#### **INTRODUCING**



Improve processes, material flow, ergonomics and safety while focussing on efficiency and flexibility in designing workplaces.

LEAN.
STRONG.
MODULAR.

# INTERNATIONAL GROUP

With our hands-on mentality and continuous expansion, we created a strong brand in the european market. We act across all borders with serveral warehouses and more than 25 design engineers. Our customers benefit from high availability and short delivery times.









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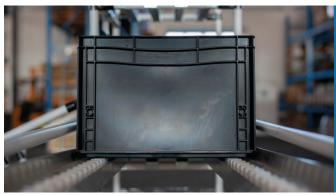
## BE LEAN, USE BEEWATEC.

With our innovative modular system, we are a leading provider of lean and material flow solutions for every industry. We deliver components only or fully customized solutions exactly to your requirements and goals.



## OPTIMIZE PRODUCTION

Maximize the efficieny and performance of your production process, by using lean manufacturing principles and methods.



## STREAMLINE MATERIAL FLOW

Together we create a seamless flow of material and information and work towards the goal of 100% waste elimination.



## IMPROVE ERGONOMICS

To create a safe and comfortable minimizes physical strain, reduces the risk of injuries and boosts overall performance and joy.



#### REDUCE COSTS

We help to improve efficiency and increase profitability by using lean principles and products along a seamless workflow.



## 2500+ LEAN **COMPONENTS**

Our lean modular system follows the Toyota principle for maximum efficiency, flexibility and adaptability. We have a huge portfolio to meet your requirements - whether you need round pipes, square pipes, steel, aluminum, ESD - we have it all for you.

You can buy all of our high-Quality components and attachments separately from us or let us design and build your lean solutions.



100% FLEXIBLE



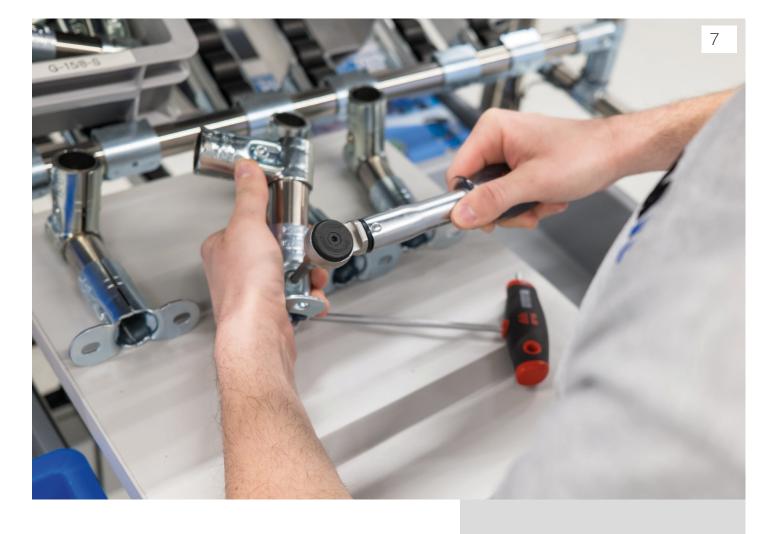
**HUGE PORTFOLIO** 



LARGE WAREHOUSE

























## LEAN MODULAR SYSTEM

#### **GETTING STARTED**

We support you in identifying the best solution and prepare a 3D model and technical drawing for free, based on your requirements.





We bring your lean solution to life.











## **ERGONOMIC WORKPLACES**

Workplace systems form the basis for the vast majority of assembly for industrial use, packaging and testing activities in production. Industrial workstations can stand alone or combine entire processes and successive processing steps in the form of an assembly line.

Workplace systems from BeeWaTec can be tailormade to your space limitations and corporate requirements.



