

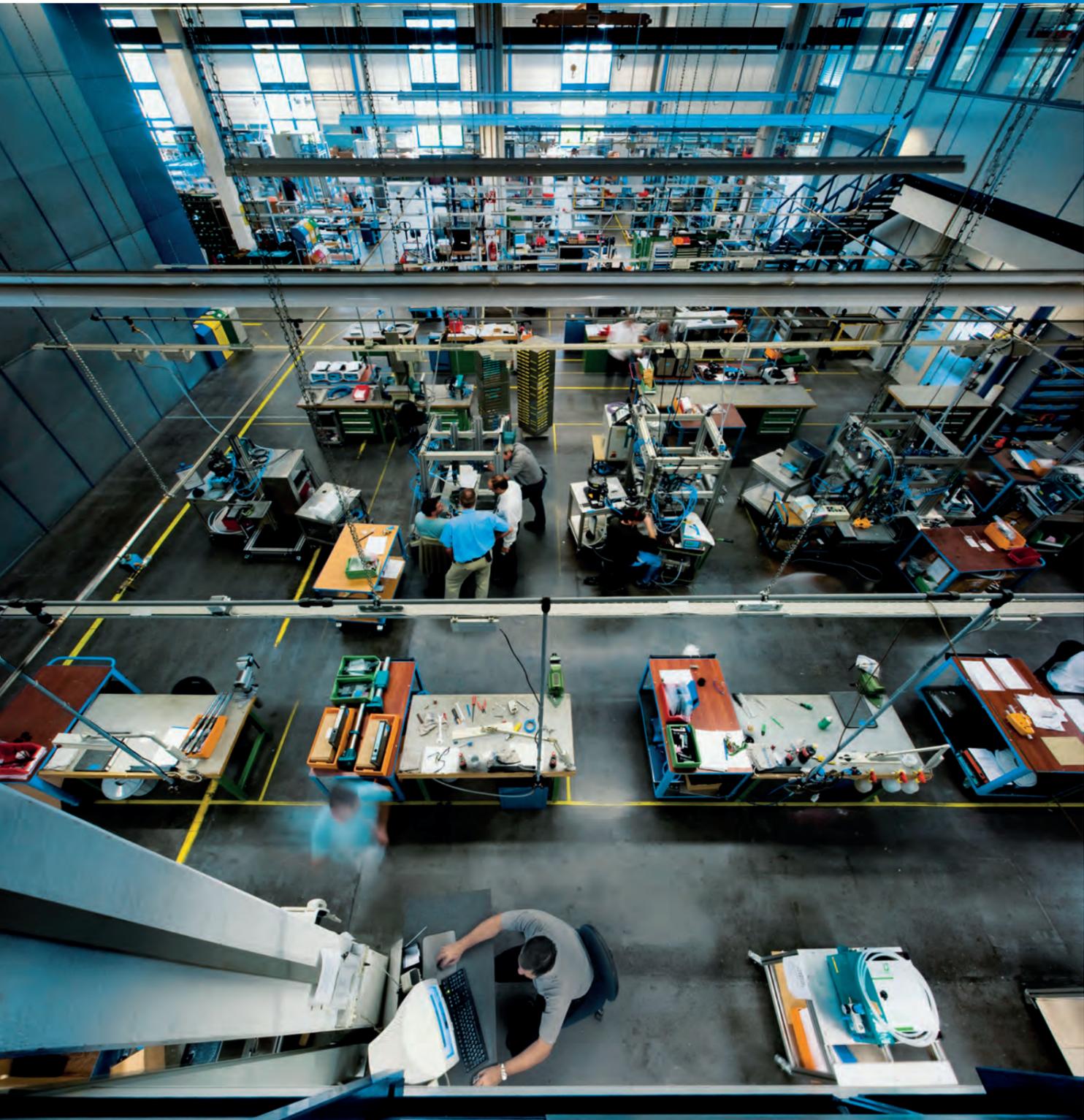


# WEBER Automatic Screwdriving Systems

Technology That Connects



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## The art of doing the right thing at the right moment

### High-end WEBER products set standards for screwdriving automation

More than 60 years after the founding of the company, we still follow the same principle: each application is unique, each customer has specific requirements and each automation process requires a tailor-made solution.

The secret to the success of WEBER is that we listen to our customers. We carefully analyze their requirements to develop optimal solutions. And ultimately, it is all about increasing efficiency, optimizing processes and helping our customers to be economically successful.

We recognize that the needs of a medium-sized furniture assembly company are completely different from those of an automotive manufacturer. Thanks to the quality of our products, solutions and services, our innovative automatic screwdriving systems have been leading the market since 1956. For me, the value of our company also lies in the fact that we speak the same language as our customers.

Our screwdriving products, feed systems and control units – and of course the WEBER automatic screwdriving systems – must be able to reflect the complexity of modern assembly processes. WEBER customers are therefore justified in demanding 100 percent process reliability and the full flexibility to select their parameters freely.

This is why we want to show you on the following pages where we specialize and how you can benefit from our expertise. So get ready – for WEBER and technology that connects.



Yours,  
**Karl Ernst Bujnowski**

Managing Director  
WEBER Schraubautomaten GmbH



### Applications

- + Assembly systems
- + Manual workstations
- + Assembly cells
- + Robot stations
- + Assembly lines

### Processes

- + Screwdriving
- + Setting and inserting
- + Feeding
- + Controlling, testing, documenting

### Special applications

- + System solutions
- + Setting system for blind rivet nuts
- + Joining system for flow drilling screws
- + Setting system for sandwich structures

### Service

- + Personal consulting
- + Comprehensive problem analysis
- + Customized system development
- + Training and on-site support
- + 24-hour service

### Industries

- + Electrical industry
- + Mechanical engineering
- + Aviation industry
- + Car body construction
- + Automotive
- + Telecommunications
- + Wood industry
- + Household appliances
- + Medical and life sciences
- + E-mobility

# WEBER Solutions

WEBER has been offering reliable and accurate automatic screwdriving systems for assembly applications in all industrial sectors for over 60 years



### Electrical industry

Electrical components require assembly systems that provide high technical cleanliness and short cycle times.



### Car body construction

New joining technologies for lightweight construction require flexible assembly systems and continuous innovations – with maximum system availability.



### Wood industry

High-performance handheld and fixtured screwdrivers are tailored to less complex assembly processes.



### Medical and life sciences

Technical cleanliness is a key requirement for the assembly of high-precision medical devices.



### Mechanical engineering

Machinery and plant manufacturers worldwide rely on WEBER because of the flexibility of our products.



### Automotive

Solutions for the automotive industry have to primarily focus on short cycle times. The high process reliability of WEBER equipment is essential.



### Household appliances

WEBER technology enables high cycle rates and fasteners at points that are difficult to access.



### E-mobility

Insulated WEBER automated screwdriving systems also offer customized solutions for manufacturing and assembly of live components.



### Aerospace industry

The quality of screw connections and pressed connections must be documentable even after many years.

