

EROWA®  
system solutions



# General Catalog

Unlocking the full potential  
of your machines



# Welcome to the EROWA General Catalog

Competence means understanding the facts. EROWA products are based on this competence. The use of the EROWA FMC concept only has one single aim: **to increase competitiveness**. We'll be glad to be of assistance. With practical advice.

Your EROWA Team





# How to find everything

## STANDARDIZATION



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## ORGANIZATION



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## AUTOMATION



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## INTEGRATION



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# This is how the General Catalog works



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



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14. Handling with EROWA Robot gripper 115



15. Handling with EROWA Robot gripper 148



16. Handling with EROWA Robot gripper RN PC 210

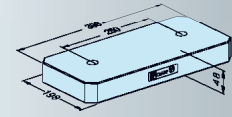


17. Handling with EROWA Robot gripper RCS

## ER-041781 MTS pallet 198 x 398 / 250



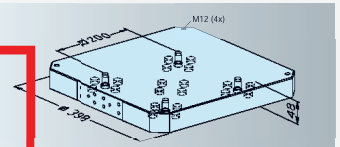
Aluminum pallet, 2-fold, excluding chucking spigot (MTS chucking spigot set ER-041460).  
To clamp workpieces, vises and gauges.  
ER-041460 to be ordered separately.



## 8014 MTS pallet 398 x 398 / 200



Cast aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).  
To clamp workpieces, vises and gauges.  
ER-041461 (M) / ER-041464 (A) to be ordered separately.



## 8002 MTS pallet 398 x 398 / 250



Cast aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).  
To clamp workpieces, vises and gauges.  
ER-041461 (M) / ER-041464 (A) to be ordered separately.



### Suitable for:



For chip-removing processes



For EDM sinking



For WEDM

## 8376 MTS pallet 398 x 398 / 200

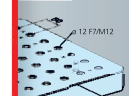
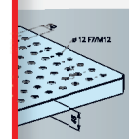
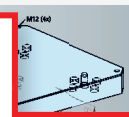


Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).  
**Hard Z support**



## STANDARDIZATION 039

EROWA MTS PRESETTING SYSTEM



### STANDARDIZATION

Red marks everything that is connected with **palletizing systems**.

### ORGANIZATION

Yellow is used for **measuring and presetting stations**.

### AUTOMATION

The color green directs you to **handling facilities**.

### INTEGRATION

**Software and process control systems** are marked blue.

To make it easier for you to find your bearings among all the applications of EROWA products, we use the following icons in all our documents:

## How to find ev

**STANDARDIZATION**

**EROWA PALLETIZING SYSTEMS**

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**INTEGRATION**

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- EROWA Manufacturing Control cell control 374

### QUICK SEARCH

The quick search on the first inside page leads you to the beginning of the various product areas.

### DETAILED OVERVIEW

The detailed overview that precedes each product area leads you to the relevant product families such as the ITS or the WEDM tooling system.

Machine dependent						
500 x 500 x 500 mm						
000 x 000 x 000 mm						EROWA ClearClamp System
400 x 400 x 400 mm						EROWA PC210 (ProductionChuck 210)
160 x 160 x 250 mm						EROWA PowerChuck P
Depends on machining power						EROWA Self-Centering Vise
200 x 200 x 200 mm						EROWA ClampSet
140 x 140 x 140 mm						EROWA ITS (Integrated Tooling System)
50 x 50 x 50 mm						EROWA ITS Compact Combi
						EROWA ITS Accessories
Depends on machining power						EROWA FTS (Fine Tooling System)
Machine dependent						EROWA Wire EDM Tooling

### OVERVIEW TABLES

The overview tables that precede the chapters on presetting stations and handling facilities provide you with a quick overview of the properties of the various products.

Robot Easy							
PSW	PC210	UPC	IMTS 400				
-	-	-	-	-	-	-	-
-	-	-	-	11	-	-	30
-	-	-	-	11	11	-	30
-	-	-	-	11	-	-	30
-	-	-	-	9	-	-	30
-	-	-	-	5	-	-	15
-	-	-	-	5	-	-	15
-	-	-	-	5	-	-	15
-	-	-	-	5	-	-	15
-	12	-	-	3	-	5	10
-	-	10	-	2	2	2	3
-	-	-	6	-	-	-	3
-	-	-	-	4	-	-	2
-	-	-	-	9	-	-	30*
15	-	-	-	2/3	-	7	15

### UPDATES

The «Updates» page on the Internet shows you novelties and improvements that cannot be found in the printed copy. The PDF file is easy to download. The version number will tell you whether this page contains something new for you.

Online Catalogs

Quick Order

**File Download**

Exhibitions & Events

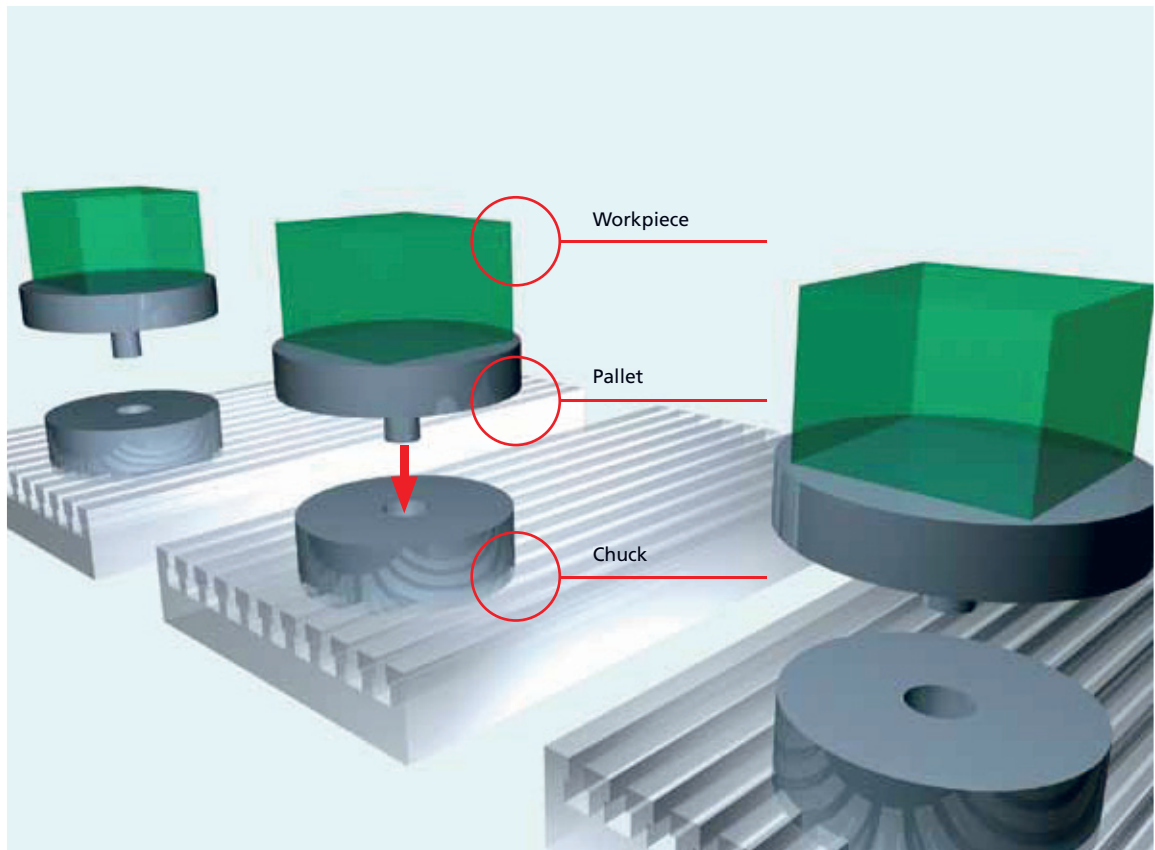
EMO 2011

**NEW 5 | File Download**

**Interesting Files for**

This is the page where you can... and follow the directions on the...

# EROWA Palletizing systems



**Standardization** of mechanical interfaces. The integration of a universal tooling system on all machine tools will significantly reduce any downtimes.



For chip-removing processes





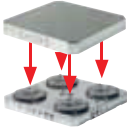

















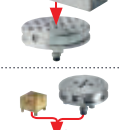


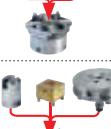








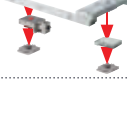


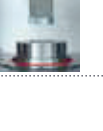
For EDM sinking



For WEDM



## EROWA PALLETIZING SYSTEMS

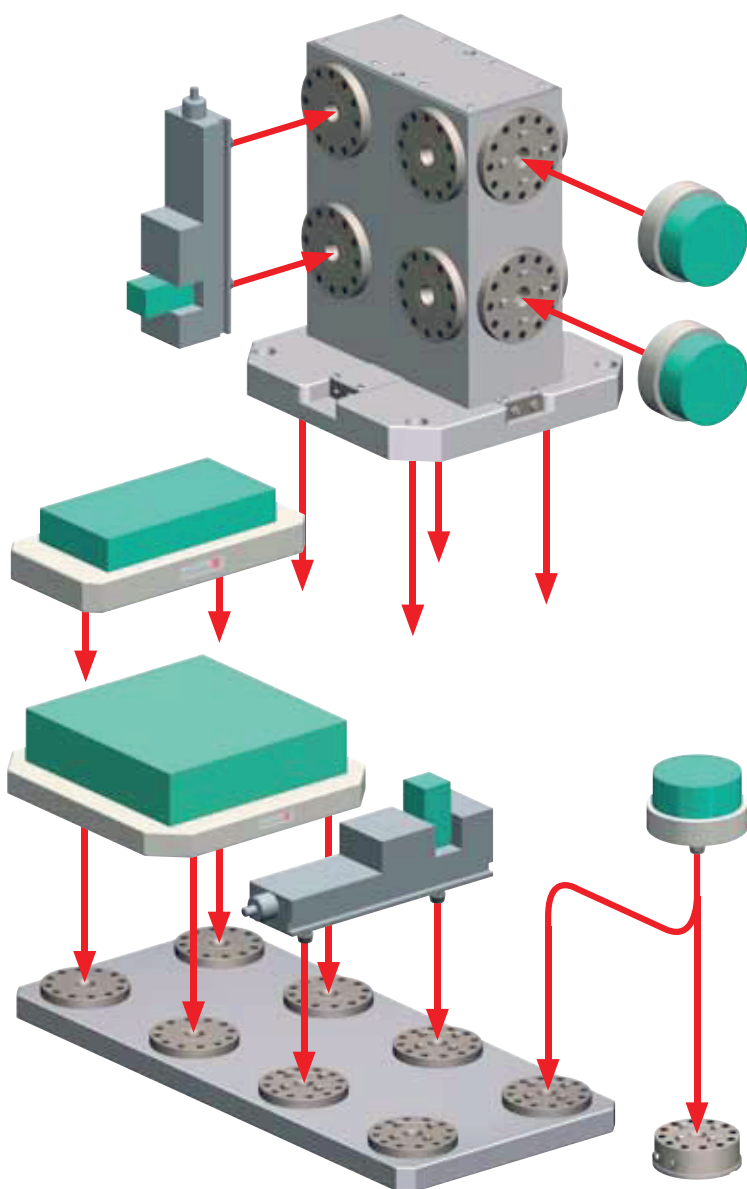
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Machine dependent				

EROWA MTS

# The datum point tooling system

The EROWA MTS (Modular Tooling System) is a flexible system. The maximum workpiece size exclusively depends on the possibilities offered by the machine. Whether it is a case of single palletization with one MTS chuck or multiple palletization with several MTS chucks or base plates - any combination is possible.

MTS chucks can be operated manually or automatically. New jobs are set up while the machine is in productive operation. Express jobs can be positioned on the machine within seconds. After that, the previous production process can be resumed. Therefore, machine down-times are reduced to a minimum.



### The datum point is defined!

No alignment is necessary.

### Minimum set-up times thanks to a standardized interface!

The interface between the machine and the workpieces/fixtures is standardized. The modular design of the clamping equipment allows for an almost unlimited number of combinations of all the components.

### Make use of existing equipment!

Vises, gauges and fixtures are palletized or equipped with chucking spigots and put into production right away.

### 5-sided machining in one single clamping process!

Once the workpiece has been clamped on an EROWA pallet, 5 sides can be machined with that one clamping process.

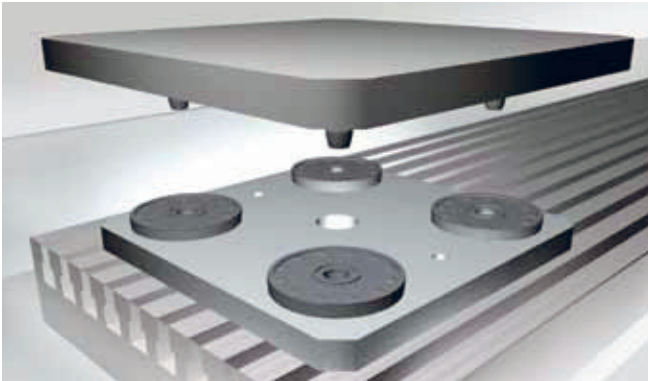
- Play-free prismatic centering in MTS single chucks.
- Indexable 4 x 90°.
- More than 500,000 clamping processes without any loss of power or reference accuracy.
- Clamping surfaces without recesses can be cleaned with compressed air.
- Low profile design.
- Suitable for automatic pallet change.
- Standardized pitch\* of 200 mm or 250 mm on all EROWA base plates.

\*) The pitch is the distance between the MTS chucks on a base plate.

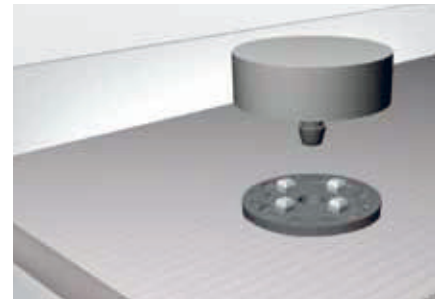
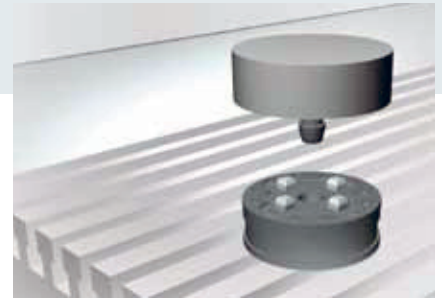
EROWA MTS

# Systematic clamping

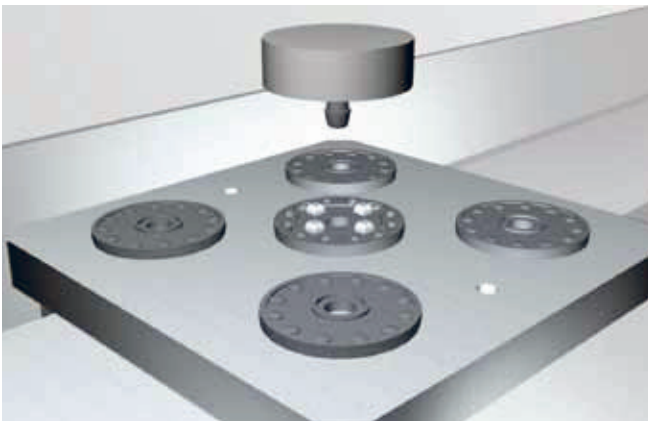
A base plate with integrated MTS chucks.



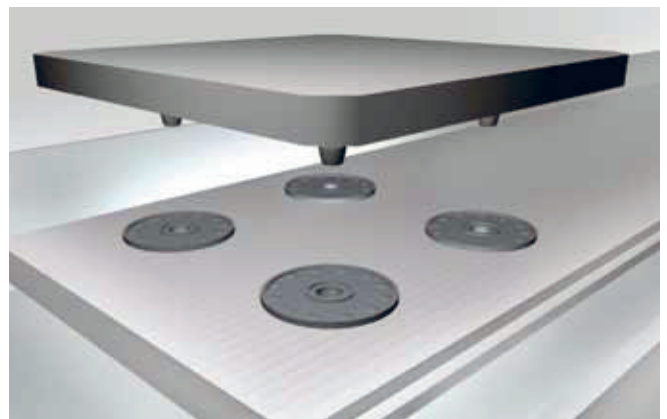
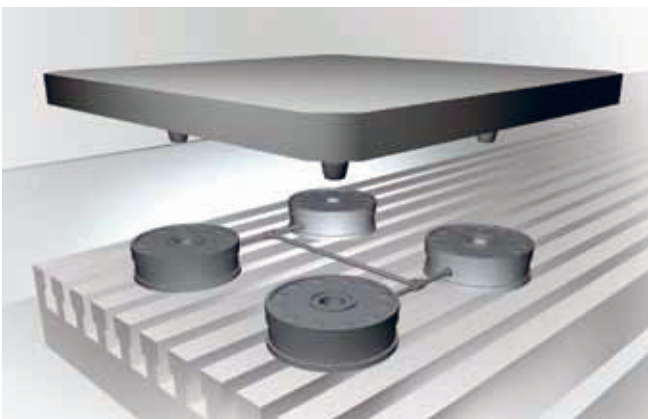
An individual MTS chuck, mounted on or directly integrated in the machine table.



Single and/or multiple MTS chucks integrated in a customized base plate.



Several MTS chucks mounted on or directly integrated in the machine table.



MTS

EROWA MTS

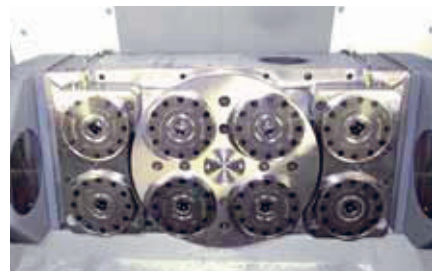
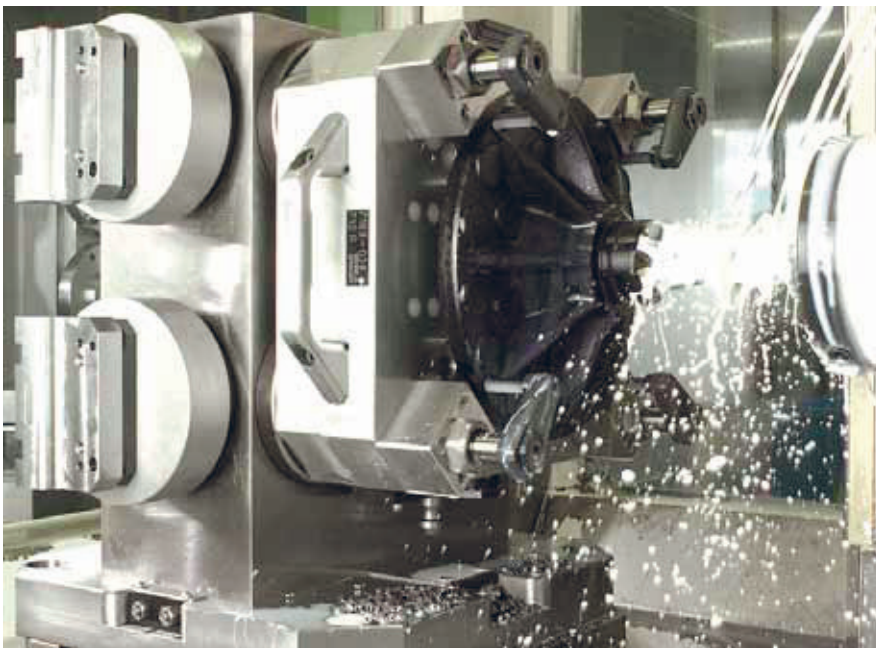
# The palletizing system for your manufacturing processes

## SERVICE

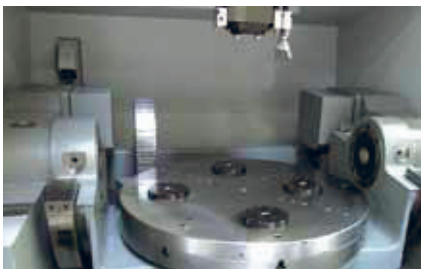
We'll be glad to advise you. No doubt we will find an optimal «clamping solution» for you, too.

Practical work demonstrates the flexibility of the EROWA MTS tooling system. Whether it is a standard solution or a customized configuration, the system will adapt to virtually any machine situation.

The system's universality allows for a wide variety of workpiece carriers to be loaded and unloaded in next to no time. The automation of the workpiece loading/unloading cycle can be retrofitted at any time.



Customized solutions are included. We will gladly advise you.



The low profile design of the EROWA MTS leaves a great deal of space for workpieces.

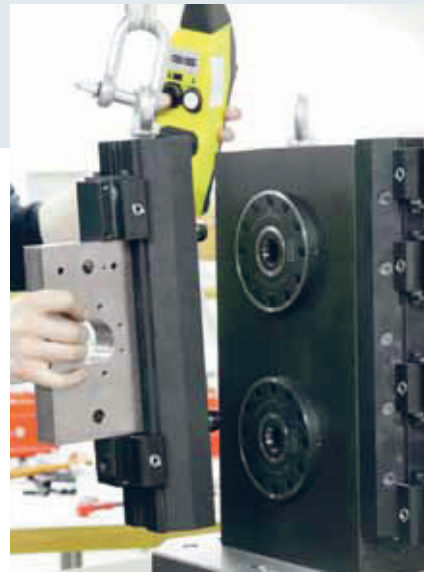


Various jobs can be done on one machine. Express jobs can easily be placed in between. Resetting the clamping equipment only takes a few seconds.

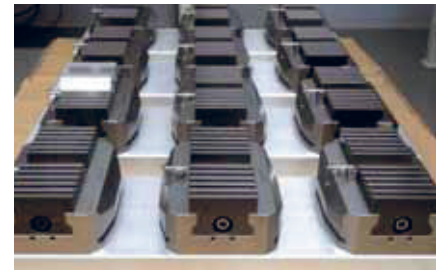


Thanks to the medium duct between chuck and pallet, workpieces may be clamped pneumatically, hydraulically or with a vacuum.





MTS chuck integrated in the mineral cast cube. In combination with the EROWA CleverClamp tooling system - a crucial production factor.



Flexible clamping devices. EROWA center clamps on MTS pallet.



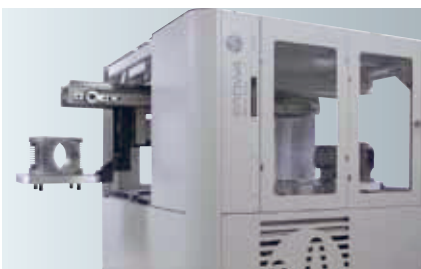
MTS single base plates are quickly installed and ready to use. Fit on machine tables with R50 and 63 mm hole grid and 100 mm T-slot spacing.



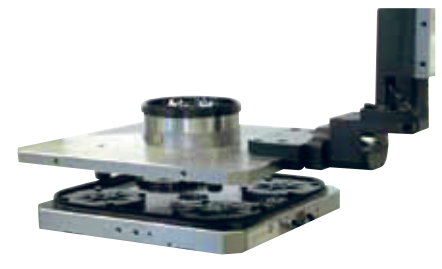
MTS chuck, able to automate. During the workpiece change, the contact surfaces are cleaned automatically.



Variable use of tombstones. The MTS system provides an interface to fixtures and vises. Refitting takes no time at all.



From the manual handling facility to the complex Robot system, EROWA supplies the handling solution you require.



Automatic pallet change in mixed operation with MTS and ITS pallets. Such combinations allow for an optimal use of the tooling system according to part sizes.

EROWA MTS

# The various EROWA MTS palletizing systems at a glance

## **EROWA MTS 81**

### **Small size, high clamping power**

MTS 81 is used wherever available space is limited.

There is no need to give up the benefits of a datum point tooling system and high clamping power.

---

## **EROWA MTS**

### **The universal interface**

Used and proven in tens of thousands of practical applications, the MTS datum point tooling system is indispensable in machining production and the EROWA product portfolio.

---

## **EROWA MTS 2.0**

### **The datum point tooling system for highest demands**

With integrated open monitoring, a maximum clamping power of 20,000 N and enhanced precision, the new MTS 2.0 generation fulfills even the most exacting demands. A top product with an attractive price-performance ratio!

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








On the following pages, you will find detailed product information including a portfolio overview of the individual EROWA MTS palletizing systems.

## **EROWA MTS+**

Contact your EROWA dealer for information about MTS+.

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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       |
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## EROWA MTS PALLETIZING SYSTEM

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EROWA MTS 81

# Small size, high clamping power!

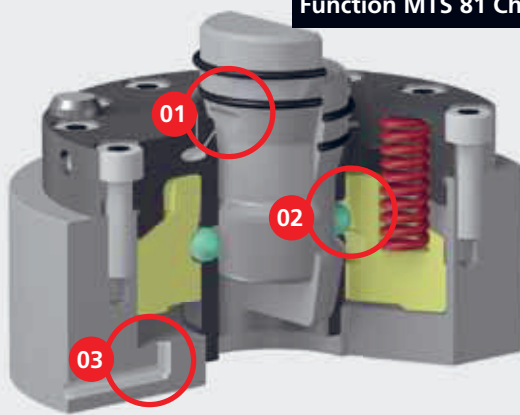
## Applications



## Handling

Manual / Loading facility / Robot

## Function MTS 81 Chuck



### 01 | Precise

Play-free, conical centering.  
Repeatability: < 0.005 mm.  
Easy insertion of the pallets  
without any jamming.

### 02 | Clamping mechanism

Reliable clamping mechanism through  
self-locking ball lock. Stable, low level  
of vibration.

### 03 | Open

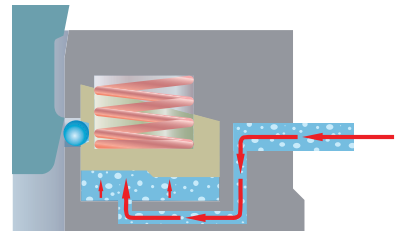
MTS 81 chucks are operated  
pneumatically.

## Technical data - MTS 81

	MTS 81
Repeatability	< 0.005 mm
Activation	clamped without pressure
Opening pressure	min. 8.5 bar
Process monitoring	pneumatically
Clamping power with reclamping	10,000 N/chuck
Holding power	> 60,000 N/chuck
Reclamp	yes
Clamping cycles	> 500,000

### Power package

A reclamping feature provides up to  
10,000 N of clamping power.  
The chucks are opened pneumatically.



compatible

- MTS 81
- MTS
- MTS 2.0
- MTS+



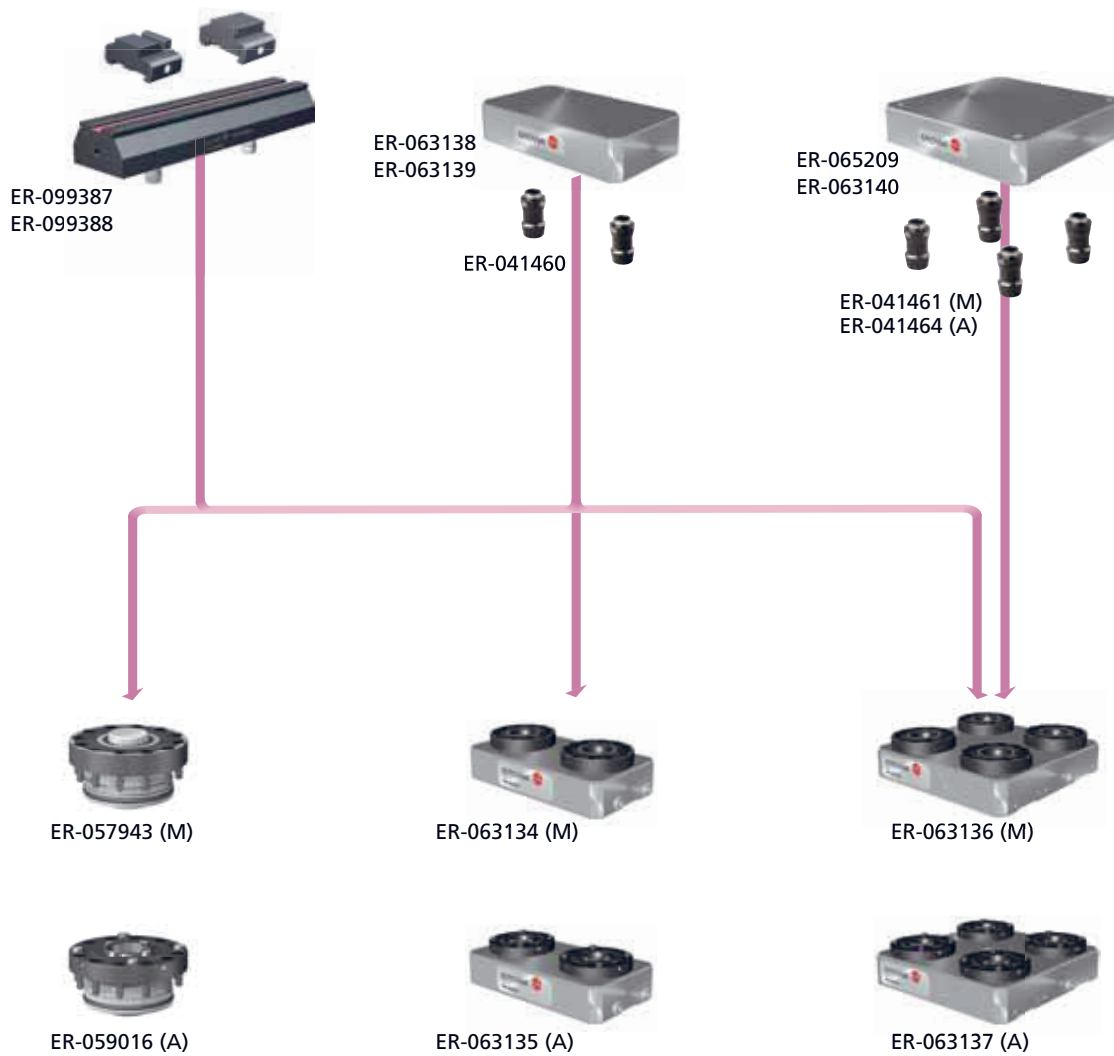


EROWA MTS 81

# The components

(M) = manual  
(A) = automatic

CleverClamp System:  
see page 76



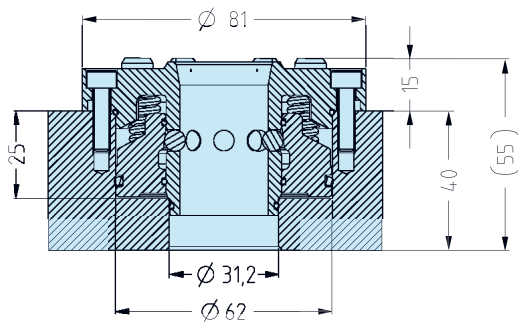
MTS 81

# EROWA MTS 81 Integral chucks

Technical data	MTS 81 integral chucks pneumatic
Repeatability	< 0.005 mm
Clamping	Spring tension
Opening pressure	min. 8.5 bar
Process monitoring	pneumatic
Clamping power with reclamping	up to 10,000 N/chuck

M = Multi  
P = pneumatically operated  
A = able to automate

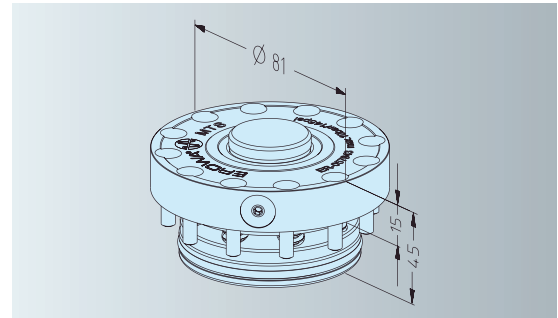
Integration variant applicable to MTS 81 IntegralChucks.  
Observe tolerances according to integration instructions!



## ER-057943 MTS 81 IntegralChuck M-P



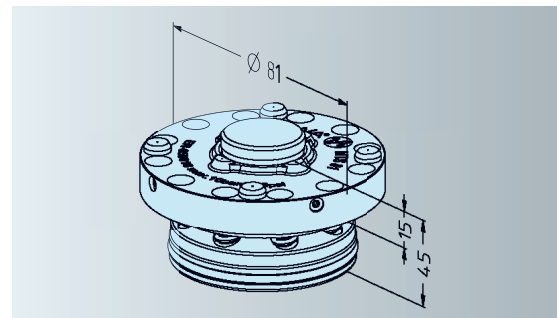
- Version To be fitted directly to machine tables, plates, tombstones, squares or dividing heads. Suitable for manual loading.
- Connections 2 pneumatic connections: one for opening and one for reclamping.
- Application To accommodate multiple pallets.



## ER-059016 MTS 81 IntegralChuck M-P/A



- Version To be fitted directly to machine tables, plates, tombstones, squares or dividing heads. Suitable for automatic loading.
- Connections 3 pneumatic connections: one for opening, one for reclamping, and one for presence checks and cleaning.
- Application To accommodate multiple pallets.



EROWA MTS 81

# Base plates, 2-fold

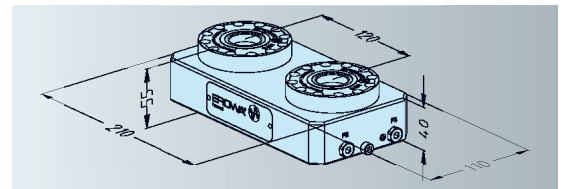
Technical data	MTS 81 Base plates, 2-fold pneumatic
Repeatability	< 0.005 mm
Indexation, pallet	1 x 180°
Clamping	Spring tension
Opening pressure	min. 8.5 bar
Process monitoring	pneumatic
Clamping power with reclamping	up to 20,000 N (2 x 10,000 N)

P = pneumatically operated  
A = able to automate

## ER-063134 MTS 81 base plate 110 x 210 P Pitch 120 mm



Version	Base plate, steel, unhardened; pitch 120 mm.
Connections	2 lateral pneumatic connections: one for opening and one for reclamping.
Application	To accommodate double pallets. For direct assembly on machine tables.
Accessories supplied	2 x ER-014326 threaded connector, straight, $\varnothing$ 6 2 x ER-002675 plugs, $\varnothing$ 6 1 x ER-014324 threaded connector, straight, $\varnothing$ 4 1 x ER-002673 plug, $\varnothing$ 4
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



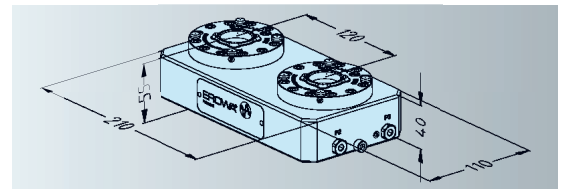
EROWA MTS 81

# Base plates, 2-fold with cleaning facility, automatable

## ER-063135 MTS 81 base plate 110 x 210 P/A Pitch 120 mm



Version	Base plate, steel, unhardened; pitch 120 mm.
Connections	3 lateral pneumatic connections: one for opening, one for cleaning and one for reclamping.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	2 x ER-014326 threaded connector, straight, $\varnothing$ 6 2 x ER-002675 plugs, $\varnothing$ 6 1 x ER-014324 threaded connector, straight, $\varnothing$ 4 1 x ER-002673 plug, $\varnothing$ 4
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



## EROWA MTS 81

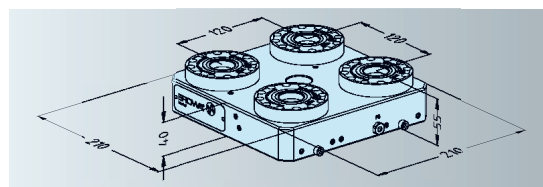
# Base plates, 4-fold

Technical data	MTS 81 Base plates, 4-fold pneumatic
Repeatability	< 0.005 mm
Indexation, pallet	4 x 90°
Clamping	Spring tension
Opening pressure	min. 8.5 bar
Process monitoring	pneumatic
Clamping power with reclamping	up to 40,000 N (4 x 10,000 N)

### ER-063136 MTS 81 base plate 210 x 210 P pitch 120 mm



Version	Base plate, steel, unhardened; pitch 120 mm.
Connections	2 lateral pneumatic connections: one for opening and one for reclamping.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	2 x ER-014326 threaded connector, straight, $\varnothing$ 6 2 x ER-002675 plugs, $\varnothing$ 6 1 x ER-014324 threaded connector, straight, $\varnothing$ 4 1 x ER-002673 plug, $\varnothing$ 4
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



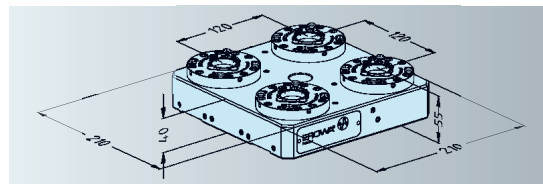
## EROWA MTS 81

# Base plates, 4-fold with cleaning facility, automatable

### ER-063137 MTS 81 base plate 210 x 210 P/A pitch 120 mm



Version	Base plate, steel, unhardened; pitch 120 mm.
Connections	3 lateral pneumatic connections: one for opening, one for cleaning and one for reclamping.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	2 x ER-014326 threaded connector, straight, $\varnothing$ 6 2 x ER-002675 plugs, $\varnothing$ 6 1 x ER-014324 threaded connector, straight, $\varnothing$ 4 1 x ER-002673 plug, $\varnothing$ 4
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.





## EROWA MTS 81

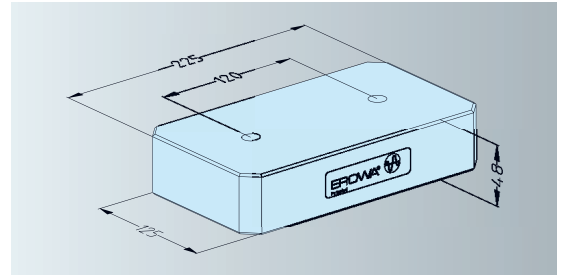
## Pallets

**ER-063138 MTS 81 pallet 125 x 225 / 120  
hard Z support**

Version Aluminum pallet, double, excluding chucking spigots (MTS chucking spigot set ER-041460). Hard Z-supports.

Application To clamp workpieces, vises and gauges.

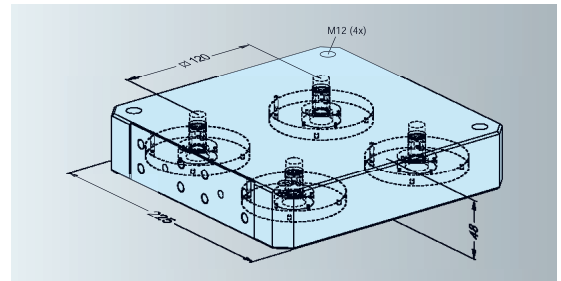
Accessories ER-041460 to be ordered separately.

**ER-065209 MTS 81 pallet 225 x 225 / 120  
hard Z support**

Version Aluminum pallet, excluding chucking spigots (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)). Hard Z-supports.

Application To clamp workpieces, vises and gauges.

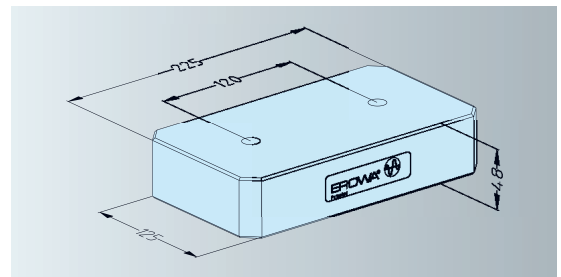
Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.

**ER-063139 MTS 81 pallet 125 x 225 / 120**

Version Aluminum pallet, double, excluding chucking spigots (MTS chucking spigot set ER-041460).

Application To clamp workpieces, vises and gauges.

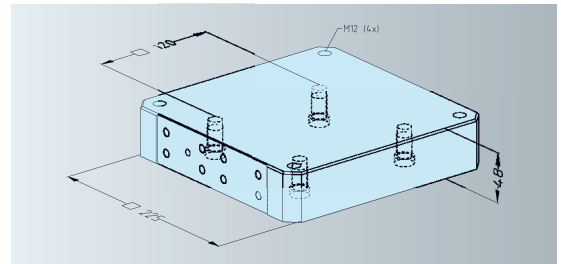
Accessories ER-041460 to be ordered separately.

**ER-063140 MTS 81 pallet 225 x 225 / 120**

Version Aluminum pallet, 4-fold, excluding chucking spigots (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).

Application To clamp workpieces, vises and gauges.

Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.



**Note:** You will find the MTS chucking spigots overview starting on page: 48.

# EROWA MTS

## The universal interface

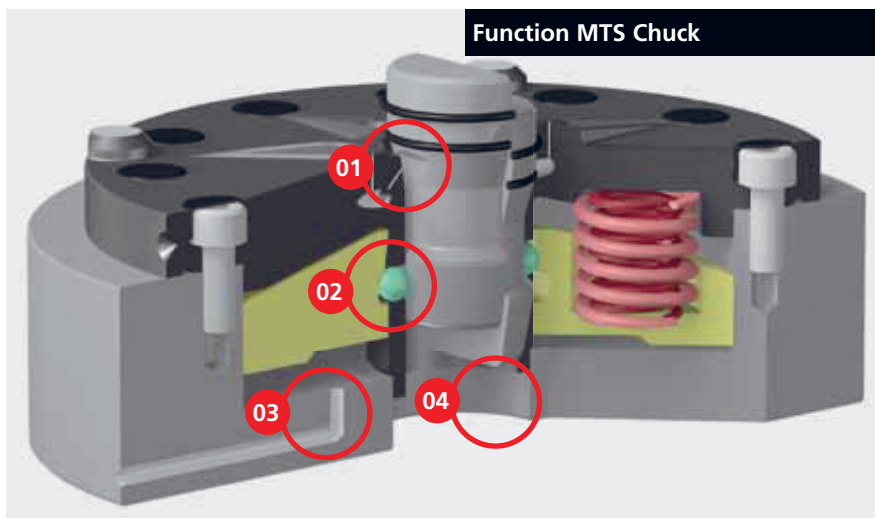
### Applications



### Handling

Manual / Loading facility / Robot

### Function MTS Chuck



#### 01 | Precise

Play free, conical centering.  
Repeatability: <math><0.005\text{ mm}</math>.  
Easy insertion of the pallets  
without any jamming.

#### 02 | Clamping mechanism

Reliable clamping mechanism through  
self-locking ball lock. Stable, low level  
of vibration.

#### 03 | Open

MTS chucks are available as pneumatic  
and hydraulic versions.

#### 04 | Cleanliness

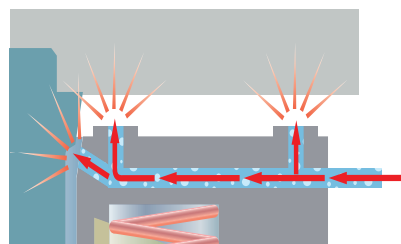
Liquids can drain off. No dirt traps.

### Technical data - MTS

	MTS
Repeatability	<math>< 0.005\text{ mm}</math>
Activation	clamped without pressure
Opening pressure pneumatically	min. 7 bar
Opening pressure hydraulically	min. 25 bar / max. 35 bar
Clamping power	12,000 N/chuck
Holding power	> 60,000 N/chuck
Reclamp	no
Clamping cycles	> 500,000

#### MTS chuck, automatable

Automatic cleaning of contact surfaces  
and of the centering spigot cone  
while the workpiece is changed.



compatible

- MTS 81
- MTS
- MTS 2.0
- MTS+



EROWA MTS

# The components

## Pitch 200 mm

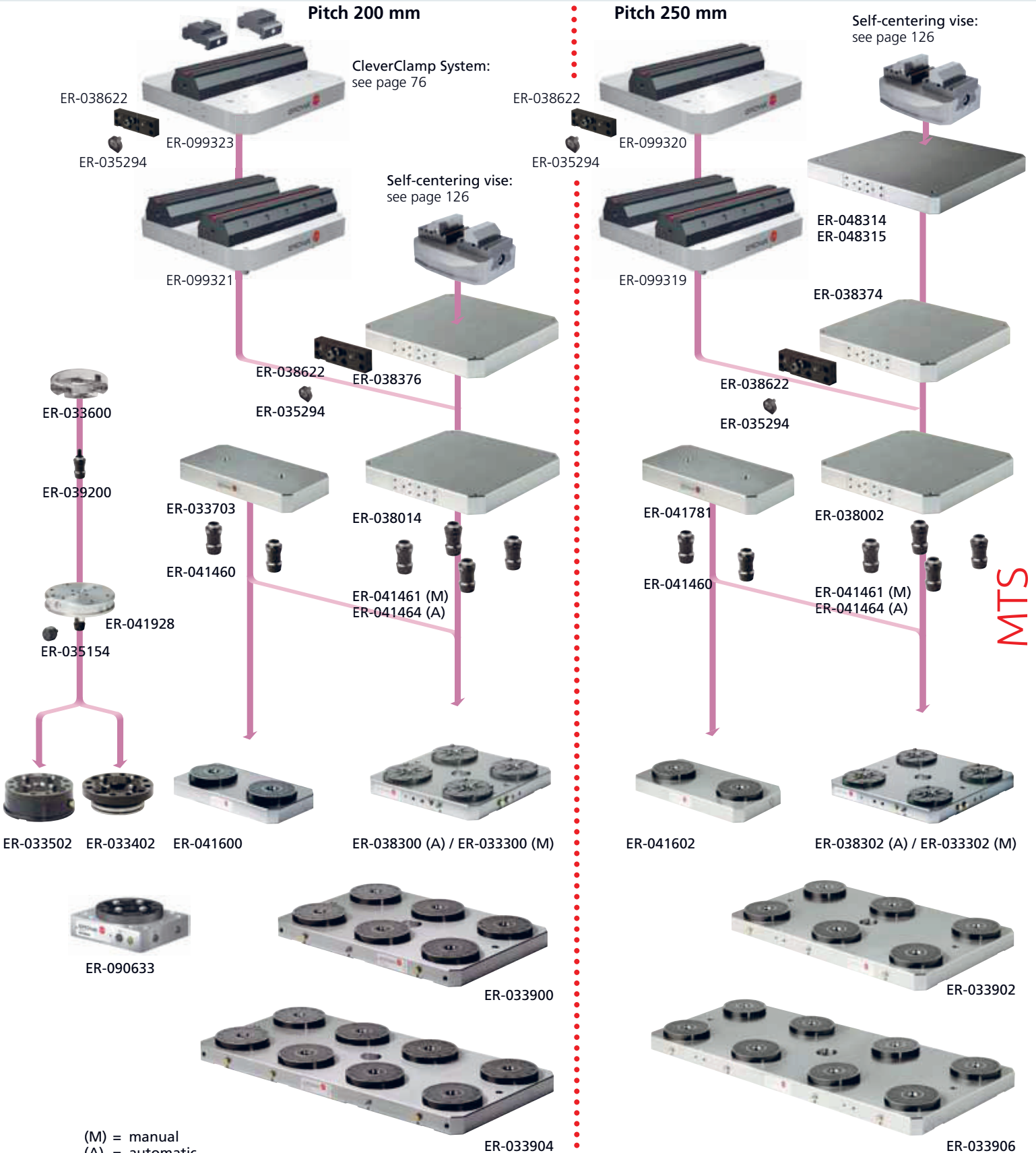
## Pitch 250 mm

Self-centering vise: see page 126

CleverClamp System: see page 76

Self-centering vise: see page 126

MTS



(M) = manual  
(A) = automatic

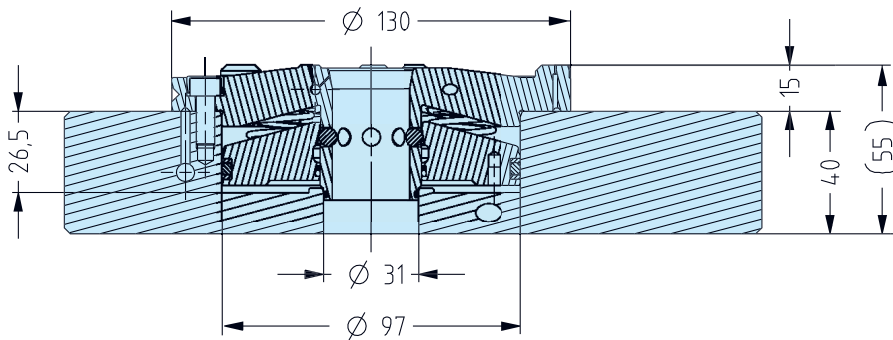
# EROWA MTS

## Integral chucks

Technical data	MTS integral chucks	
	pneumatic	hydraulic
Repeatability	< 0.005 mm	< 0.005 mm
Indexation, pallet	4 x 90° (MTS IntegralChuck S)	
Clamping	Spring tension	Spring tension
Opening pressure	min. 7 bar	min. 25 /max. 35 bar
Process monitoring	pneumatic	pneumatic
Clamping power	12,000 N/chuck	20,000 N/chuck

S = Single  
M = Multi  
P = pneumatically operated  
H = hydraulically operated  
A = able to automate

Integration variant (applicable to MTS IntegralChucks Single and Multi).  
Observe tolerances according to integration instructions!



**ER-033402 MTS IntegralChuck S-P**

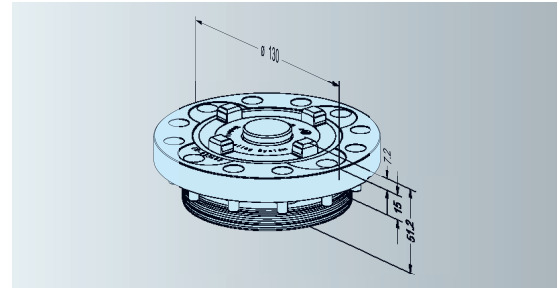
**ER-033403 MTS IntegralChuck S-H**



Version For direct integration in machine tables, plates, tombstones, squares or dividing heads.

Connections To open: pneumatic or hydraulic.

Application To accommodate single or multiple pallets.



**ER-036802 MTS IntegralChuck S-P/A**

**ER-036803 MTS IntegralChuck S-H/A**

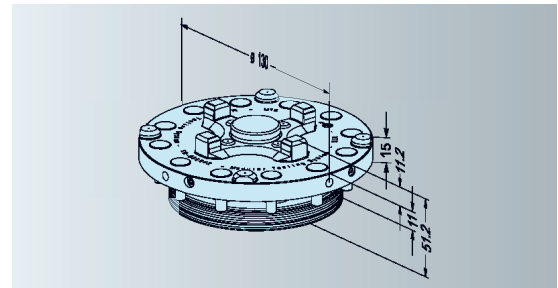


Version For direct integration in machine tables, plates, tombstones, squares or dividing heads.

Connections To open: pneumatic or hydraulic.

To clean: pneumatic.

Application To accommodate single or multiple pallets.

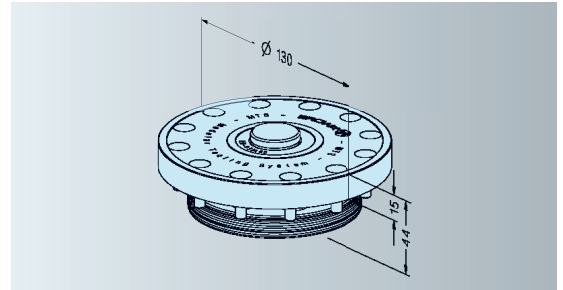


**ER-033400 MTS IntegralChuck M-P****ER-033401 MTS IntegralChuck M-H**

Version For direct integration in machine tables, plates, tombstones, squares or dividing heads.

Connections To open: pneumatic or hydraulic.

Application To accommodate multiple pallets.

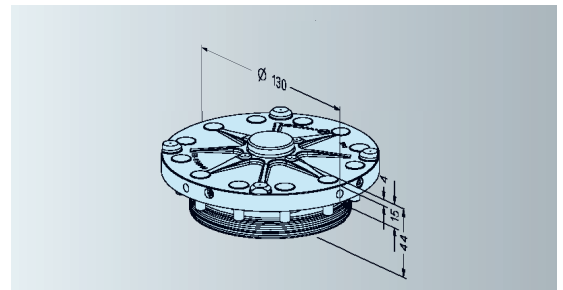
**ER-036800 MTS IntegralChuck M-P/A****ER-036801 MTS IntegralChuck M-H/A**

Version For direct integration in machine tables, plates, tombstones, squares or dividing heads.

Connections To open: pneumatic or hydraulic.

To clean: pneumatic.

Application To accommodate multiple pallets.





# EROWA MTS Mounted chucks

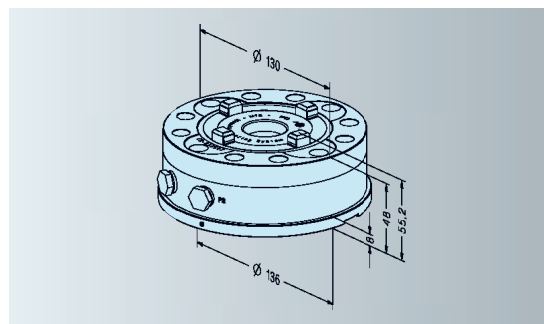
Technical data	MTS mounted chucks
	pneumatic
Repeatability	< 0.005 mm
Indexation, pallet	4 x 90° (MTS Chuck S)
Clamping	Spring power
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	12,000 N/Chuck

S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

## ER-033502 MTS Chuck S-P



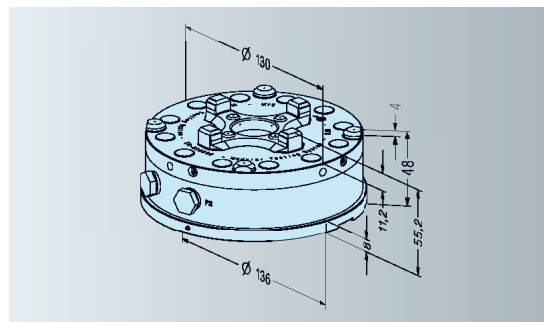
Version	For direct mounting on machine tables, plates, tombstones, squares or dividing heads.
Connections	Lateral, to open: pneumatic.
Application	To accommodate single or multiple pallets.
Accessories	Order separately: to fit MTS Chuck, MTS bracket ER-033804 or ER-033805.



## ER-035502 MTS Chuck S-P/A

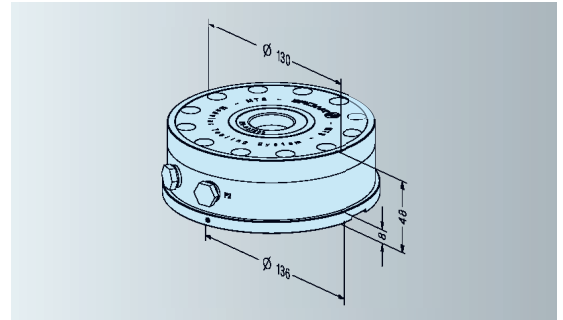


Version	For direct mounting on machine tables, plates, tombstones, squares or dividing heads.
Connections	Lateral, to open: pneumatic. Lateral to clean: pneumatic
Application	To accommodate single or multiple pallets.
Accessories	Order separately: to fit MTS Chuck, MTS bracket ER-033804 or ER-033805.

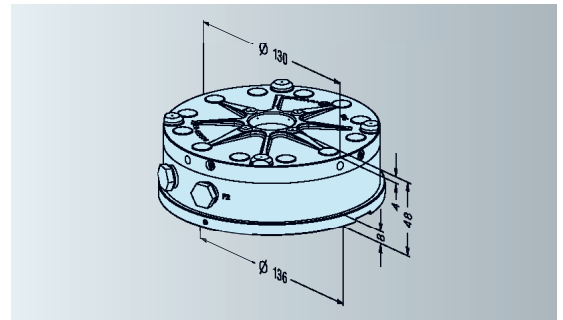


**ER-033500 MTS Chuck M-P**

- Version For direct mounting on machine tables, plates, tombstones, squares or dividing heads.
- Connections Lateral, to open: pneumatic.
- Application To accommodate multiple pallets.
- Accessories Order separately: to fit MTS Chuck, MTS bracket ER-033804 or ER-033805.

**ER-035500 MTS Chuck M-P/A**

- Version For direct mounting on machine tables, plates, tombstones, squares or dividing heads.
- Connections Lateral, to open: pneumatic.  
Lateral to clean: pneumatic.
- Application To accommodate multiple pallets.
- Accessories Order separately: to fit MTS Chuck, MTS bracket ER-033804 or ER-033805.



# EROWA MTS

## Base plates, 1-fold

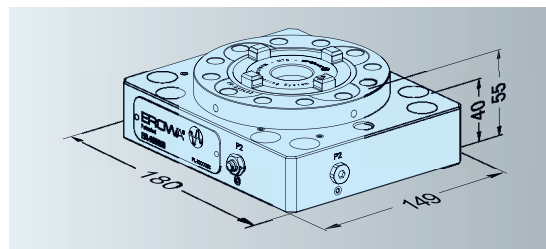
Technical data	MTS base plates, 1-fold pneumatic
Repeatability	< 0.005 mm
Indexation, pallet	4 x 90° (MTS Chuck S)
Clamping	Spring tension
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	12,000 N

S = Single  
M = Multi  
P = pneumatically operated

### ER-090633 MTS base plate 149 x 180 S-P



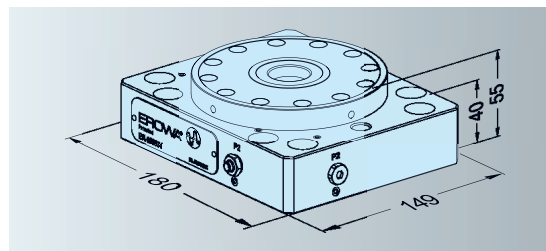
Version	Baseplate, steel not heat treated
Connections	At the side for opening the chuck. 1x air jet valve 2x threaded plug
Application	Mounting on to machine tables. For holding MTS single- and multiple pallets
Installation	Hole pattern for R50 / M12 grid plates and for machine tables with T-slot distance 63 / 100 mm



### ER-090634 MTS base plate 149 x 180 M-P



Version	Baseplate, steel not heat treated
Connections	At the side for opening the chuck. 1x air jet valve 2x threaded plug
Application	Mounting on to machine tables. For holding MTS single- and multiple pallets
Installation	Hole pattern for R50 / M12 grid plates and for machine tables with T-slot distance 63 / 100 mm



EROWA MTS

# Base plates, 2-fold

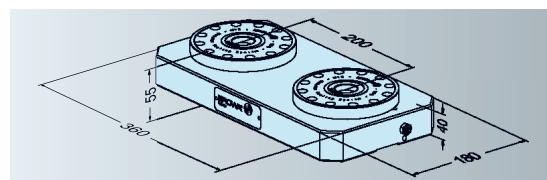
Technical data	MTS base plates, 2-fold pneumatic
Repeatability	< 0.005 mm
Indexation, pallet	1 x 180°
Clamping	Spring power
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	24,000 N (2 x 12,000 N)

P = pneumatically operated

## ER-041600 MTS base plate 180 x 360 / 200 P Pitch 200



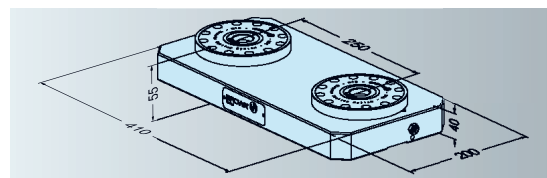
Version	Base plate, steel, unhardened; Pitch: 200 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate double pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672 MTS air jet valve
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



## ER-041602 MTS base plate 200 x 410 P Pitch 250



Version	Base plate, steel, unhardened; Pitch: 250 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate double pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



MTS

# EROWA MTS

## Base plates, 4-fold

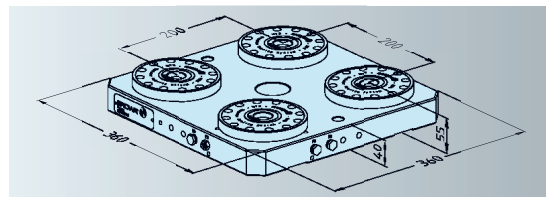
Technical data	MTS base plates, 4-fold pneumatic
Repeatability	< 0.005 mm
Clamping	Spring power
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	48,000 N (4 x 12,000 N)

P = pneumatically operated

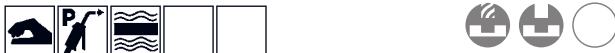
### ER-033300 MTS base plate 360 x 360 P Pitch 200



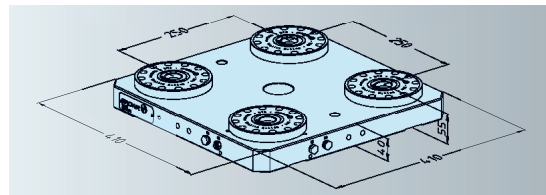
Version	Base plate, steel, unhardened; Pitch: 200 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



### ER-033302 MTS base plate 410 x 410 P Pitch 250



Version	Base plate, steel, unhardened; Pitch: 250 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.





EROWA MTS

# Base plates, 4-fold, with cleaning facility, automatable

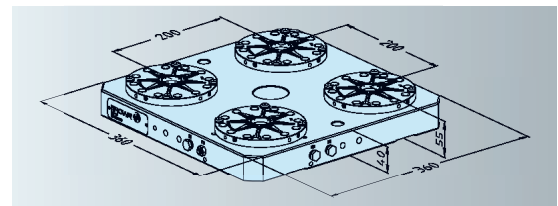
Technical data	MTS base plates, 4-fold, with cleaning facility, automatable pneumatic
Repeatability	< 0.005 mm
Clamping	Spring tension
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	48,000 N (4 x 12,000 N)

P = pneumatically operated

## ER-038300 MTS base plate 360 x 360 P/A Pitch 200



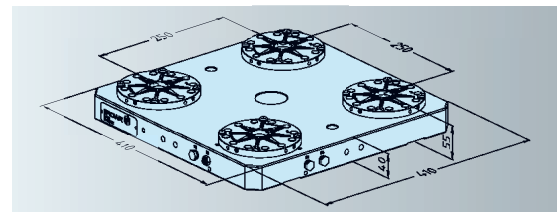
Version	Base plate, steel, unhardened; Pitch: 200 mm.
Connections	Lateral, to open: pneumatic. Lateral to clean: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	for ER-038300: 1 x ER-036672, 2 x ER-014326.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



## ER-038302 MTS base plate 410 x 410 P/A Pitch 250



Version	Base plate, steel, unhardened; Pitch: 250 mm.
Connections	Lateral, to open: pneumatic. Lateral to clean: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	for ER-038302: 1 x ER-036672, 2 x ER-014326.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



MTS

# EROWA MTS

## Base plates, 6-fold

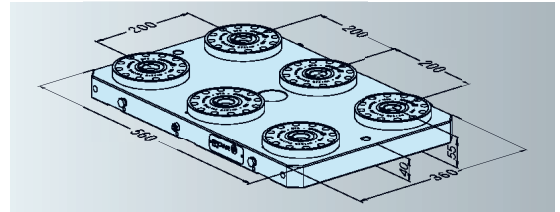
Technical data	MTS base plates, 6-fold pneumatic
Repeatability	< 0.005 mm
Clamping	Spring tension
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	72,000 N (6 x 12,000 N)

P = pneumatically operated

### ER-033900 MTS base plate 360 x 560 P Pitch 200



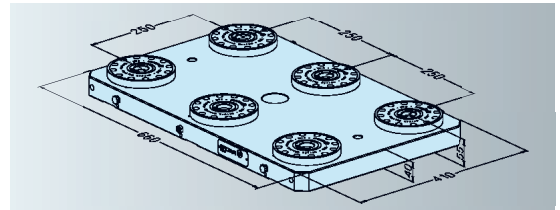
Version	Base plate, steel, unhardened; Pitch: 200 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



### ER-033902 MTS base plate 410 x 660 P Pitch 250



Version	Base plate, steel, unhardened; Pitch: 250 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



EROWA MTS

# Base plates, 8-fold

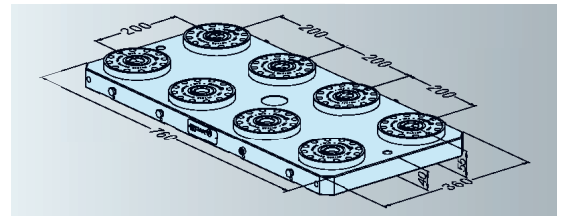
Technical data	MTS base plates, 8-fold pneumatic
Repeatability	<0.005 mm
Clamping	Spring power
Opening pressure	min. 7 bar
Process monitoring	pneumatic
Clamping power	96,000 N (8 x 12,000 N)

P = pneumatically operated

## ER-033904 MTS base plate 360 x 760 P Pitch 200



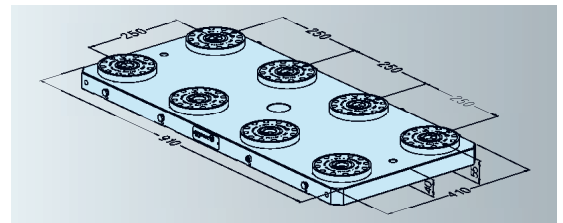
Version	Base plate, steel, unhardened; Pitch: 200 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



## ER-033906 MTS base plate 410 x 910 P Pitch 250



Version	Base plate, steel, unhardened; Pitch: 250 mm.
Connections	Lateral, to open: pneumatic.
Application	To accommodate multiple pallets. For direct assembly on machine tables.
Accessories supplied	1 x ER-036672.
Note	Attachment boreholes can be drilled by customers.
Caution	Do not drill through any air ducts! Please order operating instructions from your EROWA dealer.



MTS

## EROWA MTS 2.0

The datum-point system  
for the highest demands

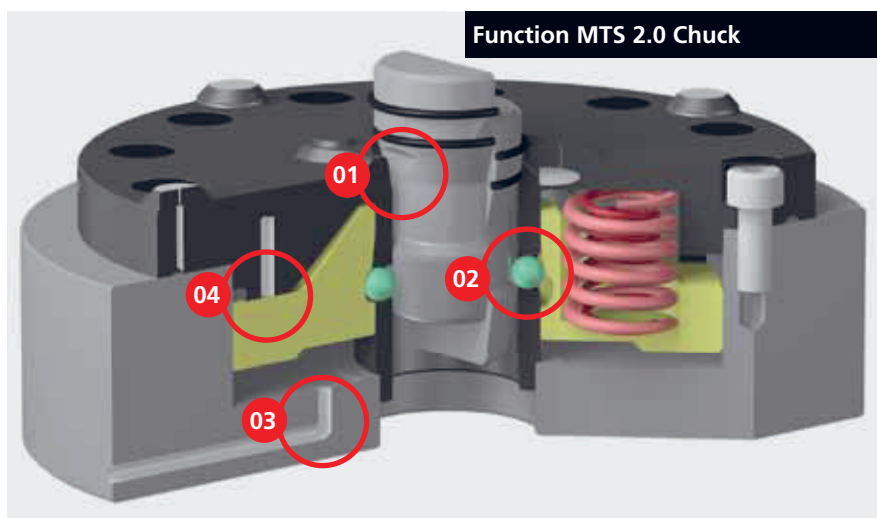
## Applications



## Handling

Manual / Loading facility / Robot

## Function MTS 2.0 Chuck



## CRUCIAL ADVANTAGES

- Open check
- Extreme process safety
- Clamping power: 20,000 N
- Opening pressure: 6 bar
- Clamping mechanism with ceramic balls
- Rust-resistant

**01 | High precision**

Play free, conical centering.  
Repeatability: < 0.003 mm.  
Easy insertion of the pallets  
without any jamming.

**02 | Clamping mechanism**

Reliable clamping mechanism  
through self-locking ball lock.  
Stable, low level of vibration.

**03 | Open**

MTS 2.0 chucks are operated pneumatically. The chucks require only 6 bar opening pressure despite their high clamping power of 20,000 N.

**04 | Open monitoring**

Know for sure when the MTS 2.0 chuck is open thanks to integrated open monitoring.

## Technical data - MTS 2.0

	MTS 2.0
Repeatability	< 0.003 mm
Activation	clamped without pressure
Opening pressure	6 bar
Reclamp pressure	max. 6 bar
Process monitoring	pneumatically: opening control and monitoring
Clamping power	9,000 N/Chuck (spring tension)
with reclamping	20,000 N/Chuck
Holding power	> 60,000 N/Chuck
Reclamp	yes
Clamping cycles	> 500,000
Material	INOX

compatible

- MTS 81
- MTS
- MTS 2.0
- MTS+



# EROWA MTS 2.0

## The components

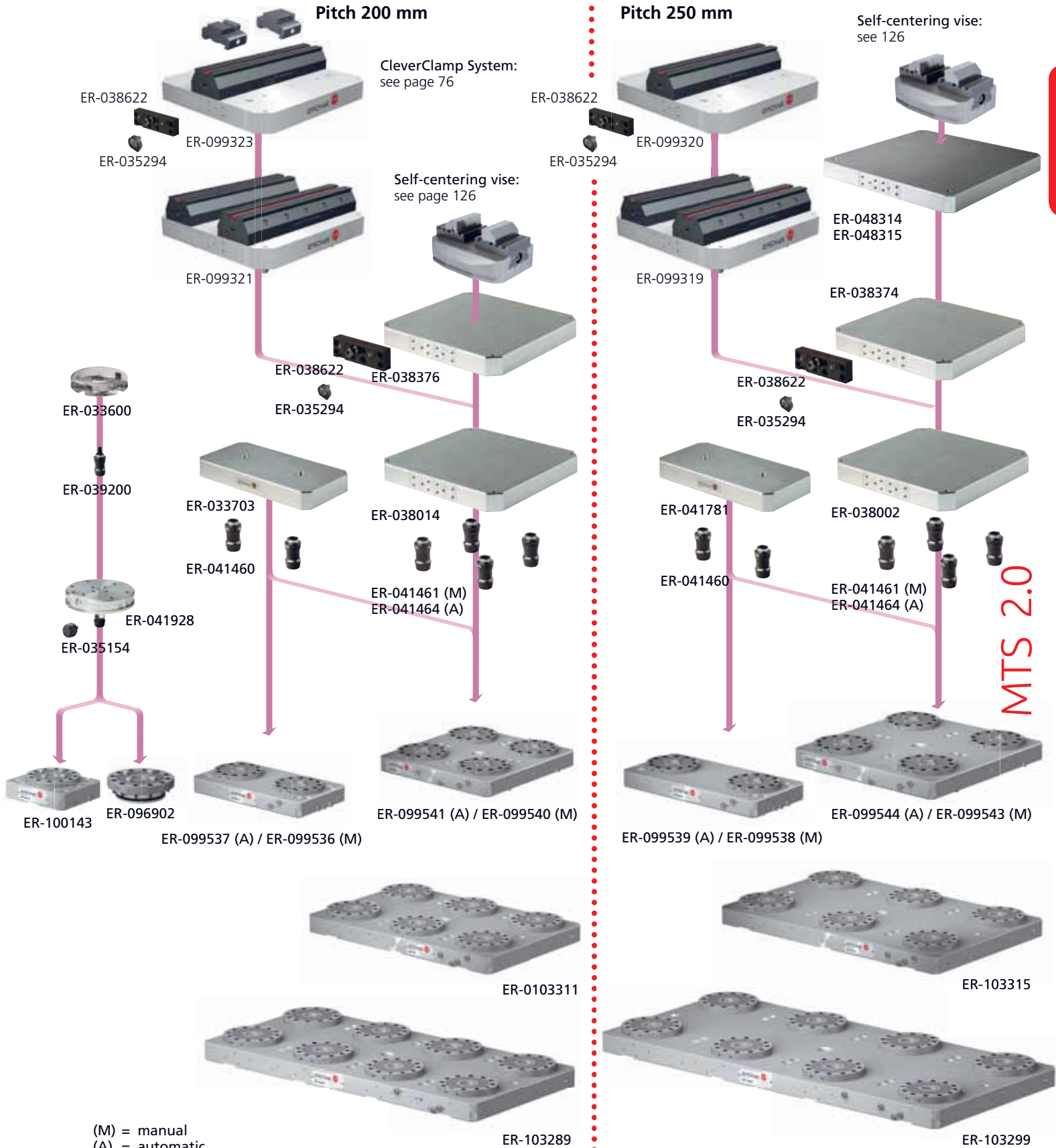
### Pitch 200 mm

### Pitch 250 mm

Self-centering vise: see 126

CleverClamp System: see page 76

Self-centering vise: see page 126



(M) = manual  
(A) = automatic

MTS 2.0

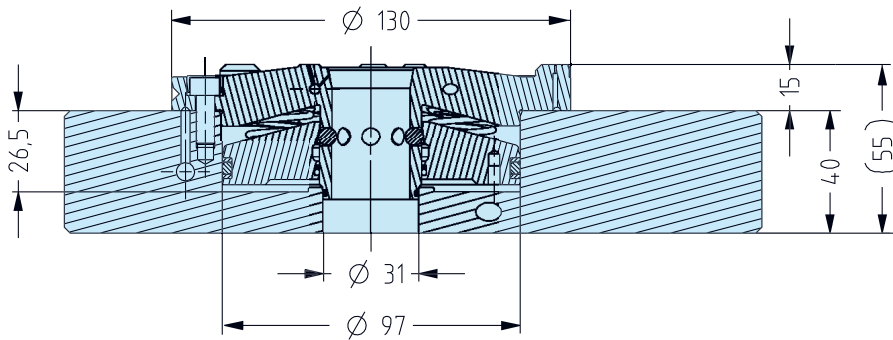


# EROWA MTS 2.0 Integral chucks

Technical data	MTS 2.0 integral chuck, pneumatic
Repeatability	< 0.003 mm
Indexation, pallet	4 x 90° (MTS 2.0 IntegralChuck S)
Clamping	Spring tension
Opening pressure	6 bar
Process monitoring	Pneumatically: opening control and monitoring
Clamping power	9,000 N (spring tension)
with reclamping	20,000 N

S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

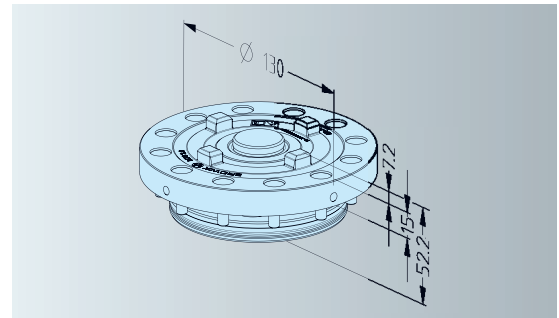
Integration variant (applicable to MTS 2.0 IntegralChucks Single and Multi).  
Observe tolerances according to integration instructions!



## ER-096902 MTS 2.0 IntegralChuck S-P



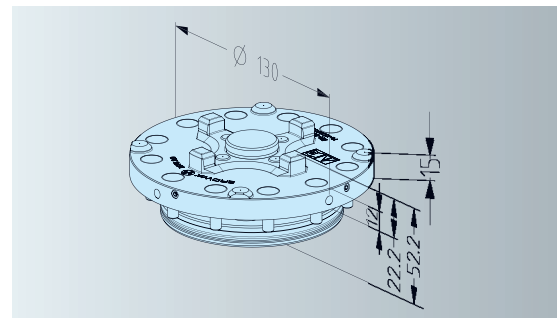
- Version For direct attachment to machine tables, plates, tombstones, angles or dividing heads.
- Connections 3 pneumatic connections: for opening, reclamping and open check.
- Application To hold individual and multiple pallets.



## ER-096903 MTS 2.0 IntegralChuck S-P/A

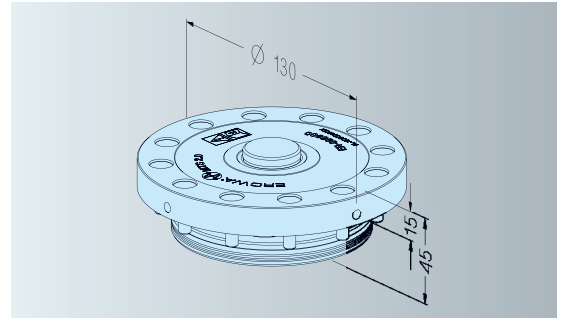


- Version For direct attachment to machine tables, plates, tombstones or dividing heads.
- Connections 4 pneumatic connections: for opening, cleaning/presence checks, reclamping and open check.
- Application To hold individual and multiple pallets.

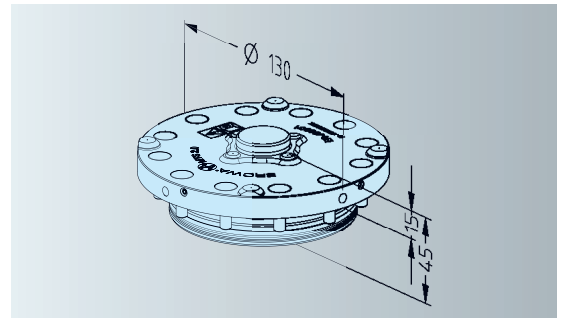


**ER-096900 MTS 2.0 IntegralChuck M-P**

- Version For direct attachment to machine tables, plates, tombstones or dividing heads.
- Connections 3 pneumatic connections: for opening, reclamping and open check.
- Application To hold multiple pallets.

**ER-096901 MTS 2.0 IntegralChuck M-P/A**

- Version For direct attachment to machine tables, plates, tombstones, angles or dividing heads.
- Connections 4 pneumatic connections: for opening, cleaning/presence check, reclamping and open check.
- Application To hold multiple pallets.



# EROWA MTS 2.0

## Base plates, 1-fold

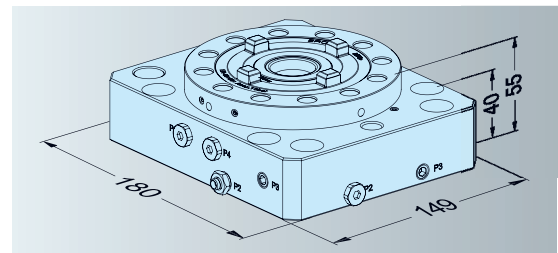
Technical data	MTS 2.0 base plate, 1-fold, pneumatic
Repeatability	< 0.003 mm
Indexation, pallet	4 x 90° (MTS 2.0 IntegralChuck S)
Clamping	Spring tension
Opening pressure	6 bar
Process monitoring	Pneumatically: opening control and monitoring
Clamping power	9,000 N (spring tension)
with reclamping	20,000 N

S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

### ER-100143 MTS 2.0 base plate 149 x 180 S-P single



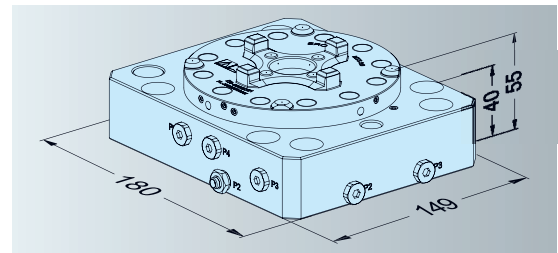
Version	Base plate, unhardened steel.
Connections:	Laterally: for opening, reclamping and open check.
Application	To hold individual and multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 60/100 mm.



### ER-100145 MTS 2.0 base plate 149 x 180 S-P/A single

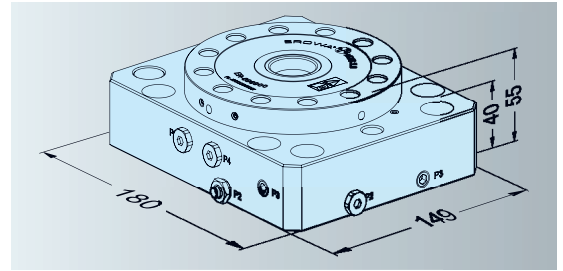


Version	Base plate, unhardened steel.
Connections:	Laterally: for opening, reclamping, open check and for cleaning/presence check.
Application	To hold individual and multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for table with T-slot distances of 63/100 mm.

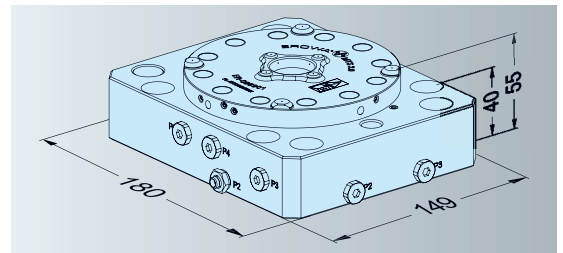


**ER-100140 MTS 2.0 Base plate 149 x 180 M-P single**

Version	Base plate, unhardened steel.
Connections	Laterally: for opening, reclamping and open check.
Application	To hold individual and multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.

**ER-100144 MTS 2.0 base plate 149 x 180 M-P/A single**

Version	Base plate, unhardened steel.
Connections	Laterally: for opening, reclamping, open check and for cleaning/presence check.
Application	To hold individual and multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.



# EROWA MTS 2.0

## Base plates, 2-fold

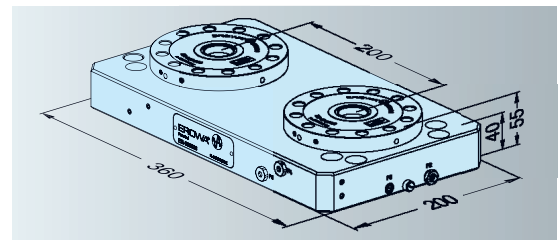
Technical data	MTS 2.0 base plate, 2-fold, pneumatic
Repeatability	< 0.003 mm
Indexation, pallet	1 x 180° (MTS 2.0 IntegralChuck S)
Clamping	Spring tension
Opening pressure	6 bar
Process monitoring	Pneumatically: opening control and monitoring
Clamping power	18,000 N (2 x 9,000 N) (spring tension)
with reclamping	40,000 N (2 x 20,000 N)

S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

### ER-099536 MTS 2.0 base plate 200 x 360 P Pitch 200



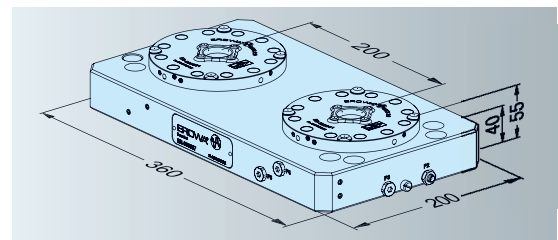
Version	Base plate, unhardened steel. Pitch: 200 mm.
Connections	Laterally: for opening, reclamping and open check.
Application	To hold double pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.



### ER-099537 MTS 2.0 base plate 200 x 360 P/A Pitch 200



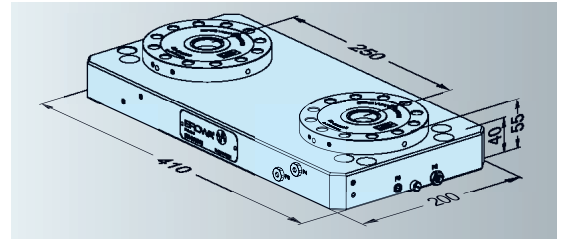
Version	Base plate, unhardened steel. Pitch: 200 mm.
Connections	Laterally: for opening, reclamping, open check and for cleaning/presence check.
Application	To hold double pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.



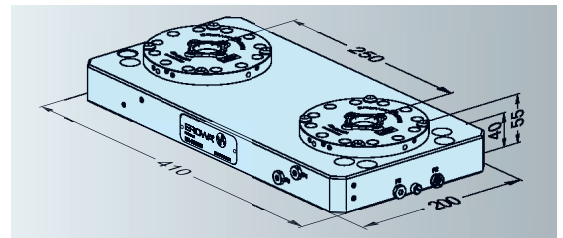


**ER-099538 MTS 2.0 base plate 200 x 410 P  
Pitch 250**


Version	Base plate, unhardened steel. Pitch: 250 mm.
Connections	Laterally: for opening, reclamping and open check.
Application	To hold double pallets. To be set up on machine tables.
Mounting	Mounting hold configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.


**ER-099539 MTS 2.0 base plate 200 x 410 P/A  
Pitch 250**


Version	Base plate, unhardened steel. Pitch: 250 mm
Connections	Laterally: for opening, reclamping, open check and for cleaning/presence check.
Application	To hold double pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.



# EROWA MTS 2.0

## Base plates, 4-fold

Technical data	MTS base plate 2.0, 4-fold, pneumatic
Repeatability	< 0.003 mm
Clamping	Spring tension
Opening pressure	6 bar
Process monitoring	Pneumatically: opening control and monitoring
Clamping power	36,000 N (4 x 9,000 N) (spring tension)
with reclamping	80,000 N (4 x 20,000 N)

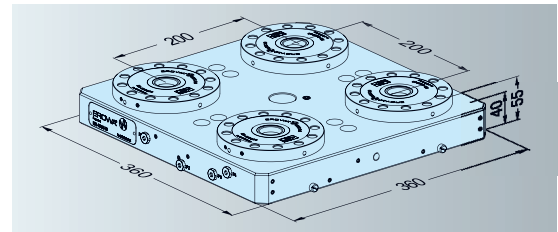
S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

PC\* = pitch circle

### ER-099540 MTS 2.0 base plate 360 x 360 P Pitch 200



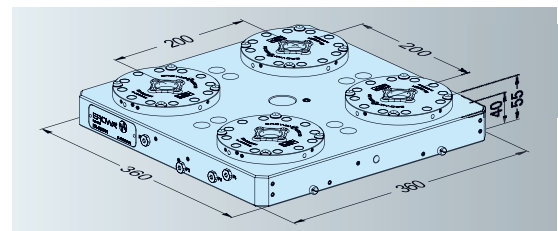
Version	Base plate, unhardened steel. Pitch: 200 mm.
Connections	Laterally and underneath (PC* $\varnothing$ 57 mm): for opening, reclamping and open check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.



### ER-099541 MTS 2.0 base plate 360 x 360 P/A Pitch 200

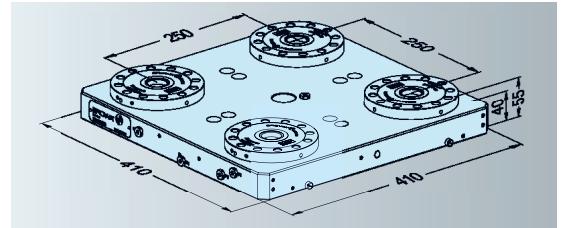


Version	Base plate, unhardened steel. Pitch: 200 mm.
Connections	Laterally and underneath (PC* $\varnothing$ 57 mm): for opening, reclamping, open check and for cleaning/presence check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.

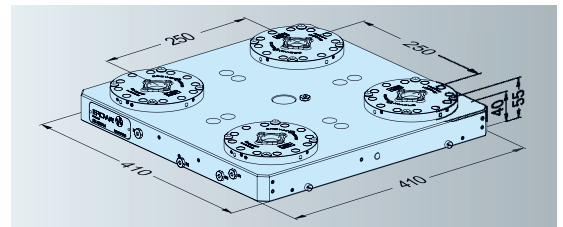


**ER-099543 MTS 2.0 base plate 410 x 410 P  
Pitch 250**


Version	Base plate, unhardened steel. Pitch: 250 mm.
Connections	Laterally and underneath (PC* $\varnothing 57$ mm): for opening, reclamping and open check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.


**ER-099544 MTS 2.0 base plate 410 x 410 P/A  
Pitch 250**


Version	Base plate, unhardened steel. Pitch: 250 mm.
Connections	Laterally and underneath (PC* $\varnothing 57$ mm): for opening, reclamping, open check and for cleaning/presence check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for R50/M12 grids and for tables with T-slot distances of 63/100 mm.



# EROWA MTS 2.0

## Base plates, 6-fold

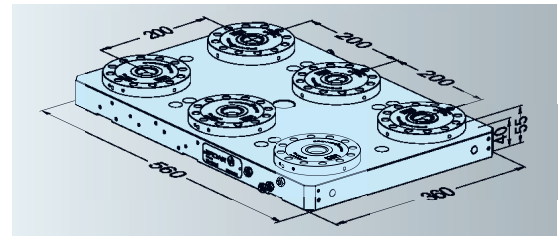
Technical data	MTS 2.0 base plate, 6-fold, pneumatic
Repeatability	< 0.003 mm
Clamping	Spring tension
Opening pressure	6 bar
Process monitoring	Pneumatically: opening control and monitoring
Clamping power	54,000 N (6 x 9,000 N) (spring tension)
with reclamping	120,000 N (6 x 20,000 N)

S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

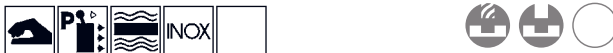
### ER-103311 MTS 2.0 base plate 360 x 560 P Pitch 200



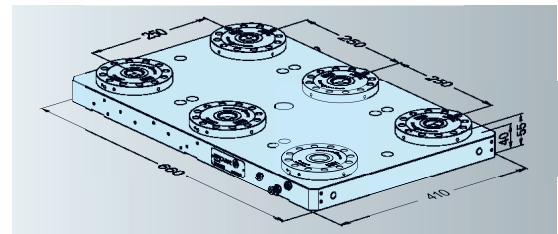
Version	Base plate, unhardened steel. Pitch: 200 mm.
Connections	Laterally: for opening, reclamping and open check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for tables with T-slot distances of 63/100 mm.



### ER-103315 MTS 2.0 base plate 410 x 660 P Pitch 250



Version	Base plate, unhardened steel. Pitch: 250 mm.
Connections	Laterally: for opening, reclamping and open check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for tables with T-slot distances of 63/100 mm.



EROWA MTS 2.0

# Base plates, 8-fold

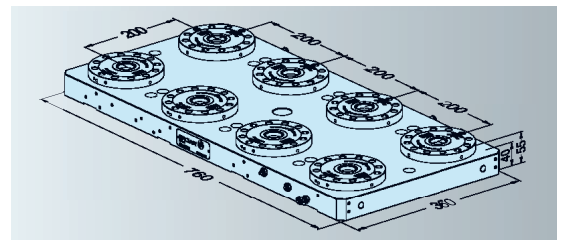
Technical data	MTS 2.0 base plate, 8-fold, pneumatic
Repeatability	< 0.003 mm
Clamping	Spring tension
Opening pressure	6 bar
Process monitoring	Pneumatically: opening controll and monitoring
Clamping power	72,000 N (8 x 9,000 N) (spring tension)
with reclamping	160,000 N (8 x 20,000 N)

S = Single  
M = Multi  
P = pneumatically operated  
A = able to automate

## ER-103289 MTS 2.0 base plate 360 x 760 P Pitch 200



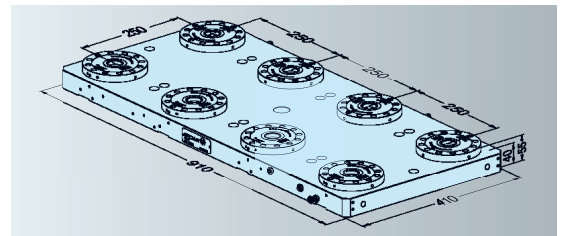
Version	Base plate, unhardened steel. Pitch: 200 mm.
Connections	Laterally: for opening, reclamping and open check.
Application	To hold multiple pallets. To be set up on machine tables.
Mounting	Mounting hole configuration for tables with T-slot distances of 63/100 mm.



## ER-103299 MTS 2.0 base plate 410 x 910 P Pitch 250



Version	Base plate, unhardened steel. Pitch: 250 mm.
Connections.	Laterally: for opening, reclamping and open check.
Application	To hold multiple pallets. To be set up on machines tables.
Mounting	Mounting hole configuration for tables with T-slot distances of 63/100 mm.

