Screwdriving and inserting technology with automatic feeding.

Innovative solutions for efficient assembly processes.

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The art of doing the right thing at the right moment

High-end WEBER products set standards for screwdriving automation

Leading fastener assembly automation for over 70 years, 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 us, 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.

Competencies

WEBER stands for comprehensive expertise in screw-driving, fastening, and feeding technology - providing customized solutions for a wide range of industrial applications – from initial consultation through to on-going operational support.

Applications

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

Service

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

Processes

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

Special fastening

- Inserting system for blind rivet nuts
- Joining system for flow-drilling screws
- Setting system for sandwich structures

Industrial sectors

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

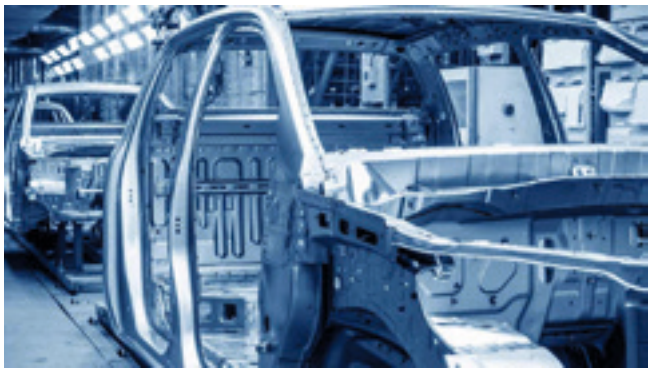
Industrial sectors

WEBER has delivered high-performance screwdriving systems for assembly tasks in various industrial sectors for over 70 years

WEBER offers complete screwdriving and assembly systems from a single source – from manual workstations to fully automated systems. Whether automotive, e-mobility, or medical technology, we develop customized solutions for your application. Personal consultation, perfectly matched technology, and worldwide service make WEBER a strong partner for your production processes.

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.

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.

Aerospace industry

In the aerospace sector, our screwdriving systems guarantee maximum precision and reliability – both in aircraft assembly and in galleys.

Semiconductor industry

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

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.

Household appliances

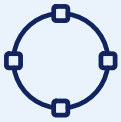
WEBER technology enables high cycle rates and fasteners at points that are difficult to access.

E-mobility

WEBER screwdriving systems also offer tailor-made solutions for assembly and disassembly with support for galvanic isolation.

Technologies

WEBER offers modern solutions for precise screwdriving and joining. With innovative technologies, we ensure clean processes and the highest repeatability in automation.



WEBER-Principle

WEBER relies on fully automated screwdriving systems with integrated feeding. A swivel arm enables parallel feeding and processing of screws – ensuring the shortest cycle times and maximum efficiency. The process is controlled by a perfectly coordinated system consisting of the spindle, feeding unit, and control components.

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Techn. cleanliness & vacuum technology

WEBER screwdriving systems minimize particle contamination and increase quality and reliability in assembly. Low-vibration feeding, combined with a dirt brake reduces particle ingress by up to 90 % – ensuring longer system service life and high process reliability. WEBER's vacuum technology secures the screw directly on the drive tool. The advantages: reliable screwdriving in hard-to-reach fastener locations, clean assembly, and maximum flexibility.

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Screwdriving systems - a guide

The guide explains what matters when selecting and configuring screwdriving systems: fasteners with unfavorable geometry (head-heavy), the right feeding technology, and choosing suitable bits and mouthpieces when accessibility is limited. It also outlines the requirements for screws designed for automation to ensure reliable and clean assembly processes.

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Measurement accuracy

WEBER offers screwdriving systems with different drive technologies – from simple pneumatic handheld screwdriver to high-precision fixtured screwdriver with EC servo drives and integrated measurement technology. Depending on the version, the systems achieve a torque standard deviation of 1.4 %. All variants provide high angular and depth measurement accuracy – ensuring maximum process reliability and full process documentation.

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Tightening methods

This method refers to the strategy used to create a screw joint. The tightening procedures range from simple processes with only a few steps and parameters to complex program sequences in which a wide variety of process parameters must be taken into account.

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Special fastening

The processes used to join components together are referred to as joining methods in manufacturing technology. In addition to detachable joining methods, such as thread-forming screws or screw connections with blind rivet nuts, WEBER also relies on methods like thermal material bonding.

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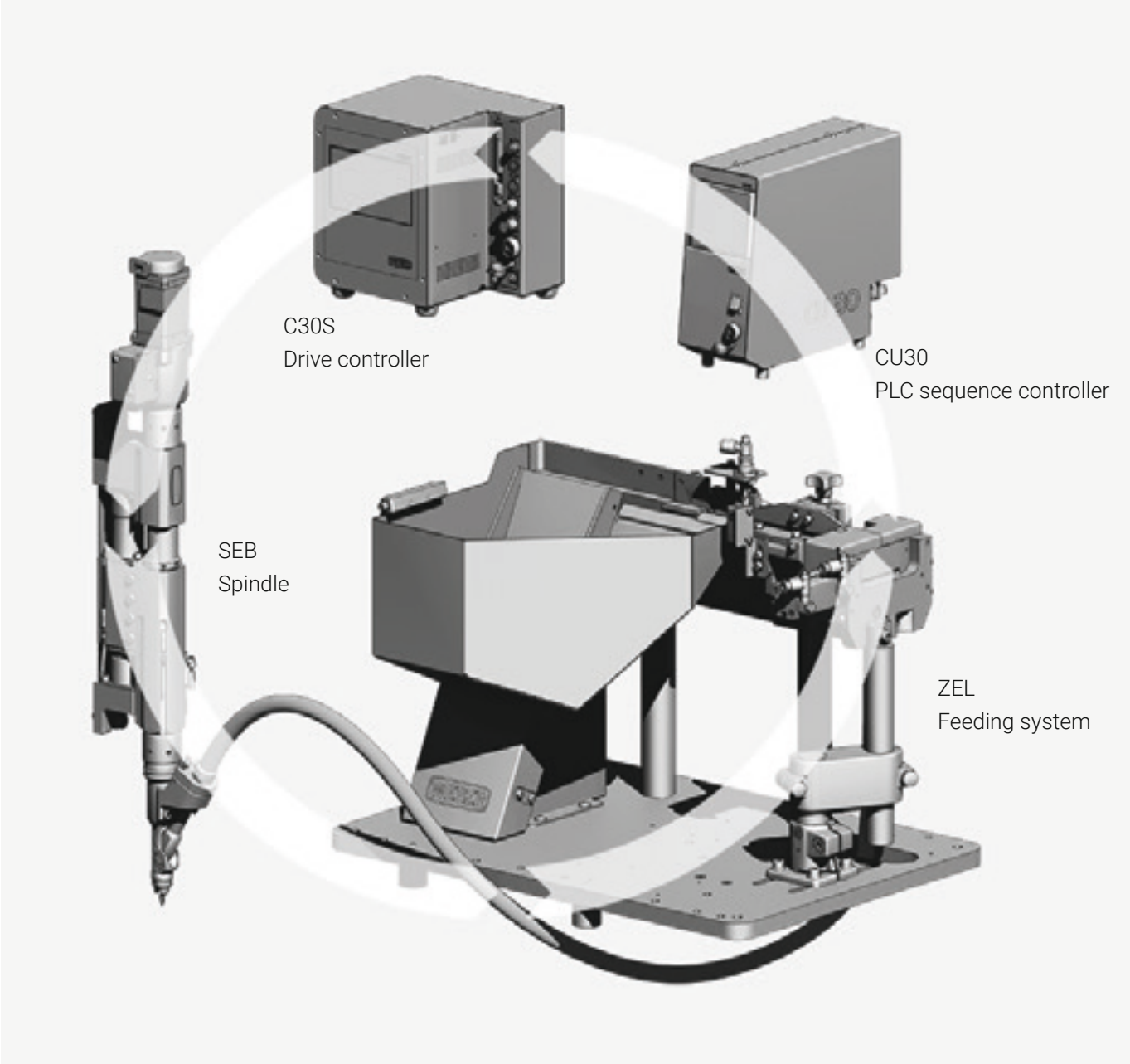
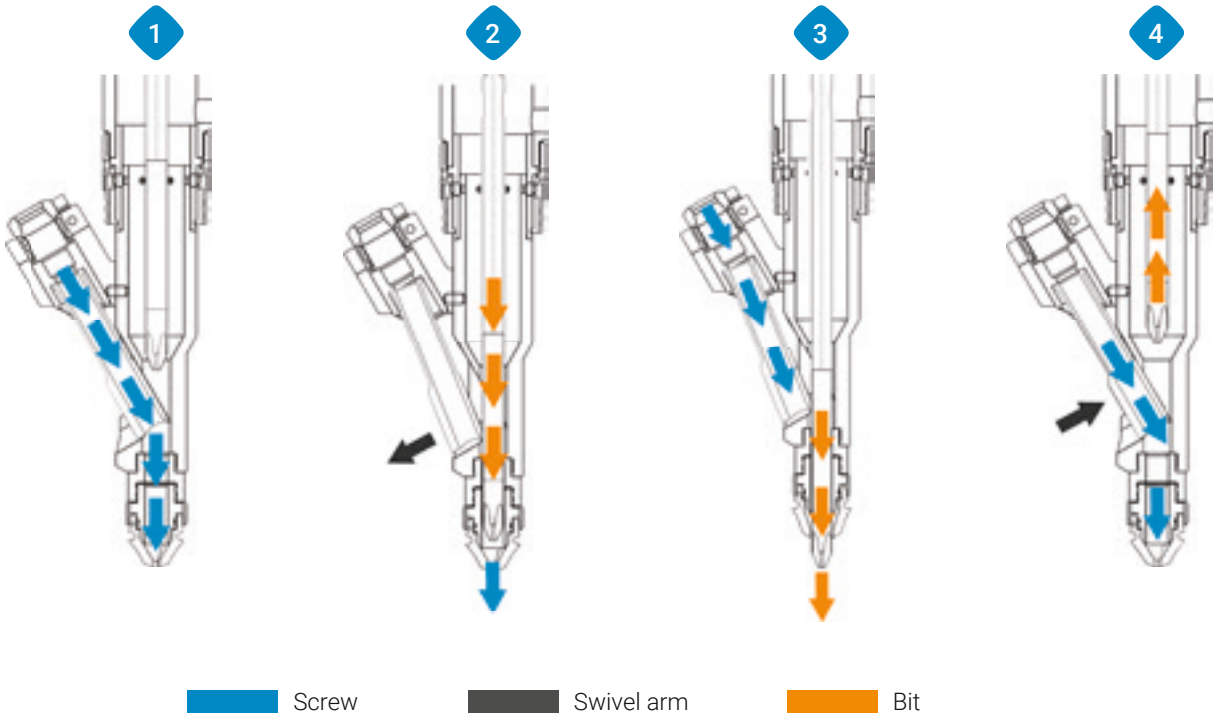
"WEBER-Principle"

Fast cycle times thanks to an innovative swivelarm technique

Typical components of a WEBER screwdriving system with automatic feeding: the sequence control manages the auto feeding and stroke movements of the screwdriver spindle, as well as the associated sensors. The screw tightening process itself is controlled and monitored via the process control. Process data can optionally be transmitted to a customer-specific data management system.



The foundation of the “WEBER-Principle” is screwdriving supported by fully automated feeding. Both the compact, high-performance handheld screwdrivers and the widely configurable fixtured screwdriving systems follow this principle and pursue the goal of completing assembly tasks quickly, cost-efficiently, and reliably. The proven "WEBER-Principle" consistently adheres to this standard and ensures economic 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 screwdriver is already in the start position directly in front of the product. The bit moves forward toward the screw and moves the swivel arm to the side into the parking position.

Step 3

While the screw bit is driving in the screw, the next one can already be fed into the swivel arm, even though it is still in the parking position. This saves valuable 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.

Technical cleanliness

Screwdriving applications for the highest quality

In automated screwdriving applications, abrasion and dirt particles on screws and workpieces can cause product malfunctions. Technical cleanliness specifically reduces these contaminants in the range of 5 to 1000 micrometers (according to VDA 19 – Part 2).

The combination of low-vibration feeding technology and an upstream dirt brake reduces particle contamination in the critical range of 50 to 400 micrometers by up to 90%.

Advantages at a glance

Optimal fastening quality

+ Through reduced contamination

Maximum system availability

+ Reduction in downtime due to contaminated feeding and screwdriving systems

Reliable function of safety-related components

+ Less contamination during assembly

Longer equipment service life

+ Due to less wear and tear

Cost savings

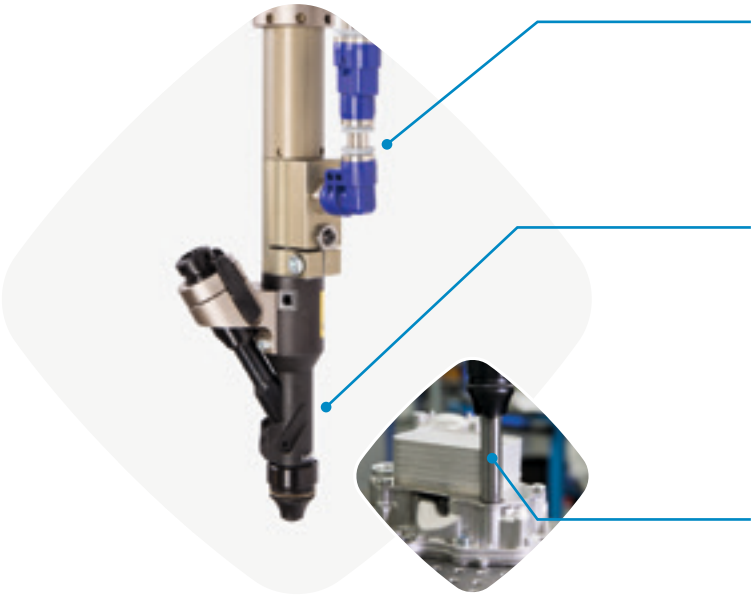
+ Through reduced end customer reclamations, scrap, rework and improved process reliability

Illustration shows dirt brake BR-S

Vacuum screwdriving technology – Precise, flexible and reliable

Interfering edges often prevent the feed head from being placed directly at the screw location. This is where WEBER's innovative vacuum screwdriving technology shines.

The screw is secured directly to the screwdriving tool using vacuum, allowing access to recessed or obstructed screwdriving locations.



The vacuum module is an adapter with a vacuum connection

+ It transfers the negative pressure generated in the vacuum device to the suction tube

Screwdriving head with swivel arm and 3-finger aligning guide

+ The screw is blown into the mouthpiece through the feeding tube, the swivel arm, and the hold-down device, where it is secured (by the jaws)

Vacuum screwdriving tool with suction sleeve adapted to the fastener and the workpiece

Advantages of vacuum screwdriving technology

Optimal accessibility

+ Allows access to recessed or obstructed screwdriving locations
+ Tool extends past the feed head tooling while holding the fastener for optimal workpiece assembly

Technical cleanliness

+ Reduction of contamination in the assembly process
+ Safe for sensitive parts and electronic components

Precision and flexibility

+ Suitable for magnetic, non-magnetic, and non-metallic fasteners
+ Precise alignment of the fastener by securing and centering the screw head
+ Compact tool design for maximum flexibility

Highest process reliability

+ Secured by vacuum: the screw is held directly on the screwdriving tool
+ Automatic self-release: if necessary, the screw can be reliably ejected

Screwdriving system - a guide

More about the design of your screwdriving system

The load distribution of a screw is defined by whether it is head-heavy or shaft-heavy: head-heavy screws have their center of gravity close to the screw head, which can make stability and handling difficult, especially with regard to automation.

Shaft-heavy screws, on the other hand, have their center of gravity close to the screw axis, which makes them more stable and better suited for automated processes.

Feeding by:

Head-heavy screw:
l < Ø + 2 mm

Shaft-heavy screw:
l > Ø + 2 mm

ideal: l_{total} ≥ Ø head + 2 mm

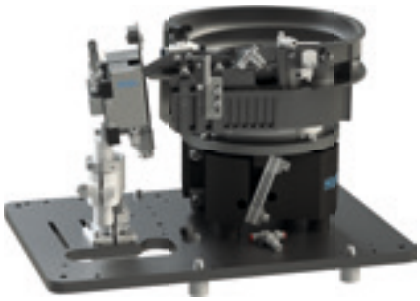
Profiled tube

Round tube

Selection of feeding technique:

Bowl feeder

A bowl feeder is recommended for long screws, head-heavy screws, and low profile washers with high feed rate requirements.



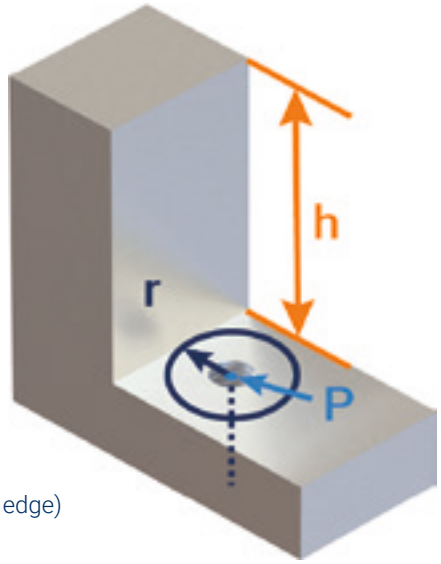
Step feeder

For coated parts (e.g., screw locking compounds), the step feeder minimizes friction and thus prevents contamination of the system tooling. Compared to other techniques, this linear feeder is particularly recommended when a lower noise level is desired.

Accessibility at the workpiece

- Accessibility to the screw location determines the technical design of the spindle.

- Interfering edges are features or surfaces that extend beyond the screw location or are in its vicinity. The height and distance of the interfering edges are decisive factors in selecting a suitable mouthpiece design.



Generally relevant for WEBER:

P = screwdriving location
r = radius (distance between screwdriving location and interfering edge)
h = height (height difference between screwdriving location and interfering edge)

There is no interfering edge*, if r > 20 mm and h < 30 mm.

Mouthpieces

3-finger aligning guide	2-finger aligning guide	ball bushing	3-finger aligning guide
without vacuum with standard tool			with vacuum & suction tube

easy — harder

Accessibility at the workpiece

Screws for automated assembly

Automated assembly requires a high level of quality that exceeds DIN requirements. The goal is to achieve a non-conform part level of 10 ppm (parts per million). As the number of conform parts increases, the probability of assembly problems decreases, which in turn reduces assembly costs. Fasteners suitable for automated assembly must meet higher requirements than standard fasteners in terms of dimensional, form, and tolerances in order to ensure trouble-free automated assembly. These requirements include a chamfered thread termination, an increased head height, a reduced head diameter, and better surface treatment for reduced abrasion particulates the feed unit.

*depending on the head diameter of the element

Measurement accuracy

The appropriate drive for every screwdriving task

Pneumatic drive with friction or one-shot clutch

- Repetition accuracy torque
  ± 15 % for cmk ≥ 1.67 (10-30 %)*
  ± 15 % for cmk ≥ 2 (30-100 %)*
- Standard deviation ± 3 %

EC drive with current torque and angle encoder

- Process controller: C5S / C30S
- Repetition accuracy torque
  ± 15 % for cmk ≥ 1.67 (10-30 %)*
  ± 15 % for cmk ≥ 2 (30-100 %)*
- Standard deviation ± 3 %
  Measurement accuracy angle ± 0.5°
  Measurement analogue depth ± 0.3 mm

*Percentage value refers to the max. possible torque range of the system e.g. MDW10 from 1-10 Nm.

