



LEANTOOL

Radial / Linear

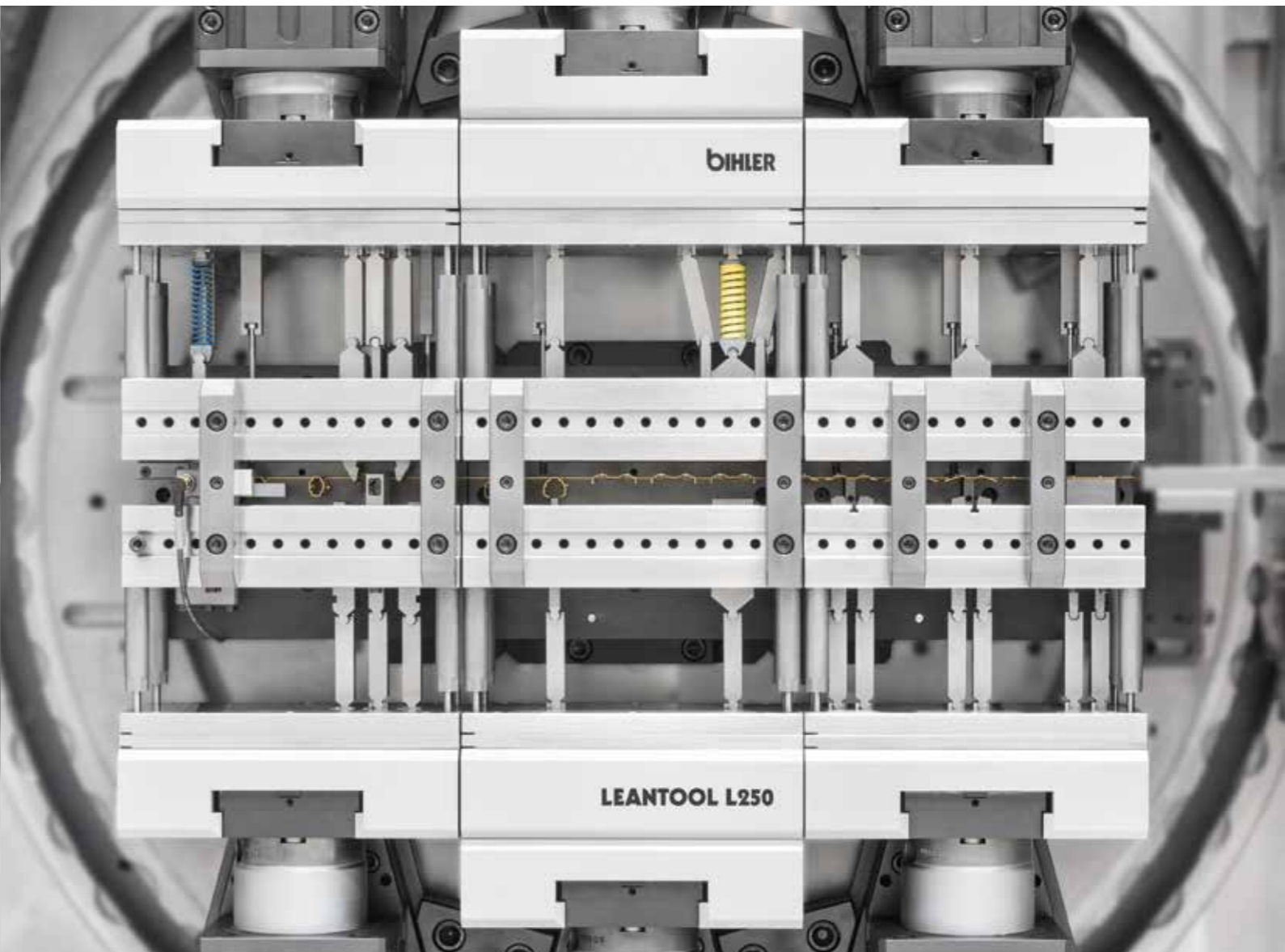
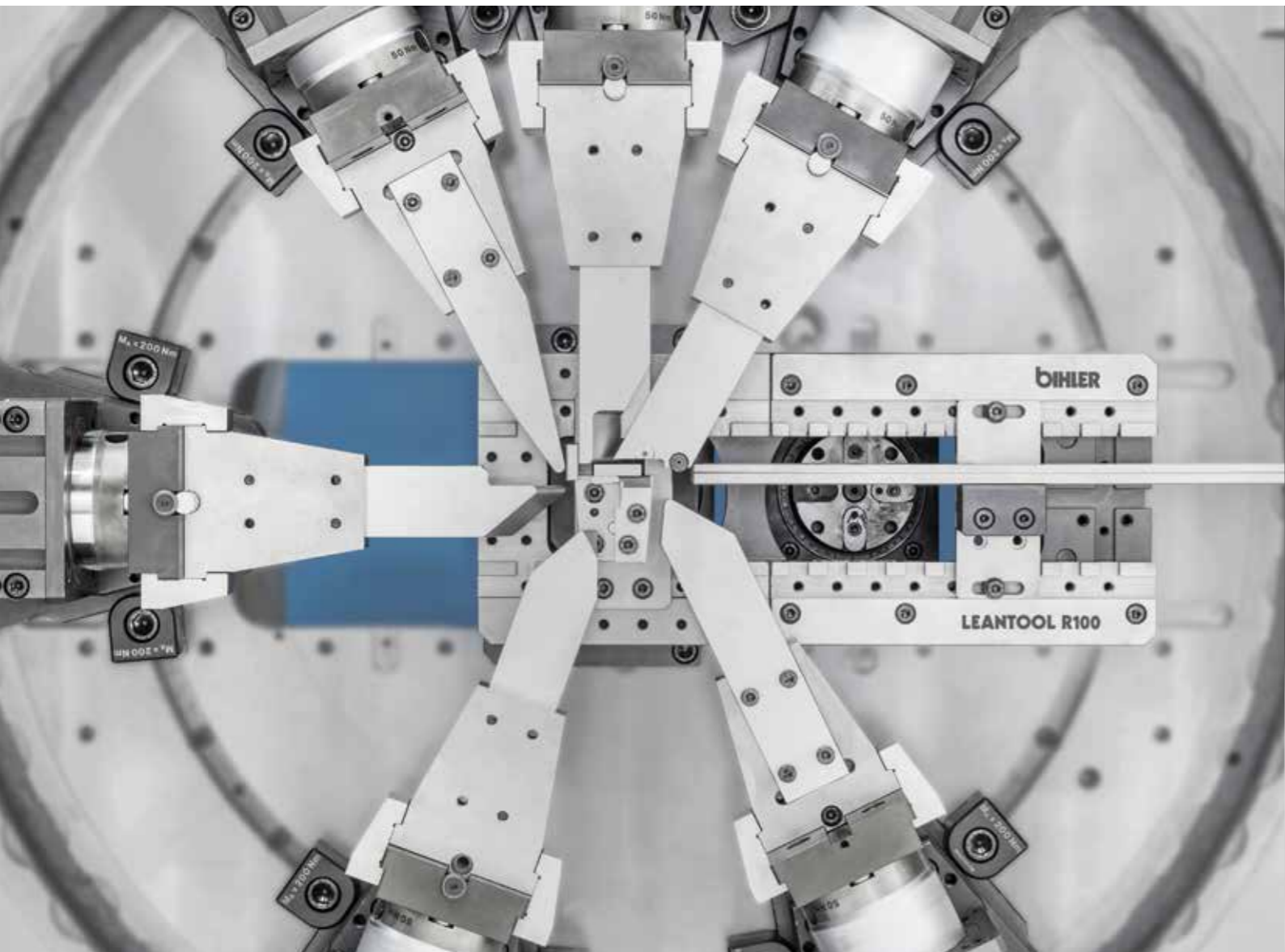
Standardized modular
tooling system

