





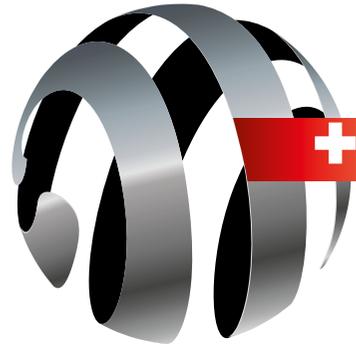
ASTES4 SA

Via Passeggiata 3A / 6828 Balerna / Switzerland
Tel. +41 91 6829320 / sales@astes4.ch / www.astes4.ch



MITSUBISHI ELECTRIC EUROPE B.V.

Mechatronics Machinery / Mitsubishi-Electric-Platz 1 / 40882 Ratingen / Germany
Tel. +49 (0) 2102 486-0 / laser.sales@mee.com / www.mitsubishi-laser.de



ASTES4[®]

Past

Today and tomorrow

Laser-cutting system only



Manual handling of material only

Laser-cutting system with pallet changer



Manual handling
No sorting

Laser-cutting system with loading/unloading unit



Automatic loading/unloading
No sorting

Flexible laser production cell with ASTES4 sorting system



Fully automatic process



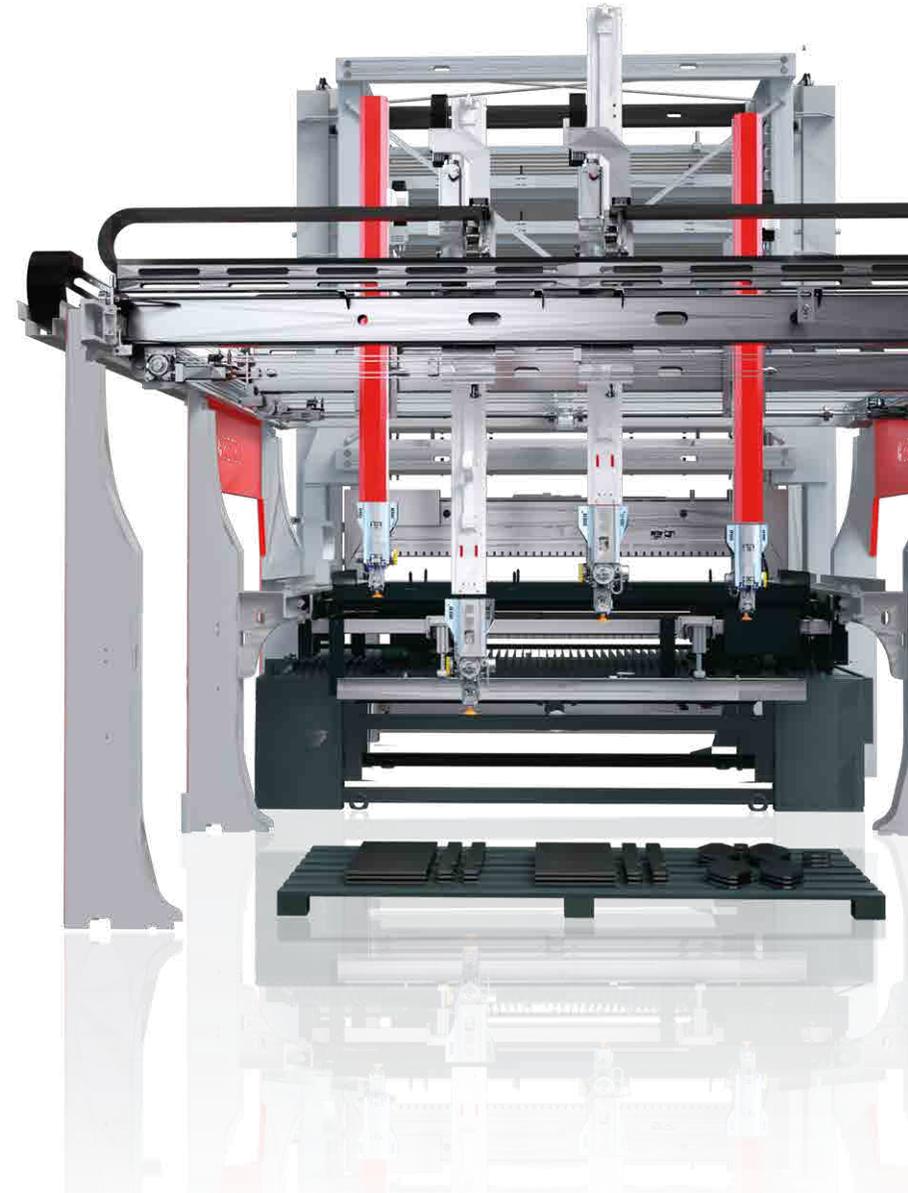
Maximize profitability through automation

Since the beginning of laser cutting and automation, the sorting and storing of parts has always been a manual operation ... until now.

Today and Tomorrow

Simplify processes to get more!

ASTES4MAS Modular Automation System	6
SortPro Linear	8
SkyWay Cross – Clever Start!	9
SkyWay Linear – Flexibility is the key!	11
Compact Tower – Loading and unloading system	14
StoreGo – Efficient Storage	16
SortCAM – Programming in 4 clicks!	26
Kitting	29
World of Choices	30
Service	32
ASTES4	35
Technical Data	36



Clever Start – Rise Smart!

Easy access to automate, modularity to grow your business.

With intelligent and integrated automation solutions, the ASTES4MAS concept ensures that you will always have the suitable degree of automation to meet your production needs. It literally grows with your rising future demands.

From a fast and efficient loading and unloading system to a high-speed sorting module that allows a fully automated handling process of cut parts, connected to a wide range of automatic storage systems. The modular design allows for an adaptation to your budget and space situation.

ASTES4SkyWay



The clever start

The very fast loading and unloading system SkyWay enables you to separate the processes between laser cutting and parts picking, allowing a significant increase in the utilization of the laser system. The SkyWay loads the laser system's pallet changer with raw material and unloads the cut sheets – all within 58 seconds!

