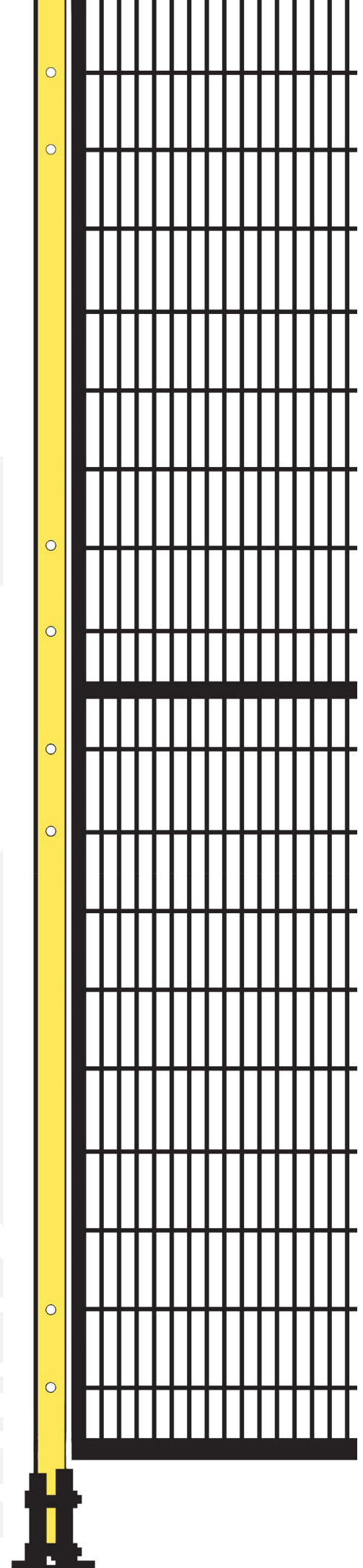


# Modular Perimeter Guarding



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## WE KNOW MACHINE SAFETY

Established in 1740, Procter Machine Safety is a specialist designer and manufacturer of machine guards, serving markets in the UK, Europe, Middle East, USA and elsewhere.

Customers trust our capability and expertise whether they need standard, modular or bespoke machine guards for compliance with health and safety standards, legislation and regulations.

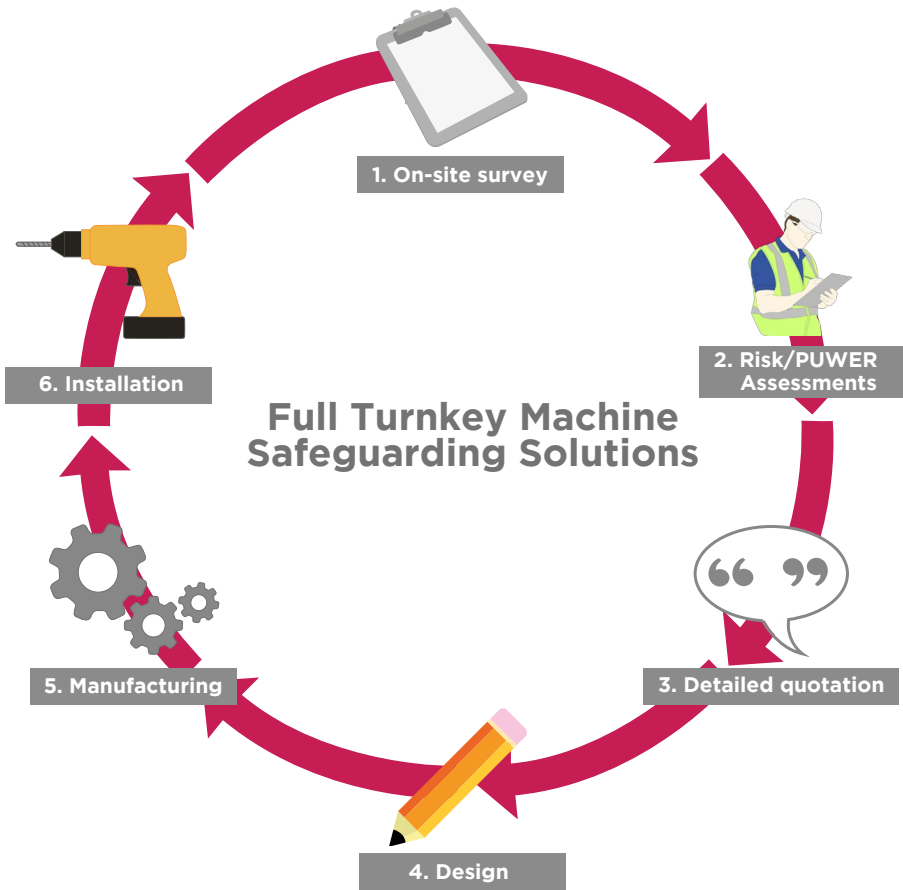
With state-of-the-art manufacturing facilities and a team of machinery safety expert designers with over 250 years of combined industry knowledge, customers trust our capability and expertise.

## A FULL TURNKEY SOLUTION

We apply our combined experience and know-how to design, manufacture, assess and install high quality safety compliant machine guards to keep your people safe in a forever changing world.

Our comprehensive service extends from machine surveys, risk assessments, consultation and guarding design, through to manufacture, finishing, delivery, and mechanical and electrical installation.

From concept to completion, Procter Machine Safety provides full turnkey machine safeguarding solutions.





## EN Standards for safety in working environments

### BS EN ISO 14120

General requirements for the design and manufacture of fixed and movable guards.

### 5.2.4 - Viewing

Where viewing of the process is required, guards shall be designed and constructed to offer adequate viewing.

