UNILINE: In-Line Storage System for Effective Material Supply to Processing Machines and for Commissioning.

Saws. Storage. And More. KASTO®

UNILINE: Storage Systems with Highest Flexibility for Flat and Bulky Products.

Dynamic storage buffer.

UNILINE Storage Systems from KASTO stand for flexibility when designing automatic storage systems for different purposes.

Typical applications are:
- Sheet metal storage systems for commissioning in steel distribution
- Interface to sheet metal processing machines for virtually unmanned operation
- Logistics center to store crates, tools and other materials to interface different work areas in manufacturing facilities

Many installation possibilities.

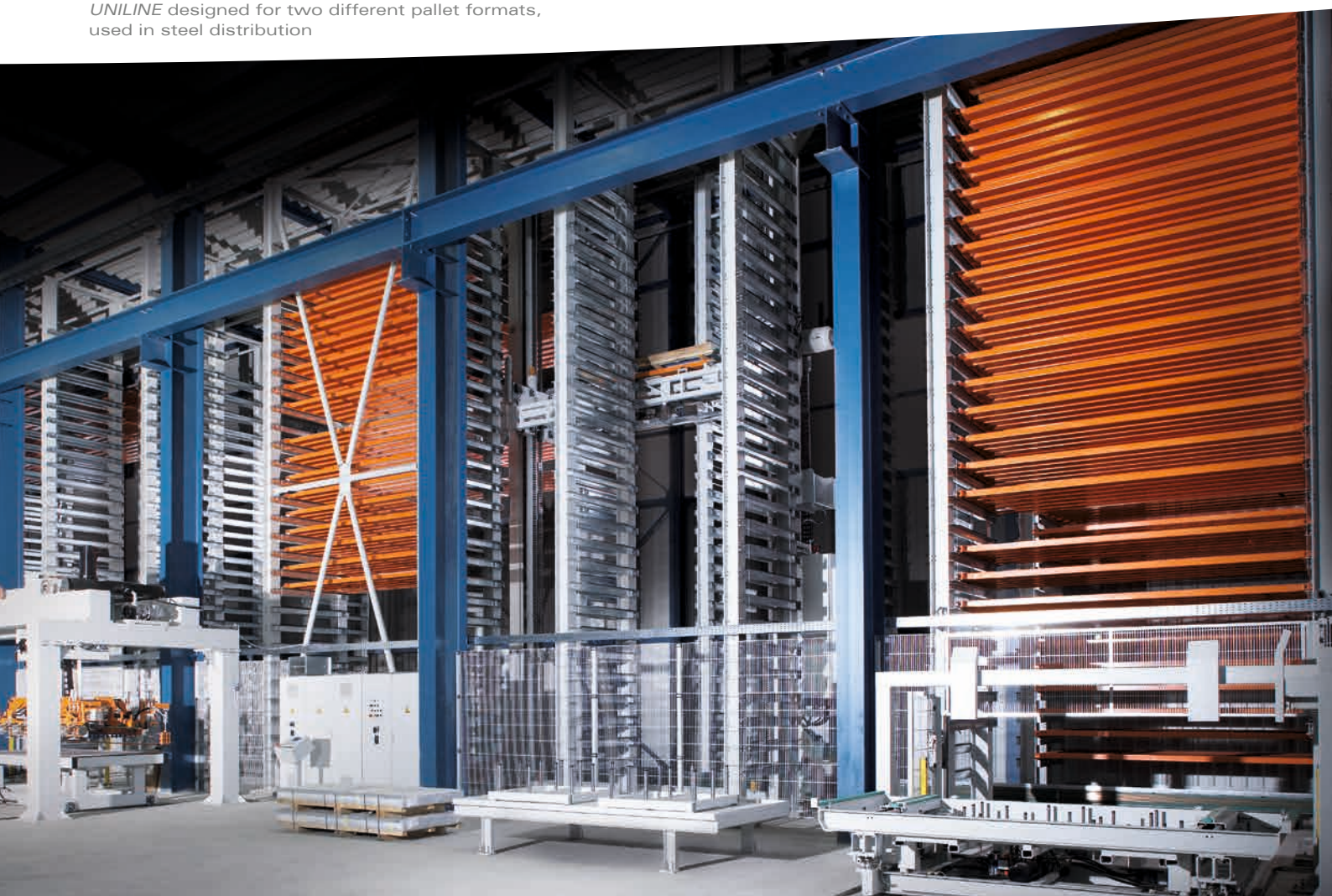
This storage system can be installed as a stand-alone unit within existing buildings. Upon request, the steel structure can be designed as a rack-supported silo construction with wall and roof enclosure.

