

**BIHLER**

**P 150 KN**

# **RM SERIES**

Stamping and forming machines  
RM 40K / RM 40KS / RM 40P

### **New perspectives for your production**

Increase the quality of your precision parts, lower your unit costs and produce even more efficiently overall. With the versatile RM Series stamping and forming machines you open up new perspectives for the production of your stamped and formed parts. The RM 40KS and the RM 40P show their strengths especially with thin, high-strength steels.

The open design of the machines enables you to easily integrate a wide variety of process steps. The excellent accessibility to all processing stations ensures easy retrofitting and maintenance operations. Equipped with the latest control technology, the RM machines convince with maximum machine availability and maximum process reliability.

# RM 40K

Stamping-Forming Machine

## The highlights at a glance

- Compact machine system for the manufacture of stamped and formed precision parts
- High production speeds up to 350 1/min.
- Perfectly designed for radial and linear tooling concepts
- Rigid 90 kN two-point eccentric press with large mounting area
- Large center aperture in the work-plate for flexible central mandrel movements
- Rapid tool-exchange system for shortest change-over times
- User friendly VC1-E control with 15" touch screen
- Compatibility with RM 35, RM 40 and RM 40E tools



# RM 40K

Stamping-Forming Machine



## Precise material feed

A mechanical feed guarantees that materials are precision-fed into the machine. Standard feed-time reduction offers larger head angles for comprehensive processing. The feed gripper and non-return gripper are both hydraulically activated and are electronically controlled, whereby the non-return gripper's intermediate release is freely programmable.

As an option it is possible to integrate the NC radial gripper feed RZV 2. The RZV 2 offers even more flexibility where head angle, feed length and movements is concerned.



