



ORDER PICKING IN THE TIMBER INDUSTRY

SAFE HANDLING OF HEAVY AND LONG LOADS



www.hubtex.com

HUBTEX.
WE CREATE THE UNIQUE

TABLE OF CONTENTS

Whitepaper: Order picking in the timber industry

EDITORIAL	3
➤ Managing Director Hans-Joachim Finger	3
DIFFERENT REQUIREMENTS IN THE TIMBER INDUSTRY	4
CHECKLIST – WHAT DOES A PICKING SOLUTION HAVE TO ACHIEVE?	5
ANALYSIS	6
FROM MANUAL PICKING TO THE AUTOMATED PROCESS	7
➤ Manual order picking with front loader	7
➤ Classic electric multidirectional side loaders	8
➤ Picking platform	9
THE ADVANTAGES AND DISADVANTAGES OF PICKING SOLUTIONS	11
CASE STUDY: ORDER PICKING AT SWISS KRONO AG	13
HUBTEX AT A GLANCE	15
ABOUT HUBTEX	16

EDITORIAL!



» THERE IS NO
SINGLE SOLUTION FOR
WOOD HANDLING «

The requirements for the transport of long, heavy and bulky goods in the timber industry are high: the material has to be protected and the goods have to be quickly and precisely brought from A to B. This is the only way for panels, decors and other wood-based materials to reach their destination safely and without damage so that subsequent process steps can follow seamlessly. There are different approaches to order picking in the wood industry depending on the handling capacity, storage capacity and budget. All picking systems – whether manual, partially automated or fully automated – can be used. It is important to find the right solution for the individual application in order to ensure high process quality.

In this whitepaper you will find an overview of the most important picking systems in the timber industry. We will highlight the advantages and disadvantages of the various options and provide you with a checklist of criteria that you should pay attention to when choosing your individual solution.

If you have any questions, the HUBTEX team with its experienced experts will be happy to help you at any time.

Enjoy reading!

A handwritten signature in blue ink, appearing to read 'HJ Finger'.

Hans-Joachim Finger,

Managing Director Sales and Purchasing at HUBTEX

DIFFERENT REQUIREMENTS IN THE TIMBER INDUSTRY

WOOD VALUE CHAIN



The removal of heavy and bulky wooden panels from the shelves and their transport to loading poses numerous challenges for logisticians. In order to deliver high-quality and valuable goods to the customer without them being damaged, a cost-efficient order picking solution must be found that is appropriate for the individual application. Depending on your position in the wood value chain, there are basically three groups of companies, each with its own individual requirements for order picking:

MANUFACTURER OF CHIPBOARDS, WOOD DECORS AND OTHER BULKY WOODEN MATERIALS

- > High turnover rate
- > Production just in time
- > Limited number of panel dimensions

WOOD TRADERS WITH THEIR OWN LOGISTICS CENTRES

- > Low to medium turnover rate
- > Storage of different products
- > High variance in material and products
- > Specific dimensions

PROCESSING COMPANIES

- > High turnover rate
- > Storage of different products
- > High variance in material and products
- > Specific dimensions

CHECKLIST ✓

WHAT DOES A PICKING SOLUTION HAVE TO ACHIEVE?

The optimum picking solution ...

Whether a manufacturer, trader or processing company – the picking solution must fit the individual conditions on site. With the help of our checklist, you can define a system that is perfectly adapted to your individual requirements.



ENABLES THE PROVISION OF GOODS WITHOUT SCRATCHES, BREAKS OR OTHER DAMAGE AND THUS ENSURES A HIGH DELIVERY QUALITY



RELIEVES THE EMPLOYEES



INCREASES PICKING SPEED AND THUS INCREASES PRODUCTIVITY



LEADS TO AN INCREASE IN ENERGY EFFICIENCY THROUGH THE USE OF ELECTRIC DRIVES AND POWERFUL MOTORS



LOWERS OPERATING COSTS THROUGH THE USE OF STATE-OF-THE-ART TECHNOLOGY WITH LOW REPAIR SUSCEPTIBILITY



IS FAIL-SAFE AND THUS ENSURES HIGH PRODUCT AVAILABILITY



OFFERS A HIGH LEVEL OF FLEXIBILITY FOR ALL NECESSARY WORK IN THE WAREHOUSE. FOR EXAMPLE, NUMEROUS EQUIPMENT OPTIONS CAN BE INTEGRATED AND VEHICLES CAN BE USED FOR DIFFERENT PROCESSES

ANALYSIS!