The KASTO storage system *UNILINE*, designed as a single or double-sided system, can accept system pallets with loads up to 11,000 lbs (5,000 kg per) location.

System for all sheet sizes.

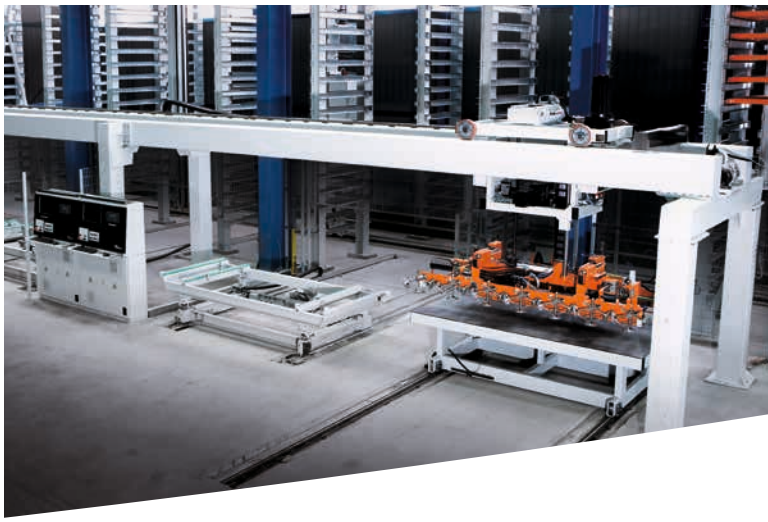
The *UNILINE* offers different system pallets for flat and bulky storage goods where different formats can be combined.

UNILINE designed for two different pallet formats, used in steel distribution



Operating gantry crane with proven chain hoist.

Unpacking table with movable frame and storing/removal station.



Automatic commissioning station with vacuum sheet lifter.

In-Line Storage System for Sheets in Steel Distribution.

Use of building height as efficiency factor.

The *UNILINE* Storage System from KASTO guarantees optimum building height utilization. Due to the narrow system design, the in-line storage system fits optimally in buildings with limited bay width.

The compact design of the operating gantry crane further improves the optimal utilization of space.

Space-saving, fast and cost-effective.

According to the "Material to Operator" principle, the *UNILINE* storage system brings the requested storage goods quickly to the transfer stations.

An extensive range of storage and removal stations guarantees efficient and ergonomic workflow. Optional automation components from the modular KASTO system program further simplify material handling.

Reliable, proven components for any application:

- Package conveyors, optionally with plastic lining
- Commissioning units with vacuum or magnet lifting unit, designed as linear or jib gantry
- Integration of paper extractor and shredder systems
- Integration of wrapping and packing systems
- Integration of labeling systems

KASTO *UNILINE* as a Production Logistics System.

Fully flexible.

The standard KASTO system pallet allows storing of different goods:
Flat sheets, cut-pieces, semi-finished parts, laser nesting as well as bulky components such as tools and boxes can all be stored and handled in the *UNILINE* storage system.