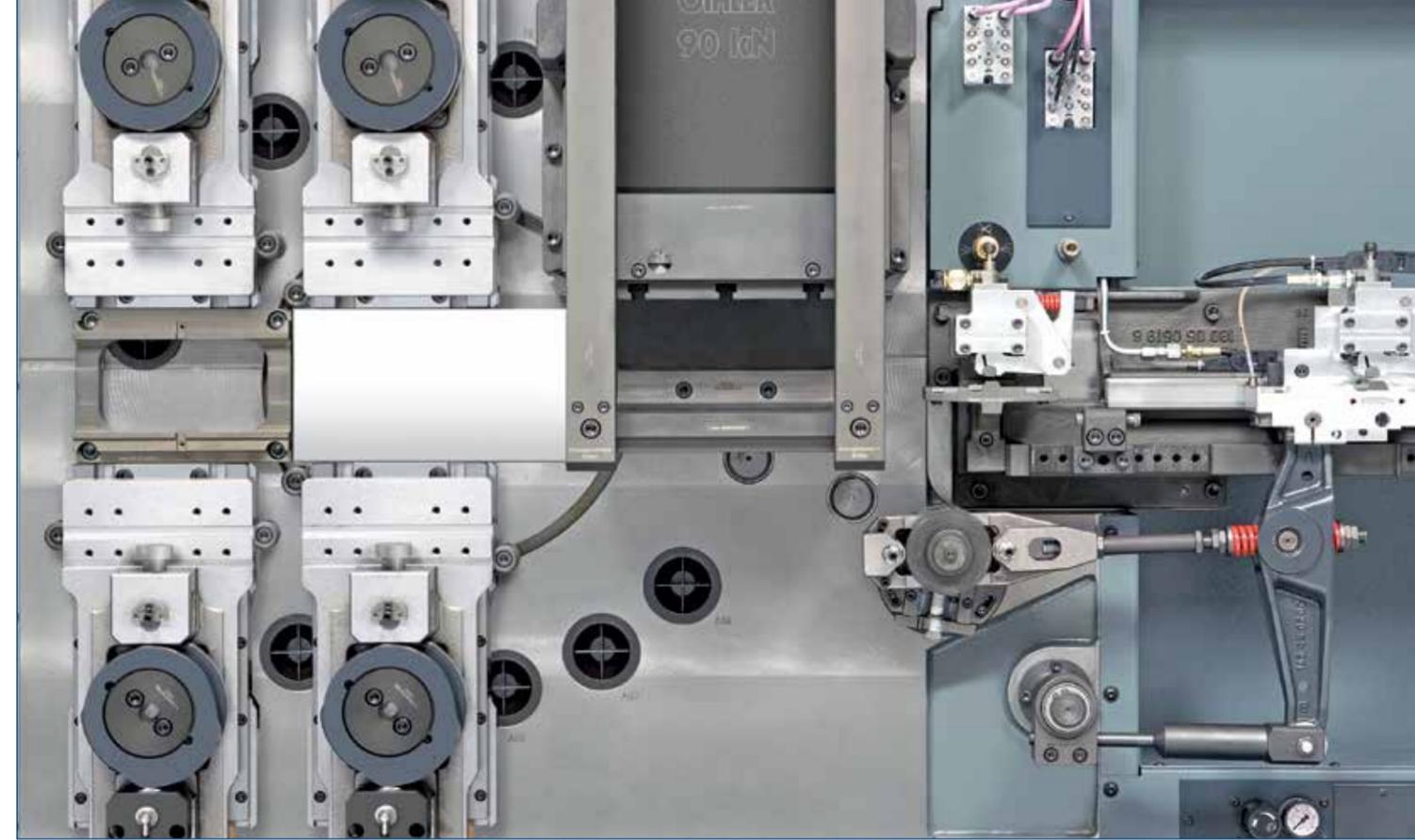
## Stable press for precise cuts

The 90 kN two-point eccentric press is characterized by a large space for die sets up to 320 mm in length and 170 mm wide. The press casing offers high rigidity - for maximum precision of workpieces and long tool service life. The RM 40K can also be equipped with an optional 70 kN eccentric press. Equipment from older machines is compatible.



## Central mandrels for additional movements

The workplate has a large center aperture (400 mm x 122 mm), allowing a maximum of 3 mechanically central mandrels to be integrated flexibly in the overall concept from the rear of the machine. 6 mounting positions are available on the rear side of the machine. These movements segregate the tools, making them even more accessible and provide new areas of application. NC central mandrels can be mounted optionally.

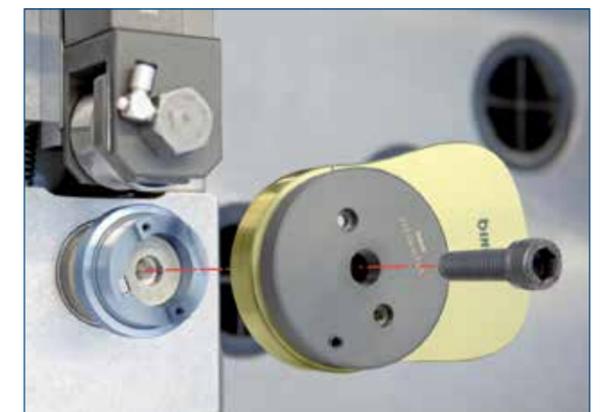


## Slide units with rapid tool-clamping system (RM 40K/KS/P)

Depending on your application normal, narrow, extended, double and sub-slide units are available. Standard sensor-based protection of the slide unit functions guarantees maximum production safety.

To achieve the very fastest tool-exchange all normal slide units and all narrow slide units are equipped with an innovative rapid tool-clamping system. The punch-holder interlock is quickly and easily released by a pin. After the new tool is inserted it must only be fixed using the clamping pin. The old tool mounting-system is also retained, allowing the RM 35, RM 40 and RM 40E tools to be fitted to the new machine's slides.

In addition, the innovative cam system consisting of a cam carrier and driving disk ensure that the cams are rapidly exchanged.



# RM 40KS

Stamping-Forming Machine

## The highlights at a glance

- Universally applicable machine system for enlarged parts range especially in the field of high tensile steels
- High production performance up to 350 1/min.
- Strong 150 kN two-point eccentric press unit with large mounting area
- High press rigidity allows the use of high performance carbide tools
- Guaranteed process reliability through press force monitoring and bearing temperature sensors
- Tool clamping system provides accuracy with minimum set-up time
- VariControl VC 1 for simple operation and highest process reliability
- Compatible with the RM series



# RM 40KS

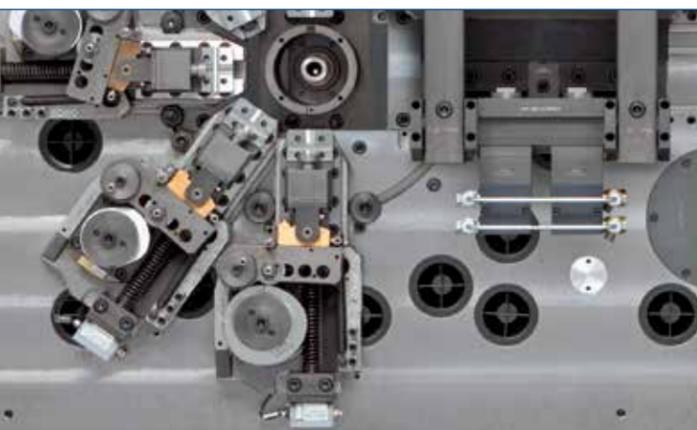
Stamping-Forming Machine



## Highly dynamic feed

The compact NC radial gripper feed RZV 2 stands out with its fast feed speeds and excellent positioning accuracy - also for large feed lengths. Automatic adjustment for material thicknesses between 0 and 9.5 mm.