Introducing a new picking solution is always preceded by a detailed analysis of the overall warehouse processes and warehouse typography. In order to transport material safely and without it being damaged, a number of factors must be taken into account in the selection process and questions answered.



FROM MANUAL PICKING TO THE AUTOMATED PROCESS

If it is still advantageous for companies up to a certain size to rely on manual order picking solutions and the use of counterbalance forklift trucks, these systems quickly reach their limits in warehouses with larger capacities and bulky, long transport goods. In order to ensure a high level of safety and efficiency in warehouse processes, a company must select the appropriate vehicle from a range of different vehicles – tailored to the specific requirements and environmental parameters.

AN OVERVIEW OF THE DIFFERENT OPTIONS:

1

Manual order picking with counterbalance forklift truck

With manual picking, the goods are provided in storage compartments and the employee receives the necessary information through picking procedures such as Pick by Light or Pick by Voice.

The modular solutions show the correct shelf compartment and the number of goods to be removed. The employee uses forklifts or reach trucks to remove or store goods from the lowest shelf levels.





2

Classic electric multidirectional side loaders

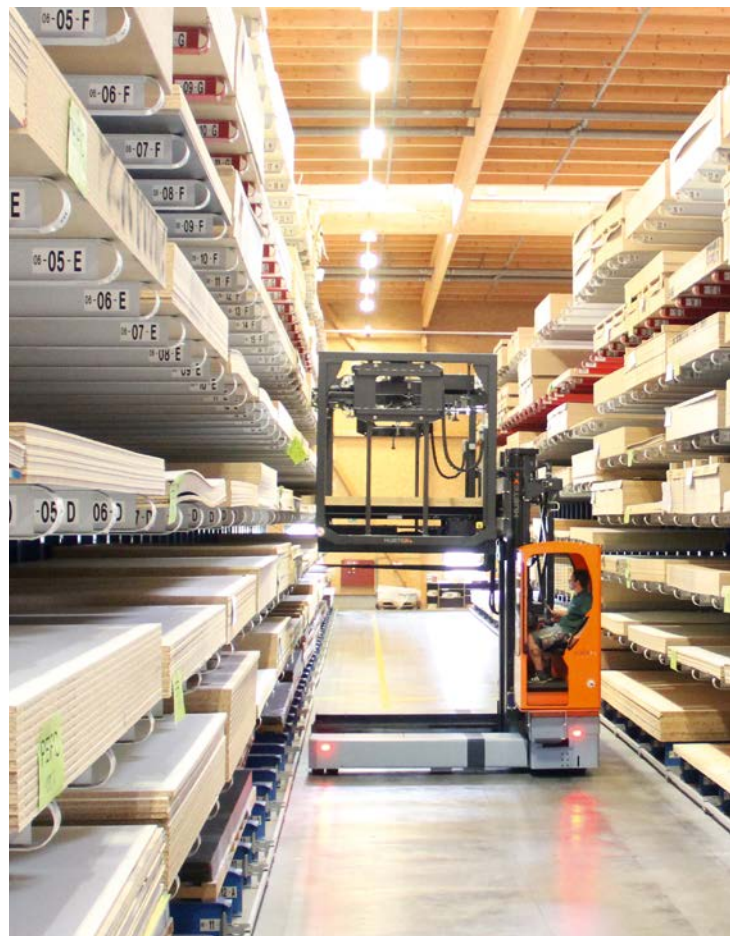
In their basic configuration, classic electric multidirectional side loaders are suitable for handling long loads – especially in narrow aisles. A great advantage of these vehicles is that they can be supplemented by a large number of other equipment options. For use as a pure order picking vehicle, the multidirectional side loader is supplemented by a pick-up platform, whereby one pick-up takes a maximum of five minutes. The operator then controls the system from the platform. The operator picks

the boards either alone or with another operator directly onto the platform.