**INDIVIDUAL** 



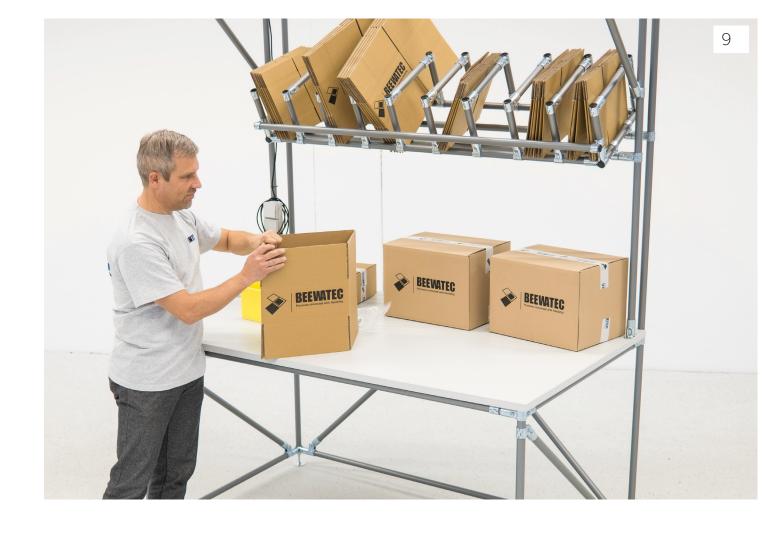
**ERGONOMIC** 



SUPPORTIVE















# ERGONOMIC WORKPLACES

Inspiration and references

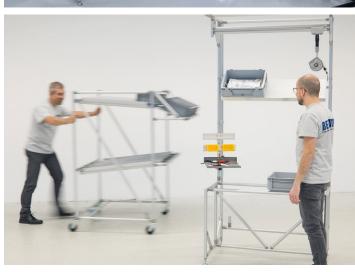












#### **USE CASE (AUTOMOTIVE)**

## Height-Adjustable Workplace 132665

#### **GOAL**

Ergonomic and height-adjustable sit & stand workstation with storage shelf, monitor folding arm and perforated plate.

#### **CUSTOMER REQUIREMENTS**

- Maximum dimensions 1525 x 715 mm, incl. CE declaration of conformity
- Electrically conductive construction (ESD) with SUS pipe (S2812-PF), joints Ni
- Swivel and foldable monitor arm and swivel perforated plate for attaching tools; runner on top for attaching screwdrivers
- Customer payload at full load: up to 150 kg









Mobile heightadjustable workstation



CE-compliant, and electrically



Designated total load capacity of approx. 250 kg

#### **USE CASE (MECHANICAL ENGINEERING)**

## Packing Table 132770

#### **GOAL**

Height-adjustable workstation with easy access to various cardboard packaging and packaging materials.

#### **CUSTOMER REQUIREMENTS**

- Electric height adjustment
- Integrated, ergonomic workplace lighting
- Clear storage of different cardboard boxes
- Customer payload at full load: up to 250 kg



#### **SOLUTION MADE BY BEEWATEC:**



Ergonomic design with BEEWATEC LED & height-adjustment



Plenty of storage space for cartons and packing materials



Designated total load capacity of approx. 250 kg



## **RACK AND FIFO SYSTEMS**

Modular rack systems are used in the field of lean production for easy, ergonomic and efficient storage. Flow/FIFO racks, shelf racks and cantilever racks help to implement different storage methods and support a seamless material flow.

Rack systems from BeeWaTec can be tailor-made to your space limitations and corporate requirements.



**INDIVIDUAL** 



**EFFICIENT STORAGE** 



SUPPORTIVE









to storage and transport special goods and materials (often long goods)







# RACKS AND FIFO SYSTEMS

Inspiration and references













#### **USE CASE (AUTOMOTIVE)**

## Simple Rack 118955

#### **GOAL**

The aim of this solution is to provide production material

#### **CUSTOMER REQUIREMENTS**

- Ergonomic gripping of containers
- Maximum dimensions (1758 x 682 x 2003 mm) with castors
- Materials: Plastic-coated round steel pipes, 28 mm (DP-2820-G), black joints (BK), 10 mm structural chamber plates
- Customer load capacity at full load: up to 200 kg





#### **SOLUTION MADE BY BEEWATEC:**



Inclined shelf rack



Ergonomic working



Designated total load capacity of approx. 250 kg

#### **USE CASE (ELECTRONIC)**

## FIFO-Rack 134057

#### **GOAL**

Demand-oriented provision of production material in production. Individual items must be clearly separated from each other.

