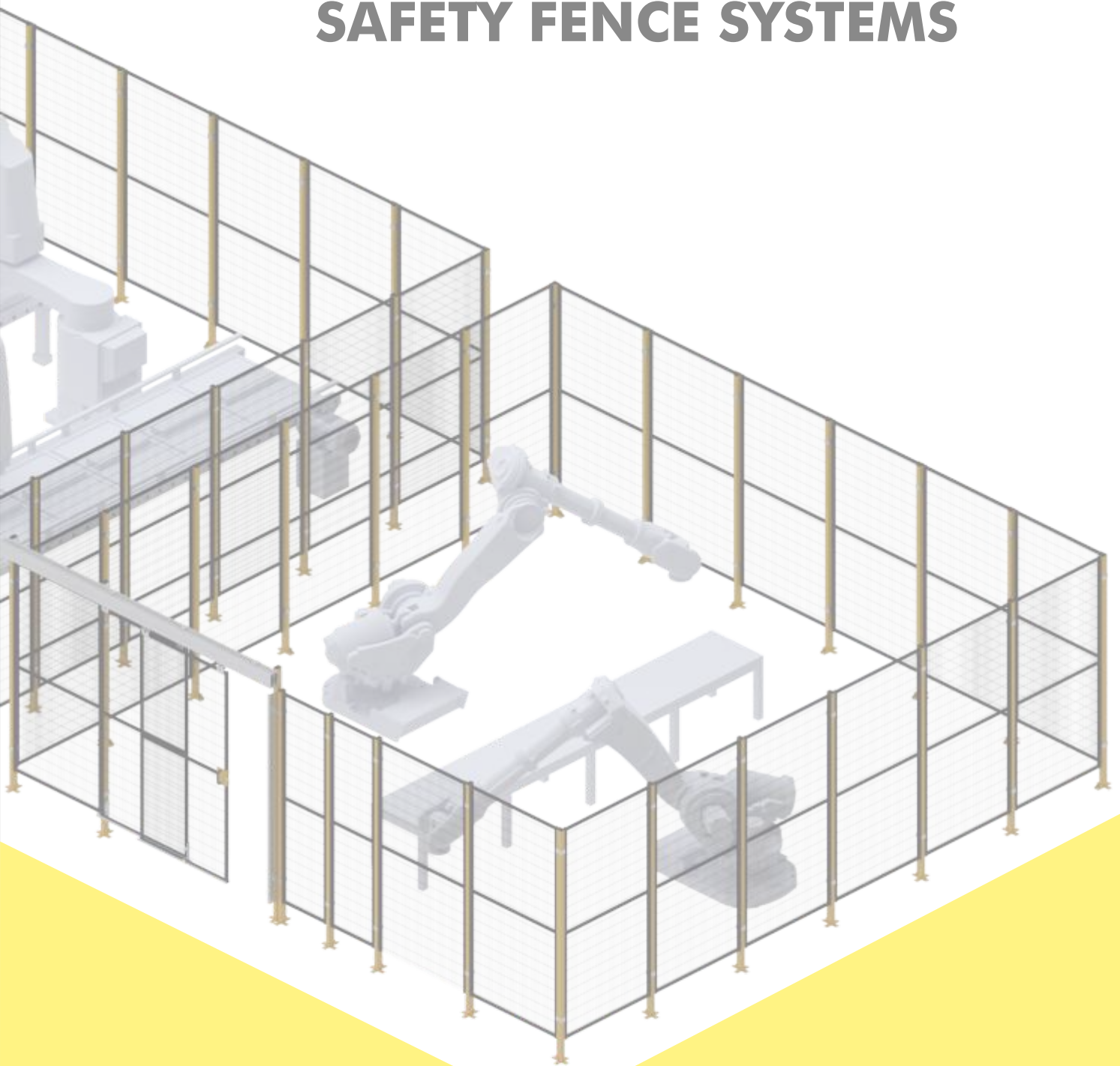




## SAFETY FENCE SYSTEMS





# GENMACS

S A F E T Y S Y S T E M S

Since its foundation in 2014 our firm with its expert team has been offering turn-key projects to leading companies in this sector. In 2015, after moving to the new manufacturing area of 3000 square meters we set a goal to enlarge our production means.

To achieve this goal, taking into consideration technical progress and global safety requirements we have included Safety systems and accessories in our product range. Following the principles of product quality and satisfaction of customer requirements we supply the most demanded in the global market product.

With our specialized staff in this field we perform maintenance in 3 basic directions: Electric and automation systems; Creation of machineries and production lines; Safety systems and accessories. On the issue of certification, because of technical specifics, the compliance of our products with "ISO - CE" standards is confirmed by certificates and quality assurance is given.





### **Why Genmacs Fence Systems?**

Based on our experience during the work with many manufacturers and companies we carry out easy installation, produce safe and quality production. With our experienced design and installation team we offer the most appropriate solution for your business.

Both manufacturers and users want to work with safe equipment. Under safe machinery we imply protection of the person from possible risks coming from different mechanisms. There are global rules regarding machineries, in our firm we apply and properly use them within the relevant EU laws.

