



**IMA SCHELLING**  
GROUP

# vs area storage system

Efficiency begins before the first cut.

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# VS AREA STORAGE SYSTEM

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VS  
ENG 06/2022



## Energy-efficient production

With the vs, environmental protection and energy saving are already part of the standard programme: examples of this are the integrated standby operation, the optimised extraction of the units, a greatly reduced consumption of compressed air or, for example, the energy-efficient drive technology.

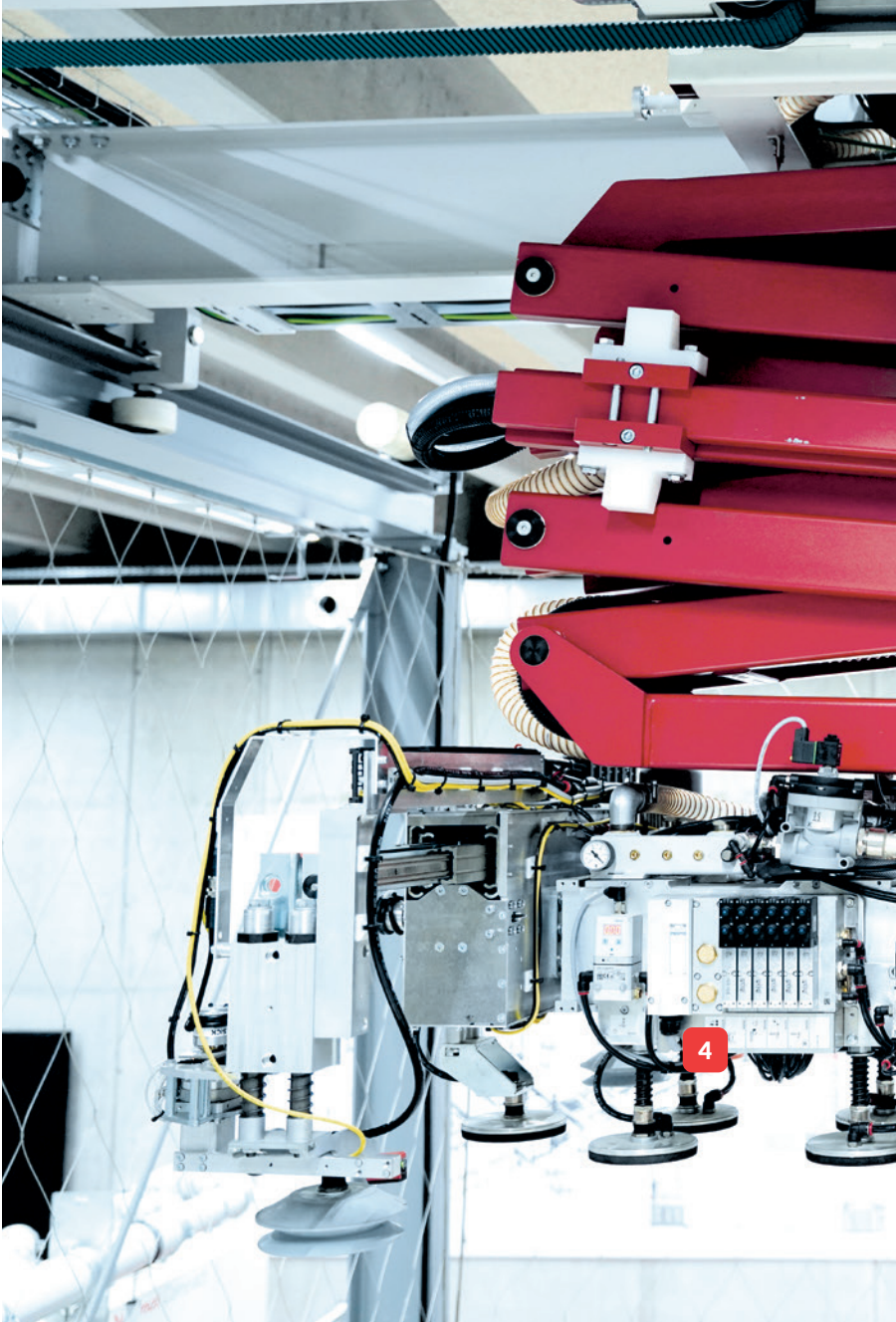
## **High saw efficiency, short throughput times**

A practical development which ensures a further leap in productivity for cutting panels to size: the IMA Schelling area storage system makes an important contribution toward increasing production capacities up to 100 %, while saving valuable time and expensive storage space at the same time.

The key to this innovation lies in the fully engineered and automated organisation of the storage system. An area of 4 to 20 m in width and up to 120 m in length can be used in its entirety with stacks up to 2,000 mm high. Longer systems and higher stacks are available on request. Feeding into/out of the stack, relocating and loading operations are carried out by a trolley which reacts quickly, precisely and saves space. The trolley moves along travel beams and a bridge above the stack of boards. Total height of the plant: only 3,680 mm.

Since machine and storage system come from a single source – IMA Schelling – perfect integration goes without saying. This includes simple operation and high reliability of software and technology. In short, an investment which not only pays off, but also secures new profits in a short time.