### 5.9 - Machine viewing

Where viewing of machine operation is required through the guard, materials shall be selected with suitable properties (...) or wire mesh is used, this should be of adequate open area and suitable colour to permit viewing.

Viewing will be enhanced if the perforate material is darker than the area observed.

### BS EN ISO 12100-1

Basic concepts, general design principles.

### BS EN 13857:2008

Safety distances to prevent hazard zones being reached by upper and lower limbs.

### BS EN ISO 12100:2010

General principles for design. Risk assessment and risk reduction.

### BS EN 349:1993+A1:2008

Minimum gaps to avoid crushing of parts of the human body.

### BS EN ISO 14119:2013

Interlocking devices associated with guards. Principles for design and selection.

### BS EN ISO 14120:2015

General requirements for the design and construction of fixed and movable guards.

### 2006/42/EC

Machinery Directive.

### ISO 13849-1

Safety of machinery — Safety-related parts of control systems

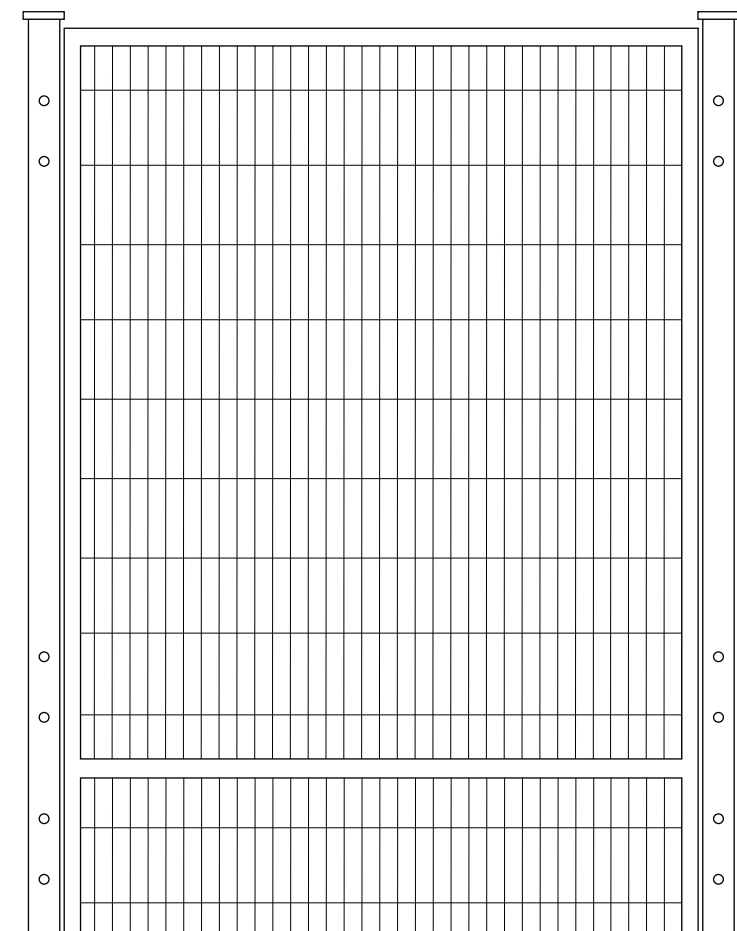
“A Safe factory is a productive one.”

We produce and distribute solutions for the safety of machinery and industrial plants in accordance with EU and international (ISO) directives. Modular steel barriers and accessories that become customized solutions for our clients all over the world.

The production flow is entirely managed within our facilities, which ensures a high quality that you can see in every detail.

We are always innovating throughout the industry with our exclusive patents, know-how, and ongoing product upgrades.

Research, development, design, production, logistics and assistance, Satech is your reference for safety in working environments.

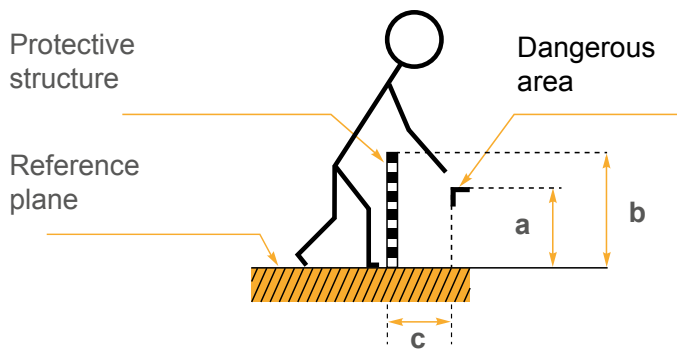




# SAFETY DISTANCES

Keeping you safe in the workplace

## BS EN ISO 13857, 4.2.2: Reaching over protective structures



a: height of hazard zone  
b: height of protective structure  
c: horizontal distance to hazard zone

Table 2		Dimensions in millimeters									
Height of dangerous area a	Height of the protection structure b										
	1000	1200	1400	1600	1800	2000	2200	2400	2500	2700	
	Horizontal distance to the dangerous area c										
2700	-	-	-	-	-	-	-	-	-	-	
2600	900	800	700	600	600	500	400	300	100	-	
2400	1100	1000	900	800	700	600	400	300	100	-	
2200	1300	1200	1000	900	800	600	400	300	-	-	
2000	1400	1300	1100	900	800	600	400	-	-	-	
1800	1500	1400	1100	900	800	600	-	-	-	-	
1600	1500	1400	1100	900	800	500	-	-	-	-	
1400	1500	1400	1100	900	800	-	-	-	-	-	
1200	1500	1400	1100	900	700	-	-	-	-	-	
1000	1500	1400	1000	800	-	-	-	-	-	-	
800	1500	1300	900	600	-	-	-	-	-	-	
600	1400	1300	800	-	-	-	-	-	-	-	
400	1400	1200	400	-	-	-	-	-	-	-	
200	1200	900	-	-	-	-	-	-	-	-	
0	1100	500	-	-	-	-	-	-	-	-	

