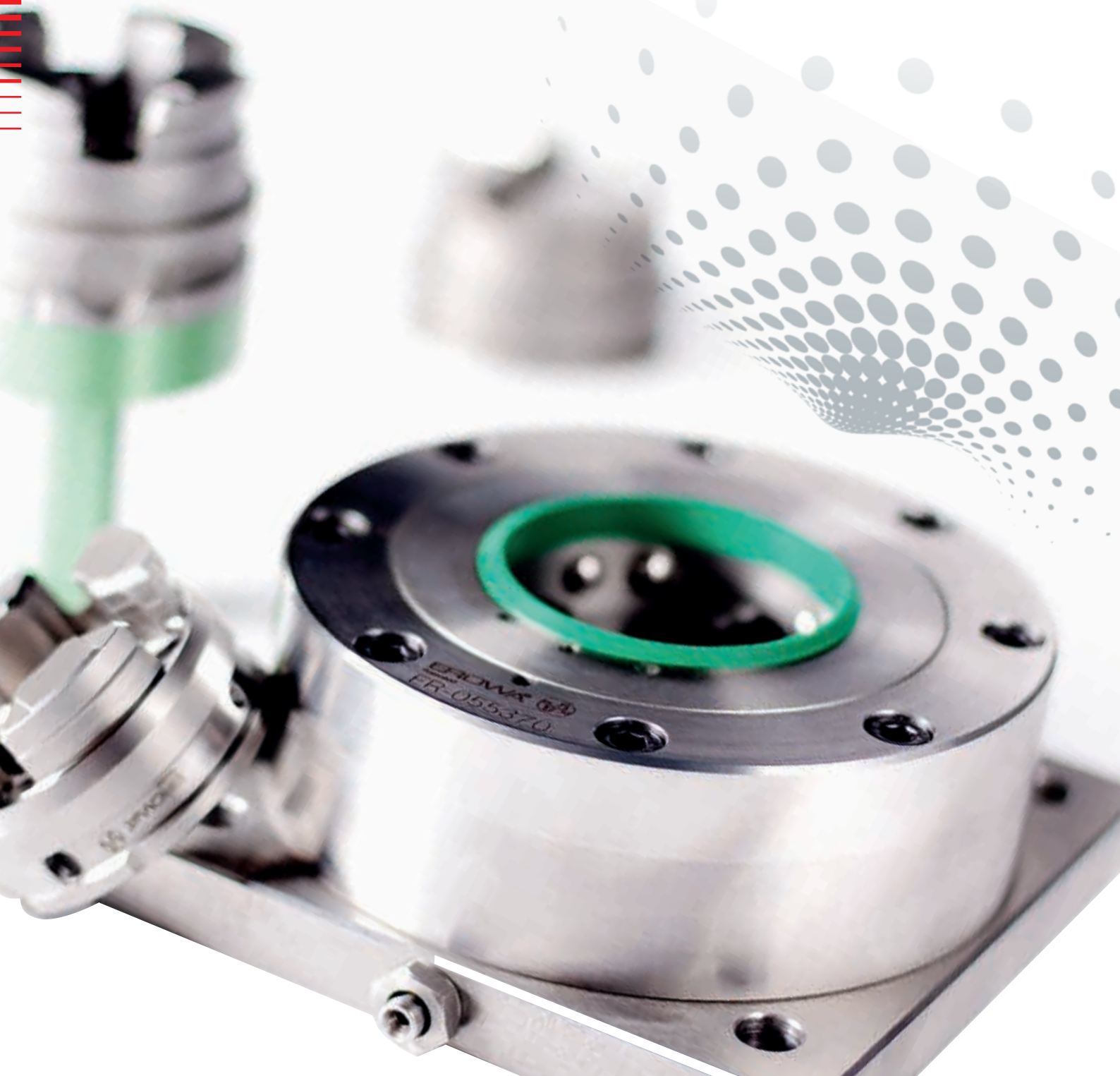


EROWA®  
system solutions



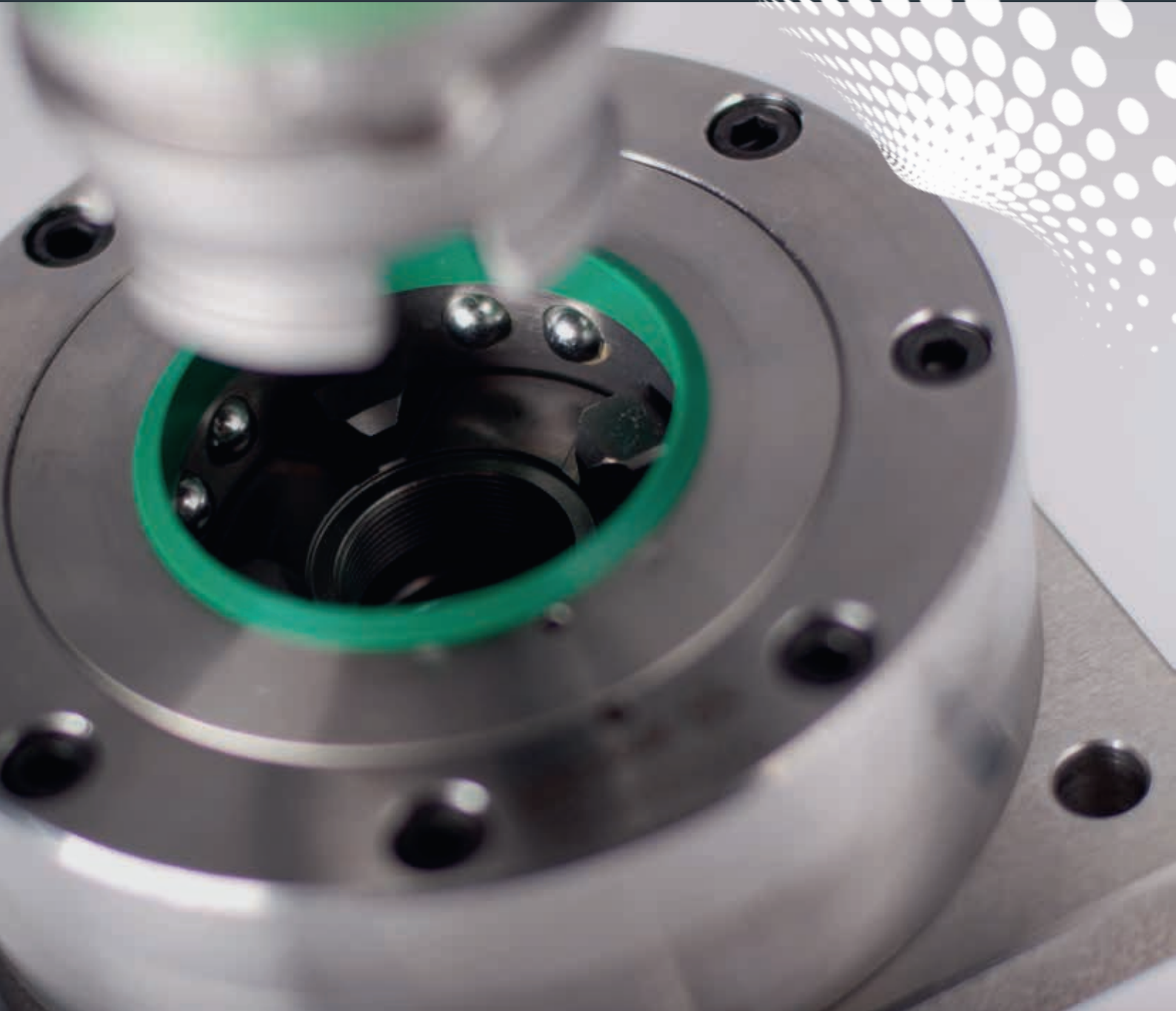
# PM Tooling

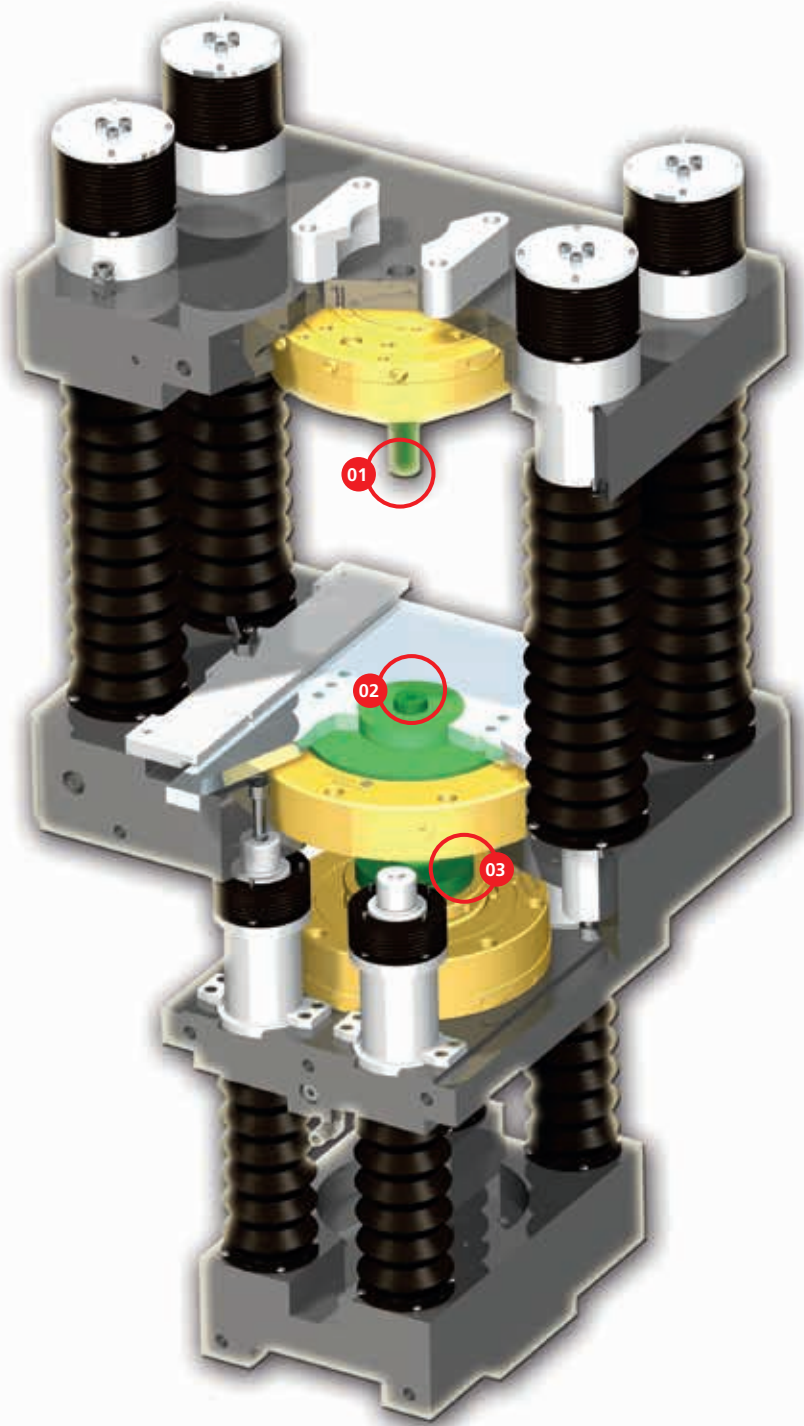
Efficient powder compacting



# Increasing productivity

Reducing setup times.





Compacted powder parts are becoming more and more refined, and the variety of product shapes is on the rise. As lot sizes are getting smaller, powder presses need to be changed over frequently.

EROWA has the solution to minimize setup times: Single or multi-level powder presses are fitted with PM Tooling chucks. This enables pressing tools to be changed at  $\mu$ -levels of precision within very short periods of time.

**01 | Top punch**  
on EROWA PM Tooling pallet:  
repeatability < 0.002 mm.

**02 | Die**  
on EROWA PM Tooling pallet:  
repeatability < 0.002 mm

**03 | Bottom punch**  
on EROWA PM Tooling pallet:  
repeatability < 0.002 mm



Release and remove die, bottom and top punches pneumatically.



Insert and clamp new dies and punches.