The shorter feed angle leaves a greater machining angle for optimum cam plate movement. This results in smoother running and higher production speeds. A mechanical feeder unit with feed time reduction can be installed as an option.



## Very precise strip guidance

Two drive positions beneath the press facilitate movements from below without having to lift the punching strip in the cutting tool. Drawing bushings, bending cores or bending movements can be actuated. Complex turn rounds in the cutting tool can therefore be avoided.

## Press designed for high performance carbide tools

The powerful 150 kN two-point eccentric press offers a lot of mounting space for modern dies. Strips of up to 80 mm wide can be machined precisely. Wider strips are possible as option. The high rigidity of the press extends tool life and allows the use of high performance carbide tools.

### Maximum process reliability

Bearing temperature sensors and the integrated press force monitoring system guarantee highest tool and process reliability.

### Very fast exchange of dies

Two pivoting tie-rods on the press ease the removal and fitting of die sets and help to shorten set-up times. An optional hydraulic tool-clamping system also accelerates and simplifies set-up.

### Actuations for welding units

Up to two mechanical actuations for welding appliances can be mounted on the press housing.



**MANUFACTURE  
LARGE BATCH SIZES  
MORE EFFICIENTLY**



# RM 40P

Stamping-Forming Machine

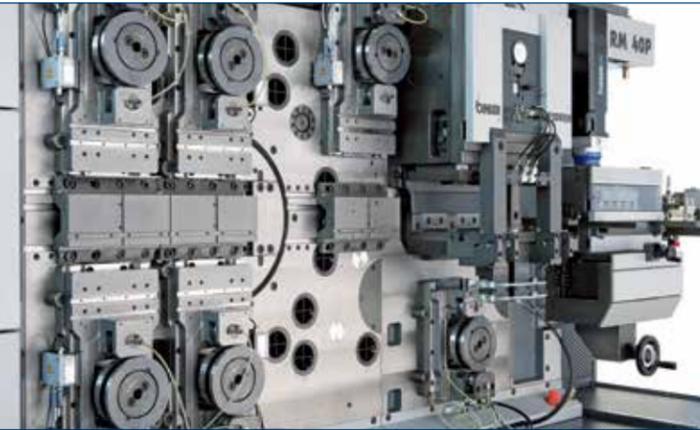
## The highlights at a glance

- Universally applicable machine system for extended area of application (high-tensile steels and complete assemblies)
- High production performance up to 350 1/min.
- A lot of space at work plate due to separate press module
- More than 1,400 mm of manufacturing space in case of linear toolings
- Easy integration of additional processing units for thread forming, screw insertion, welding, etc.
- Powerful 200 kN two-point eccentric press with large mounting area
- Tool clamping system provides accuracy with minimum set-up time
- VariControl VC 1 for intuitive handling