ASTES4SortPro



Professional sorting at high speed

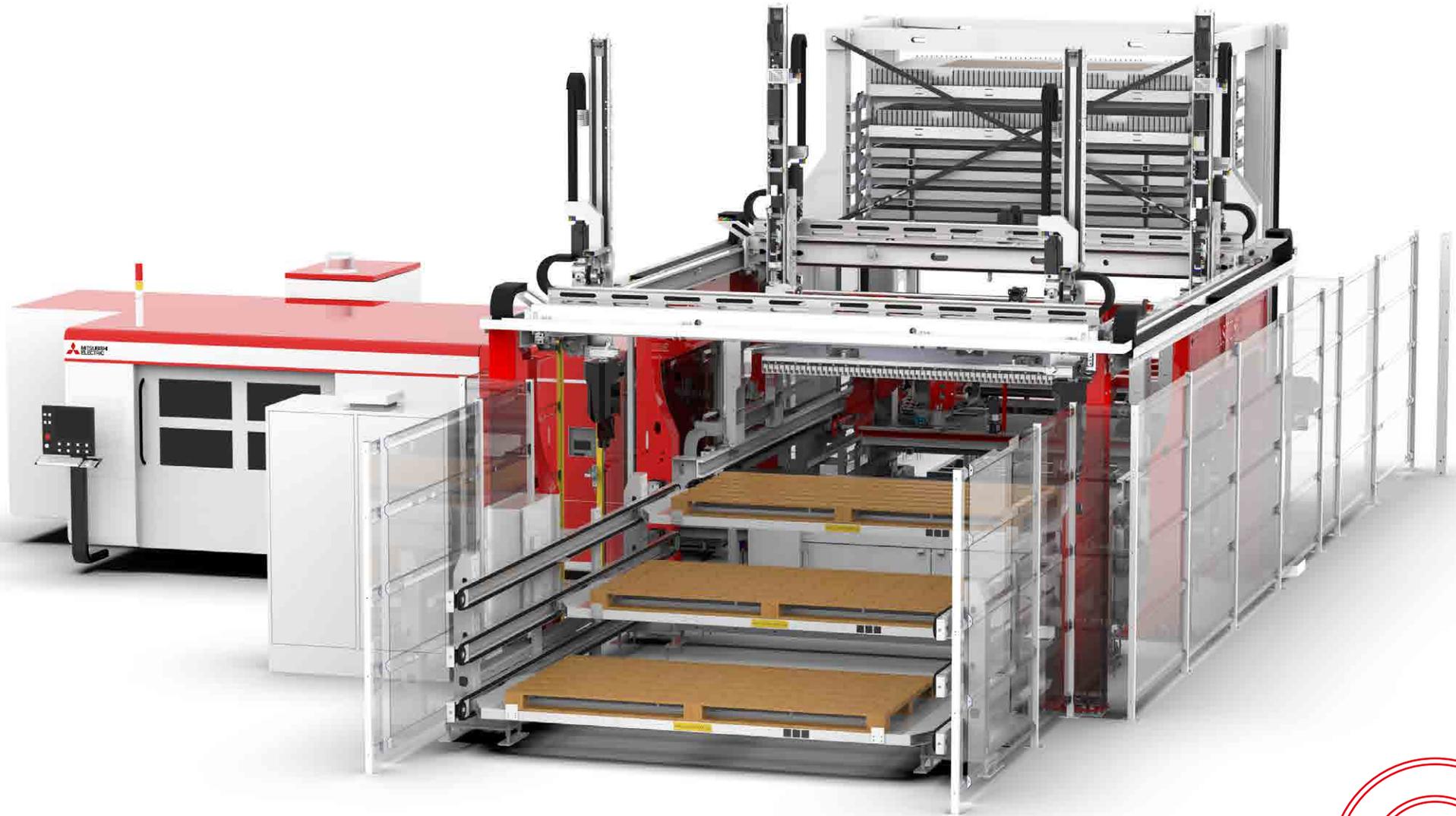
In combination with the SortPro sorting module, the automation system can even handle the individual parts picking process automatically. SortPro consists of four parts picking heads. These are each equipped with a patented revolving head that can access seven individual vacuum and magnetic picking tools. Maximum automation with maximum flexibility.

ASTES4StoreGo



Efficient sheet material storage

The SkyWay can be connected to various types of storage systems. Whether single tower, double tower or multi-tower system – we adapt to your demands. To optimize the space requirement, the SkyWay can be integrated directly into an automatic storage system by allowing both manipulator units to move into the storage tower.



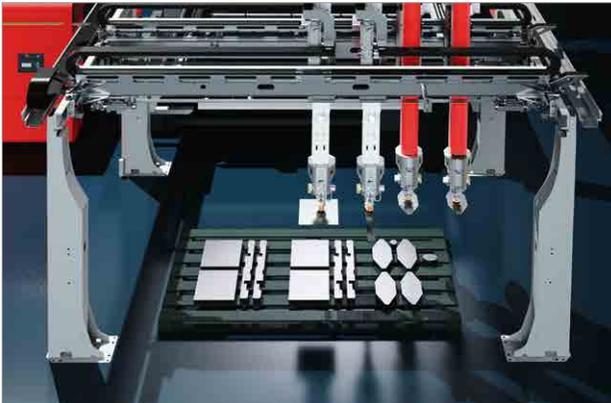
ASTES4 Modular Automation System



Lasers cut Metal – ASTES4 cuts costs

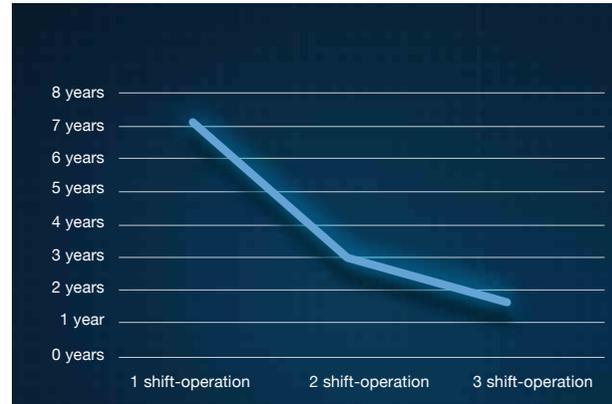
Fully integrated automation with major laser manufactures.

This is what ASTES4 can do for you...



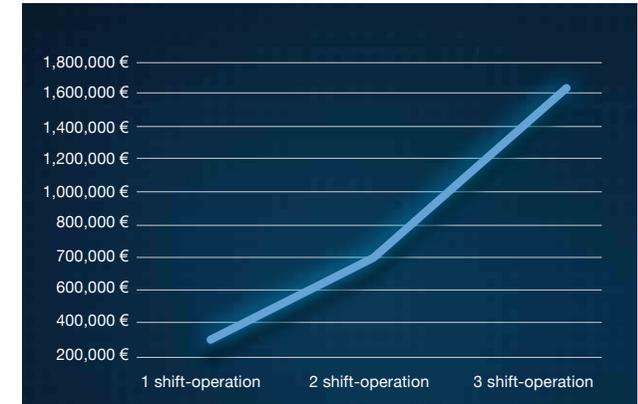
Ready for shipping with minimum manpower and maximum profits.

