



RM-NC GRM-NC

Servo-controlled
stamping and forming
machines



Simply more efficient production

With the servo-controlled RM-NC and GRM-NC stamping and forming machines, you now produce traditional stamped and formed parts and wire bending parts as well as complex progressive components with much higher flexibility and productivity. Benefit from very fast tool changeover, demand-oriented handling even of the smallest batch sizes and first-class product quality.

In conjunction with the LEANTOOL system, the implementation of radial bending tools and linear progressive tools will be particularly easy, quick and inexpensive. Thanks to the full tool compatibility with RM and GRM machines, you can adapt and optimize existing tools for the servo machines in a very short time. Your advantages: You save up to 80 percent setup time and significantly increase your output.

RM-NC

Highlights

Your advantages at a glance

- Highly productive manufacturing of stamped and formed parts and wire bending parts in small and medium batch sizes
- High production speeds of up to 300 parts / min.
- Rapid response to short-term customer requests
- Standardized machine platform for LEANTOOL system
- Full tool compatibility with mechanical RM series
- 80% reduction of setup time possible*
- Possible output increase up to three times*
- Convenient operation with VariControl VC 1 central control system



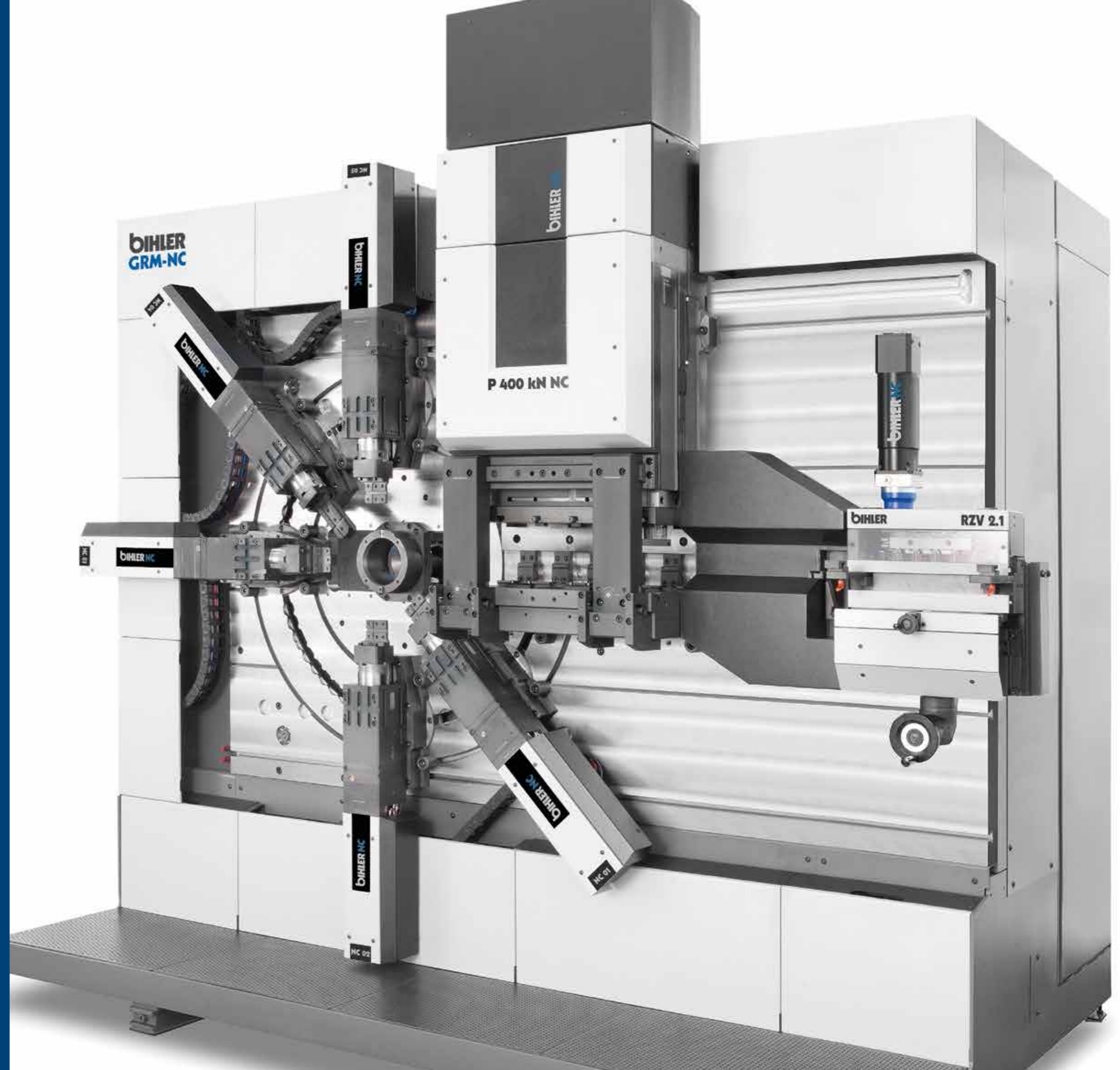
*Production tests: Transfer and optimization of tools from mechanical machine types to servo machine

