EROWA®
system solutions

# General Catalog

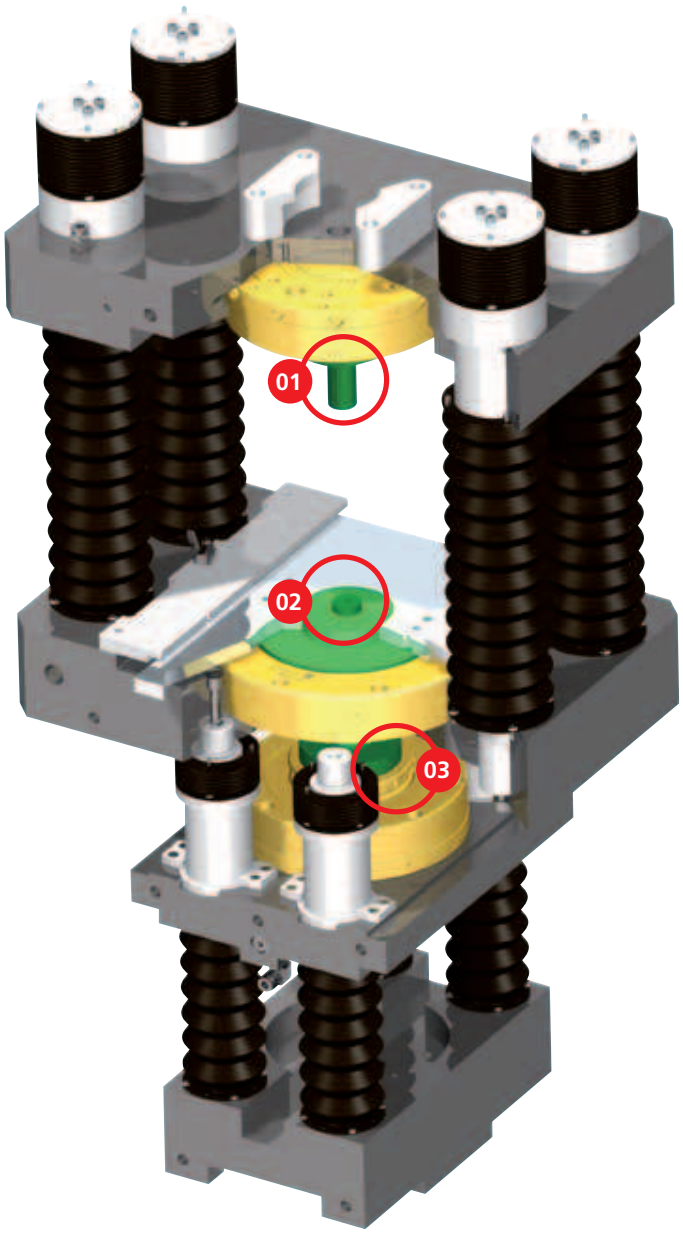
## Unlocking the full potential of your machines

EROWA PM Tooling

# Pressing powder systematically

**Pressed-powder parts are becoming ever more refined, and the diversity of product shapes is on the increase. Batch sizes are becoming smaller, which means that powder presses must be reset frequently.**

**EROWA has developed a solution for the minimization of resetting times: Single- or multi-level powder presses are equipped with the suitable PM tooling system. In this way, pressing tools can be exchanged in next to no time and with the highest degree of precision.**




The EROWA PM tooling system was developed for use under high pressing forces. Depending on the field of application and on requirements, the optimal tooling system can be chosen.

Crucial advantages of the PM tooling systems:

- Repeatability for the highest precision requirements.
- High degree of stability thanks to patented outside clamping.
- User-friendliness.
- Capable of being automated.

These factors directly aim to increase the productivity and economy of your powder press!