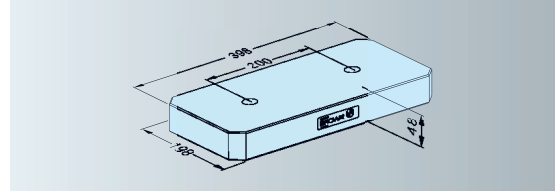


# EROWA MTS Pallets

## ER-033703 MTS pallet 198 x 398 / 200



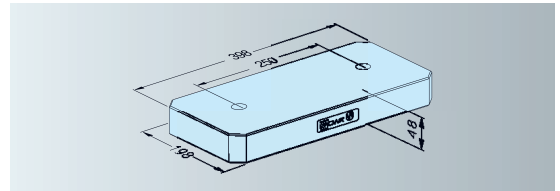
Version Aluminum pallet, 2-fold, excluding chucking spigot (MTS chucking spigot set ER-041460).  
 Application To clamp workpieces, vises and gauges.  
 Accessories ER-041460 to be ordered separately.



## ER-041781 MTS pallet 198 x 398 / 250



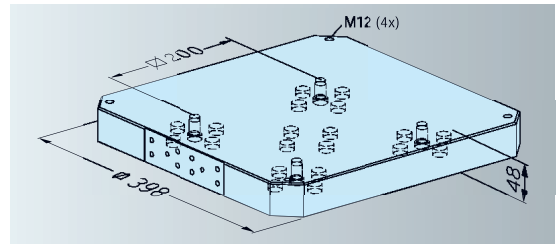
Version Aluminum pallet, 2-fold, excluding chucking spigot (MTS chucking spigot set ER-041460).  
 Application To clamp workpieces, vises and gauges.  
 Accessories ER-041460 to be ordered separately.



## ER-038014 MTS pallet 398 x 398 / 200



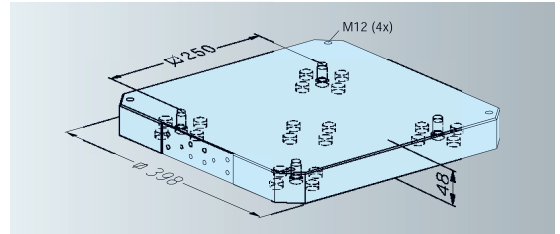
Version Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).  
 Application To clamp workpieces, vises and gauges.  
 Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.



## ER-038002 MTS pallet 398 x 398 / 250



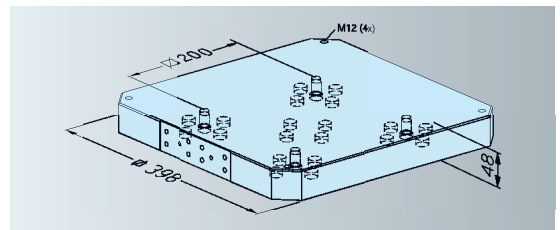
Version Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).  
 Application To clamp workpieces, vises and gauges.  
 Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.



## ER-038376 MTS pallet 398 x 398 / 200 Hard Z support



Version Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).  
 Application To clamp workpieces, vises and gauges.  
 Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.



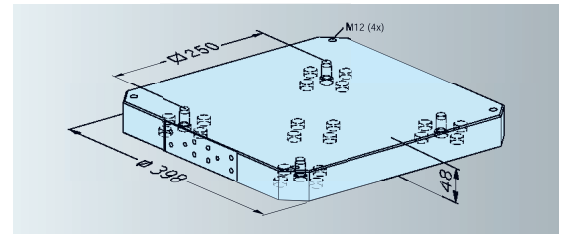


**ER-038374 MTS pallet 398 x 398 / 250  
Hard Z support**

Version Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).

Application To clamp workpieces, vises and gauges.

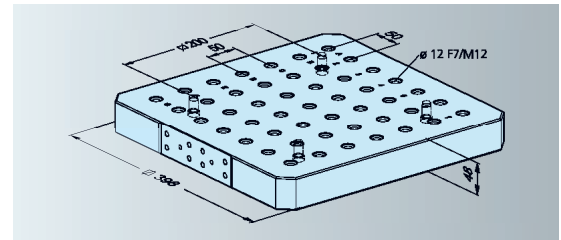
Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.

**ER-058819 MTS Pallet 398 x 398/200 R50**

Version Aluminum pallet (hard anodized), 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).

Application To clamp workpieces, vises and gauges.

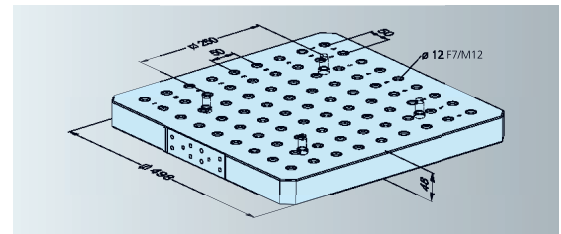
Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.

**ER-044906 MTS Pallet 498 x 498/250 R50**

Version Aluminum pallet (hard anodized), 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).

Application To clamp workpieces, vises and gauges.

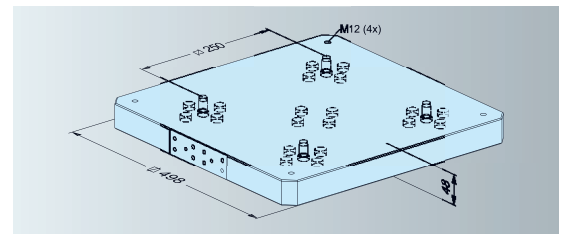
Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.

**ER-048314 MTS Pallet 498 x 498 / 250**

Version Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).

Application To clamp workpieces, vises and gauges.

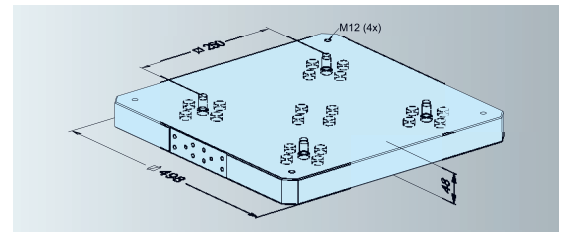
Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.

**ER-048315 MTS Pallet 498 x 498 / 250  
Hard Z support**

Version Aluminum pallet, 4-fold, excluding chucking spigot (MTS chucking spigot set ER-041461 (M) / ER-041464 (A)).

Application To clamp workpieces, vises and gauges.

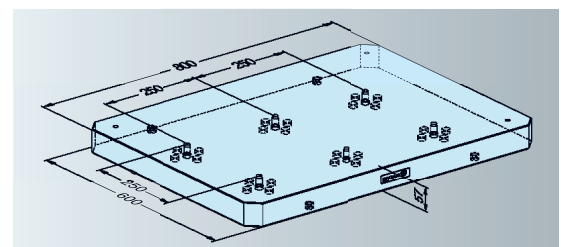
Accessories ER-041461 (M) / ER-041464 (A) to be ordered separately.

**ER-054981 MTS pallet 600 x 800 x 57 / 250  
hard Z support**

Version Aluminum pallet, 6-fold, excluding chucking spigot (MTS chucking spigot set ER-054710(A), ER-041462 (M)).

Application To clamp workpieces, vises and gauges, for chip-cutting operations

Accessories To be ordered separately ER-054710(A), ER-041462 (M).



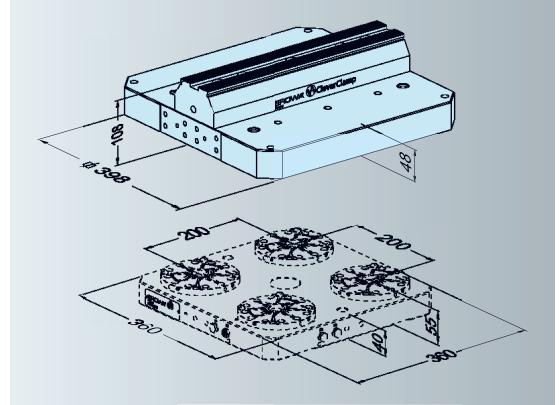
# EROWA MTS

## Pallets CleverClamp System

### ER-099323 Base MTS 200 mono CleverClamp



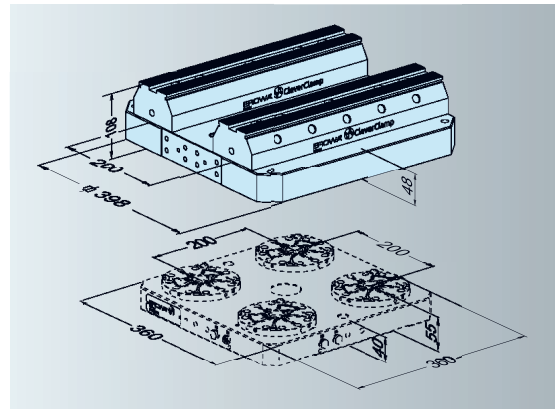
- Version Combination of MTS aluminum pallet with 398 rail (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



### ER-099321 Base MTS 200 duo CleverClamp



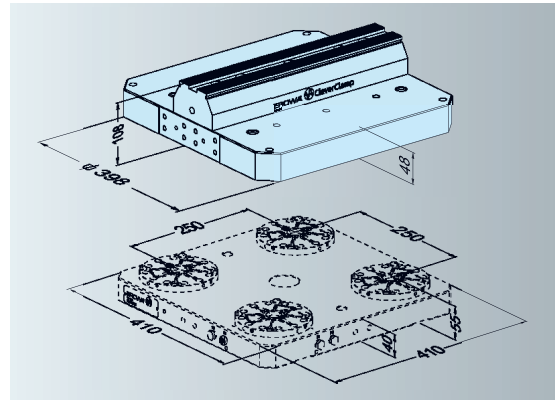
- Version Combination of MTS aluminum pallet with two 298 rails (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal for multiple fixtures and for clamping big work-pieces.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



### ER-099320 Base MTS 250 mono CleverClamp



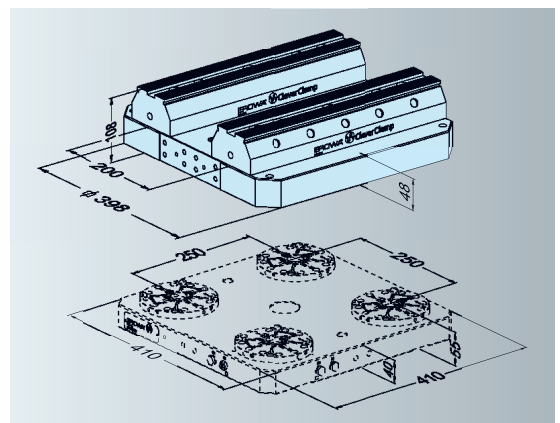
- Version Combination of MTS aluminum pallet with 298 rail (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) with GripperLink Rapid ER-038622.



### ER-099319 Base MTS 250 duo CleverClamp



- Version Combination of MTS aluminum with two 398 rails (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal for multiple fixtures and for clamping big work-pieces.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.

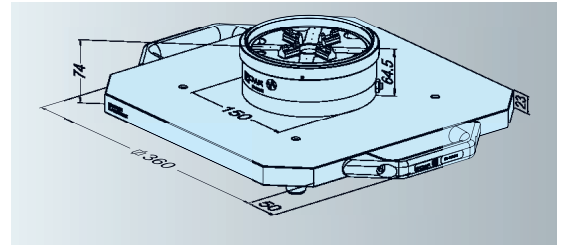


**ER-054315 Adapter pallet MTS-PowerChuck 360x360, pitch 200**

Version Adapterpallet MTS to PowerChuck P. Chuck ER-029391 installed and aligned.

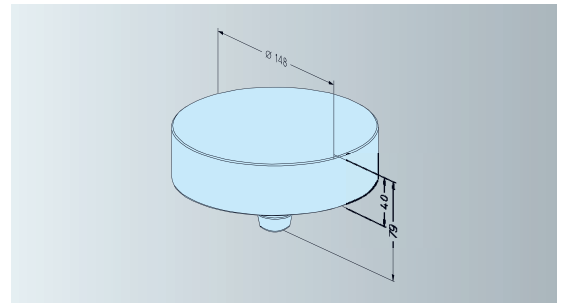
Operation PowerChuck P with lateral valve. Operate with air-jet.

Application On machines with MTS base to receive ITS pallets and standard holders.

**ER-033602 MTS pallet P ø 148 Alu**

Version Aluminum pallet, fitted with centering plate ER-033600, including chucking spigot ER-039200.

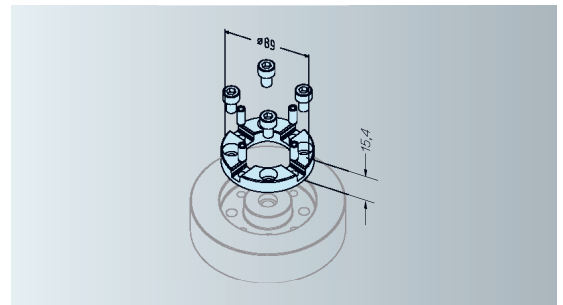
Application To clamp workpieces and gauges. For manual handling.

**ER-033600 MTS centering plate P**

Version Steel, including attachment bolts and positioning pins.

Application For the production of customized and indexable MTS pallets.

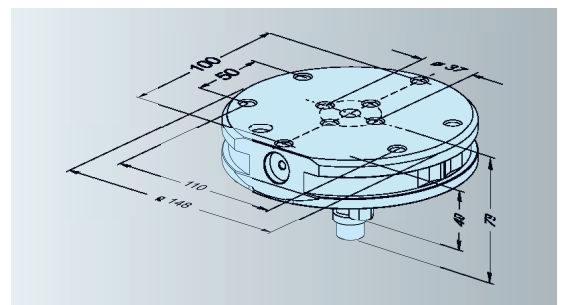
Accessories Chucking spigot ER-039200 to be ordered separately.

**ER-041928 MTS pallet P ø 148 Inox**

Version Steel pallet, not hardened, including chucking spigot ER-040999. Centering segment integrated in the pallet body.

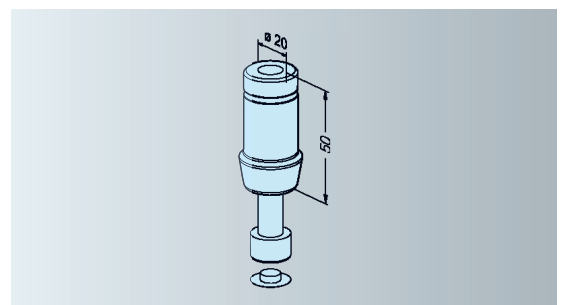
Application To clamp workpieces and gauges. For manual handling and automatic operation.

Note Compatible with EROWA PC210 CombiChuck and PowerChuck P (ITS chucking spigot ER-010742 required).

**ER-040999 MTS chucking spigot P**

Version One chucking spigot, including attachment bolt and protective cap.

Application For the conversion of ITS pallet ø 148 ER-041912 into MTS pallet P ø 148 ER-041928.



# EROWA MTS

## Chucking spigots



**MTS centering spigot:**  
**ER-033800 MTS centering spigot**  
**ER-038000 MTS centering spigot / A**  
 The centering spigot defines the datum point (free of play).



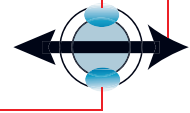
**MTS chucking spigot:**  
**ER-039200 MTS chucking spigot / A**  
 (centering play 0.1 mm).



**MTS compensation spigot:**  
**ER-039201 MTS compensation spigot / A**  
 The compensation spigot positions the pallet in one axis only (X or Y) and is capable of compensating for a maximum set-up distance difference of 0.1 mm.

Possible compensation movements

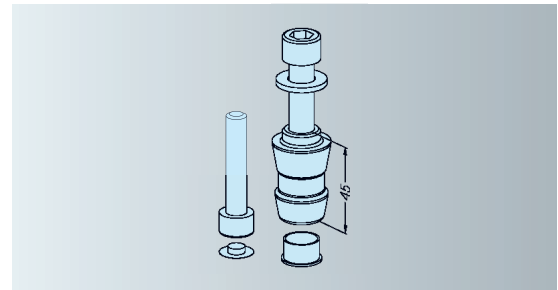
Centering surfaces



### ER-033800 MTS centering spigot



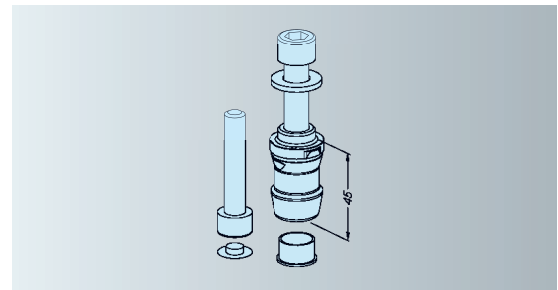
Version One chucking spigot with centering function (without play), including attachment bolts (M10x50, M12x55), U-disc and protective caps.



### ER-039201 MTS compensation spigot / A



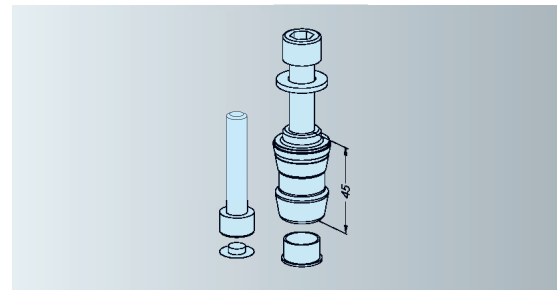
Version One chucking spigot with compensation function, including attachment bolts (M10x50, M12x55), U-disc and protective caps.



### ER-039200 MTS chucking spigot / A



Version One chucking spigot without centering (centering play 0.1mm), including attachment bolts (M10x50, M12x55), U-disc and protective caps.

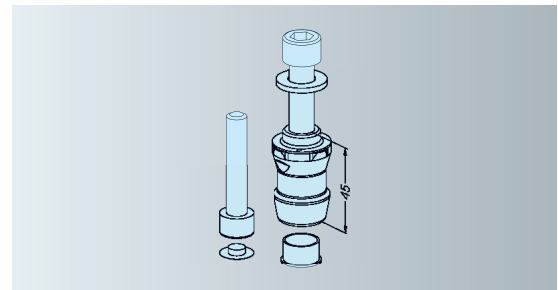


### ER-038000 MTS centering spigot / A



Version One chucking spigot with centering function, including attachment bolts (M10x50, M12x55), U-disc, O-ring and protective caps.

Application For MTS pallets which are loaded/unloaded automatically. The centering spigot defines the datum point without play and closes the cleaning boreholes in the MTS Chucks / A.



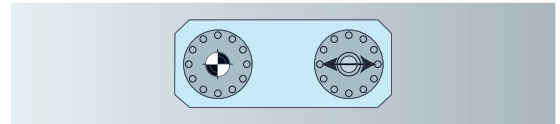
EROWA MTS

# Chucking spigot set

## ER-041460 MTS chucking spigot set 2



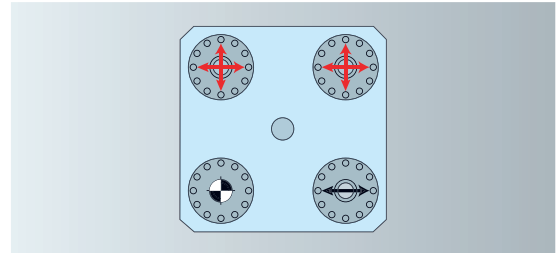
Version 1 centering spigot, 1 compensation spigot / A.  
 Mounting With the bolts supplied through the pallet or through the chucking spigot.



## ER-041461 MTS chucking spigot set 4



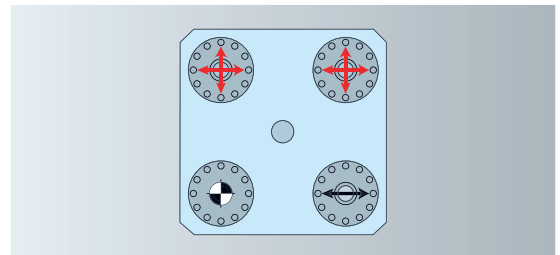
Version 1 centering spigot, 1 compensation spigot / A,  
 2 chucking spigots / A.  
 Mounting With the bolts supplied through the pallet or through the chucking spigot.



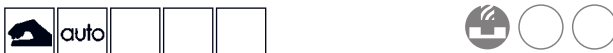
## ER-041464 MTS chucking spigot set 4 / A



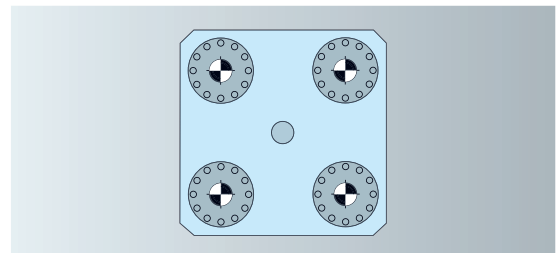
Version 1 centering spigot / A, 1 compensation spigot / A,  
 2 chucking spigots / A.  
 Mounting With the bolts supplied through the pallet or through the chucking spigot.



## ER-062465 MTS centering spigot set 4 / A



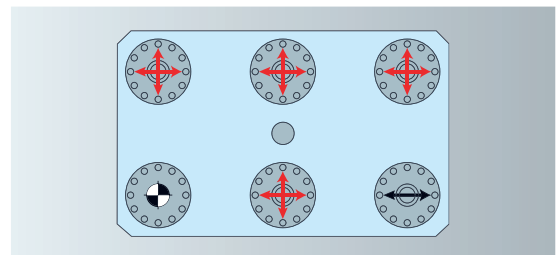
Version 4 centering spigots / A.  
 Application For 5-axis machining.  
 To fit With the bolts supplied, through the pallet, or through chucking spigots.



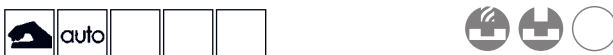
## ER-041462 MTS chucking spigot set 6



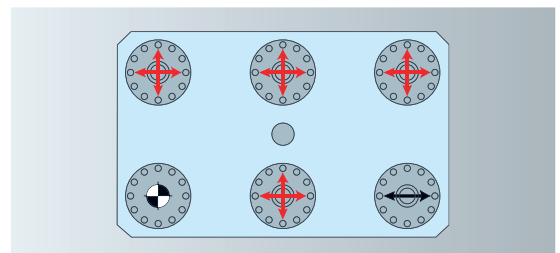
Version 1 centering spigot, 1 compensation spigot / A,  
 4 chucking spigots / A.  
 Mounting With the bolts supplied through the pallet or through the chucking spigot.



## ER-054710 MTS Chucking spigot set 6 / A



Version 1 centering spigot / A, 1 compensation spigot / A,  
 4 chucking spigots / A.  
 Mounting With the bolts supplied through the pallet or through the chucking spigot.



MTS

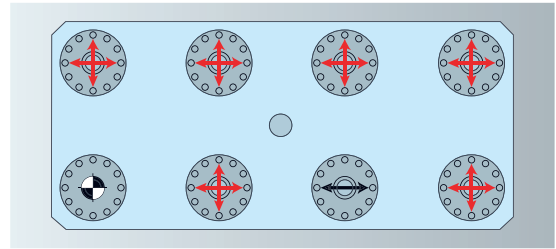
# EROWA MTS

## Chucking spigot set

### ER-041463 MTS chucking spigot set 8



- Version 1 centering spigot, 1 compensation spigot / A,  
6 chucking spigots / A.
- Mounting With the bolts supplied through the pallet or  
through the chucking spigot.



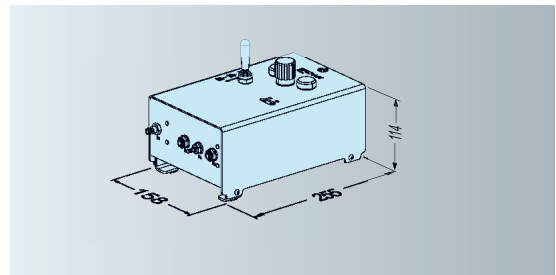
# EROWA MTS

## Operation

### ER-073872 Manual control unit with booster



- Version Manual valve to control the EROWA chucks:  
Opening/Reclamping/Cleaning.
- Application Operation of: EROWA ITS Compact Combi Chuck, ITS,  
UPC, MTS, PC 210 chucks and PowerChuck P.
- Note Integrated booster with load ratio 1:2 (up to output pressure of 10 bar max.).



### ER-099200 MTS 2.0 manual control unit



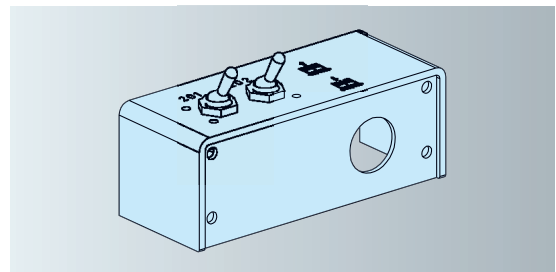
- Version Manually operated valve for the control of the MTS 2.0  
chuck functions. Opening / reclamping / monitoring / open  
check. Open control status: display possible through pressure  
gauge and additional electrical signal.
- Application Operation of MTS 2.0 chucks.



### ER-039466 Additional valve double



- Version For mounting to the manual control units ER-008988 and  
ER-073872, incl. set of hoses.
- Application Operating of two separate chucks with one single control  
unit.





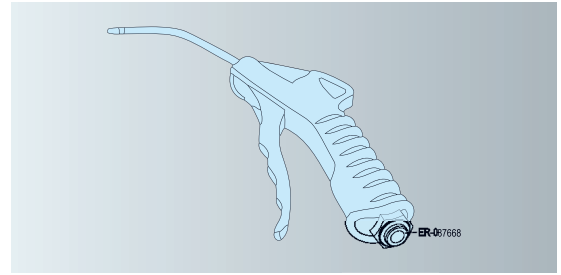
# EROWA MTS

## Operation

### ER-001846 Air jet



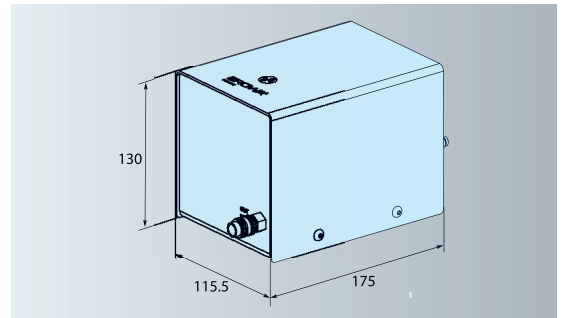
Version	Plastic, smooth regulation of air flow, connection 1/4", inside thread.
Application	Operation of manual chucks.
Option	Volume and pressure reduction to air jet (ER-087668). Pressure build up is reduced if Air Jet is not pushed against an air valve.



### ER-074893 Pressure booster



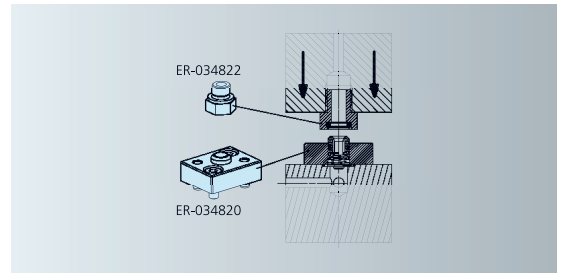
Version	Quick-connect couplings for hose $\varnothing i = 8$ mm. Compression ratio: 1:2
Application	On insufficient system pressure and on pressure fluctuations.
Installation	Integrate in air circuit near application.



### ER-034820 MTS air coupling

### ER-034822 MTS air coupling pallet 1 piece

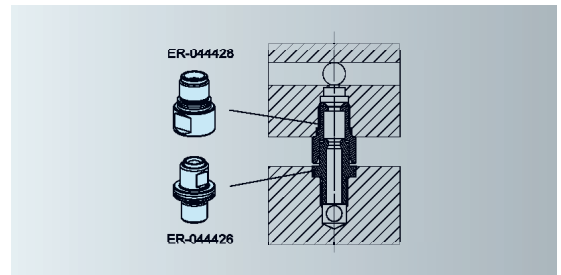
Application	The MTS air coupling ER-034820 combined with the MTS air coupling ER-034822 serves as a pneumatic interface between MTS base plates (A) and MTS pallets (B).
For use	with compressed air.
Working pressure	max. 10 bar.



### ER-044426 Nipple for MTS base plates

### ER-044428 Coupling for MTS pallets

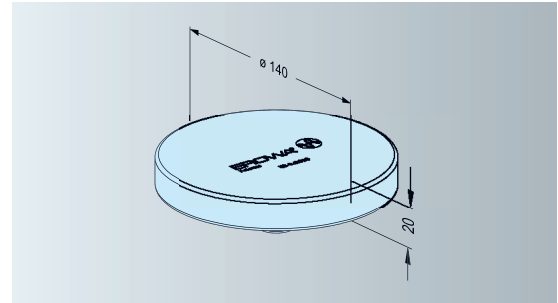
Application	The coupling for MTS pallets ER-044428, in combination with the nipple for MTS base plates ER-044426, serves as an interface for the medium connection between MTS base plates (A) and MTS pallets (B).
For use	with compressed air, with vacuum, with oil / hydraulic.
Working pressure	max. 200 bar.
Important	Docking- and undocking only depressurized.



# EROWA MTS Accessories

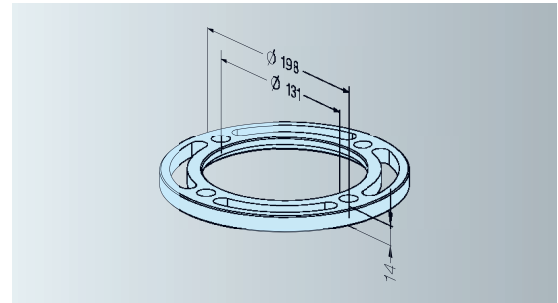
## ER-042038 MTS cover

Version Aluminum cover, anodized. Suitable for MTS and MTS 2.0 chucks.  
 Application Protects MTS and MTS 2.0 chucks that are not in use from chips and coolant.



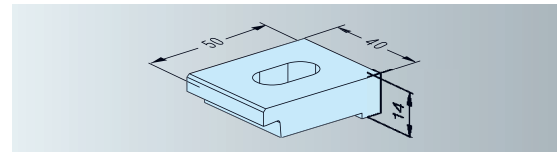
## ER-033804 MTS ring bracket

Version Bracket made of steel, excluding attachment bolts.  
 Application Suitable for MTS chucks only. To attach mounted MTS chucks to the machine table.



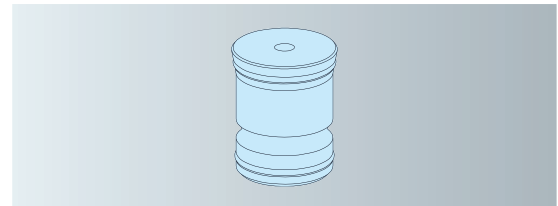
## ER-033805 MTS bracket 1 piece

Version Bracket made of steel, excluding attachment bolt.  
 Application To attach MTS chucks onto the machine table.  
 Note Four brackets are necessary per MTS chuck.



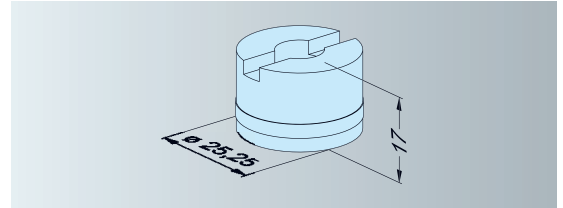
## ER-037967 MTS Locking bolt with M6 with internal thread M6

Version Steel.  
 Application To plug the central borehole in MTS and MTS 81 chucks.

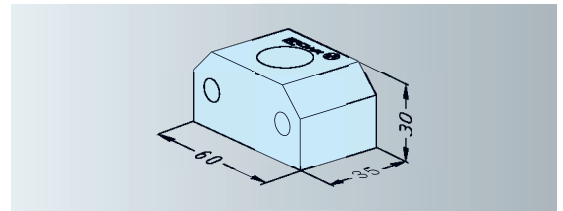


**ER-067563 Rubber seal MTS  $\varnothing 25.25 \times 17$  for EDM**

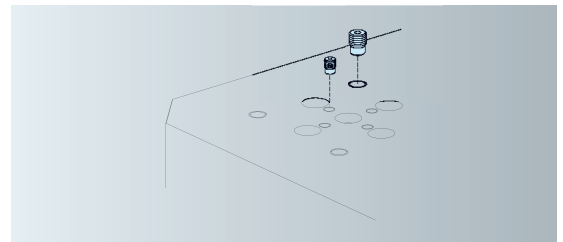
Version Rubber seal  
 Note Assembly according to operating instructions. Prevents liquid from penetrating from below.

**ER-034168 MTS Connector block 1/8" double**

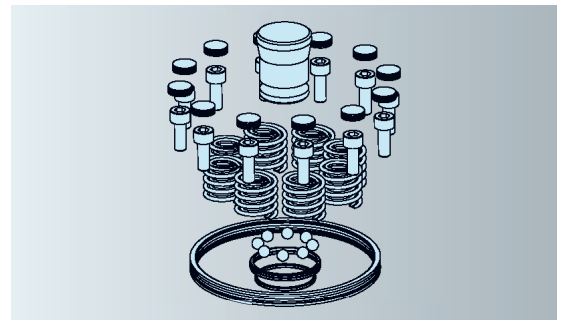
Version Connector block made of steel, excluding attachment bolts.  
 Application To receive pneumatic and hydraulic threaded connectors, nipples and couplings.

**ER-060391 MTS Set Z-support bolt set for 4-part pallet**

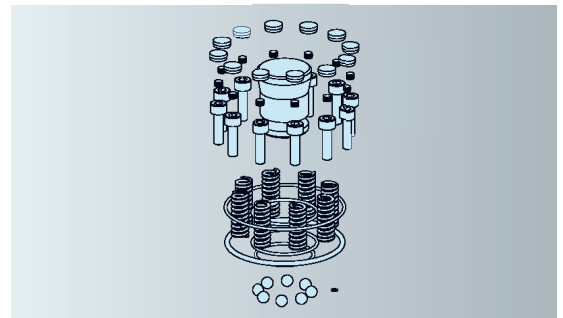
Version Steel, hardened  
 Application The Z-support bolts (1, 2) serve as Z-support surface for customized MTS pallets.

**ER-034382 MTS repair set pneumatic**

Version All the wearing parts for pneumatic MTS chucks.  
 Application As a repair set or for the conversion of hydraulic MTS chucks into pneumatic ones.  
 Note Repair or conversion according to instruction manual supplied.

**ER-061558 MTS 81 Repair Kit**

Application Repair Kit  
 Version All the wearing parts for MTS IntegralChuck  $\varnothing 81$  M-P (ER-057943) and MTS IntegralChuck  $\varnothing 81$  M-P/A (ER-059016).

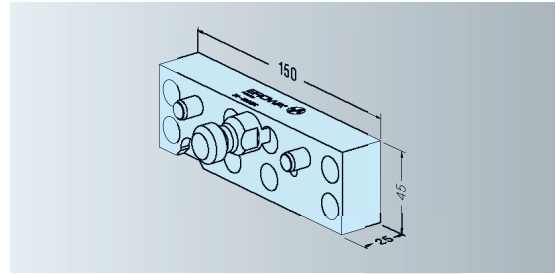


# EROWA MTS Accessories

## ER-038622 MTS GripperLink Rapid



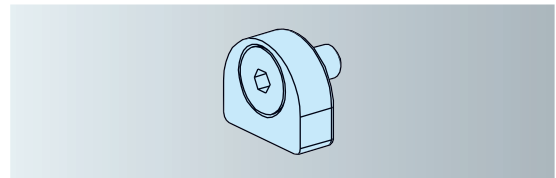
Version Coupling for MTS pallets, mounting accessories included.  
Application Suited for MTS pallets to be used on EROWA handling devices with the RCS coupling system.



## ER-035294 EWIS™ Rapid chip with chip holder RCS with chip $\varnothing$ 12.4 x 2 mm



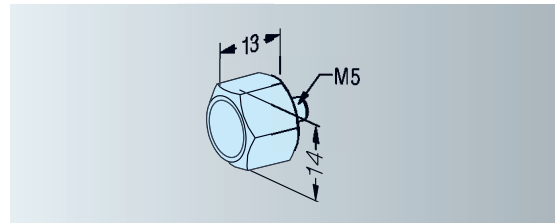
Version Holder with built-in data carrier. EWIS chip: read only.  
Application To build into RCS coupling, PalletSet W holder and Basic WEDM holder.



## ER-035154 EWIS™ Rapid chip with chip holder SW14 with chip $\varnothing$ 12.4 x 2 mm



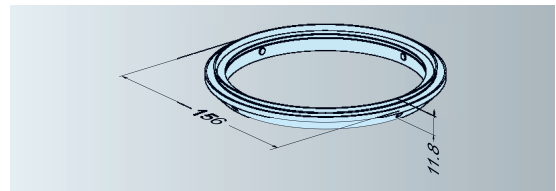
Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.  
Application In any EROWA electrode holder and pallet which has been prepared for it.



## ER-048478 MTS Chip guard low



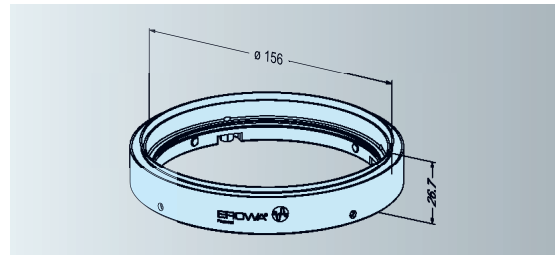
Version Aluminum, anodized  
Application The MTS chip guard serves to seal the automatic MTS chucks and base plates when MTS pallets are used.  
Note The MTS chip guard low cannot be combined with the MTS pallet P  $\varnothing$  148 Inox, ER-041928.



## ER-056879 MTS Chip guard $\varnothing$ 156 with axial deaeration

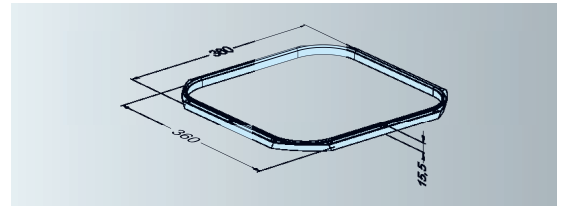


Application For use with MTS pallet P  $\varnothing$  148.  
Prevents dirt and chips from penetrating into the MTS SingleChuck

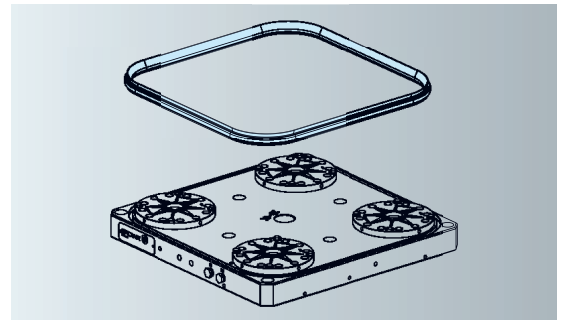


**ER-049041 MTS seal frame set / 200**

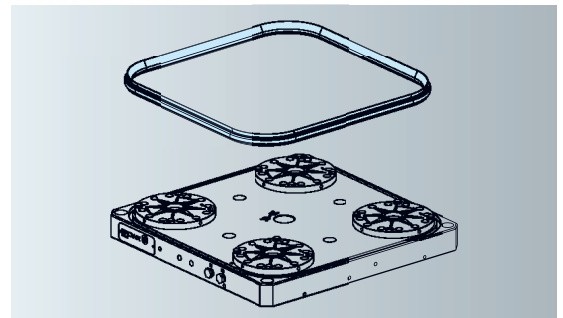
Version Aluminum anodized, with seal FPM (Viton).  
 Application The MTS seal frame set serves to protect MTS chucks against dirt and liquids when in use with an EROWA MTS pallet.

**ER-075393 MTS seal / 200 for MTS base plate 360 x 360 mm**

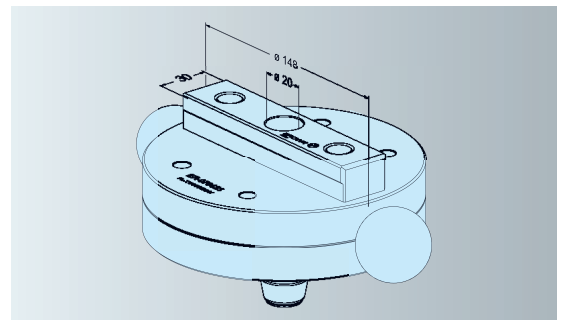
Version FPM (Viton).  
 Application Prevents dirt from penetrating into MTS base plates 360 x 360 in combination with MTS pallets 398 x 398 / 200.  
 Note The MTS base plate must have, or be equipped with, the groove (A) to accommodate the seal.

**ER-071604 MTS seal / 250 for MTS base plate 410 x 410 mm**

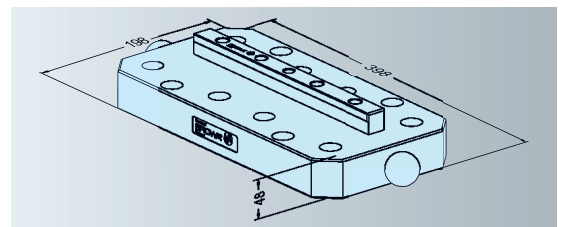
Version FPM (Viton)  
 Application Prevents dirt from penetrating into MTS base plates 410 x 410 with the use of EROWA MTS pallets 398 x 398 / 250 and 498 x 498 / 250.

**ER-078823 MTS alignment pallet P ø 148 for MTS single chuck**

Version Pallet ø 148 mm, center borehole ø 20 mm.  
 Application Alignment of radial, axial and angular position of MTS single chucks.

**ER-037870 MTS Alignment pallet / 200****ER-037875 MTS Alignment pallet / 250**

Version Twin aluminum pallet with precision ground alignment rail.  
 Application Alignment of MTS chucks.  
 Rail length ER-037870 = 200 mm.  
 Rail length ER-037875 = 250 mm.



# EROWA MTS

## Accessories

### ER-014326 Straight threaded connector 3101 06 10 ø6 / G1/8

Application Pneumatic.



### ER-002814 Angled connector 3199 06 10

Application Pneumatic.



### ER-014366 Threaded T-connector 3198 06 10

Application Pneumatic.



### ER-014333 T-connector

Application Pneumatic.



### ER-034095 Cross-connector

Application Pneumatic.



### ER-002023 Tube ø 6/4 black Legris 1100 U06 01

Application Pneumatic. Max. operating pressure: 9 bar.  
Order unit Meters.



### ER-036672 MTS air jet valve

Application Pneumatic. For air jet ER-001846.



### ER-002147 Reinforced pipe PMAFlex Co-Flex divisible

Application Hydraulic and pneumatic. Protects tubes ER-033495 and ER-002023 from damage.  
Order units Meter.





**ER-034098 Reduction nipple G1/4" - G1/8"**

Application Hydraulic and pneumatic.

**ER-034372 Reduction bushing IG1/8" - IG1/4"**

Application Hydraulic and pneumatic.

**ER-034373 Reduction bushing IG 1/8" - IG 1/8" AD FA 40-1/8-1/8**

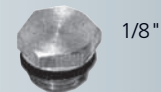
Application Hydraulic and pneumatic.

**ER-034375 Reduction nipple AG 1/4" - IG 1/8"**

Application Hydraulic and pneumatic.

**ER-001617 Threaded plug 1/8"**

Application Hydraulic and pneumatic.

**ER-033504 Nipple 1/8"**

Application Hydraulic. With blocking device. Fits fast coupling ER-033499.

**ER-033499 Rapid-action coupling 1/8" IG**

Application Hydraulic. With blocking device. Fits fast nipple ER-033504.

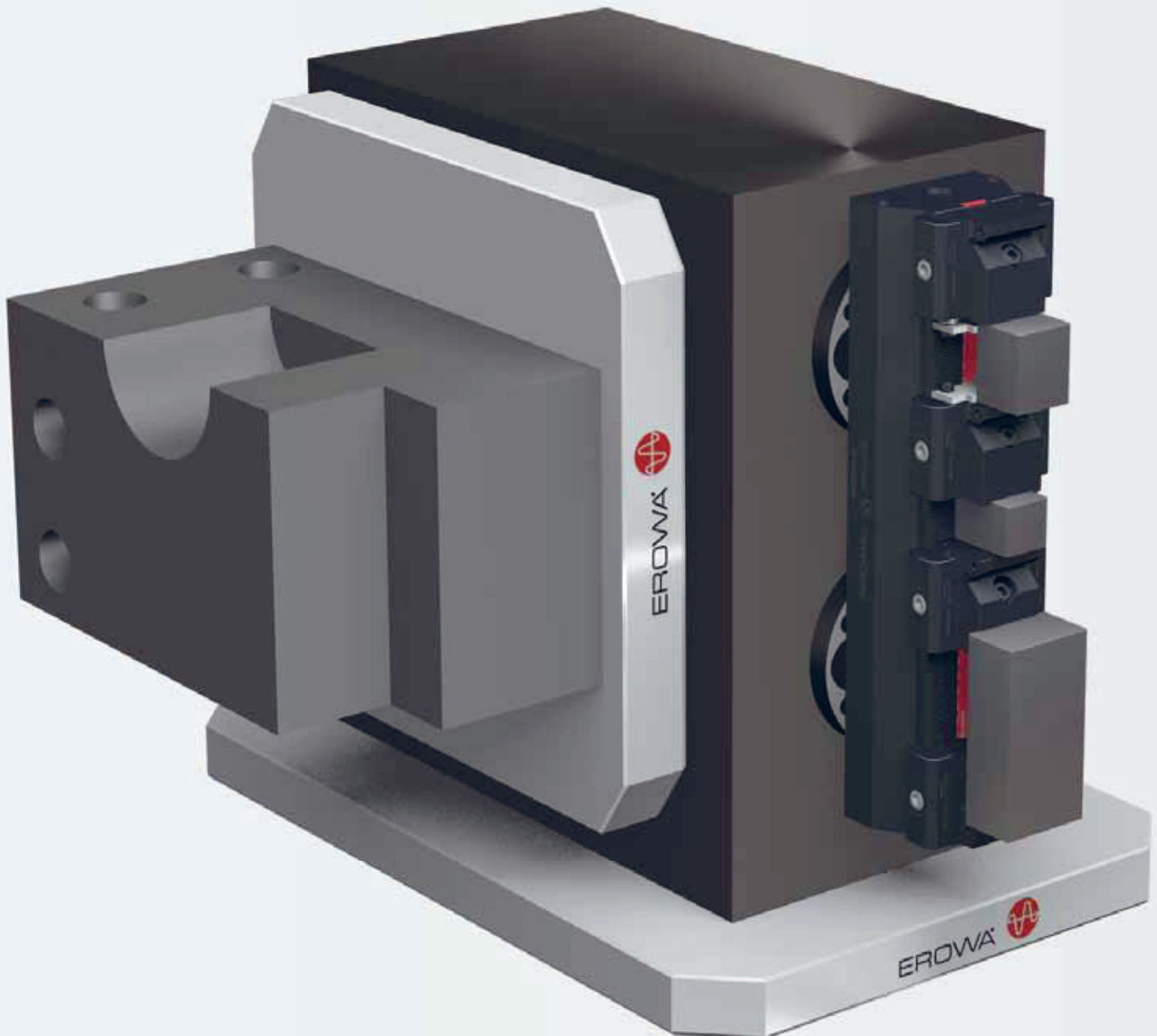


EROWA MTS

# Mineral Cast Cube

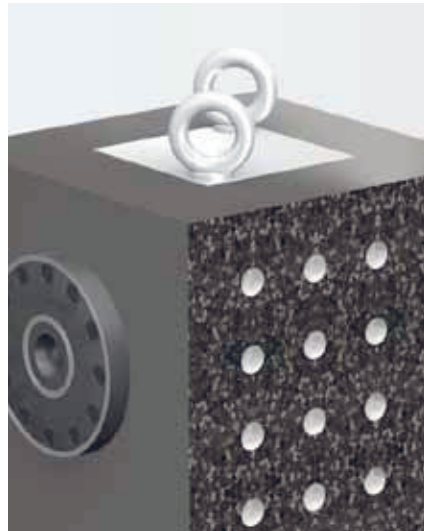
The whole working area of the machine is utilized optimally by using mineral cast cubes. Mineral cast as base material has many beneficial properties: The vibration damping is up to 10 times better than that of cast iron. Mineral cast also has a very high temperature stability.

Paired with the ingenious MTS datum point tooling system, the EROWA mineral cast cube becomes a key productivity factor.





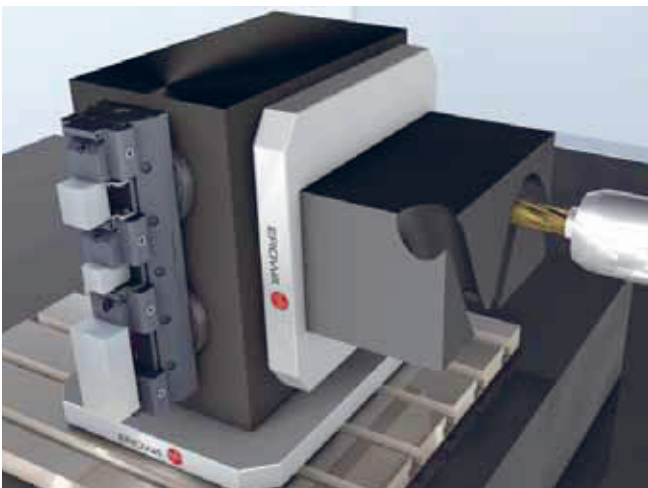
Changeover times are eliminated: Workpieces are prepared conveniently at the set-up station outside of the machine. They are then clamped in the MTS datum point tooling system for machining.



Moving the cube from the machine to the setup station? Simply lift it with the overhead crane.



Rust-resistant built-in pockets and internal pneumatic supply for safe operation in the challenging production environment.

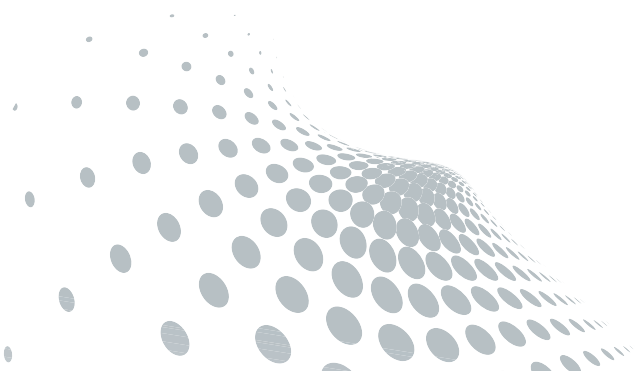


Ultimate machine utilization by maximizing the working area.



Reduce set-up time even further with EROWA CleverClamp, the modular tooling system. Easy to handle, versatile in use.

MTS



# EROWA MTS Mineral Cast Cube Variations

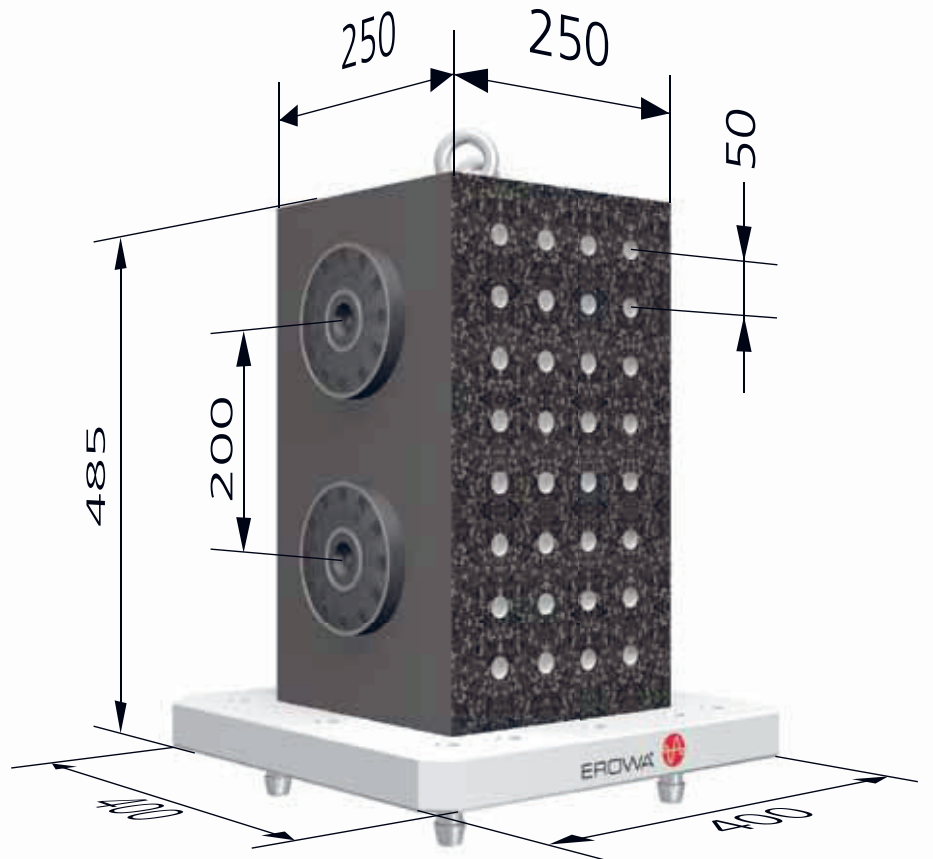
All devices, including tombstones, should be clamped on the machine table as quickly and accurately as possible. The basis is the MTS datum point tooling system. So, all job changes are done in no time with only two pallets. The fixtures are stored in racks, saving space, but can be called up at any time.

Standard version:

**ER-094454 MTS mineral cast cube  
250 x 250 x 485 mm**



Version	Mineral cast cube 250 x 250 x 445 mm. Including 2 sides each with 2 MTS chuck M-P (pitch 200 mm) and 2 sides with hole grid R50 / M12 F7.
Operation	With mounted steel base plate 400 x 400 x 40 mm.
Note	MTS chuck with air gun. Base plate with borehole for 63 / 100 mm slot spacing as well as preparation for 4 chucking spigots (set-up distance 200 mm).
Weight	Approx. 135 kg.





## MTS Mineral Cast Cube

Scan the code and choose your mineral cast cube on our homepage.

For clamping of MTS 4-way, 2-way and single pallets.

The following examples show some of the possibilities.

Various sizes, other forms, any number of chucks, with or without hole patterns – almost everything is possible.

The MTS mineral cast cubes are produced according to customer specifications. Simply order "Your Cube".



### Example 01

8 chucks in the smallest space.  
Clamp pallets from the tooling station directly on the cube.



### Example 02

4-way or 2-way MTS pallets can be used on two sides.



### Example 03

Additional four positions for MTS single pallets..



### Example 04

For optimal use of the available height in the machine.



### Example 05

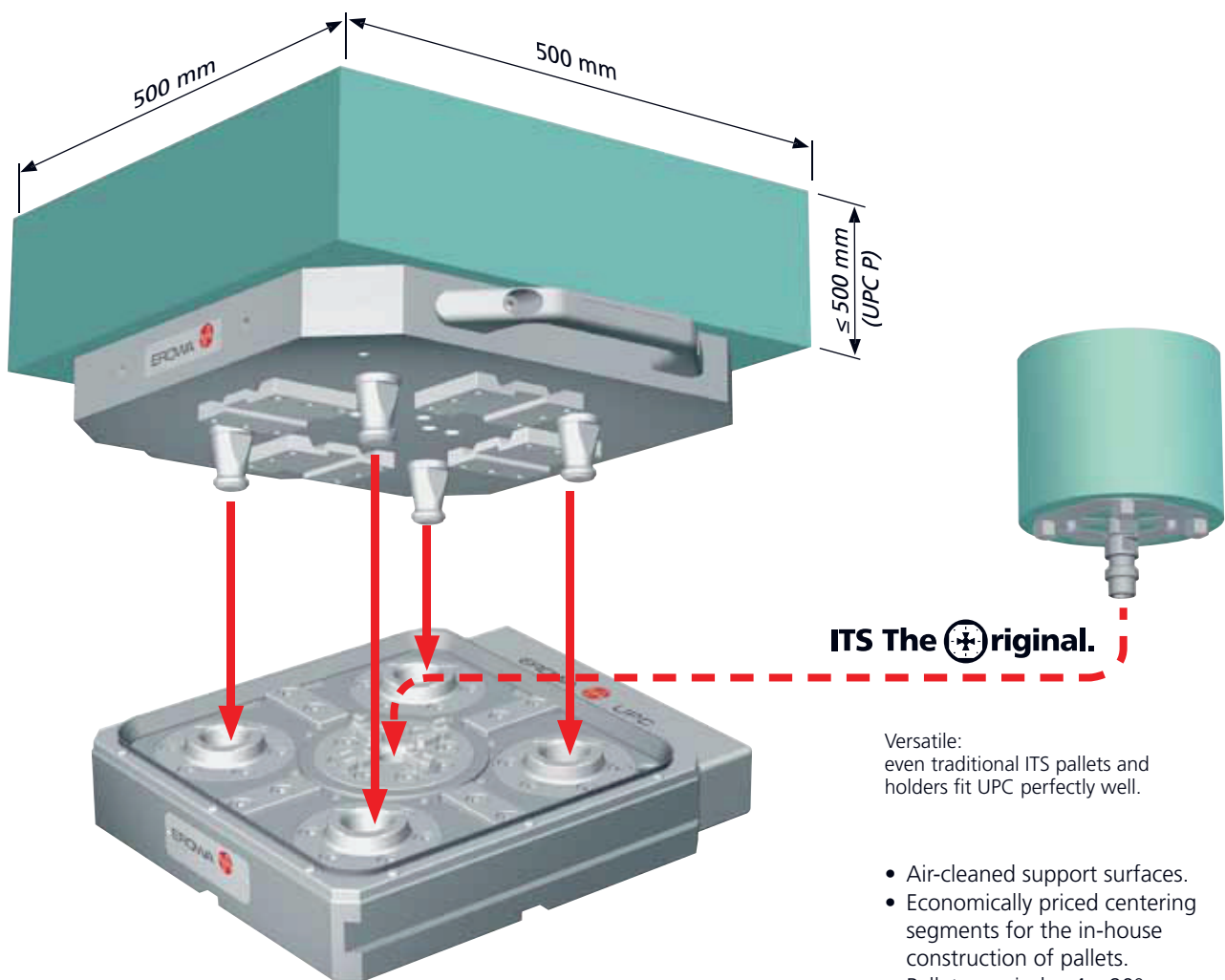
Optimal use of the machine working envelope.

EROWA UPC

# You might as well try to move a mountain

EROWA's UPC (Universal Power Chuck) breaks through the conventional limits of precision, stability and workpiece size. Now, 500 x 500 x 500 mm have ceased to be a problem. And the 2- $\mu$ m precision will not be impaired at all.

A decisive factor for ITS users: the central ITS chuck guarantees seamless integration into the existing system.



ITS The  riginal.

Versatile:  
even traditional ITS pallets and  
holders fit UPC perfectly well.

- Air-cleaned support surfaces.
- Economically priced centering segments for the in-house construction of pallets.
- Pallets can index 4 x 90°.
- Stable centering segments with patented initial tension.
- ITS chuck can be integrated in the center (option).
- Four fixed chucking spigots which also serve as supports for pallet storage.
- Economically priced aluminum pallets with hardened Z-supports as a basis for any fixture.



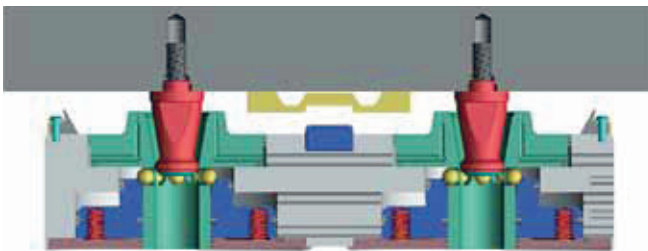
## Applications



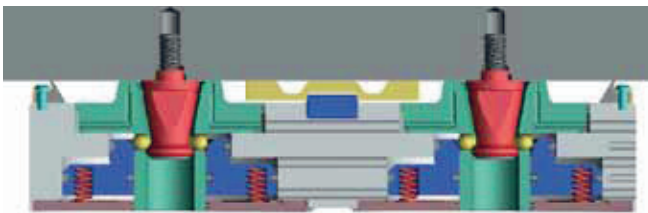
## Handling

Manual / Loading facility / Robot

## Function



UPC open



UPC closed

The functional elements have been designed with every conceivable simplicity. This makes for a favorable price. The few movable parts guarantee high functional safety.

The lock creates a retaining power of 50,000 N. The big distance between the supports creates an extreme degree of platform stability.

Precentering is done by means of the chucking spigots. Precise positioning is then achieved by four stable centering segments in the pallet and chuck. Release and cleaning are achieved by means of compressed air.

## Technical data - UPC

	UPC	UPC P «Production»
Pallet size	320 x 320 mm	320 x 320 mm
Chuck dimensions	280 x 280 mm	320 x 300 mm
System height (chuck and pallet)	105 mm	105 mm
Recommended workpiece sizes	500 x 500 x 350 mm	500 x 500 x 500 mm
Repeatability	0.002 mm	0.002 mm
Indexation, pallet	4 x 90°	4 x 90°
Activation	clamped without pressure	
Air pressure, dry	min. 6 bar	min. 6 bar
Operation	manually or with automatic control unit	
Process monitoring	pneumatically, evaluation electro-pneumatically	
Clamping power	32,000 N	50,000 N

EROWA UPC in operation

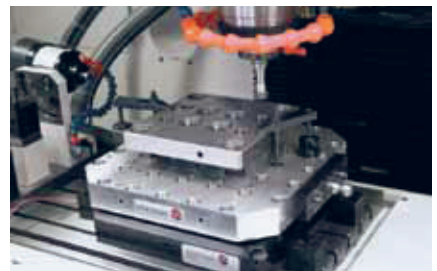
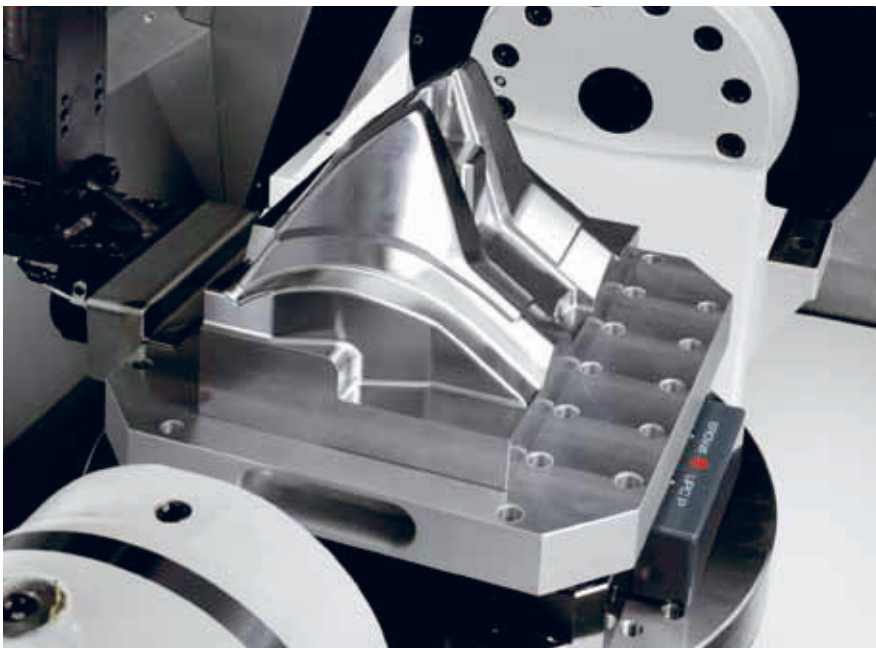
# Universal, powerful, micronaccurate

The UPC tooling system is suitable for flexible use. Whether big electrodes on the quill of EDM centers or big workpieces in milling machines: the UPC has been designed to cope with them, and it does.

With a repeatability of 2  $\mu\text{m}$ , the UPC does not leave any wishes unfulfilled with regard to precision, either.

## RELIABLE

Resistant to dirt.  
Robust - developed for  
continuous operation.



Customized solutions including. We'll be happy to advise you!



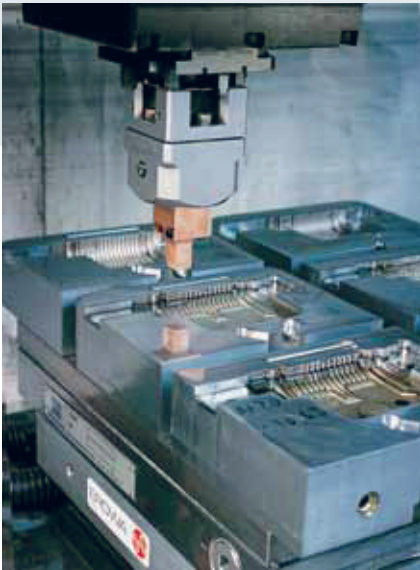
Low construction height leaves much room for workpieces.



Suitable PreSet stations are available for setting up and presetting - manual or CNC.



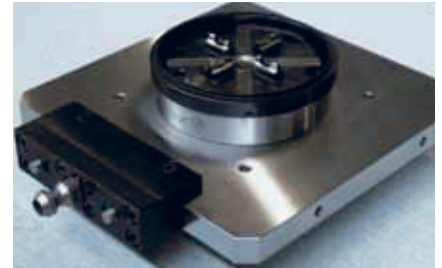
Practical! EDMing on the UPC magnet pallet.



On a clamping surface of up to 500 x 500 mm, even large workpieces or fixtures can be attached to the UPC pallet without any problems.



Powerful in heavy machining.



2 in 1: UPC adapter pallet with EROWA PowerChuck P.



The UPC pallet CleverClamp workpiece tooling system makes it simple to clamp different workpieces on a pallet with different clamping elements. The pallets can be automated.



UPC Pallet Alu DG – light and handy.



Short set-up times with flexible clamping elements: EROWA ClampSet vises on UPC grid pallet.



The UPC on the machine table constitutes the interface with the workpiece carrier. Resetting takes next to no time, and production can resume.



The UPC palletizing system is consistently automatable.

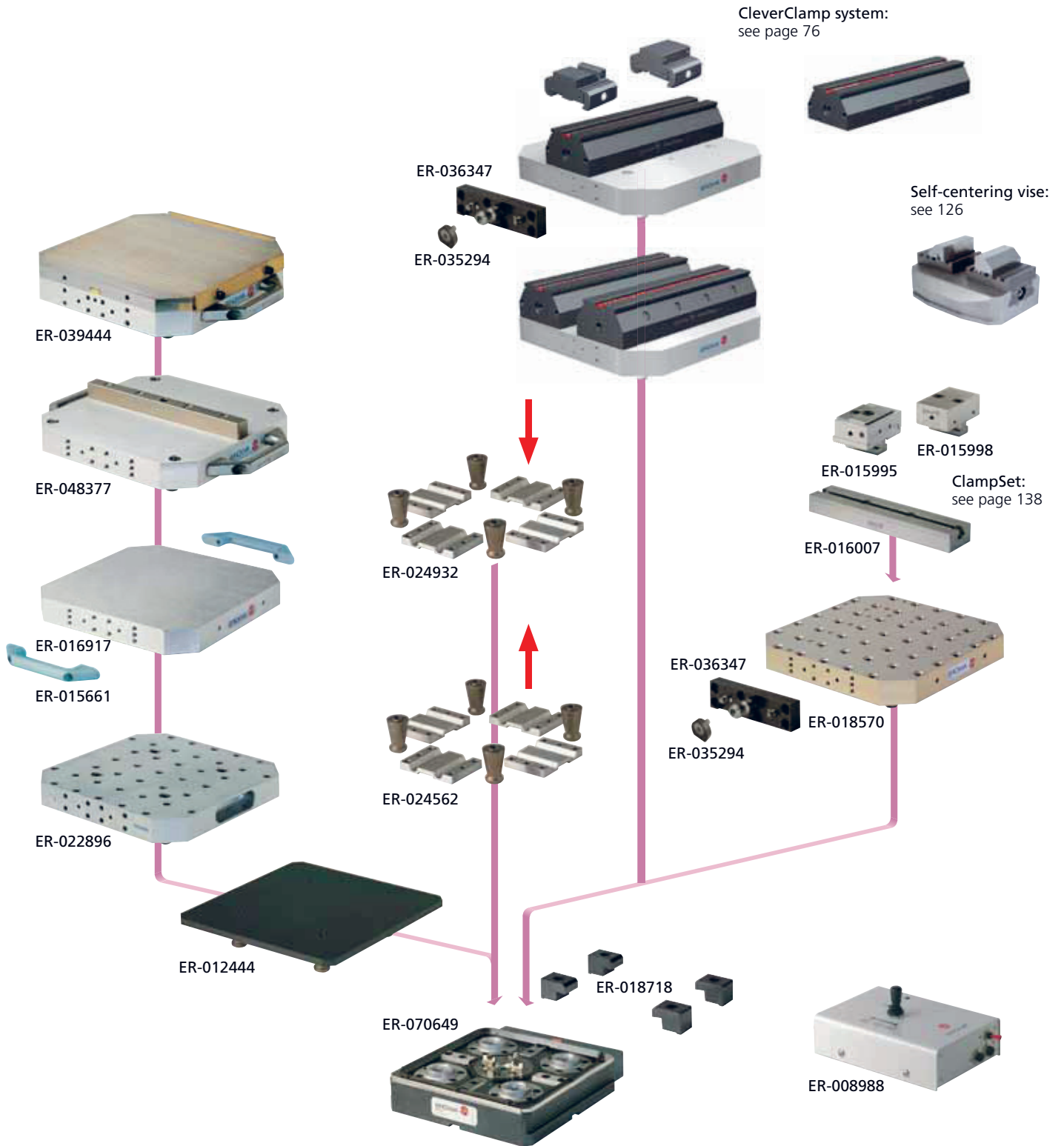


The chucks are completely sealed against ingress of coolant and chips. The contact surfaces are cleaned automatically and thoroughly with air.




















# EROWA UPC Palletizing System

## The components

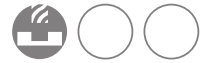


To make it easier for you to find your way about the fields of application for EROWA products, we use the following symbols in all our documents:

-  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

## EROWA UPC PALLETIZING SYSTEM

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For chip-removing processes



For EDM sinking



For WEDM

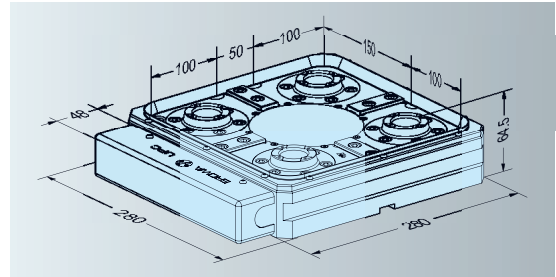
# EROWA UPC Chucks

Technical data	UPC	UPC P «Production»	ITS Chuck 100P	PowerChuck
Repeatability	0.002 mm	0.002 mm	0.002 mm	0.002 mm
Indexing, pallet position-oriented	4 x 90°	4 x 90°	4 x 90°	4 x 90°
Chuck clamping power	32,000 N	50,000 N	6000 N	10 000 N
Generated by	spring power	spring power	spring power	spring power
Chuck opens, air pressure dry	min. 6 bar	min. 6 bar	min. 6 bar	min. 6 bar

## ER-074524 UPC chuck



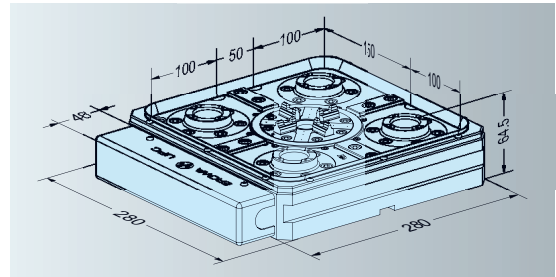
Version UPC, prepared to accommodate an ITS chuck 100P.  
 Connections Through the base and on the side.  
 Application On milling, grinding, drilling and EDM sinking centers.  
 In production lines.



## ER-070649 UPC chuck with ITS Chuck 100 P



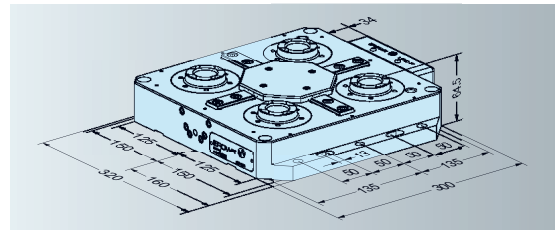
Version UPC with ITS chuck 100P fitted and aligned.  
 Connections Through the base and on the side.  
 Application On milling, grinding, drilling and EDM sinking centers.  
 In production lines.



## ER-016841 UPC P chuck



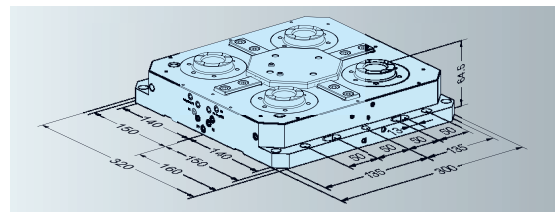
Version Chuck for high machining forces during chip removal.  
 Connections Through the base and on the side.  
 Application On milling, grinding, drilling and EDM centers and in production lines.  
 Option UPC Sealing-Set ER-016650.



## ER-078728 UPC P with connection on TK 57 mm with 2 air docks



Version Chuck for high machining forces during chip removal.  
 Connections Through the base on pitch circle 57 mm and on the side.  
 Application For milling, grinding, drilling and EDM centers and in production lines.  
 Option UPC Sealing kit ER-016650 and ER-030580.  
 Another system adaptations on request.

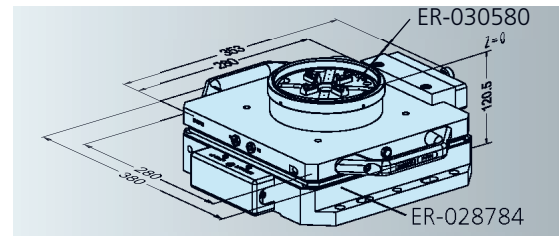


# EROWA UPC Chucks

## ER-030581 UPC P / PowerChuck P kit automatic



- Version UPC P with air dock for the automatic operation of PowerChuck P.
- Content 1 x ER-028784, UPC P with air duct and UPC seal kit  
1 x ER-030580, PowerChuck P on UPC pallet with air duct  
1 x Pneumatic tube.
- Requirements \*At least 4 air ducts available on the machine table.  
\*Air ducts for the PowerChuck P are only possible laterally.  
If required, an adapter plate can be used.
- Please note Another system adaptations on request..

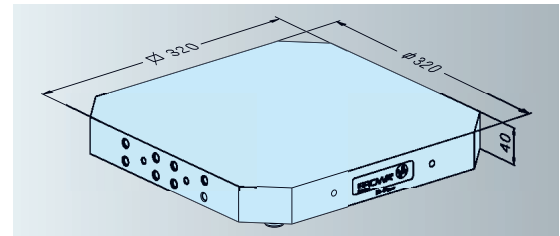


# EROWA UPC Pallets

## ER-016917 UPC pallet Alu 320 x 320 x 40



- Version Aluminum, with centering segments and chucking spigots fitted. Hard Z-support.
- Application To clamp workpieces and gauges.
- Please note Holes to be drilled as required.

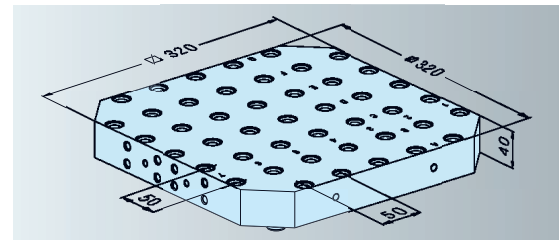


## ER-018570 UPC pallet Alu R50 320 x 320 x 40 anodized

## ER-016003 UPC pallet Alu R50 320 x 320 x 40



- Version Aluminum with 50 mm grid. Centering segments and chucking spigots fitted. Hard Z-support.
- Application Basis for gauges and workpieces.
- Info Pattern borehole  $\varnothing$  12F7, M12 thread.





# EROWA UPC Pallets

## ER-022896 UPC pallet Alu diecast S with steel centering

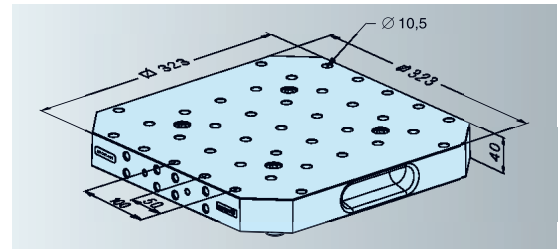


Version Aluminum with 50mm grid. Chucking spigot fitted. Handles integrated. Steel Z-support.

Application To clamp workpieces and gauges.

Please note With steel centering segment fitted (repeatability:0.002 mm).

Accessories Order separately: ER-032503, M10 insert nut.

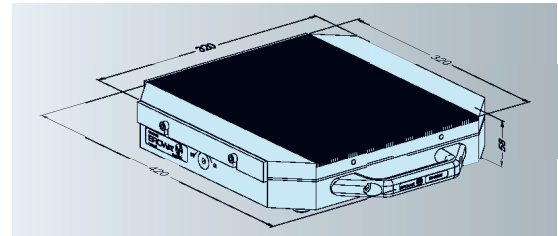


## ER-090679 UPC magnet plate Neomicro 320x320x58



Version Magnet plate assembled as a UPC pallet 320 x 320 x 58 mm.

Application To clamp workpieces for surface and profile grinding, EDM sinking, and high speed milling.



# EROWA UPC Pallets CleverClamp System

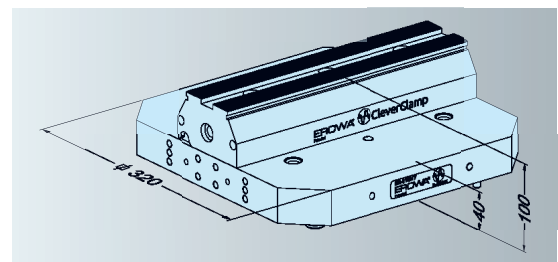
## ER-099318 Base UPC mono CleverClamp



Version Combination of UPC aluminum pallet with 320 rail; centering segments and chucking spigots fitted. Z-Support hard.

Application Optimal accessibility for 5-axis applications with single and multiple fixtures.

Accessories Order separately: GripperLink RCS / EWIST™ Rapid ER-036347 for Automation.



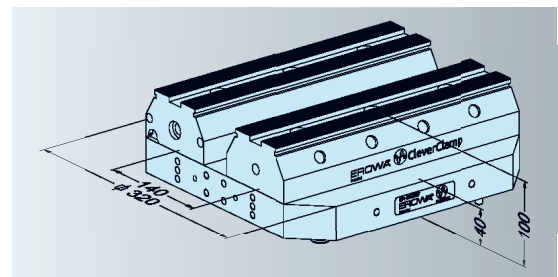
## ER-099317 Base UPC duo CleverClamp



Version Combination of UPC aluminum pallet with two 320 rails; centering segments and chucking spigots fitted. Z-support hard.

Application Optimal for multiple fixtures and for clamping big workpieces.

Accessories Order separately: GripperLink RCS / EWIST™ Rapid ER-036347 for Automation.



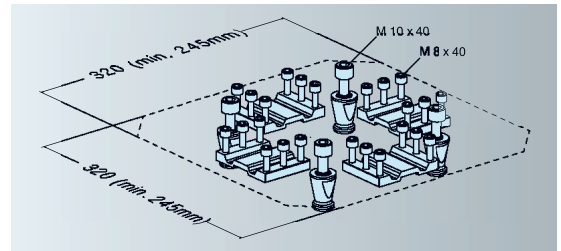
EROWA UPC

# Auxiliary equipment

## ER-024932 UPC centering segments and chucking spigots, for mounting from above



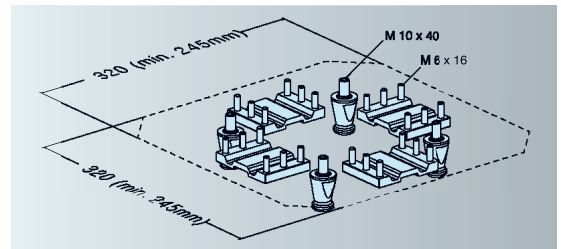
Version	Four segments and chucking spigots for UPC, including bolts.
Application	To produce special UPC pallets.
Mounting	With bolts through the pallet from above.
Note	Easy to assemble on the UPC chuck.



## ER-024562 UPC centering segments and spigots to mount from lower side



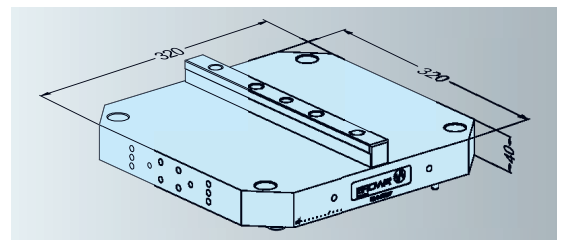
Version	Four segments and chucking spigots for UPC, including bolts.
Application	To produce special UPC pallets.
Mounting	With bolts through the pallet from below.
Note	Easy to assemble on the PreSet Basic UPC presetting station.



## ER-048377 UPC alignment pallet, 320x320x40



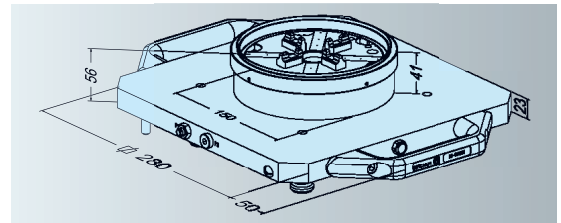
Application	To align angular position and to determine the center of UPC chucks.
Please note	System parallelism 0.005 mm. Borehole concentricity 0.005 mm.



## ER-029453 PowerChuck P on UPC pallet



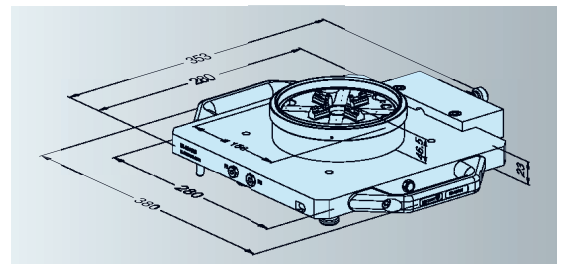
Version	Adapter pallet UPC - PowerChuck P.
Connections	Laterally on pallet.
Application	On machining centers. Operate with air-jet or fixed connection.
Note	Manual change into UPC. Possible automatic change into PowerChuck P.



## ER-030580 PowerChuck P on UPC pallet with air connection



Version	Adapter pallet UPC - PowerChuck P.
Connections	From the bottom through of the pallet. Suitable for ER-028784 and ER-078728.
Application	On machining centers.



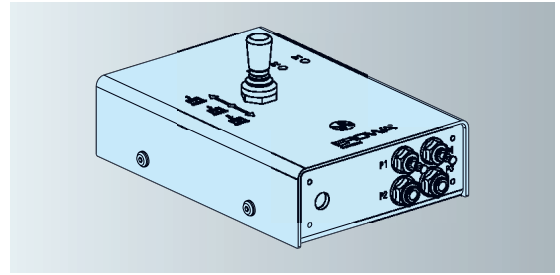
# EROWA UPC

## Auxiliary equipment

### ER-008988 Manual control unit



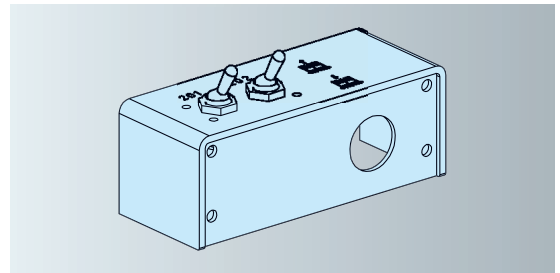
- Version Manual valve to control all the functions of ITS, ITS Compact CombiChuck, PowerChuck P and UPC: opening/reclamping/cleaning.
- Application Operation of chucks on machines.



### ER-039466 Additional valve double



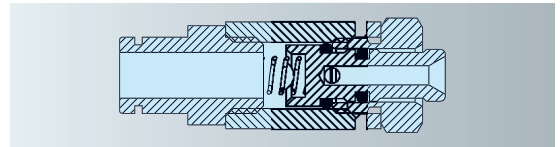
- Version For mounting to the manual control units ER-008988 and ER-073872, incl. set of hoses.
- Application Operating of two separate chucks with one single control unit.



### ER-016531 UPC air jet connection



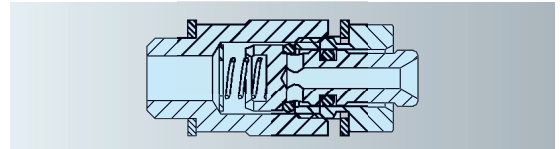
- Version Valve for the manual operation of UPC ER-016092, ER-016093, ER-074527 and ER-070649 with an air jet.
- Application To be fitted on UPC cover.



### ER-018168 UPC P air jet connection



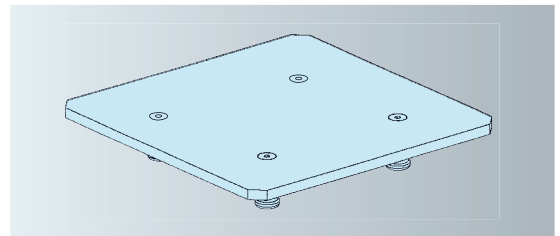
- Version Valve for the manual operation of UPC P ER-016841 with an air jet.
- Application To be fitted on UPC P cover.



### ER-012444 Cover for UPC

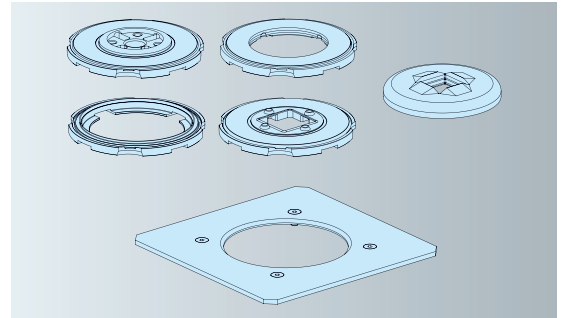


- Version Aluminum.
- Application Cover for UPC.

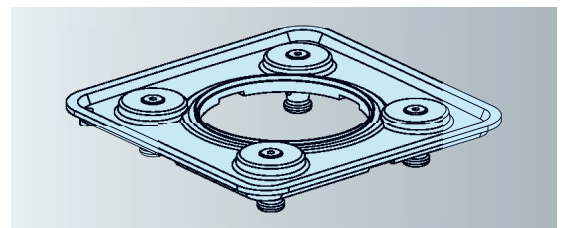


**ER-094178 Cover set for UPC / ITS 50 C**

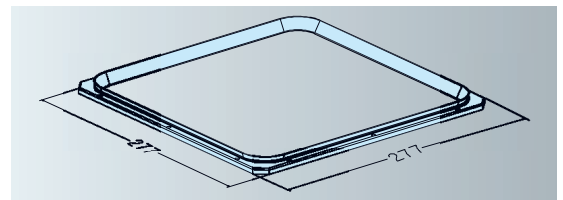
Version Aluminum with inserts, to protect UPC chuck when used with holder 72, pallet  $\varnothing 115$ , pallet  $\varnothing 148$ , electrode holders ITS 50 C.

**ER-018247 Cover UPC pallet  $\varnothing 148$** 

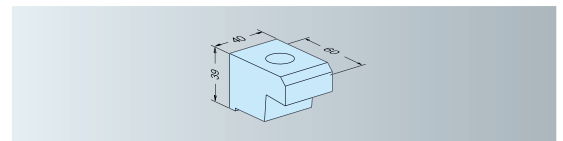
Version Aluminum. Cover for UPC ER-070649.  
Application Protects UPC system when  $\varnothing 148$  mm pallets are used in the ITS central chuck.

**ER-016650 UPC sealing kit**

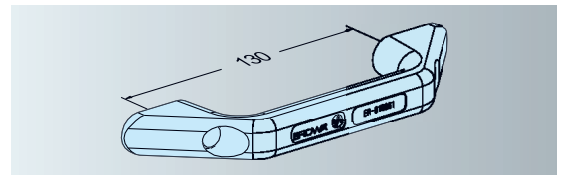
Version Rubber seal and frame.  
Application To seal the UPC P against chips.  
Mounting With supplied bolts.  
Please note Fits UPC No. ER-016841/ER-070649/ER-074524/ER-078728.

**ER-018718 UPC clamping bracket  
4 pieces**

Version High tension steel, mounting accessories not included.  
Application To mount UPC chucks to machine tables.  
Please note Fits UPC chuck No. ER-016841/ER-070649/ER-074524/ER-078728.

**ER-015661 Handles for UPC pallets / FrameSet  
2 pieces**

Version Aluminum die-casting, set of 2 units.  
Application Safe handles for UPC pallets.  
Mounting With the enclosed bolts to the prepared threads.



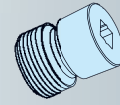
# EROWA UPC

## Auxiliary equipment

### ER-018817 Sealing bolt M12x16 50 pieces



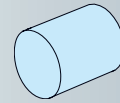
Version Set of 50, including square wrench.  
Application Plastic bolts to seal grid boreholes that are not in use.  
Suitable for ER-018570 and ER-016003.



### ER-022646 Plug $\varnothing$ 10.6x20 50 pieces



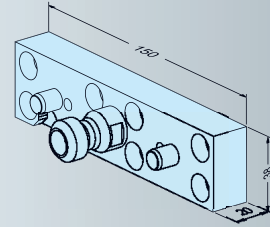
Version Set of 50.  
Application Plastic plug to seal grid boreholes that are not in use.  
Suitable for ER-022896.



### ER-036347 GripperLink RCS / EWIS™ Rapid



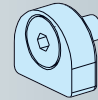
Version Coupling for UPC pallets, mounting accessories included.  
Application Suited for UPC pallets to be used on EROWA handling devices with the «RCS coupling system».



### ER-035294 EWIS™ Rapid chip with chip holder RCS with chip $\varnothing$ 12,4 x 2mm



Version Holder with built-in data carrier. EWIS chip: read only.  
Application To build into RCS coupling, PalletSet W holder and Basic WEDM holder.





