



PM Tooling

Efficient powder compacting



Flexible
conversion

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 μ -levels of precision within very short periods of time.

01 | Top punch

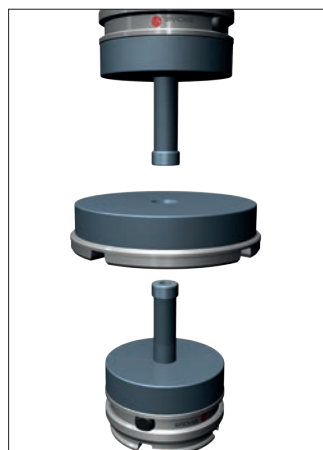
on EROWA PM Tooling pallet:
repeatability < 0.002 mm.

02 | Die

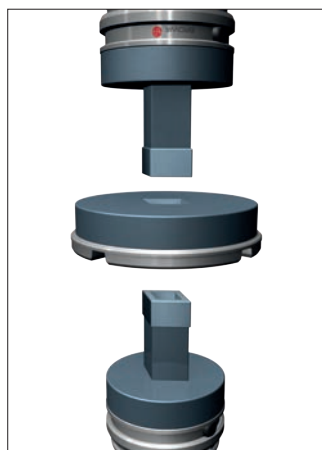
on EROWA PM Tooling pallet:
repeatability < 0.002 mm

03 | Bottom punch

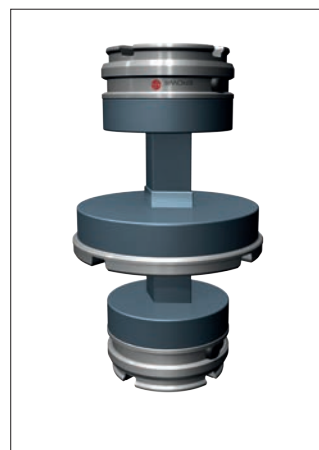
on EROWA PM Tooling pallet:
repeatability < 0.002 mm



Release and remove die, bottom and top punches pneumatically.



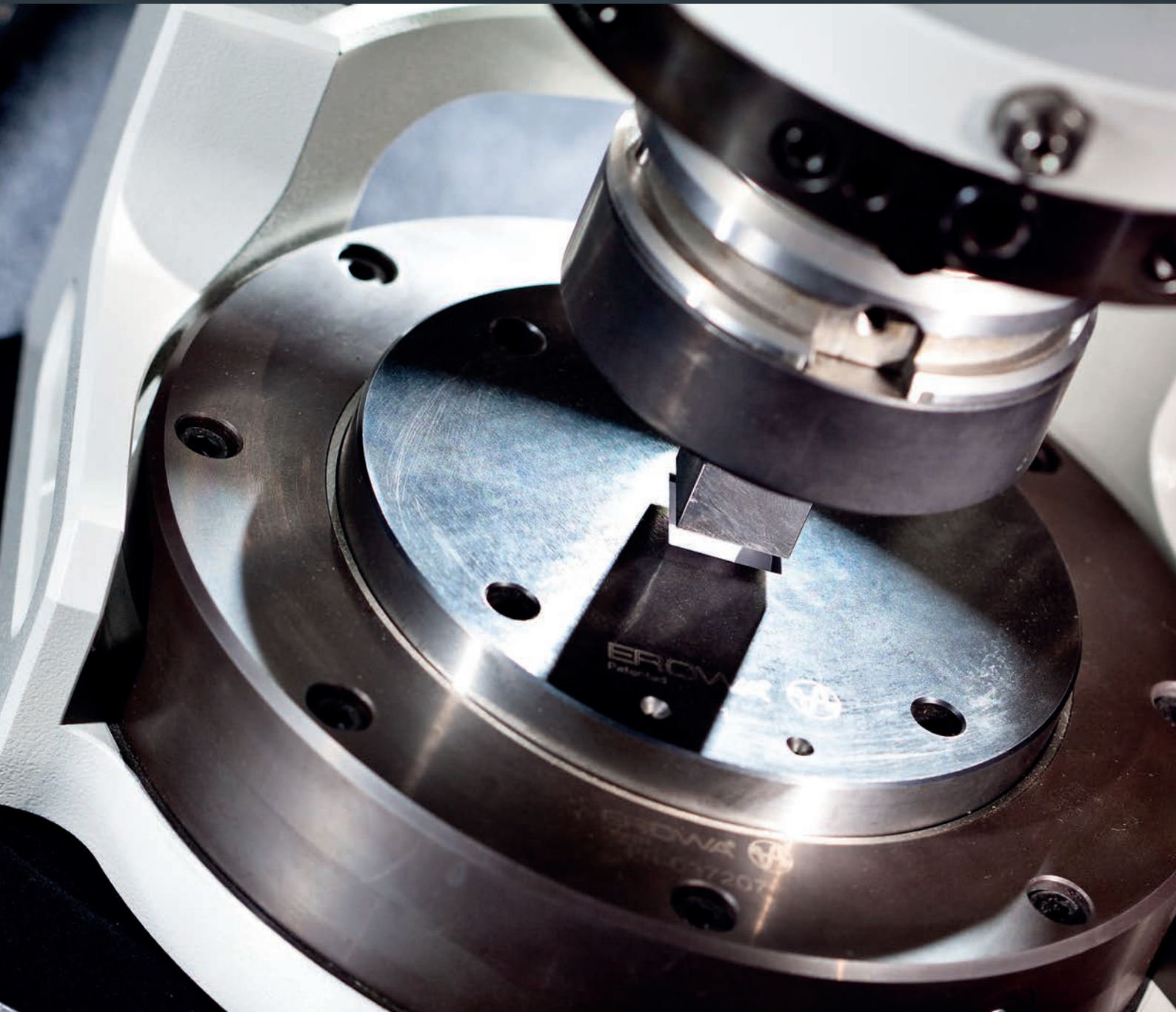
Insert and clamp new dies and punches.

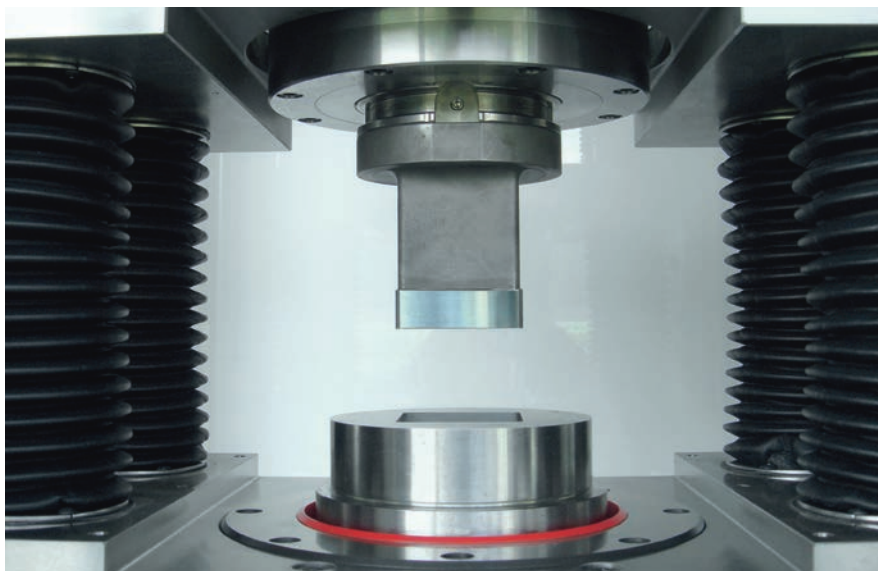


Produce new compacted powder parts.

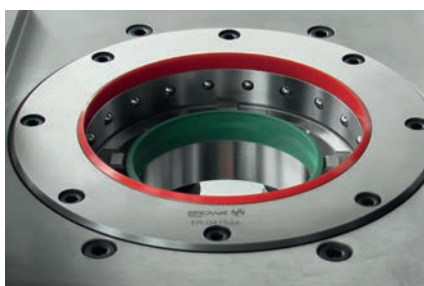
Ultra-high precision

Pressing tools are positioned with less than 0.002 mm tolerance.





Precision is required to produce compacted powder parts high 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

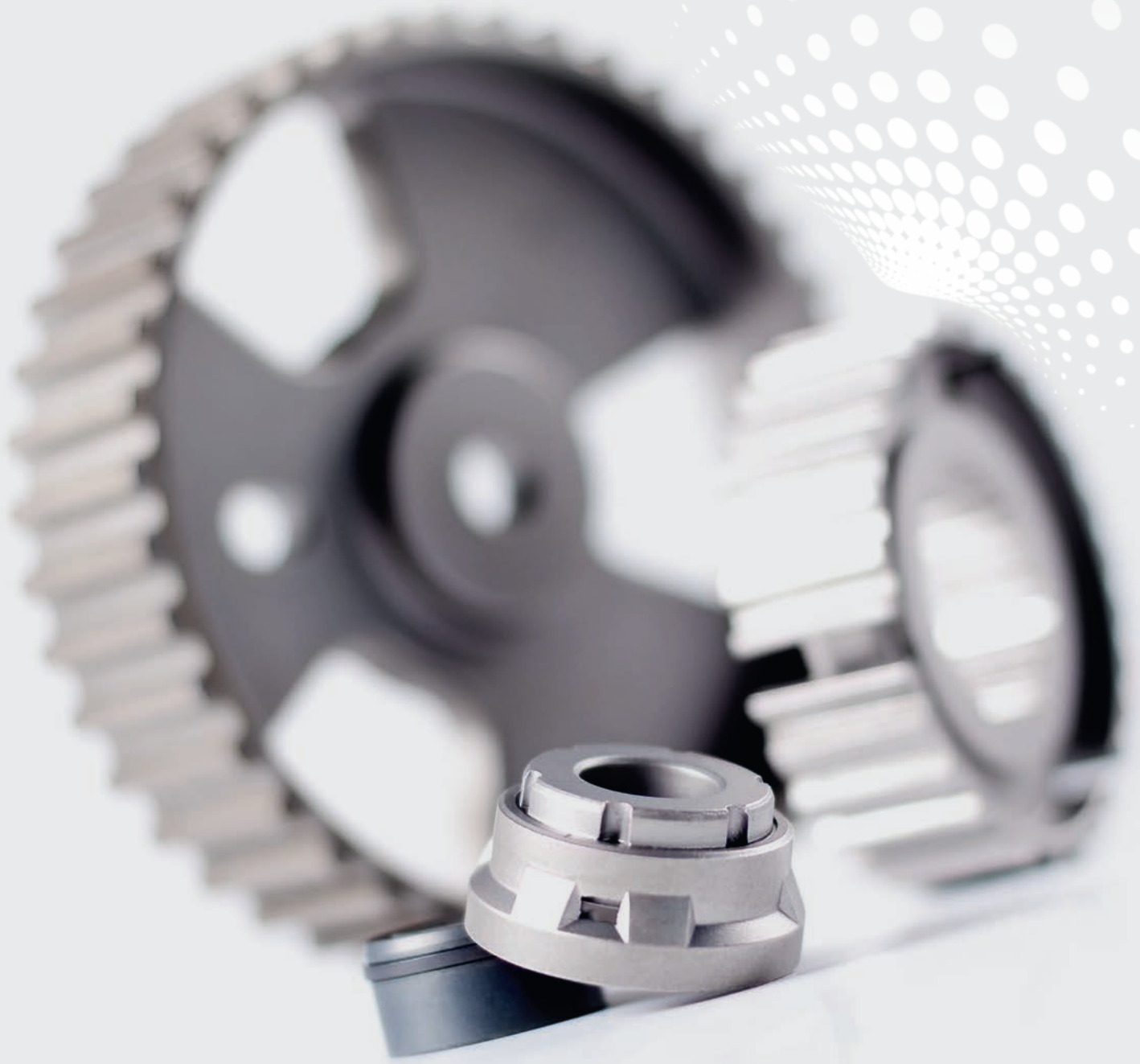
Repeatability < 0.002 mm

Pallets are indexable $4 \times 90^\circ$

Designed for use under high pressing forces

Power and size

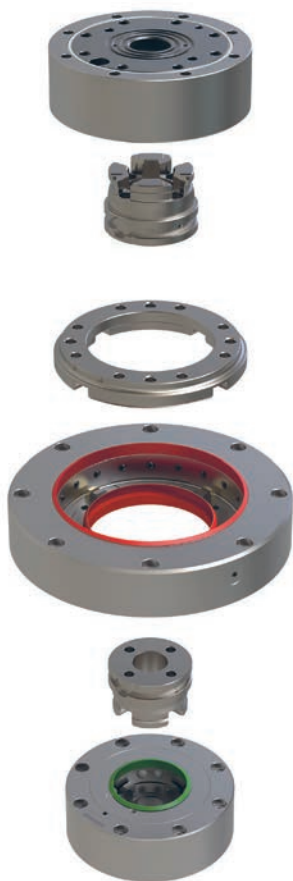
The optimal tooling system for any application.



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



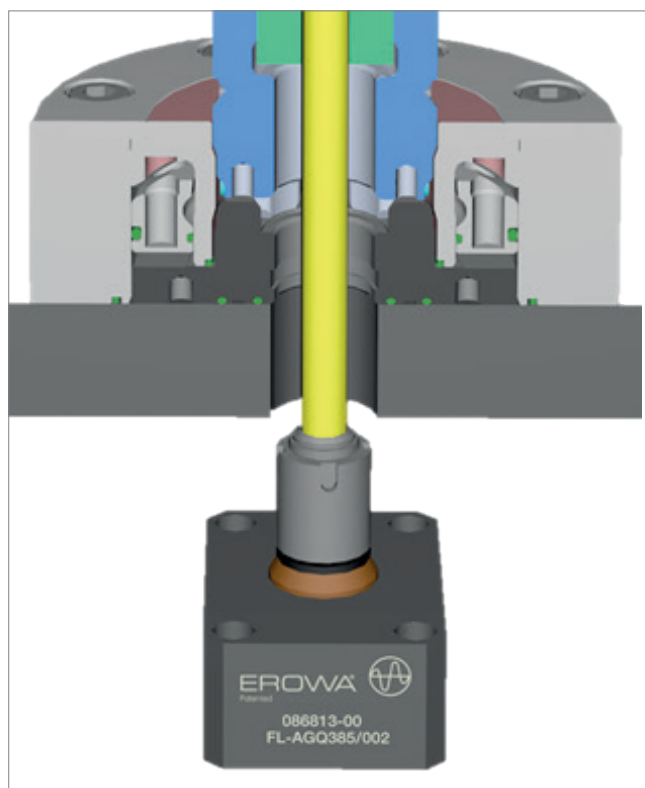
To the last detail

Well thought-out core pin clamping solutions.



Positioning and clamping of core pins in powder presses is significantly simplified by using the EROWA CPC core pin clamping system.

Presetting outside the powder press, transferring into the working position and finally sealing the core pin completely is effected with the All - in - one EROWA CPC, the core pin chuck.



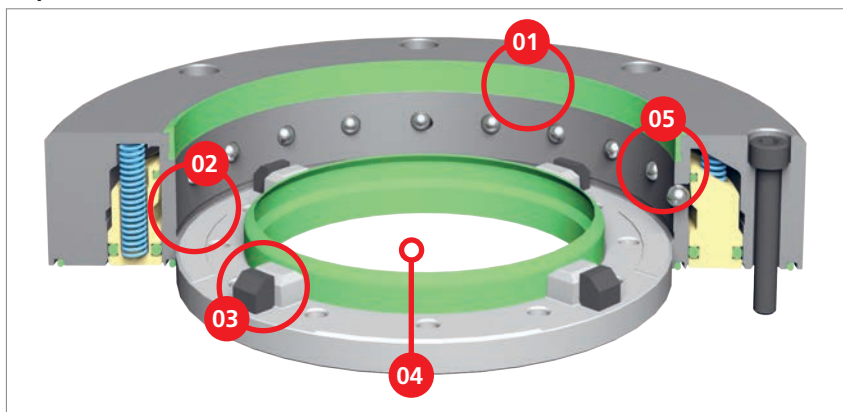
THE FACTS

- EROWA PM Tooling compatible
- Minimal space requirement
- Fixed or floating core pin
- We are pleased to advise you without obligation

Innovative toolholding technology



Die-plate chuck



01 | Fully sealed system; resistant to powder, contamination and liquids.

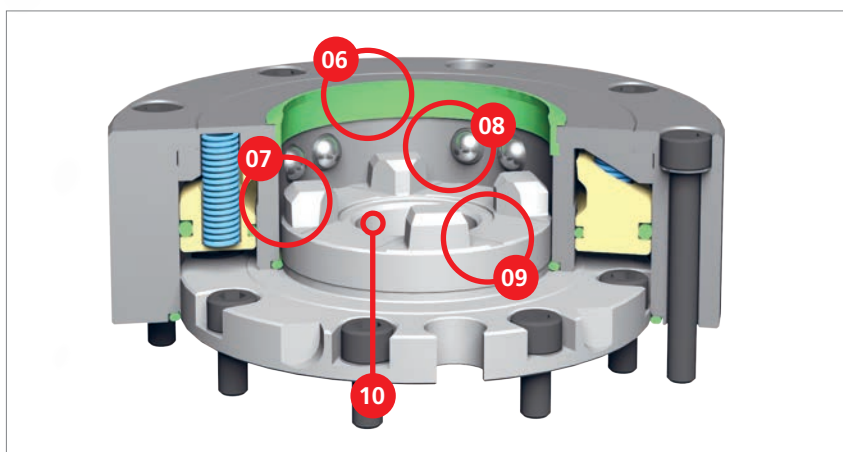
02 | Large contact surface for great force absorption.

03 | Precise «P» centering.

04 | Wide opening for bottom punch.

05 | Patented outside clamping.

Punch chuck



06 | Fully sealed system.

07 | Precise «P» centering.

08 | Patented outside clamping.

09 | Large contact surface for great force absorption.