**01** | Upper punch on EROWA PM Tooling pallet: Positioning accuracy < 0.002 mm.

**02** | Die-plate on EROWA PM Tooling pallet: Positioning accuracy < 0.002 mm.

**03** | Lower punch on the EROWA PM Tooling pallet: Positioning accuracy < 0.002 mm.

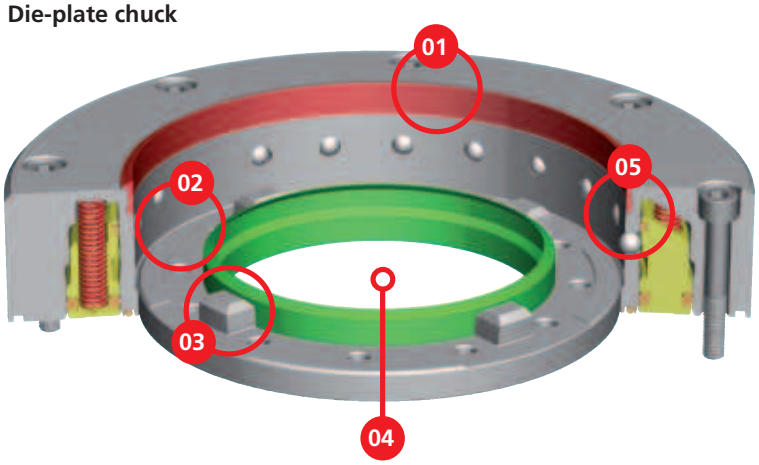
## Applications

## Handling

Manual / Loading facility / Robot

## Function

### Die-plate chuck




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

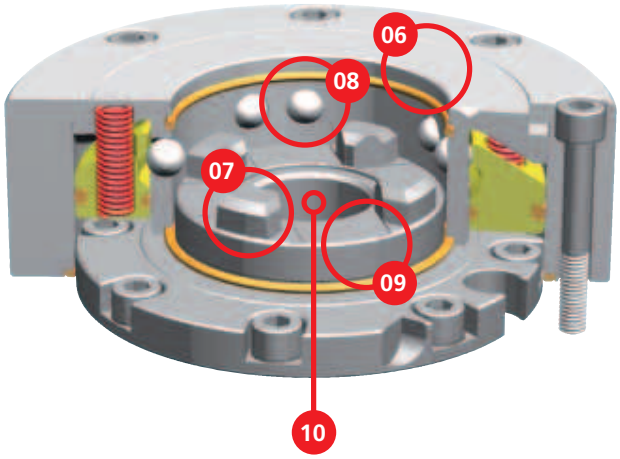
**02** | Large contact surface for great force absorption.

**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.

PM Tooling

**Technical data - PM Tooling Precise**

| PM Tooling Precise | System size | Max. admissible pressing force |
|---|---|---|
| Punch chuck | PM56 | 500 kN |
| | PM60 | 500 kN |
| | PM85 | 1000 kN |
| Die-plate chuck | PM128 | 1000 kN |

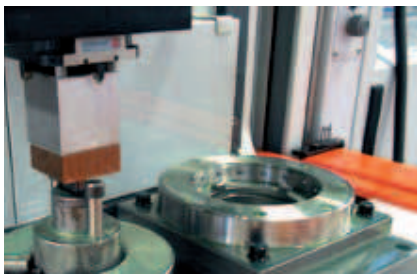
EROWA PM Tooling

# Universal from milling to pressing

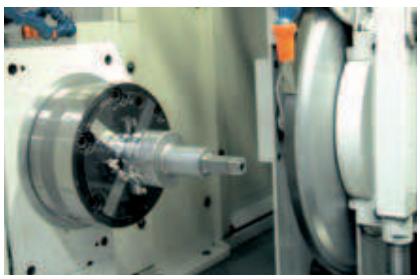
**With the EROWA PM tooling system, punches and die plates are fitted to pallets and manufactured with datum-point precision. Compatibility with other EROWA tooling systems enables your production machine to be fully automated. Workpieces run through the entire production chain on pallets:**


For more information about the whole EROWA PM tooling system range.

**Milling**
Electrodes used to EMD the molds are machined on ITS system holders.

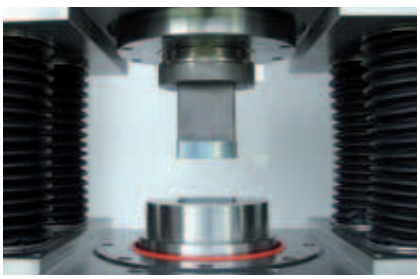


**EDM**
Shapes in the surface of the punches are EDMed.



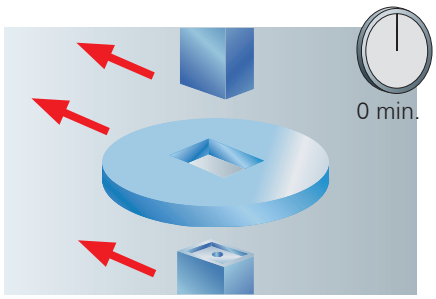
**Grinding**
Punches may also be machined on cylindrical grinding machines.

**Wire-EDM**
The contours are produced on a WEDM center. The reference position is provided by the chuck.

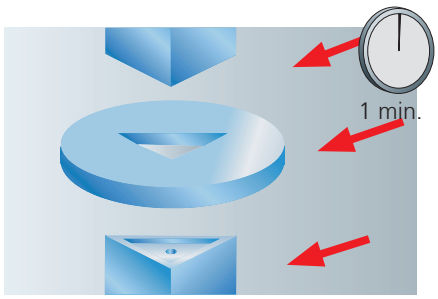


**Powder pressing**
Top and bottom punches and the die plate are inserted into the press. The reference positions are provided by the precisely aligned chucks.

