



Teqram

VISION GUIDED ROBOTICS



EasyGrinder

Autonomous robotic grinding
of thermally cut sheet metal parts

Tegram EasyGrinder

Cleaning thermally cut parts has always been a tough, time-consuming, and risky job, often leading to worker injuries and fatigue.

The **Tegram EasyGrinder** changes that by automating the grinding process, making it **safer, faster, and more precise**. This autonomous robot handles everything from basic slag removal to high-quality surface preparation, meeting the strictest industry standards (grade P3, SSPC SP5/11, NACE No.1). With the EasyGrinder, manufacturers can achieve consistent, high-quality results while saving time and reducing risks.

The EasyGrinder revolutionizes automated grinding with its award-winning **3D vision** technology and **AI-powered** controller. Unlike traditional robotic systems that need complex programming or manual setup, it automatically detects each sheet metal part's shape and selects the best tools for every step. This makes it the perfect solution for steel processing companies that work with custom parts or small production runs, ensuring efficiency and precision with minimal effort.



Challenges in grinding thermally cut parts

Thermally cut parts often require extensive post-processing due to surface contamination and irregularities. The top and bottom surfaces are typically covered with hard slag, burning beads, mill scale, and rust, making cleanup essential. The cutting edges have a hard heat affected zone and an oxide layer and the cutting starting points are often causing large irregularities. Additionally, sharp burrs along the edges pose a risk of injuries during handling and can compromise the adhesion of protective coatings.

Effective post-processing of thermally cut parts is crucial to ensure smooth, safe, and high-quality components.



Challenges in grinding thermally cut parts



Grinding sheet metal parts is a tough job - labor-intensive, repetitive, and physically demanding. Finding and keeping skilled workers for this task is becoming increasingly difficult.

At the same time, the demand for higher finish quality is rising, and achieving consistent results is more challenging than ever. Variations in grinding can lead to uneven product quality, which affects both efficiency and customer satisfaction.

On top of that, grinding is a costly process, yet its value isn't always fully recognized or rewarded. Manufacturers need a smarter, more efficient solution to stay competitive.

Challenges in grinding thermally cut parts



Challenges in grinding thermally cut parts





Easy and efficient grinding automation

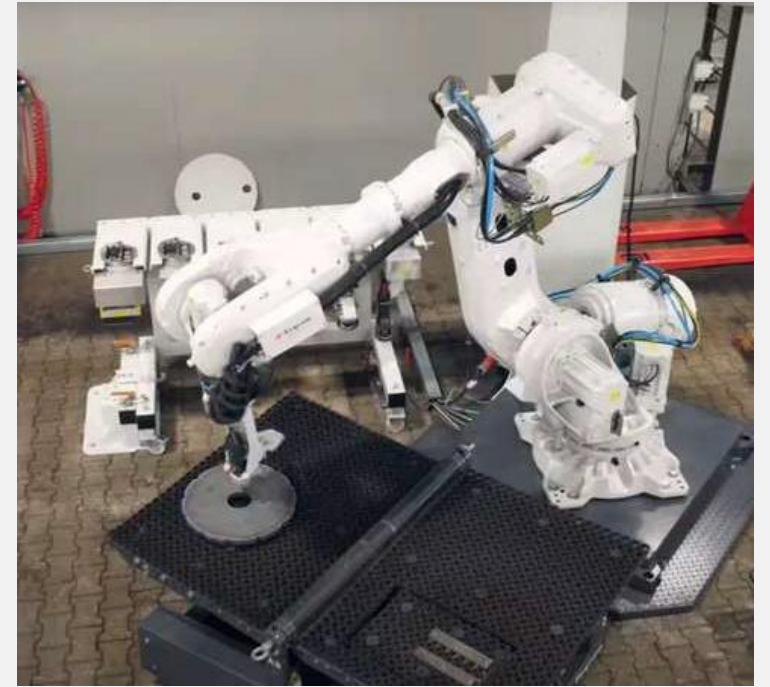
The EasyGrinder operates without programming or teaching. Its user-friendly interface simplifies operation, requiring no specialized programming knowledge. Operators handle only straightforward tasks such as pallet logistics, system startup, monitoring, and routine cleaning, allowing skilled grinding technicians to focus on higher-value work.

Getting started is simple: select the material, thickness, and a predefined recipe, and the EasyGrinder automatically applies optimized parameters for every process step. With a single 'Start' command, the EasyEye scans pallets, detects stacks, and identifies part geometry without requiring any CAD data.

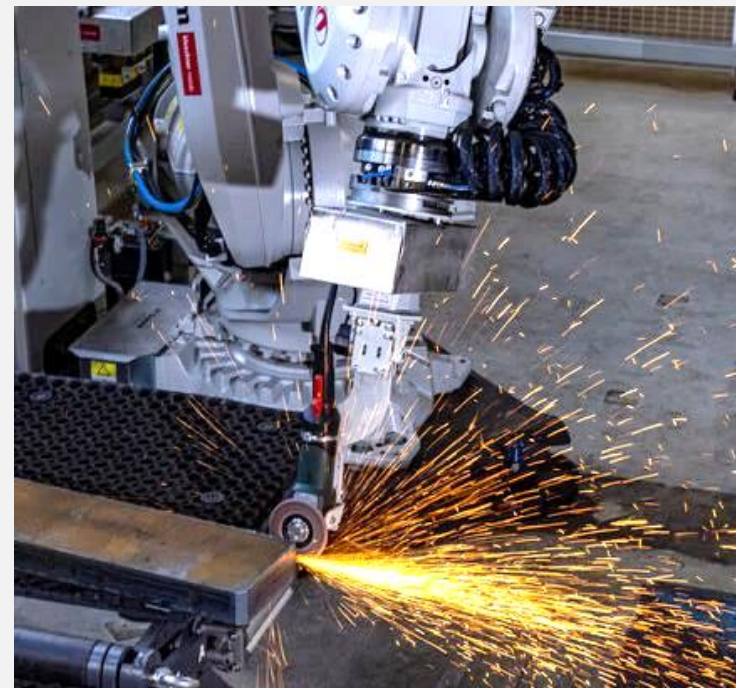
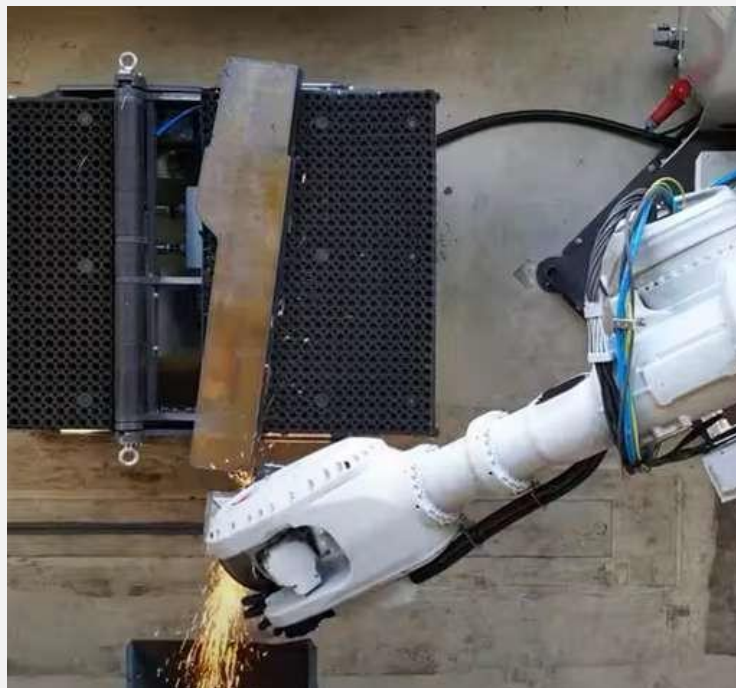
Gripper selection and positioning, and part handling are fully automated. The integrated EasyFlipper enables automatic part flipping for two-sided processing.

After processing, parts are unloaded onto the output pallet in the same position as the input pallet. This ensures a seamless integration of the EasyGrinder into your existing workflow.

Autonomous robotic grinding



Autonomous robotic grinding





Gripper change system

EasyGripper

Gripper Rack

Tools and grippers

EasyFlipper

EasyEye

EasyBot

EasyControl

EasyBase

Pallet positions

Autonomous robotic grinding

Programming has long been a challenge for cost-effective production of small series and single parts. Teqram's EasyEye 3D vision sensor and smart AI-based controller enable fully autonomous operation without human intervention.

