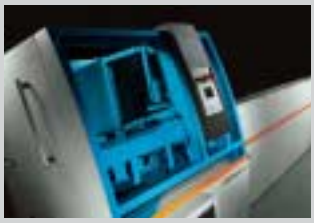
The Complete KASTO Program: Economic Sawing and Storing of Metal

Expertise right down the line.

For over 150 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 storage systems, 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.

Your KASTO Partner

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KASTO®

KASTO®

Bar Storage Systems and Sawing Centers for effective material flow in industry and distribution

Modern Bar Storage Technology: The foundation for profitability.

Significantly improves efficiency in all lines of business!

How do you increase today the efficiency of storing and removing processes? With the KASTO-System Program! KASTO equipment is strategically engineered to provide shorter access times, shorter delivery times and higher readiness for shipment - and all this with fewer personnel. Faster access, better space utilization and a clear storage overview characterize all products of the KASTO-System Program. Whether stacking cradle system, sawing center, commissioning or production storage, whether bridge type storage systems or Honeycomb design: KASTO's customers know their exact inventories and profit from reduced capital commitment because of minimized storage quantities. KASTO offers the complete system as a one-source supplier and also ensures the best system service available.

KASTO Storage Systems use the third dimension - The full height of the storage building!

Generally, this frees valuable production space. Today's trend towards smaller order sizes and "just-in-time" delivery has led to increased costs per order. Fortunately, this development can be counteracted with effective storage and commissioning systems. Additionally, the accident potential is greatly reduced because automated material handling systems are safer than working with traditional, cumbersome forklifts and cranes.

Use KASTO's competence. Analysis and Planning:

KASTO intensely analyzes each situation from the start and then finds the optimum application-specific solution utilizing the wide spectrum of KASTO products. Including industry-specific solutions ! Custom-tailored components are design/engineered for an efficient material flow. Where needed, a system simulation gives additional assurance for finding the best possible solution. This is, for example, how KASTO calculates the optimum cassette and storage sizes. Also, part of the planning phase are the necessary cycle times or sawing capacities for a smooth material flow. If desired, KASTO takes care of the entire project from consulting to engineering, assembly (including foundation works and wall cladding) up to run-off and turnkey completion.

The deciding factor: "Availability". Guaranteed by KASTO Service.

A thought-out service concept ensures continuous performance and reliability of all products of the KASTO System Program. Problems are addressed quickly and efficiently by phone, by fastest possible spare parts delivery or by especially trained technicians. If needed, within hours!
Abroad, spare parts and well-trained service technicians are available from our sales partners.

KASTO solves storage problems.

More economic use of storage space.

The more accurate a storage system fits the need, the more economically it performs. This is why KASTO offers a wide variety of different, customized storage systems, which can be adapted to various architectural requirements. The spectrum goes from an uncomplicated stacking cradle system to the fully automated storage & retrieval system interfaced with the customer's IT system. Many storage systems can be designed as self-supporting structures with wall siding and roof.

UNIBLOC: Stacking Cradle System with minimal space requirements. For small to medium handling quantities.

UNIPORTAL: Cassette Storage System with excellent space utilization. To handle small and medium amounts of material.

UNITOWER: Compact Cassette Storage System for bar stock, boxes and pallets.

UNITOP: Bar Storage System with a gantry crane moving on top. Due to fast access, also ideal as commissioning system.

KASTO*center:* Combined Storage-Sawing-System. Especially universal with additional cassettes.

UNICOMPACT: Cost-effective Honeycomb Bar Storage System for medium to large storage volumes.

UNIGRIP: The ideal Honeycomb Bar Storage System for medium storage quantities.

Order filling station with chain conveyor and a commissioning device.

	UNIBLOC	***UNITOWER***	***UNIPORTAL***	***UNITOP***	***UNIGRIP***	***UNICOMPACT***	**KASTO*center***
	Stacking Cradle System	Tower System	Gantry System	Overhead System	Honeycomb System	Honeycomb System	Sawing Center
Loading per storage location	6/9 t (13,200/ 19,800 lbs)	1-3 t (2,200- 6,600 lbs)	1,2 t (2,640 lbs)	1-5 t (2,200- 11,000 lbs)	1-3 t (2,200- 6,600 lbs)	1-8 t (2,200- 17,600 lbs)	0,5-5 t (1,100- 11,000 lbs)
Economic storage size	from 10 locations	10-100 locations	40-400 locations	80-1500 locations	from 400 locations	from 500 locations	from 50 locations
Economic storage length	3-24 m (9.8'-78.7')	3-12 m (9.8'-39.4')	3-8 m (9.8'-26.2')	3-12 m (9.8'-39.4')	3-8 m (9.8'-26.2')	3-8 m (9.8'-26.2')	3-12 m (9.8'-39.4')
Economic system height	up to 5 m (16.4')	4-20 m (13'-65.6')	3-8 m (9.8'-26.2')	4-20 m (13.1'-65.6')	4-15 m (13'-49.2')	4-26 m (13.1'-85.3')	3-10 m (9.8'-39.4')
Rack supported design possible	NO	YES	NO	YES	(YES)	YES	NO
Number of picks per h (per OGC)	1 to 20	1 to 30	1 to 24	10 to 32	10 to 40	20 to 60	5 to 20
Partially integrated saw possible	YES	YES	YES	YES	YES	YES	YES
Fully integrated saw possible	NO	(YES)	NO	YES	YES	YES	YES

