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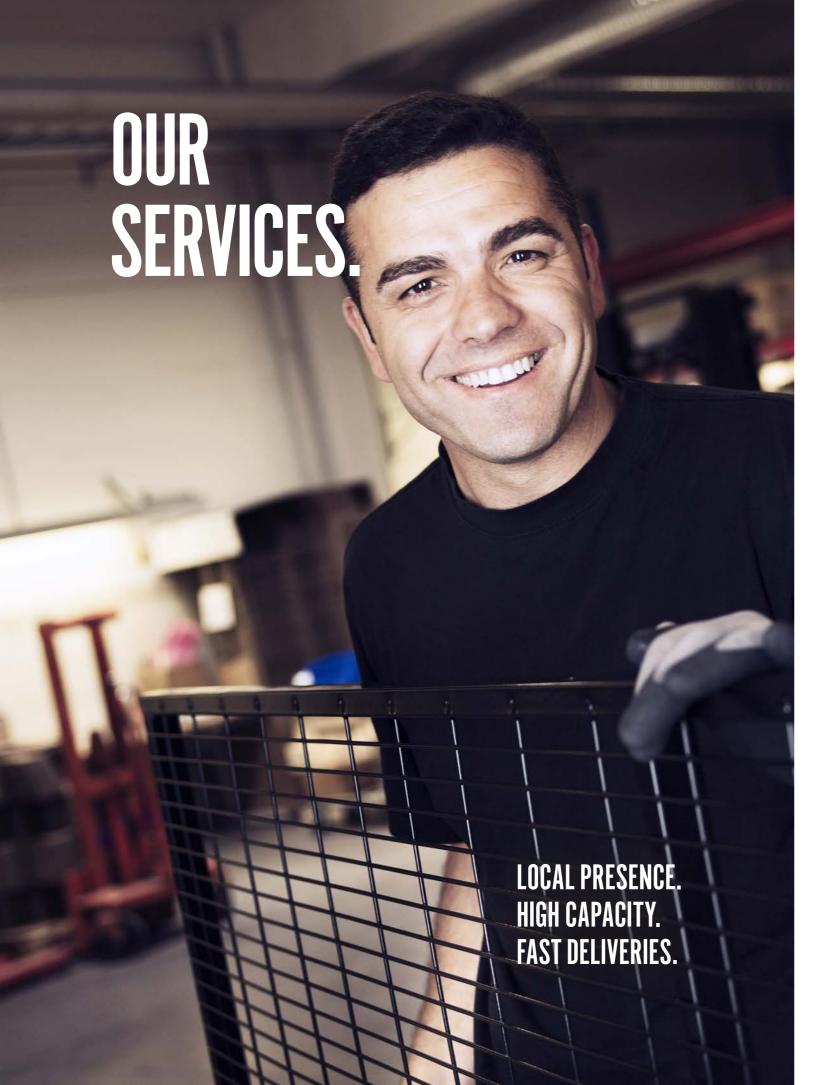
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## Troax is a global developer and manufacturer of steel mesh panels for Machine Guarding, Warehouse Partitioning and Property Protection. This brochure presents our solutions for the market segment Machine Guarding. Our business concept is to develop innovative steel mesh panel solutions to protect people, property and processes. Our lightweight but strong mesh panels can be combined into unique solutions and are built to withstand the toughest tests and environments. Read more about our systems at **www.troax.com**

## MACHINE GUARDING

FOR MORE THAN 65 YEARS WE HAVE BEEN DEVELOPING INNOVATIVE STEEL MESH PANEL SOLUTIONS FOR MACHINE GUARDING, WAREHOUSE PARTITIONING, AND PROPERTY PROTECTION. TODAY WE ARE THE MARKET LEADER, AND OUR PRODUCTS CAN BE FOUND ALL OVER THE WORLD — PROTECTING PEOPLE, PROPERTY AND PROCESSES.



TROAX IS IN THE BUSINESS OF SAFETY. OUR STEEL MESH PANEL SYSTEMS OFFER THE SAFEST AND MOST FLEXIBLE SOLUTIONS ON THE MARKET.

SEE MORE HERE:

### TROAX PLAYLIST



Whatever your safety needs may be, we will create a solution that is perfect for you. Our systems are marketed in three segments: Machine Guarding, Warehouse Partitioning and Property Protection.

### SAFETY DOESN'T HAPPEN BY ACCIDENT

The Troax Test Centre is the heart of our business. Here, our products go through rigorous tests to maintain a high standard. We conduct impact tests on our panels, brackets and retainers on a daily basis. It is a job that requires both time and effort. But it is all worth it, because your safety is our priority.

