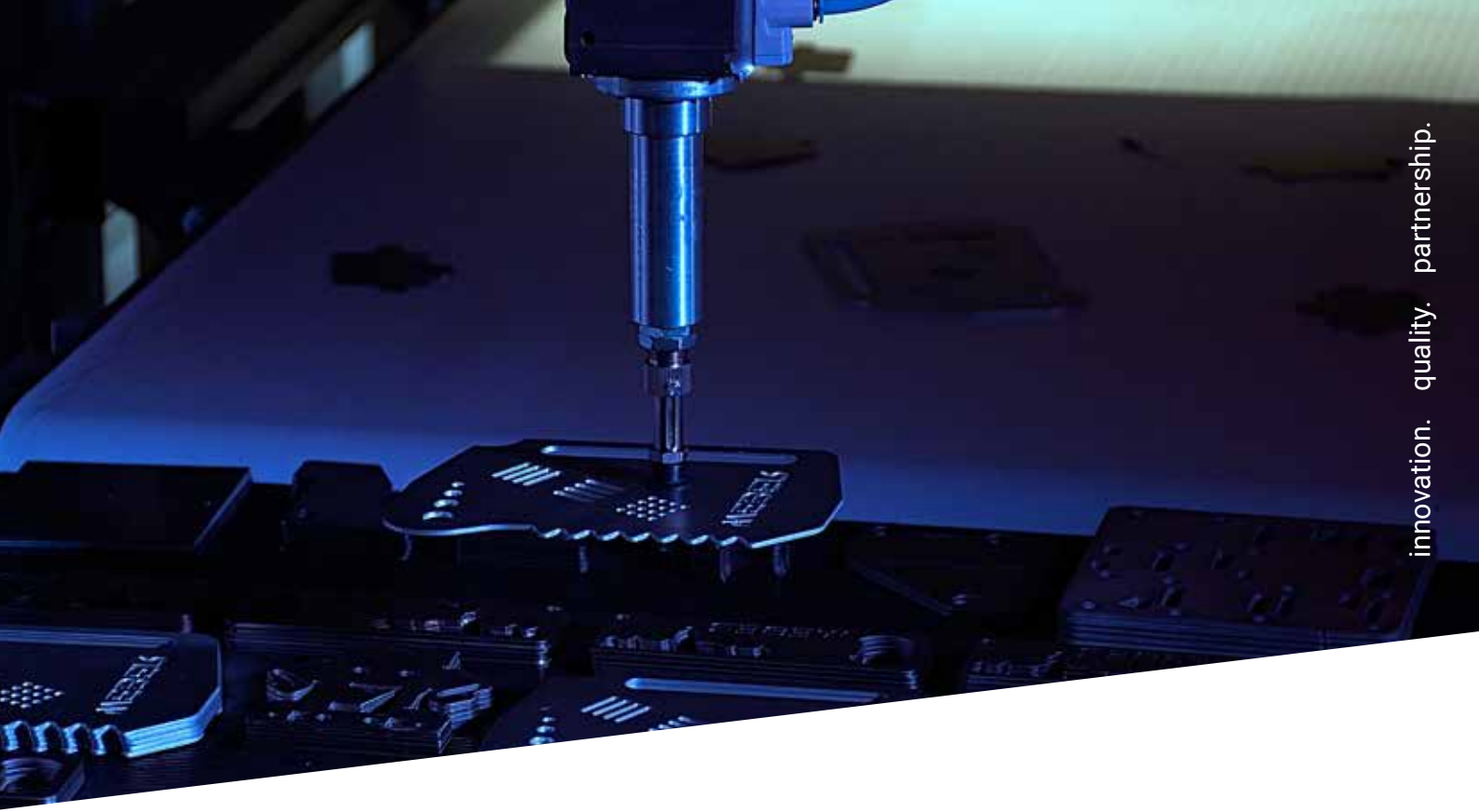


innovation. quality. partnership.

WEBER ROBOTIC AND AUTOMATION

HANSWEBER Maschinenfabrik

100 years of engineering
“Made in Germany“

For more than 100 years, WEBER has been representing perfection in machine manufacturing and the consistent implementation of new ideas.