Simple but effective: The Stacking Cradle System *UNIBLOC.*

Ideally suited for bar stock, sheet metal and other bulky material.

The Stacking Cradle System *UNIBLOC* is the sensible solution where automatic bar storage systems are not economically feasible. Often, small storage volumes and small to medium turnover numbers only require a transport device where easy access, small footprint and uncomplicated operation are most important. For the conventional restacking operation with *UNIBLOC,* only two-hoist, possibly swayfree cranes are needed. The best suited material lengths for the Stacking Cradle System *UNIBLOC* are between 3 and 24 m (9.8' and 78.7').

Restacking with manual single- and multiple lift spreader beams *UNIBLOC E* and *UNIBLOC U.*

With *UNIBLOC E,* KASTO offers a manual single-lift spreader beam with tested safety chains for the KASTO transport cradle *UNIVERSAL.* The manual multiple lift spreader beam *UNIBLOC U* allows multiple restacking of up to three layers simultaneously and can be easily automated. Up to three layers of stacking cradles with a usable height of 400 mm (15.7") each can be transported together via the mechanical gripper function. Only the crane's up/down movement is required to lock/unlock the spreader beam with the cradles.

Ideal for effortless multiple stacking : *UNIBLOC U.*

Fast and safe multiple stacking with *UNIBLOC A*.

The centering aide for the Stacking Cradle System *UNIBLOC* simplifies the accurate aligning of the spreader beams.

The *UNIVERSAL* transport cradle can be transported via single lift and multiple lift spreader beams.

The *AUTOMATIK* transport cradle is optimized for multiple lift and automatic spreader beam.

To access individual bars: Magnet Spreader Beam *UNIBLOC F.*

With the KASTO Magnet Spreader Beam *UNIBLOC F,* an electro magnet, integrated into the spreader beam, allows direct access to individual bars without changing the spreader beam. This *UNIBLOC* variety also has a device for multiple restacking. Retractable grippers are offered for material removal from the side with cradles next to each other.

Automatic multiple restacking with the Spreader Beam *UNIBLOC A.*

The Stacking Cradle System *UNIBLOC A,* together with a floor mounted KASTO-Operating Gantry Crane or an automatic swayfree crane, further speeds up the restoring process. Up to three cradles stacked on top of each other can be transported simultaneously. The KASTO-Inventory Control Computer manages material and location and controls storing, restacking or retrieval orders.

The compact solution: *UNITOWER* Cassette Storage System.

UNITOWER: Large volume, minimal floor space

Applications for a *UNITOWER* Storage System include buffer storage in all types of manufacturing; to store small quantities in steel and other service centers, job shops, window manufacturers and others. The Compact Cassette Storage System *UNITOWER* optimizes the material flow - and not only for bar stock! Because the *UNITOWER* can be used for bar stock or profiles as well as for pallets or boxes, which - in turn - can be loaded with all different kinds of goods. This system also shows its strength as an island solution or when using customer containers .

Cost and tax advantages.

Pretensioned, virtually maintenance-free precision roller chains are used for the *UNITOWER* Compact Cassette Storage System. They are not only more reliable than steel cables; these chains also help lower maintenance costs. The *UNITOWER* uses power more effectively, because unlike the paternoster systems, only the required cassette is moved and not the entire storage volume. The rack supported building design of the *UNITOWER* (and many other KASTO-Systems) also saves space and taxes: If the steel structure is cladded with sheet metal or concrete plates and is weatherproof, it can be depreciated more favorably as one unit.

UNITOWER E and *UNITOWER F:*
Substantially increased storage space with a small footprint, at reasonable costs.

Robust and reliable: The chain hoist of the *UNITOWER* loading traverse.