### **SURVEYS ON SITE**

One of our Technical salesmen will personally manage your inquiry and – if needed – carry out a detailed site survey on location. We use a CAD drawing tool to create each solution, which allows you to view our proposal in 2D and 3D before ordering any material. Our skilled assembly team can take care of the installation of your system while your contact at Troax will follow up your project.

### PLANNING AND DESIGN

Our systems are adapted and designed to suit your specific needs, with everything intricately planned down to the smallest detail. With several security levels and a variety of different lock and door designs, our systems can be built to suit all kinds of application areas.

### ASSEMBLY IS PART OF OUR OFFER

Troax offers help with assembly and installation of all our systems. Should you choose to assemble the products yourself, each Troax delivery includes clear user instructions and assembly guidelines, which make it easy to assemble our system on site.

### IF YOU ARE STILL NOT CONVINCED...

- » Each installation is unique and created to meet the customer's specific demands.
- » Our mesh panels are extremely durable and can withstand the most demanding applications.
- » Troax provides products of the highest quality and functionality, using automated and environmentally friendly production processes.
- » Our systems are versatile and can easily be combined with each other, which makes them a good investment.
- » We are the first mesh panel solution company in the world to have our test method certified by TÜV.



# YOUR PARTNER IN BETTER SAFE GUARDING.

Your modern industrial processes are safe, when no one except authorized personnel has access to the company's machines. Troax mesh panels for machine guarding provide maximum personal and machine safety in accordance with the Machinery Directive.

Troax is a well-known name in machine guarding and machine security for the production industry in many parts of the world. The key is intelligent details which can be combined with new and old modules in well-tested systems.

### PROVEN STRENGTH

Step by step, we are developing the foundation of our systems – our mesh panels. Theoretical calculations are tested in our own test center. The panels are tested using energies of up to 6,000 joules, which is a very respectable level. If an accident were to happen, you should know that the panels are strong enough to keep both people and machinery safe. Every single weld can withstand a heavy blow and that makes all the difference.

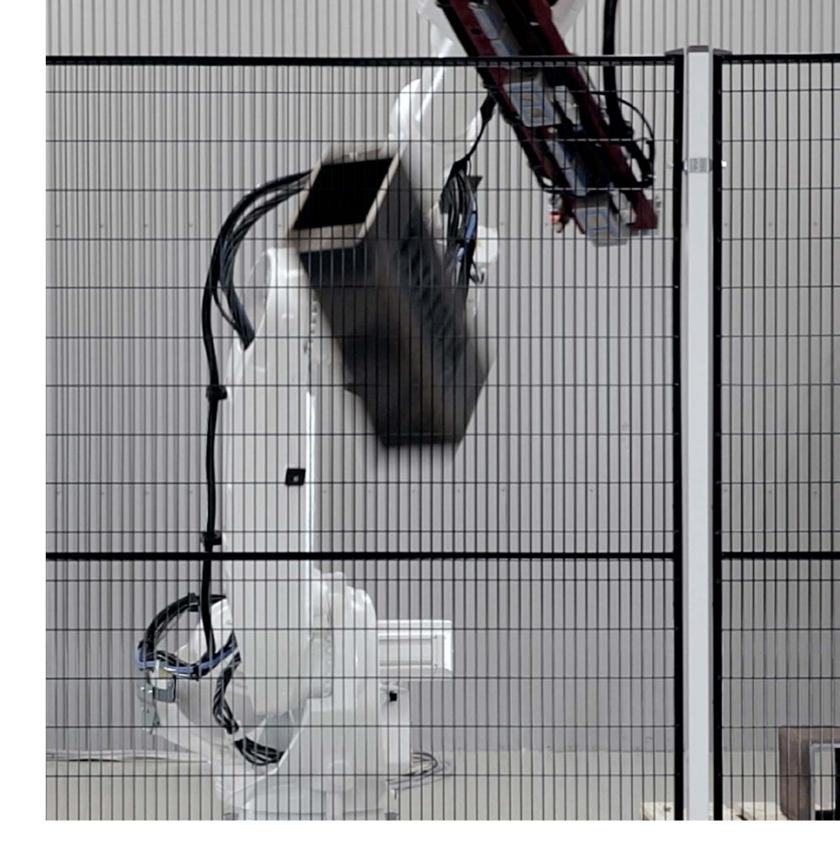
### IN COMPLIANCE WITH THE MACHINERY DIRECTIVE

Troax machine guarding and machine safety products meet all the requirements set in the European Machinery Directive, 2006/42/EC – requirements which your installation should meet today as well as into the future when you have supplemented or extended your machine guarding system with new mesh panels, doors and locks.