# OVERVIEW



## BRIDGE

High running smoothness due to compact design and low-noise impellers

1



## TROLLEY

manoeuvres the scissor lift device precisely onto the stack

2



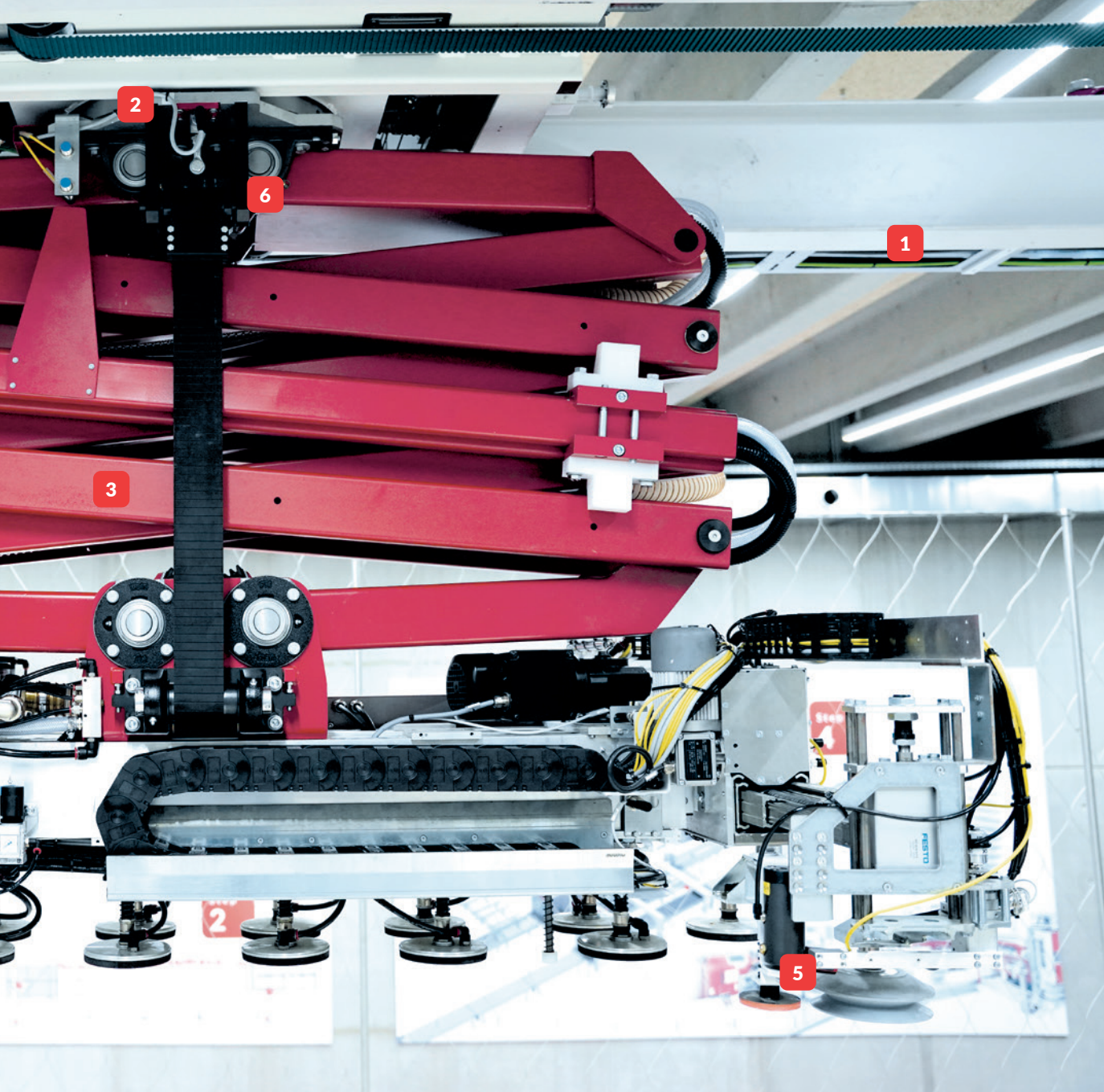
## LIFTING SCISSORS

particularly stable due to the double shears

3







## LOAD TAKING

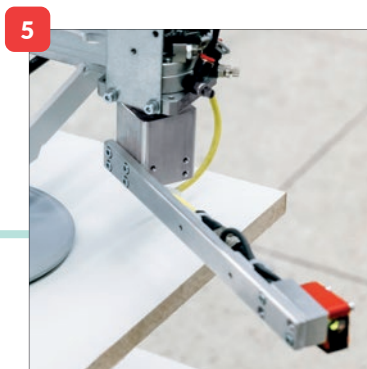
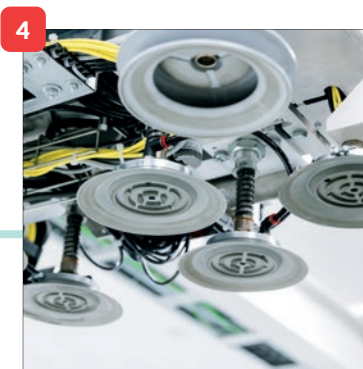
The vacuum lifting unit with 18 suction cups sucks the panels powerfully