For easy loading and unloading with slings, the *UNITOWER* cassettes are equipped with distance studs.

Operator-friendly control, engineered to interface with customer's own EDP-system.

Move-out in longitudinal direction: Loading traverse deposits cassette onto a roller conveyor.

Lateral stations can be built at floor height or in any other desired height.

The *UNITOWER* can be connected to a saw via roller conveyors.

UNITOWER E 1.5:
Up to 1.5 t (3,300 lbs.) per cassette:

Easy operation and fast cassettes deliveries for loads up to 1.5 t (3,300 lbs.) per cassette. The standard design of the *UNITOWER E 1.5* offers a storage control with location preselection. It can be extended to control inventory with up to 12 different materials per cassette. Up to 59 cassettes can be stored in the double tower.

UNITOWER F 3.0:
For loads up to 3 t (6,600 lbs.):

For loads up to 3 t (6,600 lbs.) per cassette and a total capacity of up to 300 t (660,000 lbs.): By installing several in/out stations, time-parallel and independent working is possible with the double tower *UNITOWER F 3.0* The PLC control allows an inventory management by length, weight or by number of pieces with material identification numbers. A connection for the KASTO-Inventory Control Computer is available.

Automatic Bar Storage System *UNIPORTAL*

Gantry design for more flexibility.

The *UNIPORTAL* shows versatility: The gantry design allows the move-out of the cassettes in cassette direction in any aisle. Moreover, outfeed stations are available at the front of the system. The material loading and unloading stations can even be designed as moving stations. The *UNIPORTAL* allows fast access, is durable and reliable. Due to its modular design, the *UNIPORTAL* can be extended with no problems in the future. Only additional shelf blocks are needed. The crane rails will be extended, permitting the gantry crane to be used as is.

Ideal for the smaller to medium-sized business

The many possibilities of a station design make the *UNIPORTAL* an ideal solution for individual material flow systems in a smaller to medium-sized business; as a buffer system near the manufacturing area, for example to supply lathes or to store aluminum profiles. The *UNIPORTAL* takes care of the material supply to an automatic saw, fast and economically.

Longitudinal stations are possible at each shelf block with the storage system *UNIPORTAL.*

A flexible system is possible with a gantry design.

With the storage system *UNIPORTAL,* in/out stations can be integrated in front and longitudinally - also with safety buffer.

KASTO can deliver carts for the inner-company transport of customer cassettes.

Facts of the KASTO Cassette System *UNIPORTAL*

- Heights from 3 m to 8 m (9.8' to 26.2')
- Storage lengths 3 m to 8 m (9.8' to 26.2')
- Storage volume up to 500 t (1,100,000 lbs.)
- Loads up to 1.2 t/cassette (2,640 lbs.)
- Integrated weighing device (option)
- Use of customer cassettes (option)

UNITOP Bar Storage System - On top of technology:

Ideal space utilization. Safe inventory management.

A unique feature of the *UNITOP* automatic bar storage system is that the operating crane travels on top of the shelf block . The enclosed compact design of the system ensures fast access to self-carrying cassettes. Computer controlled, the *UNITOP* allows a perfect overview of the inventory at any time and is able to deliver the requested bar stock every 120 seconds - depending on system height - to the unloading station. Individually tailored in/out stations ensure the adaptation to the company-specific material flow. With the (optional) integration of an automatic bar separator and a connection to a KASTO CNC-saw, a flexible, profitable manufacturing system is created.

Long-term, reliable, time-tested performance.

The *UNITOP* Bar Storage System is a highly efficient and extremely reliable, fully automated system requiring a minimum of personnel. And this for a long time: The virtually wear-free hoists are equipped with precision roller chains to guarantee an absolute minimum of service.

UNITOP as a 'Rack Supported Building': A building for the price of a machine.

Additional storage space without costly new construction: A roof and walls can be mounted onto the steel rack construction. The height of the *UNITOP* does not depend on the height of the connecting building - and therefore can tower above it. Storing and removing can take place directly at the interface to an already existing production building. This solution might offer some tax advantages.

The chain hoist of the operating crane: Sturdy and durable.

For highest reliability: Lift chain with slag chain safety.

Weighing cells integrated into the cassette pick-up allow automatic inventory updates and constant inventory maintenance (option).

Longitudinal stations can be built-in at floor level or at any other height.

With an additional undercarriage, the *UNITOP* Bar Storage System is a fast commissioning system.

Commissioning stations with minimized cassette change times guarantee continuous production.

Facts of the KASTO Bar Storage System *UNITOP*.