The EasyEye automatically detects pallets, stacks, and part geometries, allowing the robot to identify, position, and switch grippers and tools as needed. This flexibility makes handling and processing different products more efficient and adaptable to changing production needs.



Optimal process selection



Slag removal



Grinding, deburring
and burning beads
removal



Heat-affected zone
removal (HAZ)



Oxide skin removal

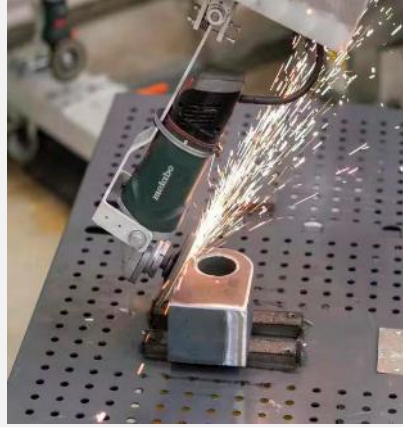


Starting point removal

Optimal process selection



Roughening



Edge rounding



Chamfering



Edge breaking
small holes



Chamfering
small holes

Precision grinding for high-quality finishing

The EasyGrinder ensures top-quality results by automatically selecting the best tool for each operation. Optimized parameters maintain high speeds while minimizing abrasive wear.

Slag is removed with a chisel, adjusting speed based on hardness, while burrs and burning beads are removed with a horizontal disc for a flawless finish.

The hard heat-affected zone is fully removed with a vertical angle grinder while starting points are removed with a special scrub disc, ensuring structural integrity. The oxide layer is removed with a vertical disc or pencil grinder for a clean surface. For optimal paint adhesion, the surface can be roughened with a specialized tool.

Edges are rounded effortlessly, achieving a radius 2 or 3, using horizontal and vertical lamella discs or a pencil grinder, depending on the geometry. Small holes are chamfered or rounded with a disc brush or countersink tool.

This flexibility ensures maximum precision, regardless of the complexity of the component. With full automation and consistent results, the EasyGrinder streamlines post-processing for superior finishing, efficiency, and durability.

Adaptable to your situation

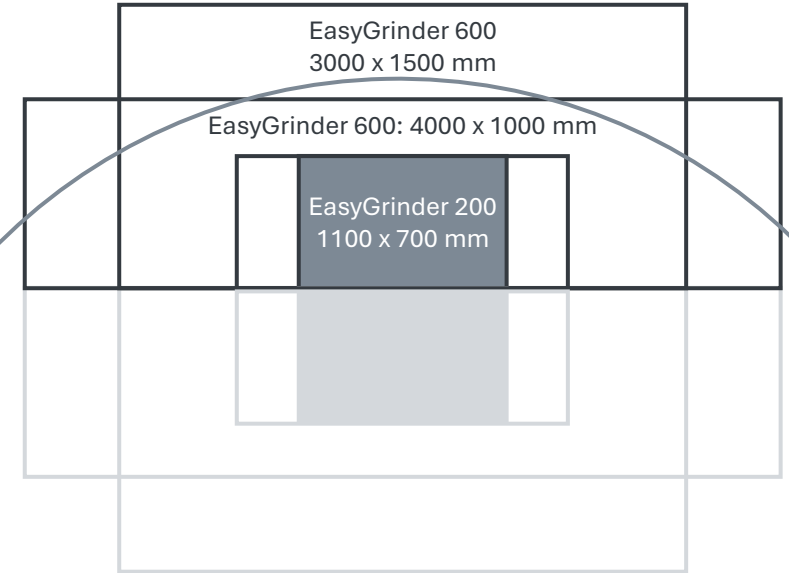
The EasyGrinder 200 autonomously handles and processes products weighing up to 200 kg. For larger components up to 2,000 kg, the system can be expanded with the EasyTransfer. For even greater flexibility, the EasyGrinder 600 offers an extended reach for parts up to 4 meters length and can process workpieces weighing up to 600 kg, making it suitable for larger and heavier parts.

Equipped with 10 tool and gripper positions, the EasyGrinder operates with a high degree of autonomy. Its smart gripper system ensures secure handling of various products while minimizing the need for gripper changes.

The integrated EasyFlipper, available in pneumatic or hydraulic versions, allows for seamless double-sided processing by automatically turning products over.

To maintain a safe working environment, the system includes a plexiglass safety fence with sliding doors or a light barrier, ensuring both protection and accessibility.