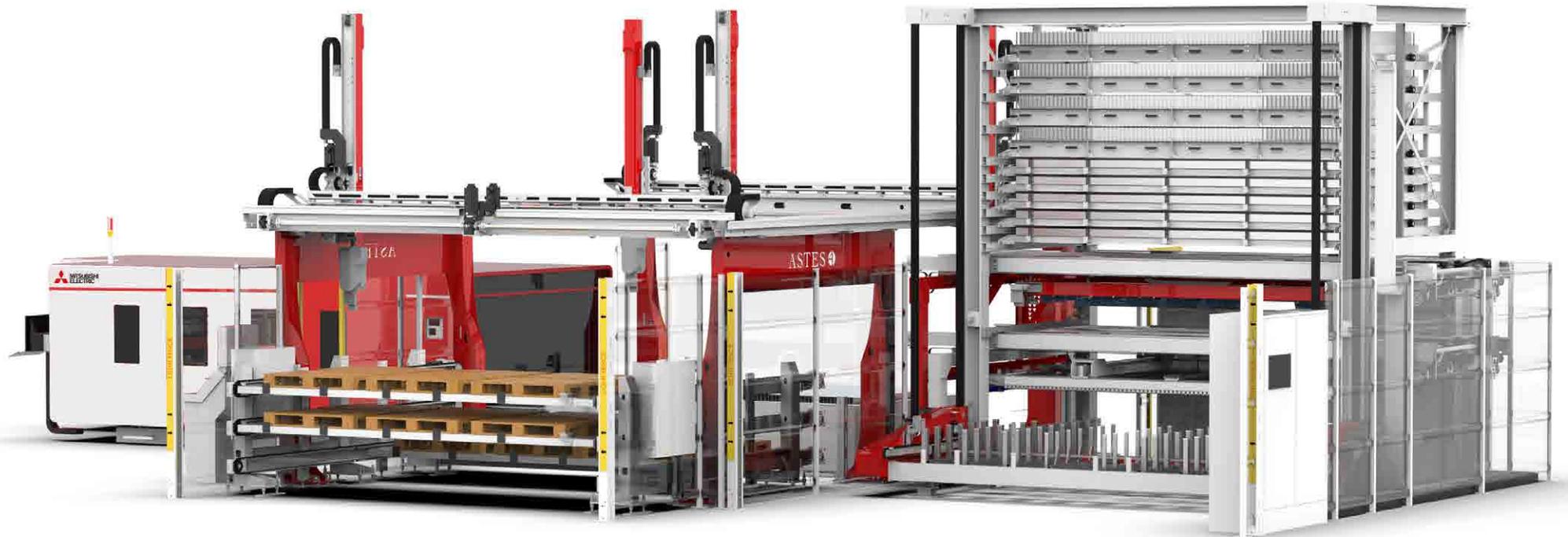
Average return of investment for you



Reduce cost through automatization and be ahead of your competition. The employees so far responsible for physically demanding parts sorting can now be entrusted with more value-generating activities.

Average additional profit in 10 years



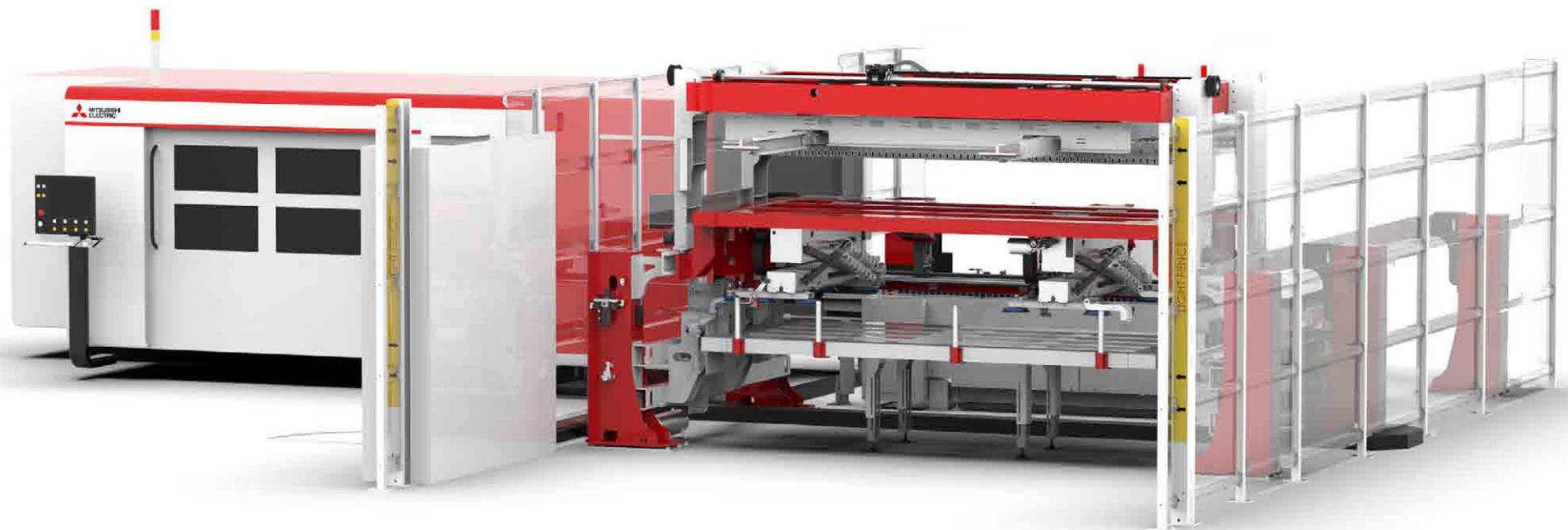


SortPro Linear

Compact, efficient, streamlined. SortPro Linear is the sorting system that revolutionizes logistics: designed in-line, it's ideal even in limited spaces.

With single-sided entry and exit, it optimizes flow and simplifies integration into the production line.

Maximum efficiency, minimal footprint.



SkyWay Cross

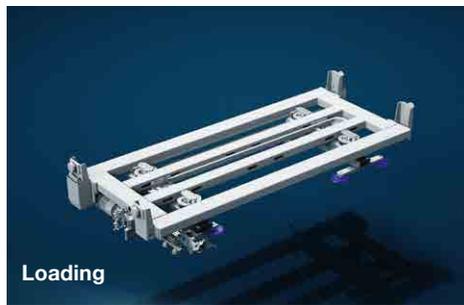
SkyWay CROSS for loading raw material and to remove and unload cut sheets.

- Full access on the pallet changer.
 - Basic automation with multiple configurations to extend or integrate with other ASTES4 products.
- extend or integrate with other ASTES4 products.

58 Seconds Cycle Time

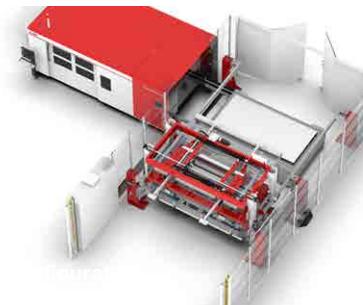
Wow, this gets your Beam-on Time up!

2 manipulator units

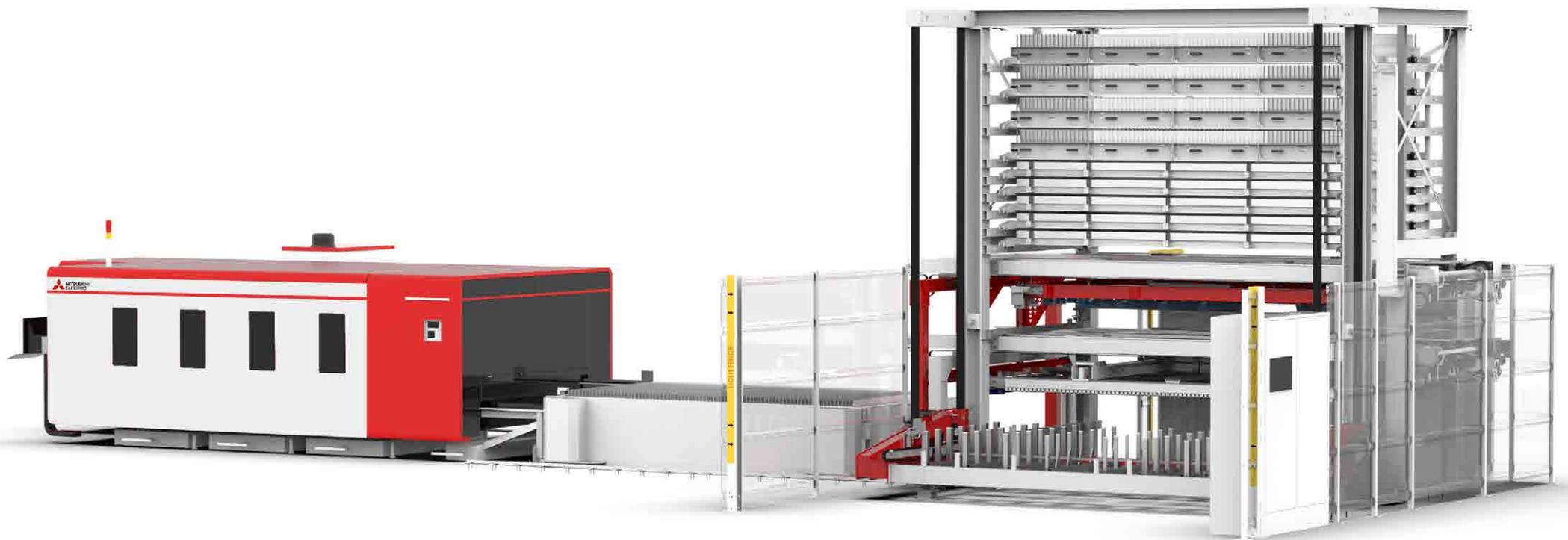


The SkyWay consists of two separate manipulator units – one for loading and one for unloading. This way different operations can take place simultaneously which reduces the cycle time to the absolute minimum of 58 seconds (3015). The slats brushing device automatically brushes away debris left on the pallet of the laser system to ensure a stable automation process.