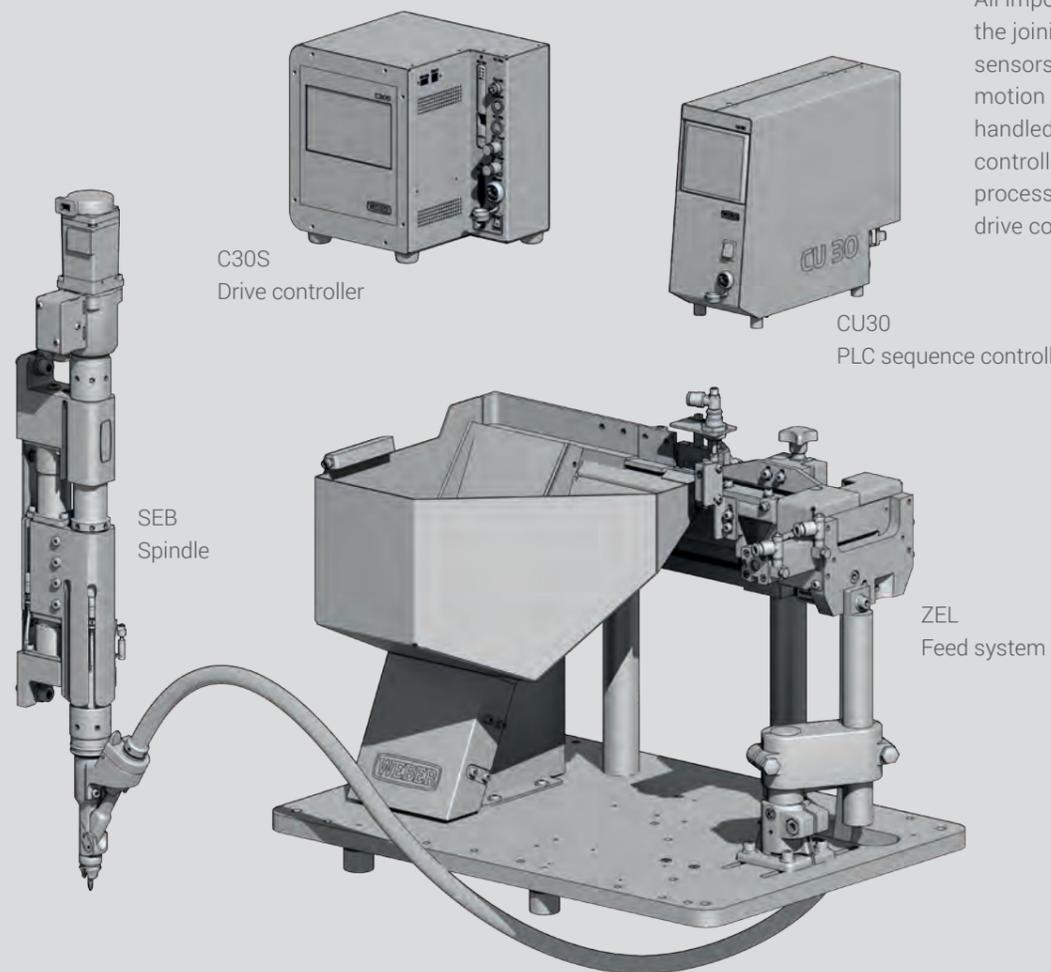


### Telecommunications

WEBER technology allows even the smallest components to be connected with consistently high quality.

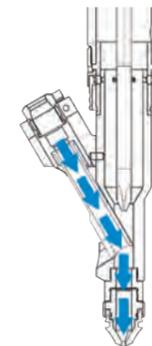
# The WEBER "Feed While You Drive" Technology

Typical setup of a WEBER screwdriving system with automatic feeding. All important functions of the joining process such as sensors, valves, spindle motion and feeding are handled by a PLC sequence controller. The screwdriving process is controlled by a drive controller.



The "WEBER principle" or WEBER "Feed While You Drive" advantage is based on screwdriving with fully automatic feeding. Both the compact and powerful handheld screwdrivers and our widely configurable fixtured screwdriving systems follow this principle. The automation of screwdriving processes has only one goal – to make assembly tasks quick, cost-efficient and reliable to help our customers achieve significant cost savings. The successful WEBER Feed While You Drive technology consistently follows this strategy and ensures success.

## Step 1



The first screw is blown through the swivel arm into the aligning jaws of the screwdriving head. The feed path and the aligning guide are tailored to the screw dimensions so that the head and screw are perfectly concentric in the aligning guide to ensure a smooth transition of the screw.

## Step 2



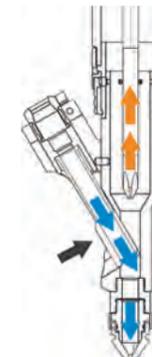
The driving bit advances towards the screw and moves the swivel arm aside so that the following, "on-deck" screw can be fed.

## Step 3



As the screwdriver installs the first fastener, the "on-deck" screw is delivered to the swivel arm. This saves time.

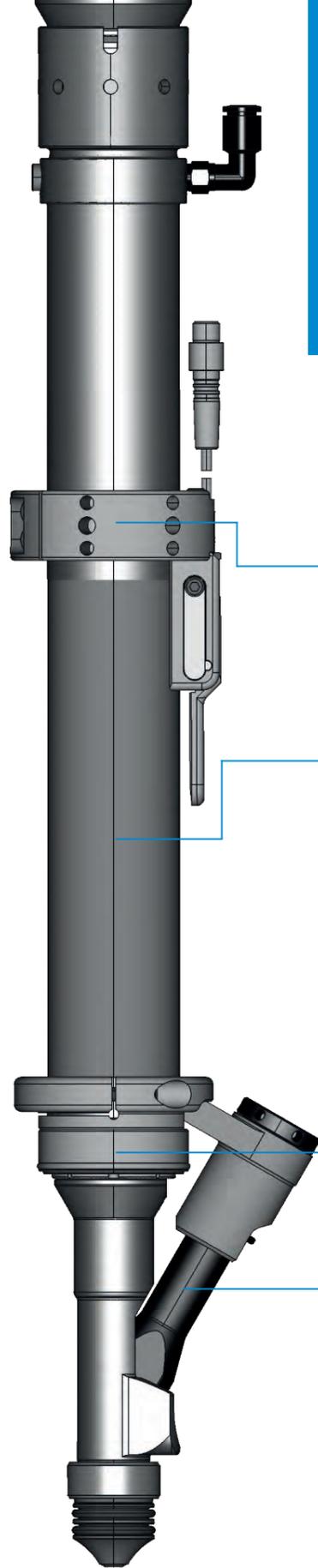
## Step 4



After completing the install, the bit retracts and the swivel arm moves back into the feed position. The screw is delivered to the aligning jaws in a fraction of a second so that the screwdriver is immediately ready for the next cycle.



# Handheld Screwdriving



## Mounting area for handling device

Our torque reaction devices run smoothly and minimize the tool weight to allow ergonomic operation. The screw guide ensures a high level of process reliability.

## Integrated bit stroke for ergonomic operation

The integrated bit stroke reduces fatigue during operation. The pneumatic bit feed lifts the screwdriver slightly during the installation process, preventing damage to the workpiece.

## Quick-release for tool-free bit changes

The entire screwdriving head is equipped with a quick-release system. Head and bit changes can be carried out within a few seconds, without tools. An appropriate nosepiece is selected to suit the component geometry and accessibility of the installation site.

## Swivel arm for short cycle times

The WEBER Feed While You Drive swivel arm allows the next screw to be supplied during the screwdriving process. It ensures uninterrupted, precise guiding from the feed unit into the nosepiece, even for short screws.

## Handheld screwdrivers with electric drive

The HSE series handheld screwdrivers are available in many variants to cover a wide range of applications. The powerful handheld screwdrivers with automatic feed system have a winning combination of compact design and low weight, which is an advantage for safety-relevant assembly processes or for use on sensitive components.