## BOARD/ANGLE MEASUREMENT

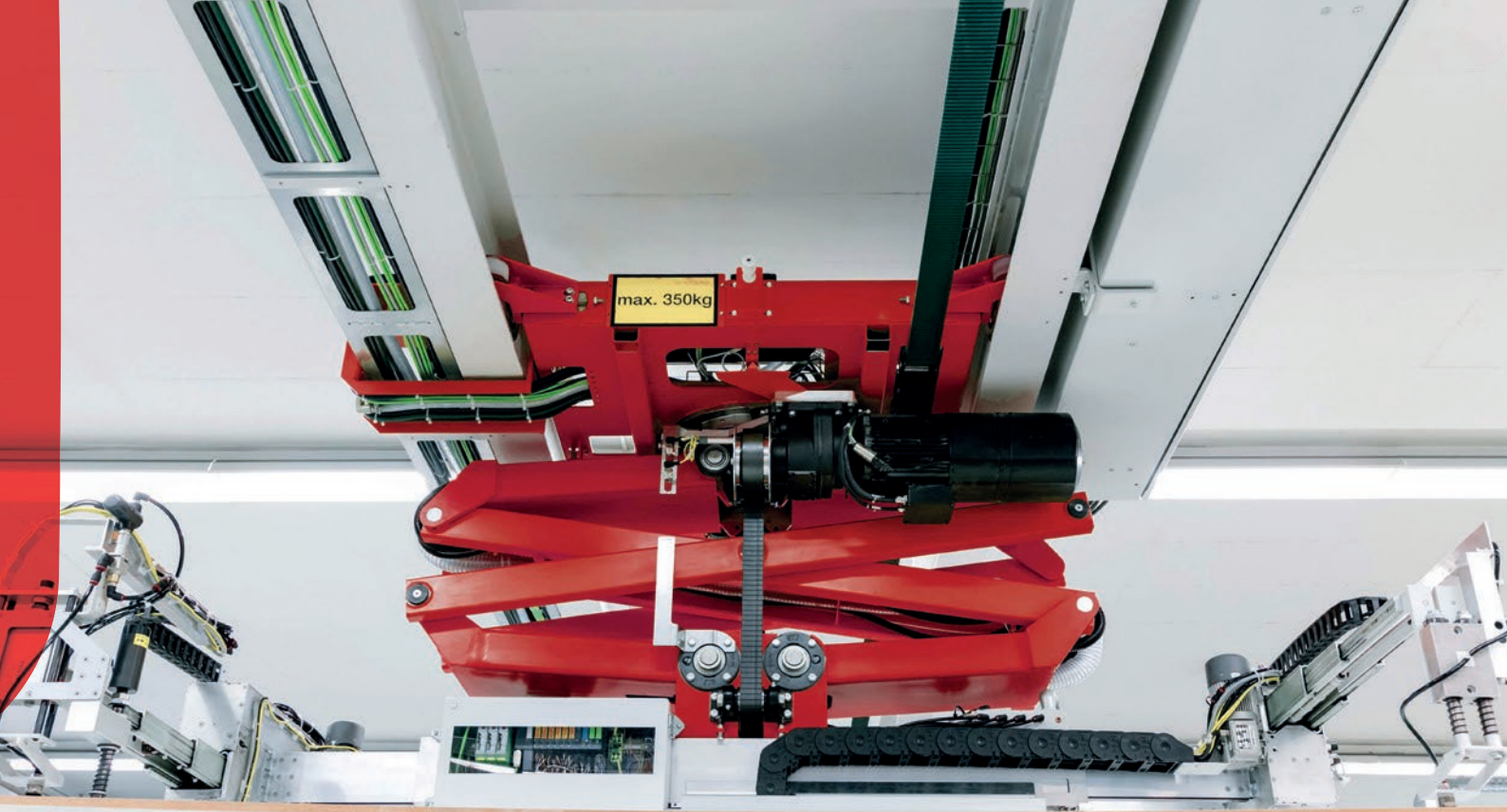
Measures the plate and corrects the position if necessary

## WEIGHT CONTROL

Weight comparison of the panels with the master data in order to avoid incorrect deliveries







DURABLE  
TRAVEL BEAM,  
DYNAMIC  
BRIDGE



# DETAILS OF THE SERIES

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## **Well thought out to the last detail, compact and highly productive**

The technical concept of the area storage system is a travel beam carrying a bridge on which a trolley with a vacuum lifting unit moves. The bridge takes over the transport in the x-axis (over the length of the storage system), the trolley in the y-axis (width of the storage system), and the scissor-type lifting system attached to it in the z-axis (height of the storage system). Impressive load speeds of 150 m/min in the x-direction and in the y-direction as well as 60 m/min in the z-direction are achieved.

The smooth running of the bridge is due to the compact construction of the mechanics and electronics, as well as the low-noise high-performance motors. The weight-optimized two-beam construction is characterised by a low construction height of only 3,680 mm and great rigidity. The direct drives ensure high driving dynamics, and thus rapid travel movements.



# EQUIPMENT AND OPTIONS

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Storing can be carried out with adaptive strategies according to the order combinations, such as - individual jobs, large batch sizes or constantly changing production orders. The board stacks can be handled according to type, dynamically or as mixed stacks.