### **Why is it necessary to use?**

### **How to Select and Install?**

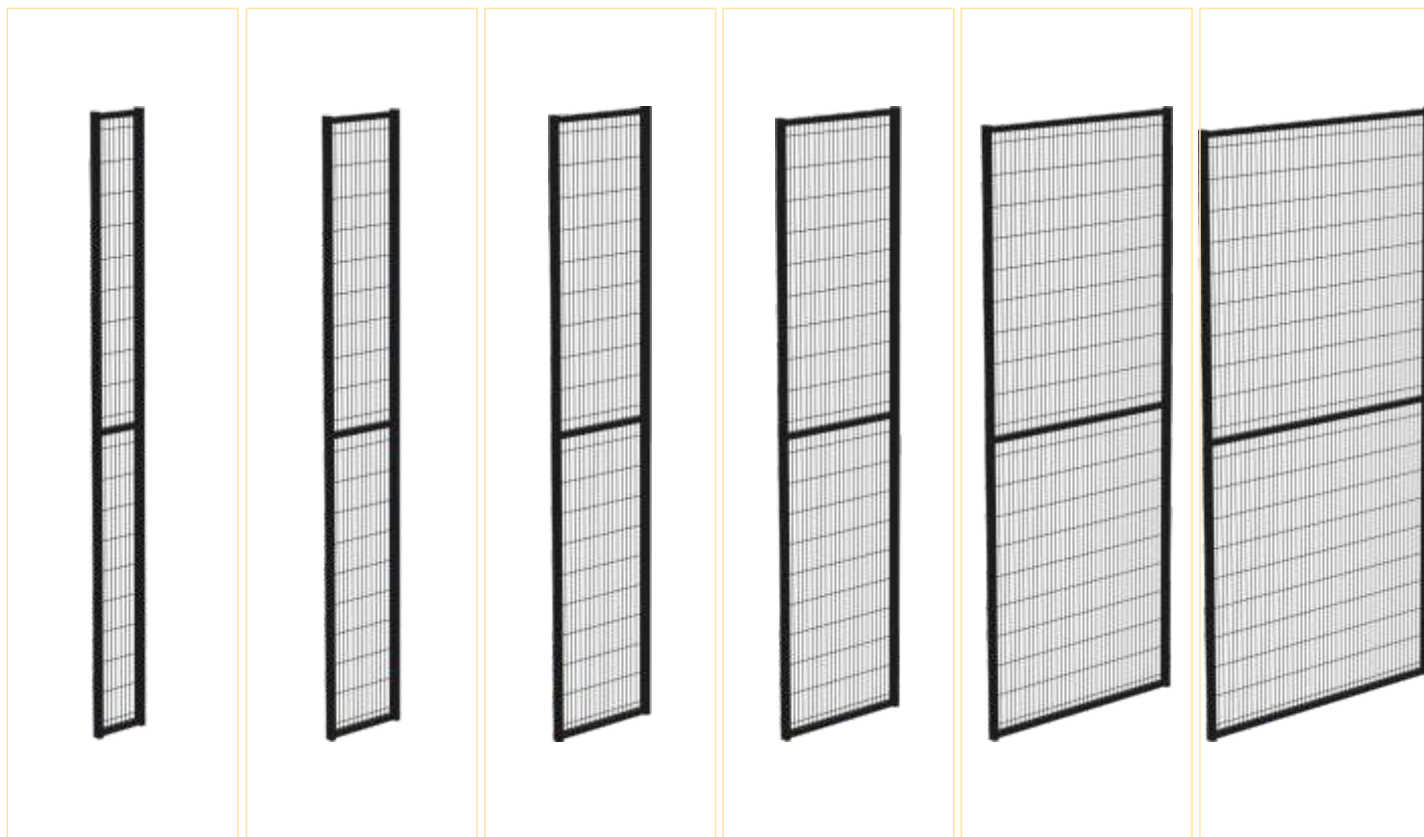
In accordance with the safety standard for machinery, Risk assessment and risk reduction EN ISO 12100, Safety Fence Systems are included in the group of Guards (physical protection devices) and must be evaluated according to EN ISO 14119-14120 standard. Spacings in physical protection devices, distance from hazardous areas, installation locations must be determined according to EN ISO 13855 and EN ISO 13857 standards.

With our Mechanical and Automation staff we can provide services for the installation of both mechanical and automation safety systems. We solve problems in the initial installation and revision (modernization) of existing work areas.

### **Solution Center for Safety Applications**

# FENCE PANELS

## Series D



- GEN-SFP -100-D
- GEN-SFP -200-D
- GEN-SFP -300-D
- GEN-SFP -500-D
- GEN-SFP -800-D
- GEN-SFP -1000-D

## MODULAR ASSEMBLY

Using panels of different sizes with width from 100mm to 1500mm we can cover the required area without extra welding and other similar works.