### GUIDE TO BETTER SAFE GUARDING



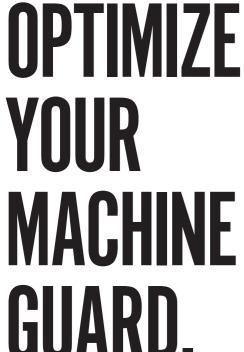




ISO 12100 ISO 14120 ISO 14119 ISO 10218-2 ISO 13857 ISO 14121-1

WHEN TESTING OUR PRODUCTS, WE USE A METHOD THAT ITSELF IS CERTIFIED BY TÜV.

# YOUR GUARD.



There are several dimensions to the safety of your machine guarding. Our world-class products, such as the strong mesh panels, the quick release Rapid Fix system and the Safe Lock solution fit many variants of safety switches, have been developed to make your machine guarding safe and smooth.

The polycarbonate panels offer excellent visibility and using the steel sheet panels you can create a fully covered cell. With the wire mesh panels you will get good ventilation and the strongest solution for your guard. Choose Smart Fix or Rapid Fix system for easy access supplied with our 60×40 mm posts. For heavy industry environments or where there is a risk for an impact to the guard, the stronger 80×80 post with Strong Fix is recommend. Troax will create a solution that fits your needs.



POLYCARBONATE PANELS Gives good overview and protects against fluids and small particles.



**SLIDING DOOR** Double or single sliding doors built with a strong aluminium rail.



**MEZZANINE GUARD** Fall protection on Mezzanine floor areas.



**SMART POST AND SAFE LOCK** Integrate push buttons to the post and equip the Safe Lock with your choice of safety switch.



**FULL STEEL SOLUTIONS** Build a fully covered cell with the URSP steel sheet panels.



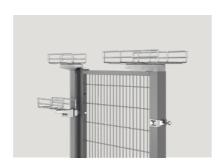
**GALVANIZED GUARD** For outdoor and humid environments we recommend hot dip galvanized panels and posts.



SMART SPLICE Fast splicing for tall posts. The Smart Splice fits inside the 60×40 post.



TROAX OFFERS COMPLETE **SOLUTIONS TO PROTECT YOUR** PERSONNEL AND PRODUCTION PROCESS. OUR MACHINE **GUARDING PRODUCTS WILL** MAKE YOUR PRODUCTION SAFER AND MORE EFFICIENT.



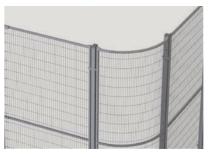
Easily attached consoles to the posts or Smart Fix bracket, for 100 mm or 200 mm wide



FOLDING DOOR The folding door is folded together when opened, saving space on the side and allowing free opening space.



SLIDING DOOR ON WHEELS A large door solution – up to approximately 6 meter using the Troax ST30 mesh panels.



**PANEL CURVE** The Panel Curve is formed on site and turns a 90 degree corner into a smooth curve.



PANEL FLEXI A fill out mesh panel that will fit to the ST20 panels in 2,050 mm height and cover a gap from 50-199 mm.

# MACHINE GUARDING TROAD

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# COMBINE OUR SYSTEMS FOR UNIQUE SOLUTIONS.

Troax machine guarding systems can be combined and adapted to fit your specific needs. The standard heights of our panels and posts are developed to comply with the required values for safety distances stated in ISO 13857.

### SYSTEM DIMENSIONS

The wall system standard heights are from 1,400 mm to 4,250 mm. The panels are available in eight widths, from 200 mm up to 1,500 mm, and the 150 mm floor gap allows for easy cleaning. Both panels and posts can be customized to create the desired dimensions. Fitting details, panels and posts for all our systems are kept in stock and can be delivered immediately.

### **MESH GUARDS**

The Troax panel design for ST20 and ST30 mesh panels complies with ISO standards for maintaining a safety distance of 120 mm from the hazard. Vertical wires on the outside of the panel make it difficult to climb.

### **HIGH VISIBILITY**

Our grey colour, RAL7037, provides the best visibility throughout the hazard zone. However, our mesh panels can be supplied in any colour.

4,250 mm 3,450 mm - 3,450 mm - 3,450 mm - 1,400 mm

SMART FIXINGS COMPLETE THE SYSTEM. OUR RANGE OF FIXINGS, COMBINED WITH THE RIGHT PANELS AND POSTS FOR YOUR APPLICATIONS, PROVIDE MAXIMUM PERSONNEL AND MACHINE SAFETY.