- Heights from 4 to 20 m (13' to 65.5')
- Inventory volume up to 8.000 t (17,600,000 lbs.)
- Loads up to 5 t (11,000 lbs.) per cassette
- Cassette lengths from 3 to 12 m (9.8' to 39.4')
- Rack supported building design possible
- Integrated weighing device (option)
- Interface to KASTO-CNC saws (options) according to material flow
- Fast commissioning system when interfaced with an undercarriage

The *UNIGRIP* Cassette Storage System. Fast, reasonably priced and compact:

Simply effective: Honeycomb-Bar Storage System *UNIGRIP*.

For system heights from 4 - 15 m (13.1' - 49.2') with loads of up to 3 t (6,600 lbs.), the *UNIGRIP* system is the perfect choice. Because it offers everything an efficient storage system needs - and with low investment costs. The close dimensions of the operating gantry crane allow for great space utilization and short cycle times. The cassettes can be modified to individual requirements by adding dividers, lining of the material supports or floor plates.

Your Choice: fully automatic or semi-automatic.

The semi-automatic version *UNIGRIP U* works according to the principle "Operator to the Material" - ideal for commissioning tasks of small to medium storage volumes with slow to medium cycle requirements.

The fully automatic version *UNIGRIP A* brings "Material to Operator". The loading traverse can be equipped with one or two cassette storage locations depending on the necessary cycle times. With two storage locations, the KASTO-random cassette access principle ensures optimized travel, short distances and a minimum of non-productive movements. Result: High performances when storing or removing or when filling orders.

Modern steel structure included: *UNIGRIP*-System.

Durable and virtually wear free: Glide pads made of special plastic material.

Operating gantry crane with pulling device for a reliable cassette transport.

Easy to assemble side walls for unstable or sensitive material.

UNIGRIP-diagonal station: For easy storing and removing at front.

Example: Longitudinal rotary station with four cassette locations and minimized cassette change times.

Facts of the KASTO-Cassette Storage System *UNIGRIP:*

- Heights from 4 to 15 m (13.1 to 49.2')
- Inventory volumes up to 10.000 t (22,000,000 lbs.)
- Loads up to 3 t (6,600 lbs.) per cassette
- Cassette lengths from 3 to 8 m (9.8' to 26.2')
- Rack supported building design possible
- Integrated weighing device (option)
- Comfortable inventory management with KASTO-Inventory Control Computer
- Integrated logistics solution by interface with customer's Host-System
- Interface to KASTO CNC-saws according to material flow (Option)

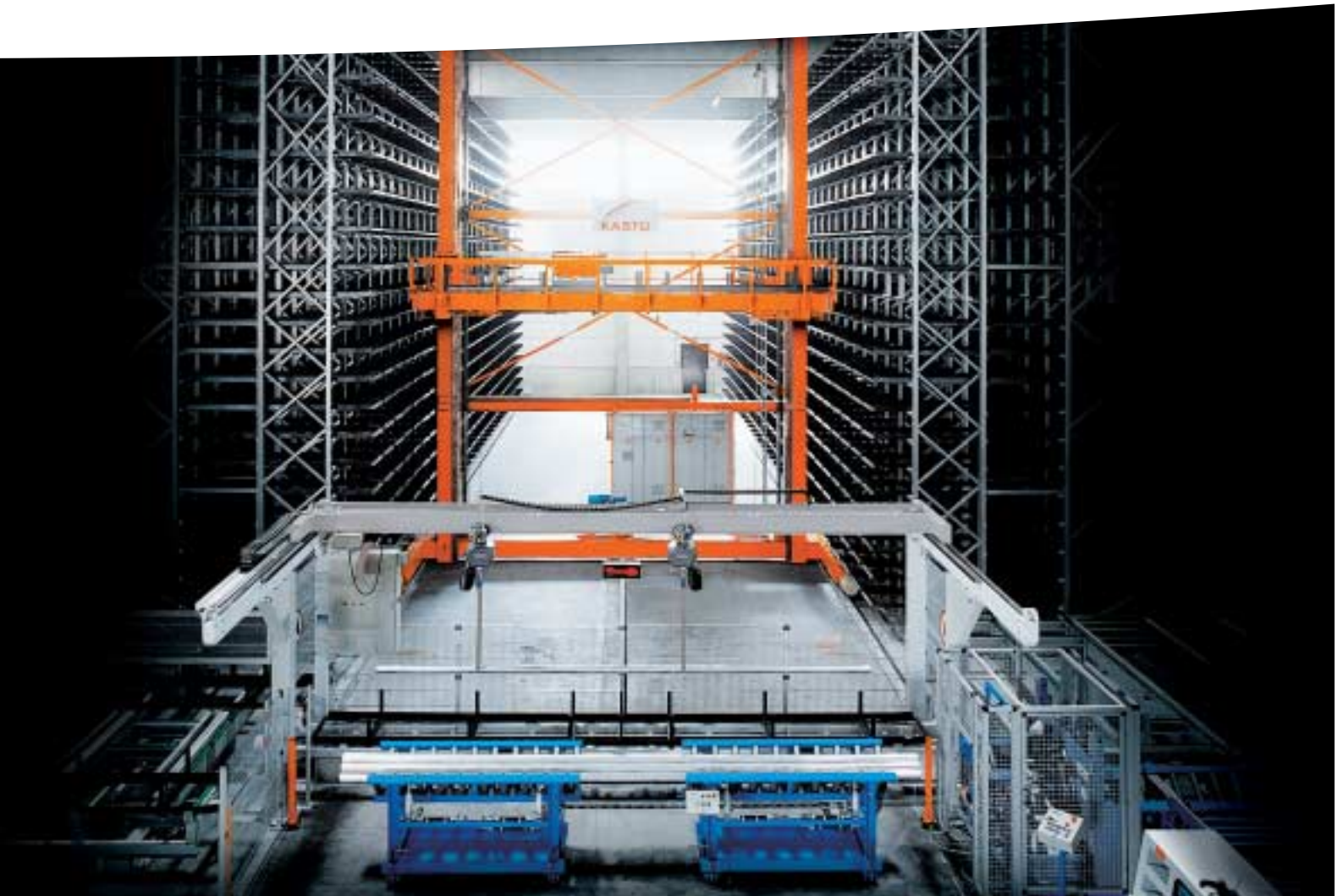
Honeycomb Bar Storage System *UNICOMPACT:* For shortest cycle times.