EasyBot



EasyBot

Robot

Range

Minimum part weight

Maximum part weight

Minimum part size

Maximum part size

Minimum hole size

EasyFlipper

EasyGrinder 200

ABB IRB 6700/245/3.00

3.0 m

5 kg

200 kg

200 x 200 mm

1100 x 700 mm

10 mm

Pneumatic 750 kg

EasyGrinder 600

ABB IRB 8700/550/4.20

4.2 m

5 kg

600 kg

200 x 200 mm

3000 x 1500 mm / 4000 x 1000 mm

10 mm

Hydraulic 5000 kg

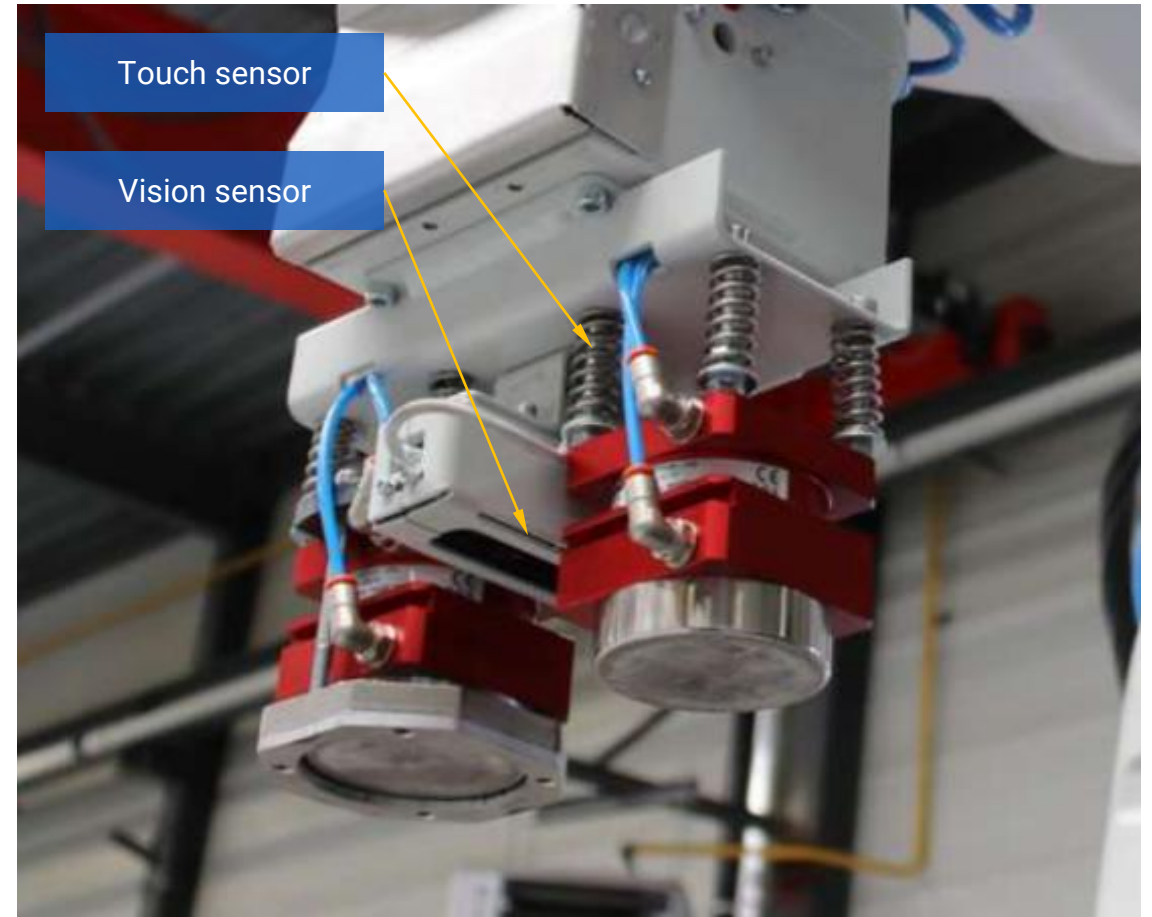
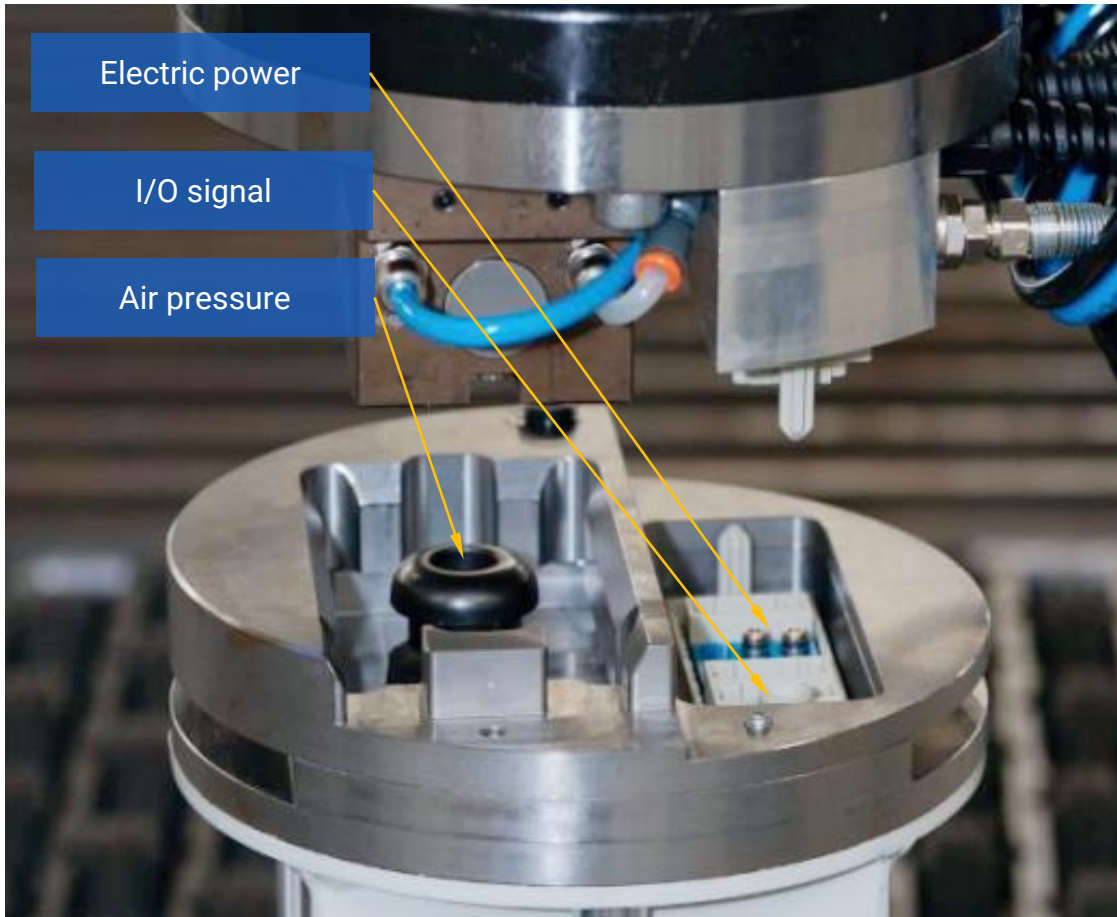
EasyGrinder 2000

EasyTransfer 2000 + ABB IRB 6700/245/3.00

2000 kg

1750 x 600 mm

Automatic part handing and tool change



Automatic part handling



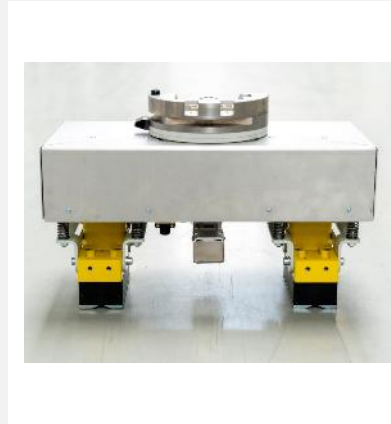
50 kg fixed magnetic



100 kg fixed magnetic



100 kg stretch magnetic



200 kg fixed magnetic



100 kg stretch vacuum

Integrated part flipping



Pneumatic EasyFlipper: payload 750 kg 

Integrated part flipping



Hydraulic EasyFlipper: payload 5,000 kg 

Heavy part loadig



EasyTransfer: payload 2000 kg

Flexible tooling for every operation



Chisel

- Slag removal
- Burning beads removal



Horizontal grinding disc

- Grinding
- Deburring
- Burning beads removal



Vertical grinding disc

- Grinding
- Oxide layer removal