SECURE YOUR FUTURE

Standardized LEANTOOL system for new tools

With the LEANTOOL system, you now implement radial and linear forming tools easier, faster and cheaper. Based on the RM-NC and GRM-NC servo stamping and forming machines as well as the LM linear machines, the standardized modular tool kit covers the entire spectrum of stamped and formed parts from wire and strip in all batch sizes. For an efficient assembly production, the linear LEANTOOL is used on the BIMERIC Modular with other machining processes.

The LEANTOOL system impresses with its perfect consistency from planning and design all the way to manufacturing and production. You benefit from rapid implementation times and up to 70 percent lower costs compared to conventional tools on mechanical machines and presses. New products can be brought to market before your competitors, even with very small batch sizes.



LEANTOOL SYSTEM

Highlights

- Very fast "Time to Market" for new stamped and formed parts from wire and strip as well as progressive components
- Very fast feasibility statements and precise quotations
- Simple and structured design methodology of bNX software
- Up to 70% standard tools regardless of task
- Very short tool production times
- Up to 70% lower manufacturing costs compared to conventional tool technologies
- Extremely fast, 100% reproducible setup operations
- Lower logistics and maintenance costs



LEANTOOL

Radial

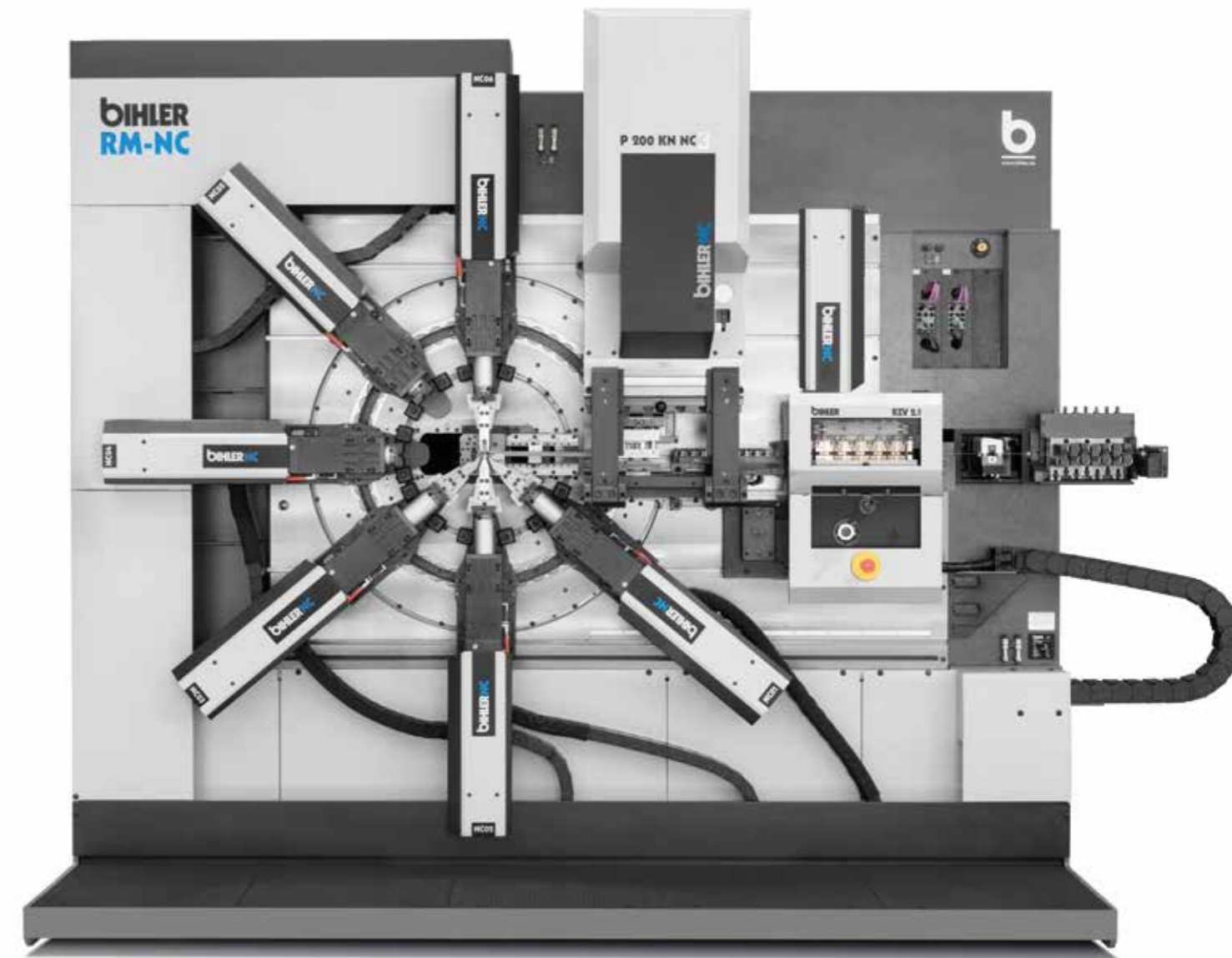
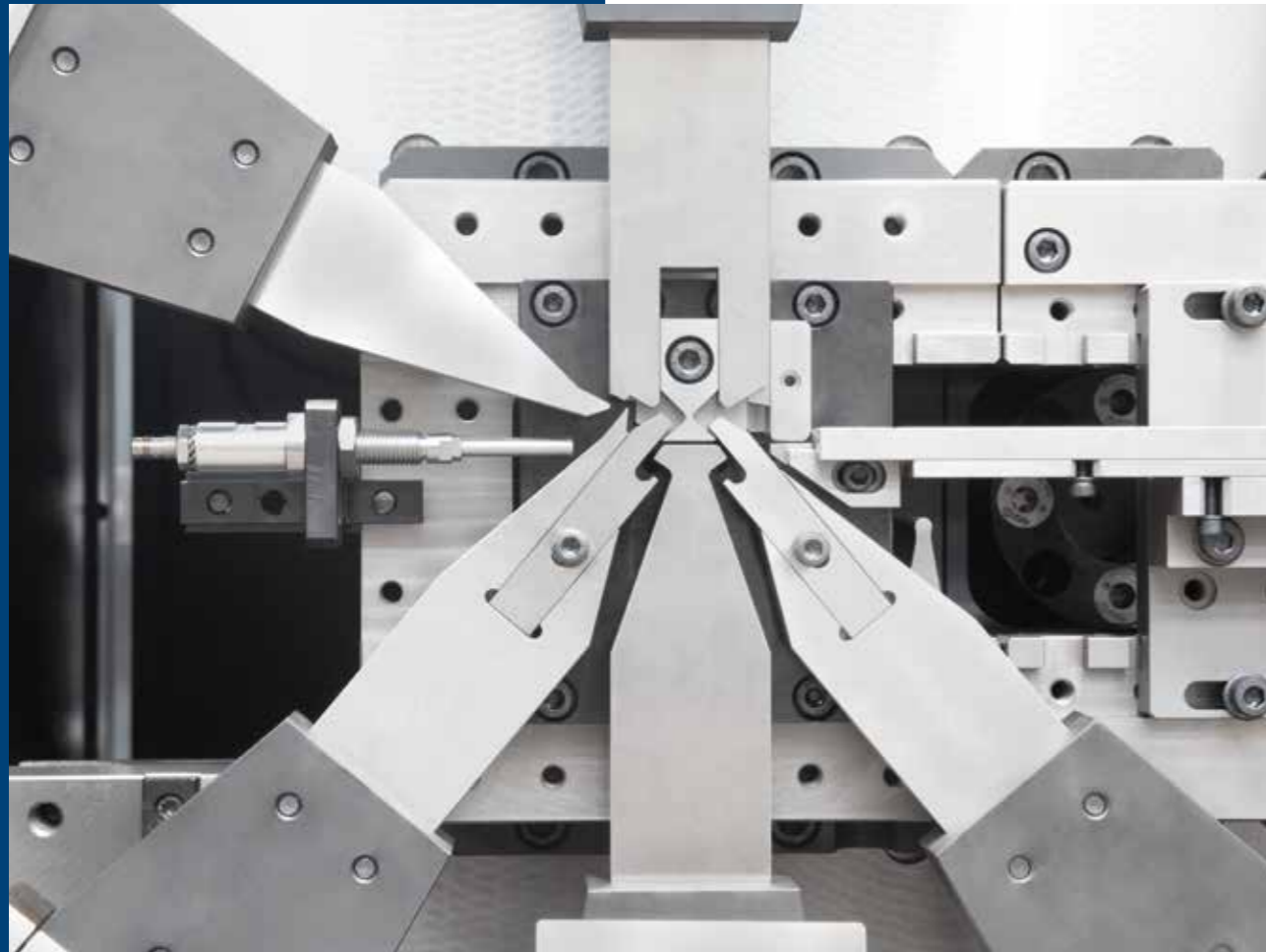
Application:
Implementing forming tools according to the radial principle