GRM-NC

Highlights

Your advantages at a glance

- Highly productive manufacturing of stamped and formed parts, wire bending parts and progressive components in small and medium batch sizes
- High production speeds of up to 240 parts / min.
- Rapid response to short-term customer requests
- Standardized machine platform for LEANTOOL system
- Significant reduction in tool costs
- Full tool compatibility with mechanical GRM series
- 80% reduction of setup time possible*
- Possible output increase up to three times*



*Production tests: Transfer and optimization of tools from mechanical machine types to servo machine

RM-NC / GRM-NC

Machine design

Fully automatic alignment and positioning in radial and linear direction

Freely programmable:
Working stroke
BDC
Stroke position adjustment
Motion profile

User-friendly operation

Integrated absolute position sensor

No fixed stop on tool

Compatible with RM and GRM series and LEANTOOL

Up to 3-fold, central mandrel

Integrated adjustment and positioning unit for NC units

Radial and linear assignment

Controller and regulator integrated in machine housing

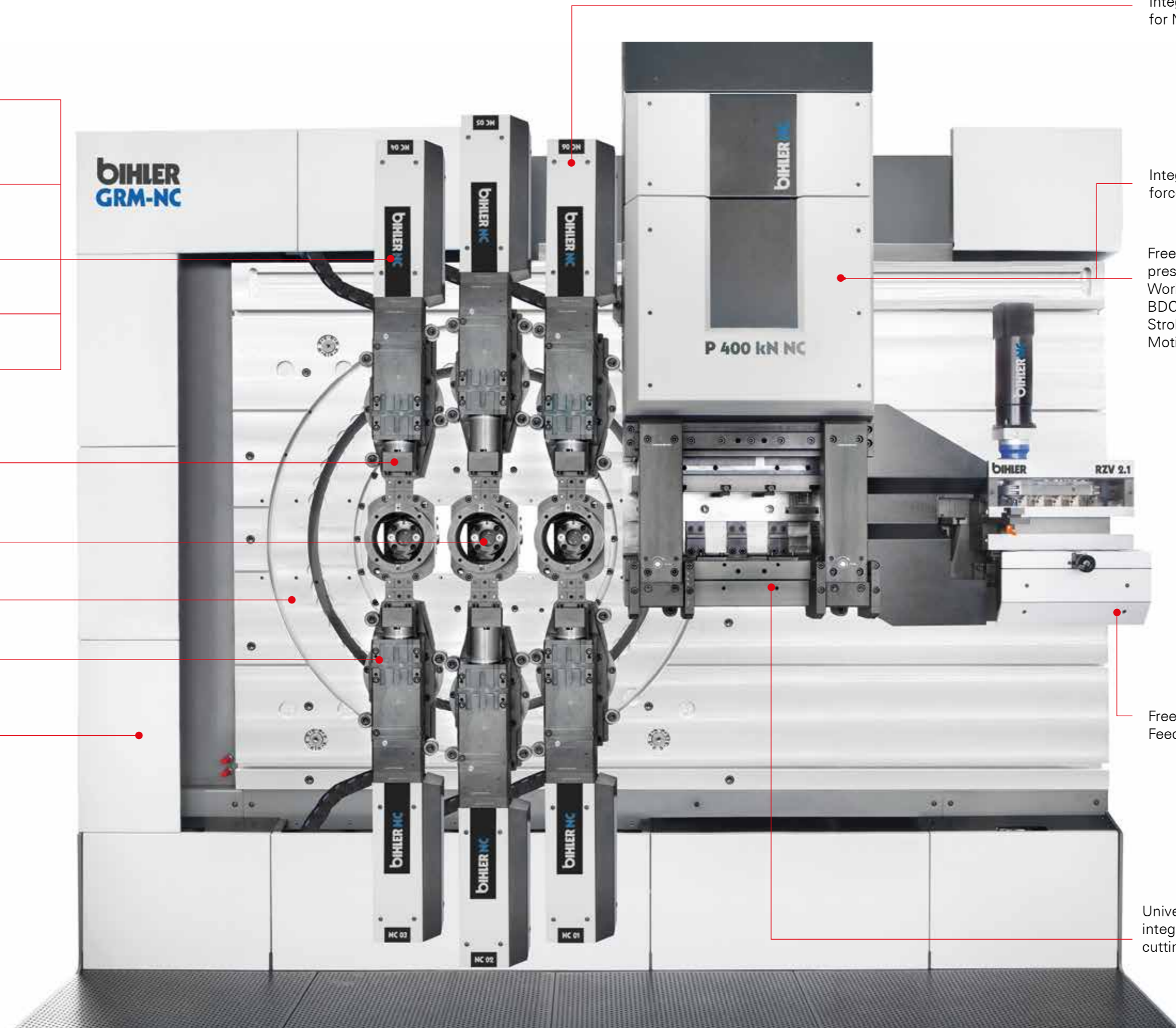
Integrated overload protection for NC components