+ 500
Employees in Kronach

+ 100
Years of competence and know-how

+ 46.000
m2 production area

Starting out with manufacturing a grinding machine for slates in the 1920s and having developed into one of the leading international companies in the sector: the development of the WEBER company is impressive.

Passion for new technologies has been in the genes of the Kronach-based machine factory for the last 100 years. Each new generation contributes its own, innovative ideas to the company’s history. The family-owned business has by now become firmly rooted in the market, offering not only excellent, patented wood sanding and metal grinding machine process technologies; it has also built up an excellent reputation in engineering plastics extrusion and pelletizing. By adding the „Additive Manufacturing“ and „Robotics and Automation“ divisions in 2019, WEBER also set new standards in the areas of large-volume 3D printing using direct extrusion and vision-controlled industrial robotics and automation solutions.

100 YEARS OF TRADITION WITH A VIEW TO THE FUTURE

Each WEBER division combines years of expert knowledge with innovative technologies. Behind each machine stands a team of specialists working hand in hand to create smooth workflows, individual solutions, and maximum efficiency – for 100 years. The constantly continuing development in the in-house research and development centres combines high-level engineering with utmost quality.

Dr. Markus Weber Ludwig Weber

FIRMLY ROOTED IN KRONACH IN UPPER FRANCONIA FOR 100 YEARS

The foundation of „Maschinenfabrik und Eisengießerei Kronach GmbH“ in 1922 is the historical origin of today’s Hans Weber Maschinenfabrik. Today, WEBER has more than 500 employees, including 44 apprentices. For comparison: at the time of their 50th anniversary, there were 253 employees and 42 apprentices. In other words, during the time between the two company anniversaries, the number of employees has doubled almost proportionally. WEBER produces at two locations in Kronach with a production area of 46,000m² and supplies customers from over 60 countries with machine technology „Made in Kronach“.

100 YEARS OF ONE BIG FAMILY

Numerous, long-time employees and, as a consequence thereof, the familiar working atmosphere, characterise the Weber company as employer. Like the members of the family owning the company, many employees have been working for the company for generations.

Industrial Robotics & Automation Solutions

Our automation solutions not only offer advantages in the teach-free handling of small batch sizes with a high diversity of variants.

AUTOMATED PROCESS
Innovative loading and placing systems, parts turning concepts and sorting systems – in addition to grinding technology, WEBER offers sophisticated gripping and stacking robotic from a single source, all according to the customer´s wishes. Depending on the material flow and space capacity WEBER designs individually optimized conveyor belt or even complete system solutions for the product

FLEXIBILITY IN THE BATCH
Wood/metal/plastics – small/large. Regarding the flexibility, WEBER offers changeable robot tools in order to react to the variety of the workpiece geometry. The working width of the conveyor can be flexibly selected, according to the requirements of the customer.

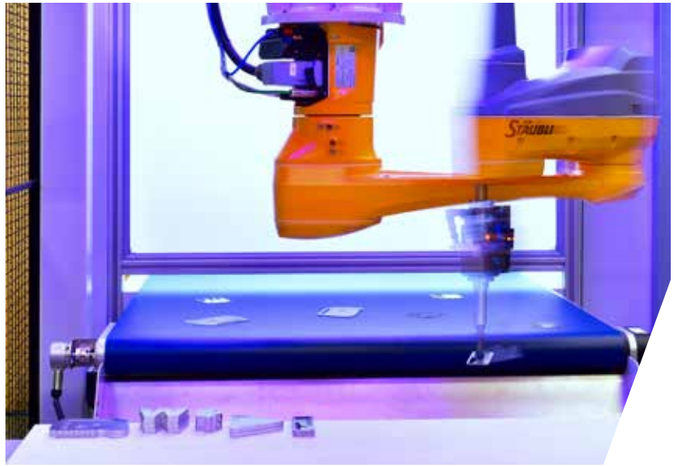
0
robotics knowledge necessary

100
% profitable with small batch sizes

- Workspace individually adapted to meet customer requirements
- Handling by 4-axis or 6-axis industrial robots from Stäubli and ABB
- Fully automated teaching of workpieces (teach-free due to automatic calculation of the gripping point)
- Intelligent palletizing and sorting
- Workpieces can be palletized in combination across batches
- Variable and configurable tool size
- Automatic tool changer