EROWA CleverClamp System

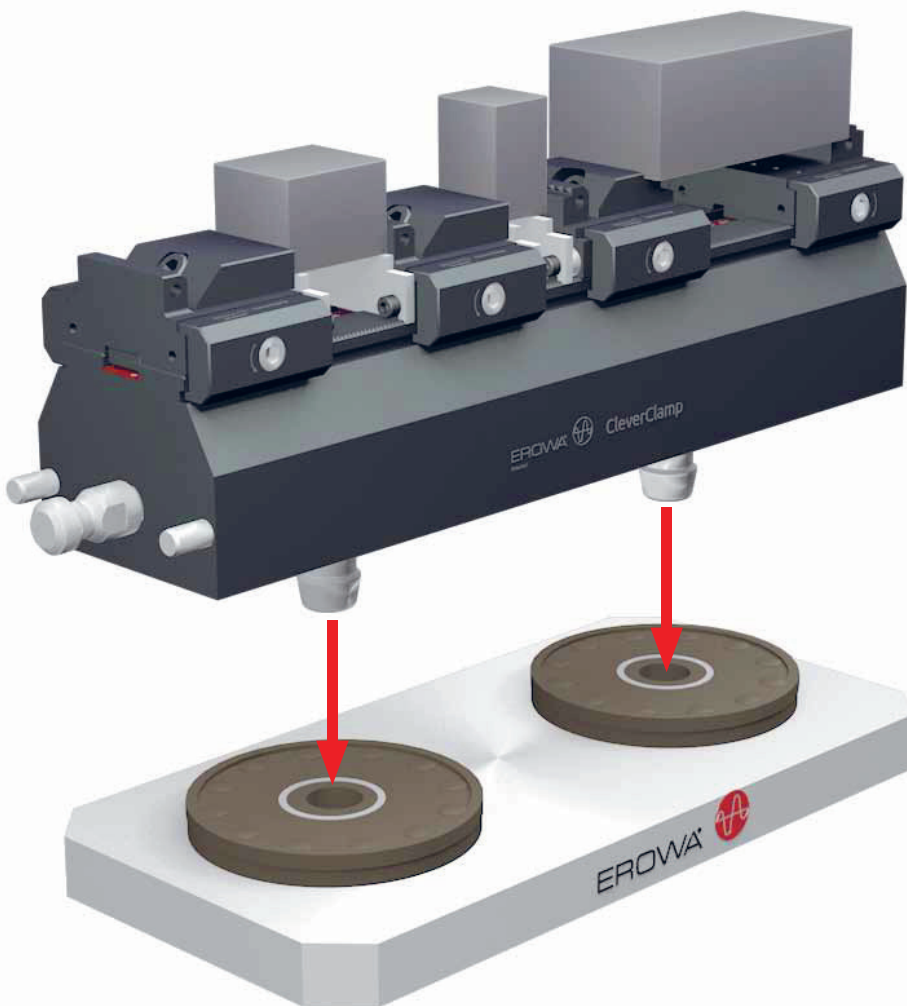
# The flexible workpiece clamping system for chip-cutting processes

The EROWA CleverClamp system is a modular and universal workpiece clamping system. It is simple to operate and can be used in a wide variety of ways.

CleverClamp base rails are fitted directly to the machine table, a tombstone, a pallet, etc. Thanks to the standardized interface, they can be universally used in EROWA's UPC and MTS palletizing systems.



For more information about the entire EROWA CleverClamp system range.



- The base rails constitute the foundation of the CleverClamp workpiece clamping system.
- The base rails are available in various versions.
- Large and well-thought-out selection of clamping and stop elements.
- Precise 2mm positioning grid to place clamping and stop elements.
- MTS clamping spigots can be directly fitted to the base rails.
- The integrated scale with a 2mm gradation helps the operator to position the clamping and stop elements quickly and repeatably during setting-up operations.
- Clamping surfaces are available in various versions.
- Base rails can be directly automated.

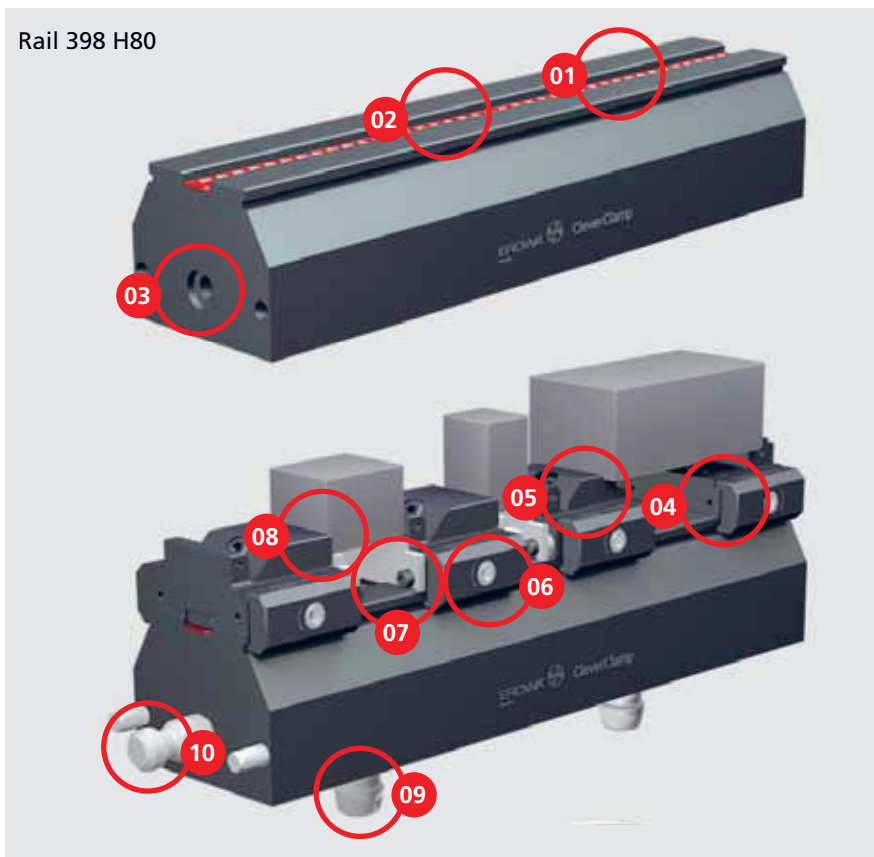


**Applications****Handling**

Manual / Loading facility / Robot

**Function**

Rail 398 H80

**01 | Precise**

Steel, hardened and ground, 2mm positioning grid.

**02 | Scale**

for the quick positioning of the clamping elements.

**03 | Automation**

Attachment borehole for the coupling required for automatic handling.

**04 | Stop element****05 | Clamping element**

Depending on requirements, as a pull-down or linear clamping element.

**06 | Locking bolt**

Threaded spindle mechanism for the quick attachment of the modules.

**07 | Support**

Various versions and heights.

**08 | Clamping jaw**

A suitable stop surface for every clamping position.

**09 | Chucking spigot**

for quick positioning in the EROWA MTS tooling system.

**10 | Automation coupling (option)**

More productive machine hours through automatic loading.

**Technical data - Clamping elements**

	Pull-down clamping elements	Linear clamping elements
Clamping range	0 - 4.1 mm	0 - 5mm
Clamping power	up to 28kN	up to 16kN



# EROWA CleverClamp system in operation

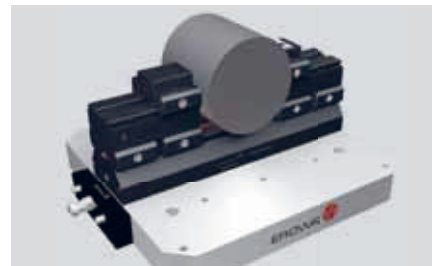
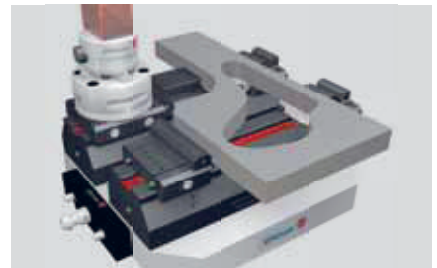
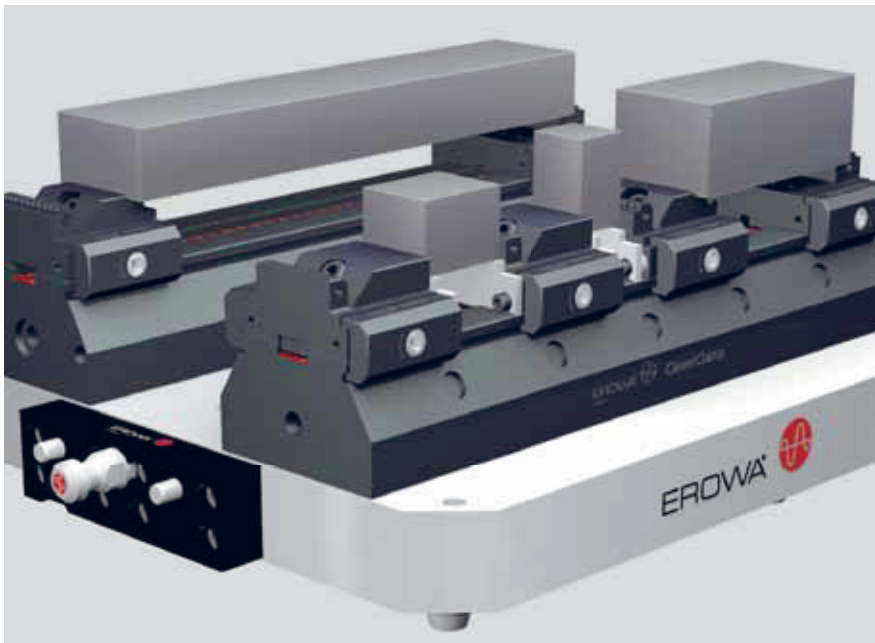
## Perfect combination

### EXTREMELY VERSATILE

Everything matches up and can be combined flexibly.

The CleverClamp system clamps any workpiece and adapts to any machine situation.

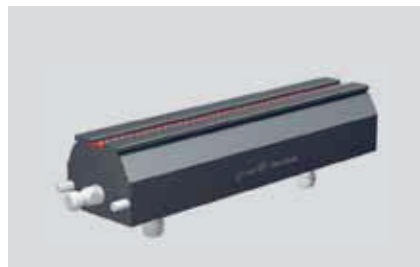
Suitable clamping and stop elements can be placed quickly with the help of the precise positioning grid. The base rails take up hardly any room but still provide a great deal of space for the flexible attachment of a wide variety of workpiece shapes and sizes.



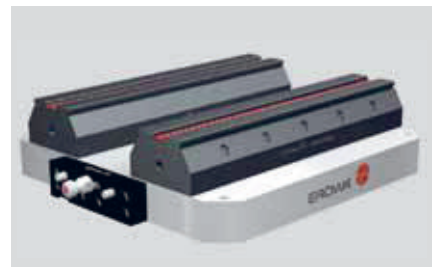
Use of elevation elements to clamp larger workpieces.



- As a single rail to be individually fitted onto the machine table, fixture, EROWA UPC or MTS pallet, etc.



- With a fitted chucking spigot and automation coupling (option) for direct integration into the EROWA MTS tooling system.  
- Can be directly automated.

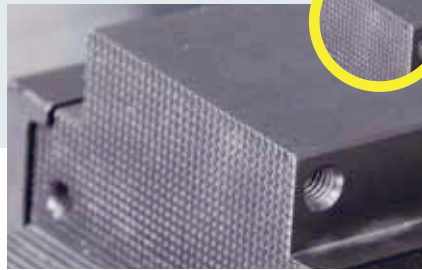


- On EROWA UPC and MTS pallets.

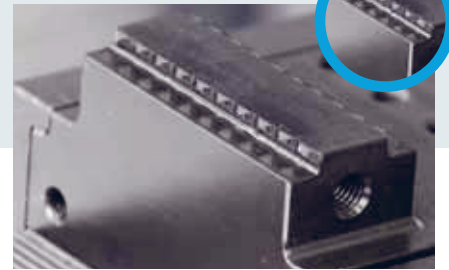
Smooth clamping surface



Clamping surface with grip contours



Clamping surface with stamping contours



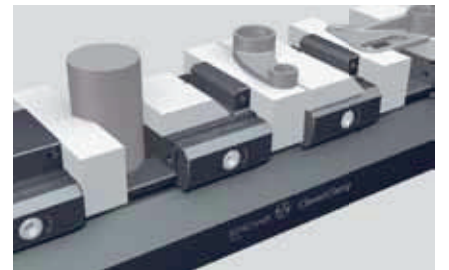
You can choose the clamping surface structure according to materials and workpieces.



The CleverClamp base rails have holes on both sides to attach eye bolts.



Clamping of workpieces with stamping technology at the minimum clamping height of 3mm.



Various clamping and stop jaws for every requirement. Soft jaws can be used for the production of clamping jaws with contours according to requirements, for example.



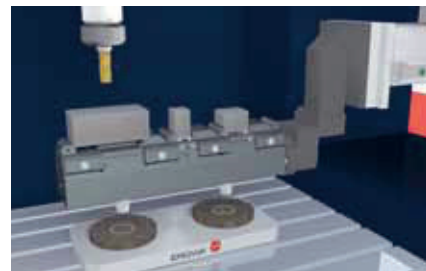
EROWA CleverClamp to clamp big workpieces with great holding power.



Multiple clamping of the same or different workpieces on the same base.



Simple handling, short set-up times. Setting up and resetting in just a few steps.

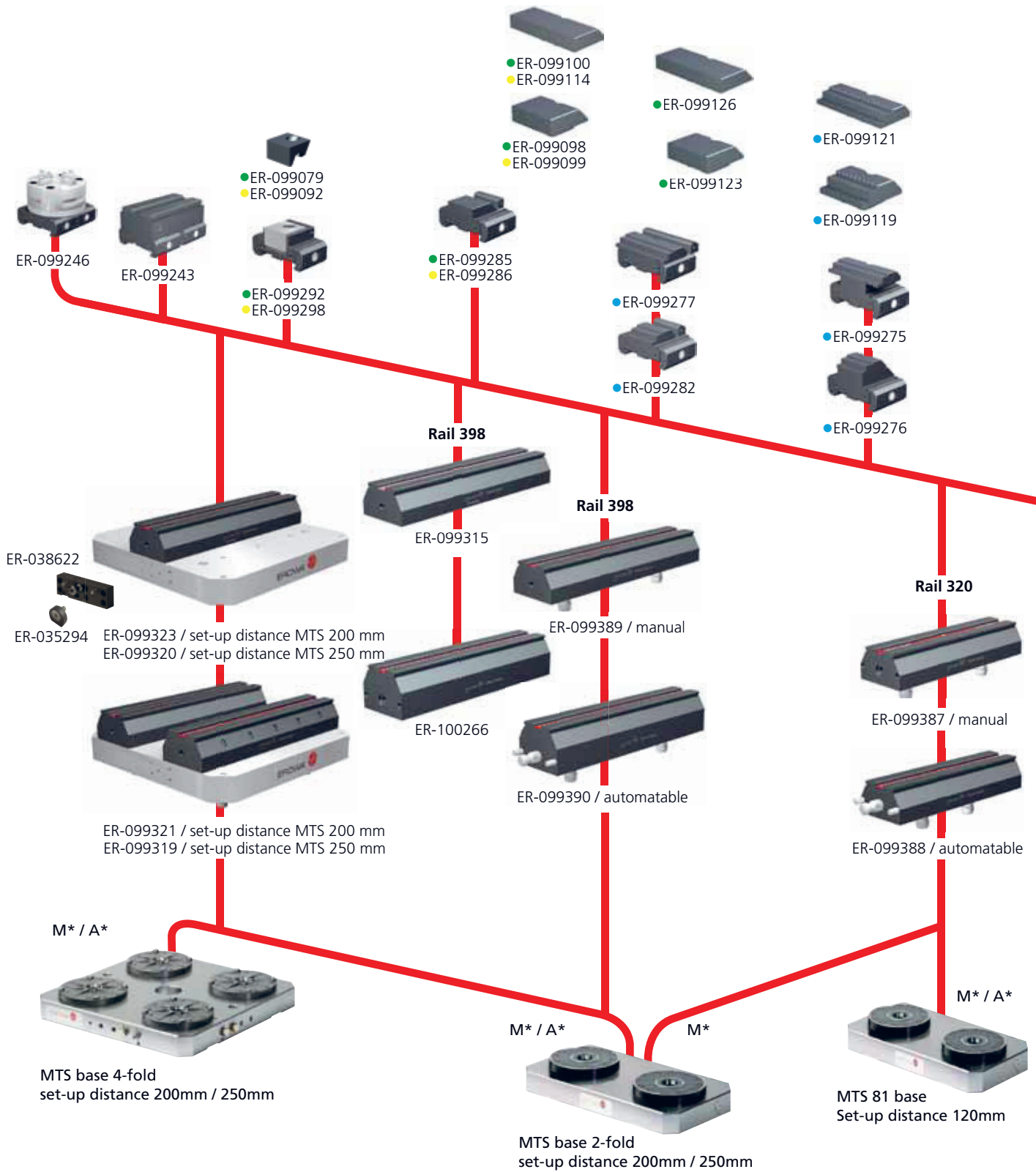


The CleverClamp can be directly automated. The Robot places the workpiece carrier on the machine with precision and speed.

# EROWA CleverClamp System

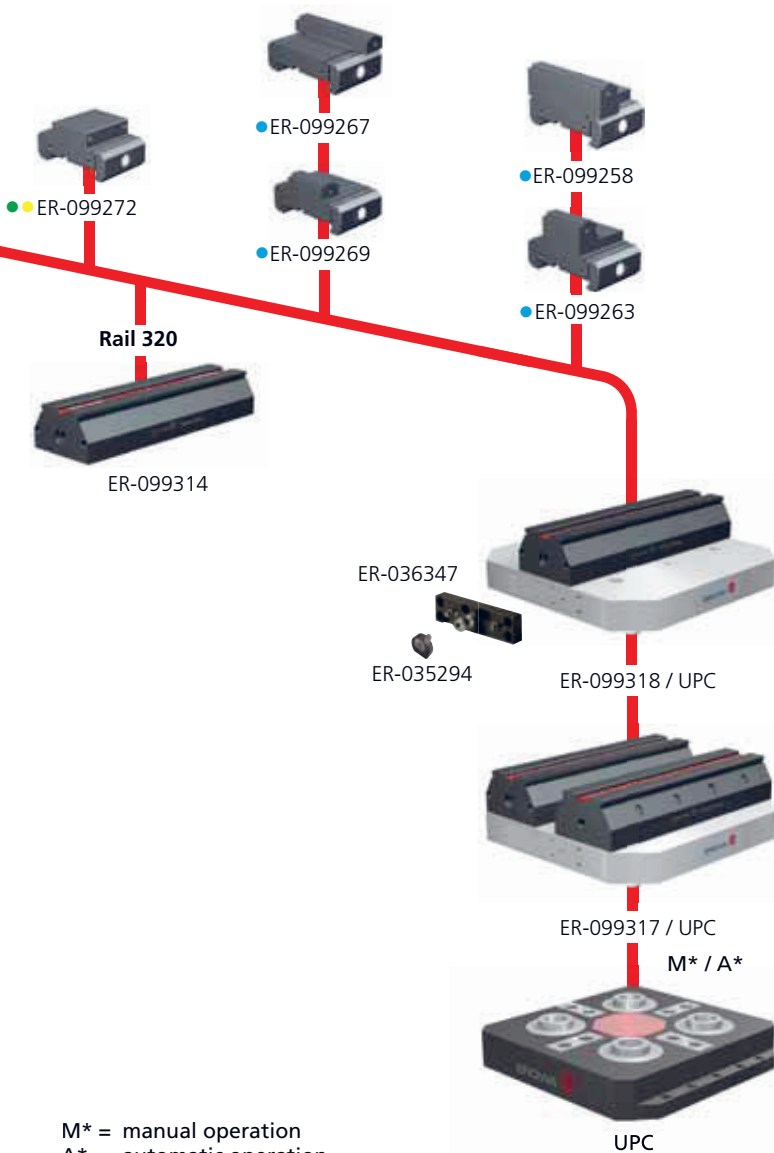
## Tooling system

### The components





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

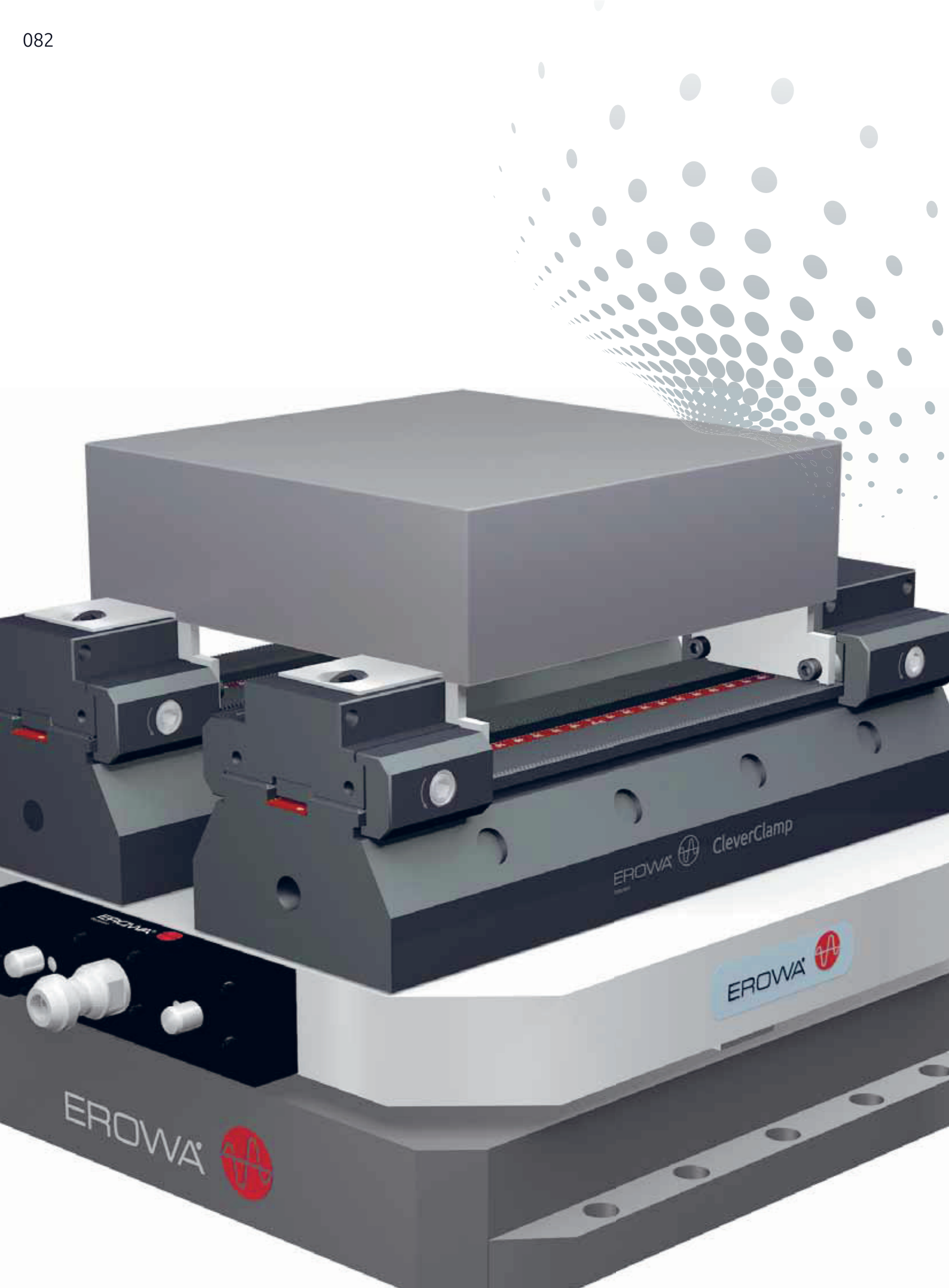


M\* = manual operation  
A\* = automatic operation




















The color icon describes the respective surface finish.

CleverClamp System



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

## CLEVERCLAMP WORKPIECE TOOLING SYSTEM

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For chip-removing processes



For EDM sinking



For WEDM

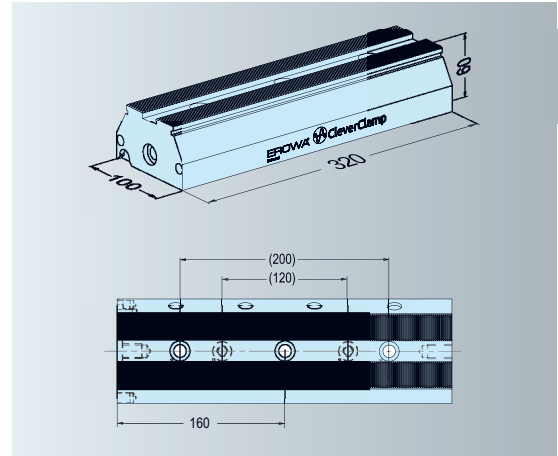


# EROWA CleverClamp System Rails

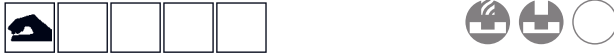
## ER-099314 Rail 320 H60 CleverClamp



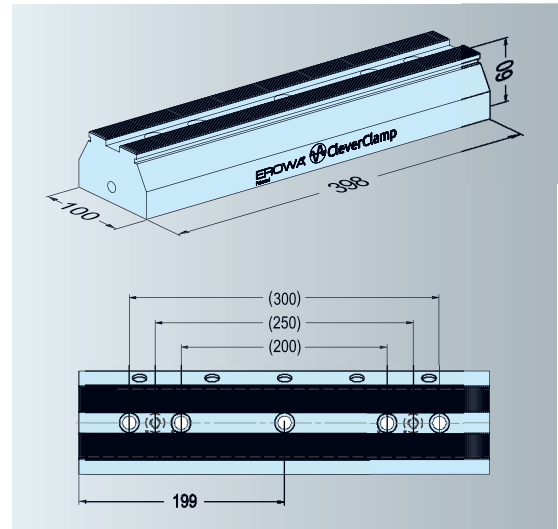
- Version** Steel, hardened. H60 clamping element carrier with 2mm positioning grid.
- Application** Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
- Mounting** To mount on R50 grid plates, pallets, tombstones and machine tables
- Accessories** Clamping and stop elements, etc.
- Important** Can be used directly with a spigot on MTS, 200mm pitch (M) or MTS81, 120mm pitch (A/M).



## ER-099315 Rail 398 H60 CleverClamp



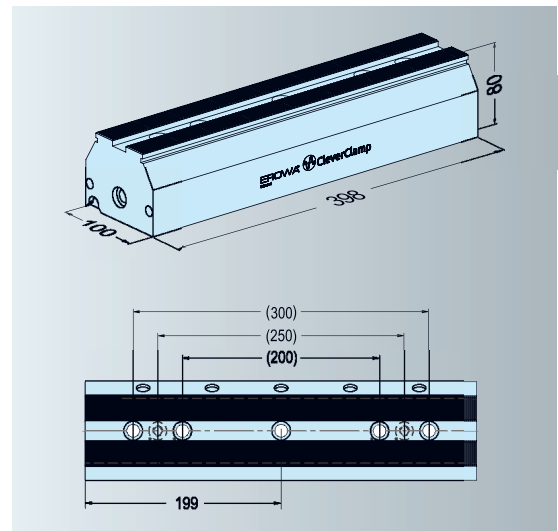
- Version** Steel, hardened. H60 clamping element carrier with 2mm positioning grid.
- Application** Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
- Mounting** To fit on R50 grid plates, pallets, tombstones and machine tables.
- Accessories** Clamping and stop elements, etc.
- Important** Can be used directly with a spigot on MTS, 200mm pitch (M) or 250mm pitch (M).



## ER-100266 Rail 398 H80 CleverClamp

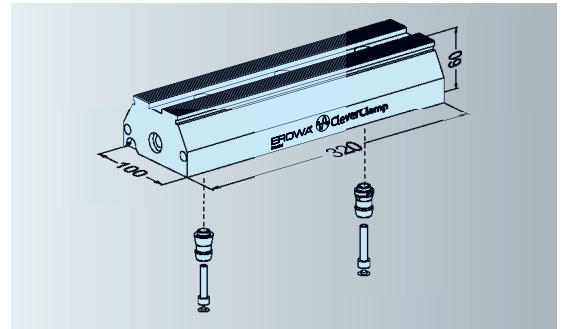


- Version** Steel, hardened. H80 clamping element carrier with 2mm positioning grid.
- Application** Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
- Mounting** To fit on R50 grid plates, pallets, tombstones and machine tables.
- Accessories** Clamping and stop elements, etc.
- Important** Can be used directly with a spigot on MTS, 200mm pitch (A/M) or 250mm pitch (A/M).

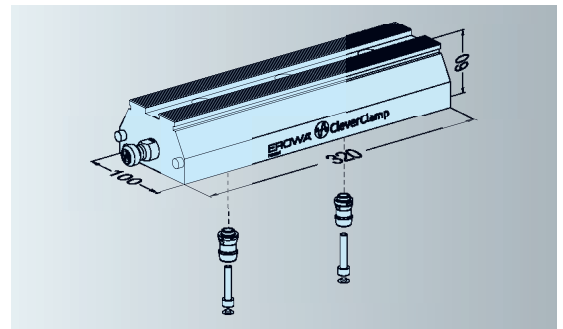


**ER-099387 Rail 320 H60 manual CleverClamp**

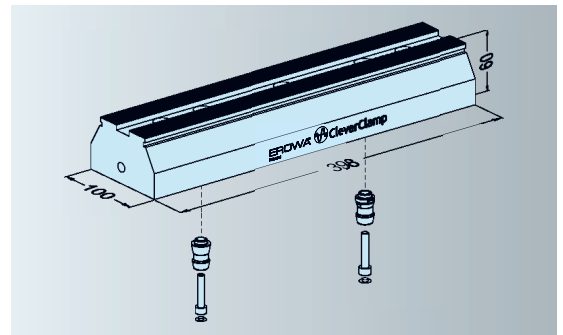
Version	Steel, hardened. H60 clamping element carrier with 2mm positioning grid. With MTS spigot, manual.
Operation	Manual application on MTS81 base plates with 120mm pitch and MTS base plates with 200m pitch.
Application	Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
Accessories	Clamping and stop elements, etc.
Important	Manual application.

**ER-099388 Rail 320 H60 automated CleverClamp**

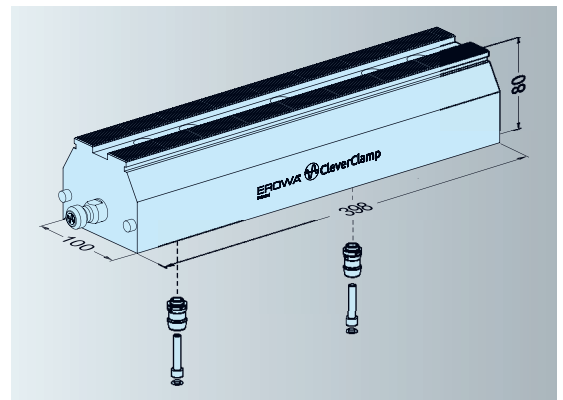
Version	Steel, hardened. H60 clamping element carrier with 2mm positioning grid. With MTS spigot, automatic, and Grip-perLink.
Operation	Automated application on MTS81 base plates with 120mm pitch.
Application	Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
Accessories	Clamping and stop elements, etc.
Important	Automated application.

**ER-099389 Rail 398 H60 manual CleverClamp**

Version	Steel, hardened. H60 clamping element carrier with 2mm positioning grid. With MTS spigot, Manual.
Operation	Manual application on MTS base plates with 200/250mm pitch.
Application	Serves as a basis to clamp workpieces with various CleverClamp clamping and stop elements.
Accessories	Clamping and stop elements, etc.
Important	Manual application.

**ER-099390 Rail 398 H80 automated CleverClamp**

Version	Steel, hardened. H80 clamping element carrier with 2mm positioning grid. With MTS spigot, automatic, and Grip-perLink.
Operation	Automated application of MTS base plates with 200/250mm pitch.
Application	Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
Accessories	Clamping and stop elements, etc.
Important	Automated application.



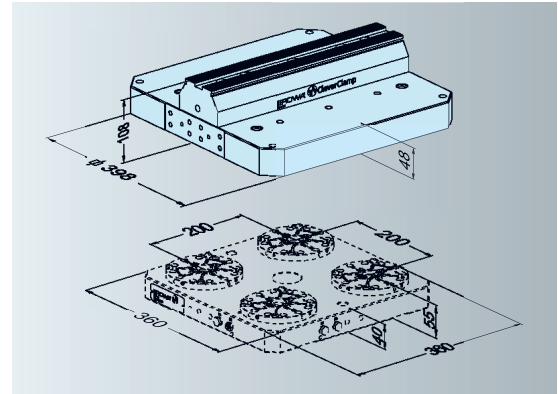
# EROWA CleverClamp System

## MTS Base rails

### ER-099323 Base MTS 200 mono CleverClamp



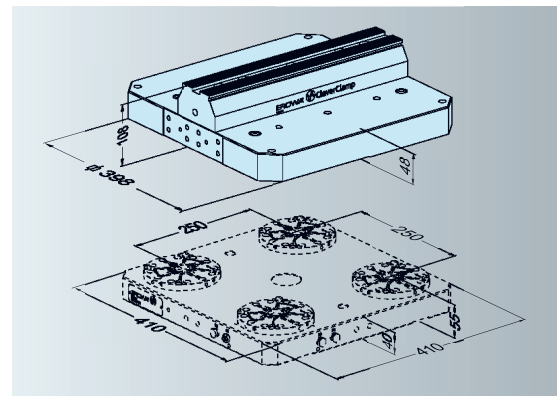
- Version Combination of MTS aluminum pallet with 398 rail (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



### ER-099320 Base MTS 250 mono CleverClamp



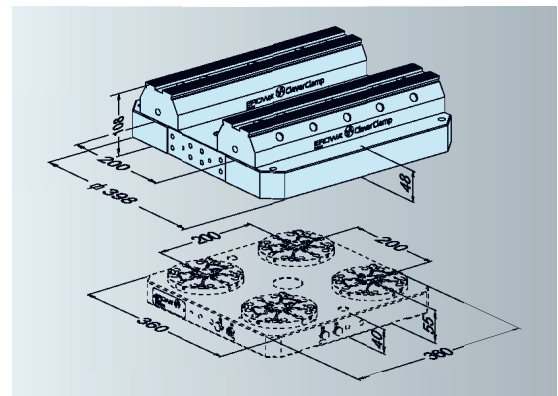
- Version Combination of MTS aluminum pallet with 298 rail (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) with GripperLink Rapid ER-038622.



### ER-099321 Base MTS 200 duo CleverClamp



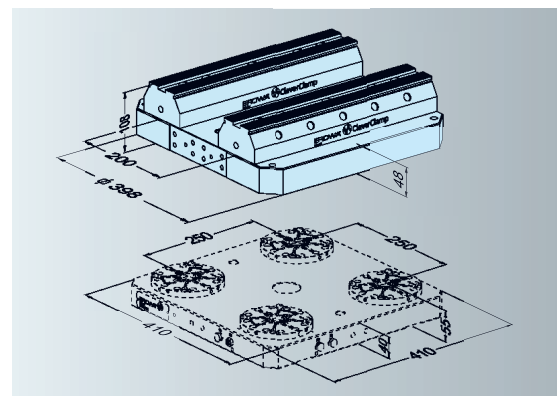
- Version Combination of MTS aluminum pallet with two 298 rails (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal for multiple fixtures and for clamping big workpieces.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



### ER-099319 Base MTS 250 duo CleverClamp



- Version Combination of MTS aluminum with two 398 rails (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal for multiple fixtures and for clamping big workpieces.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



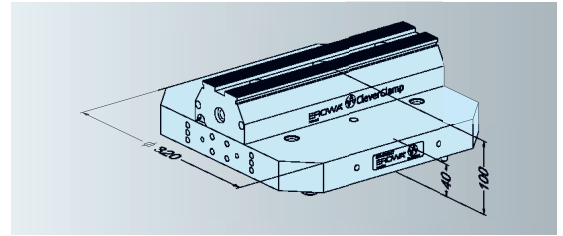
# EROWA CleverClamp System

## UPC Base rails

### ER-099318 Base UPC mono CleverClamp



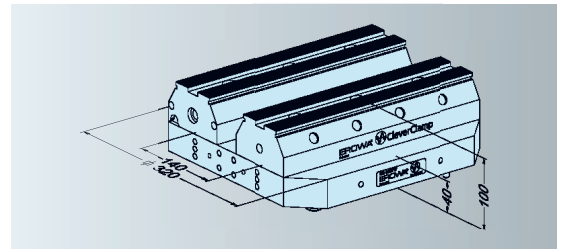
- Version** Combination of UPC aluminum pallet with 320 rail; centering segments and chucking spigots fitted. Z-Support hard.
- Application** Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories** Order separately: GripperLink RCS / EWISTM Rapid ER-036347 for Automation.



### ER-099317 Base UPC duo CleverClamp



- Version** Combination of UPC aluminum pallet with two 320 rails; centering segments and chucking spigots fitted. Z-support hard.
- Application** Optimal for multiple fixtures and for clamping big work-pieces.
- Accessories** Order separately: GripperLink RCS / EWISTM Rapid ER-036347 for Automation.



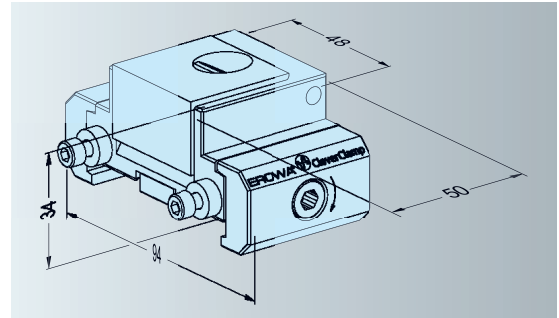
## EROWA CleverClamp System

# Pull down clamping elements

### ER-099292 Pull Down Slide Multi Flat CleverClamp



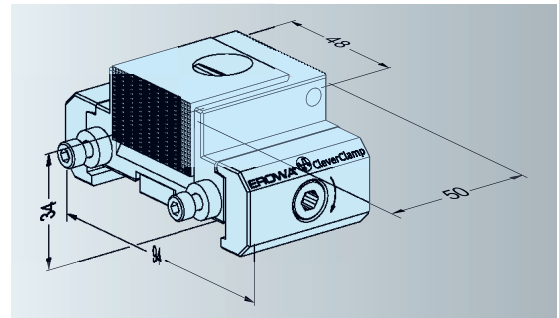
Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides smooth.
Application	Pull-down element for clamping jobs with high clamping forces. Surface: smooth. Ideal for two-side machining and for clamping workpieces with machined surfaces.
Mounting	On a CleverClamp rail.
Important	Suitable for single or multiple fixtures.
Clamping force	Up to 28kN max. at a torque of 40Nm max.
Clamping stroke	Up to 4.1mm.



### ER-099298 Pull Down Slide Multi Grip CleverClamp



Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides with grip contours.
Application	Pull-down element for clamping jobs with high clamping forces. Surface with grip contours for additional purchase.
Mounting	On CleverClamp rail.
Important	Suitable for single or multiple fixtures.
Clamping force	Up to 28kN max. with a torque of 40Nm max.
Clamping stroke	Up to 4.1mm.



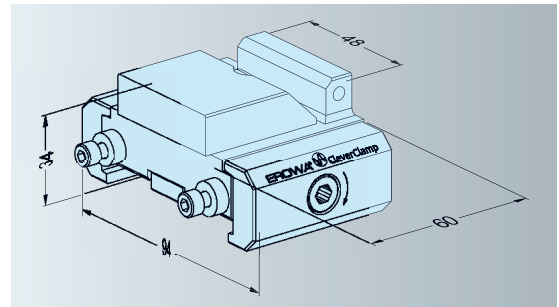
## EROWA CleverClamp System

# Linear clamping elements

### ER-099285 Linear Slide Multi Flat CleverClamp



Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides smooth.
Application	For the linear clamping of workpieces with machined surfaces.
Mounting	On CleverClamp rail.
Important	Modularly compatible with all linear jaws. Suitable for single and multiple fixtures.
Clamping force	Up to 16kN max. with a torque of 40Nm max.
Clamping stroke	Up to 5mm.



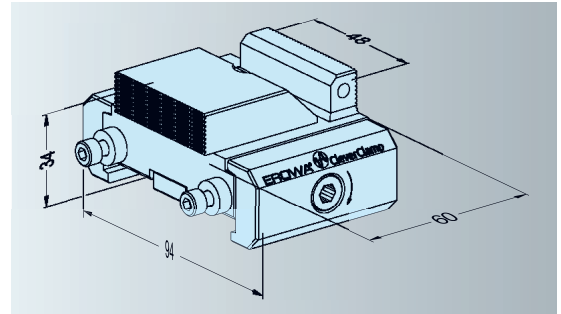
# EROWA CleverClamp System

## Linear clamping elements

### ER-099286 Linear Slide Multi Grip CleverClamp



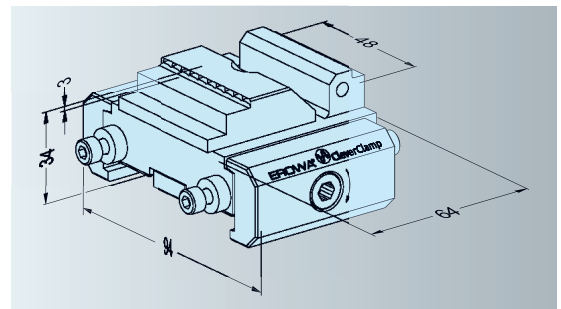
Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides with grip contours.
Application	Linear clamping with grip contours for additional purchase.
Mounting	On CleverClamp rail.
Important	Modularly compatible with all linear jaws. Suitable for single and multiple fixtures.
Clamping force	Up to 16kN max. with a torque of 40Nm max.
Clamping stroke	Up to 5mm.



### ER-099282 Linear Slide Multi Stamp CleverClamp



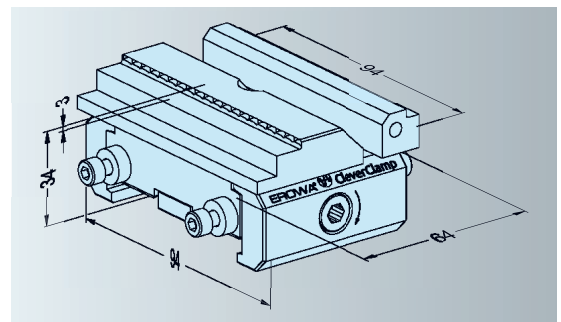
Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides with stamp contours
Application	Ideal for clamping blanks at the minimum clamping height of 3mm. Secure grip thanks to stamp technology for direct stamping. Can also be used for two-side machining.
Mounting	On CleverClamp rail.
Important	Modularly compatible with all linear jaws. Suitable for single and multiple fixtures.
Clamping force	Up to 16kN max. with a torque of 40Nm max.
Clamping stroke	Up to 5mm.



### ER-099277 Linear Slide Multi Stamp Wide CleverClamp



Version	Steel, hardened, width 94mm, height 34mm, clamping and stop sides with stamp contours.
Application	Ideal for clamping blanks at a minimum clamping height of 3mm. Secure grip thanks to stamp technology for direct stamping. Can also be used for two-side machining.
Mounting	On CleverClamp rail.
Important	Modularly compatible with all linear jaws. Suitable for single and multiple fixtures.
Clamping force	Up to 16kN max. with a torque of 40Nm max.
Clamping stroke	Up to 5mm.



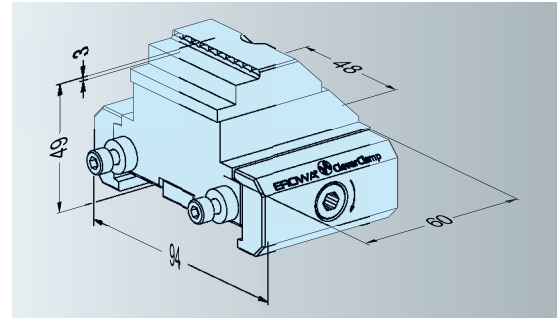
## EROWA CleverClamp System

# Linear clamping elements

### ER-099276 Linear Slide 5X Stamp CleverClamp



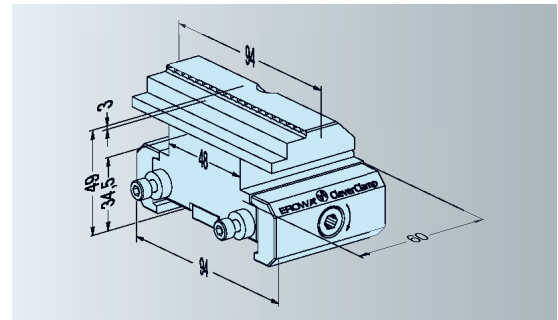
Version	Steel, hardened, width 48mm, height 49mm, clamping side with stamp contours.
Application	Optimised machine spindle accessibility for 5-axis applications. Ideal for clamping blanks at a minimum clamping height of 3mm. Secure grip thanks to stamp technology for direct stamping.
Mounting Important	On CleverClamp rail. Modularly compatible with all linear jaws. Can be used for single and multiple fixtures.
Clamping force	Up to 16kN max. with a torque of 40Nm max.
Clamping stroke	Up to 5mm.



### ER-099275 Linear Slide 5X Stamp Wide CleverClamp



Version	Steel, hardened, width 94mm, height 49mm, clamping side with stamp contours.
Application	Optimised machine spindle accessibility for 5-axis applications. Ideal for clamping blanks at a minimum clamping height of 3mm. Secure grip thanks to stamp technology for direct stamping.
Mounting Important	On CleverClamp rail. Modularly compatible with all linear jaws. Can be used for single and multiple fixtures.
Clamping force	Up to 16kN max. with a torque of 40Nm max.
Clamping stroke	Up to 5mm.



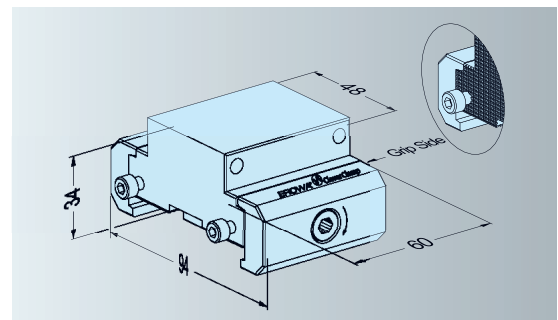
## EROWA CleverClamp System

# Stop elements

### ER-099272 Stop Flat/Grip CleverClamp



Version	Steel, hardened, width 48mm, height 34mm; two stop sides: one smooth, one with grip contours.
Application	Stop element in the modular CleverClamp system. Smooth stop side for workpieces with a machined surface, grip side for additional purchase.
Mounting	On CleverClamp rail.





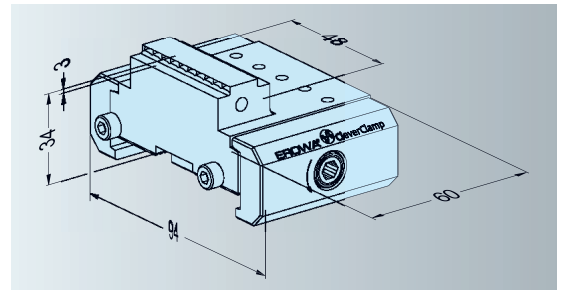
# EROWA CleverClamp System

## Stop elements

### ER-099269 Stop Multi Stamp CleverClamp



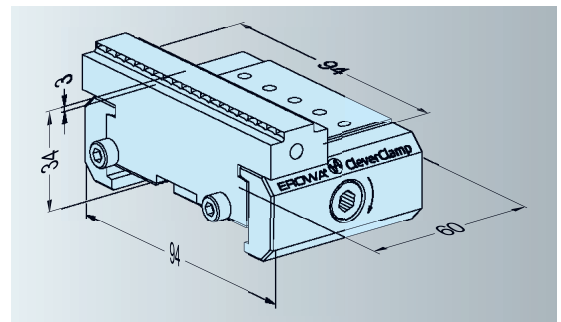
- Version** Steel, hardened, width 48mm, height 34mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with stamp contours, ideal in combination with stamp clamping elements for clamping blanks at a minimum clamping height of 3mm.
- Mounting** On CleverClamp rail.



### ER-099267 Stop Multi Stamp Wide CleverClamp



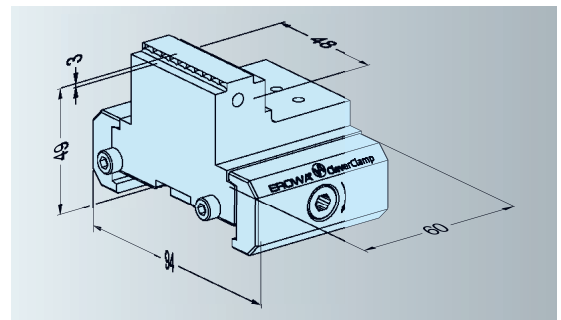
- Version** Steel, hardened, width 94mm, height 34mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with stamp contours, ideal in combination with stamp clamping elements for clamping blanks at a minimum clamping height of 3mm.
- Mounting** On CleverClamp rails.



### ER-099263 Stop 5X Stamp CleverClamp



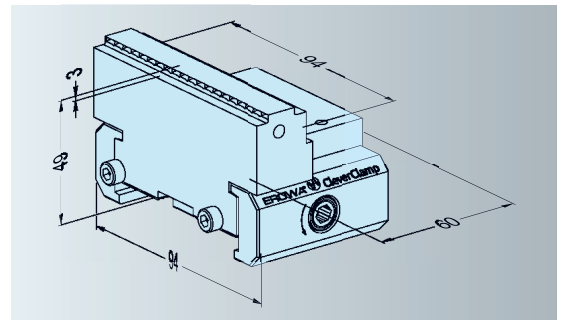
- Version** Steel, hardened, width 48mm, height 49 mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with better machine spindle accessibility for 5-axis applications. With stamp contours, ideal in combination with stamp clamping elements for clamping blanks at a minimum clamping height of 3mm.
- Mounting** On CleverClamp rail.



### ER-099258 Stop 5X Stamp Wide CleverClamp



- Version** Steel, hardened, width 94mm, height 49mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with better machine spindle accessibility for 5-axis applications. With stamp contours, ideal in combination with stamp clamping elements for clamping blanks at a minimum clamping height of 3mm.
- Mounting** On CleverClamp rail.



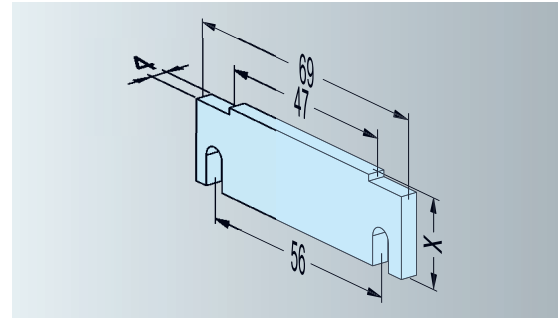
# EROWA CleverClamp System

## Accessories / Parallel supports

ER-099204	Support 20 CleverClamp
ER-099206	Support 24 CleverClamp
ER-099227	Support 29 CleverClamp
ER-099228	Support 31 CleverClamp
ER-099229	Support 34 CleverClamp
ER-099230	Support 39 CleverClamp
ER-099231	Support 44 CleverClamp
ER-099232	Support 46 CleverClamp



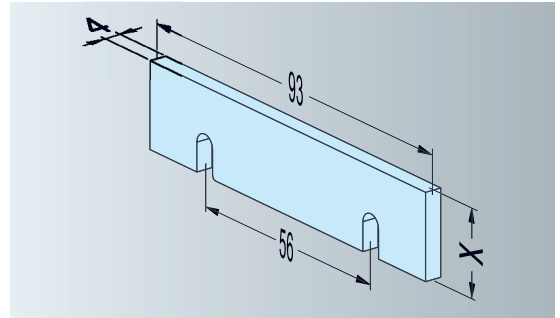
Version	Steel, hardened, width 47mm, height x mm.
Application	Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.
Important	Supports of the heights 34, 39, 44 and 46 can only be used in combination with the 5-axis clamping and stop elements.



ER-099233	Support 20 Wide CleverClamp
ER-099234	Support 24 Wide CleverClamp
ER-099235	Support 29 Wide CleverClamp
ER-099236	Support 31 Wide CleverClamp
ER-099237	Support 34 Wide CleverClamp
ER-099238	Support 39 Wide CleverClamp
ER-099239	Support 44 Wide CleverClamp
ER-099240	Support 46 Wide CleverClamp



Version	Steel, hardened, width 93mm, height x mm.
Application	Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.
Important	Supports of the heights 34, 39, 44 and 46 can only be used in combination with the 5-axis clamping and stop elements.



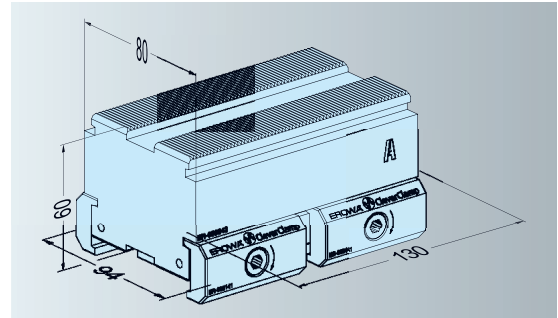
# EROWA CleverClamp System

## Accessories

### ER-099243 Elevation for rail H60 CleverClamp



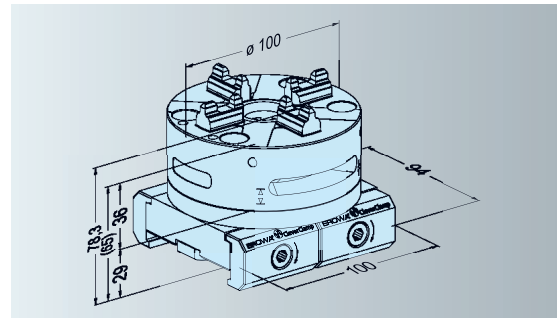
Version	Steel, hardened, height 60mm, width 94mm, length 130mm.
Application	CleverClamp 5-axis elevation - enables optimal machine spindle accessibility in 5-axis applications.
Mounting	On CleverClamp rail.



### ER-099246 Quick Chuck 100 P CleverClamp



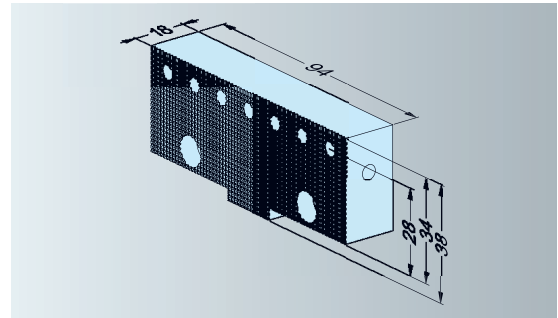
Version	CleverClamp carrier element with QuickChuck 100P, manual.
Application	Adapter between CleverClamp and EROWA ITS pallets/holders.
Mounting	On CleverClamp rail.



### ER-099166 Stop Jaw Flat / Grip Wide CleverClamp



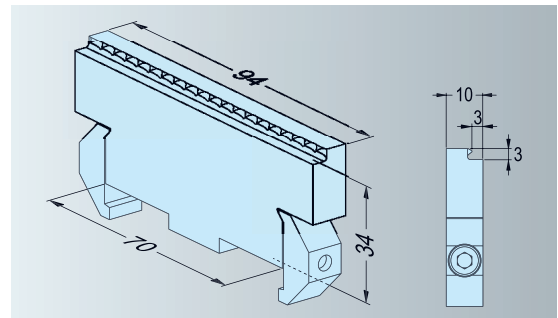
Version	Steel, hardened, width 94mm, height 34mm, one side smooth, the other with grip contours.
Application	Widening the stop surface for better grip when clamping wide workpieces.
Mounting	Use the bolts supplied to fit it to the front of the CleverClamp clamping or stop elements of your choice.
Important	Can be ideally combined for use with the 94mm-width linear jaws.



### ER-099195 Stop Jaw Stamp Wide CleverClamp



Version	Steel, hardened, width 94mm, height 34mm, with stamping.
Application	Widening the stamping stop surface for better grip when clamping wide workpieces at minimum clamping height with stamping.
Mounting	Place stop jaw behind the clamping or stop element of your choice and attach with lateral bolt.



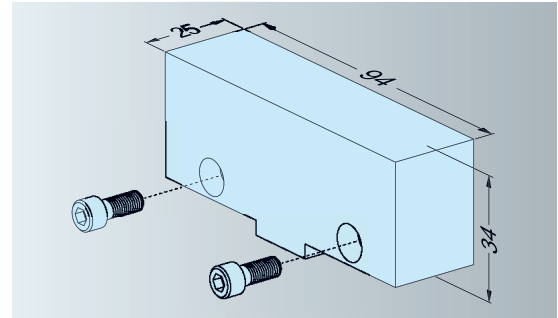
# EROWA CleverClamp System

## Accessories

### ER-099164 Stop Jaw Soft Wide CleverClamp



Version Steel, soft, width 94mm, height 34mm.  
 Application Soft stop jaw, ideal for milling workpiece-specific clamping contours.  
 Mounting Use the bolts supplied to fit it to the front of the CleverClamp clamping or stop elements of your choice.

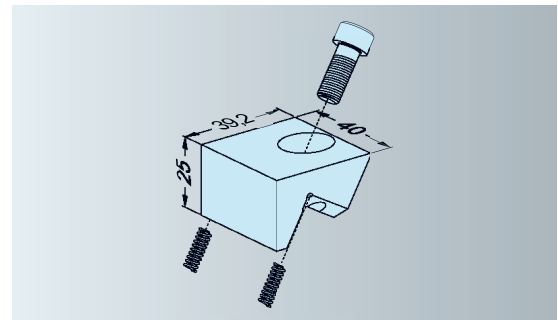


### ER-099079 Pull Down Jaw Flat CleverClamp

### ER-099092 Pull Down Jaw Grip CleverClamp



Version Steel, hardened, stop side smooth or with grip contours.  
 Application **ER-099079:** stop side smooth - ideal for clamping workpieces with machined surfaces.  
**ER-099092:** stop side with grip contours for additional grip.  
 Mounting Can be used on all CleverClamp pull-down clamping elements.

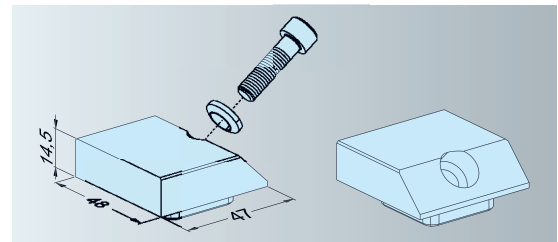


### ER-099098 Linear Jaw Flat CleverClamp

### ER-099099 Linear Jaw Grip CleverClamp



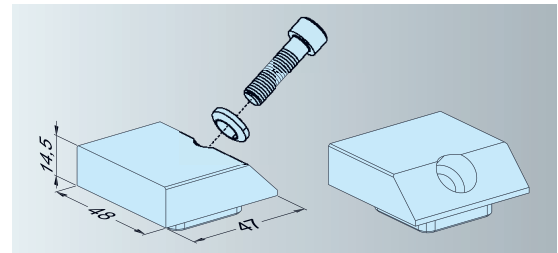
Version Steel, hardened, width 48mm, stop side smooth or with grip contours.  
 Application **ER-099098:** stop side smooth - ideal for clamping workpieces with machined surfaces.  
**ER-099099:** stop side with grip contours for additional grip.  
 Mounting Can be used on all CleverClamp linear clamping elements.



### ER-099123 Linear Jaw Soft CleverClamp

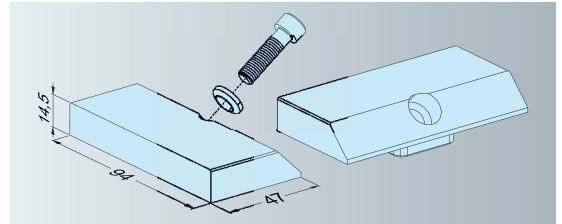


Version Steel, soft, width 48mm.  
 Application To produce jaws with contours of your choice.  
 Mounting Can be used on all CleverClamp linear clamping elements.

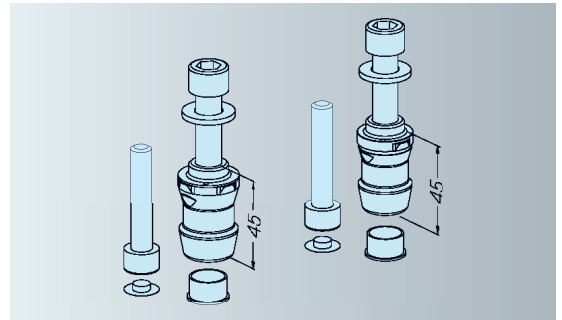


**ER-099126 Linear Jaw Soft Wide  
CleverClamp**

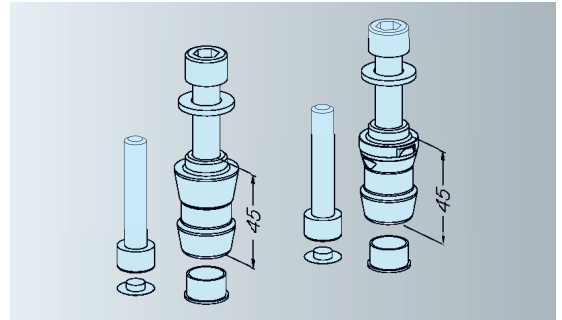
Version Steel, soft, width 94mm.  
 Application To produce jaws with contours of your choice.  
 Mounting Can be used on all CleverClamp linear clamping elements.

**ER-099334 MTS Spigot Set 2 automated  
CleverClamp**

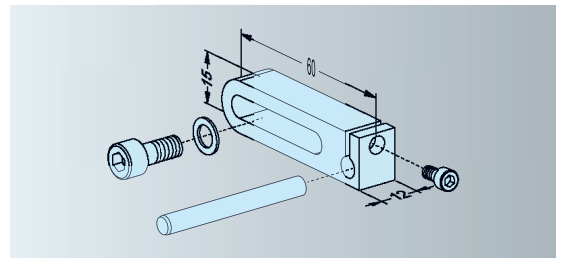
Version 1 centering spigot / A, 1 compensation spigot / A.  
 Application For CleverClamp rails "320 H60 automated" and „398 automated“, which are automatically loaded / unloaded in the MTS System.  
 To be fitted From below to the CleverClamp base rails.

**ER-099437 MTS Spigot Set 2 manuel  
CleverClamp**

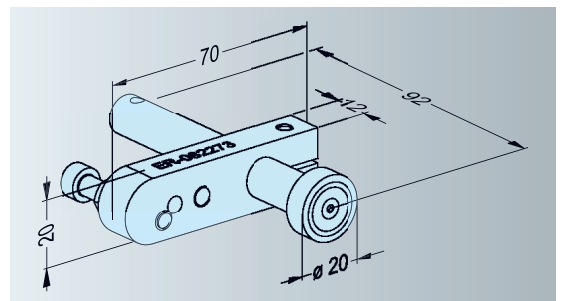
Version 1 centering spigot, 1 compensation spigot / A.  
 Application For CleverClamp rails "320 H60 Manual" and „398 H60 Manual“, which are manually loaded / unloaded in the MTS system.  
 To be fitted From below to the CleverClamp base rails.

**ER-099201 MillStop  
CleverClamp**

Version Adjustable stop made of steel.  
 Application Lateral stop on any CleverClamp clamping or stop element.  
 Mounting Use the bolts supplied to fit it laterally to the CleverClamp clamping or stop elements of your choice.

**ER-082273 Magnetic stop  
CleverClamp**

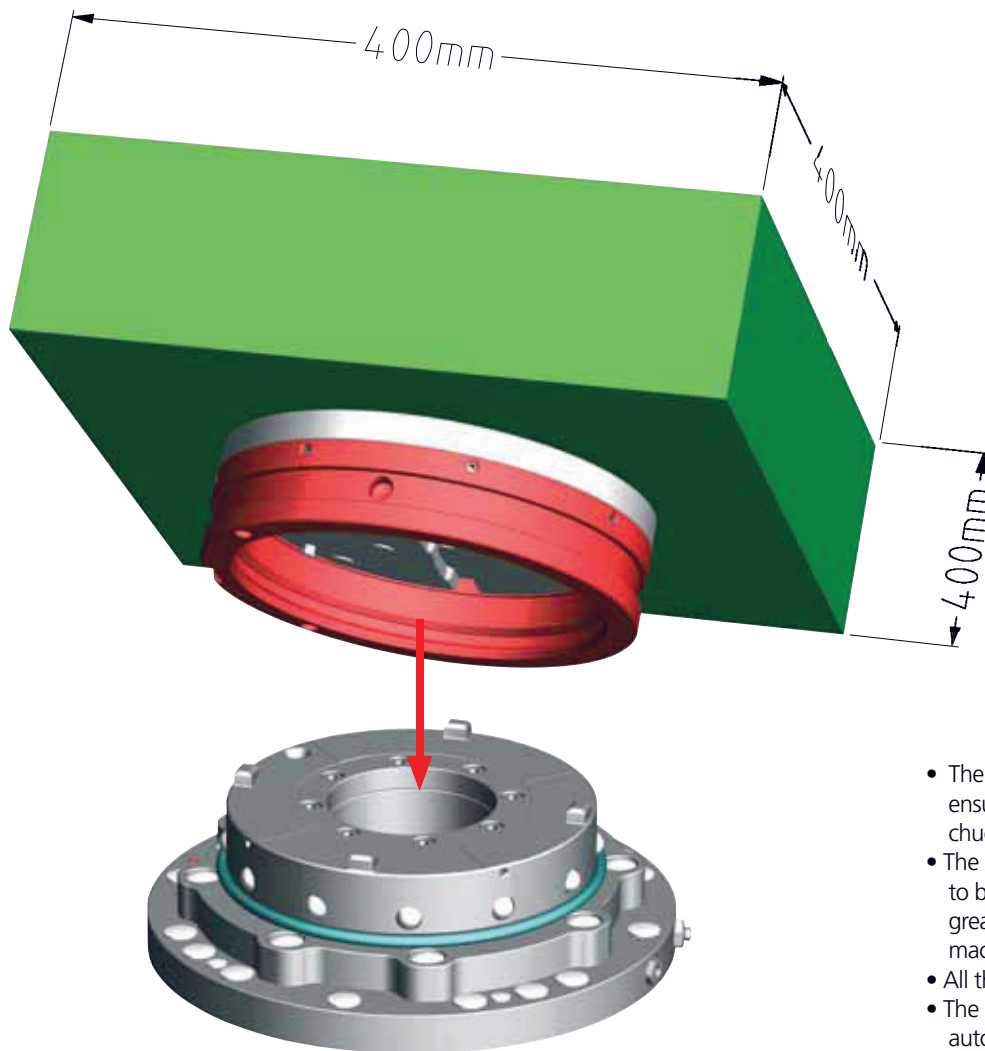
Version Stop made of anodized aluminum.  
 Application Magnetic stop used for positioning workpieces in vises.  
 Important Remove the magnetic stop before machining the part.



EROWA ProductionChuck 210

# Palletizing system with centralized material pass-through

The EROWA ProductionChuck 210 ingeniously combines the endurance-tested EROWA precision with the flexible operation of a palletizing system such as required by modern parts manufacturing.

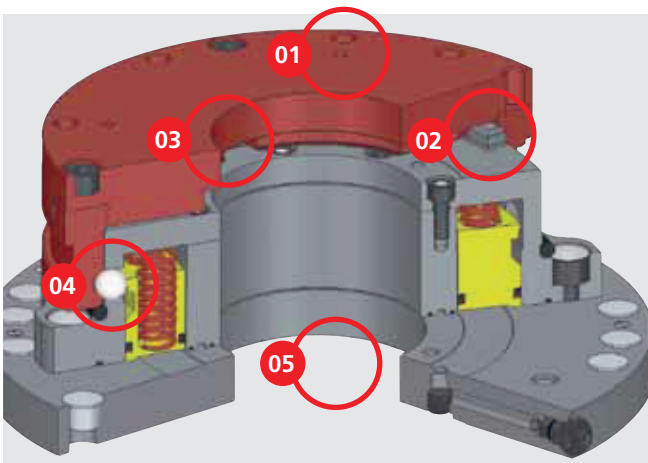


- The locking mechanism on the periphery ensures a stable connection between chuck and pallet.
- The  $\varnothing 81$  mm borehole enables material to be run through the center. This is a great advantage when workpieces are machined on lathes and dividing heads.
- All the pallets are indexable  $4 \times 90^\circ$ .
- The system can be operated manually or automatically.
- The system is suitable for the palletizing of workpieces with volumes of up to  $400 \times 400 \times 400$  mm.
- Its round design enables tools with optimal accessibility to workpieces.



**Applications****Handling**

Manual / Loading facility / Robot

**Function****05 | Material pass-through**

Rod material of up to  $\varnothing 81$  mm can be led directly through the chuck. The  $\varnothing 81$  mm boreholes also provides for air, hydraulic and vacuum lines to operate the fixtures that are clamped on pallets.

**01 | Mounting**

Workpieces, fixtures and plates are directly mounted on the PC 210 pallet.

**02 | Centering system**

The widely spaced centering system enables the transfer of maximum torque.

**03 | Z-supports**

The Z-supports are positioned on the far outside, thus accommodating the tilting moment in the best possible way. The Z-supports are automatically cleaned with air. Dynamic pressure is used to check whether a pallet is in place.

**04 | Ball lock**

The self-locking ball lock generates a clamping power of 20,000 N. Compressed air is necessary to open the chuck and to clean the Z-supports.

**Technical data - ProductionChuck 210**

	<b>ProductionChuck 210</b>
Repeatability	<0.002 mm
Pallet indexation	4 x 90°
Clamping power	20,000 N / 29,000 N
Clamping power (central PowerChuck P)	9,000 N
Generated by	spring power
Opening with compressed air	7.5 bar
Chuck fits directly to:	
– machine tables with T-slots	50, 63, 100 mm
– round tables with T-slots	4 x 90°, 45°

EROWA ProductionChuck 210 in action

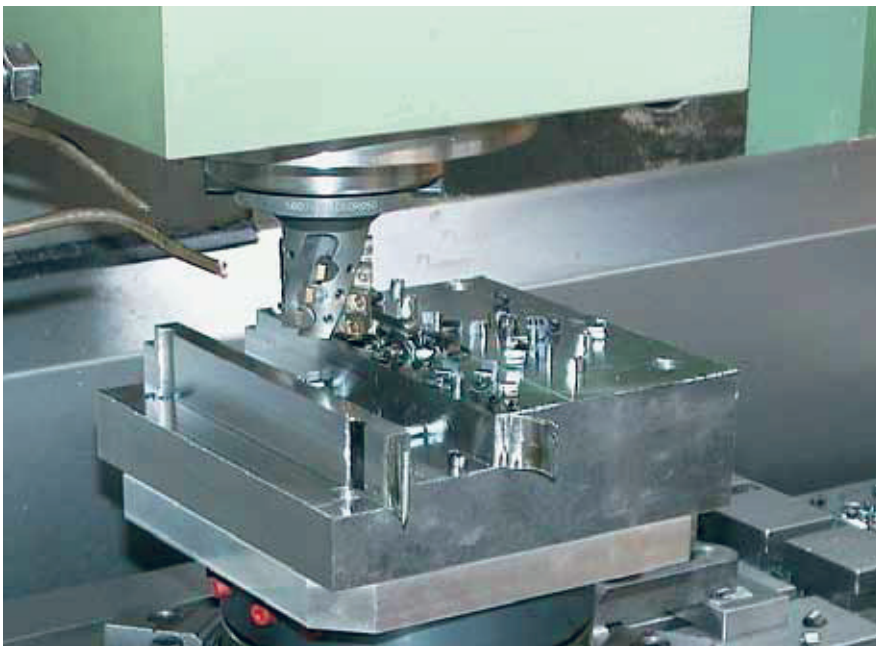
# Flexible palletizing of workpieces and fixtures

## RELIABLE

**Dirt-resistant, robust, designed for continuous use.**

The ProductionChuck 210 pallet serves as a workpiece and fixture carrier.

A borehole in the center of the pallet also enables material up to a diameter of 81 mm to be led through the ProductionChuck 210.



Working space well exploited! 5-side machining in one clamping process thanks to optimal accessibility.



The existing attachment boreholes allow for quick mounting on all well-established machines.



Another advantage: the workpiece or the fixture can be fitted directly on the PC pallet 210.



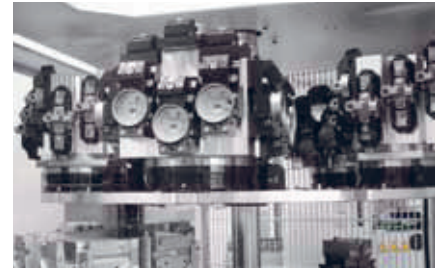
The Z-supports are placed as far on the outside that they provide a stable and precise support even for bigger workpieces.



Fixture stability. Access from all sides. Best use of horizontal/vertical milling machines.



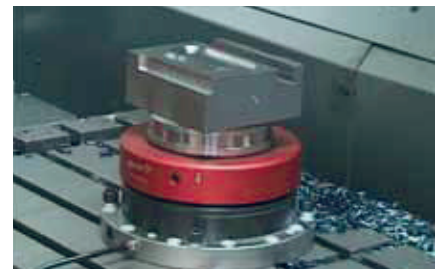
PC 210 is a tooling system that is ideal for rotary transfer machines:  
- quick fixture change,  
- sufficient room to dock on the hydraulic system to operate the fixtures.



Palletized clamping devices in the robot magazine.



Particularly suitable for use on lathes. The ProductionChuck 210 is the only precision palletizing system with a borehole for central material feed.



Mixed use of ITS and ProductionChuck 210 pallets.



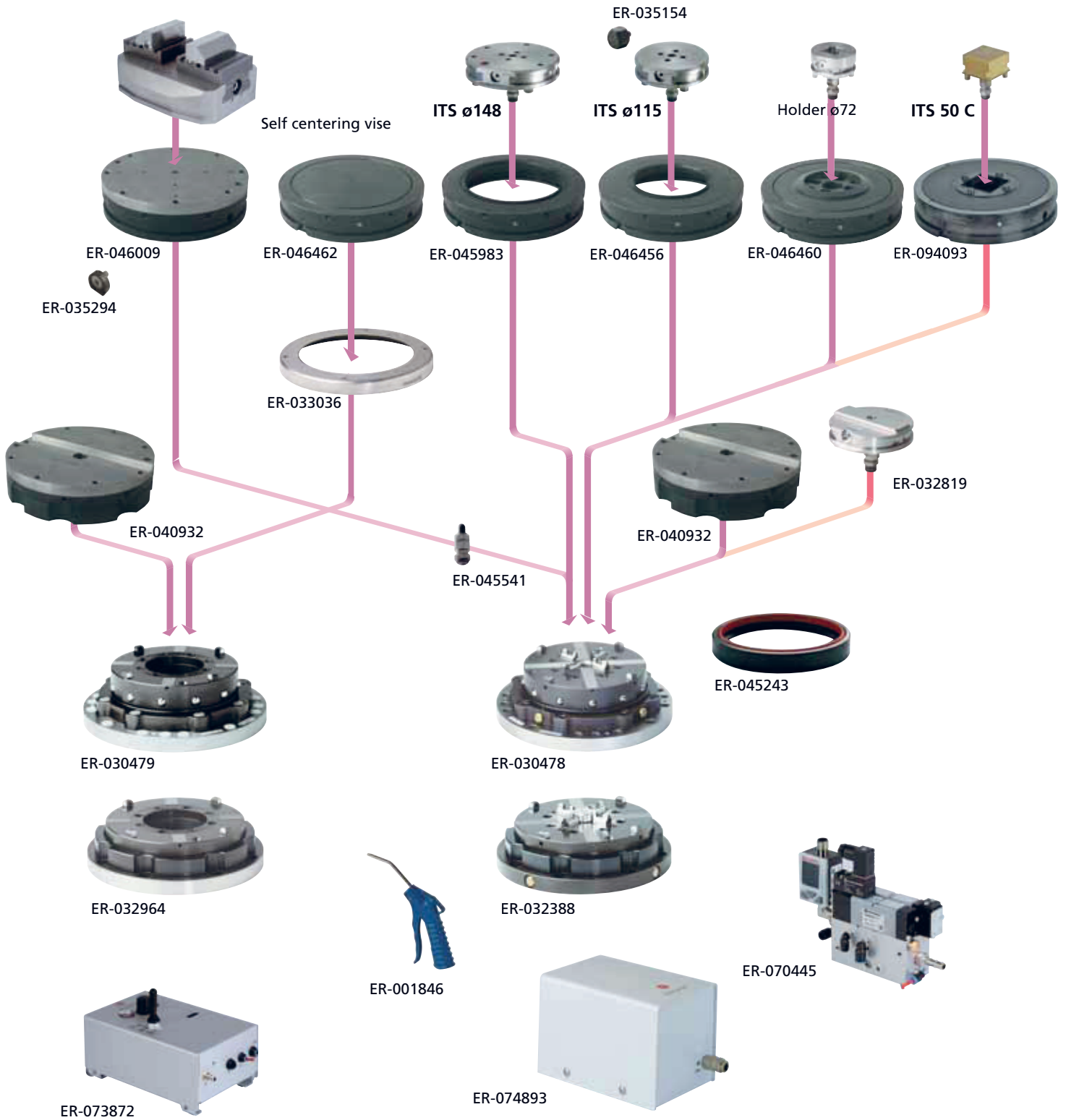
Would you like to automate? We will gladly advise you as to how an EROWA handling facility will increase your productivity up to three times.






















# EROWA ProductionChuck 210 palletizing system

## The components






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

## EROWA PRODUCTIONCHUCK 210 PALLETIZING SYSTEM

ProductionChuck 210	Chucks	102
ProductionChuck 210	Workpiece carriers	104
ProductionChuck 210	Auxiliary Equipment	106



-  For chip-removing processes
-  For EDM sinking
-  For WEDM

# EROWA ProductionChuck 210

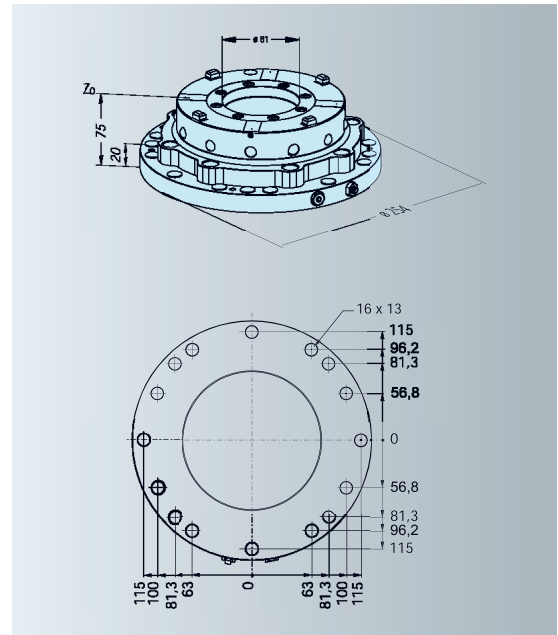
## Chucks

Technical data	ProductionChuck 210
Repeatability	0.002 mm
Indexing	4 x 90°
Clamping power	20,000 N
Clamping power (central PowerChuck P)	9,000 N
Generated by	spring power
Opening with compressed air	min. 7.5 bar

### ER-030479 ProductionChuck 210



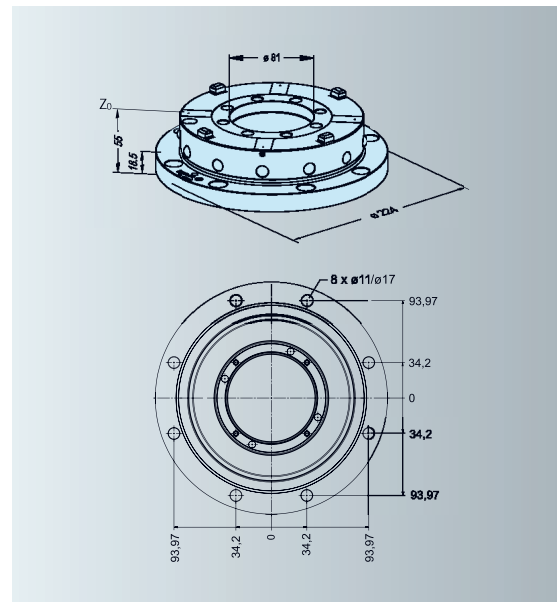
- Version** Chuck for high machining forces in chip cutting. Low design. Through-borehole  $\varnothing$  81 mm.
- Connections** Laterally or from below with two lines.
- Operation** With air gun, laterally. With control unit, through the two connections laterally or from below.
- Application** On milling machines, lathes and grinding machines. To clamp pallets PC 210.



### ER-032964 ProductionChuck 210 without base plate



- Version** Chuck for high machining forces in chip cutting. Low design. Through-borehole  $\varnothing$  81 mm.
- Application** On milling machines, lathes and grinding machines. To clamp pallets PC 210.
- Connections** 2 air connections: on the sides and from below through customized base plate.
- Operation** With air gun or control unit.
- Note** Base plate must be customized.



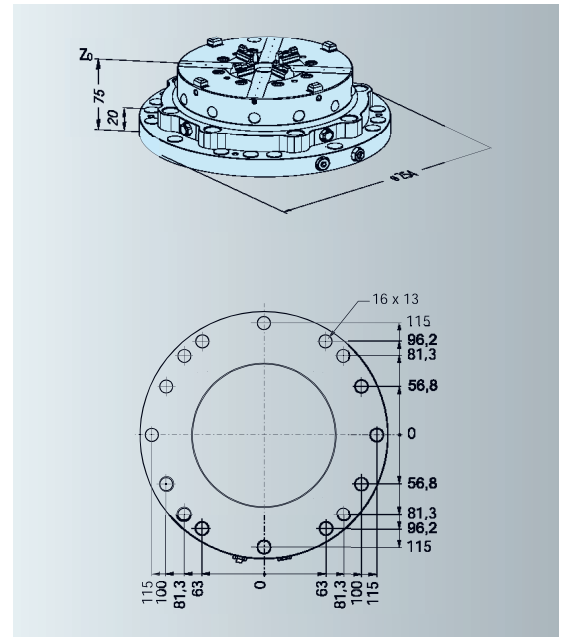


# EROWA ProductionChuck 210 Chucks

## ER-030478 ProductionChuck 210 Combi



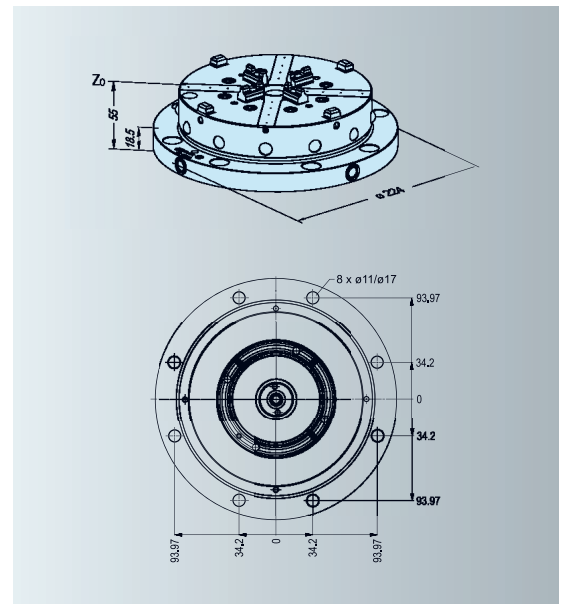
- Version** Chuck for strong machining forces in chip-cutting operations. PC 210 with integrated PowerChuck P.
- Connections** Laterally or from below with two lines.
- Operation** With air gun, laterally. With control unit, through the two connections laterally or from below.
- Application** On milling machines, lathes, grinding machines and EDM centers. To clamp pallets PC 210, ITS pallets  $\varnothing$  148,  $\varnothing$  115, ITS 50 holders and PM pallets.



## ER-032388 ProductionChuck 210 Combi without base plate



- Version** Chuck for high machining forces in chip cutting. System PC210 and ITS.
- Application** On milling machines, lathes, grinding machines and EDM centers. To clamp pallets PC 210, ITS pallets  $\varnothing$  148,  $\varnothing$  115, ITS 50 holders and PM pallets.
- Connections** 2 air connections: on the sides and from below through customized base plate.
- Operation** With air gun or control unit.
- Note** Base plate must be customized.



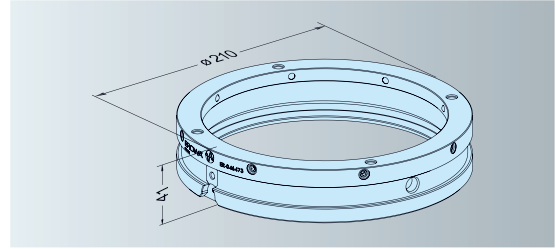
# EROWA ProductionChuck 210

## Workpiece carriers

### ER-046473 Clamping ring RN PC 210



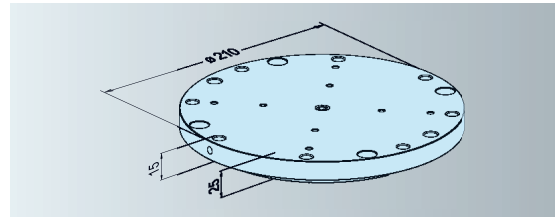
Version Steel, hardened.  
Application Clamping ring for centering pallet PC 210 and centering pallet PC 210 /  $\varnothing 81$ . Can be automated with gripper PC 210 RN (option).



### ER-042865 PC Centering pallet 210



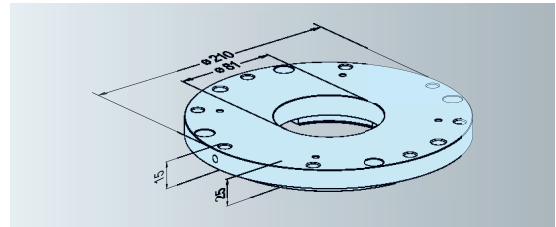
Version Steel, without clamping ring (option ER-046473).  
Fitting 8 x M10 attachment threads and two  $\varnothing 10$  boreholes.  
Application To accommodate workpieces, clamping jigs and plates PC 210.



### ER-042866 PC Centering pallet 210 $\varnothing 81$



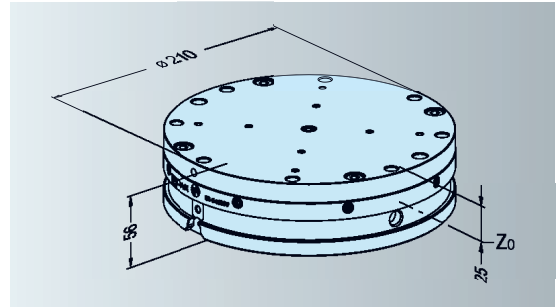
Version Steel, without clamping ring (option ER-046473).  
Fitting 8 x M10 attachment threads and two  $\varnothing 10$  boreholes.  
Application To accommodate workpieces, clamping jigs and plates PC 210.



### ER-046009 Pallet RN PC 210



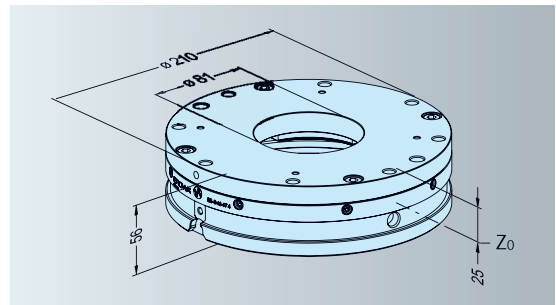
Version Steel. Centering segments integrated.  
Assembly 8 x M10 attachment threads and two  $\varnothing 10$  boreholes.  
Application To clamp workpieces, clamping jigs and pallets PC 210. Can be automated with gripper RN PC 210 (option).



### ER-046474 Pallet RN PC 210 $\varnothing 81$

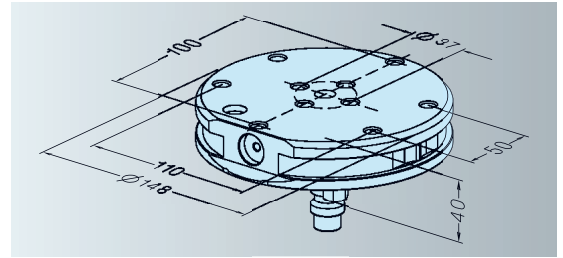


Version Steel. Centering segments integrated.  
Through borehole  $\varnothing 81$  mm.  
Fitting 8 x M10 attachment threads and two  $\varnothing 10$  boreholes.  
Application To accommodate workpieces, clamping jigs and plates PC 210. Can be automated with gripper RN PC 210 (Option).

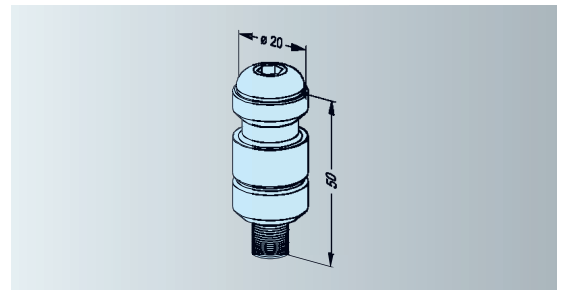


**ER-041912 Pallet P ø 148 Inox****ER-041924 Pallet Kit P ø 148 Inox  
4 pieces**

- Version Steel, corrosion-resistant. Centering integrated in the pallet.
- Application For use on all EROWA PowerChucks P and Production-Chuck 210 Combi. To accommodate workpieces and fixtures in chip-cutting machining processes.
- Mounting Through pallet with M8 bolts or through blank with M10 bolts.

**ER-045541 Chucking spigot for PC 210**

- Version Fixed type, manual. 1 spigot.
- Application In pallets PC 210 for chip-cutting machining processes.



Please note: Further pallets and electrode holders for the ProductionChuck 210 Combi can be found from pages 172.

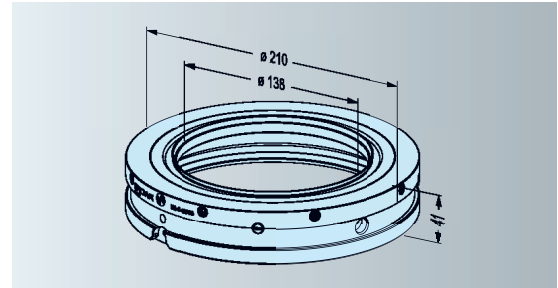
# EROWA ProductionChuck 210

## Auxiliary Equipment

### ER-045983 Sealing ring holder RN $\varnothing$ 148 PC 210



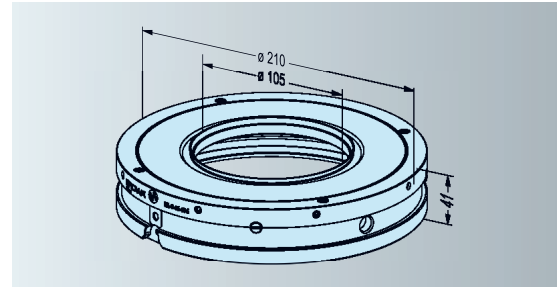
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 by application of EROWA ITS pallets  $\varnothing$  148. For automatic handling with gripper RN PC 210 (option).



### ER-046456 Sealing ring holder RN $\varnothing$ 115 PC 210



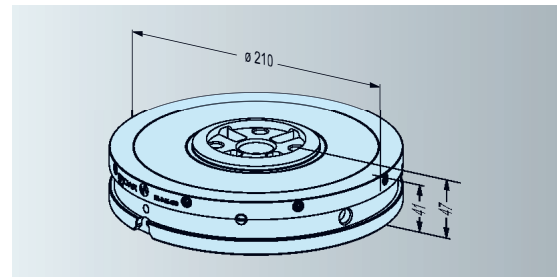
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 by application of EROWA ITS pallets  $\varnothing$  115. For automatic handling with gripper RN PC 210 (option).