The handheld screwdrivers are suitable for right and left rotation. The screwdriving process is triggered with the press of a button. The process result is displayed on the touch screen panel of the controller.



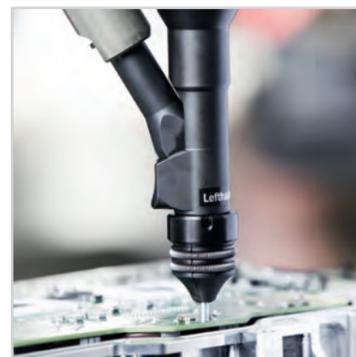
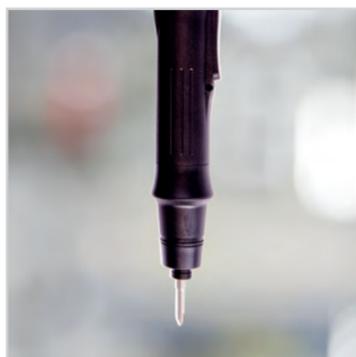
# Handheld Screwdriving

## Ergonomics and flexibility are always included

The advantages of handheld screwdriving technology are plain to see – highly flexible, powerful and with almost 100 percent process reliability thanks to programmable control technology.

Ergonomics and variability of the screwdriver play a central role in manual screwdriving. WEBER products allow fatigue-free working while ensuring high volumes with short cycle times. The quick-release makes it easy to quickly change the screwdriving head on the HS series.

## Models



HSE with handle

### ESB

- Handheld screwdriver with electric drive
- Without feed system

### HET

- Powerful handheld screwdriver with electric drive
- Without feed system

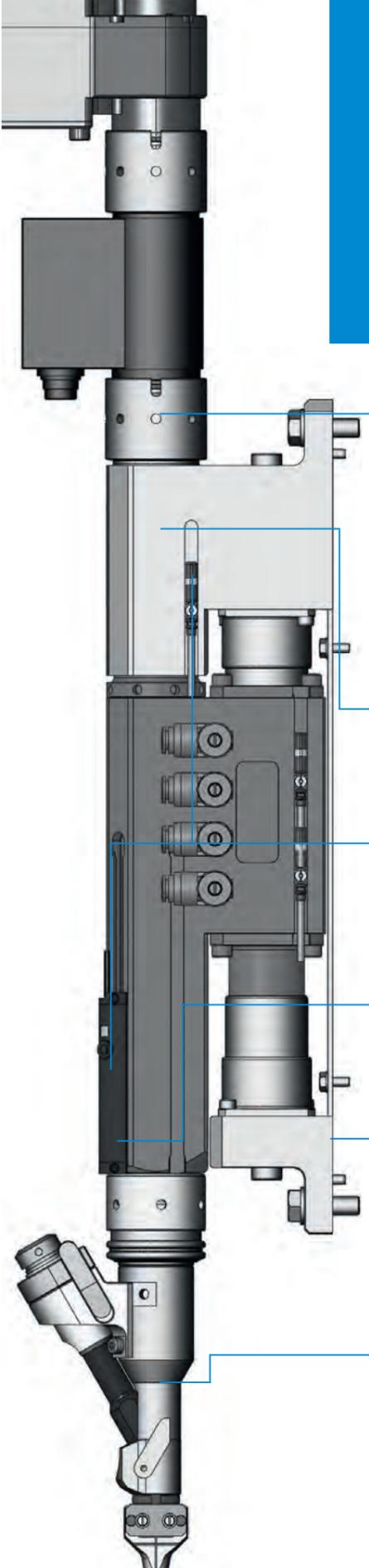
### HSP/HSD/HSV

- Handheld screwdriver with pneumatic drive HSP
- Version with stall detector HSD
- Version for hard to reach screw locations HSV
- Automatic feed system
- Integrated bit stroke

### HSE

- Handheld screwdriver with electric drive
- Optionally with customer-supplied drive
- Automatic feed system
- Integrated bit stroke

# Fixtured Screwdriving Systems



## Drive and transducer connections

The spindle connections are designed to be modular with solid, castle-gearing, which ensures quick, safe and backlash-free torque transmission.

## Robust housing

The housing is a monoblock design and is made of high-strength billet aluminum. A special coating makes the surfaces wear-resistant.

## Sensors in clamping grooves

The use of magnetic-inductive sensors delivers high switching accuracy in minimal space. The programmable depth sensor monitors the final depth and the end position of the screw head to speed up cycle times.

## Analog depth sensor

Only the WEBER fully integrated, closed loop analog depth sensor can control the driving speed through a distance, resulting in optimal clamp load verification. This allows reliable switching even for different component heights, minimizing the setup work during commissioning.

## WEBER mounting profile

The spindle has a unique profile to mount on the customer's flange. An additional rail ensures that all defined depth values are retained, even after maintenance work.

## Quick-release system

The entire screwdriving head is equipped with a quick-release system. This allows operators to change bits within a few seconds and without tools, convert to other screw types or correct malfunctions. A uniquely designed nosepiece is selected to suit the component geometry and the accessibility of the installation site.

## Shock safety – thanks to an insulated bit

This exclusive WEBER technology allows you to work on high-voltage components up to 1,500V. The auto-feeding head and bit are insulated for these special applications to protect the sensitive motor and controller from damage. WEBER uses highly specialized, non-conductive components to enable this capability. The spindle concept also makes allowance for the relevant clearance and creepage distances, and ensures a high degree of cleanliness by avoiding metallic abrasion.



## Vacuum technology

Some parts have difficult access to the screw locations. This prevents the screwdriving head from reaching the installation location.

In these cases, WEBER offers vacuum screwdriving technology. The screw is attached directly to the vacuum tube using negative pressure. The vacuum tube advances out of the screwdriving head and into the working position, accurately delivering the hardware to the part.

WEBER's vacuum screwdriving technology keeps the screw in the ideal position, even outside of the screwdriving head to ensure reliable installation.



# Fixtured Screwdriving Systems

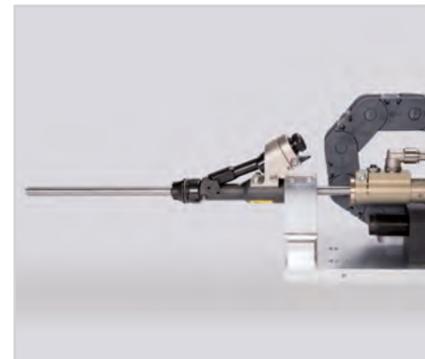
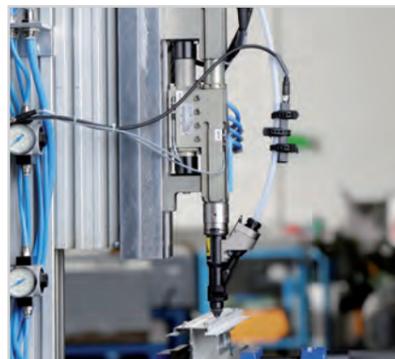
## From stand-alone stations to individually tailored systems

WEBER automatic screwdriving systems grow with the demands companies place on automated assembly processes.

Fixtured screwdriving is used when processes become more complex, cycle times become shorter and quality requirements in terms of process reliability become higher.

Stationary screwdriving spindle systems from WEBER allow flexible configurations for all installation situations. Nosepieces, stroke lengths, sensors or drive units – everything can be adapted to customer requirements. WEBER offers customized solutions to suit any application and screwdriving process. Tool changes on the screwdriving units are made easy by innovative fasteners and the modular design.