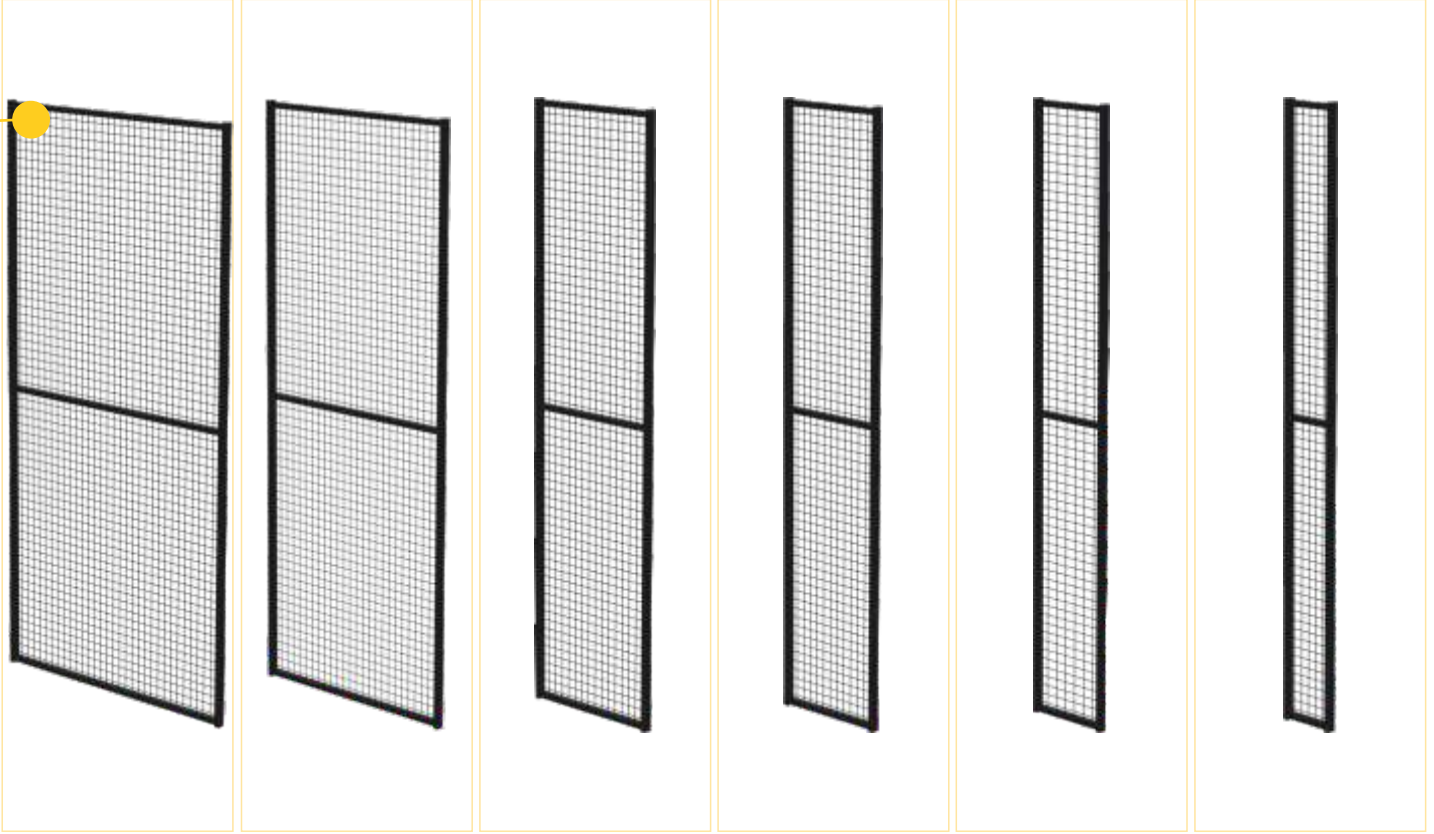
Product Code	Product Name	Size of panel size spacings (mm)		Panel Height* (mm)
		Width	Height	
GEN-SFP -100-D	Fence Panel width 100mm	20	100	2000
GEN-SFP -200-D	Fence Panel width 200mm	20	100	2000
GEN-SFP -300-D	Fence Panel width 300mm	20	100	2000
GEN-SFP -500-D	Fence Panel width 500mm	20	100	2000
GEN-SFP -800-D	Fence Panel width 800mm	20	100	2000
GEN-SFP -1000-D	Fence Panel width 1000mm	20	100	2000
GEN-SFP -1200-D	Fence Panel width 1200mm	20	100	2000
GEN-SFP -1500-D	Fence Panel width 1500mm	20	100	2000

\*Note: The panels can be manufactured with height of 1000mm, 1400mm. Please contact us.





## Series K1



### ERGONOMIC DESIGN

Fence panels should be connected by spot welding and recessed into the profile frame.