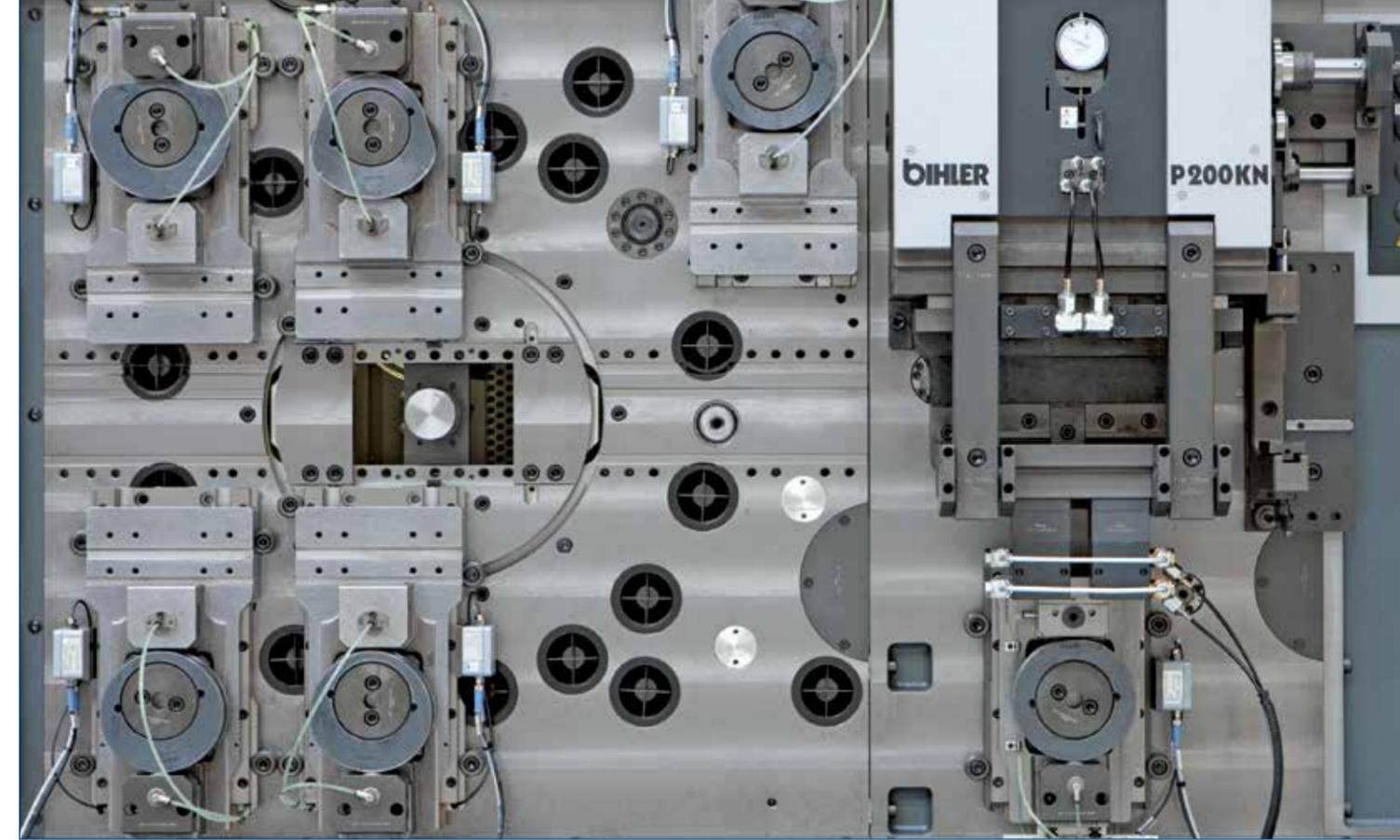
# RM 40P

Stamping-Forming Machine



## A lot of space for bulky processings

The RM 40P consists of a separate 200 kN press module. This press module creates an additional 1,000 mm of manufacturing space at the machine's work plate allowing further operations, such as thread forming, welding, screw insertion, assembly, inspection, laser marking, etc. to be easily integrated. Together with the press the machine offers more than 1,400 mm processing travel for maximum added value.



## Mechanical or NC central mandrels

The workplate has a large center aperture (400 mm x 122 mm), allowing a maximum of 3 mechanical central mandrels or NC central mandrels (as option) to be integrated flexibly in the overall concept from the rear of the machine. This segregates the tools, making them even more accessible and provides new areas of application.



## Sophisticated design (RM 40KS/P)

The sophisticated design make the operator's work safer. All the electric, pneumatic, hydraulic and lubrication pipes are laid behind the machine paneling. The danger of buckling or severing of cables or hoses and/or the associated plug connectors is effectively prevented.

Rapid access to the pipes is made by simply opening the panels. All cables can be easily run through the cable channel openings.



## The highlights at a glance

- Simple, versatile machine setup without external programming device
- Customized production menus and user interfaces
- Multimedia diagnostic and online help system bASSIST
- Freely configurable production menus and user interfaces
- Integrated monitoring system of production and machine sensing data