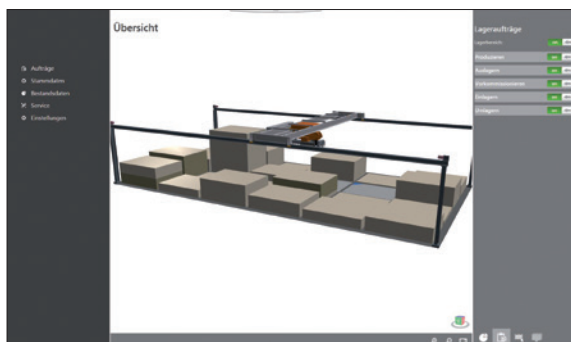
## TROLLEY WITH SCISSOR-TYPE LIFTING SYSTEM

The gantry carriage has a scissor lift that maneuvers the suction crosshead with the plate exactly onto the stack. The scissors are double and thus particularly stable. The patented double scissor design in combination with the adjustable suction crosshead allows a wide range of plate dimensions to be loaded. The direct drive and the high-performance running wheels are responsible for the smooth running of the gantry car.

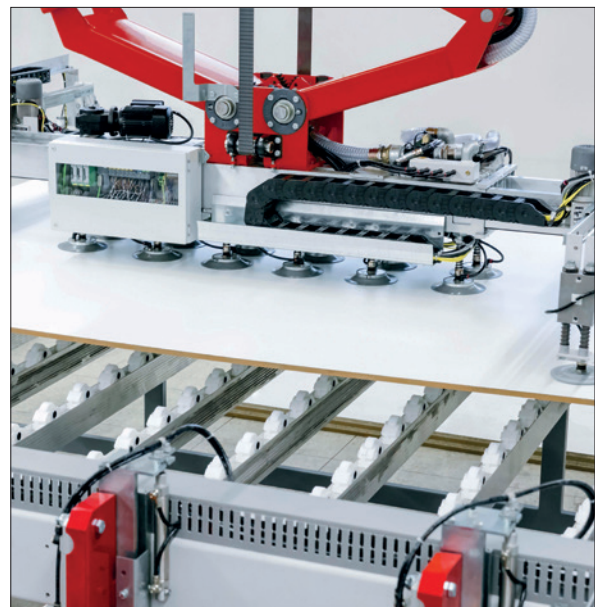
- The rotating scissors allow plates to be placed even underneath the carriers
- This greatly increases space utilization, especially with smaller bearings enormously
- The shear design allows turning in  $+ 90^\circ$  and  $- 90^\circ$
- This allows any orientation of the minimum shaft dimension



Vacuum lifting unit for all events



High saw efficiency, short cycle times







**The vacuum lifting unit has eighteen suction units, four of which are corner suction units, and can powerfully grasp the boards. Up to six suction groups can be optionally selected for smaller board dimensions. Remainders up to a size of 1,250 x 330 mm can be safely handled. The corner suction units are designed as bellows suction pads and lift the corners to separate the boards.**

**VACUUM LIFTING UNIT:  
FIXED OR VARIABLE LENGTH**

The vacuum lifting unit is suspended from the scissor-type lifting mechanism of the trolley. Thanks to a central swivel head and optimized dimensions, it enables a minimum shaft dimension of 2,000 x 700 mm for short or narrow parts. Optionally, the traverse can be selected for a defined length or with continuous length adjustment. The latter allows dimensions from 2,000 to 4,200 mm and, optionally, also from 2,650 to 5,650.

**VACUUM LIFTING UNIT:  
FIXED OR VARIABLE WIDTH**

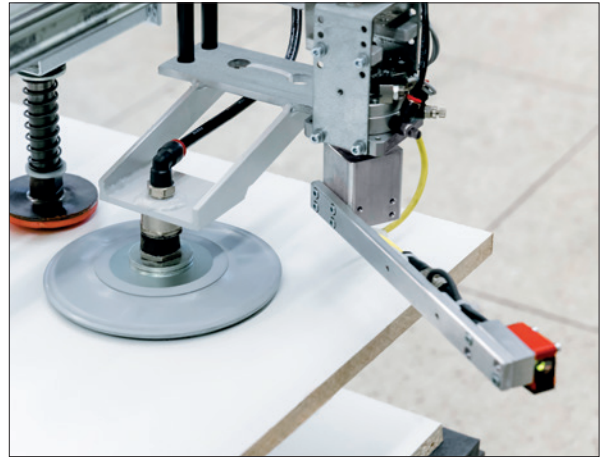
Even the width of the vacuum lifting unit can be selected as fixed or variable. The continuously variable width adjustment is offered from 1,000 to 2,100 mm and, optionally, also from 600 to 2100 mm or from 1,250 to 2,600 mm. The vacuum lifting unit can be adjusted to the material size by adjustment of the length or width. This means a wide range of board sizes can be stored with optimal use of space.

# EQUIPMENT AND OPTIONS

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## POWERFUL VACUUM PUMP FOR SECURE HOLDING OF THE WORKPIECE

The vacuum pump for the vacuum lifting unit with a performance of 47 m<sup>3</sup>/h ensures a perfect grip of different board materials. More vacuum power is available for porous materials. Control with a frequency converter for vacuum reduction is also possible. For slightly porous boards, the vacuum power is reduced for separating the top board during lifting and increases after the board is lifted.