- GEN-SFP -100-K1
- GEN-SFP -200-K1
- GEN-SFP -300-K1
- GEN-SFP -500-K1
- GEN-SFP -800-K1
- GEN-SFP -1000-K1

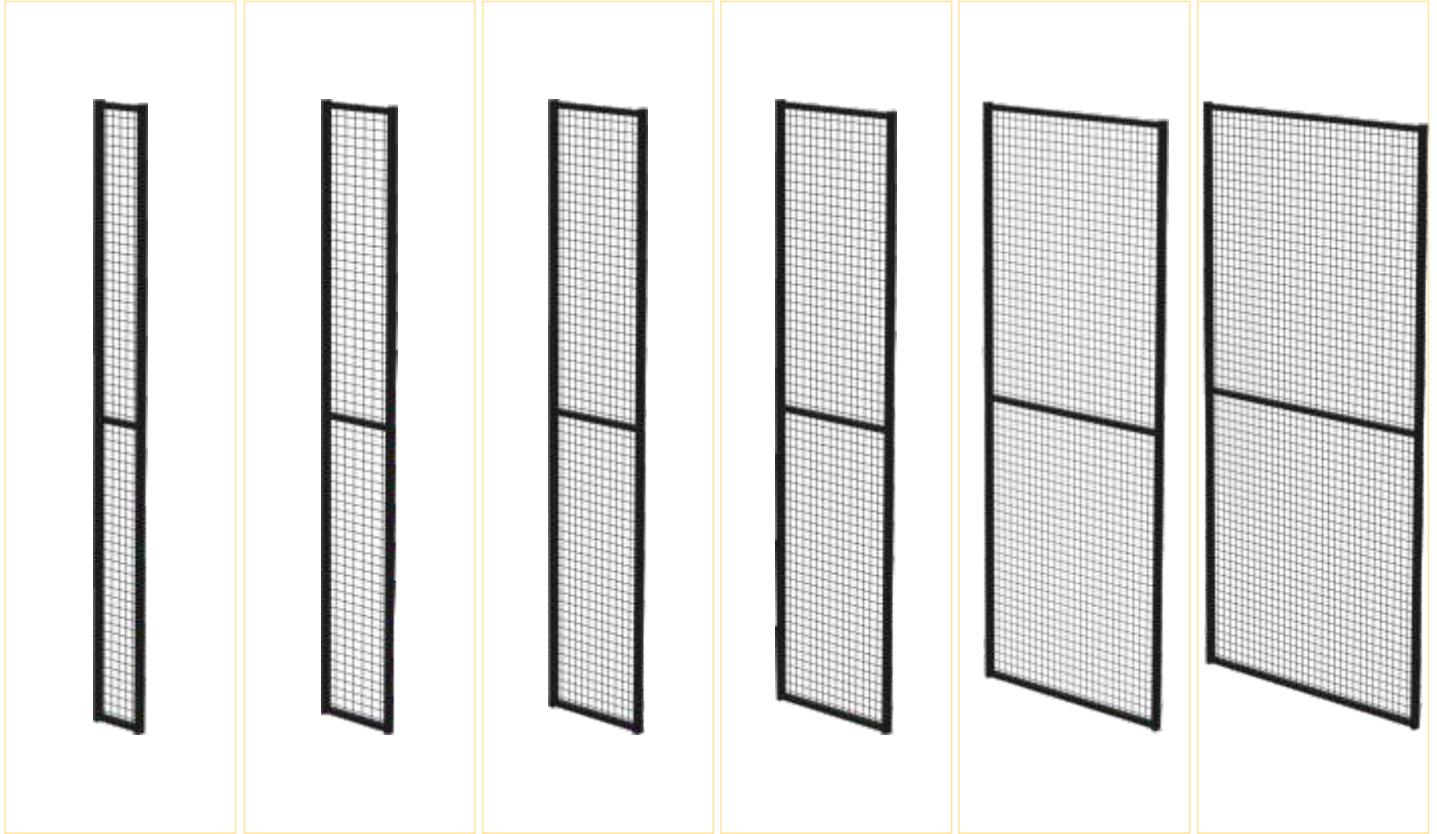


Product Code	Product Name	Size of panel size spacings (mm)		Panel Height* (mm)
		Width	Height	
GEN-SFP -100-K1	Fence Panel width 100mm	30	30	2000
GEN-SFP -200-K1	Fence Panel width 200mm	30	30	2000
GEN-SFP -300-K1	Fence Panel width 300mm	30	30	2000
GEN-SFP -500-K1	Fence Panel width 500mm	30	30	2000
GEN-SFP -800-K1	Fence Panel width 800mm	30	30	2000
GEN-SFP -1000-K1	Fence Panel width 1000mm	30	30	2000
GEN-SFP -1200-K1	Fence Panel width 1200mm	30	30	2000
GEN-SFP -1500-K1	Fence Panel width 1500mm	30	30	2000

\*Note: The panels can be manufactured with height of 1000mm, 1400mm. Please contact us.

# FENCE PANELS

## Series K2



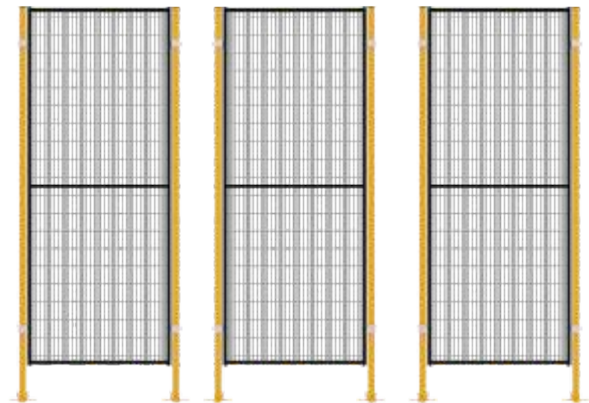
- GEN-SFP -100-K2
- GEN-SFP -200-K2
- GEN-SFP -300-K2
- GEN-SFP -500-K2
- GEN-SFP -800-K2
- GEN-SFP -1000-K2

### SAFE DESIGN

The design of the panel mesh make it impossible to climb over the fence.

Product Code	Product Name	Size of panel size spacings (mm)		Panel Height* (mm)
		Width	Height	
GEN-SFP -100-K2	Fence Panel width 100mm	40	40	2000
GEN-SFP -200-K2	Fence Panel width 200mm	40	40	2000
GEN-SFP -300-K2	Fence Panel width 300mm	40	40	2000
GEN-SFP -500-K2	Fence Panel width 500mm	40	40	2000
GEN-SFP -800-K2	Fence Panel width 800mm	40	40	2000
GEN-SFP -1000-K2	Fence Panel width 1000mm	40	40	2000
GEN-SFP -1200-K2	Fence Panel width 1200mm	40	40	2000
GEN-SFP -1500-K2	Fence Panel width 1500mm	40	40	2000

\*Note: The panels can be manufactured with height of 1000mm, 1400mm. Please contact us.



# SAFE - MODULER DESIGN - EASY INSTALLATION



## Spot Welding

With spot welding connection method the panel structure remains solid, at the end of the welding work the edges of the mesh panels are recessed into the profile. This reduces the risk of occupational injuries (abrasions, cuts, etc of the limbs of the body).

Design of mesh panels with spacings in accordance with ISO safety standards provides requested safety standards and at the same time allows us to monitor how the equipment works.

## Production Safety Standards

## Durable Doors

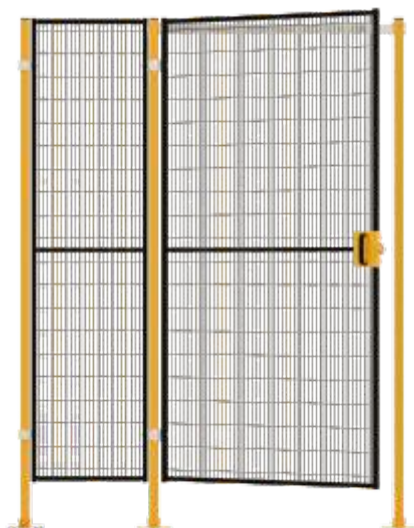
The doors are reinforced with metal door hinges. Used mounting accessories provide stronger fixation of the doors.