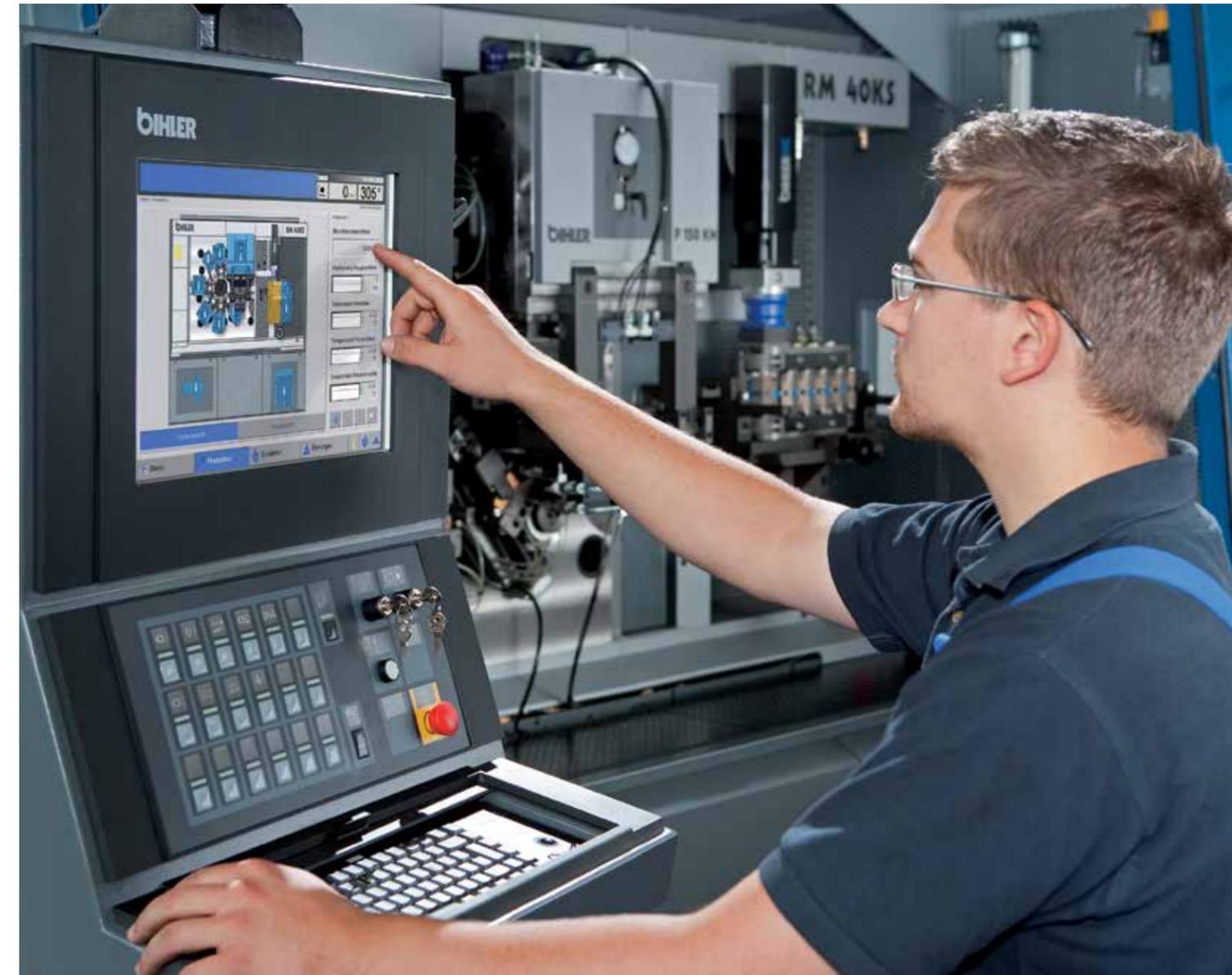
## Intuitive handling

The RM series is equipped with the machine and process control VariControl VC 1(E). The control system ensures simple handling and monitoring of complex production and assembly processes via a 15" touch display and a multifunctional keyboard. The control cabinet is fully integrated in the machine housing.



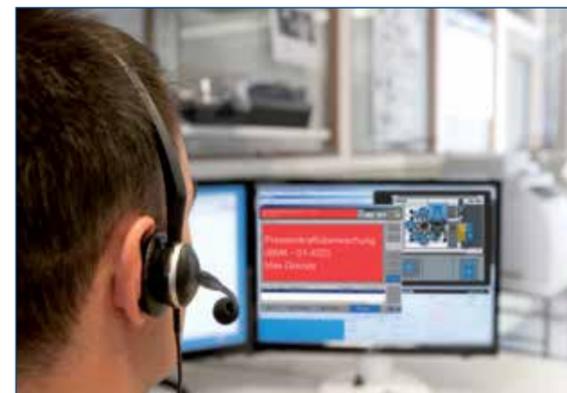
## Easy programming

Direct and easy programming of NC process modules (feeding unit, thread forming unit, screw insertion unit) via a simple input screen



## Support at the touch of a button

The extremely versatile remote maintenance solution (optional) fulfils the exacting support requirements. The portal provides full access to the machine's control and all networked components. At the touch of a button on the control cabinet the secure connection is established.