UNICOMPACT: For large and largest storage requirements.

The Honeycomb Storage System *UNICOMPACT* features excellent space utilization - for new as well as for already existing buildings, i.e. the classic facilities of steel service centers. The close dimensions of the operating gantry crane ensure that as much space as possible is used for material storage. Utilizing the principle "Material to Operator", the *UNICOMPACT* bar storage system delivers the requested material fast to the outfeed stations. An extensive variety of different station designs increases the efficiency for cutting and commissioning of solids or shapes of steel, aluminum, plastic or non-ferrous materials.

The KASTO random-access cassette principle: Higher efficiency due to higher speed:

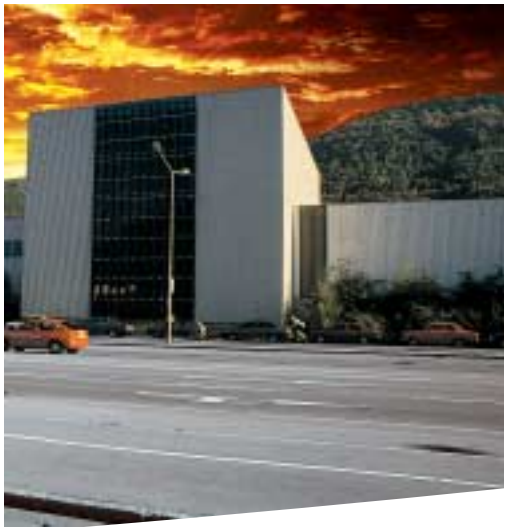
The KASTO random-access cassette principle lowers the number of travel movements and allows, together with fast drives, cycle times of approx. 75 seconds. And this in a system with 2,000 cassettes! The most important components of the random-access principle are two simultaneously working cassette-pulling devices on the mechanical side, and on the control side, a well thought-out program to minimize travel distances and for optimize cycle times.



Durable and virtually maintenance-free: Operating Gantry Crane with chain hoist.

Infrared data transfer and laser axis ensure safe data transfer and interruption- free positioning of the operating gantry crane.

The commissioning unit allows ergonomic and fast material removal.



System heights up to 26 m (85') - no problem with *UNICOMPACT* Honeycomb Storage System

Continuous material flow: Carrousel station with buffer locations.

Magnet crane with pretensioned ropes for fast commissioning and loading onto an outfeed chain conveyor.