Adaptable handling system for unloading of a conveyor belt

Modular handling cells with sophisticated robot technology for sorting, stacking, workpiece handling



PROCESS DESCRIPTION

Sorting, stacking and workpiece handling – the modular palletizing and sorting system offers all this. This system complements the follow-up-process to the WEBER grinding machines and thus offers a perfect interface to the other processing steps of the workpieces.

HUMAN MACHINE INTERFACE

Using the user interface (touch panel), the operator can simply activate the teaching operation and monitor the current process. Workpieces are gripped intelligently depending on their center of gravity and geometry. The gripping point of the workpieces is automatically detected by the system. The operator does not require any programming or robot knowledge

Series HS-4-1000

Technical Data HS-4-1000

Part size:	20 x 20mm up to 750 x 750 mm
Workpiece geometry:	flat workpieces, any free form
Workpiece material:	metal, wood, plastics
Max. load capacity:	8,4 kg
Working width:	max. 1350 mm
Cycle time:	approx. 25 parts/min
Max. storage area:	1200 x 800 x 370 mm
Robot type:	Stäubli TS2-100

The perfect solution for small batch sizes and a high variance of different workpieces due to the fully automated teach-in of the parts and the intelligent palletizing.

+

The modular design of these handling systems enables the integration to any predecessor machines.

+

Due to the integrated roller conveyor, the handling cell can be combined with a pallet station, allowing production to be completely automated.

+

In addition, this variant offers a very large stacking height, which means that a large number of workpieces can be stacked on the pallet.

Series HS-4-1000 with extended conveyor belt

The perfect solution for small batch sizes and a high variance of different workpieces due to the fully automated teach-in of the parts and the intelligent palletizing

Technical Data HS-4-1000

Part size:	20 x 20mm up to 750 x 750 mm
Workpiece geometry:	flat workpieces, any free form
Workpiece material:	metal, wood, plastics
Max. load capacity:	8,4 kg
Working width:	max. 1350 mm
Cycle time:	approx. 25 parts/min
Max. storage area:	1200 x 800 x 170 mm
Robot type:	Stäubli TS2-100

+

This series offers great advantages with regard to the setup effort for oversized workpieces.

+

Due to the extended conveyor belt, non-handleable workpieces can be removed manually, which means that autonomous robot handling and manual operation can be easily combined.

+

The roller conveyor located at the outlet can also accommodate a large number of workpieces, which can be removed manually at the end of the production series.

Series HS-6-2000

The handling system, consisting of the core components like the industrial robot, camera system and the conveyor, localizes and identifies the workpieces entering the cell. They will be teached fully automated and intelligently palletized on a europallet.

Technical Data HS-6-2000

Part size:	20 x 20mm up to 1200 x 1200 mm
Workpiece geometry:	flat workpieces, any free form
Workpiece material:	metal, wood, plastics
Max. load capacity:	25 kg
Working width:	max. 1600 mm
Cycle time:	approx. 13 parts/min
Max. storage area:	1200 x 800 x 500 mm
Robot type:	Stäubli TX2-160L

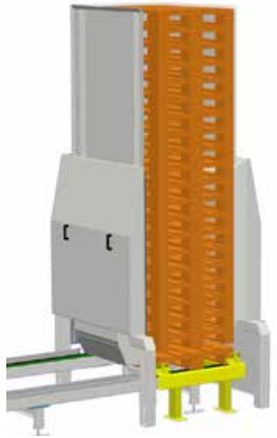
The new HS-6-2000 is the answer to the requirement of handling larger and heavier workpieces.

+ Can be combined with pallet station
+ Modular design means that existing systems can be integrated without any problems
+ Fast cycle times thanks to fast 6-axis industrial robot from Stäubli

Options for HS-4-1000 / HS-6-2000

A **roller conveyor** at the pallet infeed can serve as an additional buffer space for empty or loaded pallets and, in combination with an impact protection, offers protection against damage e.g. by industrial trucks.