- Heat affected zone removal



Pencil grinder

- Edge rounding / breaking
- Chamfering / beveling
- Melting rim removal

Flexible tooling for every operation



Horizontal scrub disc

- Starting point removal



Countersink tool

- Chamfering small holes



Steel brush

- Burning beads removal
- Edge cleaning



Brush disc

- Edge breaking small holes

Revolutionize your grinding process

Upgrade your manufacturing with our cutting-edge robotic grinding system, designed to maximize efficiency, improve quality, and reduce costs.

Boost your productivity

- ✓ No programming or teaching required
- ✓ Easy integration into your workflow
- ✓ Consistently high output with reliable automation
- ✓ Faster processing speeds for increased throughput

Unmatched product quality

- ✓ Meets the highest industry standards
- ✓ Reduces non-conformities for flawless results

Transform your production with precision, reliability, and safety. Invest in the future of automated grinding today!

Safer and more efficient work environment

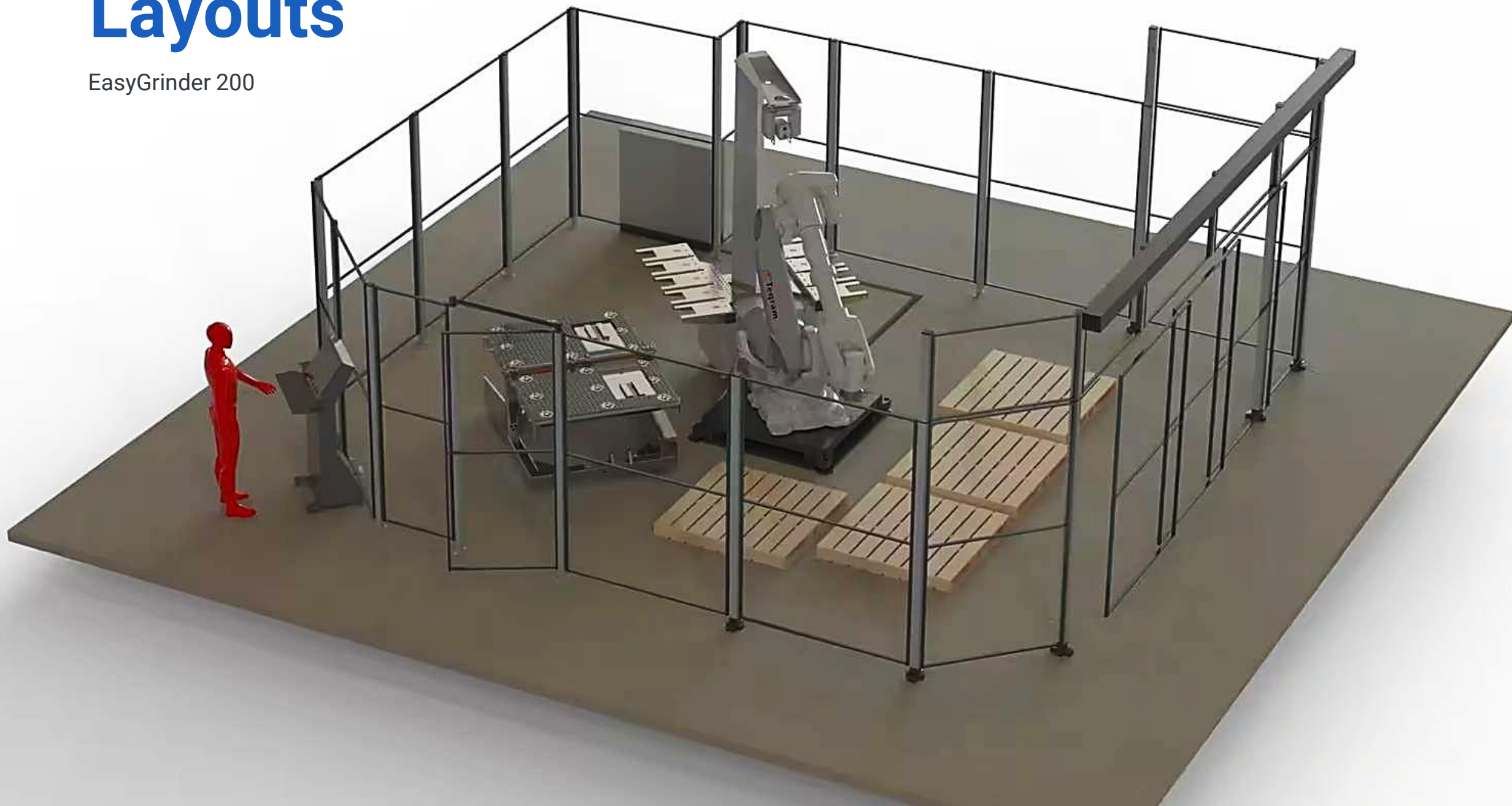
- ✓ Eliminates heavy lifting and manual part handling
- ✓ Protects workers from exposure to noise, dust, and hazardous tasks