### ER-046460 Sealing ring holder RN $\varnothing$ 72 PC 210



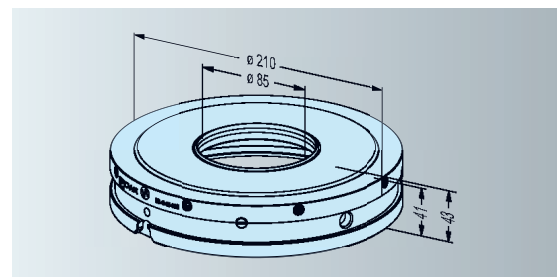
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 Combi by application of EROWA ITS pallets  $\varnothing$  72. For automatic handling with gripper RN PC 210 (option).



### ER-046458 Sealing ring holder RN $\varnothing$ 85 PC 210



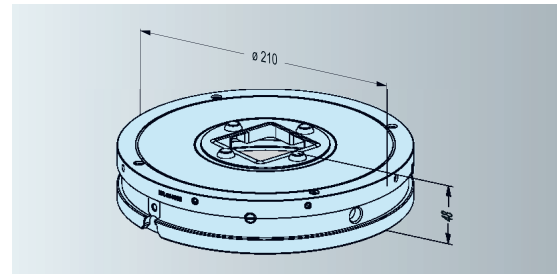
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 Combi by application of EROWA ITS pallets  $\varnothing$  85. For automatic handling with gripper RN PC 210 (option).



### ER-094093 Sealing ring ITS 50 C for PC 210

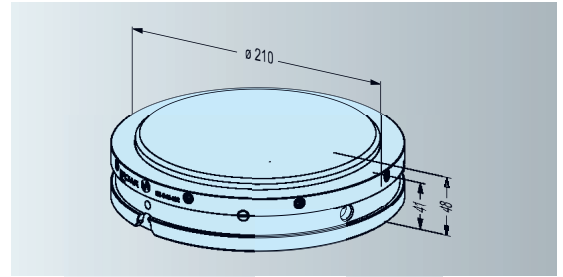


Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 Combi by application of EROWA electrode holders C. For automatic handling with gripper RN PC 210 (option).

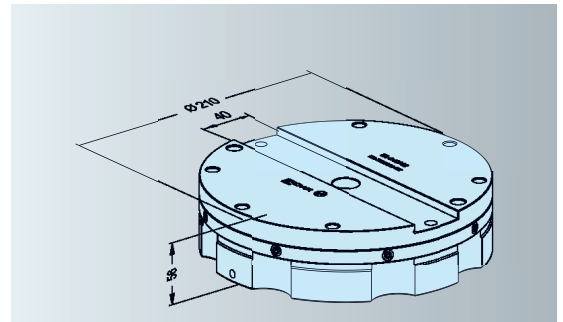


**ER-046462 Cover RN PC 210**

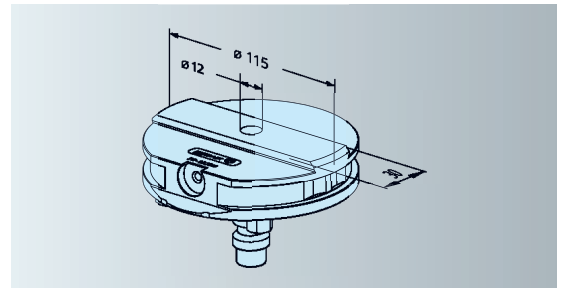
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 Combi. For automatic handling with gripper RN PC 210 (option).

**ER-040932 Positioning pallet PC 210**

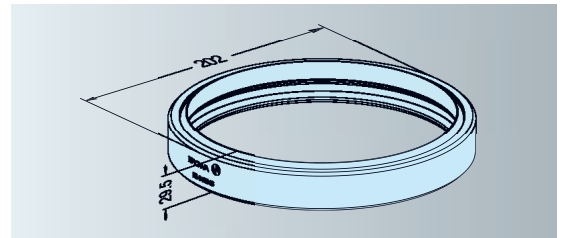
Version Alignment pallet with ground alignment rail and central borehole.  
Application Alignment of angular position, and determination of the center of PC 210 chucks.

**ER-032819 Alignment pallet ø 115**

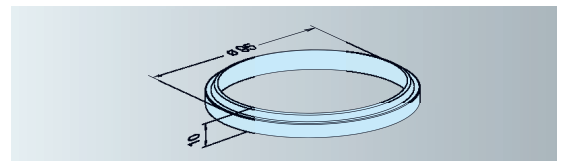
Version Pallet ø 115 mm, alignment length 110 mm, center borehole ø 12 mm.  
Application Alignment of radial, axial and angular position of ITS chucks, PowerChuck P and PC 210 Combi chucks.

**ER-045243 PC 210 Sealing ring**

Version Holder with wiper.  
Application For use on ProductionChuck 210 Combi. To seal the outer balls if ITS 50 standard electrode holders or other workpiece carriers without PC sealing ring holders PC 210 are used.

**ER-045249 Wiper for pallet PC 210 ø 81**

Version Rubber  
Application Prevents penetration of chips and dirt into the Production-Chuck 210 in use with pallets PC 210 / ø 81.

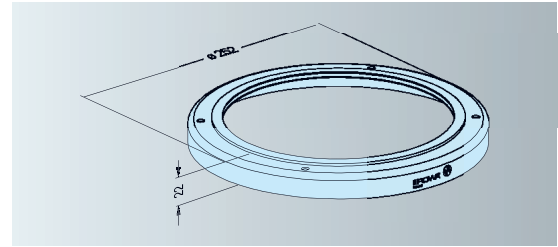


# EROWA ProductionChuck 210

## Auxiliary Equipment

### ER-033036 Covering ring PC 210

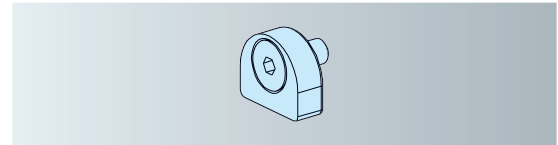
**Application** Covering ring for the attachment bolts of the PC 210: ER-030479, ER-030478 (Recommended for application on lathes).



### ER-035294 EWIS™ Rapid chip with chip holder RCS with chip $\varnothing$ 12,4 x 2mm



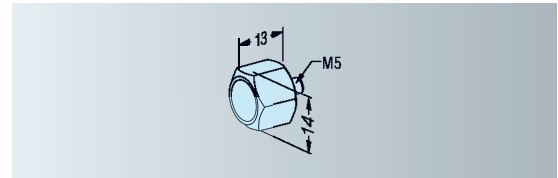
**Version** Holder with built-in data carrier. EWIS chip: read only.  
**Application** To build into RCS coupling, PalletSet W holder and Basic WEDM holder.



### ER-035154 EWIS™ Rapid chip with chip holder SW14 with chip $\varnothing$ 12,4 x 2mm



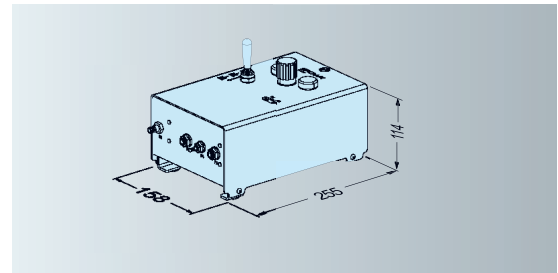
**Version** Sleeve fitting with built-in data carrier.  
**Application** In any EROWA electrode holder and pallet which has been prepared for it.



### ER-073872 Manual control unit with booster



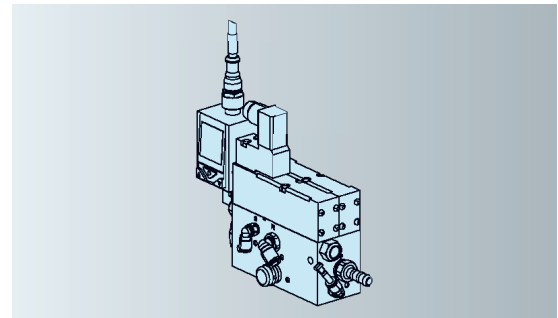
**Version** Manual valve to control the EROWA chucks: Opening/Reclamping/Cleaning.  
**Application** Operation of: EROWA ITS Compact Combi Chuck, ITS, UPC, MTS, PC 210 chucks and PowerChuck P.  
**Note** Integrated booster with load ratio 1:2 (up to output pressure of 10 bar max.).



### ER-070445 Control unit with monitoring



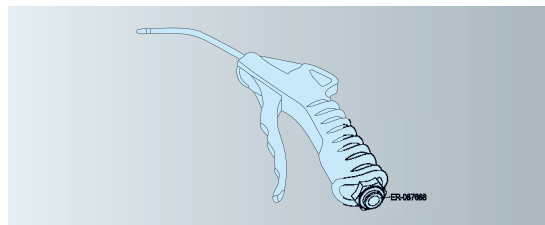
**Version** Electropneumatic valve. Outputs for chucks: opening/cleaning/reclamping. 24 V, incl. mounting accessories and 3 m connection hose.  
**Application** Operation and monitoring of machine-integrated chucks, for instance through the CNC M-function.



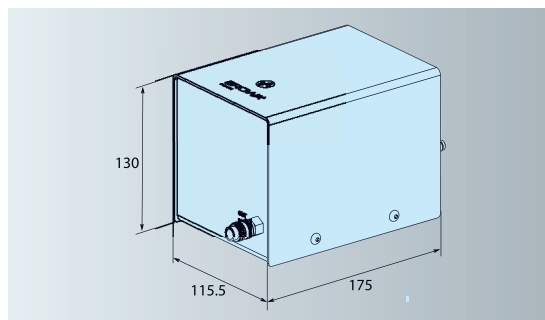


**ER-001846 Air jet**

Version	Plastic, smooth regulation of air flow, connection 1/4", inside thread.
Application	Operation of manual chucks.
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-074893 Pressure booster**

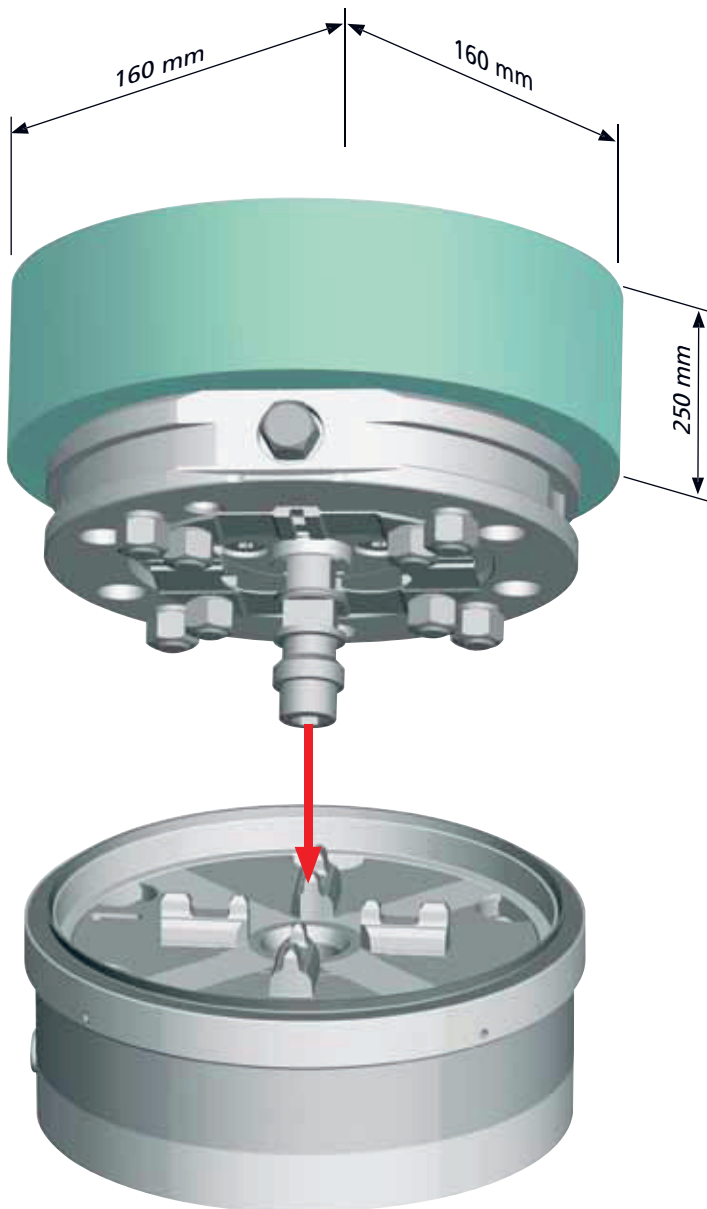
Version	Quick-connect couplings for hose $\varnothing i = 8$ mm. Compression ratio: 1:2.
Application	On insufficient system pressure and on pressure fluctuations.
Installation	Integrate in air circuit near application.



## EROWA PowerChuck P

# Accessible from all sides

EROWA PowerChucks are quick and easy to integrate on a wide variety of machining centers.



- Whether affixed to the T-slot table or built into the integrated axis, there is always a good solution.
- Access from all five open sides is particularly important with horizontal machining. The low height of the chuck plays a significant role on smaller machines.
- Operation is manual with an air jet, or with one of the pneumatic control units through the permanently screwed-in connections.
- In automatic operation, the presence and proper position of the pallets in the chuck is monitored (EROWA standard). Support surfaces are automatically cleaned.
- The different variants enable the chuck to be optimally fitted to the existing machine base.

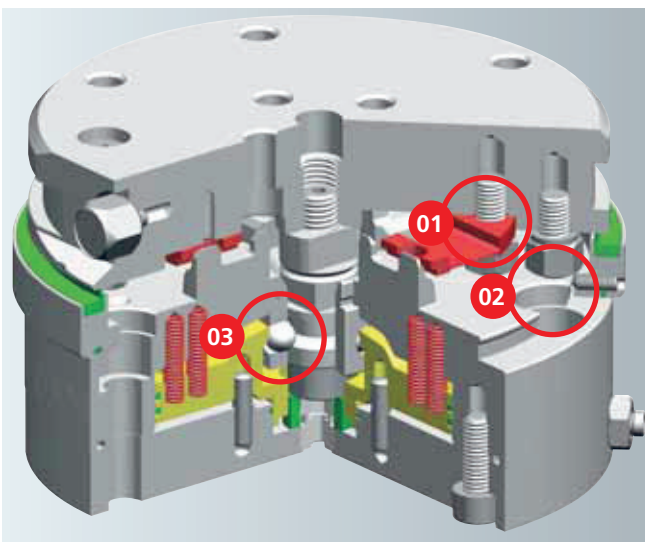
## Applications



## Handling

Manual / Loading facility / Robot

## Function



### 01 | Centering plates

The G-centering plates with their ground centering slots and their 0.7-mm-thick spring plate ensure clean and powerful positioning.

### 02 | Cleaning

During the clamping process, the contact surfaces of the supports are cleaned with compressed air.

### 03 | Ball lock

The self-locking ball lock generates a clamping power of 10,000 N; full clamping power is even retained in the case of a pressure failure.

## Technical data - PowerChuck P

	<b>PowerChuck P</b>
Pallet size	ø 115 mm, ø 148 mm and ITS 50
Chuck dimensions H x ø	H = 51 mm x ø 156 mm
System height (chuck and pallet)	H = 91 mm
Recommended workpiece size	up to 160 x 160 x 250 mm
Repeatability	0.002 mm
Indexing	4 x 90°
Clamping power	10,000 N
Generated by	springs
Release	compressed air, min. 6 bar
Operation	control unit or air jet

# EROWA PowerChuck P in action

## Powerful, flexible, universally applicable

**Manufacturing is virtually inconceivable anymore without PowerChucks. Whether on milling or drilling machines, whether on profile-grinding or surface-grinding machines, whether on spindles of dividing heads or lathes: wherever it is, they fit like a glove.**

**Downtimes are completely eliminated by integrating a consistent clamping system on all machine tools.**

---

**CLEAN**

---

**By automatic cleaning of  
the contact surfaces.**



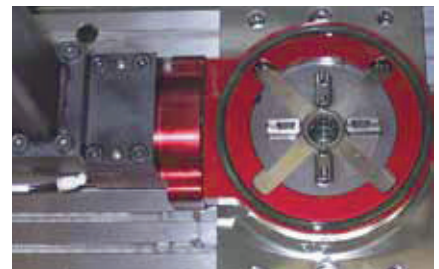
Horizontal chuck on a dividing head.



Flexible and automatic loading of a machine tool with an EROWA handling unit. The ratio of productive hours is considerably increased.



Universal combination of EROWA clamping systems with automatic handling.



Gaskets protect the chucks and ensure secure automatic loading.





Securely clamped also for heavy machining.



We would like to advise you. Please describe your clamping problem to us.



Clamped with  $\mu\text{m}$ -accuracy with one movement of the hand.



Practical clamping elements for universal operation.



Grinding or milling: EROWA PowerChucks are just right.

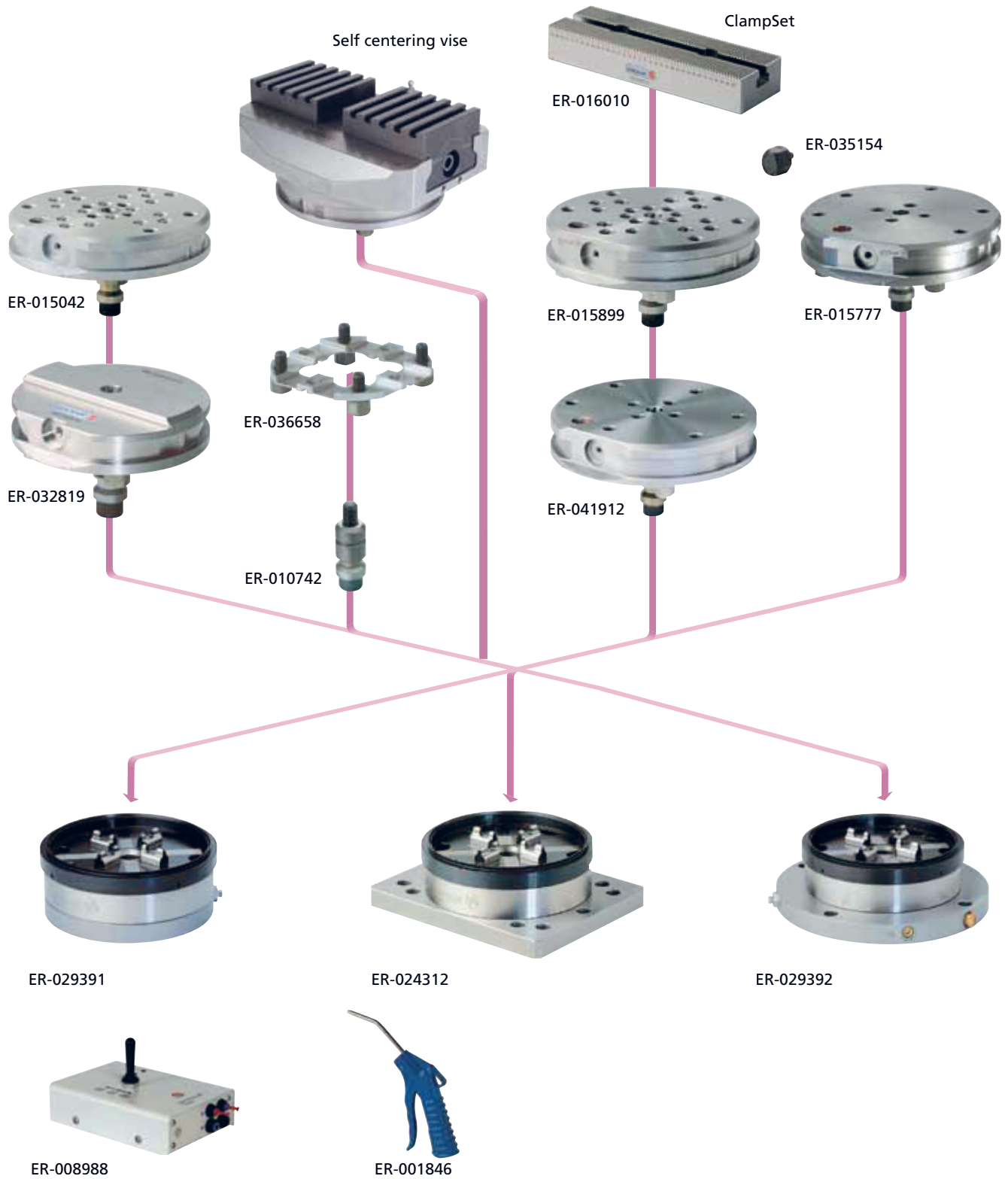


Prepare, clamp and complete the job.




















# EROWA PowerChuck P Palletizing system

## The components





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

## EROWA POWERCHUCK P PALLETIZING SYSTEM

PowerChuck P	Chucks	116
PowerChuck P	Workpiece carrier	118
PowerChuck P	Auxiliary Equipment	122



For chip-removing processes



For EDM sinking



For WEDM

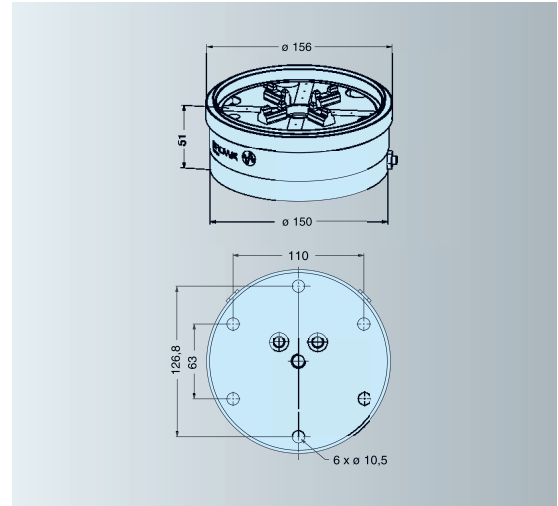
# EROWA PowerChuck P Chucks

Technical data	PowerChuck P
Repeatability	0.002 mm
Pallet indexation	4 x 90°
Clamping power	10,000 N
Generated by	spring power
Opening with compressed air	min. 6 bar

## ER-029391 PowerChuck P ø 150



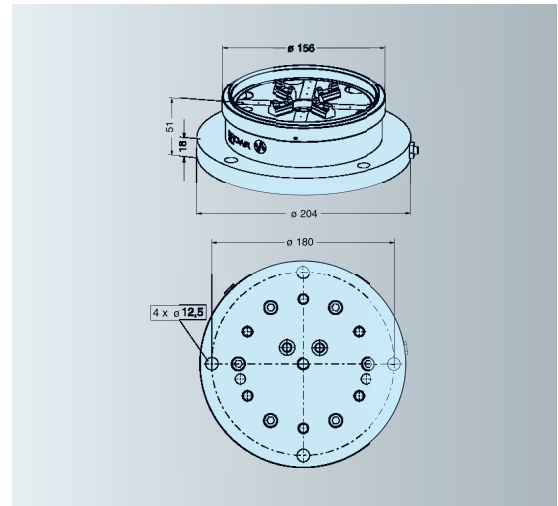
Version	Extra-flat version. Height 51 mm. Base plate ø 150 mm.
Connections	On the side or at the rear with two lines.
Operation	With airjet, laterally. With control unit through the two lines on the side and at the rear.



## ER-029392 PowerChuck P ø 204



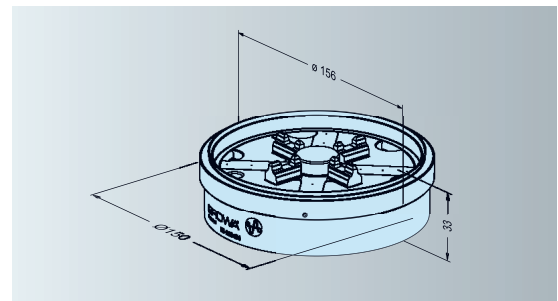
Version	Extra-flat version. Height 51 mm. Base plate ø 204 mm.
Connections	On the side or at the rear with two lines.
Operation	With airjet, laterally. With control unit through the two lines on the side and at the rear.



## ER-029436 PowerChuck P without base plate

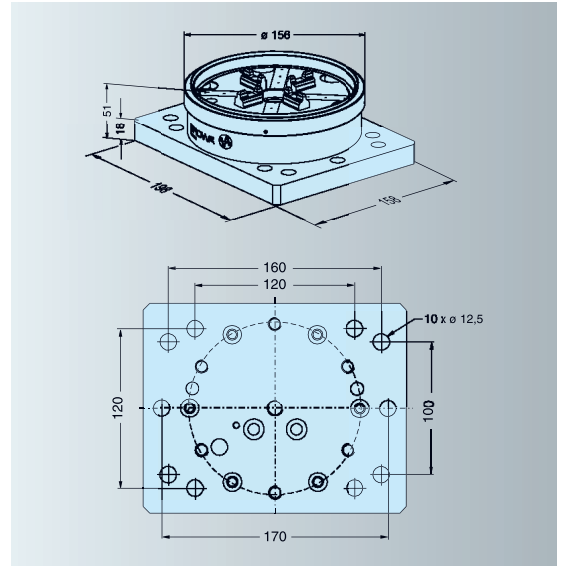


Version	Extra flat version. Height 33 mm. Without base plate.
Connections	At the rear according to the instruction manual.
Operation	Pneumatically.

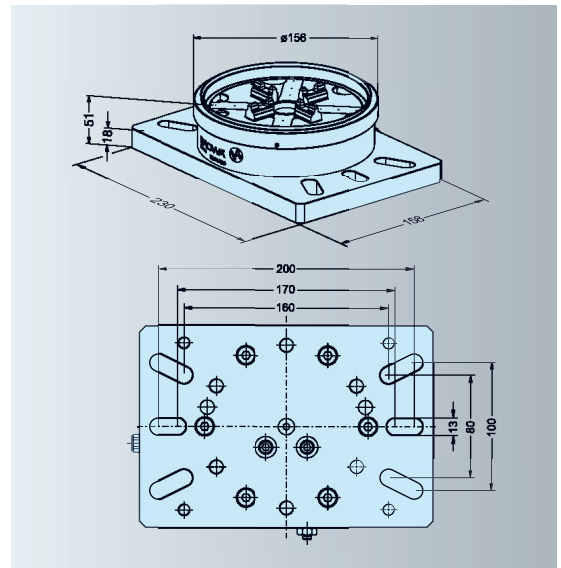


**ER-024312 PowerChuck P 158 x 198**

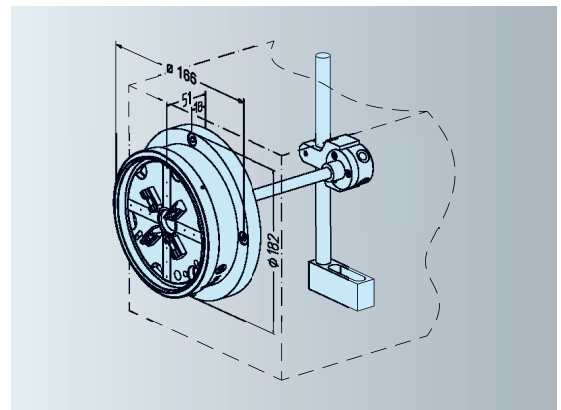
- Version Extra-flat version. Height 51 mm.  
Base plate 158 mm x 198 mm.
- Connections On the side or at the rear with two lines.
- Operation With airjet, laterally. With control unit through the two lines on the side and at the rear.

**ER-044310 PowerChuck P 158 x 230**

- Version Extra-flat version. Height 51 mm.  
Base plate 158 mm x 230 mm.
- Connections On the side or at the rear with two lines.
- Operation With airgun on the side. With control unit through the two lines on the side or at the rear.
- Information The borehole pattern of this plate fits 40mm and 50mm T-slot distances.

**ER-029422 PowerChuck P / R**

- Version PowerChuck P with rotatable connection, max. 50 rpm.
- Connections Two lines to the rotatable connection.
- Operation With control unit, manually and automatically.
- Application For use on dividing heads and round tables.



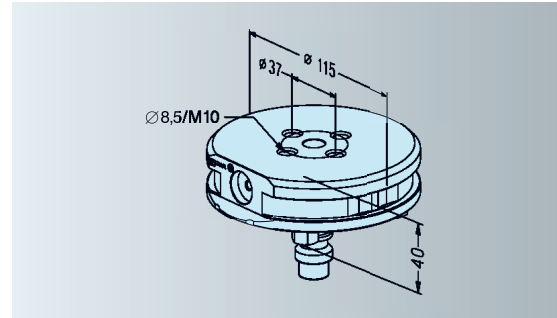
# EROWA PowerChuck P Workpiece carriers

**ER-008519 Pallet  $\varnothing$  115 MS EWIS™**

**ER-032730 Pallet kit  $\varnothing$  115 MS  
4 pieces**



Version Standard type, punched centering plates.  
Application For electrodes and workpieces in EDM.  
Mounting Through pallet with 4xM8 bolts or through blank with 4xM10 bolts.

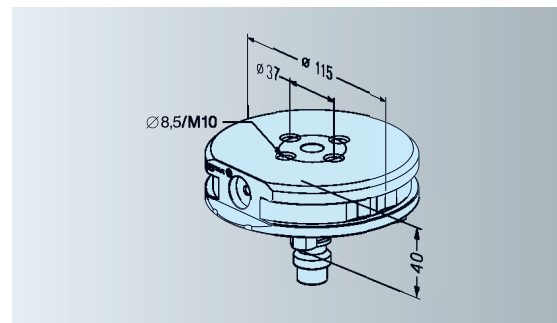


**ER-008517 Pallet G  $\varnothing$  115 EWIS™**

**ER-032729 Pallet kit G  $\varnothing$  115  
4 pieces**



Version Standard type, ground centering plates.  
Application For electrodes and workpieces in EDM.  
Mounting Through pallet with 4xM8 bolts or through blank with 4xM10 bolts.

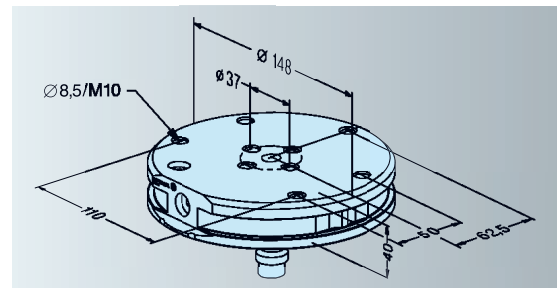


**ER-015776 Pallet  $\varnothing$  148 MS EWIS™**

**ER-032731 Pallet kit  $\varnothing$  148 MS  
4 pieces**



Version Standard type, punched centering plates.  
Application For electrodes and workpieces, and for the construction of fixtures.  
Mounting Through pallet with M8 bolts or through blank with M10 bolts.

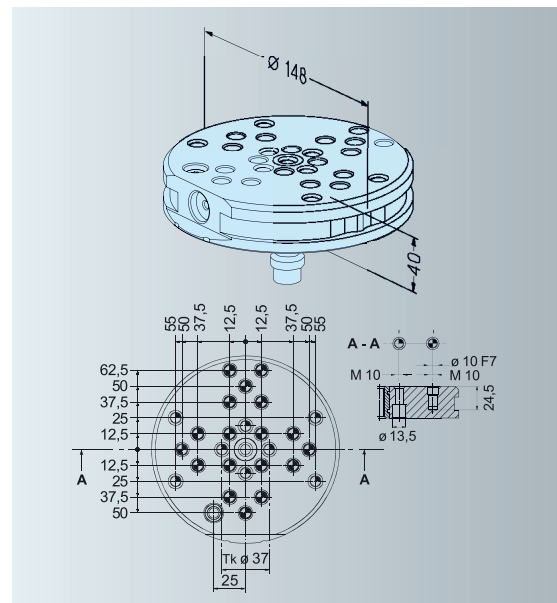


**ER-015042 Pallet  $\varnothing$  148 MS ALU R25**

**ER-033051 Pallet Kit  $\varnothing$  148 MS ALU R25  
4 pieces**



Version Body of casted aluminum with borehole pattern 25,  $\varnothing$  10 F7, thread M10.  
Application Palletizing of workpieces and electrodes, mounting of fixtures and ClampSet Base 220.  
Mounting Through pallet with M8 bolts or through blank with M10 bolts.

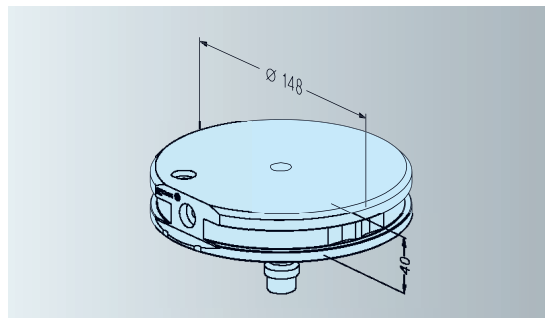


**ER-032699 Pallet  $\varnothing$  148 G****ER-033048 Pallet Kit  $\varnothing$  148 G  
4 pieces**

Version Without bore holes apart from center borehole and borehole for reference bolt.

Application For work pieces machined in chip-cutting machining.

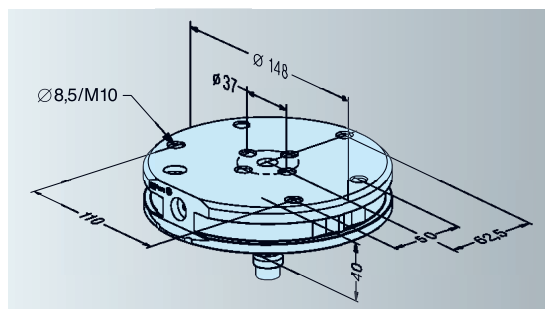
Mounting According to your preference.

**ER-015777 Pallet  $\varnothing$  148 G EWIS™****ER-032732 Pallet kit G  $\varnothing$  148 EWIS™  
4 pieces**

Version Standard type, ground centering plates.

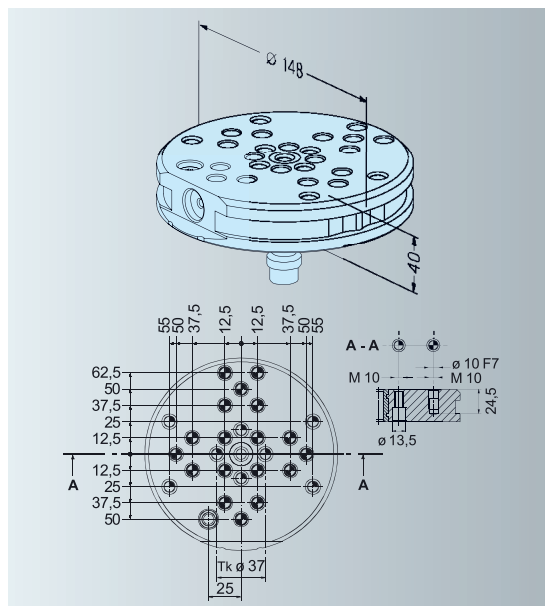
Application To accommodate workpieces and fixtures in chip-cutting machining processes.

Mounting Through pallet with M8 bolts or through blank with M10 bolts.

**ER-015899 Pallet  $\varnothing$  148 G R25****ER-033053 Pallet Kit  $\varnothing$  148 G R25  
4 pieces**

Version Steel, nitride coated, with borehole pattern 25,  $\varnothing$  10 F7, thread M10.

Application To accommodate EROWA ClampSet Base 220 or specially constructed fixtures and gauges.



# EROWA PowerChuck P

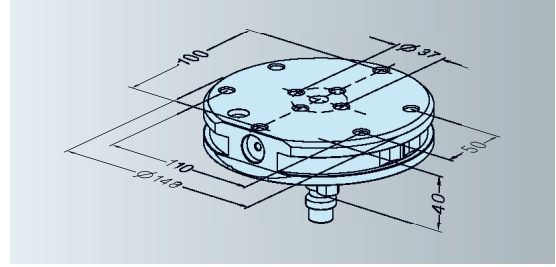
## Workpiece carriers

### ER-041912 Pallet P $\varnothing$ 148 Inox

### ER-041924 Pallet Kit P $\varnothing$ 148 Inox 4 pieces



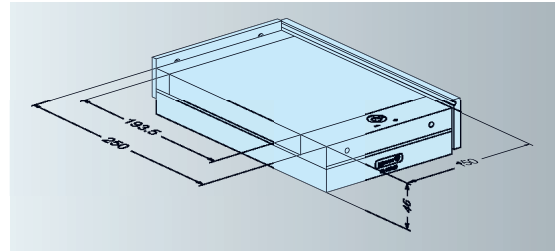
- Version** Steel, corrosion-resistant. Centering integrated in the pallet.
- Application** For use on all EROWA PowerChucks P and Production-Chuck 210 Combi. To accommodate workpieces and fixtures in chip-cutting machining processes.
- Mounting** Through pallet with M8 bolts or through blank with M10 bolts.



### ER-038189 Magnetic clamping plate Neospark 250 x 150 x 46



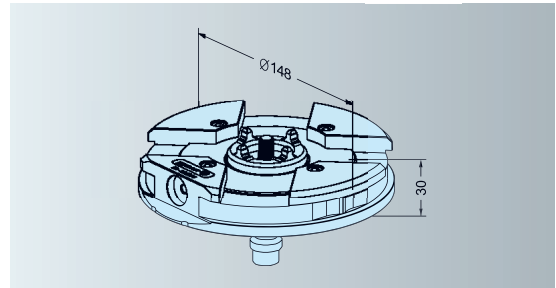
- Version** Magnetic clamping plate of steel with M8 attachment boreholes for ITS Pallet  $\varnothing$  148.
- Application** To clamp workpieces for surface and profile grinding, WEDM and high-frequency milling.



### ER-022250 Adapter pallet ITS 50 / $\varnothing$ 148



- Version** ITS system size 100.  
Lock with central M 10 locking bolt.
- Application** To accommodate ITS Electrode holders system 50.  
Lock with central M10 locking bolt.  
For automatic handling.



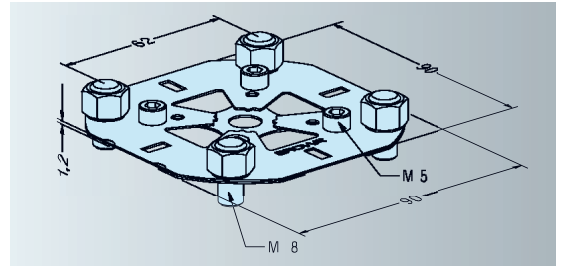


**ER-050195** Centering plate 100 M8  
 1 unit

**ER-011599** Centering plate 100 M8  
 10 pieces



Version Corrosion-resistant, including 4 supporting feet M8 and 4 x M5 screws per plate.  
 Application Workpieces and electrodes.  
 Mounting Mounted directly on of blank plane surface of blank.

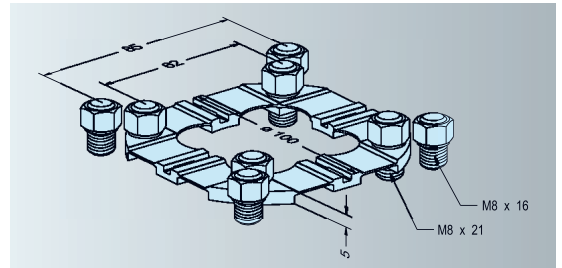


**ER-036657** Centering plate G Inox  
 1 unit

**ER-036658** Centering plate G Inox  
 5 pieces



Version Ground including 8 supporting feet M8 per plate.  
 Application For workpieces, jigs and fixtures in chip-removal machining.  
 Mounting According to accompanying fitting instructions.



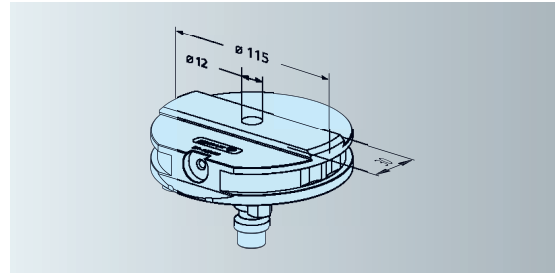
# EROWA PowerChuck P Auxiliary Equipment

## ER-032819 Alignment pallet $\varnothing$ 115



Version Pallet  $\varnothing$  115 mm, alignment length 110 mm, center bore-hole  $\varnothing$  12 mm.

Application Alignment of radial, axial and angular position of ITS chucks, PowerChuck P and PC 210 Combi chucks.

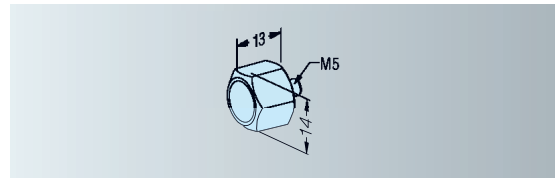


## ER-035154 EWIS™ Rapid chip with chip holder SW14 with chip $\varnothing$ 12,4 x 2mm



Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.

Application In any EROWA electrode holder and pallet which has been prepared for it.

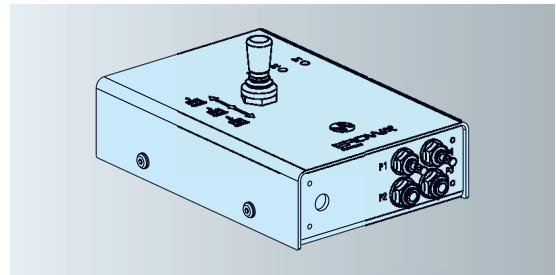


## ER-008988 Manual control unit



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.



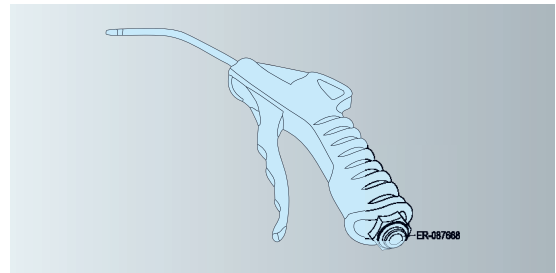
## ER-001846 Air jet



Version Plastic, smooth regulation of air flow, connection 1/4", inside thread.

Application Operation of manual chucks.

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.



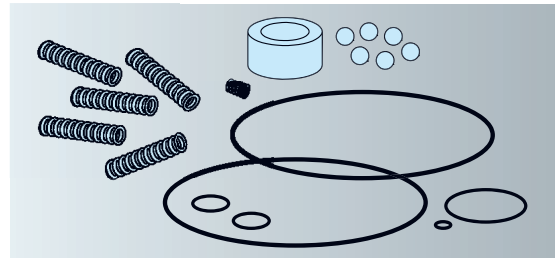
## ER-015962 Repair kit PowerChuck P



Version All the wear parts of PowerChuck P.

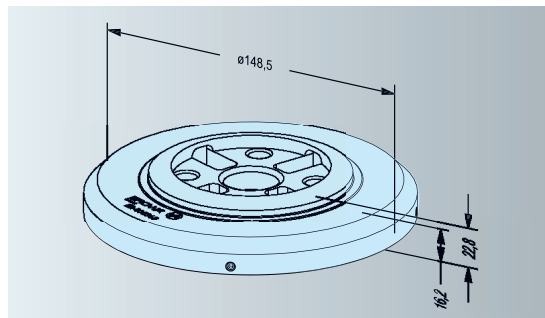
Application Dismantle chuck according to instructions supplied, replace parts.

Please note Every chuck is supplied with instructions. Please keep in a safe place.

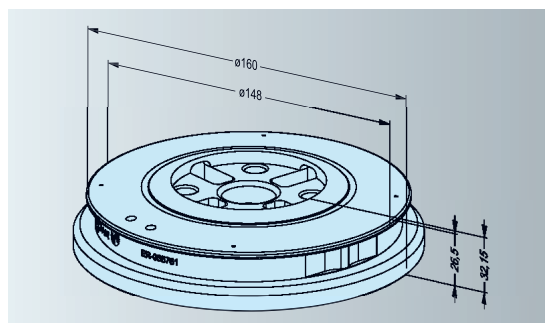


**ER-035365 Sealing ring PowerChuck P ø 72**

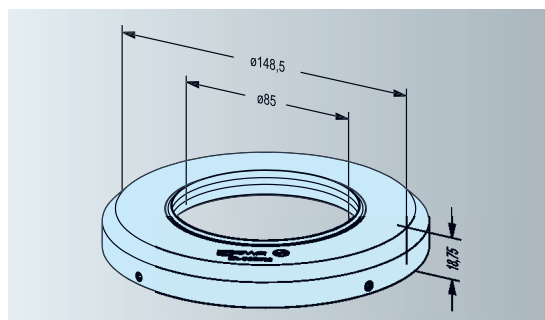
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA Holders ø 72.

**ER-055761 Sealing ring for holder 72 PowerChuck P**

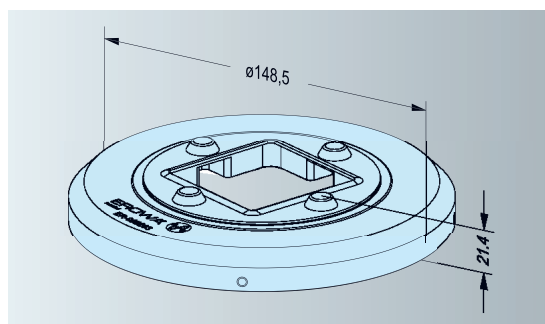
Version Rust-resistant steel  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA Holders 72.

**ER-038918 Sealing ring PowerChuck P / ø 85**

Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA pallets PM85.

**ER-092203 Sealing ring ITS 50 C for PowerChuck P manual**

Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA electrode holders C.

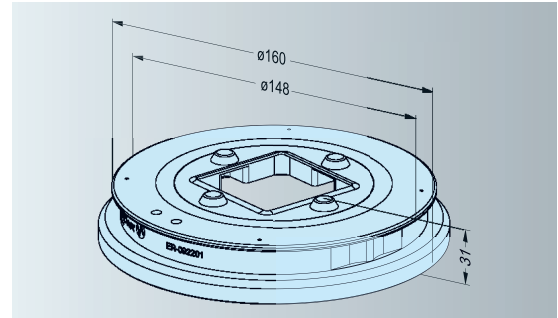


# EROWA PowerChuck P Auxiliary Equipment

## ER-092201 Sealing ring ITS 50 C for PowerChuck P automatic



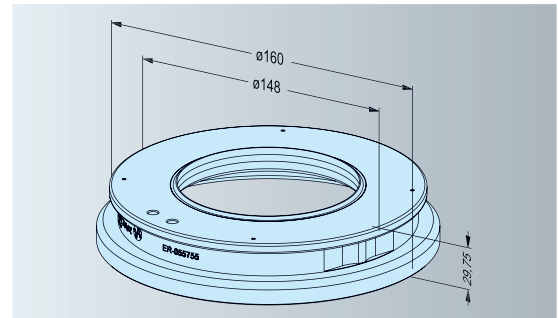
Version Rust-resistant steel  
Application Prevents penetration of chips and dirt into the PowerChuck P during machining with EROWA electrode holders C.



## ER-055755 Sealing ring for pallet PM85 PowerChuck P



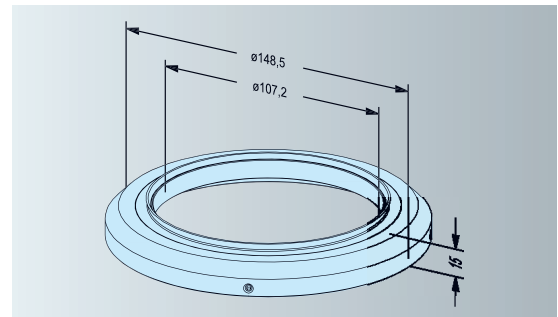
Version Rust-resistant steel.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA pallets PM85.



## ER-016142 Sealing ring holder ø 115



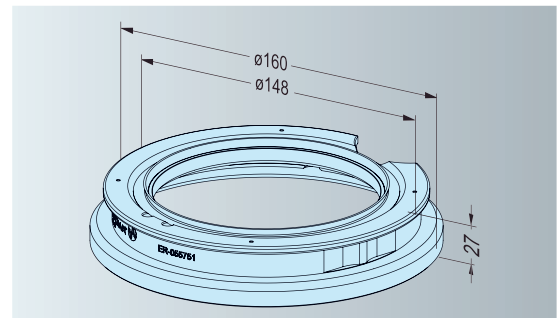
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA ITS pallets ø 115.



## ER-055751 Sealing ring for pallet ø115 PowerChuck P

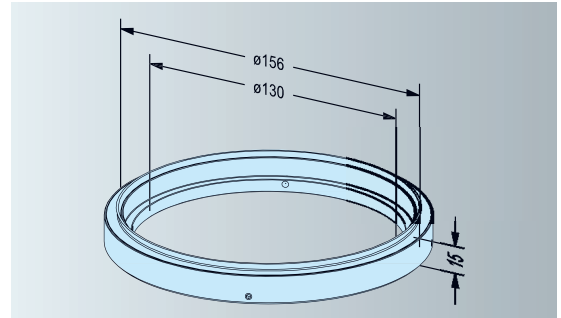


Version Rust-resistant steel.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA ITS pallets ø 115.

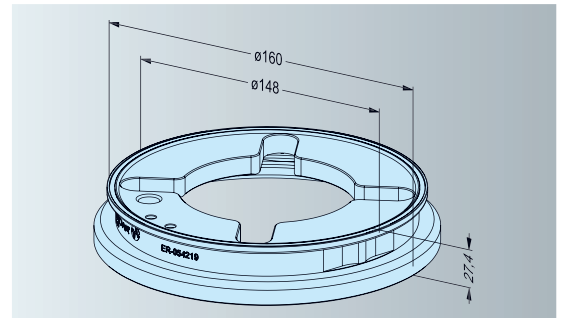


**ER-016131 Sealing ring holder  $\varnothing$  148**

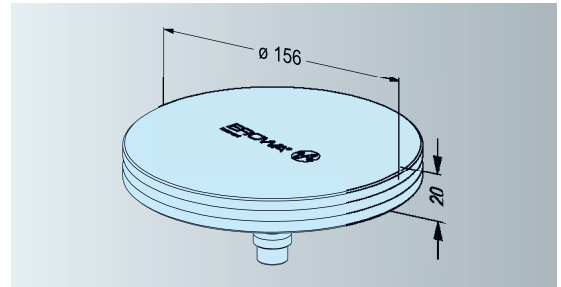
Version Steel black oxide coated.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA ITS pallets  $\varnothing$  148.

**ER-054219 Sealing ring for pallet  $\varnothing$ 148 PowerChuck P**

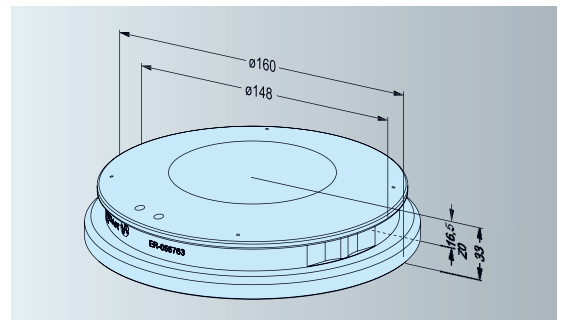
Version Rust-resistant steel.  
Application Prevents penetration of chips and dirt into the PowerChuck P by application of EROWA ITS pallets  $\varnothing$  148.

**ER-008972 Cover for PowerChuck P**

Version Aluminum. Without centering plate and supports.  
Application Protects the PowerChuck P from chips and cooling water when not in use.

**ER-055763 Cover to PowerChuck P**

Version Rust-resistant steel.  
Application Prevents penetration of chips and dirt into the PowerChuck P. For automatic handling.

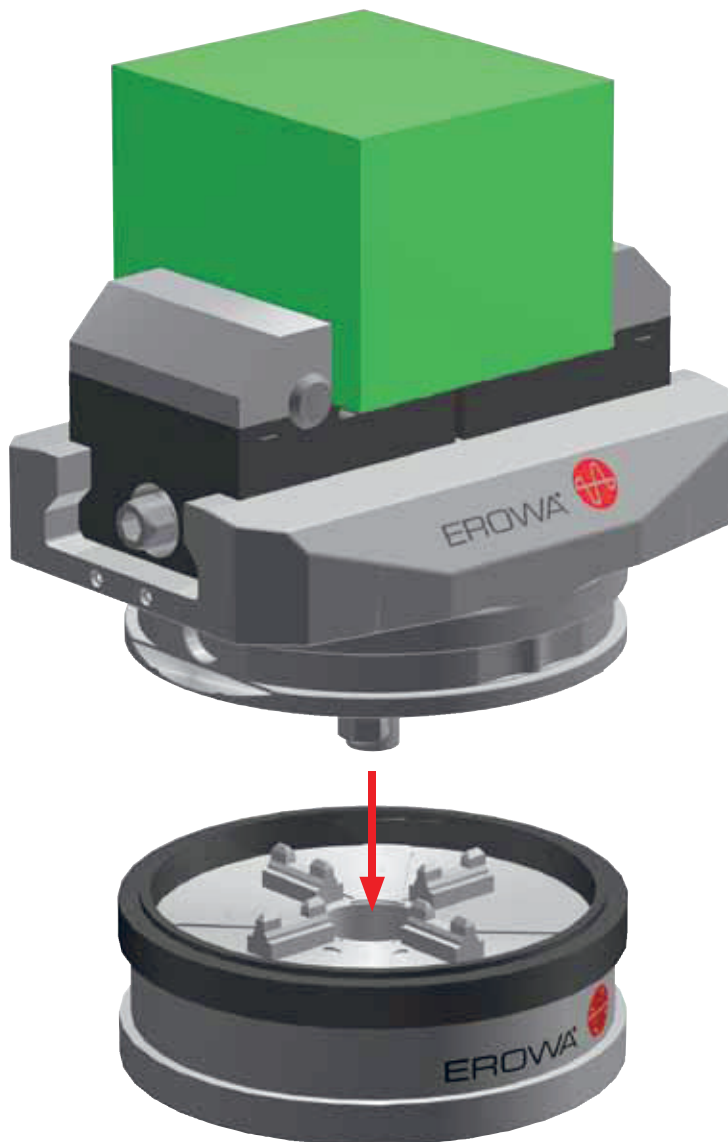


## EROWA Self Centering Vise

# Secure and flexible clamping

For producing workpieces as completely as possible and economically, 5-sided machining in one setup offers great benefits. The downtimes are significantly reduced and errors during reclamping are avoided.

The EROWA Self Centering Vise is the precise and flexible interface between the workpiece and the machine.



- The pallet and vise body of the self-centering vise are made of one piece. But, the center of the vise can still be adjusted.
- The entire body of the self-centering vise is manufactured from rust-resistant hardened steel.
- In addition, the slide and the spindle have a high-tech coating and are wear-free.
- The spindle is sealed and protected against contamination.
- Wide selection of jaws.
- Two different sizes (85 + 148).
- Depending on size, the EROWA self-centering vise is also available with an integrated EROWA G pallet or without a pallet for direct mounting on an EROWA pallet or machine table.



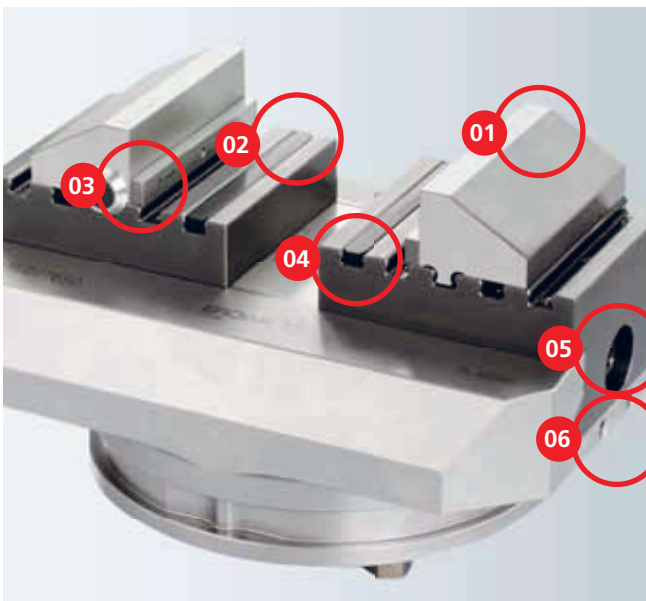
**Applications**



**Handling**

Manual / Loading facility / Robot

**Function**



**01 | Jaws**

Various types of jaws can be changed quickly without tools

**02 | Dirt covers**

Dirt covers for grid grooves and high-precision spindle

**03 | Pads**

Various pads

**04 | Grid**

15 mm grid for jaw positioning

**05 | Operation**

Double-sided clamping and unclamping

**06 | Center**

Center adjustment

**Technical Data - Self Centering Vise**

	<b>Self Centering Vise 148</b>	<b>Self Centering Vise 85</b>
Clamping force at 60 Nm	19,000 N	
Clamping force at 35 Nm		14,000 N
Repeatability	0.01 mm	0.01 mm
Clamping stroke of spindle	30 mm	30 mm
Opening width	5-155 mm	5-95 mm
Contact spacing of jaw positioning	15 mm	15 mm
Clamping mechanism	maintenance-free	maintenance-free
Material	hardened, rust-resistant	hardened, rust-proof
Compatibility with EROWA tooling (depending on model)	ITS, PowerChuck P, PC210 Combi, MTS Single Chuck	ITS, PowerChuck P, PM85
Options	- different jaws, - dust cover for profiles - pads in various heights - clamping pin for ITS or MTS - torque wrench	- different jaws, - dust cover for profiles - pads in various heights - clamping pin for ITS - torque wrench

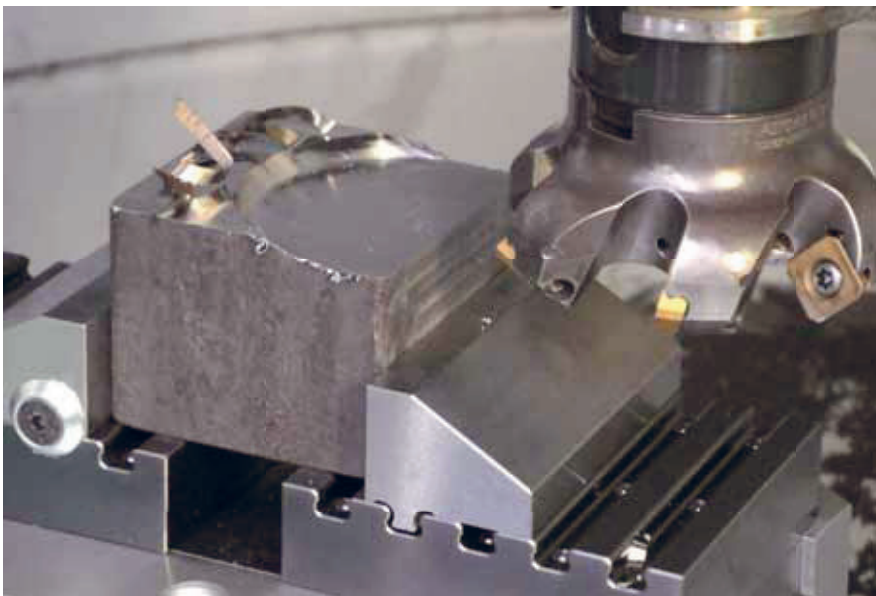
## EROWA Self Centering Vise in action

# Precise and protected clamping

Wherever good access, high holding power and variable clamping is required, the self-centering vise is the first choice.

CHANGE WITH SYSTEM

Replacing jaws without tools.



All moving parts of the self centering vise are protected.



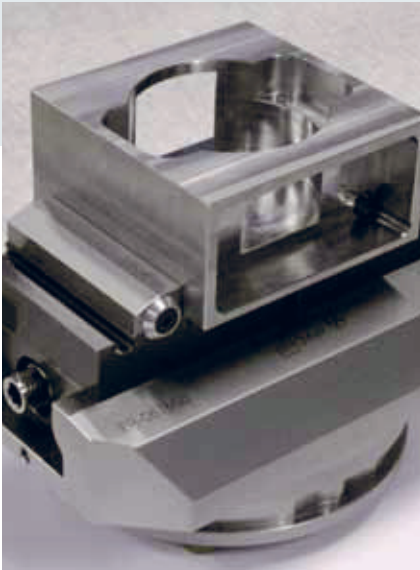
Also suitable for heavy cutting operations: The Self Centering Vise 148 holds workpieces in position with 19,000 N. Selecting the appropriate jaws adds even more stability.



The grooves are protected by covers against pollution.



Simple means fast – changing jaws in no time and without any tools.



Securely clamped and well accessible from all sides.



No matter how many chips, the Self Centering Vise remains clean at crucial points such as the spindle and guides.



The Self Centering Vise 148 is made of rust-resistant material. All components are hardened. Highly stressed parts are specially surface-coated for increased durability.



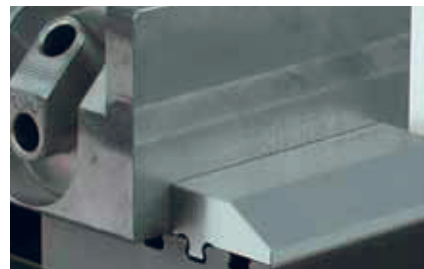
A few manual steps – and the workpiece is positioned in the Self Centering Vise.



Wholly made of one piece. Self Centering Vise P 148 with utmost stability.



The SlipStop® surface prevents unhardened workpieces from slipping. The holding force is more than doubled.



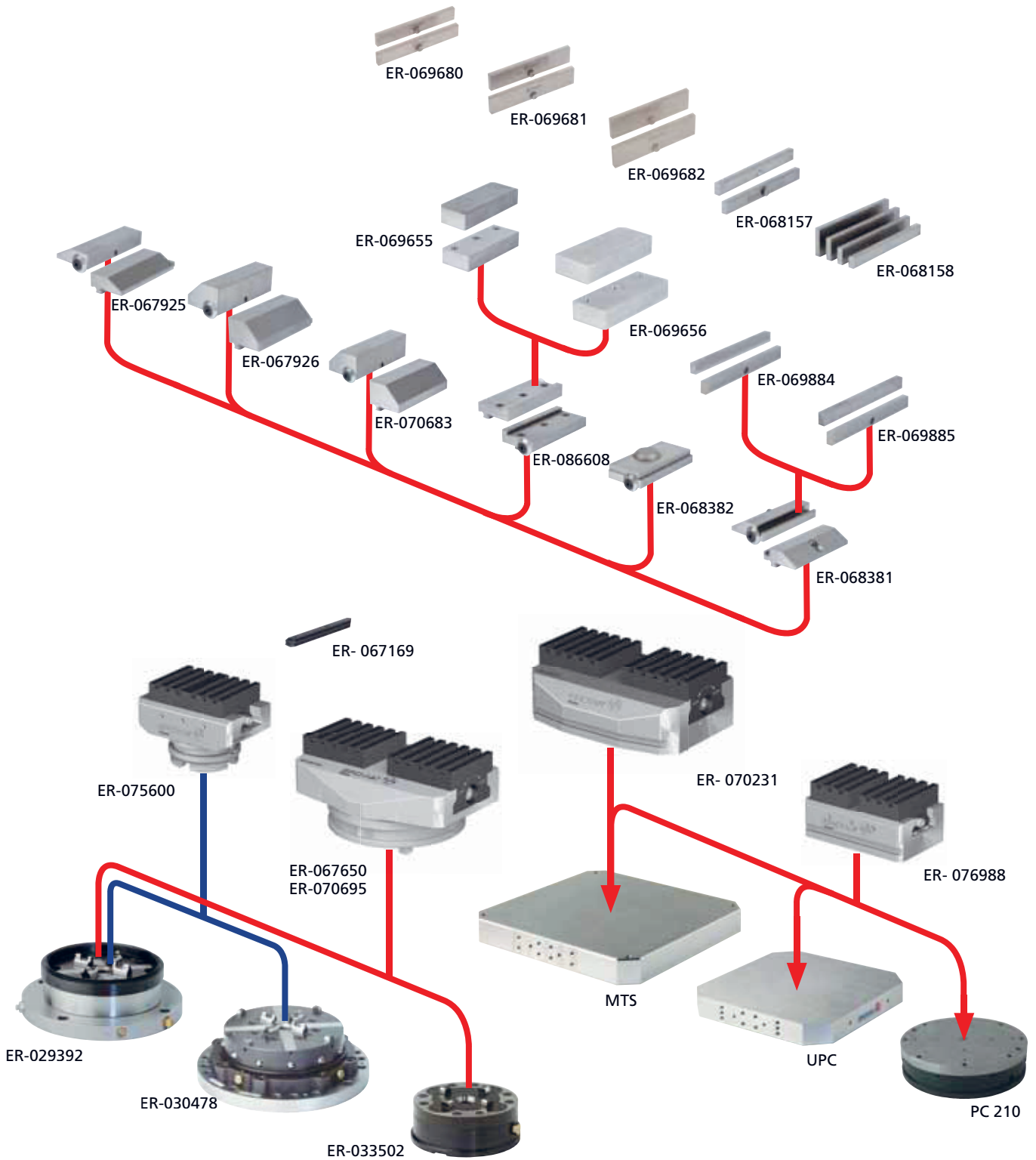
Despite its small and compact design, the Self Centering Vise 85 P is also ideally suitable for clamping large workpieces.




















The Self Centering Vises fit perfectly in the magazines of EROWA robots. Contact us for more information on EROWA automation solutions.

# EROWA Self Centering Vise

## The components



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



## EROWA SELF CENTERING VISE

Self Centering Vise 132

Self Centering Vise auxiliary equipment 133



For chip-removing processes



For EDM sinking



For WEDM



# EROWA Self Centering Vise

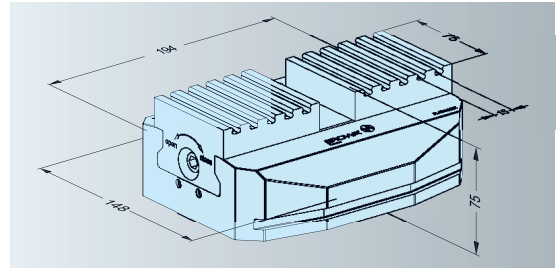
## Self Centering Vise

	Self Centering Vise 148	Self Centering Vise 85
Clamping force at 60 Nm (35 Nm by Typ 85)	19,000 N	14,000 N
Repeatability	0.01 mm	0.01 mm
Clamping stroke of spindle	30 mm	30 mm
Opening width	5-155 mm	5-95 mm
Contact spacing of jaw positioning	15 mm	15 mm

### ER-070231 Self Centering Vise 148 without pallet



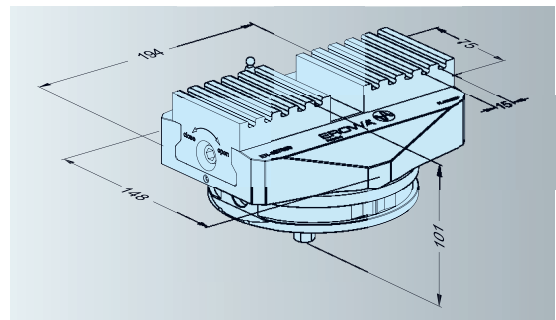
Version Self-Centering Vise 148, including lateral stop.  
 Accessories Various jaws, torque wrenches etc.  
 Application To clamp workpieces. Mounting on pallets.  
 Mounting directly on the machine table.



### ER-067650 Self Centering Vise 148 P



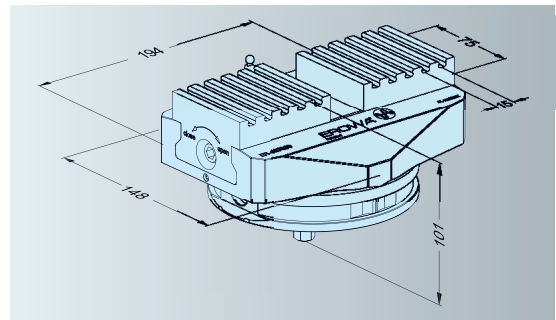
Version Self-Centering Vise 148 P, including lateral stop.  
 Optional Chucking spigot F/M Production ER-010742 or MTS chucking spigot P ER-040999.  
 Accessories Various jaws, torque wrenches etc.  
 Application To clamp workpieces. For use on PC 210 Combi, PowerChuck P, MTS SingleChuck.



### ER-070695 Self Centering Vise 148 G



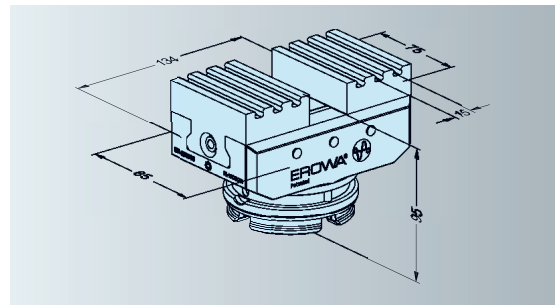
Version Self-Centering Vise 148 G, including lateral stop.  
 Optional Chucking spigot F/M Production ER-010742.  
 Accessories Various jaws, torque wrenches etc.  
 Application To clamp workpieces. For use on PC 210 Combi, PowerChuck P & F, UPC with ITS.



### ER-075600 Self Centering Vise 85 P



Version Stainless material, hardened and ground. Pallet fully integrated.  
 Application On milling and grinding machines.  
 Note Compatible with EROWA tooling systems: ITS, PM85, PowerChuck P.



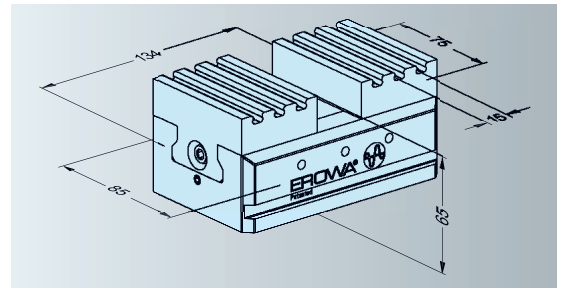
# EROWA Self Centering Vise

## Auxiliary equipment

### ER-076988 Self Centering Vise 85 without pallet



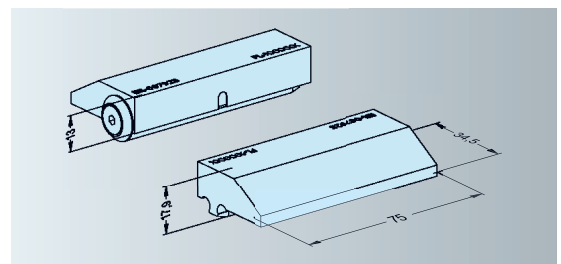
Version Stainless material, hardened and ground.  
 Accessories Various jaws, torque wrenches etc.  
 Application To clamp workpieces. To be mounted on pallets or directly on the machine table.



### ER-067925 Jaws 13 mm (1 pair) for self centering vise



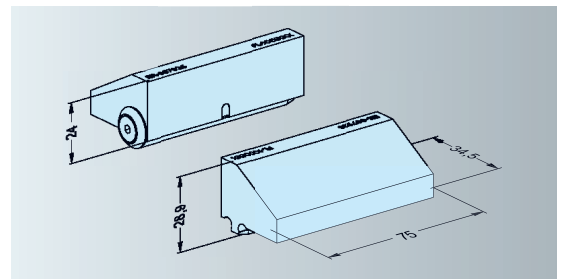
Version Steel, hardened and ground; height: 13mm.  
 Note Supplied in pairs.  
 Application To clamp workpieces with machined surfaces.



### ER-067926 Jaws 24 mm (1 pair) for self centering vise



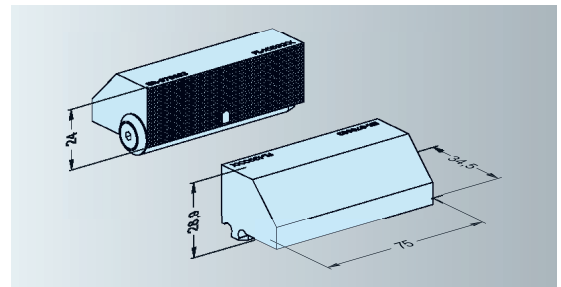
Version Steel, hardened and ground; height: 24mm.  
 Note Supplied in pairs.  
 Application To clamp workpieces with machined surfaces.



### ER-070683 Jaws 24 mm grip(1 pair) for self centering vise



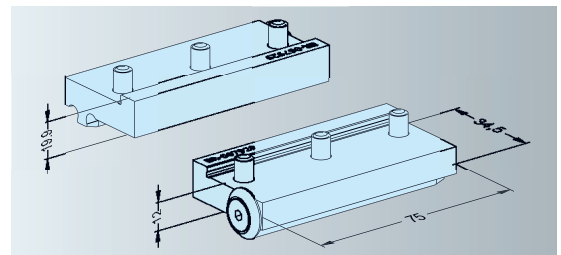
Version Steel, hardened and ground; height: 24mm; with grip contours.  
 Note Supplied in pairs.  
 Application Ideal to clamp unhardened workpieces.



### ER-086608 Adapters for interchangeable jaws 1 pair, for self centering vise



Application Steel, hardened and ground, with attachment bolts.  
 Note Supplied in pairs.  
 Application To accommodate customized interchangeable jaws of your choice.





# EROWA Self Centering Vise

## Auxiliary equipment

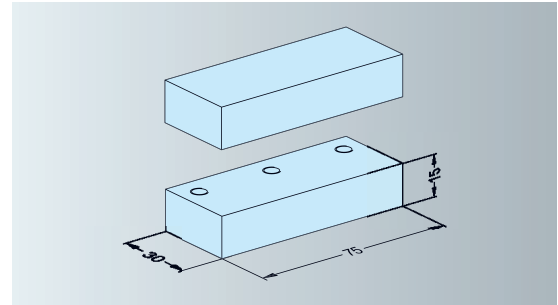
### ER-069655 Interchangeable jaws steel unhardened 1 pair, to fit adapter ER-086608



Version Steel, unhardened, dimensions: 75 x 30 x 15 mm, including attachment boreholes, fully prepared.

Note To fit adapter ER-067929.

Application To produce jaws with contours of your choice.



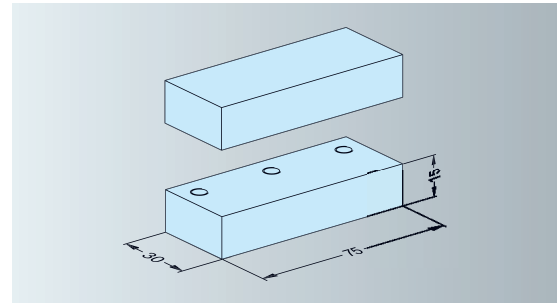
### ER-069656 Interchangeable jaws Alu 1 pair, to adapter ER-086608



Version Aluminum, dimensions: 75 x 30 x 15 mm, including attachment boreholes, fully prepared.

Note To fit adapter ER-067929.

Application To produce jaws with contours of your choice.



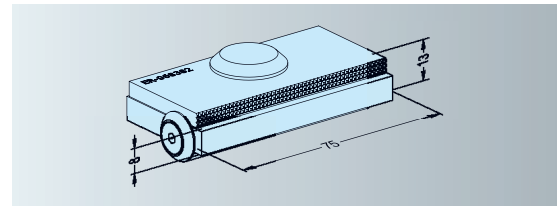
### ER-068382 Pendulum jaw 1 piece, for self centering vise



Version Hardened ground jaw with pendulum compensation for oblique workpieces.

Application To clamp workpieces with oblique outer surfaces.

To fit Insert.



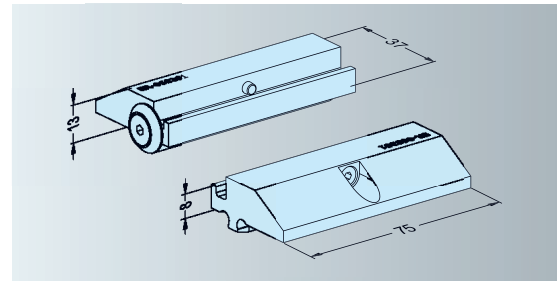
### ER-068381 Adapter 5 mm for SlipStop® jaw inserts 1 pair, for self centering vise



Version Steel, hardened and ground. With fixing screw for inserts, clamping height 5 mm.

Note Delivered in pairs.

Application To accommodate SlipStop® inserts ER-069884 and ER-069885.



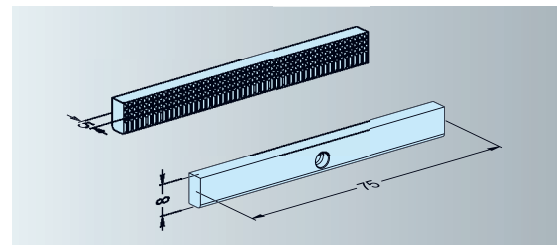
### ER-069884 SlipStop® insert, ruffled 1 pair, for adapter ER-068381



Version Steel, hardened and ground, height: 24mm, with ruffled contour.

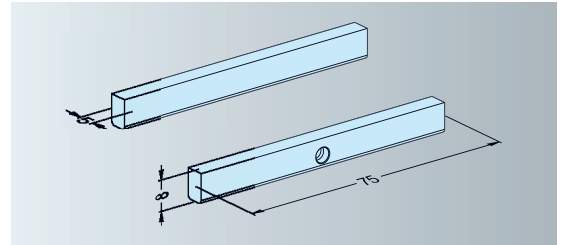
Note Supplied in pairs.

Application To clamp workpieces with machined surfaces.

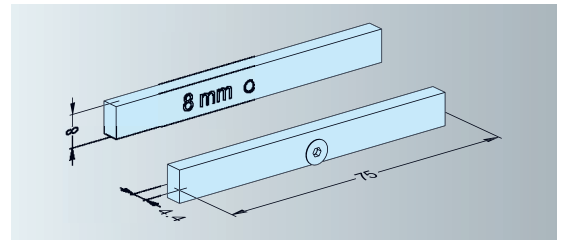


**ER-069885 SlipStop® insert, ground  
1 pair, for adapter ER-068381**

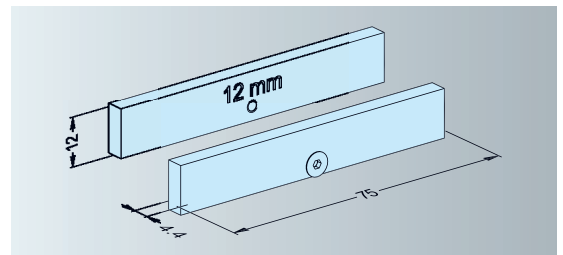
Version Steel hardened and ground.  
 Note Delivered in pairs.  
 Application Suitable for Adapter ER-068381. Ideal for the clamping of ground workpieces.

**ER-068157 Spacers 8 mm, 1 pair  
for self Centering vise**

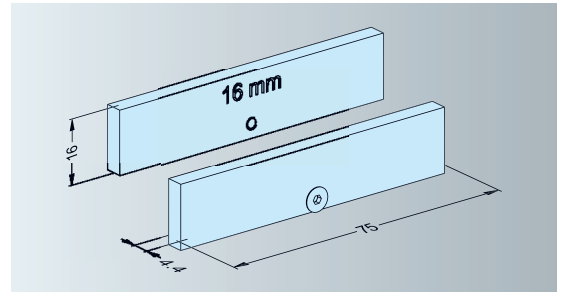
Version 1 pair of hardened, ground supports.  
 Application For the optimal positioning of workpieces at the correct height on the self-centering vise.  
 To fit Insert in the jaws, the insert jaws with the supports into the profile.

**ER-069680 Support 12 mm mounted  
self centering vise**

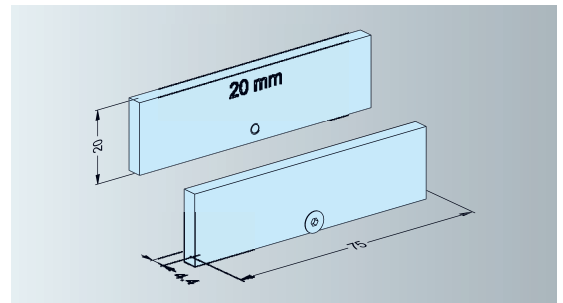
Version 1 pair of hardened, ground supports.  
 Application For the optimal positioning of workpieces at the correct height on the self-centering vise.  
 To fit Insert in the jaws, the insert jaws with the supports into the profile.

**ER-069681 Support 16 mm mounted  
self centering vise**

Version 1 pair of hardened, ground supports.  
 Application For the optimal positioning of workpieces at the correct height on the self-centering vise.  
 To fit Insert in the jaws, the insert jaws with the supports into the profile.

**ER-069682 Support 20mm mounted  
Self Centering vise**

Version 1 pair of hardened, ground supports.  
 Application For the optimal positioning of workpieces at the correct height on the self-centering vise.  
 To fit Insert in the jaws, the insert jaws with the supports into the profile.



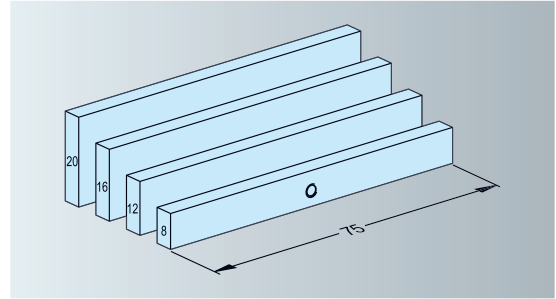
# EROWA Self Centering Vise

## Auxiliary equipment

### ER-068158 Spacer set (4 pairs) for self centering vise



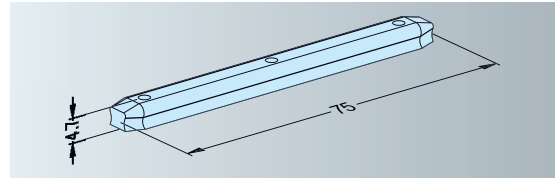
Version Set of ground supports, heights 8, 12, 16 and 20 mm.  
Application Support for the height positioning of workpieces.  
Mounting Insert the support into the groove of the jaw with the help of the holding device.



### ER-067169 Chip cover for self centering vise



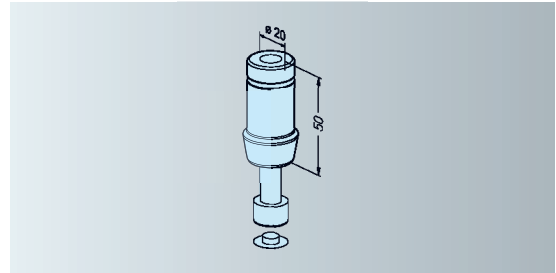
Version 1 plastic cover.  
Application To protect the empty profile inserts at the base of the self-centering vise.  
To fit Insert.



### ER-040999 MTS chucking spigot P



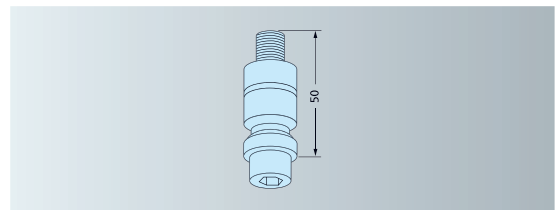
Version One chucking spigot, including attachment bolt and protective cap.  
Application For the conversion of ITS pallet  $\varnothing$  148 ER-041912 into MTS pallet P  $\varnothing$  148 ER-041928.



### ER-010742 Chucking spigot F/M production 1 unit



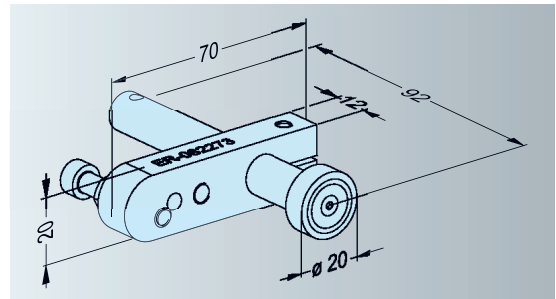
Version Fixed type, manual. Bolt 12.9, without flushing hole.  
Application In pallets for chip-cutting machining processes.



### ER-082273 Magnetic stop CleverClamp



Version Stop made of anodized aluminum.  
Application Magnetic stop used for positioning workpieces in vises.  
Important Remove the magnetic stop before machining the part.



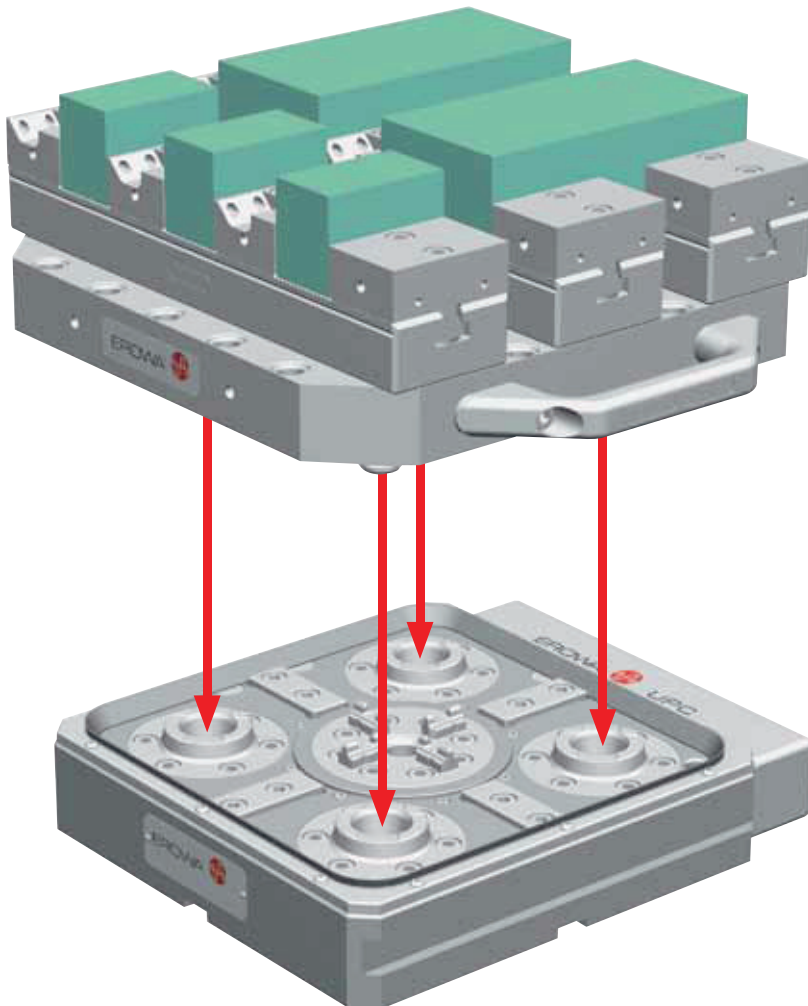


## EROWA ClampSet

# For universal use and high precision

EROWA ClampSet is the modular system for the precise clamping of workpieces. It can be universally used throughout the EROWA manufacturing concept.

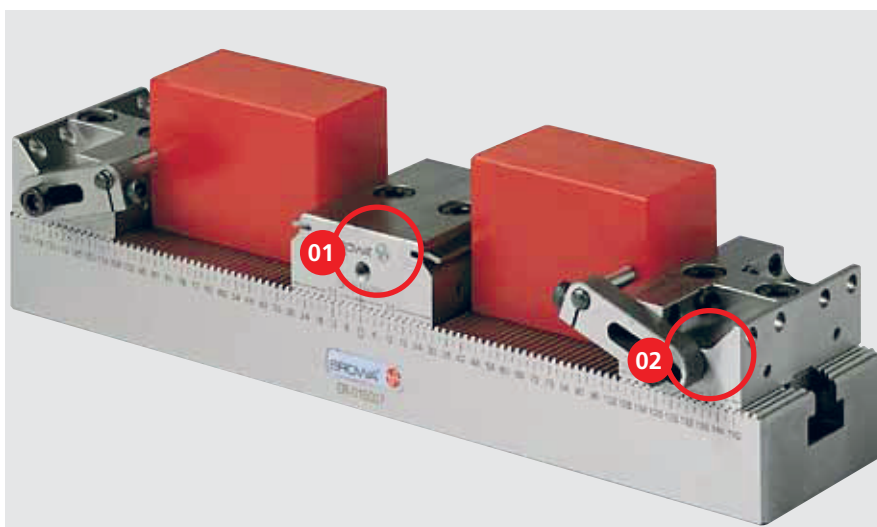
The base rails and clamping elements have been produced in accordance with the highest standards and enable operators to position workpieces with a high degree of precision. ClampSet is optimally suitable for the high precision requirements in tool- and mold-making.



- The ClampSet offers enormous flexibility. A great number of various precise clamping elements are available.
- It serves to clamp both machined workpieces and blanks.
- A variety of jaws enable many different workpiece forms to be clamped.
- A maximum clamping range of 225 mm also provides room for large workpieces.
- Workpieces are set up and preset outside the machine; this makes for an optimal use of time and cuts costs.
- Once the ClampSet has been palletized, it is immediately suitable for the automatic loading of machines.

**Applications****Handling**

Manual / Loading facility / Robot

**Function****01 | ClampSet Block N**

the pull-down jaw in combination with the ClampSet Standard Block offers the ideal pull-down effect.

**02 | ClampSet Stop**

the lateral stop can be attached to any ClampSet jaw.

**Technical data - ClampSet**

	<b>ClampSet Base 220</b>	<b>ClampSet Base 320</b>
Clamping range	max. 126 mm	max. 225 mm
Material	steel, hardened, ground	



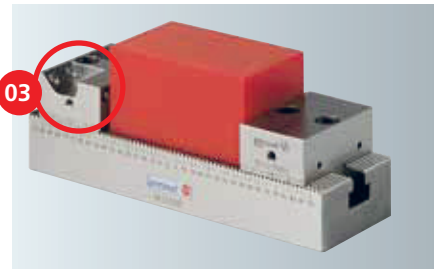
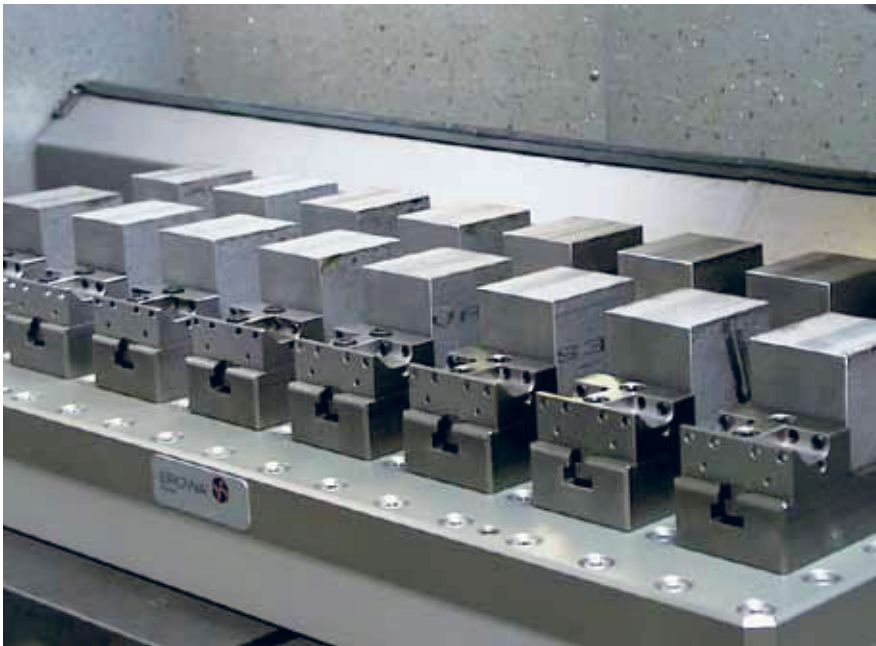
## EROWA ClampSet in action

# Modular, flexible, precise

Whether it's drilling, milling, grinding or EDM, ClampSet will reduce set-up times.