EC drive with reaction transducer MDG and angle encoder

- Process controller: C30S / C50S
- EC servo drive with integrated reaction transducer MDG
- Repetition accuracy
  ± 10 % for cmk ≥ 1.67 (10-30 %)*
  ± 10 % for cmk ≥ 2 (30-100 %)*
- Standard deviation ± 2 %
  Measurement accuracy angle ± 0.5°
  Measurement analogue depth ± 0.3 mm

EC drive with transducer MDW and angle encoder

- Process controller: C30S / C50S
- EC servo drive with dynamic transducer and angle measurement MDW
- Repetition accuracy
  ± 7 % for cmk ≥ 1.67 (10-30 %)*
  ± 7 % for cmk ≥ 2 (30-100 %)*
- Standard deviation ± 1.4 %
  Measurement accuracy angle ± 0.5°
  Measurement analogue depth ± 0.3 mm

Tightening methods

Reliable screwdriving technology for highest demands – precisely controlled, documented, and compliant with known standards

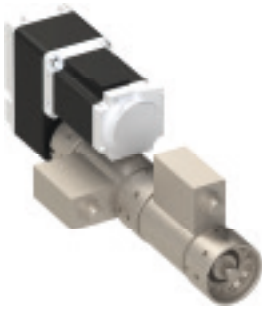
WEBER screwdriving systems use compact EC drives in combination with high-performance gearboxes. Short acceleration and deceleration times ensure precise shutdown even at high speeds.

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

In addition to the EC drive, high-precision transducers continuously measure torque and angle of rotation during the screwdriving process and transmit this data to the screwdriving process control system. There, the entire screwdriving process is controlled and documented in a traceable manner using the collected measured values. This technology enables short cycle times with optimum switch-off accuracy despite high screw-in speeds. As a result, WEBER screwdriving technology guarantees high repeat accuracy and reproducible screwdriving results as a basic prerequisite for optimum machine capability.



Redundant measurement according to VDI / VDE 2862

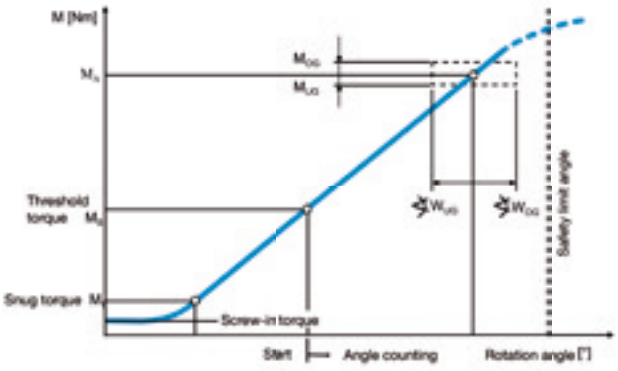
The VDI / VDE 2862 guideline defines joint types and minimum requirements for assembly tools. In category A – danger to life and physical well-being – the control and monitoring variable must be directly measured on an automatic screwdriving system. This means the transducer on the production system 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.

Not only the friction conditions under the screw head and within the thread influence the preload force of a screw joint, but also the tightening method of the screwdriving spindle and its accuracy. Other assembly processes established by WEBER, such as depth monitoring, working with relative torque, and the use of our patented depth gradient manage particularly challenging screwdriving tasks and support the reliable detection of thread starting, bit engagements, insertion depths, or tightening torques in self-tapping screw applications.

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.

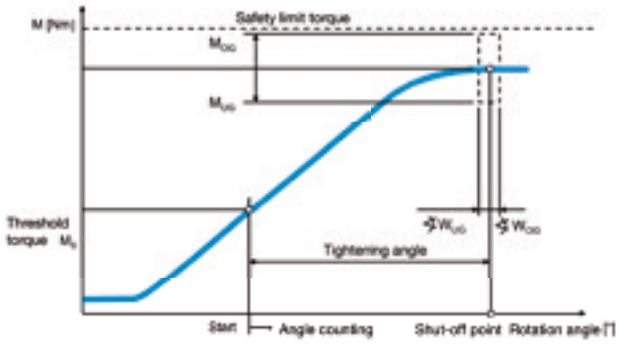
+ Torque is easy to measure and control
– Large variation of pre-stressing force



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 torsion range. The system also monitors the shut-off torque.

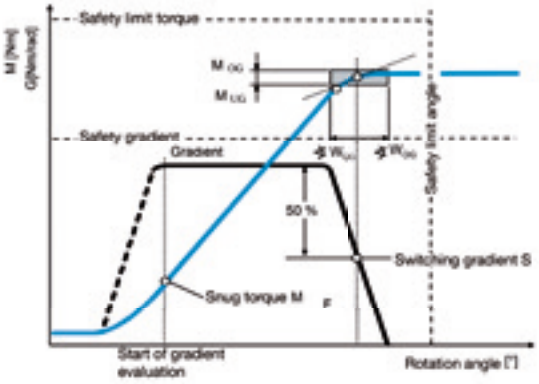
+ Constant clamping force regardless of friction
+ Optimum use of material
– Screws not reusable after removal
– Not suitable for all screw joints
– Requires special expansion screws
– Determining screwdriving parameters is complex



Yield-controlled tightening

The screw is tightened to the yield point with a calculated gradient of torque and angle. Tightening process is stopped when the gradient drops from its peak by a defined percentage (usually 50 %).

+ Pre-stressing force is achieved largely regardless of friction
+ Optimum use of the screw
+ No special screw form required
+ Screw can usually be reused after removal
– Complex screwdriving and control system
– Not suitable for all screw joints



Joining process RSF25

Detachable screw joints 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

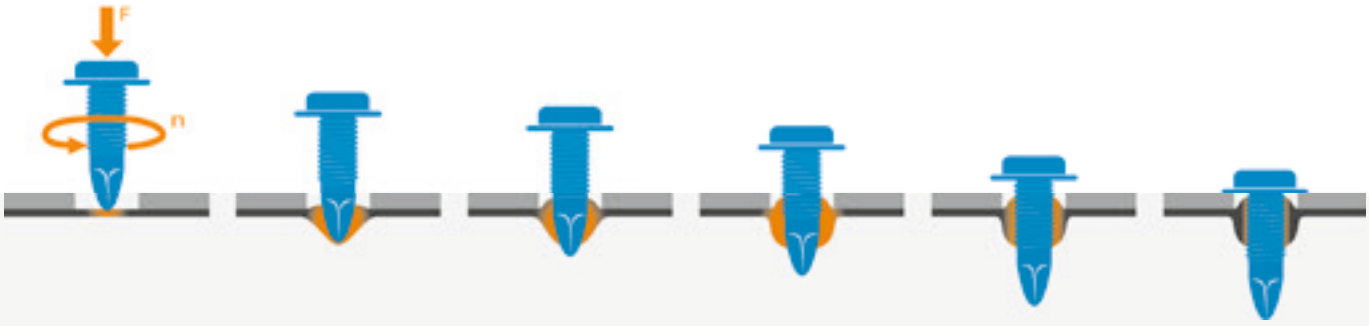
A metric thread is cut directly into the elements to be joined. This produces detachable joints, allowing dismantling at any time. The RSF method creates screw connections with high tightening forces and release torques. The process is freely configurable.

Features of flow drill 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 heat generation
+ High loosening torques and vibration resistance, absorption of high shear and peeling forces

WEBER facts

+ In 1999, WEBER was the first manufacturer of systems for automatic flow-drill installation
+ Patented depth gradient screwdriving
+ Over 3,000 systems in use worldwide



Phase 1
Pressing force and high RPM heat the sheet

Phase 2
Conical screw tip penetrates the material

Phase 3
Formation of cylindrical passage

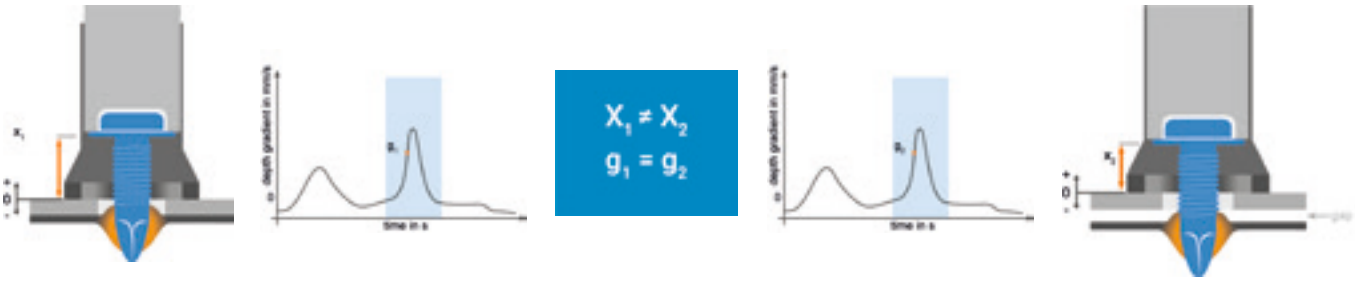
Phase 4
Chip-free cutting of a metric true-to-gauge female-thread

Phase 5
Screw penetration

Phase 6
Tightening of screw to set torque

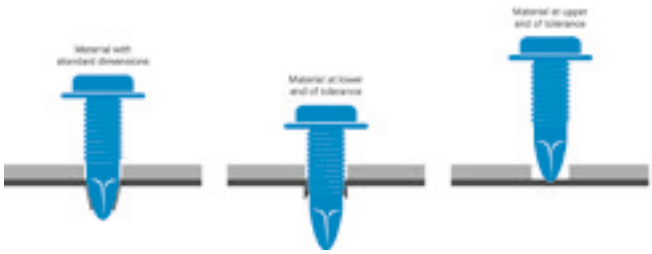
Patented WEBER depth gradient

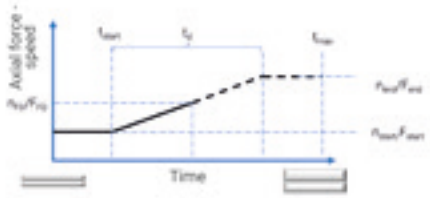
The right combination of strength and speed is the decisive factor for flow-drilling joining technology: while high forces and speeds are essential for flow-drilling, very little force is required during thread forming work since the thread pitch of the screw will determine the speed of penetration. The patented WEBER depth gradient identifies changes in depth while the screw is breaking through the material and therefore always switches between these two processing steps at the optimum moment. This happens regardless of the material thickness or gaps between the components to be joined.



Patented WEBER Boost function

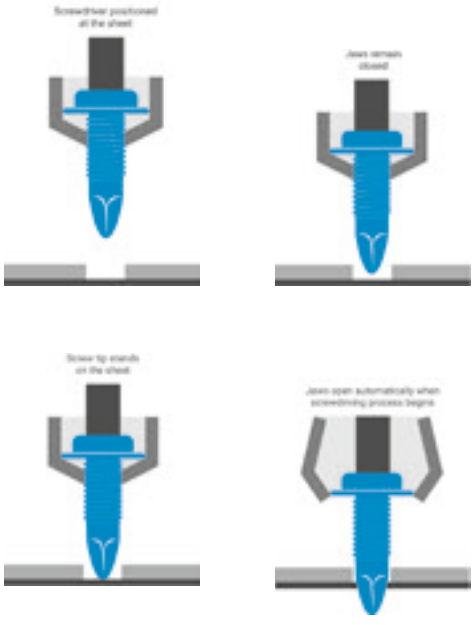
Fluctuations in material strength and thickness can cause situations where the sets of parameters specified in the laboratory do not perform optimally in practice. To date, any recalibration work required has been a very time-consuming process that regularly needs to be adjusted to the ongoing production situation. To solve this problem, WEBER uses the new boost feature offered by the RSF25. This increases both axial force and speed automatically until the depth gradient is achieved.





Automatic pre-punch compensation

The screw is guided by the jaws right up to the point at which the screw tip and shank have penetrated the material. The jaws are opened and the screwdriving process can begin.



- Simplified spare parts management through standardized variants
- Increase process reliability
- Reduced NOK rate
- Reduced abrasion

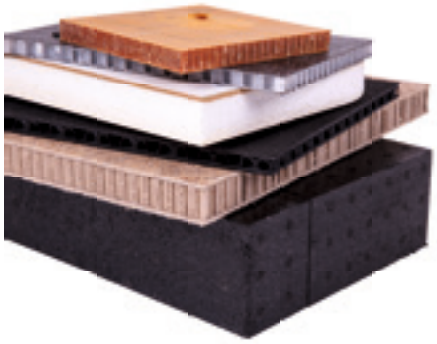
Setting process TSS

Thermal bonding

Following the trend to lightweight construction, breaking new ground in bonding 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 inserted with or without a pilot hole.

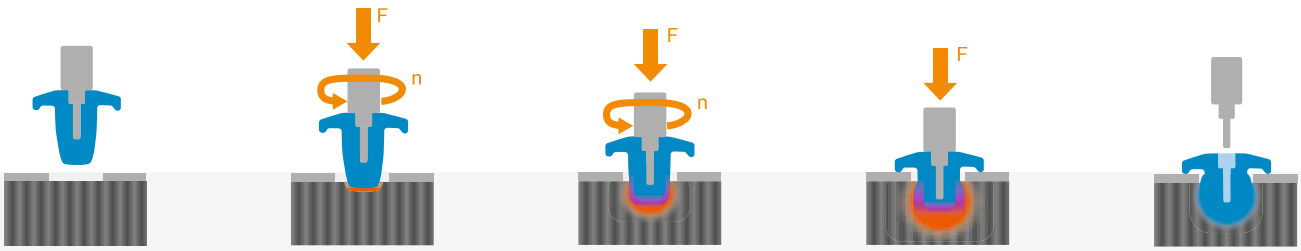
Secure connections – with setting systems for plastic bosses

The TSS process is used as a manual application or as a setting system in a semi-automatic cell.



Possible fields of application

- Layered composites (honeycombs)
- Particle composites (plastic press mats)
- Fiber composites (fiber-reinforced plastics)



Phase 1
Locating

Phase 2
Frictional heating

Phase 3
Penetration / Melting

Phase 4
Dwell time with down force

Phase 5
Cooling / Tool retract

Inserting process SBM25

Robust threads in thin sheet metals

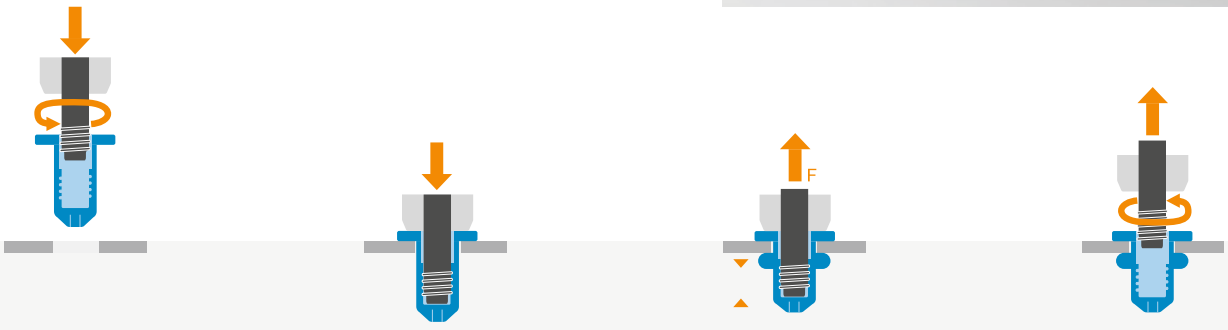
As highly reliable functional elements, blind rivet nuts offer the possibility of creating a load-bearing thread for a detachable screw connection, even with thin wall thicknesses and one-sided accessibility. Their versatile applications range from car body construction and battery pack assembly to household appliances, control cabinets, and profiles that serve as structural components and require mounting threads for attachments.

Automation for greater efficiency

Thanks to modern technology and well-coordinated system elements, this process can be automated reliably and with maximum process availability from a cycle time of 5 seconds. This enables modern inserting systems such as the SBM25 to process several million elements per year reliably and with maximum precision.

Low-impact process

The spring-loaded tool reduces wear during threading, protecting the tool and the element's thread. This minimizes wear despite high speeds and short cycle times. During the forming process, the torsional elongation of the tool and element can be compensated. This allows the collapsing of the blind rivet nut to be measured with particular precision. For the most demanding requirements, the mandrel can be changed fully automatically through an optional auto change station.



Phase 1
Threading and positioning of the blind rivet nut

Phase 2
Insertion into the component

Phase 3
The mandrel is retracted to collapse (or set) the insert

Phase 4
The mandrel is then counter-rotated, leaving the insert securely connected to the sheet

Products

WEBER provides innovative screwdriving and joining technology for automated assembly processes. The portfolio ranges from handheld screwdrivers and stationary systems to solutions for setting pins, bolts, and rivets. Decades of experience make WEBER a leading provider of process-reliable and scalable automation solutions.

Handheld screwdrivers

WEBER's handheld screwdrivers combine ergonomics with versatility. They offer high flexibility, performance, and nearly 100 % process reliability through programmable control. The integrated bit stroke enables fatigue-free operation while achieving high output rates in short cycle times. In this way, WEBER ensures efficient and flexible fastening technology.

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Fixtured screwdrivers

WEBER screwdriving systems grow with the requirements of modern assembly processes and are used particularly for complex joints, high cycle rates, and strict quality specifications. The flexibly configurable fixtured screwdriving spindles can be individually adapted – including tool-free, quick release bit change for minimal downtime.

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Inserting- & press-fitting

WEBER offers more than screwdriving technology – including automatic setting and pressing of pins, bolts, or clips. Fully automated and handheld systems with automatic feeding and optional force-stroke monitoring enable force-fit and form-fit connections with high process reliability.

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Feeding technology

The automation of assembly processes aims for greater efficiency, improved quality, and reduced costs. With decades of experience and in-house developed, fully automatic feeding systems, WEBER ensures exceptionally reliable, repeatable and material-friendly feeding of fasteners – and, with more than 50,000 delivered systems, is one of the leading suppliers in this field.

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Control systems

In screwdriving automation, a distinction is made between screw-tightening process control and sequence control. While process control monitors, documents, and evaluates the actual screwdriving operation, sequence control manages the entire system operation – such as stroke movements, feeding, or communication with peripheral devices.