Significant cost savings

- ✓ Optimized processing parameters reduce abrasive consumption
- ✓ Improves human capital efficiency, allowing workers to focus on higher-value tasks

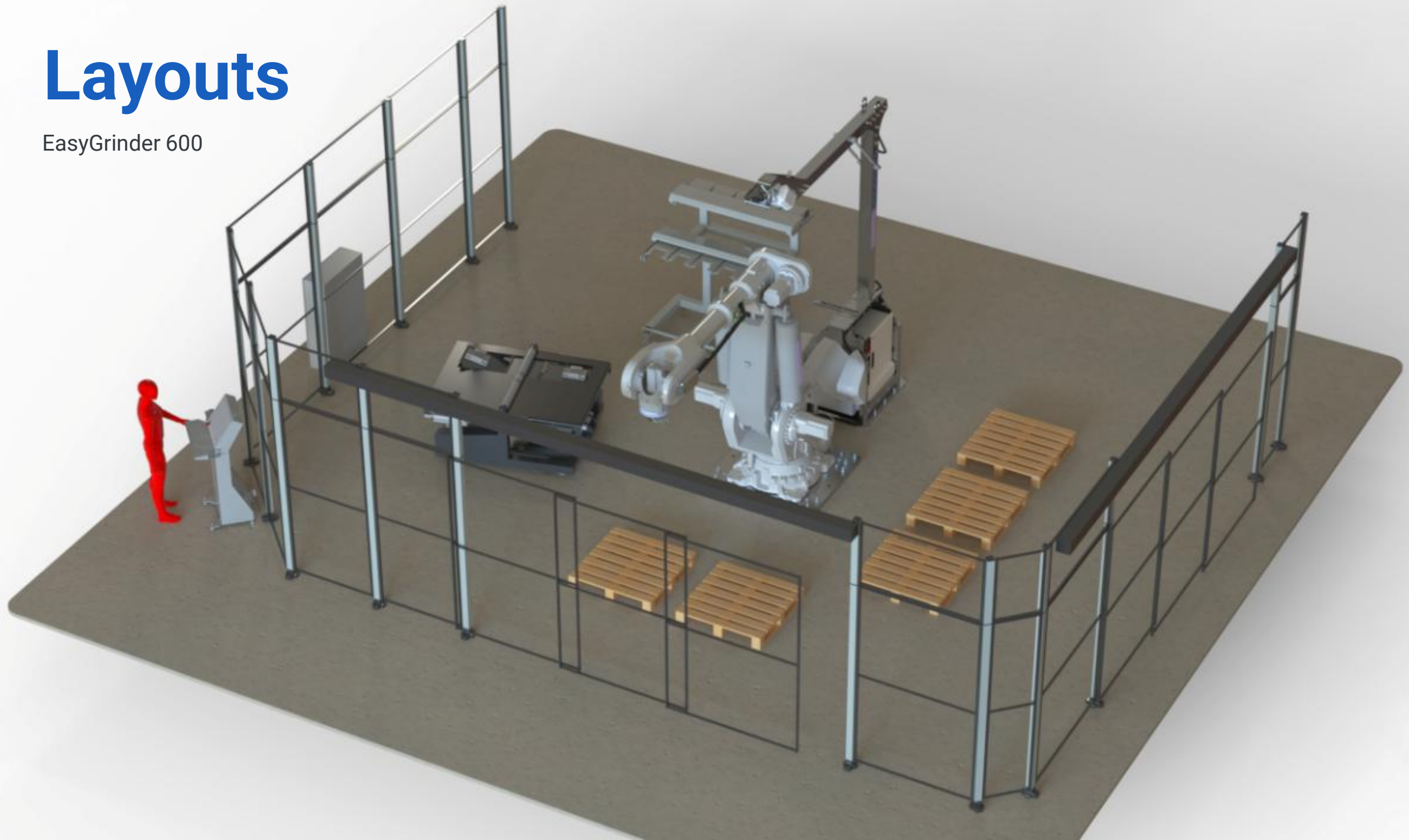
Layouts

EasyGrinder 200



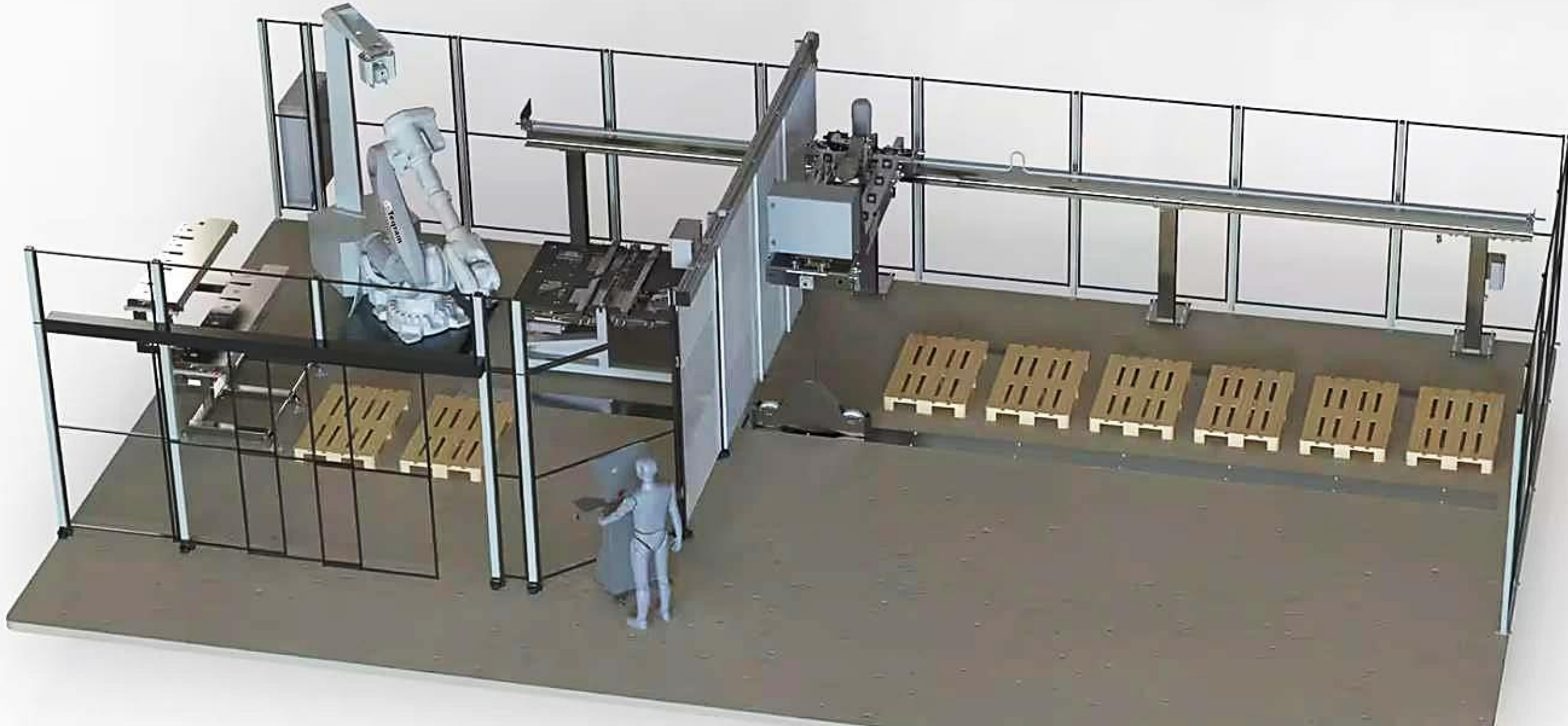
Layouts

EasyGrinder 600



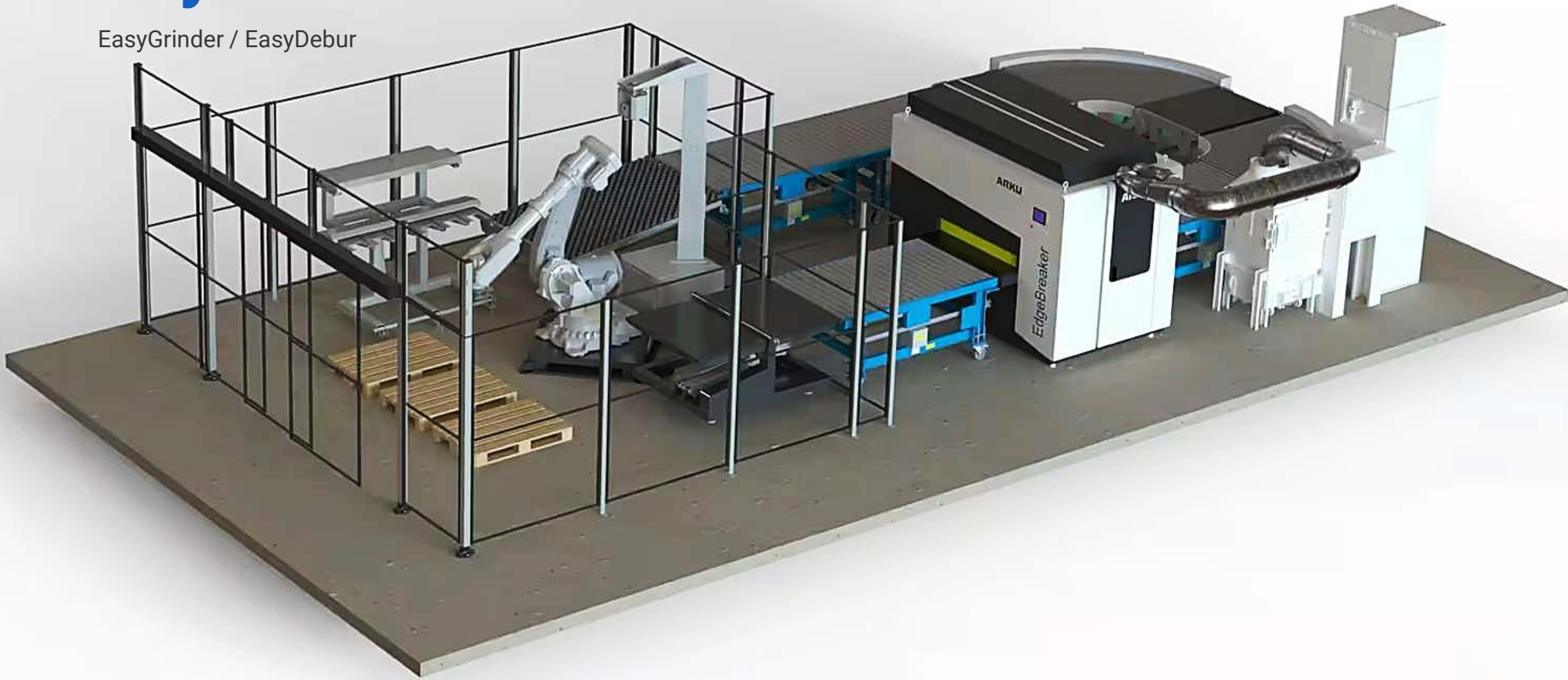
Layouts

EasyGrinder 2000 with EasyTransfer



Layouts

EasyGrinder / EasyDebur



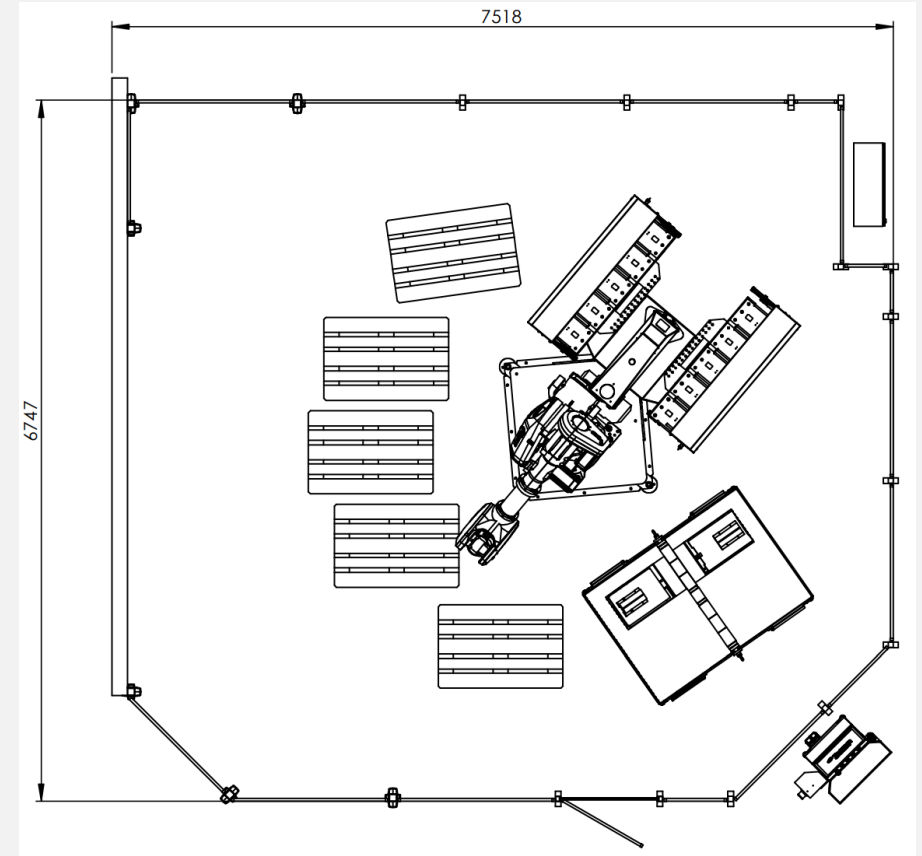
Layouts

EasyGrinder / EasyShotblast



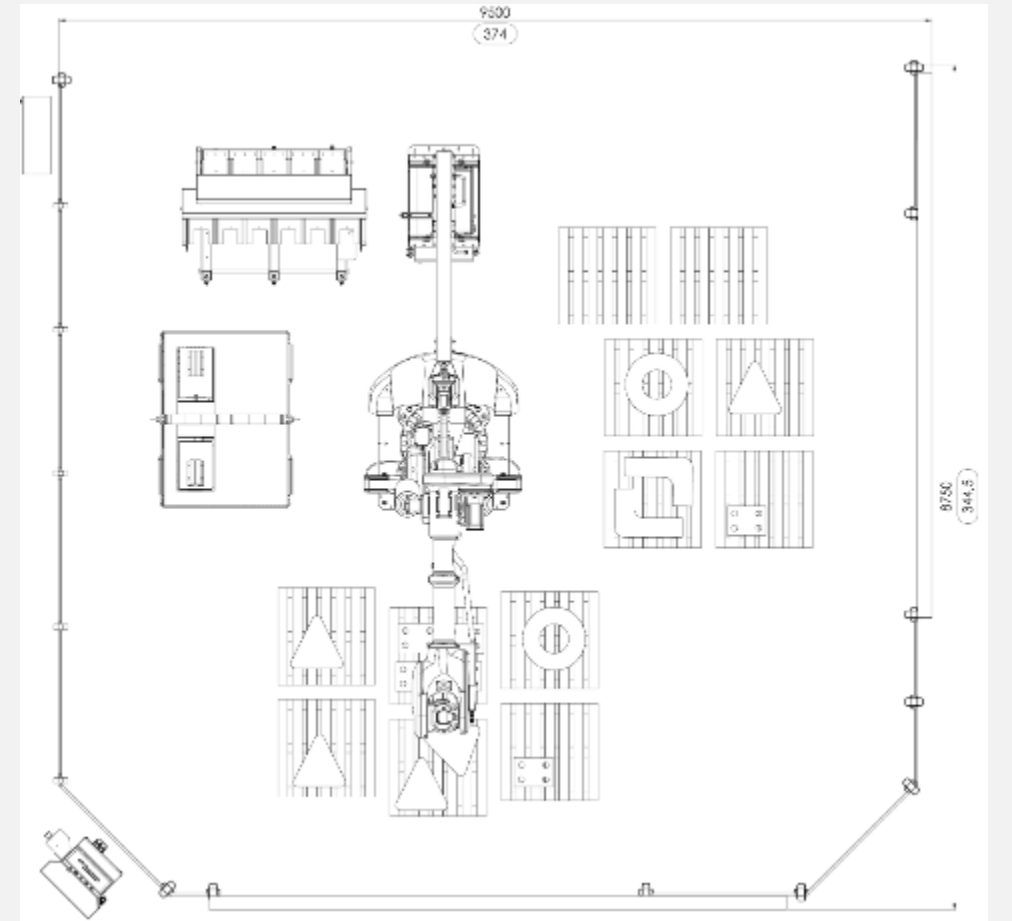
Technical requirements EasyGrinder 200

Footprint	7.5 x 6.8 x 3.1 m (L x B x H) - 51 m ²
Floor	Standard industrial floor No foundation necessary
Electrical	400V 3P+N+PE V 50 Hz 20 kVA CEE 5P 32A C32 fuse 6mm ²
Compressed air	6 bar, 1000 l/min
Lighting conditions	Minimum 500 lux No direct sunlight within the reach of the robot-manipulator.
Connectivity	Ethernet/IP, internet access

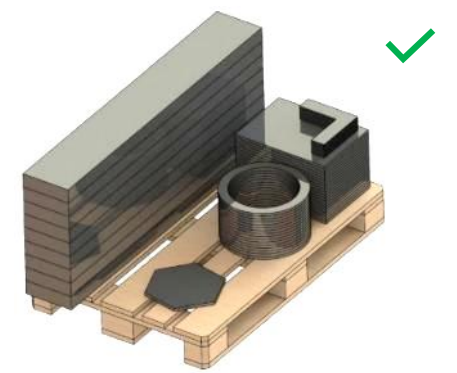


Technical requirements EasyGrinder 600

Footprint	9.5 x 8.8 x 4.0 m (L x B x H) - 84 m ²