Flexible configuration



To adapt the SkyWay to your needs you can choose for its working area to be in front or behind the pallet changer. The configurations of the system start with the "smart configuration" which simply adds a table for raw material. The "advanced configuration" will add 2 carts moving in a 90° angle to the SkyWay operation. Finally, the SkyWay can be integrated in various types of automated storage systems. Choose what fits you best!



SkyWay Linear

SkyWay LINEAR for loading raw material and to remove and unload cut sheets.

- Full access on the pallet changer
- Offers optimized footprint
- Single side load – offload operations
- Basic automation with multiple configurations to extend or integrate with other ASTES4 products.

Flexibility is the key!

ASTES4 SKYWAY with full access on the laser pallet changer for secondary operations as remnant loading or manual cut part removal.

The SkyWay Linear consists of two separate manipulator units for sheet load and unload operations.

Sheet unload – loading cycles are optimized and synchronized for maximum system efficiency and to reduce or eliminate laser machine waiting times.

The loading unit has integrated brush to wipe out slugs or scarp before sheet loading.

Easy and safe raw material loading, cut sheets on the pallet located to floor level.

- Linear model offers minimal impact in production site.
- Skyway while not operating offers full access on the laser pallet changer.
- The unit can be integrated with ASTES4 advanced sorting systems and automate storage solutions.



Easy access to the pallet changer



Expandible with storage system for extended operation hours





COMPACT TOWER Loading and unloading system

The combined loading system that boosts productivity!

A high-performance solution that ensures continuity and boosts production rates.

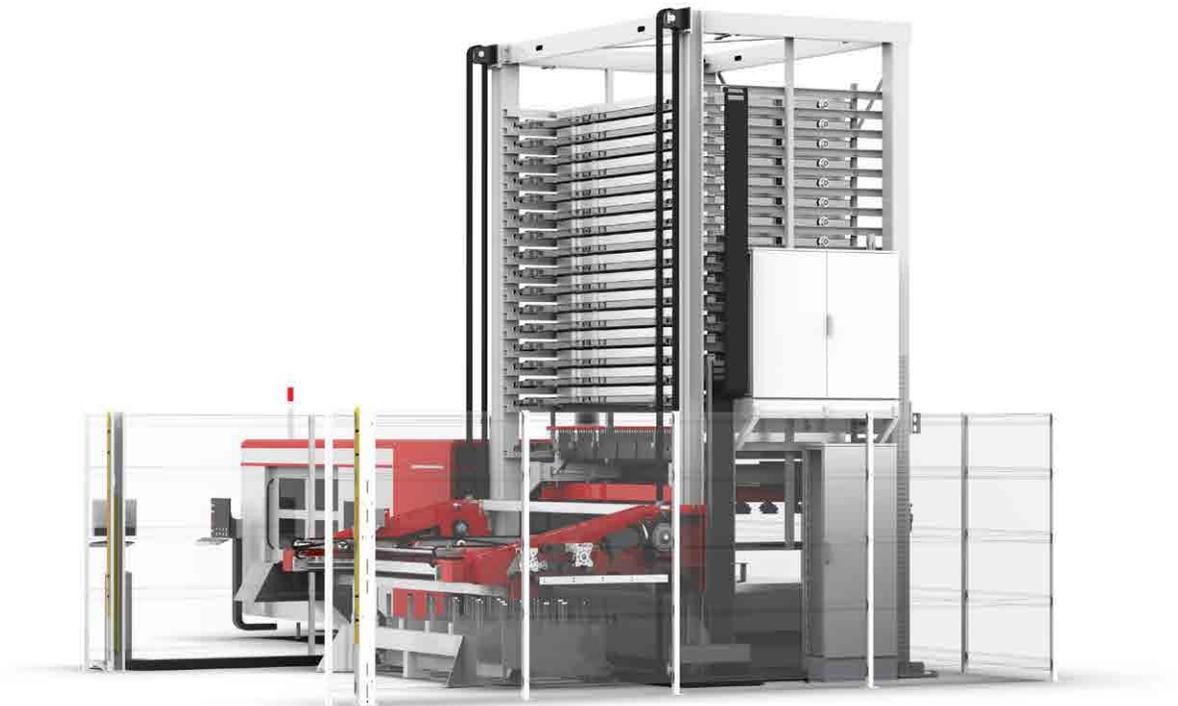
Here's what ASTES4 has created for you!

The ASTES4 loading and unloading system is combined with a storage tower. Thanks to this design, the productivity of the laser cutting machine increases without the need for additional space.

A high-performance solution that ensures continuity and a significant boost in production rates.

The system has been designed to occupy the least possible floor space. The fully automated drawer change enables staffed or lights-out production for companies of any size.

ASTES4 COMPACT TOWER integrates with the most advanced laser cutting production lines, offering top performance in terms of efficiency, safety, and quality.





StoreGo

One, two or 20? How many Storage Towers do you need?

Exactly tailored to your requirements.

The ASTES4StoreGo automated storage systems optimize your logistic process – whether you just need a single tower system for the continuous supply of raw material to your laser system or you are looking for a huge multi-tower system to organize all your shop floor logistics.

Our single, double or multi-tower storage systems can store pallets with raw material or cut and perfectly stacked parts but also cassettes with cut sheets or skeleton. Different layout options make sure that the system adapts to your needs and space requirements. We are at your disposal to find the most suitable solution for you.

Fast elevator



The elevator of the StoreGo storage systems is equipped with an additional axis for picking the storage pallets/cassettes faster than conventional systems.

Raw material loading



For raw material loading, a device with many pins is installed below the elevator. This allows to remove wooden bars with a max height of 100 mm, without the need of a separate unpacking station.



StoreGo

Ready to Ship or Ready for further Processing

Set to serve You the best!

Fully automated storage system



StoreGo system manages and keeps track on materials and sorted parts. Inventory check at the press of a button and a complete overview of all critical process data are thus possible.