### SMART FIX

Smart Fix system is a well-proven, strong system based on the  $60\times40$  posts.



### RAPID FIX

A system that offers quick and easy access for maintenance.



### **SAFE FIX**

The Safe Fix bracket adjoins the panels in front of each post, creating fully covered cells.



### STRONG FIX

Strong Fix is a robust and durable machine guard based on the heavier  $80 \times 80$  posts.



### PANEL ST20

A strong mesh panel with  $100 \times 20 \text{ mm}$  mesh size, 3 mm wire on a  $19 \times 19 \text{ mm}$  frame.



### PANEL ST30

A stronger mesh panel with  $100 \times 20 \text{ mm}$  mesh size, 3 mm wire on a  $30 \times 20 \text{ mm}$  frame.



### PANEL ST PC

A polycarbonate panel with a 3 mm pc-sheet fixed with screws to the 30×20 mm panel frame.



PANEL FULL STEEL

A 0.7 mm metal sheet welded onto a  $19 \times 19$  mm frame.



READ MORE TECHNICAL SPECIFICATIONS AT TROAX WEB

## SMART FIX STRONG AND PROVEN.

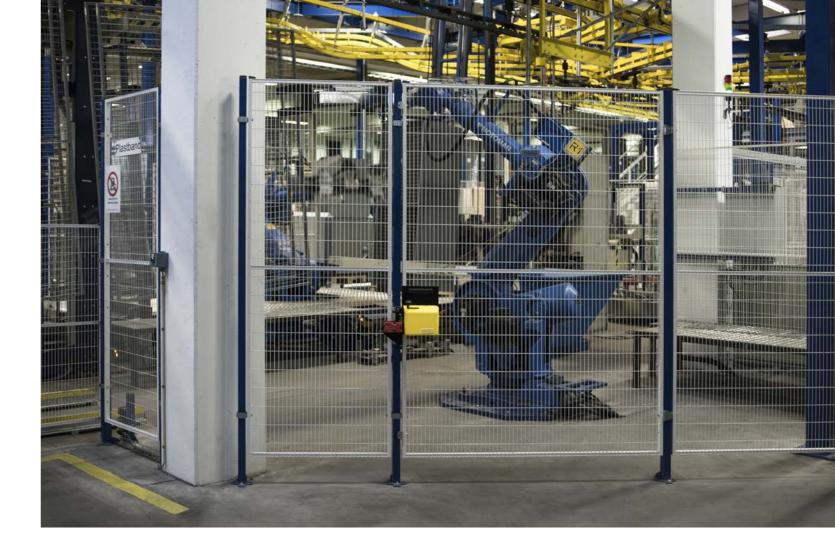


### SMART FIX IS OUR BEST-SELLING SAFEGUARD SYSTEM. THIS VERSATILE MACHINE GUARD IS EXTREMELY DURABLE AND FITS MOST APPLICATIONS.

Our strong and flexible Smart Fix system is easy to assemble and can be combined with any of the machine guarding panels in mesh, steel or polycarbonate. The bracket is easily mounted to the  $60\times40$  mm posts, tightened to the post with an M8 bolt on the inside of the fence and can easily be moved up and down to adjust for uneven floors.

The bolts will be held captive to the panels even when the system is disassembled, fulfilling the requirements and standards for machine guarding.

The Smart Fix system can easily be combined with other systems, such as Rapid Fix and Strong Fix to create unique, suitable solutions. Choose among a wide range of doors, locks and accessories to customize your installation. The Smart Fix system is heat-resistant and it's tested to withstand an impact of 2,100 joules in the most common sold combination with the ST20 mesh panels.





### ST20 MESH PANEL

The ST20 mesh panel has a classic look with the mesh size of  $20\times100\,\mathrm{mm}$  fixed to a  $19\times19\,\mathrm{mm}$  frame. Available in three standard heights, 1,250, 2,050 and 2,350 mm in up to 8 widths.



### POST 60×40

Strong post with four holes for flexible fixing to the floor. Standard heights 1,400, 2,200, 2,500, 2,650 and 3,000 mm plus extension tubes.



### SMART FIX BRACKET

Fixed in position with a bolt from the backside of the bracket. Move the bolt to the side position to create a corner.

## COMBINE WITH THE EQUIPOTENTIAL BONDING TO SOLVE PROBLEMS WITH LEAKAGE CURRENT.



## STRONG FIX ROBUST AND DURABLE.



## STRONG FIX IS OUR STRONGEST MACHINE GUARDING SYSTEM. IT HAS BEEN DEVELOPED AND TESTED TO ENDURE THE HARSHEST ENVIRONMENTS.