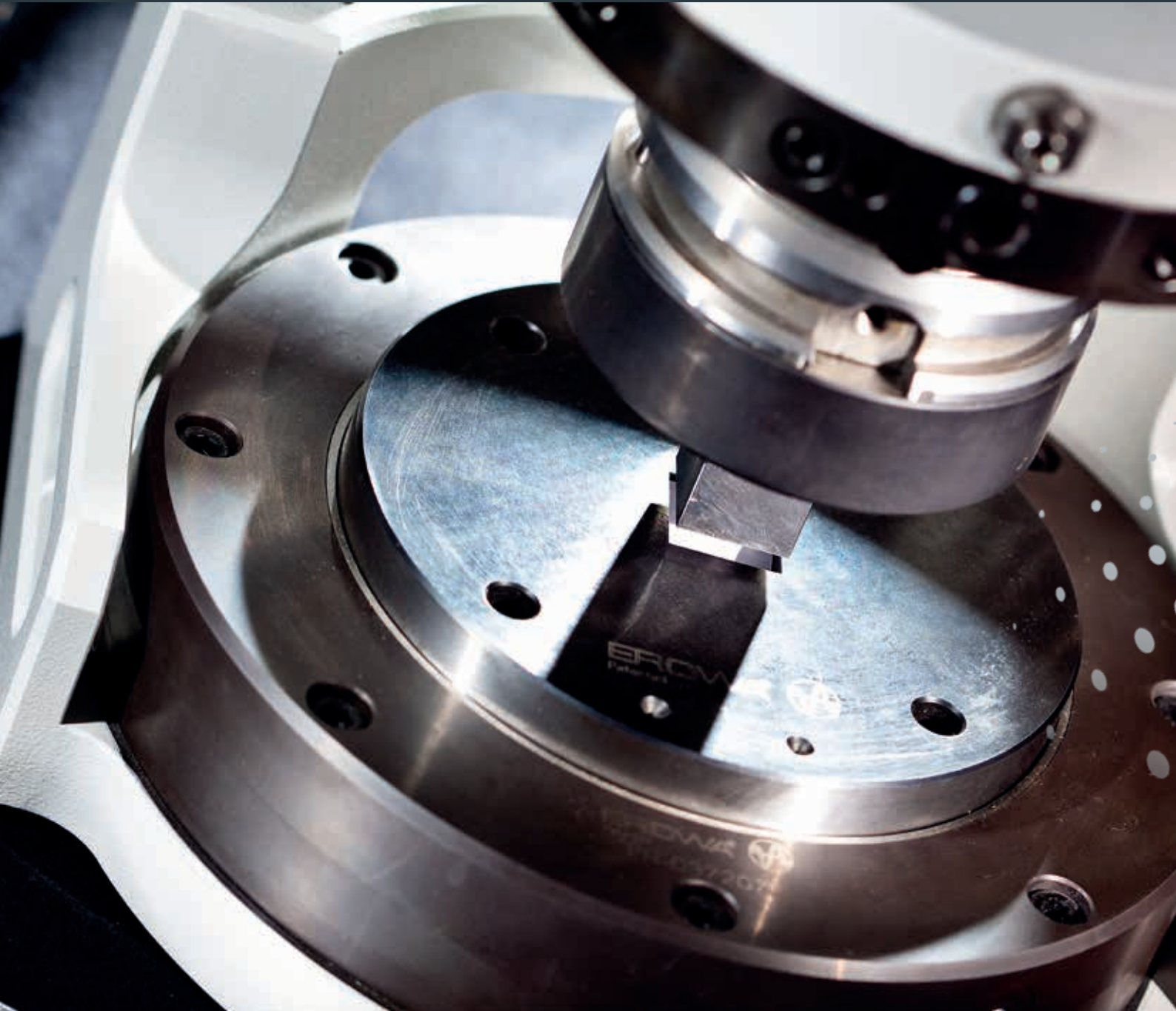


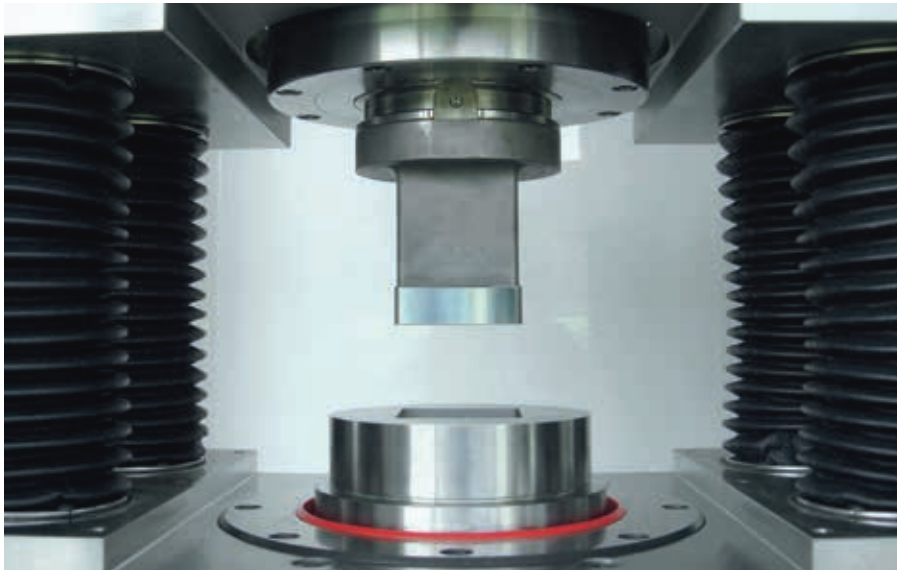
Produce new compacted powder parts.



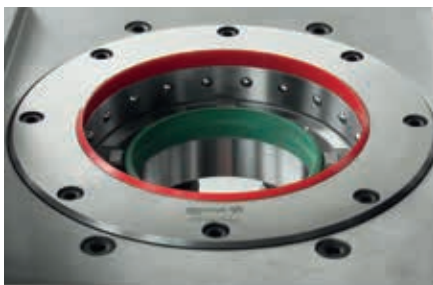
# Ultra-high precision

Pressing tools are positioned with less than 0.002 mm tolerance.





Precision is required to produce compacted powder parts in top quality. EROWA high-precision quick clamping tooling systems play a crucial role in this regard.



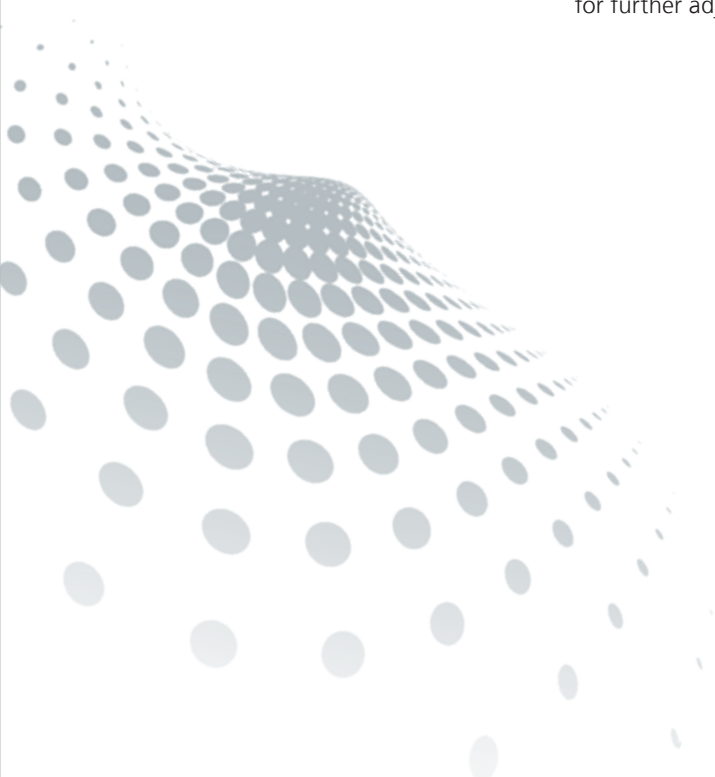
The PM Tooling chucks are integrated directly into the powder press or press adapter.



The chucks are precisely aligned to each other with the help of a specially designed alignment set. There is no need for further adjustments.



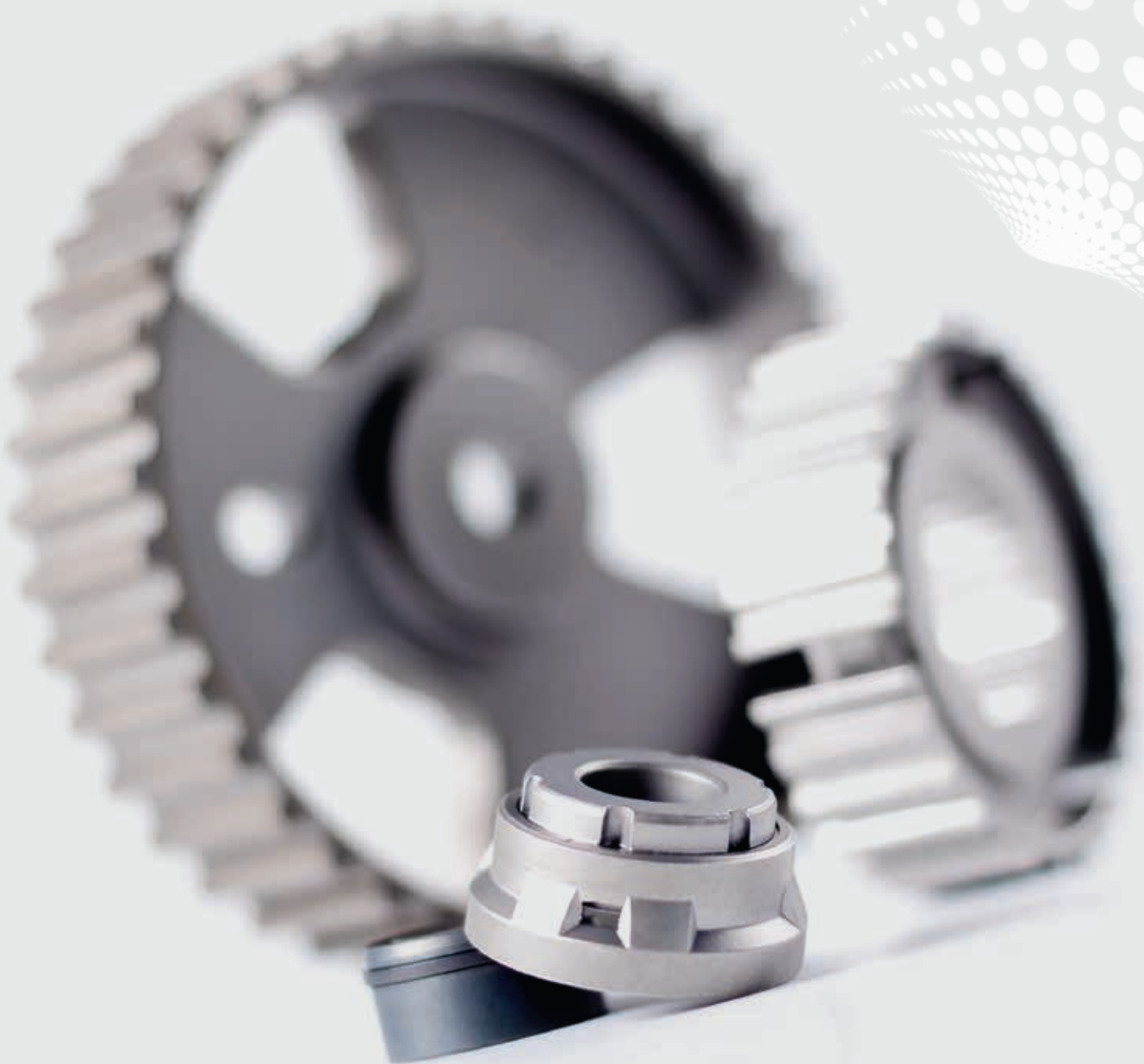
Punches and dies can be clamped and replaced quickly and precisely. The repeatability is  $< 0.002$  mm.



**PRECISE SYSTEM**  
 Repeatability  $< 0.002$  mm  
 Pallets are indexable  $4 \times 90^\circ$   
 Designed for use under high pressing forces

# Power and size

For each application the optimal tooling system.

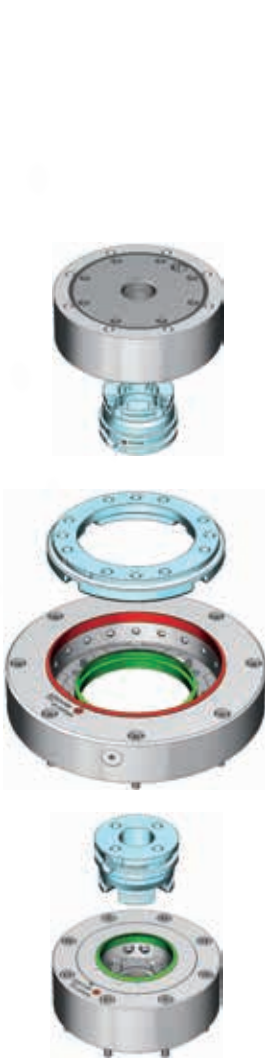




The various PM Tooling systems at a glance:

**PM Tooling Precise**

- The quick clamping tooling system for highest precision requirements
- Very compact frame sizes
- Used for compacting cutting inserts and metal powder



**PM Tooling Multi**

- The quick clamping tooling system for multiple punch levels
- Reinforced design for larger extraction forces
- Used for compacting of metal and ceramic powder