Depending on the sorting strategy, cut parts are sorted on pallets to minimize the lead time for further operations



Lasers get faster and faster

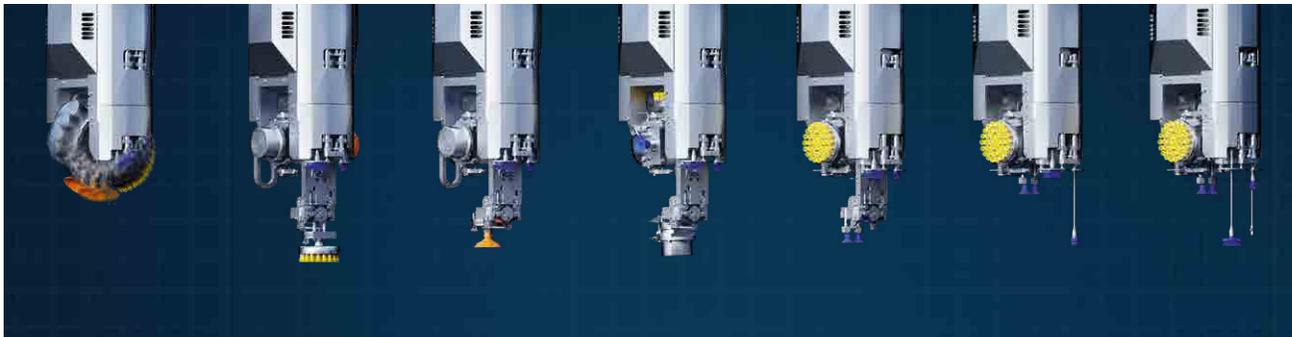
ASTES4SortPro revolver heads are ready for 30 kW and more



Adaptable as a Swiss Army Knife

But much more efficient.

28 sorting tools and no external tool change required – for maximum performance

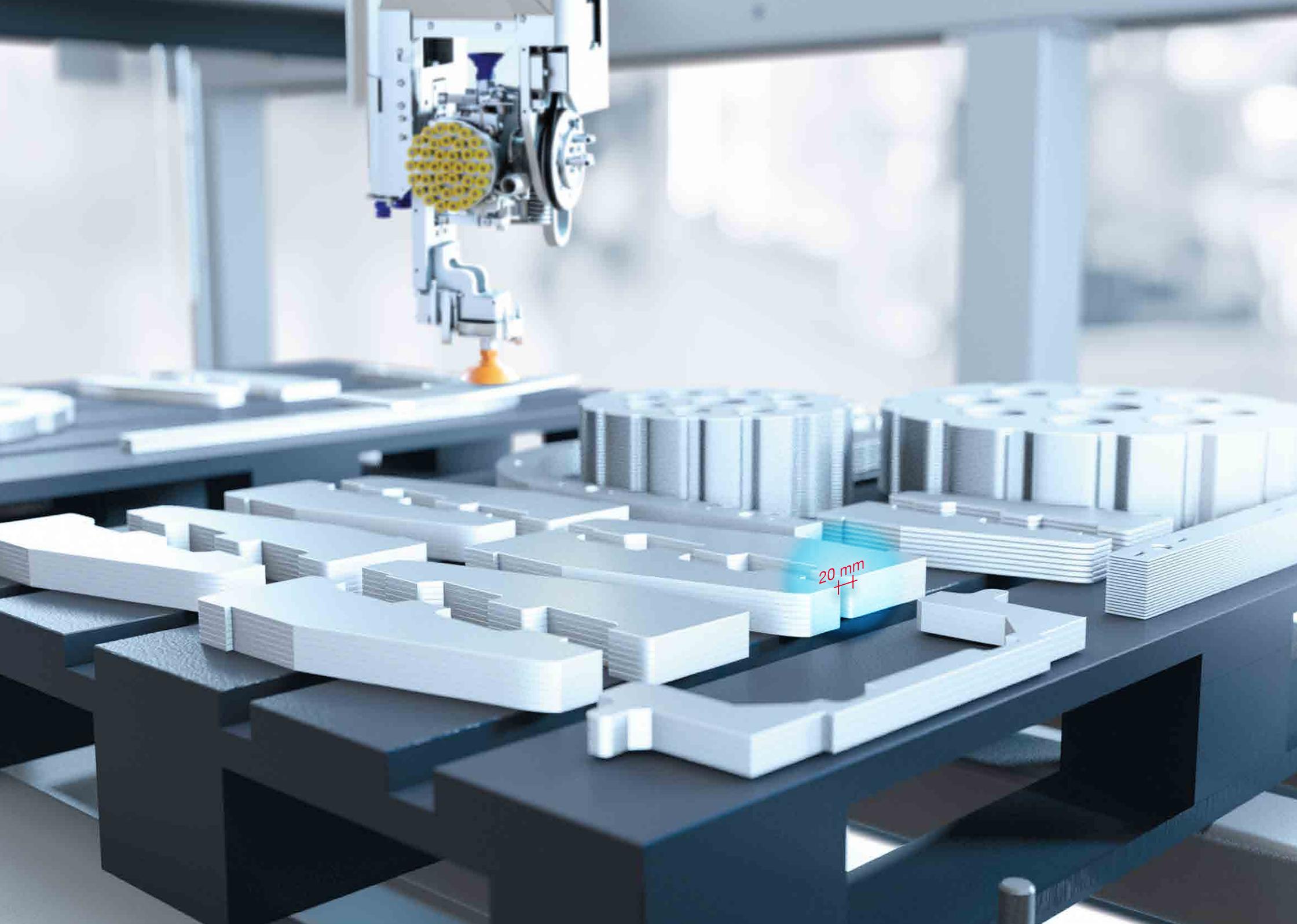


4 patented sorting heads with revolutionary automatic revolving tool changer always have the right tool on-board. There is no external and time consuming tool-change necessary anymore. Each head carries seven vacuum and magnetic tools of different dimensions and shapes. These tools are automatically changed depending on the part geometry and weight.

Heavy parts up to 400 kg



Each of the 4 sorting heads can handle part weights up to 100 kg. The heads can be used individually or together to move large or heavy parts. This way parts with a total weight of up to 400 kg can be sorted.



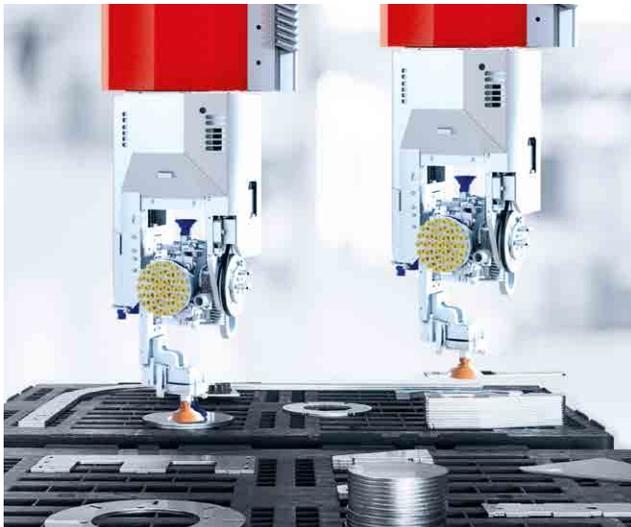
20 mm
++

Get More out of Storage and Pallets!

Higher Packing Density through Precise Stacking.

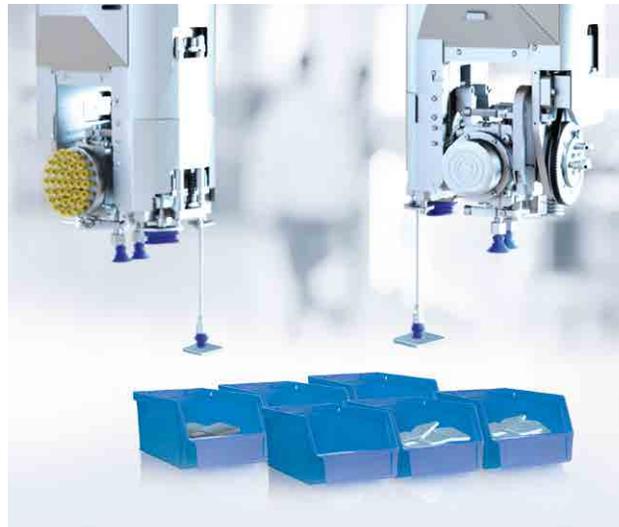
Mass production can be done by anyone... flexibility is what scores today! The ASTES4SortPro is significantly ahead of all currently available laser automation systems on the market – in terms of productivity and efficiency!