## BS EN ISO 13857, 4.2.4.1: Reaching through regular openings

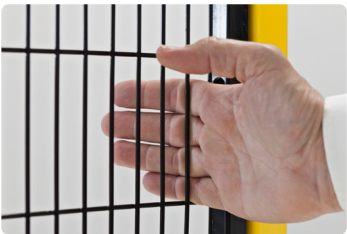
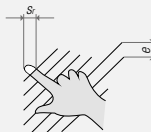
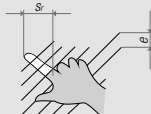
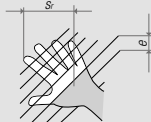
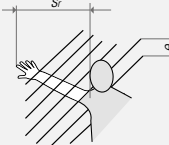


Table 4 gives Sr for regular openings for persons of 14 years of age and above.

The dimension of the opening “e” corresponds to the side of a square opening, the diameter of a round opening and the narrowest dimension of a slot opening.

For openings larger than 120 mm safety distances in accordance with point 4.2.2 shall be used.

Table 4			Dimensions in millimeters		
Part of body	Illustration	Opening	Safety distance $S_r$		
			Slot	Square	Round
Fingertip		$e \leq 4$	$\geq 2$	$\geq 2$	$\geq 2$
		$4 < e \leq 6$	$\geq 10$	$\geq 5$	$\geq 5$
Finger up to knuckle joint		$6 < e \leq 8$	$\geq 20$	$\geq 15$	$\geq 5$
		$8 < e \leq 10$	$\geq 80$	$\geq 25$	$\geq 20$
Hand		$10 < e \leq 12$	$\geq 100$	$\geq 80$	$\geq 80$
		$12 < e \leq 20$	$\geq 120$	$\geq 120$	$\geq 120$
		$20 < e \leq 30$	$\geq 850^a$	$\geq 120$	$\geq 120$
Arm up to junction with shoulder		$30 < e \leq 40$	$\geq 850$	$\geq 200$	$\geq 120$
		$40 < e \leq 120$	$\geq 850$	$\geq 850$	$\geq 850$

The bold lines within the table indicate the part of the body which is restricted by the opening size.  
a) If the length of the slot opening is less or equal to 65 mm, the thumb will act as a stop and the safety distance can be reduced to 200 mm.

## BS EN ISO 13857, 4.3: Safety distances to prevent access by lower limbs

In general, safety distances should be determined using Tables 1 to 6 for the upper limbs.

When it is not possible to foresee the upper limb access through the opening, it is possible to use the values given in Table 7 to determine safety distances for the lower limbs.

The dimension “e” of openings corresponds to the side of a square opening, the diameter of a round opening or the narrowest dimension of a slot opening.

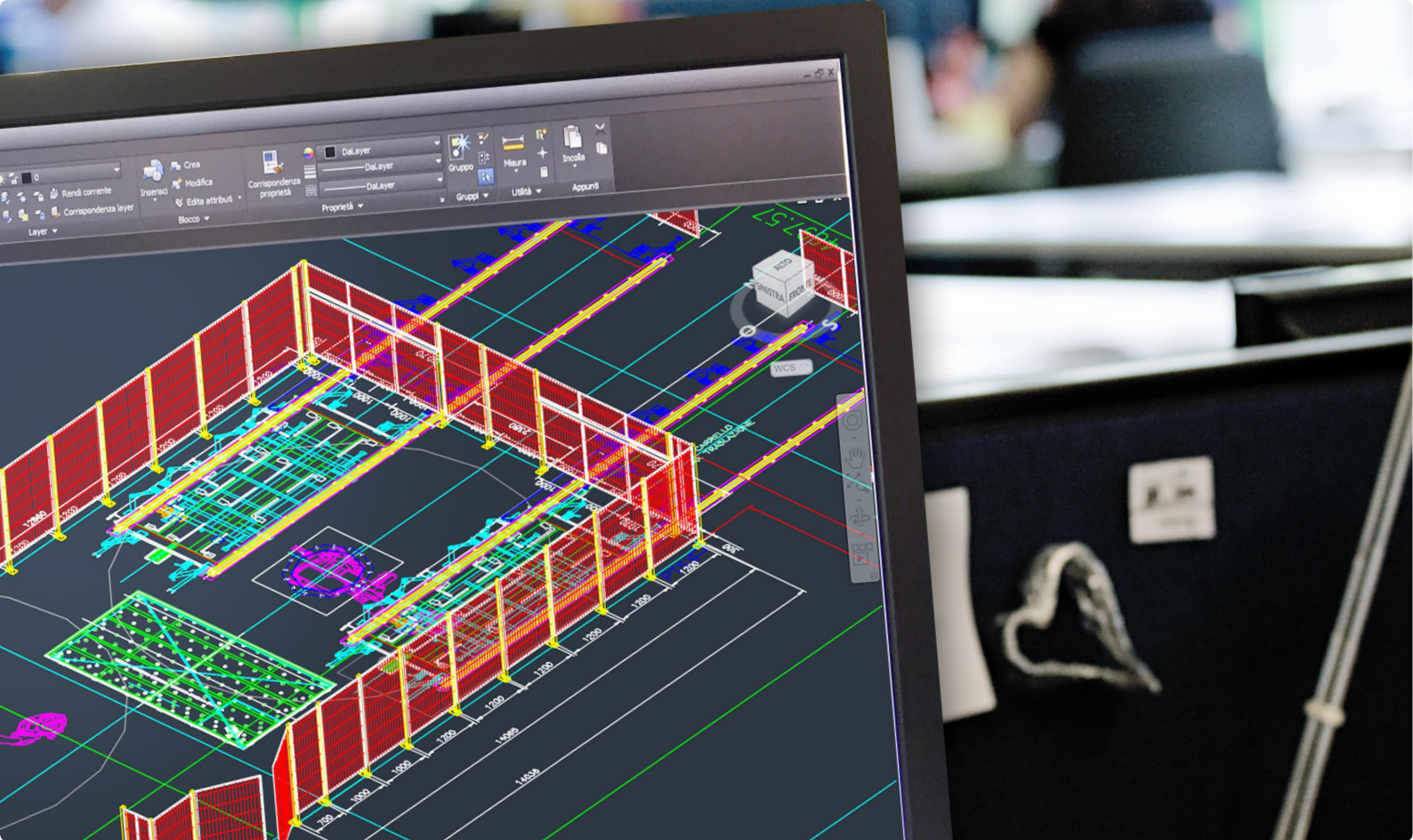
The values given in Table 7 are independent of whether clothing or footwear is being worn and are applicable for persons of 14 years of age and above. For reaching through openings of irregular shape, see 4.2.4.3.