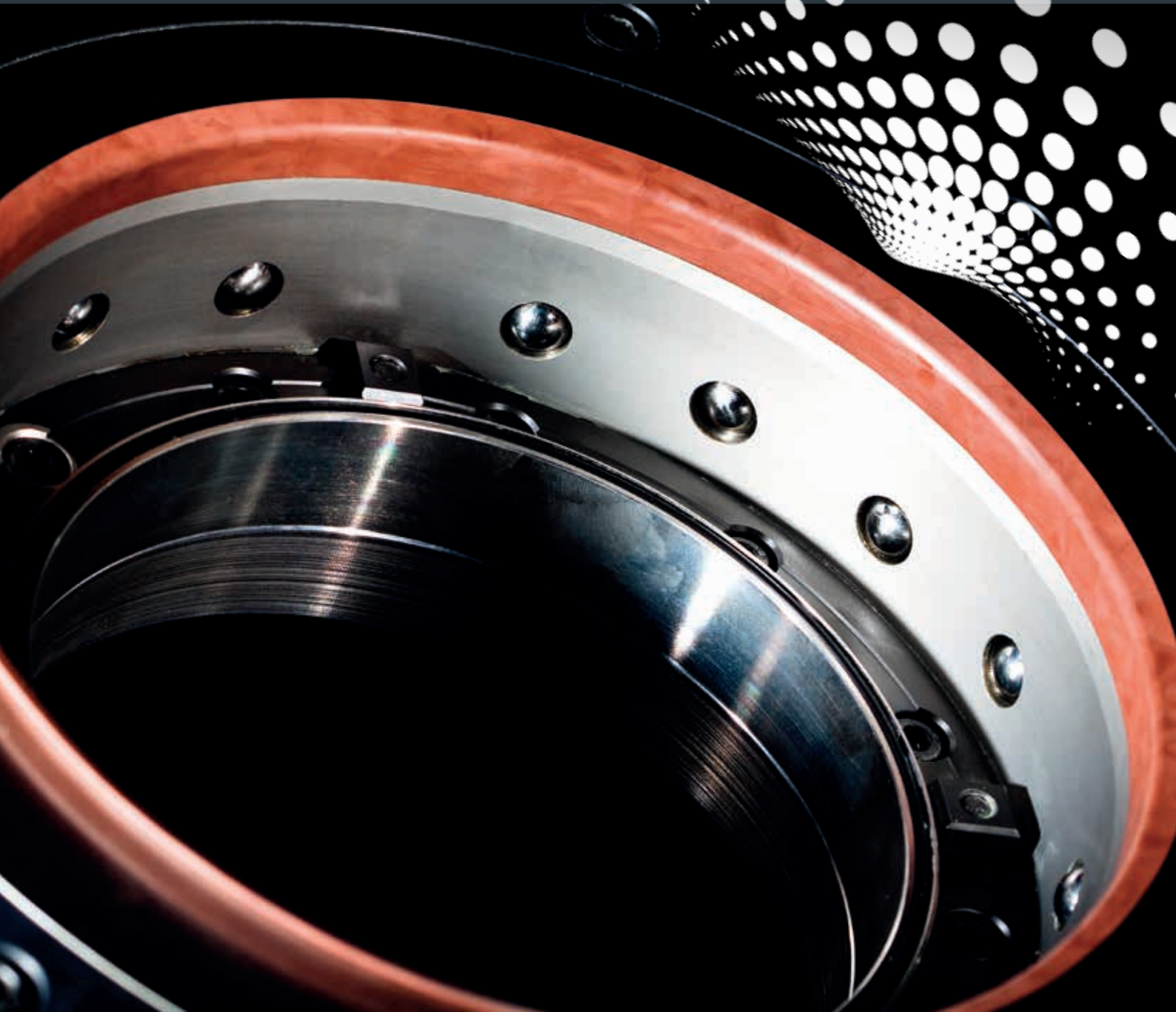


**PM Tooling Hercules**

- The quick clamping tooling system for the highest force requirements
- Slider principle for very high extraction forces
- Used for compacting of metal and ceramic powder

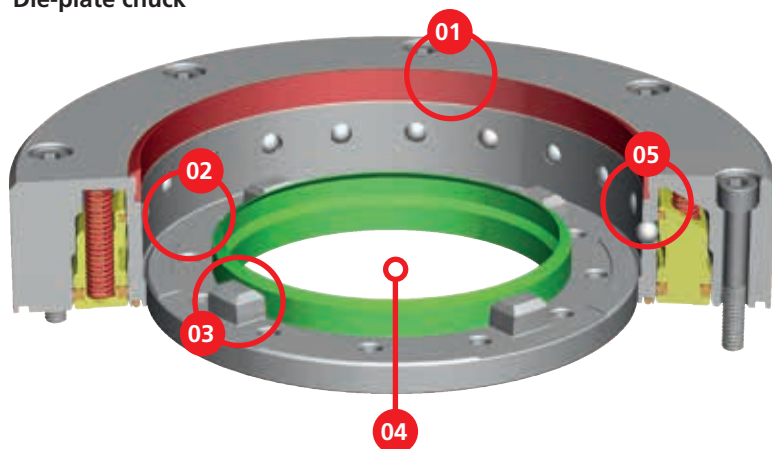


# Compelling toolholding technology





**Die-plate chuck**



**01 | Fully sealed system**  
resistant to powder, dirt and liquids.

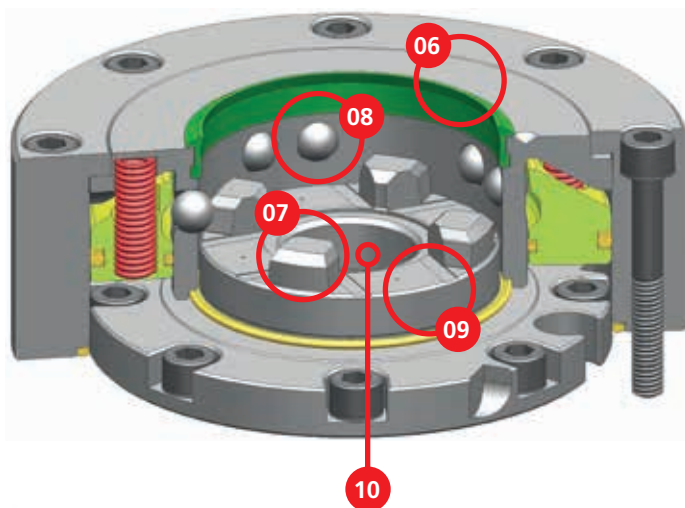
**02 | Large support surfaces**  
for absorbing high forces.

**03 | Precise "P" centering**

**04 | Large clearance**  
for bottom punches.

**05 | Patented external clamping**

**Punch chuck**



**06 | Fully sealed system**

**07 | Precise "P" centering**

**08 | Patented external clamping**

**09 | Large support surfaces**  
for absorbing high forces.

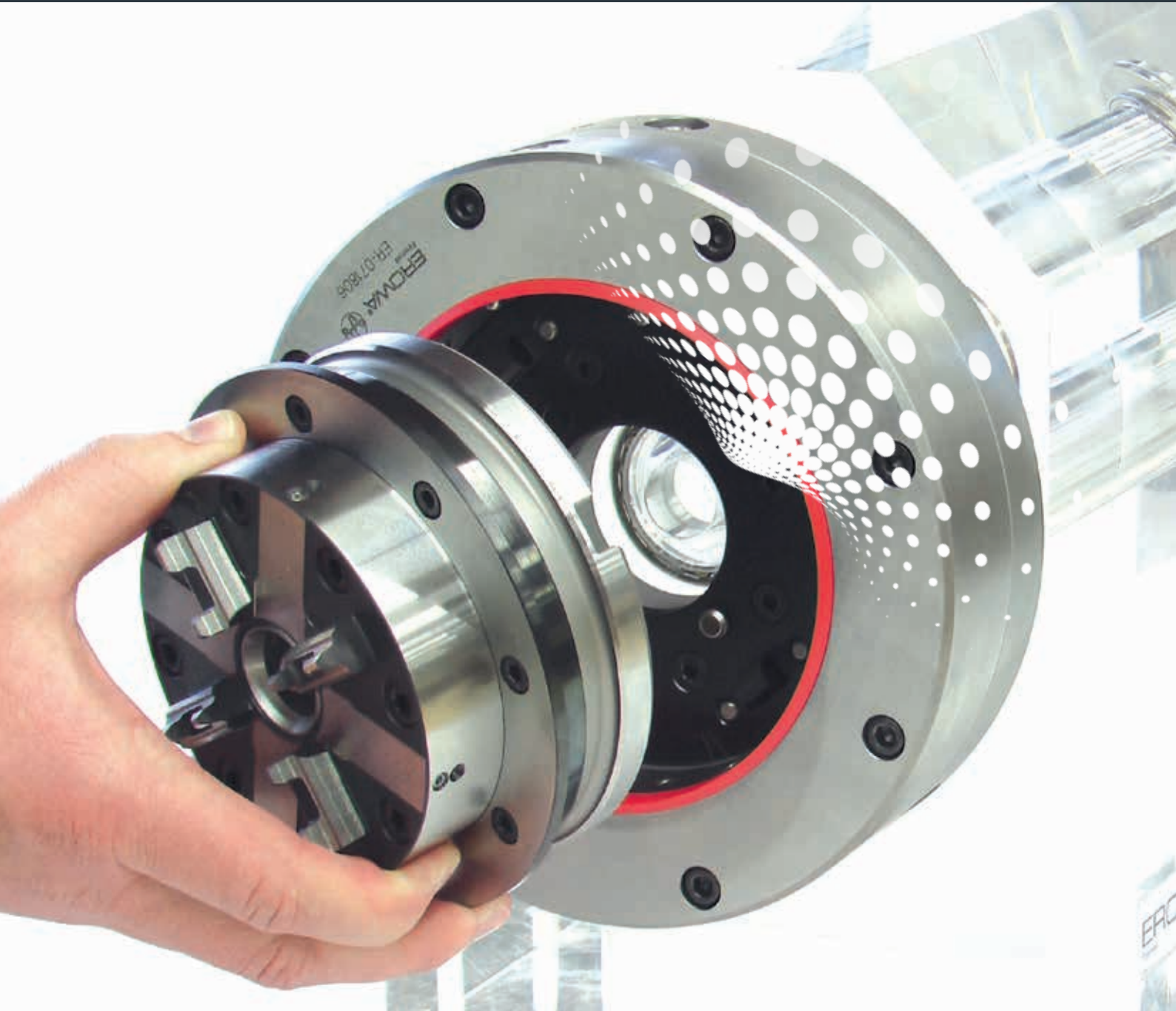
**10 | Large clearance**  
for center pin or second bottom punch.

**TECHNICAL DETAILS**

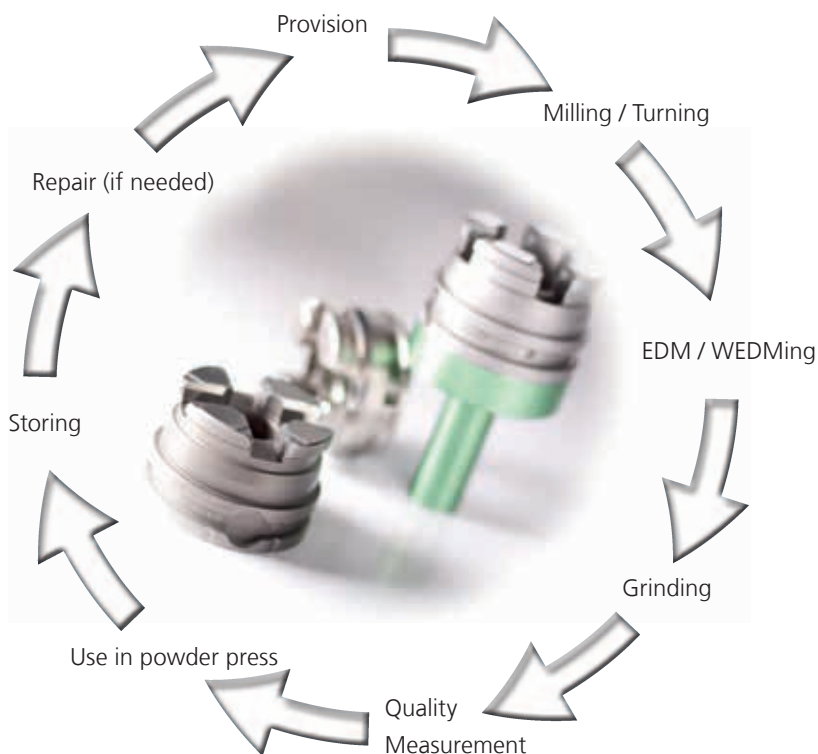
PM Tooling	Precise	Multi	Hercules
Repeatability	< 0.002 mm	< 0.002 mm	< 0.002 mm
Outside diameter die-plate pallet	128 mm	128/190 mm	105/195 mm
Center diameter max. die-plate chuck	86 mm	86/141 mm	34/131 mm
Outside diameter punch pallet	56/60/85 mm	56/85/134 mm	105/195 mm
Center diameter max. punch chuck	25/25/25 mm	25/57/86 mm	34/131 mm
Pressing force max. kN	500 - 1000	500 - 1500	1500 - 2500
Extraction force max. kN	10 - 70	50 - 150	300

# Integrated manufacturing

From the tool shop to the powder press.



The pressing tool cycle:



With the EROWA PM Tooling system, punches and dies are mounted on pallets and manufactured precisely to the system datum point. The compatibility with other EROWA tooling systems allows for the complete automation of your production machine. The tools pass through the entire production chain on pallets.



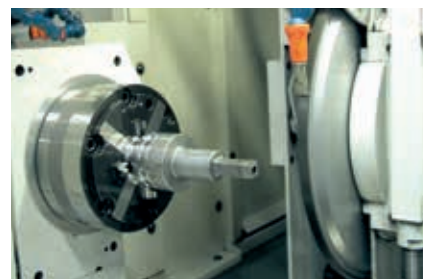
**Milling**

Electrodes for EDMing the forms are produced on ITS system holders.



**EDM**

Shapes in the surface of the punches and dies are EDMed.



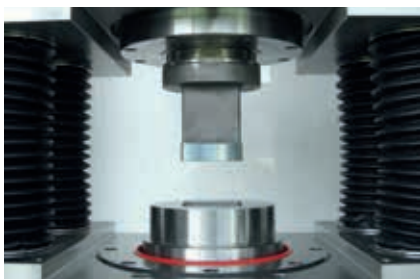
**Grinding**

Punches can also be produced on circular grinding machines.



**Wire-EDM**

Continuous contours in dies and punches are machined on the WEDM machine.



**Powder presses**

Top and bottom punches and the die are inserted into the powder press. The reference positions are given by the precisely aligned chucks.

**COMPATIBLE IN TOOL MANUFACTURING**

Intelligent tool manufacturing and use

Efficiency and reliability in tool production and repair



# Retrofit

Existing tools are integrated into the PM tooling system.



Existing punches and dies can be adapted to EROWA PM pallets and aligned precisely.

A sample adaptation:



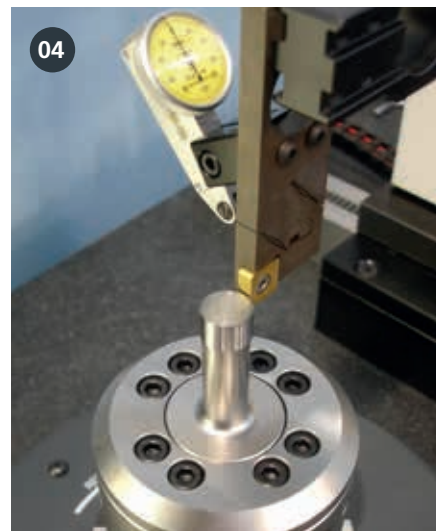
The punch base is modified as needed.