CLASSIC ELECTRIC MULTIDIRECTIONAL SIDE LOADER WITH PLATFORM AND VACUUM SUCTION DEVICE

In order to further reduce the risk of damage to the materials, a vacuum suction device is added to the picking platform of the electric multidirectional side loader. Extendable suction cups suck individual panels out of the shelf and then put

them down again. In this case, only one person is required for operation. The great advantage of the modular solution is its flexibility. The multidirectional side loader can be used cost-effectively for both load handling and order picking at medium handling rates. A disadvantage of the pick-up platform on a returnable stacker is the one-sided picking. For removal from the opposite shelf, the operator must leave the aisle to turn the vehicle. With a low to medium handling performance, however, this loss of time does not weigh heavily.



3

Picking platform

Platform solutions are well suited for high storage throughputs. This allows operators to pick on both sides of the aisle and the use of telescopic tables means that the platforms can also be used for stacking. The vehicle configuration enables extremely narrow aisle widths. They can be reduced to a minimum, for example to the largest panel width and a small safety distance. The energy consumption of the picking platforms is significantly higher. It is therefore advisable to use two platform vehicles in a logistics system in order to increase reliability with the redundancy that this provides.

In practice, the combination of the platform solution with a multidirectional side loader

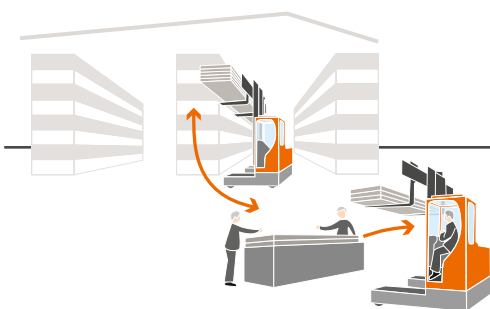


for handling full packages, for example for loading and unloading trucks or storage, is much more common. The reusable forklift and order picking platform move in the same aisle. This practical combination is more energy efficient and creates greater flexibility.

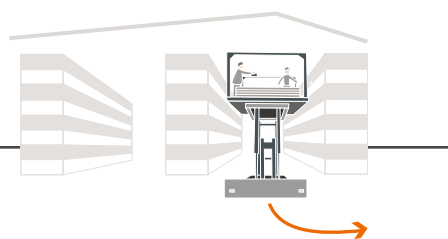
The order picking platforms can also be optionally equipped

with vacuum suction technology that protects the material. Since the materials to be picked are becoming increasingly heavy, physical picking by hand has its limits. By using vacuum suction technology, heavy loads can be moved safely and the risk of damage due to incorrect handling is minimised. In addition, the technology also serves as a basis for further vehicle automation.

without HUBTEX-platform



with HUBTEX-platform



(PARTIALLY) AUTOMATED PICKING PLATFORMS

The boundaries between partially and fully automated order picking solutions for the wood industry are fluid.

Manufacturers equip their order picking platforms with numerous assistance systems and thus increase not only the safety and efficiency of the processes, but also the degree of automation. Automatic shelf positioning or the connection of the vehicles to the warehouse management system, for example, can contribute to this.

Here, too, there are different integration options depending on the requirements. After entering the storage position, the platform uses semi-automatic operation to navigate the operator directly to the correct shelf.



FULLY AUTOMATIC PICKING SOLUTIONS

Companies achieve the highest speed and precision with fully automated solutions. The main requirement is to integrate the shelf system into the hall architecture and to embed the stacker crane and an intelligent warehouse management system into one system. Before the implementation of such a system, the logistics in the overall concept of the company must be analysed and all interfaces to further production processes must be checked for synergy potentials.