Floor	Reinforced industrial floor Robot foundation
Electrical	400V 3P+N+PE V 50 Hz 20 kVA CEE 5P 32A C32 fuse 6mm ²
Compressed air	6 bar, 1000 l/min
Lighting conditions	Minimum 500 lux No direct sunlight within the reach of the robot-manipulator.
Connectivity	Ethernet/IP, internet access



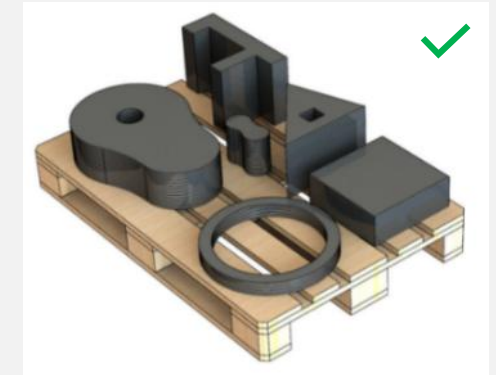
Pallets and stacks



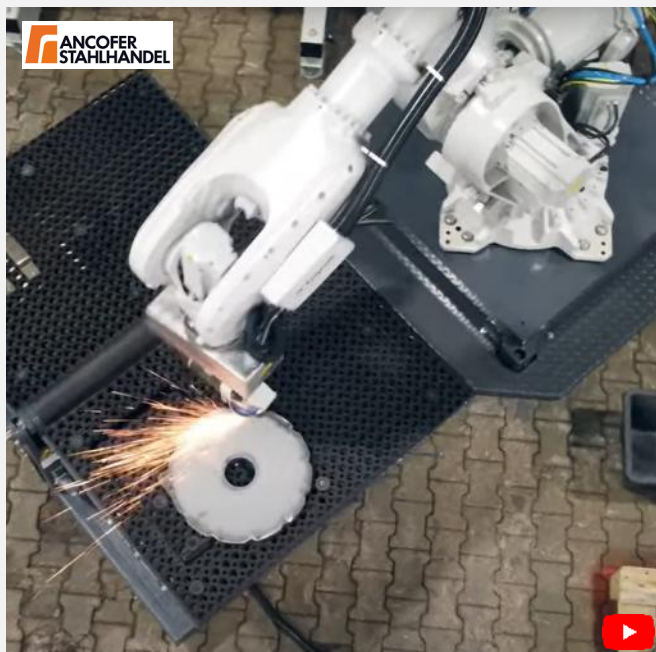
Pallet material	Preferably wood or plastic when working with vacuum grippers due to inductive sensor
Pallet positioning	+/- 50 mm within zoned areas
Pallet positioning height	Pallets can be placed on the floor as well as on tables
Maximum pallet size	1200 x 800 mm (europallet) No overhanging parts
Number of stacks	No limitation
Stack distance	Minimum 35 mm between stacks
Stack height	Minimum 20 mm*
	Maximum 500 mm
	Max difference in height 300 mm
Part thickness	Minimum 10 mm**
Material per pallet	1 - all parts same material
Part geometry per pallet	No limitation

* For stacking heights less than 20 mm, a honeycomb mat must be used.