It is possible to adjust the height from floor to the connection place of panel and column

## Easy to Use



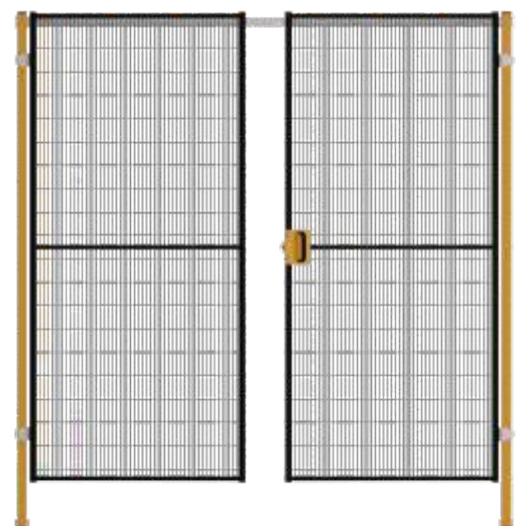
# DOORS



## Single Door

Widely used for generally purposes, this door is installed for the possibility of adjustment or repair of equipment.

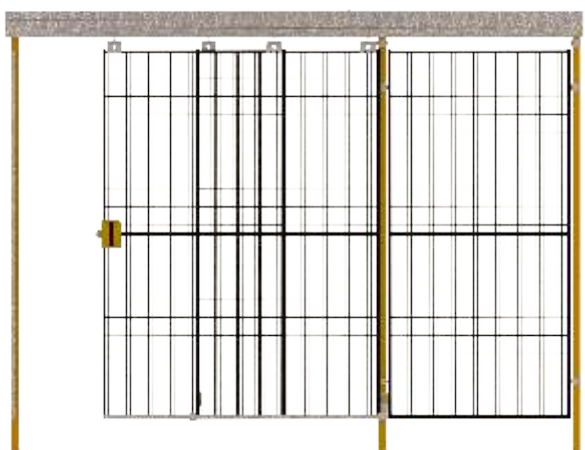
Product Code	Product Name	Width (mm)	Panel Height (mm)
GEN-SFG-1-800	Single Door - 800mm	800	2000
GEN-SFG-1-1000	Single Door - 1000mm	1000	2000



## Double Door

These doors are more often used in loading and unloading areas, mould change areas, container exit points.

Product Code	Product Name	Width (mm)	Panel Height (mm)
GEN-SFG-2-800	Double Door - 800mm	800x2	2000
GEN-SFG-2-1000	Double Door - 1000mm	1000x2	2000

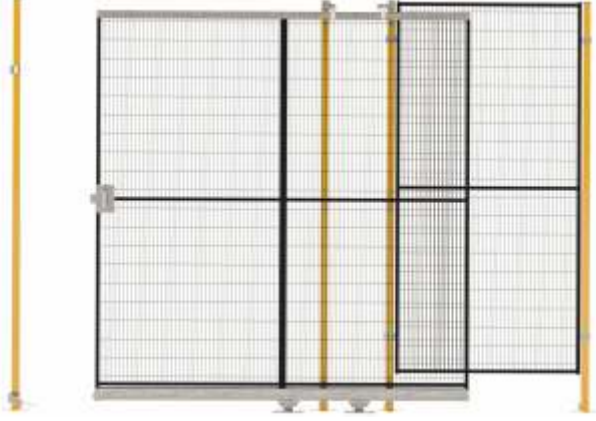


## Sliding Door on Rail

This type of door can be used in loading areas, mold feed places. The door moves by means of a rail located in its top part.

Product Code	Product Name	Width (mm)	Panel Height (mm)
GEN-SFG-3	Sliding Door on Rail	-	2000

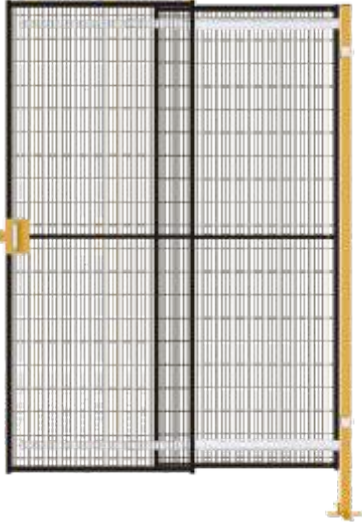




### Sliding Door on Wheels

It is especially suitable for forklift entry areas. Due to the fact that the lack of any connection in the upper part of the door, the entry-exit of forklift is carried out easily.

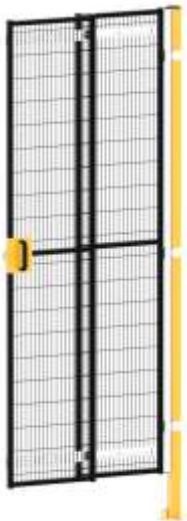
Product Code	Product Name	Width (mm)	Panel Height* (mm)
GEN-SFG-3-W	Sliding Door on Wheels	-	2000



### Telescopic Sliding Door

If there is not enough space behind the door, the foldable inside telescopic design ensures easy application.

Product Code	Product Name	Width (mm)	Panel Height* (mm)
GEN-SFG-4	Telescopic Sliding Door	-	2000



### Telescopic Sliding Door on Hinges

The hinges added to the back of the telescopic door provide opening up to 90 degrees and creating of a more convenient loading and unloading area.

Product Code	Product Name	Width (mm)	Panel Height* (mm)
GEN-SFG-4-H	Telescopic Sliding Door on Hinges	-	2000

# DOORS



## Pneumatic Barrier

It is a mechanical barrier that makes movement by pneumatic piston and is used to protect the operator of C-type presses from work accident injuries.