The punch can thus be mounted and clamped in the adaptation pallet.



The pallet is clamped pneumatically on the alignment device – Repeatability < 0.002 mm.



The punch is aligned with absolute precision to the system datum point.

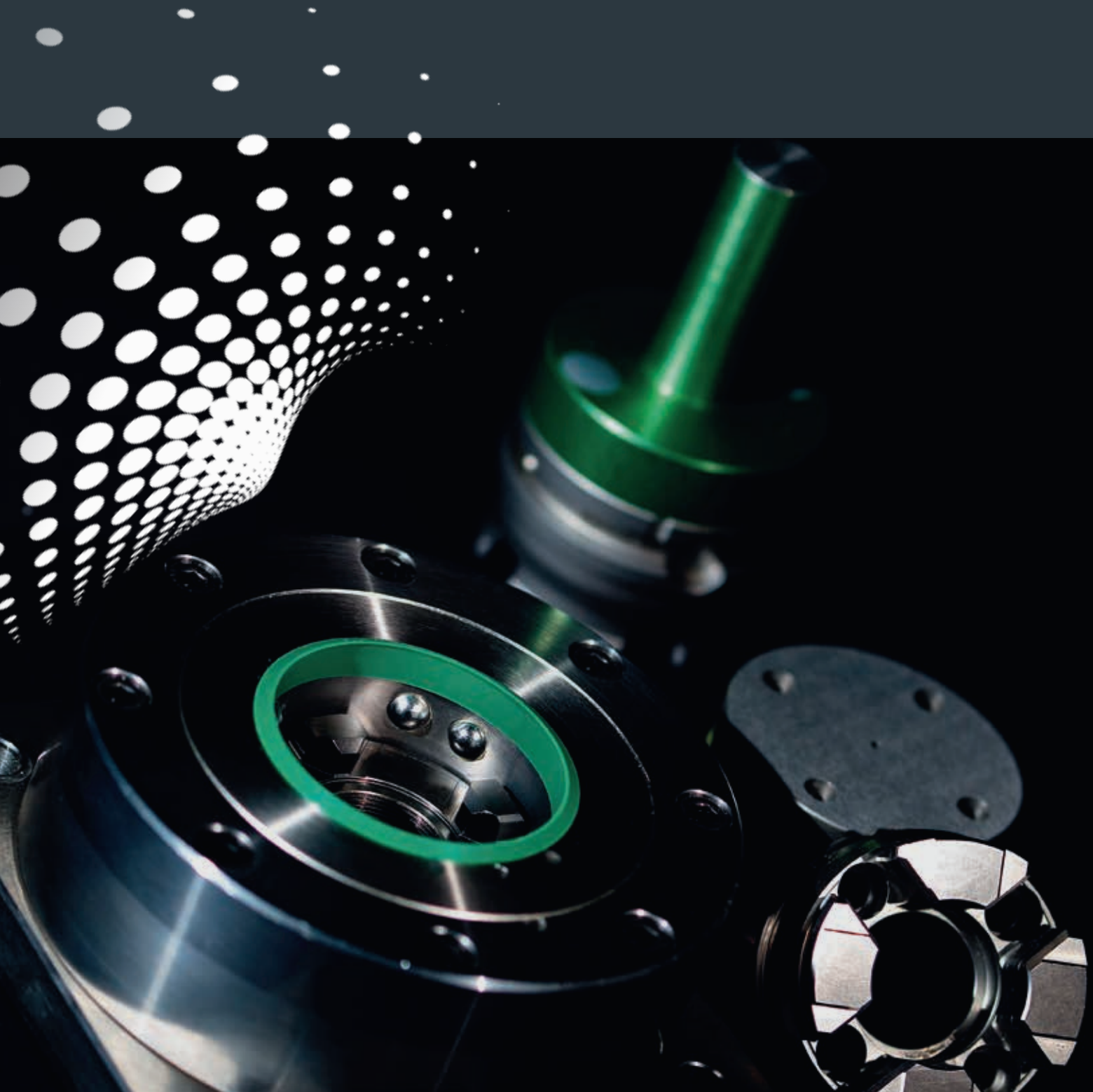
**TOOL ADAPTATION**

There are plenty of adaptation options

We are happy to advise you without any obligation

















# Complete equipment

EROWA provides you with a full range of products –  
everything fits together!





To facilitate a quick overview of the applications of EROWA products, the following icons are used in all our documents:


-  1. Manual operation
-  2. Operation with compressed air gun
-  3. Operation with toggle valve
-  4. Operation with manual control unit
-  5. Operation with electro-pneumatic control unit
-  6. Central flushing passage available
-  7. Suitable for use in liquids
-  8. Rust-resistant material
-  9. Suitable for automatic application
-  10. Handling with EROWA robot gripper S
-  11. Handling with EROWA Combi gripper
-  12. Handling with EROWA robot gripper 72
-  13. Handling with EROWA robot gripper 115
-  14. Handling with EROWA robot gripper 148
-  15. Handling with EROWA gripper RN PC 210
-  16. Handling with EROWA RCS gripper

## PM TOOLING OVERVIEW

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 For cutting operations

 For EDM

 For wire-EDM

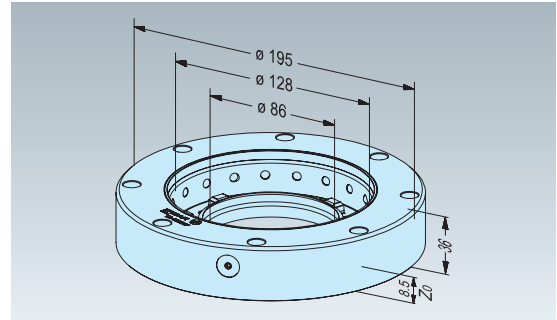
# PM Precise chucks for powder presses

Technical data	Chucks PM Precise
Repeatability	0,002 mm
Indexation	4 x 90°
Opening with dry compressed air	min. 6 bar
Clamping	Spring pressure

## ER-037207 Die-plate chuck PM128 I Precise



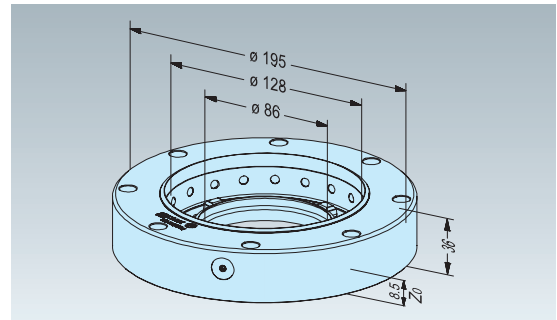
Version Steel, hardened. Through borehole  $\varnothing$  86.  
 Clamping power 23000 N (reclamped at 6 bar)  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines and powder presses.  
 To accommodate die-plate pallets PM128 Precise.



## ER-047544 Die-plate chuck PM128 II Precise



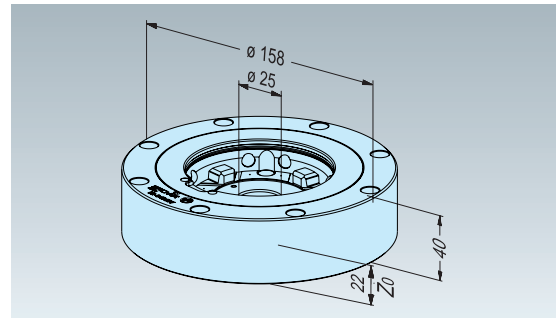
Version Steel, hardened. Through borehole  $\varnothing$  86. External seal.  
 Clamping power 23000 N (reclamped at 6 bar)  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines and powder presses.  
 To accommodate die-plate pallets PM128 Precise.



## ER-040697 Chuck PM85 Precise



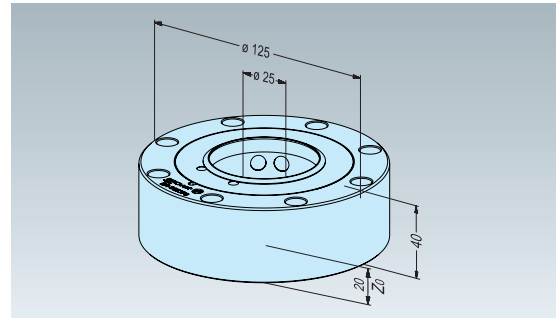
Version Steel, hardened, corrosion-resistant.  
 Through borehole  $\varnothing$  25.  
 Clamping power 9000 N.  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines, lathes, EDM/WEDM centers and powder presses.  
 To accommodate pallets PM85 Precise.



## ER-055370 Chuck PM60 Precise



Version Steel, hardened, corrosion-resistant.  
 Through borehole  $\varnothing$  25.  
 Clamping power 6500 N.  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines, lathes, EDM/WEDM centers and powder presses.  
 To accommodate pallets PM60 Precise.



**ER-041366 Chuck PM56 Precise**



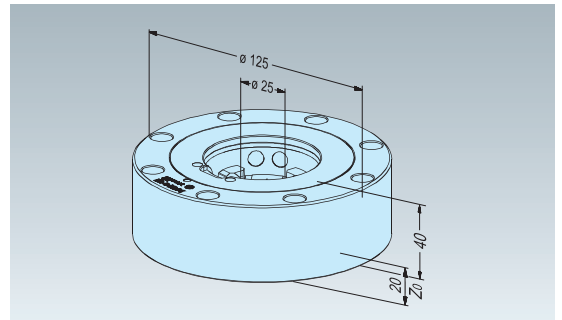
Version Steel, hardened, corrosion-resistant.  
Through borehole  $\varnothing$  25.

Clamping power 6500 N.

Connections At the rear, with two lines.

Operation With control unit.

Application On milling machines, lathes, EDM/WEDM centers and powder presses.  
To accommodate pallets PM56 Precise.



**ER-035288 ITS Chuck 100 P with support**



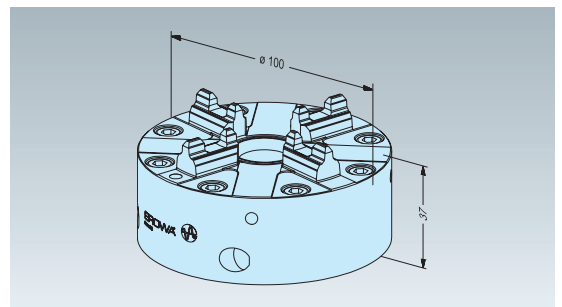
Version Steel, hardened.

Clamping power 6000 N.

Connections At the rear, with two lines.

Operation With control unit.

Application On powder presses. To accommodate centering set pallet PM Basic and pallets PM56, PM60 and PM85 Precise.



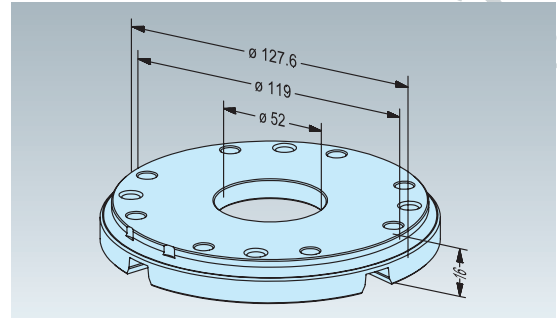


# Pallets PM Precise

## ER-034680 Die-plate pallet PM128 $\varnothing$ 52 Precise 1 piece



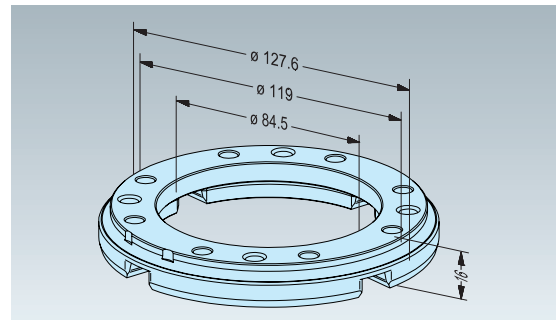
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  52.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet with M6 bolts or through the work-piece with M8 bolts.



## ER-046927 Die-plate pallet PM128 $\varnothing$ 84.5 Precise 1 piece



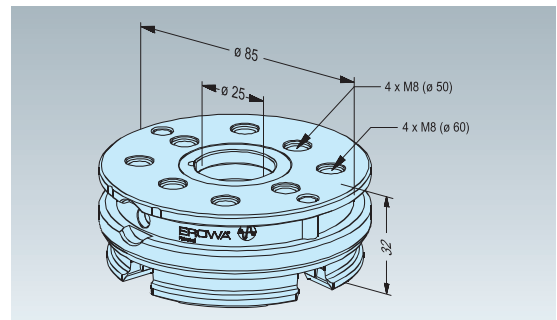
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  84.5.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet with M6 bolts or through the work-piece with M8 bolts.



## ER-040701 Pallet PM85 Precise 1 piece



- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  25.
- Application** For use on Chuck PM85 Precise. With chucking spigot ER-039839 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet with M6 bolts or through the work-piece with M8 bolts.



**ER-057201 Pallet PM60 Precise**  
1 unit

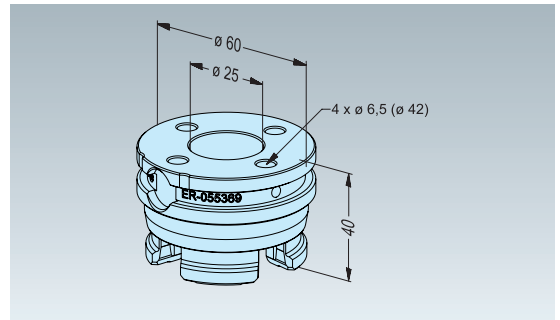
**ER-055369 Pallet PM60 Precise**  
8 pieces



Version Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  25.