Highlights at a glance

- Up to 70% standard tools regardless of task
- Up to 70% lower manufacturing costs compared to conventional radial tools
- Forming in the ideal grain direction
- Strip width in accordance with part width: production with minimum material waste
- Optimum forming angle infinitely adjustable



LEANTOOL Radial is an intelligent optimization of the existing Bihler radial principle. Thanks to the innovative features of the (G)RM-NC servo machines and the servo-controlled forming units, the number of parts in a LEANTOOL radial tool can be reduced to a minimum. The tool parts also consist of 70% standard parts, and do not have to be reworked or only have to be reworked slightly.



Technical recommendations

Radial equipment: R60 for RM-NC / R100 for GRM-NC

- Wire diameters up to approx. 4mm / 6mm
- Strip dimensions up to approx. 2mm×40mm / 2mm×60mm
- If the bends are within the main workspace, the formed part can generally be mapped with the modular tool kit.
- Up to approx. 8 bends for the bending part (for >8 bends the progressive principle is recommended)

Main workspace RM-NC (Ø 60mm)

Main workspace GRM-NC (Ø 100mm)

LEANTOOL

Linear

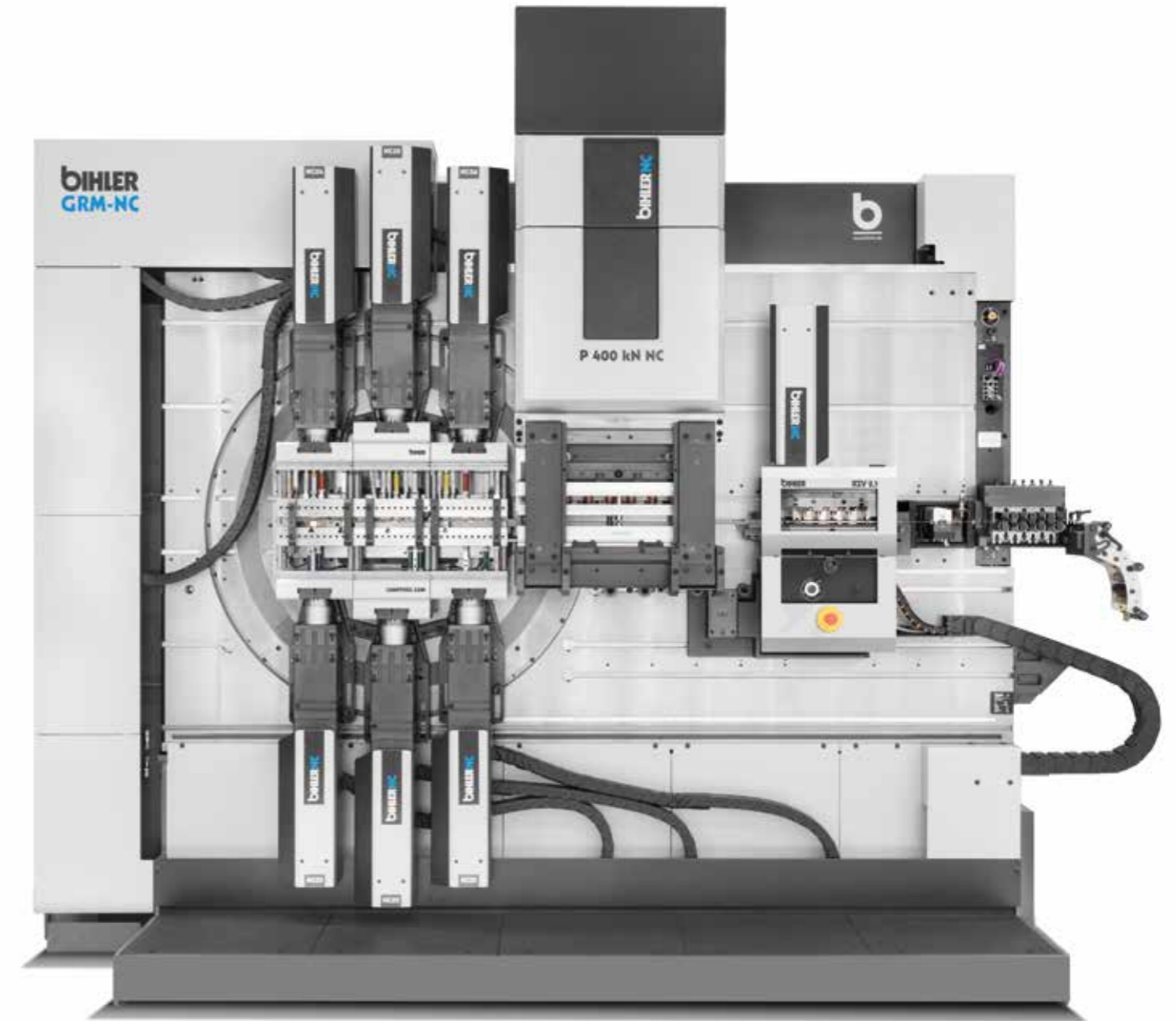
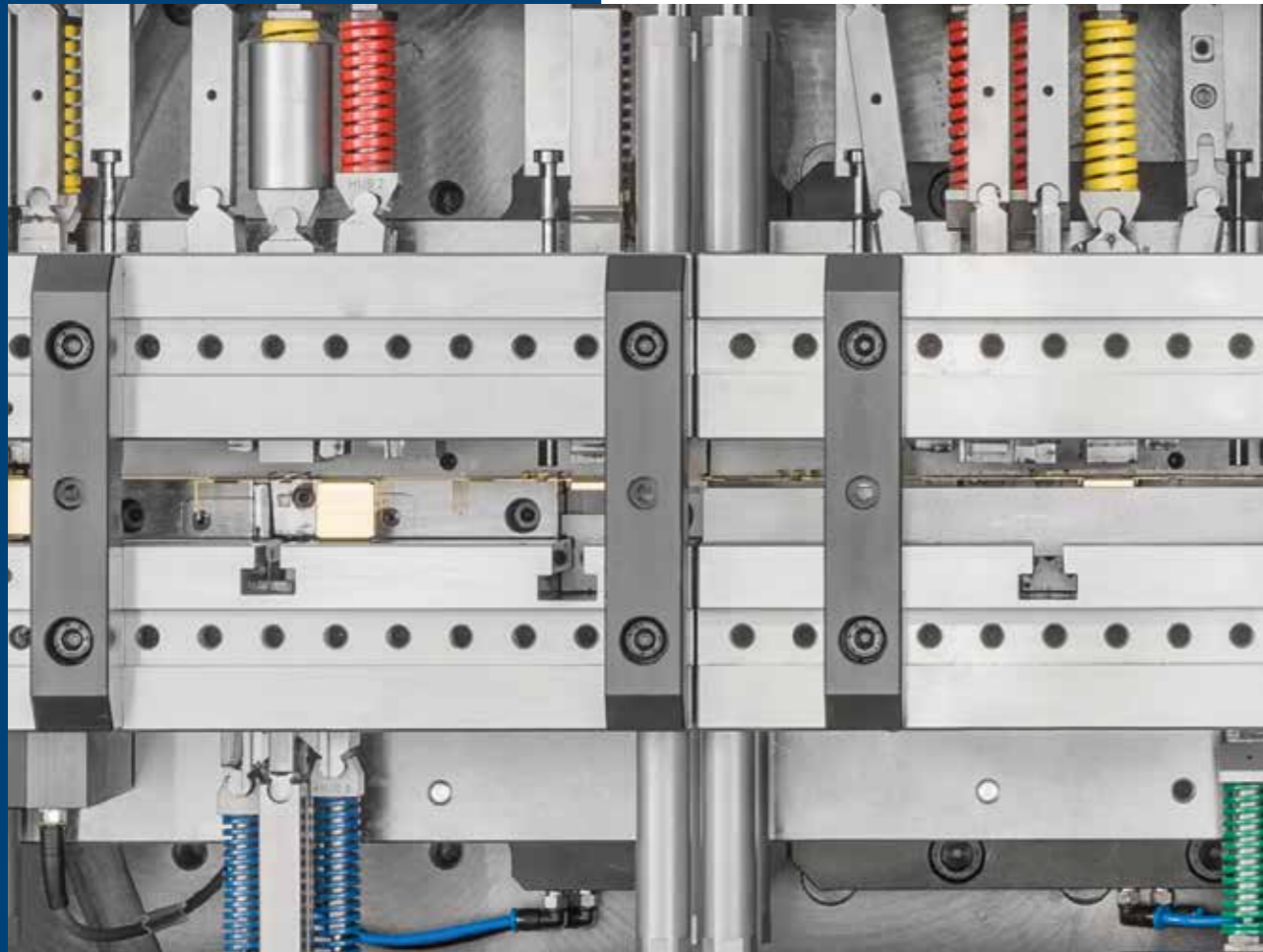
Application:
Implementing forming tools according to the linear, progressive and progressive component principle

Highlights at a glance

- Up to 70% standard tools regardless of task
- Up to 50% lower manufacturing costs compared to conventional progressive tools
- Simpler tool technology, since tool movements from 3 sides are performed by the machine by default
- No strip lifting in the tool
- Less material waste compared to conventional progressive tool solutions



LEANTOOL Linear combines the strengths of traditional progressive tool technology with the strengths of Bihler machine technology. The tools consist of a large number of standardized tool parts made of standard parts and blanks. The machine allows individually controllable movements that can be implemented from above, from below and from the side. All this reduces the overall effort and complexity in the tool and guarantees simplicity, speed and safety.