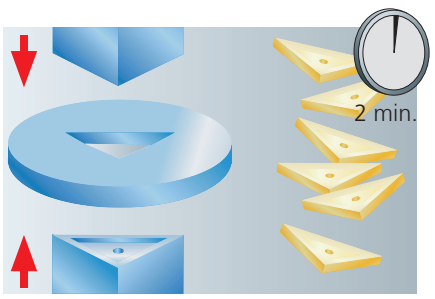
## Changing variants in 2 minutes




Pneumatically loosen die-plate and both punches.




Insert and clamp new die-plate and punches.




Produce new molds.

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 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

## EROWA PM TOOLING




For chip-removing processes


For EDM sinking


For WEDM

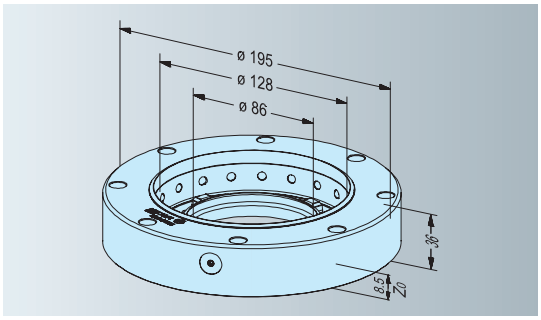
EROWA PM Tooling Precise

# Chucks

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

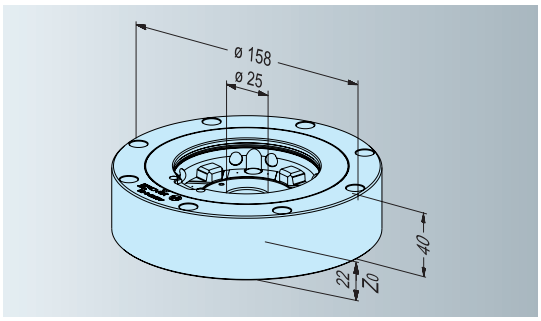
## ER-047544 Die-plate chuck PM128 II Precise

| | |
|---|---|
| Version | Steel, hardened. Through borehole ø 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.<br>To accommodate die-plate pallets PM128 Precise. |



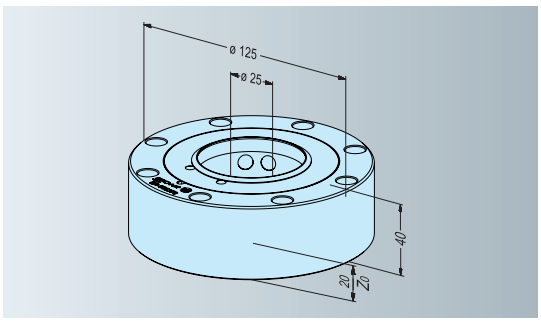

## ER-040697 Chuck PM85 Precise

| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Through borehole ø 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.<br>To accommodate pallets PM85 Precise. |



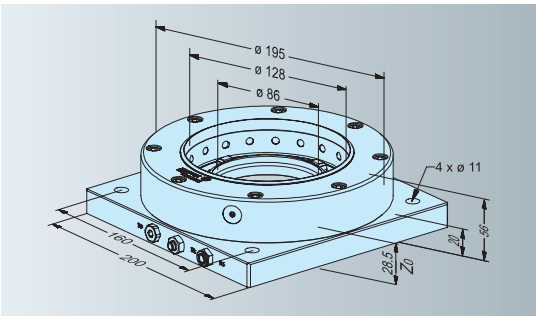

## ER-055370 Chuck PM60 Precise

| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Through borehole ø 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.<br>To accommodate pallets PM60 Precise. |



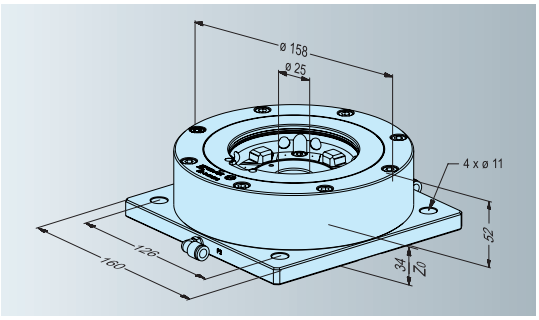
## ER-047566 Die-plate chuck PM128 II Precise with base plate


| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Through borehole ø 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.<br>To accommodate die-plate pallets PM128 Precise and Multi. |