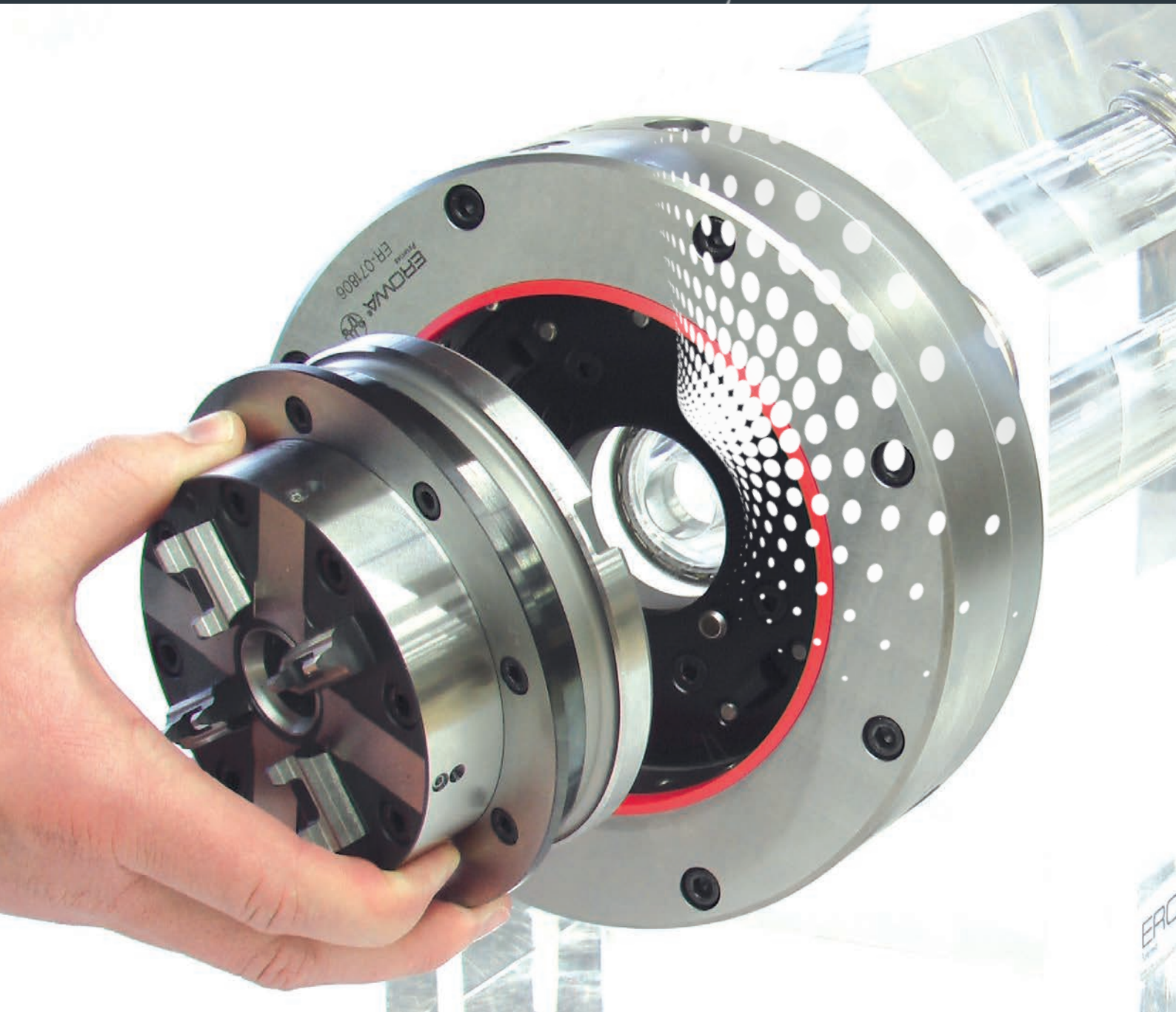
10 | 25 mm clearance for center pin or second punch.

TECHNICAL DETAILS

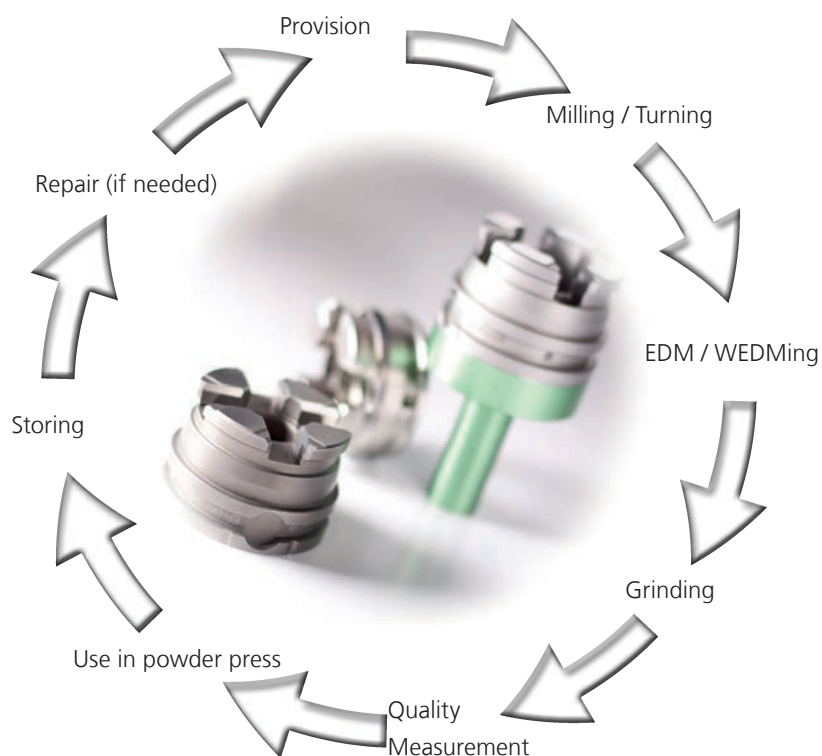
PM Tooling	Precise	Multi	Hercules
Repeatability	< 0.002 mm	< 0.002 mm	< 0.002 mm
Outside diameter die-plate pallet	128 mm	128/190 mm	105/195 mm
Center diameter max. die-plate chuck	86 mm	86/141 mm	34/131 mm
Outside diameter punch pallet	56/60/85 mm	56/85/134 mm	105/195 mm
Center diameter max. punch chuck	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

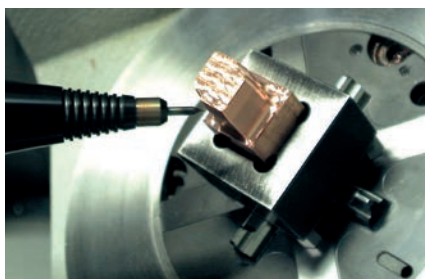
From the tool shop to the powder press.



The pressing tool cycle:

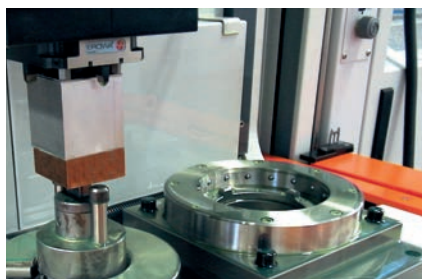


With the EROWA PM Tooling system, punches and dies are mounted on pallets and manufactured precisely to the system datum point. The compatibility with other EROWA tooling systems allows for the complete automation of your production machine. The tools pass through the entire production chain on pallets.



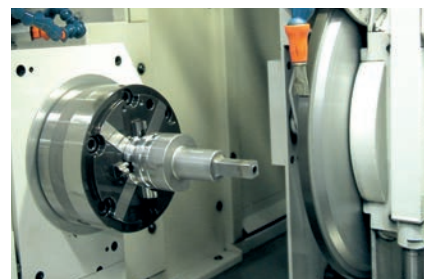
Milling

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



EDM

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



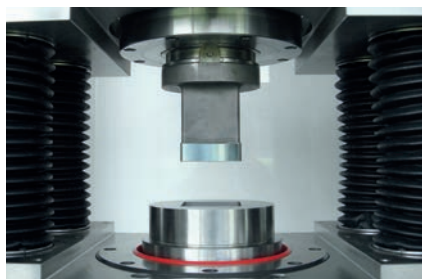
Grinding

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.

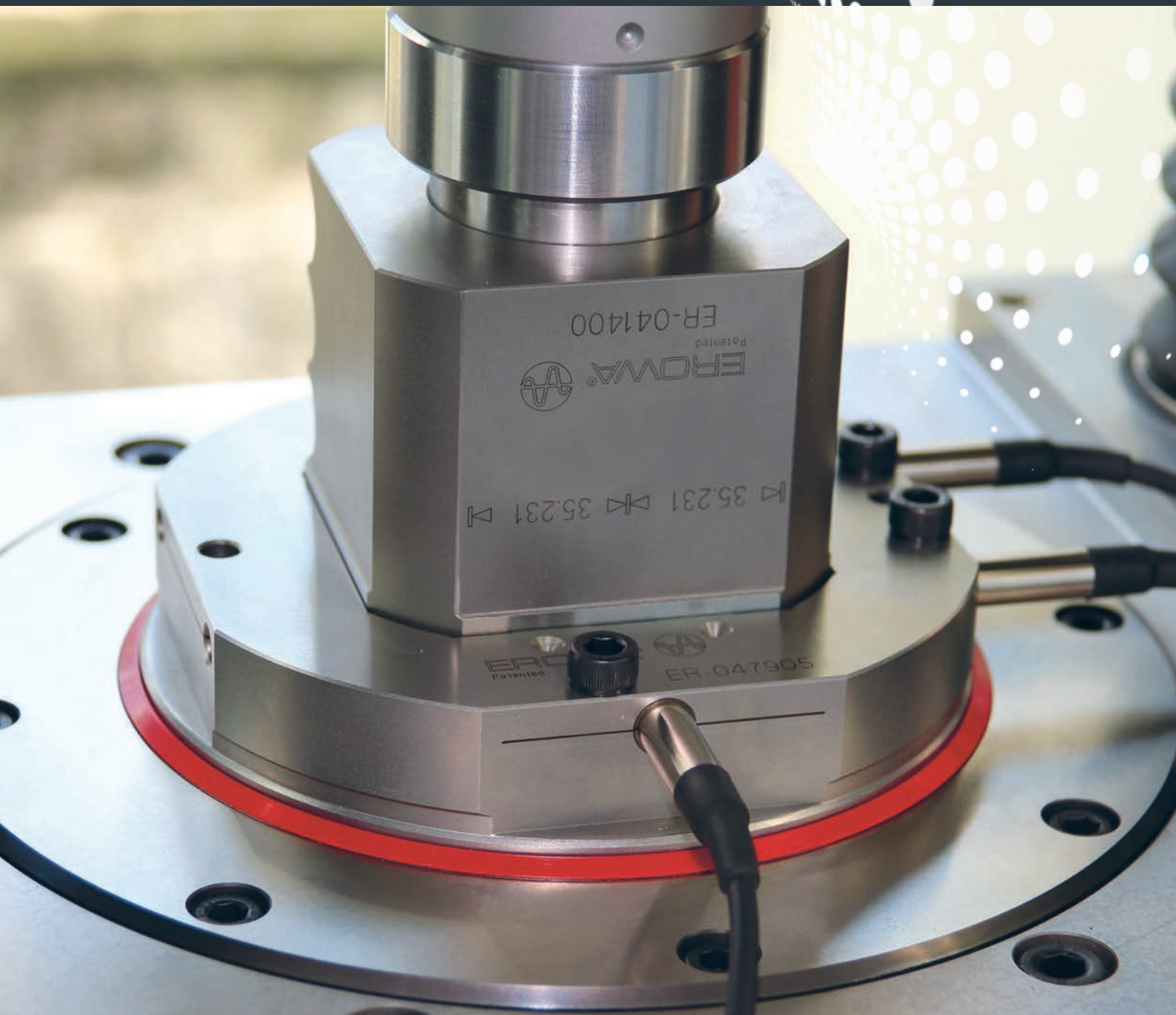
COMPATIBLE IN TOOL MANUFACTURING

Intelligent tool manufacturing and use

Efficiency and reliability in tool production and repair

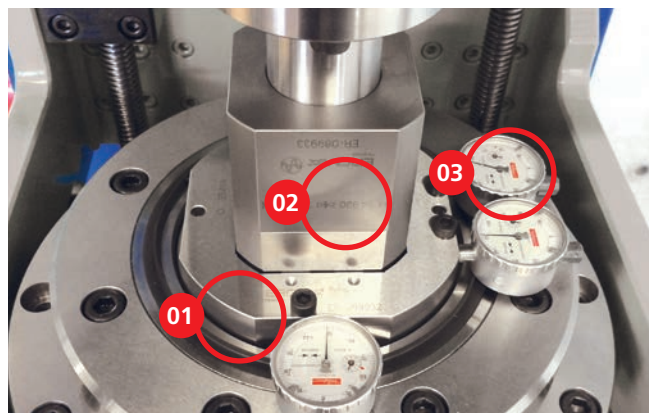
Precise alignment system

For a reliable process.



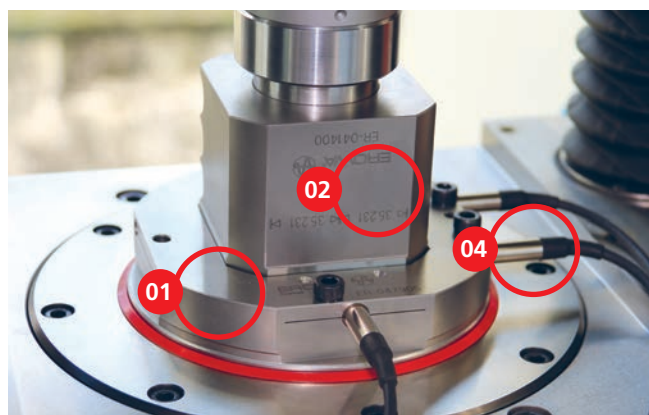
EROWA PM Tooling Alignment system with dial gauges

The EROWA PM alignment die plate (1) serves as a reference. In combination with an EROWA PM positioning pin (2), offsets in the bottom and top punch chucks are indicated on the dial gauges (3). Next, the correction values are determined and the chucks are aligned.

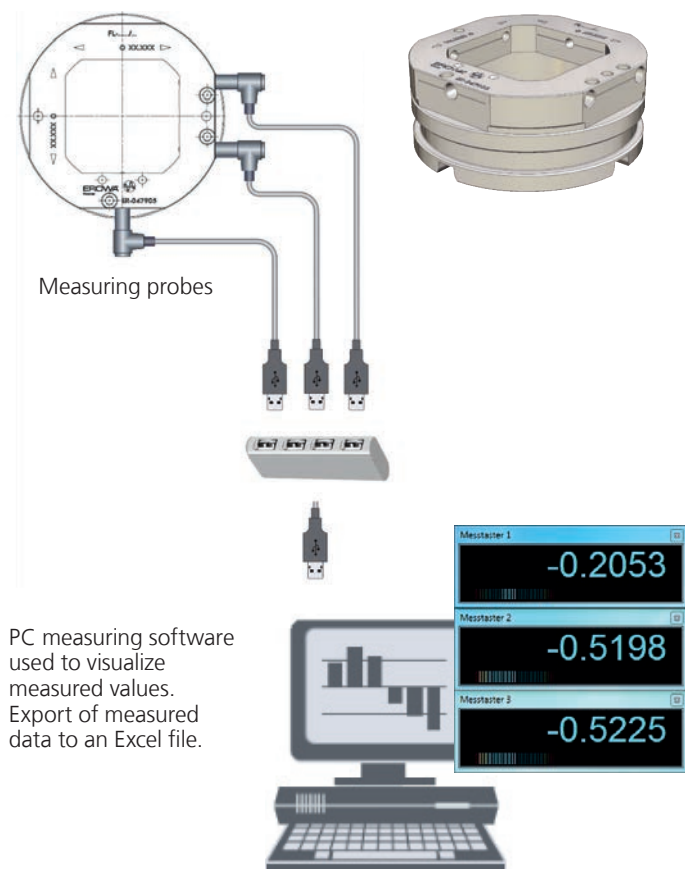


EROWA PM Tooling Alignment system with measuring probes

The EROWA PM alignment die plate (1) serves as a reference. Offsets in the bottom and top punch chucks are detected in combination with an EROWA PM positioning pin (2). High-precision measuring probes (4) capture the offset data. The measured values are clearly listed on the PC monitor. After calculating the correction values, the clamping chucks are aligned.