60

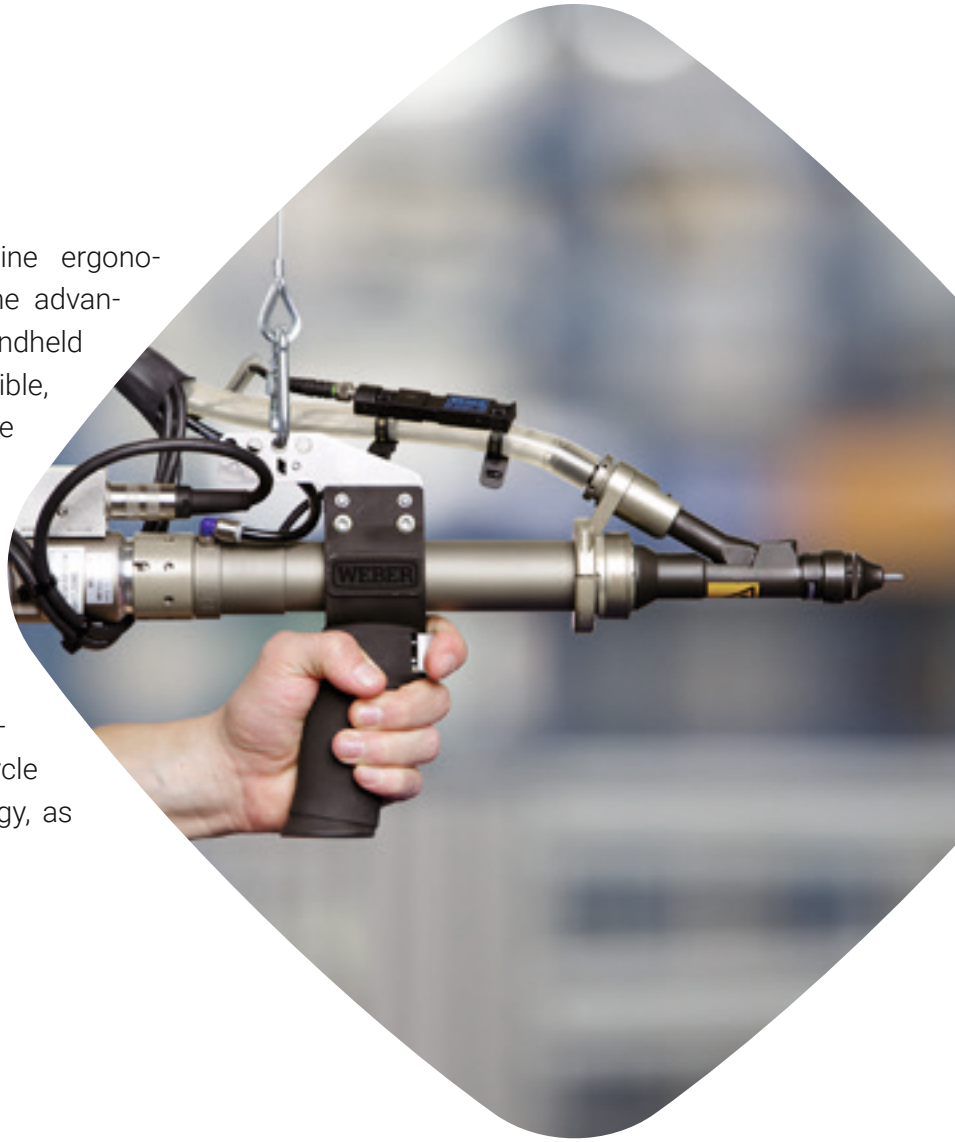
Systems

WEBER has decades of experience in the automation of assembly processes. The comprehensive portfolio includes feeding, screwdriving, and setting technology as well as processes such as flow drilling, blind rivet nuts, and thermal joining methods, all of which can be flexibly combined.

70

Handheld screwdriving

WEBER handheld screwdrivers combine ergonomics and variability in each model. The advantages of the electric and pneumatic handheld screwdrivers are obvious: highly flexible, powerful, and thanks to programmable control nearly 100 percent process-reliable. In addition, ergonomics and variability play a central role in manual fitting with handheld screwdrivers. WEBER enables with its products – in particular thanks to their built-in bit stroke – fatigue-free working, while realizing high quantities in extremely short cycle times. Freedom in connection technology, as WEBER understands it.



Maximum flexibility thanks to compact design

Long service life thanks to wear-resistant surfaces

Low moving mass for short cycle times

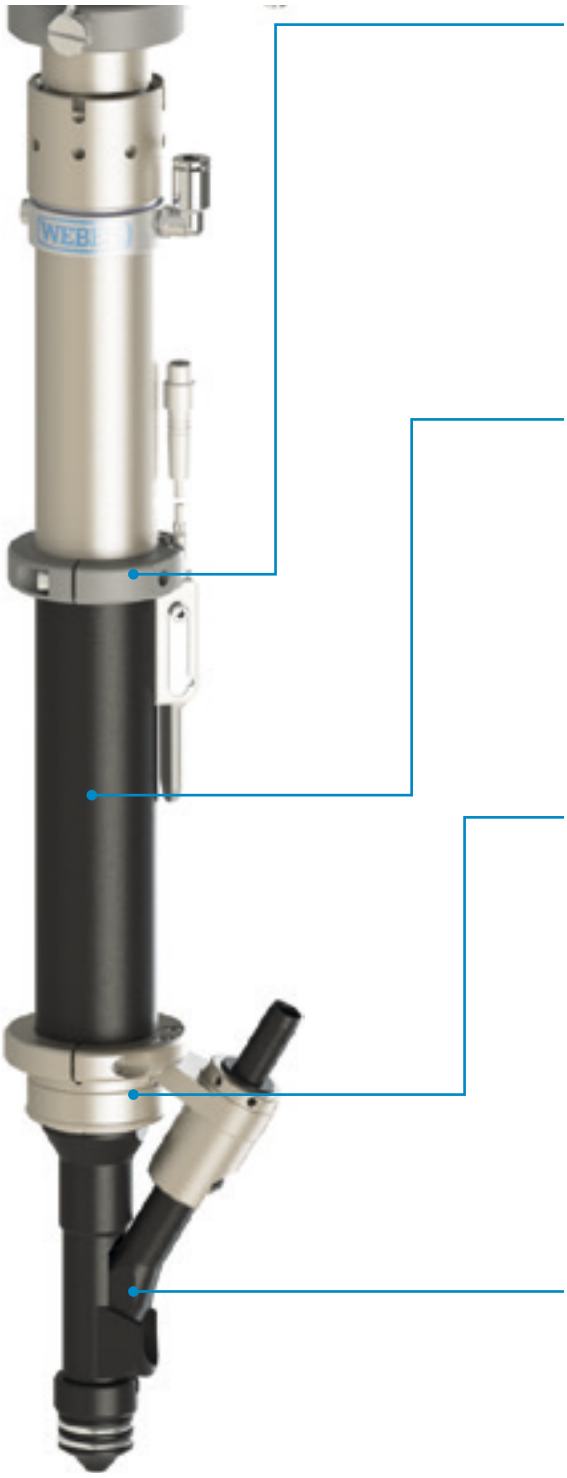
Economically viable from 20,000 screwdriving operations per year

Overview of handheld screwdrivers

Ergonomics and variability - flexibility in fastening technology

Criteria	HET	HSE	HSP
For shank-heavy screws (head diameter / shaft length > 1.5 mm)	✓	✓	✓
For head-heavy screws (head diameter / shaft length < 1.5 mm)	✓	-	-
For nuts	✓	-	-
For inserting / press-fitting	-	✓	✓
Use as a tightening screwdriver	✓	-	-
Start trigger	✓	✓	✓
Mechanical shut-off clutch	-	-	✓
Integrated auto bit stroke	-	✓	✓
Quick bit change	✓	-	✓
With swivel arm principle (feeding during screwdriving)	-	✓	✓
For automatic feeding (ZEB / ZEL)	-	✓	✓
Torque up to [Nm]	30	10	5.3
With electric drive	✓	✓	-
With pneumatic drive	-	-	✓
Option customer-side drive	✓	✓	-
Option transducer with angle measurement (MDW)	✓	✓	-
Option integrated reaction transducer (MDG)	✓	✓	-
Integrated program changeover	✓	✓	-
Suitable for multi-stage screwdriving programs	✓	✓	-
Documentation of the screwdriving results	✓	✓	-
Combination with process controller C30S	✓	✓	-
Combination with process controller C50S	✓	✓	-
Combination with sequence controller CU30	-	✓	-
Combination with sequence controller CU10	-	-	✓
Combination with sequence controller CU15	-	✓	✓
Option screw bit lock function	-	✓	-
Option pistol grip for horizontal screwdriving	-	✓	✓
Option bit box	✓	-	-
Option vacuum version	✓	✓	-
Option magnetic screwdriving tool	✓	✓	✓
Option redundant measuring according to VDI / VDE 2862 sheet 2 category A	✓	✓	-
ESD-compliant	✓	✓	✓

Handheld screwdriver



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.

Applications

Ergonomic screwdriving thanks to compact system design

When assembling the short side panels of dishwashers, screw installation is often accomplished in a fatiguing posture for the operator. To improve the ergonomics of the screwdriving process, the compact handheld screwdriving system (HSE) with a special cable guide was developed, enabling user-friendly handling in an optimized working position. This reduces physical strain and increases process reliability, as every screw is positioned precisely at the intended location.

Fatigue-free screwdriving for maximum process reliability

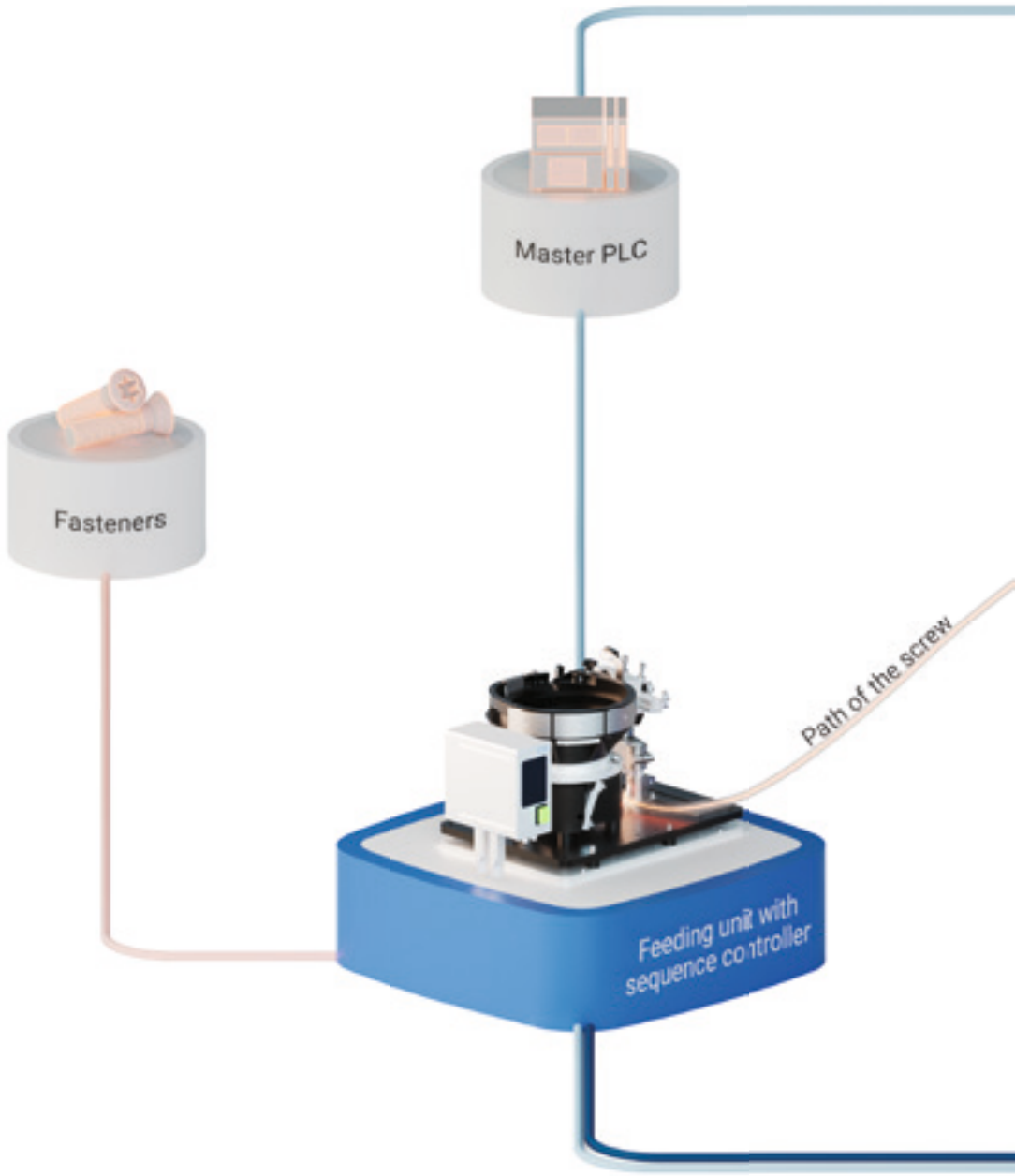
The illustration shows the use of the handheld screwdriver (HSE) with pistol grip in body pre-assembly. The HSE is designed for particularly fatigue-free operation and features automatic bit feed — ideal for standard applications without interfering edges on the workpiece and for shaft-intensive screws. It enables precise screw point location through an adjustable stroke and is suitable for applications with high safety requirements. In addition, it supports both horizontal and vertical screwdriving.

Optimized cycle times with consistently high quality

The assembly of a dishwasher control panel requires high screwdriving precision while maintaining the shortest possible cycle times. The HSE handheld screwdriving system with automatic screw feeding ensures a process-reliable fastening process with consistently high quality. Integrating the HSE system significantly increases productivity, while the failure rate is significantly reduced.

System overview

Typical handheld screwdriver set up in your workstation

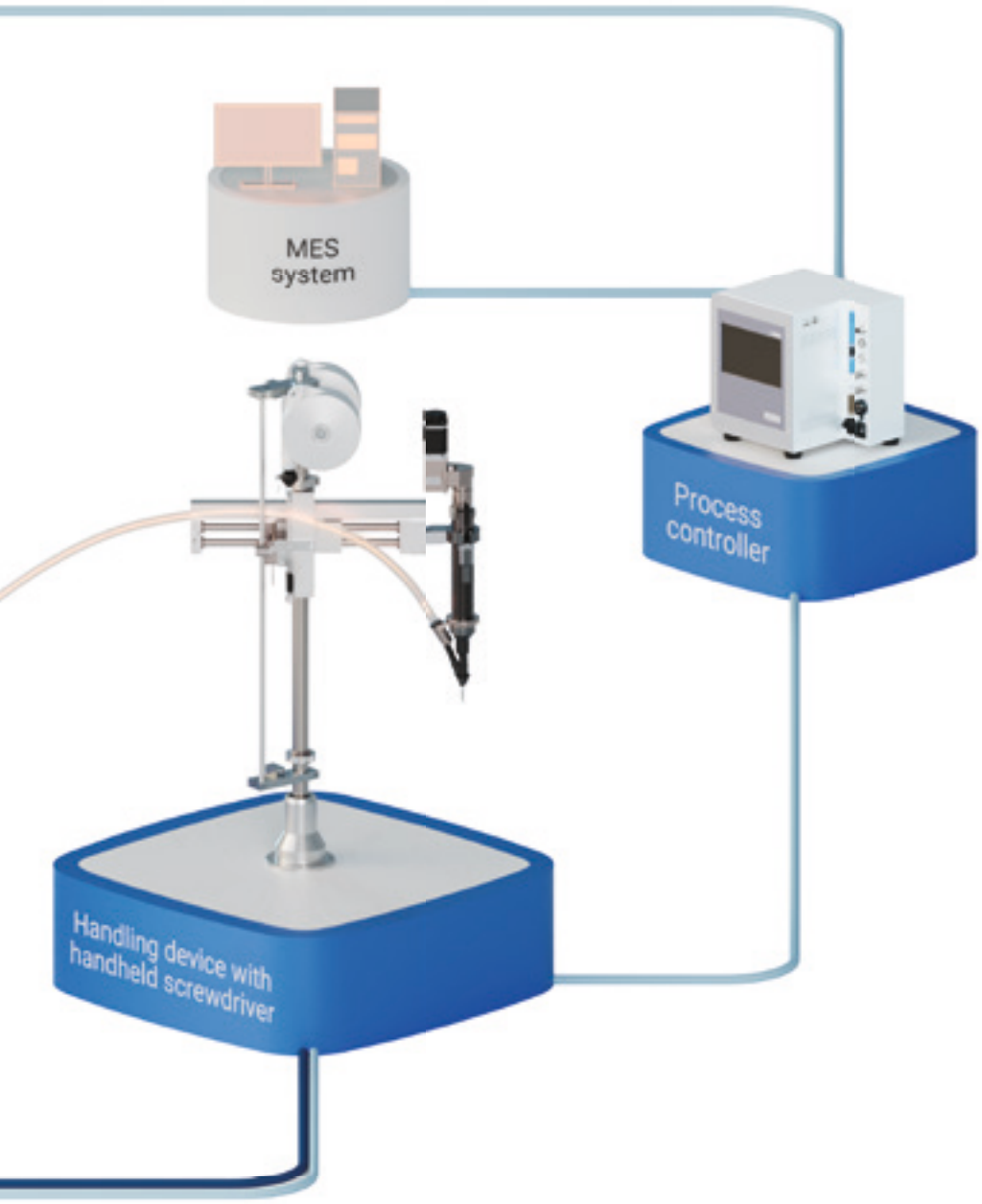


Pneumatics

Control signal

WEBER components

Customer components

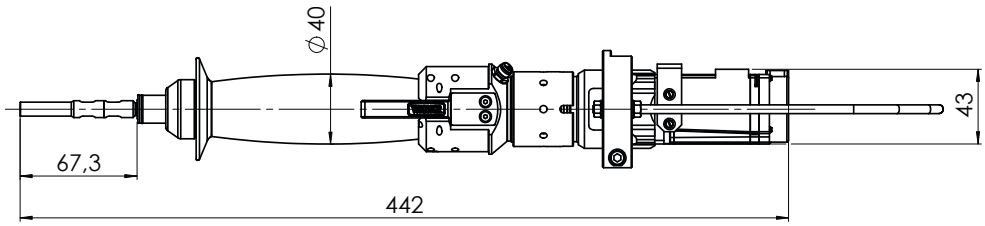

MES
system
Process
controller
Handling device with
handheld screwdriver

HET

Electric handheld screwdriver

Features

- For various applications - without auto feeding
- For applications with high process repeatability requirements where a direct measuring system is mandatory
- With vacuum technology option for recessed screwdriving locations



Dimensions and technical data may differ depending on the configuration. Image shows HET10 with AEC.

Technical data

Series	03	10	30
Torque range [Nm]	0.2 - 3	1 - 10	3 - 30
Max. rotation speed [rpm]	2,500	1,500	1,500
Weight* [kg]	approx. 1.2	approx. 2.6	approx. 4
Total length* [mm]	340	380	400
Grip Ø [mm]		40	
Tool holding coupler		1/4“ with quick change chuck	
Option vacuum		yes	
Option magnetic screwdriving tool		yes	

*With direct drive

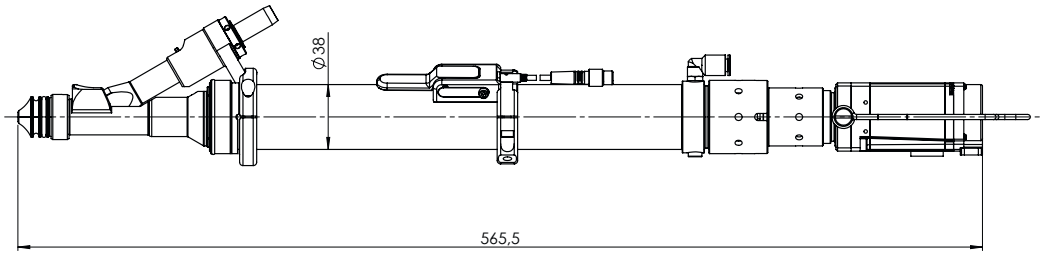
Technical changes reserved.