#### **CUSTOMER REQUIREMENTS**

- Clear separation of all parts/small load carriers
- Accommodates a fixed number of load carrier in compliance with predefined dimensions
- Customer payload at full load: up to 1.500 kg





#### **SOLUTION MADE BY BEEWATEC:**



FIFO shelving for optimum use of space



Clear separation of individual boxes by tracks



Designated total load capacity of approx. 1.800 kg



## TRANSPORT CARTS **AND TROLLEYS**

Transport and material trolleys are the central element of intralogistics for the supply and temporary storage of goods. They are usually characterized by a compact and robust design and have wheels (e.g. swivel castors) that are adapted to both the load and the place of use.

Carts and trolleys from BeeWaTec can be tailormade to your space limitations and corporate requirements.



**INDIVIDUAL** 



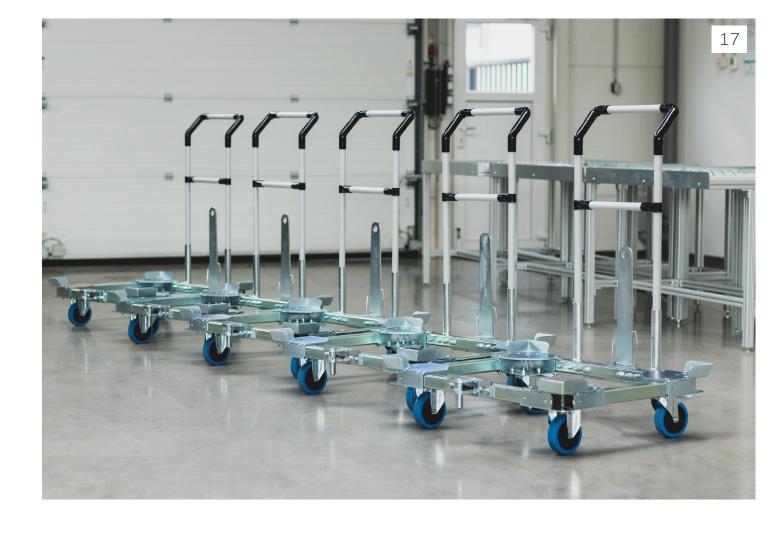
MILKRUN-PRINCIPLE



**BRIDGING DISTANCES** 









#### ORDER PICKING TROLLEY

to ensure easy and safe transportation for production supply

#### FENCED MATERIAL CART

to enable storage with the option of locking sensitive or expensive goods

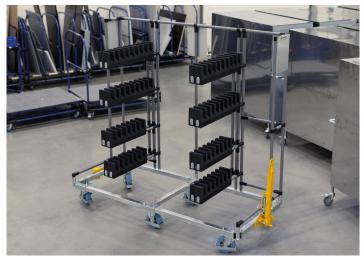






# TRANSPORT CARTS AND TROLLEYS

Inspiration and references













#### **USE CASE (AGRICULTURE)**

## Cantilever Cart 201593

#### **GOAL**

The aim of this solution is to provide production material. The material is very individual and so the trolleys are loaded at an external supplier. They are then transported by truck to the customer for final assembly. The number of components is based on a daily requirement.

#### **CUSTOMER REQUIREMENTS**

- Take maximum dimensions into account (individual geometry)
- The stored components are painted and require a certain degree of protection
- The transport trolley must meet the requirements for simple and safe truck transport: Stability & load securing
- Customer's payload with full load: up to 400 kg





#### **SOLUTION MADE BY BEEWATEC:**



Cantilever trolley with pipe protection for safe transportation



Suitable for trucks (dimensions and stability)



Designated total load capacity of approx. 400 kg

#### **USE CASE (FASHION)**

## Material Trolley 132114

#### **GOAL**

Storage, provision and transportation of soccer boots

#### **CUSTOMER REQUIREMENTS**

- Soccer boots do not slip during transportation
- Hand-pushed trolley
- Customer load capacity at full load: up to 120 kg





#### **SOLUTION MADE BY BEEWATEC:**





Labeling plates on the pipes per level



Designated total load capacity of approx. 300 kg



## KARAKURI **APPLICATIONS**

The term karakuri is an idea from Japan and describes a type of lean automation that uses the laws of mechanics and gravity alone to handle load carriers. Karakuri applications are primarily designed and used for the automatic lifting, lowering or redirecting of load carriers.