PM alignment die plate

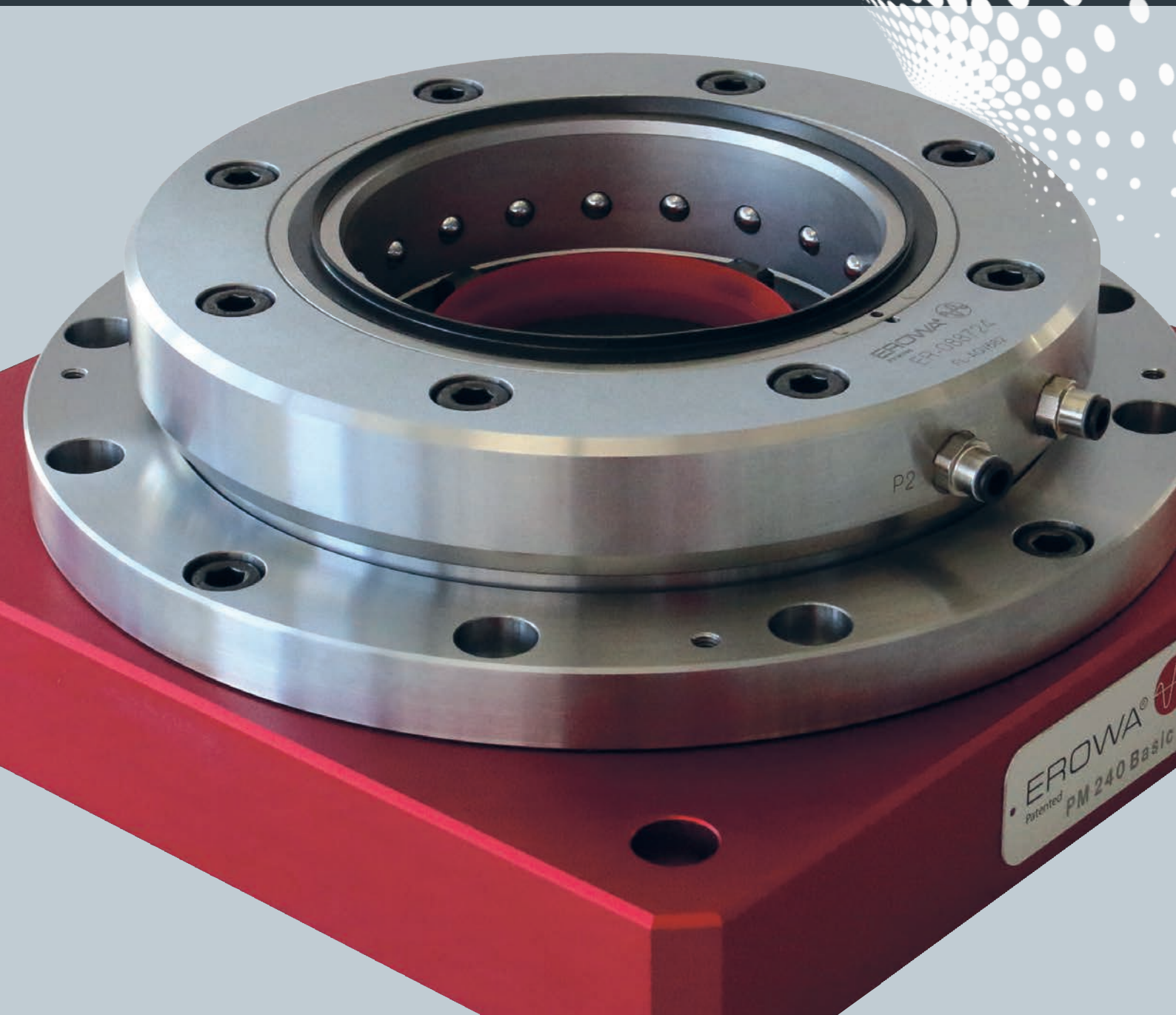


THE FACTS

- High-precision alignment system
- Dial gauges or measuring probes as needed
- Easy to use measuring software with USB interface
- Clear visualization of measured values
- Export of measured data to an Excel file
- Existing PM alignment die plates can be retrofitted with measuring probes

Flexible conversion

Variable part shapes and different part sizes require flexible and quick conversion of powder press adapters.



Different system sizes

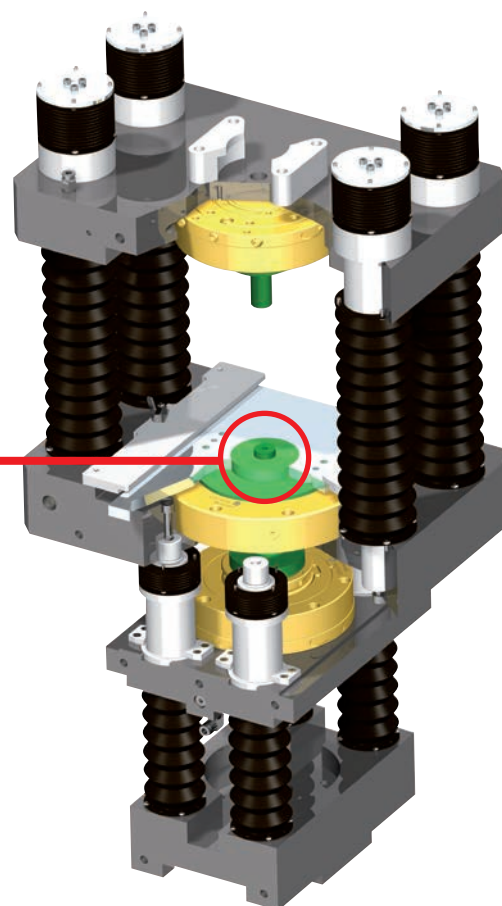
For pressing large parts, the existing range of EROWA PM Tooling products has been extended by the EROWA PM240 Basic.

Using the EROWA PM240 Basic system, it is also possible to adapt the die system sizes between the EROWA PM240 and PM128 flexibly to each other.

EROWA PM240 Basic System



EROWA PM240 Basic System / Adapter PM128

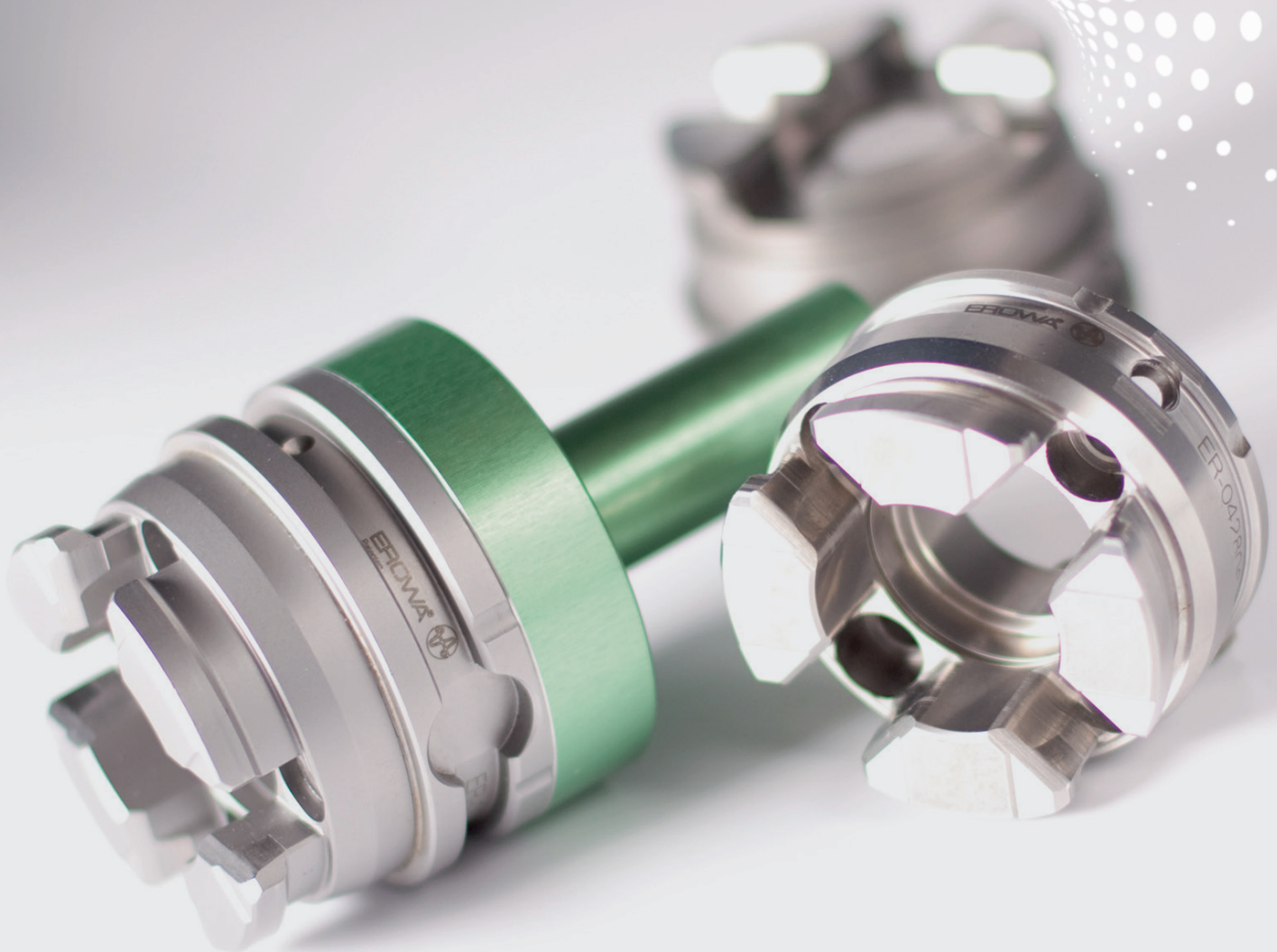


THE FACTS

- Produce large and small parts on the same press
- Adapt different system sizes with each other
- Flexible conversion
- Low profile in the Z-axis
- Protective cams for the centering prisms against damage during mounting
- Through-hole in the die-plate pallet for the bottom punch chuck

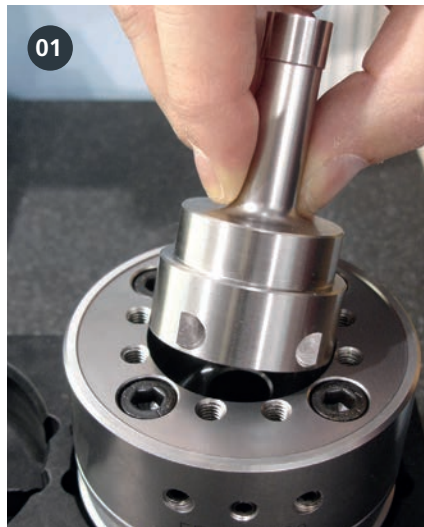
Retrofit

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:



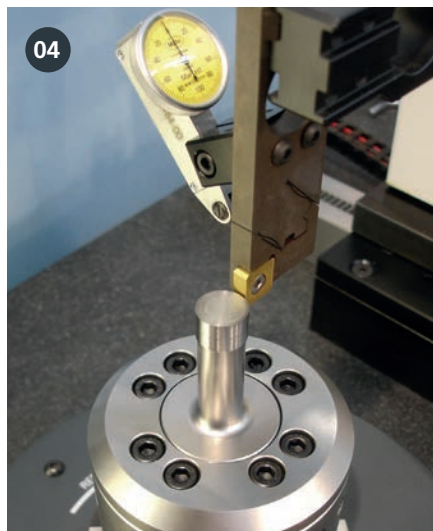
The punch base is modified as needed.



The punch can then 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

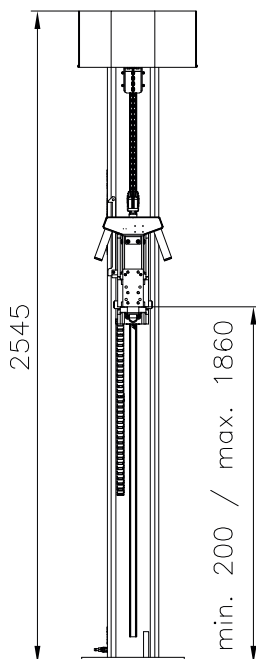
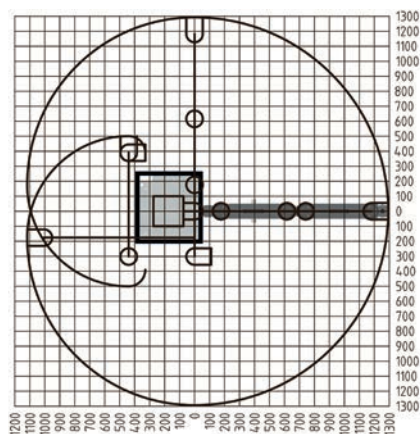
We are happy to advise you without any obligation

Handling for heavy workpieces

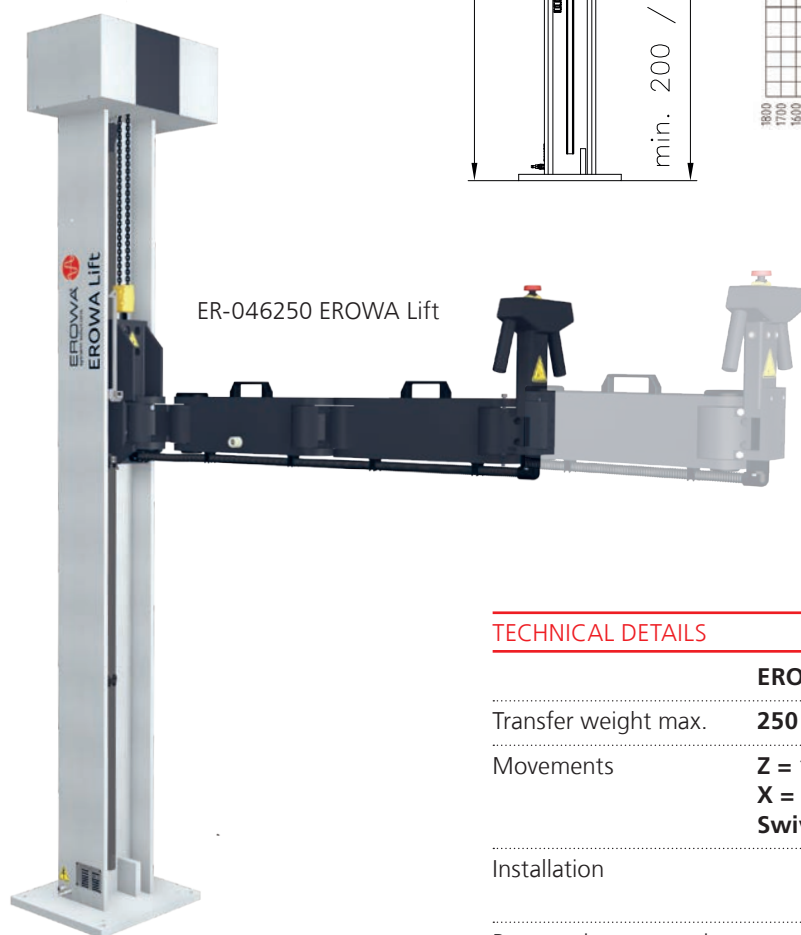
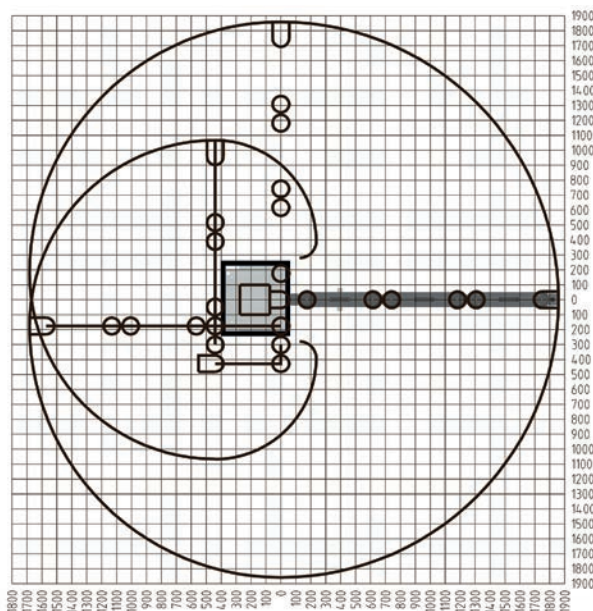
When it comes to frequent pallet changes, either directly onto the machine or into the handling facility, the EROWA Lift is the perfect companion. Installed in a fixed position next to the machine, it's always there when it's needed.



EROWA Lift standard (max. 250 kg)



EROWA Lift long axis (max. 100 kg)



ER-046250 EROWA Lift

Option
ER-111922 Long arm

TECHNICAL DETAILS

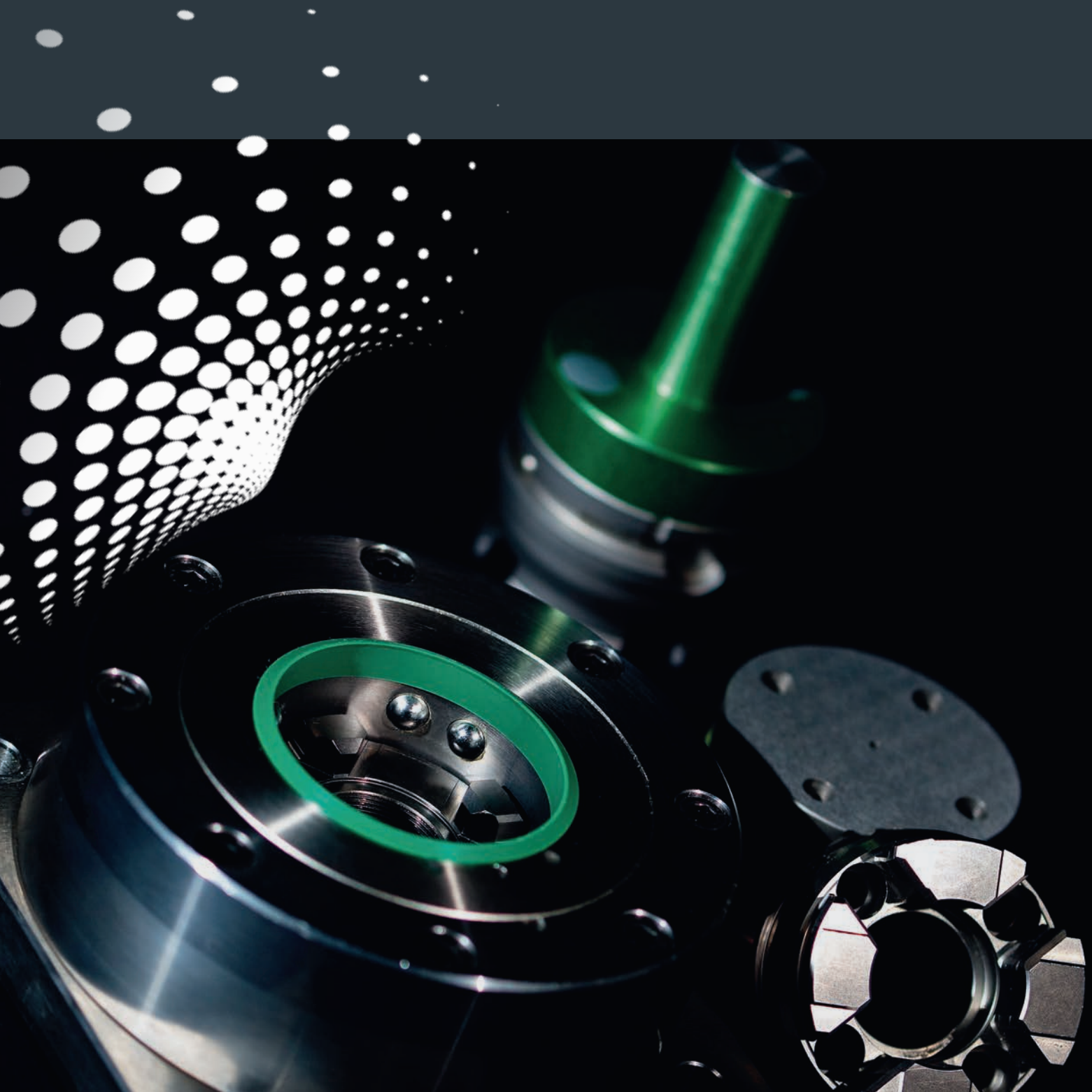
	EROWA Lift standard	EROWA Lift long axis
Transfer weight max.	250 kg	100 kg
Movements	Z = 1660 mm X = 1300 mm Swivel range 360°	Z = 1660 mm X = 1850 mm Swivel range 360°
Installation	4 heavy duty anchors $\varnothing$ 18 x 132 mm Floor strength min. C20/25	
Pneumatic system min.	5 bar	
Voltage	3x 208-480 V	
Frequency	50/60 Hz	
Drive	Quick motion 4m/min. Slow motion 1m/min.	
Color	RAL 7035	
Note	Grippers must be ordered separately	