AT A GLANCE

THE ADVANTAGES AND DISADVANTAGES OF PICKING SOLUTIONS

Advantages

Manual with front loader

- Cost efficient

Classic electric multidirectional side loader

- Suitable for handling long material and large pallets
- For indoor and outdoor use
- Can be used in narrow shelf aisles
- Compact design
- Manoeuvrable due to multidirectional steering
- Expandable with further equipment options
- Optimum view from the cabin
- Energy-efficient thanks to electric drive

Electric multidirectional side loader with pick-up order picking platform

- Platform can be integrated within minutes
- Convenient operation through control from the platform
- Optional additional protection of the materials by vacuum lifting device
- Flexible application, both for load handling and order picking
- Up to 80% time saving compared to variant without platform
- Reduction of material damage

Disadvantages

- Not suitable for high turnover, long and bulky loads

- For high turnover rates, only suitable in combination with a picking system.
- Conditionally suitable for pallets

- One-sided picking in narrow aisle, thus loss of time due to turning processes
- The dead weight of the platform must be taken into account

 Advantages

 Disadvantages

Picking platform

- | | |
|---|---|
| <ul style="list-style-type: none"> ➤ Picking from both sides of the shelf possible without turning ➤ Medium to high handling performance ➤ Suitable for medium, heavy and bulky loads ➤ When supplemented with telescopic forks, the storage of entire packages is handled by the use of telescopic forks and tables ➤ This makes narrow aisle widths possible | <ul style="list-style-type: none"> ➤ When using the narrow series, at least two platforms must be used for redundancy reasons ➤ The energy consumption of two platforms in combined operation from storage and order picking is higher than that of a combination of returnable forklifts for storage and platform vehicles for order picking |
|---|---|

Order picking platform with semi-automatic operation

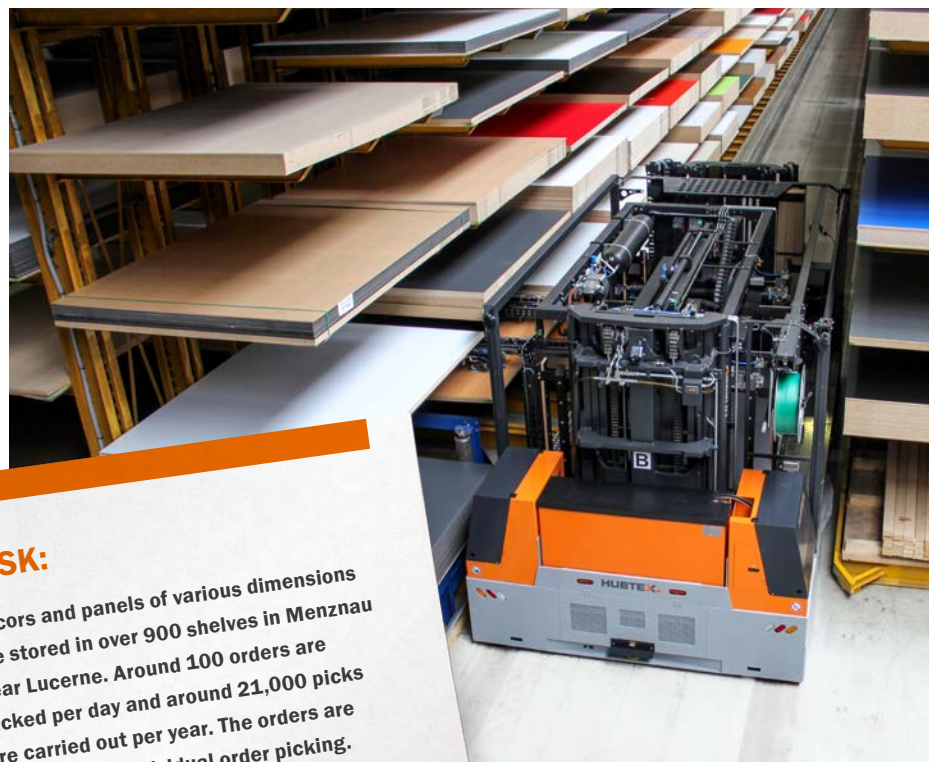
- | | |
|---|---|
| <ul style="list-style-type: none"> ➤ Reduced damage to the goods thanks to optionally applicable vacuum suction technology ➤ Suitable for heavy panel materials ➤ Relief for employees ➤ Can be integrated into existing shelf system | <ul style="list-style-type: none"> ➤ Possibly reduced speed compared to manual picking |
|---|---|