Quantity 1 or 1,000,000?



The challenge for future-oriented laser automation is not the handling of millions of identical parts – day in, day out, but the ability to flexibly process countless different contours in different materials and sheet thicknesses in a reliable manner.

Please specify destination



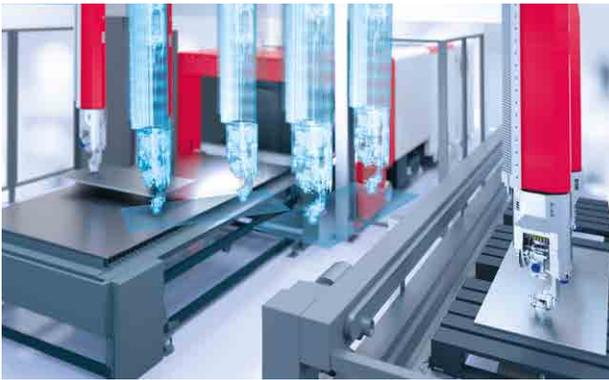
Where should the cut parts be placed? On pallets that are either located on the floor, on cross conveyors or longitudinal carts, or would you rather put them in lattice boxes or small parts boxes? No problem! Define your own load carrier. With the “Area Configurator” module (optional) it is possible to define specific load carriers. This way the system adapts freely and easily to your requirements.



Economical Stacking

with additional Health & Safety Benefits!

360° head rotation



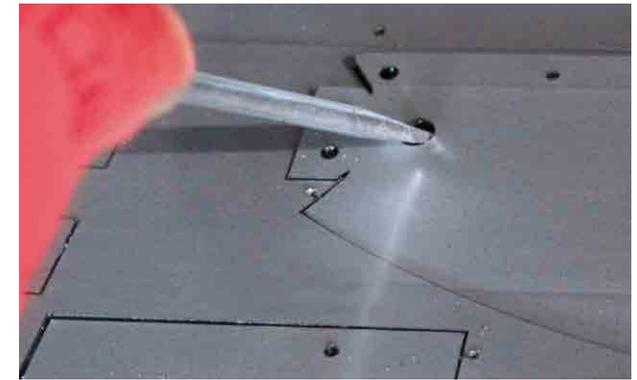
How economic may an automation system be that cannot sort all part geometries or cannot stack them in the same orientation? To place all the cut parts always in the required orientation, every head can rotate 360°. Also, long parts often have to be rotated 90° or even 180° in order to place them correctly or as desired. The ASTES4 sorting systems master this task using two sorting heads (one of each portal).

Work accidents? Better to fight against causes!



In the rough everyday work of order picking employees, it is not seldom the case that minor work accidents occur, as the manual breaking out of hundreds or thousands of parts can take its tribute. In case of thicker sheets or larger part geometries, heavy weights have to be taken into account. The sorting system takes over the picking process and significantly reduces the risk of work accidents.

(Almost) no micro joints!



In comparison to a simple loading/unloading system, which requires the micro jointing of parts to the skeleton to ensure process reliability, the sorting system expressly does not allow micro joints, as otherwise the picking-process would not be possible. This means, the subsequent process of grinding off the micro joints can be avoided, which reduces costs and improves part quality. The only exception are parts, smaller than 130 x 60 mm, which require „clustering“ using micro joints.



SORTCAM[®]

The brain makes the difference
Easy to use software

 **swiss made**
software

Programming in 4 Clicks

It couldn't be simpler.

SortCAM automatically optimises and manages the production process through to storage, without the user having to intervene. The outcome is unsurpassed user-friendliness. The user only has to select the pallets being used and everything proceeds automatically as a single production order – management of various materials, part quantities, sorting and storage – based on purchase orders and deliveries.

SortCAM stands for simplicity



The intelligent sorting software “SortCAM” stands for simplicity. A new program can be done in just 4 clicks. The intelligent algorithm of the software works perfectly in the background and supports the user to perform each production order in the most efficient way.

Modular design. SortCam takes charge of your demands.

Name	Standard	Option
SortCAM: Multi Layer	×	
SortCAM: Picking Point Database	×	
SortCAM: High Performance	×	
SortCAM: Mixed Tool Sorting	×	
SortCAM: Dynamic Group-ID	×	
SortCAM: Stacking Similar Parts	×	
SortCAM: Sort Area Configurator		×
SortCAM: Pallet Template		×
SortCAM: Homogeneous stacking		×
SortCAM: Incremental joblist		×

SortCAM is designed in such a way that you can program your ASTES4MAS to the full extent of the standard configuration. However, there may be some programming requirements that are not met by the standard configuration. Additional modules are available for this purpose. All additional modules are based on special customer requirements and have proven themselves in daily use. If you still need something that neither the standard configuration nor one of the modules can fulfill, please contact us. We always find a solution!