Facts of the KASTO-Honeycomb Bar Storage System *UNICOMPACT.*

- Building heights 4-26 m (13'-85.3')
- Cassette for 1-8 t (2,200-17,600 lbs.) usable load
- Inventory volume approx. 500-4.000 cassettes - approx. 500-20.000 t (1,100,000-44,000,000 lbs.) -
- Cassette lengths from 3 to 8 m (9.8'-26.2')
- Building carrying design possible
- Easy operator guidance, i.e. with bar code entry
- Integrated weighing device (option)
- Comfortable inventory management with the KASTO Inventory Control Computer
- Integrated logistic solutions by interfacing to customer's Host-System

Fully automatic, unmanned sawing: The Sawing Centers KASTO*center.*

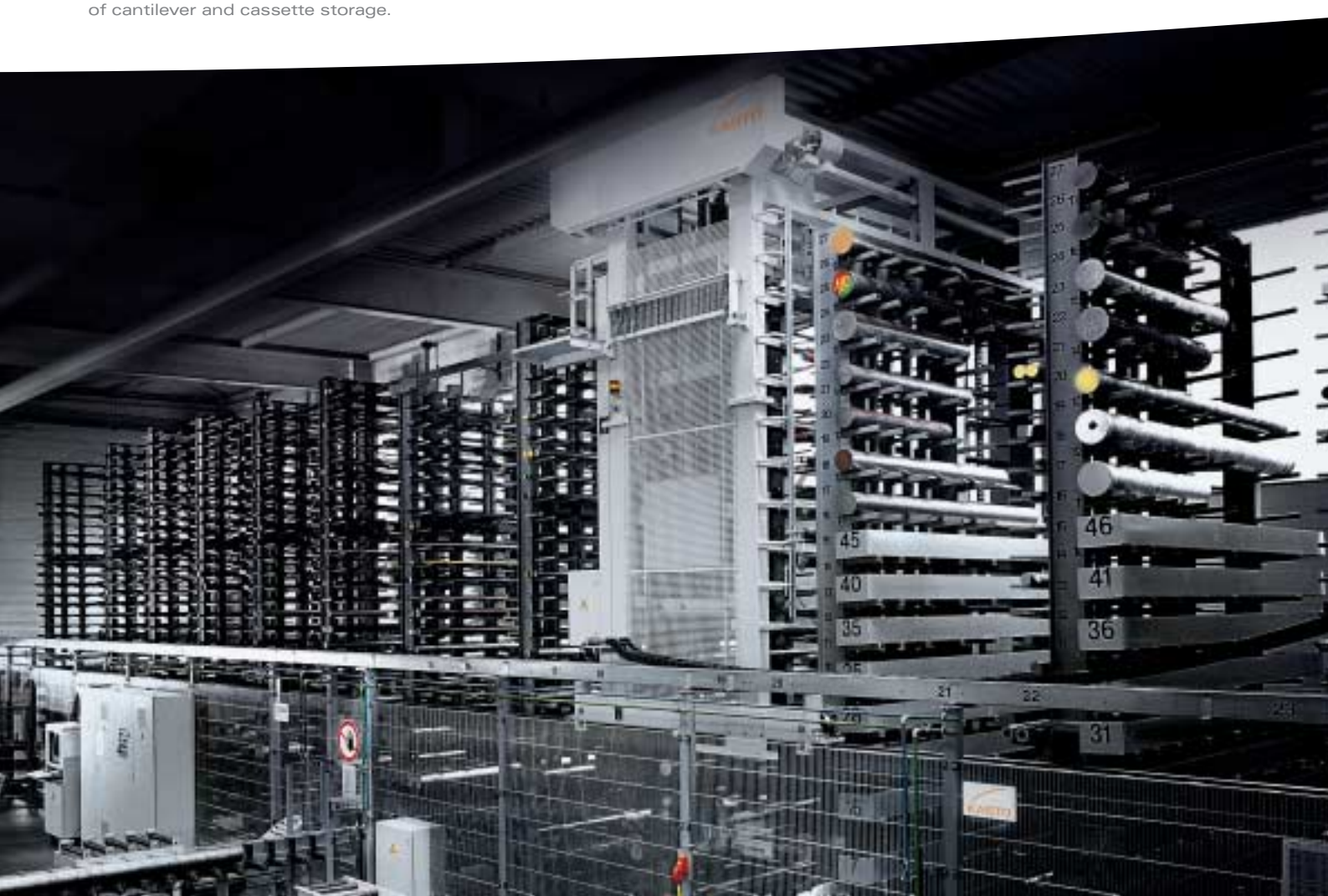
The KASTO Sawing Centers: Computer-controlled efficiency with a fast return of investment.