Table 7	Dimensions in millimeters			
	Part of lower limb	Illustration	Opening	Safety distance Sr
	Toe tip		e ≤ 5	0
			5 < e ≤ 15	≥ 10
	Toe		15 < e ≤ 35	≥ 80 <sup>a</sup>
			35 < e ≤ 60	≥ 25
	Foot		60 < e ≤ 80	≥ 180
			80 < e ≤ 95	≥ 650 <sup>b</sup>
	Leg (toe tip to knee)		95 < e ≤ 180	≥ 1100 <sup>c</sup>
			180 < e ≤ 240	Not admissible
	Leg (toe tip to crotch)		180 < e ≤ 240	≥ 1100 <sup>c</sup>
			240 < e ≤ 300	Not admissible

a) If the length to the slot opening is ≤75mm, the distance can be reduced to ≥50mm  
b) The value corresponds to leg (toe tip to knee)  
c) The value corresponds to leg (toe tip to crotch)  
Note: Slot openings with e>180mm and square or round openings with e>240mm will allow access for the whole body (see also Clause 1, final paragraph)







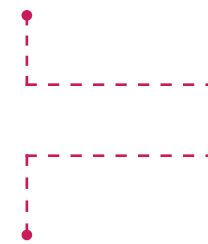
# FRAMED PANELS

Safe and robust

## Easy to handle

Light and robust

A resistant and light structure, Satech framed panel can be easily handled by one person

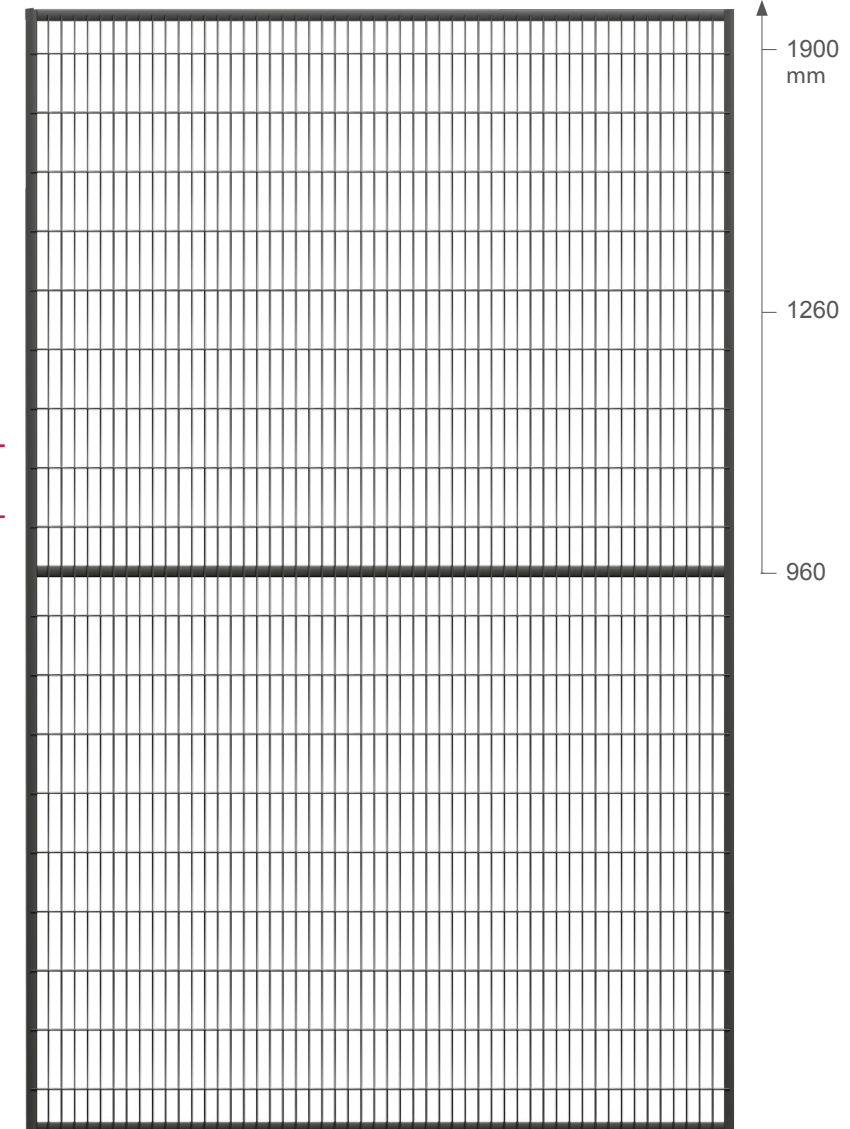


## Ready to use

Plug and play versatility

The frame is drilled to allow assembly with screws and installation of brackets and accessories