# ASSEMBLY EQUIPMENTS



**Panel Mounting Equipment**



**Door Hinge**

Product Code	Product Name
GEN-PME	Panel Mounting Equipment
GEN-HNG	Door Hinge
GEN-SFC-2200	Mounting Column – height 2200mm
GEN-GME	Door Support profile
GEN-CS	Column Support Bracket



**Mounting Column**



**Wheels of Sliding Door**

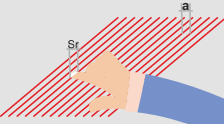
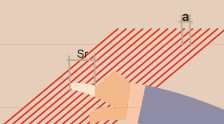
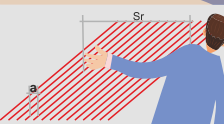


**Column Support Bracket**



# HOW TO SELECT?

Physical protection devices with different openings-spacings should be at a sufficient distance from hazardous zones of machinery. A certain distance between the moving parts of the machinery and the protective devices must be observed. According to EN ISO 13857 standart, depending on the openings in the protective devices, the safe distance is **determined as follows:**

Part of Body	Visual Expression	Opening (mm)	Safe Distance (mm)		
			Slot	Square	Circle
Fingertip		$a \leq 4$	$\geq 2$	$\geq 2$	$\geq 2$
		$4 < a \leq 6$	$\geq 10$	$\geq 5$	$\geq 5$
Finger up to wrist		$6 < a \leq 8$	$\geq 20$	$\geq 15$	$\geq 5$
		$8 < a \leq 10$	$\geq 80$	$\geq 25$	$\geq 20$
		$10 < a \leq 12$	$\geq 100$	$\geq 80$	$\geq 80$
		$12 < a \leq 20$	$\geq 120$	$\geq 120$	$\geq 120$
		$20 < a \leq 30$	$\geq 850$	$\geq 120$	$\geq 120$
Arm up to shoulder		$30 < a \leq 40$	$\geq 850$	$\geq 200$	$\geq 120$
		$40 < a \leq 120$	$\geq 850$	$\geq 850$	$\geq 850$





# HOW TO INSTALL?

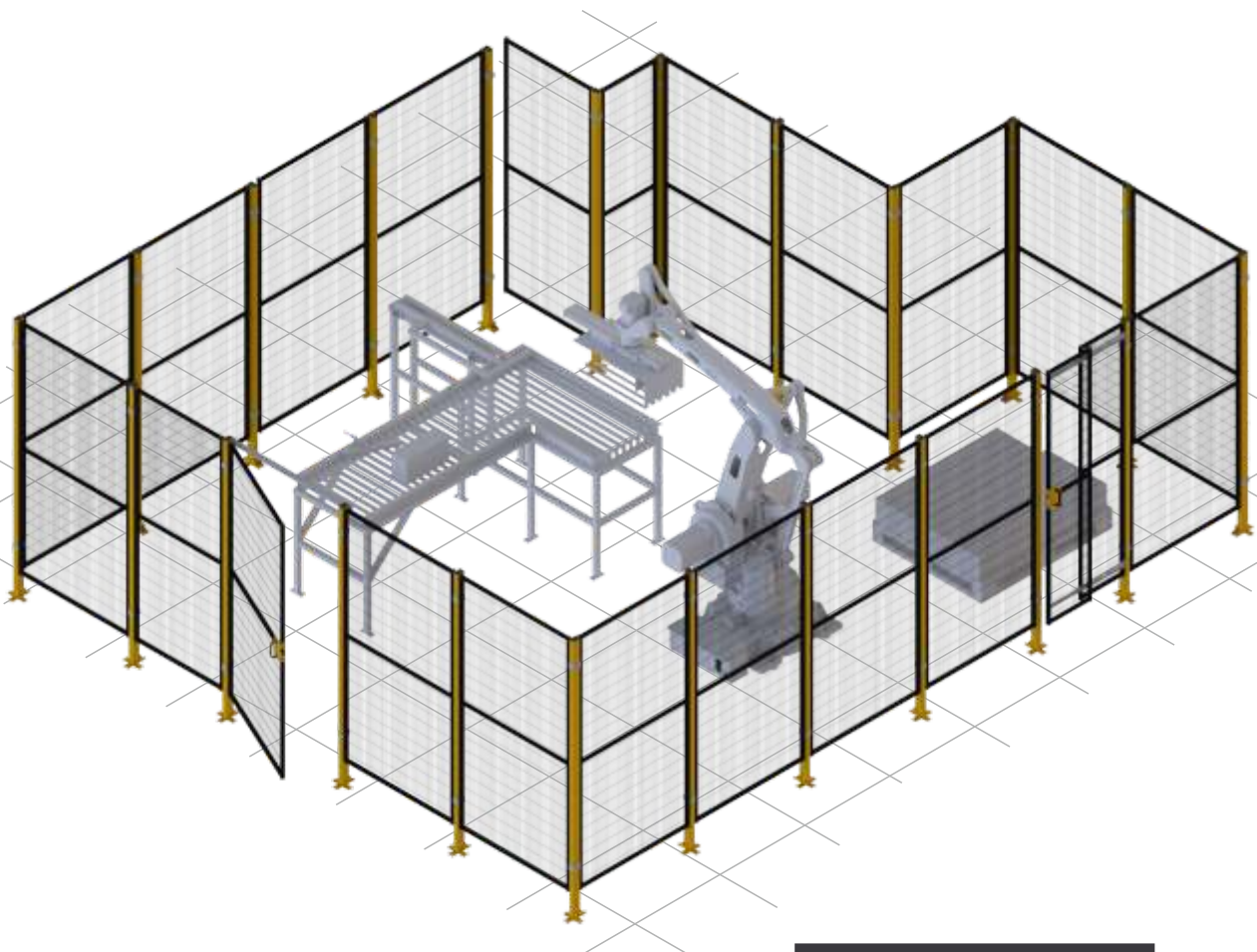
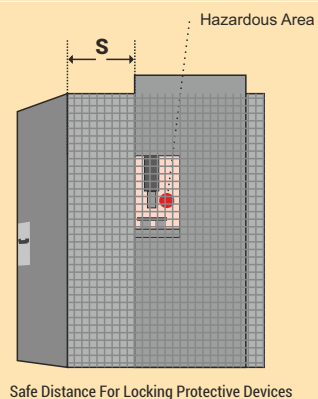
Among the physical protection devices, locking devices should be used to control access to the mechanisms (for maintenance and adjustment). For the correct location of the fence systems used together with the locking device, it is necessary to perform some calculations.