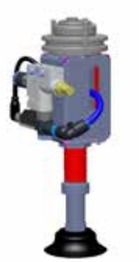
The integration of a **pallet station** enables the completely unmanned production and is available from WEBER in different variants with any number of stations. Loading and unloading with driverless transport systems is also possible with this option, whereby a high degree of automation in company logistics is achieved.



The **pallet magazine** enables the provision of more than 20 load carriers and thus provides further relief for the company's logistics.

The **transfer roller conveyor** enables the manual handling of oversized workpieces and is compactly adapted to the size of a europallet, which means that it can for example also be used in combination with an automated pallet station.

Tool Portfolio



SINGLE SUCTION CUP

DOUBLE SUCTION CUP

AREA SUCTION CUP

MAGNETIC GRIPPER

PARALLEL GRIPPER

With the large number of different robot tools, a variety of different workpiece geometries can be handled. In addition, the calculation of a suitable gripping point takes place automatically without any intervention by the operator.

Another advantage is the adjustment options on the various tools. For example, the vacuum tools can be equipped with a wide variety of suction cups or the distance between the vacuum suction cups can be adapted to the respective workpiece.

5

Tools for handling a wide variety of workpieces

4

automatic changing stations for maximum flexibility

Thanks to the integrated automatic tool changing system, the robot always has the right tool for the corresponding workpiece available, without any intervention by the machine operator.

Another special feature of this changing system is the power supply, which is guided internally and eliminates interfering contours, e.g. due to cables on the robot tool.

hansweber.de/en/products-services/automation

HANSWEBER Maschinenfabrik

Variable handling systems and individual system solutions

PROCESS DESCRIPTION
In order to increase the degree of automation, Weber also offers complete solutions, which, in addition to the robots for workpiece handling can include transport systems for pallets or pallet cages. Thus, the operation of the system is possible in completely self-sufficient mode, which is especially important for a line integration.

Technical Data

Working width:	variable
Cycle time:	depending on requirements
Workpiece geometry:	variable
Storage area:	variable
Robot type:	depending on requirements

Variable handling systems as a complete solution with individual adaptation in independent operation

There are almost no limits to size and weight and all feasible customer requirements can be implemented.

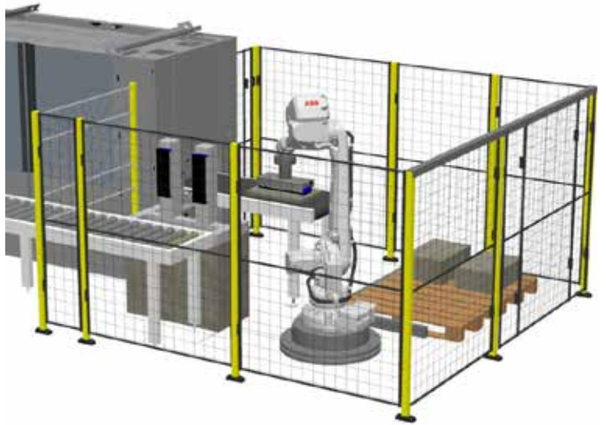
The robot type is selected according to the respective requirements (e.g. payload, cycle time). Generally we use high quality robots for our automation solutions of the brands Stäubli and ABB.

Adaptable handling systems for loading a conveyor belt

Technical Data HS-4-1000

Part size:	20 x 20mm up to 750 x 750 mm
Workpiece geometry:	flat workpieces, any free form
Workpiece material:	metal, wood, plastics
Max. load capacity:	8,4 kg
Working width:	max. 1350 mm
Cycle time:	approx. 25 parts/min
Max. storage area:	1200 x 800 x 370 mm
Robot type:	Stäubli TS2-100

Are you looking for a perfectly tailored to your requirements loading solution?
Get in touch with us. We will be happy to develop a suitable solution for you.



By supplementing your unloading system with an automated loading system, you can achieve complete automation of your machine. Through the possibilities of integrating automated infeed and outfeed solutions, the degree of automation can be further increased up to completely unmanned production.