Karakuri from BeeWaTec can be tailormade to your space limitations and corporate requirements.



**INDIVIDUAL** 

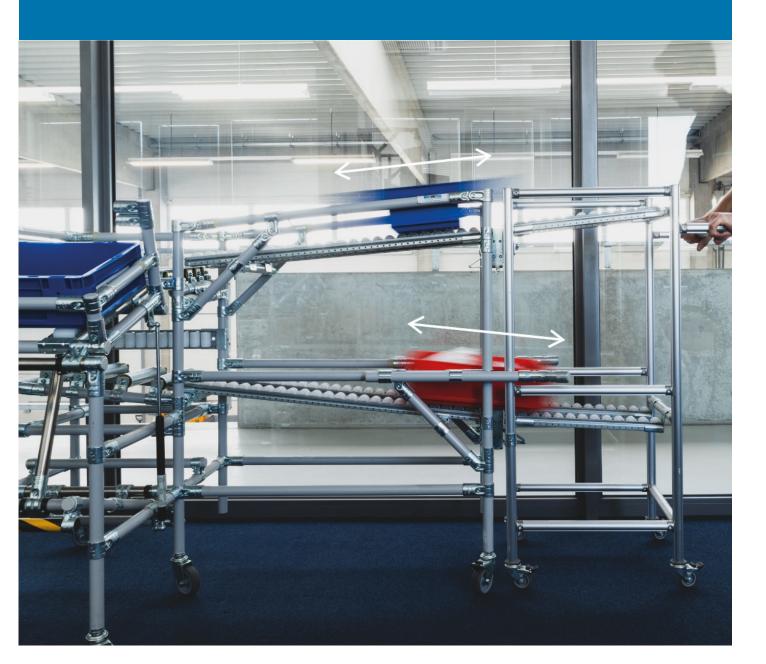


LOW COST AUTOMATION



GRAVITY & PHYSICS









## LIFT FOR LOAD CARRIER WITH CRANK HANDLE MECHANISM

to bridge height differences in workplace or production processes to ensure ergonomic working







## KARKURI APPLICATIONS

Inspiration and references













## Karakuri solutions explained

Karakuri applications are primarily designed and used for the automatic lifting and lowering of load carriers. Both fixed dimensions and a fixed weight of the load carrier play a decisive role in ensuring smooth operation. Successful implementation of Karakuri solutions is generally worthwhile for high throughput rates of identical load carriers.

What is Karakuri not? - Karakuri is not a panacea for automating every process at low cost. Especially processes in which different load carriers (in terms of dimensions or weight) are moved, the Karakuri principle quickly reaches its limits. Check carefully with your contact person which processes are suitable.

#### IMPLEMENTING KARAKURI WITH BEEWATEC (EXAMPLES):



A separating mechanism for load carriers ensures that only one load carrier passes through. This requirement is crucial for some applications such as the automatic exchange of boxes with mobile robots, AMRs, AGVs or for rockers.

Video about how it works:





Transfer of load carrier (shooter)

A shooter is a locking mechanism that is activated by pressing and leaves one (or more) load carriers "free". The principle is used for the automatic transfer of boxes, e.g. for AMR, FIFO racks or picking trolleys that load workstations or entire assembly lines at once.

Video about how it works:





Rocker for empty load carrier

This mechanism is suitable for ergonomic supply and return of load carrier, including separation of the crates to hold back the following crates. This solution is used at workstations or assembly stations with a high throughput of load carrier.

Video about





Lift for load carrier (crank handle)

Lifts for load carriers are mainly used to bridge height differences at the workplace, in production or in logistics processes to ensure ergonomic working. Lifts are often combined with a rocker solution to transfer the crate.