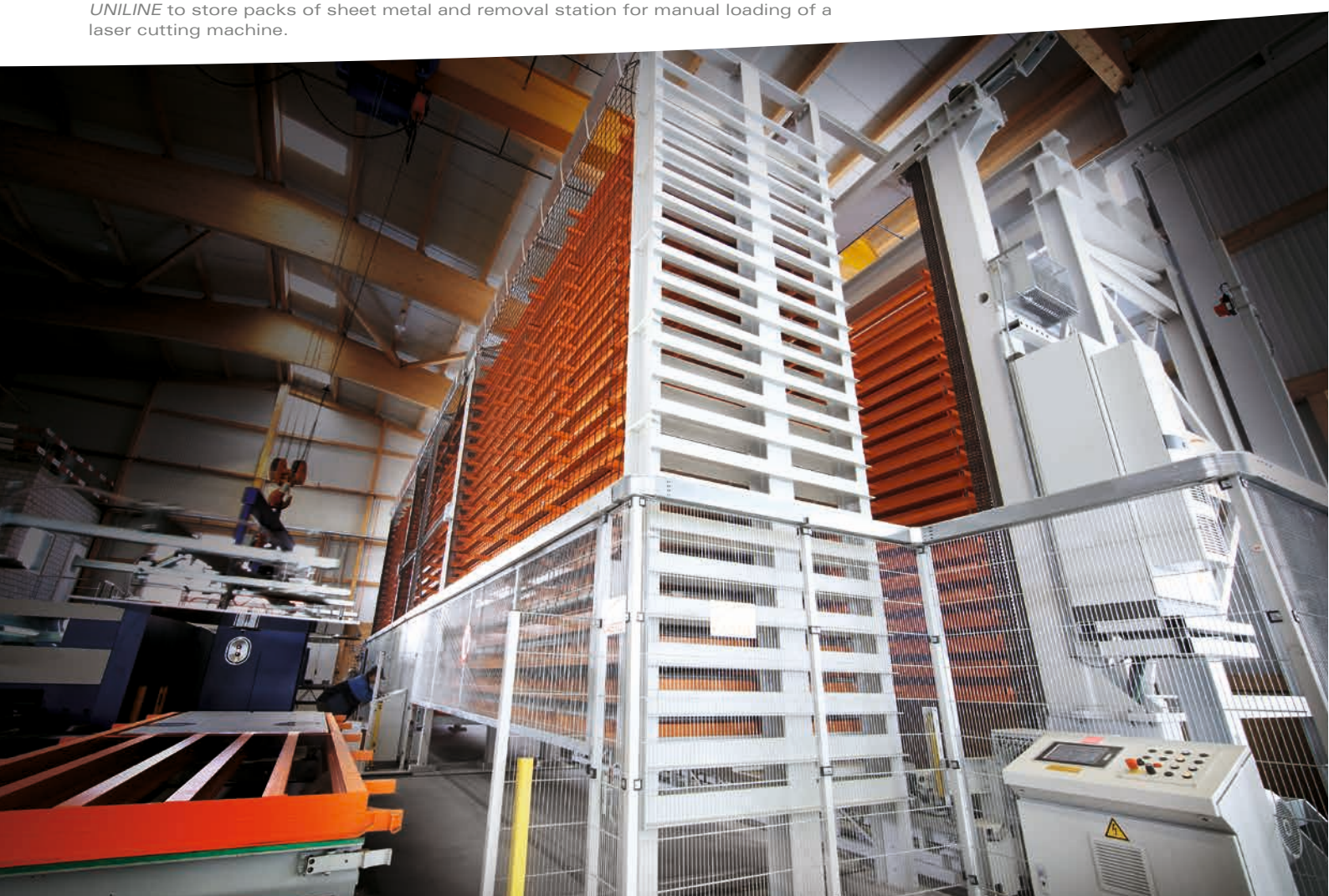
A standard height grid in the shelf block together with the dynamic shelf height management, automatically adapts the available stor-age space each time to required circumstances.