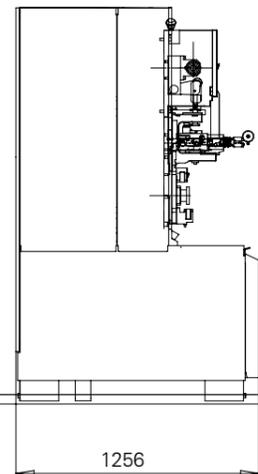
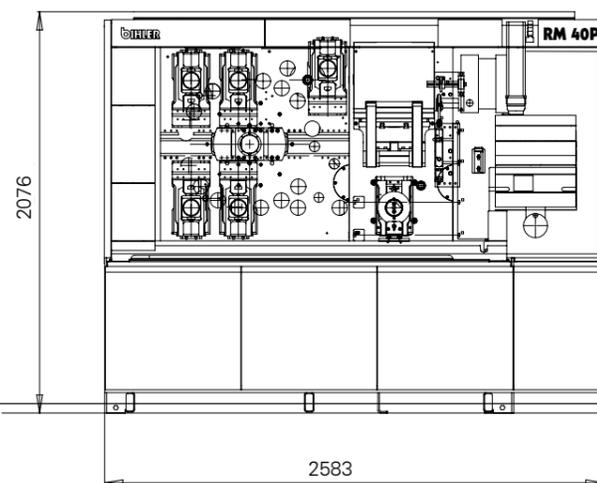
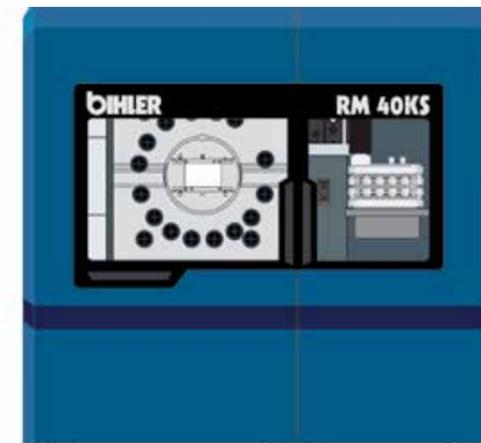
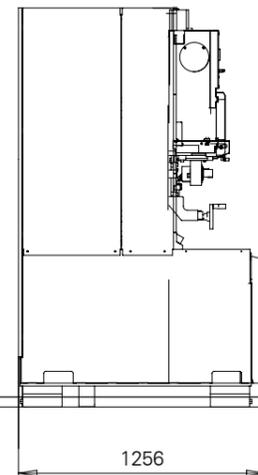
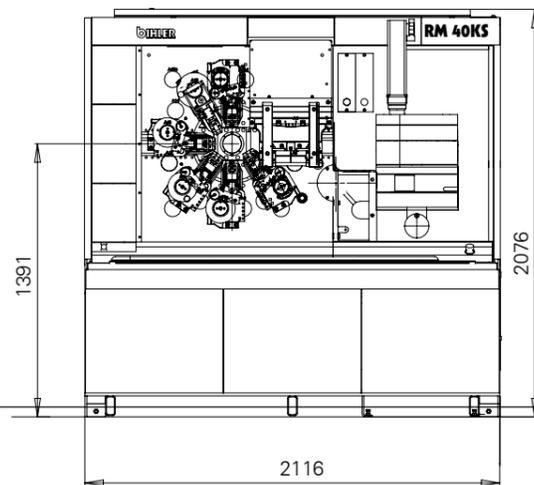
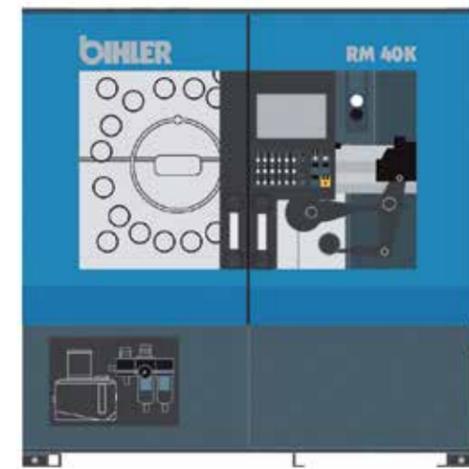
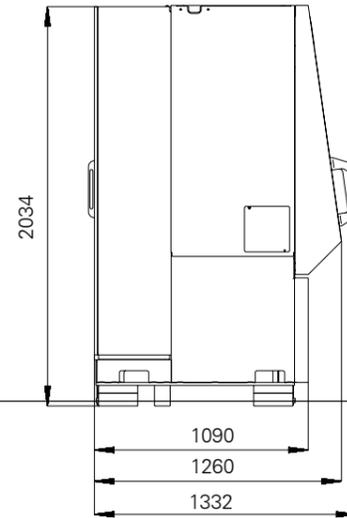
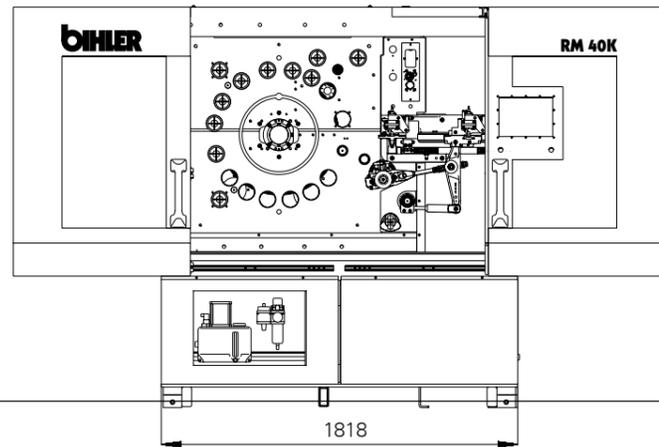