For heavy industrial environments and where there is a high risk for an impact, the Strong Fix system is the perfect solution. Based on the heavy  $80 \times 80$  mm posts combined with a strong bracket and the ST30 mesh panels, the system is tested to withstand an impact of 6,000 joules in Troax Premises, and even higher energies can be withstood.

The brackets are easily mounted to the posts and tightened with an M8 bolt on the inside of the fence. Move the brackets up and down on the post to adjust for uneven floors.

The Strong Fix system can be mounted with double ST20 panels, creating a super strong machine guard – withstanding an impact of 8,180 joules! – depending on the quality of the floor it is fixed to.





### ST30 MESH PANEL

The ST30 mesh panel has a classic look with the mesh size of  $20\times100\,\mathrm{mm}$  fixed to a  $30\times20\,\mathrm{mm}$  frame. Available in three standard heights, 1,250, 2,050 and 2,350 mm in up to 8 widths.



### POST 80×80

Our strongest post. The foot is updated with the easy clean design and two holes for fixing the expander bolts on the back and each side of the post. Standard heights 1,400, 2,200, 2,500 and 3,000 mm plus extension tubes.



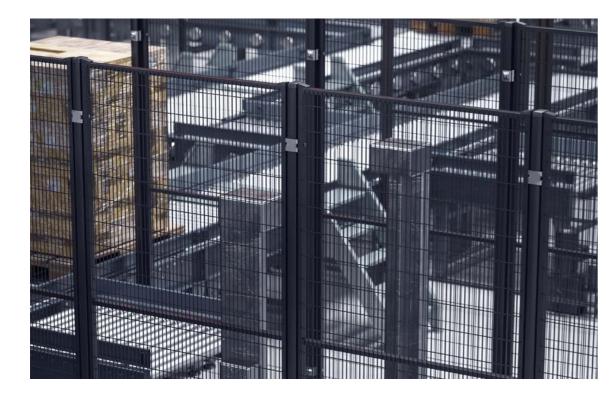
### STRONG FIX BRACKET

Pre-galvanized steel bracket that can be easily moved up and down on the posts.





## RAPID FIX QUICK AND EASY ACCESS.

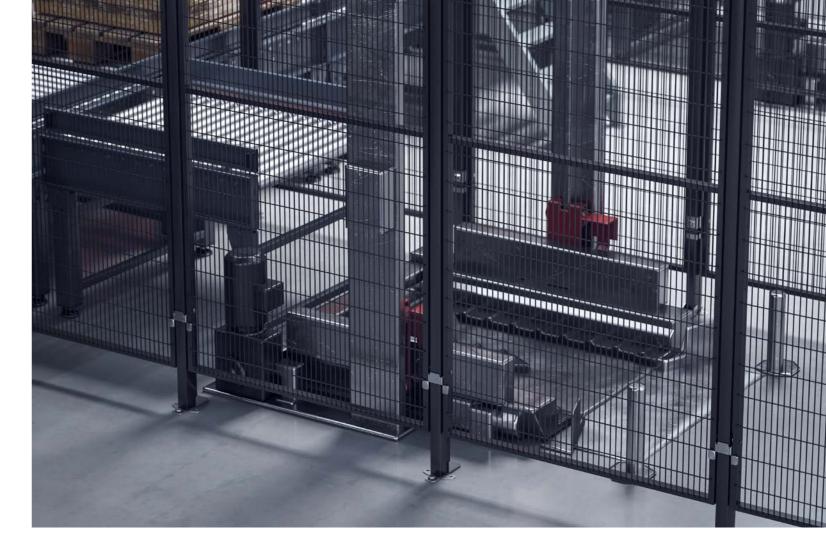


## RAPID FIX IS A CLEVERLY DESIGNED MACHINE SAFETY SYSTEM THAT OFFERS QUICK AND EASY ACCESS TO THE HAZARD ZONE.

The updated Rapid Fix bracket is faster and easier to install and at the same time more impact resistant. Together with the ST20 mesh panels, the updated Rapid Fix system is tested to withstand an impact of 1,600 joules.

The system is easily disassembled from inside the cell, using a special tool, Torx with pin, to release the panels.

To re-assemble the panel, slide in the lower fixing into the slot and click the panel in place. Rapid Fix offers a fast and flexible access to the machine.









RAPID FIX LOWER BRACKET
Easily slide the panel into the lower fixing position.