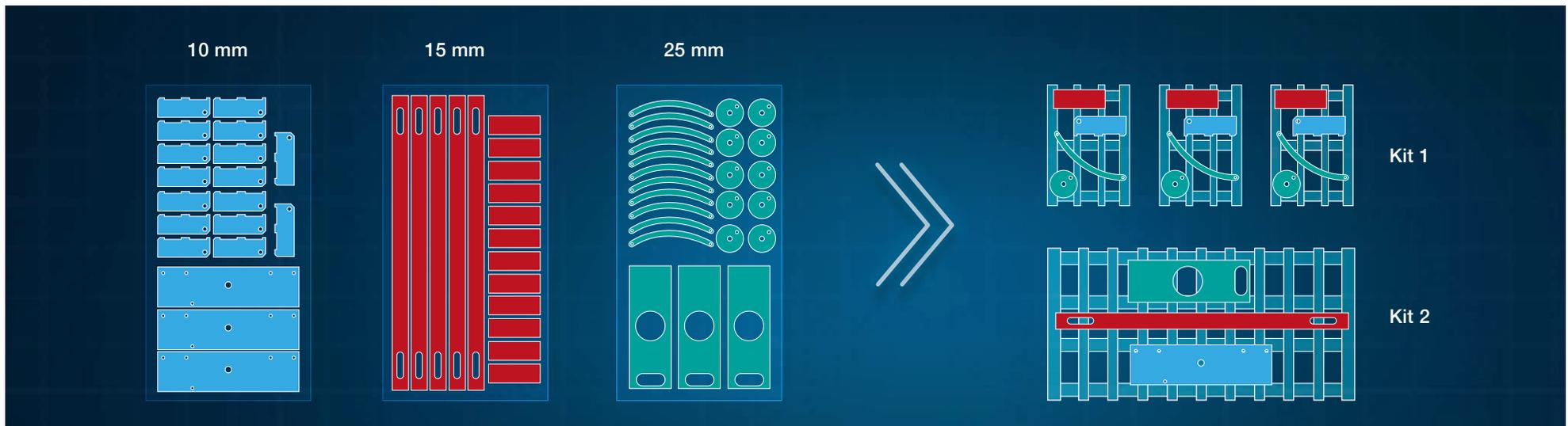


W1532 9-03
Shipping Contents

Easy to use and masters even complicated processes

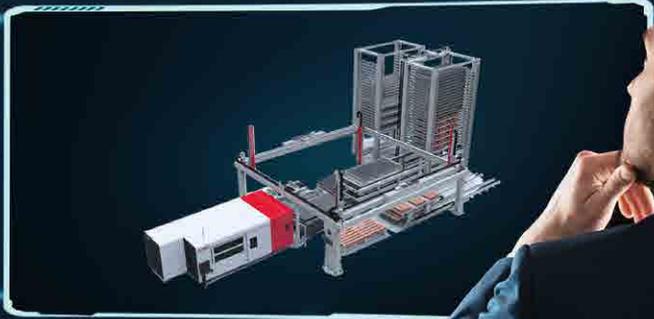
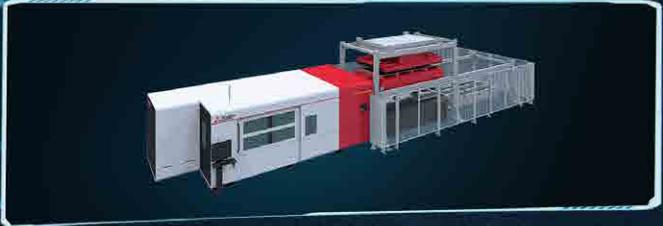
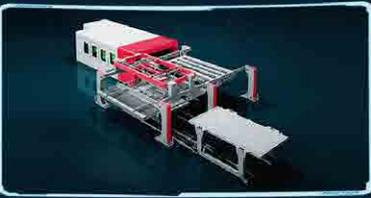
The first time right.

Three different thicknesses are sorted on four pallets



Not kidding, but kitting!

What is your production process like? Do you need many different parts made of different kinds of materials and material thicknesses, sorted by end customer, by drawing number, depending on the subsequent process, such as deburring, bending, welding, painting - or sorted according to your very own system? Your wish is a command for SortCAM. The ASTES4MAS creates kits according to your specifications. SortCAM receives the relevant data from the nesting software. Also ERP connection is available.





A world of Choices for you.

Is a laser cutting system, maybe with a pallet changer, still not enough for you? With a higher rate of automation, you can boost machine capacity utilization and produce more parts per hour. Intelligent and customized automation solutions are available so that you can achieve the degree of automation that best serves your needs. The possibilities extend from loading and unloading systems through to the fully automated process solutions with automated sorting of cut parts and storage integration.

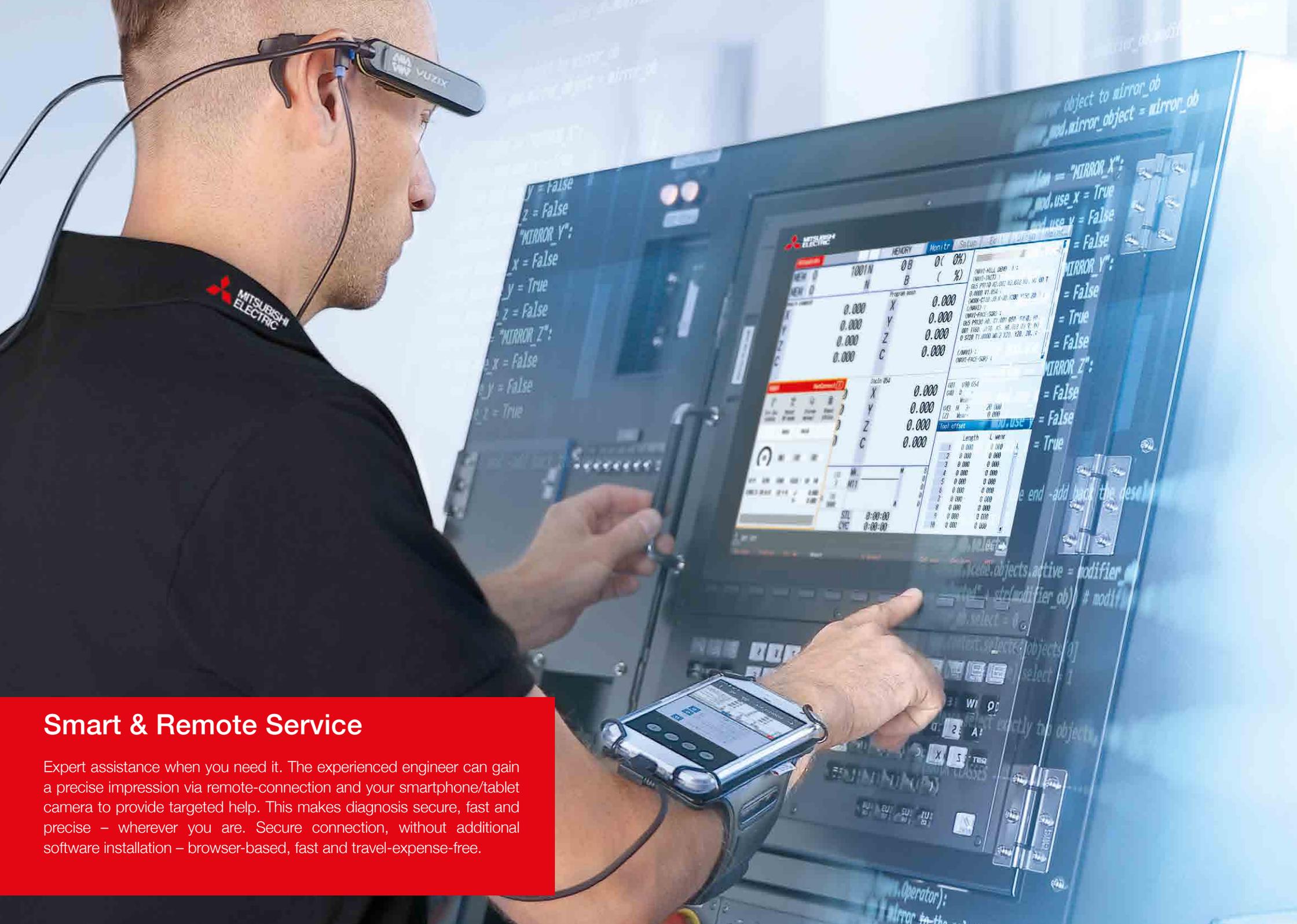
Modular approach!

You still don't know what will await you in a few years' time and want to start on a small scale? No problem – start with our SkyWay cross loading/unloading system and the SortPro and/or StoreGo can be retrofitted at any time. Your automation degree can thus grow with your needs.



Vedi altro

www.astes4.ch/products-sorting



Smart & Remote Service

Expert assistance when you need it. The experienced engineer can gain a precise impression via remote-connection and your smartphone/tablet camera to provide targeted help. This makes diagnosis secure, fast and precise – wherever you are. Secure connection, without additional software installation – browser-based, fast and travel-expense-free.

World Class Service!

For the most demanding customers.

Installation, training & application support



To get a good start, everything must already be right when the laser cutting system is installed. Our experienced engineers ensure a professional installation. Users get operating and application training to acquire the necessary skills. Immediately after installation and at any time in the future if needed.

Telephone & on-site service



Our service team consisting of our service helpdesk and field service engineers ensures your long-term success. Be it assistance over the phone, by email or personally on your site, you always receive reliable service from ASTES4.

Control and intervention



The 4 cameras installed in various positions in the system provide a detailed and direct overview of the whole automation process so our service helpdesk can follow each operation individually and intervene at any time by remote control.



ASTES4

is on the Forefront of Technology Innovation.

Our promise: From sorting to production excellence.