Application For use on Chuck PM60 Precise. With chucking spigot ER-041429 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.

Fitting blanks Through the pallet with M6 bolts.



**ER-045760 Pallet PM56 Precise**  
1 piece

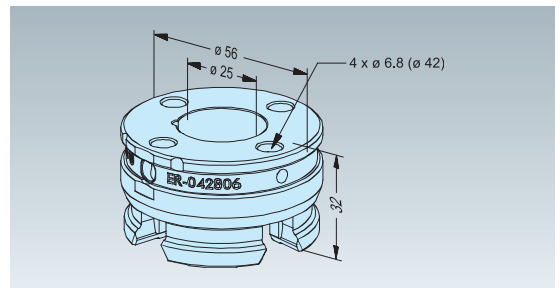
**ER-042806 Pallet PM56 Precise**  
8 pieces



Version Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  25.

Application For use on Chuck PM56 Precise. With chucking spigot ER-041429 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.

Fitting blanks Through the pallet with M6 bolts.



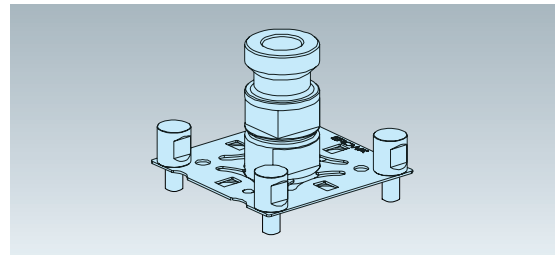
**ER-021209 Centering set pallet PM Basic**  
10 pieces



Version Corrosion-resistant. Incl. centering plates, chucking spigots and 4 support feet each.

Application For use on all EROWA ITS Chucks, for powder pressing on ITS Chucks with support. To accommodate punches and workpieces for chip-cutting machines, EDM/WEDM centers and powder presses.

Fitting blanks To be fitted directly on prefabricated punch blanks.

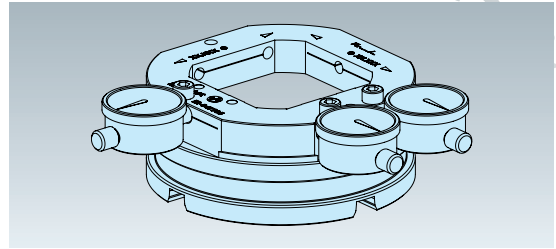


# Alignment components PM Precise

## ER-047905 Positioning die plate PM128 Precise/ Multi



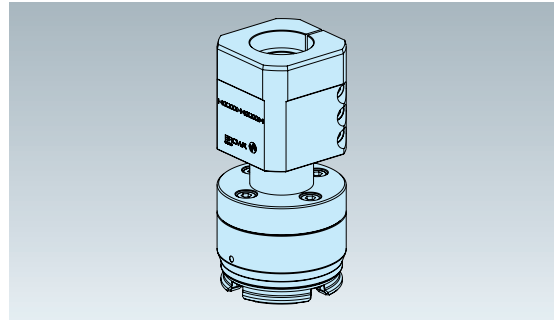
- Version Hardened steel, corrosion-resistant. Incl. 3 dial gauges and measuring stop.
- Application On powder presses. For precise alignment of the lower and upper punch chucks in relation to the die-plate chuck PM128 Precise or Multi. Used in combination with positioning pin PM56 / PM60 or PM85.



## ER-062132 Positioning pin P PM Precise L140 mm with accessories



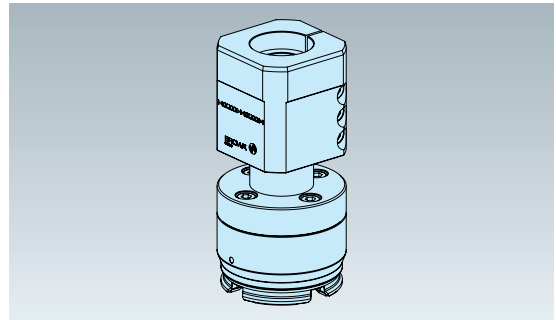
- Version Hardened steel, corrosion-resistant. Length 140 mm. Incl. chucking spigot, alignment flange, and pin spanner.
- Application On powder presses. For precise alignment of lower and upper punch chucks ITS 100 P in relation to die-plate chuck PM128. Used in combination with positioning die-plate PM128 Precise / Multi.



## ER-062133 Positioning pin PM56 / PM60 Precise L127 - 167 mm with accessories



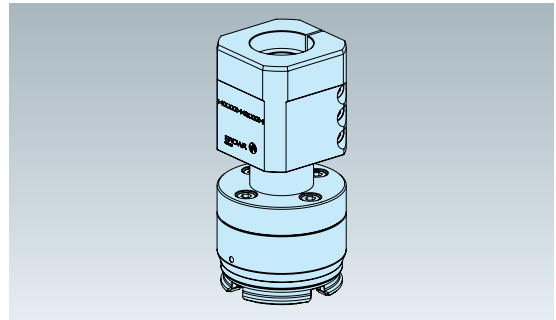
- Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded insert and pin spanner.
- Please note The pin is made to custom length (range 127-167 mm). Specification required!
- Application On powder presses. For precise alignment of PM56 / PM60 lower and upper punch chucks in relation to die-plate chuck PM128. Used in combination with positioning die-plate PM128 Precise / Multi.



## ER-062135 Positioning pin PM85 Precise L145 - 184 mm with accessories



- Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded washer, threaded insert, and pin spanner.
- Please note The pin is made to custom length (range 145-184 mm). Specification required!
- Application On powder presses. For precise alignment of PM85 lower and upper punch chucks in relation to die-plate chuck PM128. Used in combination with positioning die-plate PM128 Precise / Multi.







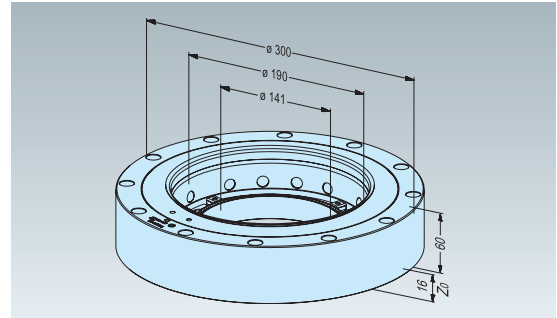
# PM Multi chucks for powder presses

Technical data	Chucks PM Multi
Repeatability	0,002 mm
Indexation	4 x 90°
Opening with dry compressed air	min. 6 bar
Clamping	Spring pressure

## ER-057194 Die-plate chuck PM190 Multi



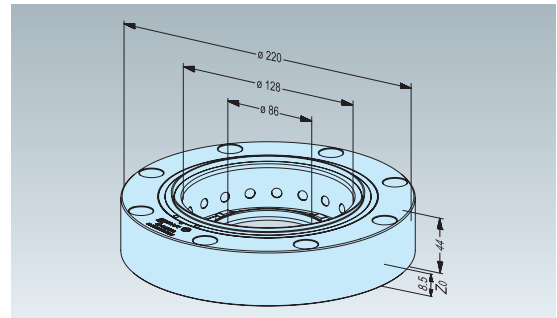
Version Steel, hardened. Through borehole  $\varnothing$  141.  
 Connections At the rear, with one line.  
 Operation With control unit.  
 Application On milling machines and powder presses.  
 To accommodate die-plate pallets PM190 Multi.



## ER-048690 Die-plate chuck PM128 Multi



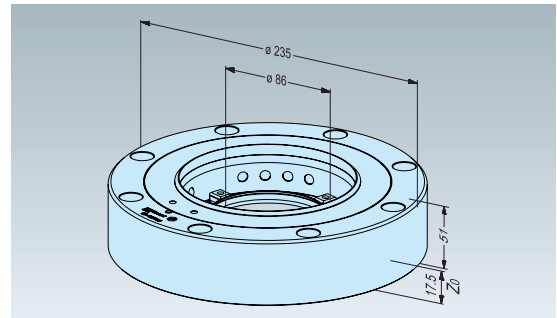
Version Steel, hardened. Through borehole  $\varnothing$  86.  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines and powder presses.  
 To accommodate die-plate pallets PM128 Multi.



## ER-057195 Chuck PM134 Multi



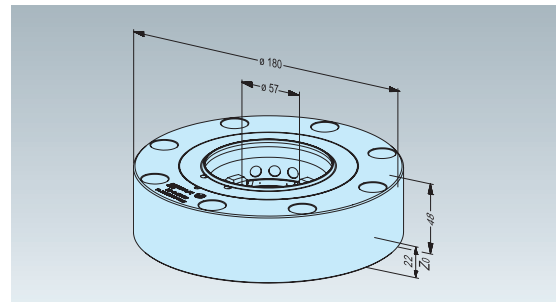
Version Steel, hardened. Through borehole  $\varnothing$  86.  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines, lathes, EDM centers and powder presses. To accommodate pallets PM134 and PM128 Multi.



## ER-048580 Chuck PM85 Multi

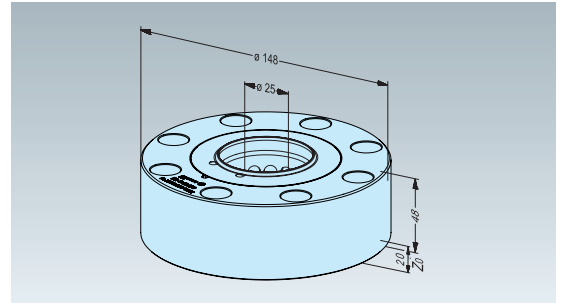


Version Steel, hardened. Through borehole  $\varnothing$  57.  
 Connections At the rear, with two lines.  
 Operation With control unit.  
 Application On milling machines, lathes, EDM centers and powder presses.  
 To accommodate pallets PM85 Multi.



**ER-048480 Chuck PM56 Multi**

- Version Steel, hardened. Through borehole  $\varnothing$  25.
- Connections At the rear, with two lines.
- Operation With control unit.
- Application On milling machines, lathes, EDM centers and powder presses.  
To accommodate pallets PM56 Multi.



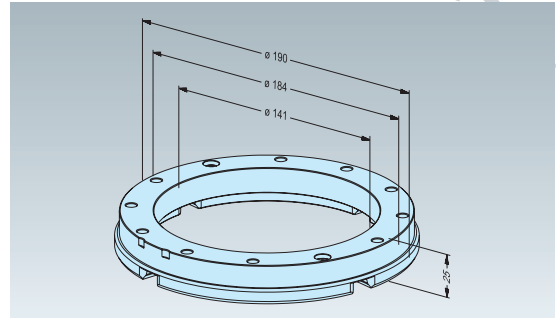


# Pallets PM Multi

## ER-057192 Die-plate pallet PM190 ø 141 Multi 1 piece



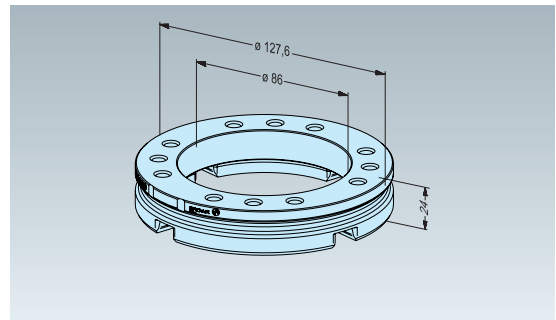
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 141.
- Application** For use on die-plate chuck PM190 Multi. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet with 12xM6 bolts.



## ER-049028 Die-plate pallet PM128 ø 86 Multi 1 piece



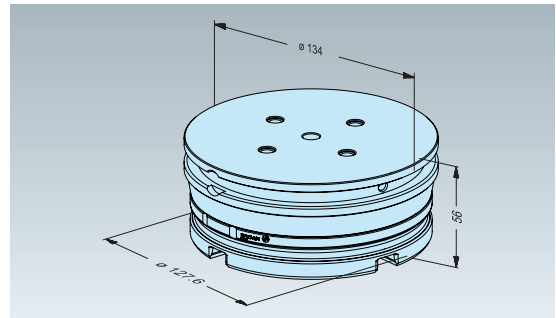
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 86.
- Application** For use on die-plate chucks PM128 Multi and Precise, as well as on chucks PM134 Multi. To accommodate die plates, punches, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet with M6 bolts or through the work-piece with M8 bolts.



## ER-057193 Pallet PM134 Multi 1 piece



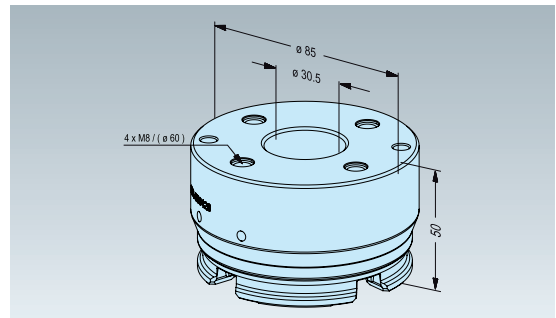
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet.
- Application** For use on chuck PM134 Multi. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.



## ER-058428 Pallet PM85 Multi H50 / ø 30.5 4 x M8 / 1 piece

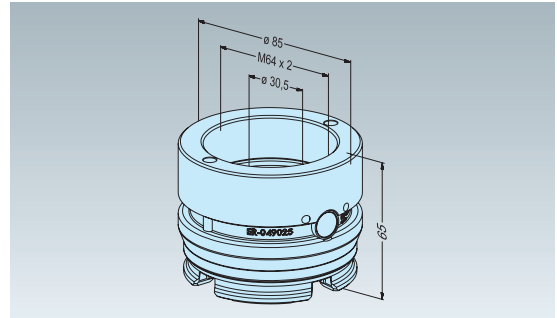


- Version** Hardened steel, corrosion-resistant. Centering integrated in pallet. Inside ø 30.5.
- Application** Used on PM85 Multi and Precise chucks. With ER-057236 chucking spigot on PM 100 P chuck. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Mounting** Through workpiece with 4 x M8 socket head screws.