## Models



### SER/SEB

- Standard design with screwdriver stroke and integrated head stroke
- Automatic feed system
- Pneumatic or electric drive unit

### SEV

- Screwdriving spindle with vacuum technology to ensure reliable fastener insertion even in deep recesses
- Automatic feed system
- Pneumatic or electric drive unit

### SEK/SEM

- Screwdriving spindle with cylinder controlled screw positioning for top-heavy screws as well as DIN, flange and special nuts
- Automatic feed system with profiled feed tube
- Pneumatic or electric drive unit

### SEV-E

- Screwdriving spindle with vacuum technology to ensure reliable fastener insertion even in extremely deep seated and hard to reach locations
- Automatic feed system
- Pneumatic and electric drive unit

### SEV-P

- Screwdriving spindle with vacuum technology for lightweight robots
- Tool changer allows various screwdriving applications
- Feed via pick&place
- Electric drive unit

### SEV-C/SEV-L/SER-L

- Screwdriving system for lightweight robots (SER-L)/with vacuum (SEV-L)
- Safety system (SEV-C) for collaboration
- Automatic feed system
- Electric drive unit

# Setting and Insertion Systems

## Simple, quick – and always under control

Connection technology means more than just automating the screwdriving process. That is why WEBER also offers innovative technology for other joining processes, such as fix-tured or handheld setting and insertion units for pins, bolts or clips.

All systems are equipped with automatic feed systems and intelligent controllers, allowing high process forces during setting or insertion.

## Models



### HPP

- Manually manipulated system to install blowfed components with low insertion force
- Automatic feed system
- Pneumatic drive unit

### PEB

- Fixtured system for insertion tasks up to 10 kN
- Automatic feed system
- Pneumatic drive unit



## HPP

### Manually manipulated system

The HPP is designed for pneumatic setting at low insertion forces. The handheld unit is used to push in fasteners or place them onto a component.



## PEB

### Fixtured insertion system

The PEB spindle series is used for insertion applications. The insertion force is generated pneumatically. The spindle is highly suitable for single station and complex assembly systems. Different sizes are available for different applications, depending on the size of the fastener and the required insertion forces. Verification of the depth and the insertion force ensures maximum quality.



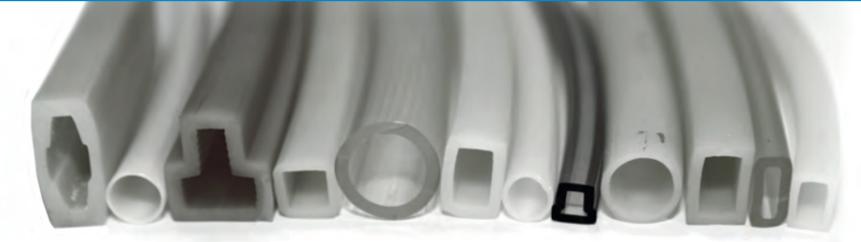
# Feed Systems

## Intelligent sorting

The feed system for fasteners is one of the key components when it comes to reliability, quality and cost reduction in any automated assembly process. The overall process success depends heavily on a robust yet gentle feeding solution.

Developing such systems requires years of experience and expertise. Only the correct choice of sensors and controllers can link the individual components to form a fully automatic feed system that is individually tailored to customer requirements.

With more than 30,000 screwdriver and assembly systems with automatic feeding delivered, WEBER is among the market-leading companies in this field.



## Feed tubes

Parts with complex shapes often have to be delivered across long distances. Placing feed systems further away from the assembly systems saves valuable space. The wide selection of WEBER profiled and round tubes allows reliable conveying of fasteners which are difficult to transport, such as top-heavy screws.

WEBER was the first manufacturer to use profiled tubes for the delivery of nuts.

## Models



### ZEB bowl feeders

- Abrasion-resistant feeder bowl for long service life
- Unique solid urethane with dual durometer protects the conveyed material and reduces noise

### ZER bowl feeders

- Feed system for complex parts
- Digital twin for 100% reproducibility
- 3D (geometric) Deep Learning for the development of sorting tracks (AI)

### ZEL step feeders

- Gentle conveying
- Very low noise emissions
- High output volume
- Low abrasion for high technical cleanliness

## Accessories



### + Sound insulation cover

Sound insulation covers reduce the noise emission of our feed units. Removable for quick servicing and lids allow easy refilling of fasteners.

### + Base frames and distributors

Our base frames ensure that our WEBER feed systems are on a secure footing. They can be used to easily attach control units, distributors, pneumatic components and hopper systems. The distributors are designed to distribute fasteners to multiple WEBER devices.

### + Belt hoppers

Belt hoppers extend the intervals between refills of the feeder. They are placed on a frame directly above the feed unit.

### + Brakes

WEBER brake systems have two functions: First, they dissipate the kinetic energy of heavy fasteners to protect the screw head. Secondly, the dirt brake version effectively reduces the number of particles in the screwdriving system.



# Control Systems



## Screwdriving process control

Process controls monitor and regulate the actual screwdriving process – speed, torque and insertion depth.

## Features

- + Define and control screwdriving spindle rotation (servo-drive)
- + Evaluate process and trigger response to OK or NOK
- + Display, document and transfer screwdriving data

## Sequence controls

These controls are responsible for running the system (actuators and sensors).

## Features

- + Control and monitor screwdriving spindle stroke motion
- + Control feed system for fasteners
- + Handle communication with the peripheral equipment

## Did you know?

WEBER believes in developing the control solutions for the screwdriving processes in-house. This ensures that the screwdriving results meet even the highest quality expectations. Alongside the patented WEBER depth gradient method and the M360 method, we have been using the gradient method (torque gradient) since 1995 and developed it further.

## Models



### C5S

- Very simple screwdriving applications
- Screwdriving process control
- Digital interface
- EC servo drive

### C30S

- Complex screwdriving applications
- Screwdriving process control
- Touch panel
- Digital interface
- Fieldbus interface
- External display possible
- USB interface
- EC servo drive

### C50S

- Very complex screwdriving applications
- Screwdriving process control
- Digital interface
- Fieldbus interface
- External display
- Ethernet interface
- EC servo drive

### C10

- Simple screwdriving tasks
- Sequence control

### C15

- Simple screwdriving tasks
- Sequence control
- Digital interface

### CU30

- Complex screwdriving applications
- Sequence control
- Touch panel
- Digital interface
- Fieldbus interface
- External display possible

# Control Systems

# Tightening Methods



Torque dynamic transducer MDG

## Electronically controlled screwdriving system with current control

The screwdriving spindle is fitted with a highly dynamic AC servo-drive. The motor current consumption and rotor position of the EC drive are continuously measured during the screwdriving process. This data is then transmitted to the screwdriving process control. EC drives are equipped with rotor position monitoring which can be used instead of the measured rotation angle signal.

## Electronically controlled screwdriving system with torque and rotation angle measurement

The screwdriving spindle can also be fitted with a highly dynamic electric servo-drive. The important torque and rotation angle screwdriving parameters are continuously measured during the screwdriving process by highly sensitive dynamic transducers and transferred to the associated screwdriver controller. The controller uses these collected measurements in a closed loop process to control the entire screwdriving process. The technology allows optimum precision for joining processes. All recorded screwdriving processes can be documented. The same applies to torque repeating accuracy. This always provides precisely measured values and data with absolute accuracy for quality assurance of the screwdriving process.