HSE

Electric handheld screwdriver with automatic feeding

Features

- With automatic bit stroke for user assisted application
- For standard applications with easily accessible screw locations
- With adjustable bit lock stroke for ease of finding the screwdriving location
- For applications with high process repeatabililty requirements where a direct measuring system is mandatory
- With vacuum technology option for recessed screwdriving locations (model HSE-V)
- With magnetic extension screwdriving tool option for slightly recessed screwdriving locations
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows HSE10 130 with AEC.

Technical data

Series	03		10
Torque range [Nm]	0.2 - 3		1 - 10
Max. rotation speed [rpm]	2,500		1,500
Head diameter [mm]		3 - 15	
Stroke length [mm]	90		90 | 130
Weight* [kg]	approx. 1.8	approx. 3	approx. 3.5
Total length* [mm]	464		480 | 580
Grip Ø [mm]		38	
Tool holding coupler		1/4" with quick change chuck	
Option vacuum		yes	
Option magnetic screwdrving tool		yes	

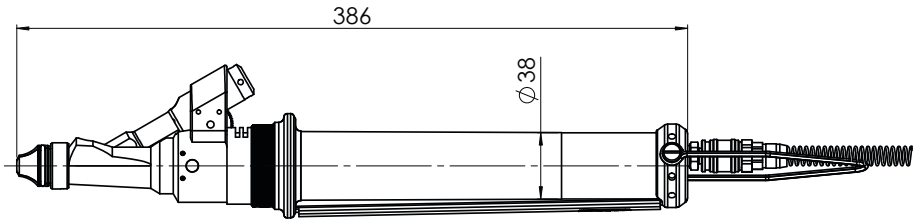
*With direct drive and standard screwdriving head assembly

HSP

Pneumatic handheld screwdriver with automatic feeding

Features

- For fatigue free application, including integrated pneumatic drive and automatic bit stroke
- For standard applications with easily accessible screw locations
- For shank heavy screws
- Torque adjustment via mechanical clutch
- With magnetic extension screwdriving tool option for slightly recessed screwdriving locations
- Swivel arm principle: feeding during screwdriving
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows HSP32 80.

Technical data

Series	HSP32			
Torque range [Nm]	0.5 - 5.3	0.5 - 4	0.5 - 3	
Max. rotation speed [rpm]	650	1,000	1,500	
Head diameter [mm]	3 - 14			
Stroke length [mm]	80	92	104	128
Weight* [kg]	2.6	2.8	2.8	3.3
Total length* [mm]	385	420	445	490
Grip Ø [mm]	40			
Tool holding coupler	1/4" with quick change chuck			
Option magnetic screwdriving tool	yes			

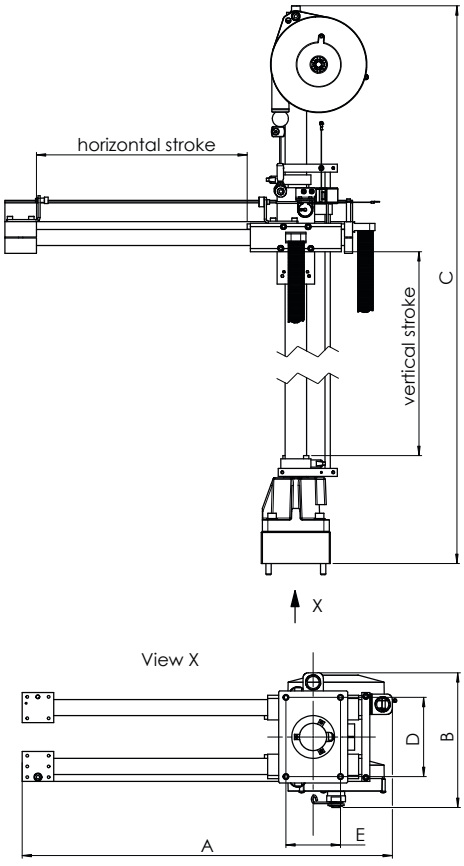
*With standard screwdriving head assembly

Technical changes reserved.

Accessories

Criteria	HET	HSE	HSP
Parallel arm with table top or wall mounting	✓	✓	✓
Linear support arm	✓	✓	✓
Balancer	✓	✓	✓
Vertical mounting	✓	✓	✓
Pistol grip	-	✓	✓

Linear support arm	HHG7 ESD	HHG20 ESD
Option angle and linear monitoring	✓	✓
Horizontal stroke [mm]	200	390
Vertical stroke [mm]	400 mm	540
Load capacity [kg]	0.8 - 2.5 | 2.8 - 6.5	8 - 12 | 12 - 20
A [mm]	440	700
B [mm]	245	250
C [mm]	940	1,250
D [mm]	Ø 110	148
E [mm]	Ø 110	102

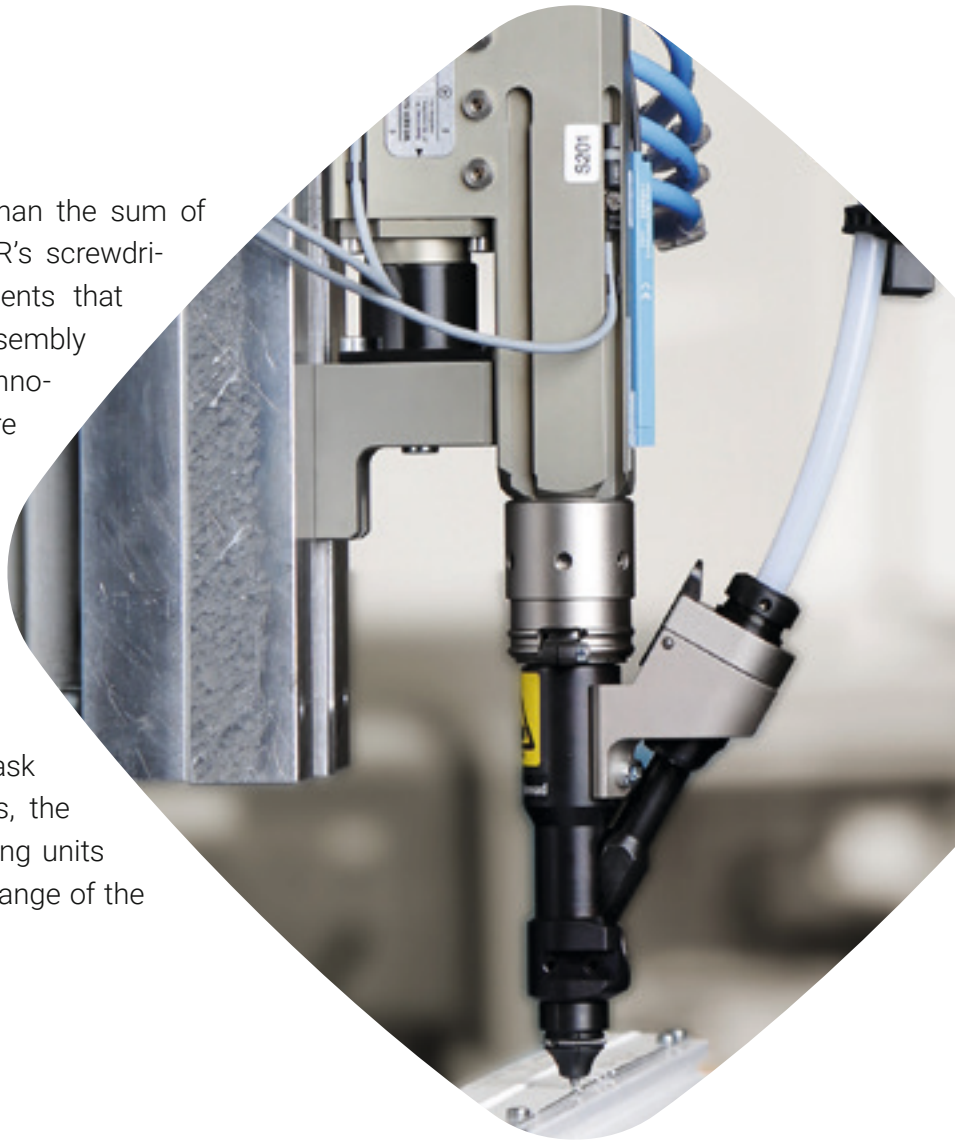


Balancer	diameter	weight	length	load capacity
Balancer 1 - 2.5 kg	146 mm	3.2 kg	2 m	1 - 2.5 kg
Balancer 2 - 4 kg	146 mm	3.2 kg	2 m	2 - 4 kg

Pistol grip*	diameter	weight	length	electrical connection
HSE	40x30 mm	0.3 kg	110 mm	M8 4-pole
HSP	38x25 mm	0.4 kg	120 mm	-

*Always with mounting

Fixtured screwdriving



As is well known, the whole is more than the sum of the individual parts. Hence also WEBER's screwdriving systems grow with the requirements that companies impose on automated assembly processes. Fixtured screwdriving technology is used if connection processes are more complex, cycle times are shorter and quality requirements are higher. WEBER's variably configurable fixtured screwdriving spindles adapt themselves to all screwdriving cases: whether mouthpieces, stroke lengths, sensors or drive units – WEBER offers tailor-made solutions depending on the task and screwdriving process. Nevertheless, the effort to change tools on the screwdriving units remains low – thanks to the tool-free change of the screwdriving head assembly.

Maximum flexibility thanks to compact design

Long service life thanks to wear-resistant surfaces

Low moving mass for gentle placement

Economically viable from 60,000 screwdriving operations per year

Overview of fixtured screwdrivers

Configurable fixtured screwdriving spindles for your application

Criteria	SER	SEB	SEV	SEM	SEK	SEV-E	SEV-L	SEV-P
For shank-heavy screws (head diameter / shaft length > 1.5 mm)	✓	✓	✓	-	-	✓	✓	✓
For head-heavy screws (head diameter / shaft length < 1.5 mm)	-	-	-	-	✓	-	-	✓
For nuts	-	-	-	✓	-	-	-	✓
For inserting / press-fitting	✓	✓	✓	-	-	-	✓	✓
For standard applications with easily accessible screwdriving locations	✓	✓	-	-	-	-	✓	✓
For limited access screwdriving locations	-	-	✓	✓	✓	✓	✓	✓
For applications with hard-to-reach and extremely recessed screwdriving locations	-	-	-	✓	✓	✓	-	✓
Thread friendly application	✓	✓	✓	✓	✓	✓	✓	✓
Closed spindle module	✓	✓	✓	✓	✓	-	✓	✓
Spindle module - open slide design	-	-	-	-	-	✓	-	-
With integrated head clearance stroke	-	✓	-	-	-	-	-	-
With pneumatic bit stroke	✓	✓	✓	✓	✓	✓	✓	-
With electrical bit stroke	-	-	-	-	-	✓	-	-
Low moving mass due to fixed drive motor	✓	✓	✓	✓	✓	-	✓	✓
Modular drive concept	✓	✓	✓	✓	✓	✓	✓	✓
Torque range up to [Nm]	120	60	120	120	120	30	10	60
Designed for linear axis applications	✓	✓	✓	✓	✓	✓	✓	✓
Designed for application with industrial robots	✓	-	✓	✓	✓	✓	✓	✓
Designed for LWR applications	-	-	-	-	-	-	✓	✓
Swivel arm principle for automatic feeding	✓	✓	✓	✓*	✓*	✓	✓	-
With vacuum technology	-	-	✓	✓	✓	✓	✓	✓
Pick & Place version	-	-	✓	-	-	-	-	✓
Option redundant measuring according to VDI / VDE 2862 sheet 2 category A	✓	✓	✓	✓	✓	✓	-	✓

*Screwdriving tool assembly in drawer design, feeding of the fastener during the screwdriving process
LWR = Lightweight robot

Technical changes reserved.

Fixtured screwdriver

Drive and transducer connections

The spindle connections are designed to be modular with solid, castleated 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.

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.

Applications

Process-reliable assembly with extremely short cycle times

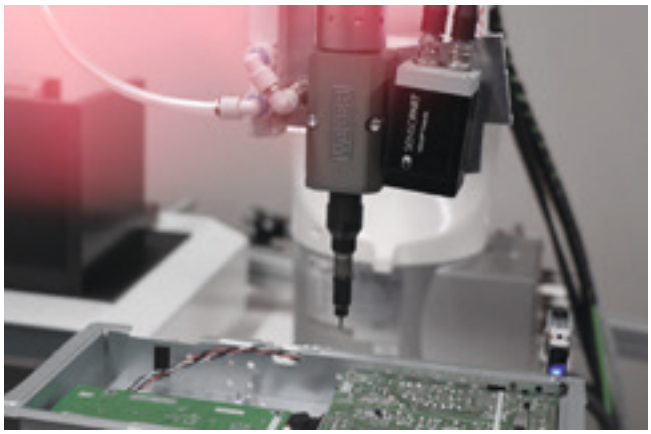
In dishwasher production, fastening the inner and outer doors is a particularly secure-critical process, as they contain electronic components and are opened and closed daily. Reliable and durable fastening is essential for one of the leading home appliance manufacturers. At the same time, the screwdriving processes must be performed within extremely short cycle times.

Maximum flexibility through automatic tool change and vision sensor technology

In automated applications, the vision sensor detects:

+ where the robot must position the screwdriver
+ which screw is used and which tool is required

This allows the robot to guide the SEV-P with precision – and the system to automatically select the appropriate tool. This saves time, reduces errors and increases flexibility in automated assembly.

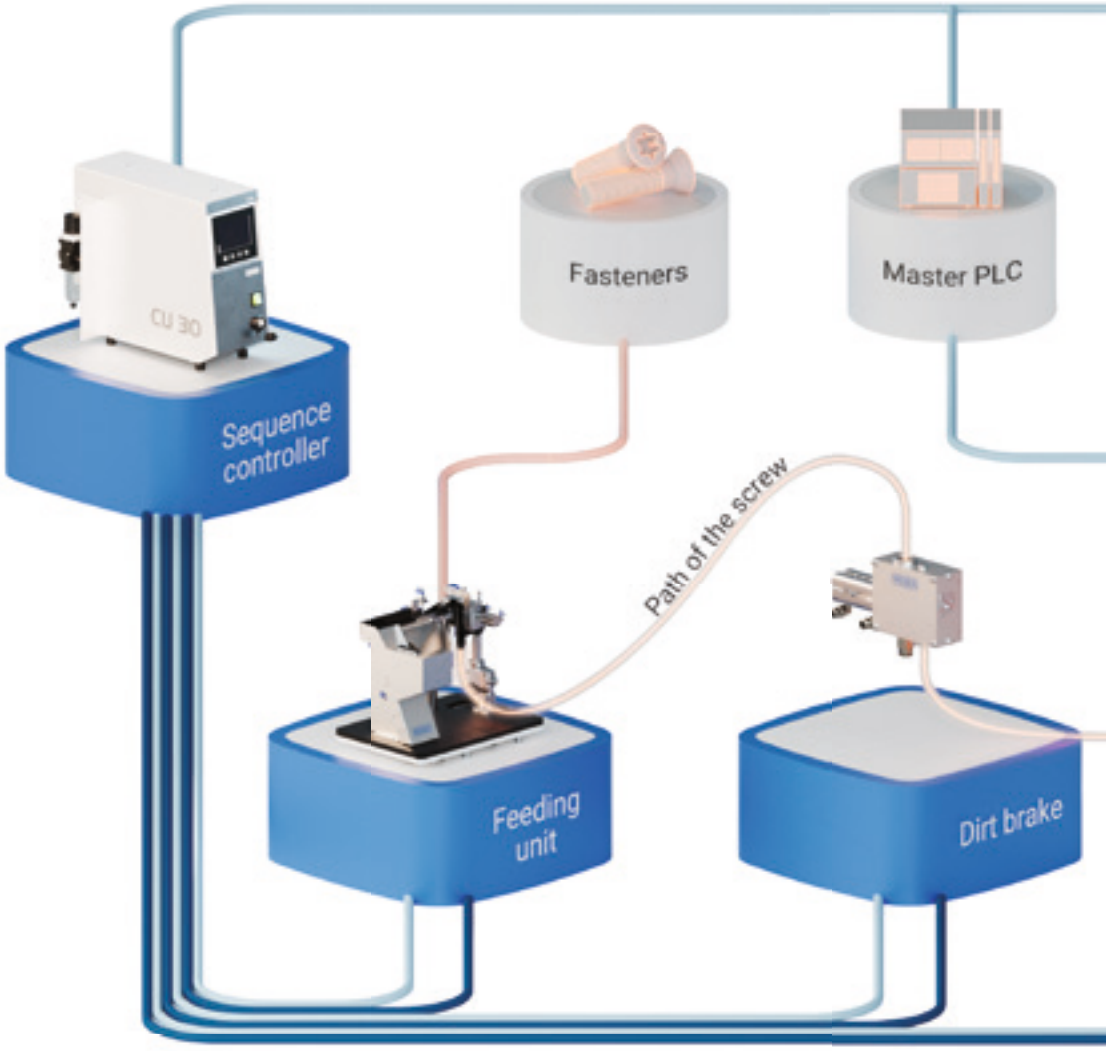


Safe fastening of high-voltage battery packs

A particular challenge in the production of electric vehicles is the fastening of battery packs that may carry high-voltage levels. Contact with live high-voltage components can pose serious health and safety risks for employees. With the new spindle concept, WEBER has developed an innovative solution that ensures workplace safety.