Integrated monitoring of press force and bearing temperature

Freely programmable (spindle press P 400kN NC):
Working stroke
BDC
Stroke position adjustment
Motion profile

Freely programmable. Feed length

Universal press plate for integration of existing cutting tools



RM-NC / GRM-NC

Adjustment and positioning unit

Fast alignment of NC units

With the adjustment and positioning unit, you can quickly and precisely align the NC units in radial and linear direction at the push of a button. The freely selectable positions are saved in the tool program after the initial setup. When the positions are called up again or after a tool changeover, all unit positions are reproduced 100 percent.

Exact assignment

The adjustment and positioning unit automatically assigns the NC units to all basic positions as well as to the corresponding mechanical unit types (narrow and normal slide, right/left version) of the RM or GRM machines.



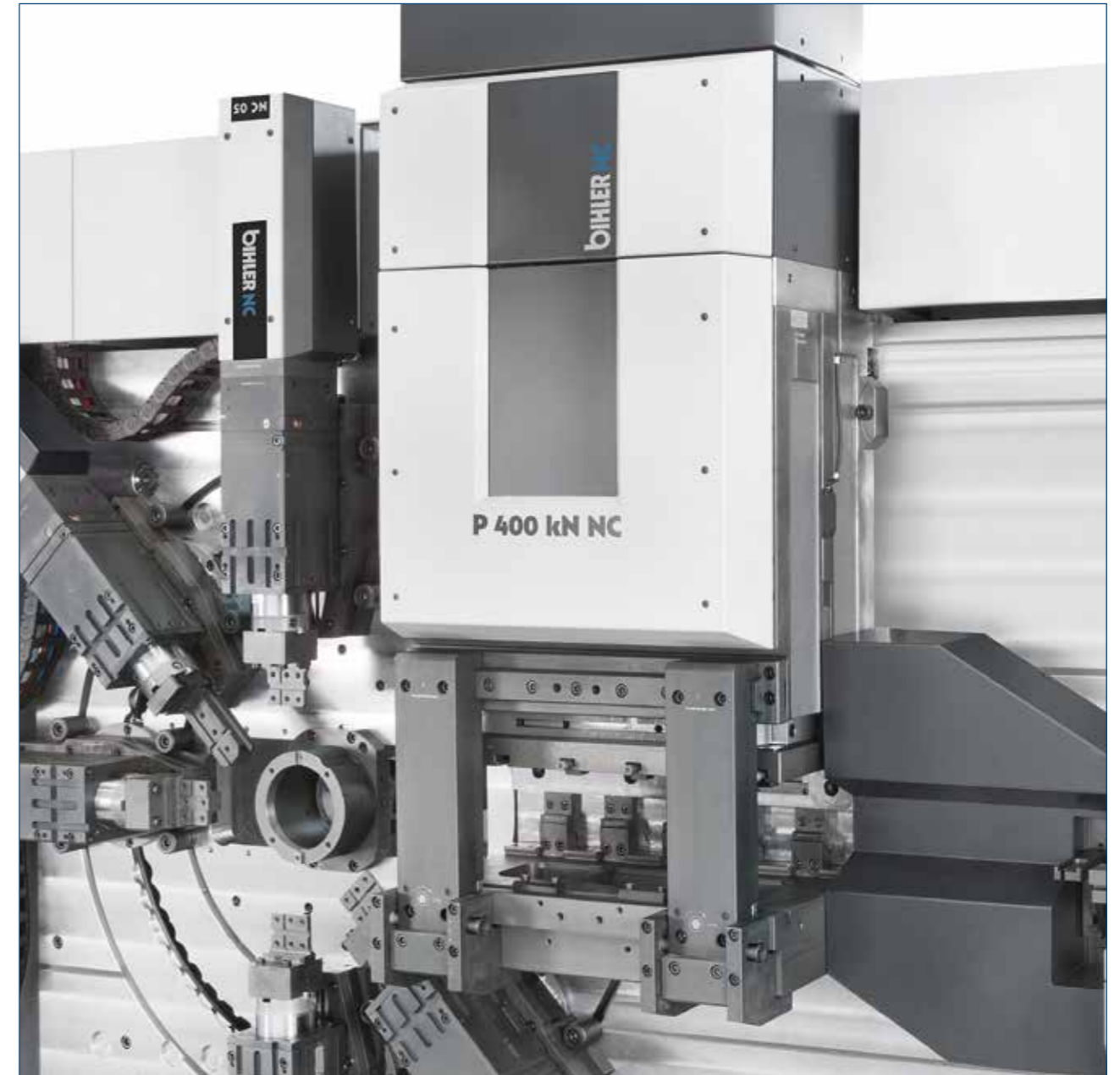
RM-NC / GRM-NC

Presses



RM-NC servo two-point eccentric press

- Nominal force 200kN
- Fixed stroke with BDC
- Integrated monitoring of press force and bearing temperature
- Preloaded press housing
- Max. installation space for die sets 368×202×126mm (L×W×H)

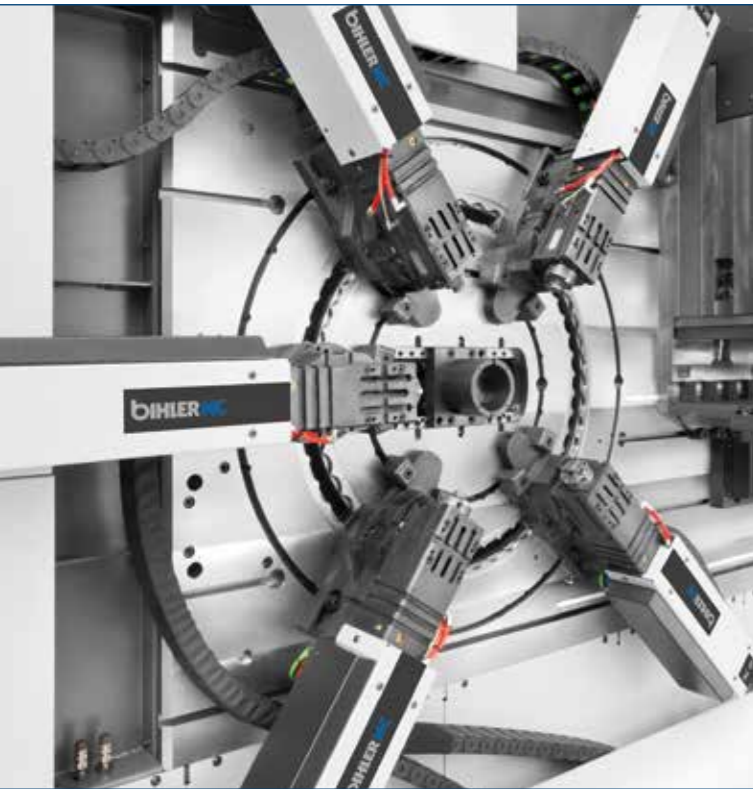


GRM-NC servo friction press

- Nominal force 400kN
- Freely programmable stroke and stroke position adjustment
- No BDC, max. force available anytime
- Integrated monitoring of press force and bearing temperature
- Max. installation space for die sets 670×207×250mm (L×W×H)

