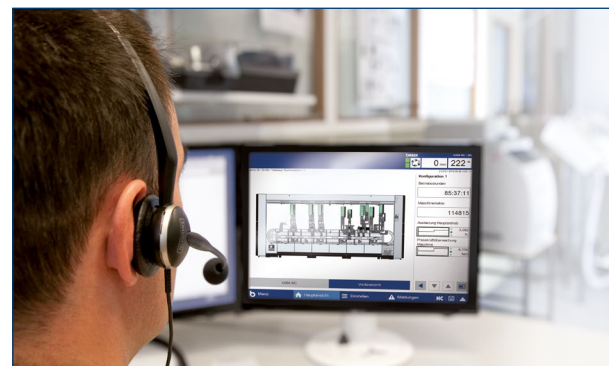


Perfect support

The multimedia diagnostic online assistance system bASSIST integrated in the VC 1 control supports your daily work with info texts and operating instructions. You can quickly and easily store digital files like videos, PDFs or images for your tasks, setup operations etc. and also save time and money with remote maintenance. On receiving your approval, a Bihler specialist will connect to your machine, detect any faults in the control system and resolve operating faults and input errors immediately.



Extensive process expertise

For more than 50 years, the integration of key technologies in fully automated processes has been one of the key areas of expertise at Bihler. The extensive process expertise gained, in particular in relation to Bihler welding technology, is an important factor in the global success of Bihler's production systems.



Benefit from our service portfolio

Our sophisticated service portfolio accompanies you from the first feasibility study to the implementation of the production solutions as well as through the entire lifecycle of your machine.

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SERVO PROCESSING MODULES

High-performance processing
modules for production, assembly
and processing tasks

BIHLER

Perfect interaction

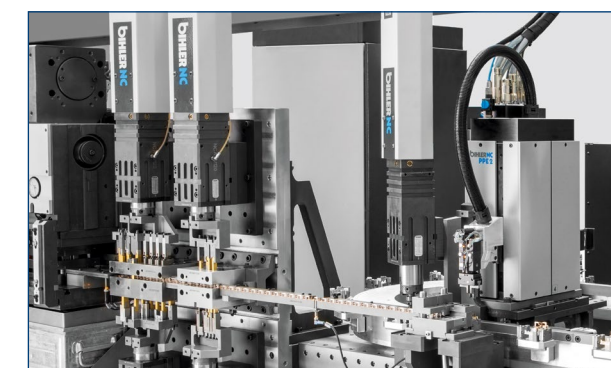
Material feeding, thread forming, screw insertion, contact welding, parts handling.

Bihler's strength has always been the perfect interaction of the greatest possible number of production processes on one machine. Thanks to their modular design, high-performance Bihler servo processing modules can be flexibly integrated into production concepts on Bihler systems and third-party installations.

For maximum added value in your production.

High-performance processing modules

Bihler servo process modules are designed for the flexible production in small and medium batch sizes as well as for the extreme conditions of mass production. These environments are characterized by quick cycle speeds and fast signal processing. The servo process modules need to be operated in exact synchronicity with the machine. For maximum reliability, data logging, sensors and monitoring functions are integrated into all processes.



User-friendly operation

The customized menu assists you with all your activities. Simple input screens facilitate quick parameterisation of servo process modules. Clearly structured operating menus are intuitive to use. Each process has customized input fields at different levels. On the second level (advanced) you can make detailed optimisations.

One-stop shop

Bihler develops, manufactures and assembles all servo processing modules inhouse. You benefit from having one contact person for the process, device and control system. In this way, we even get behind the interfaces. If you have special requests, we modify the modules according to your individual requirements.



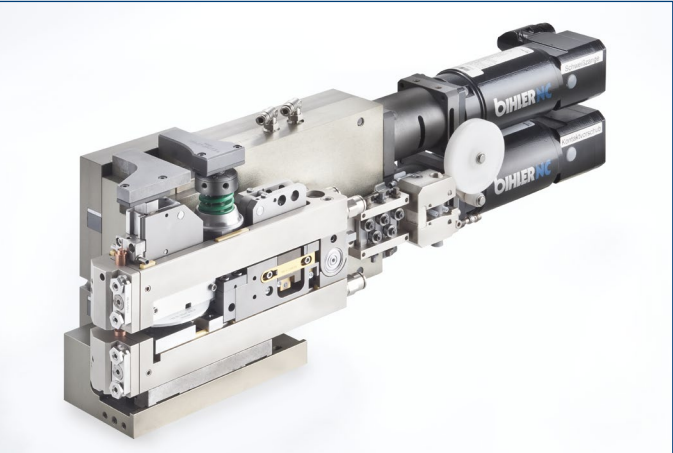


Material feed

Radial gripper feed RZV 2.1¹

Safe and precise feeding of strip and wire material at production rates of up to 1,200 strokes/min.³