System overview

Typical fixtured screwdriver set up in your workstation

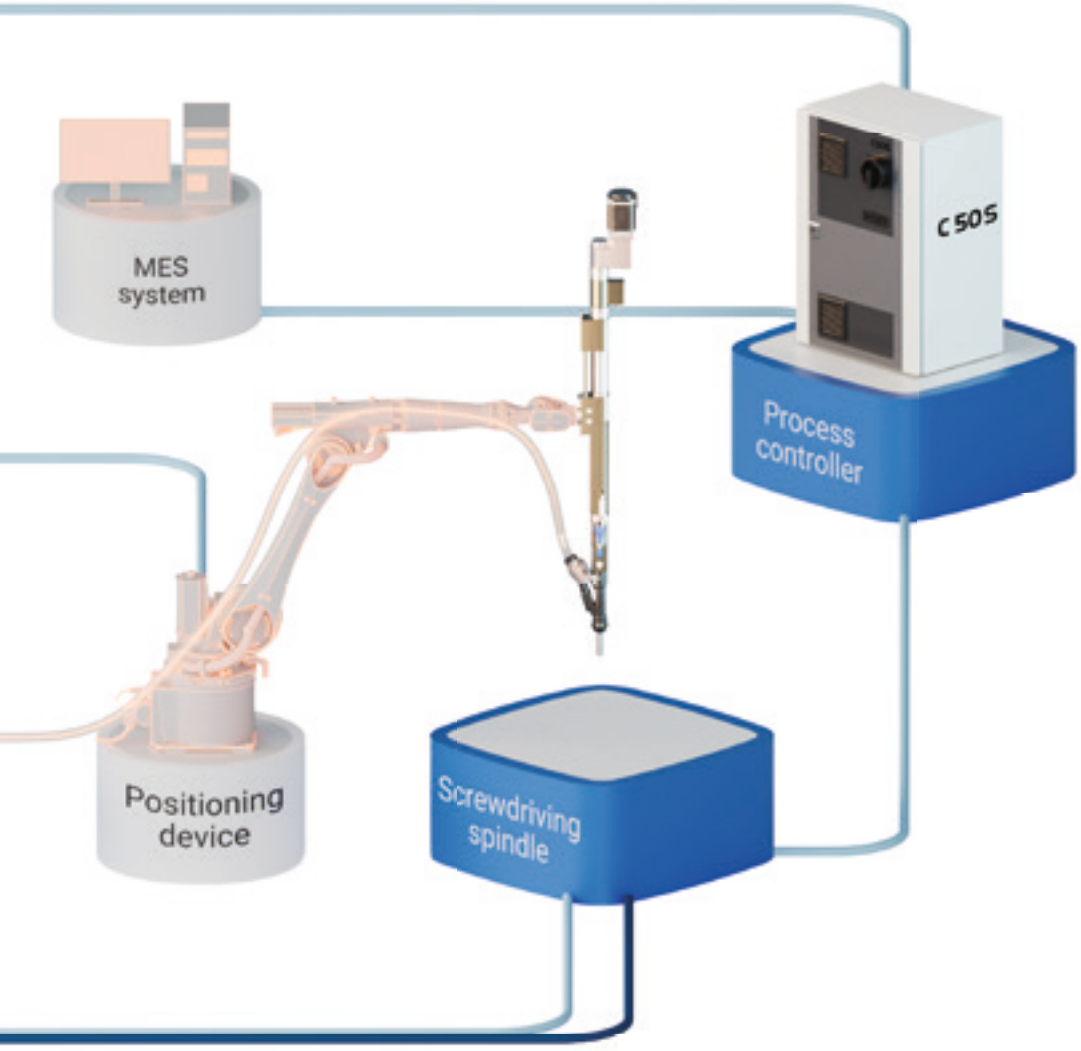


Pneumatics

Control signal

WEBER components

Customer components


MES
system
C505
Process
controller
Positioning
device
Screwdriving
spindle

Modular design

Modular design screwdriving spindles for flexible configuration

Mouthpiece

Ball bushing

3-finger aligning guide

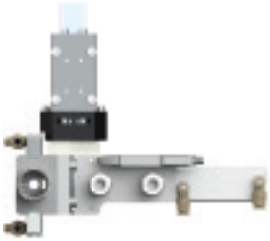
2-finger aligning guide

Collet chuck / collet sleeve

Feed head (screwdriving head)

Guide bushing head

Downholder adaptor with swivel arm



Nut feeding head

Vacuum screwdriving head assembly

Screwdriving tool

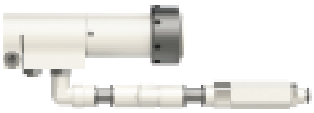
Drive bit and bit holder - clockwise rotation

Drive bit - clockwise / counter-clockwise rotation

Suction tube

Connecting sleeve / vacuum module

Connecting sleeve



Vacuum module

Screwdriving module

Screwdriving module SEV-E

Screwdriving module SEB

Screwdriving module SER

Dynamic transducer (torque sensor)

Dynamic transducer MDW

Drive

EC motor with direct drive

EC motor with offset gear

EC motor with inverse gear

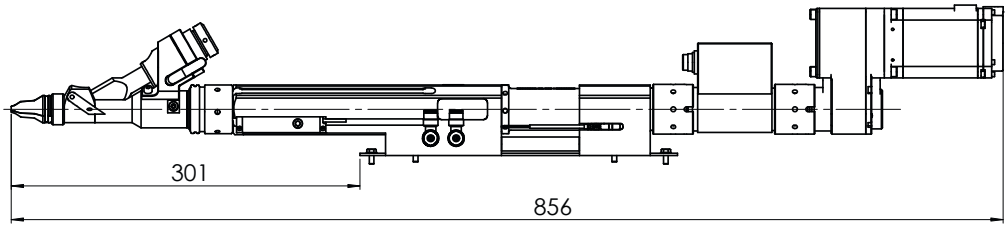
EC motor with integrated transducer MDG

SER

Fixtured screwdriver with closed spindle module

Features

- For standard applications with easily accessible screwdriving locations
- Swivel arm principle: feeding during screwdriving
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows SER10 120 with MDW and AEC.

Technical data

Series	03	10	30	60	120
Torque range [Nm]	0.3 - 3	1 - 10	3 - 30	6 - 60	12 - 120
Max. rotation speed [rpm]	2,500	2,500	1,500	1,500	300
Head diameter [mm]	3 - 16	5 - 21	9 - 24	9 - 24	9 - 24
Weight* [kg]	approx. 5	approx. 7	approx. 9	approx. 11	approx. 16
Bit stroke (internal) [mm]	70 | 90 | 120 | 190	90 | 120 | 160 | 240	120 | 160 | 200	120 | 160 | 200	160 | 200
Axial force bit (1 | 3 | 5 bar) [N]	30 | 90 | 150	45 | 135 | 225	70 | 210 | 350	70 | 210 | 350	160 | 480 | 800 | 210 | 350**
Max. overstroke depending on head diameter [mm]	11 -18 | 7.4 - 38 | 24.4 - 68 | 89 - 126	4.5 - 33.3 | 2.3 - 63.3 | 42.3 - 103.3 | 89 - 126.4	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84
Tool holding coupler	3/16"	1/4"	5/16"	7/16"	7/16"

*With direct drive and standard screwdriving head assembly
**Version LAF Low Axial Force

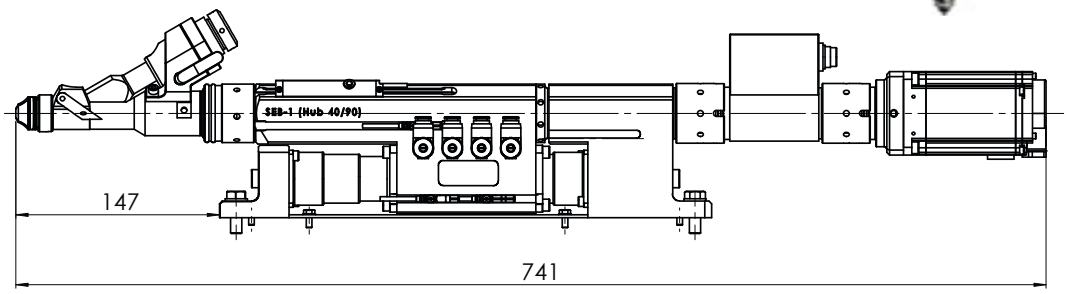
Technical changes reserved.

SEB

Fixtured screwdriver with integrated head stroke

Features

- For standard applications with easily accessible screwdriving locations
- Integrated head clearance stroke replaces the customer-side Z-axis
- Swivel arm principle: feeding during screwdriving
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows SEB10 90 with MDW and AEC.

Technical data

Series	03	10	30	60
Torque range [Nm]	0.3 - 3	1 - 10	3 - 30	6 - 60
Max. rotation speed [rpm]	2,500	2,500	1,500	1,500
Head diameter [mm]	2 - 13	4.5 - 22	9 - 24	9 - 24
Weight* [kg]	approx. 5	approx. 7	approx. 9	approx. 11
Bit stroke (internal) [mm]	70 | 90 | 120	90 | 120 | 160	120 | 160 | 200	120 | 160 | 200
Axial force bit (1 | 3 | 5 bar) [N]	30 | 90 | 150	45 | 134 | 225	70 | 210 | 350	70 | 210 | 350
Max. overstroke depending on head diameter [mm]	11 -18 | 7.4 - 38 | 24.4 - 68 | 89 - 126	4.5 - 33.3 | 2.3 - 63.3 | 42.3 - 103.3 | 89 - 126.4	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 2.3 - 84
Head stroke [mm]	30	40	60	60
Axial force head stroke (1 | 3 | 5 bar) [N]	45 | 135 | 225	75 | 225 | 375	115 | 345 | 375	115 | 345 | 375
Tool holding coupler	3/16"	1/4"	5/16"	7/16"

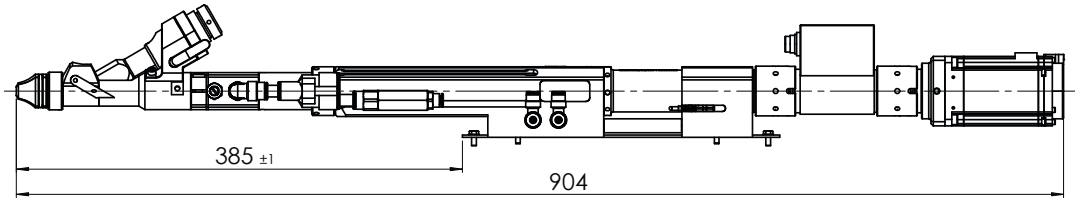
*With direct drive and standard screwdriving head assembly

SEV

For hard to reach screwdriving locations

Features

- Version with vacuum technology for hard-to-reach screwdriving locations
- For requirements of technical cleanliness with particulate reduction
- Swivel arm principle: feeding during screwdriving
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows SEV10 120 with MDW and AEC.

Technical data

Series	03	10	30	60	120
Torque range [Nm]	0.3 - 3	1 - 10	3 - 30	6 - 60	12- 120
Max. rotation speed [rpm]	2,500	2,500	1,500	1,500	300
Head diameter [mm]	6.5 - 11	6.5 - 13	9 - 24	9 - 24	9 - 24
Weight* [kg]	from 5	from 7	from 9	from 11	from 16
Bit stroke (internal) [mm]	70 | 90 | 120 | 190	90 | 120 | 160 | 240	120 | 160 | 200	120 | 160 | 200	160 | 200
Axial force bit (1 | 3 | 5 bar) [N]	30 | 90 | 150	45 | 135 | 225	70 | 210 | 350	70 | 210 | 350	160 | 480 | 800 70 | 210 | 350**
Max. overstroke depending on head diameter [mm]	11 -18 | 7.4 - 38 | 24.4 - 68 | 89 - 126	4.5 - 33.3 | 2.3 - 63.3 | 42.3 - 103.3 | 89 | 126.4	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84
Tool holding coupler	3/16"	1/4"	5/16"	7/16"	7/16"

*With direct drive and standard screwdriving head assembly
**Version LAF Low Axial Force

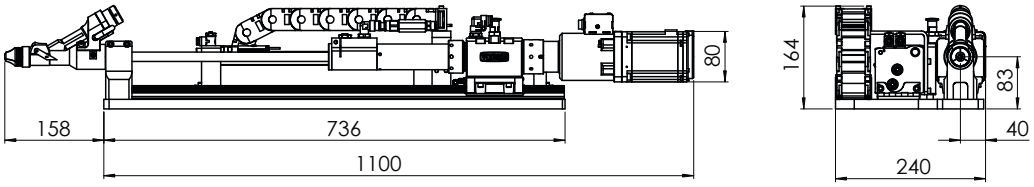
Technical changes reserved.

SEV-E

For severily recessed screwdriving locations

Features

- For severily recessed screwdriving locations and special applications with extremely long stroke requirements
- Open slide design with pneumatic or electric bit stroke
- For handling shank-heavy screws with swivel arm principle
- With energy chain for cable management
- Two types: right and left version for optimized length (stroke pneumatic and electric)
- Combination possible with SEK or SEM screwdriving assembly
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows SEV-E10 350 with MDG.

Technical data

	Pneum. stroke	Electr. stroke	Pneum. stroke	Electr. stroke	Pneum. stroke	Electr. stroke
Series	03		10		30	
Torque range [Nm]	0.3 - 3		1 - 10		3 - 30	
Max. rotation speed [rpm]	2,500		2,500		1,500	
Head diameter [mm]	3 - 16		5 - 21		9 - 24	
Nut size Ø collar or across corners [mm]	see technical data SEM					
Weight* [kg]	approx.13	approx. 19	approx. 15	approx. 21	approx. 24	approx. 30
Position dependent force compensation	-	✓	-	✓	-	✓
Bit stroke (internal) [mm]	300	350	350	350	300	350
Axial force bit (1 | 3 | 5 bar) [N]	44 | 133 | 220**	>35	44 | 133 | 200**	>35	72 | 217 | 362**	>35
Max. stroke speed [mm/s]	-	500	-	500	-	500

*With direct drive and standard screwdriving head assembly
**+ - 150 N depending on the screwdriving direction

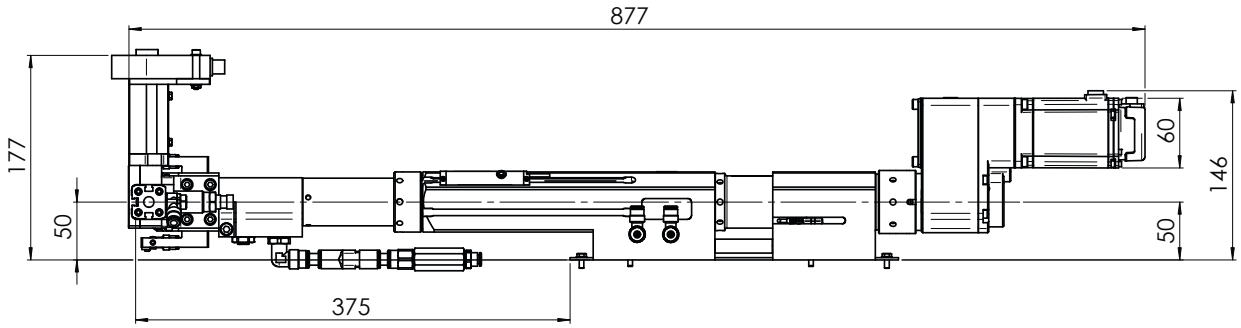
Technical changes reserved.

SEM | SEK

For nuts and head-heavy screws

Features

- Version with vacuum technology for the handling of nuts, also for hard-to-reach screwdriving locations
- For head-heavy screws SEK
- For DIN-, flange- and application specific nuts SEM
- Screwdriving head assembly in pusher design with profile tube, feeding during screwdriving
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows SEM30 120 with AEC.

Technical data

Series	03	10	30	60	120
Torque range [Nm]	0.3 - 3	1 - 10	3 - 30	6 - 60	12 - 120
Max. rotation speed [rpm]	2,500	2,500	1,500	1,500	300
Head diameter (SEK) [mm]	3 - 16	5 - 21	9 - 24	9 - 24	9 - 24
Nut size (SEM)	M2 - M4	M3 - M8	M5 - M10	M5 - M10	M5 - M10
Nut size Ø collar or across corners [mm]	up to 10	up to 15	up to 20	up to 20	up to 20
Weight* [kg]	approx. 5	approx. 7	approx. 9	approx. 11	approx. 16
Bit stroke (internal) [mm]	70 | 90 | 120 | 190	90 | 120 | 160 | 240	120 | 160 | 200	120 | 160 | 200	160 | 200
Axial force bit (1 | 3 | 5 bar) [N]	30 | 90 | 150	45 | 135 | 225	70 | 210 | 350	70 | 210 | 350	160 | 480 | 800 70 | 210 | 350**
Max. overstroke depending on head diameter [mm]	11 -18 | 7.4 - 38 | 24.4 - 68 | 89 - 126	4.5 - 33.3 | 2.3 - 63.3 | 42.3 - 103.3 | 89 - 126.4	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84	2.5 - 42.2 | 42.5 - 82.2 | 42.3 - 84
Tool holding coupler	3/16“	1/4“	5/16“	7/16“	7/16“

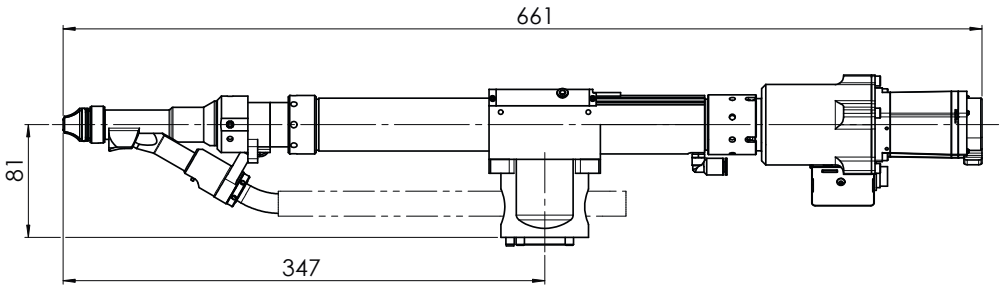
*With direct drive and standard screwdriving head assembly
**Version LAF Low Axial Force

SER-L / SEV-L

Spindle for lightweight robots with automatic feeding

Features

- For lightweight robots and coexisting HRC applications
- With vacuum technology option for recessed screwdriving locations (SEV-L)
- Swivel arm principle: feeding during screwdriving
- Suitable for automatic feeding



Dimensions and technical data may differ depending on the configuration. Image shows SER-L 130 with MDG.

Technical data

Series	SEV-L	SER-L
Torque range [Nm]	1 - 10	1 - 10
Max. rotation speed [rpm]	2,500	2,500
Head diameter [mm]	6 - 16	6 - 16
Weight* [kg]	approx. 3.7	approx. 3.6
Bit stroke (internal) [mm]	90 | 130	90 | 130
Axial force bit (1 | 3 | 5 bar) [N]	20 | 60 | 100	20 | 60 | 100
Max. overstroke depending on head diameter [mm]	32 - 73.5	32 - 73.5
Tool holding coupler	1/4"	1/4"
Collaborative mode according to level 4 of ISO TS 15066	-	-

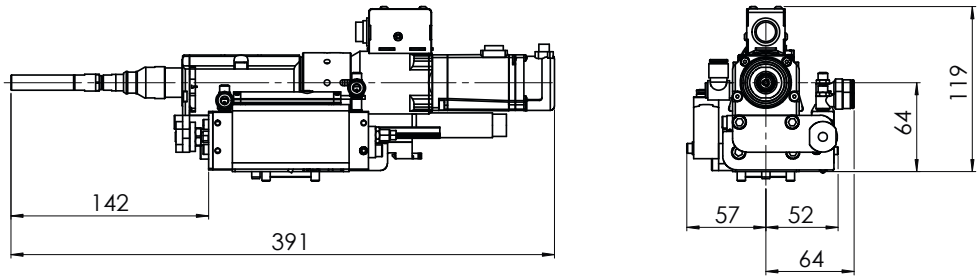
*With direct drive, standard screwdriving head assembly and cable pack

SEV-P

Pick & Place screwdriver for robot applications

Features

- For use with collaborative lightweight or industrial robots
- For Pick & Place applications with vacuum technology for fasteners of all types
- Automatic tool change with tool identification system using RFID (read & write)
- Force-controlled stroke and active depth measurement through optional head stroke slide
- Suitable for automatic feeding in Pick & Place design



Dimensions and technical data may differ depending on the configuration. Image shows SEV-P10 with MDG and feed slide.