This calculations is based on EN ISO 13855 standart. The formula for calculating the safe distance for locking protective devices according to this standard is visually shown on the right:

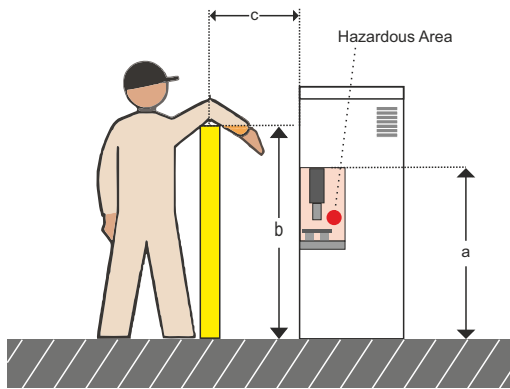
Where:

- **S** millimeters - the minimum distance from the hazardous area to the open door.
- **K** millimeters per second - a parameter derived from the value of the speed of approximation of a person or his limb.
- **T** seconds - stop time of the whole system.
- **C** millimeters - the safe distance taken from the table "Safety distance depending on the openings of different protective devices", based on ISO 13857 standard.

$$S = (K \times T) + C$$



# HOW TO INSTALL?



The height of protective devices in areas of high potential danger is given in the table.

Within these safe limits, to determine the required height of the upper edge of the protective device, you must perform the following calculations:

1. Determine the height of the Hazardous Area **A** and find its value in the left column (Example: 1000 mm).
2. In this line, find a cell with a minimum horizontal distance calculated on the C basis of a safe distance (Example: first cell with value "0").
3. In the lowest line read the obtained height of the protective device **B** (Example: 1800 mm).

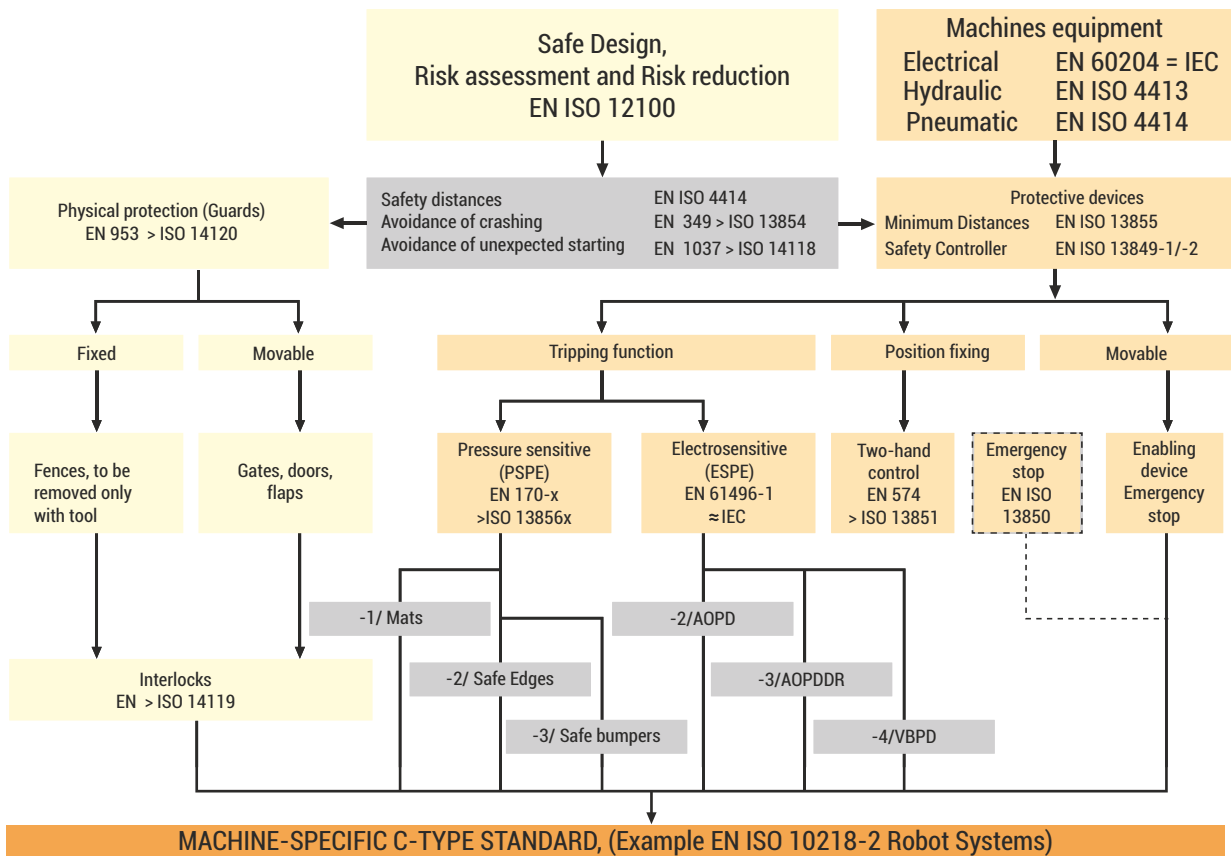
The Height of Hazardous Area <b>A</b> (mm)	Horizontal Distance to Danger Zone <b>C</b> (mm)									
	0	0	0	0	0	0	0	0	0	0
2700	0	0	0	0	0	0	0	0	0	0
2600	900	800	700	900	600	500	400	300	100	0
2400	1100	1000	900	800	700	600	400	300	100	0
2200	1300	1200	1000	900	800	600	400	300	0	0
2000	1400	1300	1100	900	800	600	400	0	0	0
1800	1500	1400	1100	900	800	600	0	0	0	0
1600	1500	1400	1100	900	800	500	0	0	0	0
1400	1500	1400	1100	900	800	0	0	0	0	0
1200	1500	1400	1100	900	700	0	0	0	0	0
1000	1500	1400	1000	800	0	0	0	0	0	0
800	1500	1300	900	600	0	0	0	0	0	0
600	1400	1300	800	0	0	0	0	0	0	0
400	1400	1200	400	0	0	0	0	0	0	0
200	1200	900	0	0	0	0	0	0	0	0
0	1100	500	0	0	0	0	0	0	0	0
	The Height of the Protective Device <b>B</b> (mm)									
	1000	1200	1400	1600	1800	2000	2200	2400	2500	2700