Torque/rotation angle dynamic transducer MDW

## Redundant measurement according to VDI/VDE 2862

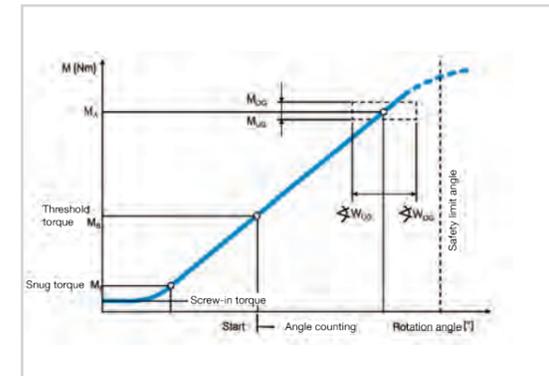
The VDI/VDE 2862 guideline defines joint types and minimum requirements for assembly tools. In category A – danger to life and physical well-being – the control and monitoring variable must be directly measured on an automatic screwdriving system. This means the transducer on the production system must have a second redundant transducer to constantly check the primary transducer for accuracy. WEBER screwdriving systems can cover all categories A, B and C.

The correct installation of any fastener is not only determined by the friction under the head of the fastener and in the thread but also by the accuracy of the screwdriving tool and the tightening method.

## Torque-controlled tightening

The screw is tightened to a pre-load below the yield strength. Rotation angle monitoring is used in addition to verify the desired torque value.

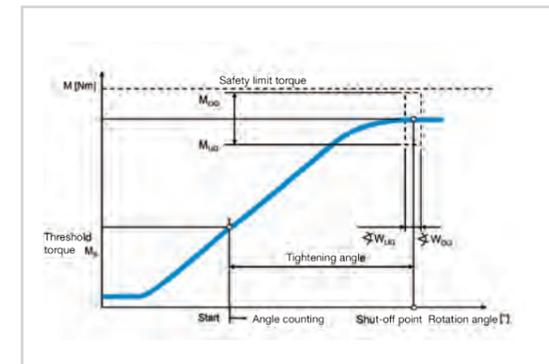
- + Torque is easy to measure and control
- Large variation of pre-stressing force



## Rotation angle-controlled tightening

First, the screw is tightened up to a defined threshold torque  $M_S$ . Above this torque, the screw is turned further by a defined rotation angle into the plastic range. The system also monitors the shut-off torque.

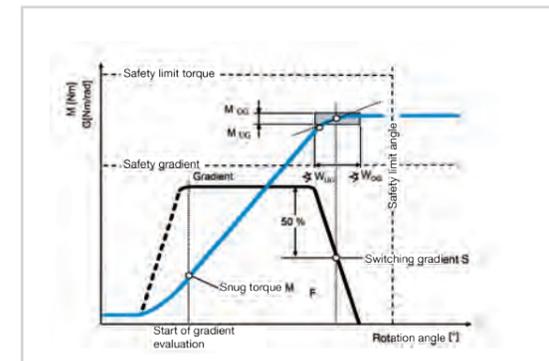
- + Constant clamping force regardless of friction
- + Optimum use of material
- Screws not reusable after releasing
- Not suitable for all screw connections: requires expansion screws
- Determining screwdriving parameters is complex



## Yield-controlled tightening

The screw is tightened up to the limit of plastic strain with a calculated gradient of torque and rotation angle. Tightening is stopped when this gradient drops from its maximum by a defined percentage (usually 50%).

- + Pre-stressing force is achieved largely regardless of friction
- + Optimum use of the screw
- + No special screw shape required (e.g. expansion screws)
- + Screw can usually be reused after releasing
- Complex screwdriving and control system
- Not suitable for all screw connections



Other WEBER screwdriving process control types are drive to depth, relative torque and the patented depth gradient control method.

# System Solutions

## RSF – robotic screw-driving system

### Detachable screw connections without prior processes

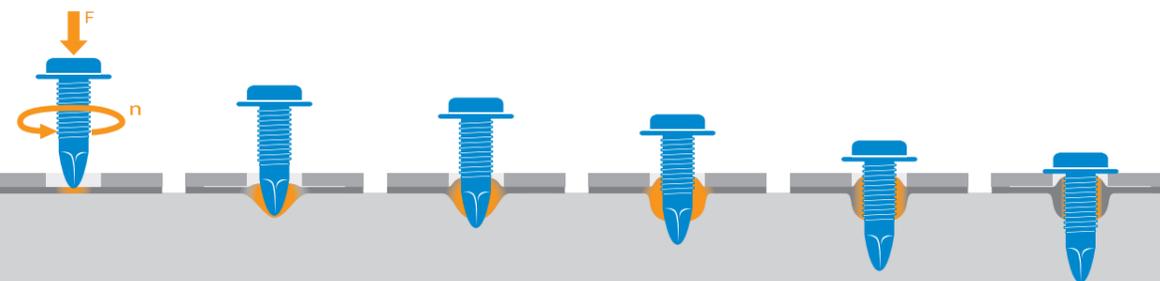
Composite construction designs and one-sided accessibility of joints are challenges for the joining technology in vehicle body construction. The RSF robotic screwdriving system for flow drilling screws ensures high-strength connections in just one joining process. Screw connections can be accomplished with or without pilot holes and compensating material variations and manufacturing tolerances.

### High strength and flexibility

A metric thread is cut directly into the elements to be joined. This produces detachable joints, allowing dismantling at any time. The RSF method creates screw connections with high tightening forces and release torques. The process is freely configurable.

### Features of flow drilling joining technology

- + Also suitable for single sided accessibility
- + Suitable for joining different materials and thicknesses
- + More than two layers can be joined
- + Joining process with low generation of heat
- + Forming of a metric female thread



- Phase 1**  
Pressing force and high RPM heat the sheet
- Phase 2**  
Conical screw tip penetrates the material
- Phase 3**  
Formation of cylindrical passage
- Phase 4**  
Chip-free cutting of a metric true-to-gauge female thread
- Phase 5**  
Screw penetration
- Phase 6**  
Tightening of screw to set torque

## Features

- + Patented WEBER depth gradient for precise switching between flow drilling and thread tapping
- + Intelligent boost function to compensate for material tolerances during the process
- + Fast tool changing by hand
- + Automatic pilot hole compensation thanks to a floating head
- + Prevention of screw tipping thanks to a controlled jaw opening
- + Cycle time-shortening drive detection of the bit before the process starts
- + Flexible design for quickly changing from the straight to the compact version



More information:  
[www.rs25.com](http://www.rs25.com)

### WEBER facts

- + In 1999, WEBER was the first manufacturer of systems for automatic flow drill installation
- + Patented depth gradient screwdriving
- + Over 1,500 systems in use worldwide



# System Solutions

## TSS – setting system for sandwich structures

### Thermal bonding

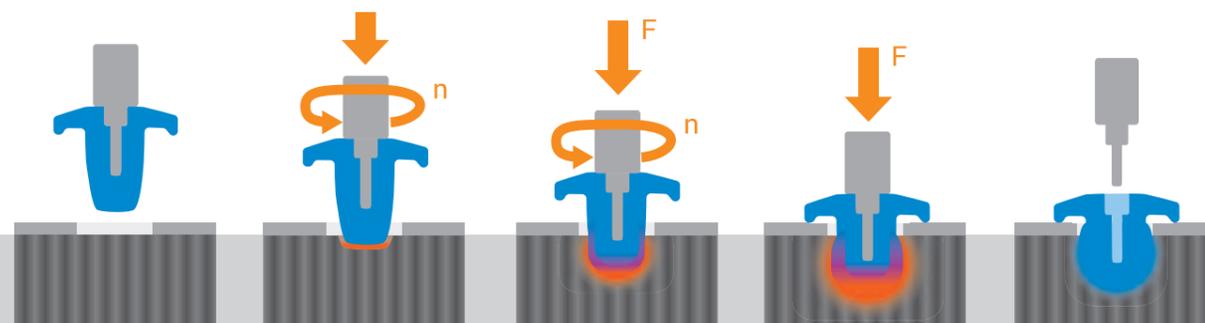
Following the trend to lightweight construction, breaking new ground in connection technology is essential. Our TSS system allows placing of plastic bosses in sandwich structures, which consist of a honeycomb or foam core with outer layers of fiber-reinforced plastics (e.g., CRP or GRP), or into suitable solid materials. During the TSS joining process, the plastic components are melted, creating a thermal bond. The plastic bosses are placed with or without a pilot hole.