Technical data

Series	SEV-P10	SEV-P30	SEV-P60
Torque range [Nm]	0.5 - 10	3 - 30	6 - 60
Max. rotation speed [rpm]	2,500	1,500	850
Head diameter [mm] / Nut size		as needed	
Weight* with / without slide [kg]	4.6 | 3.5	9.5 | 8	20 | 14
Bit stroke (internal) [mm]	5	5	10
Axial force intern bit stroke [N]	5	5	5
Head stroke slide [mm]	50	50	125
Max. screw location recess [mm]	130	180	130
Axial force head stroke [N]	50	50	125
Tool holding coupler	1/4"	5/16"	7/16"
Suitable for disassembly applications	–	✓	✓

*With direct drive

Technical changes reserved.

SEV-P accessories

Head stroke slide depth sensor incl.

Head clearance stroke slide for use with robots which do not support force and displacement sensing functions. Equipped with a depth sensor for more complex screwdriving programs.

Tool docking station

For fully automated bit exchange to different drive sizes or types without the need for manual intervention, including sensing for the drive spindle and bit.

Disassembly function head tooling with gripper

Allows fully automated disassembly and secure management of the removed fastener in one step. The tooling concept is applicable in many areas, eg. battery pack disassembly, component recycling or other automated assembly & disassembly applications.

Tooling set with offset gear drive

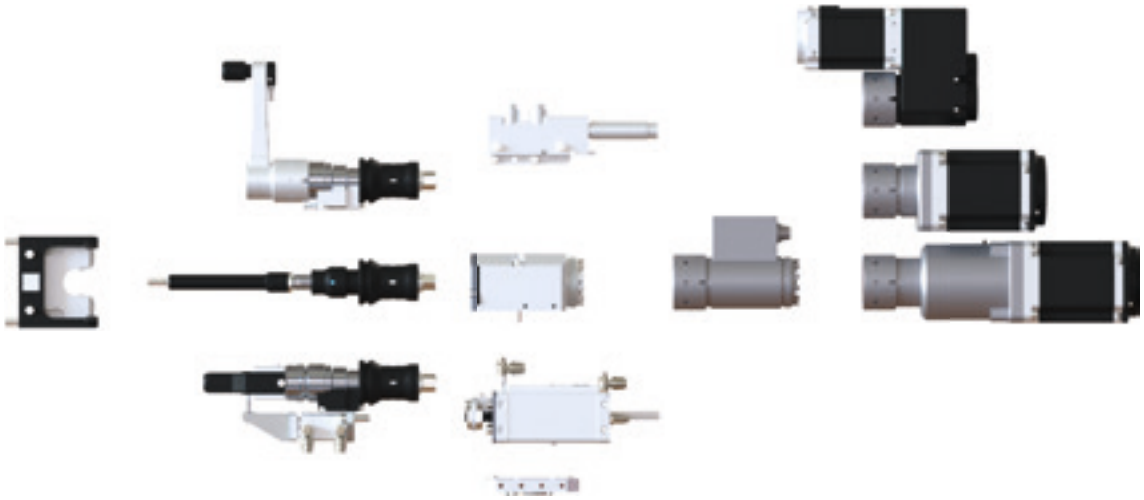
Right-angle offset torque transmission for hard-to-reach screwdriving locations, with optional vacuum.

Drive tool identification system

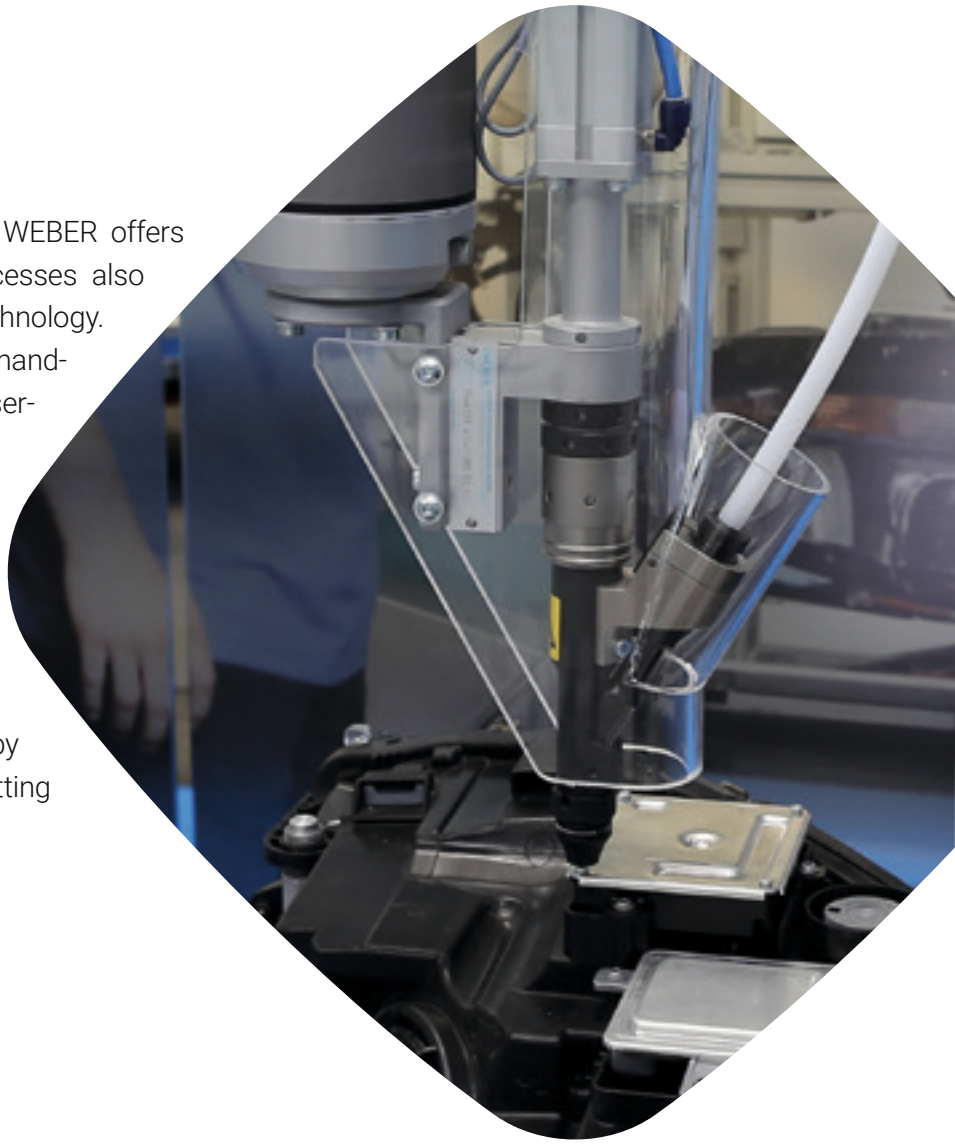
For tightening tool / bit identification: confirms that the correct drive tool is in process and track the number of duty cycles (e.g. maintenance - bit wear).

Flexibility newly defined:

Thanks to its modular design, the SEV-P significantly reduces the complexity of commissioning, maintenance and spare parts inventory.



Inserting and press-fitting



Connection technology can do more – WEBER offers more. Automation of assembly processes also includes inserting and press-fitting technology. WEBER offers innovative fixtured and hand-held systems in this range. With the insertion and press-fitting units for pins, bolts or clips, permanent force-fitting or force- and form-fitting connections are realized. All systems have automatic feed systems or intelligent controllers and allow high process forces for setting or insertion. Quality control can be achieved during the joining process by a force-path monitoring system. The setting tools are pneumatically powered.

Pneumatic drive or feed requires no separate drive control

Various designs for different demanding insertion or press-fitting tasks

Short cycle times due to automatic feeding and swivel arm technology

PEB | HPP

For various inserting applications

Features PEB

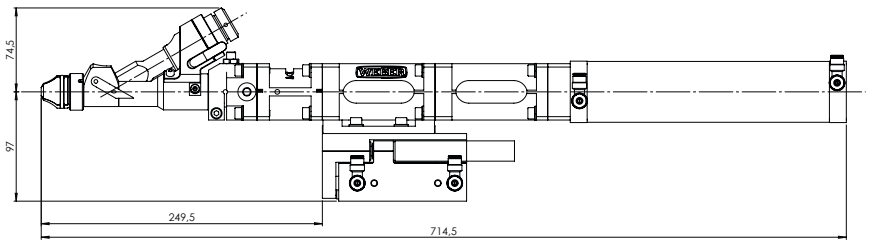
- Adjustable depth stop and analog stroke and force measurement for high precision
- Additional head stroke or vacuum tool for hard-to-reach insertion locations
- Suitable for robot applications
- Short cycle times due to automatic feeding and swivel arm technology

Features HPP

- Adjustable depth and optional insertion force monitoring
- Linear support arm or balancer for user assisted application
- Faster cycle times possible at manual workstations
- Optional bit lock stroke version

PEB

HPP



Dimensions and technical data may differ depending on the configuration.
Image shows PEB with head stroke, adjustable depth stop and 200mm inserting stroke.

Technical data PEB

Model	Standard	Special
Insertion-/press-fitting force [N]	50 - 600	up to 10,000
Insertion stroke [mm]	60 - 400	up to 300
Weight [kg]	from 2.5	approx. 15
Pneumatic connection [bar]	4 - 8	4 - 8

Technical data HPP

Max. insertion-/press-fitting force [N]	190
Insertion stroke [mm]	90 / 130
Weight [kg]	approx. 2
Pneumatic connection [bar]	4 - 8

Feeding technology

Automation of assembly processes normally pursues three objectives: efficiency enhancement, quality improvement and cost reduction. To achieve these objectives, the supply of fasteners must be trouble-free and as gentle as possible on the material. WEBER, with its automatic feed systems, achieves a maximum of process quality. The development of these systems requires experience and know-how. WEBER has developed and manufactured individual components for many years, combining them to fully automated feeding systems. After currently more than 30,000 delivered screwdriving and assembly systems with automatic feeding, WEBER is one of the leading companies in this area.

Screws, bolts, nuts, washers, caps and much more

Over 70 years of experience in feeding technology

Cycle times as fast as 0.8 seconds

Monitoring with numerous sensors such as presence check and feeder level control

Overview of feeding systems

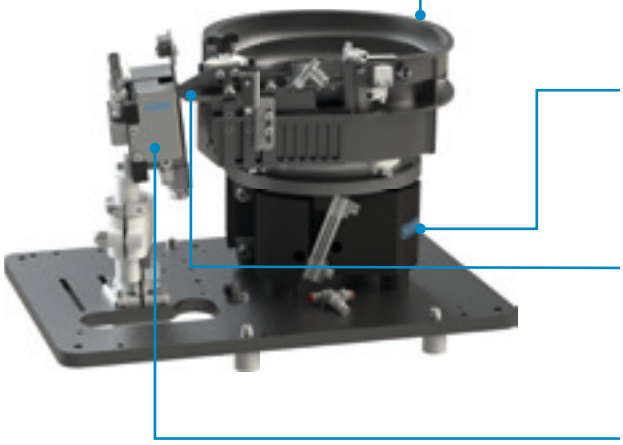
Efficient and gentle feeding of fasteners

	ZEB			ZEL		
Criteria	120	240	360	240	360	480
For shank-heavy screws	✓	✓	✓	✓	✓	✓
For head-heavy screws	-	✓	✓	✓	✓	✓
For nuts	-	✓	✓	✓	✓	✓
For washers	-	✓	✓	-	-	-
For rotationally symmetrical elements	-	✓	✓	✓	✓	✓
For elements with adhesive coating	-	-	-	✓	✓	✓
Gentle feeding of parts	-	-	-	✓	✓	✓
For shank diameter up to 2 mm	✓	-	-	-	-	-
For shank diameter up to 6 mm	-	✓	✓	✓	✓	-
For shank diameter up to 12 mm	-	-	✓	-	✓	✓
For shank diameter up to 14 mm	-	-	✓	-	-	✓
For shank diameter up to 16 mm	-	-	-	-	-	✓
For shank length up to 22 mm	✓	✓	✓	✓	✓	✓
For shank length up to 42 mm	-	✓	✓	✓	✓	✓
For shank length up to 48 mm	-	✓	✓	-	✓	✓
For shank length up to 70 mm	-	-	✓	-	✓	✓
For shank length up to 160 mm	-	-	-	-	-	✓
For head diameter up to 4 mm	✓	✓	-	✓	-	-
For head diameter up to 12.5 mm	-	✓	✓	✓	✓	✓
For head diameter up to 20 mm	-	-	✓	-	✓	✓
For head diameter up to 24 mm	-	-	✓	-	-	✓
For head diameter up to 32 mm	-	-	-	-	-	✓
Fill capacity [ltr.] / weight [kg]	0.3 / 1.2	1.2 / 6	3.8 / 17	1.2 / 6	3 / 14	25 / 100

Technical changes reserved

Feeding technology

Auto feeding systems from WEBER are based upon a modular platform. This allows for flexible configurations and ease of maintenance. Application specific tooling which is designed to support your individual fastener and process are a part of the solution. Concepted for 24/7 industrial application with maximum reliability and efficiency.



Bowl feeder ZEB

Feeder bowl

The pliable and extremely low wear GF plastic compound coating guarantees a long life and optimized transport characteristics of the fastener.

Vibratory drive for feeder bowl

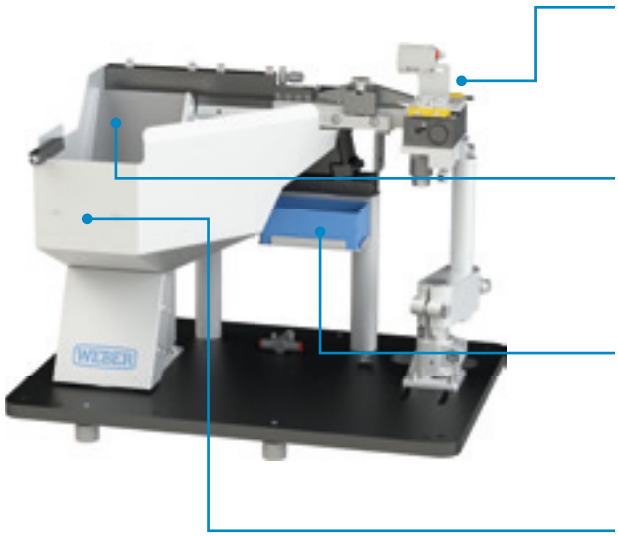
The powerful drive delivers a consistent performance – independent of the fill level of the feeder bowl.

Exit track

Several exit track platform concepts enable the processing of different types of fasteners.

Escapement unit

Flexible concepts optimized for the respective fasteners as well as customer-specific requirements.



Step feeder ZEL

Pick & Place

The optimized feeding process of the ZEL is suited to varying customer applications such as blow-feeding or Pick & Place.

Step feeder

The step feeder transports the fasteners by way of lifting plates to a linear track and ensures an especially gentle and fastener friendly process.

Particles collection container

All components are designed for gentle part handling; the collection container captures surplus particles and thus reduces contamination within the system.

Fasteners storage container

The high-quality, vibration-isolated stainless-steel hopper ensures quiet and gentle buffering of the fasteners.

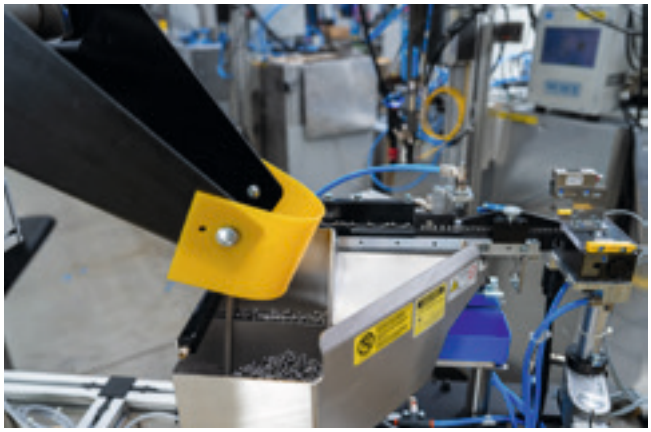
Applications

Perfect for long screws – quiet, gentle, efficient

The vibratory spiral bowl offers high wearing materials and a special surface which helps to protects the fasteners while reducing noise output. Ideal for longer and also head-heavy screws. The precise vibratory technique guarantees a stable sorting and feed rate. Universally applicable for all types of fasteners.

Efficient auto feeding for maximum process security

The step feeding unit ZEL auto feeds screws, nuts, and pins especially gently and reliably, thanks to a low-vibration exit track and integrated sensors, and is ideal for components with sensitive coatings. Its high feed rate and low noise operation ensure efficiency and noise reduction in the work space.

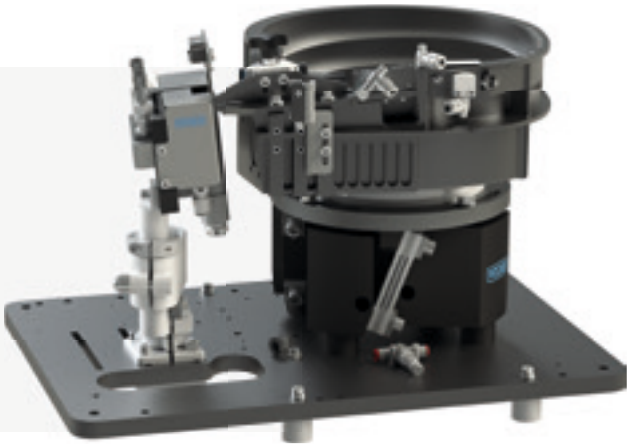


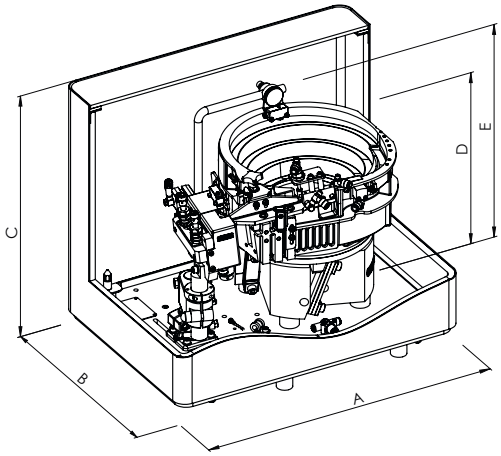
Power for your automation process

The ZEL480 is the perfect solution for larger bolts, nuts and pins. Robust powerful and flexible, they support OEM's and machine builders with reliable and smooth automation of assembly processes. The modular construction insures fast refill cycles and simple maintenance.