200 300 700 800 1000 1200 1500 mm

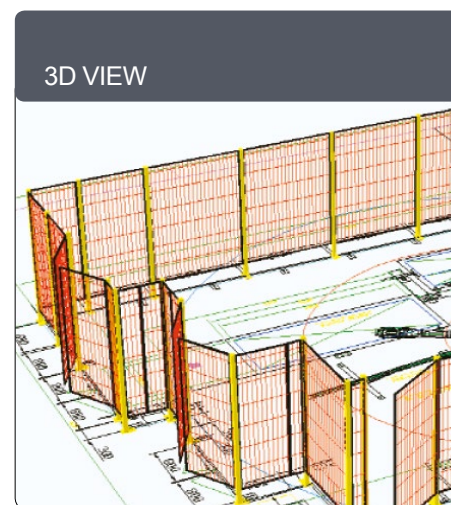
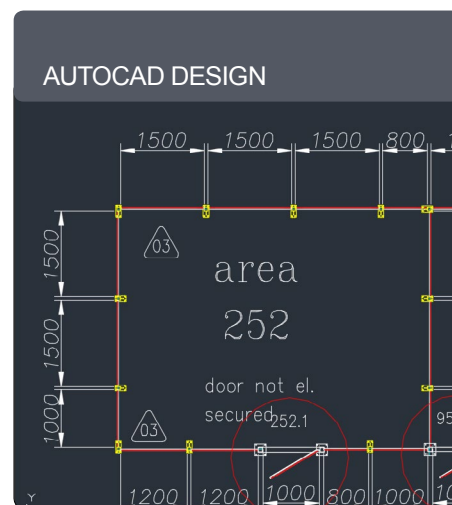
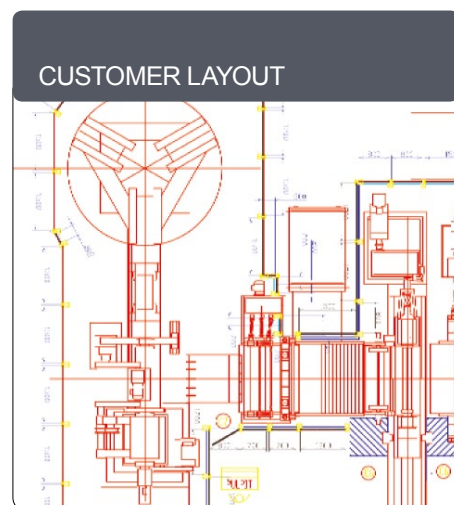


## Autocad® and Inventor® design

### From the clients needs to customised design

Our technical department is geared to meet the individual requirements of the clients and provides for customised protection solutions for all the industry sectors.

A customised Autocad® design application allows us to get maximum optimisation choosing the modular components used in the layouts. Our designs are saved in STEP and PDF-3D format, ensuring a full compatibility with your IT standards.

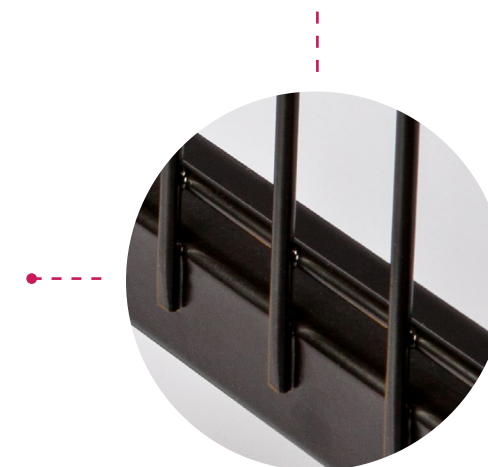


## Resistant

20mm frame

Satech panel is rigid and resistant, thanks to the welds along the entire frame and at each intersection of the wires. It is available with a 20 frame.

FRAME  
mm  
**20**



## Safety

EN ISO 13857

A 19mm slot width allows the installation of the fence only 120 mm from the danger zone.

## Anti-climbing

EN ISO 14120-5.18

External vertical wires effectively prevent climbing.

## Visibility

EN ISO 14120-5.9

The vertical mesh slots ensure excellent visibility of the machinery.



Series  
**BASIC**

Modular Protection Systems

BASIC is the protection and accident prevention system consisting of 40x40 uprights and 20x20 panels. It is the standard method used in all guards for plant and machinery. It is easy to be assembled with a patented clamp or with nuts and bolts as an option.