### Secure connections – with setting systems for plastic bosses

The TSS process is implemented in a semi-automated cell. Bosses are used directly as fasteners or as robust threaded inserts for self-tapping screws. The entire process is freely configurable and can be documented.

## Features

- + Installation of different plastic bosses in lightweight materials – with or without pilot hole
- + Feasibility study and testing of connections at the WEBER in-house laboratory
- + Detailed process monitoring and evaluation
- + Suitable for tasks with single-sided accessibility
- + Plastic bosses as fasteners or as fixing points for self-tapping screws



Phase 1  
Locating

Phase 2  
Friction melting

Phase 3  
Penetration /  
melting

Phase 4  
Dwell time with  
contact pressure

Phase 5  
Cooling and tool  
retraction

### Scope of applications

- Laminar structures (sandwich panels/honeycombs)
- Particle composite materials (plastic press mats)
- Fiber composites (fiber-reinforced plastics)



# System Solutions



## HRC screwdriving system for lightweight robots

The ultimate level of an HRC application is attained when humans and robots work together in one workspace effectively and without fencing. The design and function of the WEBER HRC screwdriving system ensure that the most complex variant of human-robot collaboration can be realized in accordance with ISO TS 15066.



More information:  
[www.hrc-screwdriver.com](http://www.hrc-screwdriver.com)



## SMZ – screwdriving and assembly cell

### All-in-one

WEBER offers a complete solution for screwdriving and mounting components. The SMZ screwdriving and assembly cell can handle a wide variety of assembly tasks and is available in three cell sizes, which differ mainly in width. A flexible loading system is designed both for manual loading of individual elements and integration into a production line.

The SMZ can be flexibly integrated into production and assembly processes thanks to its compact dimensions and comes with an efficient and reliable positioning system. An ESD-compatible version is also available for machining electronic assemblies.

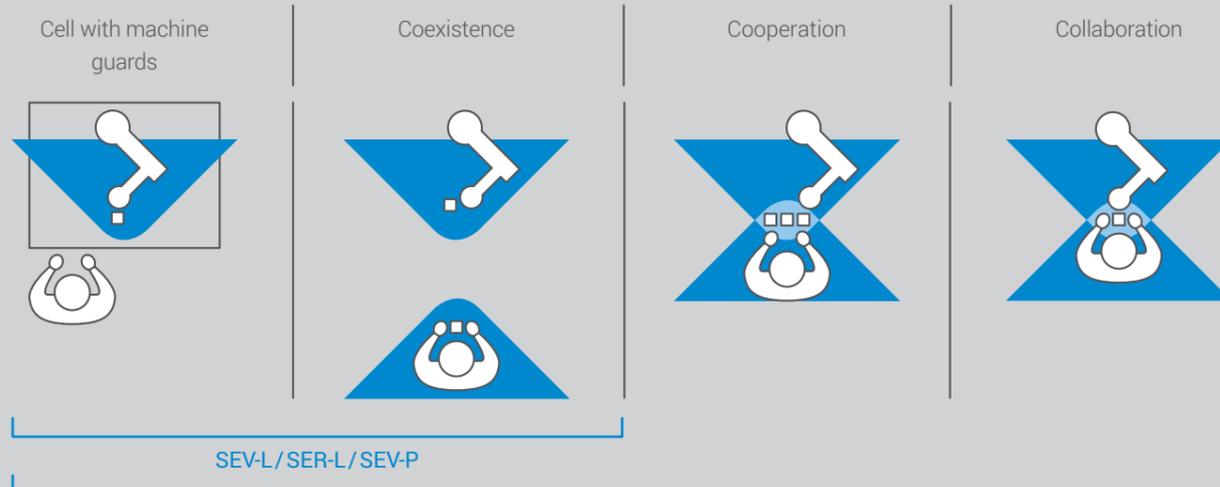


## Features

- + Compact design
- + Model versions for different workpiece widths
- + Easy integration into existing systems
- + Cost-saving and energy-efficient
- + High process reliability
- + Ergo-SMZ version with height-adjustable working plane approx. 750–1,200 mm above floor level



### HRC characteristics



This graphic is based on the template © Fraunhofer IFF, Magdeburg 2016

# System Solutions

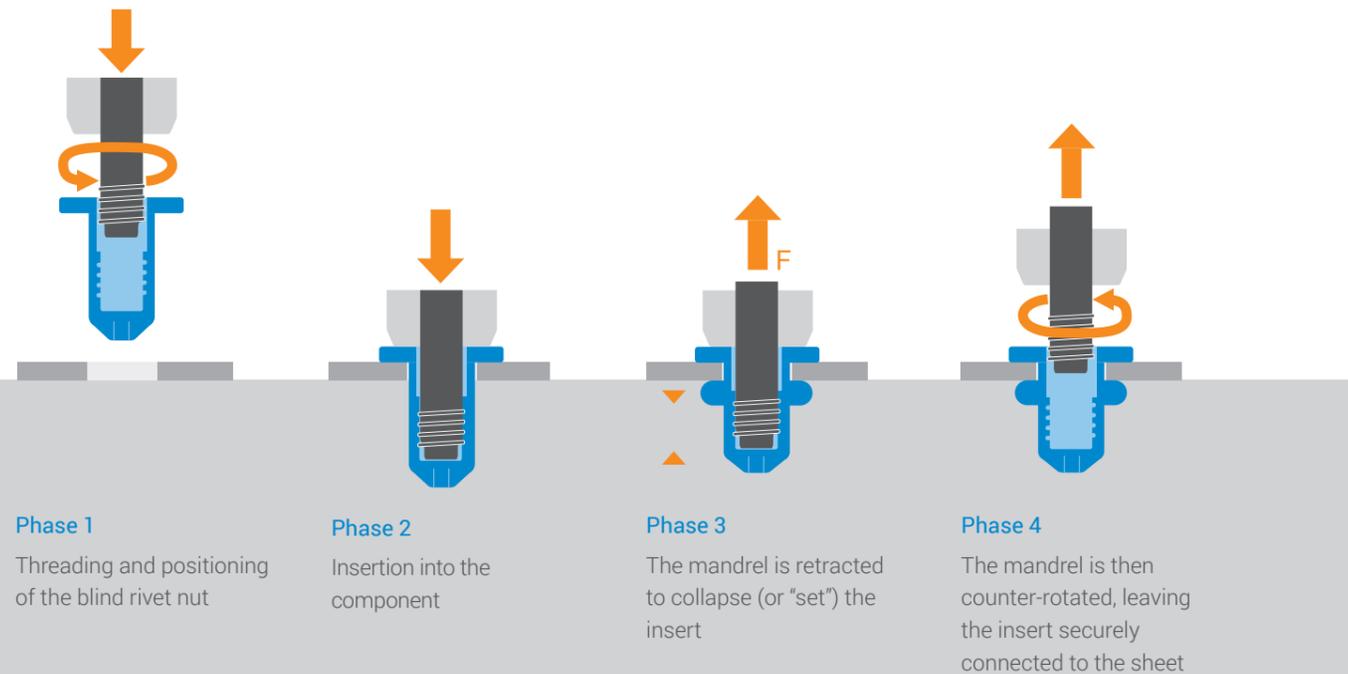
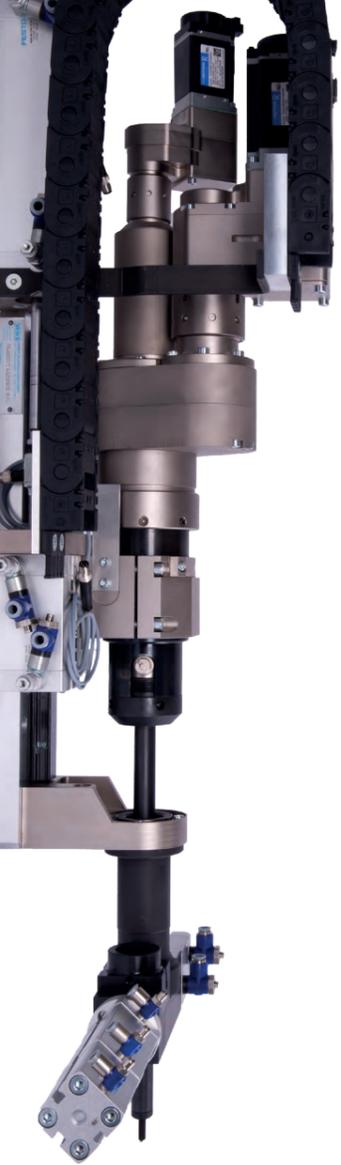
## SBM – setting system for blind rivet nuts