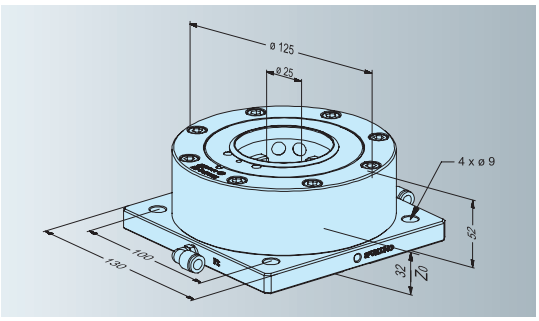

## ER-040696 Chuck PM85 Precise with base plate


| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Through borehole ø 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.<br>To accommodate pallets PM85 Precise and Multi. |




## ER-047500 Chuck PM60 Precise with base plate


| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Through borehole ø 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.<br>To accommodate pallets PM60 Precise. |



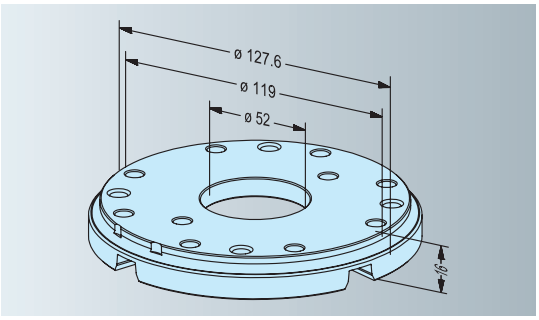
EROWA PM Tooling Precise

# Pallets

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

INOX

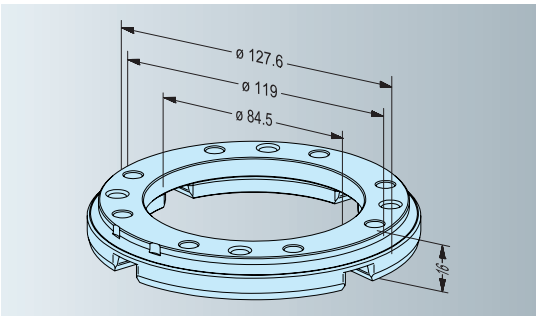
| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Centering integrated in pallet. Inside ø 52. |
| Application | For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses. |
| Fitting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




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

INOX

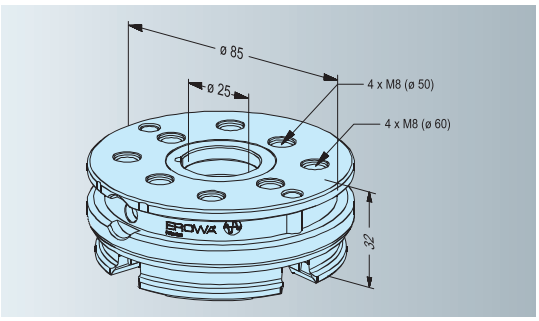
| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Centering integrated in pallet. Inside ø 84.5. |
| Application | For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses. |
| Fitting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




## ER-040701 Pallet PM85 Precise 1 piece

INOX auto

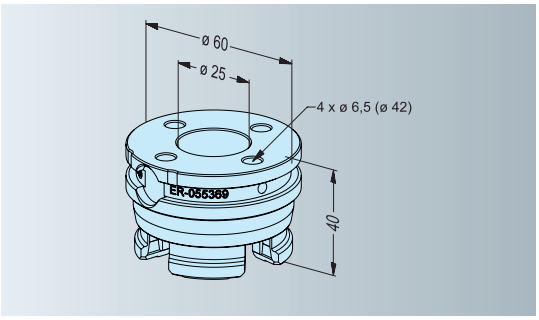
| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>Centering integrated in pallet. Inside ø 25. |
| Application | For use on Chuck PM85 Precise. With chucking spigot ER-039839 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces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




## ER-055369 Pallet PM60 Precise 8 pieces

INOX auto

| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>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. |



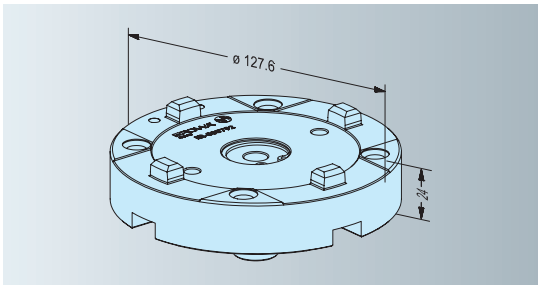
EROWA PM Tooling

# Accessories

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

INOX

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.