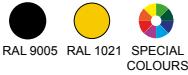
POST  
mm

40

FRAME  
mm

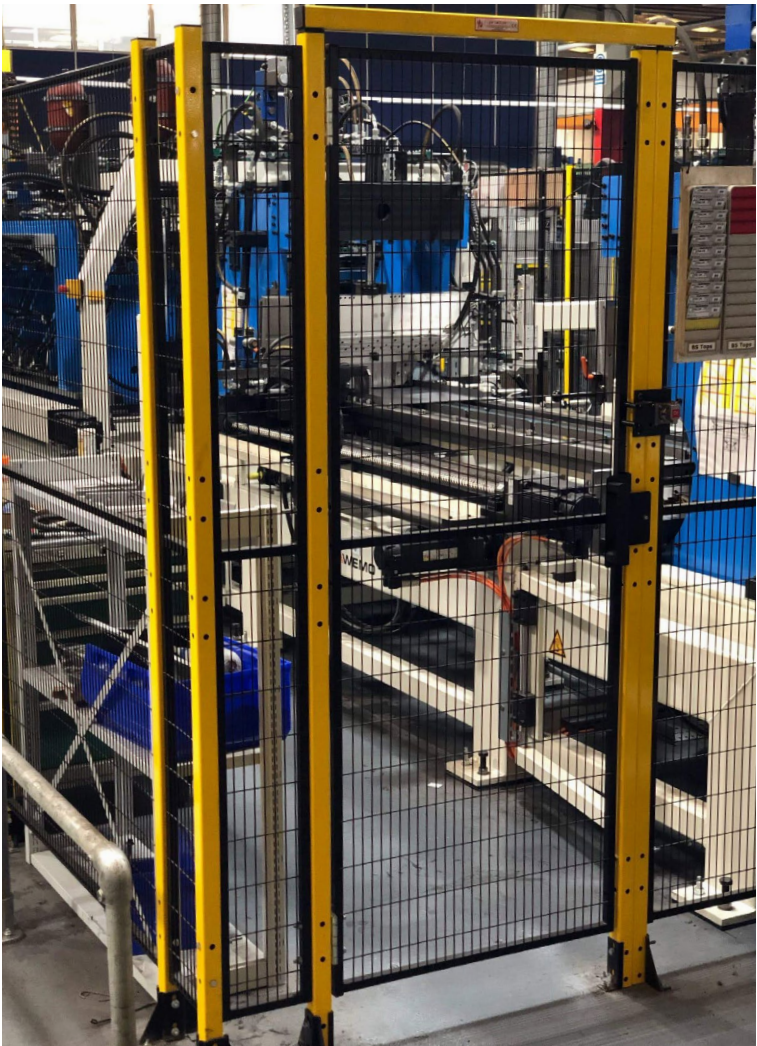
20

Protection Height: 1120 ~ 2060 mm



Fastenings

NUTS  
AND BOLTS



Series  
**STRONG**

Modular Protection Systems

STRONG is the guarding system consisting of 60x60 mm posts with welded baseplates and panels with 20x20 frame. It is used in heavier applications such as industrial robotics or the steel industry.

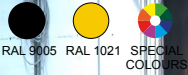
POST  
mm

60

FRAME  
mm

20

Protection Height: 1120 ~ 2060 mm



Fastenings

NUTS  
AND BOLTS







# PANELS

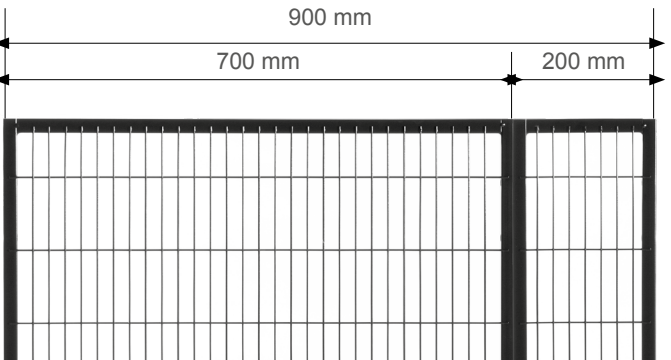
As well as the standard mesh, our framed panels can be made in different or mixed materials and shaped upon request

Panels Composition		
200	200	
300	300	
400	200	200
500	200	300
600	300	300
700	700	
800	800	
900	700	200
1000	1000	
1100	800	300
1200	1200	
1300	1000	300
1400	700	700
1500	1500	

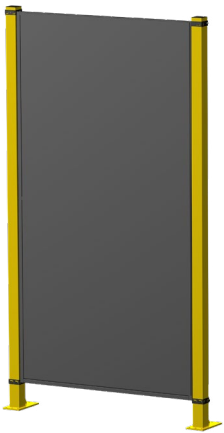
## Satech Modularity

7 standard sizes, endless possibilities

The modular composition of seven standard widths allows you to obtain all the intermediate dimensions with a progression of only 100mm.



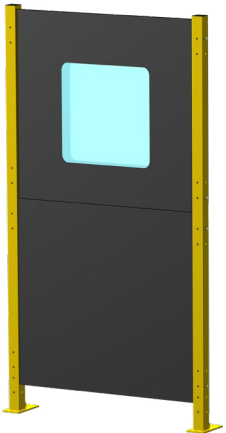
## Sheet Metal



MATERIAL:  
1,2 mm thick  
metal sheet

AVAILABLE ON REQUEST

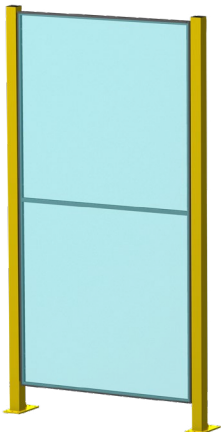
## Sheet metal with viewing port



MATERIAL:  
1,2 mm thick  
metal sheet

AVAILABLE ON REQUEST

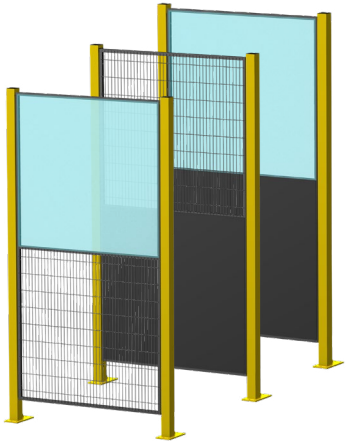
## Transparent Sheet



MATERIAL:  
4 mm thick  
transparent sheet

AVAILABLE ON REQUEST

## Mixed



MATERIALS:  
3 mm  
drawn steel mesh  
1,2 mm thick  
sheet metal  
4 mm thick  
transparent sheet

AVAILABLE ON REQUEST



# DOORS

## Single Leaf Doors

POST  
mm

40

POST  
mm

60

Standard single leaf hinged door. The movement is achieved by means of two hinges and a door stop, which is provided with a new generation supermagnet.