- Freely programmable feed lengths from 0 - ∞
- Achieves faster feed times than mechanical feeds
- Wire and strip do not require setup
- Patented adjustment system that automatically adjusts thickness tolerances on the strip material
- Maximum wire and strip dimensions 9.0 x 300 m (S, Ø × W)



Contact welding

Contact welding devices D...Q... & servo control¹

Reliable welding/soldering of contact materials to manufacture contact base components with production rates of up to 800 contact welds/min.³

- Different device types for contact sizes up to a max. of 8.5 x 8.5 x 3.5 mm (LxWxH)
- Processing of contact material for semi-finished products in profile shapes round, profile, square and sheet plates
- Rapid changeover system for shortest possible setup times
- Servo control guarantees flexible deployment



Contact welding of silver graphite AgC

Turntable welding device¹

Reliable welding/soldering of contact materials made from AgC at production rates of up to 180 contact welds/min.³

- Complete system with feeding, separating and welding
- Very high electrode durability
- Welding in parallel or perpendicular to the selection area
- Unit designed for sheet plates and/or strips
- Integrated electrode cleaning system
- Optional integrated set-back path measurement for quality monitoring



Resistance welding

Welding control system B 20K

Flexible use from micro to macro welding and all resistance welding processes

- Control of welding power parts for transformers from 70 kVA up to 220 kVA directly by means of the VC1 control system
- High frequency technology (20,000 Hz) guarantees a highly dynamic and precise actuation
- Any number of servo axes can be implemented
- Networking capability via an OPC UA interface for online data transmission

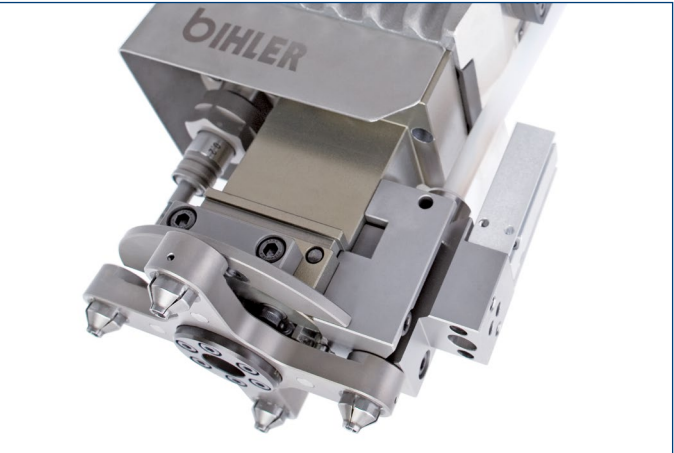


Thread forming/tapping

Thread forming units GSE K/KS¹

Highly efficient forming and cutting of threads on components at production rates of up to 260 threads/min.³

- 6 unit types for thread diameters from 2 to 20 mm
- Freely programmable device and process parameters
- Highly flexible deployment thanks to operation without mechanical pitch leader
- Rapid retooling system for shortest possible setup times
- Integrated process monitoring through control system e.g. detection of tool breakage, thread depth, etc.

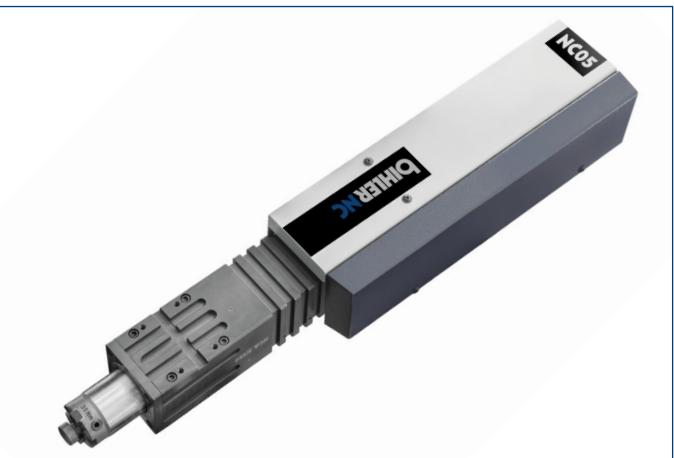


Joining screws

Multiple-use screw insertion unit MSE 2¹

Quick and reliable joining of bolted connections at up to 180 connection operations/min.³

- Modular design: sub-system (for inserting only) or complete system (separating, positioning and inserting)
- Patented torque coupling for constant torque (0.1 - 2.0 Nm)
- Screws with thread diameters up to 8 mm
- Integrated process monitoring through control system e.g. screw check, revolutions, insertion path
- Freely programmable device and process parameters
- Special version can also be used for spring coiling