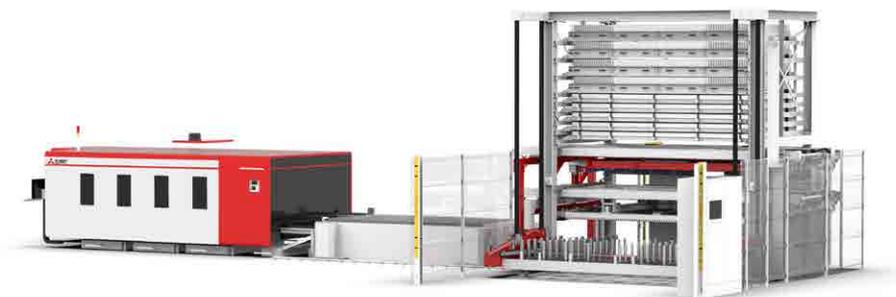
Efficiency in motion: where sorting meets performance.

- Adaptability and intelligence at your service
- Reduction of operational errors
- Optimization of production efficiency
- Seamless integration with existing systems
- Cost optimization

The tight integration between sorting and subsequent work phases also facilitates the collection of detailed production data, which can be analyzed to identify further optimization opportunities. This 360-degree approach to production management enables companies to respond more quickly to changes in demand, improve product quality, and reduce operational costs.



ASTES4SkyWay Cross and Linear



General Specifications	3015	4020
Cycle Time Cross	58 s	65 s
Cycle Time Linear	62 s	70 s

Raw Material Specifications	3015	4020
Sheet Thickness	0.8–25 mm	
Min. Sheet Size	1,000 x 1,000 mm	
Max. Sheet Size	3,048 x 1,524 mm	4,064 x 2,032 mm
Max. Sheet Weight	900 kg	1,650 kg
Max. Stack Height	120 mm	
Max. Stack Weight	3,000 kg	5,000 kg

Cut Sheets/Skeleton Specifications	3015	4020
Max. Sheet Thickness	25 mm	
Max. Sheet Weight	900 kg	1,650 kg
Max. Stack Height	150 mm	
Max. Stack Weight	3,000 kg	5,000 kg
Max. Wooden Pallet Height	100 mm	
Required Pallet Changer Grid Pitch	50 mm	

ASTES4 COMPACT TOWER



Specifications and Technical Data

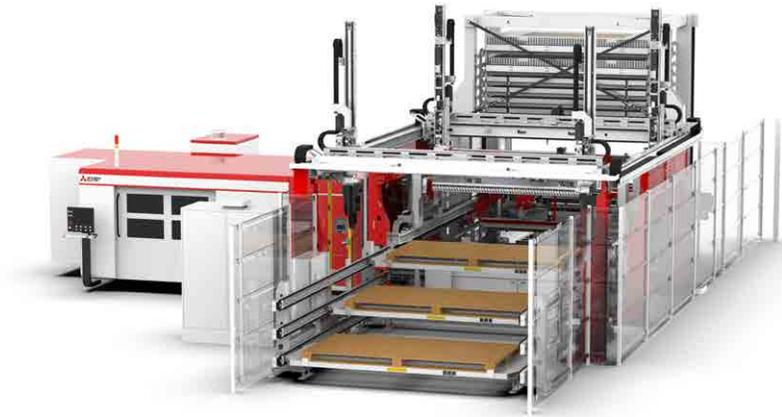
Maximum elevator speed: 0.3 m/sec

Maximum drawer extraction speed: 0.4 m/sec

Maximum fork movement speed: 0.3 m/sec

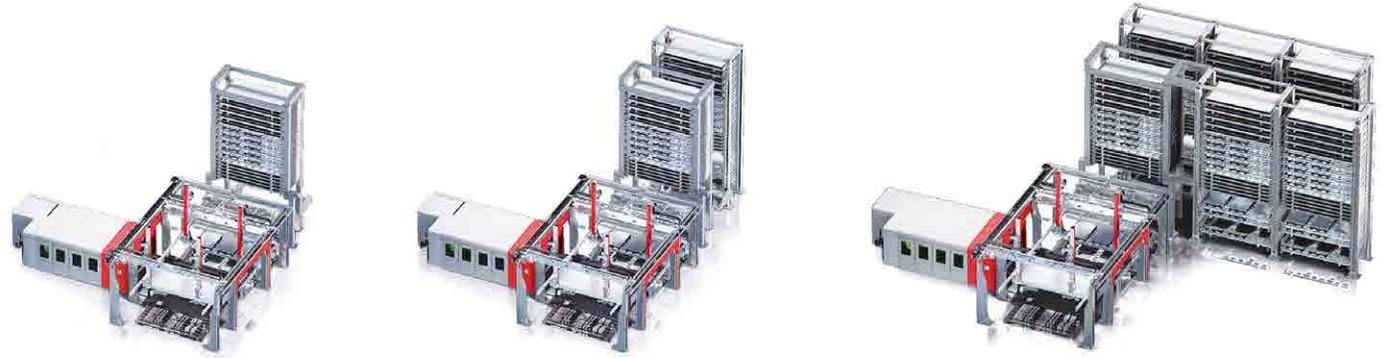
Vacuum cups lift/lower speed: 0.1475 m/sec

ASTES4SortPro



Specifications	3015	4020
Min. Sorting Time for up to 4 Parts	14 s (3.5 s per Part)	16 s (4 s per Part)
No. Sorting Heads	4	
No. Sorting Portals	2	
Max. Single Part Weight (Vacuum/Magnet Tools)	60/400 kg	
Min. Single Part Size	130 x 60 mm (Smaller Parts Require Clustering)	
No. of Revolver Tools per Head	5	
No. of Out-of-Center Tools per Head (Option)	2	
No. of Vacuum / Magnet Tools per Head	5/2	
Max. Part Rotation	360°	

ASTES4StoreGo



Specifications	Single-Tower Storage System		Double-Tower Storage System		Multi-Tower Storage System	
	3015	4020	3015	4020	3015	4020
No. of Storage Towers	1		2		upon request	
Min. Height (Standard)	4,920 mm	5,010 mm	4,920 mm	5,010 mm	upon request	
Max. Height (Standard)	8,040 mm	7,890 mm	8,040 mm	7,890 mm	upon request	
No. of Slots at Min. Height	11		28		upon request	
No. of Slots at Max. Height	27		60		upon request	
Max. Capacity per Slot	3,000 kg	3,000 kg (5,000 kg*)	3,000 kg	3,000 kg (5,000 kg*)	3,000 kg	3,000 kg (5,000 kg*)
Max. Loading Height for Raw Material	85 mm	50 mm (80 mm*)	85 mm	50 mm (80 mm*)	85 mm	50 mm (80 mm*)
Max. Stacking Height for Cut Sheets/Skeleton	150 mm	120 mm (140 mm*)	150 mm	120 mm (140 mm*)	150 mm	120 mm (140 mm*)
Max. Wooden Pallet Height for Cut Sheets/Skeleton	100 mm		100 mm		100 mm	
Required no. Slots for Raw Material	1		1		1	
Required no. Slots for Cut Sheets/Skeleton	2		2		2	

* Option

Certifications



swiss made software



ASTES4 SA
Via Passeggiata 3A / 6828 Balerna / Switzerland
Tel. +41 91 6829320 / sales@astes4.ch / www.astes4.ch



MITSUBISHI ELECTRIC EUROPE B.V.
Mechatronics Machinery / Mitsubishi-Electric-Platz 1 / 40882 Ratingen / Germany
Tel. +49 (0) 2102 486-0 / laser.sales@mee.com / www.mitsubishi-laser.de