Remote maintenance

|                                   | <b>RM 40K</b>  | <b>RM 40KS</b>   | <b>RM 40P</b>  |
|-----------------------------------|--|--|--|
| <b>System concept</b>             | Housing with single processing area; 20 drive-positions for radial and linear manufacturing; rear face with 6 drive-positions for central mandrel movements; center aperture (length 400 mm, height 122 mm)  | Housing with single processing area; 22 drive-positions for radial and linear manufacturing; rear face with 10 drive-positions for central mandrel movements; center aperture (length 400 mm, height 122 mm)   | Housing with single processing area; 25 drive-positions for radial and linear manufacturing; rear face with 10 drive-positions for central mandrel movements; center aperture (length 400 mm, height 122 mm)   |
| <b>Stroke frequency</b>           | Infinitely variable from approximately 5 to max 350 1/min  | Infinitely variable from approximately 5 to max 350 1/min  | Infinitely variable from approximately 5 to max 350 1/min  |
| <b>Drive</b>                      | Infinitely variable direct-drive motor; nominal motor rating 5.5 kW  | Infinitely variable direct-drive motor with clutch-brake combination; nominal motor rating 12 kW   | Infinitely variable direct-drive motor with clutch-brake combination; nominal motor rating 12 kW   |
| <b>Control</b>                    | VariControl VC1-E process control with power supply unit and electronic control and monitoring system; integrated operating panel with 15" TFT touch screen and control elements; 1 machine-controller with I/O bus modules for the entire machine control; 1 tool-controller with I/O bus modules; standard are 2 freely-programmable modules, each of which is equipped with 8 channels programmable as input or output; 1 bus module programmable with 16 inputs and 16 outputs; 1 press force and slide force monitor optional | VariControl VC 1 process control; control cabinet integrated into machine housing, with power supply unit and electronic control and monitoring system; operating panel with 15" TFT touch screen, keyboard and control elements; 1 machine-controller with I/O bus modules for the entire machine control; 1 tool-controller with I/O bus modules; standard are 2 freely-programmable modules, each of which is equipped with 8 channels programmable as input or output; 1 bus module programmable with 16 inputs and 16 outputs; 1 press force monitor, slide force monitor as option | VariControl VC 1 process control; control cabinet integrated into machine housing, with power supply unit and electronic control and monitoring system; operating panel with 15" TFT touch screen, keyboard and control elements; 1 machine-controller with I/O bus modules for the entire machine control; 1 tool-controller with I/O bus modules; standard are 2 freely-programmable modules, each of which is equipped with 8 channels programmable as input or output; 1 bus module programmable with 16 inputs and 16 outputs; 1 press force monitor, slide force monitor as option |
| <b>Pneumatic system</b>           | Maintenance unit with twin-tapping points for oil-free air; normal pressure 6 bar; pressure monitoring with machine stop   | Maintenance unit with twin-tapping points for oil-free air; normal pressure 6 bar; pressure monitoring with machine stop   | Maintenance unit with twin-tapping points for oil-free air; normal pressure 6 bar; pressure monitoring with machine stop   |
| <b>Hydraulic system</b>           | Pneumatically activated hydro pump with hydraulic accumulator and valves for hydraulic activation of the feeder; P max = 150 bar   | Pneumatically activated hydro pump with hydraulic accumulator and valves for hydraulic activation of the feeder; P max = 150 bar   | Pneumatically activated hydro pump with hydraulic accumulator and valves for hydraulic activation of the feeder; P max = 150 bar   |
| <b>Central lubrication system</b> | Single-line central oil lubrication system for machine and system modules, optionally available with integrated oil recovery and/or oil disposal system; air-pressure activated pump; 4.5 liter capacity; function monitoring; 10 free quick-action couplings  | Single-line central oil lubrication system for machine and system modules, optionally available with integrated oil recovery and/or oil disposal system; air-pressure activated pump; 4.5 liter capacity; function monitoring; 10 free quick-action couplings  | Single-line central oil lubrication system for machine and system modules, optionally available with integrated oil recovery and/or oil disposal system; air-pressure activated pump; 4.5 liter capacity; function monitoring; 10 free quick-action couplings  |