RAPID FIX UPPER BRACKET
Secure the panel with ease using the built-in click function.

SEAMLESS INTEGRATION WITH SMART FIX SYSTEM.





## POWER UP YOUR DOORS **AND AUTOMATE** FLOWS.

THE TROAX POWER DOOR ENABLES A **FULLY AUTOMATED MOTOR SOLUTION** ON THE JOURNEY TOWARDS THE CONNECTED FACTORIES OF TOMORROW. IT KEEPS YOU SAFE AND RELEVANT IN AN **EVER-CHANGING WORLD.** 

Our fully automated motor solution easily automates sliding doors in production areas such as robot cells as well as warehouses. It's suitable for both new installations and retro fit. In addition, the solution is compatible with PLCs, making it perfect for communicating with different kinds of automated guided vehicles, AGVs. The motor can also be controlled manually with buttons, signals from PLCs, or from manned forklift trucks using sensors or remote controls. The motor itself is CE marked and TÜV certified, and we provide comprehensive documentation for CE marking of the complete solution on site.

The add-on package, containing an electric drive, a tooth rack, all necessary fasteners, and full documentation, enables people to safely use the motor solution with both ease and confidence. Most importantly, the Troax Power Door increases your productivity, profitability, and performance. In a world of automated and connected production processes, the Troax Power Door fits right in.





## **OPEN** SESAME.

**CHOOSE FROM A WIDE SELECTION OF DOORS** TO FIT YOUR APPLICATION. ALL DOORS ARE **AVAILABLE IN VARIOUS STANDARD WIDTHS** AND HEIGHTS, AND PART OF OUR MODULAR MACHINE GUARDING SYSTEM.



SINGLE HINGEDDOOR 500-1,500 mm



SINGLE SLIDING DOOR 700-1,500 mm



**DOUBLE HINGED DOOR** 1,000-3,000 mm



**DOUBLE SLIDING DOOR** 700-1.500 mm

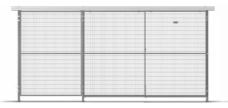
**CARRIER DOOR** (3)

1,500-4,500 mm





**DOUBLE SLIDING DOOR** 1,400-3,000 mm



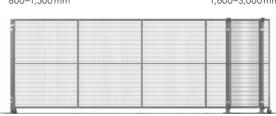
**CARRIER DOOR** (2) 1,000-3,000 mm



TELESCOPIC SINGLE SLIDING DOOR



TELESCOPIC DOUBLE SLIDING DOOR 1,600-3,000 mm



SLIDING DOOR ON WHEELS

1,100-6,000 mm



LINEAR SLIDING DOOR 1 800-4 000 mm



TELESCOPIC HINGED DOOR 1,800-2,700 mm



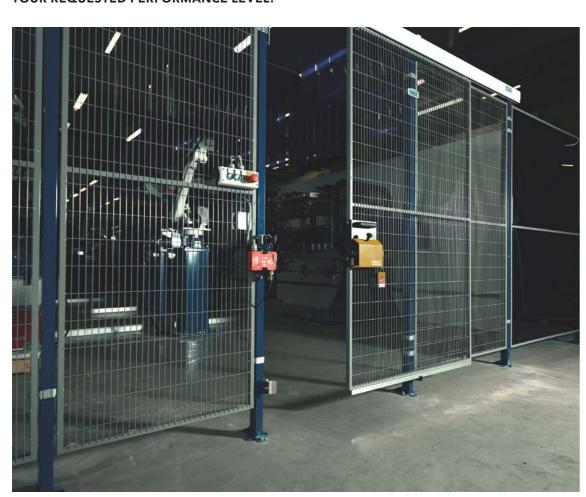
Read more about our doors and locks at troax.com 20

## SAFE AND SOUND WITH DOORS AND LOCKS.

TROAX OFFERS SEVERAL TYPES OF DOORS AND LOCKS TO FIT YOUR MACHINE **GUARDING DEMANDS. CHOOSE AMONG A VARIETY OF SAFETY SWITCHES TO REACH** YOUR REQUESTED PERFORMANCE LEVEL.

Our selection of doors is available in standard widths from 700 mm up to 6,000 mm, and in heights up to 4,100 mm. The door construction is based on panels, posts and fixings, and is built with our mesh, sheet metal and polycarbonate panels. The hinged doors can be delivered fully assembled with your preferred lock solution for fast installation on site. Locks are adapted to your security level. There are several options, such as magnetic locks, Euro cylinder locks and our own Safe Lock and Safe Escape Lock, that can be fitted with many variants of safety switches.