In a KASTO Sawing Center, computer-controlled operating cranes (moving on top of the shelf block or in gantry design) feed a single bar, fully automatic, to an integrated CNC-saw and automatically restore the remnants. A storage computer keeps inventory up-to-date. KASTO offers this flexible manufacturing system for the sawing department complete with storage system, saw, control and service as a one-source supplier! Result: Highest reliability and minimum idle times due to perfectly fine-tuned individual components. And such a sawing center accomplishes as much as 3 to 7 individual saws!

Combined storage/sawing systems with cantilever arm and cassette storage.

These systems combine the advantages of cantilever and cassette storage for a universal solution and can be used for a large variety of requirements. Individual bars are removed and restored fast and fully automatic from the cantilever storage. The search from the cassette supply is done automatically. Main advantage of the cassette storage: higher storage density and high material turnover.

KASTO Bar Storage and Sawing Systems together combine the advantages of cantilever and cassette storage.



Operating crane in gantry design with maintenance catwalk.

For individual bars and cassettes: KASTO*center* with a combined cassette and cantilever arm storage.

The KASTO loading traverse *VarioPlus* allows to pick up bars that are stored back to back.

The specially designed KASTO loading traverse always removes and transports exactly one bar from the cantilever shelves.

Outfeed roller conveyor to feed saws.

The KASTO quick-change station minimizes idle times when changing bars

Facts of the KASTO*center* Sawing Centers:

- Bar weight up to 2,5 t (5,500 lbs.) each
- Diameter of bars: 20-320 mm (0.79"-12.6")
- Fully automatic handling of bars with 0,45-12 m (1.5'-39.4') length
- Integrated KASTO Band or Circular Saws, optional with carbide blades
- Short chip-to-chip time for bar change
- Duo-systems combine cantilever and cassette storage

Material management and manufacturing process control: KASTO Inventory Control Computer.

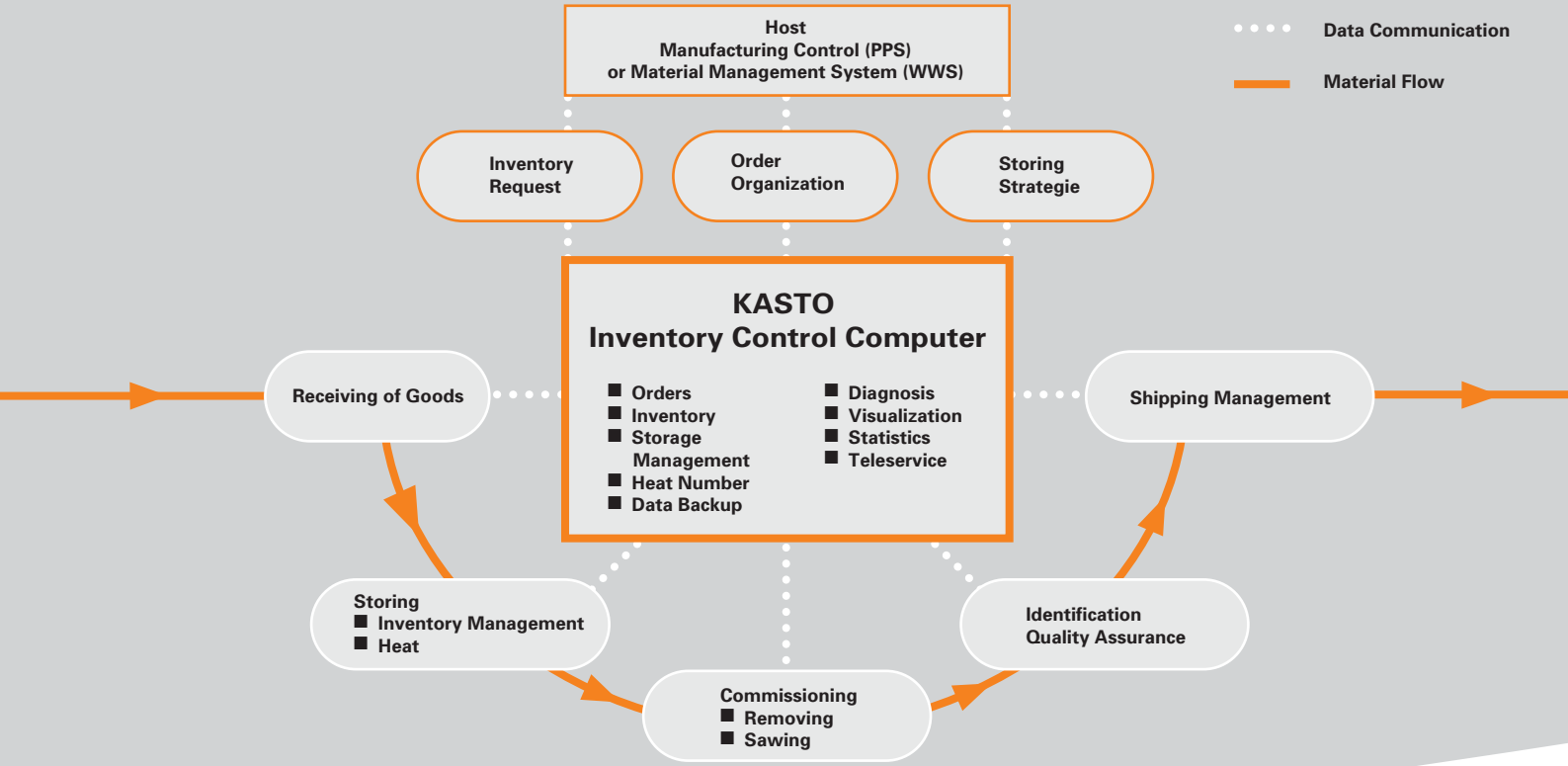
Reliable order processing for storage system and saw.