### FLEXIBLE

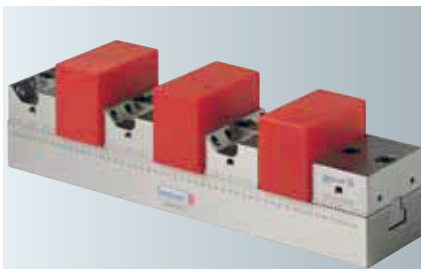
Can be used vertically and horizontally.



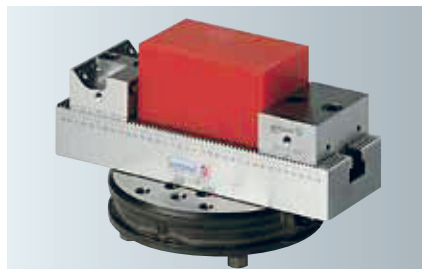
#### 03 | Standard Block

The Standard Block with 4 ball pressure bolts at an angle of 3° to the base surface for an optimal pull-down function.

Base 220, ClampSet Standard Block and ClampSet Block F (hard jaw) to clamp blanks.



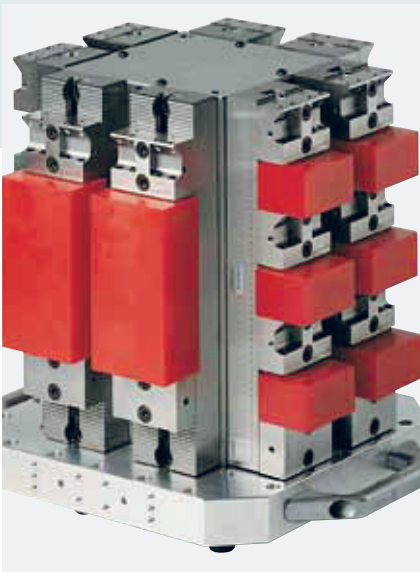
Base 320 with 3 ClampSet Standard Blocks and Block F for multiple fixtures.



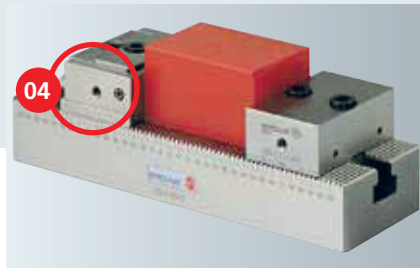
A fixture with Base 220 on an ITS pallet  $\varnothing$  148 mm.



ClampSet vise on ITS pallet. Positioning to  $\mu$ -accuracy and ready for use within seconds.



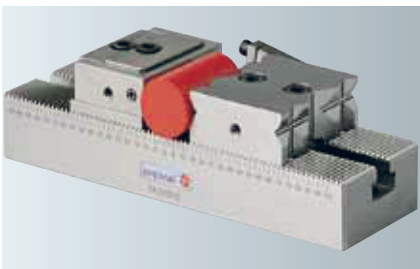
The multiple fixture on Cube and the UPC pallet for horizontal machining.



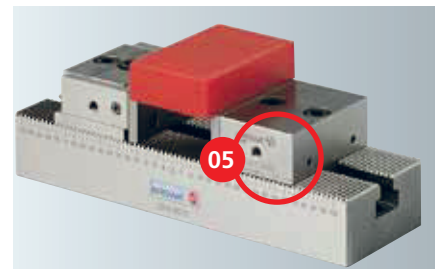
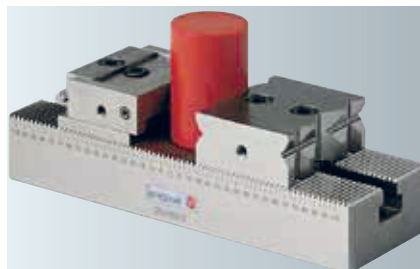
#### 04 | ClampSet Slide

ClampSet Slide; the precision clamping jaw for multiple clamping.

Base 220, ClampSet Slide and Block F to clamp machined parts (grinding vise).



Base 220, ClampSet Slide and prismatic jaw to clamp various cylindrical parts, both horizontally and vertically.



#### 05 | Support N

Support N; to clamp flat, low workpieces.

Base 220, ClampSet Slide, Block F and Support N (in two parts).



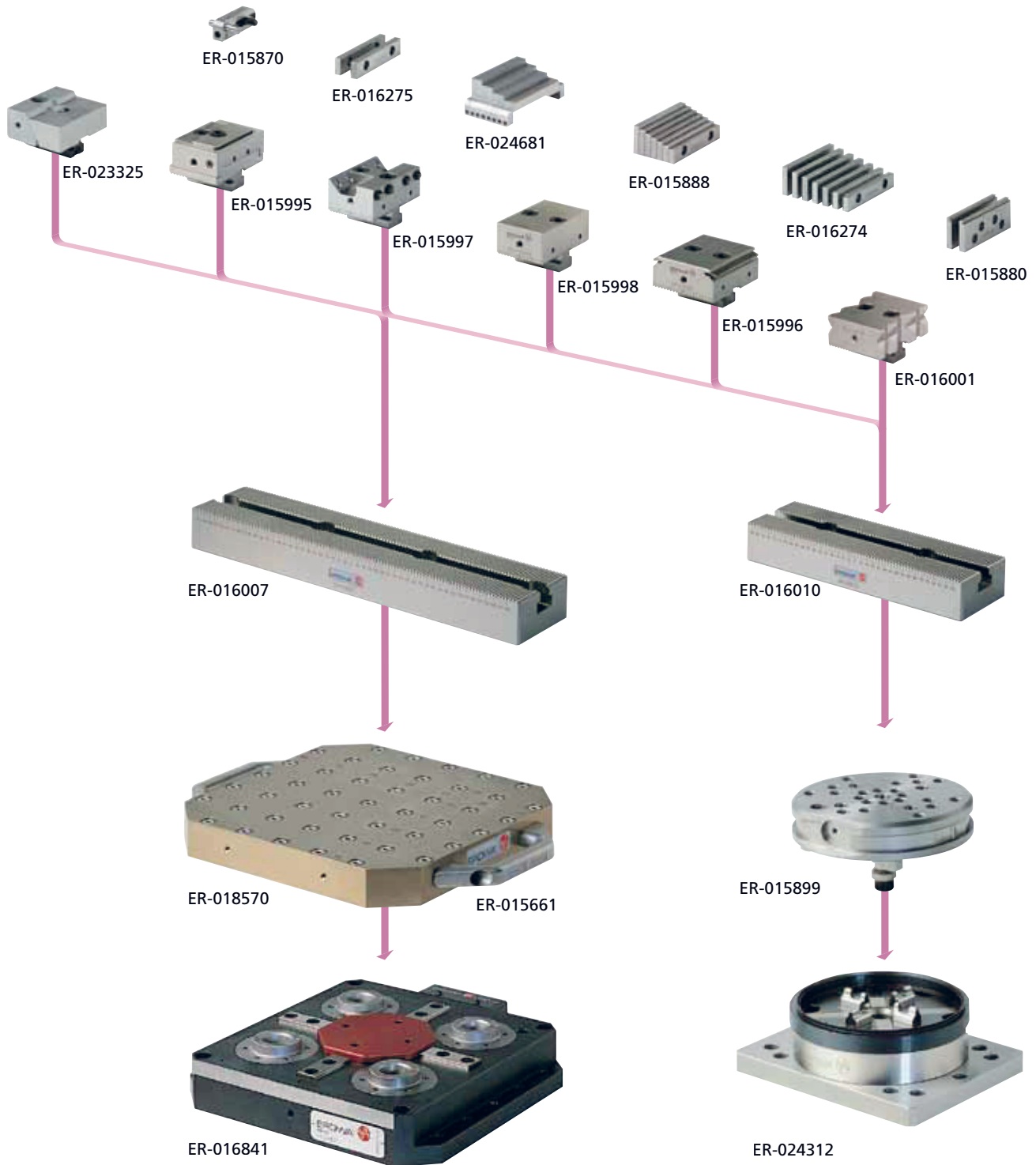
ClampSet also for long and big workpieces.



# EROWA ClampSet


















## Clamping elements

### The components



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       |

## EROWA CLAMPSET CLAMPING ELEMENTS

ClampSet	Technical data	144
ClampSet	Base	146
ClampSet	Clamping elements	147



For chip-removing processes



For EDM sinking



For WEDM

# EROWA ClampSet clamping elements

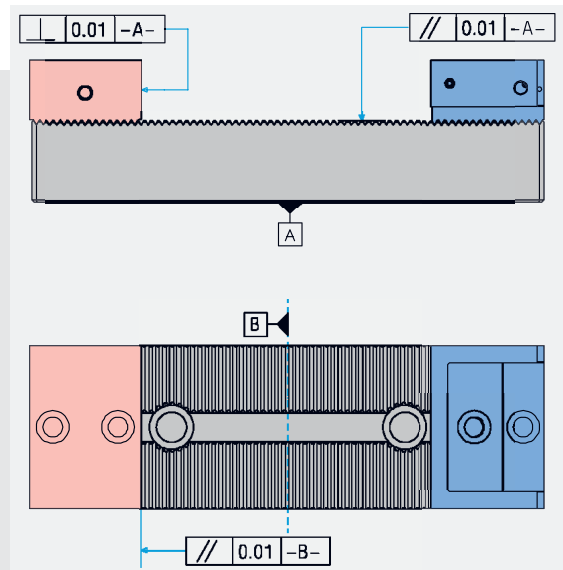
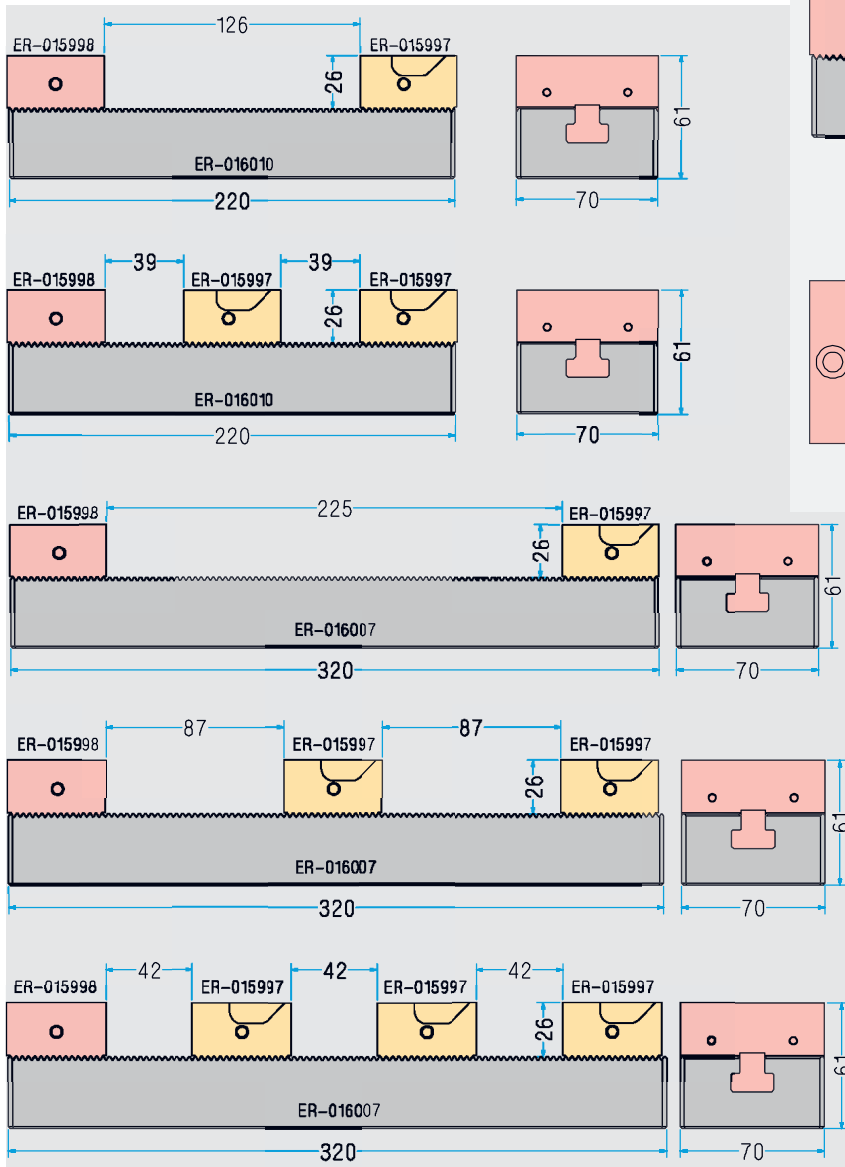
## Application ClampSet Standard block

ER-015997	ClampSet Standard block
ER-015998	ClampSet Block F
ER-016010	ClampSet Base 220
ER-016007	ClampSet Base 320

ClampSet Standardblock Number of ball-pressure bolts	Clamping power in kg $\pm 10\%$ at a torque of		
	5 Nm	10 Nm	15 Nm
2	900	1750	2500
4	1450	2750	3900

For the sake of clamping precision and safety, it is very important to tighten the bolts with a torque wrench.

Data given are guiding values, which may be impaired by dirt and other environmental influences.



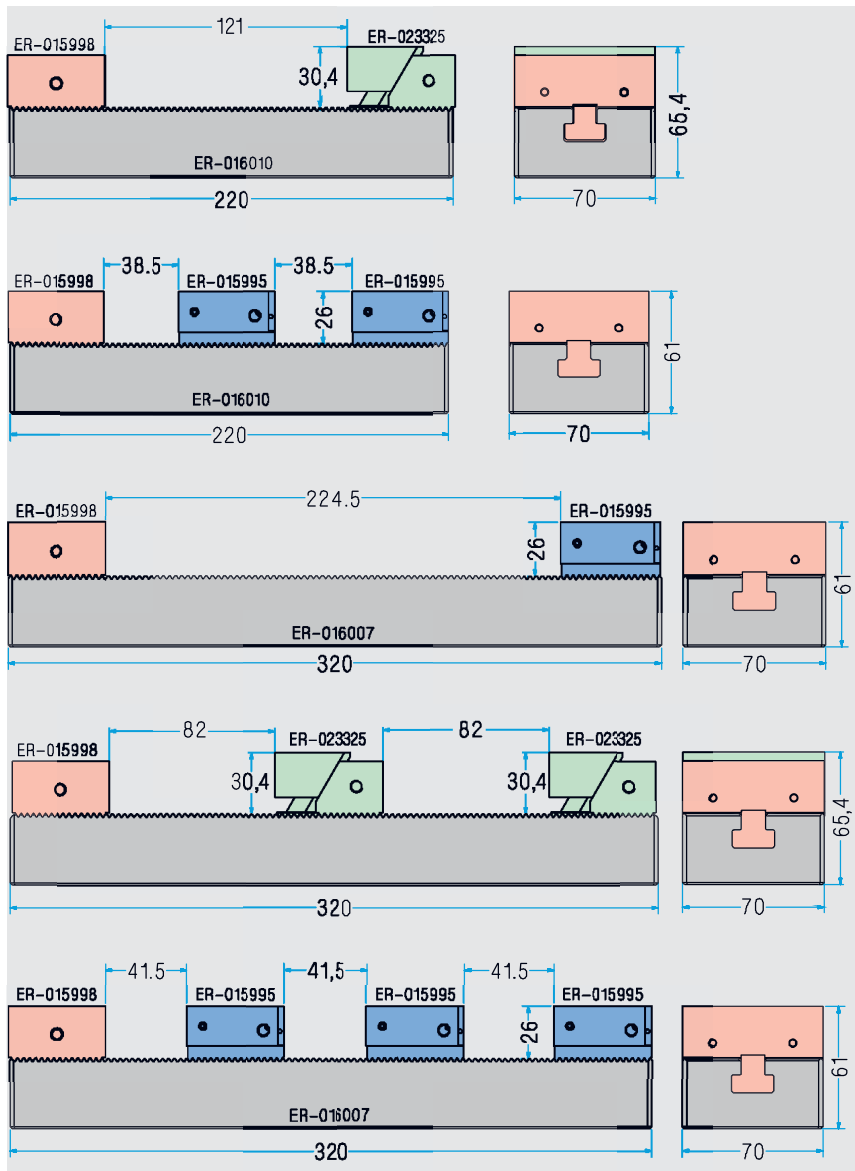
Position tolerances

**Application ClampSet Slide / Jaw**

ER-015995	ClampSet Slide
ER-023325	ClampSet Jaw
ER-015998	ClampSet Block F
ER-016010	ClampSet Base 220
ER-016007	ClampSet Base 320

Clamping power in kg ±10%  
at a torque of  
5 Nm 10 Nm 15 Nm 20 Nm

ClampSet Slide	250	500	750	1000
ClampSet Jaw	300	600	900	1200



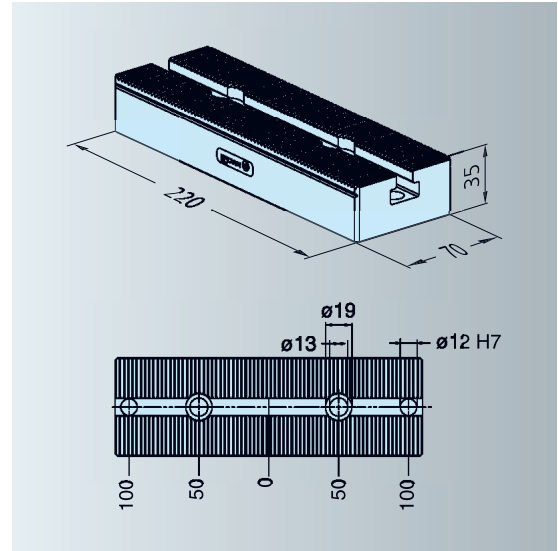


# EROWA ClampSet Base

## ER-016010 ClampSet base 220



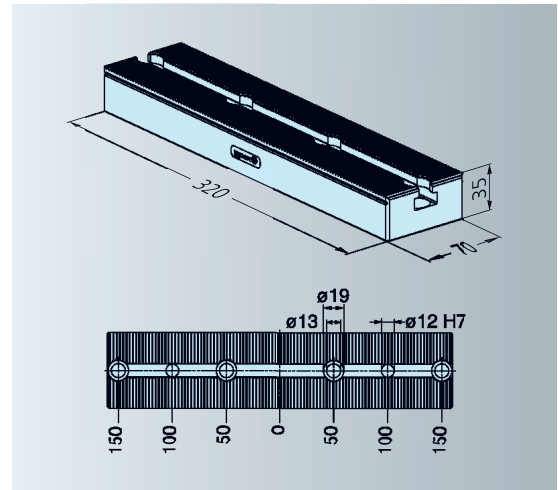
Version	Steel, hardened, ground. Clamping element carrier with 3 mm positioning grid.
Application	On ITS pallets 148 with 25 mm grid and on UPC pallets with 50 mm grid, as a base for the various ClampSet clamping jaws.
Mounting	On all EROWA grid pallets.
Note	R40 subject to consultation.



## ER-016007 ClampSet base 320



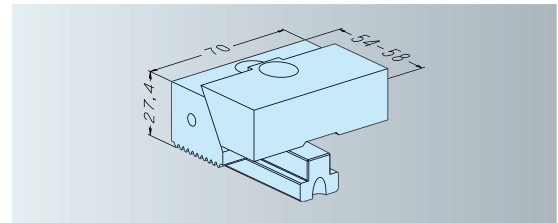
Version	Steel, hardened, ground. Clamping element carrier with 3 mm positioning grid.
Application	On UPC grid pallets R50 or Cube R50, as a base for the various ClampSet clamping jaws.
Mounting	On EROWA UPC and MTS grid pallets R50 or Cube R50.
Note	R40 subject to consultation.



## ER-023325 ClampSet Jaw



Version	Steel, hardened, including tenon block for attachment.
Application	To clamp workpieces with machined surfaces.
Mounting	On ClampSet Base 320 or 220 with tenon block supplied.
Note	Favorably priced alternative to the Clamp Set Slide. The fixed stop side enables multiple fixtures.





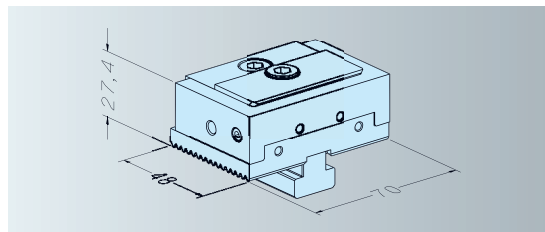
# EROWA ClampSet

## Clamping elements

### ER-015995 ClampSet Slide



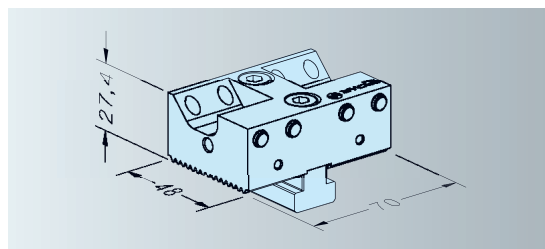
Version	Steel, hardened, incl. T-nut for fixation.
Application	To clamp workpieces with machined sides.
Mounting	On ClampSet Base 320 or 220 with the T-nut supplied.
Note	Fixed stop side for the multiple fixture of machined workpieces. The precision clamping jaw in the ClampSet system.



### ER-015997 ClampSet standard block M8



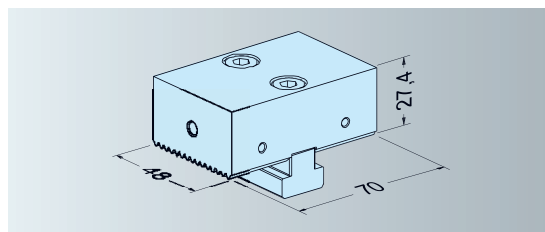
Version	Steel, hardened, incl. T-nut for attachment.
Application	The blanks are clamped with the M8 stud bolts. A clamping jaw in EROWA's modular vise system.
Mounting	On ClampSet Base 320 or 220 with the T-nut supplied.
Note	The fixed stop side allows for multiple fixtures.



### ER-015998 ClampSet block F



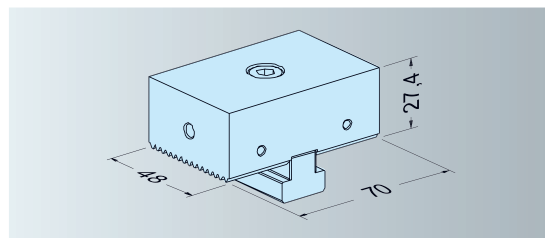
Version	Steel, hardened, incl. T-nut for attachment.
Application	Hard jaw in EROWA's modular vise system.
Mounting	On ClampSet 320 or 220 with the T-nut supplied.



### ER-015999 ClampSet block S steel soft



Version	Steel, soft, incl. T-nut for attachment.
Application	The soft block serves to produce a workpiece-specific hard jaw.
Mounting	On ClampSet 320 or 220 with the T-nut supplied.



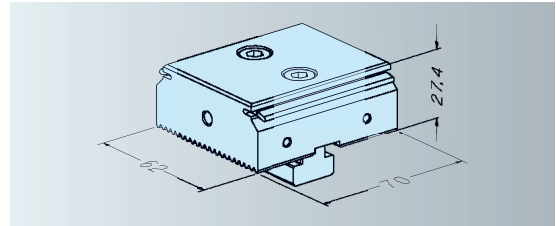
# EROWA ClampSet

## Clamping elements

### ER-015996 ClampSet block N pull-down jaw



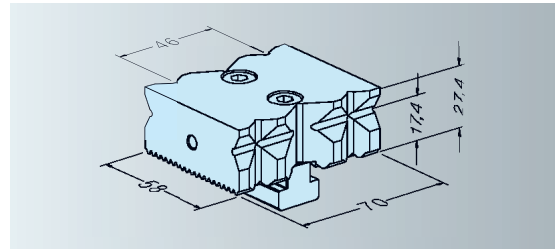
Version	Steel, hardened, incl. T-nut for attachment.
Application	To clamp blanks. Hard jaw in EROWA's modular vise system.
Mounting	On ClampSet 320 or 220 with the T-nut supplied.
Note	Pull-down function when clamping.



### ER-016001 ClampSet block Prisma



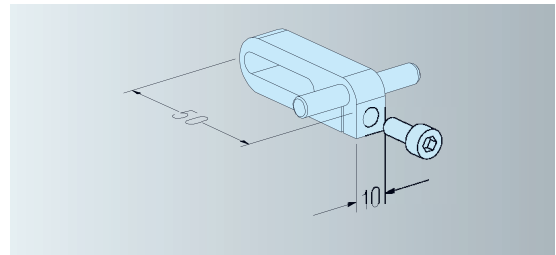
Version	Steel, hardened, incl. T-nut for attachment.
Application	To clamp round parts. Hard jaw in EROWA's modular vise system.
Mounting	On ClampSet 320 or 220 with the T-nut supplied.



### ER-015870 ClampSet Stop adjustable stop



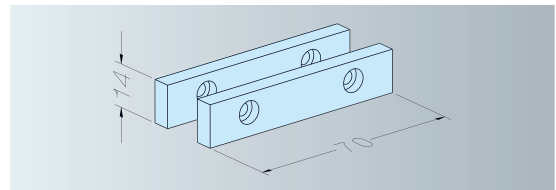
Version	Adjustable stop, steel.
Application	Lateral stop for every ClampSet element.
Mounting	Laterally to the relevant ClampSet block with the bolts supplied.



### ER-016275 ClampSet support kit 14mm

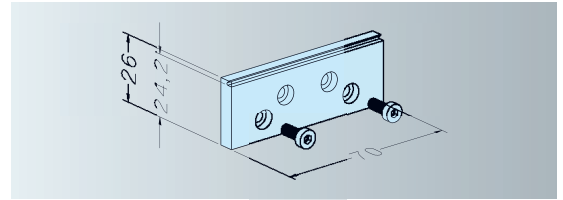


Version	Ground support (1 pair), 14 mm high, with four bolts.
Application	Support for the height positioning of workpieces.
Mounting	To the ClampSet Standard Block with the bolts supplied.

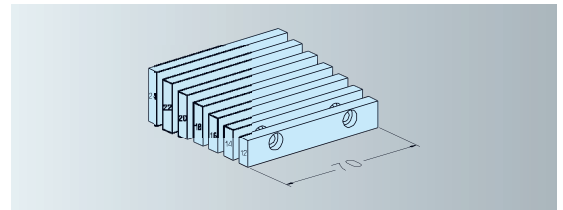


**ER-015880 ClampSet Support N**  
1 pair

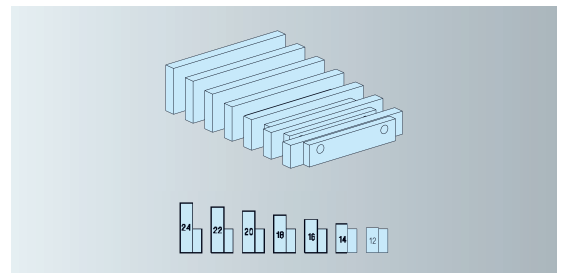
Version	Steel, hardened, ground, with bolts.
Application	Pull-down element for ClampSet Slide and ClampSet Block. To clamp workpieces of aluminum and non-ferrous heavy metal.
Mounting	To ClampSet Slide and ClampSet Block with the bolts supplied.
Note	Also suitable for clamping workpieces of low height.

**ER-015888 ClampSet Support Kit**  
7 parts, ground supports

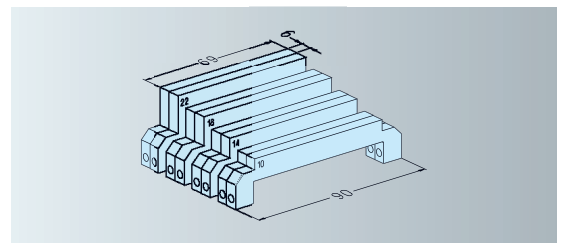
Version	Set of 7 ground supports; 12, 14, 16, 18, 20, 22 and 24 mm high; with bolts.
Application	Supports for the height positioning of workpieces.
Mounting	To the various ClampSet Blocks with the bolts supplied.

**ER-016274 ClampSet support kit**  
7 parts, stepped

Version	Set of 7 ground, offset supports, with bolts.
Application	Supports for the height positioning of workpieces.
Mounting	To ClampSet Slide with the bolts supplied.

**ER-024681 ClampSet support kit**  
ground supports

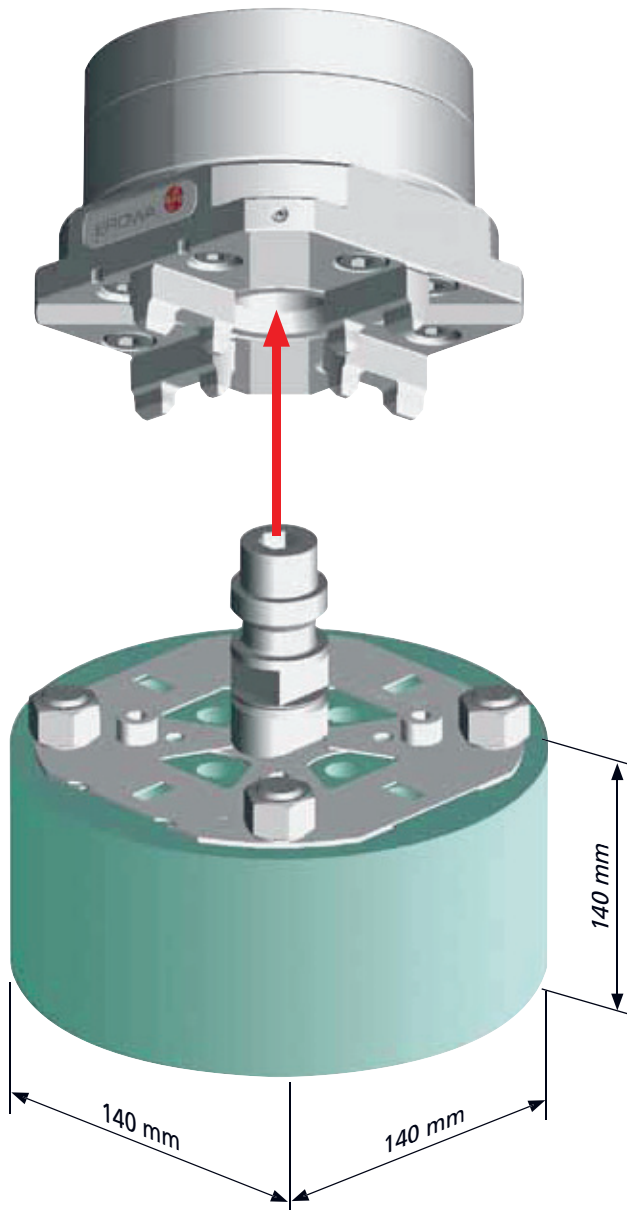
Version	Set of 8 ground supports, heights 10, 14, 18 and 22 mm.
Application	Support for the height positioning of workpieces.
Mounting	The supports are clamped on the base from above.



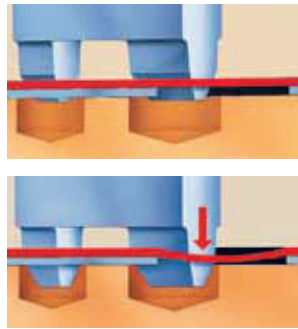
## EROWA ITS chuck

## Simple, practical, good

**EROWA's ITS chuck operates on a principle that is as simple as it is ingenious. It holds both tools and workpieces with equal precision and with a high degree of repeatability. Its applications are so numerous that it forms the basis for a well thought-out modular tooling system.**



- Tens of thousands of ITS chucks are in daily operation worldwide - with their guaranteed 2- $\mu$ m accuracy and with a reliability they have earned for themselves in practical working application.
- Integrated on milling, grinding and drilling machines, on EDM sinking and WEDM centers or on measuring and presetting stations, ITS helps us week after week to achieve a profitable use of production time.



The two pictures illustrate the ITS patent. After a rough pre-centering process, the reference position is only reached when the centering plate is flexed. Together with the contact points, this flexing action creates the stability of the frictional connection. This is how positioning accuracy is created between the flexible centering plate and the rigid centering prisms.

**ITS The  riginal.**

Nothing is copied as fast as a pioneering invention. But then a copy always lags behind the times. It won't be different with the next innovative idea. We will ensure that you continue to do well if you invest your money in originals. In originals by EROWA.

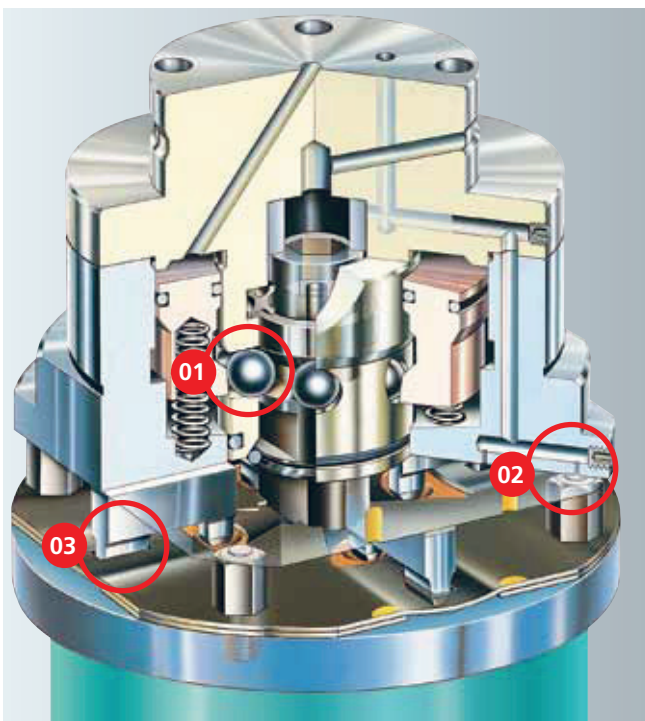
## Applications



## Handling

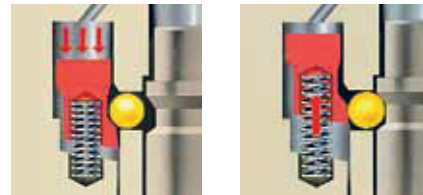
Manual / Loading facility / Robot

## Function



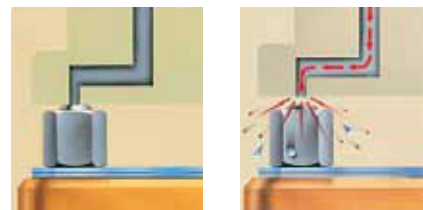
### 03 | Precision

The second important effect: the flexing plate wipes off any dirt. Centering plate and prism only touch on one line. A small contact area also reduces the possibility of interference by chips and dirt particles.



### 01 | Ball lock

The reliable clamping mechanism with the self-locking ball lock generates a clamping power of up to 7,000 N (NSF) and does not unlock even if the pressure fails.



### 02 | Cleaning

Experience shows that precision and dirt do not go hand in hand. This is why the contact points of the support feet are cleaned with compressed air at the very moment of clamping. This also functions when the chuck is submerged in liquid.

## Technical data - ITS chuck

	ITS chuck, pneumatic
System sizes	50 and 100
Repeatability	0.002 mm
Indexing	4 x 90°
Clamping power	2,500 N - 7,000 N
Recommended workpiece sizes	up to 140 x 140 x 140 mm
Generated by	springs (+ 6 bar NSF chucks)
Opening	compressed air min. 6 bar
Operation	control unit or air jet

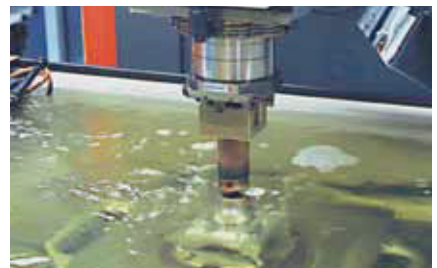
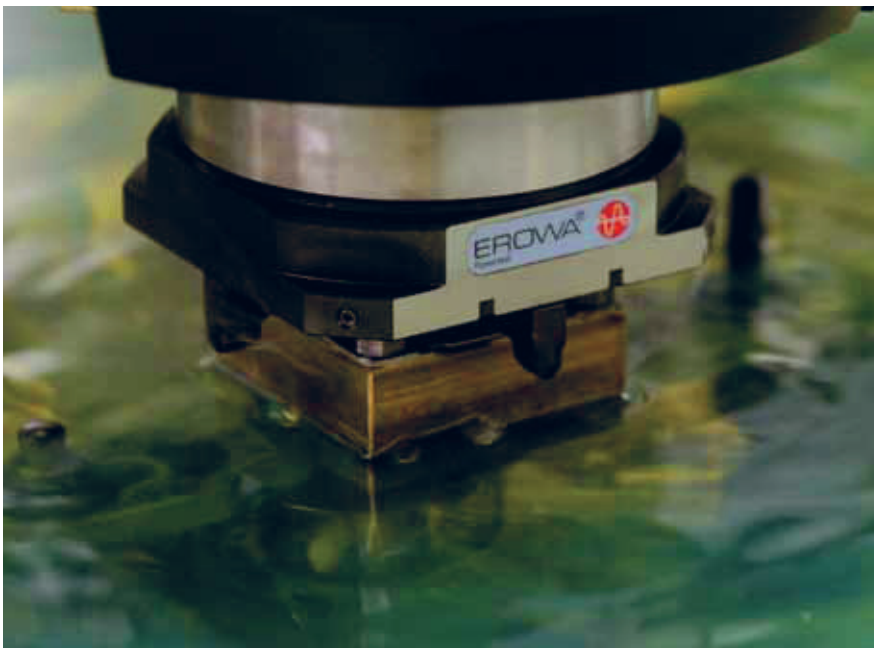
## EROWA ITS chuck in action

# A suitable version for each job

The applications of ITS chucks are as numerous as the jobs to be done in precision mechanics and in tool and mold manufacturing. This is why we offer such a diverse variety of chucks.

### SAVE TIME

Machine changes and in-process-control without loss of time thanks to fixed reference position.



Precision and reliability in the tank and on the quill of the EDM machine.

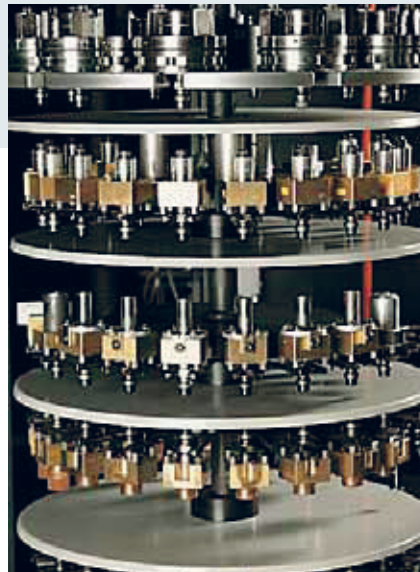


ITS chucks can be used on all machines.





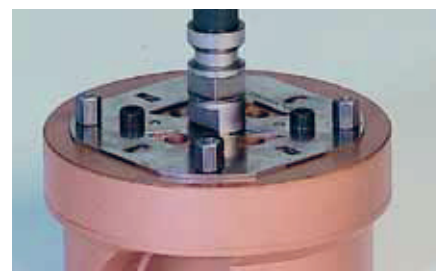
Ideally suitable for milling, drilling, grinding, turning . . .



Exploit marginal and night hours by loading EDM machines automatically: ITS provides you with the necessary prerequisites.



ITS chucks: Perfectly suited for integration in special fixtures.



The centering plate is fitted directly on to the electrode or the workpiece...  
...which is then transferred to the ITS chuck at once!



Checking outside the machine: quick, simple, precise.



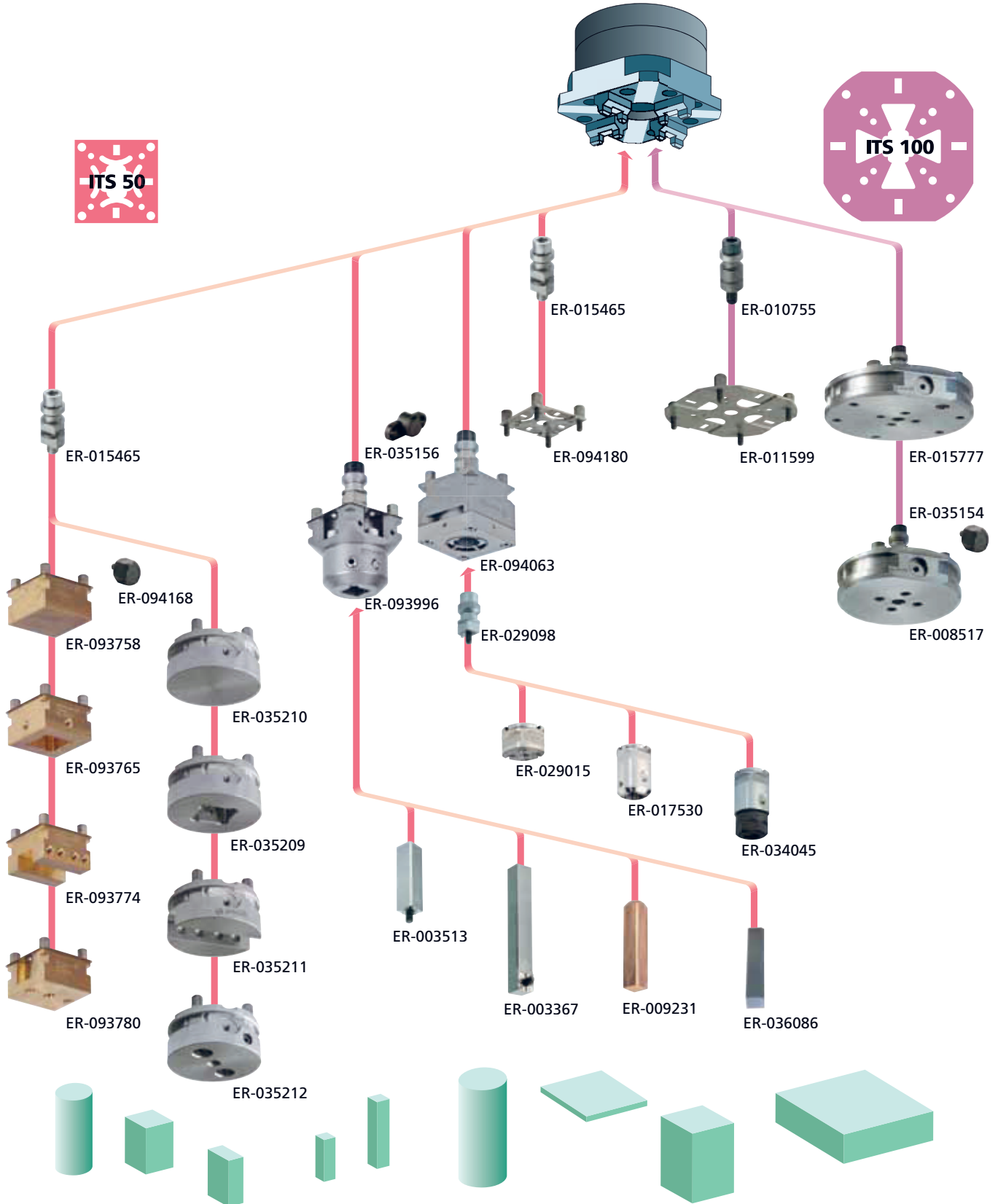
Loading machines with preset parts will increase your capacity.



High degree of safety. The sealing plate of the EROWA ITS 50 holder C and the sealing ring constitute a form-fit seal. This provides the chuck with maximum protection against contamination.


















# Integrated tooling system

## The components





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       |

## EROWA ITS TOOLING SYSTEM

### EROWA ITS chucks

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For chip-removing processes



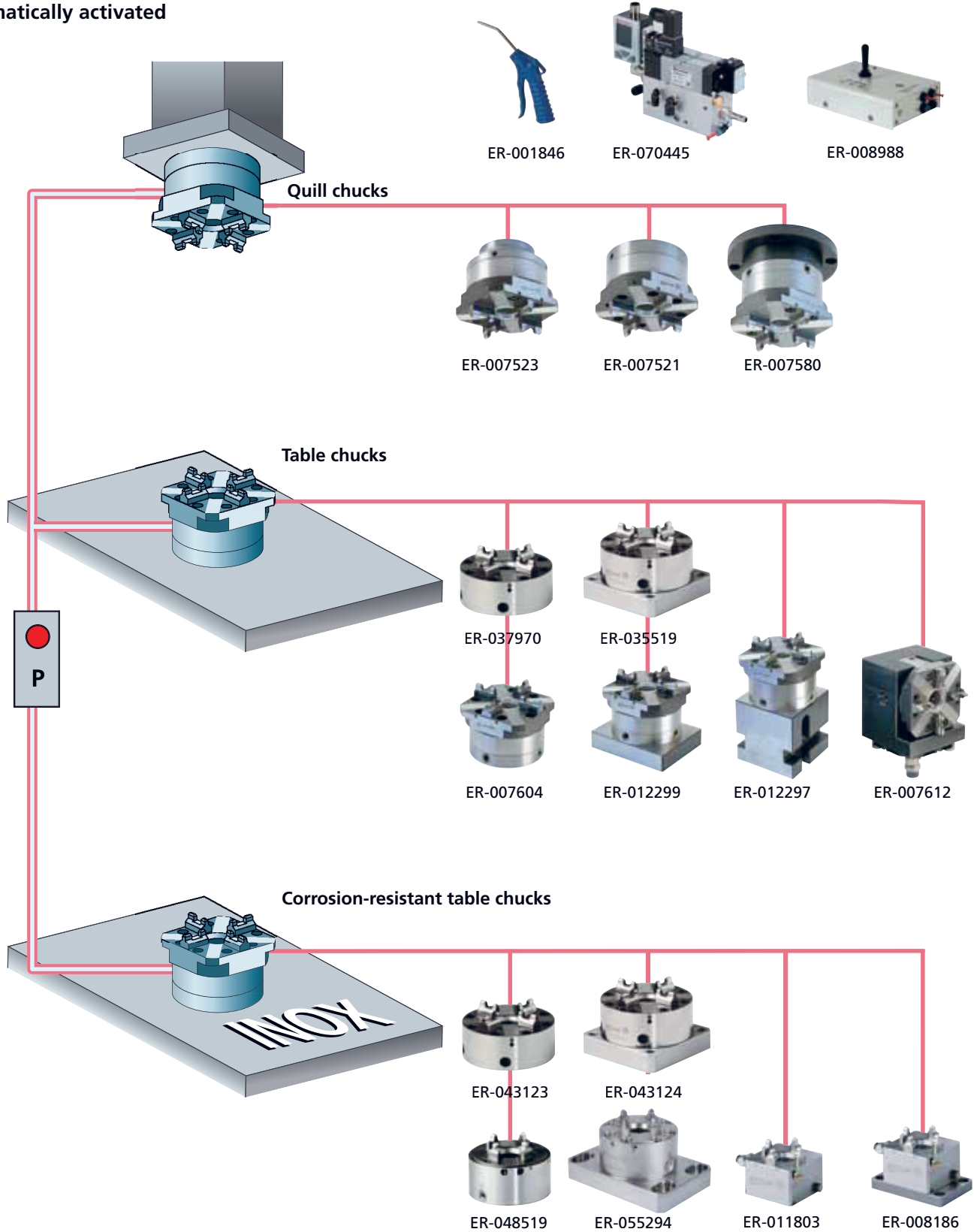
For EDM sinking



For WEDM

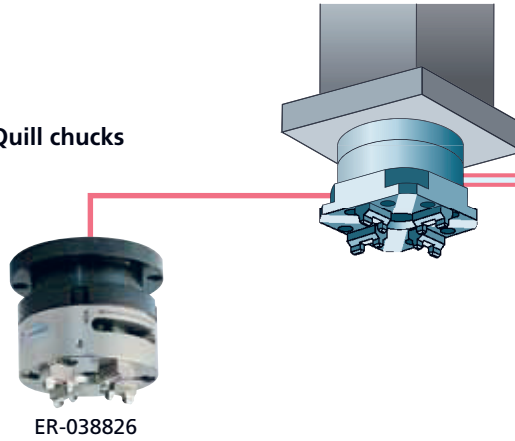
# EROWA ITS chucks

Pneumatically activated



**Mechanically activated**

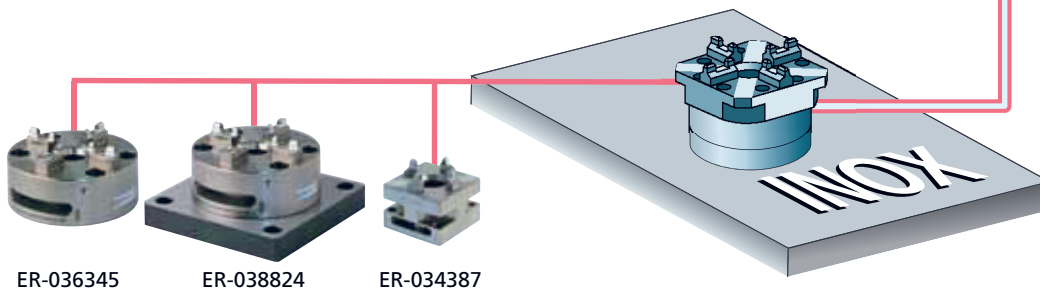
Quill chucks



**ITS - THE ORIGINAL**

Tens of thousands in  
successful operation and  
patented worldwide since  
1984.

Corrosion-resistant table chucks



ITS

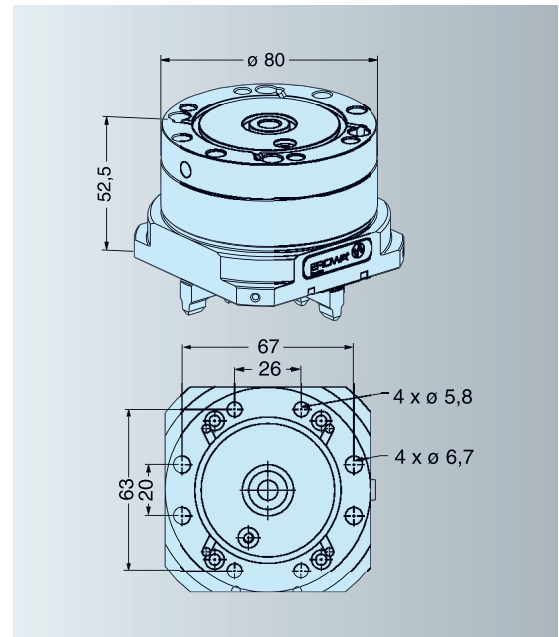
# EROWA ITS chucks pneumatic, quill

Technical data	Chuck	Chuck «NSF» (with reclamping)
Repeatability	0.002 mm	0.002 mm
Indexing	4 x 90°	4 x 90°
Generated by	springs	springs
Opening	min. 6 bar	min. 6 bar
Reclamp		min. 6 bar

## ER-007521 Rapid-action chuck automatic



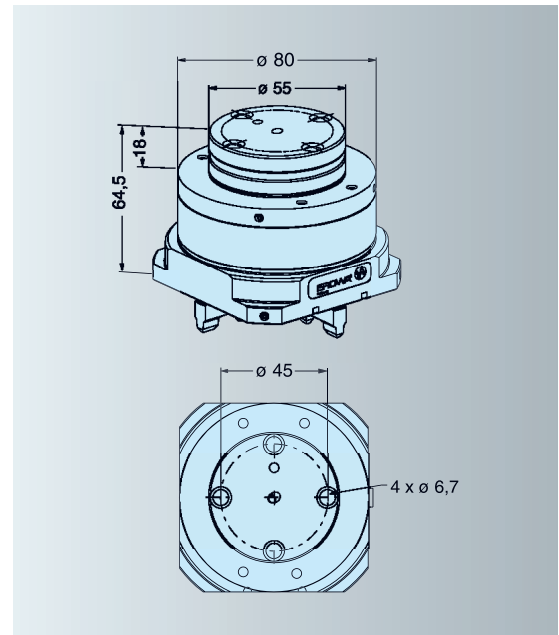
Version Standard type. Clamping power up to 2500 N.  
 Connections On back.  
 Application EDM sinking machines with automatic electrode change, machine tools with automatic loading, production lines.



## ER-007523 Rapid-action chuck automatic with shoulder for flushing



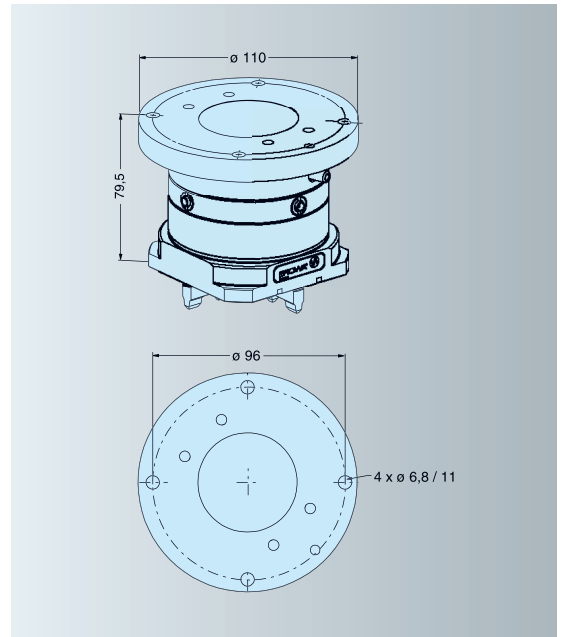
Version Shoulder for flushing connection. Clamping power up to 2500 N.  
 Connections On back.  
 Application EDM sinking machines with automatic electrode change.





**ER-007580 Manual rapid-action chuck**

- Version With flange  $\varnothing$  110 mm. Clamping power up to 2500 N.
- Connections Hose coupling fitting on side.
- Application Retrofitting on EDM sinking machines.



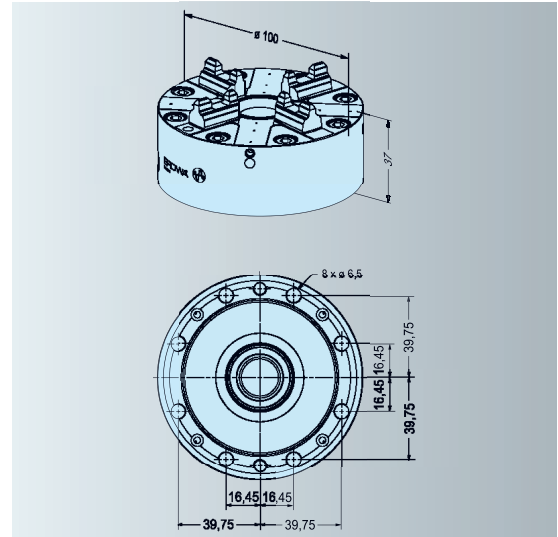
# EROWA ITS chucks

## pneumatic, table, able to automate

### ER-037970 ITS chuck 100 P without base plate



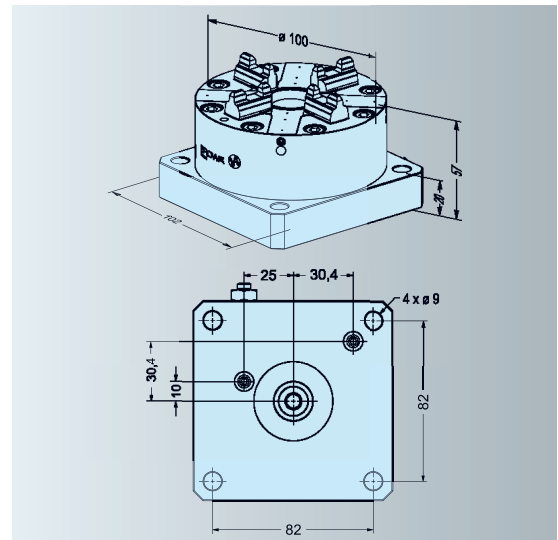
Version	Steel, hardened.
Clamping power	6000 N.
Connections	At the rear, with two lines.
Operation	With control unit.
Application	For receiving pallets $\varnothing 115 / \varnothing 148$ , electrode holders, pallets PM56, PM60 and PM85 Precise.



### ER-035519 ITS chuck 100 P 102 x 102



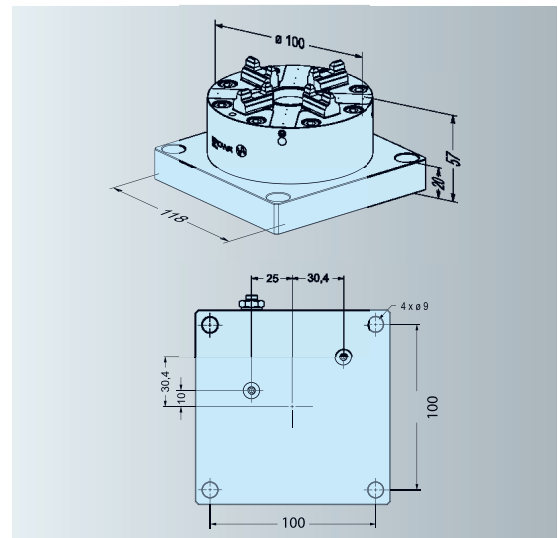
Version	Steel, hardened.
Clamping power	6000 N.
Connections	On the side or at the rear, with two lines.
Operation	With control unit or with air jet.
Application	For receiving pallets $\varnothing 115 / \varnothing 148$ , electrode holders, pallets PM56, PM60 and PM85 Precise.



### 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.



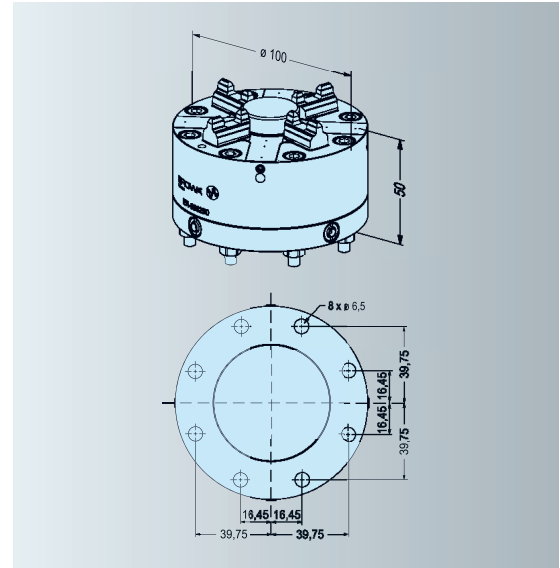
# EROWA ITS chucks

## pneumatic, table, manual

### ER-058250 ITS Chuck 100 P with base plate $\varnothing 100$



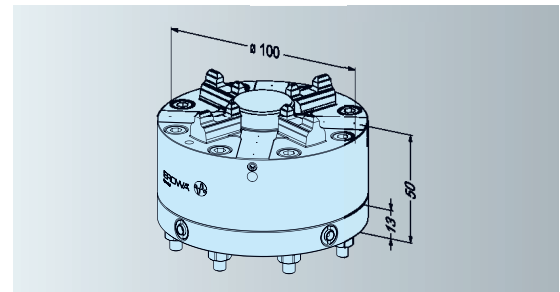
Version	Steel, hardened, with P-profile.
Clamping power	6000 N.
Connections	Air valves, lateral.
Operation	With air jet.
Application	To hold pallet $\varnothing 115 / \varnothing 148$ and pallets PM56, PM60, PM85 Precise.



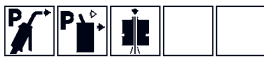
### ER-082885 ITS Chuck 100 P Inox with base plate $\varnothing 100$



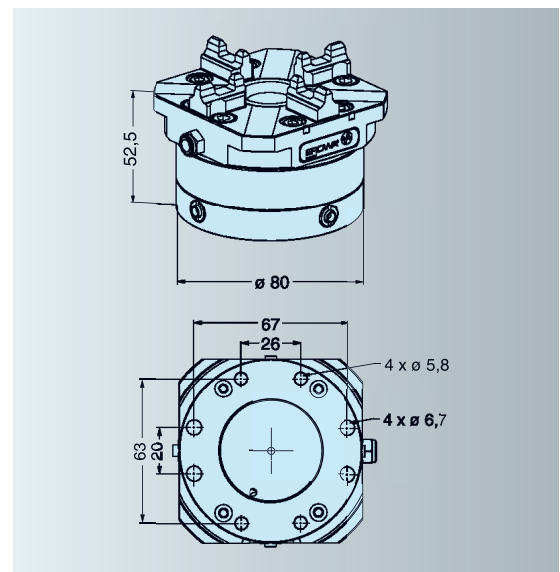
Version	Steel, stainless, hardened, with P-profile.
Clamping power	5000 N.
Connections	Air valves, lateral.
Operation	With air jet.
Application	To hold pallet $\varnothing 115 / \varnothing 148$ and pallets PM56, PM60, PM85 Precise.



### ER-007604 Manual rapid-action chuck NSF



Version	NSF = increased clamping power up to 7000 N.
Connections	Pneumatic valves on side, flushing on back.
Application	Electrode fabrication general.
Note	To clamp pallets of $\varnothing 115 / \varnothing 148$ , $\varnothing 72$ and electrode holder 50. Pallets with P centering system are excluded.



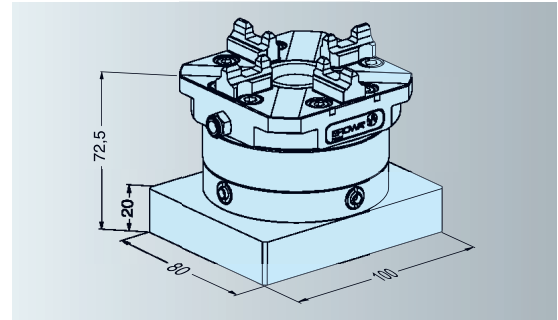
# EROWA ITS chucks

## pneumatic, table, manual

### ER-012299 Rapid-action chuck NSF on plate



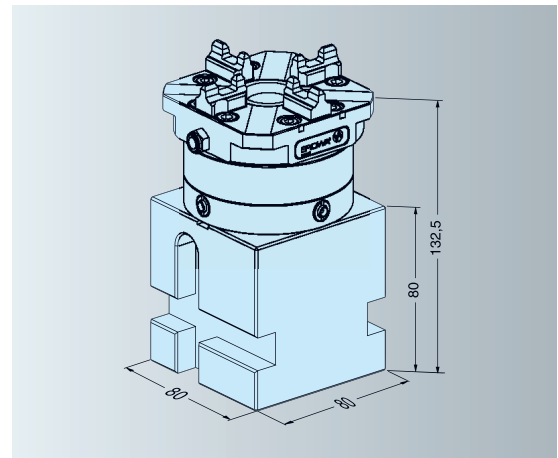
Version NSF = increased clamping power up to 7000 N.  
 Connections Pneumatic valves on side.  
 Application Electrode fabrication, e.g. on magnetic plate.  
 Note To hold pallets  $\varnothing$  115 /  $\varnothing$  148, electrode holders, with the exception of pallets with a P-profile.



### ER-012297 Rapid-action chuck NSF on block



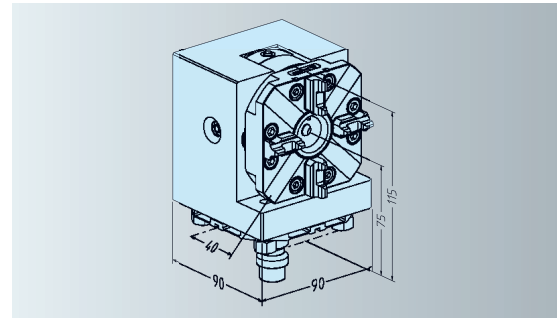
Version NSF = increased clamping power up to 7000 N.  
 Connections Pneumatic valves on side.  
 Application Electrode fabrication. For use in horizontal and vertical positions.  
 Note To hold pallets  $\varnothing$  115 /  $\varnothing$  148, electrode holders, with the exception of pallets with a P-profile.



### ER-007612 Rapid-action chuck NSF on angle plate



Version Standard type on type G angle plate.  
 NFS = increased clamping power up to 7000 N.  
 Connections Pneumatic valves on the side, flushing through chucking spigot.  
 Application To produce electrodes, and on EDM quill.  
 Note To hold pallets  $\varnothing$  115 /  $\varnothing$  148, electrode holders, with the exception of pallets with a P-profile.



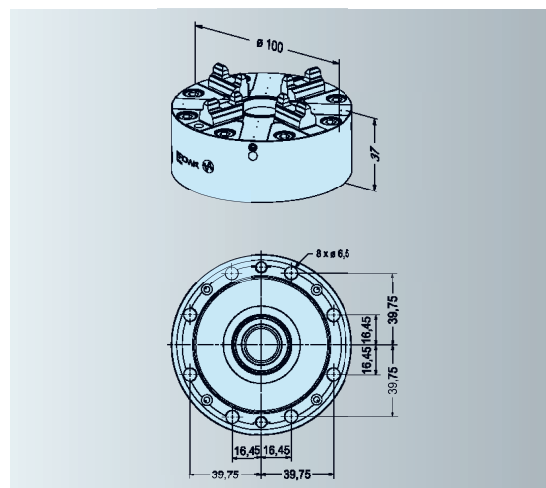
# EROWA ITS chucks

## pneumatic, table, able to automate, INOX

### ER-043123 ITS chuck 100 P Inox without base plate



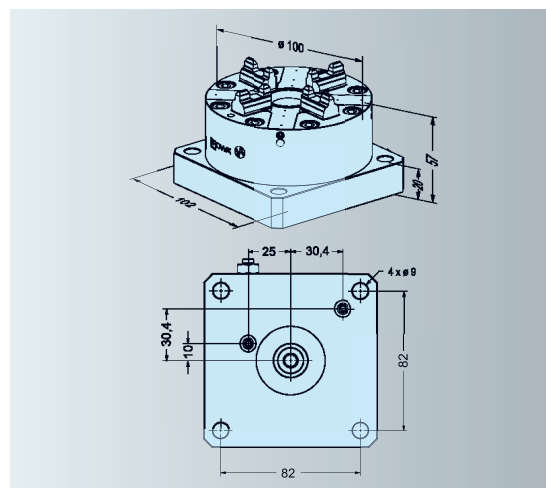
Version	Steel, hardened, INOX.
Clamping power	5000 N.
Connections	At the rear, with two lines.
Operation	With control unit
Note	To hold pallets $\varnothing 115 / \varnothing 148$ , electrode holders and pallets PM56, PM60 and PM85 Precise.



### ER-043124 ITS chuck 100 P Inox 102 x 102



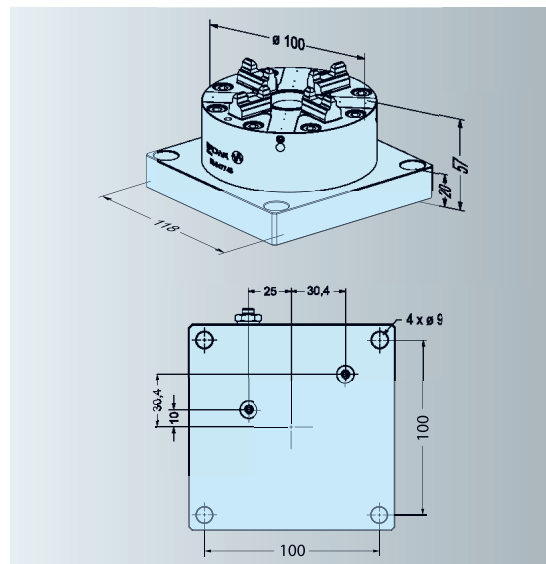
Version	Steel, hardened, INOX.
Clamping power	5000 N.
Connections	On the side or at the rear, with two lines.
Operation	With control unit or with air jet.
Application	To hold pallets $\varnothing 115 / \varnothing 148$ , electrode holders and pallets PM56, PM60 and PM85 Precise.



### ER-047743 ITS chuck 100 P Inox 118 x 118



Version	Steel, hardened, stainless
Clamping power	5,000 N
Connections	Laterally or at the rear, with two lines.
Operation	With control unit or with compressed-air jet.
Application	To hold pallets $\varnothing 115 / \varnothing 148$ , electrode holders and pallets PM56, PM60 and PM85 Precise.

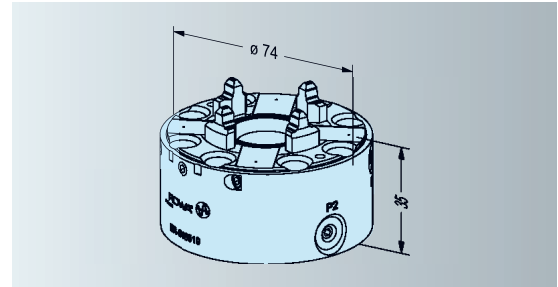


# EROWA ITS chucks pneumatic, table, able to automate, INOX

## ER-048519 ITS chuck 50 Inox



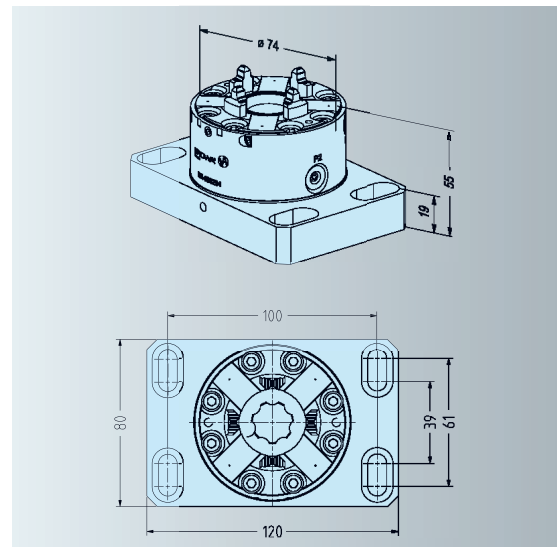
Version	System size 50, corrosion-resistant.
Clamping power	2800 N.
To be fitted	with 8 M5 bolts from the front.
Application	For fixtures produced by users themselves.
Note	Chuck can be operated manually or automatically. Air connections laterally or at the rear.



## ER-055294 ITS Chuck 50 Inox with base plate 80 x 120



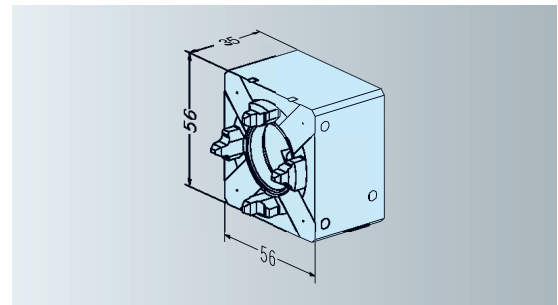
Version	System size 50, corrosion-resistant.
Clamping power	2800 N.
Attachment	With 4xM8 bolts from the front.
Application	On milling and grinding machines and on EDM/WEDM centers.
Note	Chuck can be operated manually or automatically. Pneumatic connections on the side of the chuck.



## ER-011803 Chuck 50 RSA without base plate



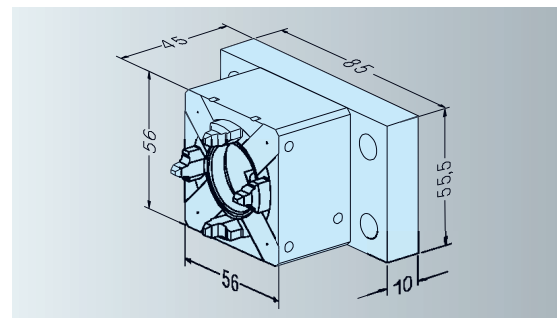
Version	Chuck 50 RSA, automatic with pneumatic valve.
Clamping power	2800 N.
Attachment	With 4 M6 bolts from the rear.
Application	ITS basis for the manual loading of ITS elements or for automatic operation.



## ER-008186 Chuck 50 RSA with base plate 10 x 55.5 x 85



Version	Chuck 50 RSA, automatic, with pneumatic connection.
Clamping power	2800 N.
Application	ITS basis for the manual loading of ITS elements or for automatic operation.





# EROWA ITS chucks

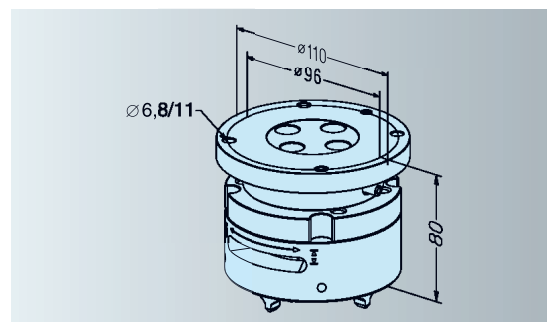
## manual, quill

Technical data	ITS chuck, manual
Repeatability	0.002 mm
Indexing	4 x 90°
Operation/clamping	manually with clamping lever

### ER-038826 QuickChuck 100 P / R



Version	On a $\varnothing$ 110 mm base plate with a rotatable flushing connection.
Attachment	With 4 x M6 bolts.
Application	On EDM centers with quill rotation.
Note	Clamping power: up to 10000 N.

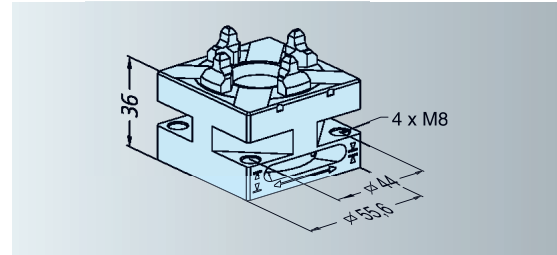


# EROWA ITS chucks manual, table, INOX

## ER-034387 QuickChuck 50



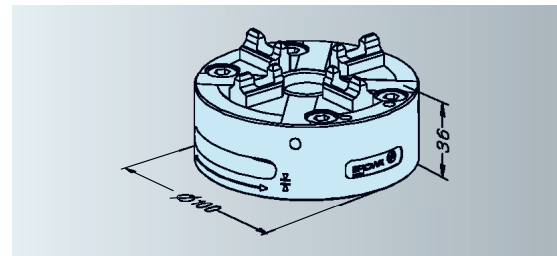
Version	System size 50, manual, corrosion-resistant.
Attachment	4 x M8 from the rear or 4 x M6 stud bolts with nuts.
Application	On EDM/WEDM centers for light milling and grinding work. Max. revolutions on rotating axes 200min <sup>-1</sup>
Note	Clamping power up to 4000 N.



## ER-036345 QuickChuck 100 P



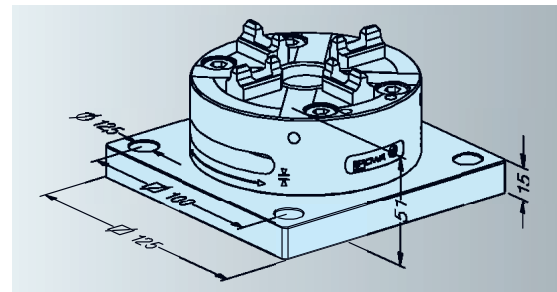
Version	System size 100, manual, corrosion-resistant.
Mounting	With four M8 bolts supplied.
Application	Turning, milling, grinding or EDM/WEDM machines, in dividers and fixtures.
Note	Clamping power up to 10000 Nm. max. 3000 rpm.



## ER-038824 QuickChuck 100 P with base plate



Version	System size 100, manual, corrosion-resistant, with baseplate.
Mounting	With bolts or clamps.
Application	Milling, grinding or EDM machines.
Please note	Clamping power up to 10000 N.



# EROWA ITS chucks

## ITS screw chucks

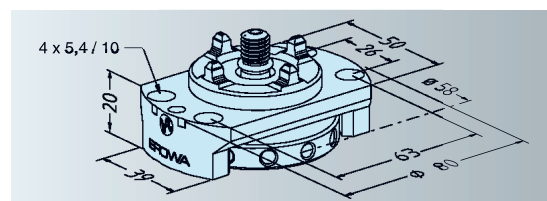
### manual

Technical data	ITS screw chuck, manual
Repeatability	0.002 mm
Indexing	4 x 90°
Operation/clamping	manually with locking bolt

#### ER-007697 Screw chuck 50 D



- Version Only 20 mm overall height. For holders of system size 50.
- Connections Central flushing possible.
- Application Small lathes, on tapers, flanges, jigs and fixtures.



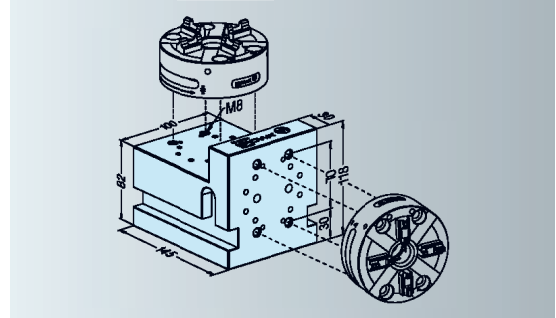
# EROWA ITS chucks

## Accessories

### ER-019424 Universal square block



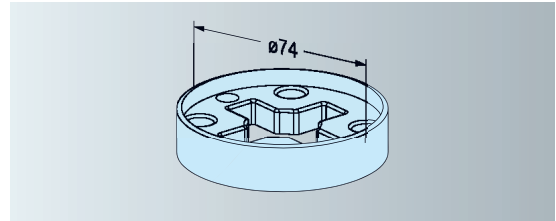
Version	Steel, hardened, corrosion-resistant.
Application	For attaching 1 or 2 chucks in horizontal and/or vertical position. Fits ITS chucks, QuickChuck 50, QuickChuck 100.
Note	Delivery without chucks.



### ER-032832 Sealing ring ITS chuck 50



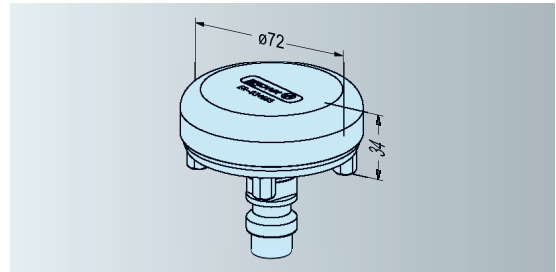
Version	Plastic.
Application	Prevents penetration of chips and dirt into the ITS Chuck 50 by application of EROWA Holders $\varnothing$ 72.



### ER-034665 Cover ITS chuck 50



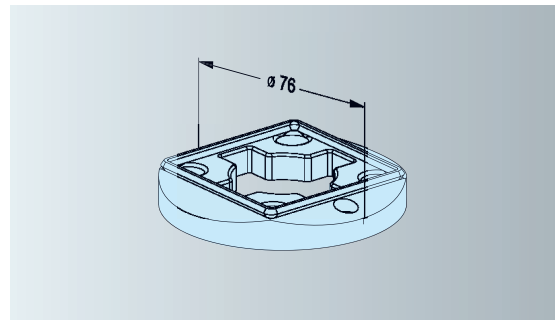
Version	Aluminium anodized. Without centering plate.
Application	Prevents penetration of chips and dirt into the ITS Chuck 50 in combination with the seal ring ER-032832.



### ER-094955 Sealing ring ITS 50 C for chuck 50



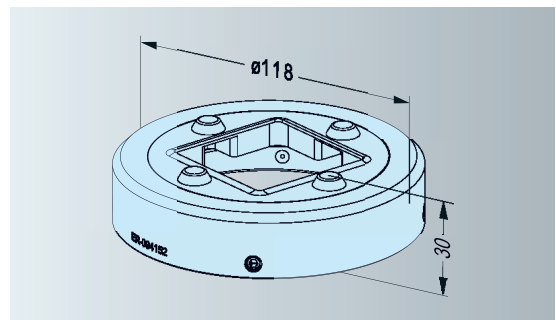
Version	Plastic.
Application	Prevents penetration of chips and dirt into the ITS Chuck 50 with application of EROWA Holders ITS50 C.



### ER-094152 Sealing ring ITS50 C for ITS 100 P manual

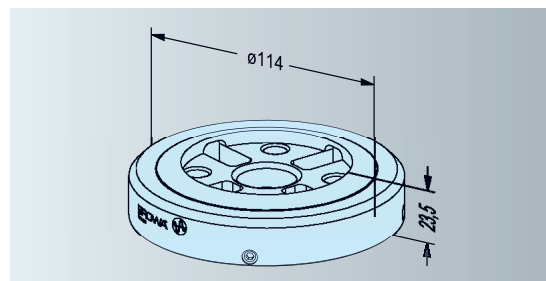


Version	Aluminium anodized.
Application	Prevents penetration of chips and dirt into the QuickChuck 100 P or ITS chuck 100 P by application of EROWA electrode holders C.

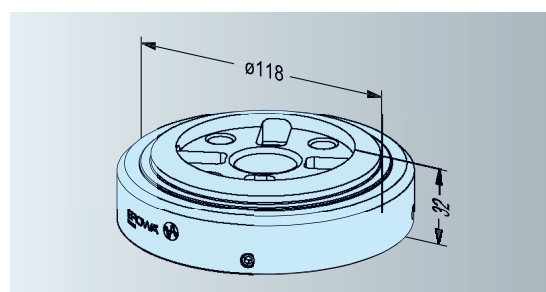


**ER-034735 Seal Rapid Action Chuck /  $\varnothing$  72**

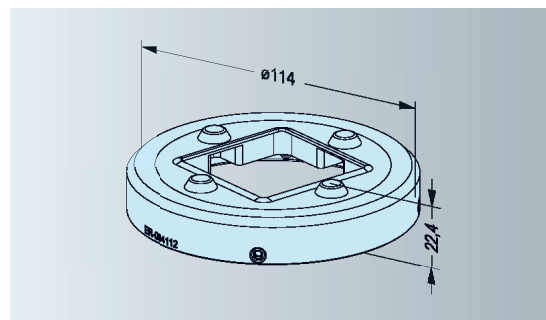
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the rapid action chuck by application of EROWA Holders  $\varnothing$  72.

**ER-035356 Sealing ring QuickChuck 100 P  $\varnothing$  72**

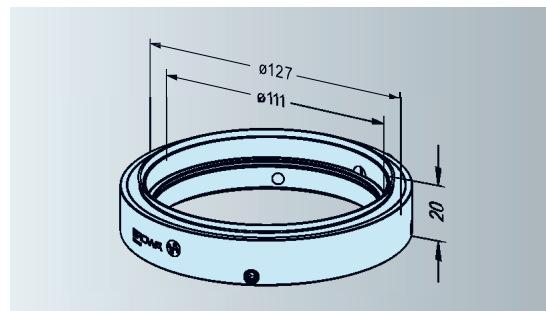
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the QuickChuck 100 P or ITS chuck 100 P by application of EROWA Holders  $\varnothing$  72.

**ER-094112 Sealing ring ITS50 C for SSF manual**

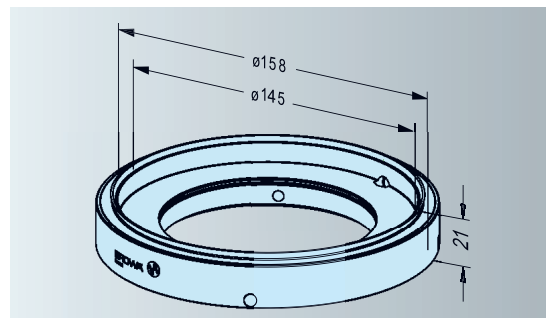
Version Aluminium anodized.  
Application Prevents penetration of chips and dirt into the rapid action chuck during machining of EROWA electrode holders C.

**ER-046046 Chip guard  $\varnothing$  115 to QuickChuck 100 P / ITS Chuck 100 P**

Version Aluminum, for pallets  $\varnothing$  115 mm.  
Application Seals QuickChuck 100 P / ITS Chuck 100 P in use with pallets  $\varnothing$  115 mm against liquid and chips. Can be combined with ER-029313.

**ER-046044 Chip guard  $\varnothing$  148 for QuickChuck 100 P / ITS Chuck 100 P**

Version Aluminum, for pallets  $\varnothing$  148 mm.  
Application Seals QuickChuck 100 P / ITS Chuck 100 P in use with pallets  $\varnothing$  148 mm against liquid and chips. Can be combined with ER-029313.



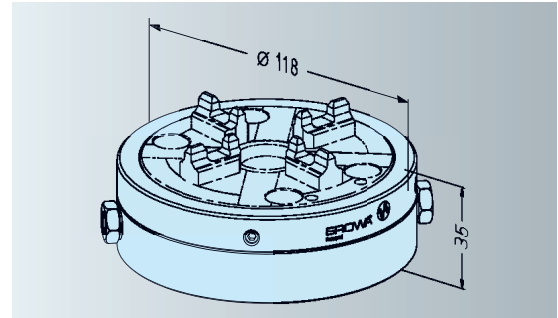
# EROWA ITS chucks

## Accessories

### ER-029313 Chip guard for QuickChuck 100 P



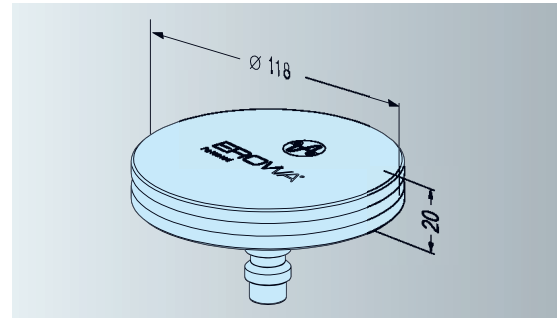
Version Aluminum.  
Application Seals the locking mechanism of the QuickChuck 100 P against the penetration of liquids and chips.



### ER-007618 Cover for rapid-action chuck



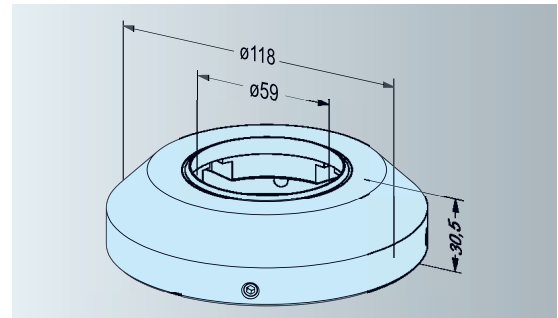
Version Aluminum, without supports and centering plate.  
Application To protect rapid-action chucks against dirt.



### ER-041374 Sealing ring PM56



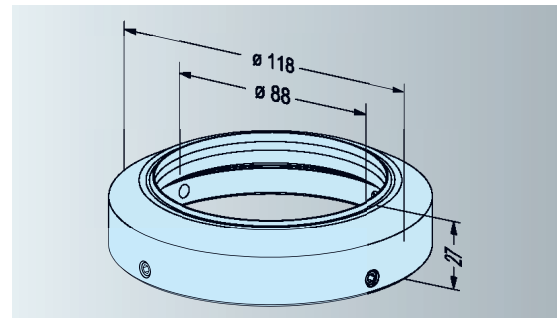
Version Aluminum, for pallets PM56.  
Application Prevents dirt from penetrating into ITS chuck 100 P.



### ER-034677 Sealing ring ITS 100 P / ø 85



Version Aluminum, for pallets PM85.  
Application Prevents dirt from penetrating into ITS chuck 100 P.