MANIPULATOR USED TO LOAD

- Machine tools
- Pallet magazines
- Robot magazines
- Measuring stations
- Quill chucks
- Powder presses

Complete equipment

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



To make it easier for you to find your way about the fields of application for EROWA products, we use the following symbols in all our documents:

- | | |
|---|---|
|  | 1. Manual operation |
|  | 2. Operate with compressed air jet |
|  | 3. Operate with manual valve |
|  | 4. Operate with manual control unit |
|  | 5. Operate with electro-pneumatic control unit |
|  | 6. With central flushing clearance |
|  | 7. Suited for submerged operation |
|  | 8. Corrosion-resistant material |
|  | 9. Suited for automatic operation |
|  | 10. Handling with EROWA Robot gripper S |
|  | 11. Handling with EROWA Robot gripper Combi |
|  | 12. Handling with EROWA Robot gripper C |
|  | 13. Handling with EROWA Robot gripper 72 |
|  | 14. Handling with EROWA Robot gripper 115 |
|  | 15. Handling with EROWA Robot gripper 148 |
|  | 16. Handling with EROWA Robot gripper RN PC 210 |
|  | 17. Handling with EROWA Robot gripper RCS |
|  | 18. Handling with EROWA Robot gripper WGS-500 |

PM TOOLING OVERVIEW

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For cutting operations



For EDM



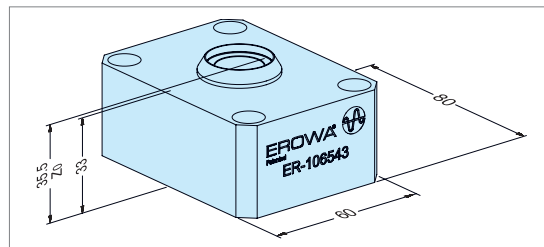
For wire-EDM

Core Pin Chuck CPC

ER-106543 Core Pin Chuck CPC



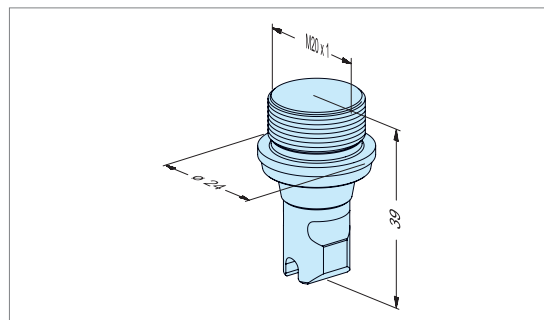
Version	Steel, hardened.
Clamping power	1500N.
Connections	At the rear, 1 line.
Operation	With control unit.
Application	On powder presses. To accommodate CPC pallets, fix/movable.



ER-087563 Pallet for chuck CPC fix / movable



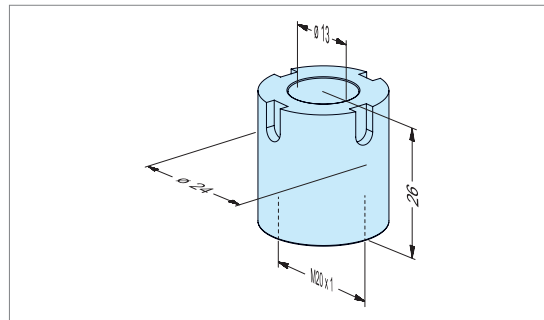
Version	Steel, hardened. Centering integrated in the pallet.
Application	For use on center pin chuck CPC. To accommodate center pins on powder presses.
Fitting blank	On pallet, with M20x1 attachment bolt.



ER-087567 Mounting nut M20x1 for chuck CPC



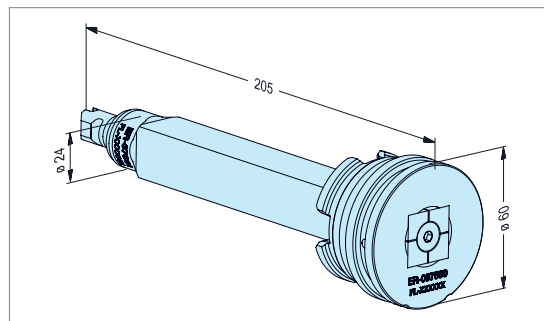
Version	Steel, corrosion-resistant. Female thread M20x1. Inside diameter 13mm.
Application	For use on pallets CPC fix/movable. To clamp center pins on pallets.



ER-097562 Alignment set PM60 / CPC



Version	Steel, hardened, rust-resistant. Set consists of positioning pin for CPC center pin chuck and alignment pallet for PM60 Precise punch chuck.
Application	On powder presses, for the precise alignment of CPC center pin chuck in relation to PM60 Precise punch chuck.



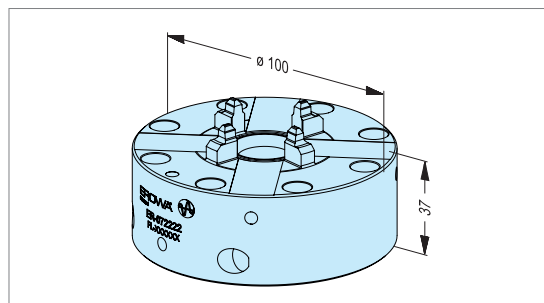
Chucks PM Basic

Technical data	Chucks PM Basic
Repeatability	0.002 mm
Indexation	4 x 90°
Opening with dry compressed air	min. 6 bar
Clamping	Spring pressure

ER-07222 ITS Chuck PM Basic with support



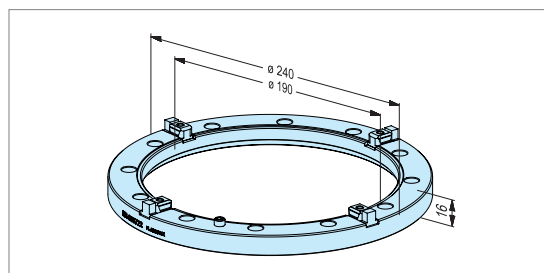
Version	Steel, hardened.
Clamping force	6,000N.
Connections	At the rear with two lines.
Operation	With control unit.
Application	On powder presses to accommodate PM Basic pallets and centering set.



ER-088722 Positioning ring PM240 Basic incl. locating pin



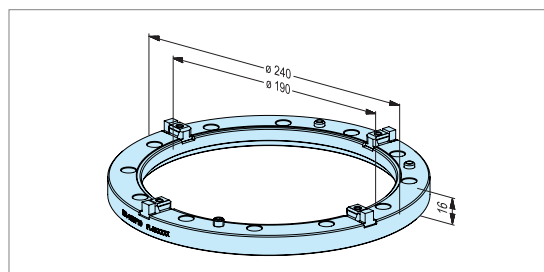
Version	Steel, hardened, rust-resistant, coated.
Application	On milling and grinding machines, on EDM and WEDM centers, and on powder presses. In combination with clamping ring PM240 Basic to accommodate die-plate pallet PM240 Basic.



ER-150719 Positioning ring PM240 Basic with AirDock



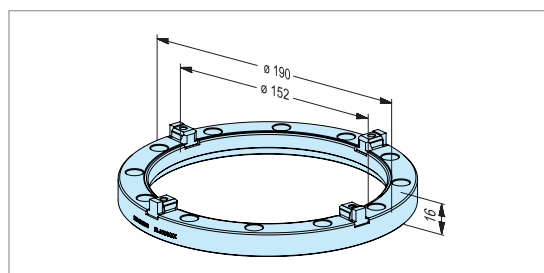
Version	Steel, hardened, rust-resistant, coated. With two AirDock valves to control an adaption.
Application	On milling and grinding machines, on EDM and WEDM centers, and on powder presses. In combination with PM240 Basic clamping ring to accommodate PM240 Basic die-plate pallets.



ER-077122 Positioning ring PM190 Multi / Basic coated



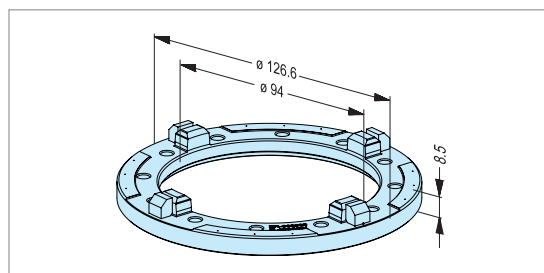
Version	Steel, hardened, rust-resistant, coated.
Application	On milling and grinding machines, on EDM and WEDM centers, and on powder presses. In combination with PM190 Basic clamping ring or PM190 Multi die-plate chuck to accommodate PM 190 Basic/Multi die-plate pallets.



ER-071548 Positioning ring PM128 Basic coated



Version	Hardened steel, rust-resistant, coated.
Application	On milling, grinding, EDM and wire EDM machines and powder presses. In combination with PM Basic mounting ring to accommodate PM Basic die-plate pallets.

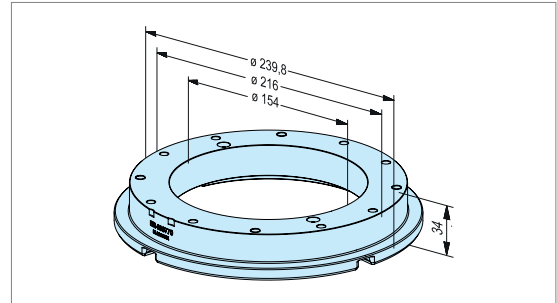


Pallets PM Basic

ER-089770 Die-plate pallet PM240 ø 190 with reference hole



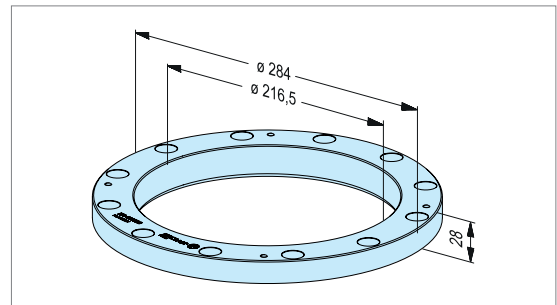
- Version** Steel, hardened, rust-resistant. Centering integrated in pallet. Inner ø 154.
- Application** For use on PM240 Basic positioning ring to accommodate die plates, workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank** Through pallet with M6 bolts or through workpiece with M8 bolts.



ER-088723 Clamping ring PM240 Basic



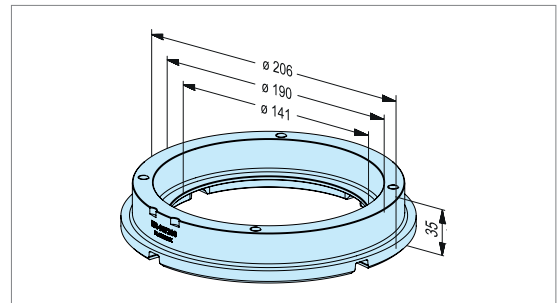
- Version** Steel, rust-resistant. Inner ø 216.5.
- Application** On milling and grinding machines, on EDM centers and to powder presses. In combination with PM240 Basic positioning ring for the manual attachment of PM240 Basic die-plate pallets with 12xM10 bolts.



ER-107210 Die-plate pallet PM190 Basic



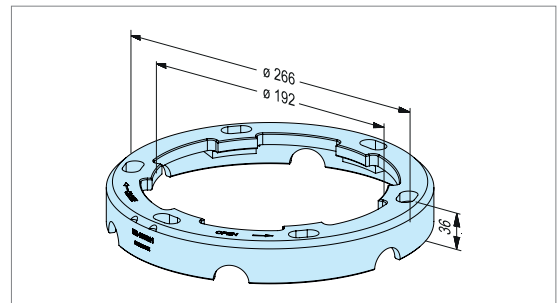
- Version** Steel, hardened, rust-resistant. Centering integrated in pallet. Inner ø 141.
- Application** For use on PM190 Multi/Basic positioning ring to accommodate die plates, workpieces and fixtures in chip-cutting machining, EDM and WEDM and on powder presses.
- To fit blank** Through workpiece with M8 bolts.



ER-107211 Clamping ring PM190 Basic

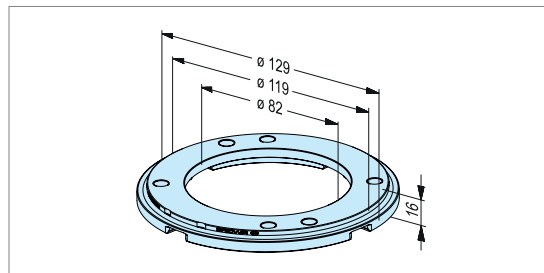


- Version** Steel, rust-resistant.
- Application** On milling and grinding machines, on EDM and WEDM centers, and on powder presses. In combination with PM190 Multi/Basic positioning ring for the manual attachment of PM190 Basic die-plate pallets with 6xM8 bolts.

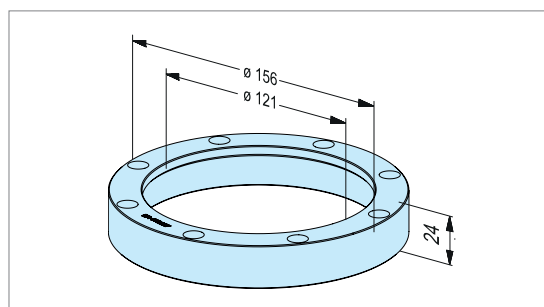


**ER-072228 Die-plate pallet PM128 Basic
1 piece**

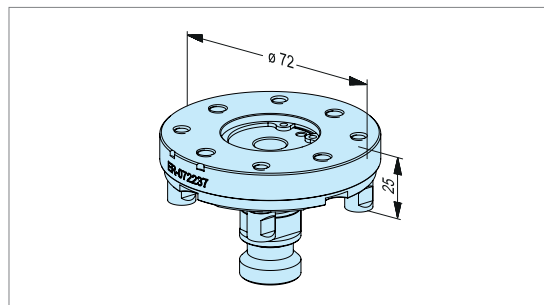
- Version Hardened steel, rust-resistant. Centering integrated in pallet. Inner $\varnothing$ 82.
- Application In combination with positioning ring and PM Basic mounting ring to accommodate die-plates and workpieces in chip-cutting machining, EDM and WEDM, and on powder presses.
- To fit blank Through pallet with 6xM6 bolts.

**ER-072227 Clamping ring PM128 Basic**

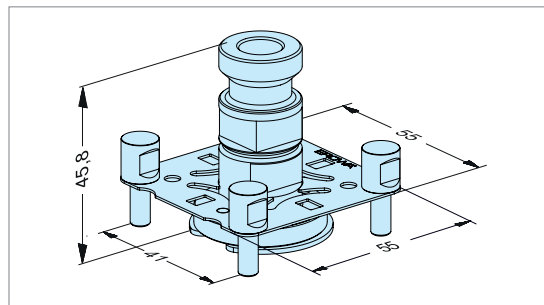
- Version Steel, rust-resistant.
- Application On milling and grinding machines, on EDM centers, and on powder presses. In combination with PM Basic positioning ring for the manual attachment of PM Basic die-plate pallets with 8xM6 bolts.

**ER-072237 Punch pallet $\varnothing$ 72 PM Basic
1 piece**

- Version Steel, hardened, rust-resistant. Prepared for $\varnothing$ 72 sealing rings (e.g. ER-035356). Including chucking spigot and securing ring.
- Application For use on all EROWA ITS chucks. For powder presses on ITS chucks with support. To accommodate punches and workpieces in chip-cutting machining, EDM and WEDM, and on powder presses.
- To fit blank Through workpiece with 4xM6 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.



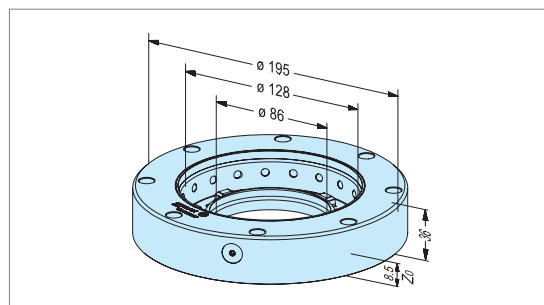
PM Precise chucks for powder presses

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



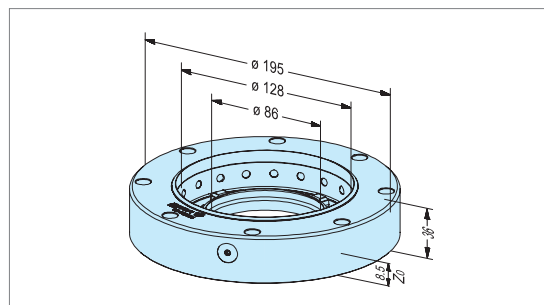
Version Steel, hardened. Through borehole $\varnothing$ 86.
 Clamping power 23000 N (reclamped at 6 bar).
 Connections At the rear, with two lines.
 Operation With control unit.
 Application On milling machines and powder presses.
 To accommodate die-plate pallets PM128 Precise.