### Efficient system for blind riveting

WEBER offers a setting system for blind rivets which processes rivet nuts with round and hexagon heads. The control and the feed unit are integrated. Two separate EC drives implement the threading and setting process. The entire process is controlled by a PLC. The setting process takes less than 2.5 seconds. The required force and the traveled path are documented and can be visualized.

### Automatic feed system

The system is also suitable for installation spaces which are only accessible from one side. The blind rivet nuts are installed with an installation force of max. 20 kN. The system can handle rivet nuts with round and hexagon heads in the sizes M5 to M12. The integrated automatic feed unit ensures a high output rate.



## Screwdriving system for cleanrooms

### Clean screwdriving process with ZEL and dirt brake

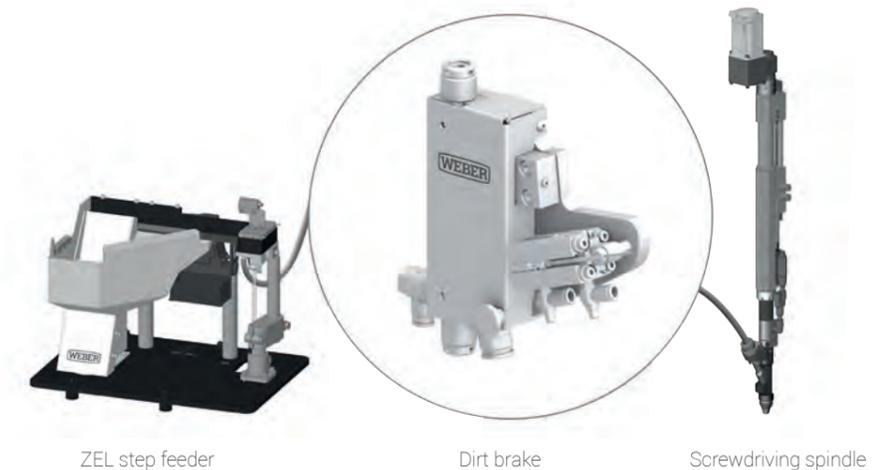
Debris and dirt particles on the surfaces of screws and/or workpieces can persistently interfere with assembly processes. Technical cleanliness therefore aims to reduce the number of these particles with a size of 5 to 1,000  $\mu\text{m}$  (VDA 19 – part 2). By using a low-vibration feed system and a dirt brake upstream of the screwdriving spindle, impurities in the critical size of 50 to 400  $\mu\text{m}$  can be reduced by approx. 90%.

## Advantages

- + Improved quality
- + High availability of assembly lines – fewer malfunctions from contaminated feed and screwdriving systems
- + Fewer failures of functional and safety-relevant components because of reduced ingress of dirt during assembly
- + Improved opportunities for component miniaturization



Metal particle from screw thread



# Service

## We are here for you

WEBER products are primarily used in industrial manufacturing lines. If problems occur in the assembly process, service technicians have to solve the problem in the shortest possible time to allow production to continue as seamlessly as possible.

We believe service can be planned and can protect the resources of our customers with preventive advice. The service team is involved from the start of system planning. This is how we ensure that all our staff can implement the most effective maintenance and service measures at all times and for all our customers.



### Full service

When customers buy a screwdriving controller, we look very carefully at the application. We adjust the controller to the individual screwdriving application, supply the optimum screwdriving program as a matter of course and train our customer to program and operate the system – either on site or as part of our seminar program.

### Simplicity of our technology

Despite the variety of options for operation and programming, WEBER controls are extremely easy to use and can be handled even by non-programmers – because most of our customers are users of screwdriving technology, not computer scientists.

### Flexibility

Each application is different. Despite an extensive standard product range, many screwdriving applications are only possible by specifically adapting the technology. Our in-house controls development provides us with the flexibility to respond to the individual needs of our customers.

## Contact us

From 6:00 a.m. to 10:00 p.m.



+49 8171 406 444

service@weber-online.com

### We know what is important

Automatic assembly has one objective – cost optimization. But for WEBER, that is not enough. We believe that cost reduction is only one side of the coin and that durability and process reliability are at least equally important.

This has various consequences. For one, WEBER has been building automatic screwdriving systems for over 60 years, which withstand the often harsh conditions in day-to-day production. We will certainly continue to do so. At the same time, our customers can rely on seamless service to correct any faults immediately without holding up the assembly line. And last but not least, our systems allow for continuous documentation of all joining processes, ensuring the highest quality.

We promise our customers no more and no less than economic success through intelligent and efficient automation of their assembly processes.

# Service

## Our services

### Customer service

Unfortunately, technical defects and the associated downtime cannot be fully prevented. When problems occur, every minute counts, because downtime ultimately means loss of revenue or even loss of customer loyalty. WEBER works hard to ensure that assembly processes can resume as quickly as possible.

Our intelligent service network, which spans the globe, makes it all possible.

An extensive stock of parts ensures that all relevant components and wear parts are permanently available. When needed, we can call off these components immediately and deliver them to the customer site within the shortest time possible – thanks to express shipping. If required, one of our own service specialists can be sent out at the same time.



### Maintenance contracts

Service and maintenance can be planned – it is the only way. Resources can only be used efficiently and downtime avoided with proactive planning. The WEBER service team advises customers from the design phase of an assembly line onwards and provides guidance on maintenance intervals and changeover times.