** For stacking different parts on 1 stack, minimum part thickness is 30 mm



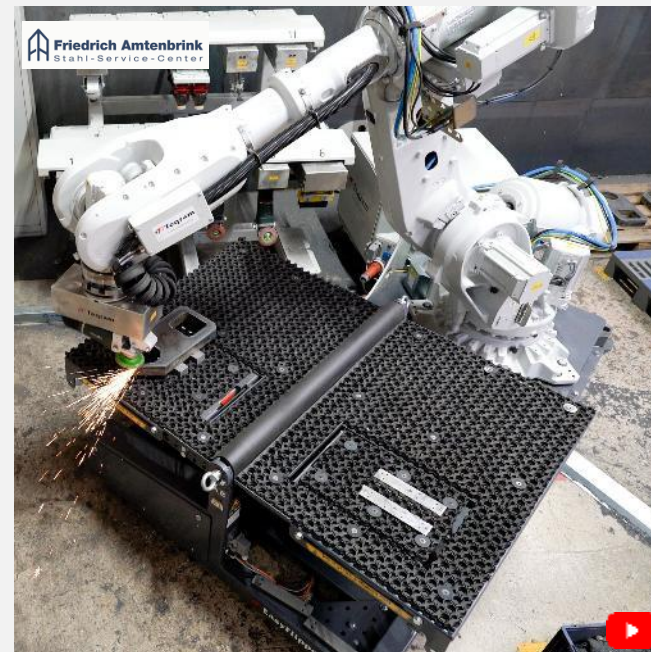
References EasyGrinder



Ancofer Stahlhandel GmbH
Mühlheim an der Ruhr, Germany
Steel service center

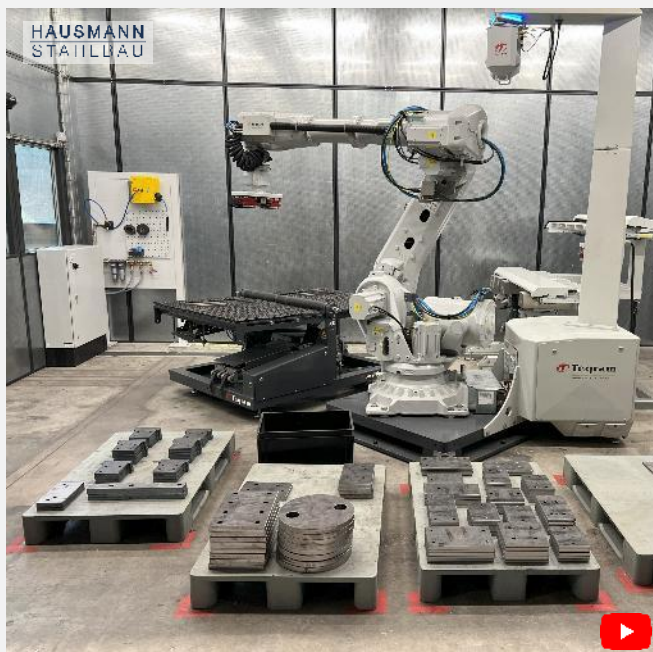


Doppelmayr Seilbahnen GmbH
Wolfurt, Austria
Cable cars

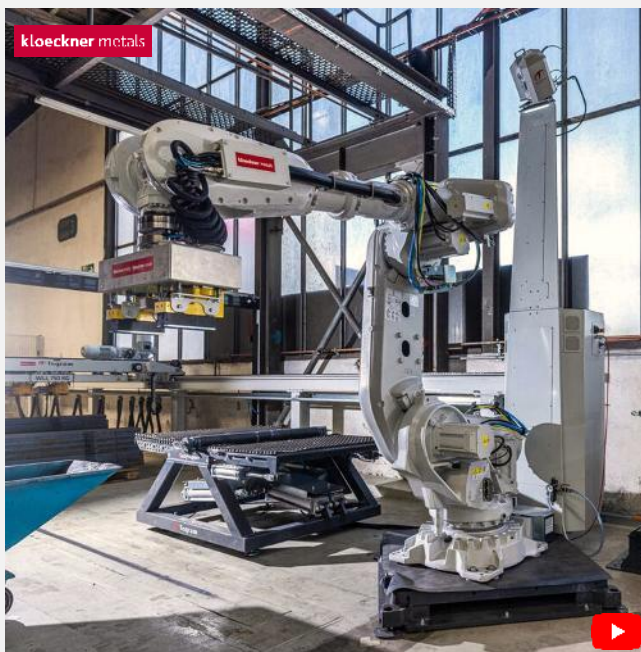


Friedrich Amtenbrink GmbH & Co KG
Gütersloh, Germany
Steel service center

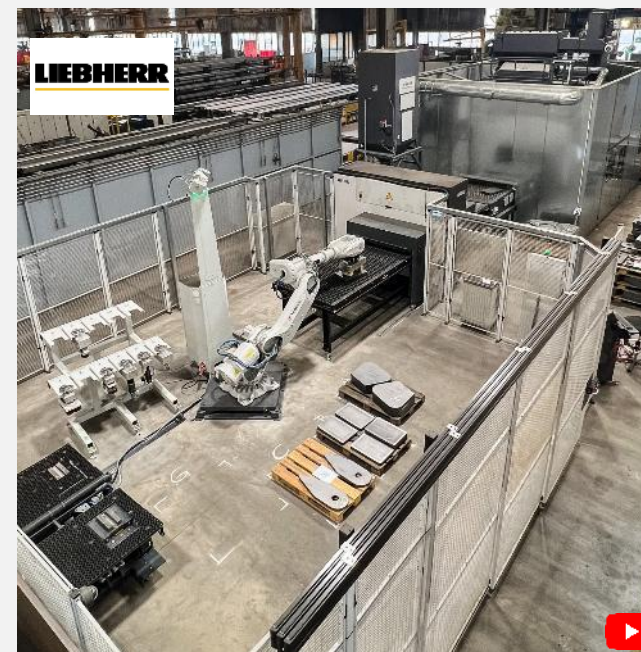
References EasyGrinder



Hausmann GmbH & Co Stahlbau KG
Aichach, Germany
Steel constructions

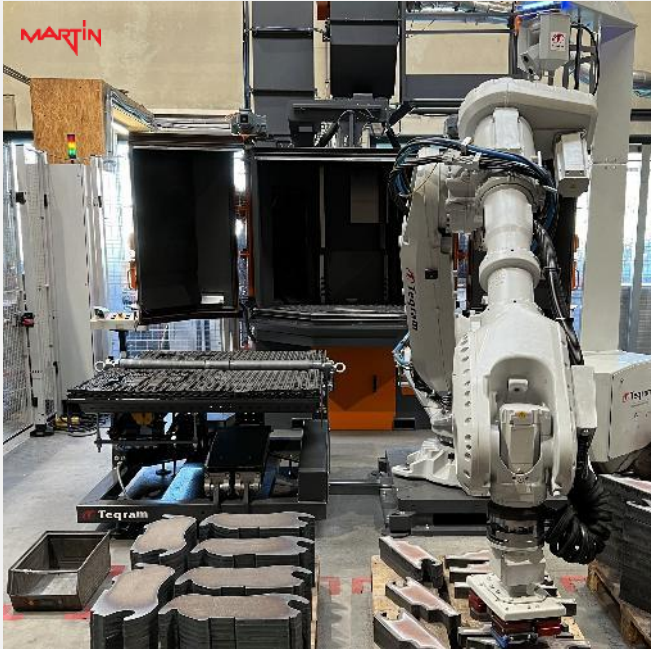


Klöckner Metals Germany GmbH
Bremen, Germany
Steel service center



Liebherr - Werk Biberach GmbH
Biberach an der Riß, Germany
Cranes

References EasyGrinder



Martin GmbH
Ludesch, Austria
Excavator attachments



Peters Stahlbau GmbH
Itterbeck, Germany
Steel constructions



UnionStahl GmbH
Duisburg, Germany
Steel service center

References EasyGrinder



Accurate Metal Products
Milwaukee, United States
Steel plate processing services



AncoferWaldram Steelplates BV
Oosterhout, Netherlands
Steel service center

References EasyGrinder

Claus Queck GmbH

Düren, Germany
Steel constructions, bridges

Döring Stahlbau GmbH - Kassecker

Crimmitschau, Germany
Steel constructions, bridges

Accurate Metals Illinois

Rockfort, United States
Steel plate processing services

Smulders Group NV – Eiffage

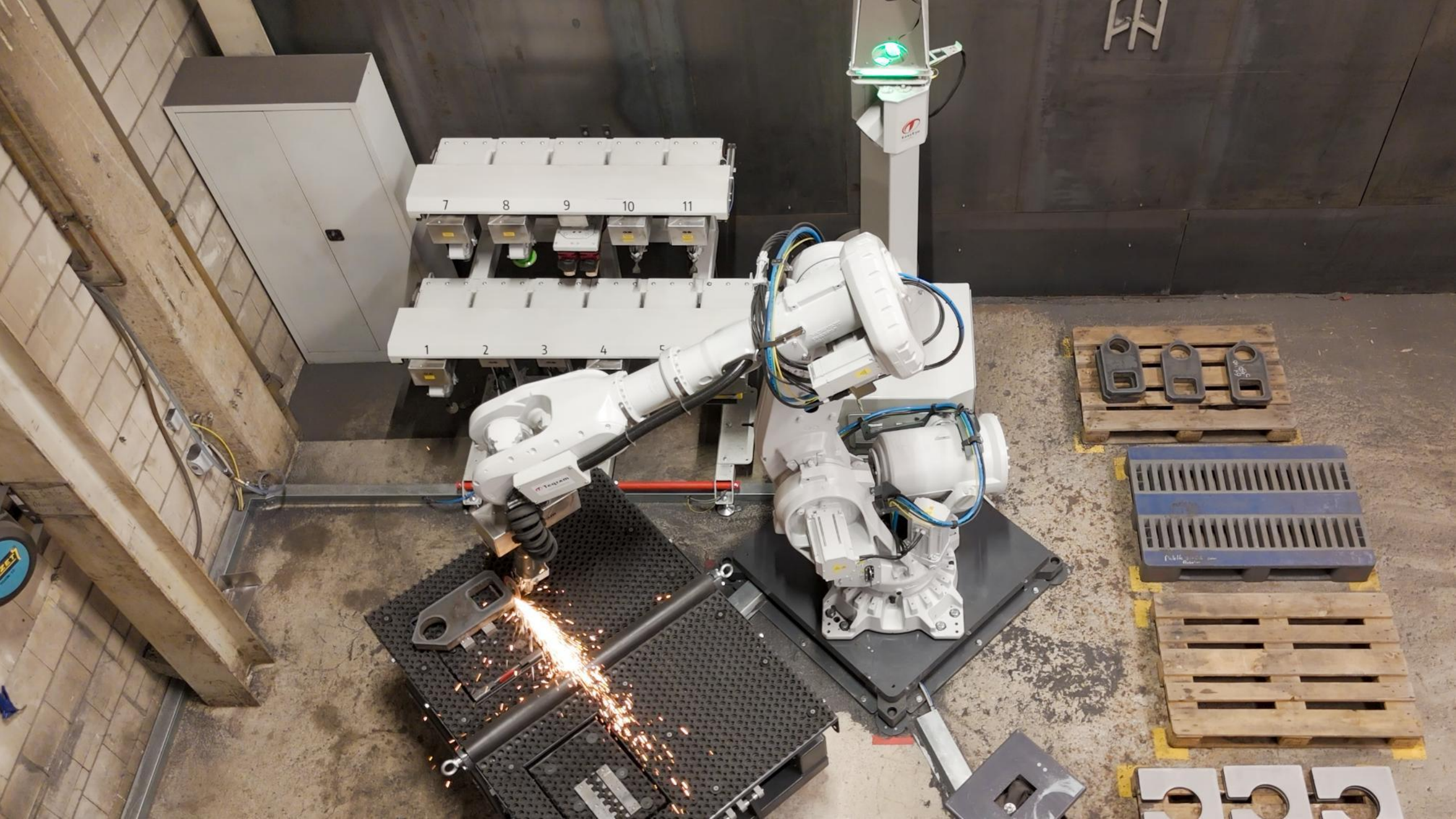
Arendonk, Belgium
Offshore, infra and industry construction