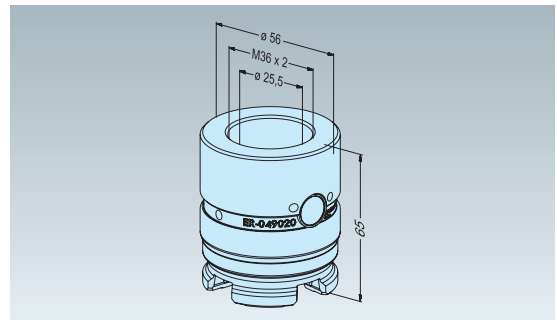


**ER-049025 Pallet PM85 Multi**  
**M64 x 2 / 1 piece**


- Version Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside  $\varnothing$  30.5.
- Application For use on chucks PM85 Multi and Precise. With chucking spigot ER-057236 on PM Chuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/ WEDM centers and powder presses.
- Fitting blanks Through M64x2 inside thread.


**ER-049020 Pallet PM56 Multi**  
**M36 x 2 / 1 piece**


- Version Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside  $\varnothing$  25.5.
- Application For use on chucks PM56 Multi and Precise. With chucking spigot ER-056745 on PM Chuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/ WEDM centers and powder presses.
- Fitting blanks Through M36x2 inside thread.



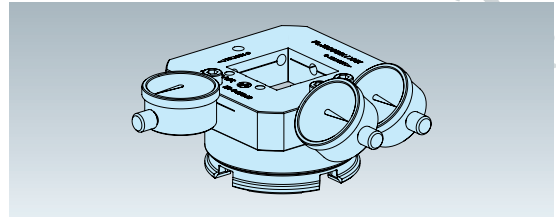
# Alignment components PM Multi

## ER-049340 Positioning die plate PM85 Multi



Version Hardened steel, corrosion-resistant. Incl. 3 dial gauges and measuring stop.

Application On multi-level powder presses. For precise alignment of PM56 Multi chucks in relation to PM85 Multi chuck. Used in combination with positioning pin PM56 Multi.

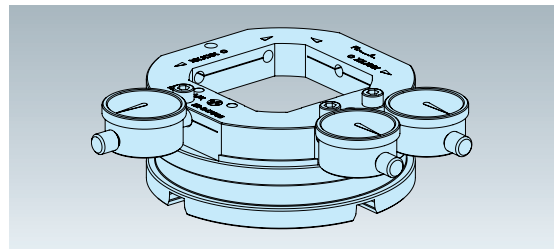


## ER-047905 Positioning die plate PM128 Precise/ Multi



Version Hardened steel, corrosion-resistant. Incl. 3 dial gauges and measuring stop.

Application On powder presses. For precise alignment of the lower and upper punch chucks in relation to the die-plate chuck PM128 Precise or Multi. Used in combination with positioning pin PM56 / PM60 or PM85.

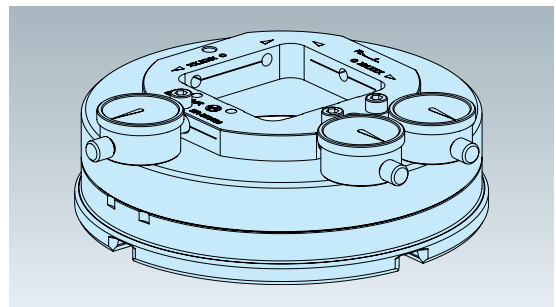


## ER-059408 Positioning die plate PM190 Multi



Version Hardened steel, corrosion-resistant. Incl. 3 dial gauges and measuring stop.

Application On powder presses. For precise alignment of the lower and upper punch chucks in relation to die-plate chuck PM190 Multi. Used in combination with positioning pin PM85 or PM134 Multi.

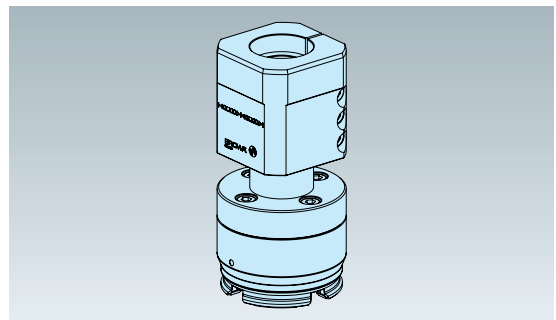


## ER-062136 Positioning pin PM56 Multi L230 mm with accessories



Version Hardened steel, corrosion-resistant. Length 230 mm. Incl. alignment flange and pin spanner.

Application On multi-level powder presses. For precise alignment of PM56 Multi chucks in relation to PM85 Multi chuck. Used in combination with positioning die-plate PM85 Multi.



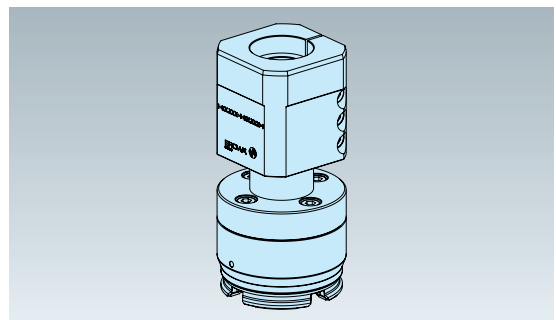
## ER-060530 Positioning pin PM85 Multi S L145 - 184 mm with accessories



Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded washer, threaded inserts, and pin spanner.

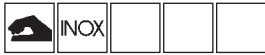
Please note The pin is made to custom length (range 145-184 mm). Specification required!

Application On powder presses. For precise alignment of the PM85 Multi lower and upper punch chucks in relation to die-plate chuck PM128 or PM190 Multi. Used in combination with positioning die-plate PM128 or PM190 Multi.

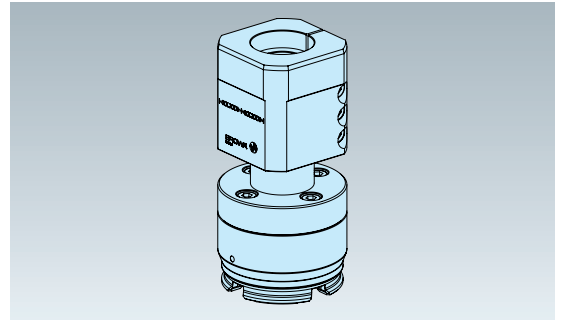




**ER-062138 Positioning pin PM85 Multi L  
L153 - 235 mm with accessories**



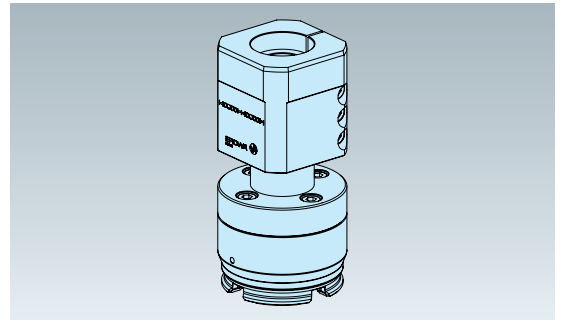
- Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded washer, threaded inserts, and pin spanner.
- Please note The pin is made to custom length (range 153-235 mm). Specification required!
- Application On powder presses. For precise alignment of the PM85 Multi lower and upper punch chucks in relation to die-plate chuck PM128 or PM190 Multi. Used in combination with positioning die-plate PM128 or PM190 Multi.



**ER-059474 Positioning pin PM134 Multi  
L151 - 191 mm with accessories**



- Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded insert and pin spanner.
- Please note The pin is made to custom length (range 151-191 mm). Specification required!
- Application On powder presses. For precise alignment of the PM134 Multi lower and upper punch chucks in relation to die-plate chuck PM190 Multi. Used in combination with positioning die-plate PM190 Multi.



# PM Hercules chucks for powder presses

Technical data	Chucks PM Hercules
Repeatability	0,002 mm
Indexation	4 x 90°
Opening with dry compressed air	min. 6 bar
Clamping	Slider principle
	Spring pressure

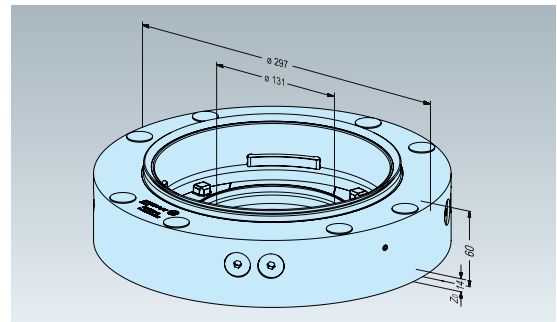
## Note:

Can be used as punch and die-plate chuck.  
Other system sizes on request.

### ER-062215 Chuck PM195 Hercules



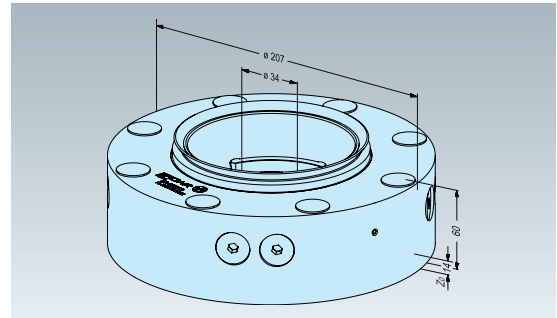
Version Steel, hardened. Through borehole  $\varnothing$  131.  
Connections At the rear, with two lines.  
Operation With control unit.  
Application On milling machines and powder presses.  
To accommodate pallets PM195 Hercules.



### ER-059596 Chuck PM105 Hercules



Version Steel, hardened. Through borehole  $\varnothing$  34.  
Connections At the rear, with two lines.  
Operation With control unit.  
Application On milling machines and powder presses.  
To accommodate pallets PM105 Hercules.

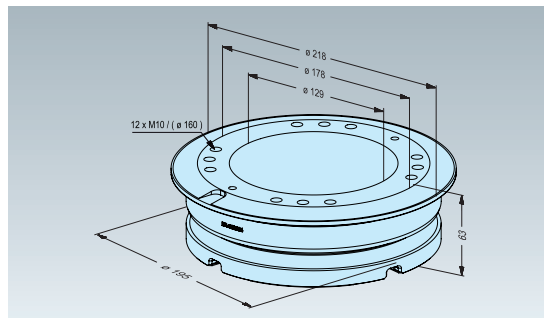


# Pallets PM Hercules

## ER-062824 Pallet PM195 $\varnothing$ 129 Hercules



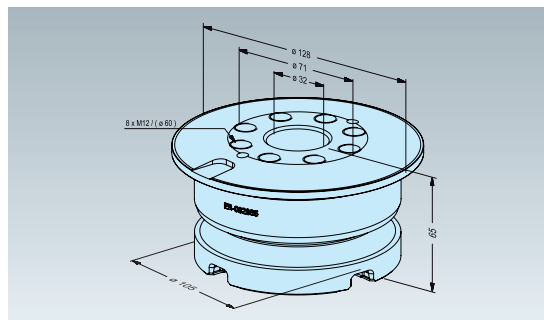
- Version** Hardened steel, corrosion-resistant. Centering integrated in pallet. Inside  $\varnothing$  129.
- Application** Used on PM195 Hercules chuck. To accommodate punches, dies, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Mounting** Through workpiece with 12 x M10 screws on pitch circle  $\varnothing$  160.



## ER-062865 Pallet PM105 $\varnothing$ 32 Hercules



- Version** Hardened steel, corrosion-resistant. Centering integrated in pallet. Inside  $\varnothing$  32.
- Application** Used on PM105 Hercules chuck. To accommodate punches, dies, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Mounting** Through workpiece with 8 x M12 screws on pitch circle  $\varnothing$  60.





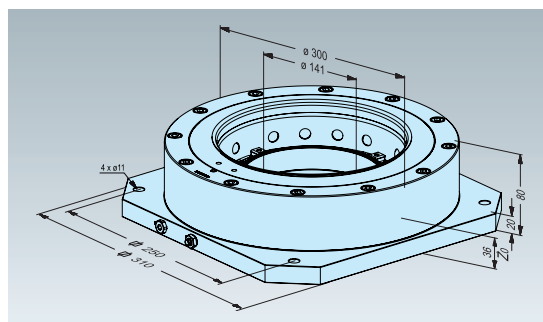
# Chucks for tool manufacturing

Technical data	Chucks for tool manufacturing
Repeatability	0,002 mm
Indexation	4 x 90°
Opening with dry compressed air	min. 6 bar
Clamping	Spring pressure

## ER-059628 Die-plate chuck PM190 Multi with base plate 310 x 310 x 20 INOX



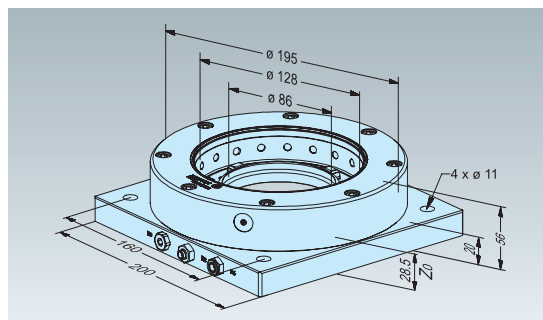
Version	Hardened steel, corrosion-resistant. Through borehole $\varnothing$ 141.
Clamping force	25000 N.
Operation	Laterally with compressed air gun or with control unit.
Application	On milling machines, lathes, grinding machines, EDM and WEDM centers. To accommodate die-plate pallets PM190 Multi.