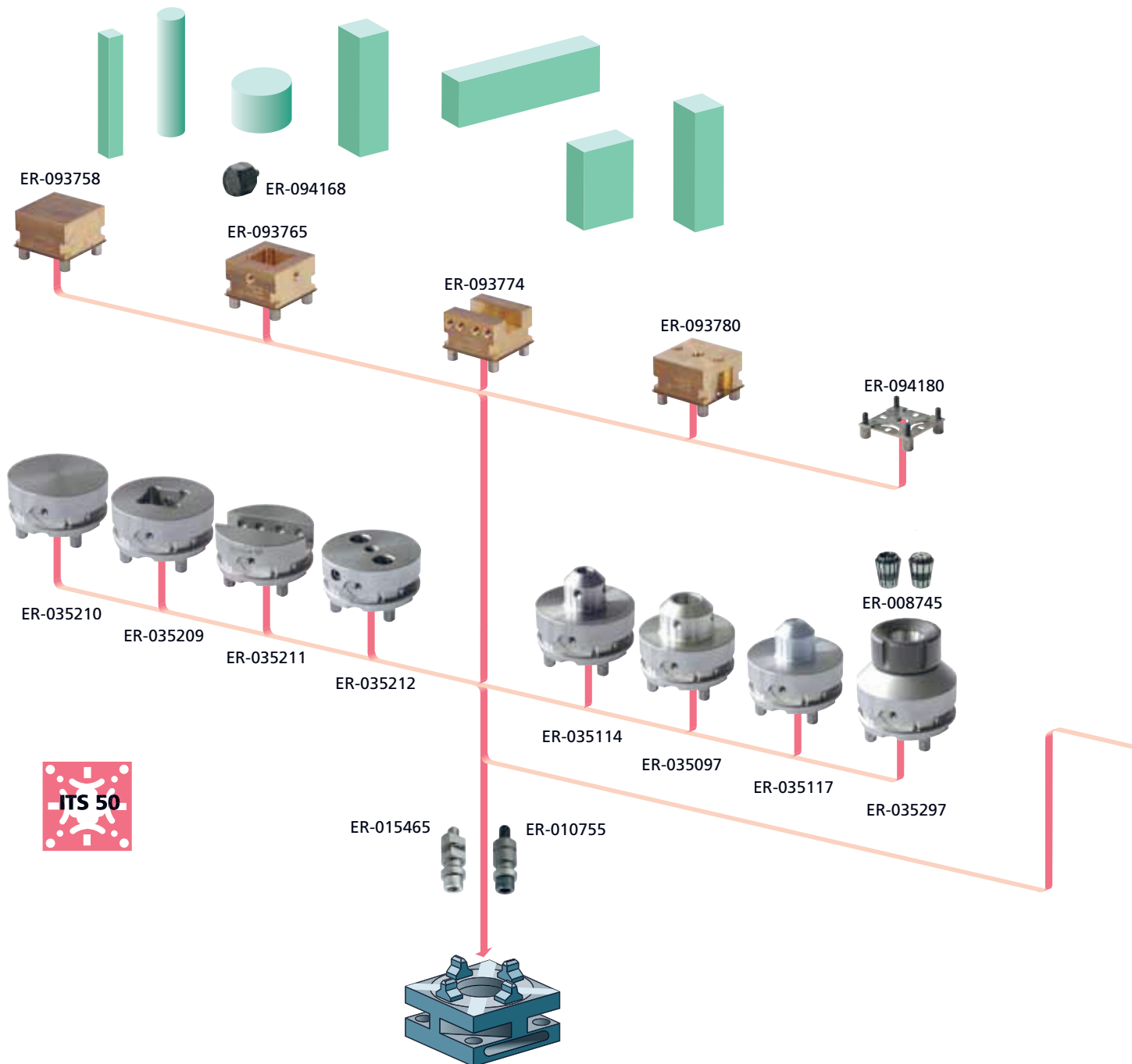


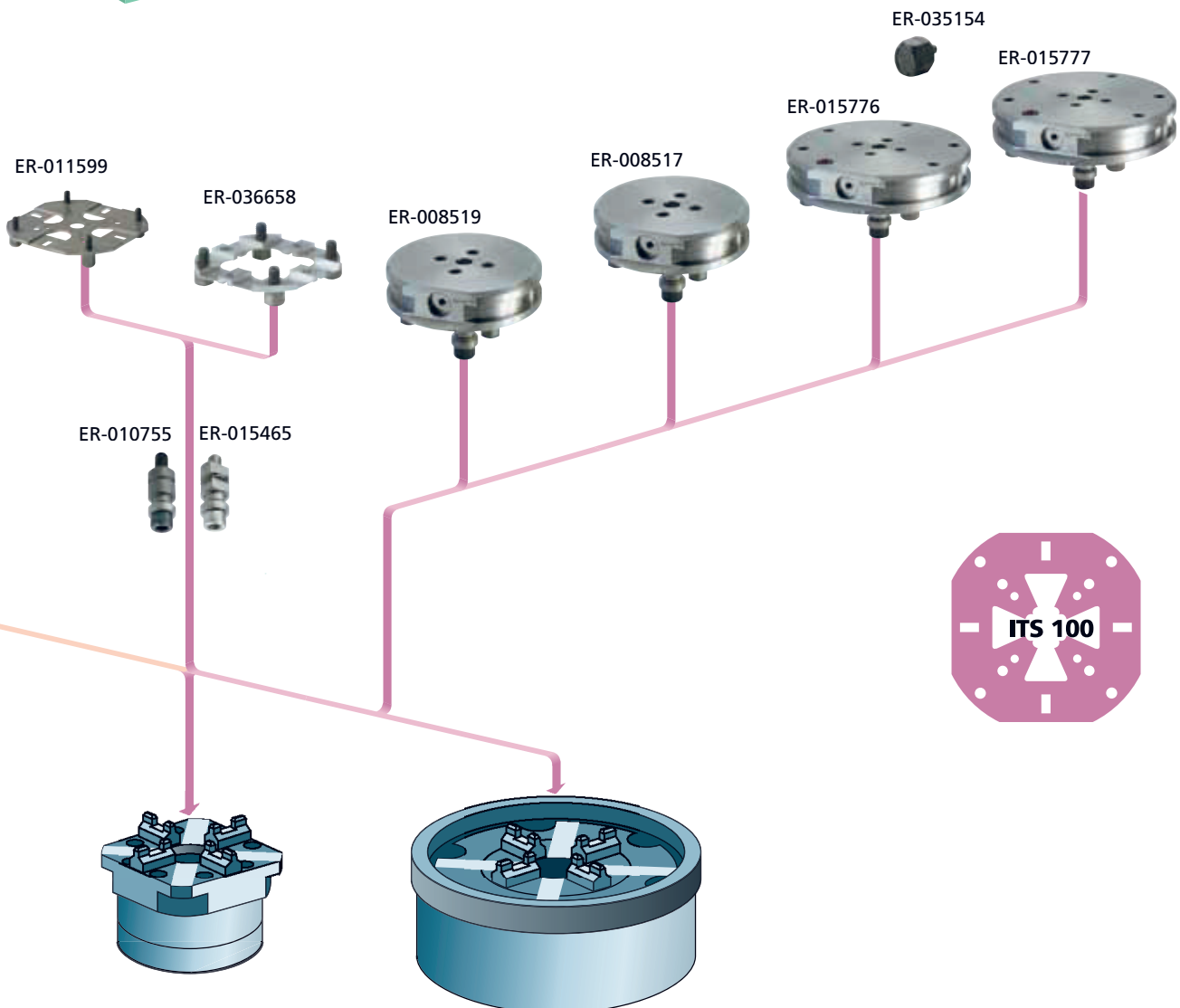
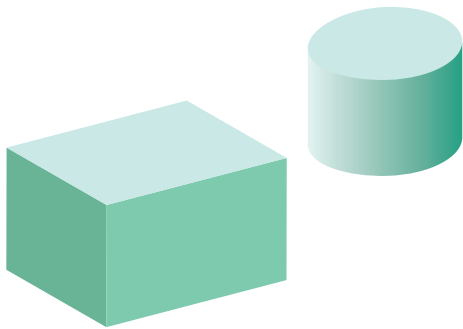


# EROWA ITS System carriers

## The components

Universality starts with the system carrier. Whether you use completely prepared electrode holders, pallets or the very economically priced centering plates, they all depend on the application. However, the workpiece will be ready for universal and flexible use in any case.





ITS

# EROWA ITS System carriers

## ITS centering plates

The centering plates are the most cost-effective base for clamping electrodes. They are mounted directly onto the blanks. This way, jigs and fixtures are also ITS compatible. The hole pattern for mounting is simply drilled into the blank with a drilling template, or by means of an NC program.

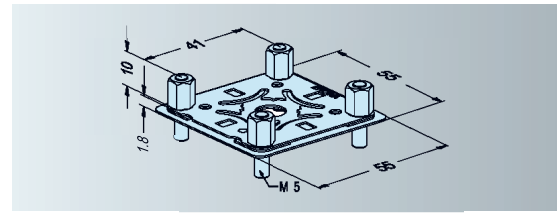
Technical data	ITS centering plates
Material	corrosion-resistant
System accuracy in chuck	0.002 mm
Versions:	
Centering plate 50	small electrode weights
Centering plate 100 M8	workpieces and electrodes
Centering plate G	workpieces, jigs and fixtures for chip-removal machining
Handling	with EROWA Handlingsystems or electrode changer.

**ER-094180** Centering plate 50 C  
50 pieces

**ER-094181** Centering plate 50C  
5 pieces



Version Corrosion-resistant, including sealing plate and 4 supporting feet each.  
Application Small electrode weights.  
Mounting Mounted directly on plane surface of blank.

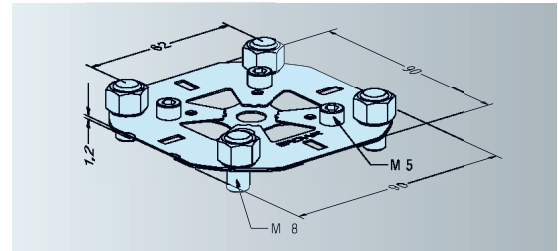


**ER-011599** Centering plate 100 M8  
10 pieces

**ER-050195** Centering plate 100 M8  
1 unit



Version Corrosion-resistant, including 4 supporting feet M8 and 4 x M5 screws per plate.  
Application Workpieces and electrodes.  
Mounting Mounted directly on of blank plane surface of blank.

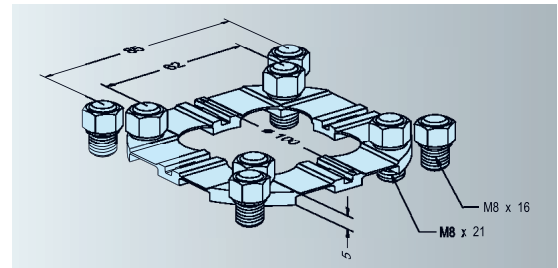


**ER-036658** Centering plate G Inox  
5 pieces

**ER-036657** Centering plate G Inox  
1 unit



Version Ground, including 8 supporting feet M8.  
Application For workpieces, jigs and fixtures in chip-removal machining.  
Fixation of blank According to accompanying fitting instructions.



EROWA ITS System carriers

# ITS standard electrode holders

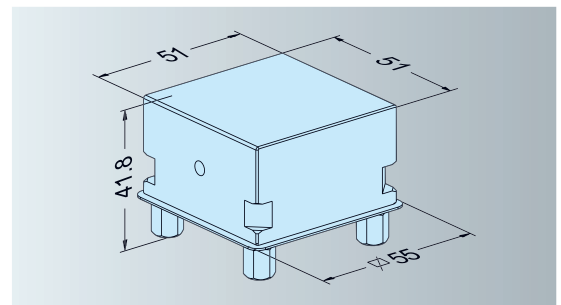
Standard electrode holders are used to contain electrodes for the entire machining cycle and for storage. Their economical unit price enables users to stock such holders in large quantities. The standard holders are supplied without chucking spigots.

Technical data	ITS standard electrode holders
Material	body: brass centering plate: corrosion-resistant
System accuracy in chuck	0.002 mm
Recommended max. weight with electrode	20 kg / 44 lbs
Handling	with EROWA Handlingsystems or electrode changer.

## ER-093758 Uniblack C EWIS™ 12 pieces



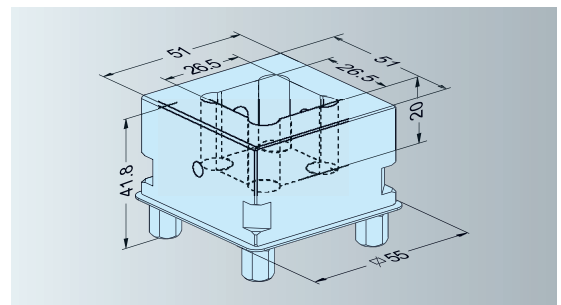
Version	Set of 12 units, fitted without machining of body. With gripper slot and sealing plate.
Application	To mount electrodes and workpieces of various shapes.
Mounting	As required.
Note	Order EWIS™ chip, ER-094168 separately.



## ER-093765 Prisround C EWIS™ 12 pieces



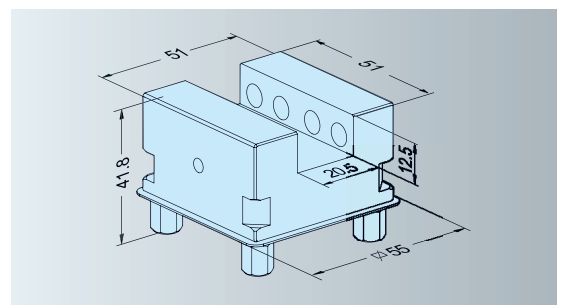
Version	Set of 12 units, with gripper slot and sealing plate. Prepared for receiving the code carrier.
Application	To mount blank parts with shaft size up to 25 mm
Mounting	Fit into recess and tighten bolts. If necessary center part with insert plates ER-010523.
Note	Order EWIS™, ER-094168 separately!



## ER-093774 Uniholder C EWIS™ 12 pieces



Version	Set of 12 units, including 2 setscrews for each unit. With gripper slot and sealing plate.
Application	To mount electrodes and workpieces with a base surface of up to 20 mm.
Mounting	Insert and tighten setscrews. If necessary, center with spacer plate ER-010532.
Note	Order EWIS™ chip, ER-094168 separately!



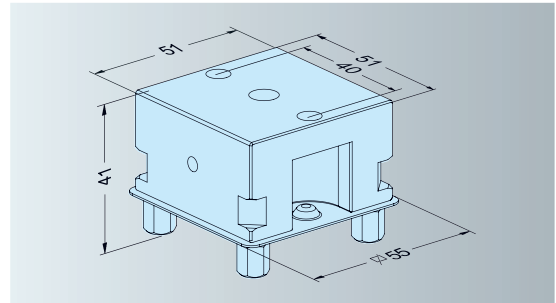
# EROWA ITS System carriers

## ITS standard electrode holders

### ER-093780 Uniplate C EWIS™ 12 pieces



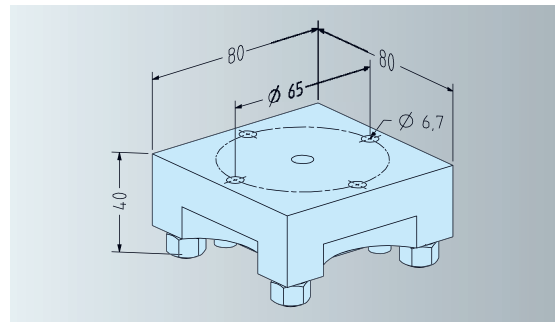
- Version Set of 12 units, surface 51 x 51 mm faced, including 2 x M6 bolts for each unit. With gripper slot and sealing plate.
- Application To mount electrodes and workpieces with a base surface of more than 50 mm.
- To fit blank With 2 x M6 bolts into the base surface.
- Note Order EWIS™ chip, ER-094168 separately.



### ER-010627 Uniplate Alu 80 x 80 4 pieces



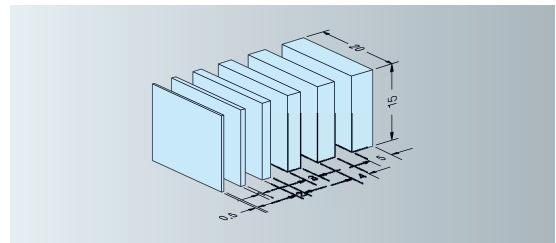
- Version Set of 4 units, aluminum, system size 100, with M8 supports.
- Application To mount electrodes and workpieces with a base surface of more than 70 mm.
- Mounting With 4 x M6 bolts into the base surface.



### ER-010532 Spacer plate 300 pieces

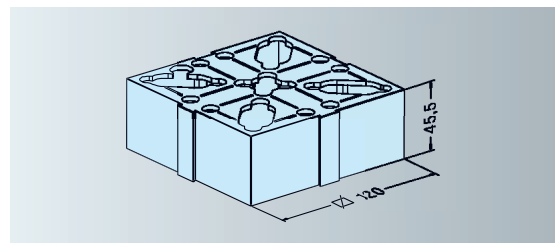


- Version 6 x 50 plates. Corrosion-resistant. Thicknesses from 0.5 mm to 5 mm.
- Application Centering of blanks in electrode holders.



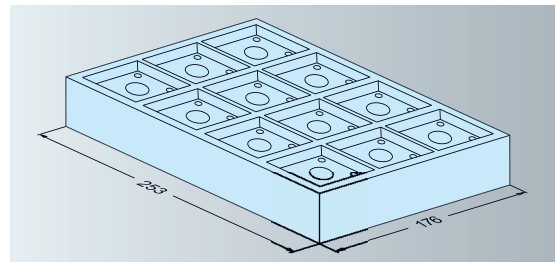
### ER-013913 System stand 10 pieces

- Version Plastic, set of 10.
- Application As a rack for four electrode holders 50 or a pallet  $\varnothing$  115/148 mm.
- Please note System racks can be stuck together without any gaps, e. g. to be stored in drawers.



### ER-011591 System stand 50 12-fold 10 pieces

- Version Set of 10 styrene stands.
- Application Storage and transport of electrode holders system size 50.



## EROWA ITS System carriers

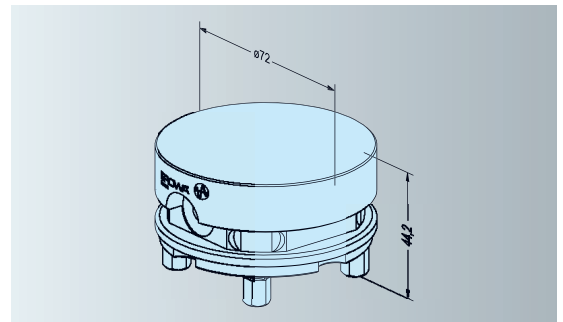
Holder  $\varnothing 72$ 

The EROWA holders  $\varnothing 72$  in combination with covers provides maximum protection against the contamination of table chucks. The holders are the optimal solution for automatic production.

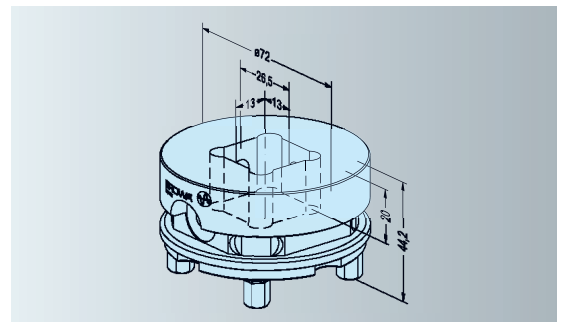
Technical data	EROWA Holder $\varnothing 72$
Material	steel, corrosion-resistant
System accuracy, chuck	0.002 mm
Recommended max. weight with electrode	20 kg / 44 lbs
Handling	with EROWA handling systems or electrode changers.

**ER-035210 Uniblack  $\varnothing 72$**   
**6 pieces**

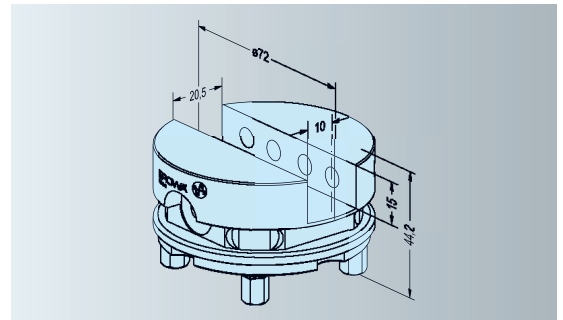

Version	Set of 6 units, system size ITS 50. Without chucking spigots.
Application	To mount electrodes and workpieces of various shapes.
Mounting	Attachment boreholes to be drilled according to requirements.


**ER-035209 Prisround  $\varnothing 72$**   
**6 pieces**


Version	Set of 6 units, system size ITS 50. Without chucking spigots.
Application	To mount electrodes and workpieces with shafts of up to square 25 mm.


**ER-035211 Uniholder  $\varnothing 72$**   
**6 pieces**


Version	Set of 6 units, system size ITS 50. Without chucking spigots.
Application	To mount electrodes and workpieces with shaft of up to 20 mm.



# EROWA ITS System carriers

## Holder $\varnothing 72$

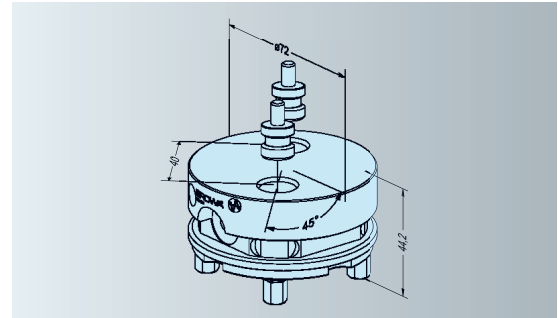
### ER-035212 Uniplate $\varnothing 72$ 6 pieces



Version Set of 6 units, includes 12 PinLock locking pins. System size ITS 50, without chucking spigots.

Application To mount electrodes and workpieces with surface more than square 40 x 40 mm or  $\varnothing 50$  mm.

Mounting With two PinLock locking pins.

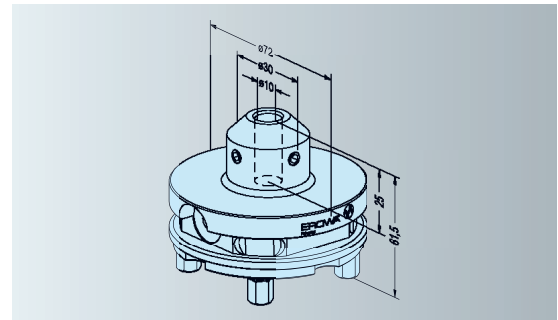


### ER-035114 Blank holder $\varnothing 10 / \varnothing 72$ 6 pieces



Version Set of 6 units, system size ITS 50. Without chucking spigots.

Application To clamp cylindrical parts with  $\varnothing 10$  mm.

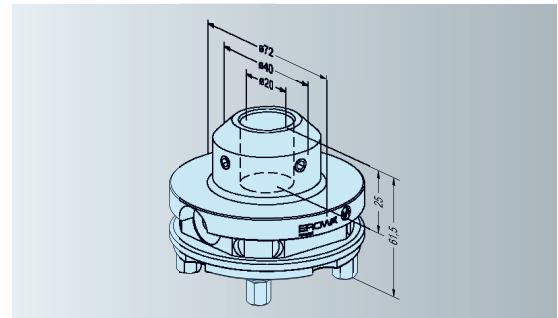


### ER-035097 Blank holder $\varnothing 20 / \varnothing 72$ 6 pieces



Version Set of 6 units, system size ITS 50. Without chucking spigots.

Application To clamp cylindrical parts with  $\varnothing 20$  mm.



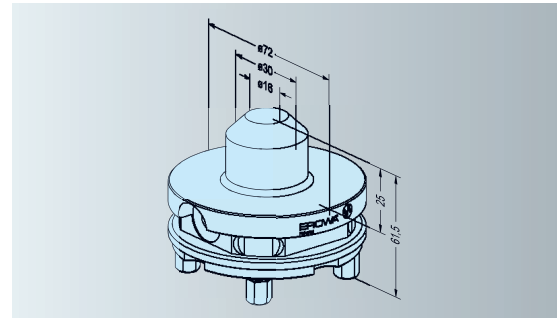
### ER-035117 Blank holder $\varnothing 72$ without borehole 6 pieces



Version Set of 6 units, system size ITS 50. Without chucking spigots.

Application To clamp cylindrical parts.

Mounting Attachment borehole up to max.  $\varnothing 12$  mm to be drilled according to requirements.



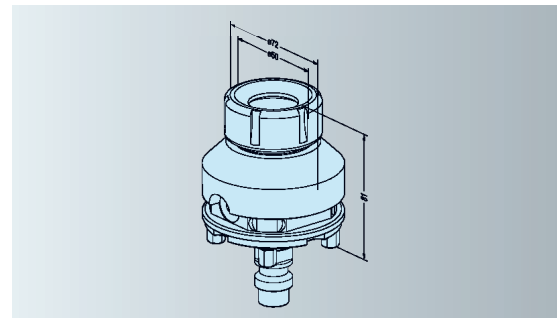
### ER-035297 Collet chuck holder $\varnothing 72$ 1 piece



Version One collet chuck holder with chucking spigot. System size ITS 50.

Application To clamp cylindrical parts. Clamping range  $\varnothing 2$  mm -  $\varnothing 20$  mm.

Please note Order collet chucks type ETS 32 separately.







# EROWA ITS System carriers

## ITS precision pallets

**ITS precision pallets are workpiece and electrode carriers.**  
**The pallets are prepared for automatic handling and to accommodate EWIS chips. Marginal and night hours are thus put to productive use.**

Technical data	ITS precision pallets
Material	corrosion-resistant
System accuracy in chuck	0.002 mm
Run-out	< 0.01 mm
Variants	
Pallets MS	die cut centering plates
Pallets G	ground centering plates
Pallets P	Centering integrated in the pallet
Borehole pattern	standard, can be supplemented
Handling	with EROWA Handlingsystems
Unit supplied	pallet including chucking spigot

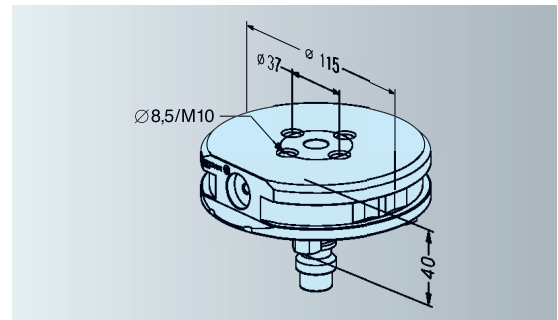
### ER-008519 Pallet $\varnothing$ 115 MS EWIS™

### ER-032730 Pallet kit $\varnothing$ 115 MS

#### 4 pieces



Version Standard type, punched centering plates.  
 Application For electrodes and workpieces in EDM  
 Mounting Through pallet with 4xM8 bolts or through blank with 4xM10 bolts.



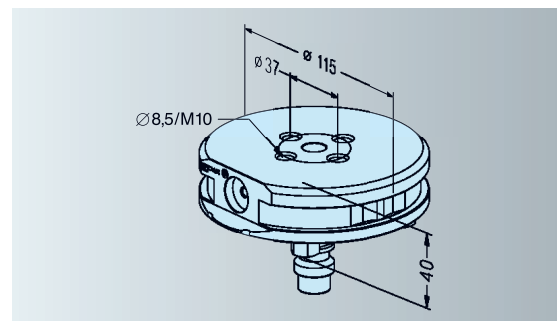
### ER-008517 Pallet G $\varnothing$ 115 EWIS™

### ER-032729 Pallet kit G $\varnothing$ 115

#### 4 pieces



Version Standard type, ground centering plates.  
 Application For electrodes and workpieces in EDM.  
 Mounting Through pallet with 4xM8 bolts or through blank with 4xM10 bolts.



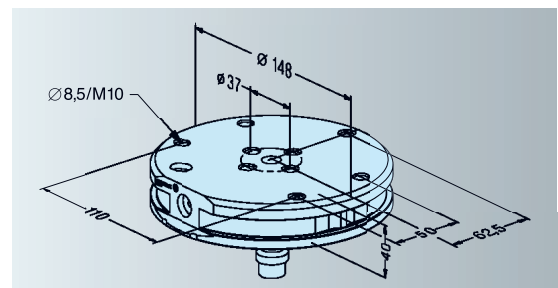
### ER-015776 Pallet $\varnothing$ 148 MS EWIS™

### ER-032731 Pallet kit $\varnothing$ 148 MS

#### 4 pieces

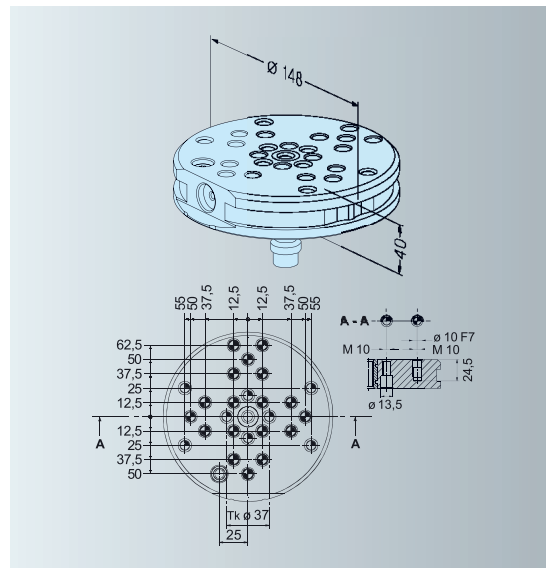


Version Standard type, punched centering plates.  
 Application For electrodes and workpieces, and for the construction of fixtures.  
 Mounting Through pallet with M8 bolts or through blank with M10 bolts.

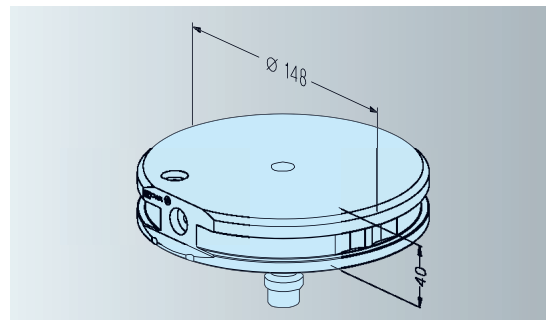


**ER-015042 Pallet  $\varnothing$  148 MS ALU R25****ER-033051 Pallet Kit  $\varnothing$  148 MS ALU R25  
4 pieces**

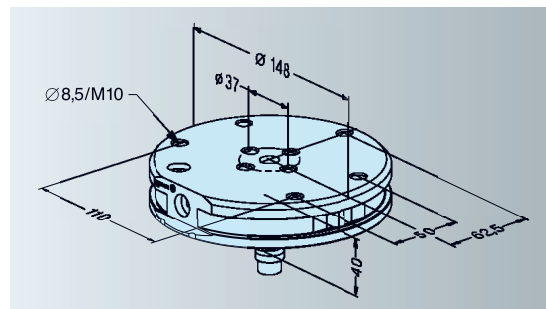
- Version Body of casted aluminum with borehole pattern 25,  $\varnothing$  10 F7, thread M10.
- Application Palletizing of workpieces and electrodes, mounting of fixtures and ClampSet Base 220.
- Mounting Through pallet with M8 bolts or through blank with M10 bolts.

**ER-032699 Pallet  $\varnothing$  148 G****ER-033048 Pallet Kit  $\varnothing$  148 G  
4 pieces**

- Version Without bore holes apart from center borehole and borehole for reference bolt.
- Application For work pieces machined in chip-cutting machining.
- Mounting According to your preference.

**ER-015777 Pallet  $\varnothing$  148 G EWIS™****ER-032732 Pallet kit G  $\varnothing$  148 EWIS™  
4 pieces**

- Version Standard type, ground centering plates.
- Application To accommodate workpieces and fixtures in chip-cutting machining processes.
- Mounting Through pallet with M8 bolts or through blank with M10 bolts.



# EROWA ITS System carriers

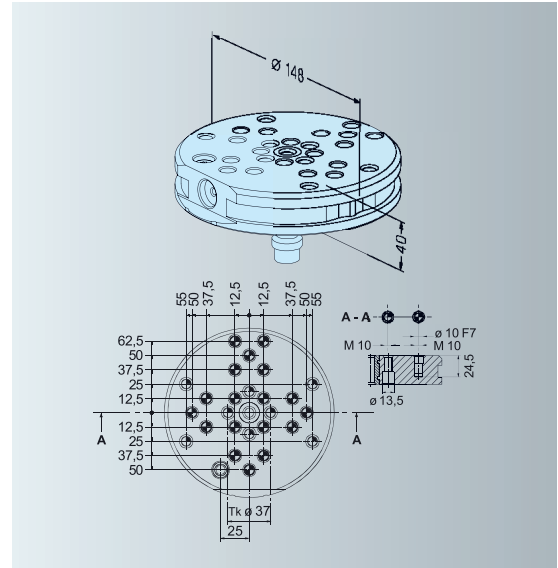
## ITS precision pallets

**ER-015899 Pallet  $\varnothing$  148 G R25**

**ER-033053 Pallet Kit  $\varnothing$  148 G R25**  
4 pieces



Version Steel, nitride coated, with borehole pattern 25,  $\varnothing$  10 F7, thread M10.  
Application To accommodate EROWA ClampSet Base 220 or specially constructed fixtures and gauges.

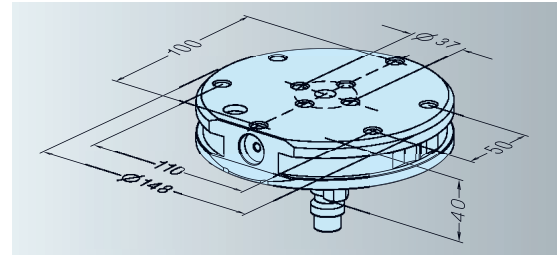


**ER-041912 Pallet P  $\varnothing$  148 Inox**

**ER-041924 Pallet Kit P  $\varnothing$  148 Inox**  
4 pieces



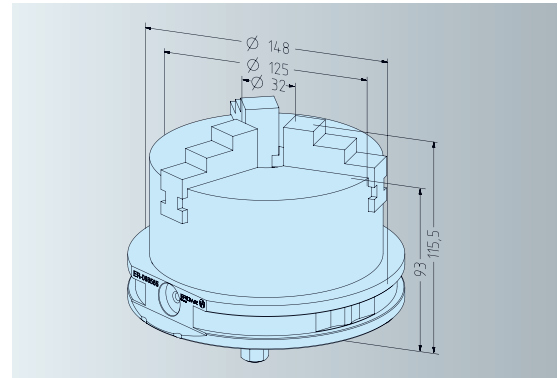
Version Steel, corrosion-resistant. Centering integrated in the pallet.  
Application For use on all EROWA PowerChucks P and Production-Chuck 210 Combi. To accommodate workpieces and fixtures in chip-cutting machining processes.  
Mounting Through pallet with M8 bolts or through blank with M10 bolts.



**ER-068585 Manual 3-jaw concentric chuck  $\varnothing$  125mm**  
on pallet  $\varnothing$  148 G



Version Manual 3-jaw concentric chuck  $\varnothing$  125mm. Central clamping range 3-53mm. Body made of cast metal. High degree of concentricity according to DIN 6386. Fitted to pallet  $\varnothing$  148 G. Includes 3 hardened drilling jaws (stepped on the outside), 3 hardened turning jaws (stepped on the inside) 1 spanner.  
Note Max. speed 4000 min<sup>-1</sup>.  
Application In combination with EROWA chucks on lathes, indexing tables, dividing heads, etc.  
Spare parts Block jaws, soft, for 3-jaw chuck, set of 3, size 125mm.



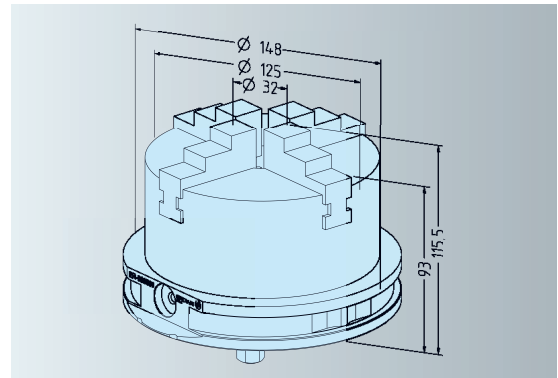
**ER-068586 Manual 4-jaw concentric chuck  $\varnothing$  125mm on pallet  $\varnothing$  148 G**

**Version** Manual 4-jaw concentric chuck  $\varnothing$  125mm. Central clamping range 3-53mm. Body made of cast metal. High degree of concentricity according to DIN 6386. Fitted to pallet  $\varnothing$  148 G. Includes 4 hardened drilling jaws (stepped on the outside), 4 hardened turning jaws (stepped on the inside), 1 spanner.

**Note** Max. speed 4000 min<sup>-1</sup>.

**Application** In combination with EROWA chucks on lathes, indexing tables, dividing heads, etc.

**Spare parts** Block jaws, soft, for 4-jaw chuck, set of 4, size 125mm.

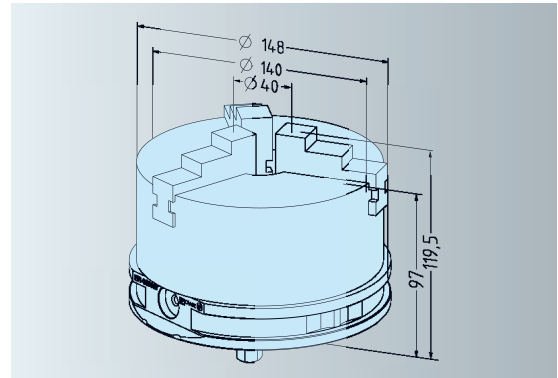
**ER-068697 Manual 3-jaw concentric chuck  $\varnothing$  140mm on pallet  $\varnothing$  148 G**

**Version** Manual 3-jaw concentric chuck  $\varnothing$  140mm. Central clamping range 3-53mm. Body made of cast metal. High degree of concentricity according to DIN 6386. Fitted to pallet  $\varnothing$  148 G. Includes 3 hardened drilling jaws (stepped on the outside), 3 hardened turning jaws (stepped on the inside) 1 spanner.

**Note** Max. speed 4000 min<sup>-1</sup>.

**Application** In combination with EROWA chucks on lathes, indexing tables, dividing heads, etc.

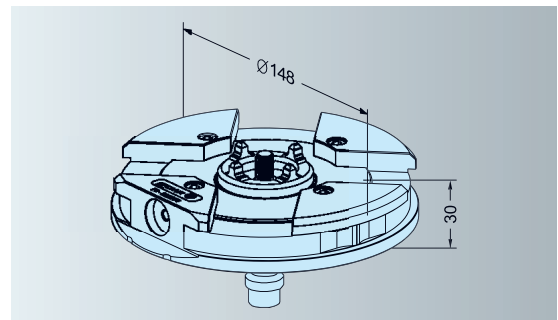
**Spare parts** Block jaws, soft, for 3-jaw chuck, set of 3, size 140mm.

**ER-022250 Adapter pallet ITS 50 /  $\varnothing$  148**

**Version** ITS system size 100.

Lock with central M 10 locking bolt.

**Application** To accommodate ITS Electrode holders system 50. Lock with central M10 locking bolt. For automatic handling.

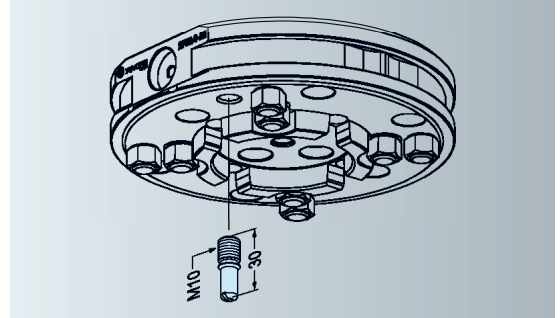


# EROWA ITS System carriers

## ITS precision pallets

### ER-046221 Reference bolt $\varnothing$ 7.7, M10x30 10 pieces

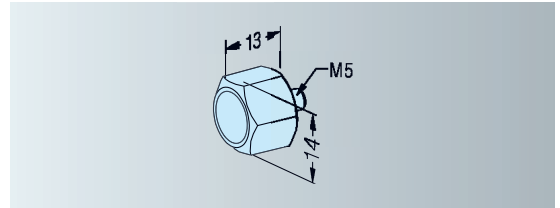
Version Set of 10 bolts. Bolts have been reworked.  
Application On pallets  $\varnothing$  148 mm: for positional orientation in PowerChucks and Robot magazines.



### ER-035154 EWIS™ Rapid chip with chip holder SW14 with chip $\varnothing$ 12,4 x 2mm



Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.  
Application In any EROWA electrode holder and pallet which has been prepared for it.

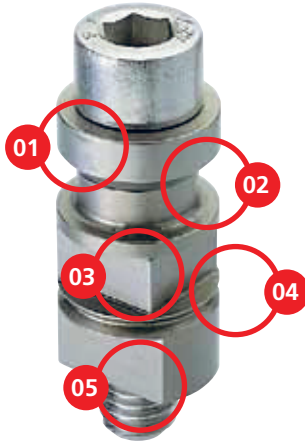






# EROWA ITS Chucking spigots

## For every application the proper version



01 | Movable upper part for error compensation

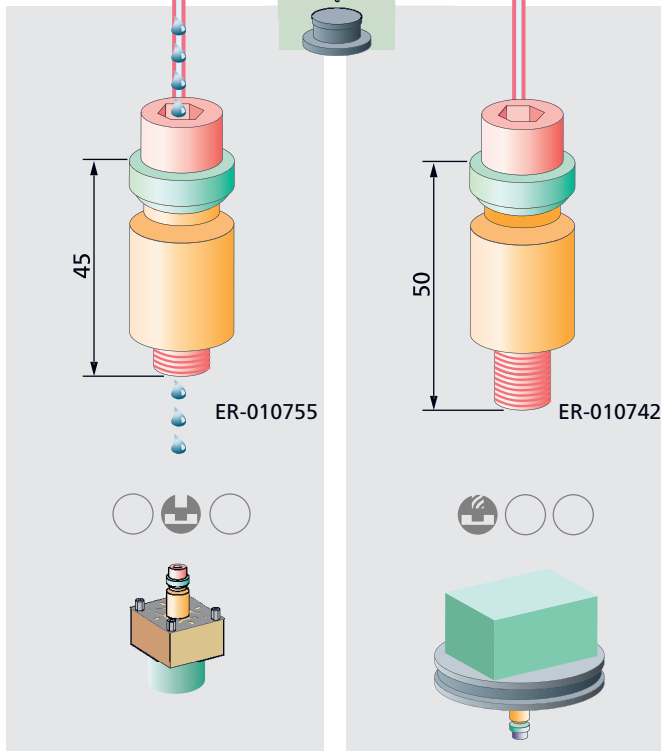
02 | Groove for ball lock

03 | Flats for magazine engagement

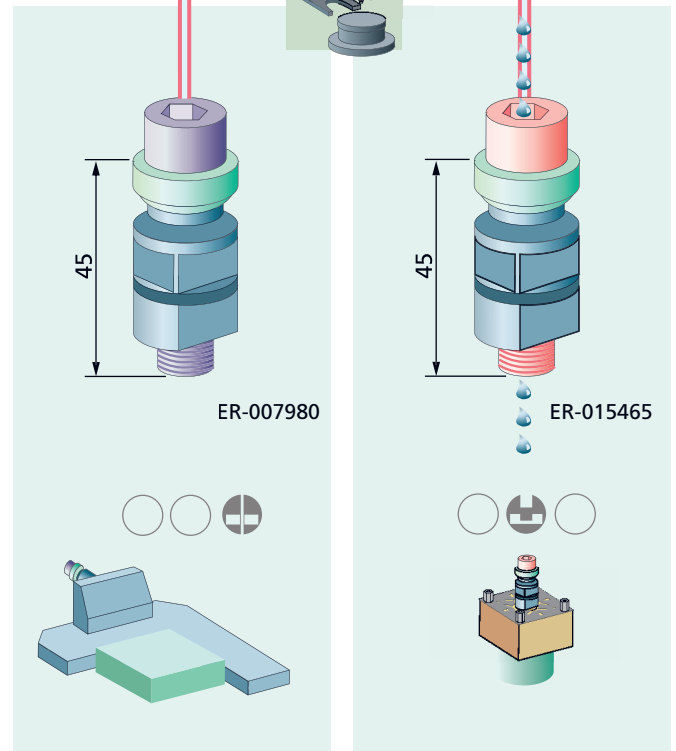
04 | Groove for O-ring seal

05 | Flats for gripper

manual



automatic



1



2



3



4



The various versions are exactly tailored to individual applications.

Chucking spigots are screwed into the holder or into the pallet for the machining cycle only. Since it has no influence on the reference position, it is removed for the purpose of spacesaving storage and only screwed in again when the holder or pallet is used next time.

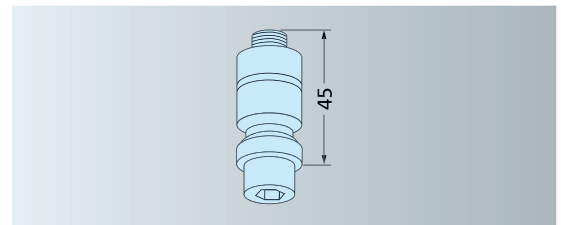
Technical data	ITS Chucking spigot
Material	Steel, hardened
Bolt	M10

#### ER-010755 Chucking spigot F/M EDM for flushing 20 pieces



Version Fixed type, manual. Bolt with flushing hole.  
Set of 20 spigots.

Application In Electrode Holders.  
For EDMing and easy machining.



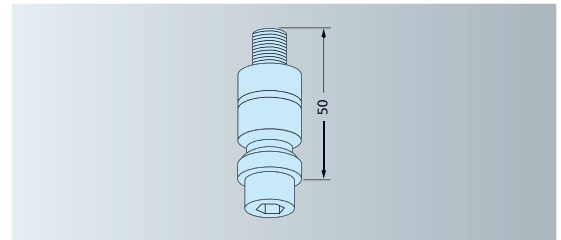
#### ER-010742 Chucking spigot F/M production 1 unit

#### ER-051381 Chucking spigot F/M Production 20 pieces



Version Fixed type, manual. Bolt 12.9, without flushing hole.

Application In pallets for chip-cutting machining processes.

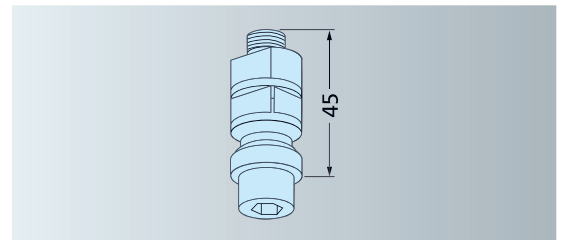


#### ER-007980 Chucking spigot F/A Inox 20 pieces



Version Fixed type, automatic. Bolt stainless, without flushing hole.  
Set of 20 spigots.

Application On all holders used on UnoSet.

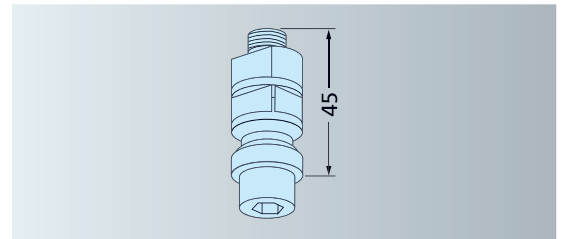


#### ER-015465 Chucking spigot F/A EDM M10 x 45 for flushing, 20 pieces



Version Fixed type, automatic. Bolt with flushing hole.  
Set of 20 spigots.

Application For electrode holder to be changed automatically. For EDM-ing and and machining with light cutting force.



# EROWA ITS Square Electrode System

## Square Electrode System and System Plus

### SAVE SPACE

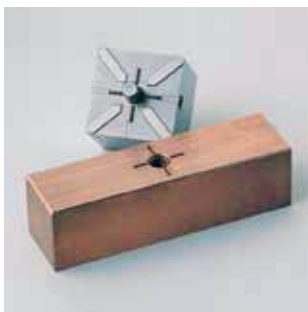
Store up to 1600 square electrodes safe and handy on 1 m<sup>2</sup>.

EROWA square holders are highly suitable for the manufacture of small electrodes. Their applications consist of milling, turning, grinding, as well as EDM sinking and WEDM. Used in addition to the System Plus, they represent a well-rounded, well thought-out range of products for everyone who works with many small electrodes.



### System Plus

The stamped centering profile directly on the blank forms the system reference.



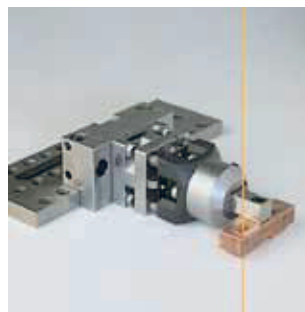
#### 1. Preparation

Stamp in the centering profile.



#### 2. Milling

On a straight System Plus holder.



#### 3. WEDM

On an angle holder.



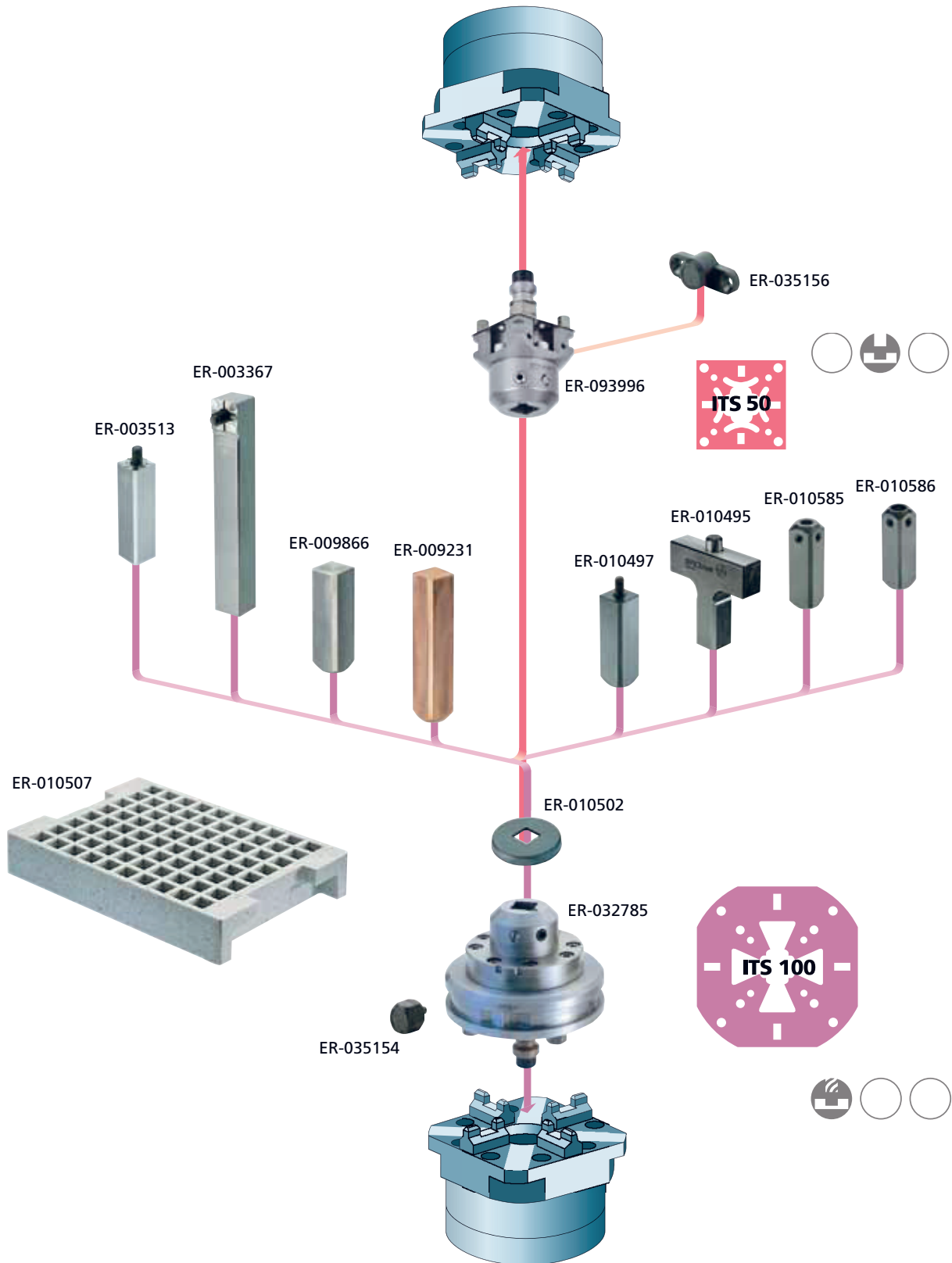
#### 4. EDM

On a straight holder.

EROWA

# ITS Integrated tooling system

## The components



ITS

# EROWA ITS Square Electrode System

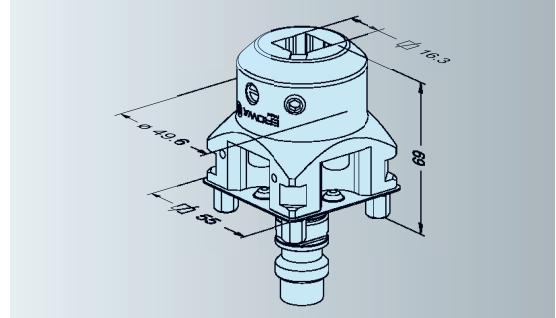
## Square Electrode Clamping System 15

**ER-093996 Square 15 holder C**  
1 pieces

**ER-093997 Square 15 holder C**  
12 pieces



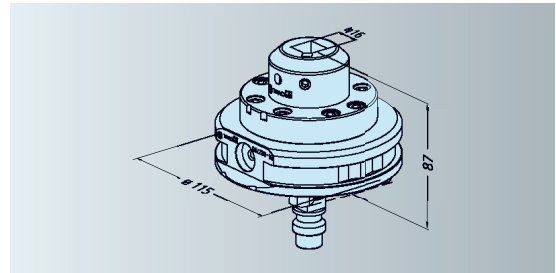
Version ITS system size 50.  
Application EDM/WEDM.



**ER-032785 Square 15 holder EWIS™**  
for ITS 100



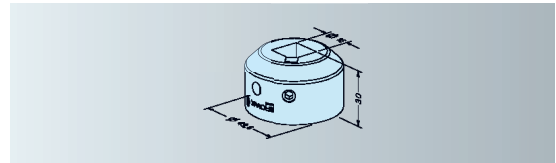
Version ITS system size 100  
Application EDM and chip-cutting processes.



**ER-007870 Square 15 holder front part**



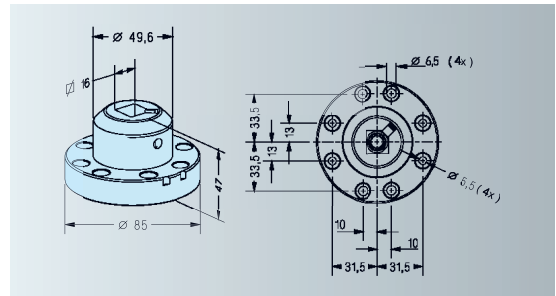
Version Only clamping part of the holder.  
Application For the construction on multiple fixtures.



**ER-015627 Square 15 holder on adapter ø 85**



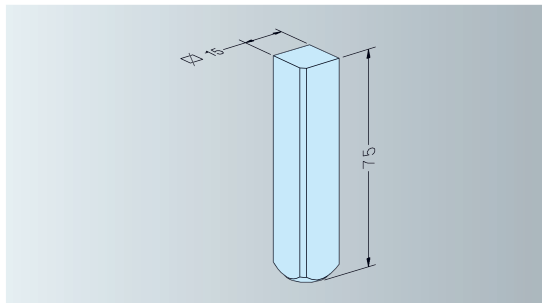
Version Clamping part fitted to flange, positioned with rods.  
Application For the construction on multiple fixtures.  
Mounting From above through the flange into the base.



**ER-009231 Square 15 electrode blank  
 40 pieces**



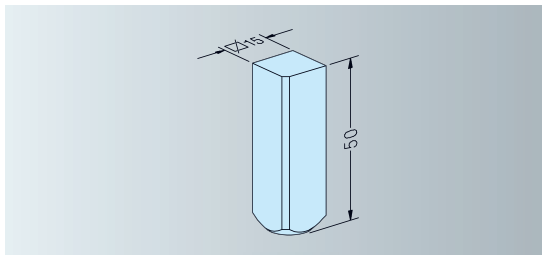
Version Set of 40 blanks. EDM copper, drawn profile.  
 Application Blank for electrodes of up to 15 mm square.



**ER-009866 Square 15 electrode shaft  
 40 pieces**



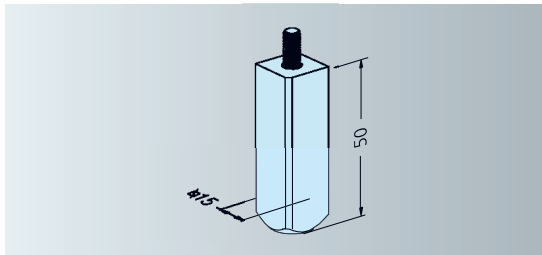
Version Set of 40 shafts, drawn steel.  
 Application To solder or bond to copper or graphite electrode blanks.



**ER-010497 Square 15 electrode shaft M5  
 10 pieces**



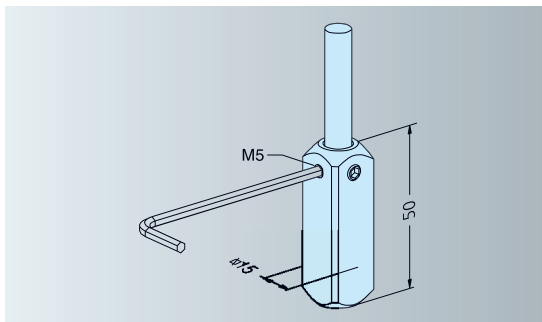
Version Set of 10 blanks, hardened, ground, including M5 bolts.  
 Application To screw on to electrode blanks.



**ER-010585 Square 15 blank holder ø 8mm**



Version Steel, hardened, ground.  
 Application To clamp round parts of ø 8 mm.



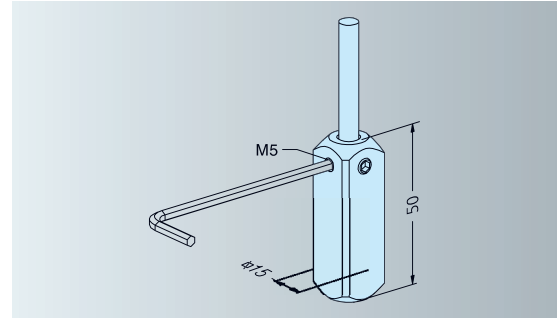
# EROWA ITS Square Electrode System

## Square Electrode Clamping System 15 and System Plus

### ER-010586 Square 15 blank holder $\varnothing$ 6 mm



Version Steel, hardened, ground.  
Application To clamp round parts of  $\varnothing$  6 mm.

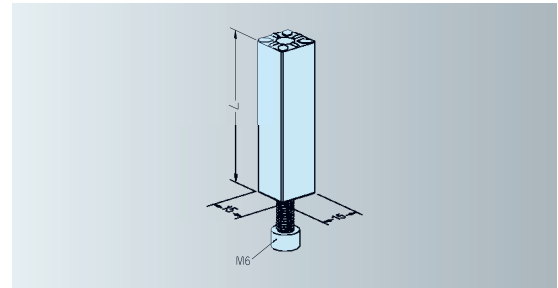


### ER-003467 Holder straight 15 x 15 x 37 mm

### ER-003513 Holder straight 15 x 15 x 57 mm



Version Steel, hardened, ground. Centering profile 15 mm.  
Holder incl. bolt.  
Application For electrodes of copper or graphite.  
Fitting according to supplied instructions.

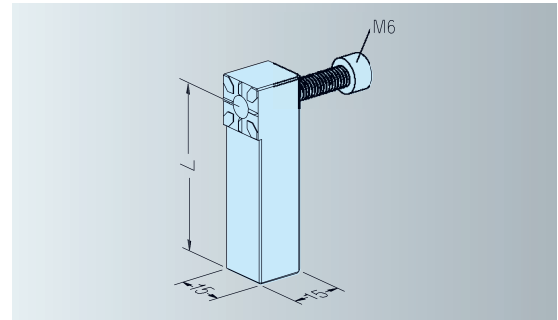


### ER-003470 Holder straight 15 x 15 x 50 mm

### ER-003367 Angle holder 15 x 15 x 100 mm



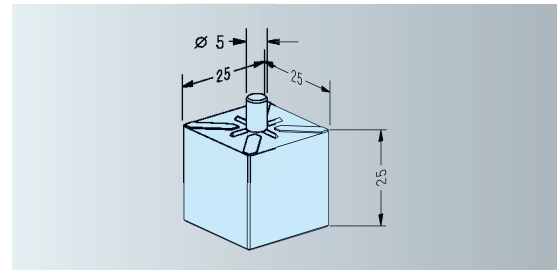
Version Steel, hardened, ground. Centering profile 15 mm.  
Holder incl. bolt.  
Application For electrodes of copper or graphite.  
Fitting according to supplied instructions.



### ER-003422 Prism die size 15



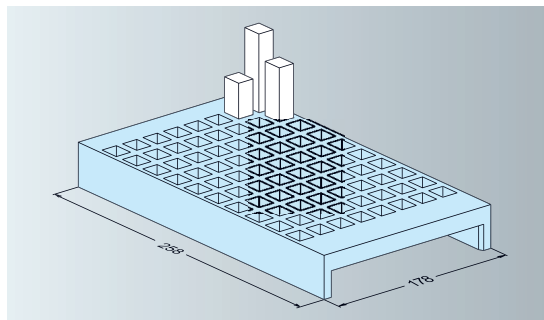
Version Steel, hardened, ground. Embossed profile 15 mm.  
Application Embossing of centering prisms in blanks.





**ER-010507 Square 15 electrode stand  
10 pieces**

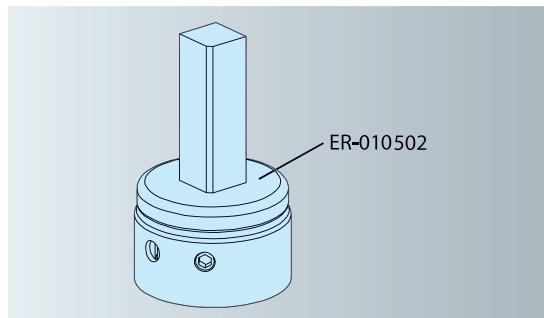
Version Set of 10 stands, styrene.  
Application Storage and transport of blanks and electrodes.



**ER-010502 Square 15 chip guard  
10 pieces**



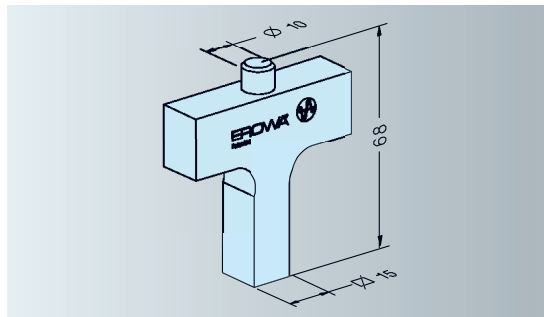
Version Set of 10 guards, oil-resistant rubber.  
Application Protection against chips during electrode manufacturing.



**ER-010495 Square 15 alignment rail**



Version Steel, hardened, ground.  
Application Testing of concentricity and angular accuracy of holder to ITS system.



# EROWA ITS Square Electrode System

## ITS Square 15 Element Set

This will provide you with the complete basic equipment to work with EROWA's square 15 system. Additional material, consumables in particular, can be ordered according to requirements.



ER-093996

ER-010495

ER-032785

ER-010502

ER-009866

ER-009231

ER-010497

ER-010507

ER-006641

### ER-103676 Square 15 Electrode Set

This material is packed into one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-006641	Socket wrench SW4 for square holder	2	1
ER-093996	Square 15 electrode holder 50 C, for use on EDM centers	2	1
ER-009231	Square 15 electrode blank, copper	20	40
ER-009866	Square 15 electrode shaft, steel	20	40
ER-032785	Square 15 holder EWIS, for chip-cutting processes	1	1
ER-010495	Square 15 checking pin	1	1
ER-010497	Square 15 electrode shaft, M5	8	10
ER-010502	Square 15 chip guard	10	10
ER-010507	Square 15 electrode stand, styrene	2	10

# EROWA ITS Square Electrode System

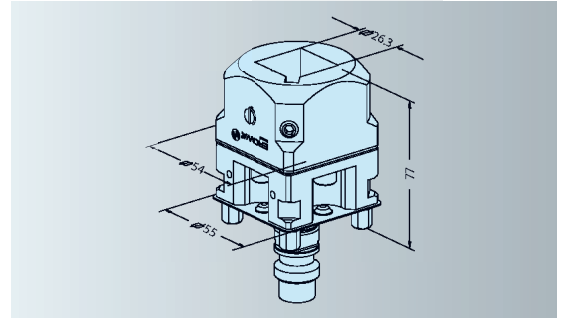
## Square Electrode Clamping System 25

**ER-093992 Square 25 holder C**  
1 pieces

**ER-093993 Square 25 holder C**  
12 pieces



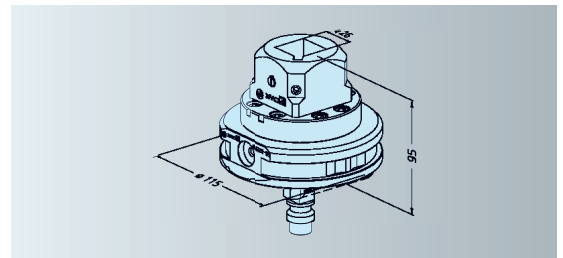
Version ITS system size 50.  
Application EDM/WEDM.



**ER-032810 Square 25 holder EWIS™**  
for ITS 100



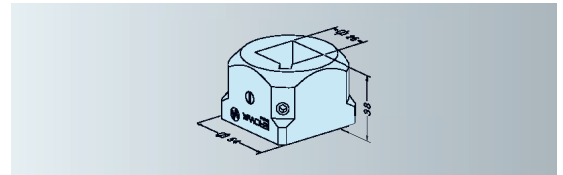
Version ITS system size 100.  
Application EDM and chip-cutting processes.



**ER-010622 Square 25 holder front part**



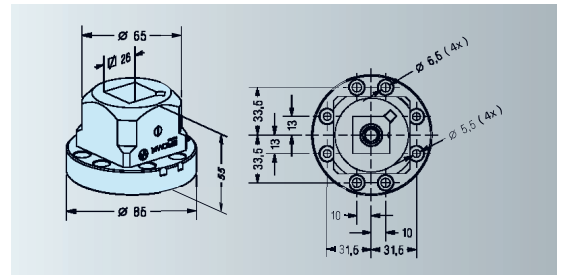
Version Only clamping part of the holder.  
Application For the construction on multiple fixtures.



**ER-015629 Square 25 holder on adapter ø 85**



Version Clamping part fitted to flange, fixed with rods.  
Application For the construction on multiple fixtures.  
Mounting From above through the flange into the base.



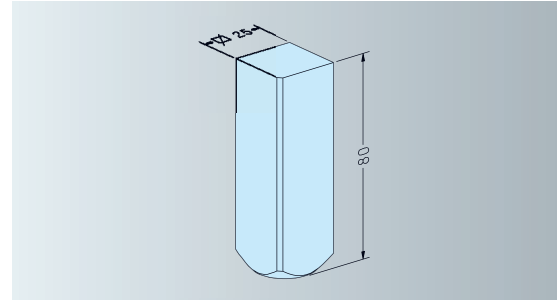
# EROWA ITS Square Electrode System

## Square Electrode Clamping System 25 and System Plus

### ER-009209 Square 25 electrode blank 24 pieces



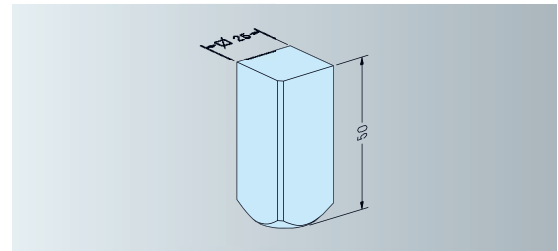
Version Set of 24 blanks. EDM copper, drawn profile.  
Application Blank for electrodes of up to 25 mm edge square.



### ER-010491 Square 25 electrode shaft 24 pieces



Version Set of 24 shafts, soft steel, drawn profile.  
Application To solder or bond to blanks of up to 40 mm square.

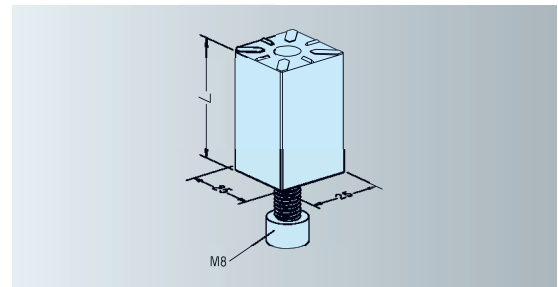


### ER-003405 Holder straight 25 x 25 x 40 mm

### ER-003439 Holder straight 25 x 25 x 65 mm



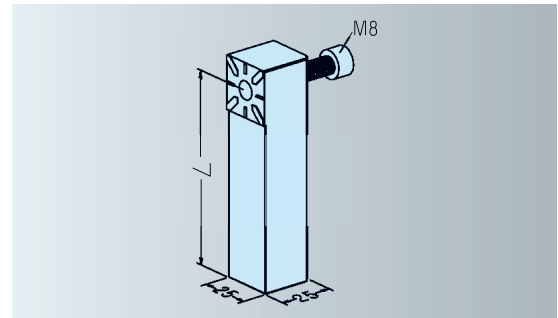
Version Steel, hardened, ground. Centering profile 25 mm. Holder incl. bolt.  
Application For electrodes of copper or graphite. Fitting according to supplied instructions.



### ER-003393 Angle holder 25 x 25 x 90 mm

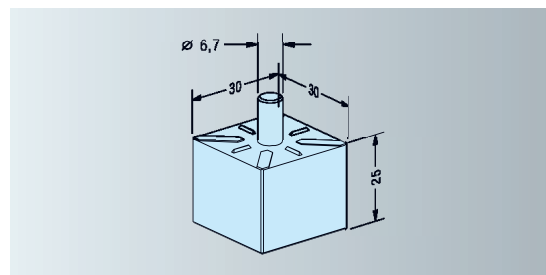


Version Steel, hardened, ground. Centering profile 25 mm. Holder incl. bolt.  
Application For electrodes of copper or graphite. Fit according to supplied instructions.

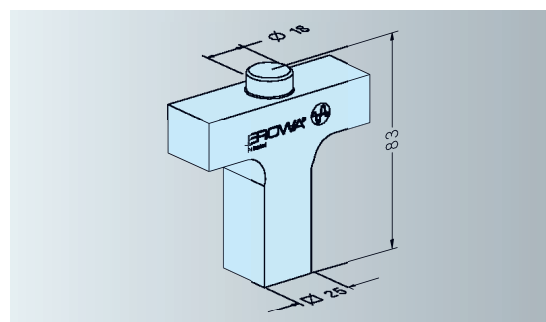


**ER-003489 Prism die size 25**

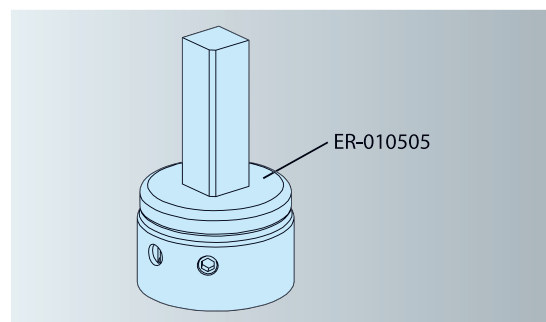
Version Steel, hardened, ground. Embossed profile 25 mm.  
Application Embossing of centering prisms in blanks.

**ER-010592 Square 25 alignment rail**

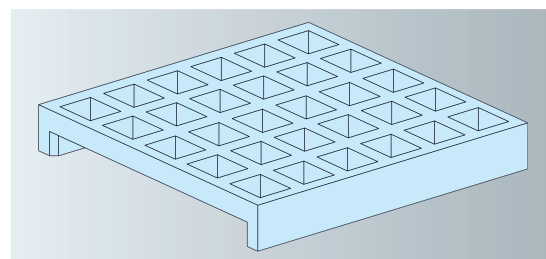
Version Steel, hardened, ground.  
Application Testing of concentricity and angular accuracy of the holder to the ITS system.

**ER-010505 Square 25 chip guard  
10 pieces**

Version Set of 10 guards, oil-resistant rubber.  
Application Protection against chips during electrode manufacturing.

**ER-010511 Square 25 electrode stand  
10 pieces**

Version Set of 10 styrene stands.  
Application Storage and transporting of blanks and electrodes.



# EROWA ITS Square Electrode System

## ITS Square 25 Element Set

This will provide you with the complete basic equipment to work with EROWA's square 25 system. Additional material, consumables in particular, can be ordered according to requirements.



### ER-103678 Square 25 Electrode Set

This material is packed into one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-032810	Square 25 holder EWIS, for chip-cutting processes	1	1
ER-006641	Socket wrench SW4 for square holder	3	1
ER-009209	Square 25 electrode blank, holder	24	24
ER-010491	Square 25 electrode shaft, steel	24	24
ER-010505	Square 25 electrode chip guard	10	10
ER-010511	Square 25 electrode stand, styrene	2	10
ER-010592	Square 25 checking pin	1	1
ER-093992	Square 25 electrode holder 50 C, for use on EDM centers	2	1





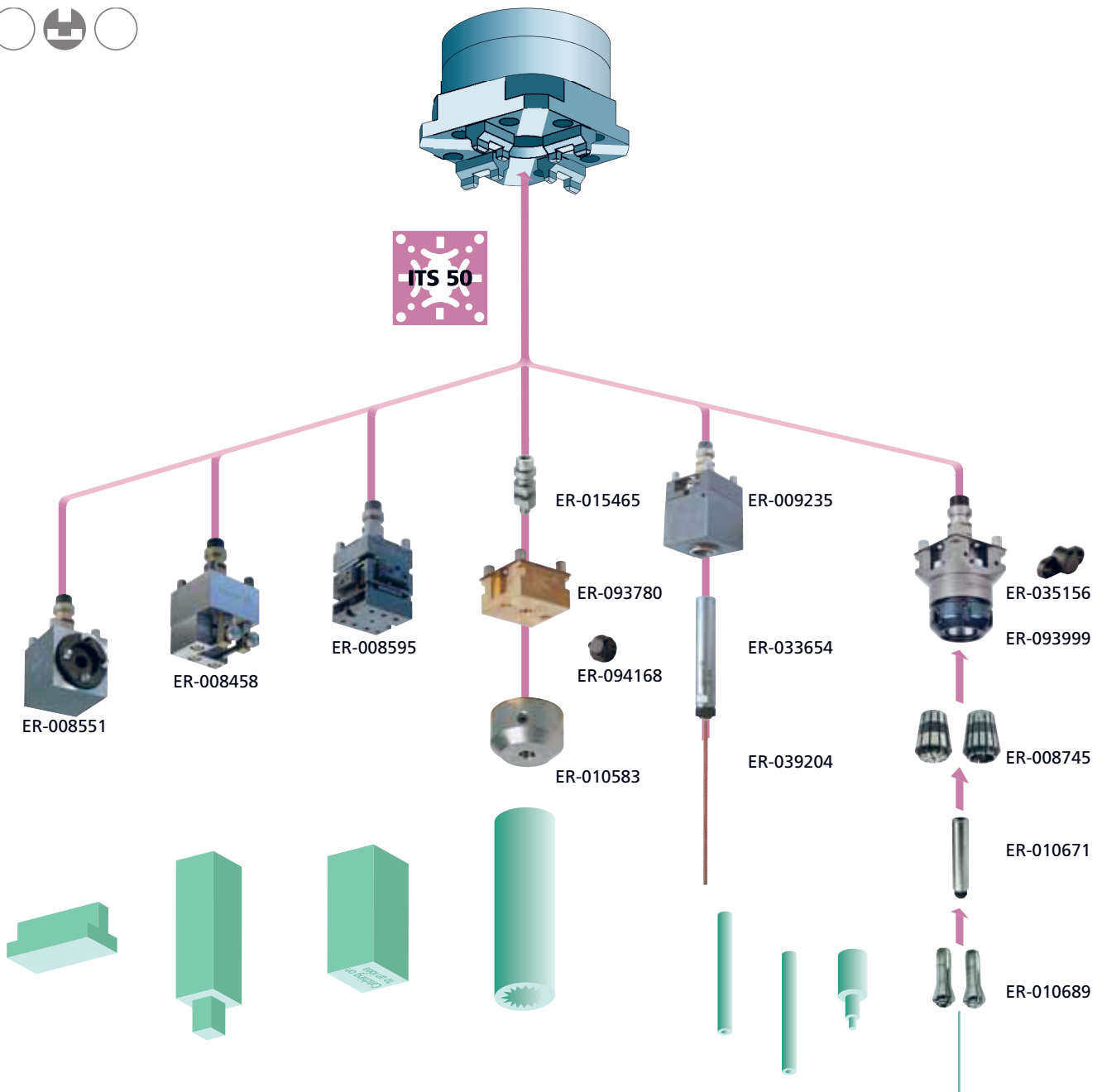
# EROWA ITS Special Electrode Holders

## The components

These holders support the manufacturing of special electrodes. Thanks to their adjustable angular and axial positions, existing electrodes can be integrated into the system. One of each of these holders should be kept ready for use in every workshop.

### SAVE TIME

Machine changes and in-process-control without loss of time thanks to fixed reference position.



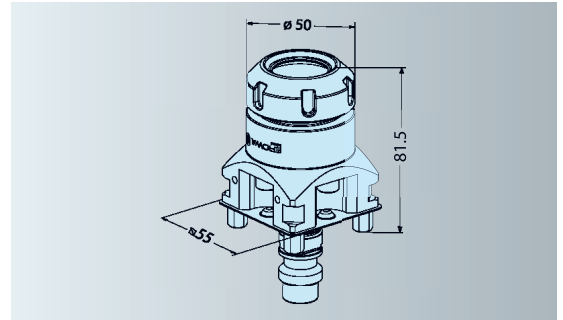
EROWA

## ITS Special Electrode Holders

**ER-093999 Collet chuck holder 50 C**

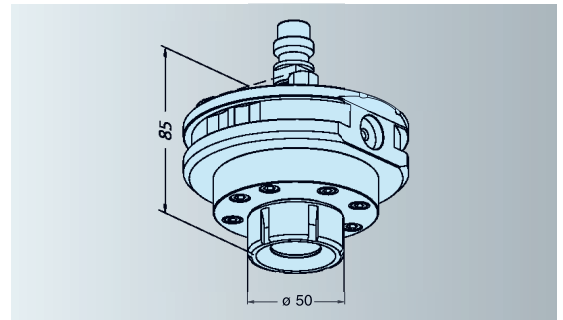
Version System size 50,  
incl. wrench.

Application For round material up to  $\varnothing 20$  mm.

**ER-032815 Collet chuck holder 100**

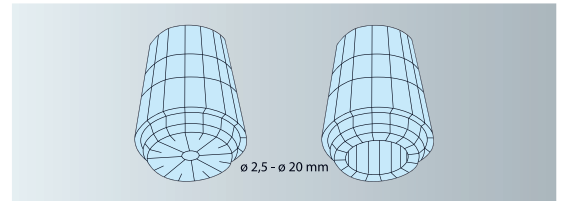
Version System size 100

Application For round material up to  $\varnothing 20$  mm.

**ER-008745 Set of collet chucks ETS 32  $\varnothing 2.5 - 20$  mm**

Version 19 collet chucks from  $\varnothing 2.5$  mm to  $\varnothing 20$  mm.

Application For round material up to  $\varnothing 20$  mm.



EROWA

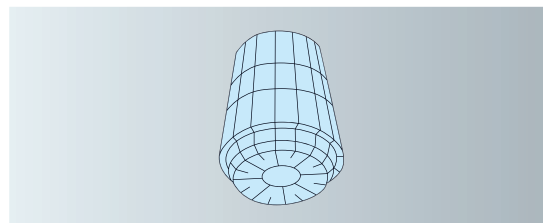
## ITS Special Electrode Holders

ER-006700	Collet chuck $\varnothing$ 2.5 mm ETS 32
ER-006701	Collet chuck $\varnothing$ 3 mm ETS 32
ER-006702	Collet chuck $\varnothing$ 4 mm ETS 32
ER-006703	Collet chuck $\varnothing$ 5 mm ETS 32
ER-006704	Collet chuck $\varnothing$ 6 mm ETS 32
ER-006705	Collet chuck $\varnothing$ 7 mm ETS 32
ER-006706	Collet chuck $\varnothing$ 8 mm ETS 32
ER-006707	Collet chuck $\varnothing$ 9 mm ETS 32
ER-006708	Collet chuck $\varnothing$ 10 mm ETS 32
ER-006709	Collet chuck $\varnothing$ 11 mm ETS 32
ER-006710	Collet chuck $\varnothing$ 12 mm ETS 32
ER-006711	Collet chuck $\varnothing$ 13 mm ETS 32
ER-006712	Collet chuck $\varnothing$ 14 mm ETS 32
ER-006713	Collet chuck $\varnothing$ 15 mm ETS 32
ER-006714	Collet chuck $\varnothing$ 16 mm ETS 32
ER-006715	Collet chuck $\varnothing$ 17 mm ETS 32
ER-006716	Collet chuck $\varnothing$ 18 mm ETS 32
ER-006717	Collet chuck $\varnothing$ 19 mm ETS 32
ER-006718	Collet chuck $\varnothing$ 20 mm ETS 32



Version Delivered separately, clamping range per collet chuck:  
 $\varnothing$  2.5 mm = 0.5 mm  
 $\varnothing$  3-20 mm = 1 mm

Application Round material from  $\varnothing$  2 mm to  $\varnothing$  20 mm.

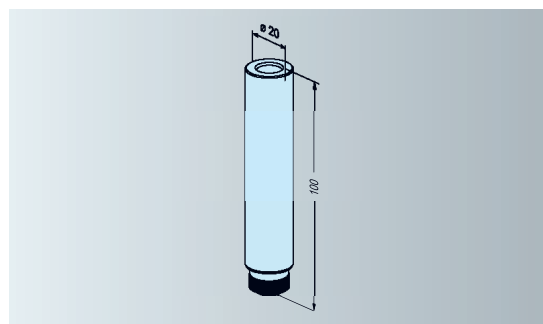


#### ER-010671 Mini collet chucks holder $\varnothing$ 20



Version Steel ground  $\varnothing$  20 mm.

Application In  $\varnothing$  20 mm adapter or in  $\varnothing$  20 mm collet chuck for mini collet chucks of  $\varnothing$  0.2 mm to  $\varnothing$  2 mm.

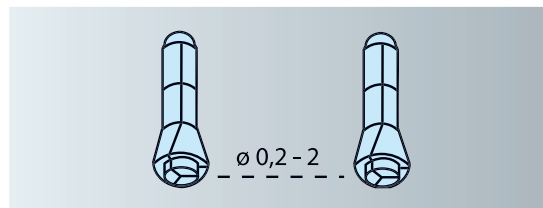


#### ER-010689 Set of mini collet chucks

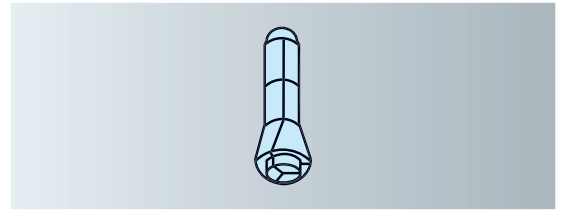


Version Set of 19 collet chucks  $\varnothing$  0.2 mm to  $\varnothing$  2.0 mm, steel ground, with brass seal for appropriate diameter.

Application Clamping of small electrode tubes  $\varnothing$  0.2 mm to  $\varnothing$  20 mm.



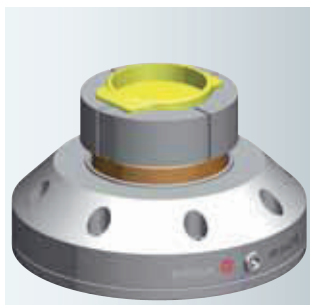
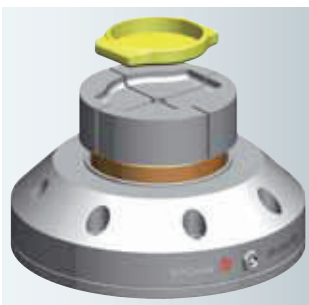
ER-002403	Mini collet chuck $\varnothing$ 0.2 mm
ER-002404	Mini collet chuck $\varnothing$ 0.3 mm
ER-002405	Mini collet chuck $\varnothing$ 0.4 mm
ER-002406	Mini collet chuck $\varnothing$ 0.5 mm
ER-002407	Mini collet chuck $\varnothing$ 0.6 mm
ER-002408	Mini collet chuck $\varnothing$ 0.7 mm
ER-002409	Mini collet chuck $\varnothing$ 0.8 mm
ER-002410	Mini collet chuck $\varnothing$ 0.9 mm
ER-002411	Mini collet chuck $\varnothing$ 1.0 mm
ER-002412	Mini collet chuck $\varnothing$ 1.1 mm
ER-002413	Mini collet chuck $\varnothing$ 1.2 mm
ER-002414	Mini collet chuck $\varnothing$ 1.3 mm
ER-002415	Mini collet chuck $\varnothing$ 1.4 mm
ER-002416	Mini collet chuck $\varnothing$ 1.5 mm
ER-002417	Mini collet chuck $\varnothing$ 1.6 mm
ER-002418	Mini collet chuck $\varnothing$ 1.7 mm
ER-002419	Mini collet chuck $\varnothing$ 1.8 mm
ER-002420	Mini collet chuck $\varnothing$ 1.9 mm
ER-002421	Mini collet chuck $\varnothing$ 2.0 mm



Version Steel, ground, with brass seal for appropriate diameter.  
 Application Clamping of small electrode tubes.

## EROWA Collet Chuck Tooling System

For workpieces in many shapes, including workpieces that are not rotationally symmetrical, a collet chuck is the optimal holding device. EROWA CTS combines the features of the tooling system with the well-known advantages of collet chucks.



Ask your specialist EROWA dealer for more information about the entire EROWA CTS range.

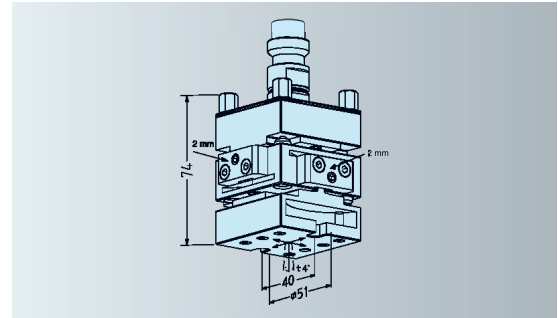
# EROWA ITS Special Electrode Holders

## ER-008595 Zekant



Version Electrode holder with cross slide (2 mm travel) and pendulum movement ( $\pm 4^\circ$ ).

Application Clamping and alignment of electrodes.  
Not suitable for chip-machining.

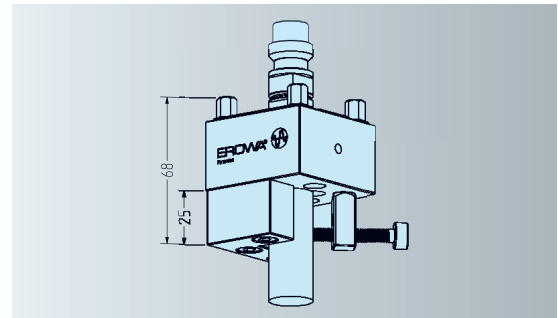


## ER-008458 V-block holder stainless

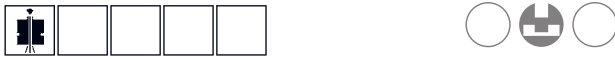


Version Prism ground bearing surfaces 10 mm  $\pm$  0.005 mm from the center.

Application Clamping from outside, precision machined electrodes or small workpieces.

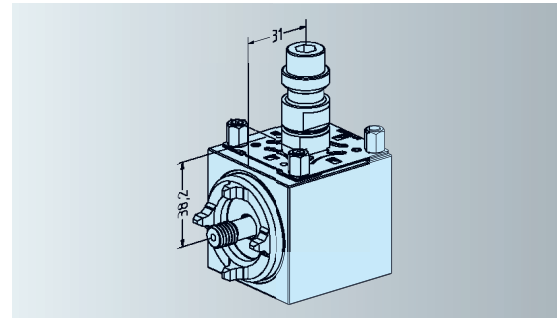


## ER-008551 Horizontal holder



Version Hardened and ground  $90^\circ$  angle and centering accuracy 0.005 mm.

Application Clamping of electrode holders in horizontal position, may not be used for chip-machining.



## ER-010583 Blank holder $\varnothing$ 10 mm

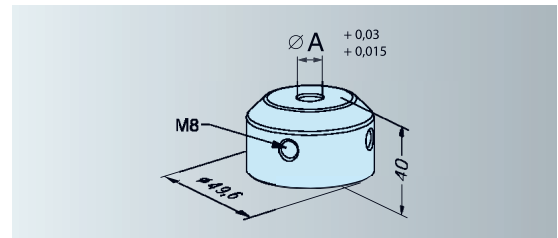
## ER-010581 Blank holder $\varnothing$ 12 mm

## ER-010577 Blank holder $\varnothing$ 20 mm



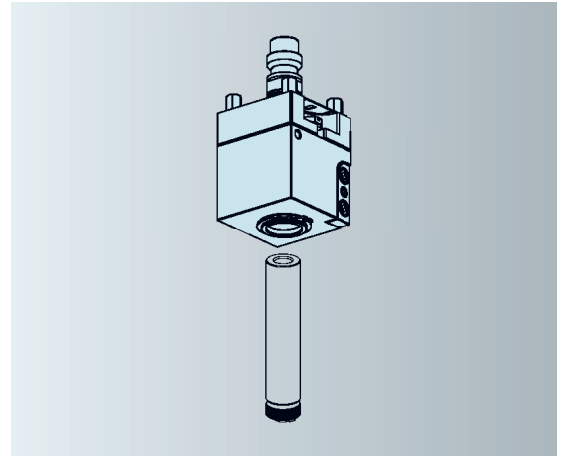
Version Steel, hardened, ground bore.

Application Fit to Uniplate C ER-093780 for clamping of precision copper tubes or bars.



**ER-009235 Adapter  $\varnothing$  20 mm**

Version Hydraulic holding of  $\varnothing$  20 mm shafts.  
 Application Recommended to hold the 20 mm EROWA thread holder.



**ER-033654 Thread holder M3**  
 P=0.5mm /  $\varnothing$  2.3 mm / L= 100

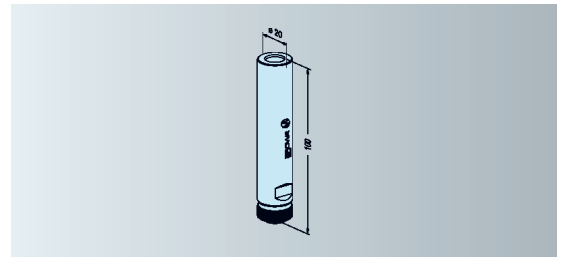
**ER-033655 Thread holder M4**  
 P=0.7mm /  $\varnothing$  2.9 mm / L= 100

**ER-033656 Thread holder M5**  
 P=0.8mm /  $\varnothing$  3.8 mm / L= 120

**ER-033657 Thread holder M6**  
 P=1mm /  $\varnothing$  4.5 mm / L= 120



Version Ground 20 mm shaft.  
 Application Defined positioning of threaded EROWA electrodes.  
 Note Systems for M3, M4, M5 and M6.



**ER-033204 Threaded electrode M3 / L= 80**

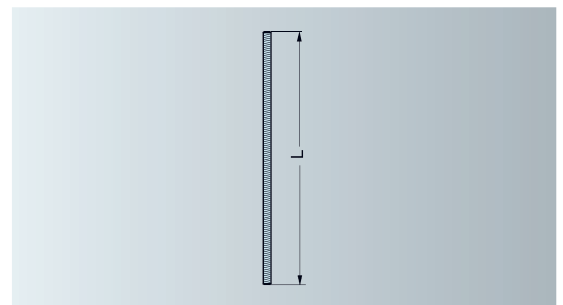
**ER-033205 Threaded electrode M4 / L= 80**

**ER-033206 Threaded electrode M5 / L= 120**

**ER-033207 Threaded electrode M6 / L= 120**



Version EDM copper with precision thread.  
 Application For EDM-ing threads with EROWA Thread holder System.  
 Note Sizes available for: M3, M4, M5 and M6.

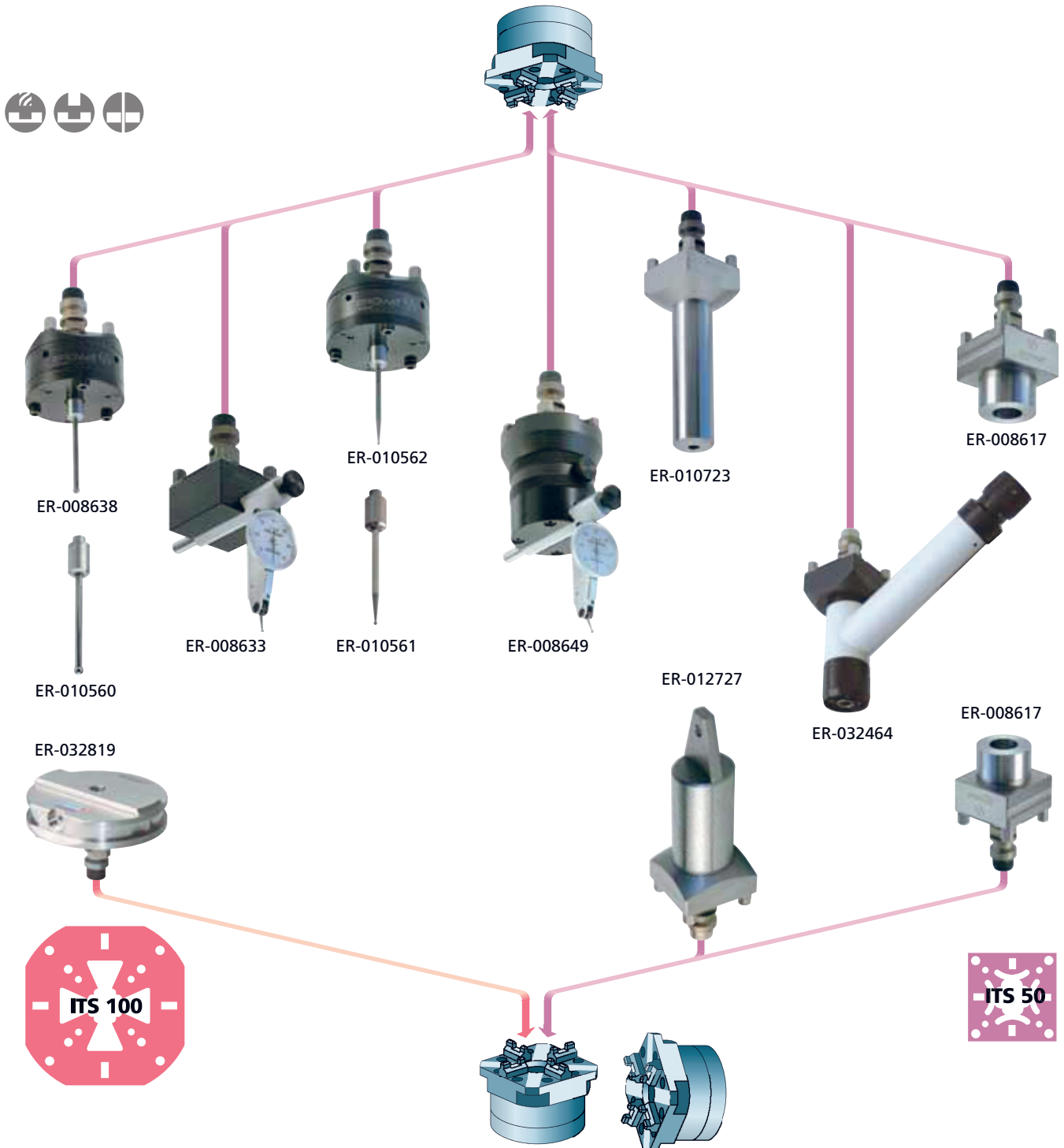


EROWA

# Measuring and Checking Elements

## The components

Trusting is good - checking is better. These specially designed elements will make it easier for you to check your production equipment. These elements are for use both in chip-cutting applications and in EDM sinking and WEDM.