| <b>Central mandrel movement</b>   | Installation of a maximum of 3 positively controlled or spring-loaded central-mandrels side-by-side possible; max. stroke 45 mm; nominal force 15 kN; Installation of 1 positively controlled or spring-loaded central-mandrel; max. stroke 45 mm, nominal force 20 kN; Installation of NC central mandrels, max. stroke 45 mm, nominal force 800 N, as option.  | Installation of a maximum of 3 positively controlled or spring-loaded central-mandrels side-by-side possible; max. stroke 45 mm; nominal force 15 kN; Installation of 1 positively controlled or spring-loaded central-mandrel; max. stroke 45 mm, nominal force 20 kN; NC-controlled central mandrels, max. stroke 45 mm, nominal force 800 N, as option.   | Installation of a maximum of 3 positively controlled or spring-loaded central-mandrels side-by-side possible; max. stroke 45 mm; nominal force 15 kN; Installation of 1 positively controlled or spring-loaded central-mandrel; max. stroke 45 mm, nominal force 20 kN; Installation of NC-controlled central mandrels, max. stroke 45 mm, nominal force 800 N, as option.   |
| <b>Feed</b>                       | Right-hand housing extension; feed length max. 240 mm; feed-time reduction; hydraulic material clamping; NC feed RZV 2 as option   | NC radial gripper feed RZV 2; feed length from zero to infinite; mech. controlled feed as option   | NC radial gripper feed RZV 2; feed length from zero to infinite; mech. controlled feed as option   |
| <b>Press</b>                      | Two-point 90 kN nominal force eccentric press, stroke 12 mm; fitted height at BDC 116 mm, stroke position adjustment -3.5 mm; mounting area for die set from 320 mm length and 170 mm width; max. strip width 60 mm; pre-tensioned press housing with 2 tie-rods; electronic press force monitoring as option  | Two-point 150 kN nominal force eccentric press, stroke 12 mm; fitted height at BDC 126 mm, stroke position adjustment -3.5 mm; max. mounting area for die set: 368 mm length, 202 mm width, 126 mm height; max. strip width 80 mm (wider strips are possible as option); pre-tensioned press housing with 2 tie-rods; electronic press force monitoring and bearing temperature sensors  | Two-point 200 kN nominal force eccentric press, stroke 12 mm; fitted height at BDC 126 mm, stroke position adjustment -3.5 mm; max. mounting area for die set: 368 mm length, 202 mm width, 126 mm height; max. strip width 80 mm (wider strips are possible as option); pre-tensioned press housing with 2 tie-rods; electronic press force monitoring and bearing temperature sensors  |
| <b>Slide units</b>                | Normal slide units: max. stroke 40 mm; max. nominal force 60 kN; narrow slide units: max. stroke 50 mm, nominal force 40 kN; all devices equipped with rapid tool-exchange system and rapid-clamp system for cams; enlarged slide units: max. stroke 25 mm, nominal force 30 kN.   | Normal slide units: max. stroke 40 mm; max. nominal force 60 kN; narrow slide units: max. stroke 50 mm, nominal force 40 kN; all devices equipped with rapid tool-exchange system and rapid-clamp system for cams; enlarged slide units: max. stroke 25 mm, nominal force 30 kN  | Normal slide units: max. stroke 40 mm; max. nominal force 60 kN; narrow slide units: max. stroke 50 mm, nominal force 40 kN; all devices equipped with rapid tool-exchange system and rapid-clamp system for cams; enlarged slide units: max. stroke 25 mm, nominal force 30 kN  |
| <b>Safety devices</b>             | Standard integrated enclosure for operator and sound protection in accordance with the EC Machinery Directive 98/37 EC.  | Standard full enclosure for operator and sound protection in accordance with the EC Machinery Directive 98/37 EC.  | Standard full enclosure for operator and sound protection in accordance with the EC Machinery Directive 98/37 EC   |
| <b>Dimensions and weight</b>      | Width 2,020 mm x depth 1,330 mm x height 2,030 mm; 2,000 kg subject to equipment (tooling excluded)  | Width 2,590 mm x depth 2,100 mm x height 2,450 mm; approx. 3,160 kg subject to equipment (tooling excluded)  | Width 3,100 mm x depth 2,026 mm x height 2,320 mm; approx. 3,900 kg subject to equipment (tooling excluded)  |

# RM SERIES

Dimensions



## Process reliability (RM 40K/KS/P)

The noise and operator protection integrated in the machine's design (RM 40K) as well as the full enclosure (RM 40KS/P) conform to the current EC Machinery Directive 98/37 EC.

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