## ER-047612 Die-plate chuck PM128 I Precise with base plate



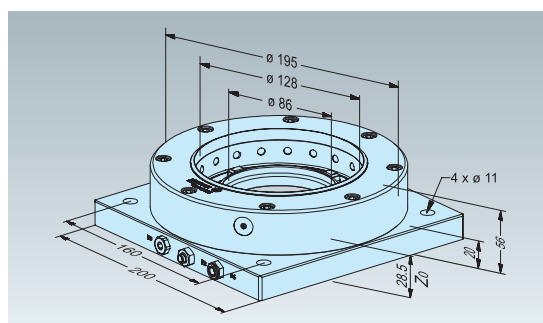
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing$ 86.
Clamping power	20000 N (reclamped at 6 bar)
Operation	Laterally with compressed-air gun or with control unit.
Application	On milling machines, lathes, grinding machines, EDM and WEDM centers. To accommodate die-plate pallets PM 128 Precise and Multi.



## ER-047566 Die-plate chuck PM128 II Precise with base plate



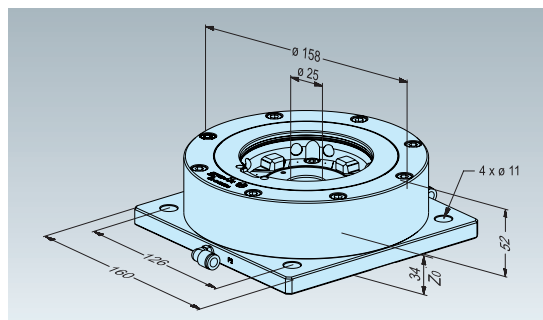
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing$ 86. External seal.
Clamping power	20000 N (reclamped at 6 bar)
Operation	Laterally with compressed-air gun or with control unit.
Application	On milling machines, lathes, grinding machines and EDM/WEDM centers. To accommodate die-plate pallets PM128 Precise and Multi.



## ER-040696 Chuck PM85 Precise with base plate



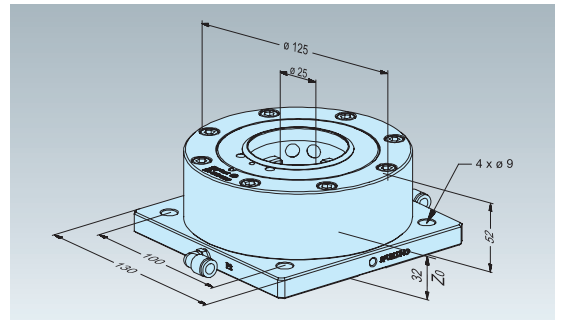
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing$ 25.
Clamping power	9000 N.
Connections	Laterally, with two lines.
Operation	With control unit.
Application	On milling and grinding machines and on EDM/WEDM centers. To accommodate pallets PM85 Precise and Multi.



**ER-047500 Chuck PM60 Precise with base plate**



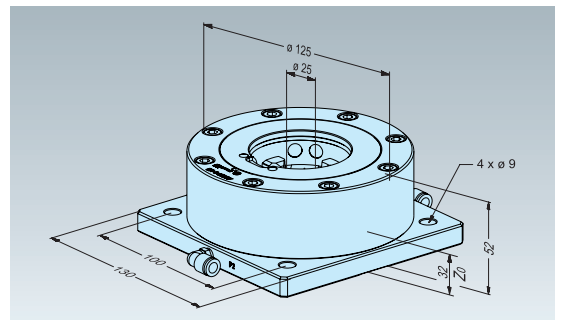
Version Steel, hardened, corrosion-resistant.  
Through borehole  $\varnothing 25$ .  
Clamping power 6500 N.  
Connections Laterally, with two lines.  
Operation With control unit.  
Application On milling and grinding machines and on EDM/WEDM centers.  
To accommodate pallets PM60 Precise.



**ER-041367 Chuck PM56 Precise with base plate**



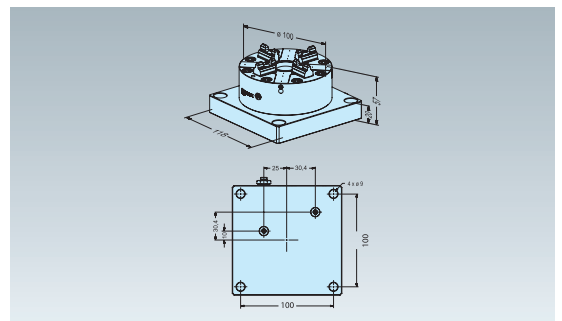
Version Steel, hardened, corrosion-resistant.  
Through borehole  $\varnothing 25$ .  
Clamping power 6500 N.  
Connections Laterally, with two lines.  
Operation With control unit.  
Application On milling and grinding machines and on EDM/WEDM centers.  
To accommodate pallets PM56 Precise and Multi.



**ER-045076 ITS chuck 100 P 118 x 118**



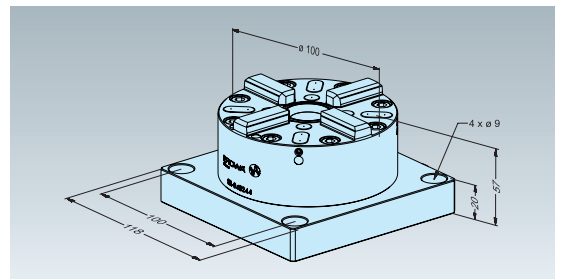
Version Steel, hardened.  
Clamping power 6000 N.  
Connections Laterally or at the rear, with two lines.  
Operation With control unit or compressed-air gun.  
Application For receiving pallets  $\varnothing 115 / \varnothing 148$ , electrode holders, pallets PM56, PM60 and PM85 Precise.



**ER-048244 PM chuck 100 P 118 x 118**



Version Steel, hardened.  
Clamping power 6000 N.  
Connections Laterally or at the rear, with two lines.  
Operation With control unit or compressed-air gun.  
Application To accommodate pallets PM56, PM60 and PM85 Precise and Multi.



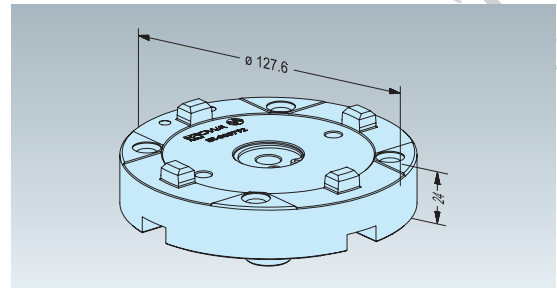
# Adapter pallets for tool manufacturing

## ER-035792 Adapter pallet H24 PM Precise for die-plate pallet PM128



Version Hardened steel, corrosion-resistant.  
Height of pallet: 24 mm.

Application Serves as an adapter between the die-plate pallets PM128 Precise and Multi and an ITS Chuck 100 P or a PowerChuck P.

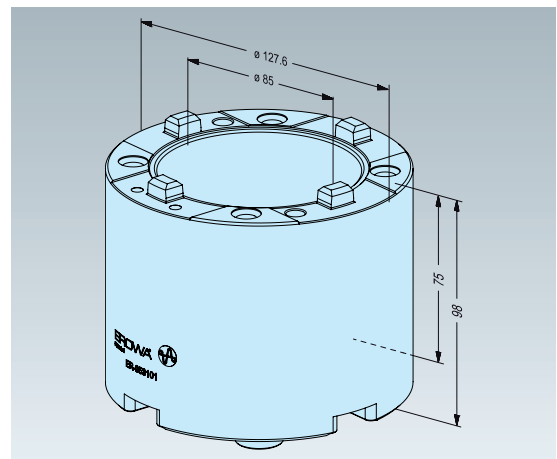


## ER-053101 Adapter pallet H98 PM Precise for die-plate pallet PM128



Version Hardened steel, corrosion-resistant.  
Height of pallet: 98 mm.

Application Serves as an adapter between the die-plate pallets PM128 Precise and Multi and an ITS Chuck 100P or PowerChuck P.

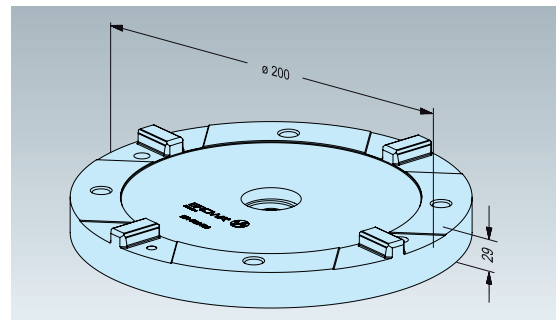


## ER-062409 Adapter pallet H29 PM190 Multi for pallet PM190 Multi + PM195 Hercules



Version Hardened steel, corrosion-resistant.  
Height of pallet: 29 mm.

Application Serves as an adapter between the die-plate pallet PM190 Multi as well as the pallet PM195 Hercules and an ITS Chuck 100P or PowerChuck P.

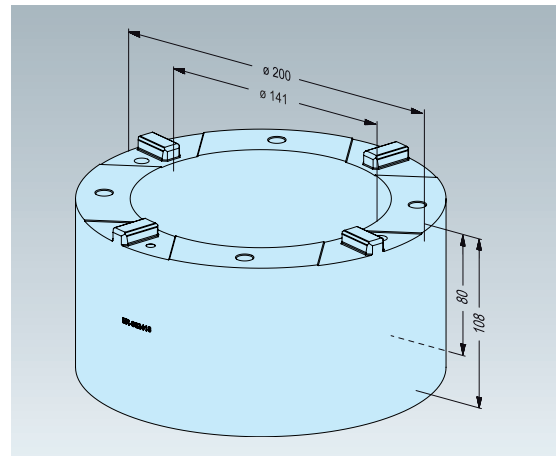


## ER-062418 Adapter pallet H108 PM190 Multi for pallet PM190 Multi + PM195 Hercules



Version Hardened steel, corrosion-resistant.  
Height of pallet: 108 mm.

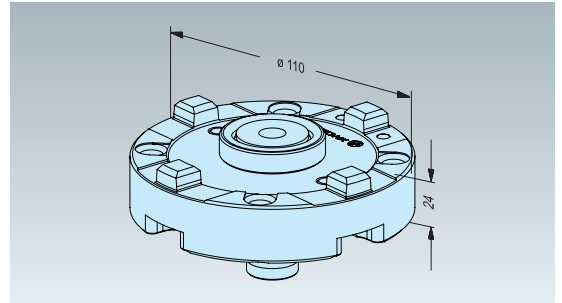
Application Serves as an adapter between the die-plate pallet PM190 Multi as well as the pallet PM195 Hercules and an ITS Chuck 100P or PowerChuck P.



**ER-060512 Adapter pallet P PM Hercules  
for pallet PM105 Hercules**

Version Hardened steel, corrosion-resistant.  
Height of pallet: 24 mm.

Application Serves as an adapter between the pallet PM105 Hercules  
and an ITS Chuck 100 P or a PowerChuck P.



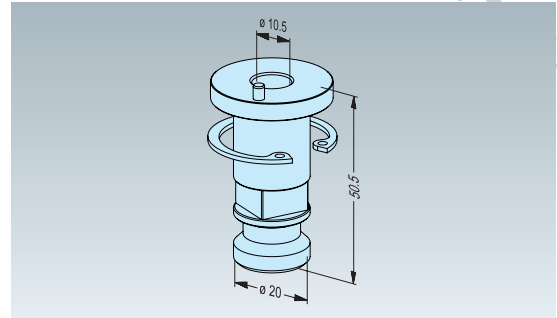
# Chucking spigots for tool manufacturing

**ER-046075** Chucking spigot PM85 automatic  
1 piece

**ER-039839** Chucking spigot PM85 automatic  
8 pieces



Version Steel, hardened. Automatic, with borehole  $\varnothing$  10.5.  
Application In pallets PM85 Precise. To be fitted with securing ring.

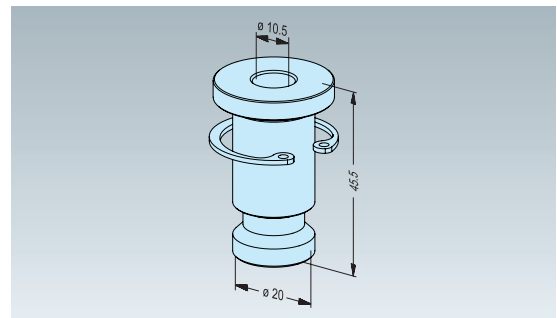


**ER-045759** Chucking spigot PM56 / PM60 manual  
1 piece

**ER-041429** Chucking spigot PM56 / PM60 manual  
8 pieces



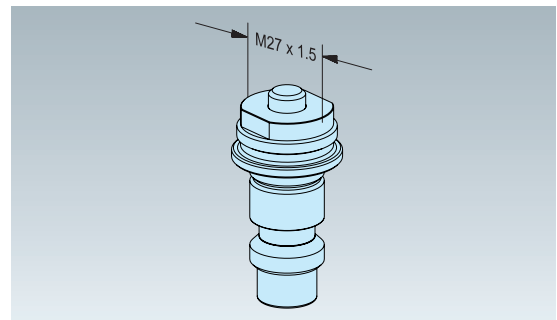
Version Steel, hardened. Manual, with borehole  $\varnothing$  10.5.  
Application In pallets PM56 and PM60 Precise. To be fitted with securing ring.