ThyssenKrupp Materials Austria GmbH

Vienna, Austria
Steel service center

VoestAlpine AG

Linz, Austria
Steel service Center



Tegram solutions



EasyGrinder

Grinding of thermally cut sheet metal parts



EasyDebur

Loading/unloading of deburring machines

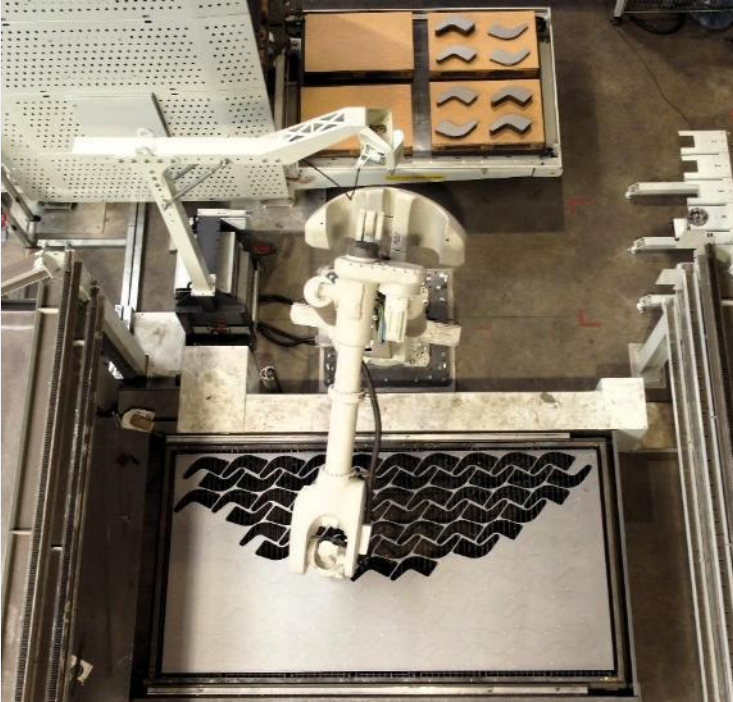


EasyShotblast

Loading/unloading of shotblasting machines



Tegram solutions



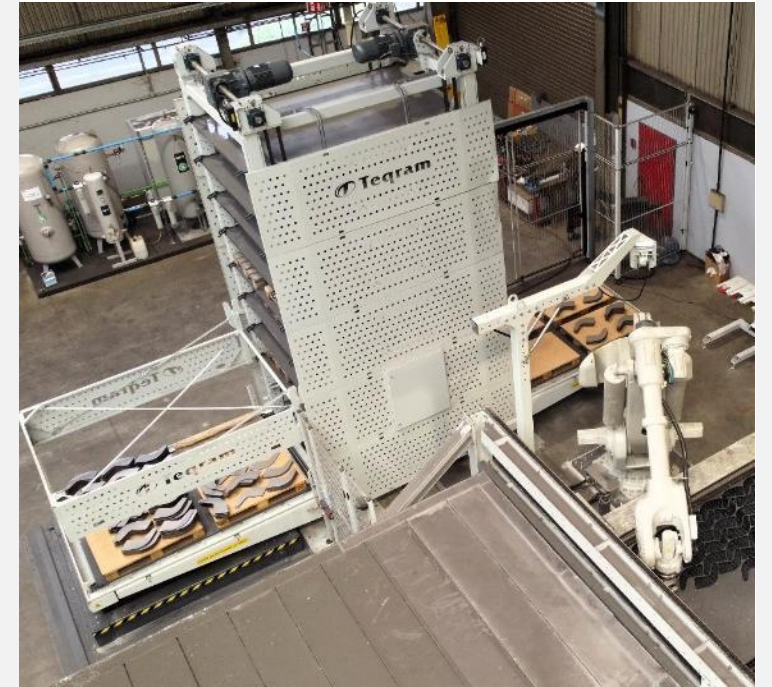
EasyUnpacker

Unloading and sorting of
laser cutting machines



EasyPlateHandler

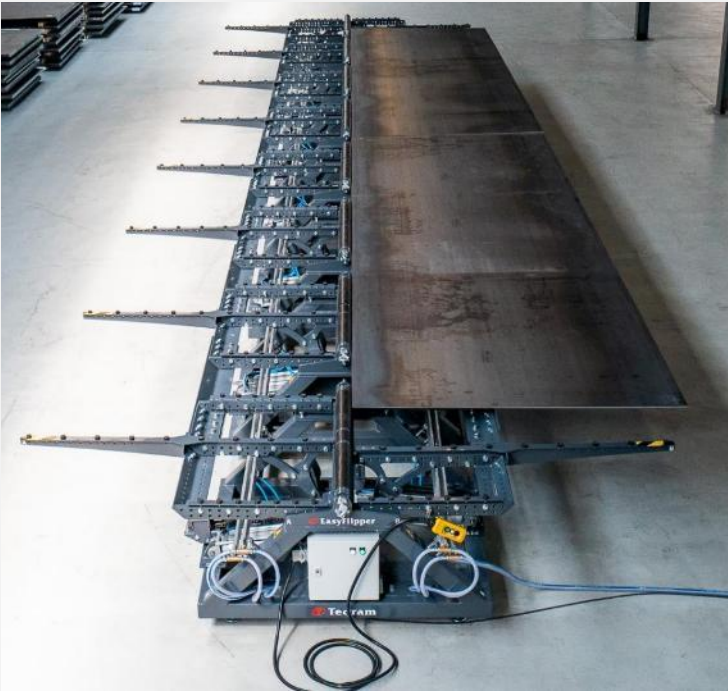
Plate loading
Scrap and skeleton unloading



EasyPalletTower

Part storage
Up to 40 pallets per tower

Tegram solutions



EasyFlipper Pneumatic
Flipping of large and heavy parts



 **EasyFlipper Hydraulic**
Flipping of large and heavy parts



 **EasyPartHandler**
Loading and unloading of
metal processing machines

Teqram

Teqram is transforming the sheet metal and plate processing industry with autonomous robotic systems that combine innovation, efficiency, and ease of use.

Our mission is to make automation accessible to everyone, lowering operational costs and improving working conditions. By using 3D vision sensors and AI-driven controllers, our systems eliminate complex robot programming. This allows a cost-effective production of small series or single parts without human intervention, letting skilled technicians focus on process optimization while robots handle heavy lifting and part processing.

With a team of expert engineers and a commitment to innovation, Teqram delivers reliable systems that enhance accuracy, improve safety, and ensure a strong return on investment.

Stay competitive in an automated world - choose Teqram for your future of manufacturing.

Contact Teqram

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