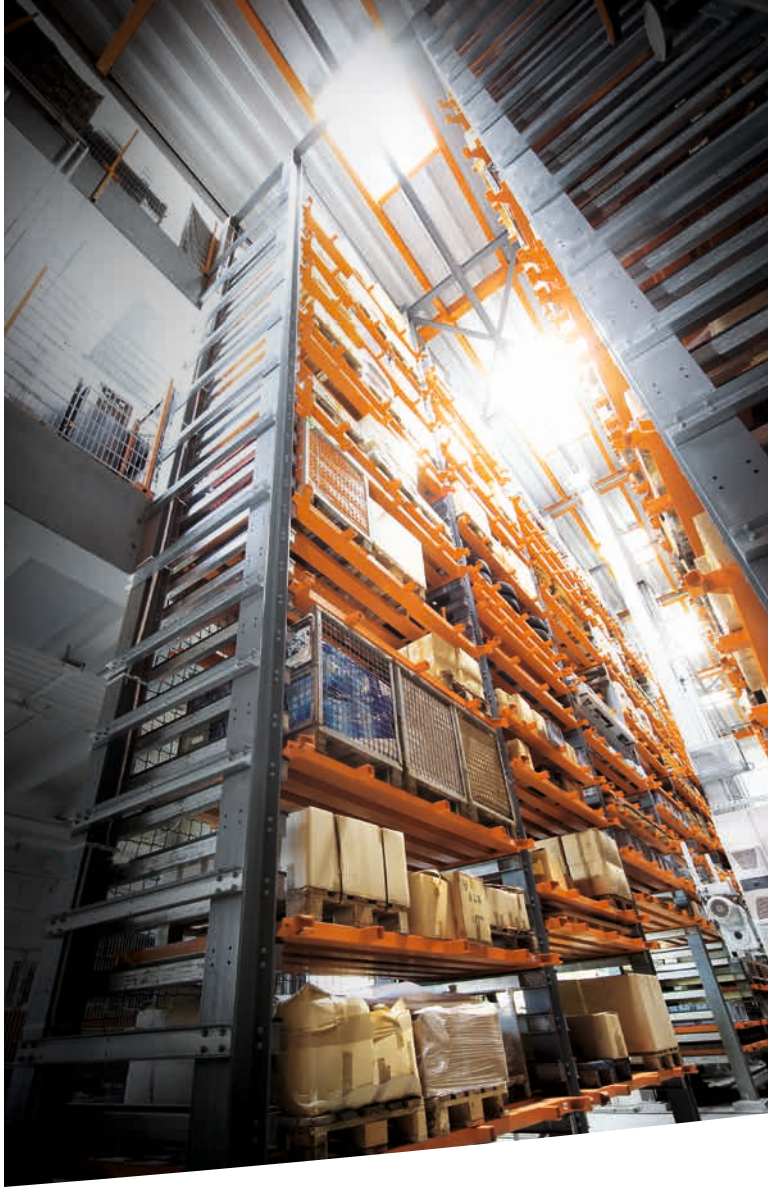
Dynamic and high availability.

The operating gantry crane of the *UNILINE* is the heart of the system. Equipped with highly dynamic drives, it allows fast, direct access to the stored material. High-quality components together with our experience with more than 1.700 installed storage systems guarantee a high system availability.

Together with the KASTO*logic* inventory control computer, a scale on the operating gantry crane (optional) allows a permanent inventory control and the actual overview of all stored materials.

UNILINE to store packs of sheet metal and removal station for manual loading of a laser cutting machine.





UNILINE with storage and removal station on three floors.

Storage and removal station designed for two different pallet sizes to universally store different products.

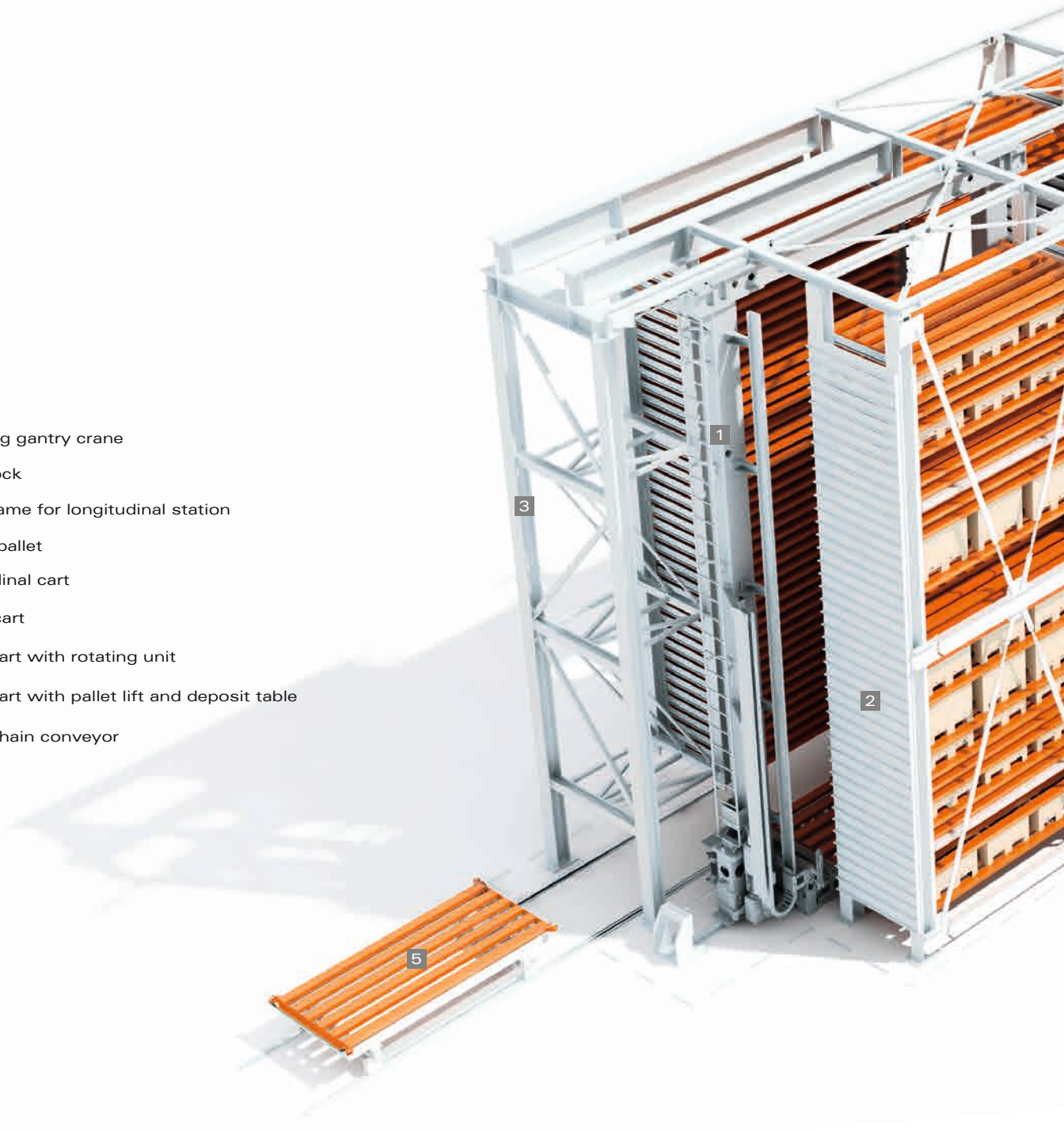
Multiple Possibilities for Distribution and Production.