ZEB

Bowl feeder





Features

- Ideal for long screws, thin washers, head-heavy screws
- Universally applicable for fasteners of all types
- Vibratory technology for sorting and feeding fasteners
- Abrasion-resistant material for durable operations
- High output volume (cycle time up to 0.8 s)
- High process reliability
- Robust system also for difficult environments

Technical data

Series	ZEB120	ZEB240	ZEB360
A Width [mm]	480 497 w. SDH*	480 497 w. SDH*	640 650 w. SDH*
B Depth [mm]	340 353 w. SDH*	340 353 w. SDH*	536 547 w. SDH*
C Height [mm]	456 463 w. SDH*	456 463 w. SDH*	602 607 w. SDH*
Weight [kg]	25 w. SDH*	54 w. SDH*	80 w. SDH*
Fill capacity [ltr.]	0.3	1.2	3.8
Fill weight [kg]	1.2	6	17
D Height to bowl [mm]	290	300	360
E Height to FSK** [mm]	305	382	440

*SDH = sound enclosure cover, **FSK = feeder level control

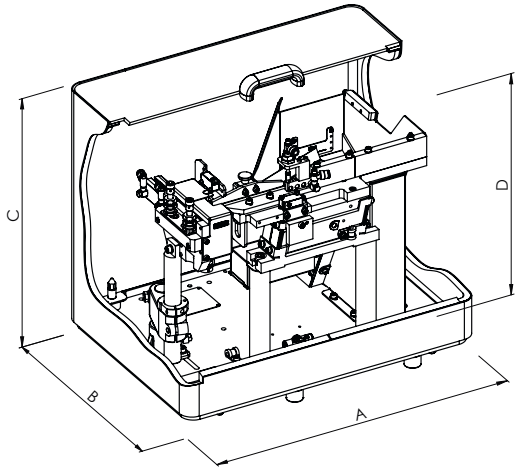
Series	ZEB120	ZEB240	ZEB360
Screws			
Head-Ø [mm]	2 - 4	2.5 - 12.5	6 - 24
Thread	M1 - M2	M2 - M6	M4 - M14
Shank length [mm]	≤ 22	≤ 48	≤ 73
Nuts			
Across corner [mm]	-	≤ 12.5	≤ 20
Thread	-	≤ M8	≤ M10
Height [mm]	-	≤ 9.5	≤ 9.5
Pins			
Pin-Ø [mm]	-	≤ 8	≤ 16
Length [mm]	-	≤ 50	≤ 80

ZEL

Step feeder

Features

- Suitable for coated and sensitive parts
- Low particulate generation for a high level of technical cleanliness
- Low vibration exit track for low noise level
- Hopper - stainless steel (Lift - hardened steel or PE)
- High process reliability
- High output volume (cycle time up to 0.8 s)
- Configurable for Pick & Place applications with escapement TPP
- Suitable for very long fasteners (e.g. M16x160 mm)



Technical data

Series	ZEL240	ZEL360	ZEL480
A Width [mm]	480 497 w. SDH*	640 650 w. SDH*	1188 1300 w. SDH*
B Depth [mm]	340 353 w. SDH*	536 547 w. SDH*	950 956 w. SDH*
C Height [mm]	456 463 w. SDH*	602 607 w. SDH*	1185 1340 w. SDH*
Weight [kg]	60 w. SDH*	85 w. SDH*	400 w. SDH*
Fill capacity [ltr.]	1.2	3	25
Fill weight [kg]	6	14	100
D Height to hopper [mm]	400	440	920

*SDH = sound enclosure cover

Technical changes reserved.

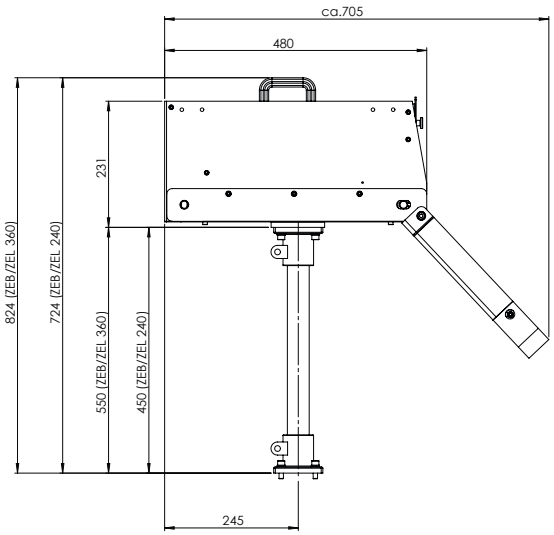
Series	ZEL240	ZEL360	ZEL480
Screws			
Head-Ø [mm]	2.5 - 12.5	6 - 20	12 - 32
Thread	M2 - M6	M4 - M12	M6 - M16
Shank length [mm]	≤ 42	≤ 73	≤ 160
Nuts			
Across corner [mm]	≤ 12.5	≤ 20	≤ 32
Thread	≤ M8	≤ M10	≤ M16
Height [mm]	≤ 9.5	≤ 9.5	≤ 20
Pins			
Pin-Ø [mm]	≤ 8	≤ 14	≤ 24
Length [mm]	≤ 48	≤ 73	≤ 160

Accessories

Belt driven refill hopper

Features

- Bulk part storage
- Longer refill autonomy (for operators)
- Folding top cover (optional)
- 24V drive for global application
- Compact design
- Adjustable output
- Option: level sensor
- Option: lockable



Dimensions and technical data may differ depending on the configuration. Image shows BB08.

Technical data

Series	BB04	BB08	BB18
Length [mm]	380	480	580
Width [mm]	193	223	273
Height [mm]	201	231	251
Fill volume [ltr.]	4	8	18
Max. fill weight [kg]	10	20	45

Technical changes reserved.

Feeding technology

Optional accessories

Sound enclosure cover with or without hopper opening

Sound enclosures reduce the noise emissions of the feeding system and protect the auto feed fasteners from environmental contamination. Access panels allow for simple fastener refills.

Base frame

Our base frames ensure the stability of the WEBER auto feeding systems. They allow easy integration of controllers, distributors, pneumatic components, and refill hopper systems. Base frames are available for all feeder sizes.

Hopper frame

Only in combination with the base frame of the feeding system.

Feeder level control

Feeder level controls ensure timely refilling of the storage hoppers.

Distributor

Feed tube distributor devices in different configurations allow distribution of fasteners to several WEBER devices.

Brake

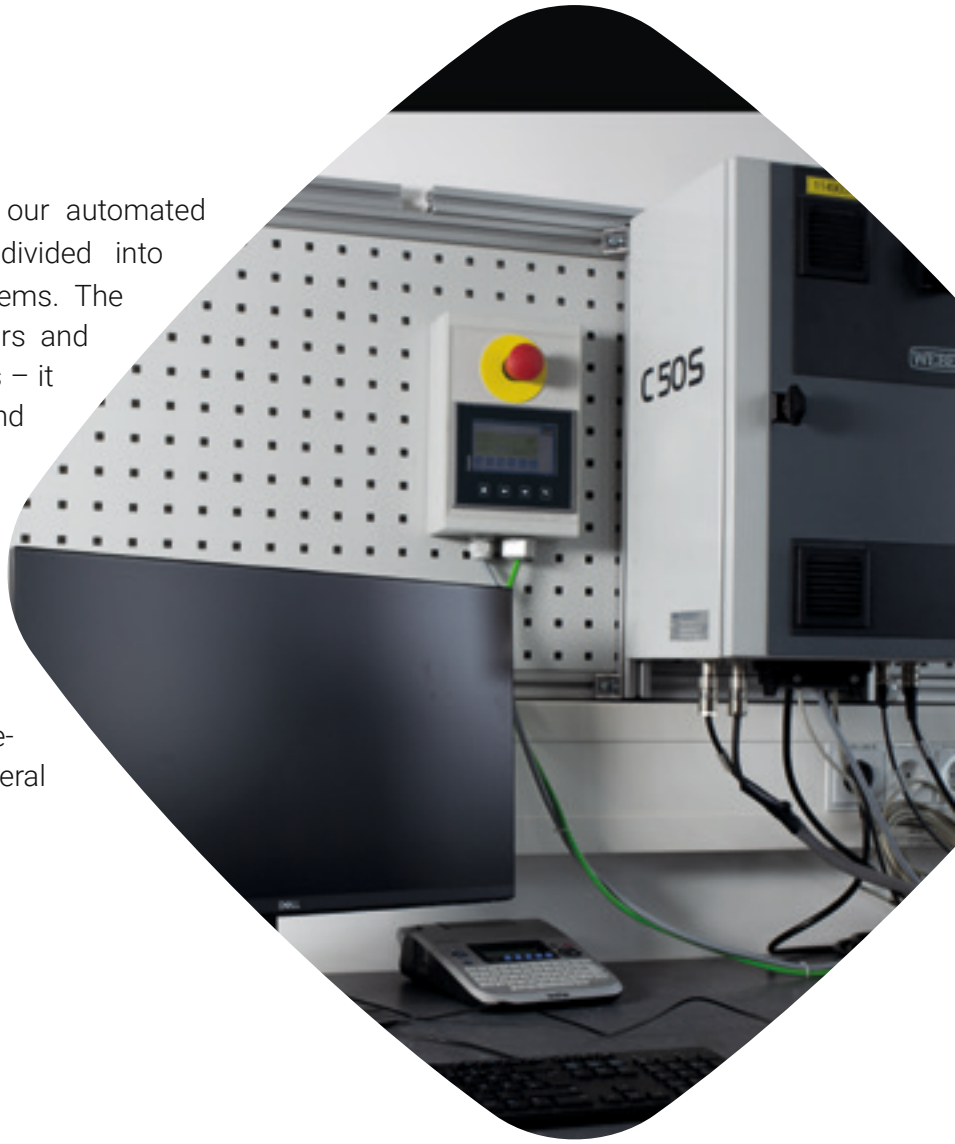
The brakes reduce the chance of long term wear or damage to WEBER tooling and the fasteners themselves.

Dirt extraction

In combination with the brake, the dirt extraction system ensures optimal cleaning of the fasteners.

Control systems

The controllers that are integrated in our automated screwdriving systems, are basically divided into screwdriving and process control systems. The screwdriving process controller monitors and controls the actual screwdriving process – it ensures that the preset speed, torque and depth are being maintained. In particular, the controller is important in evaluating the process and documentation of all screwdriving data. Process controllers are responsible for the control of the entire system. For example, they control the stroke movement of the screwdriving spindle, the feeding of fasteners or the communication with peripheral devices.



All common field bus systems

Easy parameterization

Process evaluation and documentation of screwdriving / result data

Ensure optimum coordination of the WEBER components

Overview of control systems

Process controller (1/2)

Features	C5S	C30S	C50S
General information			
ESD-compliant	✓	option	option
Remote maintenance via PC	via USB	via USB	via TCP/IP
Display, parameterization und visualization			
Integrated touch display	-	✓	-
Integrated status LEDs	✓	-	-
External touch display	-	option	option
Operation and parameterization via Windows PC	✓	-	✓
Screwdriving programs			
Torque measurement (directly by transducer)	-	✓	✓
Torque measurement (indirectly by motor power)	✓	✓	-
Number of storable screwdriving programs	15	31	255
Structure fastener tightening program	fixed - 7 strategies	fixed - 13 strategies	variable - 25 steps
User definable application of the program steps (finding, screwdriving, seating, NIO treatment, etc.)	-	-	✓
Gradient screwdriving method (torque and depth)	-	-	✓
Relative torque	-	✓	✓
M360° method for direct fastener tightening	-	-	✓
Results user definable from the program steps	-	- (fixed)	✓ (flexible)
Number of result values	-	4	5
Forming or pre-torque output	-	✓	✓
Analog depth sensor for bit displacement measurement	✓	✓	✓
Digital depth sensor	✓	✓	✓
Redundant measurement acc. to VDI 2862, Cat. A	-	option	option
Parameter interface for program adjustment	-	option	option
Automatic release	w/o overrun time	incl. overrun time	incl. overrun time
Hardware connections			
Ethernet RJ45	-	option	✓
USB Master (for USB stick)	-	✓	✓
USB Slave (for PC)	✓	✓	-
Interfaces for customer control			
Digital I/O	✓	✓	✓
Digital I/O via RS232	-	option	-
Field bus interfaces	-	option	option
Curve recording			
Visualization / Display of the screwdriving curves on the device	-	✓	✓
Curve memory in the controller	last curve	last curve	1,000

Overview of control systems

Process controller (2/2)

Features	C5S	C30S	C50S
Statistics			
Logbook	-	✓	✓
Limit values	-	-	✓
Sigma values	-	-	✓
Results	-	✓	✓
Optional documentation possibilities			
On external display	-	option	option
Results (numeric values, part ID)	-	✓	✓
Process parameters	-	✓	✓
Curves	-	✓	✓
MySQL data base	-	✓	✓

Sequence controller

Features	CU10	CU15	CU30
General information			
ESD-compliant	-	-	✓
Possible remote maintenance via PC	-	-	✓
Emergency stop can be integrated by customer	✓	✓	✓
Integrated display	✓	✓	✓
Integrated feeder vibration control	✓	✓	✓
Pneumatics integrated	-	-	✓
Hardware connections			
USB Slave (for PC)	-	-	✓
RJ45 for field bus	-	-	option
Digital interface to process controller	-	option	option
Interfaces for customer control			
Digital I/O	-	✓	✓
Field bus interfaces	-	-	option
Communication to WEBER screwdriving control	-	-	option

Models CU10 and CU15 can be easily integrated with feeding systems.

The CU30 is a high-quality sequence control with integrated pneumatics and PLC, which combines extensive functions and many options in a compact device.

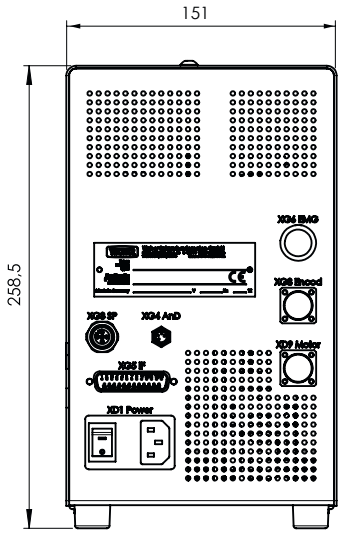
Technical changes reserved.

C5S

Process controller for simple screwdriving tasks

Features

- Easy configuration and testing via PC software
- Compatible with all WEBER fixtured screwdrivers, as well as handheld screwdrivers type HET, HSE
- Intuitive software with configurable programs and definable current consumption torque
- Extensive diagnostic and monitoring options of the spindle and interface



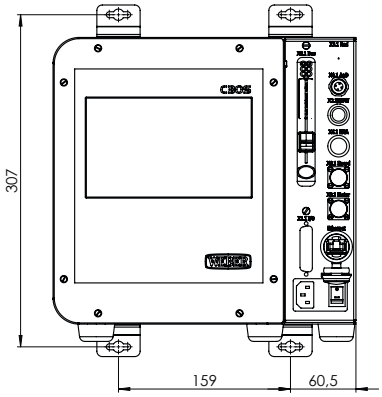
Technical data

Supply	230 V, Type: IEC connection with L, N, PE, 230 V ± 10% / 50 – 60 Hz
E-safety class	Safety class 1 (L, N, PE)
Drives [W]	100 / 400 / 750
Processes	7 different process cycles
Programs	15 programs based on an individually parameterized process sequence
Customer interface Inputs Outputs	Digital I/O Automatic, program no., start, confirm error No error, ready to start, OK, NOK, depth reached
Weight [kg]	7.8
Dimensions [mm]	151 / 259 / 332 (W / H / D, without plug)
Safety class	IP30

Technical changes reserved.

C30S

Process controller for complex screwdriving tasks



Features

- Integrated system software for configuration and control
- Compatible with all WEBER fixtured screwdrivers, as well as handheld screwdrivers type HET, HSE
- Integrated touch display for easy use and configuration
- Supports transducers for precise torque and angle measurement
- MySQL database connection optionally possible for extensive documentation
- Communication customer interface via field bus module
- Writing and reading of process parameters possible via optional interface

Technical data

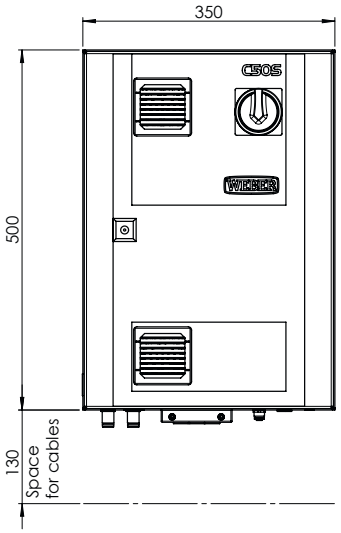
Supply	Standard 230 V, Type: IEC connection with L, N, PE, 230 V ± 10% / 50 – 60 Hz Option 115 V, Type: IEC connection with L, N, PE, 115 V ± 10% / 50 – 60 Hz
E-safety class	Safety class 1 (L, N, PE)
Drives [W]	100 / 400 / 750
Processes	13 different process cycles
Programs	31 programs based on an individually parameterized process sequence
Interfaces	Digital I/O, RS232, PROFIBUS, PROFINET, DeviceNet, EtherCAT, EtherNet/IP
Weight [kg]	7.8
Dimensions [mm]	280 / 280 / 280 (W / H / D, without plug)
Safety class	IP30

C50S

Process controller for high complex screwdriving tasks

Features

- Individual process sequences are configurable using the latest technologies
- Gradient screwdriving method (moment, depth), relative moment as well as M360° method
- Individual export of parameters and results
- MySQL / MSSQL database connection optionally possible for extensive documentation
- Communication customer interface via field bus module
- Modern user management and logbook function for maximum system security, interface monitoring and diagnostic functions
- Writing and reading of process parameters possible via optional interface



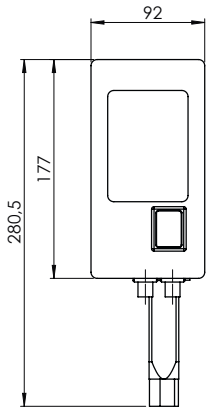
Technical data

Supply	Standard 230 V, Type: IEC connection with L, N, PE, 230 V ± 10% / 50 – 60 Hz
E-safety class	Safety class 1 (L, N, PE)
Drives [W]	100 / 400 / 750
Programs	255 programs with up to 25 individual process steps
Interfaces	Digital I/O, RS232, PROFIBUS, PROFINET, DeviceNET, EthernetCAT, EtherNet/IP
Weight [kg]	20
Dimensions [mm]	350 / 500 / 250 (W / H / D, without plug)
Safety class	IP54

Technical changes reserved.