ER-047544 Die-plate chuck PM128 II Precise



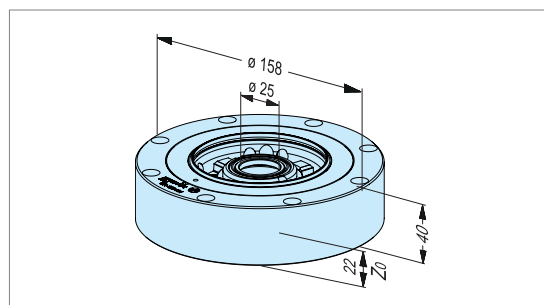
Version Steel, hardened. Through borehole $\varnothing$ 86. External seal.
 Clamping power 23000 N (reclamped at 6 bar).
 Connections At the rear, with two lines.
 Operation With control unit.
 Application On milling machines and powder presses.
 To accommodate die-plate pallets PM128 Precise.



ER-129461 Chuck PM85 II Precise



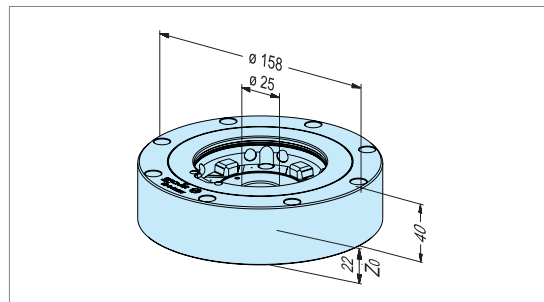
Version Steel, hardened, rust-resistant. Through hole $\varnothing$ 25. Outside seal.
 Clamping power 9,000N.
 Connections At the rear with two lines.
 Operation With control unit.



ER-040697 Chuck PM85 Precise

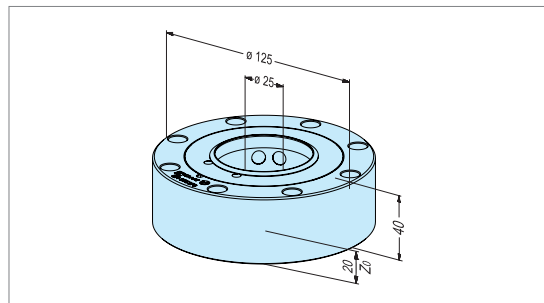


Version Steel, hardened, corrosion-resistant. Through borehole $\varnothing$ 25.
 Clamping power 9000 N.
 Connections At the rear, with two lines.
 Operation With control unit.
 Application On milling machines, lathes, EDM/WEDM centers and powder presses.
 To accommodate pallets PM85 Precise.

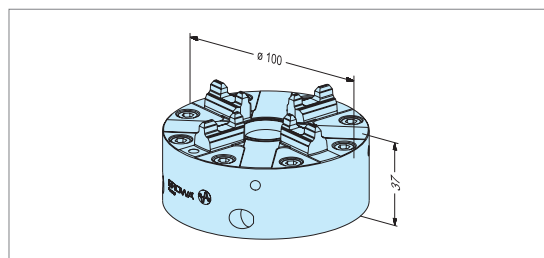


ER-055370 Chuck PM60 Precise


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-035288 ITS Chuck 100 P with support


Version	Steel, hardened.
Clamping power	6000 N.
Connections	At the rear
Operation	With control unit.
Application	On powder presses. To accommodate centering set pallet PM Basic and pallets PM56, PM60 and PM85 Precise.

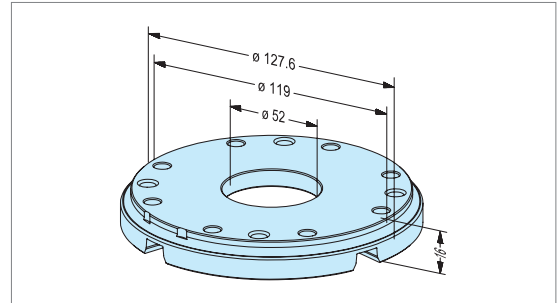


Pallets PM Precise

ER-034680 Die-plate pallet PM128 ø 52 Precise 1 piece



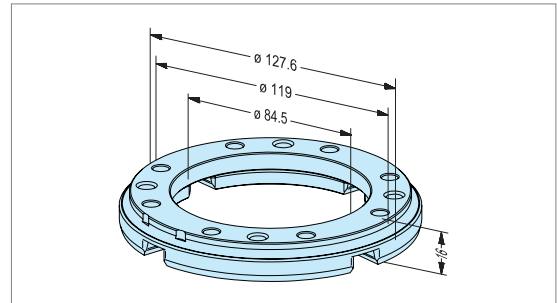
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 52.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet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



ER-046927 Die-plate pallet PM128 ø 84.5 Precise 1 piece



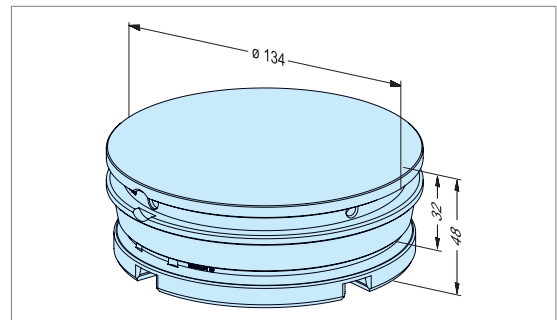
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 84.5.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the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



ER-081885 Die-plate pallet PM128 ø 135 Precise for gripper PM128



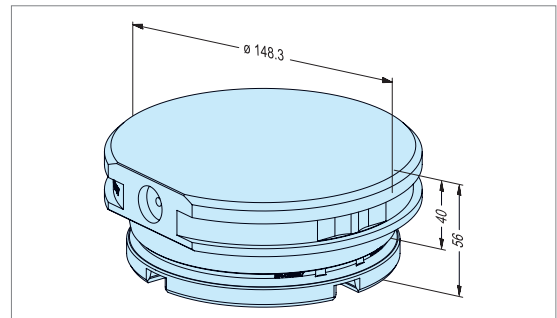
- Version** Steel, hardened, rust-resistant. Centering integrated in the pallet.
- Application** For use on PM128 Precise chucks. To accommodate work-pieces and fixtures in chip-cutting machining, EDM and WEDM, and powder pressing.
- Mounting a blank** With freely choosable attachment boreholes within ø120mm (upper part unhardened).



ER-082717 Die-plate pallet PM128 ø 148 Precise for gripper ITS 148

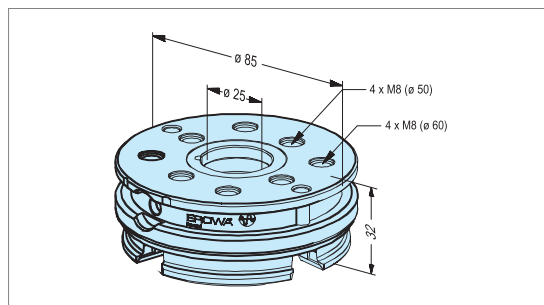


- Version** Steel, hardened, rust-resistant. Centering integrated in the pallet.
- Application** For use on PM128 Precise chucks. To accommodate work-pieces and fixture in chip-cutting machining, EDM and WEDM, and powder pressing.
- Mounting a blank** With freely choosable attachment boreholes within ø140mm (upper part unhardened).

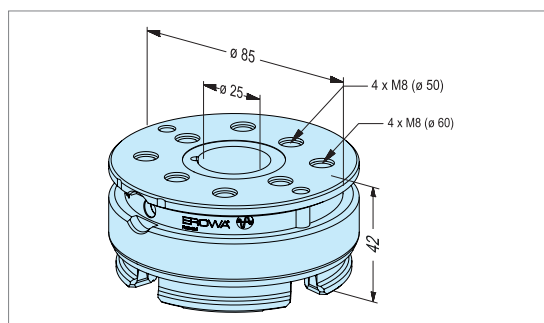


ER-040701 Pallet PM85 Precise
1 piece

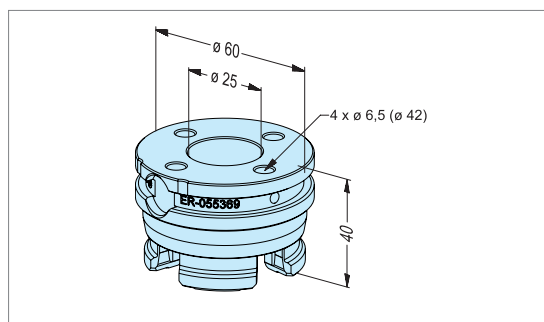

- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside $\varnothing$ 25.
- Application** For use on Chuck PM85 Precise. With chucking spigot ER-039839 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures 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-129463 Pallet PM85 II Precise
1 piece

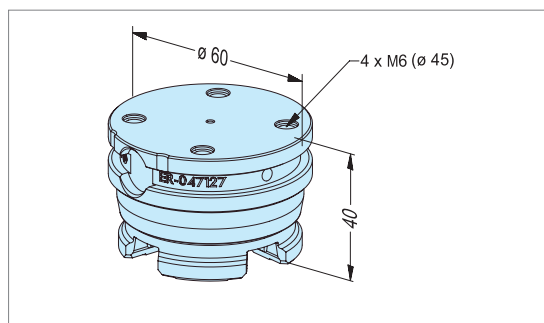

- Version** Steel, hardened, rust-resistant. Centering integrated in pallet. Inner $\varnothing$ 25.
- Application** For use of PM85 II Precise chucks. With chucking spigot ER-039839 on: ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank** Through pallet with M6 bolts or through workpiece 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-059571 Pallet PM60 $\varnothing$ 2 Precise CT
1 piece
ER-047127 Pallet PM60 $\varnothing$ 2 Precise CT
8 pieces


- Version** Steel, hardened, rust-resistant. Centering integrated in pallet. Inner $\varnothing$ 2.
- Application** For use on PM60 Precise chucks. With chucking spigot ER-047850 on: ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank** Through workpiece with M6 bolts.



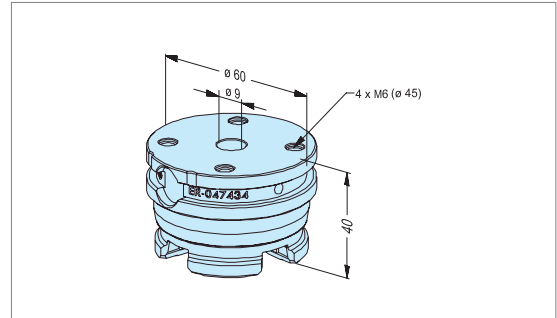
Pallets PM Precise

ER-049747 Pallet PM60 ø 9.5 Precise CT
1 piece

ER-047434 Pallet PM60 ø 9.5 Precise CT
8 pieces



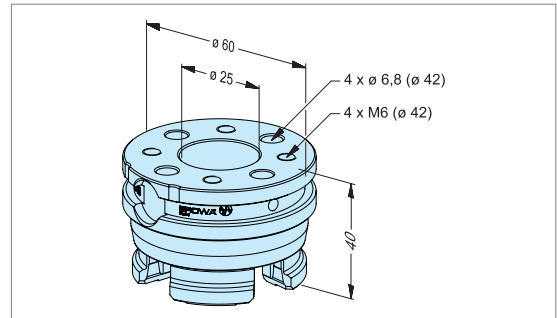
- Version** Steel, hardened, rust-resistant. Centering integrated in pallet. Inner ø 9.5.
- Application** For use on PM60 Precise chucks. With chucking spigot ER-047850 on: ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank** Through workpiece with M6 bolts.



ER-111249 Pallet PM60 Precise, 4x M6 screw thread
8 pieces



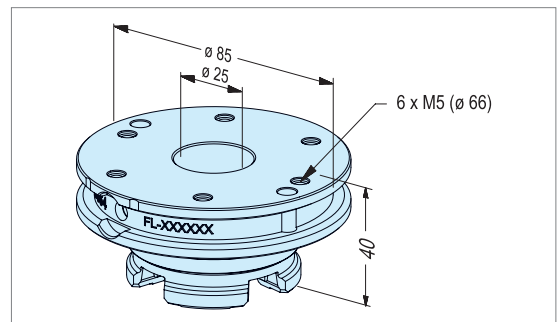
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 25.
- Application** For use on Chuck PM60 Precise. With chucking spigot ER-041429 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet with M6 bolts from above.



ER-076864 Palette PM60/85 Precise



- Version** Steel, hardened, rust-resistant. Centering integrated in pallet. Inner ø 25.
- Application** For use on PM60 Precise chucks. With chucking spigot ER-041129 on: ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank** Through workpiece with M5 bolts.



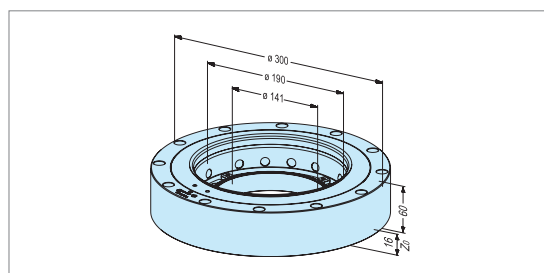
PM Multi chucks for powder presses

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



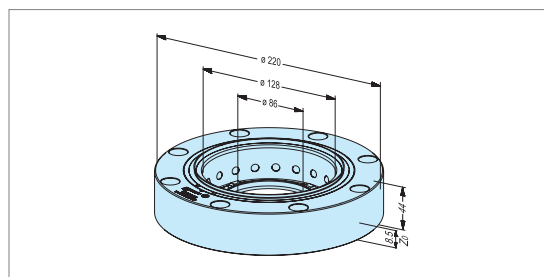
Version Steel, hardened. Through borehole $\varnothing 141$.
 Connections At the rear, with one line.
 Operation With control unit.
 Application On milling machines and powder presses.
 To accommodate die-plate pallets PM190 Multi.



ER-048690 Die-plate chuck PM128 Multi



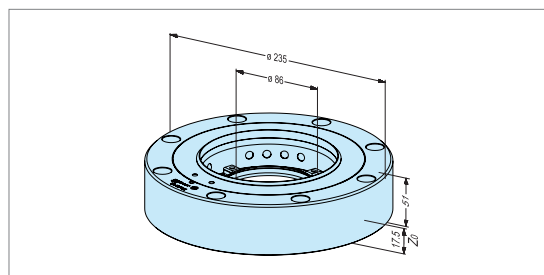
Version Steel, hardened. Through borehole $\varnothing 86$.
 Connections At the rear, with two lines.
 Operation With control unit.
 Application On milling machines and powder presses.
 To accommodate die-plate pallets PM128 Multi.



ER-057195 Chuck PM134 Multi



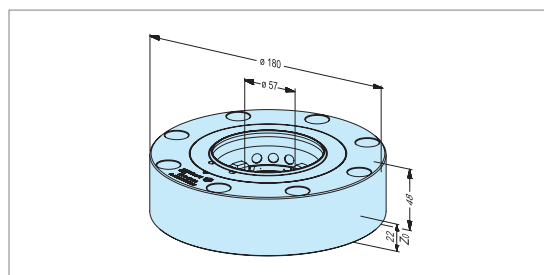
Version Steel, hardened. Through borehole $\varnothing 86$.
 Connections At the rear, with two lines.
 Operation With control unit.
 Application On milling machines, lathes, EDM centers and powder presses. To accommodate pallets PM134 and PM128 Multi.



ER-048580 Chuck PM85 Multi



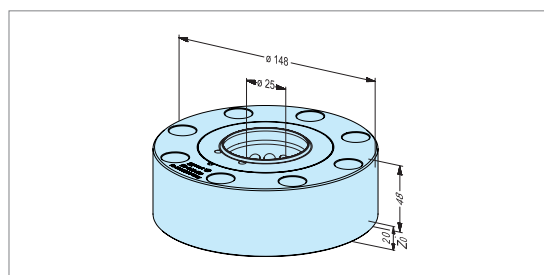
Version Steel, hardened. Through borehole $\varnothing 57$.
 Connections At the rear, with two lines.
 Operation With control unit.
 Application On milling machines, lathes, EDM centers and powder presses.
 To accommodate pallets PM85 Multi.



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.

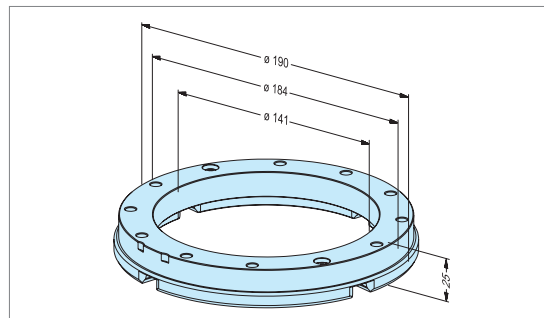


Pallets PM Multi

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



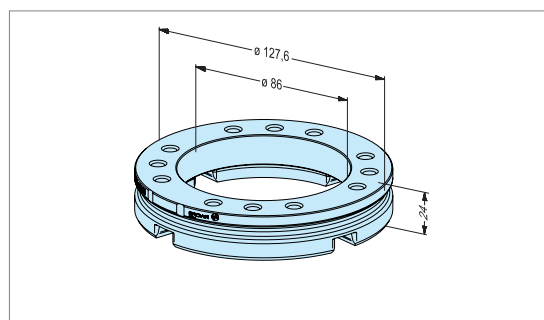
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 141.
- Application** For use on die-plate chuck PM190 Multi. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks** Through the pallet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



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



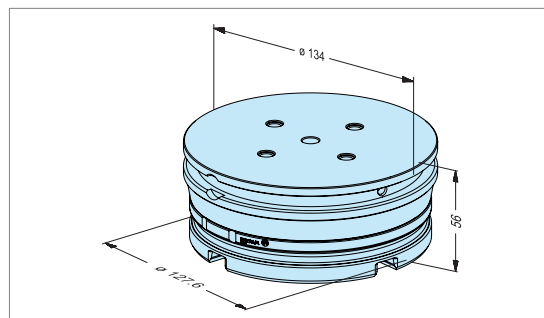
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside ø 86.
- Application** For use on die-plate chucks PM128 Multi and Precise, as well as on chucks PM134 Multi. To accommodate die plates, punches, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers 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



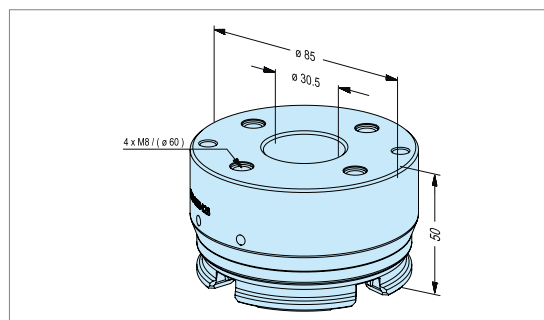
- Version** Steel, hardened, corrosion-resistant. Centering integrated in pallet.
- Application** For use on chuck PM134 Multi. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.