Board measurement

## BOARD- AND ANGLE MEASUREMENT

This option measures the board dimensions and the angular position with each relocation cycle and corrects the position of the board, if necessary. The turning unit can compensate angular deviations up to 5 degrees, so the boards are stacked precisely and the available storage space is optimally utilized. The board stacks can be built with only a small distance of 100 mm between them.



Turning device

## TURNING DEVICE: IDEAL USE OF SPACE

The optional turning device enables the boards to be rotated +/- 90 ° and therefore stacked either lengthwise or crosswise. The area storage system can be perfectly organised and filled. In addition, the saw is always loaded with the ideal board orientation.

## HIGH PROCESS SAFETY

The trolley includes a weight measurement process which determines the weight of each board and compares it with the master data for the board, thereby preventing two boards from being picked up at once (from a board weight of 6 kg). This prevents incorrect deliveries and the stock level remains correct.



Weight measurement





Storage strategies for rapid handling and high use of space

#### STACKS ACCORDING TO TYPE: STATIC AND DYNAMIC

For boards that are required constantly, it is recommended to store them "according to type" and to locate them in close proximity to the saw. This allows direct access to the material, without lengthy restacking and results in high cycle times and rapid loading of the saw. The "according to type / dynamic" strategy makes sense for boards temporarily in frequent use. Here a storage space is only used by one finished part until these boards have been used up. Quick access is assured. Greatly fluctuating amounts of frequently used material require less storage space.

#### MIXED STACKS

Mixed stack storage makes sense for all other cases. The places are constantly used as storage places for predefined materials to the maximum possible height as a mixed stack. A number of zones can be defined as mixed stack zones. This means a large number of different boards can be stacked on fewer places. The storage places can be used in an extremely flexible way.

#### MANUAL BLOCK STORAGE ADMINISTRATION

Outside of the area storage system, the block storage (optional) is a freely definable area which is managed in the control of the storage system. Any number of places can be occupied. This is especially suited for frequently used materials which are fed directly to the saw and also for rarely used materials.

#### CUSTOMIZED PLANNING

- Each area storage system is planned on customer-specific basis,
- 120 m (greater lengths on request) and storage widths up to 20 m are adjusted to the customers individual situation
- Saw-storage combinations, linking to various machine concepts or the connection of multiple stocks
- maximum utilization of the available space together with a high production output

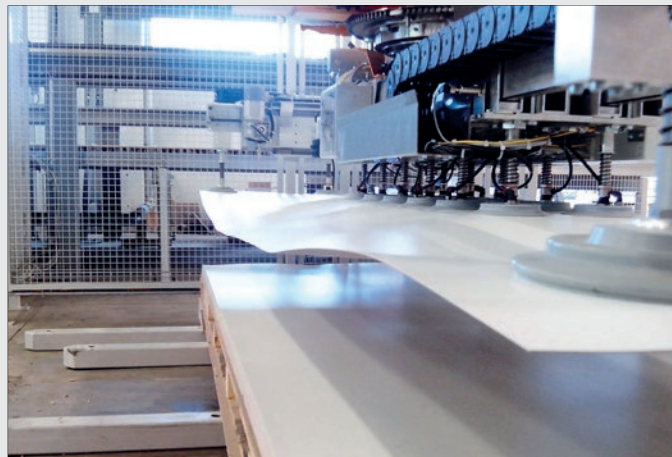
# SPECIAL VERSIONS

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**IMA Schelling offers optional, individual and customised features that contribute to a significant increase in performance.**

## PERFECT HANDLING OF THIN MATERIALS

Optionally, the corner suction units for thin materials can be separately controlled and equipped with down-holders. Clean separation of the thin boards is ensured.



## MATERIAL WITH TEXTURED SURFACE

Materials with structured surfaces are becoming increasingly popular with many customers in the furniture industry. Handling with vacuum technology in particular presents a challenge. IMA Schelling also offers a suitable solution for this with special suction cups for the safe transport of panels with textured surfaces.





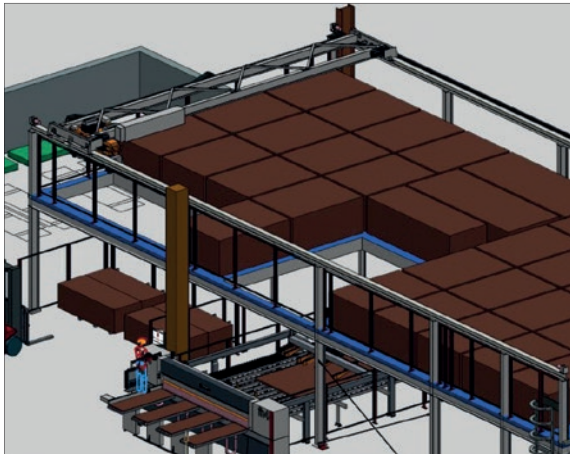
## LAMINATE BOXES

A newly developed cassette system makes the storage of thin laminates much easier. They can be stored by type in transport cassettes, and the cassettes can also be stacked in area storage. This saves valuable storage space and makes the transport of the laminate panels considerably faster.



## SURFACE OR REMNANT STORAGE ABOVE THE CUT

If existing space conditions do not permit any other solution and there is sufficient hall height, the solution of a storage area above the cutting can be aimed at. With the help of a steel construction, the storage area is shifted upwards. This steel construction is as space-saving as it is more cost-saving than extending the industrial hall.