AVAILABILITY:  
700 - 1500mm

## Double Leaf Doors

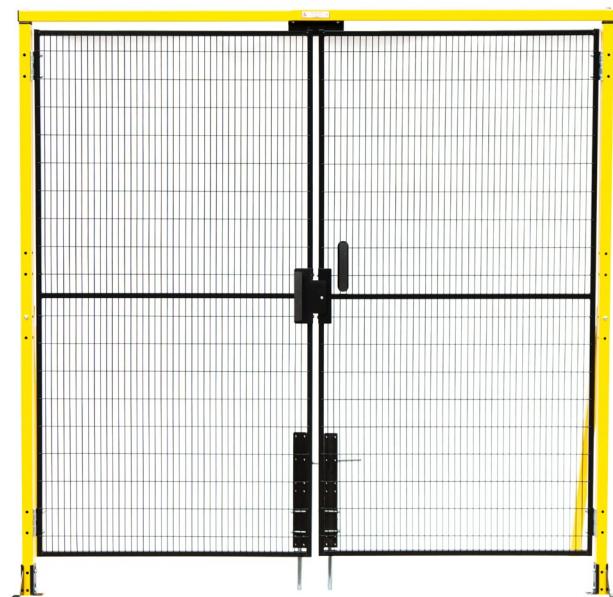
POST  
mm

40

POST  
mm

60

A folding-hinged door designed to reduce the dimension of the open door. Once the bolt is released, the two leaves fold over one another, reducing the overall size.



AVAILABILITY:  
1400 - 3000mm

# DOORS

Everything you could need in a box

Our framed panels can be easily converted into doors, the panel becomes the door leaf, while the other components are supplied "all in a box".

In our door accessory box, you will find the hinges, the lock and a standard handle. Depending on how the hinges and the lock are mounted, the door can be right or left-handed.

The door can also be adapted to specific safety requirements, (i.e. with panic or interlocked locks).





# Sliding DOORS

## With Guides

Sliding doors suspended on upper guides or with lower guides compatible with the pressure loads exerted by the forklift tires.

AVAILABILITY:

- SINGLE WITH UPPER GUIDE
- OPPOSED WITH UPPER GUIDE
- ALTERNATE WITH DOUBLE UPPER GUIDE
- DOUBLE ALTERNATE WITH DOUBLE UPPER GUIDE

60 x 60 posts only.  
Available on request.

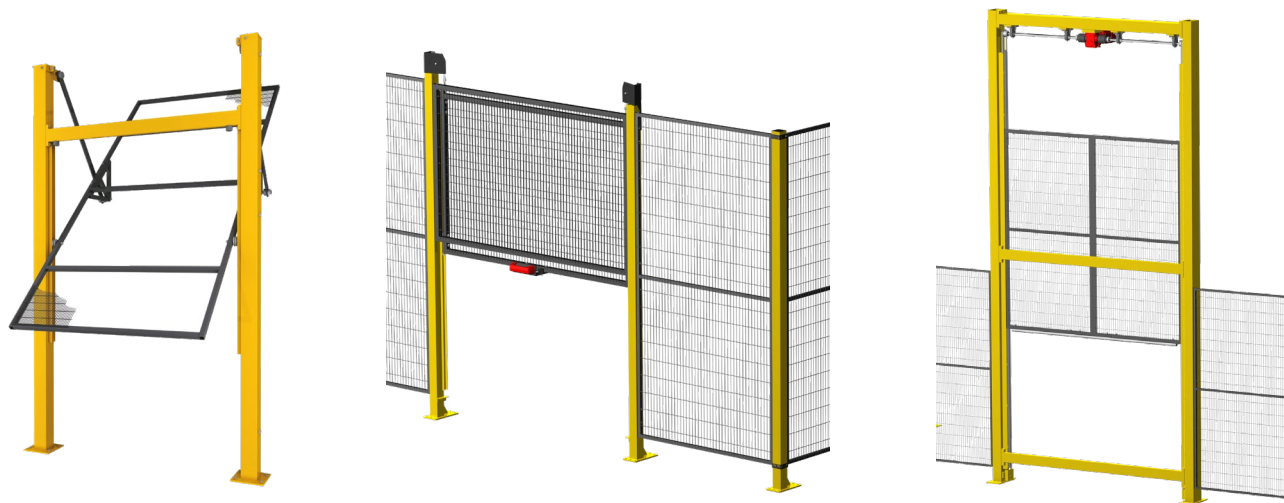
OPENING:  
from 700 to 3.000 mm



# Special DOORS

Special doors are bespoke and available on request with one of our design engineers

## Vertical & Up-and-Over



# ACCESSORIES

A full range of accessories ensures maximum versatility and customisation options