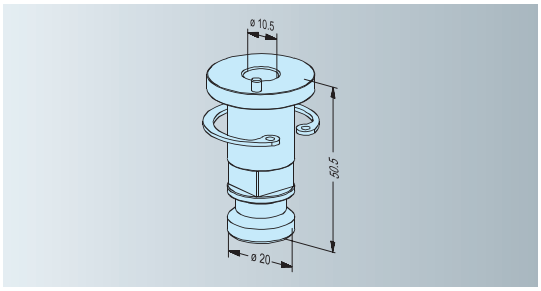



**ER-039839 Chucking spigot PM85 automatic 8 pieces**

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

auto

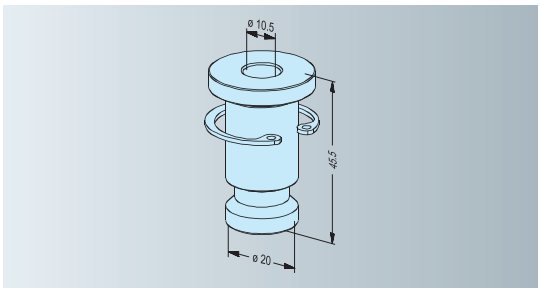
Version: Steel, hardened. Automatic, with borehole ø 10.5.
Application: In pallets PM85 Precise. To be fitted with securing ring.




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

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

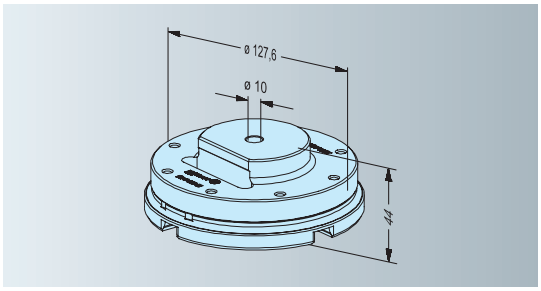
Version: Steel, hardened. Manual, with borehole ø 10.5.
Application: In pallets PM56 and PM60 Precise. To be fitted with securing ring.




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

INOX

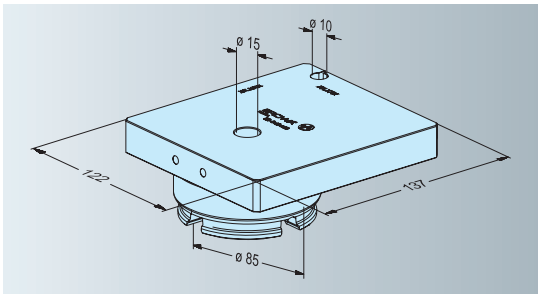
Version: Steel hardened, corrosion-resistant. Ground alignment surface and centering borehole ø 10.
Application: In tool- and mold-making. For alignment of the angle position and determination of the center of the die-plate chuck PM128 Precise.




**ER-042440 Alignment pallet PM85 Precise**

INOX

Version: Steel hardened, corrosion-resistant. Ground alignment surface, center borehole ø 15 and position borehole ø 10.
Application: In tool- and mold-making. Alignment of the angle position and determination of the center of PM85 Precise chucks.



EROWA PM Tooling

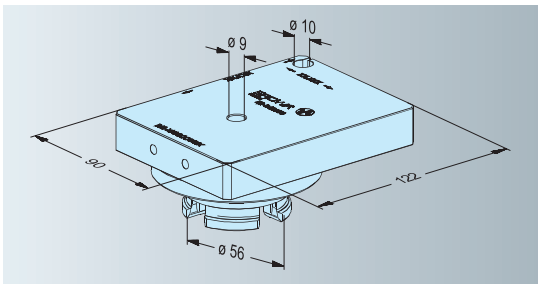
# Accessories

## ER-042350 Alignment pallet PM56 / PM60 Precise

INOX

Version: Steel hardened, corrosion-resistant. Ground alignment surface, center borehole ø 9 and position borehole ø 10.

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

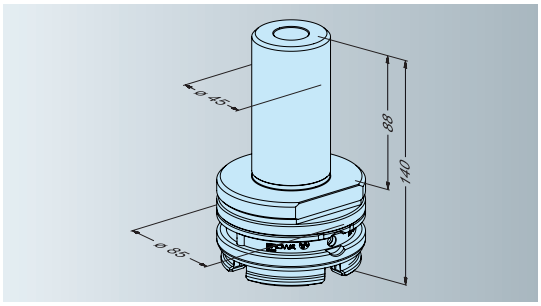



## ER-043427 Alignment pin PM85 Precise

INOX auto

Version: Steel hardened, corrosion-resistant. Ground alignment surface and ø 45.