## AREA STORAGE

- Storage of raw boards and remnants
- Maximum length of the lifting shear 4.700 mm
- Total height with 2.000 mm stack approx. 7 m



## REMAINING STORAGE

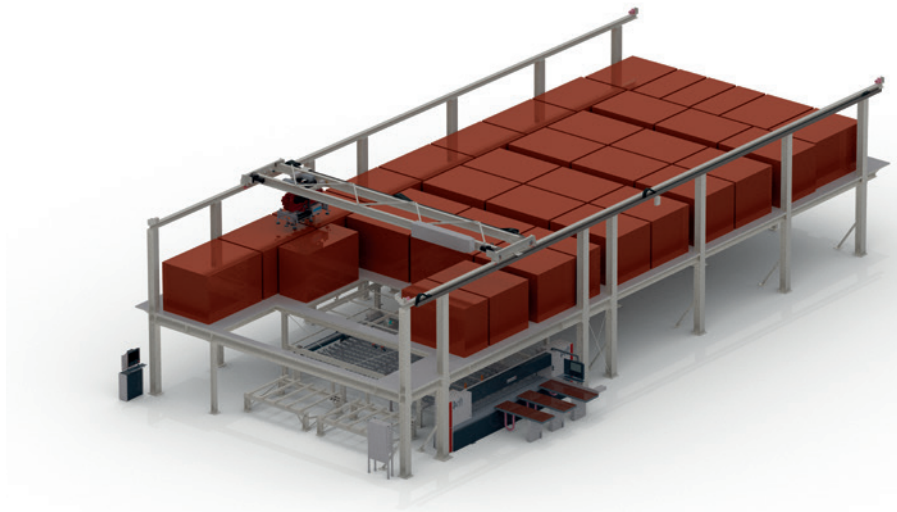
- Increased performance through decoupling of raw board and remnant storage
- Stacking heights 500 - 700 mm
- Total height with 700 mm stack approx. 5.5 m
- Normally with standard lifting shears realisable

# EXAMPLES STORAGE

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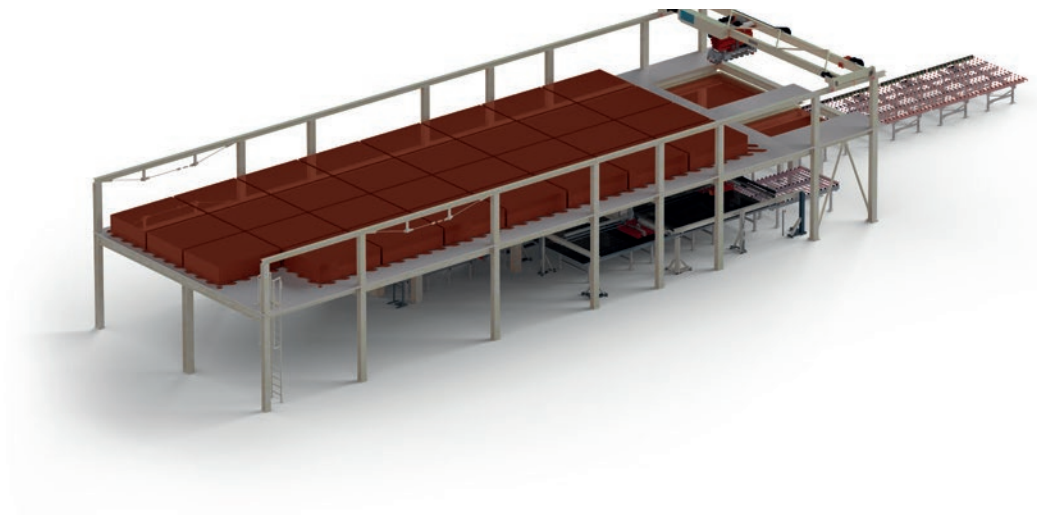
## AREA STORAGE

- fh 4 with area storage
- Project Intarbad



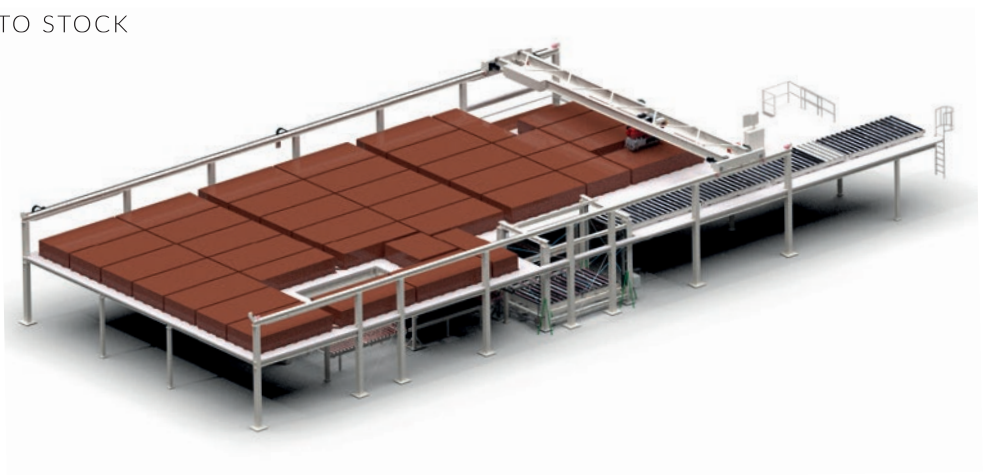
## REMAINING STORAGE

- Is 1 mit remaining storage
- Project Göpfert



## SPECIAL CONNECTION TO STOCK

- Is 1 with remaining storage
- Project DKG





# TECHNICAL DATA

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## COMPONENT SIZE

Length	2000 – 4200 mm
	2650 – 5650 mm
Width	1000 – 2100 (max. 2600) mm

## COMPONENT SIZE REMAINDERS

Length	600 – 2100 mm
	1250 – 2600 mm
Width	315 – 2100 mm

## DIMENSIONS

Basic beam with carriage length	up to 120 m (larger on request)
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## TRAVEL SPEED