All advantages at once:

- Highest storage density due to effective space utilization for smallest floor-space use
- Fast pallet changeover times due to fully automatic operation ensure short processing times with reduced personnel
- Clear storage management ensures better safety and easier planning
- Optimum inventory control due to perpetual inventory management
- Fully automatic handling for fast commissioning of all types of orders in metal distribution
- Fully automatic handling at sheet metal processing facilities for high machine utilization and reduced personnel at the same time
- Modular system design allows quick and cost effective adaptations to changing capacity needs or changing processing machines

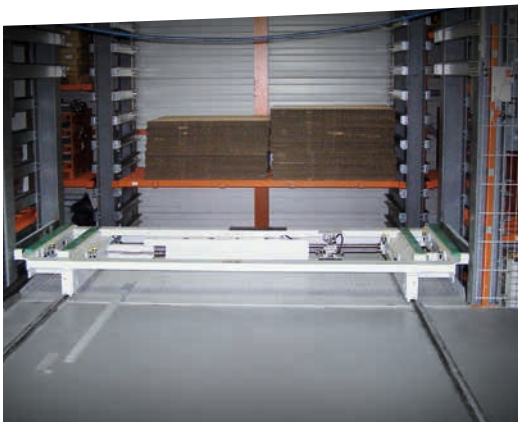
UNILINE - Intelligent Station Solutions for all Applications.

1. Operating gantry crane
2. Shelf block
3. Portal frame for longitudinal station
4. System pallet
5. Longitudinal cart
6. Double cart
7. Lateral cart with rotating unit
8. Lateral cart with pallet lift and deposit table
9. Lateral chain conveyor