RM-NC / GRM-NC

Units / Feed / Central mandrel



NC units RM-NC

More degrees of freedom

The compact NC units offer plenty of machining freedom. Working stroke, working location and motion profile are programmed freely over the entire operating range. Maximum performance can be achieved at any time and in any stroke position. Forming motions can be implemented with constant force transmission. Adjustments during tool changes can be performed quickly and easily without additional mechanical elements – simply with the controller. Depending on the application, the NC units can be arranged in radial and linear configuration.



NC units GRM-NC

Highest production reliability

Several features ensure a very high production reliability: All NC units have an integrated cooling and central lubrication system. The overload protection integrated on the software side protects the units from improper handling or overloading. For consistently high precision, all units are fitted with an integrated absolute measuring system. This means operation is possible without stoppers. Process-related thermal effects are fully compensated.



Feed

Highly dynamic material feed

The servo-controlled RZV 2.1 radial gripper feed unit impresses with high feed speeds and excellent positioning accuracy. Profit from variable feed lengths from zero to infinity as well as from various feed lengths within one total feed length. The RZV 2.1 automatically compensates for thickness tolerances in the material. Functionality is guaranteed at all times.



Central mandrel

Additional movements

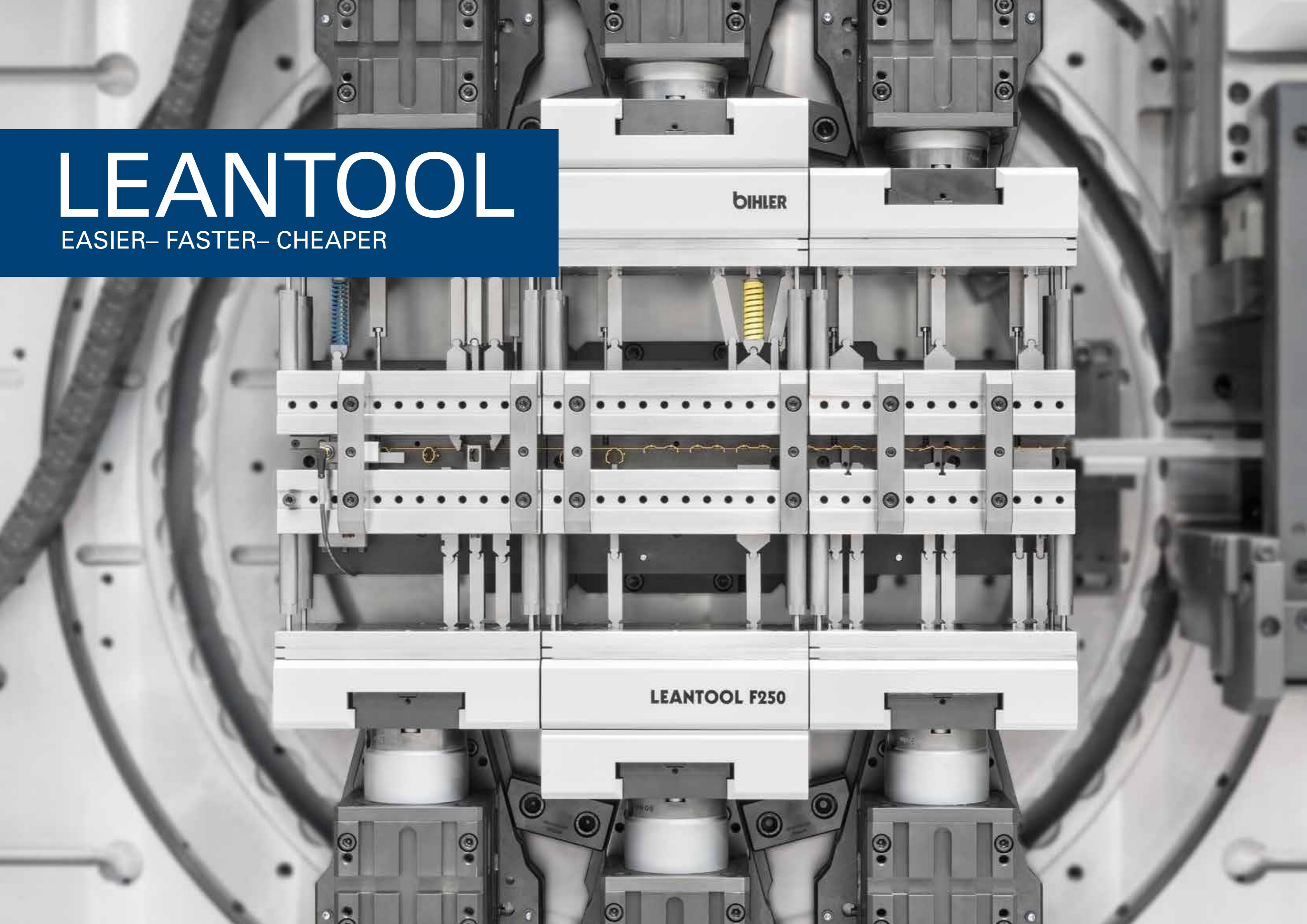
The design with up to three central mandrels enables you to straighten out tools and exploit new application possibilities. The setup of the central mandrels is done from the front of the machine.