**ER-056745** Chucking spigot PM56 M27 x 1.5 Multi  
manual / 1 piece



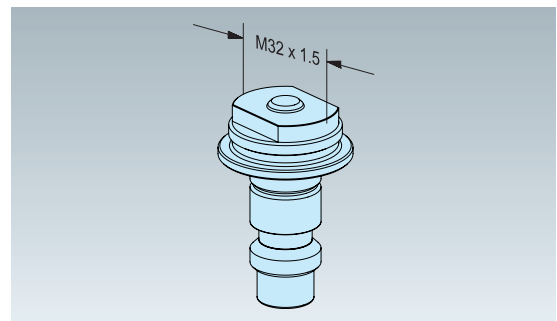
Version Steel hardened, bolt 12.9. Manual, without borehole.  
Application For pallets PM56 Multi. To be fitted on the basis of thread M27x1.5.



**ER-057236** Chucking spigot PM85 M32 x 1.5 Multi  
manual / 1 piece



Version Steel hardened, bolt 12.9. Manual, without borehole.  
Application For pallets PM85 Multi. To be fitted on the basis of thread M32x1.5.







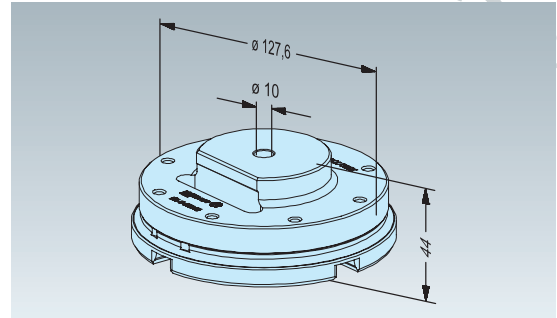
# Alignment aid for tool manufacturing

## ER-049248 Alignment pallet PM128 Precise for die-plate chuck PM128 Precise



**Version** Steel hardened, corrosion-resistant. Ground alignment surface and centering borehole  $\varnothing 10$ .

**Application** In tool- and mold-making. For alignment of the angle position and determination of the center of the die-plate chuck PM128 Precise.

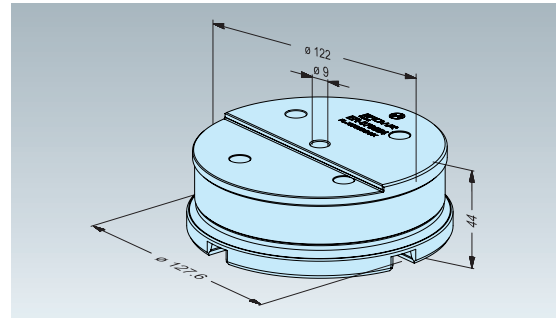


## ER-070554 Alignment pallet PM134 Multi



**Version** Hardened steel, corrosion-resistant. With ground alignment surface and  $\varnothing 122$ . Incl. M88x1.5 threaded insert.

**Application** In tool- and mold-making. For alignment of the angle position and determination of the center of chucks PM134 Multi.

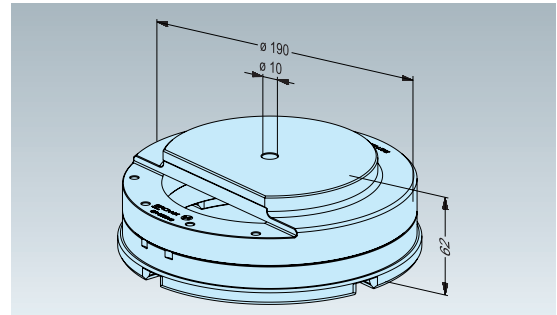


## ER-059540 Alignment pallet PM190 Multi



**Version** Hardened steel, corrosion-resistant. With ground alignment surface and  $\varnothing 10$  center hole.

**Application** In tool- and mold-making. For alignment of the angle position and determination of the center of die-plate chucks PM190 Multi.

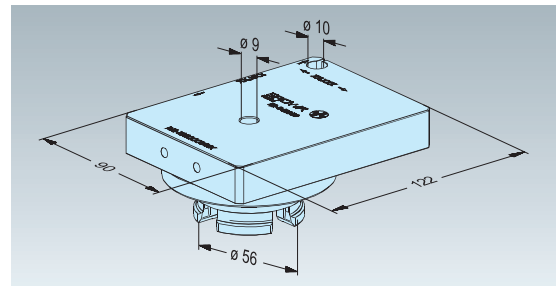


## ER-042350 Alignment pallet PM56 / PM60 Precise



**Version** Steel hardened, corrosion-resistant. Ground alignment surface, center borehole  $\varnothing 9$  and position borehole  $\varnothing 10$ .

**Application** In tool- and mold-making. To align the angular position and to determine the center of PM56 and PM60 Precise chucks.

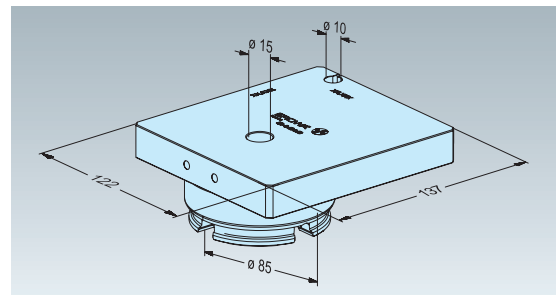


## ER-042440 Alignment pallet PM85 Precise



**Version** Steel hardened, corrosion-resistant. Ground alignment surface, center borehole  $\varnothing 15$  and position borehole  $\varnothing 10$ .

**Application** In tool- and mold-making. Alignment of the angle position and determination of the center of PM85 Precise chucks.

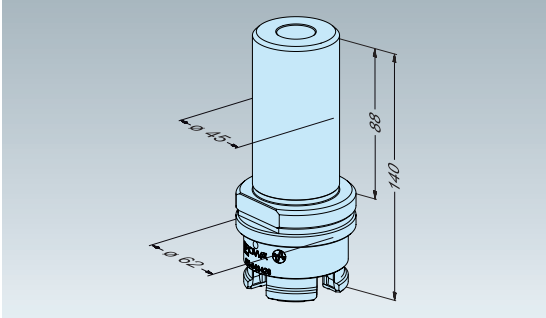


**ER-043428 Alignment pin PM56 / PM60 Precise**

INOX auto



Version Steel hardened, corrosion-resistant. Ground alignment surface and  $\varnothing 45$ .  
 Application Alignment of the radial and axial positions of PM56 and PM60 Precise chucks.

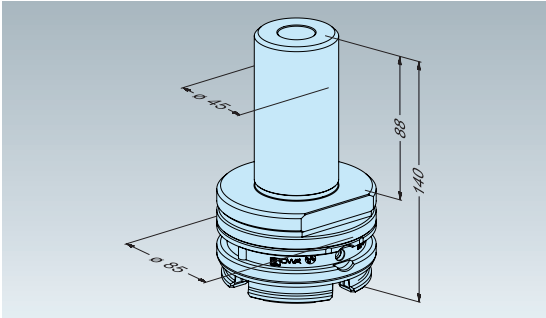


**ER-043427 Alignment pin PM85 Precise**

INOX auto



Version Steel hardened, corrosion-resistant. Ground alignment surface and  $\varnothing 45$ .  
 Application Alignment of the radial and axial positions of PM85 Precise chucks.



# Accessories

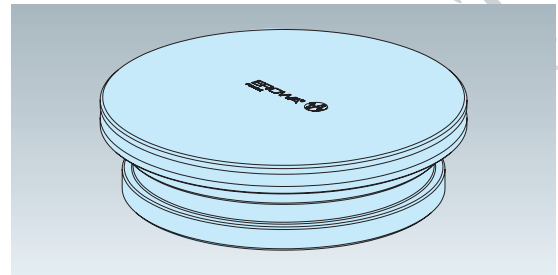
**ER-058031** Cover manual PM128 Precise  
for die-plate chuck PM128 Precise

**ER-057807** Cover manual PM85 Precise  
to chuck PM85 Precise

**ER-045381** Cover manual PM56 / PM60 Precise  
for chuck PM56 / PM60 Precise



Version Steel, corrosion-resistant. Without centering facilities.  
Application Prevents powder, dirt and chips from penetrating into the chuck mentioned in the product designation.

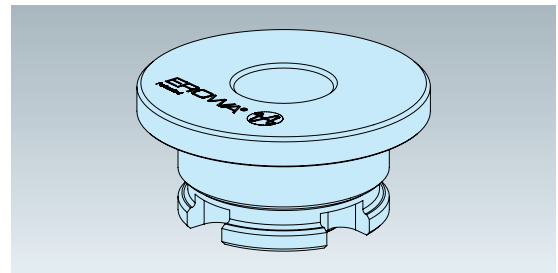


**ER-060350** Sealing ring manual PM56 Multi  
for chuck PM56 Multi

**ER-060351** Sealing ring manual PM85 Multi  
for chuck PM85 Multi



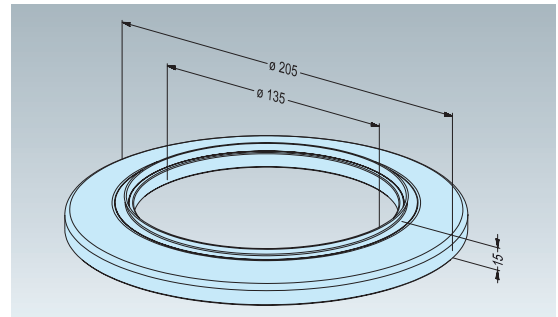
Version Steel, corrosion-resistant. Without centering facilities.  
Application Prevents powder, dirt and chips from penetrating into the chuck mentioned in the product designation.



**ER-057186** Sealing ring for die plate PM128 Multi



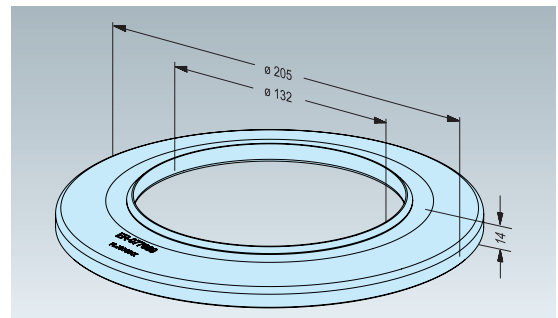
Application In tool- and mold-making, for mounting on die-plate chucks PM128 Precise.  
Prevents penetration of dirt and liquid into the die-plate chuck PM128 Precise, in combination with die-plate pallets PM128 Multi and prepared die-plates.



**ER-077689** Sealing ring for punch PM134 Multi



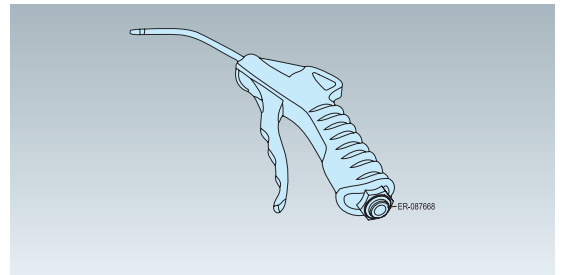
Application In tool- and mold-making, for mounting on die-plate chucks PM128 Precise.  
Prevents penetration of dirt and liquid into the die-plate chuck PM128 Precise, in combination with pallets PM134 Multi.



**ER-001846 Air jet**



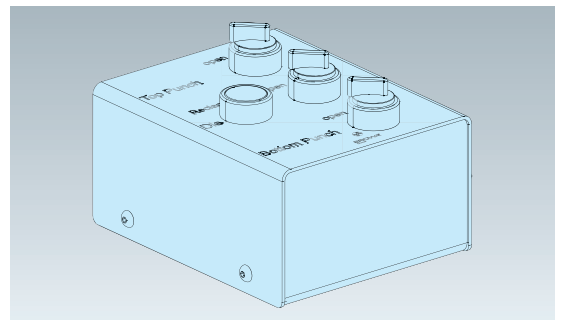
Version Plastic, smooth regulation of air flow, connection 1/4", inside thread.  
 Application Operation of manual chucks.  
 Note Not suitable for operating MTS+ and MTS81



**ER-079402 Manual control box for powder press**



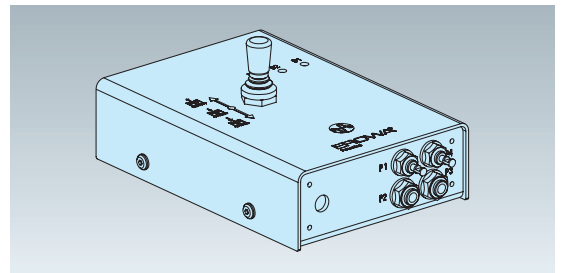
Version Three manual valves for opening/closing of PM chucks. Incl. push-button valve for reclamping of die-plate chucks.  
 Application Operation of die-plate, upper and lower punch chucks. Used for powder presses.



**ER-008988 Manual control unit**



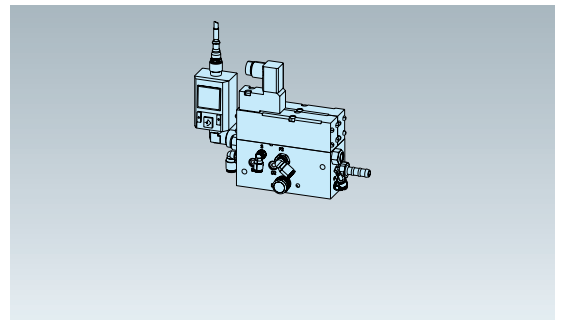
Version Manual valve to control all the functions of ITS, ITS Compact CombiChuck, PowerChuck P and UPC: opening/reclamping/cleaning.  
 Application Operation of chucks on machines.



**ER-070445 Control unit with monitoring**



Version Electropneumatic valve. Outputs for chucks: opening/cleaning/reclamping. 24 V, incl. mounting accessories and 3 m connection hose.  
 Application Operation and monitoring of machine-integrated chucks, for instance through the CNC M-function.





# The next step

Important things need to be planned. And your next step is certainly among the important things. It is your start into a new, efficient era. We are pleased to be with you on the way. As consultants, in practice. For you to know at all times what you're engaging in. The next EROWA branch office is not far – **take the step.**



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