Spann of bride	4 – 20 m
Travel speed in x	150 m / min
Travel speed in y	150 m / min
Travel speed in z	60 m / min

## MATERIAL STORING

Stack height	2000 mm (higher on request)
Distance stack in board storage	100 mm
Component weight	max. 350 kg (optional 500 kg)

# RAPID INTERPLAY OF CONTROL, SAW, STORAGE SYSTEM AND OPERATON

The operating concept is simple and efficient: The saw and storage system can work independently of one another – even if one of the two plants is switched off. The system areas are separated by a safety fence.

## INTELLIGENT NOTIFICATION SYSTEM

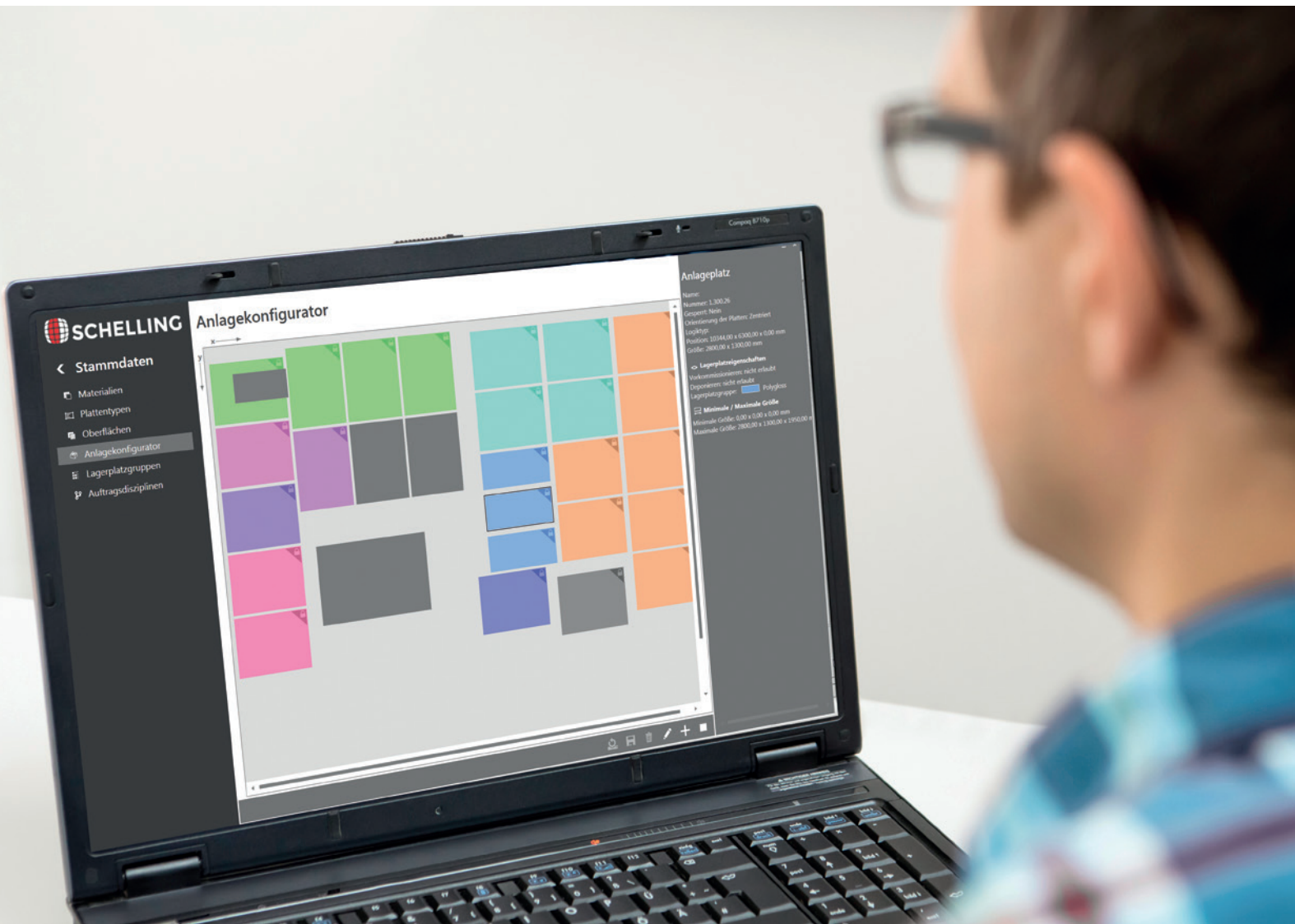
- Automatic generation of emails for any production stop that occurs (e.g. precommissioning during the night)
- Time-adjustable notification
- Priority control of the individual interruptions
- Up to five recipients can be defined