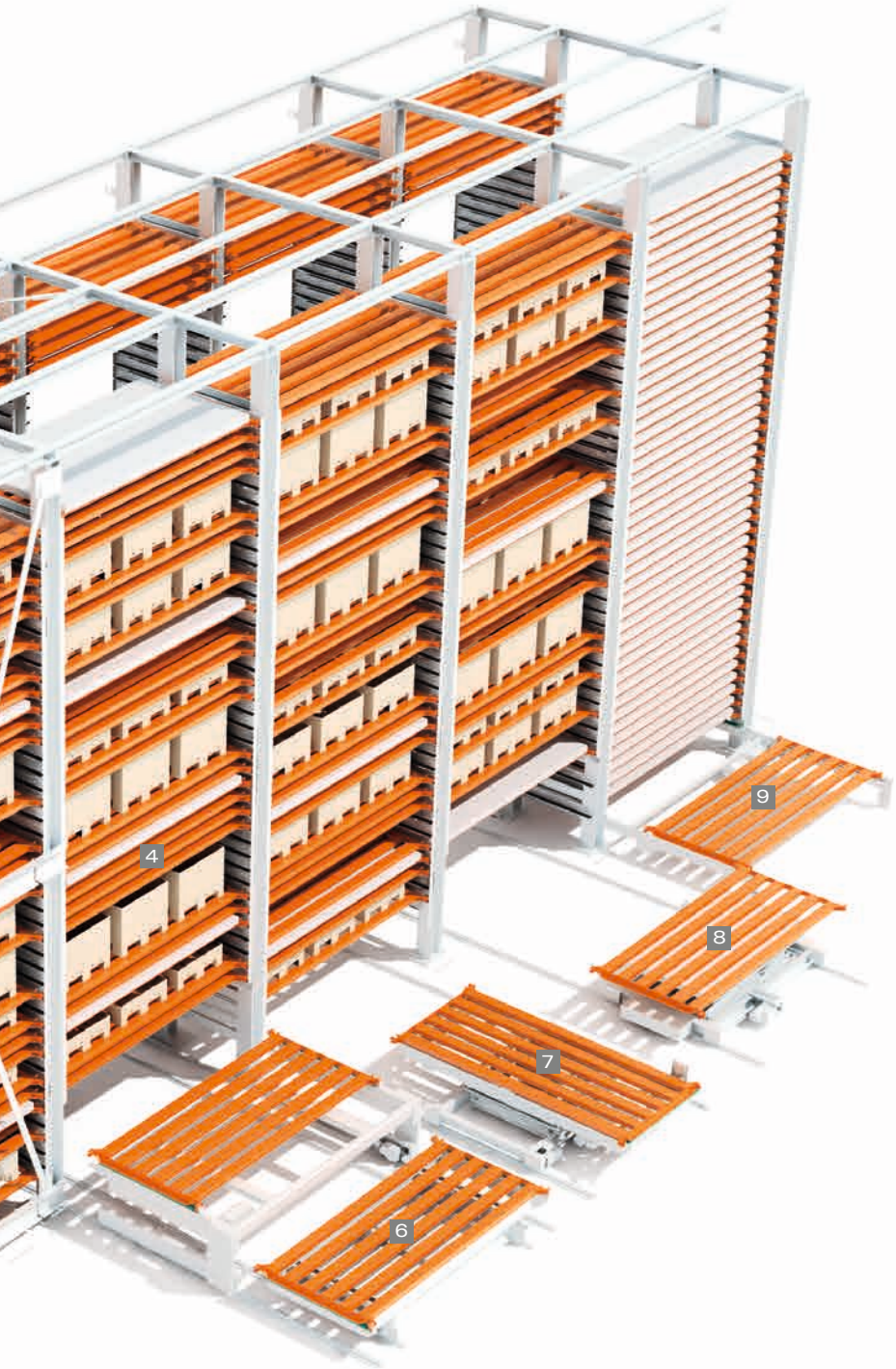


Lateral cart in upper level (inside).

Lateral cart in upper level (outside).



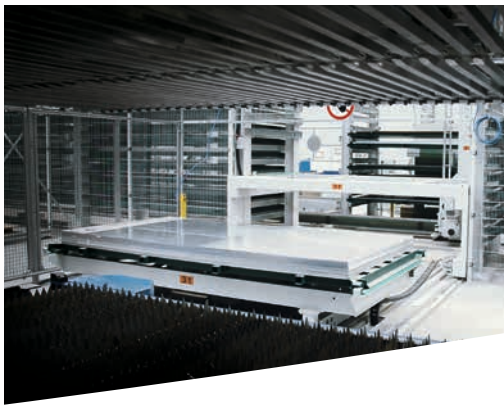
Longitudinal cart.



Unpack table.

Loading and unloading station to interface a punching laser combination machine.