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

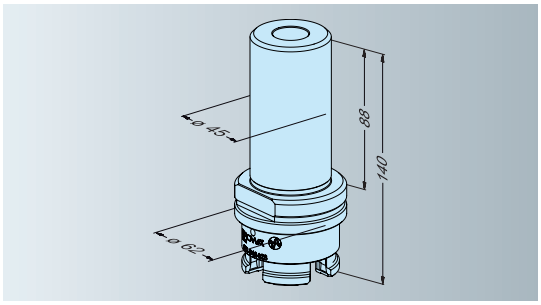



## ER-043428 Alignment pin PM56 / PM60 Precise

INOX auto

Version: Steel hardened, corrosion-resistant. Ground alignment surface and ø 45.

Application: Alignment of the radial and axial positions of PM56 and PM 60 Precise chucks.



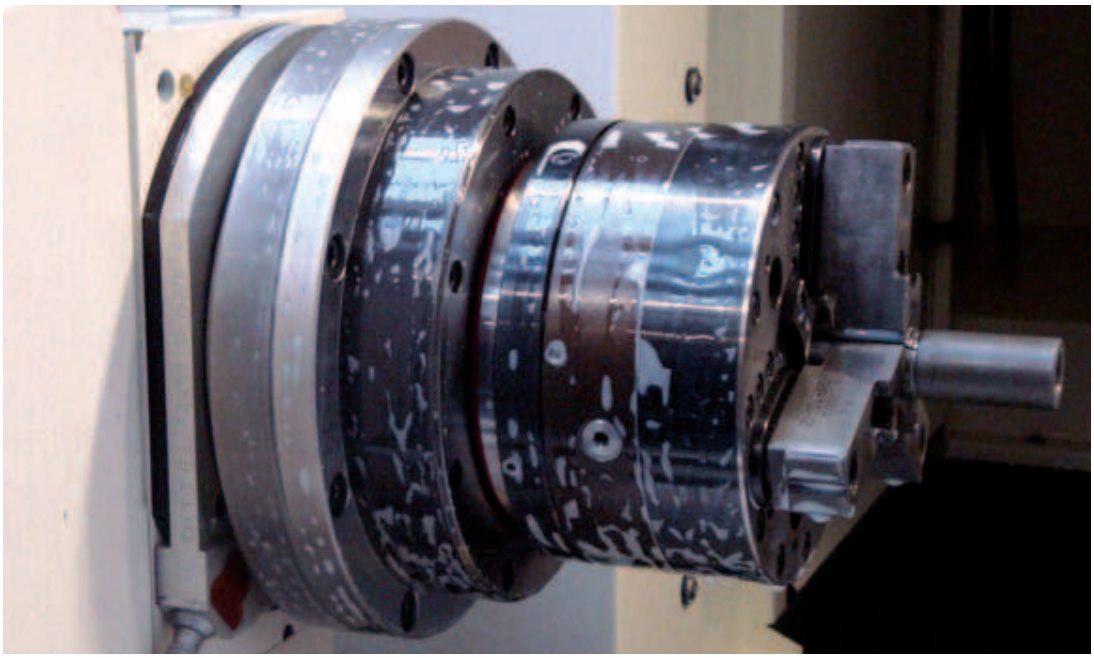

Please note: you can find the entire range in the EROWA PM Tooling System Catalog.

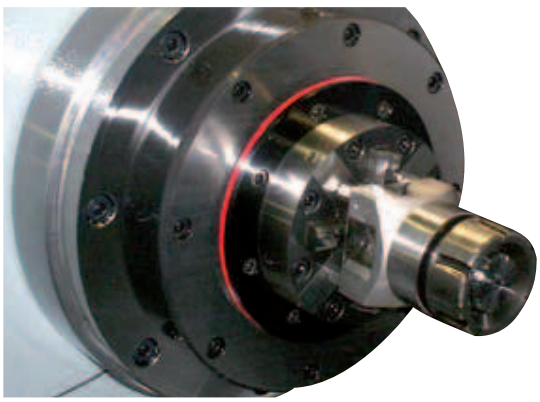
EROWA spindle adaptation

# The universal interface

**Minimize resetting time - increase productivity!**
**With the help of EROWA›s spindle-adaptation solution, productive time - for instance in circular grinding - can be substantially increased.**

**The changeover from a three-jaw chuck to a pneumatically operated tooling system and to customized jigs only takes a few seconds - whilst the highest degree of precision is retained. The basis for all adaptations is the EROWA PM chuck. It is integrated with the machine spindle with the help of a suitable flange. The overall solution is impressive, not least owing to its robust and compact design.**





Crucial advantages of EROWA's spindle adaptation:

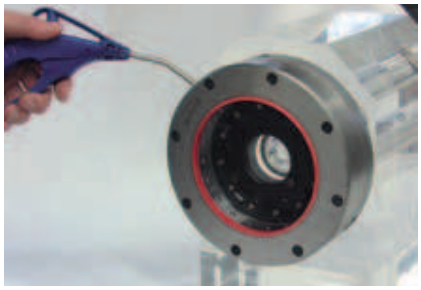
- Substantially shorter resetting times.
- Minimum height.
- Highest stability and repeatability.
- Maximum concentric accuracy.
- Pneumatic control of adaptations.
- Fully sealed.
- Capable of being automated.