The objective of every action is to optimize automated joining processes. This can be achieved, for example, with machine capability studies, which are used to check a system in operation based on a range of different parameters to ensure runs with the required process reliability. WEBER follows all assembly processes during production to eliminate errors in advance.



### Training

We are strongly committed to developing the skills of our customers. This means that employees are trained comprehensively early on in the operation of machines and systems – to keep downtimes to a minimum.

We also provide training for preventive maintenance and service. Minor problems can therefore be eliminated directly by our customers' own technical staff. In addition to saving time, this also means providing employees with qualifications, so they can develop from machine operators to experts in automated screwdriving processes. This is a win-win-win situation for customers, employees and WEBER.



## Testing and development

### Laboratory

WEBER leaves nothing to chance when it comes to designing and manufacturing screwdriving systems. The visual and external assessment of our products is an important part of our quality assurance. But WEBER engineers go far beyond this and check all components for safety and reliability.

For example, they detect and eliminate even the smallest materials defects under a light microscope with up to 1000x magnification. Microsections are used to analyze the quality of surface finishes and structures to exclude any risk of premature material fatigue.



### Testing

Series of tests at our in-house laboratory are followed by a practical trial phase. The process reliability and durability of individual parts, machines and systems are examined under realistic production and ambient conditions. Any malfunctions are immediately reported back to our design engineers.

Depending on future applications, all products undergo qualitative and quantitative evaluation by our experts. All tests are conducted according to standardized DIN procedures. Based on the results of the extensive laboratory and field testing, WEBER develops a catalog of parameters which the machines have to meet in customer operation.



### Robotic test cell

When a new product has reached production maturity or when a screwdriving system developed by WEBER is ready for customer operation, the machines have to pass an additional test run. It is often not possible to simulate the entire assembly process due to the complexity of the systems. In these cases, our screwdrivers are tested comprehensively in a robotic test cell.

The robot is also used as the basis for innovative product developments and individual customer solutions. It allows our engineers to implement and further develop new materials or innovative joining methods. This creates a seamless transition between testing and innovation, ultimately serving the objective of meeting the high demands of WEBER customers.



# WEBER Worldwide



## Our offices

WEBER Schraubautomaten GmbH  
Wolfartshausen, Germany

WEBER Assemblages Automatiques S.A.R.L.  
Saint-Jorioz, France

WEBER Schraubautomaten (Schweiz) GmbH  
Schaffhausen, Switzerland

WEBER Automation s.r.o.  
Brno, Czech Republic

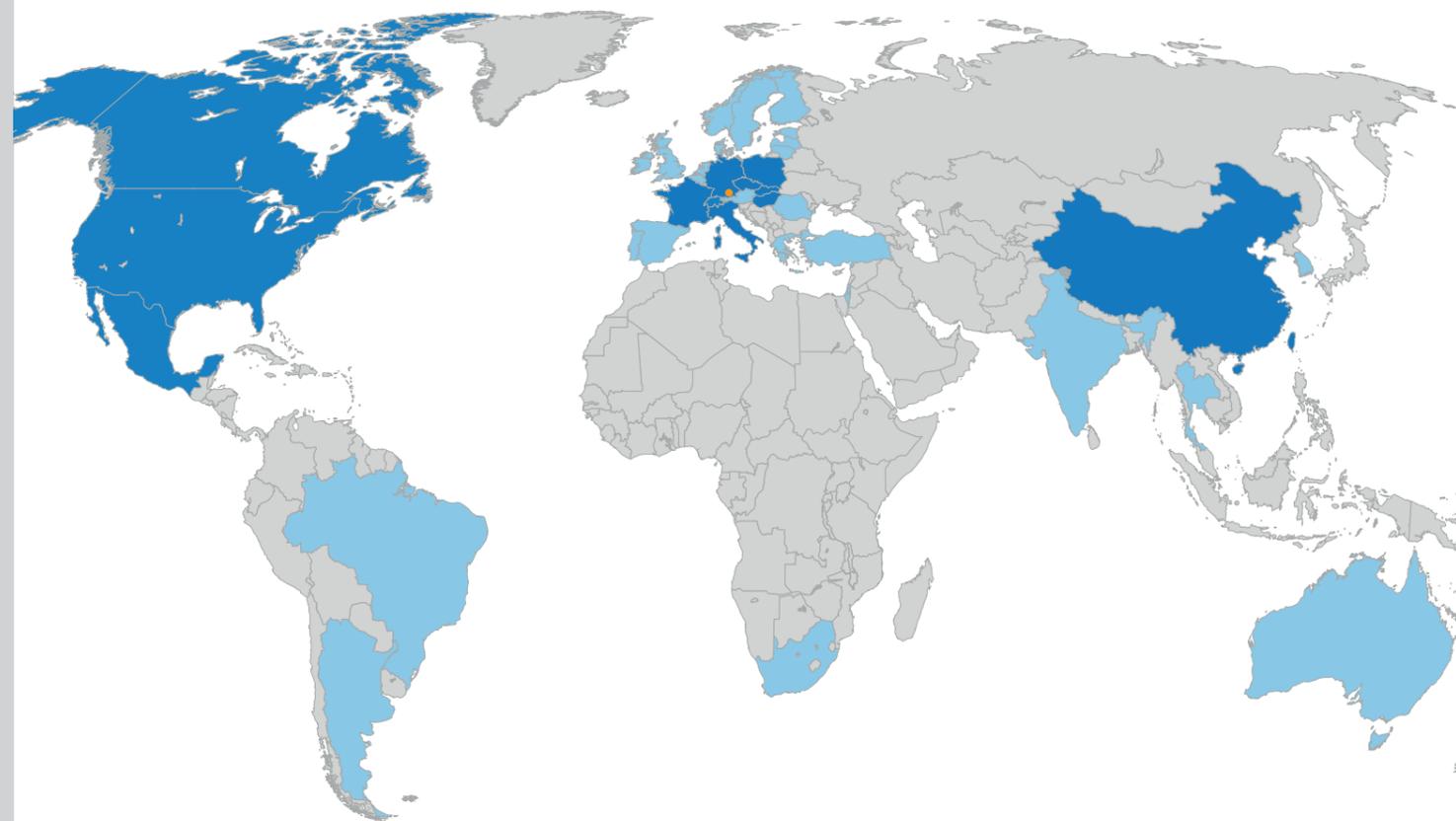
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Shanghai, China

WEBER Screwdriving Systems, Inc.  
Charlotte, NC, U.S.A.

WEBER Automazione Italia s.r.l.  
Bologna, Italy

## Number of employees

400+ employees worldwide



## Our network

### Worldwide

Argentina  
Australia  
Brazil  
Canada  
India  
Israel  
Korea  
Mexico  
South Africa  
Thailand

### Europe

Austria  
Belgium  
Denmark  
Estonia  
Finland  
Greece  
Hungary  
Latvia  
Lithuania  
Netherlands  
Norway  
Poland  
Portugal  
Romania  
Slovakia  
Spain  
Sweden  
Turkey  
United Kingdom

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**Let's put it this way:**

"Everything in business is negotiable except quality." This could be a direct quote from us. Because for over six decades, WEBER has set standards in the development and manufacturing of automatic handheld screwdrivers and fixtured screwdriving systems. More than 400 employees worldwide ensure that this will continue to be the case in the future. That's a promise.



TECHNOLOGY THAT CONNECTS