Technical recommendations

- Linear equipment: L250 for GRM-NC, LM machines, BIMERIC Modular
- Strip thickness: from approx. 0.3mm to approx. 2mm
 - Strip width: max. 80mm
 - Module length: 250mm

LEANTOOL SYSTEM

Perfect consistency



1. PLANNING (WebApp)

Fast feasibility statement

- Clearly defined workspace
- Quick and easy planning of process sequences
- Plausible calculation specified by tool setup (modular system)

www.bihlerplanning.de

2. DESIGN (bNX)

Clearly structured design

- Predefined machine environment and standard parts
- All LEANTOOL standard parts in reuse library
- Simple design methodology
- Typical application examples included



6. PRODUCTION

Highly productive production

- Fast cycle speeds
- Extremely short setup times (30 to 60 min.)
- Automatically reproducible setup
- Full tool accessibility

3. MANUFACTURING

Efficient manufacturing

- Small number of components
- High degree of standardization (70% standard parts)
- Individual tool parts reduced to a minimum
- Many standard parts readily available from stock



5. SETUP

Short tool setup times

- Standardized machine design
- Setup of servo units with VC 1
- Standardized, uniform quick clamping systems for tool modules
- Faster optimization of forming results through servo technology

4. INSTALLATION

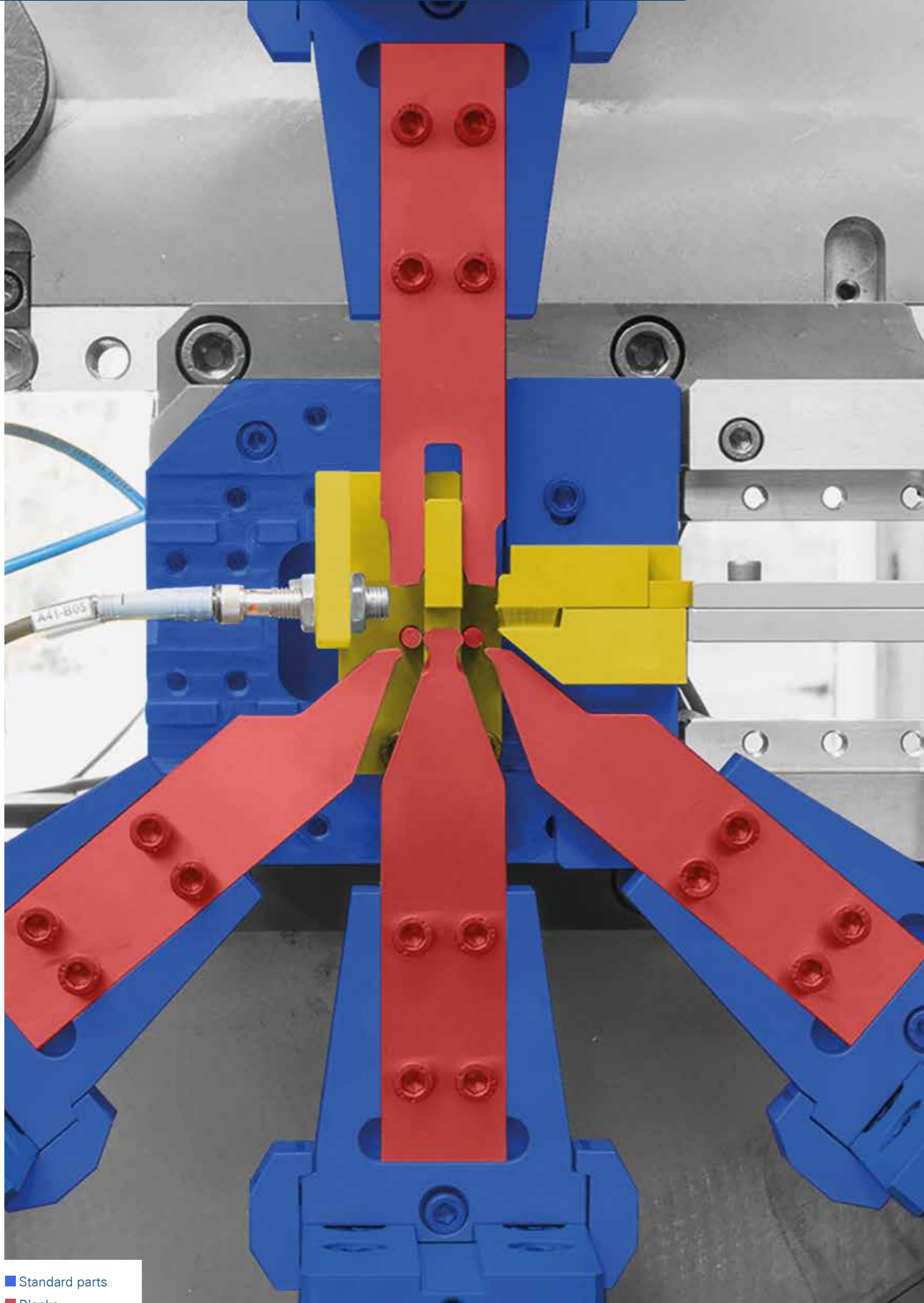
Quick tool installation

- Modular tool design
- Standardized tool units (pilots, punches, spring assemblies)
- No cam discs