All doors can be supplemented with brackets for easy mounting of safety switches. Comprehensive assembly instructions are included with each door solution and lock combination - watch the interactive 3D assembly instructions on Troax web site. All door solution parts are kept in stock for fast delivery.



SAFE AT ALL TIMES. **OUR SAFE LOCKS, EURO CYLINDER LOCKS,** MAGNETIC LOCK AND SAFE ESCAPE LOCK CAN **BE COMBINED WITH YOUR CHOICE OF SAFETY SWITCH.** 





SAFE LOCK

Fits all door variants and can be equipped with the safety switch of your choice.

MAGNETIC LOCK

A strong plastic handle mounted to the door blade.



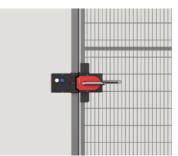


A strong metal locking tube to be equipped with a euro cylinder locking.



### SAFE ESCAPE LOCK

With possibility to integrate a non-contact safety switch.



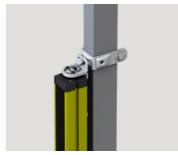
**EUCHNER MGB, MGB-PN** 

Brackets that will fit all variants on all types of doors.



### SCHMERSAL AZM201

Brackets to fit many types of AZM on many variants of doors.



Fit various types of light beams directly to the post with Smart Fix bracket.

LIGHT BEAM BRACKET



### BRACKET FOR SWITCHES

Easy to fit brackets for many variants of safety switches.





# NEAT INTEGRATION AND EASY WIRING.

TROAX SAFE LOCK IS THE PERFECT COMBINATION USING THE SMART POST WITH INTEGRATED BUTTONS. THE SMART POST MAKES IT POSSIBLE TO FIT THE CABLE WIRING AND PUSH BUTTON CONTROLS INSIDE THE POST.

Equip the Safe Lock with your choice of safety switch and connect it to the PLC with easy wiring inside the post. Smart Post can be equipped with either a pre-installed push buttons bracket, or a bracket where you can fix your own choice of buttons.



## SAFETY GREY-OUR SAFEST COLOUR EVER.

SAFETY GREY IS OUR OFFICIAL STANDARD COLOUR. IT MAKES DANGERS AND HAZARDS EASIER TO SPOT AND AVOID. MOREOVER, IT ALSO LEAVES A SMALLER ENVIRONMENTAL FOOTPRINT. SAFETY GREY IS OUR MOST POPULAR COLOUR, BUT ALL MESH PANELS AND SYSTEMS ARE AVAILABLE IN ANY RAL COLOUR.

Our standard colour, Safety Grey, is elegant, reasonable, and calm. It's timeless yet modern, always practical, and professional. Above all, Safety Grey makes the invisible visible and shines a light on what really matters to you. It makes actual dangers and hazards easier to spot and avoid. It also has a smaller environmental footprint compared to our other colours and is more suitable

for Industry 4.0. In addition, Safety Grey is also aligned with our production process, resulting in a smarter investment for you.

Although Safety Grey is the most preferred and efficient colour for mesh panels, posts, and doors, you're not bound to it. You can choose any RAL colour to match your company profile or existing colour scheme. Keep in mind that rules and safety requirements for industrial settings with machines and automated processes are stringent. Mesh panels surrounding a robot, or a machine, must allow good supervision. Therefore, most customers choose Safety Grey. Regardless of colour, we paint all products inhouse. Panels in Safety Grey and black, and posts in Safety Grey, black, and yellow are kept on stock for immediate delivery.



## SMART ACCESSORIES COMPLETE THE OVERALL PICTURE.



### KICK PLAT

Use the kick plate to fill out the gap between the panels and the floor.



### SNAPPER

The Snapper adjoins two panels and can be used to replace a post.



### DOOR CLOSER

Can be used on machine guarding doors if your risk assessment allows it.



### PC HOLDER

The PC holder fix a polycarbonate infill sheet to the mesh panel, to withhold liquids and small parts.



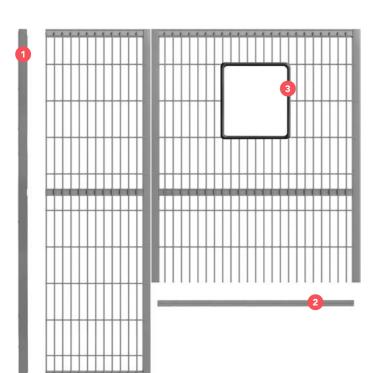
### SMART SPLICE

 $Extension bracket that fits inside the \\ 60\times40 \, tubes.$  Solve problems with le our bonding kit that c



### EARTHING

Solve problems with leakage current with our bonding kit that creates an electrical bonding between the panels and posts.