# STANDARDS AND DIRECTIVES

The fence systems used in the machinery are part of the group of Physical Protection Devices and must be selected, manufactured and installed in accordance with EN ISO 14120 standart. Among these protective devices there are fixed and movable types, which must be designed according to the same standard.

In certain areas of installation of protective devices (doors, passages, openings, window) there must be locking devices. The necessity and detailing of these locking devices are defined by EN ISO 14119 standard.



# SAFETY AUTOMATION



According to the safety standard for machinery, Risk assessment and risk reduction EN ISO 12100, for safety measures it may not be enough to use only **Physical protection devices**.

Doors, entry-exit stations and Crossing points should be inspected with Safety Sensors and safety in machine / line automation automation infrastructure should be established.  
(EN ISO 13849-1)

With the Automation team in the structure of our company, we can offer our customers turnkey solutions. When performing system integration, we prefer the products of leading manufacturers in the field of safety systems.



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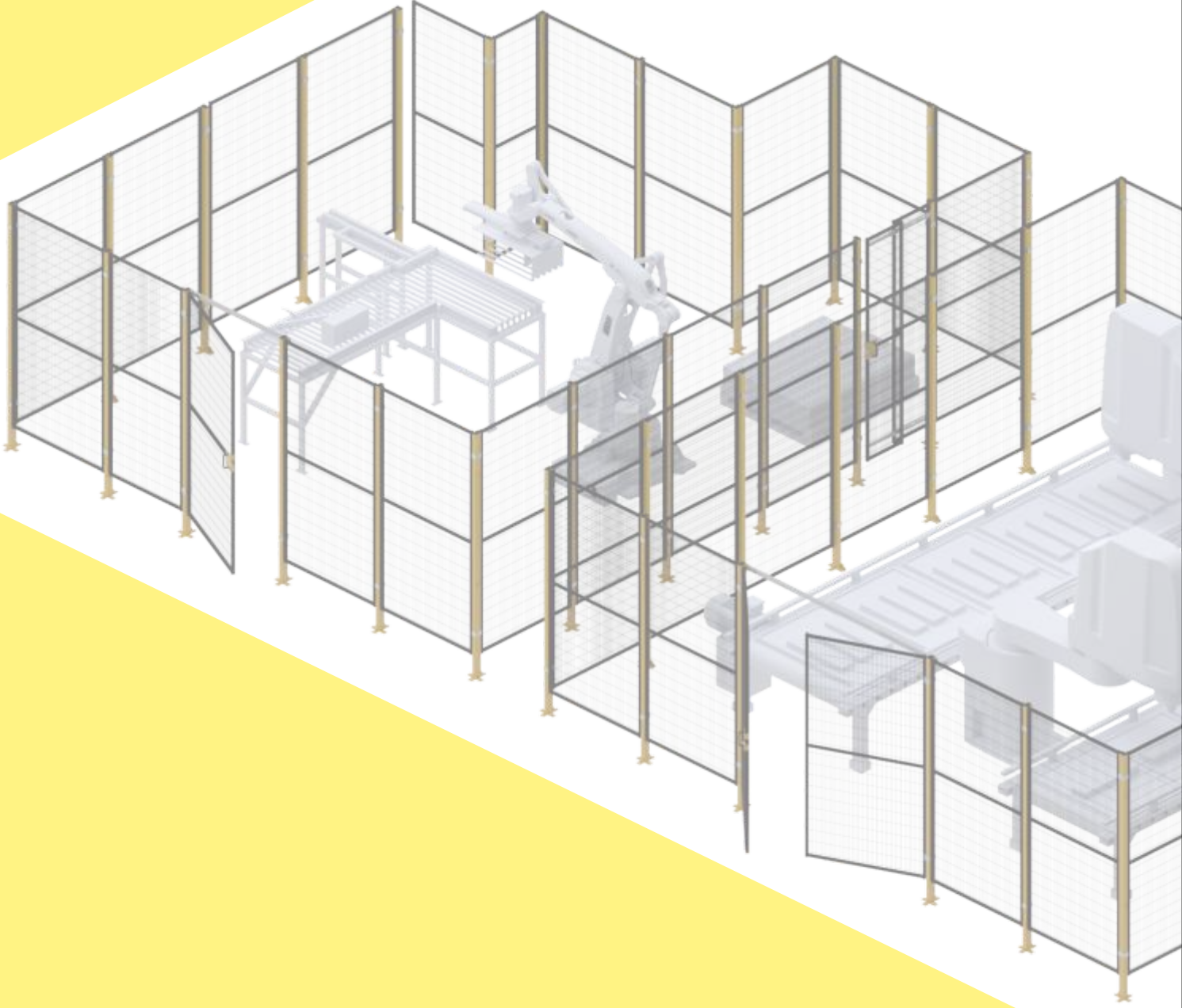
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