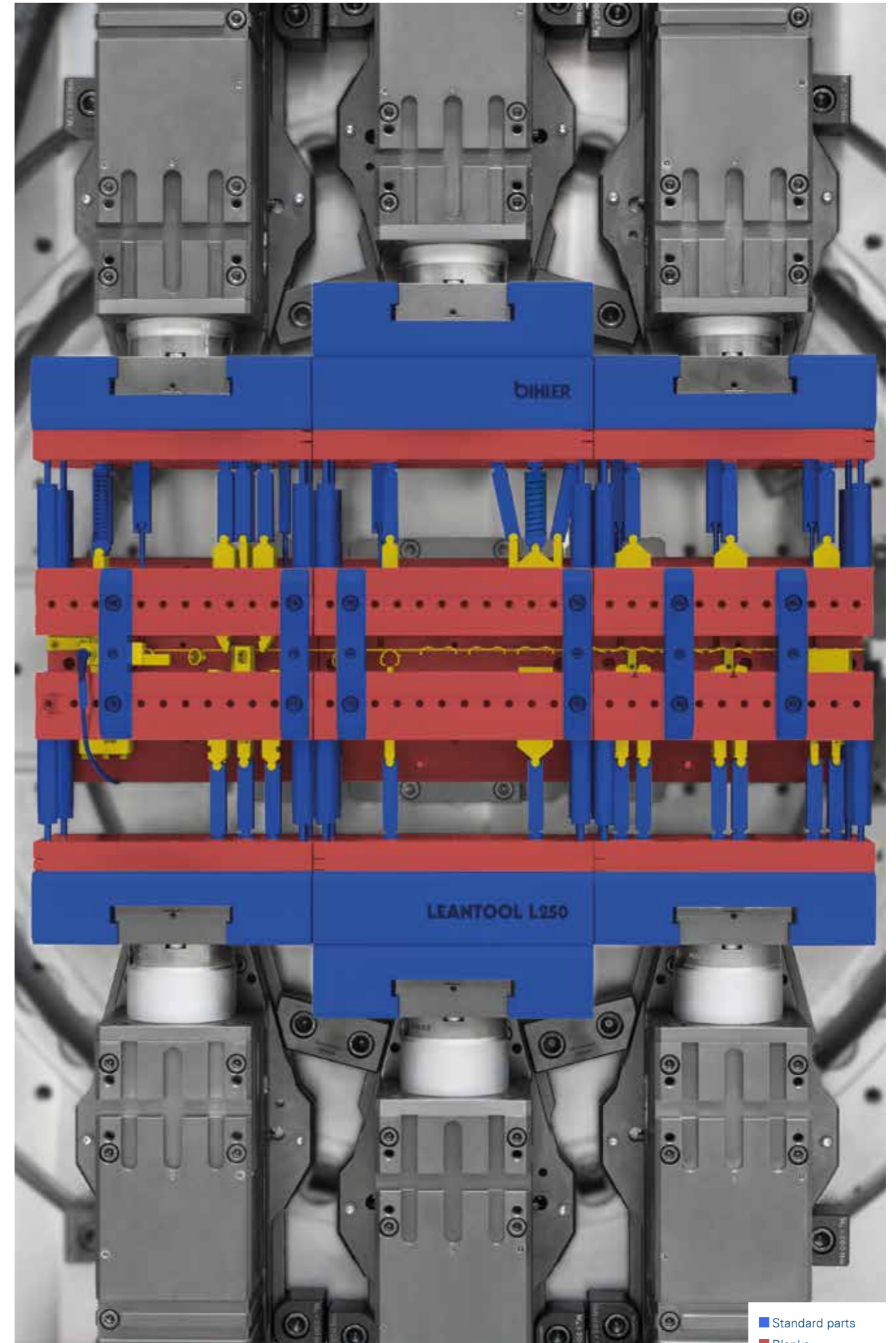


LEANTOOL

Maximum standardization



- Standard parts
- Blanks
- Individual tool parts



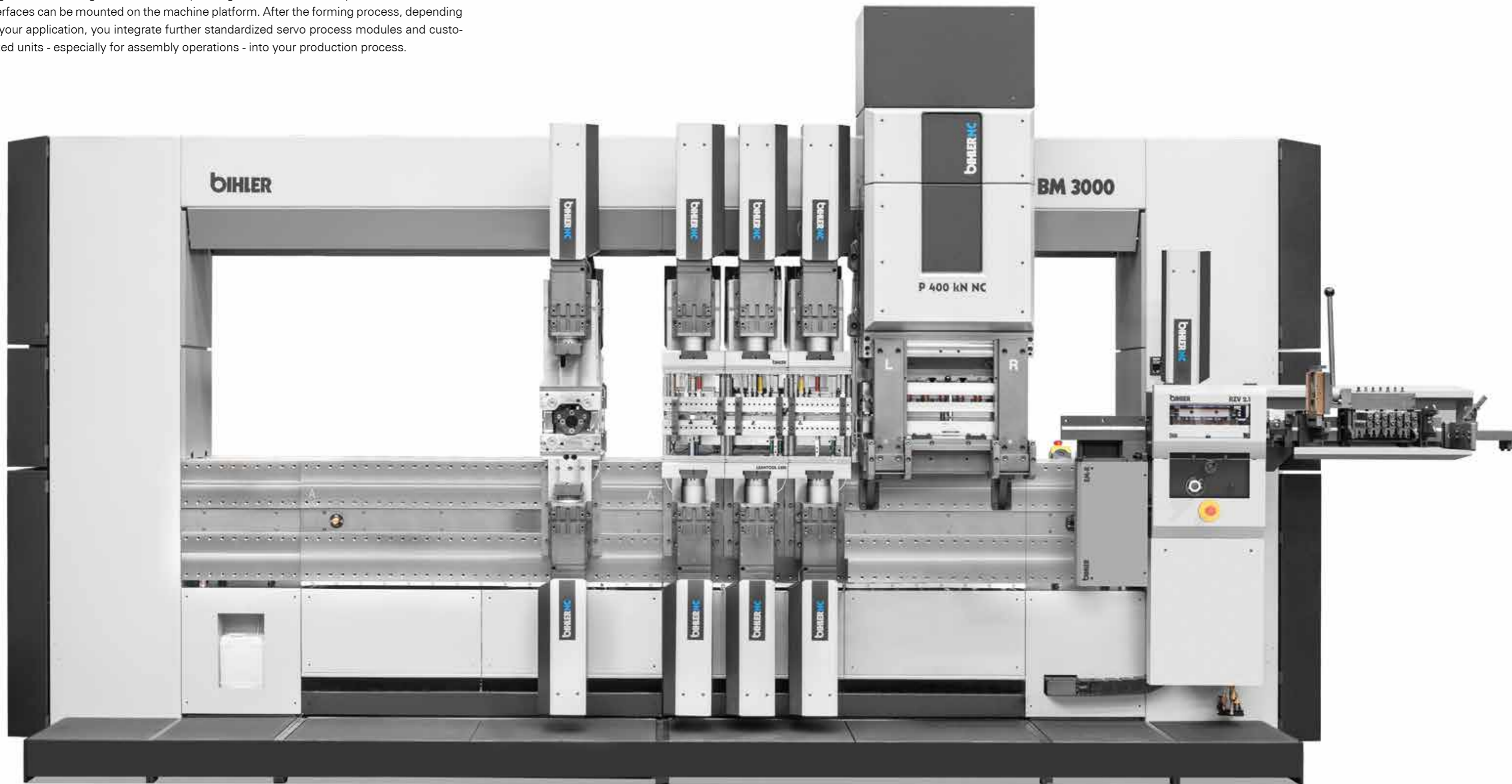
- Standard parts
- Blanks
- Individual tool parts

LEANTOOL

Linear plus

LEANTOOL plus value-adding processes

In component and assembly production, the LEANTOOL L250 forming modules are used on the BIMERIC Modular servo production and assembly system. Depending on the length of the forming module, a corresponding number of NC slide pairs with LEANTOOL interfaces can be mounted on the machine platform. After the forming process, depending on your application, you integrate further standardized servo process modules and customized units - especially for assembly operations - into your production process.