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

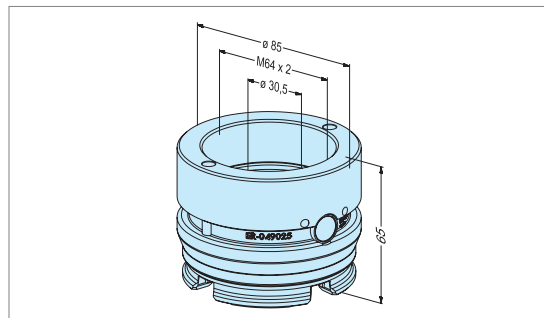


- Version** Hardened steel, corrosion-resistant. Centering integrated in pallet. Inside ø 30.5.
- Application** Used on PM85 Multi and Precise chucks. With ER-057236 chucking spigot on PM 100 P chuck. To accommodate workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.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

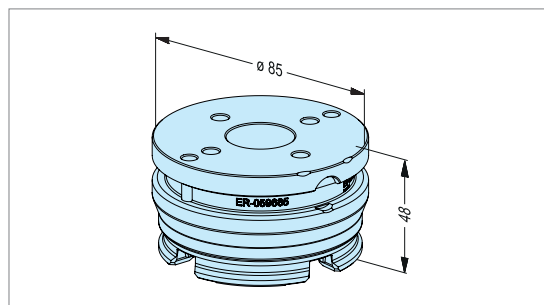


**ER-049025 Pallet PM85 Multi
M64 x 2 / 1 piece**

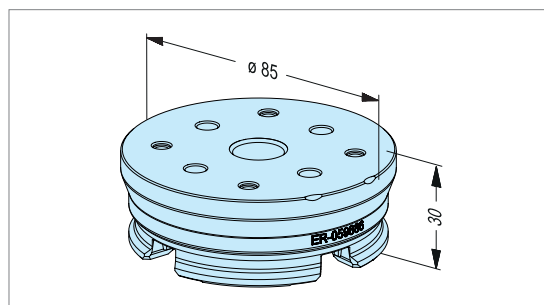
- Version Steel, hardened, corrosion-resistant. Centering integrated in pallet. Inside $\varnothing 30.5$.
- Application For use on chucks PM85 Multi and Precise. With chucking spigot ER-057236 on PM Chuck 100 P. To accommodate workpieces and fixtures for chip-cutting machines, EDM/ WEDM centers and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

**ER-059685 Pallet PM85 H48 Multi**

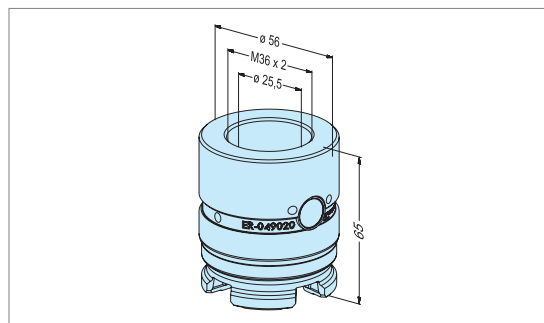
- Version Steel, hardened, rust-resistant. Centering integrated in pallet. Inner $\varnothing 27$.
- Application For use on PM85 Multi and Precise chucks. With chucking spigot ER-057236 on PM Chuck 100 p. To accommodate workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank Through workpiece with M6 bolts.

**ER-059686 Pallet PM85 H30 Multi**

- Version Steel, hardened, rust-resistant. Centering integrated in pallet. Inner $\varnothing 16$.
- Application For use on PM85 Multi and Precise chucks. To accommodate workpieces and fixtures in chip-cutting machining, EDM and WEDM, and powder presses.
- To fit blank Through pallet with M6 bolts or through workpiece with M5 bolts.

**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.



Chucks / Pallets PM Hercules

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

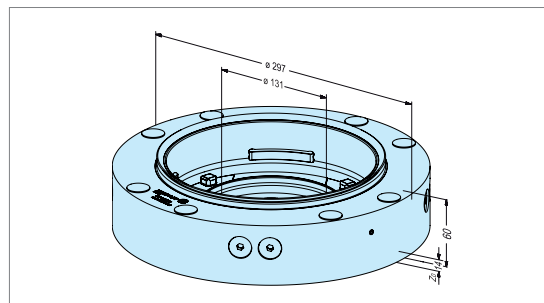
Note:

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

ER-062215 Chuck PM195 Hercules



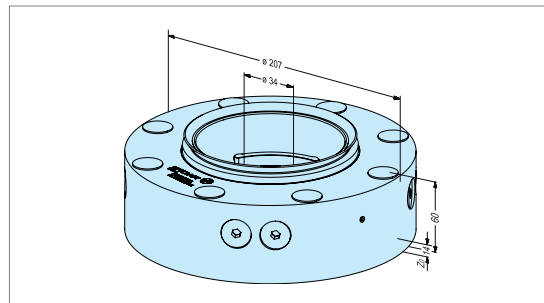
Version Steel, hardened. Through borehole $\varnothing$ 131.
Connections At the rear, with two lines.
Operation With control unit.
Application On milling machines and powder presses.
To accommodate pallets PM195 Hercules.



ER-059596 Chuck PM105 Hercules



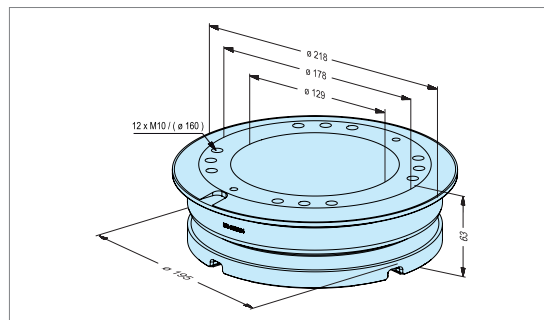
Version Steel, hardened. Through borehole $\varnothing$ 34.
Connections At the rear, with two lines.
Operation With control unit.
Application On milling machines and powder presses.
To accommodate pallets PM105 Hercules.



ER-062824 Pallet PM195 $\varnothing$ 129 Hercules



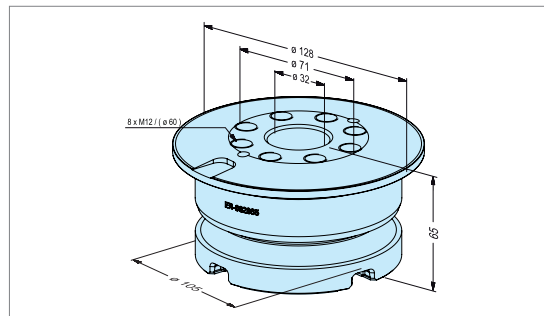
Version Hardened steel, corrosion-resistant. Centering integrated in pallet. Inside $\varnothing$ 129.
Application Used on PM195 Hercules chuck. To accommodate punches, dies, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
Mounting Through workpiece with 12 x M10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



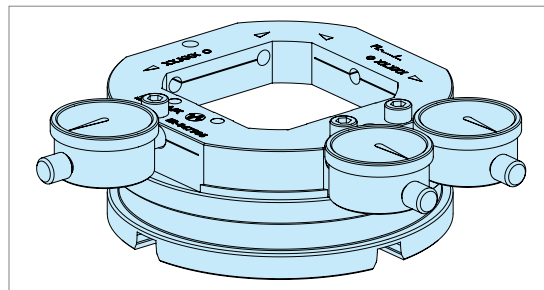
Alignment components PM Basic

ER-047905 Alignment die PM128 with dial gauges Precise/Multi

INOX ☐ ☐ ☐ ☐ ☐

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.

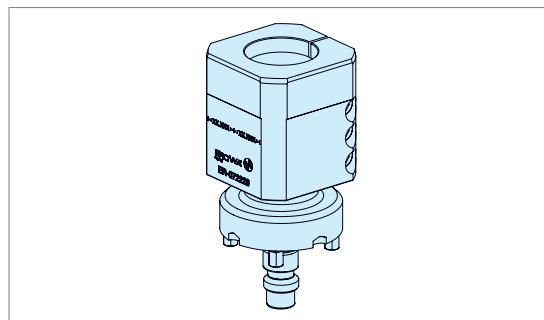


ER-072229 Positioning pin PM Basic 70 x 70 mm

INOX ☐ ☐ ☐ ☐ ☐

Version Steel, hardened, rust-resistant. Including chucking spigot.

Application On powder presses. For the precise alignment of ITS PM Basic lower and upper punch chucks with the PM Basic positioning ring. For use in combination with PM128 Precise / Multi alignment die plate.

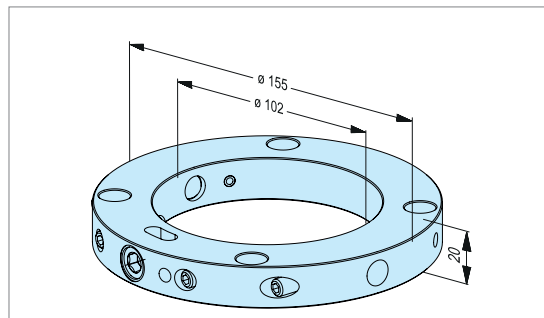


ER-035278 Alignment flange ITS for ITS chuck

 ☐ ☐ ☐ ☐ ☐

Version Steel.

Application On powder presses. For moving and aligning ITS chucks with support. For use in combination with alignment pin and alignment die plate.

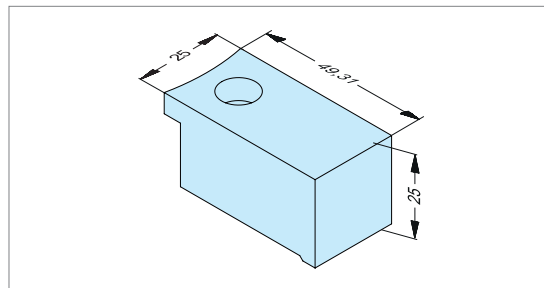


ER-072233 Assembly brackets PM Basic for positioning die-plate, 4 pieces

 ☐ ☐ ☐ ☐ ☐

Version Steel.

Application On powder presses. For manual mounting of PM128 alignment die plates.



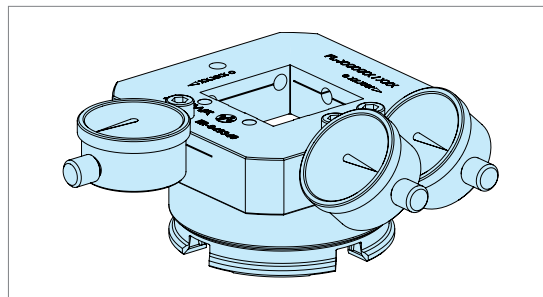
Alignment components PM Precise / Multi

ER-049340 Alignment 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.

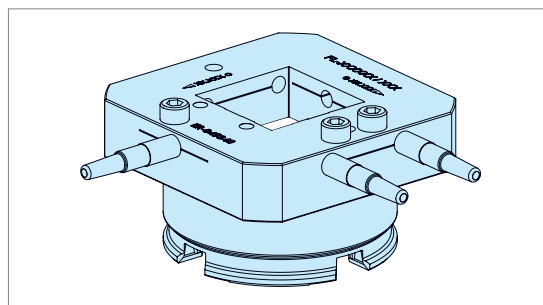


ER-095852 Positioning die-plate PM85 Multi digital



Version Steel, hardened, rust-resistant. Including 3 measuring probes and a measuring stop.

Application For multi-level powder presses. For the precise alignment of PM56 Multi chucks with the PM85 Multi chuck. For use in combination with the PM56 Multi alignment pin.

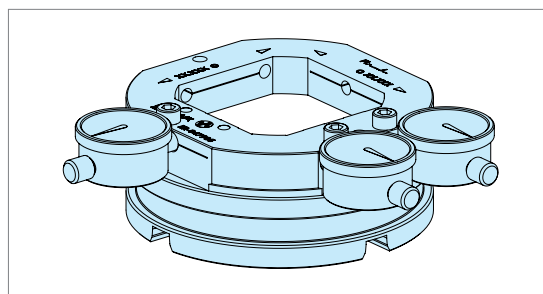


ER-047905 Alignment die PM128 with dial gauges Precise/Multi



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.

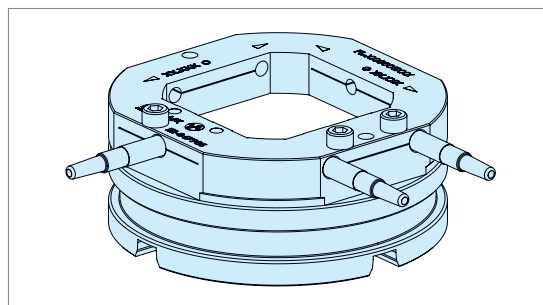


ER-095854 Positioning die plate PM128 Precise / Multi digital



Version Steel, hardened, rust-resistant. Including 3 measuring probes and measuring stop.

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

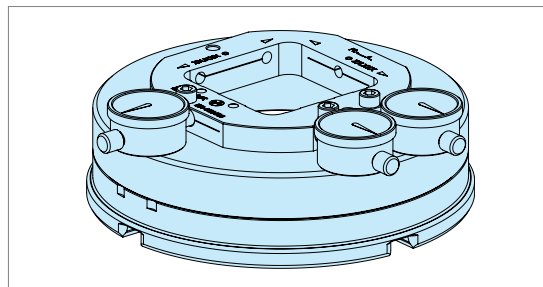


ER-059408 Positioning die-plate PM190 Multi



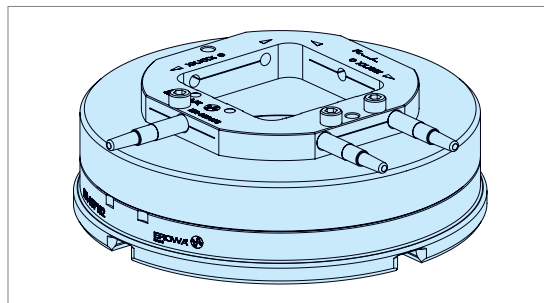
Version Hardened steel, corrosion-resistant. Incl. 3 dial gauges and measuring stop.

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.

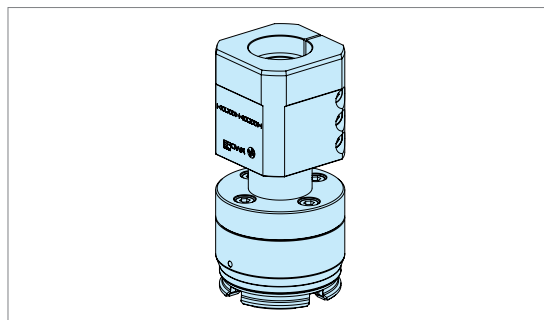


ER-095856 Positioning die plate PM190 Multi digital

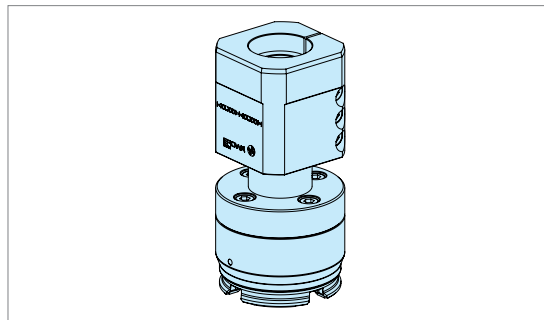
- Version Steel, hardened, rust-resistant. Including 3 measuring probes and a measuring stop.
- Application On powder presses. For the precise alignment of the lower and upper die chucks with the PM190 Multi die-plate chuck. For use in combination with the PM85 or PM134 Multi alignment pin.