CU10 | CU15

Sequence controller



General features

- Integrated feeder vibration control
- LCD display with text display and password protection

Features CU10

- Compatible with ZEB feeder and handheld screwdriver type HSP

Features CU15

- Compatible with ZEB / ZEL feeders and handheld screwdrivers type HET / HSE
- Customer interface with inputs and outputs
- Depth shut-off and torque shut-off
- Optional emergency stop & screw presence
- Intelligent feed system control with hopper for easy integration
- Slave feeder version for blow-feed or Pick & Place applications
- Optional fill level control with automatic control of a WEBER belt hopper

Technical data

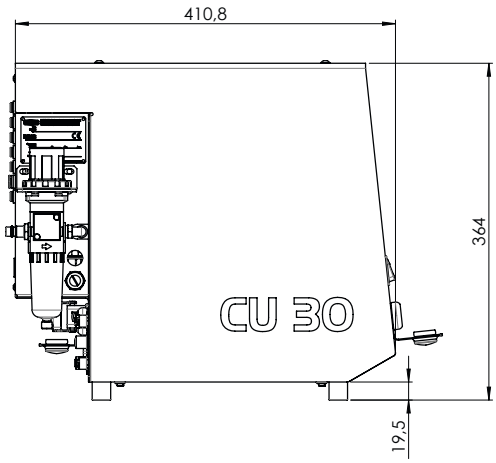
Feeder vibration control	Frequency and amplitude adjustable
Supply	230 V, Type: IEC connection with L, N, PE, 230 V ± 10% / 50 – 60 Hz
Supply (optional)	115 V Type: connection with L, N, PE, 115 V ± 10% / 50 – 60 Hz
Power input [W]	< 115
E-safety class	Safety class 1 (L, N, PE)
Weight [W]	2.8
Dimensions [mm]	92 / 177 / 192 (W / H / D, without plug)
Safety class	IP30

CU30

Sequence controller

Features

- Compact sequence controller with integrated pneumatics and PLC
- Compatible with all WEBER feeding systems as well as handheld and fixtured screwdrivers
- Optional integrated proportional valve for HSE handheld screwdriver
- Integrated touch display and software for configuration and management
- User-friendly functions such as test mode, trouble-shooting, or manual operation



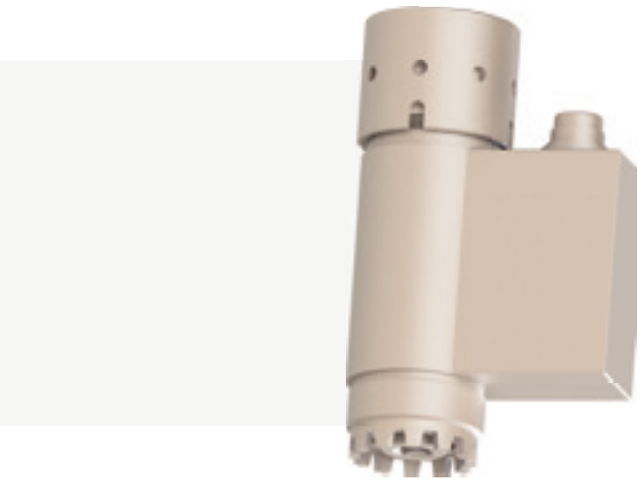
Technical data

Supply	100-230 V, Type: IEC connection with L, N, PE, 230 V ± 10% / 50 – 60 Hz
E-safety class	Safety class 1 (L, N, PE)
Power input [W]	Average 40
Weight [kg]	13.5
Compressed air supply	6 bar / 0.6 MPa
Dimensions [mm]	226 / 364 / 411 (W / H / D, without plug)
Safety class	IP30

Technical changes reserved.

Accessories

Transducer MDW



Features

- Torque and angle recording in one transducer
- Integrated measurement amplifier
- Evaluation of the transmitted signals by the screwdriving controller
- Non-contact transmission of torque from the shaft to the housing
- Measurement of the angle of rotation via encoding disc and light barrier
- Can also be used redundantly for category A fittings according to VDI / VDE 2862
- Cable connections upwards or downwards facing

Technical data

Model	MDW03			MDW10			MDW60	MDW120
Measurement range [Nm]	0.05 - 0.5	0.1 - 1	0.3 - 3	1 - 10	1.5 - 15	3 - 30	6 - 60	12 - 120
Accuracy class [%]	0.15							
Repeatability [%]	0.05							
Usable torque [%]	130							
Limit torque [%]	200							
Handling temperature range [°C]	+10 to +55							
Angular resolution [°]	0.5							
Max. rotation speed [rpm]	5,000							
Safety class when installed	IP 54							

Technical changes reserved.

Accessories

M30

Features

- Applicable for both active and passive sensors, screw joint simulator as well as MDW dynamic transducer or rotating transducer
- Small size and weight as well as battery operation make it very good for mobile use
- 10 sets of parameters (calibration) can be stored for different sensors
- Data logger for up to 600 measurement values with time and date stamp
- High resolution at 1/1000th of a second
- Trigger input for external control
- Battery powered (4 x AA) or with optional AC adapter
- USB and RS-232 interface for data transfer or print outs

Technical data

Model	M30
Dimensions [mm]	100 / 200 / 40 (W / H / D)
Weight without cable and batteries [g]	330
Handling temperature range [°C]	+5 to +45
Safety class	IP 40

Technical changes reserved.

Systems

The efficient use of complex applications and different joining methods in assembly requires experience that only WEBER can offer. For decades, we have focused on the automation of assembly processes and develop solutions for our customers that integrate seamlessly into their production environments. Our systems are suitable for robot-based, stationary, or manual use and can be scaled for any application. Our portfolio includes not only feeding, screwdriving, and setting technology, but also flow-drilling, blind rivet nuts, and thermal bonding processes — each of them combinable with additional applications and technologies.

Process reliability and high cycle rates

Individual parameterization

Setting and joining with one-sided accessibility

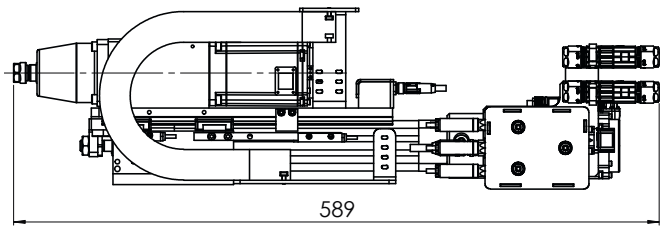
Robust systems for long service lives

TSS

Setting system for sandwich structures

Features

- The installation of plastic bosses in lightweight materials is possible with or without pilot hole
- User defined process parameters with monitoring and evaluation
- Feasibility study and evaluation of completed joints at the WEBER laboratory
- High resolution process results
- For tasks with accessibility from one side only
- Plastic bosses as fastening elements or as usable fastening point for self-tapping screws



Dimensions and technical data may differ depending on the configuration.

Technical data

Spindle weight [kg]	approx. 13
EC drive [rpm]	up to 5,000
Max. axial force [N]	1,400
Cycle time (w/o cooling) [s]	from 3

Technical changes reserved.

Thermal adhesive bond as connection technology

Honeycomb or foam core with outer layers of fiber-reinforced plastics

Individually adjustable process parameters with monitoring and evaluation

High resolution process evaluation

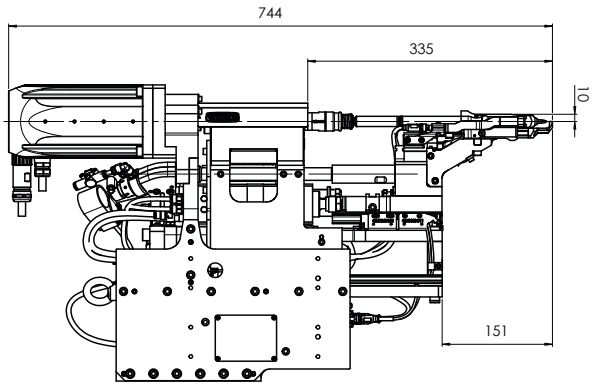
RSF25

Robot-assisted flow-drilling screwdriving system

Optional BR-H brake

WEBER RSF screwdriving system

- Anti-screw-tilt function by way of active jaw opening
- Quick and easy tool change
- Compact design
- Optional compensation for robot shifting during screw installation
- Short cycle time thanks to element feeding speeds of up to 30 m/s thanks to the new BR-H



Dimensions and technical data may differ depending on the configuration.
Image shows RSF25 in straight version.

Technical data

Torque [Nm]	up to 15
EC drive [rpm]	up to 8,000
Max. axial force (at 6 bar) [N]	up to 3,600
Holding down force (at 6 bar) [N]	up to 1,400
Cycle time [s]	from 1.6

Technical changes reserved.

Flow-drilling connections

Detachable screw connections without prior processes

One-sided accessibility

Low-heat joining process

Products

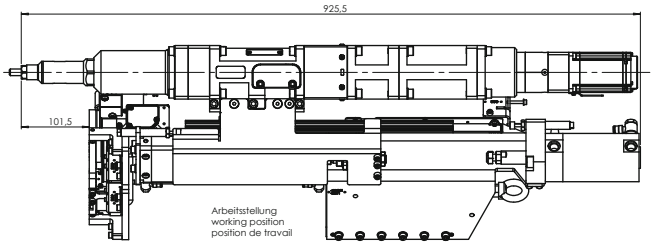
SBM25

Inserting system for blind rivet nuts and bolts

Features

- Standard with quick-change system for DIN mandrels or optional automatic mandrel auto change function
- Precise pre-alignment of hexagonal elements to the workpiece
- Suitable for fixtured or robotic applications with optional docking function
- Automatic removal and ejection of defective blind rivet nuts, or in the event of structural component faults
- Process monitoring with motor encoder and latest displacement and force sensor technology
- Intelligent head stroke with depth measurement and component surface detection

Optional mandrel auto change station TC25



Dimensions and technical data may differ depending on the configuration.

Technical data

Insertion force [kN]	up to max. 25 (continuous operation)
Insertion stroke [mm]	up to max. 15
Standard head stroke [mm]	approx. 98
Weight [kg]	approx. 58
Processable sizes	M4 - M10 (blind rivet nuts) M5 - M8 (blind rivet bolts)
Processable shapes	Round and hexagonal shank, other shapes on request

Technical changes reserved.

Minimized downtime due to auto change mandrel function

Cycle times from 5 s. possible to enable automation

Optimized mechanical system for > 7 million cycles, even under maximum strain

Stable process, regardless of the position, in any working direction

Service

Service must be pre-planned in order to conserve client resources through proactive consultation. WEBER's service team is engaged as early as the planning phase of the system. This ensures that all our employees can implement the most effective maintenance and repair measures for every client at any time.

Training

Employee training and instruction in the operation of the fastening, setting, feeding, and control technology functions are an essential component of WEBER's proactive service concept. This means that, with a view to minimizing downtime, employees have early access to comprehensive training in the operation, maintenance, and repair of the machines and systems.

Book your training sessions here:

Repair

We understand how important it is that your machines run smoothly and downtime is minimized. That's why we offer you a fast and reliable service tailored to your needs. Our goal is to keep your machines in optimal operation and support your production processes.

- Repairs and maintenance
- Calibration service (factory and DAkkS calibration)
- Machine capability study (MFU)
- Express repairs with prior appointment

Submit your repair request here:

Customer service

The internet offers this definition: "Customer service is a service designed to make the product user experience more comfortable ".While not incorrect, our understanding of customer service goes far beyond that. Analysis, consultation, and feasibility studies on the one hand – implementation, training, and maintenance on the other; seamless, comprehensive, and competent. This makes a significant contribution to optimizing and streamlining processes for our clients, while simultaneously reducing budgets in the medium to long term. Call it "comfortable" – for us, it's the driving force behind our comprehensive understanding of customer service.

Book your service appointment here:

Spare parts

In an age of fragile international supply chains, the availability of spare parts and components is a crucial test for a reliable production process. WEBER has a well-developed and efficient system for parts warehousing and procurement. This strategic approach is complemented by the expertise of our service team. They are always available to ensure the seamless integration of wear parts or spare parts into our customers' processes.

Order your spare parts here:

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 provide 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 courses in our in-house Competence Center

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 developing

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 material 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.

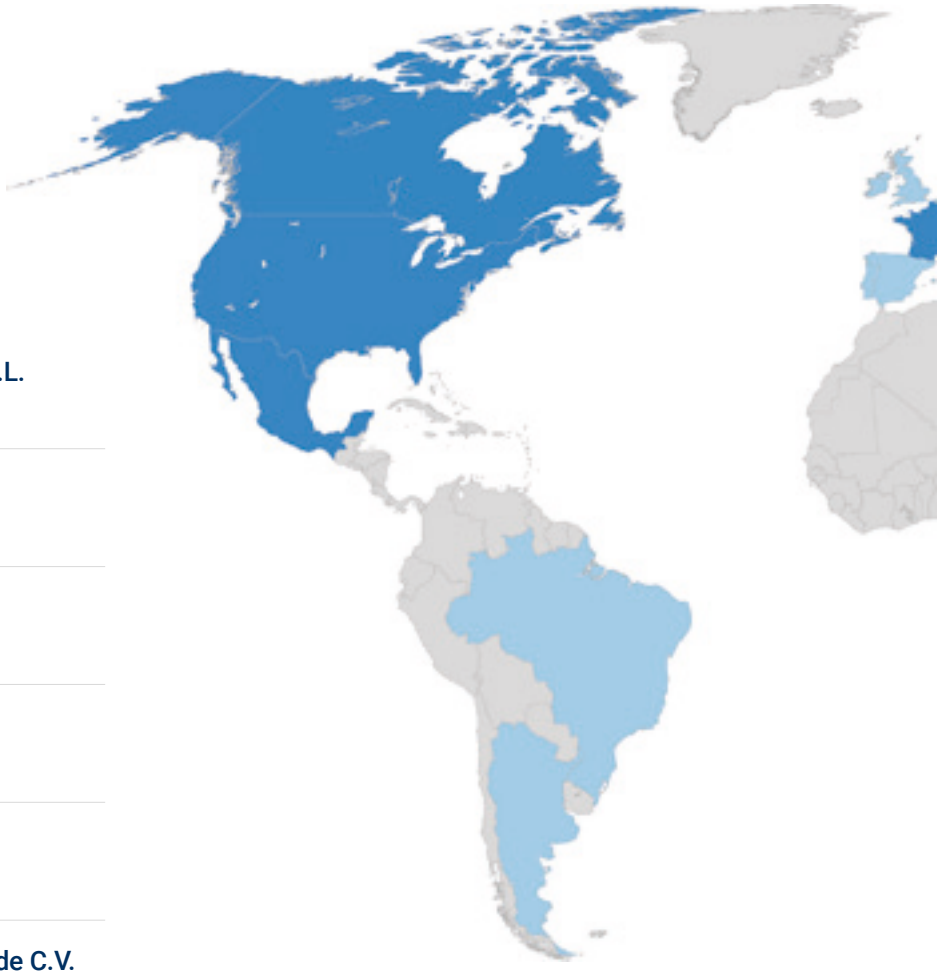
Subsidiaries and representatives

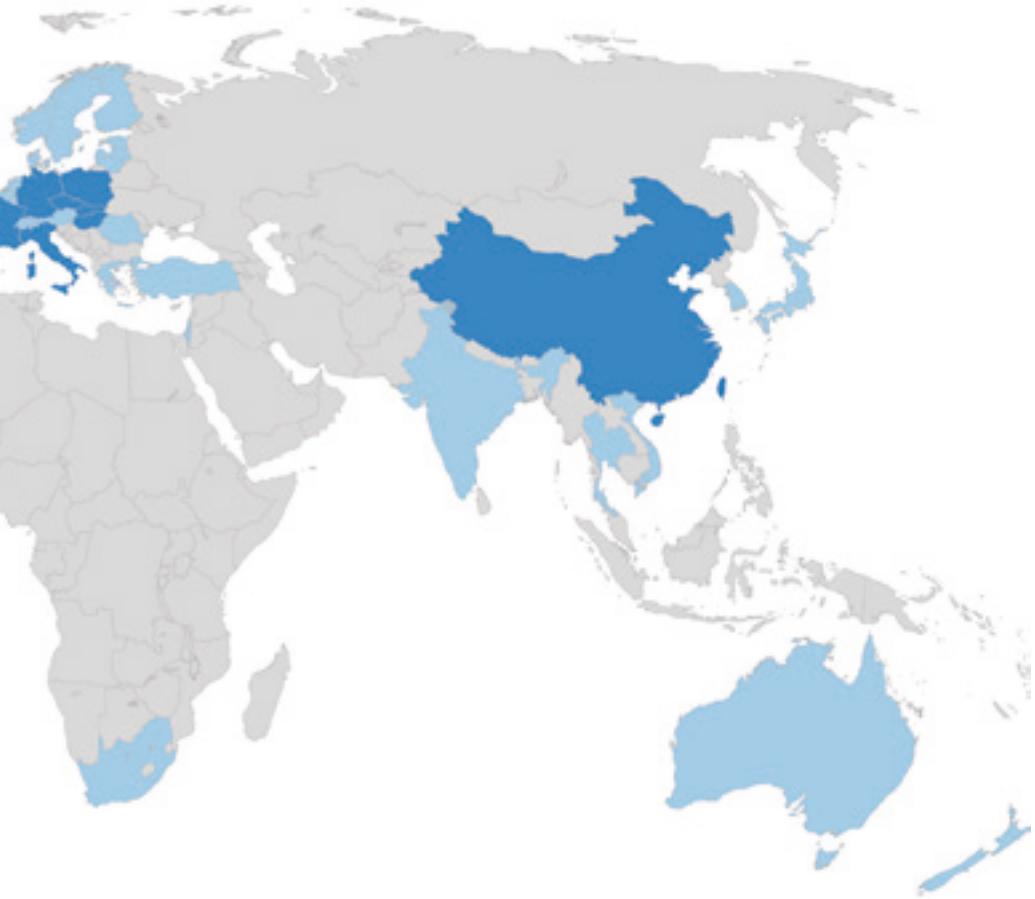
Headquarters

WEBER Schraubautomaten GmbH
Wolfratshausen, Germany

Our subsidiaries

- **WEBER Assemblages Automatiques S.A.R.L.**
  Saint-Jorioz, France
- **WEBER Screwdriving Systems, Inc.**
  Mooresville NC, USA
- **WEBER Automation s.r.o.**
  Brno, Czech Republic
- **WEBER Automation China Co., Ltd.**
  Shanghai, China
- **WEBER Automazione Italia s.r.l.**
  Bologna, Italy
- **WEBER Automatización México S. de R.L. de C.V.**
  Monterrey, Mexico





Representatives

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Latvia
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Sweden
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Turkey
United Kingdom

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WEBER Schraubautomaten GmbH
Hans-Urmiller-Ring 56
82515 Wolfratshausen
Germany
Tel.: +49 8171 406-0
Email: info@weber-online.com
www.weber-online.com

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Local court Munich, HRB 41285
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WEBER Schraubautomaten GmbH
Hans-Urmiller-Ring 56
Germany, Wolfratshausen
Tel. +49 8171 406-0
info@weber-online.com

WEBER Screwdriving Systems, Inc.
USA, Mooresville NC
Tel. +1 704 360 5820
sales@weberusa.com

WEBER Automation s.r.o.
Czech republic, Brno
Tel. +420 549 240 965
weber.cz@weber-online.com

WEBER Automation China Co., Ltd.
China, Shanghai
Tel. +86 215 459 3323
china@weber-online.com

WEBER Assemblages Automatiques S.A.R.L.
France, Saint Jorioz
Tel. +33 450 685 990
commercial@weberaa.com

WEBER Automazione Italia s.r.l.
Italy, Bologna
Tel. +39 051 032 3487
weber.it@weber-online.com

WEBER Automatización México S. de R.L. de C.V.
Mexico, Monterrey
Tel. +1 980 403 1223
sales@weber-online.com