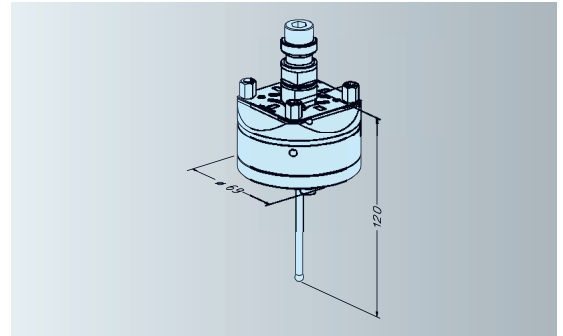
EROWA

# Measuring and Checking Elements

**ER-008638 Sensor with ball  $\varnothing$  5 mm**
**ER-010562 Sensor with ball  $\varnothing$  2 mm**

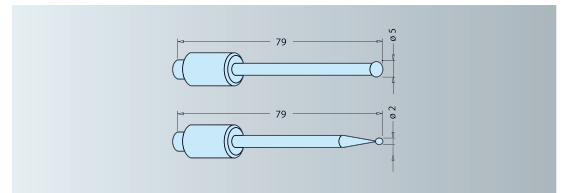

Version Holder with spring-loaded sensing pin and tungsten carbide ball. Overrun protection: X, Y, Z 1 mm. Repetition accuracy: X, Z, Y 0.002 mm.

Application Automatic measurement of workpieces in CNC EDM- sinking centers.


**ER-010560 Replacement sensor pin  $\varnothing$  5 mm**
**ER-010561 Replacement sensor pin  $\varnothing$  2 mm**

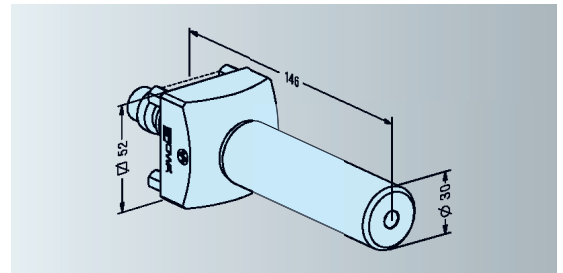

Version Tungsten carbide, incl. adapter part, without spacer washer

Application Replacement of pins in sensors ER-008638 and ER-010562. Attention: spacer washer is matched to the respective sensor.


**ER-010723 Checking pin 50**

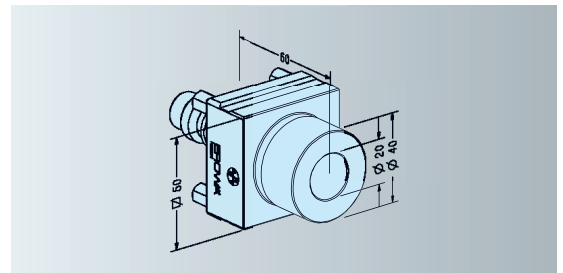

Version Hardened, ground.

Application Alignment of radial, axial and angular position of ITS chucks.


**ER-008617 Gauging pin**


Version Hardened, ground.

Application Alignment of ITS chucks in radial, axial and angular position.



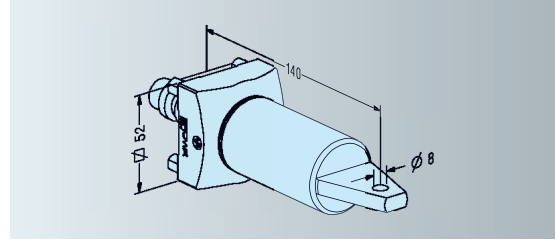
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# Measuring and Checking Elements

## ER-012727 Reference pin UnoSet



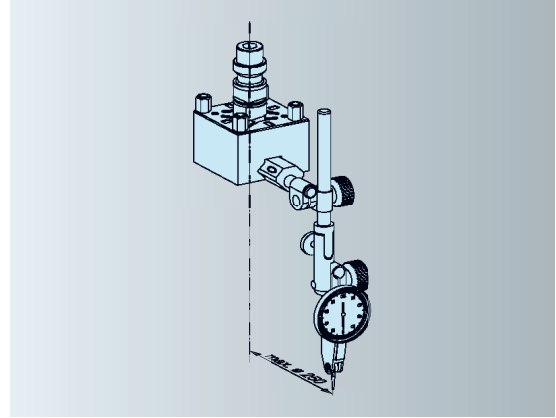
Version Hardened, ground, borehole  $\varnothing$  8 mm.  
 Application To determine reference measurements on horizontal chucks.



## ER-008633 Fixed centering device



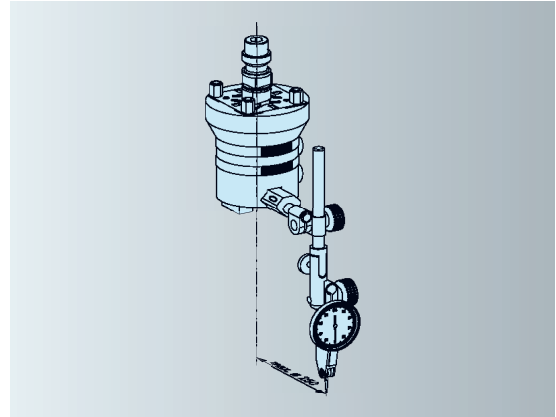
Version Holder with sliding part and metric dial gauge mm.  
 Scale graduation: 0.01 mm.  
 Application Concentricity measurement of workpieces on machines with C-axis or rotating spindle.



## ER-008649 Rotatable centering device complete



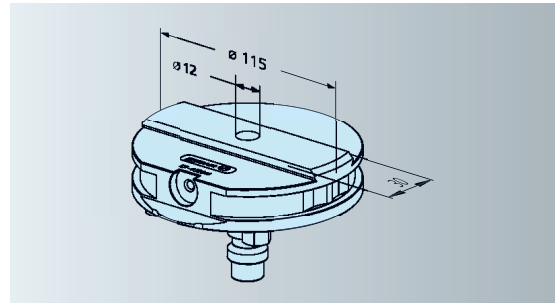
Version Holder with rotating and sliding part, including metric dial gauge mm. Scale graduation: 0.01 mm.  
 Application Concentricity measurement of workpieces on machines without rotating axis.



## ER-032819 Alignment pallet $\varnothing$ 115

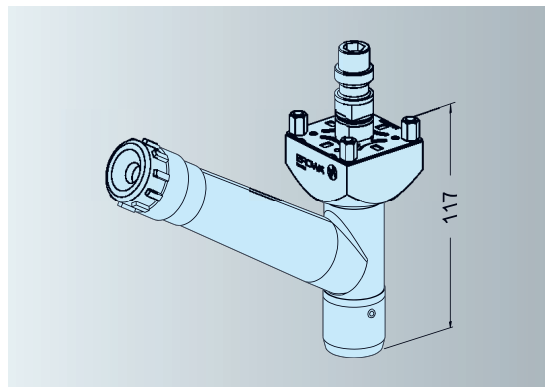


Version Pallet  $\varnothing$  115 mm, alignment length 110 mm, center borehole  $\varnothing$  12 mm.  
 Application Alignment of radial, axial and angular position of ITS chucks, PowerChuck P and PC 210 Combi chucks.

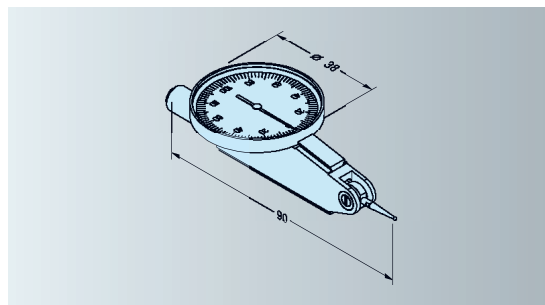


**ER-032464 Microscope with pointed checking pin**

Version	Amplification factor: 40x Illumination: 5 V, Transformer: 100-240 V.
Application	Determination of dimensions for complicated contours. The checking pin with tip serves for adjustment of the optical system.

**ER-001565 Dial gauge  $\varnothing$  38, 0.002mm**

Version	Measuring range +/- 0.2 mm Graduation 0.002 mm.
Application	On PreSet setup and pre-setting cells, and on ITS centering devices.



# EROWA ITS Element Set

## My first EROWA

We have compiled practical sets for newcomers to the modern ITS Integrated Tooling System. Additional material, consumables in particular, can be ordered according to requirements.



Starter set for newcomers, with existing ITS chuck on the EDM quill.

ER-015465

ER-010583

ER-010581

ER-010577

ER-038824

ER-010723

ER-010441

ER-010438

ER-103692

ER-093780

ER-093774

ER-093758

ER-093765

ER-010906

ER-103687

### ER-103679 My first EROWA

This material is packed into one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-093758	Uniblank C EWIS	3	12
ER-093765	Prisround C EWIS	3	12
ER-093774	Uniholder C EWIS	3	12
ER-093780	Uniplate C EWIS	3	12
ER-010438	Setscrew M8 x 16 for Prisround	6	25
ER-010441	Setscrew M8 x 16 for Uniholder	6	25
ER-010577	Blank holder $\varnothing$ 20 mm	1	1
ER-010581	Blank holder $\varnothing$ 12 mm	1	1
ER-010583	Blank holder $\varnothing$ 10 mm	1	1
ER-103692	Hexagon socket bolt M6 x 20 for Uniplate C	6	12
ER-010723	Checking pin	1	1
ER-010906	Toolkit ITS	1	1
ER-038824	QuickChuck 100 P with base plate	1	1
ER-015465	Chucking spigot F/A EDM	5	20
ER-103687	Set of SW5 hex keys for ITS C	1	1



# EROWA ITS Element Set EDM Set

We have compiled practical sets for newcomers to the modern ITS Integrated Tooling System. Additional material, in particular consumables, can be ordered according to requirements.

User set for manual or CNC EDM centers with ITS quill chuck. The supplied chuck has been designed for manual electrode manufacturing.



## ER-103680 QuickChuck 100 EDM Set

This material is packed into two solid plastic boxes.

Order number	Description	Units per set	Units supplied by order number
ER-000974	M10 x 20 hex socket head bolt	1	1
ER-001483	Key for collet holder 50	1	1
ER-006702	Collet ø 4mm	1	1
ER-006704	Collet ø 6 mm	1	1
ER-006706	Collet ø 8 mm	1	1
ER-006708	Collet ø 10 mm	1	1
ER-006710	Collet ø 12 mm	1	1
ER-006718	Collet ø 20 mm	1	1
ER-008458	Prism holder, stainless	1	1
ER-093999	Collet holder 50 C	1	1
ER-103687	Set of SW5 hex keys for ITS C	1	1

## ER-103680 QuickChuck 100 EDM Set

This material is packed into two solid plastic boxes.

Order number	Description	Units per set	Units supplied by order number
ER-094180	Centering plate 50 C with washer	20	50
ER-011599	Centering plate 100 M5 with washer	5	10
ER-093765	Prisround C EWIS	6	12
ER-093774	Uniholder C EWIS	6	12
ER-093780	Uniplate C EWIS	6	12
ER-010438	Setscrew M8 x 16 for Prisround	12	25
ER-010441	Setscrew M8 x 16 for Uniholder	12	25
ER-010514	Spacer plate 0,5 mm	50	50
ER-010518	Spacer plate 1 mm	50	50
ER-010521	Spacer plate 2 mm	50	50
ER-010523	Spacer plate 3 mm	50	50
ER-010525	Spacer plate 4 mm	50	50
ER-010526	Spacer plate 5 mm	50	50
ER-103692	Hexagon socket bolt for Uniplate C	12	12
ER-010694	Sealing washers	12	24
ER-010710	Drilling template for borehole patterns, centering plates 50 and 100	1	1
ER-010723	Checking pin	1	1
ER-010753	Support feet M5	100	100
ER-010906	Toolkit ITS	1	1
ER-038824	QuickChuck 100 P with base plate	1	1
ER-015465	Chucking spigot F/A EDM	10	20
007752	M8 support foot	20	–
000999	M5 x 8 socket head bolt	20	–

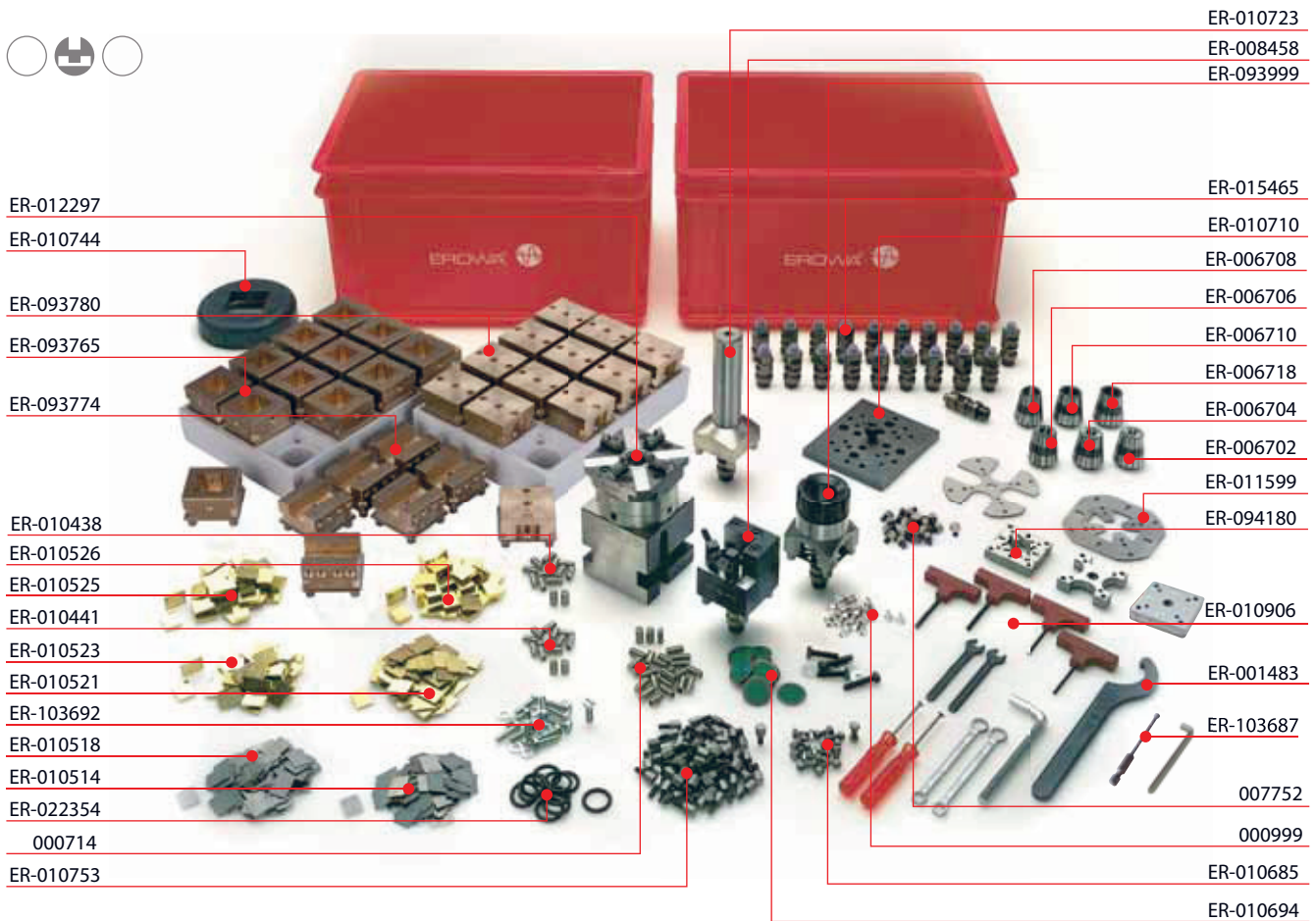


# EROWA ITS Element Set

## EDM Standard Set

We have compiled practical sets for newcomers to the modern ITS Integrated Tooling System. Additional material, in particular consumables, can be ordered according to requirements.

User set for manual or CNC centers. Containing, among other things, 50 electrode holders and a chuck.



### ER-103681 EDM Standard Set

This material is packed into two solid plastic boxes.

Order number	Description	Units per set	Units supplied by order number
000714	Setscrew M8 x 16	25	1
ER-001483	Key for collet holder 50	1	1
ER-006702	Collet $\varnothing$ 4 mm	1	1
ER-006704	Collet $\varnothing$ 6 mm	1	1
ER-006706	Collet $\varnothing$ 8 mm	1	1
ER-006708	Collet $\varnothing$ 10 mm	1	1
ER-006710	Collet $\varnothing$ 12 mm	1	1
ER-006718	Collet $\varnothing$ 20 mm	1	1
ER-103687	Set of SW5 hex keys for ITS C	1	1

## ER-103681 EDM Standard Set

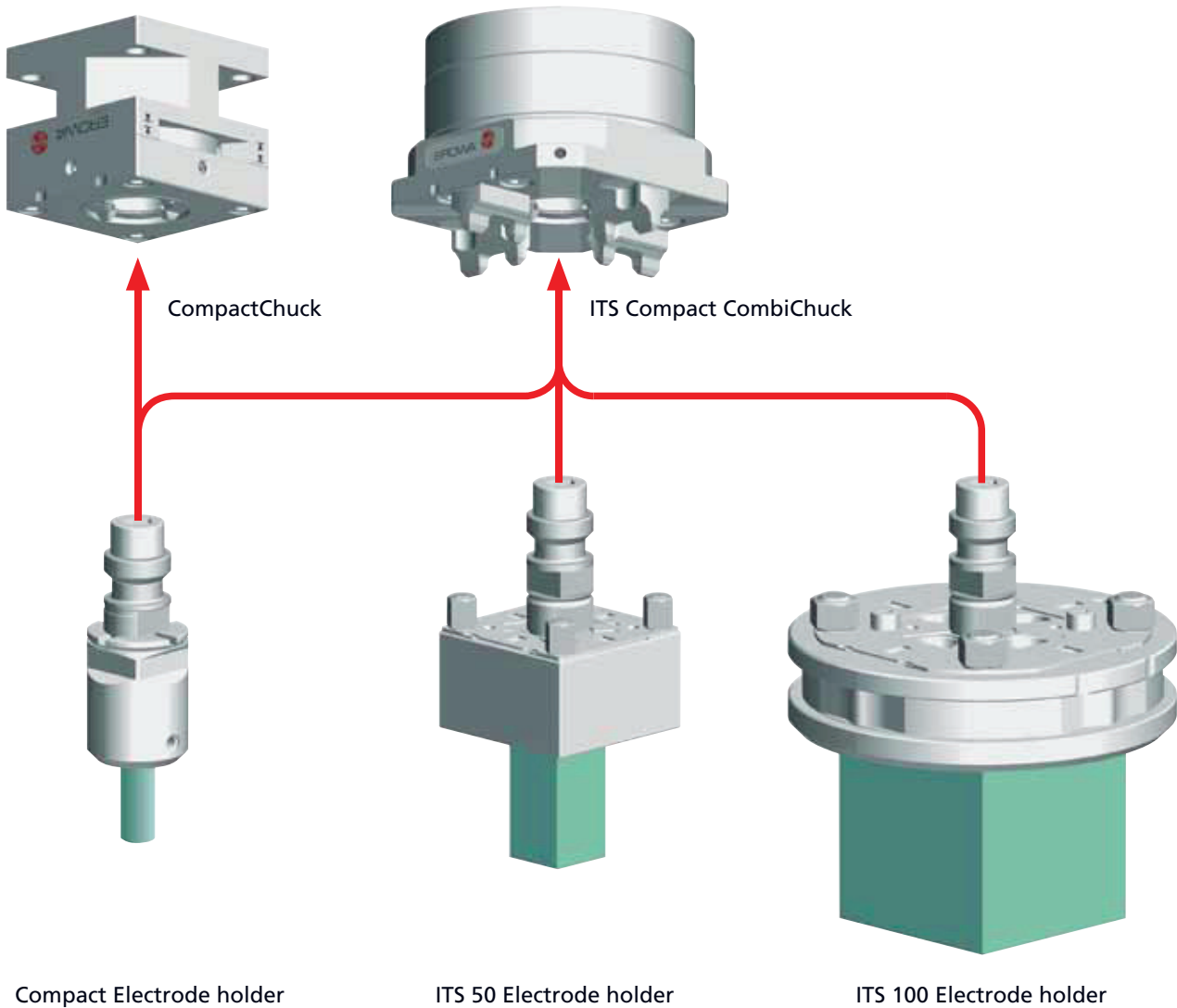
This material is packed into two solid plastic boxes.

Order number	Description	Units per set	Units supplied by order number
ER-012297	Rapid-action chuck, manual, on block	1	1
ER-008458	Prism holder	1	1
ER-093999	Collet holder 50 C	1	1
ER-094180	Centering plate 50 C with washer	20	50
ER-011599	Centering plate 100 M8 with washer	5	10
ER-093765	Prisround C EWIS	12	12
ER-093774	Uniholder C EWIS	6	12
ER-093780	Uniplate C EWIS	12	12
ER-010438	Setscrew M8 x 16 für Prisround	25	25
ER-010441	Setscrew M8 x 16 for Uniholder	12	25
ER-010514	Spacer plate 0,5 mm	100	50
ER-010518	Spacer plate 1 mm	100	50
ER-010521	Spacer plate 2 mm	100	50
ER-010523	Spacer plate 3 mm	100	50
ER-010525	Spacer plate 4 mm	100	50
ER-010526	Spacer plate 5 mm	100	50
ER-103692	Hexagon socket bolt for Uniplate C	24	12
ER-010694	Sealing washers	12	24
ER-010710	Drilling template for borehole patterns, centering plates 50 and 100	1	1
ER-010723	Checking pin	1	1
ER-010685	Supports M5, adjustable	12	12
ER-010744	Chip guard for rapid-action chuck	1	1
ER-010753	Supports M5	100	100
ER-010906	Toolkit ITS	1	1
ER-015465	Chuckling spigot F/A EDM	20	20
ER-022354	Seal ring for chucking spigot	10	10
007752	M8 support foot	20	–
000999	M5 x 8 socket head bolt	20	–

## EROWA ITS Compact Combi

# Three in one

Seamless integration into the existing ITS system. The ITS Compact CombiChucks have the same mounting borehole grid as the conventional EROWA ITS chucks. Universal clamping of three systems in one single chuck. High precision and great performance due to the patented EROWA tooling technology. Whether on the machine table or in the tool quill: EROWA's ITS Compact CombiChucks can be used everywhere.



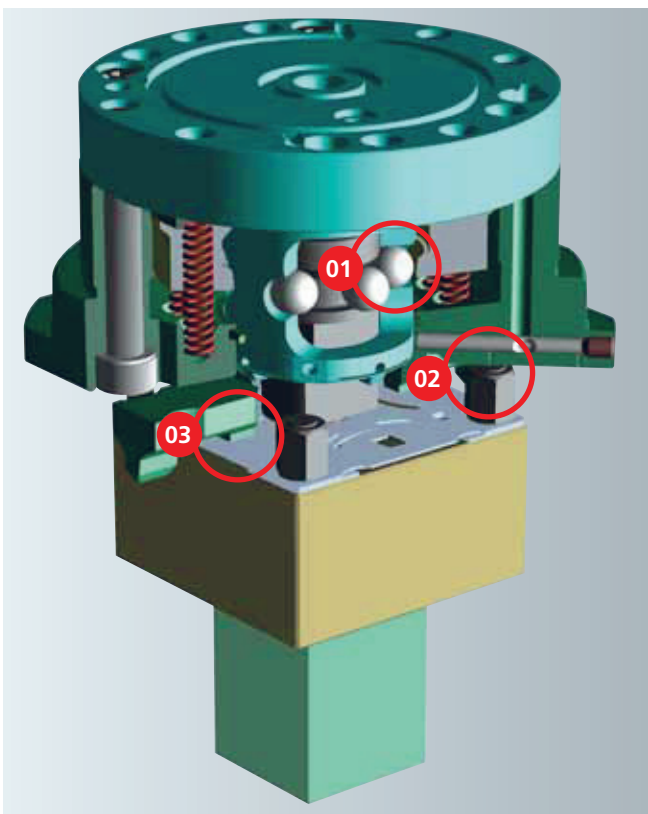
**Applications**



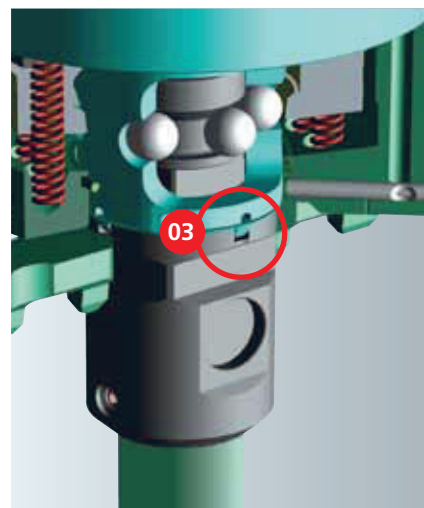
**Handling**

Manual / Loading facility / Robot

**Function**



ITS Compact CombiChuck with ITS holder.



ITS Compact CombiChuck with Compact holder.

**01 | Ball-lock**

The self-locking ball-lock generates a clamping power of 5,000 N (with re-clamping) and does not open even if the pressure fails.

**02 | Cleaning**

The support feet are cleaned during the clamping process.

**03 | Prismatic spigots**

After latching to the centering plate, the prismatic spigots in combination with the spring slots ensure powerful and high-precision positioning.

**Technical data - ITS Compact Combi Chuck**

	ITS Compact CombiChuck
System sizes	Compact 30, ITS 50 and ITS 100
Indexing	4 x 90°
Clamping power	3,000 N, 5,000 N with reclamping
Clamping	Spring power
Opening	Compressed air min. 6 bar
Operation	With manual or electropneumatic control unit

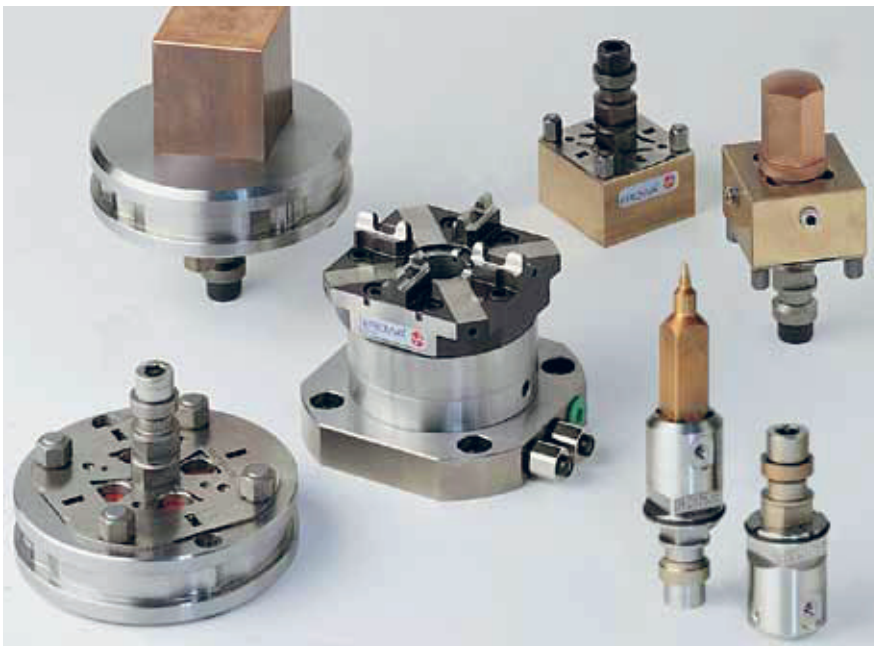
# EROWA ITS Compact Combi in action

## Versatile and universal

**Compact** – the best investment value tooling system for electrodes up to  $\varnothing$  50 mm. Compactness, precision, great performance. EROWA's Compact System consists of a complete range of chucks, electrode holders, electrode changers and accessories.

### FLEXIBLE

**Universal clamping of three systems in one chuck.**

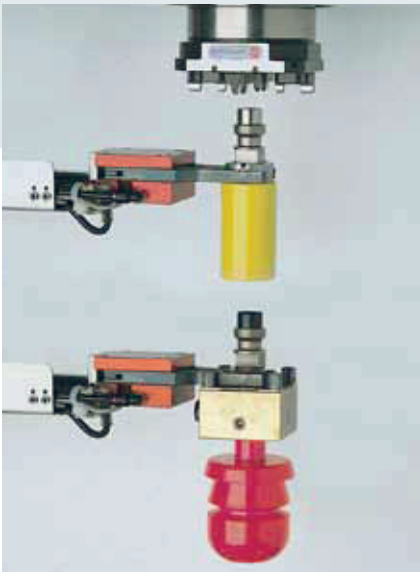


Storage capacity of up to 900 parts per square meter.

Three pallet sizes - one chuck.  
EROWA ITS Compact CombiChuck.







Economical automation by a combined loading of the EDM center.



Quick and precise clamping of electrode holders with a fitted chip guard.



Compact chucking spigot Combi: for the integration of all Compact electrodes and electrode holders into the EROWA ITS Compact Combi system.



Mixed up in the electrode magazine.



Compact ITS Adapter for the integration of Compact holders into regular ITS chucks.



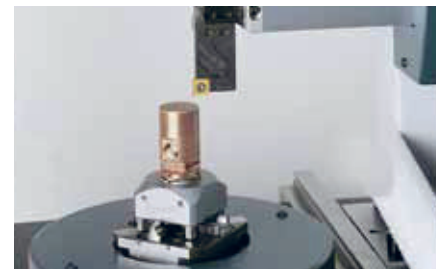
Robust and precise. The Compact standard holder is the base for most clamping applications.



Ready - steady - GO! Insert chucking spigot and start machining. Use the ready made copper blank, you won't find a quicker way.



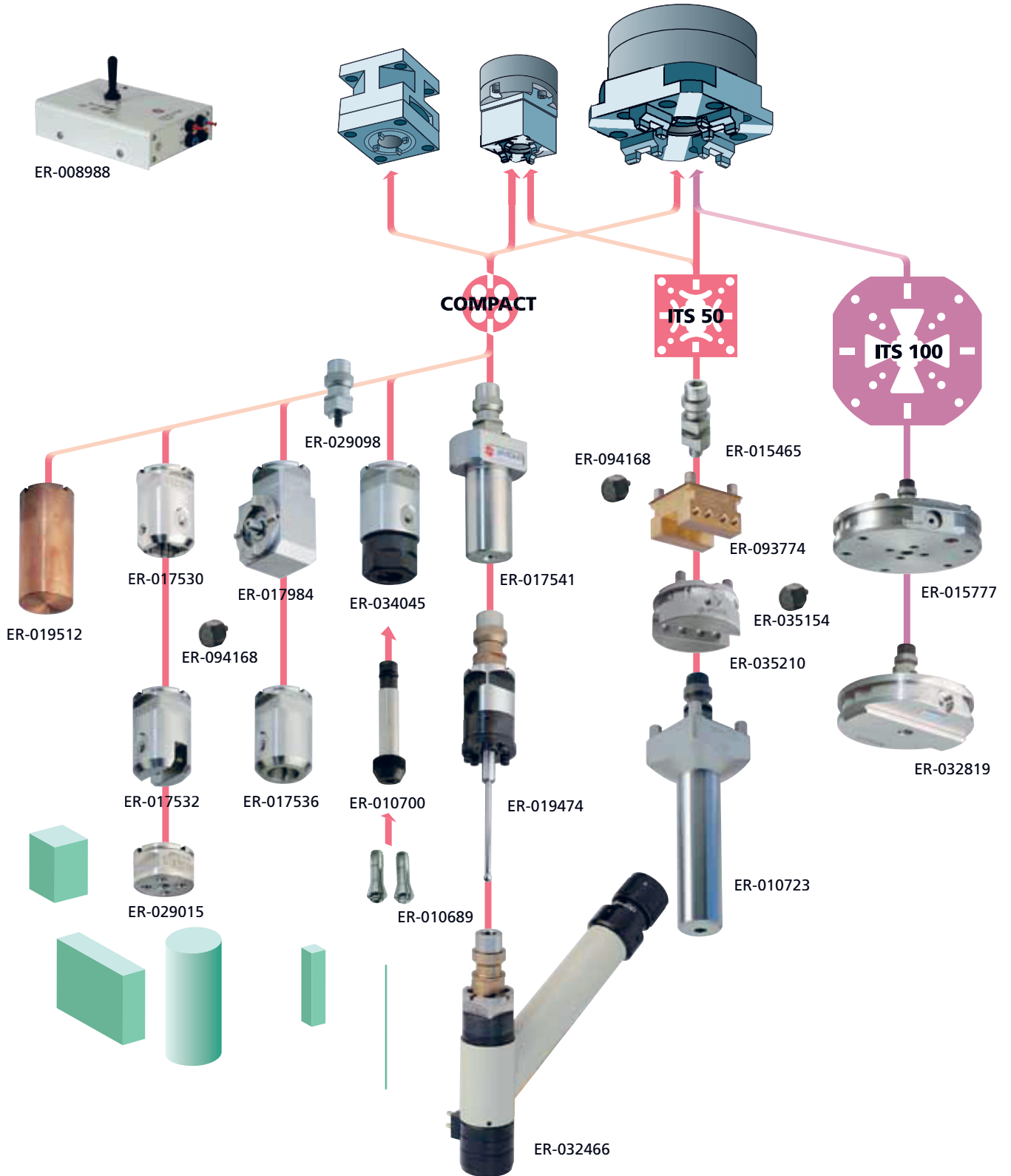
With a Compact ITS adapter, Compact electrode holders become compatible with regular EROWA ITS chucks. The electrode holder can be manually clamped in the adapter with precision and speed.



Setting-up and measuring outside the machine: quick, simple and accurate.


















# EROWA ITS Compact Combi Tooling system

## The components





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



## EROWA ITS COMPACT COMBI TOOLING SYSTEM

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For chip-removing processes



For EDM sinking



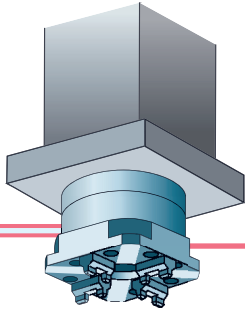
For WEDM

# EROWA ITS Compact Combi Tooling system

## The chucks



pneumatically operated



Quill chuck



ER-020025



ER-020026



ER-035261



ER-035262

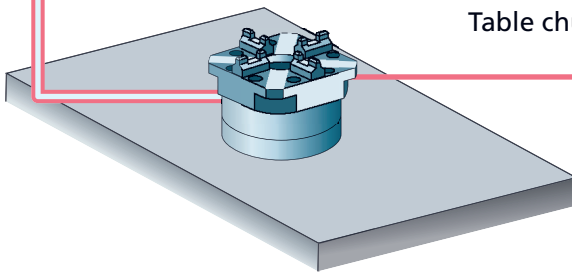
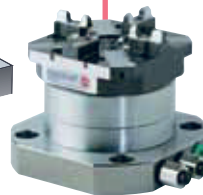


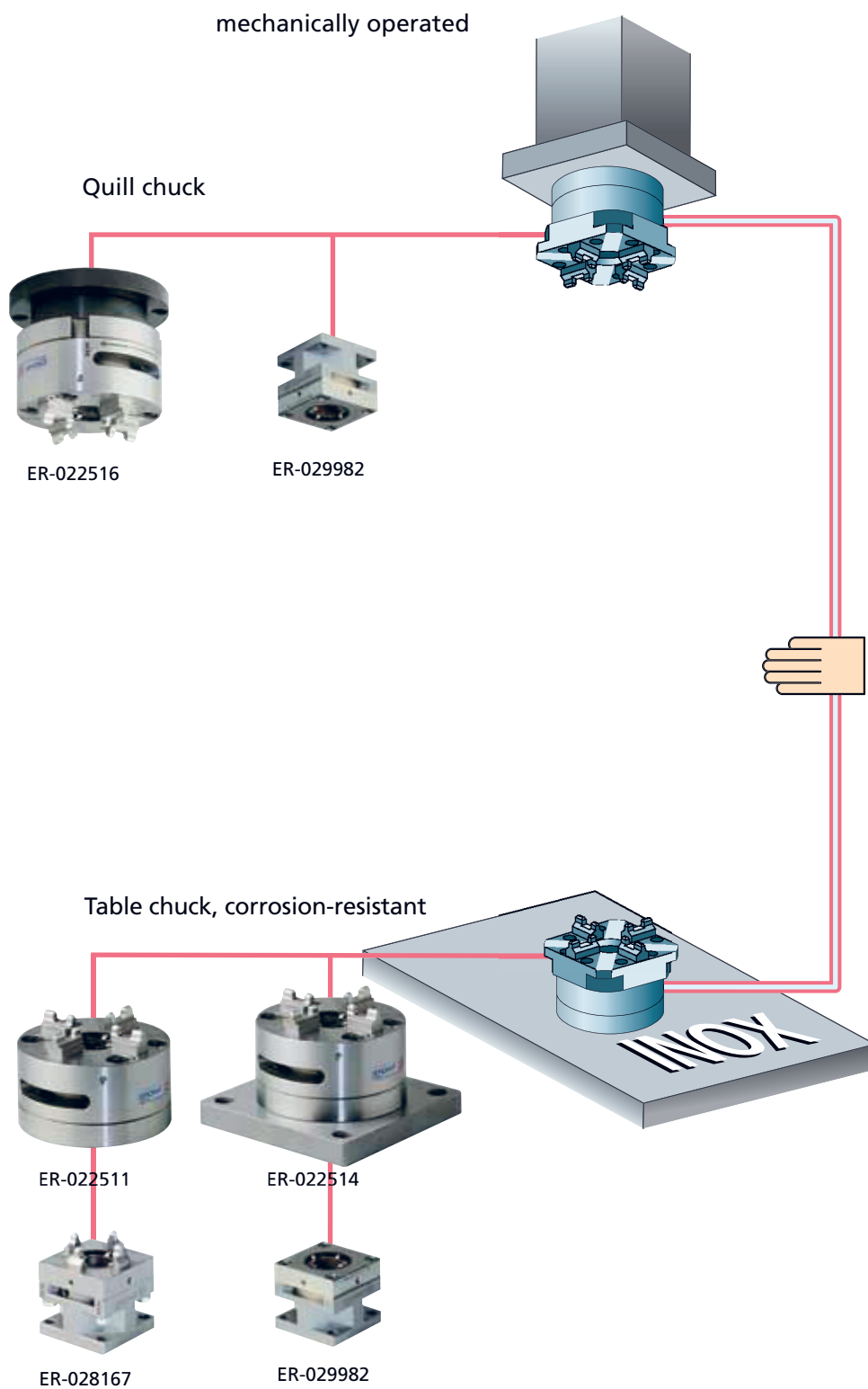
Table chuck



ER-020027



ER-020963



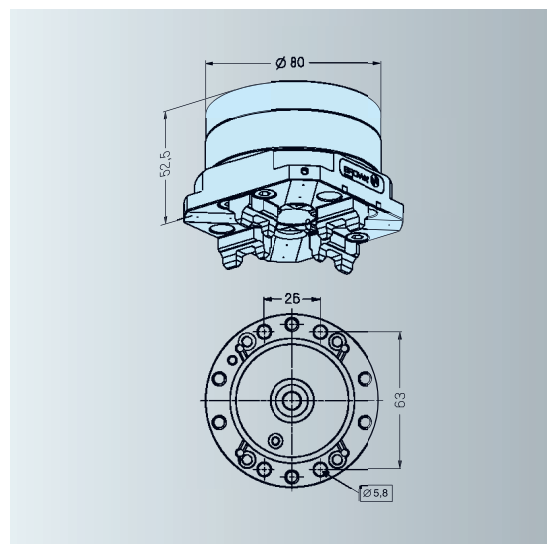
# EROWA ITS Compact Combi Chucks

Technical data	ITS Compact CombiChuck	ITS 50 Compact CombiChuck
Repeatability	0,002 mm	0,002 mm
Indexing	4 x 90°	4 x 90°
Clamping power with reclamping 6 bar (without)	5000 N (3000 N)	(4'000 N)
Generated by	springs	springs
Opening with compressed air, dry	min. 6 bar	min. 6 bar
Operation	with manual or electro- pneumatic control unit.	with manual or electro- pneumatic control unit.

## ER-020025 ITS Compact CombiChuck



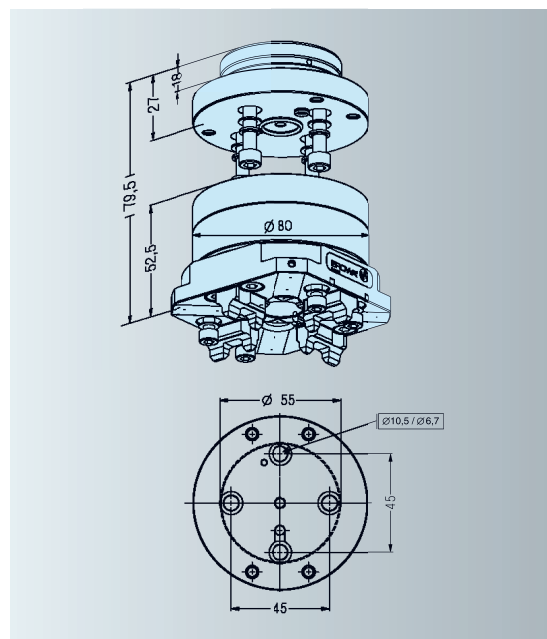
Version ITS rapid-action chuck with built-in CompactChuck.  
 Connections At the rear.  
 Application EDM centers with automatic electrode change, machine tools with automatic loading of ITS and Compact electrode holders.

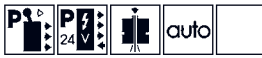


## ER-020026 ITS Compact CombiChuck with collar

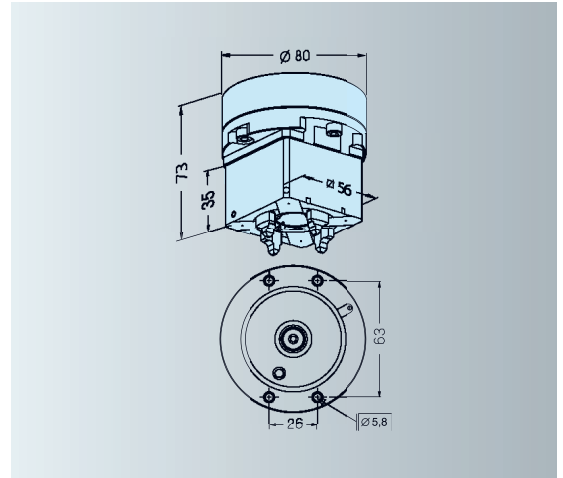


Version With flange  $\varnothing$  80/55 mm for flushing connection.  
 Connections At the rear.  
 Application EDM centers with automatic electrode change of ITS and Compact electrode holders.

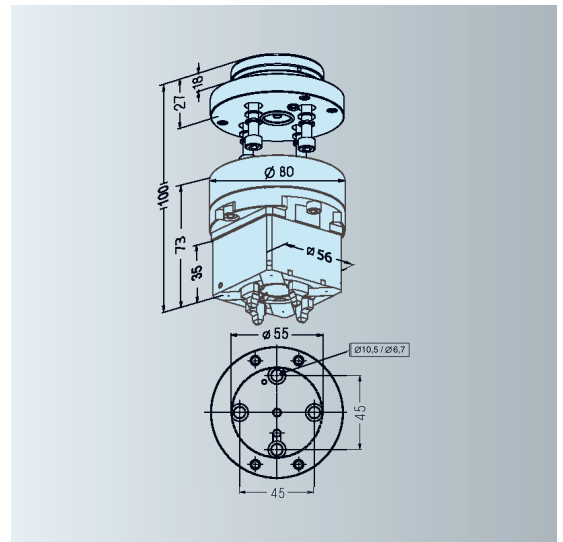


**ER-035261 ITS 50 Compact CombiChuck**

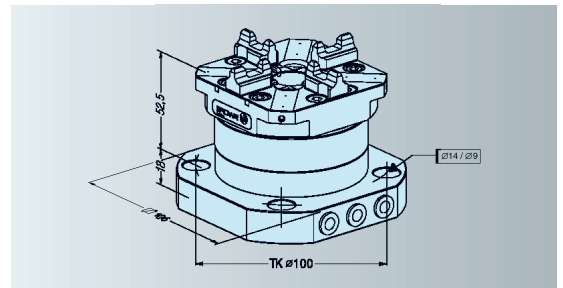
- Version ITS QuickChuck 50 with built-in CompactChuck.  
 Connections At the rear.  
 Application EDM centers with automatic electrode change, machine tools with automatic loading of ITS and Compact electrode holders.

**ER-035262 ITS 50 Compact CombiChuck with collar**

- Version With flange Ø 80/55 mm for flushing connection.  
 Connections At the rear.  
 Application EDM centers with automatic electrode change of ITS and Compact electrode holders.

**ER-020027 ITS Compact CombiChuck with base plate**

- Version With base plate 106 x 106 mm.  
 Connections Laterally on base plate for manual and pneumatic control unit.  
 Application On milling, grinding and EDM centers with manual and automatic loading facilities.



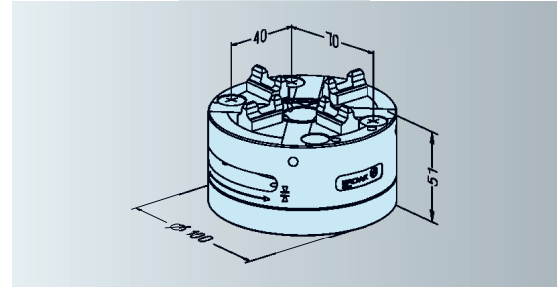
# EROWA ITS Compact Combi Chucks

Technical data	QuickChuck 100 Combi	QuickChuck 50 Combi
Repeatability	0,002 mm	0,002 mm
Indexing	4 x 90°	4 x 90°
Max. clamping power	up to 10'000 N	up to 4'000 N
Operation	manual	manual

## ER-022511 QuickChuck 100 Combi



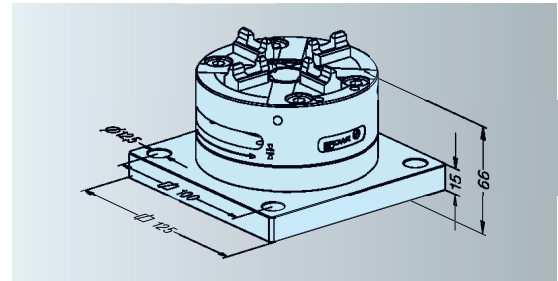
Version Combi system for EROWA ITS and Compact.  
 To fit With 4 x M8 bolts.  
 Operation Manual.  
 Application To clamp EROWA electrode holders and pallets of the system sizes Compact, ITS 50 und ITS 100.



## ER-022514 QuickChuck 100 Combi with base plate 125x125



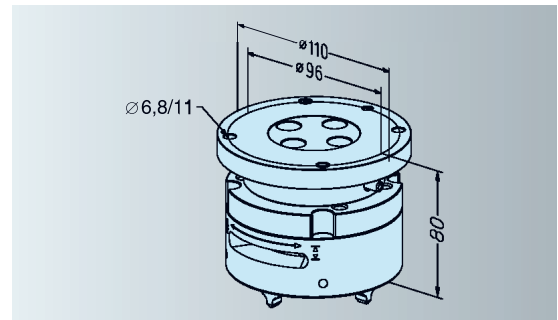
Version Combi system for EROWA ITS and Compact with base plate.  
 Mounting With bolts or brackets.  
 Operation Manual.  
 Application To clamp EROWA electrode holders and pallets of the system sizes Compact, ITS 50 and ITS 100.



## ER-022516 QuickChuck 100 Combi R

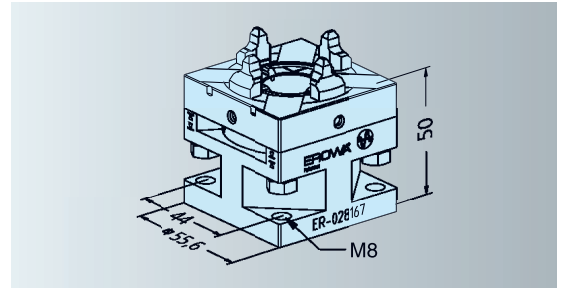


Version Combi system for EROWA ITS and Compact with rotatable flushing connection.  
 Mounting With 4 x M6 bolts.  
 Operation Manual.  
 Application To fit to rotating axes of EDM centers with lateral flushing connection.



**ER-028167 QuickChuck 50 Combi**

Version	Combi System for EROWA ITS and Compact.
Mounting	With four M8 bolts or four M6 bolts and nuts.
Operation	Manual.
Application	Clamping of EROWA electrode holders of the system size Compact and ITS 50.





# EROWA ITS Compact Combi

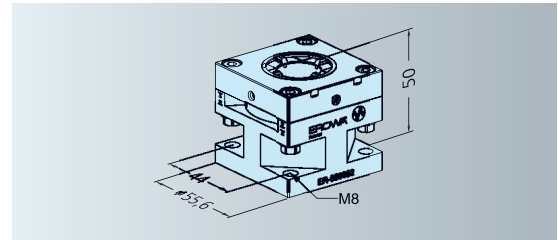
## Compact chucks

Technical data	CompactChuck
Repeatability	0.002 mm
Indexing	4 x 90°
Clamping power with reclamping 6 bar (without)	5,000 N (2,200 N)
Opening with compressed air	min. 6 bar
Operation mode	PA = Pneumatic, automatic PM = Pneumatic, manual M = Manual

### ER-029982 CompactChuck M



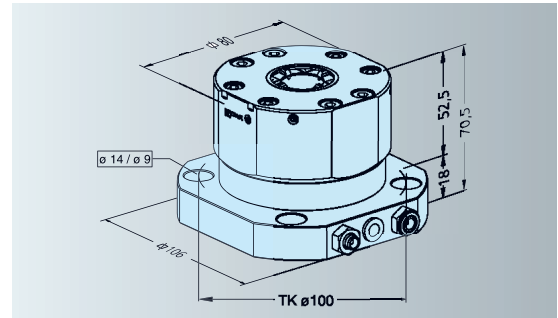
Mounting	With four M8 bolts or with four M6 bolts and nuts
Operation	Rapid-action lock with lever.
Application	Clamping of EROWA Compact electrode holders.
Note	The CompactChuck M can also be used as a quill chuck.



### ER-020963 CompactChuck PM/PA



Version	On 106 x 106 mm clamping plate.
Connections	On the side on clamping plate.
Application	On milling, grinding and EDM centers with manual operation.



# EROWA ITS Compact Combi

## Compact ITS Adapter

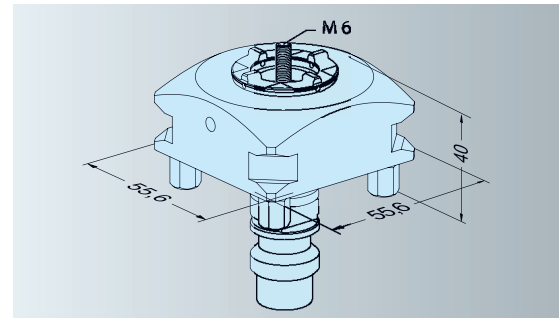
### ER-094046 Compact ITS 50 adapter C



Version ITS system size 50, lock with central locking bolt.  
Prepared to accommodate chip holder for EWIS chip.

Operation Tighten central locking bolt.

Application System adapter Compact - ITS.



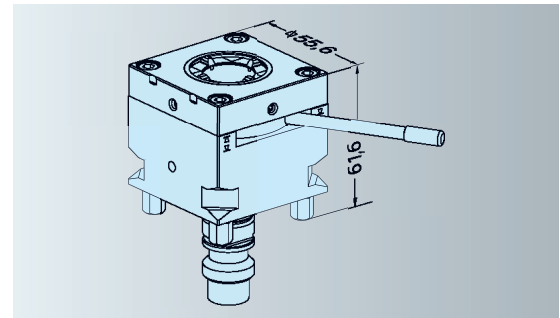
### ER-094063 Compact ITS adapter chuck C



Version ITS system size 50 C, QuickChuck action for Compact holders.

Operation Quick locking mechanism with lever.

Application Individual Compact chuck for machines which are equipped with standard ITS. System adapter Compact - ITS.



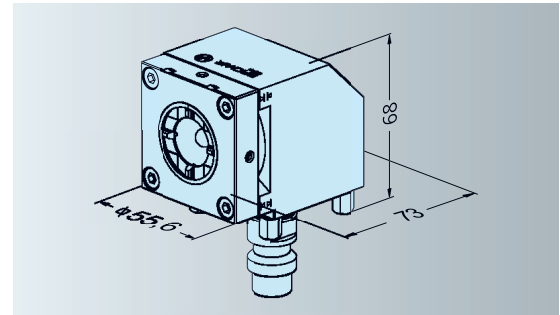
### ER-029988 Compact ITS angle adapter



Version ITS System size 50, QuickChuck locking mechanism of 90° angle chuck.

Operation Quick locking mechanism with lever.

Application Systeme adapter Compact - ITS.



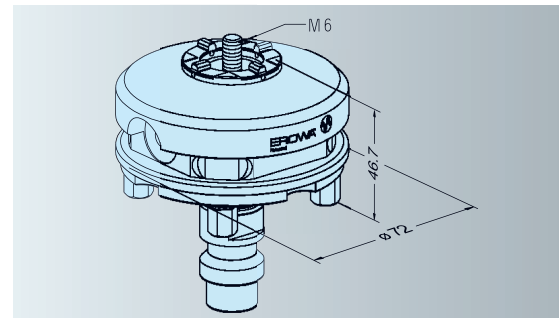
### ER-036272 Compact ITS Adapter ø 72



Version ITS system size 50 ø 72. Lock with central locking bolt.  
Prepared for chip holder identification system.

Operation Tighten central locking bolt.

Application System adapter Compact - ITS 50 ø 72 mm.



# EROWA ITS Compact Combi Electrode Holder

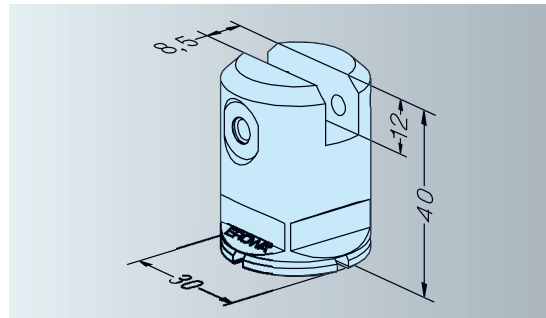
## ER-017532 Compact Uniholder 18 pieces



Version Set of 18 units.  
Without chucking spigot.

Application To hold blanks up to 8 mm width.

To fit blank Insert and tighten M5 bolts.



## ER-017529 Compact Prisround 10mm 18 pieces

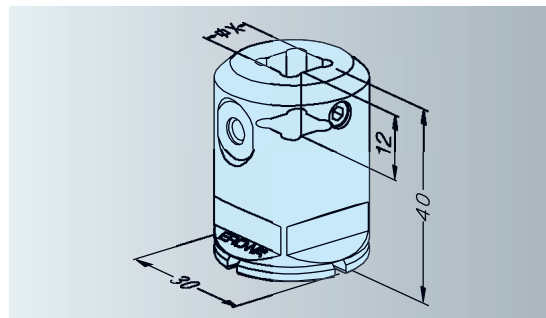
## ER-017530 Compact Prisround 15mm 18 pieces



Version Set of 18 units.  
Without chucking spigot.

Application To hold blanks with shaft of  
up to X = 10 mm square (ER-017529),  
up to X = 15 mm square (ER-017530).

Mounting Insert and tighten M5 bolts.



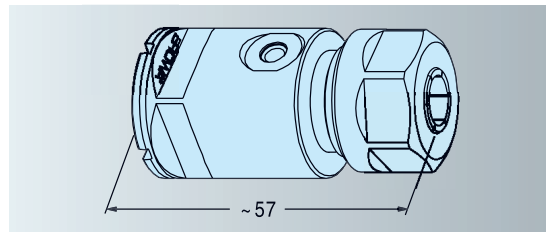
## ER-034045 Compact Collet Chuck Holder 1 piece



Version One unit.

Application To hold cylindrical parts with respective diameter.

Please note Order collect chucks ER 16 (no INOX) separately.



## ER-002394 Collet chuck ER16 ø 2mm

## ER-002395 Collet chuck ER16 ø 3mm

## ER-002396 Collet chuck ER16 ø 4mm

## ER-002397 Collet chuck ER16 ø 5mm

## ER-002398 Collet chuck ER16 ø 6mm

## ER-002399 Collet chuck ER16 ø 7mm

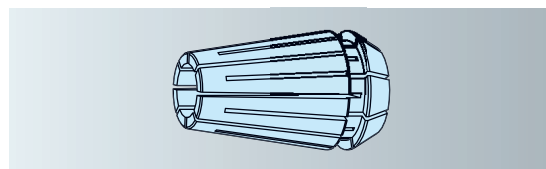
## ER-002400 Collet chuck ER16 ø 8mm

## ER-002401 Collet chuck ER16 ø 9mm

## ER-002402 Collet chuck ER16 ø 10mm



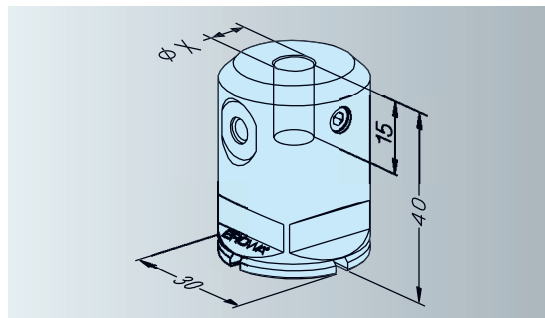
Version Clamping range 1 mm per collet chuck. Fits Collet Chuck  
Holder ER-034045. Option: Sealing ring ER-005064.



ER-017533	Compact Electrode Holder 8mm 18 pieces
ER-017534	Compact electrode holder 10mm 18 pieces
ER-017535	Compact electrode holder 12mm 18 pieces
ER-017536	Compact electrode holder 16mm 18 pieces



Version	Set of 18 units. Without chucking spigot.
Application	To hold cylindrical parts with respective diameter.
Mounting	Insert and tighten M5 bolts.

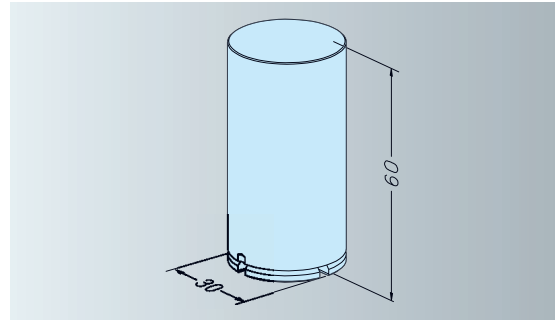


# EROWA ITS Compact Combi Electrode

**ER-019512 Compact electrode  $\varnothing$  30 x 60  
12 pieces, without gripper groove**



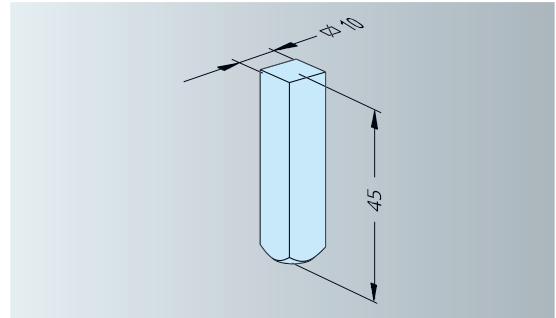
Version Electrode copper.  
Set of 18 units. Without chucking spigot.  
Application To produce electrodes up to  $\varnothing$  30 mm.



**ER-030161 Compact electrode 10 x 10 x 45 copper  
36 pieces**



Version Electrode copper. Set of 36.  
Application Production of electrodes of up to 10 x 10 mm.

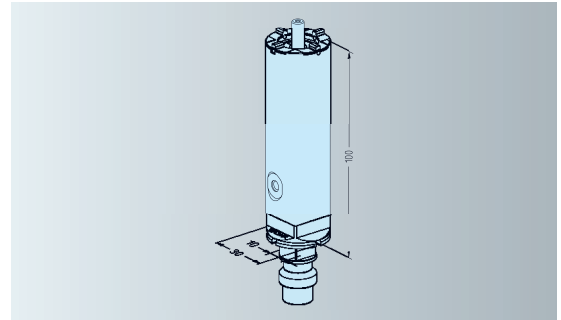


# EROWA ITS Compact Combi Accessories

## ER-017982 Compact extension 100mm



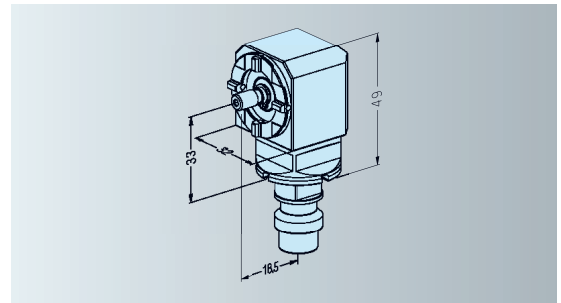
Version Shaft  $\varnothing$  30 x 100 mm.  
Application Extends the electrode by 100 mm.  
Operation Lock via central bolt through shaft.



## ER-017984 Compact angle chuck



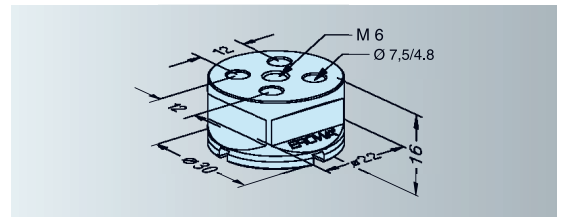
Version Compact Chuck at 90° angle.  
Operation Central locking bolt.  
Application Change from vertical to horizontal machining position.



## ER-029015 Compact standard holder H=16 20 pieces



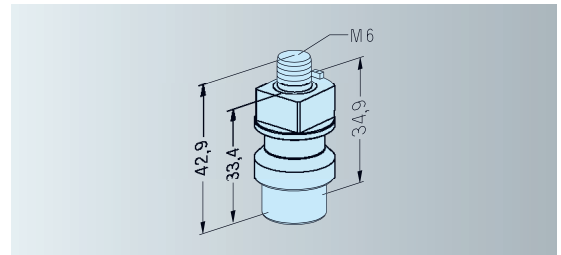
Version Set of 20 per package, without chucking spigot.  
Application To fit electrodes and workpieces.  
Note Attach blank through the center with the chucking spigot bolt or through the holder with four M4 bolts (option ER-023125, 100 M4 x 14 socket head bolts).



## ER-029098 Chucking spigot Compact Combi 20 pieces



Version Set of 20.  
Application To accommodate all the compact electrodes and electrode holders in CompactChucks, ITS-Compact-CombiChucks and electrode changers. For handling with the EROWA Combi gripper.

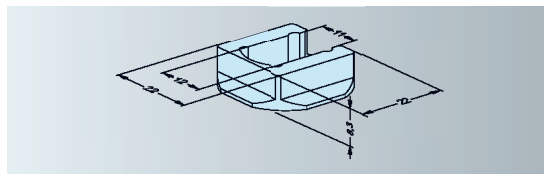


# EROWA ITS Compact Combi Accessories

## ER-051968 Chucking spigot clip 2 open electroconductive / 20 pieces



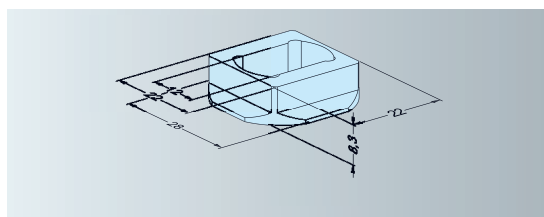
Version Synthetic, set of 20. Electroconductive.  
To be fitted to ITS chucking spigot F/A.  
Application To fit on ITS chucking spigot F/A. To load/unload ITS electrodes and electrode holders with EROWA Combi gripper.



## ER-051969 Chucking spigot clip 2 closed electroconductive / 20 pieces

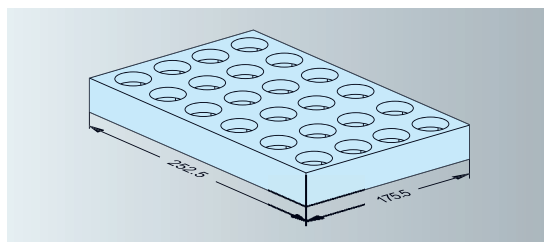


Version Synthetic, set of 20. Electroconductive.  
To be fitted to ITS chucking spigot F/A.  
Application To fit to ITS chucking spigot F/A. To load/unload ITS electrodes and electrode holders with EROWA Combi gripper.



## ER-020958 Compact system stand 24-fold 10 pieces

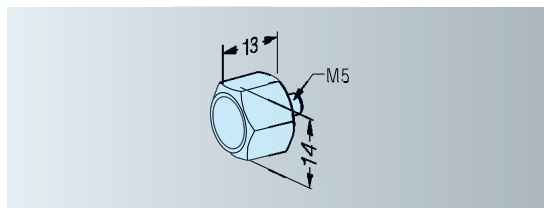
Version Styrene, set of 10.  
Application Storage and transport of 24 parts each. Compact electrodes  $\varnothing$  30 mm, with fitted Compact chucking spigot.



## ER-035154 EWIS™ Rapid chip with chip holder SW14 with chip $\varnothing$ 12,4 x 2mm



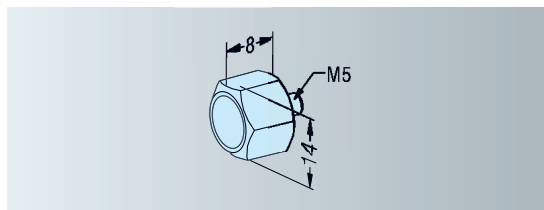
Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.  
Application In any EROWA electrode holder and pallet which has been prepared for it.



## ER-094168 EWIS™ rapid chip with chip holder SW14 for holder C



Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.  
Application In any EROWA electrode holder and pallet which has been prepared for it.

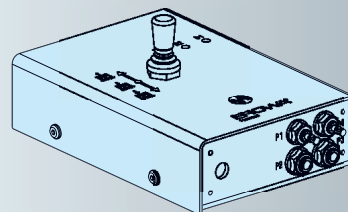




**ER-008988 Manual control unit**

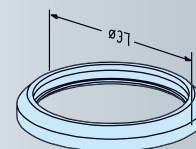
Version Manual valve to control all the functions of ITS, ITS Compact CombiChuck, PowerChuck P and UPC: opening/reclamping/cleaning.

Application Operation of chucks on machines.

**ER-022921 Chip guard for CompactChuck 10 pieces**

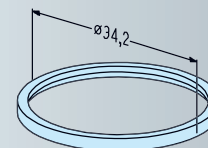
Version Rubber seal to attach to Compact ITS adapters. Set of 10.

Application Protects Compact ITS adapter and prevents the intrusion of liquids and chips. To be used in combination with sealing ring ER-022922.

**ER-022923 Chip guard for CombiChuck 10 pieces**

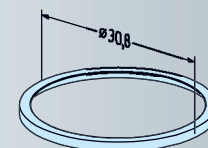
Version Plastic seal, set of 10.

Application Protects Compact chucks and prevents the intrusion of liquids and chips. To be used in combination with sealing ring ER-022922 or Combi sealing ring ER-022924.

**ER-022922 Sealing ring for Compact holder 50 pieces**

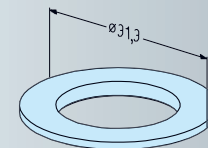
Version Rubber seal, set of 50.

Application To be fitted to Compact holder. In combination with chip guards ER-022921 or ER-022923, this prevents the intrusion of liquids and chips into the CompactChuck and the CombiChuck.

**ER-022924 Combi sealing ring / ITS chucking spigot 20 pieces**

Version Plastic seal, set of 20.

Application To be fitted to ITS chucking spigots. In combination with the chip guard ER-022923, this prevents the intrusion of liquids and chips into the CombiChuck.



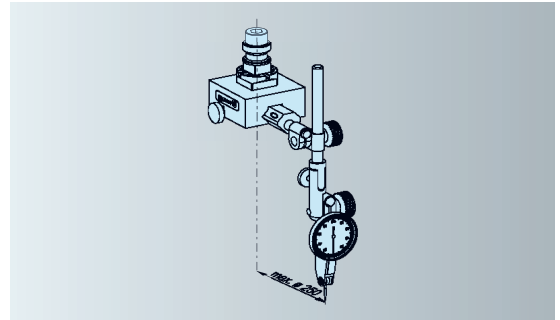
# EROWA ITS Compact Combi

## Measuring equipment

### ER-019979 Compact centering equipment fixed



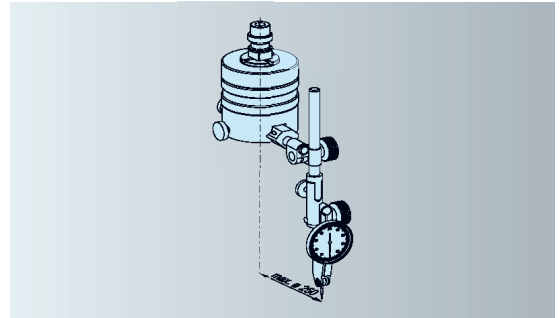
- Version Holder with slide and metric dial gauge.  
Gradation: 0.01 mm.
- Application Centric alignment of workpieces on machines with C-axes or rotation spindles.



### ER-019951 Compact centering equipment rotate



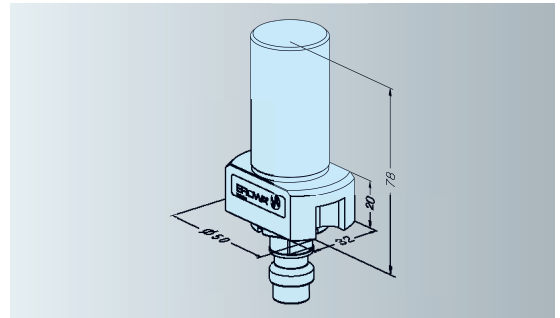
- Version Holder with slide and metric dial gauge.  
Gradation: 0.01 mm.
- Application Centric alignment of workpieces on machines without rotation axis.



### ER-017541 Compact checking pin



- Version Hardened, ground, corrosion-resistant.
- Application To align radial, axial and angular position of Compact chucks.

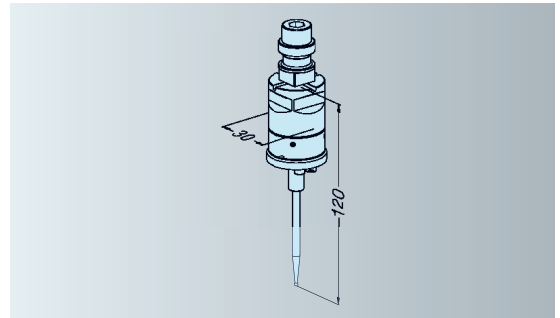


### ER-019473 Compact probe with ball ø 2 mm

### ER-019474 Compact probe with ball ø 5mm

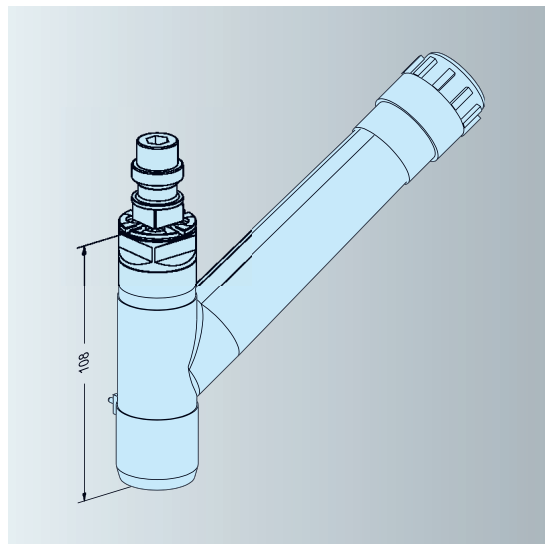


- Version Version with spring-mounted probe and carbide bolt.  
Overrun protection: X-, Y-, Z-axes, 0.3 mm.  
Repeatability: X-, Y-, Z-axes, 0.002 mm.
- Application Automatic measuring of workpieces in CNC EDM centers.



**ER-032466 Compact Microscope**

Version	Magnification: 40x Supply voltage: 12 Volt Lighting: 6 Volt Adapter: 110/220 Volt.
Application	Determination of measurements on complicated contours. The pointed checking pin serves to adjust the optic position.



# EROWA Compact Electrode holder Set

We have compiled a helpful set for the introduction of the EROWA Compact System. Additional material, in particular consumable parts, can be ordered according to your requirements.



## ER-018858 Compact Electrode holder Set

The material is packed in a practical plastic box.

Article number	Description	Number of units in the set	Number supplied according to article number
000682	Stud bolt M5 x 8	4	1
018293	Stud bolt M5 x 10	12	1
018294	Stud bolt M5 x 6	16	1
ER-017529	Compact Prisround 10 mm	4	18
ER-017530	Compact Prisround 15 mm	4	18
ER-017532	Compact Uniholder	2	18
ER-017533	Compact Electrode holder $\varnothing$ 8 mm	2	18
ER-017535	Compact Electrode holder $\varnothing$ 12 mm	2	18
ER-017536	Compact Electrode holder $\varnothing$ 16 mm	2	18
ER-029015	Compact Standard holder	6	20

Order chucking spigots according to requirements.



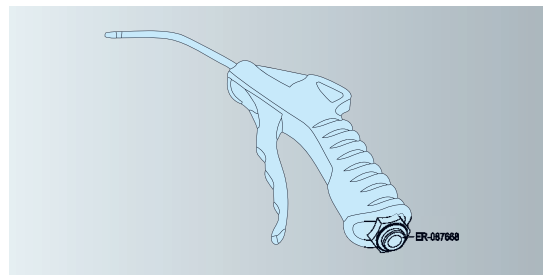
# EROWA ITS Auxiliary Equipment

## Chuck operation

### ER-001846 Air jet



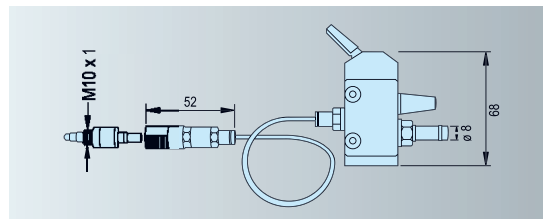
- Version Plastic, smooth regulation of air flow, connection 1/4", inside thread.
- Application Operation of manual chucks.
- Option Volume and pressure reduction to air jet (ER-087668). Pressure build up is reduced if Air Jet is not pushed against an air valve.



### ER-010538 Manual valve



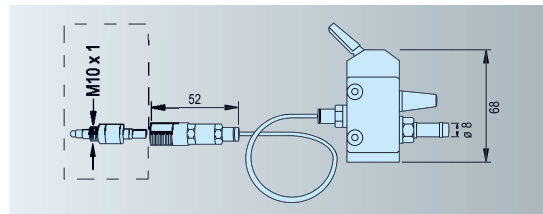
- Version Lever valve, incl. 2 m hose and coupling fittings A and B.
- Application Operation of chucks with an air connection for opening.
- Note Connecting thread M10x1.



### ER-011598 Rapid-action coupling chuck side (A)



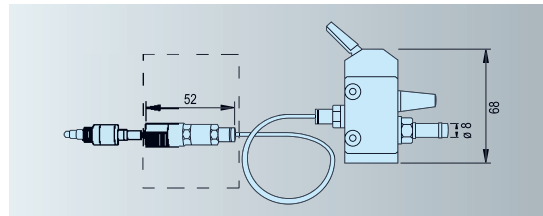
- Version Fast coupling for compressed air.
- Application Screw into a suitable EROWA chuck. Cf. manual.
- Note For connecting thread M10x1.



### ER-011597 Rapid-action coupling hose side (B)



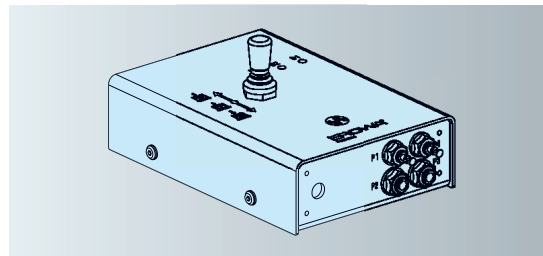
- Version Fast coupling for compressed air
- Application For use on the air supply



### ER-008988 Manual control unit

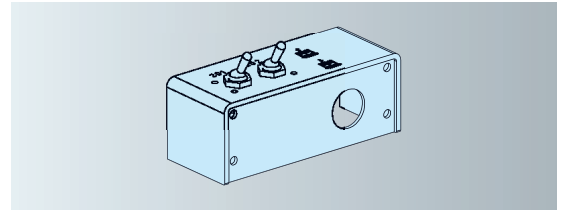


- Version Manual valve to control all the functions of ITS, ITS Compact CombiChuck, PowerChuck P and UPC: opening/reclamping/cleaning.
- Application Operation of chucks on machines.

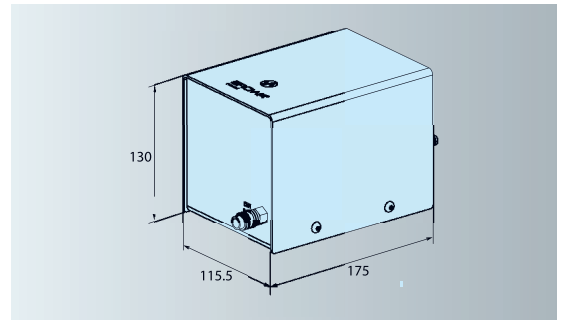


**ER-039466 Additional valve double**

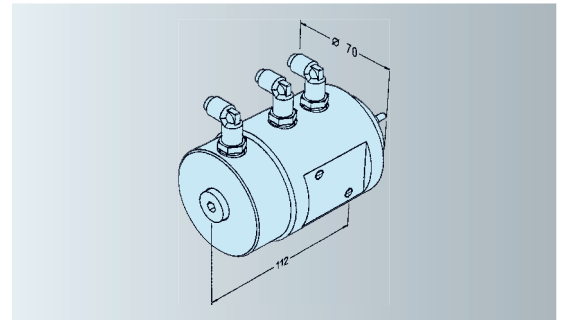
- Version For mounting to the manual control units ER-008988 and ER-073872, incl. set of hoses.
- Application Operating of two separate chucks with one single control unit.

**ER-074893 Pressure booster**

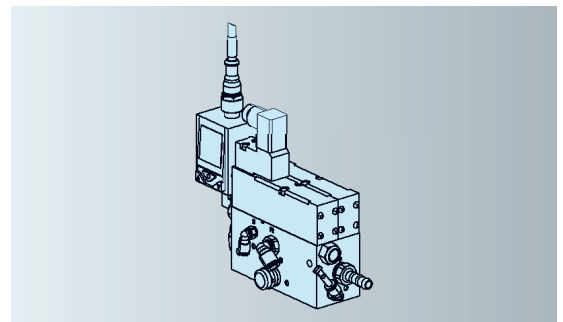
- Version Quick-connect couplings for hose  $\varnothing i = 8$  mm.  
Compression ratio: 1:2
- Application On insufficient system pressure and on pressure fluctuations.
- Installation Integrate in air circuit near application.

**ER-011362 Twin rotatable pneumatic connector****ER-011412 Triple rotatable pneumatic connector**

- Version Non machine specific connection flange. Two (three) air lines.  
Max. speed: 6000 rpm.  
Max. operating pressure: 10 bar.
- Application Air supply to EROWA chucks on rotatable spindles.
- Operation Only operate when spindle is at stand still!

**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.





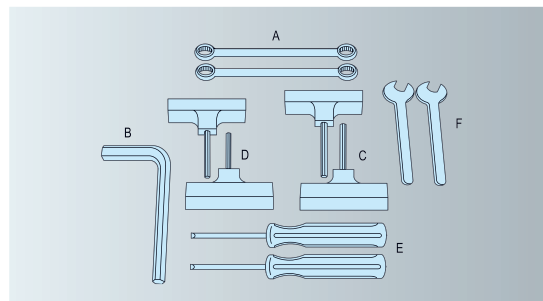
# EROWA ITS Auxiliary Equipment

## Toolroom accessories

### ER-010906 Set of tools



Application A = Box wrench 8/10 mm for supporting feet M5  
 B = Key 8 mm for chucking spigot  
 C = Key with handle 4 mm  
 D = Key with handle 3 mm  
 E = Screwdriver for slotted screws in Uniplate  
 F = Open-end wrench 8 mm

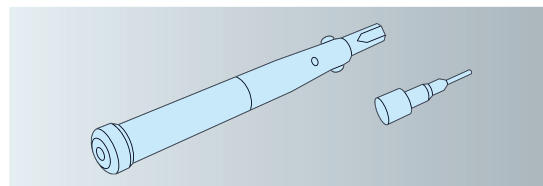


### ER-011600 Torque wrench



Version Torque range up to 20 Nm, inc. 3, 4, 5, 6 mm key and one WS 8 mm bit.

Application Service and fitting work on ITS system parts.

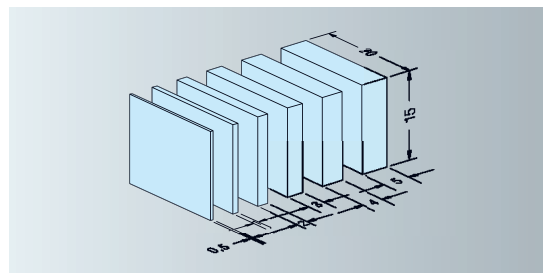


### ER-010532 Spacer plate 300 pieces



Version 6 x 50 plates. Corrosion-resistant.  
 Thicknesses from 0.5 mm to 5 mm.

Application Centering of blanks in electrode holders.



### ER-010514 Insert plates 0.5mm 50 pieces

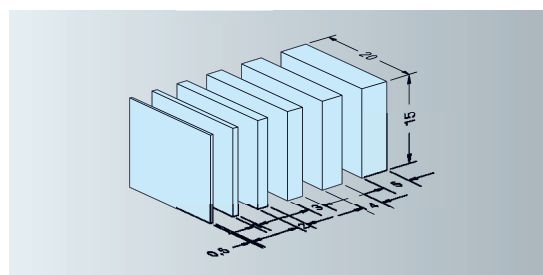
### ER-010518 Insert plates 1mm 50 pieces

### ER-010521 Insert plates 2mm 50 pieces

### ER-010523 Insert plates 3mm 50 pieces

### ER-010525 Insert plates 4mm 50 pieces

### ER-010526 Insert plates 5mm 50 pieces

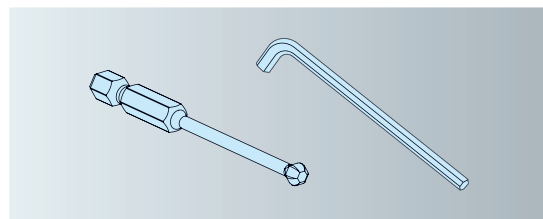


### ER-103687 SW5 hex key set for ITS C



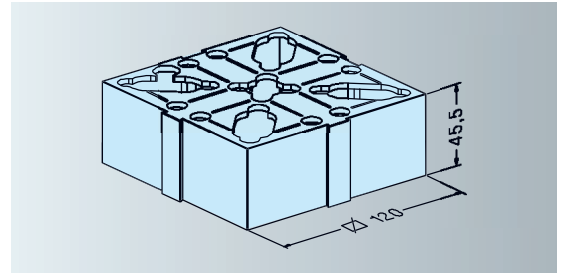
Version Consisting of 1 SW5 insert ball-point hex key, 1 hex key 5.

Application Tool used to attach electrode to the Uni plate C.

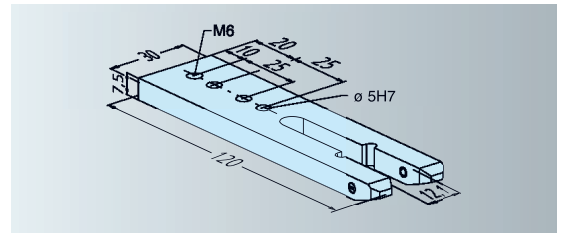


**ER-013913 System stand  
10 pieces**

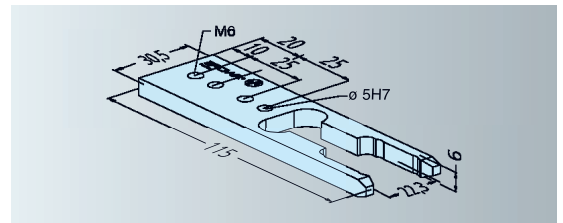
Version Plastic, set of 10.  
 Application As a rack for four electrode holders 50 or a pallet  
 $\varnothing$  115/148 mm.  
 Please note System racks can be stuck together without any gaps, e. g.  
 to be stored in drawers.


**ER-010661 Carrier fork for electrode changer**

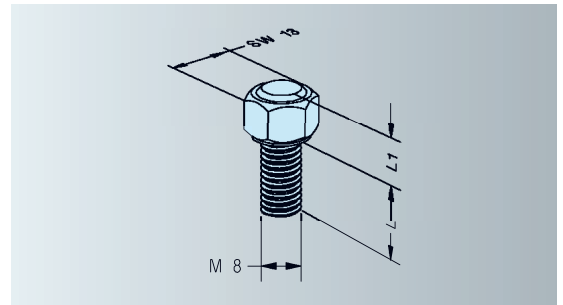

Version Steel, hardened, ground.  
 Application To build simple electrode changers, suitable for ER-007521  
 and ER-007523


**ER-024808 Pick-up fork Combi**

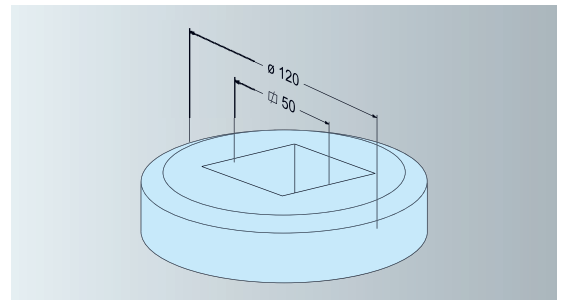

Version Corrosion-resistant steel.  
 Application To make simple electrode changers suitable for chucks  
 ER-020025 and ER-020026.


**ER-022457 Supporting foot SW13H/L=16/L1=11.4  
20 pieces**
**ER-008547 Support foot SW13/L=16/L1=10.2  
20 pieces**
**ER-008553 Support. foot SW13/L=21/L1=10.2  
20 pieces**


Version Set of 20 supportfeet.  
 ER-022457 L = 16 in combination with  
 G-centering plates,  
 Position outside the centering plate.  
 ER-008547 L = 16 for punched centering plates,  
 ER-008553 L = 21 for G-centering plates.


**ER-010744 Chip guard 50 x 50mm,  $\varnothing$  120 mm  
for rapid-action chuck**


Application On Uniplate, Prisround and all other standardholders.



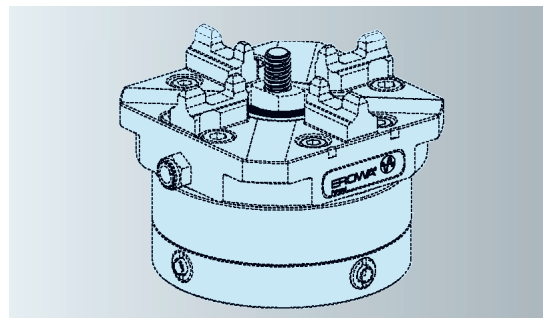
# EROWA ITS Auxiliary Equipment

## Toolroom accessories

### ER-022355 Sealing ring for ITS chucking spigot 50 pieces



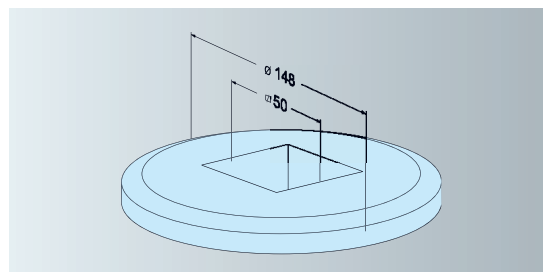
Application Set of 50 sealing rings. Sealing between chucking spigot and Rapid-action chuck.



### ER-008475 Chip guard 50 x 50 for PowerChuck



Application On Uniplate, Prisround and all other standard holders.

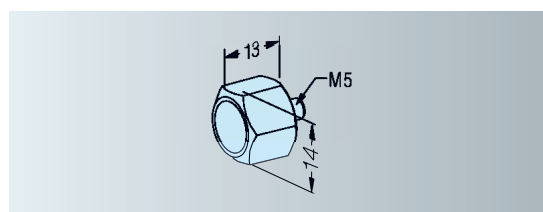


### ER-035154 EWIS™ Rapid chip with chip holder SW14 with chip $\varnothing$ 12,4 x 2mm



Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.

Application In any EROWA electrode holder and pallet which has been prepared for it.

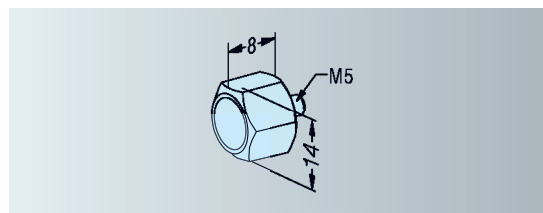


### ER-094168 EWIS™ rapid chip with chip holder SW14 for holder C



Version Sleeve fitting with built-in data carrier.  
EWIS Rapid chip: read only.