Automatic solution

- | | |
|--|---|
| <ul style="list-style-type: none"> ➤ Maximum integration of process integration ➤ Minimal damage to the goods ➤ High energy efficiency ➤ High speeds | <ul style="list-style-type: none"> ➤ Cannot be integrated into existing shelf system |
|--|---|

CASE STUDY: ORDER PICKING AT SWISS KRONO AG

SWISS KRONO AG is a company of the SWISS KRONO GROUP, one of the world's leading producers in the wood products industry. The company produces high-quality flooring and decorative wooden materials for furniture, kitchens and interior design and exports its products to over 90 countries. SWISS KRONO AG needed an efficient and, above all, gentle picking solution for its high-quality decors with synchronous surface structures.



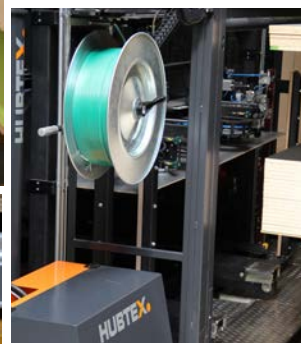
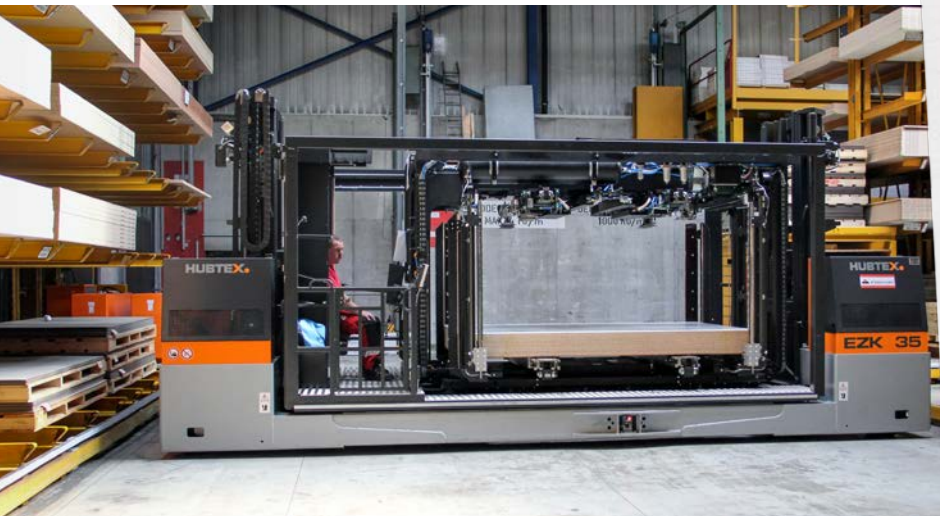
TASK:

Decors and panels of various dimensions are stored in over 900 shelves in Menznau near Lucerne. Around 100 orders are picked per day and around 21,000 picks are carried out per year. The orders are processed by individual order picking.

The greatest challenge is the transport of heavy wooden materials, since scratches or damage to the valuable goods must be avoided at all costs.

In order to minimise the physical strain on the employees and shorten the throughput time in the warehouse, the wood products supplier was looking for an ideal order picking solution that would also precisely align the panel stacks to be transported.