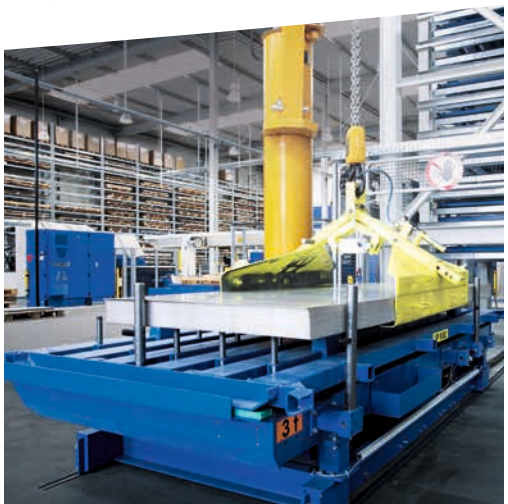
Double cart to load and unload laser cutting machines.



Rotary station to load a punching machine.

Lateral cart with pallet lift and deposit table.

Longitudinal cart with pins.



Fully Automatic Manufacturing Facility.

Storage system as automation component.

The modular KASTO system program introduces different station designs to automatically interface different production machines.

- Loading cart with fanning magnets
- Unloading cart with positioning axis
- Double cart in upper/lower design
- Single sheet handling via linear or jib gantry

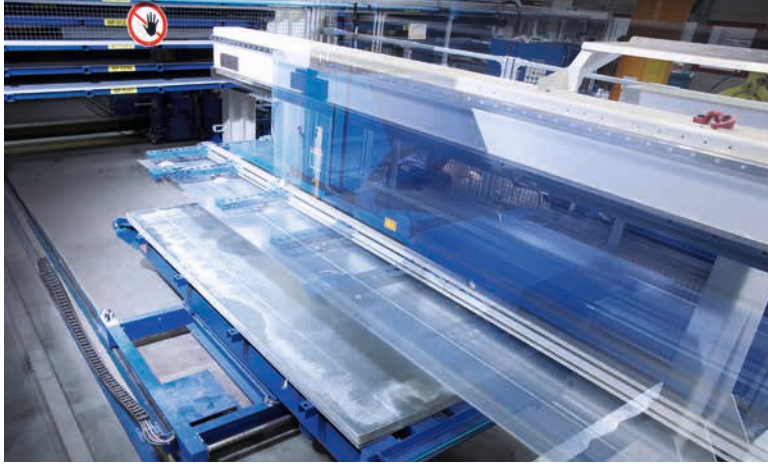
Open control concept.

Material and data flow are either controlled from the fully automatic storage control *EasyControl*, based on an HD-free industrial PC with color display and touch-screen operation or from the proven KASTO inventory control computer KASTO*logic*.

The design of the inventory control computer software is open. Using a standard interface, ERP and PPS systems can be integrated. The open software design guarantees freedom of choice when it comes to integrating different sheet metal processing machines from different manufacturers; it guarantees that the right ones for each process can be linked together.

UNILINE as logistics center in a sheet metal processing facility.

Operating gantry crane in double-sided *UNILINE*.



Automatic interface to punching machine.

Transfer of system pallets to operating gantry crane.

Two deposit tables as manual work stations.

A variety of possibilities for storage and retrieval stations.

Product availability at site of action.

Storage and removal stations can be located on all four sides of the in-line storage system *UNILINE* as well as on different height levels. This design allows the system to be installed in a pit and/or have the in-out stations on different floors.

Automatic and ergonomic.

The modular KASTO system program has many different station designs, which can be combined, depending on requirement, for example

- Longitudinal and lateral cart
- Lateral chain conveyor
- Raising pins (to lift the sheets from the pallet) and reference corner stops for storage stations
- Pallet lift units and deposit location to deliver several pallets to one station
- Tandem or quick-change stations
- Lateral pallet conveyor units to be mounted on station carts

UNILINE: Total Flexibility with Dynamic Shelf Height Management.

Automatic in-line storage system according to "Material to Operator" principle.

Automatic in-line storage systems from KASTO are equipped with the control system *EasyControl* or the inventory control system KASTO*logic*. They control all processes of the operating gantry crane (OGC) and the stations.
The KASTO*logic* is required for "dynamic shelf height management" software. To use this software, the shelf block is designed with a standard, uniform shelf height grid. The OGC has (aside from standard safety sensors) additional sensors to check the actual available height within the grid.