LEANTOOL

EASIER- FASTER- CHEAPER

BIHLER

LEANTOOL F250



RM-NC / GRM-NC

Universal basic equipment

The basic equipment is the central, universal interface for the following applications and tool technologies:

- Adaptation of existing tools from the mechanical RM and GRM series
- Implementation of new tools based on a mechanical machine
- New LEANTOOL radial tools
- New LEANTOOL progressive tools

All listed applications can be implemented with the basic equipment.

The fundamental elements of the basic equipment include the components tool carrier and base plates. You can use these elements independent of application and tool technology.



Tool carriers

The tool carriers are equipped with quick clamping systems. The appropriate adaptation sets can be mounted on the clamping systems depending on tool technology. This makes setup at the push of a button possible.

Base plates

The base plate serves as a central and uniform interface for punch holder and punch mounting. Depending on the application, different punch holders are used.



One machine platform for all applications

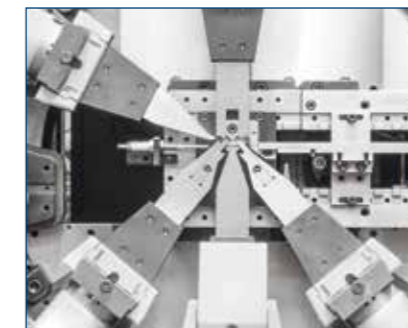
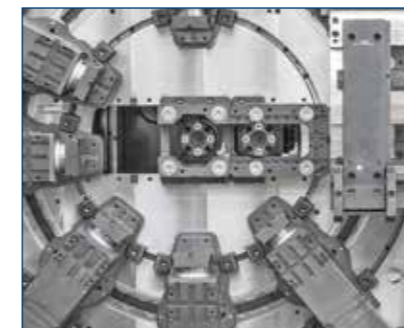
The number of tool carriers depends on the application. The subsequent extension of a tool carrier is possible at any time using the plug-in procedure. All mechanical, electrical, pneumatic and software interfaces are preconfigured in the machine and available as standard.

The basic equipment for the RM-NC will be available as of the end of 2019.

Adaptation of existing tools / new tools (based on mech. machine)



LEANTOOL Radial



LEANTOOL Progressive



Normalien (lagerhaltig verfügbar)



Benefit from these advantages:

- New LEANTOOL tools can be implemented at any time
- No subsequent modification with extensive effort
- Secure your future!