## EVOLUTION STORAGE

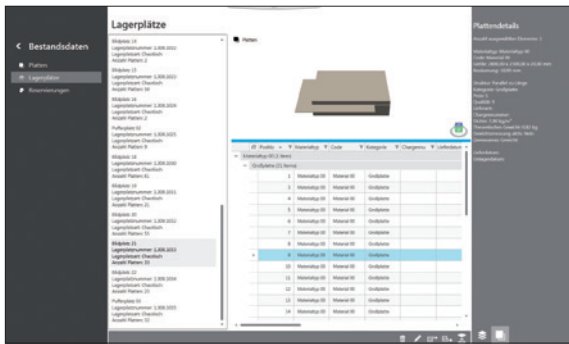
The IMA Schelling area storage system Evolution Storage software is clearly arranged, easy to use and carries out many steps itself. The graphical user interface with intuitive operator guidance is very convenient to

use. An SQL-database forms the basis of the program that enables standardised and definable statements and evaluations. Relocation orders can be created easily with "Drag and Drop". Stack infeed, outfeed of the stack and relocation orders are controlled according to priority. The trolley always operates the saw and stack outfeed place first, only then carrying out the relocation and order picking. All data is automatically compared directly with the HPO cut-to-size optimization from IMA Schelling, without any additional interface. This significantly harmonises the operating sequences and ensures high throughput both in the work preparation as well as in the production.

Even in the basic version, 2 saws can be operated from the warehouse if required. An office license is also included in the scope of delivery. Via terminals at the panel storage, at each saw and in the office, orders can be monitored and controlled comfortably and decentrally.







## ADVANCED FUNCTIONALITIES FOR EFFICIENT OPERATION

- 3D-Visualisation
  - Clear graphical user interface
  - Simple and intuitive operation
  - Data management takes place in SQL-database
  - Standard and self-defined SQL-statements for evaluations
    - Overview of stocks
    - Individual statistical evaluations
  - User administration
    - Individual password assignment
    - 0 to 9 levels of release authorisations
  - ABC analysis for optimized storage strategies
  - Quick-connect function
  - Material master data definition – cyclical, automatic import of the master data as a CSV file
- Fully automatic data exchange of board inventory with the HPO optimization program
  - HPO multi-user systems
    - Real-time query of a material
    - Reservation of residual materials in the storage system
    - No double allocation of residual materials
  - Multiple function of the stack infeed place
    - As a stack infeed place
    - As a material transfer place
    - As an order picking place
    - As a direct mounting place
  - Monitoring of the minimum stock based on the board type
  - Stock removal over time
    - Boards can be fed out if a set time is exceeded for a particular material.



## STOCK OVERVIEW AT A CLICK

With just one click, the stock level of the warehouse can be called up. The operator receives a graphical overview of the entire warehouse as well as of individual material groups.



## INTELLIGENT PREPICKING LOGIC

- Depositing logic / prepicking logic
  - All order prepicking processes is carried out with foresight
  - Required positions are not obstructed
  - Required boards are not parked on positions that are not required
  - Clearing mode = if the order is cancelled. The parked boards can be cleared up again.



Unilöcher  
VIA Schelling Austria GmbH

Suchen

Übersicht

Planung Wartungen

Apr. 2022

Mai

Jun

Jul

Sept

Okt

Status

Wartung

Früher bereits abgelaufen

0

Dringend

0

Tote

13



# SERVICE PLATFORM ZIMBA

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The ZIMBA service platform is an agreement with which we shape our relationship: 100% transparency, 100% modularity and almost 100% efficiency - from the first to the last production day of your plant.

In addition to the classic ticket and hotline modules, further services are available via ZIMBA that extend the production quality and efficiency as well as the service life of your IMA Schelling machines and systems.



ZIMBA.portal

is the entry into the ZIMBA world and includes:

- Documentation
- Administration
- User management & administration
- Security Updates
- Installations & connection fee
- Ongoing updates and data connection checks



ZIMBA.ticket

offers fast and qualified support through the ticket system and spare parts management. It includes:

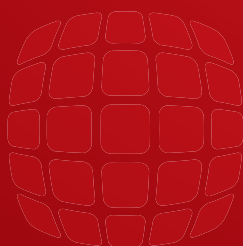
- 24h online ticket system
- Telephone accessibility
- E-parts
- Digital machine documentation
- Ticket history
- Remote Assist



ZIMBA.maintenance

is the time-based maintenance manager. Maintenance can be scheduled & documented on time and assigned to staff. This includes:

- Automatic maintenance messages
- Automatically generated knowledge articles for the maintenance messages
- Creation of maintenance lists
- Documentation of the maintenance carried out



The IMA Schelling Group is a reliable partner for implementing of sophisticated system solutions.  
The demands of our customers are a daily challenge to us, our know-how and creativity!  
We work with you to develop innovative and unique solutions for wood processing.

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Subject to technical modifications and mendments and to further developments. The offer, respectively the order confirmation is relevant in either case!  
The picture of the machine could have been taken without complete protection devices. The protection device is part of the scope of delivery.  
Photos could also be options, not being part of the scope of delivery.



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