LEANTOOL

Uniform platform

LEANTOOL

Standard parts / Die frames

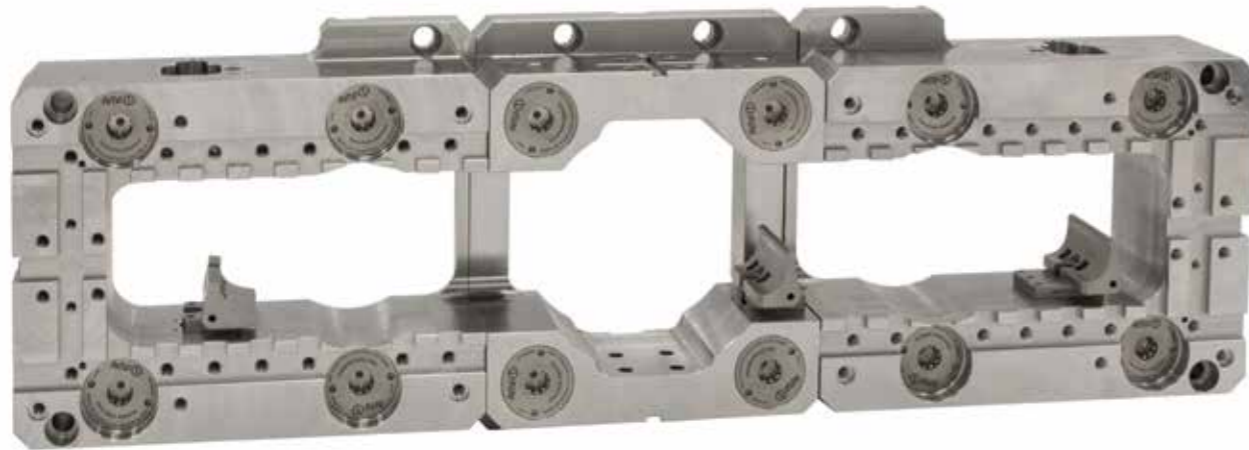
Basic equipment

RM-NC, GRM-NC and BIMERIC Modular are provided with basic equipment to operate the LEANTOOL radial and LEANTOOL linear tool concepts. The basic equipment provides the interfaces for both concepts and the corresponding standard parts. The basic equipment includes

tool carriers for implementing the basic tools as well as base plates for attaching the punch holders. The entire basic equipment is compatible with all associated standard parts of both tool concepts.

Tool carriers

Compatible with LEANTOOL Radial, LEANTOOL Linear and for adapting existing tools.



Base plates

Compatible with LEANTOOL Radial, LEANTOOL Linear and for adapting existing tools.



Standardized interfaces

The LM 2000-KT and LM 2000-NC have a machine bed in which the same interfaces of the basic equipment are already directly integrated.

Standard parts virtually explained

You will also find all standard parts in the "Bihlerplanning" WebApp. In the WebApp, each standard part is featured virtually together with a specific forming example, and technical, functional and cross-system details are explained. (www.bihlerplanning.de)

Ordering standard parts

You can order all LEANTOOL standard parts for radial and linear versions quickly and easily via the Bihler spare parts sales service.

+49(0)8368/18-135
spare.parts@bihler.de

Standardized stamping-forming frames

The Meusburger and stamping-forming die sets SBH 400 „tunnel cut“ and SBP 400 „spring-loaded guiding plate“ are available for NC presses with forces up to 400 kN. The standardized frames are cost-effective and available directly from stock.



“How is each stamped and formed part manufactured?”

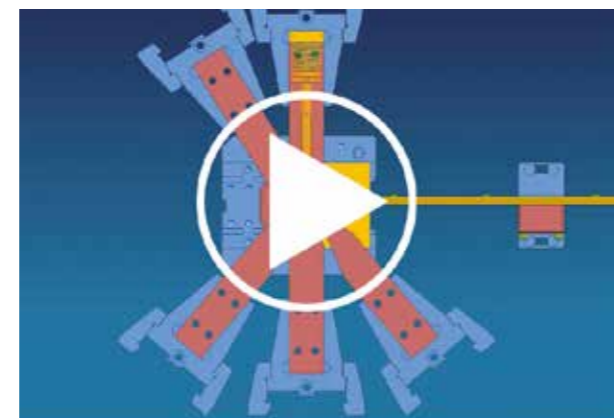
The new, free “Bihlerplanning” WebApp provides quick answers to this and many more questions. The WebApp is the ideal tool for planners and designers. It provides valuable support for component planning as well as tool design for stamped and formed parts from strip and wire material. The WebApp contains a sample database with a wealth of Bihler knowledge in addition to tool designs (strip and wire parts) in STEP format.



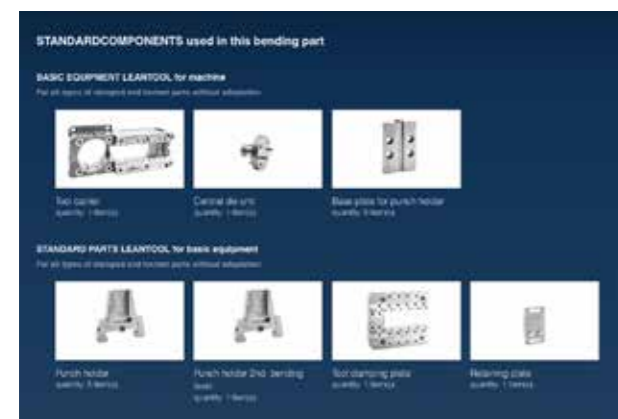
Forming steps and stage plan

Helpful source of inspiration

The WebApp offers an easy and quick overview of all aspects for implementing stamped and formed parts (bending steps, tool). Additional information such as production speed, setup time and processing time per batch will be outlined clearly. We are continuously expanding the case studies and other features for component and tool planning for you.



Animation of forming steps



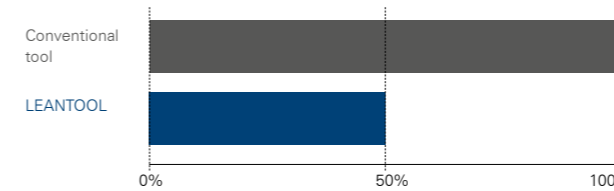
Tool technology and tool standards

Free registration

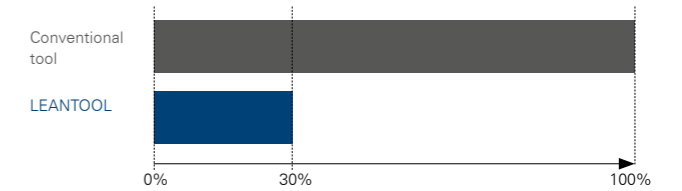
You can register at www.bihlerplanning.de. You will then be able to access and use our WebApp free of charge.