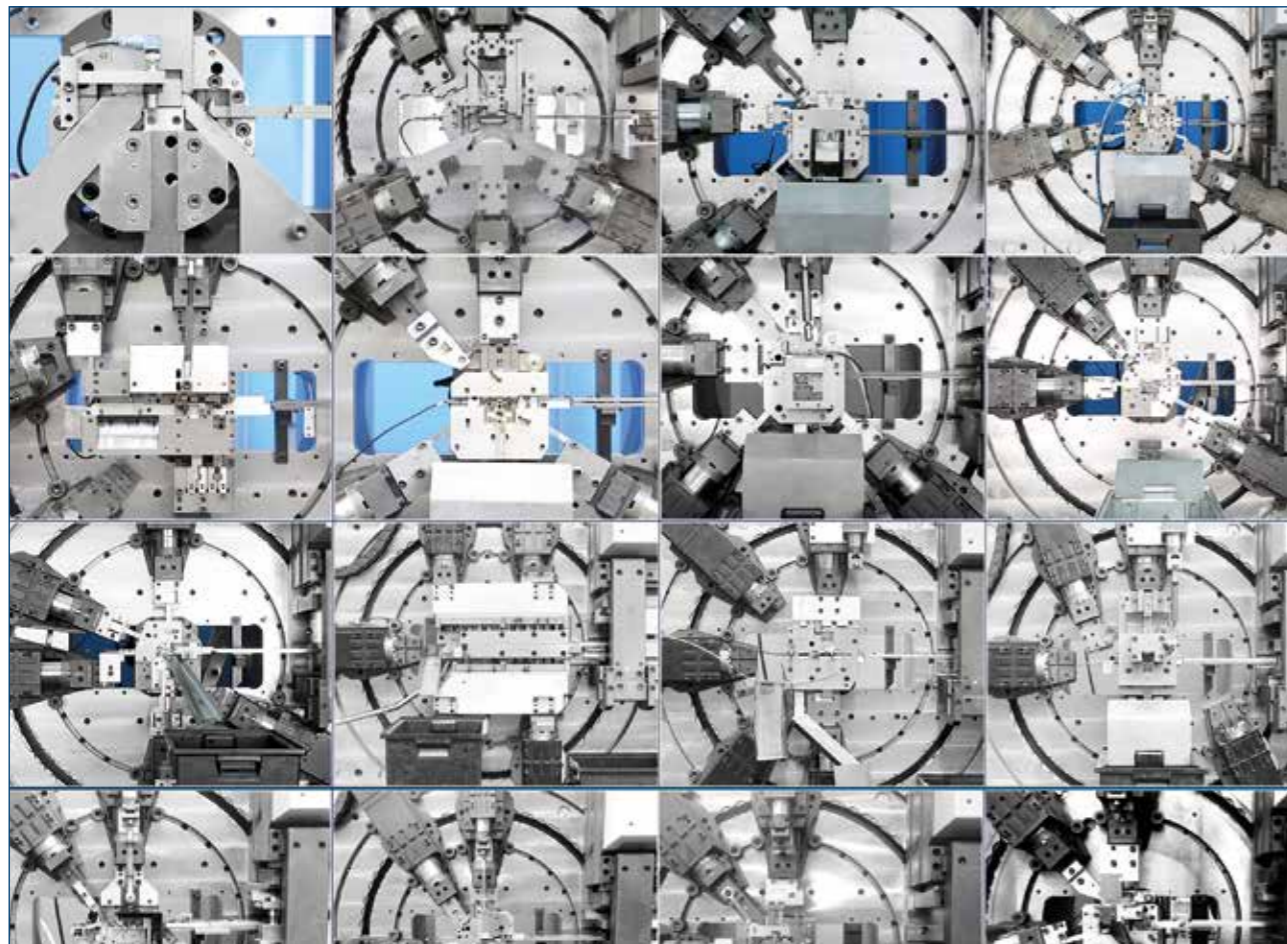
RM-NC / GRM-NC

Tool compatibility

Full tool compatibility with (G)RM series

With the new features of the servo machines and the standardized adaptation options for existing Bihler tools, you save a lot of time and money. Especially when it comes to producing small to medium batches more efficiently, since setup time increases in relation to the total production time as batch size decreases. Production schedules are now difficult to monitor.

The two Bihler servo machines offer you decisive advantages. The RM-NC and the GRM-NC are fully compatible with all mechanical RM and GRM machines. All tools of these machine types can be quickly and easily adapted and optimized for the servo machines. This allows you to benefit from extremely short setup times, higher output and quick response to your customers' requirements.