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

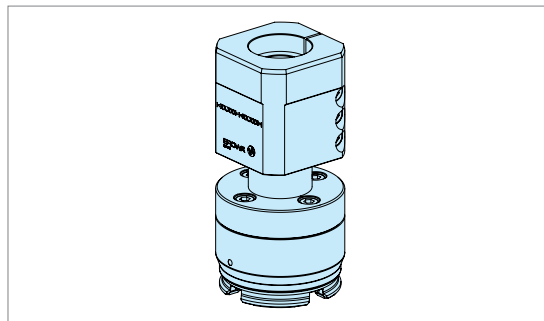
- Version Hardened steel, corrosion-resistant. Length 140 mm. Incl. chucking spigot, alignment flange, and pin spanner.
- Application On powder presses. For precise alignment of lower and upper punch chucks ITS 100 P in relation to die-plate chuck PM128. Used in combination with positioning die-plate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

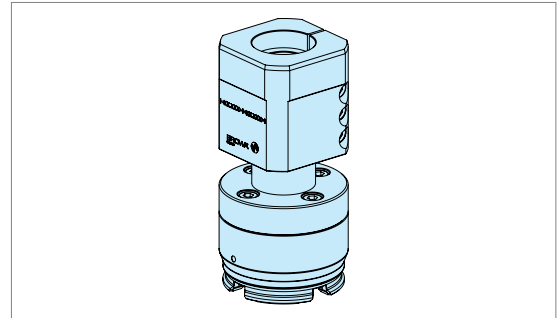


Alignment components PM Precise / Multi

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

INOX ☐ ☐ ☐ ☐

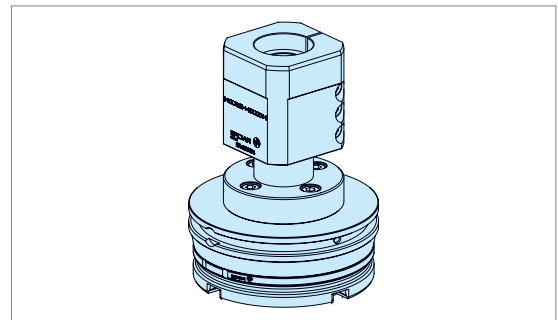
- Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded washer, threaded inserts, and pin spanner.
- Please note The pin is made to custom length (range 153-235 mm). Specification required!
- Application On powder presses. For precise alignment of the PM85 Multi lower and upper 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

INOX ☐ ☐ ☐ ☐

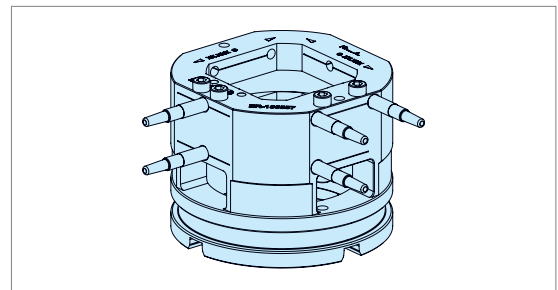
- Version Hardened steel, corrosion-resistant. Incl. alignment flange, threaded insert and pin spanner.
- Please note The pin is made to custom length (range 151-191 mm). Specification required!
- Application On powder presses. For precise alignment of the PM134 Multi lower and upper punch chucks in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



ER-155557 Positioning die plate PM128 Precise Precise / Multi digital, XL

 INOX ☐ ☐ ☐

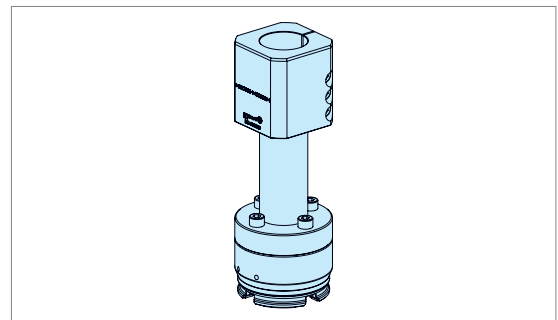
- Version Steel, hardened, rust-resistant. Including 5 measuring probes and a measuring stop.
- Application On powder presses. For the precise alignment of the lower and upper die chucks with the PM128 Precise or Multi die-plate chuck. For use in combination with the PM85 Precise XL alignment pin, to check the angle position.



ER-155559 Positioning pin PM85 Precise XL L153 - 235 mm with accessories

INOX ☐ ☐ ☐ ☐

- Version Steel, hardened, rust-resistant. Including alignment flange, threaded washer, threaded inserts and hex key.
- Please note The pin is made to customer-specific lengths (153-235mm). Specification required!
- Application On powder presses. For the precise alignment of the PM85 lower and upper die chucks with the PM128 Precise or Multi die-plate chuck. For use in combination with the PM85 Precise / Multi XL alignment pin, to check the angle position.



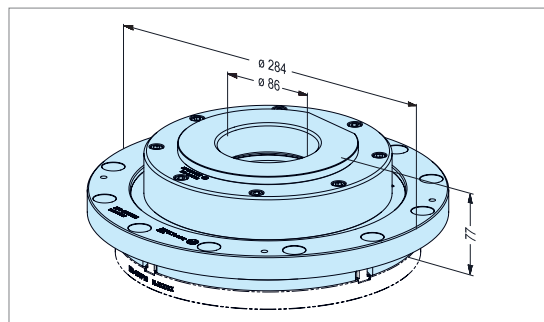
Chucks Adapters

Technical data	Chucks Adapters
Repeatability	0.002 mm
Indexation	4 x 90°
Opening with dry compressed air	min. 6 bar
Clamping	Spring pressure

ER-150718 Adaptation PM128 Precise on pallet PM240 Basic, AirDock



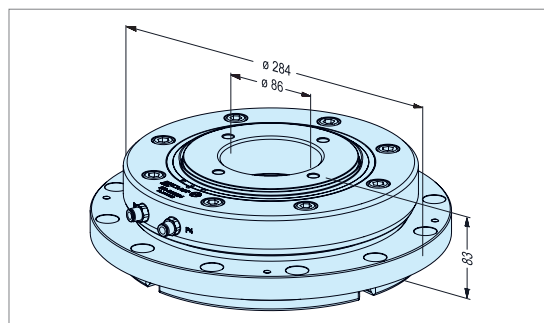
Version	Steel, hardened. Through hole $\varnothing 86$.
Clamping power	23,000N (reclamped at 6bar).
Connections	At the rear with two lines.
Operation	With control unit.
Application	On milling machines and lathes, EDM and WEDM centers, and powder presses. To accommodate PM128 Precise die-plate pallets. For use in combination with the PM240 Basic system configuration.



ER-088724 Adaption PM128 Multi with pos. hole on pallet PM240 Basic



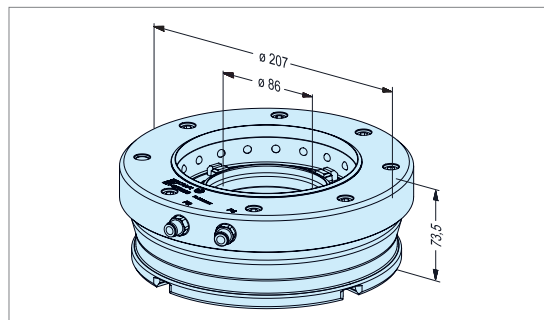
Version	Steel, hardened. Through hole $\varnothing 86$.
Clamping power	11,500N.
Connections	Laterally with two lines.
Operation	With control unit or manually.
Application	On milling machines and lathes, EDM and WEDM centers, and powder presses. To accommodate PM128 Multi die-plate pallets. For use in combination with the PM240 Basic system configuration.



ER-079398 Adaptation PM128 Precise on pallet PM190 Multi

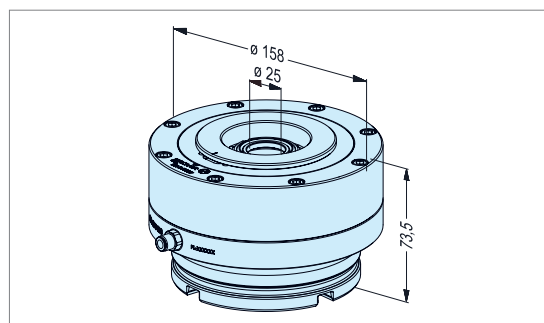


Version	Steel, hardened. Through hole $\varnothing 86$.
Clamping power	23,000N (reclamped at 6 bar).
Connections	Laterally with two lines.
Operation	With control unit or laterally.
Application	On milling machines and lathes, EDM and WEDM centers, and powder presses. To accommodate PM128 Multi die-plate pallets. For use in combination with the PM240 Basic system configuration.

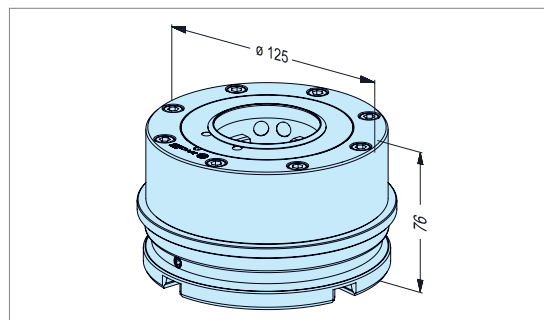


**ER-079400 Adaptation PM85 Precise
on pallet PM134 Multi**

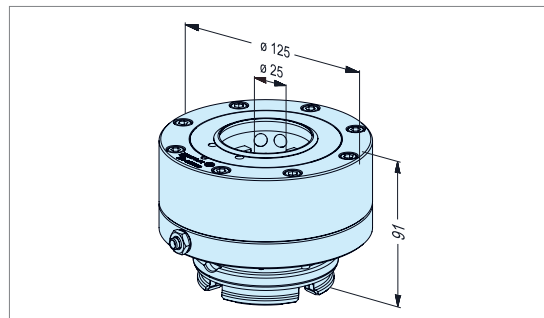
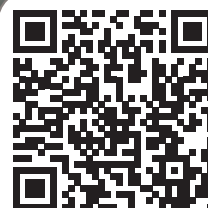
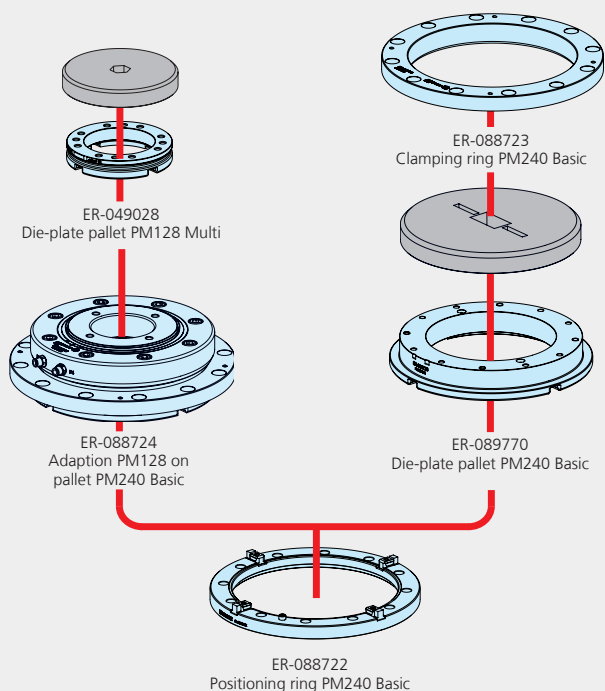

Version Steel, hardened. Through hole $\varnothing$ 25.
 Clamping power 9,000N.
 Connections Laterally.
 Operation With control unit or manually.
 Application On milling machines and lathes, EDM and WEDM centers, and powder presses. To accommodate PM85 Precise die-plate pallets. For use in combination with the PM134 Multi.


**ER-056295 Adaptation PM60 Precise
on pallet PM128 Precise**


Version Steel, hardened, rust-resistant.
 Clamping power 6,500N.
 Connections At the rear with two lines.
 Operation With control unit or manually.
 Application On milling machines and lathes, EDM and WEDM centers, and powder presses. To accommodate PM60 Precise pallets. For use in combination with PM128 Precise.


**ER-062284 Adaptation PM60 Precise
on pallet PM85 Precise**


Version Steel, hardened, rust-resistant. Through hole $\varnothing$ 25.
 Clamping power 6,500N.
 Connections Laterally.
 Please note With air-gun or optionally with control unit.
 Application On milling machines and lathes, EDM centers, grinding machines and powder presses. To accommodate PM60 Precise pallets. For use in combination with PM85 Precise.


Adapter PM240 Basic / PM128


more information:
 Weblink - PM Tooling
 System adapters

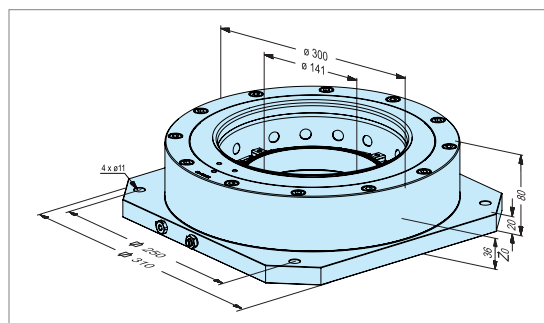
Chucks for tool manufacturing

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



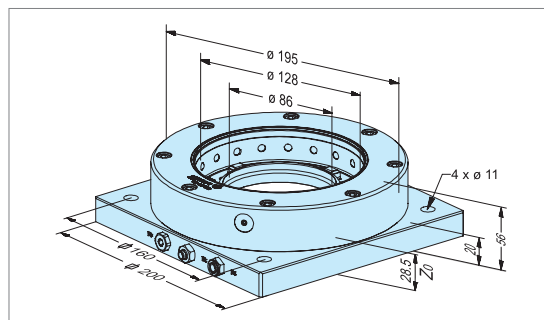
Version	Hardened steel, corrosion-resistant. Through borehole $\varnothing 141$.
Clamping force	25000 N.
Operation	Laterally with compressed air gun or with control unit.
Application	On milling machines, lathes, grinding machines, EDM and WEDM centers. To accommodate die-plate pallets PM190 Multi.



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



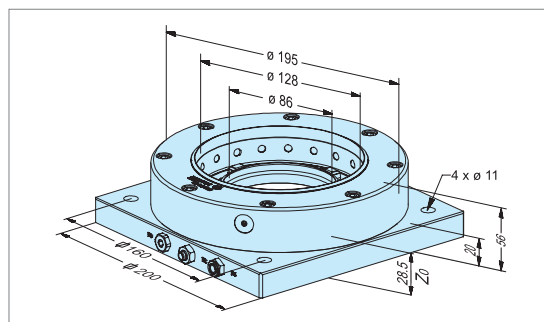
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing 86$.
Clamping power	20000 N (reclamped at 6 bar).
Operation	Laterally with compressed-air gun or with control unit.
Application	On milling machines, lathes, grinding machines, EDM and WEDM centers. To accommodate die-plate pallets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



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



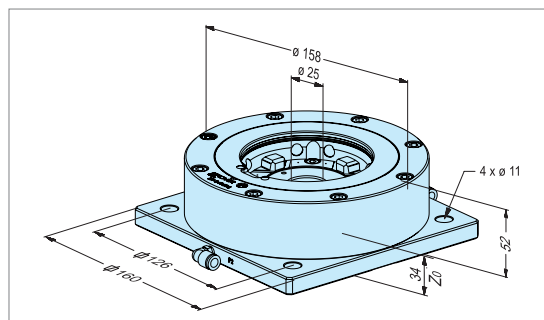
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing 86$. External seal.
Clamping power	20000 N (reclamped at 6 bar).
Operation	Laterally with compressed-air gun or with control unit.
Application	On milling machines, lathes, grinding machines and EDM/ WEDM centers. To accommodate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

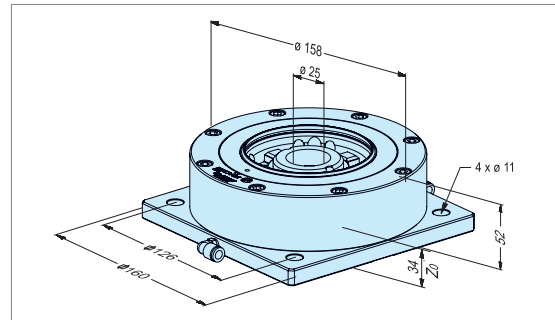


Chucks for tool manufacturing

ER-122607 Chuck PM85 Precise Production with base plate, seal Multi



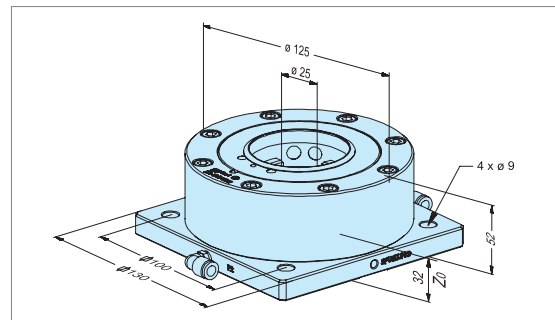
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing 25$.
Clamping power	9000 N.
Connections	Laterally, with two lines.
Operation	With control unit.
Application	On milling and grinding machines and on EDM centers. To accommodate pallets PM85 Precise.



ER-047500 Chuck PM60 Precise with base plate



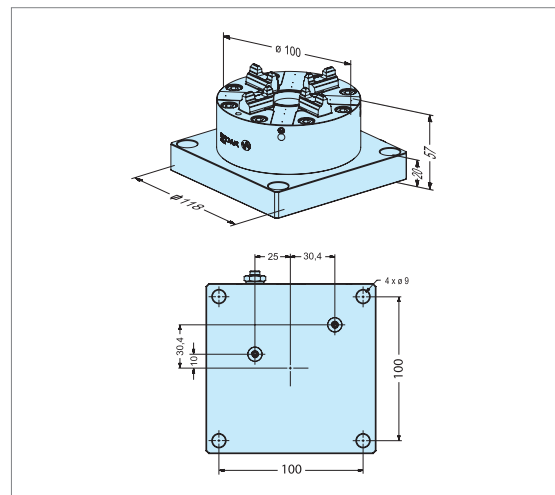
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing 25$.
Clamping power	6500 N.
Connections	Laterally, with two lines.
Operation	With control unit.
Application	On milling and grinding machines and on EDM/WEDM centers. To accommodate pallets PM60 Precise.



ER-045076 ITS Chuck 100 P 118 x 118



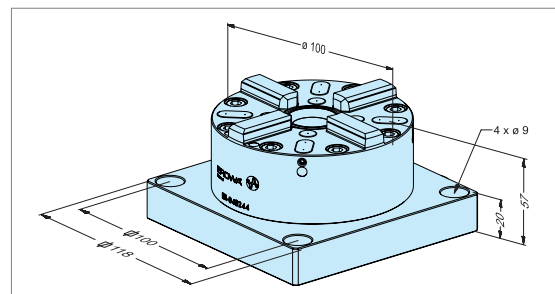
Version	Steel, hardened.
Clamping power	6000 N.
Connections	Laterally or at the rear, with two lines.
Operation	With control unit or compressed-air jet.
Application	For receiving pallets $\varnothing 115$ / $\varnothing 148$, electrode holders, pallets PM56, PM60 and PM85 Precise.



ER-048244 PM chuck 100 P 118 x 118

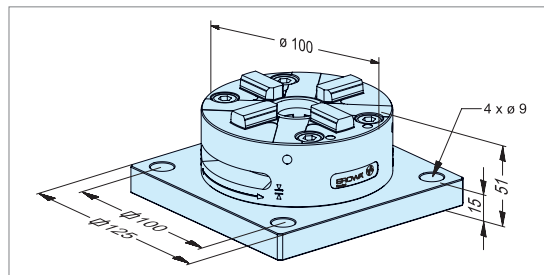


Version	Steel, hardened.
Clamping power	6000 N.
Connections	Laterally or at the rear, with two lines.
Operation	With control unit or compressed-air gun.
Application	To accommodate pallets PM56, PM60 and PM85 Precise and Multi.