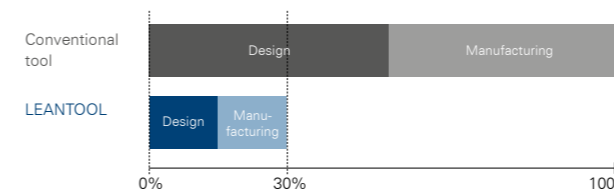
1.) Planning and costing effort



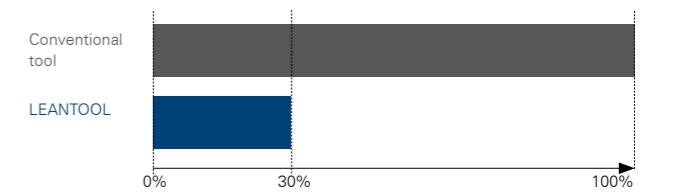
4.) Production costs for bending tool



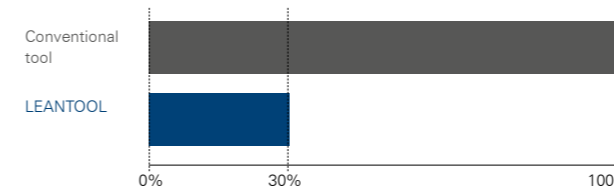
2.) Throughput time for tool implementation



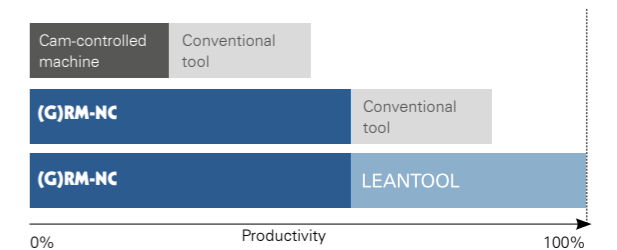
5.) Setup time



3.) Time for initial setup (= machine downtime)



6.) Machine and tool technology*



*Applies to smaller batch sizes, not for continuous operation.

LEANTOOL

Training and consulting

Information event

General overview of the LEANTOOL system as well as extended training and consulting. In addition, a short-term feasibility analysis for inquiries is possible.

Target group: Stakeholders or customers without LEANTOOL experience or with specific requests regarding feasibility

Contact and coordination directly through Process planning/Technical sales
+49(0)8368/18-141 | leantool@bihler.de

Basic training

Sharing of basic knowledge regarding planning and design of LEANTOOL tools. After the seminar, participants are able to design and assemble LEANTOOL tools.

Target group: Designers, planning & design staff, e.g. as a seminar for several participant groups at once

Contact and coordination through Customer Support
+49(0)8368/18-176 | consulting@bihler.de

Consultation for initial setup

Project-specific consultation for individual customers. Monitoring and guidance during initial LEANTOOL setup and commissioning. Our LEANTOOL experts share their knowledge in close cooperation with the customer.

Target group: Customers with LEANTOOL based production concepts

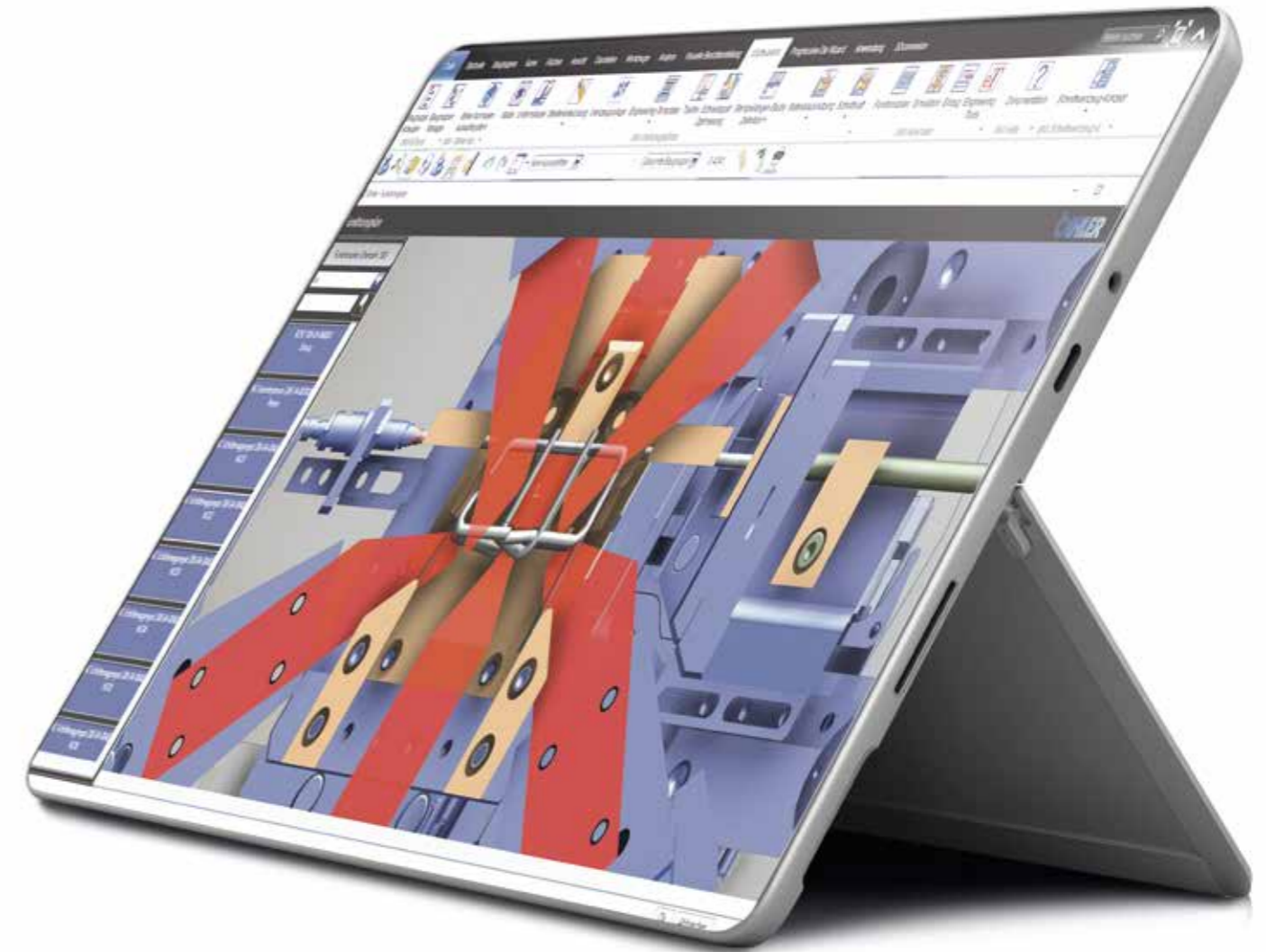
Contact and coordination through Customer Support
+49(0)8368/18-176 | consulting@bihler.de

Development of manufacturing process

Project-specific consultation for individual customers. Development and preparation of a production concept based on LEANTOOL technology. Our LEANTOOL experts share their knowledge in close cooperation with the customer.

Target group: Customers with LEANTOOL based production concepts

Contact and coordination through Customer Support
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LEANTOOL L250



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