Tool movements

Servo units

Quick and exact execution of tool movements with process speeds of up to 400 1/min.⁴

- Freely programmable stroke movements and movement profiles
- Maximum power can be freely selected across the whole working range, no fixed BDC
- No change of mechanical components during setup
- Different sizes and models depending on the type of use:
 - Servo slide units (NCA) for linear movements
 - Servo lathe mandrel for purely rotational movements
 - Servo lathe mandrel for combined linear/rotational movements



Cutting and processing tools

Servo two-point eccentric press (NCP)

Servo spindle press

Precise punching and cutting of metal strips

- Different sizes for nominal power up to 400 kN
- Mechanical stroke position adjustment
- Fast cycle speeds up to 250 strokes/min.
- Optionally with integrated press power monitoring
- Compatible with presses of mechanical RM and GRM machines



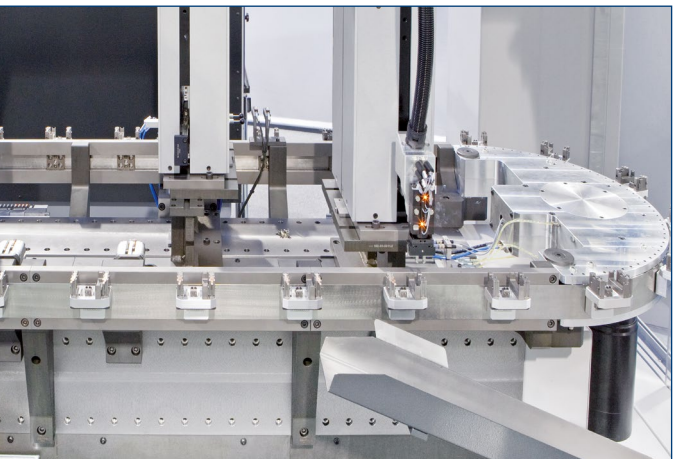
Integration of progressive dies

Servo presse SP 800²

Quick and easy integration of progressive tools

Technical data SP 800:

| | |
|-----------------------------|-------------------------|
| Speed: | 200 1/min. |
| Nominal force: | 800 kN |
| Stroke range: | Fixed stroke with 30 mm |
| Stroke position adjustment: | - 8 mm from B.D.C. |
| Tool mounting plate (LxW): | 1,000 mm x 510 mm |
| Opening size in B.D.C.: | 324.5 mm |
| Column opening: | max. strip width 160 mm |



Parts transport

Sevo transport belt

Quick and reliable transporting and positioning of components at up to 150 cycles/min.³

- Freely programmable transport distances up to 100 mm
- Different sizes and variants depending on the type of use
- Very precise positioning of components
- Assembly accessible from all sides
- Horizontal and vertical operation possible
- Work piece carriers with rapid clamping and changeover system



Parts feed

Flexible compact feed system ZSK¹

Feeds parts at feed speeds of up to 30 m/min.³

- Complete system for bunkering, pre-separating, sorting and feeding parts
- Multi-lane feeding is possible
- Modular system, fast retooling times thanks to the ease with which parts can be changed
- Max. component size 50 mm³, max. part weight 80 g/component



Parts handling

Pick & Place unit PPE 1¹

Quick and flexible parts handling at up to 100 P&P cycles/min.⁵

- Freely programmable axle positions
- Freely definable movement profiles
- Integrated distance measuring system for repetition accuracy of ±0.01 mm
- Integrated temperature compensation
- Different gripper systems can be integrated
- Work area: vertical 60 mm, horizontal 150 mm



Parts handling

NC lift-rotate unit HDE 2

Versatile and flexible application with independently program-mable lift and rotation axis (stroke 0 – 120 mm).

- Pick & Place with swivel arm and gripper, can also be used for sorting
- Increased pulse rate in rotary table mode with several grippers
- Time saving thanks to overlapping lifting and rotary movements
- Sleeve shaft for several pneumatic hoses and sensor lines (Ø23 mm)
- Rotary gland for pneumatic gripper and sensors for continuous rotary motion
- Repeatability (stroke, rotation): ±0.01 mm



Insulation stripping

Insulation stripping servo unit ANC 5

Precise stripping of enamel-insulated round wires

- VC 1 software module for simple operation and input of cutting values
- Optimized lubrication with minimum quantity lubrication without compressed air
- Optimized chip extraction guarantees very low contamination inside the ANC 5
- Wire diameter from 0.5 mm to 5 mm
- Stripping length from 0.5 mm to 50 mm

¹ For more information, see flyer or brochure.

² By removing the blanking punch in the progressive die, the components can be processed further on the hanging rack on the BIMERIC system. This makes it possible to achieve additional added value.¹

³ Dep. on size / dimension / length / measurements

⁴ Dep. on stroke length and load

⁵ Dep. on gripper reaction times