ER-089201 QuickChuck 100 P 125 x 125

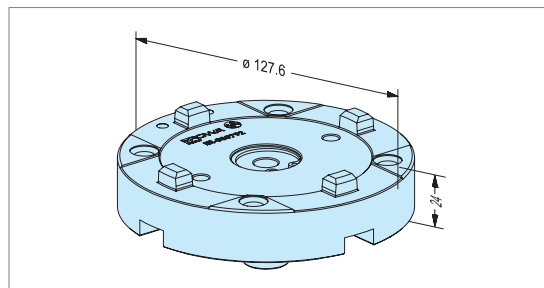
Version	System size 100, manual, rust-resistant, with base plate.
To be fitted	With bolts or brackets.
Application	On milling and grinding machines and on EDM centers. To accommodate PM Multi pallets, but also PM56, PM60 and PM85 Precise pallets.
Please note	Clamping power up to 10,000N.



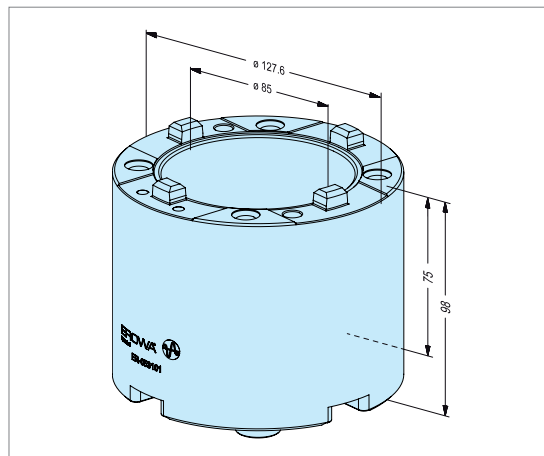
Adapter pallets for tool manufacturing

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 Power-Chuck 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.



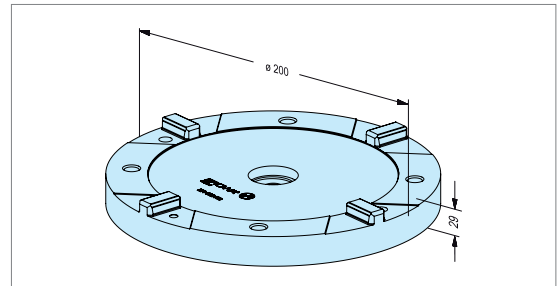
Adapter pallets for tool manufacturing

ER-062409 Adapter pallet H29 PM190 Multi for PM190 Multi, PM195 Hercules, PM240



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.

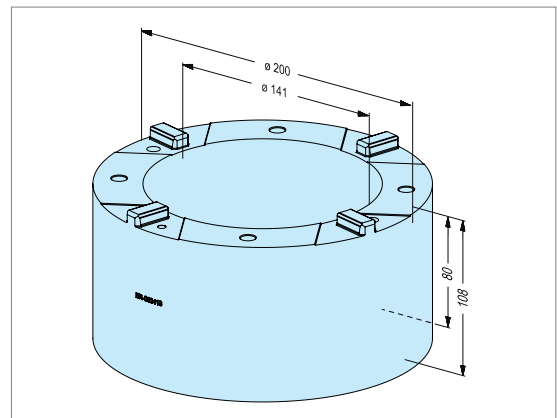


ER-062418 Adapter pallet H108 PM190 Multi for PM190 Multi, PM195 Hercules, PM240



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.

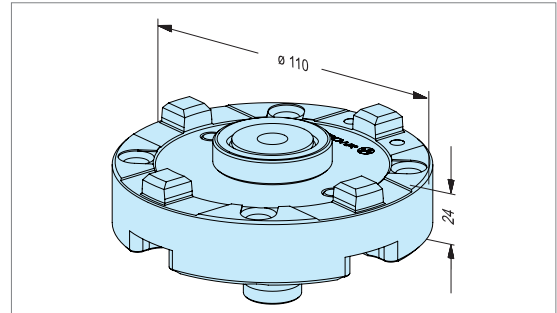


ER-060512 Adapter pallet P PM Hercules for pallet PM105 Hercules



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

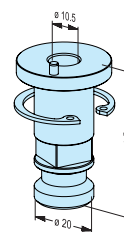
ER-039839 Chucking spigot PM85 automatic
8 pieces



auto



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

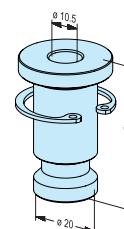


ER-045759 Chucking spigot PM56 / PM60 manual
1 piece

ER-041429 Chucking spigot PM56 / PM60 manual
8 pieces



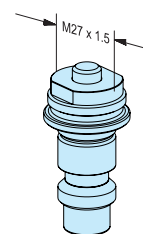
Version Steel, hardened. Manual, with borehole $\varnothing$ 10.5.
Application In pallets PM56 and PM60 Precise. To be fitted with securing ring.



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



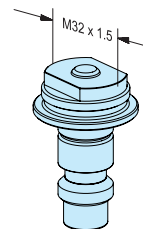
Version Steel hardened, bolt 12.9. Manual, without borehole.
Application For pallets PM56 Multi. To be fitted on the basis of thread M27 x 1.5.



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



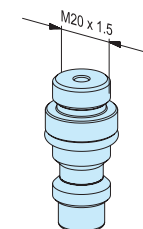
Version Steel hardened, bolt 12.9. Manual, without borehole.
Application For pallets PM85 Multi. To be fitted on the basis of thread M32 x 1.5.



ER-047850 Chucking spigot PM60 M20 x 1.5



Version Steel, hardened, A2 bolt, manually, with $\varnothing$ 5 borehole.
Application For PM60 Precise pallets. To be fitted through M20 x 1.5 thread.



Alignment aid for tool manufacturing

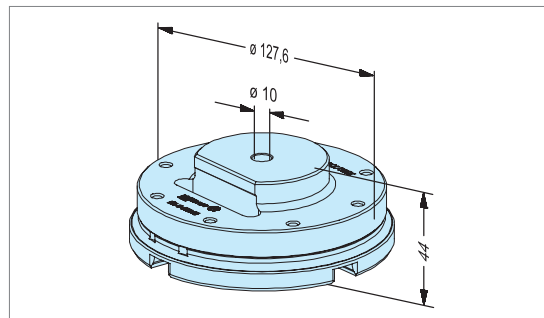
ER-049248 Alignment pallet PM128 Precise for die-plate chuck PM128 Precise

INOX ☐ ☐ ☐ ☐



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.



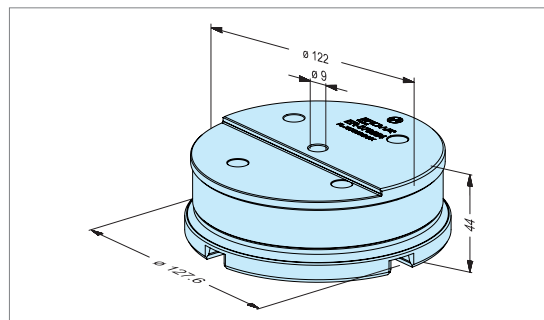
ER-070554 Alignment pallet PM134 Multi

INOX ☐ ☐ ☐ ☐



Version Hardened steel, corrosion-resistant. With ground alignment surface and $\varnothing 122$. Incl. M88 x 1.5 threaded insert.

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



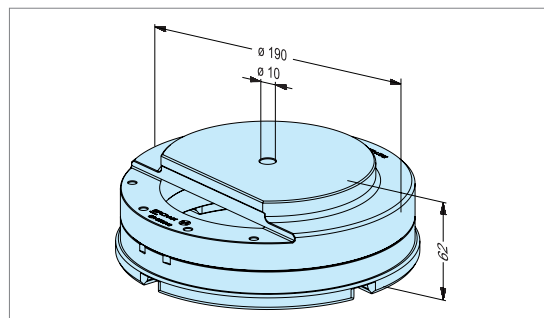
ER-059540 Alignment pallet PM190 Multi

INOX ☐ ☐ ☐ ☐



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.



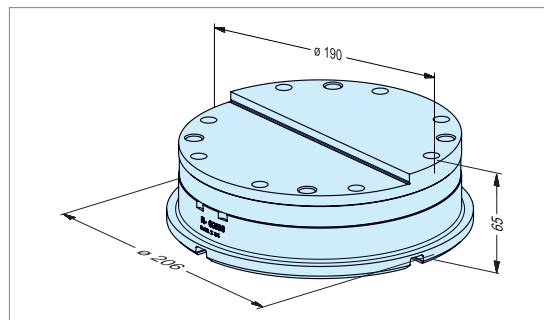
ER-109886 Alignment pallet special PM190 Basic

INOX ☐ ☐ ☐ ☐



Version Steel, hardened, rust-resistant. With ground alignment surface and $\varnothing 190$.

Application In tool- and mold-making. To align the angle position and to establish the center of PM90 Basic fixtures.



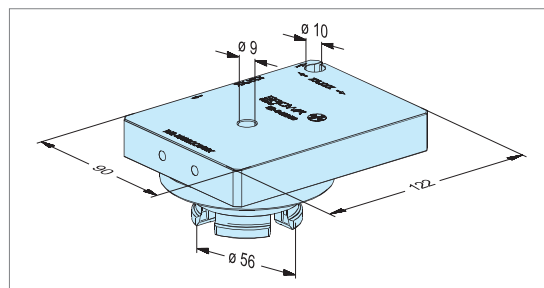
ER-042350 Alignment pallet PM56 / PM60 Precise

INOX ☐ ☐ ☐ ☐



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

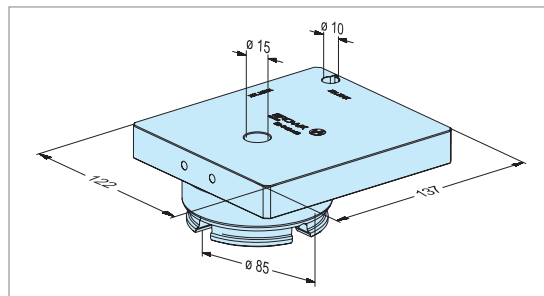
Application In tool- and mold-making. To align the angular position and to determine the center of PM56 and PM60 Precise chucks.



ER-042440 Alignment pallet PM85 PreciseINOX ☐ ☐ ☐ ☐

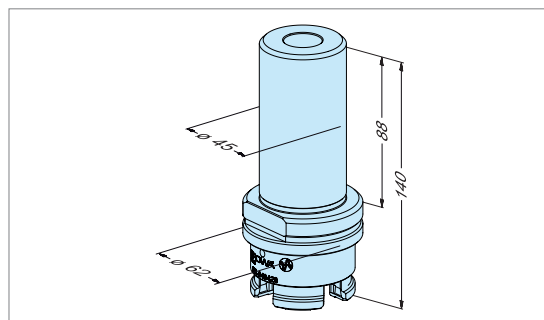
Version Steel hardened, corrosion-resistant. Ground alignment surface, center borehole $\varnothing 15$ and position borehole $\varnothing 10$.

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 ☐ ☐ ☐

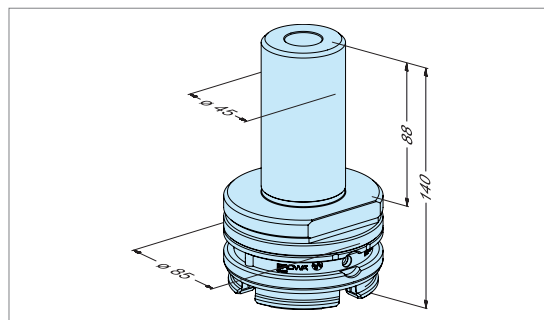
Version Steel hardened, corrosion-resistant. Ground alignment surface and $\varnothing 45$.

Application Alignment of the radial and axial positions of PM56 and PM60 Precise chucks.

**ER-043427 Alignment pin PM85 Precise**INOX auto ☐ ☐ ☐

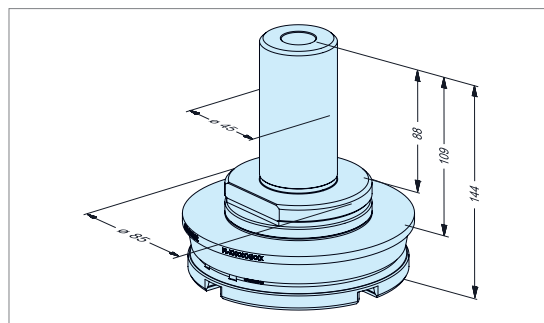
Version Steel hardened, corrosion-resistant. Ground alignment surface and $\varnothing 45$.

Application Alignment of the radial and axial positions of PM85 Precise chucks.

**ER-103292 Positioning pin PM128 Precise L144**INOX ☐ ☐ ☐

Version Steel, hardened, rust-resistant. With ground alignment surface and $\varnothing 45$.

Application To align the radial and axial positions of PM128 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



INOX

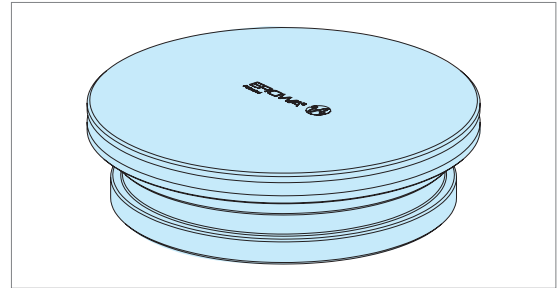


Version

Application

Steel, corrosion-resistant. Without centering facilities.

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



INOX

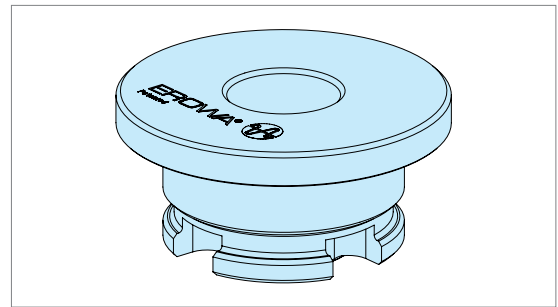


Version

Application

Steel, corrosion-resistant. Without centering facilities.

Prevents powder, dirt and chips from penetrating into the chuck mentioned in the product designation.



ER-057186 Sealing ring for die-plate PM128 Multi



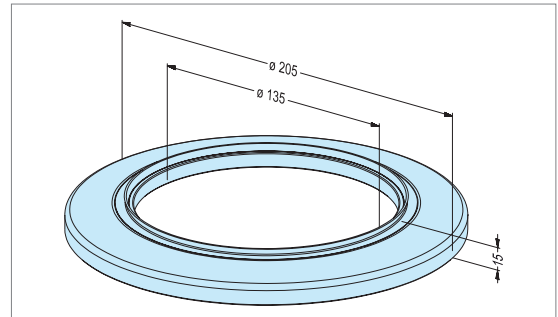
INOX



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



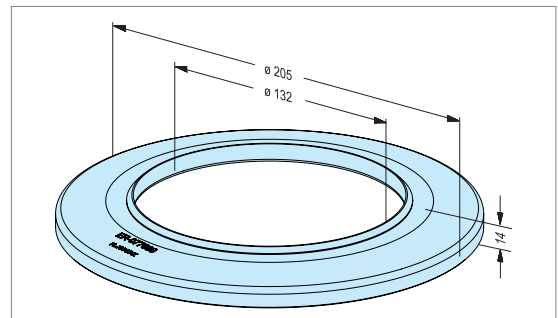
INOX



Application

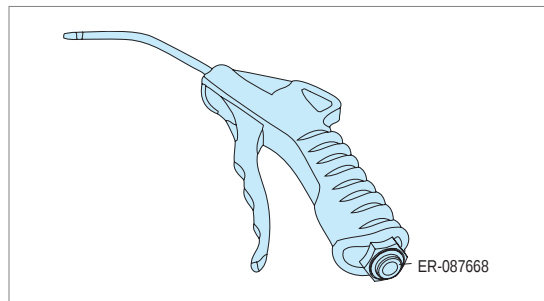
In tool- and mold-making, for mounting on die-plate chucks PM128 Precise.

Prevents penetration of dirt and liquid into the die-plate chuck PM128 Precise, in combination with pallets PM134 Multi.

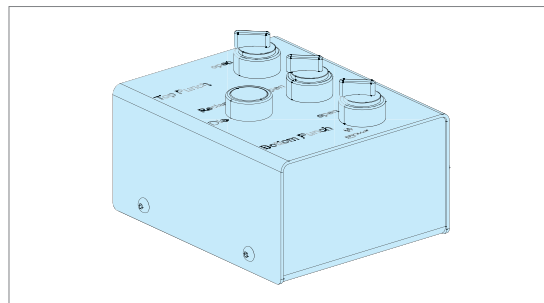


ER-001846 Air jet

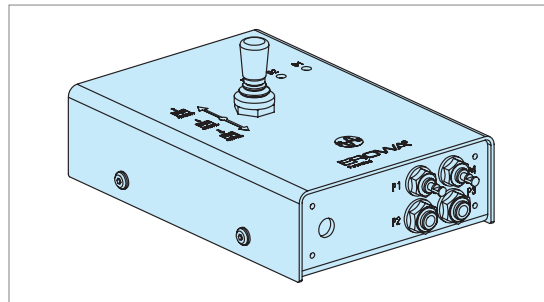
Version	Plastic, smooth regulation of air flow, connection 1/4", inside thread.
Application	Operation of manual chucks.
Note	Not suitable for operating MTS+ and MTS81.
Option	Volume and pressure reduction to air jet (ER-087668). Pressure build up is reduced if Air Jet is not pushed against an air valve.

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

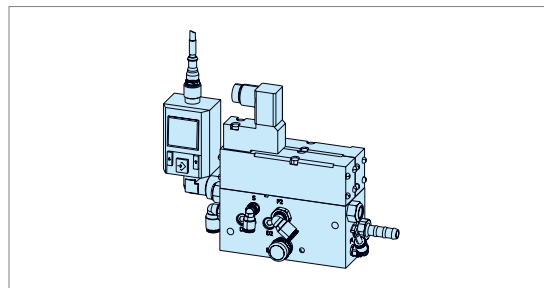
Version	Three manual valves for opening/closing of PM chucks. Incl. push-button valve for reclamping of die-plate chucks.
Application	Operation of die-plate, upper and lower punch chucks. Used for powder presses.

**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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