KRONOswiss



SOLUTION:

HUBTEX, a leading international manufacturer of custom-built industrial trucks, and Rohrer-Marti AG, a Swiss importer of construction machinery and forklifts, provided a picking platform that was specially adapted to the requirements and space conditions of SWISS KRONO AG.

The EZK 35 order picking platform has automatic shelf positioning and a special device for centring and binding the panels.

All order picking is carried out by one person who does not have to leave the vehicle during the work process. The boards are sucked in and precisely aligned by means of a vacuum. Subsequently, movable columns ensure exact centring of the boards and stacks.

The binding process has also been revised and partially automated.

RESULT:

As a result, the customised solution individually developed and designed by HUBTEX and Rohrer-Marti for SWISS KRONO AG enables quick and convenient picking of various wooden materials.

In addition, the picking platform ensures safe and damage-free transport with maximum delivery quality.



A video of the application is available on HUBTEX-TV:
youtu.be/VeZUnyDfmkM

AT A GLANCE!

Company name:	HUBTEX Maschinenbau GmbH & Co. KG
Company headquarters:	Industriepark West, Werner-von-Siemens-Straße 8 36041 Fulda, Germany
Executive Board:	Hans-Joachim Finger (Sales, Shipping and Purchasing) Jürgen Keller (Development, Production and Service) Marco Goldbach (Human Resources, Finance and IT)
Company structure:	Family
Founding year:	1981
Employees:	440
Sales:	Worldwide with more than 60 sales partners and 6 of its own subsidiaries
Market position:	Internationally recognised vehicle manufacturer for the transport and handling of long, heavy and bulky goods
Industry focus:	Aluminium, automotive, building materials, waste disposal, windows, glass, wood, plastics, aviation, mechanical engineering, furniture, solar and wind energy
Range of services:	Industrial trucks for handling long or heavy loads with load capacities <ul style="list-style-type: none"> ➤ From 1.5 to 260.0 t for large-volume loads ➤ Electric, diesel or gas drive ➤ Indoor and outdoor use ➤ Handling/transport/order picking ➤ Positively guided in narrow aisle or freely mobile
Products and services:	Manufacture of: <ul style="list-style-type: none"> ➤ Electric multidirectional side loaders ➤ Electric multidirectional counterbalanced trucks ➤ Diesel/gas four-way forklifts ➤ Order picking vehicles ➤ Platform and track wagons ➤ Heavy-duty tool changers ➤ Heavy-duty compact forklifts ➤ Reach trucks ➤ Glass transport systems ➤ Special vehicles for the transport of heavy and bulky goods ➤ Used and rental equipment ➤ Service
Subsidiaries:	Schulte-Henke GmbH, Meschede, Germany HUBTEX France S.A.R.L, Lozanne, France HUBTEX Belgium bvba, Berchem, Belgium HUBTEX (UK) Ltd., Milton Keynes, UK HUBTEX CZ sro, Cestlice, Czech Republic

ABOUT HUBTEX!



HUBTEX is the leading international manufacturer of custom-built industrial trucks, side loaders and special equipment for transporting long, heavy and bulky goods.

At its headquarters in Fulda, the company – founded in 1981 – develops and manufactures vehicles for efficient material flow and goods handling in the tightest of spaces. The side loaders and industrial trucks are marketed by a worldwide network of over 60 sales and service partners.

GOOD TO KNOW:

Customers rely on HUBTEX vehicles, especially when picking goods in the narrowest aisles, as they can be precisely matched to the requirements of a warehouse. During order picking, HUBTEX industrial trucks must meet a wide range of requirements: Large-volume wooden materials, panels and profiles can be transported highly efficiently and carefully.

Together with the customer, HUBTEX develops an individual concept, drawing on more than 30 years of industry expertise in special mechanical engineering. This results in customer-specific solutions with special optimisation effects that meet the highest quality requirements.

» WE LOOK FORWARD TO HEARING FROM YOU. CONTACT US! «

HUBTEX HAS AN EXPERT TEAM AVAILABLE TO ANSWER YOUR QUESTIONS.



HUBTEX.

WE CREATE THE UNIQUE