Complementary Fittings

Cutting kits, inserts with door, cable ducts, bracings

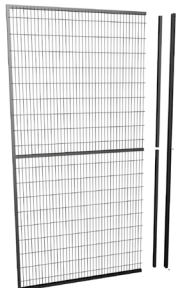
1. Support & Wheel Bracket



2. Padlock Bracket & Key Set

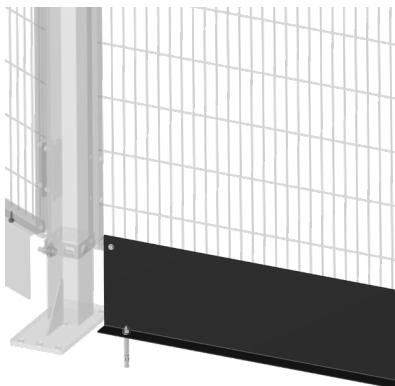
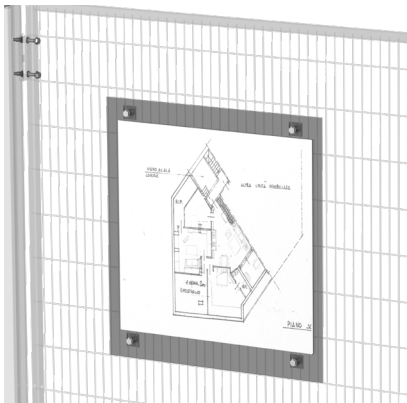
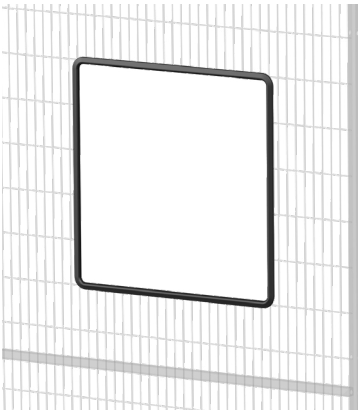


3. Cutting Kits



Finishings

Rubber profiles, fixed and adjustable angular joints, fixing plates for warnings



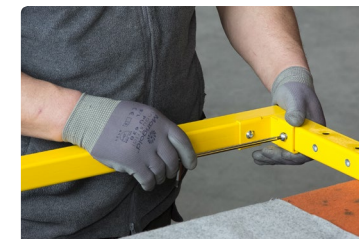
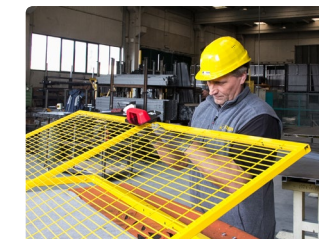




## PRE-ASSEMBLY SERVICE

We can pre-assemble doors, panels, locks, handles, safety switches and the on-board electronics of your guarding system.

These components are delivered ready to be installed, allowing you to achieve significant time savings for your installers.

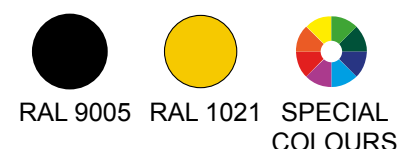


## STOCK & SHIPPING

Our vertical packing system allows for the optimisation of shipments and the containment of their cost. Each pallet is meticulously packed by experienced staff with all of the components secured and protected. Procter Machine Safety's management software also integrates a traceable control system for shipments.

## CUSTOMISED PRODUCTION

Panels, doors and accessories made following the client's design in both standard and custom colours



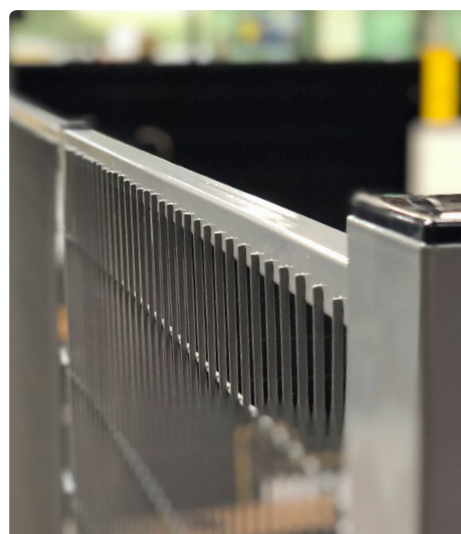
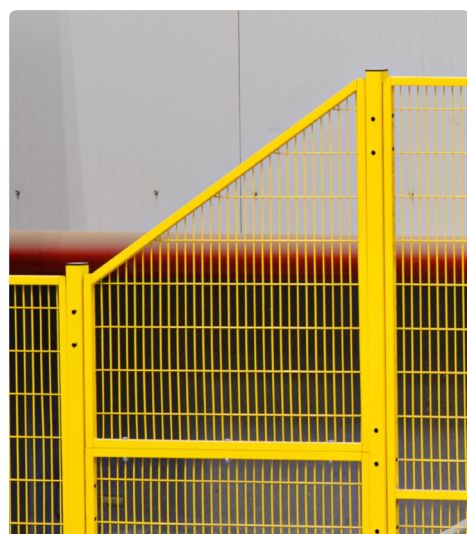
Beside the standard production, we design and manufacture customised solutions for every need: panels with special dimensions and shapes, viewing ports for inspection or sampling control, manual, electric and pneumatic operated vertical and up-and-over doors, support brackets for accessories and safety switches. The guards can also be personalised with the colour that best suits your environment.

## AFTER SALE SUPPORT

Our professional installers can assemble your perimeter guards nationwide with their knowledge and expertise. After being trained at the Satech Technical Centre, they are readily prepared to assemble any product.

After sale and installation, our goal is to keep providing support and to build reliable relationships over time that last as long as our products do. Every client can rely on our assistants to provide product brochures and real-time updates as well as product and maintenance advice.

For more information about Procter Machine Safety, please send an email to:  
[satech@machinesafety.co.uk](mailto:satech@machinesafety.co.uk)





## INDUSTRY SECTORS

These are just some of the many industry sectors our consultants have supported clients in:

- Food & Beverage
- Packaging & Paper
- Automotive
- Metal Forming & Metalworking
- Pharmaceuticals & Medical
- Oil / Gas & Undersea / Offshore
- General Manufacturing

Proud to work with



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CF83 8XD  
Tel: 02920 855 754

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[www.machinesafety.co.uk](http://www.machinesafety.co.uk)