Storage sequence of a system pallet with triple loading height using the dynamic shelf height management:

- Station is moved to transfer position to operating gantry crane. When fence opening is passed, the maximum admissible loading height in storage system is checked
- When pallet is pulled from the station onto the OGC, the actual height of the pallet is established (here: triple)
- The KASTO*logic* searches for the nearest area within the storage system where three empty storage locations on top of each other are available
- OGC moves pallet to the lowest of the three empty storage locations. The software automatically blocks the two pallet locations above the one that was just occupied
- Before system pallet is pushed in, the lowest storage location is checked by appropriate sensors for overload and all three storage locations are checked for loading status

Principle of dynamic shelf height management in the *UNILINE*.

Technical Data		Medium format	Large format	Maxi format
Max. loading capacity per location	t (lbs)	3 (6,600)	3 (6,600)	5 (11,000)
Max. system height	m (feet)	25 (82)	25 (82)	25 (82)
Usable storage length	mm (feet)	2.500 (8,200)	3.000 (9,840)	4.000 (13,120)
Usable storage width	mm (feet)	1.250 (4,100)	1.500 (4,920)	2.000 (6,560)
Usable storage height	mm (feet)	60–1.200 (196.8–3,936)	60–1.200 (196.8–3,936)	60–1.200 (196.8–3,936)
Lift speed	m/min (ft/min)	16–40 (52.5–131.2)	16–40 (52.5–131.2)	16–24 (52.5–78.7)
Longitudinal travel speed	m/min (ft/min)	60–200 (196.8-656.0)	60–200 (196.8-656.0)	60–150 (196.8-492.0)
Pulling speed	m/min (ft/min)	25 (82)	25 (82)	25 (82)
OGC double cycles / hour		20–30	20–30	20–28
Rack-supporting		Option	Option	Option
Interface to HOST computer		Option	Option	Option
Fully integrated production systems		yes	yes	yes

Special dimensions upon request

Service is the key: High Availability with KASTO.

Safe storage logistics.

The long-lasting efficiency and well-known reliability of KASTO-storage systems are not a coincidence but result of a well thought-out service concept.

Consulting, Hotline.

Specialists in control and mechanics are available for consultation in our service center.

Remote diagnosis.

KASTO tele service allows a direct online connection to a system. This shortens reaction and down times, increases and secures productivity, reduces service costs and minimizes repair hours.

On-site service.

KASTO provides professional on site assistance by our specially trained and qualified technicians guaranteeing short reaction times and minimizing travel costs.

Spare parts supply.

We provide immediate deliveries per direct courier. If the order is received by 4 pm, we will ship same day. Since we have more than 35,000 different spare parts in stock, we are able to ship almost all parts immediately.

Service contract.

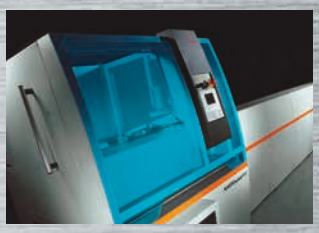
A KASTO-service contract ensures regular inspections of the system resulting in highest availability and guarantees continuous online diagnosis as well as access to a service technician within the shortest time!

The Complete KASTO Program: Economic Sawing and Storing of Metal.

Expertise right down the line.

For over 170 years, KASTO has been recognized for quality and innovation, and offers a complete range of metal cutting saws, as well as storage and retrieval systems. Thanks to an ongoing development of new technologies and constant optimization process of machine concepts, KASTO has achieved the status of market leader in sawing and storing of metals.

KASTO's Sawing Machines.



From the basic hacksaw to the high-performance automatic bandsaw capable of economically processing bar stock, blocks or plates of all grades, KASTO has the best solution for every challenge: Universal bandsaws and circular saws for light and medium applications, hacksaws employing the pushing-arching-cutting motion originated by KASTO, and production bandsaws and circular saws designed to cut medium to difficult materials.

KASTO's Storage Systems.



Rapid access, optimum space utilization, clear and accurate view of stored inventory – KASTO storage systems' excelling features. And there's more! Fully automatic sawing centers, cantilever bar and sheet metal storage systems or cassette storage and commissioning systems, combined sawing and storage systems with integrated inventory control computers. As a one-source supplier, KASTO delivers the complete system, both hardware and software.

KASTO's Service.



KASTO's comprehensive service program includes everything: from commissioning and training to maintenance support, service contracts, readily available spare parts and on-site service. KASTO's service incorporates individual consulting and immediate support with well-qualified teleservice. And of course, KASTO service is available worldwide.

2882612 / 10.2014 / pg / P&O. We reserve the right to make technical changes.

Your KASTO Partner

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