KASTO does not only develop storage systems and saws - also the software is KASTO: experienced software engineers create solutions for the most demanding and complex, logistical tasks. Main modules of the software are storage location management, material database and the order management. The manufacturing control or order processing on the customer's side is connected with the inventory control computer via Host interface. Modern concepts in client-server-architecture, SQL-capable databases, Windows operating systems and application software developed by KASTO guarantee an easy, economic and reliable operation of the systems. To optimize efficiency even more, especially with complex storage systems, up-to-date simulation tools are used.

Interfacing the storage logistics, for example, to SAP R/3.

KASTO links your bar storage system with the storage logistics of your Host-system for manufacturing control or material management. An interface of the warehouse management modules WM of SAP R/3 to the KASTO Inventory Control Computer can be realized via a customized interface.

KASTO Inventory Control Computer: Complete transparency for all storage steps.



Transparency for highest availability: Data exchange with other systems.

Based on proven industry components, KASTO engineers develope the necessary software according to the specific need of the customer. The KASTO IT-concept contains the following software modules:

- Automatic order processing
- Material database, inventory control, permanent inventory
- Windows operating system
- SQL database
- Host-Interface, i.e. for SAP R/3
- Remote modem diagnosis and teleservice
- Visualizing of system status
- Maintenance intervals
- Heat management
- Saw integration
- Data backup
- RF terminals
- Large number displays
- Integration of weighing scales
- External or virtual storage
- Label print
- Lift-truck guiding systems

The best references in Europe, Asia and USA.

Sophisticated companies count on KASTO.

From huge steel service centers down to smaller manufacturing companies, wherever bar stock, extrusions or wood products are stored, for in-house use or as commodity, the KASTO System Program provides practical solutions. Additionally, for storing and commissioning of parts or plates and sheet metal, KASTO experts are the ideal contact persons. More than 800 storage systems worldwide speak for themselves.

Innovation and reliability from the market leader

You can rely on KASTO Storage Systems. In a variety of businesses throughout the world, bar storage systems from KASTO prove their reliability day in and day out. Almost all systems are tailor-made. Patented innovations like quick-change stations in the sawing centers, separating stations and the KASTO random-access cassette principle guarantee KASTO-customers highest profitability.

Sawing center for bar diameters
up to 320 mm (12.5")

KASTO introduced the first fully automatic CNC-Sawing Center in 1980.

Sawing center for bar diameters up to 140 mm (5.5") at a manufacturer for brick making machinery.

Sawing center with carbide circular saws for a sawing diameter of up to 260 mm (10.2") at a gear manufacturer.

Commissioning system for plastic extrusions with 2 operating gantry cranes.

KASTO builds Honeycomb Systems since 1978.

At a textile machine manufacturer: Overhead travel system *UNITOP*.

Service is the deciding factor: High availability for each UNITOWER.

Your production ist protected by the KASTO-Service Concept.

Permanent performance and the well-known reliability of the KASTO-Storage Systems do not come by accident. But are the result of a thought-through Service Concept. Very often, problems are solved by the operator after a telephone consultation. Usually, spare parts are shipped the same day. If necessary, courier or next-day air services are used. For competent on-site help, well-equipped service cars with specially trained service technicians are ready to go. In addition to the KASTO main factory in Achern, Service Technicians are also stationed in the KASTO-facility in Schalkau, Thuringia, as well as in the Sales and Service Center in Krefeld. This ensures that every location in Germany can be reached within a few hours. The sales partners abroad store a large variety of spare parts and have KASTO trained Service Technicians available.