### TRIM KITS

### 1 CUT PROFILE WIDTH MODIFICATION

The cut profile vertical is a flexible solution for adjusting the width of the mesh panel on site while still retaining strength as a welded panel frame.



The cut profile horizontal is a flexible solution for adjusting the height of the mesh panel on site while still retaining strength as a welded panel frame.



Edge cover is a flexible solution for covering sharp edges after cutting mesh for access. Now also on 25 m roll.



### QUICKGUARD

QuickGuard is our multipurpose aluminium fencing system for machine guarding. It's perfect for custom solutions in low-risk areas.



### BLUEGUARD

BlueGuard is a modular system made of stainless steel. It's robust, practical, and complies with the highest hygiene standards.



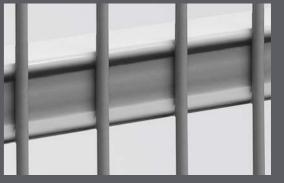
### BARRIER PROTECTION

A safety barrier system is the optimal way to separate pedestrian areas from forklift traffic.

## OUR STRENGTH IS IN THE DETAILS.



TROAX'S AUTOMATED PRODUCTION PROCESS ENSURES A HIGH QUALITY FOR EVERY PANEL PRODUCED. THE STABLE MESH PANELS HAVE A WELL-KNIT STRUCTURE MAKING THE PANEL VERY STRONG AND IMPACT RESISTANT.



### UNIQUE PROFILED TUBING

The horizontal tubes on our mesh panels have a unique profiled tubing designed to make the welding stronger and the mesh flatter.



### STRONG WELDING METHOD

All horizontal wires are welded into the panel frame, joining the wires and frame to form a strong mesh panel.

### DRAW YOUR **LAYOUT WITH OUR DESIGN TOOL.**

Drawit is Troax' completely web-based and easy-to-use configuration tool that allows you to create your own custom machine guarding solutions. You can tailor your specific needs and requirements and go from idea to quotation in three easy steps.

### **FAST LAYOUT**

User-friendly graphical interface, easy to understand. Share your design colleagues.

### PRODUCT VISUALIZATION

See the material list and visual 3D view to ensure your configuration meets the requirements.

### CONFIGURATION

Easy and reliable configuration of complex and multi-variant products in line with your specifications.

Design your machine guard solution by adding panels, posts, doors, lock, etc. Either upload a drawing to use as a background or make your design directly in Drawit.

### **PREVIEW**

Review your design in 3D and choose to either continue to request a quotation or go back to the Design step and update your layout. You can also experience the design in VR through your smartphone.

Share, print or save your project. Once you have placed your request, a Troax sales representative will get back to you with a formal quotation.

Flexible and interactive configuration process.

FLEXIBLE

### NO SOFTWARE INSTALLATION

Drawit is a Web application with no need for software installation or updates.

### ALWAYS ACCESS

Request for quotations are accessible via the web at any time, anywhere.

### VIRTUAL REALITY

Enjoy your design in Virtual Reality trough your smartphone.

## LOCAL & GLOBAL PRESENCE.

TROAX IS REPRESENTED IN MORE THAN 40 **COUNTRIES AND HAS 24 SALES COMPANIES** OF ITS OWN. WE AIM TO STRENGTHEN OUR POSITION WORLDWIDE AND EXPAND OUR **BUSINESS ON EACH CONTINENT.** 



At Troax, we meet your needs through local sales offices, backed up by daily deliveries from the world's largest warehouse for mesh panels, Troax in Hillerstorp, Sweden.

### STRONG MARKET SEGMENTS

Our systems are marketed in three segments: Machine Guarding, Warehouse Partitioning and Property Protection.

### 1. MACHINE GUARDING

Today's modern industry, with its advanced processes, places significant demands on safety. In particular, there is a great need for controlled access for authorised personnel. Our mesh panels are based on a carefully developed modular system that also includes special adaptations.

### 2. WAREHOUSE PARTITIONING

Troax can meet all requirements for storage and security. We are suppliers to all types of industry – from traditional manufacturers that require largescale flows and volumes through their factories, to facilities with high-bay storage and retail storage. We can meet all your requirements and we offer complete solutions.

### 3. PROPERTY PROTECTION

Whether a question of new development or renovation of an existing installation, we are convinced that you will find our products easy to work with. Your unique needs and our creativity have contributed to our constant product development, giving rise to our motto: "Secure storage must be simple."

# A SAFER TOMORROW SINCE 1955 —>