Video about how it works





Lift for load carrier (bracket)

Lifts for load carriers are mainly used to bridge height differences at the workplace, in production or in logistics processes to ensure ergonomic working. Lifts are often combined with a rocker solution to transfer the crate.

Video about how it works:





Rotation mechanism

This mechanism helps to carry out rotary movements for corner solutions, for example, for deflecting load carriers or for rotating table tops. A rotating Karakuri solution helps considerably in completing the task, in reducing the space required and supports ergonomic working.

Video about how it works





## **OTHER LEAN SOLUTIONS**

BeeWaTec solutions always support our customers' objectives with regard to the implementation of lean principles, such as FIFO, 5S, Kaizen, ergonomics and safety.

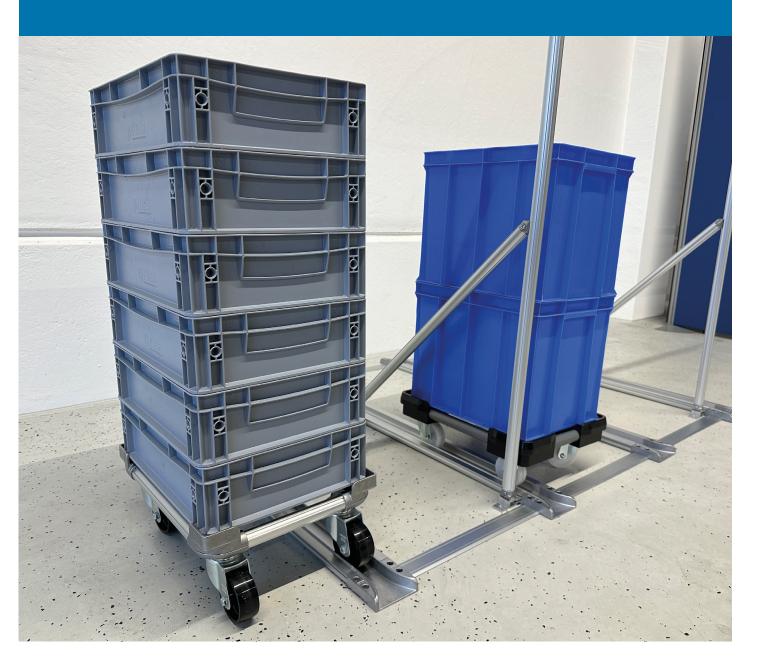
Thanks to our modular pipe racking system, we are able to realize any sort of solution, e.g. whiteboards, shadowboards, FIFO stations or superstructures for AMR.













### TRANSPORT TROLLEY WITH TEXTILE COMPARTMENT

to get a safe transport of sensitive parts (e.g. painted or coated parts)







Discover numerous parctical solutions and get inspiration for your project:





# AUTOMATION & MOBILE ROBOTS

Automation of transportation tasks, with unbeatable ROI.

The Genius 2 module from wheel.me transforms racks, trolleys, pallets and more into fully-fledged autonomous mobile robots (AMR). Our round pipes and square profiles offer the perfect way to implement your application. Retrofitting of existing equipment is also possible.





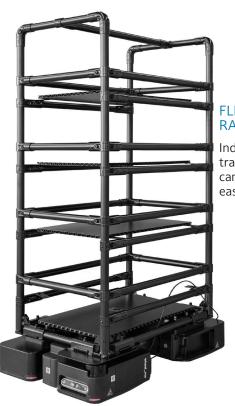


## wheel\_me





#### wheel\_me



#### CONTROL IN THE APP

With the wheel.me app, tasks and transport orders can be monitored, created and controlled in real time.

This allows you to maintain control of your robot fleet and your material flow in production and logistics at all times.

### FLEXIBLE DESIGN FOR A WIDE RANGE OF USE CASES

Individual applications, such as the transportation of racks, or pallets can be implemented quickly and easily.

#### 250 kg Load capacity of four wheels

#### < 19.000 €

Price point of four wheels

100% Flexibility of dimensions





On our website you will find a comparison of Wheel.me to conventional AMR:





#### **Publisher and production**

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All important adresses at a glance!

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