On average 160% increase in output and 80% reduction in set-up time / Source: 160 adapted existing tools for RM-NC and GRM-NC

Advantages of a tool adaptation

- 80% reduction of setup time possible
- Output increase up to three times possible
- Guarantees faster throughput times for all batch sizes
- Lower production costs for small to medium batch sizes
- Very fast, flexible response capacity in production
- Simple, fast speed optimization

MORE EFFICIENT MORE PRODUCTIVE MORE FLEXIBLE

Technical data RM-NC (GRM-NC)

	min.	max.	Standard/optional
NC units			
Number	0	14 (12)*	*standard (>12: additional axis cabinet)
Nominal force (kN)		20 (40)	
Stroke (mm)	0	120 (100)	
Central mandrels			
Number	0	3 (3)	
Nominal force (kN)		20 (40)	
Stroke (mm)	0	120 (100)	
Servo two-point eccentric press standard RM-NC			
Nominal force (kN)		200 (300)	(300 kN press as option on GRM-NC)
Stroke (mm)	0	12	
Servo press standard GRM-NC			
Nominal force (kN)		(400)	
Stroke (mm)	0	(60)	
Numbers of strokes			
stepless ** (1/min.)	0	300 (240)	** depending on tooling concept and max. press forces resp. nominal forces of NC units
Dimension (WxDxH, mm)			
without noise protection cabinet	3050 (3282) x 1820 x 2540 (2740)		
	without press / 2600 (3055) with press		
Weight (kg)			
	approx. 6000 (9500) (without tooling)		

Highlights of the control system

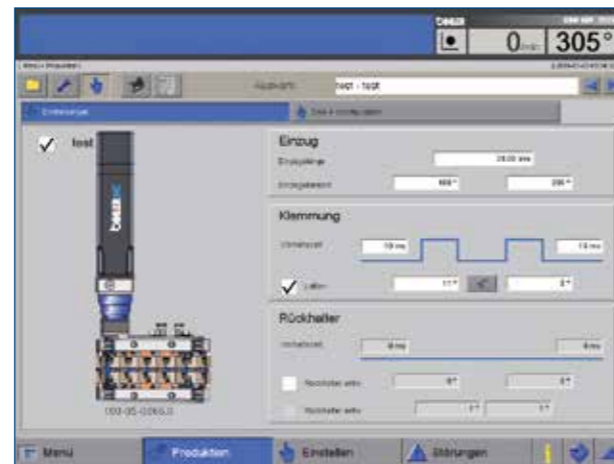
- Easy, flexible machine setup without external programming device
- Customized menu navigation for fast retooling
- bASSIST multimedia diagnostics and online help system
- Freely configurable, individually adaptable production menus and user interfaces
- Integrated recording of measurement and production data
- Remote service (optional)

Comfortable operation

The VariControl VC 1 supports the machine operator like a second person. The machine is operated comfortably via a swivel terminal with touchscreen and other control elements. The control cabinet and the controller are fully integrated in the machine housing of the RM-NC and the GRM-NC.

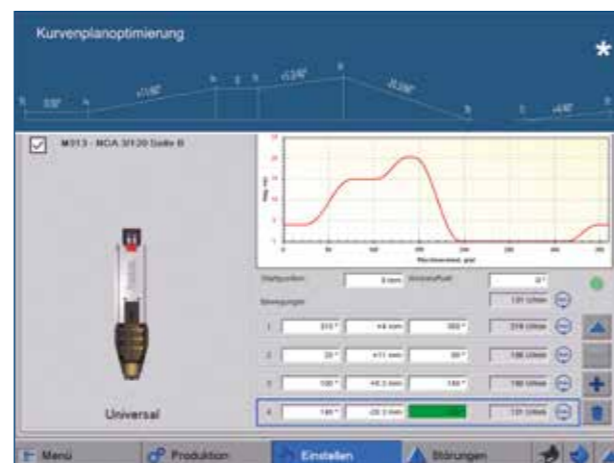
Simple programming

NC units and modules can be programmed directly and easily via self-explanatory input screens.



Cam layout optimization

Optimize motion profiles individually and easily in the control system and increase your productivity.



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