## Applications

## Handling

Manual

## Sample application

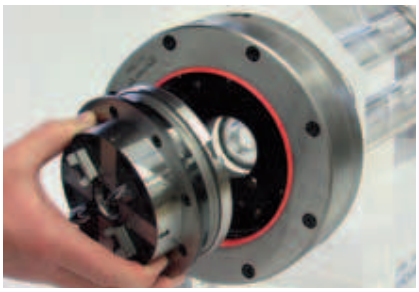


The chuck integrated with the machine spindle is opened with compressed air, either through an air-gun or through a fixed air supply.

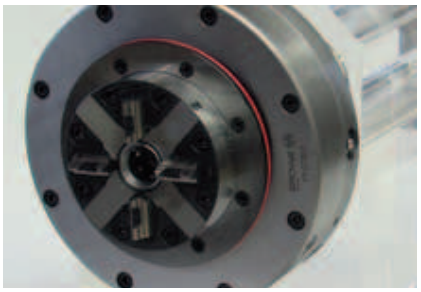
The three-jaw chuck is inserted. Both run-out and concentricity are repeated to an accuracy of 0.002 mm.

The system is ready for operation in next to no time. Resetting is no longer an essential time factor.

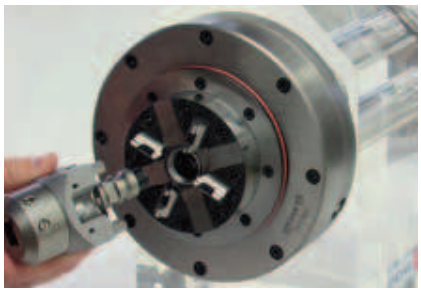
The base chuck is opened and the three-jaw chuck is removed.



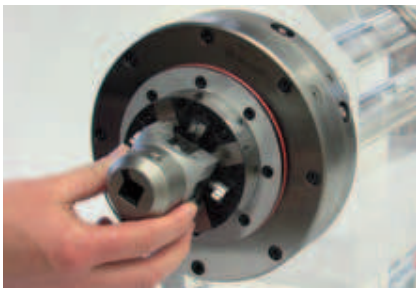
The palletized EROWA ITS chuck is inserted. The contour of the pallet completely seals off the spindle.



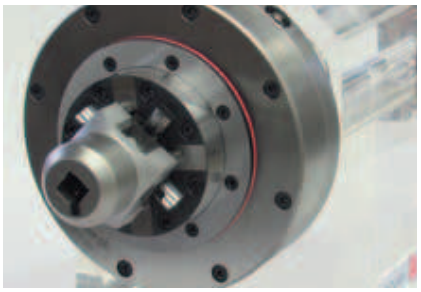
Ready for clamping and positioning to an accuracy of 0.002 mm.



The ITS chuck is opened through the integrated air coupling.



Any EROWA ITS system carrier can be clamped safely, quickly and precisely.



The ITS square holder, for example, serves as a fast-exchange facility for small workpieces or electrode blanks.

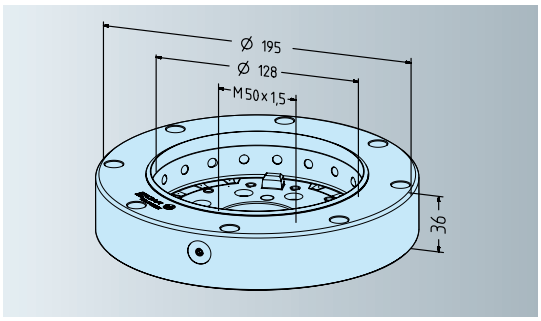
EROWA spindle adaptation

# Chucks

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

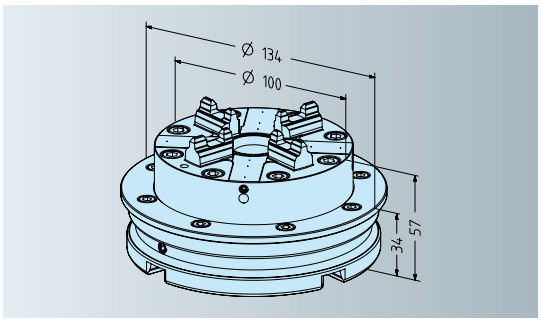
## ER-073369 Die-plate Chuck PM128 II AirDock