Vibratory bowl feeder for loading a conveyor belt

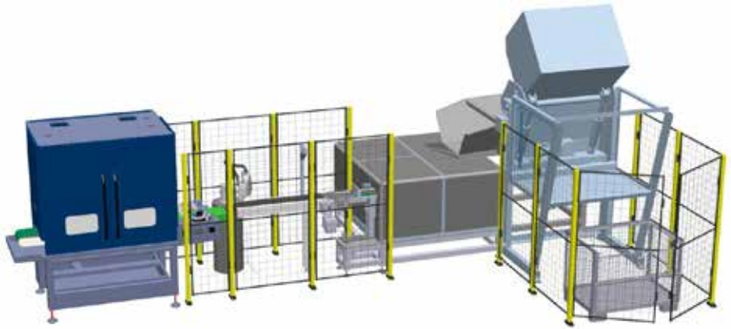
1,5
kg max part weight

3 – 10
mm part thickness

150x150
mm up to approx part size

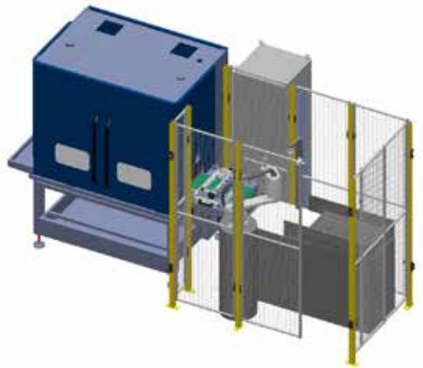
Vibratory bowl feeder are used for the correct sorting of bulk material and industrial mass-produced parts. In an electromagnetically driven sorting upper section the workpieces are conveyed up a circular spiral using the microthrow principle, are aligned in the correct position with the aid of various arrangement devices and fed in a defined position to a further accumulating section. Our system can be extended by further components, such as container tipping equipment, storage and dosing bunkers and sound-insulating bonnets, so that you can obtain a complete system from us.

Capture and recognition of the workpieces by our camera technology and subsequent loading according to the requirements



Our systems can be extended by further components, such as tilting device, storage and dosing hopper and sound insulation hoods, so that you can obtain a complete system from us.

Adaptable handling systems for loading a conveyor belt



Our feeder systems offer a flexible solution for feeding parts in large quantities. By combining image processing, robotics and special software, we can offer customers individually adapted and customised solutions. The variety of parts is almost unlimited and a change of batches is no problem.

100
g up to approx max part weight

100 x 100
mm up to approx part size

Part turning concepts for the optimally automated handling of your workpieces

Our portfolio includes a wide range of part turning concepts that complete our handling cells and enable us to develop customised solutions. Together we will find a solution for your individual requirements.

Optical surface inspection of metallic workpieces

PROCESS DESCRIPTION
The industrial image-based inspection system from Weber detects workpiece defects in continuous conveying operation (in-line inspection) after the sanding process and thus complements the follow-up process to WEBER grinding machine. With high-resolution 2D camera technology, individual lighting concepts, classical as well as deep learning based image processing algorithms and the many years of experience in surface quality of metallic sanded workpieces, Weber offers the inspection systems according to customer requirements.

DEEP LEARNING BASED SURFACE INSPECTION
The surface inspection is a classic field of activity of industrial image processing, which however is mostly unsuitable for inhomogeneous metallic surface structures. For the detection of different types of defects such as groofs, burrs, blowholes or edge damage which were not removed during the sanding process, Weber relies on Deep Learning for surface inspection.

Individual adjustments to your needs may not be missing?

THEN YOU ARE EXACTLY RIGHT WITH US!
We design and develop the appropriate concept for you exactly tailored to your requirements, your components and your space possibilities.

HAVE WE AROUSED YOUR INTEREST?
May we help you with further, more detailed information about WEBER robotics and automation systems or are you interested in additional technical information?

We would also be happy to develop the right machine configuration for your company as part of a project. Our sales team looks forward to your enquiry.

hansweber.de/en/products-services/automation

HANSWEBER Maschinenfabrik

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