| | |
|---|---|
| Version | Hardened steel. Through hole: ø 48. Outside seal. Positioning ring, including 2 AirDock valves. Max. speed 4000 min-¹. |
| Clamping power | 23,000 N (reclamped at 6 bar). |
| Connections | At the rear through customized base plate, flange or rotatable pneumatic connector (not supplied with this unit). |
| Operation | With compressed-air gun, control unit or through the machine control unit. |
| Application | On dividing heads, indexing tables, lathes and circular grinding machines. To accommodate adapter chuck, die-plates PM128 and customer-specific jigs. |



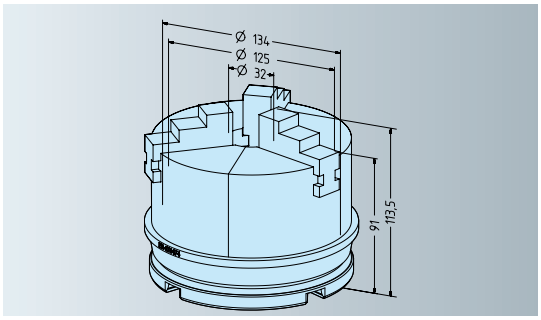

## ER-078473 ITS Chuck 100 P on die-plate pallet PM128 Precise

| | |
|---|---|
| Version | Hardened steel. |
| Clamping power | ITS Chuck 100 P: 6,000 N. |
| Connections | At the rear, to die-plate PM128. |
| Operation | Through AirDock valves. With compressed-air gun, control unit or through the machine control unit. |
| Application | As adapter chuck in the die-plate chuck PM 128 II AirDock. To accommodate electrode holders, pallets ø 115, ø 148, PM56, PM60 and PM85 Precise. |




## ER-078474 Manual 3jaw concentric chuck ø 125 mm on dieplate pallet PM128 Precise

| | |
|---|---|
| Version | Manual 3-jaw concentric chuck ø 125 mm. Central clamping area 3-53 mm. Body made of cast metal. High degree of concentricity according to DIN 6386. Includes 3 hardened drilling jaws (stepped on the outside), 3 hardened turning jaws (stepped on the inside), 1 spanner. |
| Note | Max. speed 4000 min-¹. |
| Application | As adapter chuck in the die-plate chuck PM128 II AirDock. |

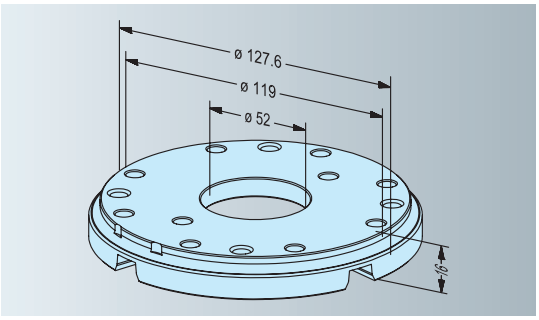


EROWA spindle adaptation

# Pallets

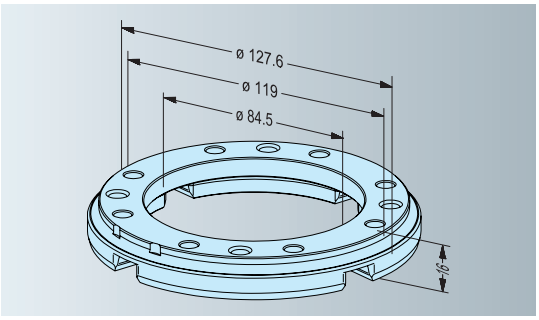
| ER-034680 | Die-plate pallet PM128 ø 52 Precise<br>1 piece |
|---|---|


| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>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 workpiece with M8 bolts. |




| ER-046927 | Die-plate pallet PM128 ø 84.5 Precise<br>1 piece |
|---|---|


| | |
|---|---|
| Version | Steel, hardened, corrosion-resistant.<br>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 workpiece with M8 bolts. |




| ER-071890 | Alignment pallet PM128 Precise<br>for die-plate chuck PM128 AirDock |
|---|---|


| | |
|---|---|
| Version | Hardened steel, corrosion-resisitant. With ground alignment surface and ø 122. Including M50x1.5 threaded insert. |
| Application | In tool- and mold-making. To align angle position and determine the center of die-plate chucks PM128 AirDock. |