Application In any EROWA electrode holder and pallet which has been prepared for it.



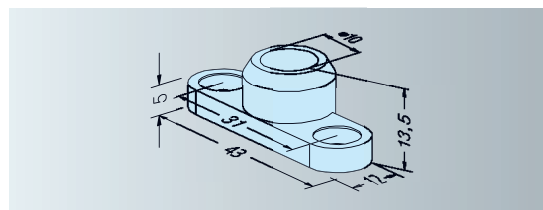
### ER-035156 EWIS™ Rapid chip with chip holder long with chip $\varnothing$ 12,4 x 2mm



Version Holder with built-in datacarrier.  
EWIS™ Chip: read only.

Application With EROWA Collet Chuck holders and Square 15/25 holders.

Mounting With supplied M4 bolts.



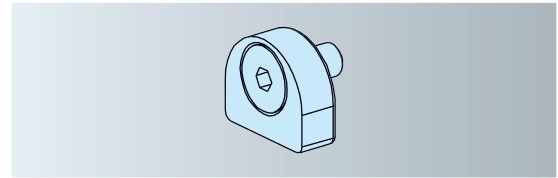
# EROWA ITS Auxiliary Equipment

## Spare parts

### ER-035294 EWIS™ Rapid chip with chip holder RCS with chip $\varnothing$ 12,4 x 2mm



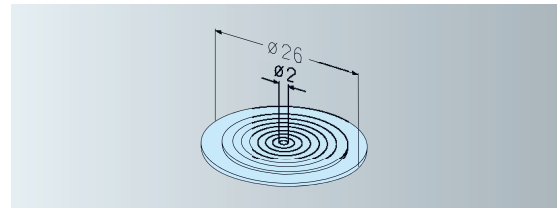
Version Holder with built-in data carrier. EWIS chip: read only.  
Application To build into RCS coupling, PalletSet W holder and Basic WEDM holder.



### ER-010694 Sealing washer 24 pieces



Application Set of 24 washers. Insertion in Prisround for sealing on central flushing.

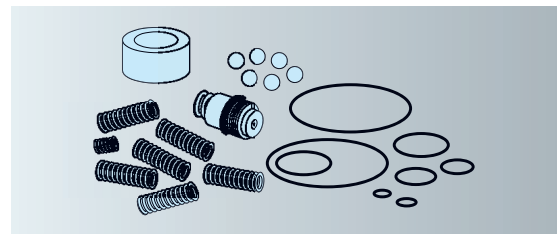


### ER-013062 Repair kit for ITS chuck

### ER-015985 Repair kit for ITS chuck INOX



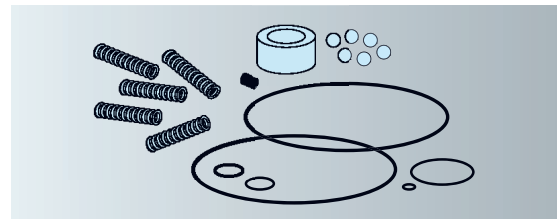
Version All the wear parts of ITS rapid-action chucks.  
Application Dismantle chuck according to instructions supplied, replace parts.  
Please note Every chuck is supplied with instructions. Please keep in a safe place.



### ER-015962 Repair kit PowerChuck P



Version All the wear parts of PowerChuck P.  
Application Dismantle chuck according to instructions supplied, replace parts.  
Please note Every chuck is supplied with instructions. Please keep in a safe place.



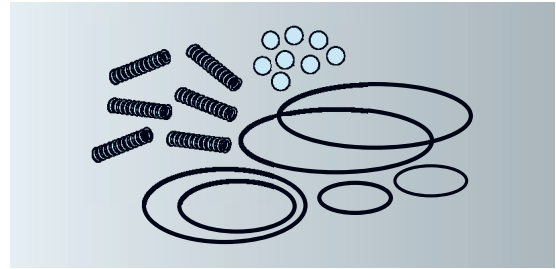
# EROWA ITS Auxiliary Equipment

## Spare parts

### ER-023121 Repair kit for UPC O-rings, springs, balls



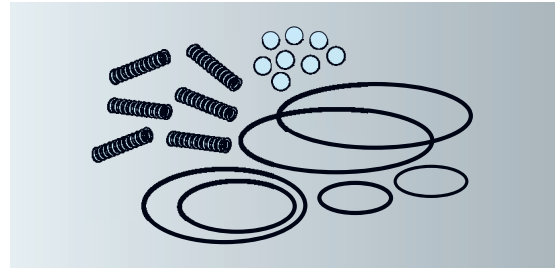
- Version All the wearing parts of UPC ER-016092, ER-016093, ER-070649 and ER-074524.
- Application Dismantle UPC according to instructions supplied, replace parts.
- Note Each UPC is supplied with an operating manual, which you will please keep.



### ER-023120 Repair kit for UPC P O-rings, springs, balls



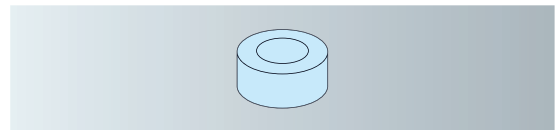
- Version All the wear parts of UPC P ER-016841, ER-078728 and ER-028784.
- Application Dismantle UPC P according to instructions supplied, replace parts.
- Note Each UPC P is supplied with an operating manual, which you will please keep.



### ER-009007 Viton seal $\varnothing 18.5/12 \times 9$ mm 10 pieces



- Version Set of 10 seals.
- Application To fit ITS rapid-action and power.



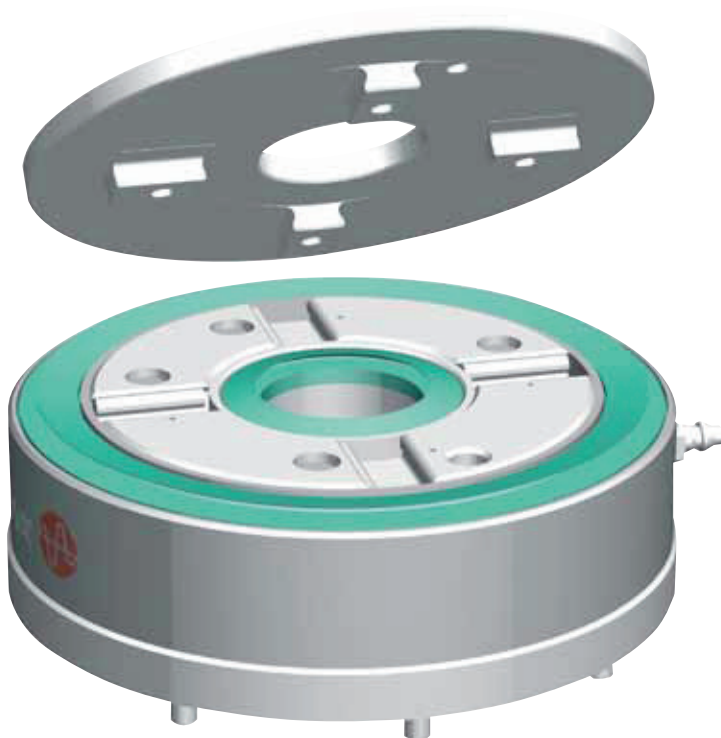


## EROWA FTS Fine Tooling System

# Workpiece palletization on small machines

The significance of setting up while the machine is at work is not a function of workpiece size. Rather, it is the time spent on changing from one production batch to another that has a crucial impact on machine productivity. Even with very small parts on machines designed for fine and finest processes, setting up outside the machine can be a critical success factor for production.

The FTS Fine Tooling System has been adapted to exactly these circumstances. With a positioning accuracy of less than 0.002 mm and its extremely flat design, it contributes toward an optimal exploitation of the working range of small machines.



- The pallet is positioned and clamped with special profiles.
- The pallet has to be raised only 4 mm before it can be removed from the chuck.
- The precision pallet is made of one piece.
- The chuck centers and clamps the pallet by means of spring tension. Thus functional safety is also guaranteed in the case of air-pressure failure.
- The compressed air required to open and clean the chuck is supplied through the lateral connections or directly through the base plate.
- Central through borehole of  $\varnothing$  18 mm.
- The seals ensure that the pallet is neatly and precisely clamped and positioned.



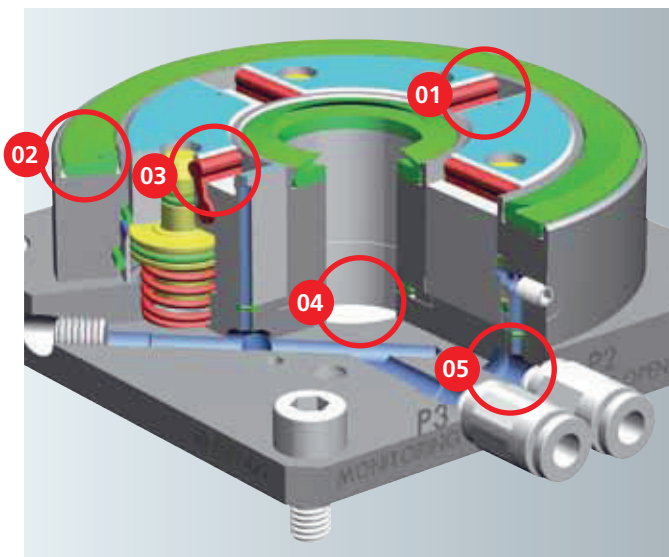
**Applications**



**Handling**

Manual / Loading facility / Robot

**Function**



**01 | Cleaning**

Contact surfaces are automatically cleaned with compressed air.

**02 | Seals**

The seals ensure reliable protection from contamination.

**03 | Clamping mechanism**

Reliable clamping mechanism thanks to spring tension.

**04 | Through-hole**

Central through borehole of  $\varnothing$  18 mm.

**05 | Connections**

Pneumatic system can be connected up laterally or through the base plate.

**Technical data - FTS Fine Tooling System**

**FTS Fine Tooling System**

Repeatability	< 0.002 mm
Indexation	4 x 90°
Clamping power	400 N
Recommended workpiece size	depends on machining power
Clamping	by spring tension
Opening	by compressed air, min. 6 bar
Operation	control unit or air gun

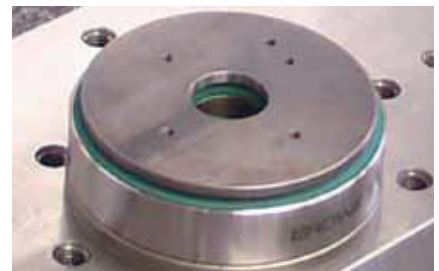
## EROWA FTS Fine Tooling System in Operation

# The palletizing system for micro-machining

Have a closer look at EROWA's FTS Fine Tooling System. All its components are made of stainless steel. The chucks can be fitted to a wide variety of machine tables, either directly or with adapter plates. A standard pallet covers the main range of applications.

### FLAT DESIGN

For a maximum utilization of the machine working range.



Chuck height: only 23 mm!

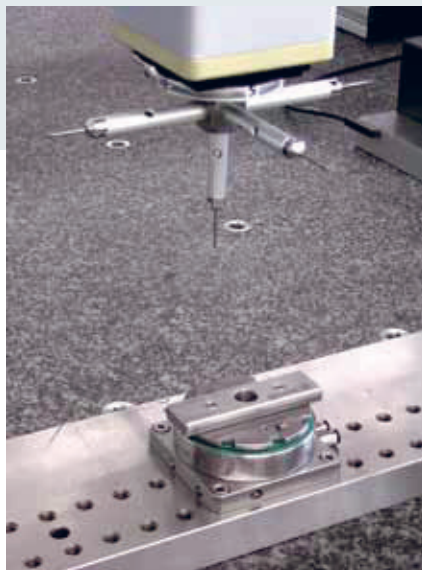
FTS in operation on a laser marking machine. The system's high positioning accuracy ensures the quality of signage even on the smallest of workpieces.



Setting up outside the machine is an essential success factor for increased machine productivity.



Fixture with set-up workpieces.



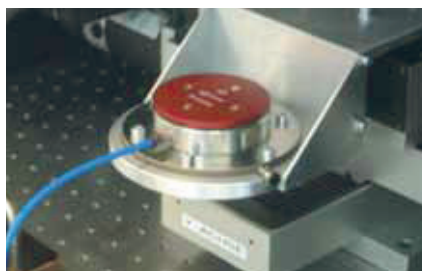
Positioning accuracy is below 0.002 mm on all machines. Precision is retained after every machining process change.



The chucks can be fitted to the machine table directly or with adapter plates.



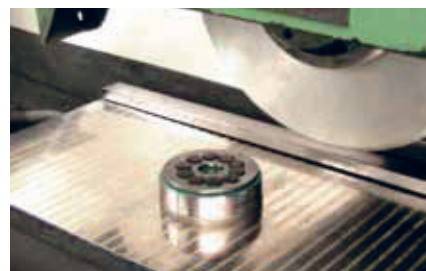
The flat precision pallet is the basis for all clamping processes.



The cover prevents penetration of chips and dirt into the FTS chuck.



4 mm vertical movement to remove the pallet. This, too, saves space.



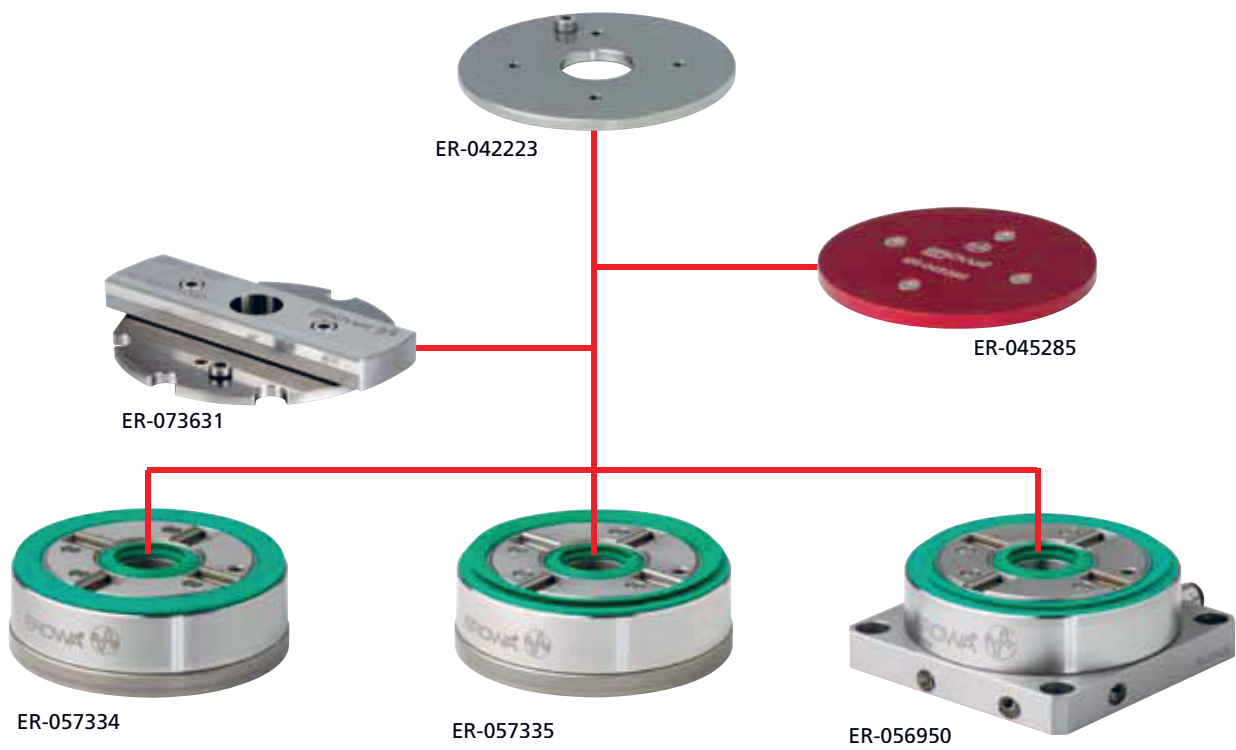
FTS is ideally suitable for the high-precision machining of small and smallest workpieces.




















All axes, X, Y, Z and the center are checked with the same alignment plate.

# Tooling System

## The components



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



## EROWA FTS FINE TOOLING SYSTEM

FTS Fine Tooling System	Chucks	254
FTS Fine Tooling System	Auxiliary equipment	255



For chip-removing processes



For EDM sinking



For WEDM

# EROWA FTS Fine Tooling System

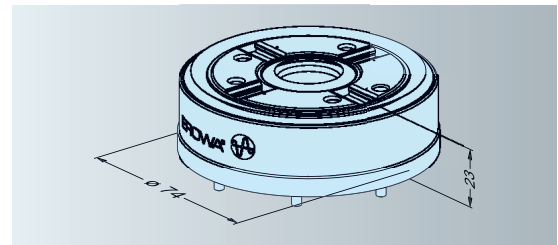
## Chucks

Technical Data	FTS Fine Tooling System
Repeatability	< 0.002 mm
Indexation	4 x 90°
Clamping power	400 N
Recommended workpiece size	depends on machining power
Clamping	by spring tension
Opening	by compressed air, min. 6 bar
Operation	control unit or air jet

### ER-057334 FTS Chuck manual Inox



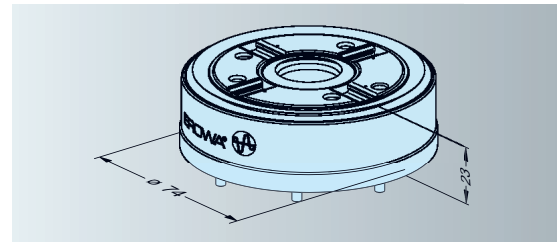
Version Pneumatic FTS chuck.  
 To fit With 7 x M3 bolts through the chuck.  
 Connections Lateral for opening.  
 Operation With air jet ER-001846 (option).



### ER-057335 FTS Chuck pneumatic Inox



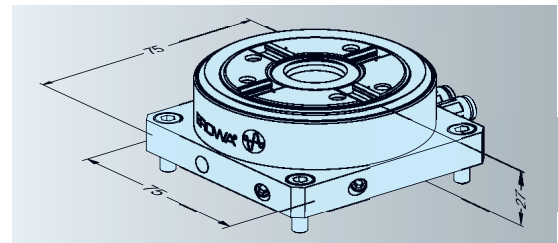
Version Pneumatic FTS chuck.  
 To fit With 7 x M3 bolts through the chuck.  
 Connections At the rear for opening and cleaning/monitoring.  
 Operation With manual control unit ER-008988 (option) or control unit with monitoring ER-070445 (option).



### ER-056950 FTS Chuck with base plate Inox



Version Pneumatic FTS chuck with base plate.  
 To fit With 4 x M5 bolts on grid dimension 63 mm through the base plate.  
 Connections Lateral for opening and cleaning/monitoring.  
 Operation With manual control unit ER-008988 (option) or control unit with monitoring ER-070445 (option).





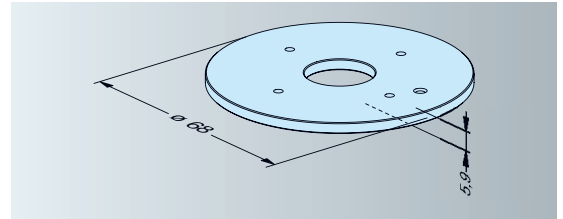
# EROWA FTS Fine Tooling System

## Auxiliary equipment

### ER-042223 Pallet FTS



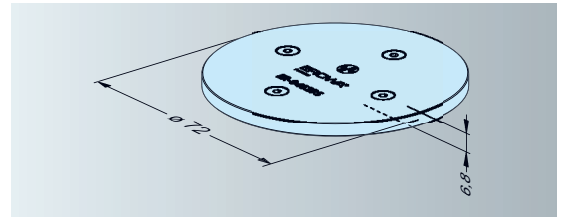
Version Steel pallet, hardened, including positioning pin for safe positioning. With central borehole  $\varnothing$  18 mm.  
Application To accommodate workpieces or fixtures.  
To fit blanks Through the pallet with 4 x M3 bolts.



### ER-045285 Cover FTS



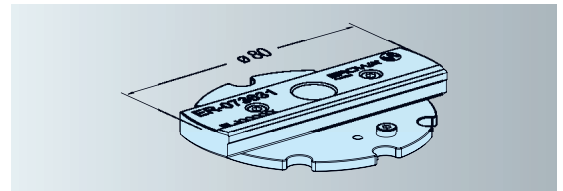
Version Aluminum, with elox finish.  
Application To protect chucks that are not in operation on the machine.  
Note CANNOT be used as a pallet.



### ER-073631 FTS alignment pallet



Version Steel, corrosion-resistant, hardened and ground.  
Application To align and check the chuck position on the machine.  
Note All the axes – X, Y and Z – as well as the center are checked with the same alignment pallet.



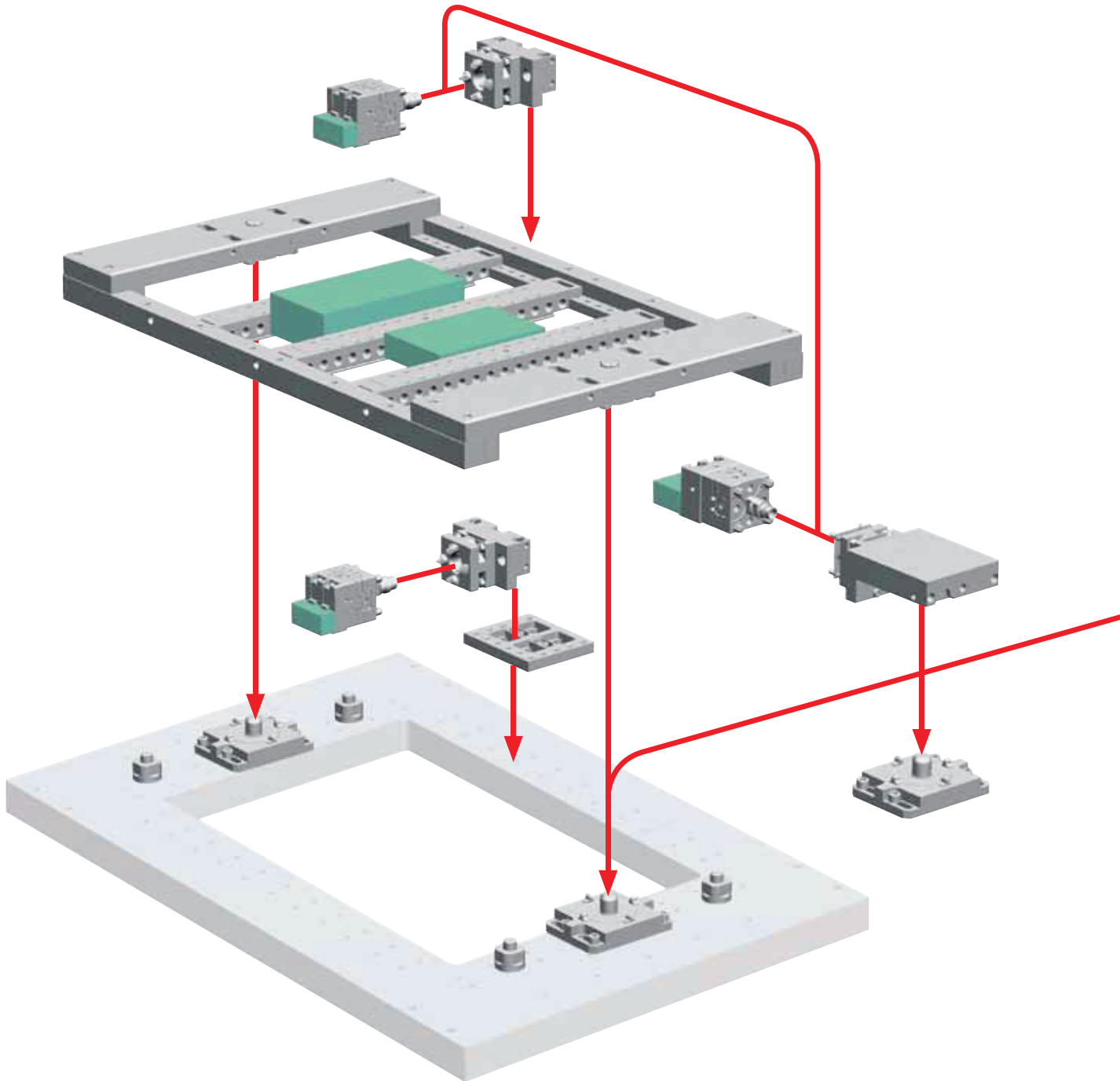


EROWA Wire EDM Tooling

# The modular tooling system for WEDM purposes

EROWA tooling systems make WEDM centers considerably more flexible and productive. Down-times can be virtually eliminated. Expensive machines can work round the clock.

Our program contains system components for newcomers, for those who would like to extend the use of ITS, and for top-end users. You define the framework and you are bound to win.



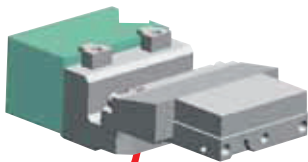
**Applications**



**Handling**

Manual / Loading facility / Robot

- Modular tooling system.
- Single and multiple palletization.
- Repeatability of clamping elements 0.002 mm.
- WEDM basic kits for all popular WEDM centers.
- Can be automated with EROWA handling facilities.



**Technical data - Wire EDM Tooling**

	Flat clamping chuck		Chuck RSA 50	QuickChuck 50 RSM
	pneumatisch	manuell		
Repeatability	0.002 mm	0.002 mm	0.002 mm	0.002 mm
Indexing			4 x 90°	4 x 90°
Clamping power	with reclamping 7'000 N	without reclamping 3'000 N	2'800 N	4'000 N
Clamping process	Spring tension	mechanically	Spring tension	Spring tension
Opening, compressed air, dry	min. 6 bar			min. 6 bar
Operation	pneumatically	mechanically	pneumatically	mechanically
Max. weight of pallet	30 kg (with support)	30 kg (with support)		

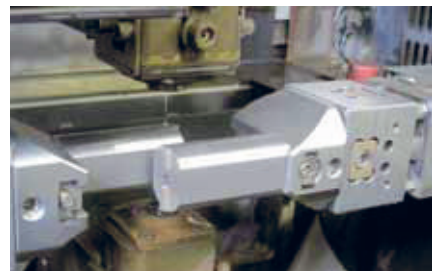
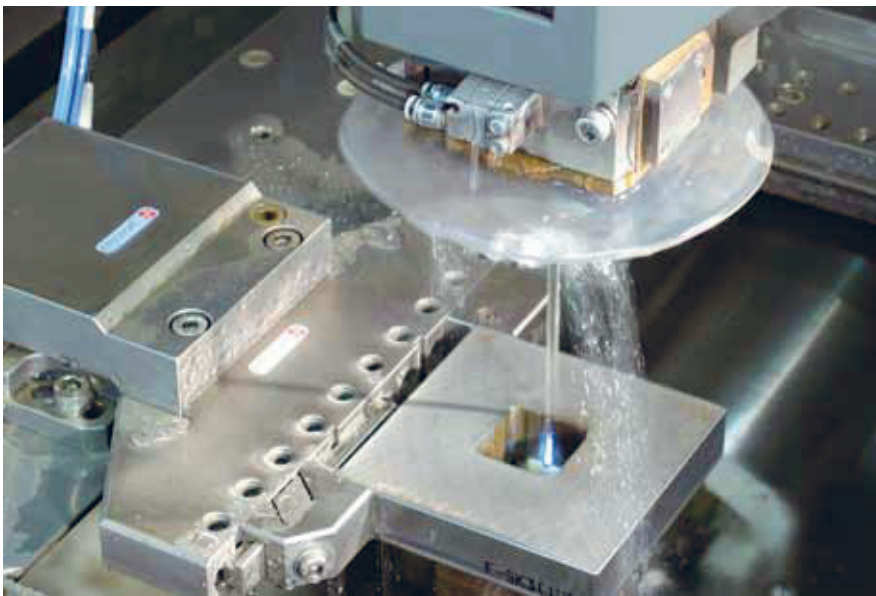
## EROWA Wire EDM Tooling

# Quick and precise resetting

The right solution for every application. With well-thought-out combinations of vises, clamping elements and clamping beams, any conceivable workpiece can be clamped. The repeatability of EROWA's Wire EDM tooling system allows for workpieces to be preset outside the machine and for safe automatic loading. Ongoing jobs can be interrupted for express jobs and then continued later.

### FLEXIBLE

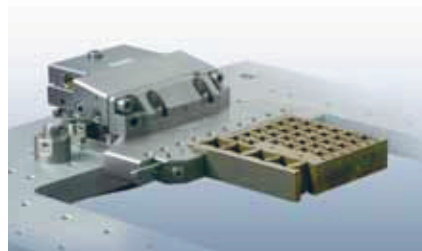
Suitable workpiece carriers for all workpiece sizes.



Use removable supports where they make sense. Thread in EDM wire through the special grooves.



Special mounting for cylindrical parts. Mounted to the pendulum holder, the workpiece is adjustable in three axes.



Adjustable in all axes: the pendulum holder with fitted flat vise.



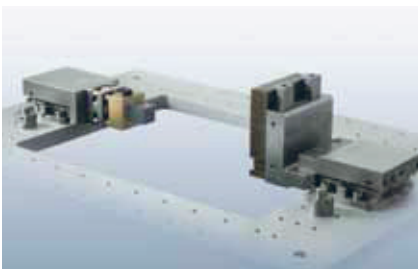
Use removable supports where they make sense. Thread in EDM wire through the special grooves.



EROWA Lift to load the WEDM center.



Special accommodation for cylindrical parts. Fitted to the pendulum holder, workpieces can be adjusted in three axes.



Single palletization in a manned shift: this is where the tricky jobs are done.



EDM electrode holders are positioned on the WEDM center for machining both quickly and with high precision.



Its low design creates more space for workpieces.



Presetting the workpieces saves time.



Presetting made easy. While the WEDM center is in operation, the next job is being preset quickly and accurately on the EROWA PreSet station.



Load Robots for more autonomy at night and at weekends. We'll be glad to advise you how to increase your productivity with an EROWA handling facility.



# EROWA Wire EDM Tooling

## Tooling System

### The components

#### Clamping elements for fixtures

ER-033958



ER-031952



ER-062788



ER-008231



ER-008875



ER-008873



ER-007990

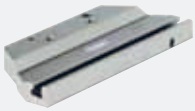


ER-008220



#### Fixtures for adapters

ER-031945



ER-017645



ER-019248



ER-030110



ER-018940



ER-031179



ER-018941



ER-025115



#### Adapters for interfaces



ER-041179



ER-035294



ER-035156

ER-033955



ER-031942



ER-039214



ER-037888



ER-055158



#### Interfaces to machine table

ER-040641



ER-008221



ER-029229



ER-029228



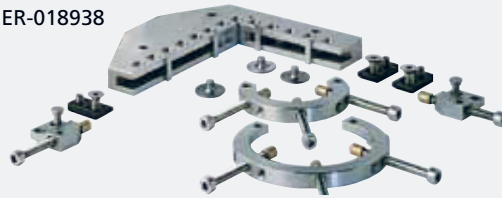
ER-025895



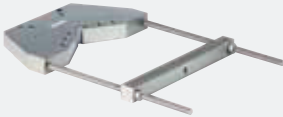
ER-054922



ER-018938



ER-038891



ER-018937



ER-055774



ER-051800



ER-038710



ER-033974



ER-008814



ER-008842



ER-052091



ER-007935



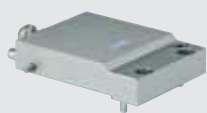
ER-008856



ER-016691



ER-030678



ER-039795



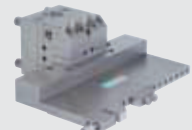
ER-014722



ER-014698



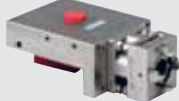
ER-055535



ER-030923



ER-033933



ER-012727



ER-007877



ER-038711



ER-028471



ER-035714



ER-035715



ER-017198



ER-007852




















ER-022583





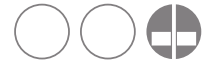


To make it easier for you to find your way about the fields of application for EROWA products, we use the following symbols in all our documents:

-  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

## EROWA WIRE EDM TOOLING

Wire EDM Tooling	Interfaces to machine table	264
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Wire EDM Tooling	Wire EDM Tooling Kits	290
Wire EDM Tooling	Clamping equipment sets	292



For chip-removing processes



For EDM sinking



For WEDM

# EROWA Wire EDM Tooling

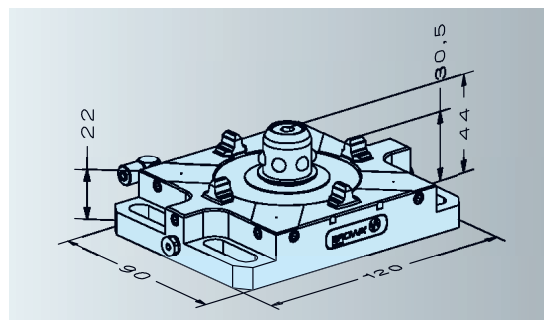
## Interfaces to machine table

Technical data	Flat chuck pneumatic	Flat chuck manual	Basic WEDM chuck manual
Repeatability	0.002 mm	0.002 mm	0.002 mm
Clamping power	with reclamping 7,000 N	without reclamping 3,000 N	without reclamping 8,000 N
Generated by	spring power	mechanic	mechanic
Opening with compressed air, dry	min. 6 bar		
Operation	pneumatic	manual	manual
Max. pallet weight	30 kg (with support)	30 kg (with support)	15 kg (with support)

### ER-035714 Flat chuck pneumatic PalletSet W / FrameSet



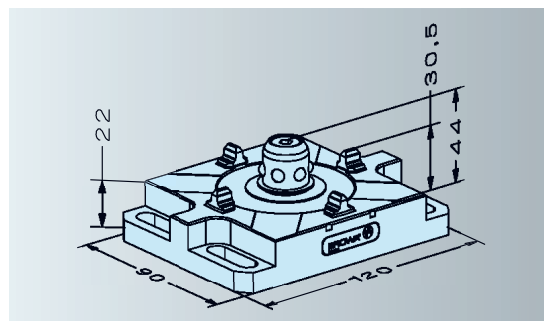
- Version Pneumatic chuck for a direct fit to the Z = 0 base of the WEDM center.
- Application On WEDM centers with manual or automatic workpiece loading.
- Connections On the side for opening, cleaning, reclamping.



### ER-035715 Flat chuck manual PalletSet W / FrameSet



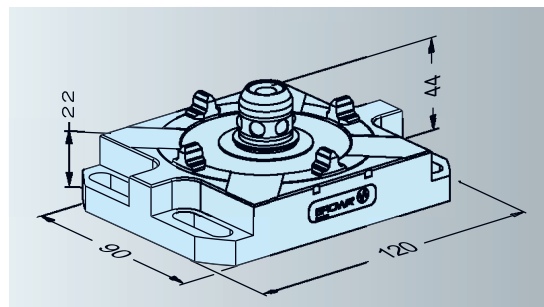
- Version Mechanical chuck for a direct fit to the Z = 0 base of the WEDM center.
- Application On WEDM centers with manual workpiece loading.
- Operation With a manually operated ball lock.



### ER-040641 Basic WEDM chuck Basic Tooling



- Version Mechanical chuck for a direct fit to the Z = 0 base of the WEDM center.
- Application On WEDM centers with manual workpiece loading.
- Operation With a manually operated ball lock.

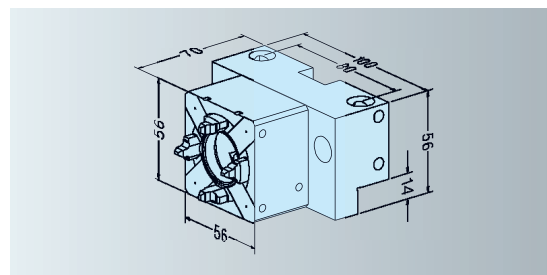


Technical data	Chuck RSA 50	QuickChuck 50 RSM
Repeatability	0.002 mm	0.002 mm
Indexing	4 x 90°	4 x 90°
Clamping power	2,800 N	4,000 N
Clamping	Spring power	mechanical
Opening with compressed air, dry	min. 6 bar	
Operation	pneumatic	mechanical

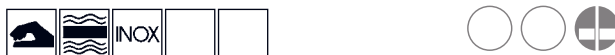
**ER-007851 Chuck 50 RSA / on universal plate UnoSet**



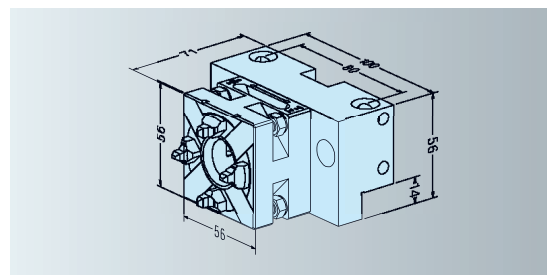
Version Automatic, with pneumatic valve.  
 Application ITS base for the manual or automatic loading of ITS elements.  
 Use On all machine bases and FrameSet beams.  
 Can be used either horizontally or vertically.



**ER-007852 QuickChuck 50 RSM / on universal plate UnoSet**



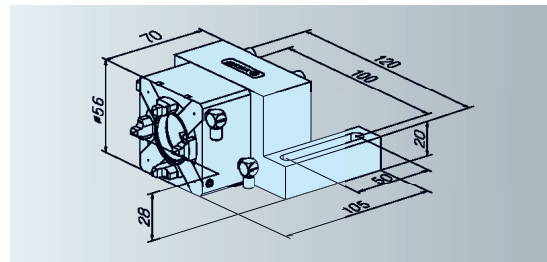
Version Manual.  
 Application ITS base for the manual loading of ITS elements.  
 Use On all machine bases and FrameSet beams.  
 Can be used either horizontally or vertically.



**ER-022583 Clamping chuck 50 RSA / UnoSet on adapter plate R=100mm**



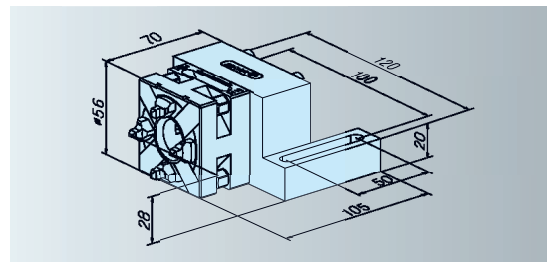
Version Chuck 50 on adapter plate, manual.  
 Application To be fitted directly to any machine bases with attachment boreholes in a 100 mm grid.



**ER-022584 QuickChuck 50 RSM UnoSet on adapter plate R=100mm**



Version Chuck 50 on adapter plate, manual.  
 Application To be fitted directly to any machine bases with attachment boreholes in a 100 mm grid.



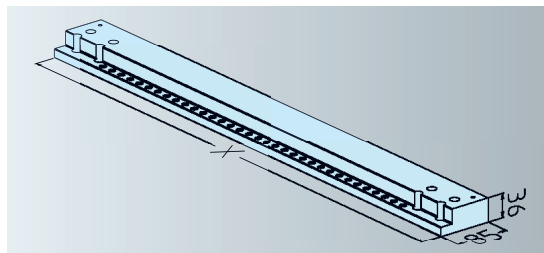
# EROWA Wire EDM Tooling

## Interfaces to machine table

### ER-012847 ManoSet rail L length 947mm XXL 1 piece



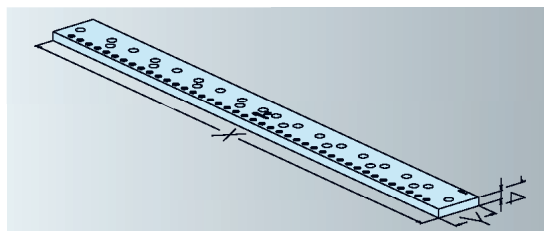
- Version Supplied: 1 unit.  
Rail for large WEDM centers.  
X = 947 mm.
- Mounting Directly on the Z=0 base.
- Application To clamp large workpieces with XXL clamping beams 540, ER-037307 or clamping beams 620, ER-034989 (see page 273).
- Note ManoSet rail XXL suitable for Charmilles CTFI60++ and Sodick AQ 750 L.



### ER-035690 ManoSet rail P 890mm XXL



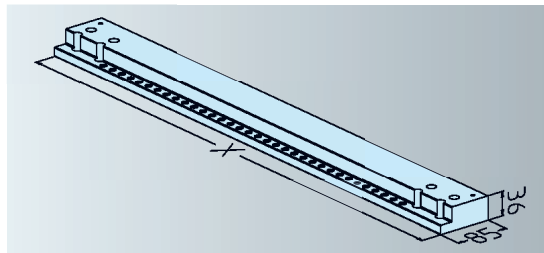
- Version Supplied: 1 unit.  
Rail for large WEDM centers.  
X = 890 mm, Y = 75 mm.
- Mounting directly on the Z=0 base.
- Application To clamp large workpieces with XXL clamping beams 540, ER-037307 or clamping beams 620, ER-034989 (see page 273).
- Note ManoSet rail XXL suitable for Sodick AQ 750 L and Makino SP 64.



### ER-038985 ManoSet rail L Length 850mm XXL



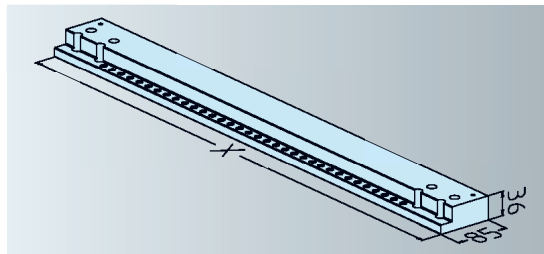
- Version Supplied: 1 unit.  
Rail for large WEDM centers.  
X = 850 mm.
- Mounting directly on the Z=0 base.
- Application To clamp large workpieces with XXL clamping beams 540, ER-037307 or clamping beams 620, ER-034989 (see page 273).
- Note ManoSet rail XXL suitable for Makino EU 64 and SP 64.



### ER-041430 ManoSet rail L Length 1010mm XXL

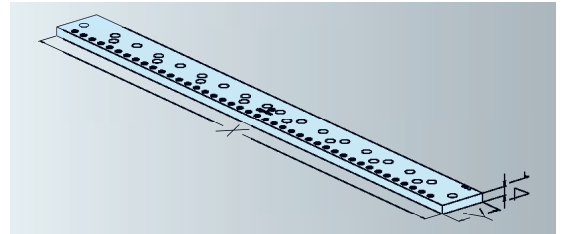


- Version Supplied: 1 unit.  
Rail for large WEDM centers.  
X = 1010 mm.
- Mounting directly on the Z=0 base.
- Application To clamp large workpieces with XXL clamping beams 540, ER-037307 or clamping beams 620, ER-034989 (see page 273).
- Note ManoSet rail XXL suitable for Makino U86 and Seibu M 750.

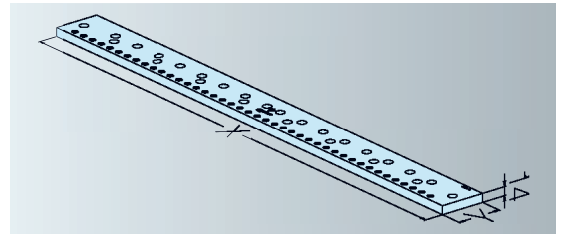


**ER-042904 ManoSet rail P length 890mm XXL  
1 piece**

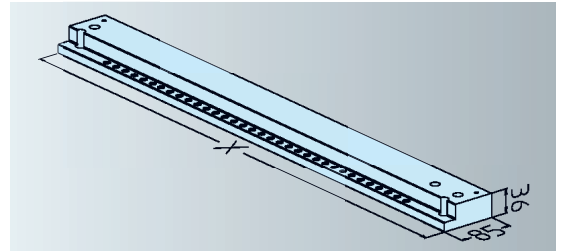
- Version Supplied: 1 unit.  
Rail for large WEDM centers.  
X = 890 mm, Y = 75 mm.
- Mounting directly on the Z=0 base.
- Application To clamp large workpieces with XXL clamping beams 540, ER-037307 or clamping beams 620, ER-034989 (see page 273).
- Note ManoSet rail XXL suitable for Charmilles CT FI 640cc, CT FI 690, GFMS Cut 400 / Cut 30P and ONA AE 600.

**ER-043487 ManoSet Beam P length 860mm XXL  
1 piece**

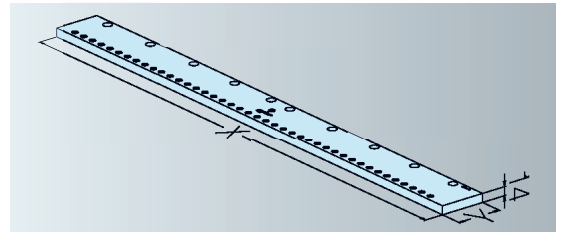
- Version Supplied: 1 unit.  
Rail for large WEDM centers.  
X = 860 mm, Y = 50 mm.
- Mounting directly on the Z=0 base.
- Application To clamp large workpieces with XXL clamping beams 540, ER-037307 or clamping beams 620, ER-034989 (see page 273).
- Note ManoSet rail XXL suitable for Mitsubishi FX 30 / FA30, CT FI6050, Makino SP64, Makino DUO 64/U6.

**ER-069834 ManoSet rail L length 1050mm  
Sodick AQ900L**

- Version Units supplied: 1 Rail for big WEDM machines.  
X = 1050mm.
- To be fitted Directly to machine base Z-Zero.
- Application Clamping of big workpieces with XXL clamping beam 540, ER-037307, or clamping beam 620, ER-034989 (see page 273).
- Information ManoSet rail XXL, suitable for Sodick AQ900L.

**ER-069835 ManoSet rail P length 950mm  
Sodick AQ900L**

- Version Units supplied: 1 Rail for big WEDM machines.  
X = 947mm, Y = 50mm,
- To be fitted Directly to machine base Z-Zero.
- Application Clamping of big workpieces with XXL clamping beam 40, ER-037307, or clamping beam 620, ER-034989 (see page 273).
- Information ManoSet Rail XXL, suitable for Sodick AQ900L.



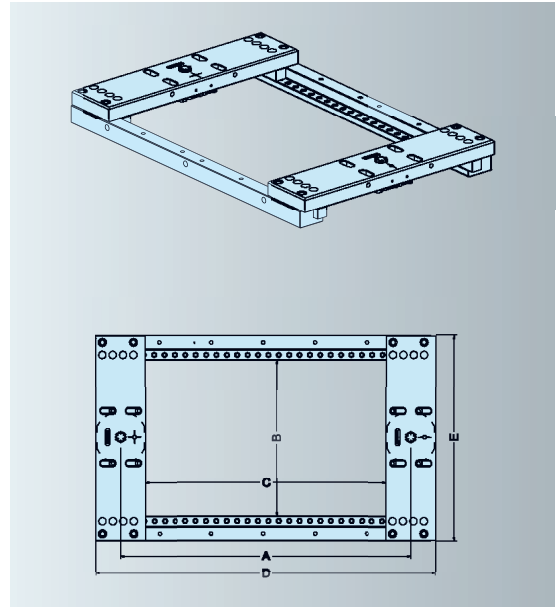
# EROWA Wire EDM Tooling

## Adapters for interfaces

ER-045555	Clamping frame FrameSet 430/220-335
ER-039212	Clamping frame FrameSet 430/300-335
ER-039211	Clamping frame FrameSet 490/220-395
ER-039213	Clamping frame FrameSet 500/300-405
ER-039214	Clamping frame FrameSet 560/300-465
ER-039215	Clamping frame FrameSet 650/300-555
ER-039216	Clamping frame FrameSet 650/380-555
ER-039217	Clamping frame FrameSet 710/380-615



Version	Clamping frame for the multiple palletization of workpieces.
Application	To fit on EROWA flat chucks (see page 264).
Options	See Clamping beams and clamping elements for the EROWA Wire Tooling System, starting from page 273.



	A	B	C	D	E
ER-045555	430	220	335	525	396
ER-039212	430	300	335	525	396
ER-039211	490	220	395	585	316
ER-039213	500	300	405	595	396
ER-039214	560	300	465	655	396
ER-039215	650	300	555	745	396
ER-039216	650	380	555	745	476
ER-039217	710	380	615	805	476

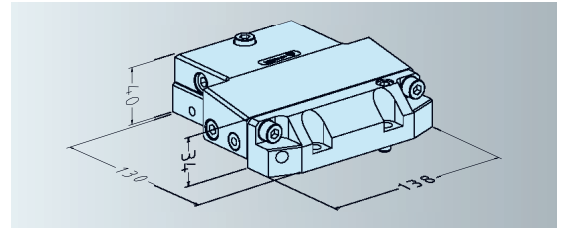
**ER-030923 Pendulum holder 3D  
PalletSet W**



Version Pendulum head for automatic and manual loading.  
G-Centering plates for increased durability.

Application Basis for all the other clamping elements such as UniVise square, frame pallet, vise and beam pallet.

Note Adjustable in the X-, Y- and Z-axes.



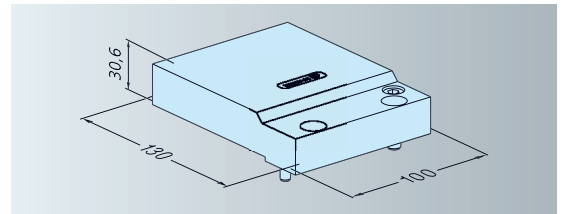
**ER-030678 Fix holder  
PalletSet W**



Version Standard element for automatic and manual loading.

Application Base for all other clamping elements such as UniVise square, frame plate, vise and beam pallet.

Note Adjustable in the C-axis.



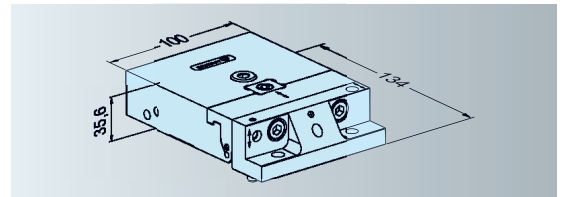
**ER-031942 Basic WEDM pendulum holder  
Basic Tooling**



Version Pendulum head for manual loading.

Application For use on the Basic WEDM chuck. As a basis for all other clamping elements like UniVise, square, vise and beam pallet.

Note Adjustable in the X-, Y- and Z-axes.



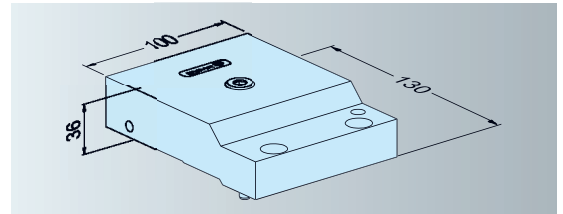
**ER-033955 Basic WEDM fix holder  
Basic Tooling**



Version Standard element for manual loading.

Application For use on the Basic WEDM chuck. As a basis for all other clamping elements like UniVise, square, vise and beam pallet.

Note Adjustable in the C-axis.





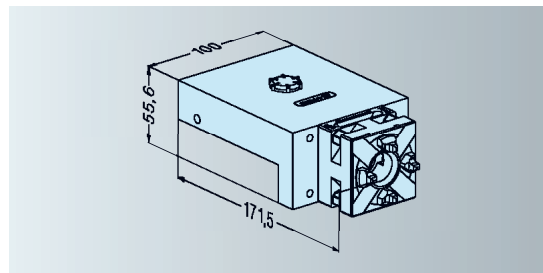
# EROWA Wire EDM Tooling

## Adapters for interfaces

### ER-030645 UnoSet adapter PalletSet W centering plate G



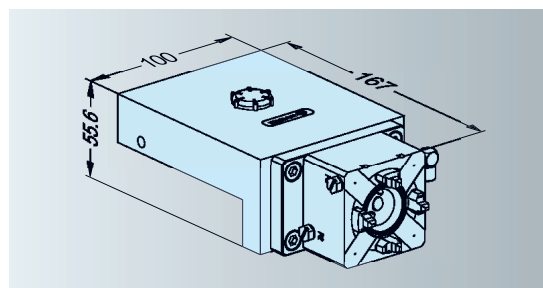
Version System adapter of PalletSet W to UnoSet.  
 Application Clamps workpieces of system size ITS 50 horizontally into the workspace.  
 Note Fits all UnoSet and ITS 50 clamping elements.



### ER-030643 UnoSet adapter with RSA 50 PalletSet W



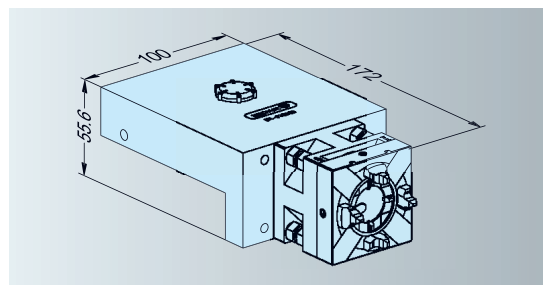
Version System adapter from Palletset W to UnoSet.  
 Application Clamps workpieces of the ITS 50 system size horizontally into the workspace.  
 Clamping power 2800 N.  
 Note Suitable for all UnoSet and ITS 50 clamping elements.



### ER-033933 PSW adapter QuickChuck 50 Combi PalletSet W / centering plate G



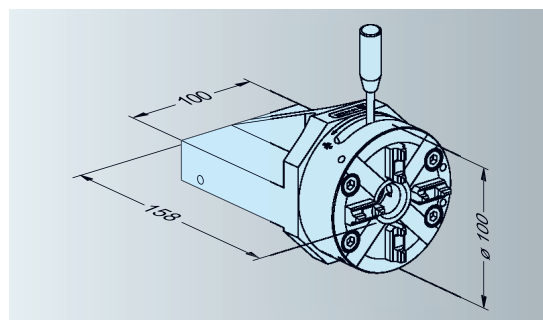
Version System adapter from Palletset W to UnoSet and/or Compact.  
 Application Clamps workpieces of the ITS 50 and Compact system sizes horizontally into the workspace.  
 Note Suitable for all UnoSet and ITS 50 clamping elements and Compact clamping elements.



### ER-033974 PSW adapter QuickChuck 100 P



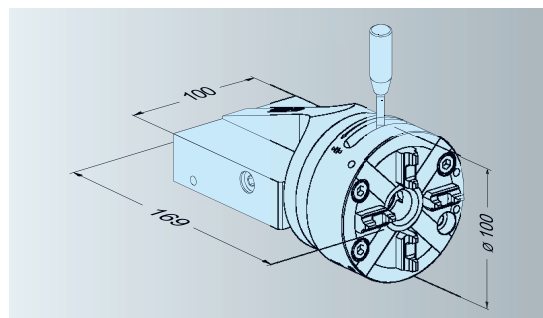
Version System adapter from Palletset W to UnoSet, ITS 50, holder  $\varnothing 72$ , and pallets 148, 115.  
 Application Clamps workpieces of the ITS 50 and ITS 100 system sizes horizontally into the workspace.  
 Note Suitable for all UnoSet clamping elements.



### ER-035994 PSW adapter QuickChuck 100 P 360° turnable

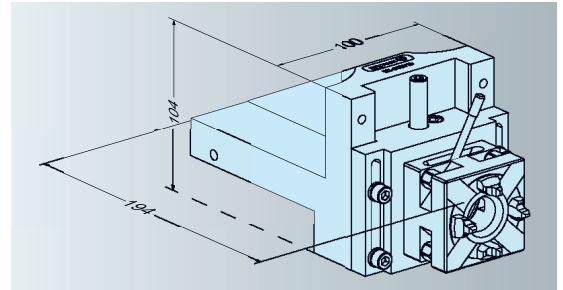


Version System adapter from Palletset W to UnoSet, ITS 50, holder  $\varnothing 72$ , and pallets 148, 115.  
 Application Clamps workpieces of system size ITS 50 and ITS 100 horizontally into the working range. Can be rotated around 360°.  
 Note Fits all UnoSet clamping elements and ITS 115/148 pallets.

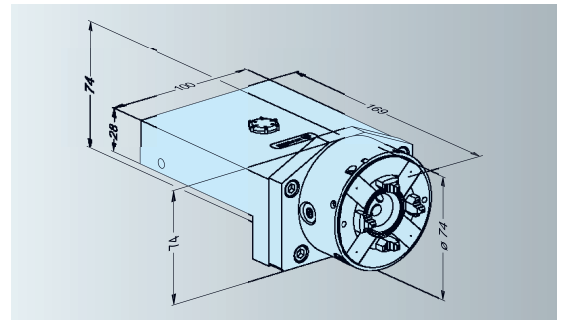


**ER-038710 Adapter Z-Vario  
PalletSet W / UnoSet RSM**

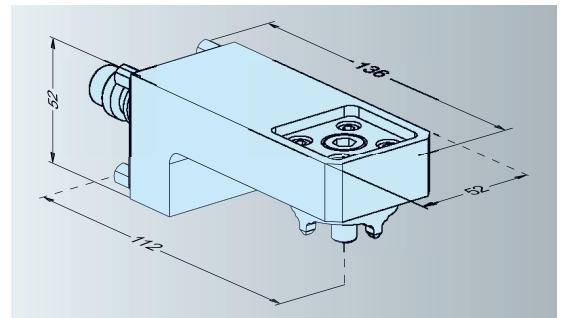
- Version System adapter from Palletset W to UnoSet.  
Z-axis height adjustable.
- Application To clamp UnoSet and electrodes/workpieces  
in the ITS 50 system size horizontally into the workspace.
- Note Suitable for use with the whole ITS 50 system and elec-  
trode holders.

**ER-039795 Holder ø 72  
PalletSet W**

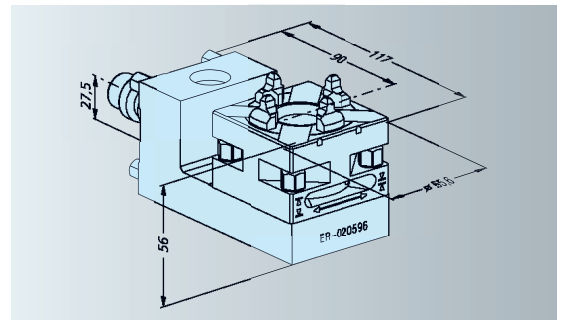
- Version System adapter from Palletset W to ITS 50 holder ø 72
- Application Clamps workpieces of holder ø 72 size horizontally into  
the workspace.
- Operation Pneumatically with air jet.
- Note Suitable for all holders ø 72 and ITS 50.
- Option ER-032832 Sealing ring ITS Chuck 50.

**ER-038711 Extension arm Z-Vario  
PalletSet W / UnoSet**

- Version Extension arm with centering system connection to ITS 50.  
Accommodates workpieces and electrodes.
- Application Accommodation of workpieces and electrodes for machi-  
ning in a horizontal or vertical position.
- Load Max. 6 kg
- Note Can be used in combination with adapter Z-Vario PSW/  
UnoSet. Indexation around 4x90°.

**ER-020596 Extension arm UnoSet**

- Clamping range 80 mm.
- Max. load 6 kg.
- Version The extension arm UnoSet with QuickChuck 50 is suitable  
for the accommodation of workpieces and electrodes that  
have to be machined in a vertical  
and in a horizontal position.
- Note Indexable around 4x90°.



# EROWA Wire EDM Tooling

## Adapters for interfaces

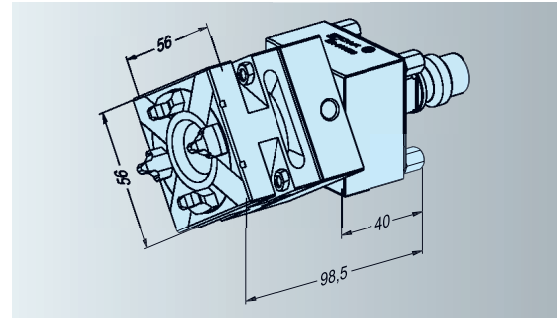
### ER-007877 TurnFix 50 UnoSet



**Version** Chuck 50, manual, with ITS base plate, continuously able to rotate round 360°.

**Application** ITS base for the manual loading of ITS elements carrying workpieces that require angular positions.

**Use** On any ITS chuck of system size 50.



### ER-028471 Angle clamping unit UnoSet for QuickChuck 50



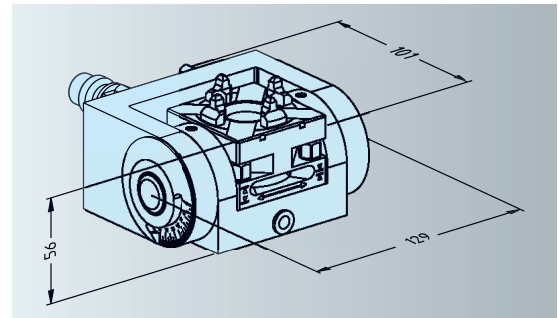
**Version** Chuck 50, angle to be set with the vernier.

**Application** WEDM or EDM.  
To fit lateral sprues to casting tools.

**Max. load** 6 kg.

**Max. work-piece size** 100 x 100 x 100 mm.

**Connections** Flushing connection in place.



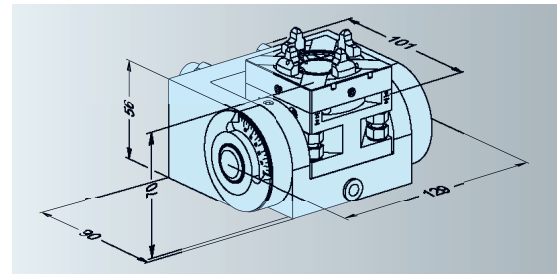
### ER-027640 Square clamping unit UnoSet for CompactChuck 50 Combi



**Version** CompactChuck 50 Combi.  
Angle to be set with the vernier.

**Application** WEDM or EDM.

**Connections** Flushing connection in place.



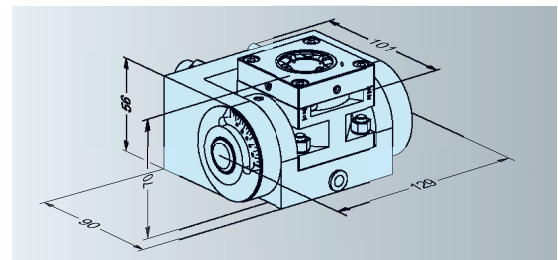
### ER-027641 Square clamping unit UnoSet for CompactChuck M



**Version** CompactChuck manual.  
Angle to be set with the vernier.

**Application** WEDM or EDM.

**Connections** Flushing connection in place.



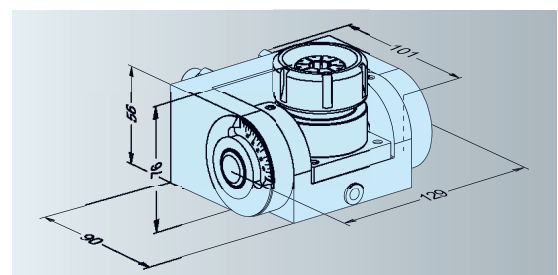
### ER-028480 Angle clamping unit UnoSet for collet chuck electrode holder



**Version** Angled clamping unit made of corrosion-resistant steel, except collet chuck unit.  
Angle to be set with the vernier.

**Application** WEDM or EDM.

**Connections** Flushing connection in place.



# EROWA Wire EDM Tooling

## Fixtures for adapters

**ER-017645** Clamping beam 220mm

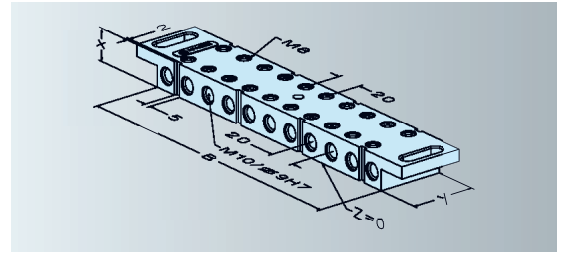
**ER-017646** Clamping beam 300mm

**ER-017647** Clamping beam 380mm

**ER-017648** Clamping beam 460mm



Application To clamp workpieces with clamping claws on Z-discs.  
Version Cross boreholes, ground.



Clamping Beam	X	Y
ER-017645	22 mm	46 mm
ER-017646	25 mm	46 mm
ER-017647	25 mm	46 mm
ER-017648	36 mm	56 mm

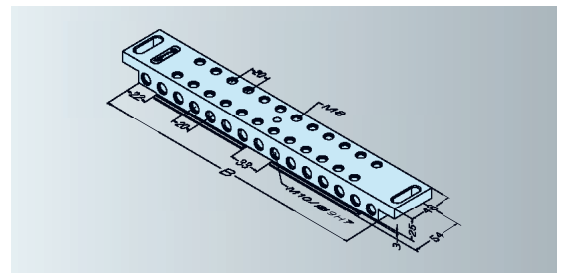
**ER-021126** Double-sided clamping beam 300mm

**ER-021127** Double-sided clamping beam 380mm

**ER-021128** Double-sided clamping beam 460mm



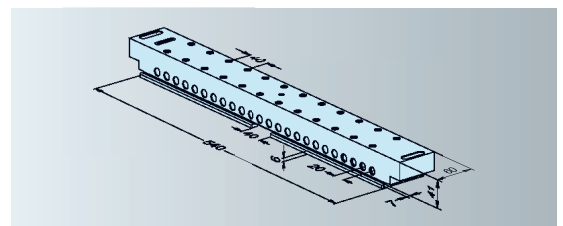
Application To clamp workpieces with clamping claws on Z-support ledges.  
Version Cross boreholes, ground.



**ER-037307** Double-sided clamping beam 540  
ManoSet XXL



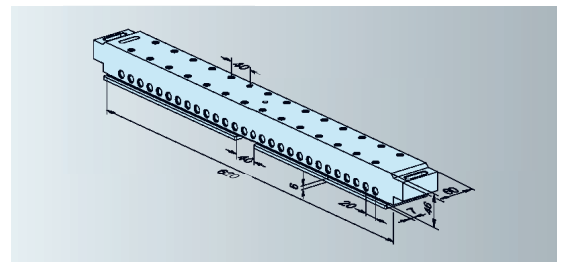
Application Clamping of workpieces with clamping claws on Z-support ledges.



**ER-034989** Double-sided Clamping beam 620mm  
ManoSet XXL



Application Clamping of workpieces with clamping claws on Z-support ledges.



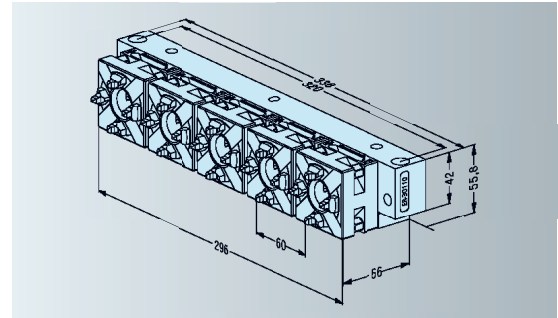
# EROWA Wire EDM Tooling

## Fixtures for adapters

### ER-030110 Beam 5-fold 300 QuickChuck 50



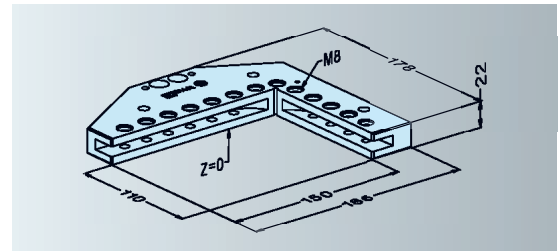
**Version** Five chucks 50, manual, in a row.  
**Application** ITS adapter for the manual loading of five ITS elements.  
**Use** On all FrameSet clamping frames. Width 300 mm. In combination with the basic adapter set (ER-016652) on the WEDM machine table.



### ER-018938 UniVise square PalletSet W



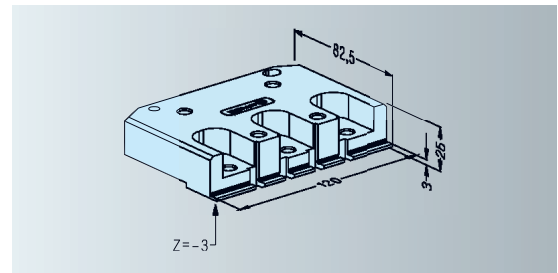
**Version** Square with all the clamping accessories.  
**Application** To be fitted to fix holders or pendulum holders.  
**Note** Max. load: 10 kg.



### ER-018940 Vise PalletSet W



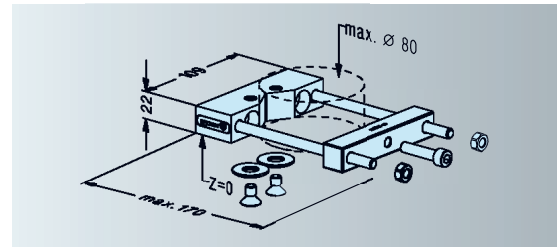
**Version** Clamping element with clips for one-sided attachment to workpieces.  
**Application** To be fitted to fix holders or pendulum holders.  
**Note** Max. load: 12 kg.



### ER-019248 Prism holder 80 PalletSet W



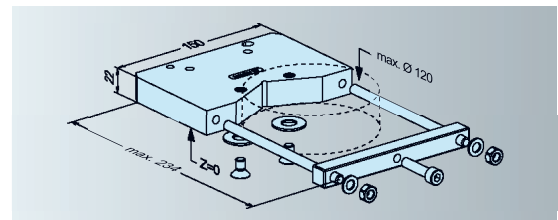
**Version** Prism and clamping part with detachable Z-supports.  
**Application** Clamping of cylindrical workpieces of up to  $\varnothing 80$  mm.  
**Assembly** To be fitted to the front of beam pallet ER-018937 or clamping beams (cf. p 273).  
**Note** Max. load: 6 kg.



### ER-031179 Prism holder 120 mm PalletSet W



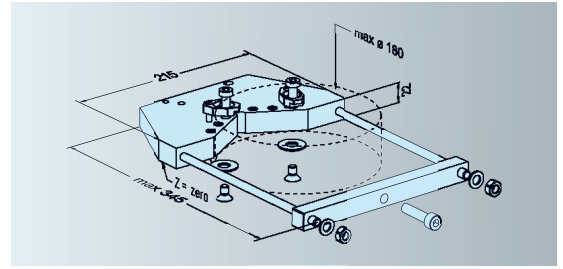
**Version** Prism and clamping bars with detachable Z-supports.  
**Application** To clamp cylindrical workpieces of up to  $\varnothing 120$  mm.  
**Mounting** directly to fixholder or pendulum holder.  
**Note** Max. load: 10 kg.



**ER-038891 Prism holder  $\phi$  10 - 180 PalletSet W**



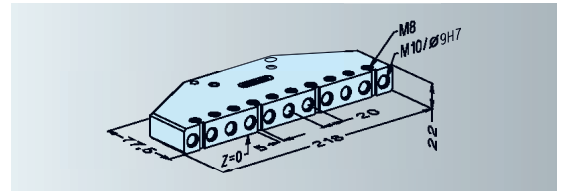
Version Prism and clamping bars with detachable Z-supports.  
 Application To clamp cylindrical workpieces of up to  $\phi$  180 mm.  
 Mounting directly to fixholder or pendulum holder.  
 Note Max. load: 12 kg.



**ER-018937 Beam pallet PalletSet W**



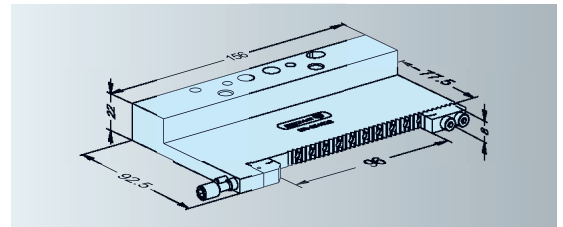
Version Pallet to accommodate various clamping elements. Includes Z-supports and clips.  
 Application To be fitted to fix holders or pendulum holders 3D.  
 Options Prism holders and BeamVise clamping elements.



**ER-054922 Flat vise 8mm PalletSet W**



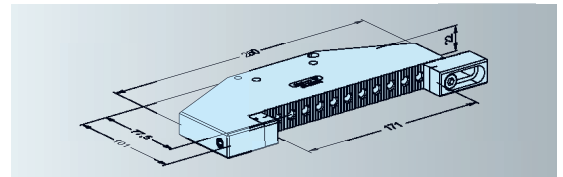
Version One movable jaw and one fixed jaw. Hardened, ground and corrosion-resistant.  
 Clamping range 0 - 96 mm.  
 Max. load 5 kg.  
 Application Lateral clamping of workpieces machined outside of up to 96mm. To be fitted to fixholder or pendulum holder.



**ER-055774 Flat vise 170 mm PalletSet W**



Version One movable and one fixed jaw. Hardened, ground and corrosion-resistant.  
 Clamping range 0 - 171 mm.  
 Max. load 12 kg.  
 Application Lateral clamping of workpieces of 0 - 171mm machined from the outside. To be fitted to fix or pendulum holders.



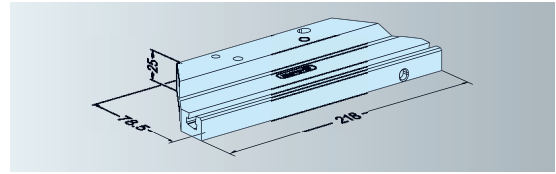
# EROWA Wire EDM Tooling

## Fixtures for adapters

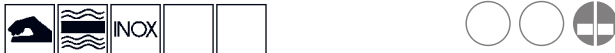
### ER-031945 Basic holder PalletSet W



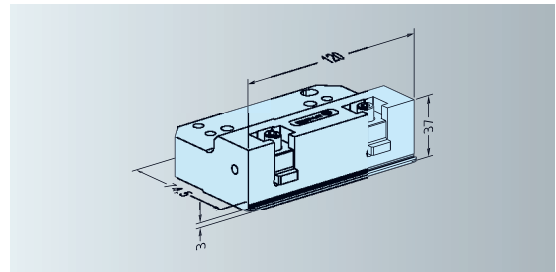
Version To accommodate various clamping elements.  
 Application To fit to fixholder or pendulum holder 3D.  
 Options Jaw holder ER-033958 or bracket holder ER-031952.



### ER-025895 Vise PalletSet W 40 mm



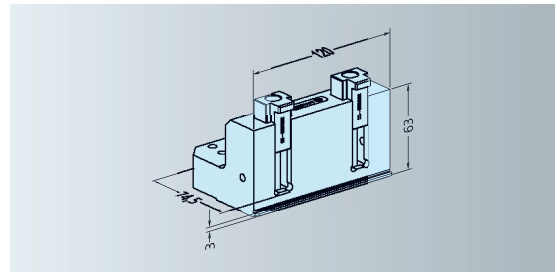
Version Vise with fixed Z-lip and jaws attached from above. Hardened and ground.  
 Clamping range max. 150 x 150 x 40 mm.  
 Max. load 12 kg.  
 Application Lateral clamping of workpieces of 0 -150 mm machined from the outside. To be fitted to fix or pendulum holders.



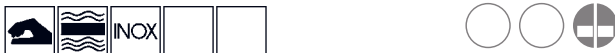
### ER-025896 Vise PalletSet W 100 mm



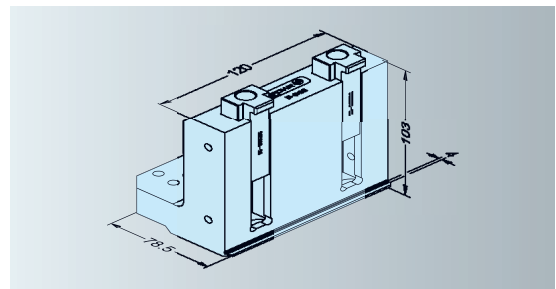
Version Vise with fixed Z-lip and jaws fitted from above.  
 Application To clamp workpieces of up to 100 mm in height. To be fitted to fixholder or pendulum holder.  
 Max. clamping range 150 x 150 x 100 mm.  
 Max. load 12 kg.



### ER-034631 Vise PalletSet W 140 mm



Version Vise with fixed Z-lip and jaws fitted from above. Hardened and ground.  
 Application To clamp workpieces of up to 140mm in height. To be fitted to fixholder or pendulum holder.  
 Max. load 12 kg.  
 Max. clamping range 150 x 100 x 140 mm.

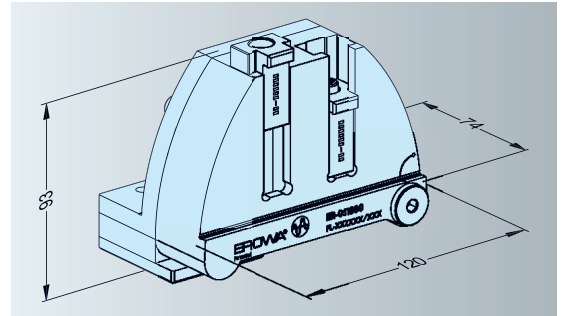




**ER-051800 Sine vise PalletSet W**



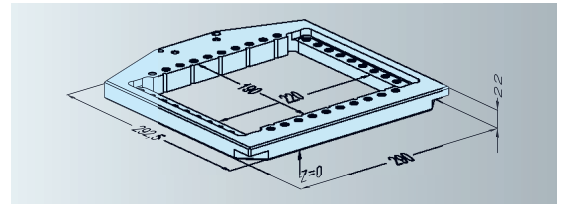
Version Vise with adjustable angle position and jaws fitted from above. Hardened and ground.  
 Application To clamp workpieces at angles adjustable between 0-90°. To fit to fixholder or pendulum holder.  
 Clamping range min. 10 mm / max. 75 mm  
 Max. load 12 kg.



**ER-018941 Frame pallet PalletSet W**



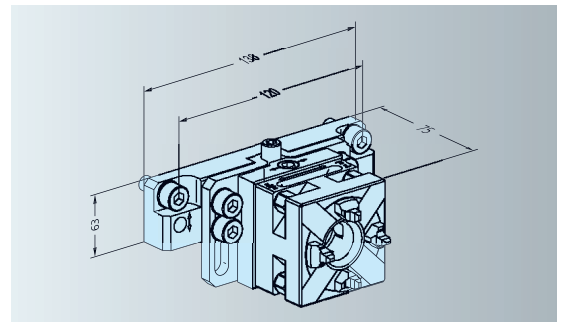
Version Clamping frame for multiple palletization of workpieces.  
 Application To be fitted to fix holders or pendulum holders.  
 Option Clamping beam 220 ER-017645.  
 Note To support the clamping frame, use Z-supports (Page 278).



**ER-029228 Z-Vario QuickChuck PalletSet W**



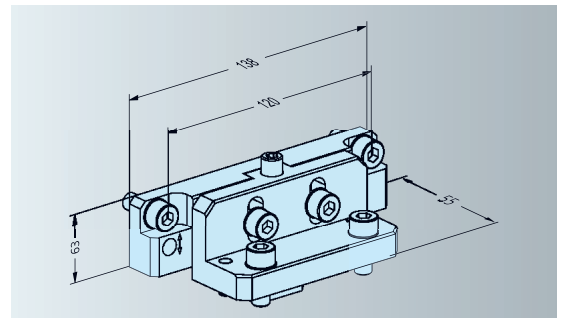
Version Fits 3D ER-030923 pendulum holder. Hardened and ground..  
 Max. load 8 kg.  
 Clamping range max. height adjustment 30 mm.  
 Application To machine electrodes in PSW which have to be adjusted in height.



**ER-029229 Z-Vario clamping elements PalletSet W**



Version Fits 3D ER-030923 pendulum holder. Hardened and ground.  
 Max. load 8 kg.  
 Clamping range max. height adjustment 30 mm.  
 Application PSW clamping elements can also be adjusted in height.



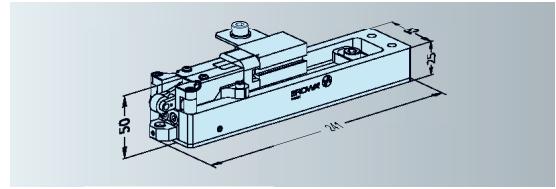
# EROWA Wire EDM Tooling

## Fixtures for adapters

### ER-025115 Z-support PalletSet W universal pneumatic, 1 pair



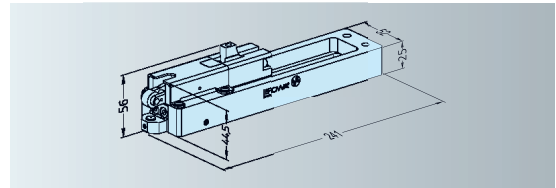
Version	1 pair of supports. Hardened and ground.
Mounting	Directly on the Z=0 base of the WEDM center.
Operation	With manual control unit.
Application	Support and clamping of the frame plate with weights of up to 30kg. Stabilizes the frame plate in case of high flushing pressure.



### ER-025116 Z-support PalletSet W universal manual 1 pair



Version	1 pair of supports. Hardened and ground.
Mounting	Directly on the Z=0 base of the WEDM center.
Operation	Manually.
Application	Support and clamping of the frame plate with weights of up to 30 kg. Stabilizes the frame plate in case of high flushing pressure.



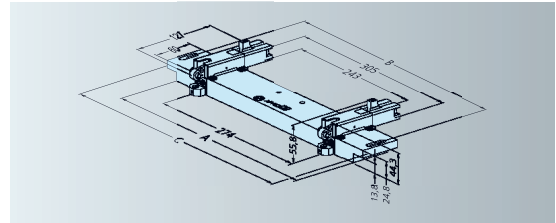
### ER-025100 Z-support beam 300 PalletSet W manual

### ER-025101 Z-support beam 380 PalletSet W manual

### ER-027205 Z-support beam 460 PalletSet W manual



Version	Support beam for use in EROWA ManoSet.
Operation	Manually.
Application	Support and clamping of the frame plate with weights of up to 30 kg in combination with EROWA ManoSet. Stabilizes the frame plate in case of high flushing pressure.



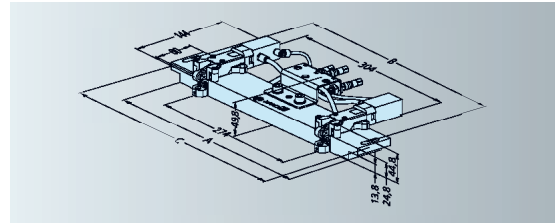
### ER-025027 Z-support beam 300 PalletSet W pneumatic

### ER-025030 Z-support beam 380 PalletSet W pneumatic

### ER-028306 Z-support beam 460 PalletSet W pneumatic

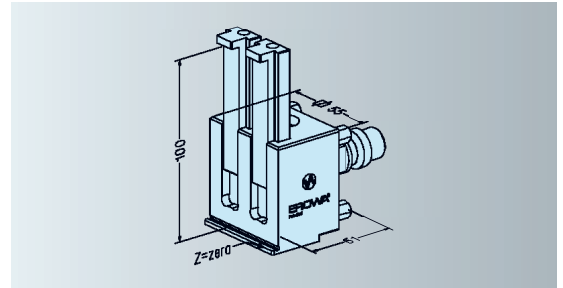


Version	Support beam for use in EROWA ManoSet.
Operation	Pneumatically.
Application	Support and clamping of the frame plate with weights of up to 30kg in combination with EROWA ManoSet. Stabilizes the frame plate in case of high flushing pressure.

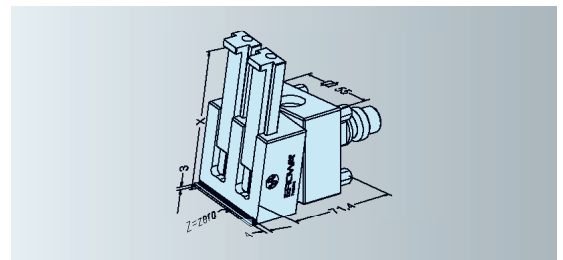


**ER-008814 Precision vise 0 - 100 UnoSet**

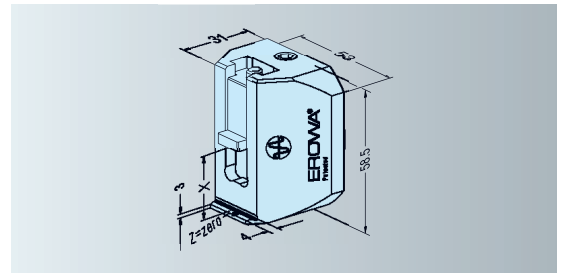
Clamping range	Ranges from 0 to 100 mm.
Max. extension	40 mm at 100 mm workpiece height.
Zuladung	max. 5 kg.
Version	Workpiece fixed. Including three sets of clamping jaws.

**ER-007935 Rotary vise 0 - 100 UnoSet**

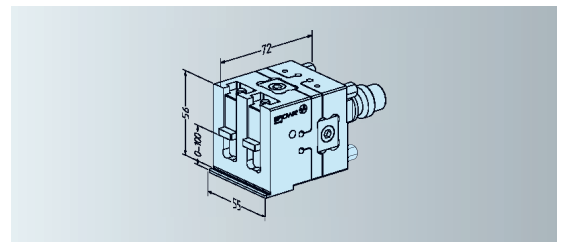
Clamping range	0–100 mm.
Max. extension	40 mm with 100 mm part height.
Zuladung	max. 5 kg.
Version	Continuously able to rotate around 360°. Set with three pairs of clamping jaws.

**ER-014698 VeeVise UnoSet**

Clamping range	0–100 mm.
Max. extension	40 mm with 100 mm part height.
Zuladung	max. 5 kg.
Version	Clamping component without ITS connection. To fit to an existing pendulum rotating adapter.

**ER-008842 Pendulum vise 0 - 100 UnoSet**

Clamping range	Ranges from 0 to 100 mm.
Max. extension	40 mm at 100 mm workpiece height.
Zuladung	max. 5 kg.
Version	Workpiece adjustable in two axes. Including three sets of clamping jaws.



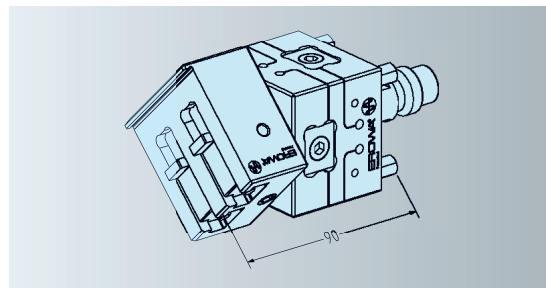
# EROWA Wire EDM Tooling

## Fixtures for adapters

### ER-008856 Rotatable pendulum vise 0 - 100 UnoSet



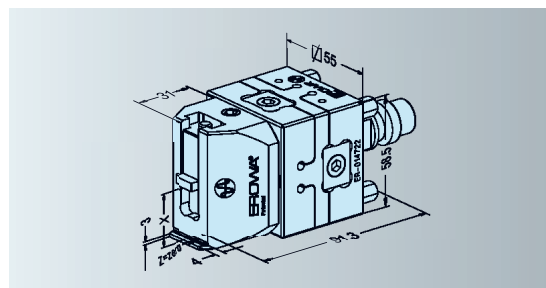
Clamping range 0-100 mm.  
 Max. extension 40 mm with 100 mm part height.  
 Zuladung max. 5 kg.  
 Version For adjustable workpiece positioning in three axes. Continuously able to rotate around 360°. Set with three pairs of clamping jaws.



### ER-014722 VeeVise TP UnoSet



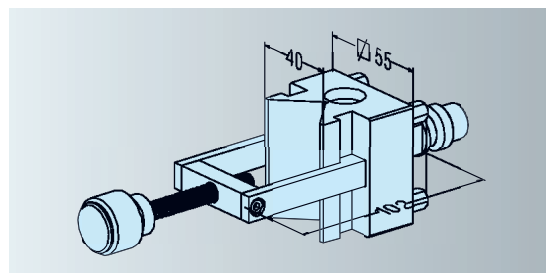
Clamping range 0-100 mm.  
 Max. extension 40 mm with 100 mm part height.  
 Zuladung max. 5 kg.  
 Version For adjustable workpiece positioning in three axes. Continuously able to rotate around 360°. Set with three clamping jaws.



### ER-016691 V-block holder UnoSet



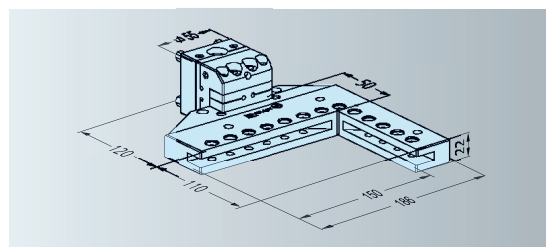
Clamping range Parts up to  $\varnothing 40 \times H 150$  mm.  
 Max. load 1.5 kg.  
 Application To clamp parts in prismatic slot. Parallel and angular precision 0.01 mm.



### ER-015670 UniVise P UnoSet



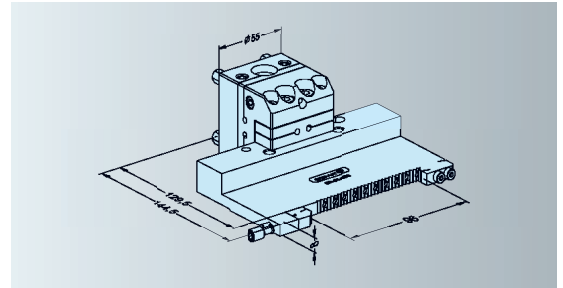
Clamping range Round parts:  $\varnothing 5-85$  mm.  
 Flat parts: 140 x 100 mm.  
 Max. load 5 kg.  
 Version Complete set with all clamping accessories. Workpiece adjustable in three axes.



**ER-055535 Flat vise 8 mm UnoSet**



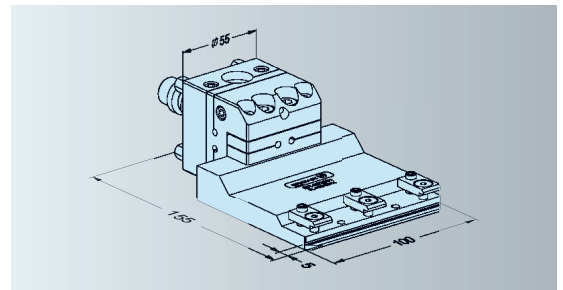
Version One movable jaw and one fixed jaw. Hardened, ground and corrosion-resistant.  
Clamping range 0 - 96 mm.  
Max. load 5 kg.  
Application Lateral clamping of workpieces machined outside of 0 - 96 mm.



**ER-052091 Support straight UnoSet with mini clamp**



Version Vertical clamping of workpieces.  
Clamping range 0 - 40 mm.  
Max. load 5 kg.  
Application Vertical clamping of workpieces.



# EROWA Wire EDM Tooling

## Clamping elements for fixtures

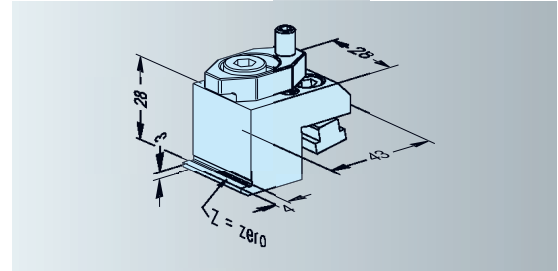
### ER-031952 Bracket holder PalletSet W (1 pair)



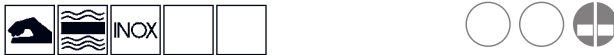
**Version** Two movable vertical jaws. Hardened, ground and corrosion-resistant.

**Application** Variable vise to be fitted to basic holder PSW.

**Mounting** Directly to basic holder ER-031945, using the fittings supplied.



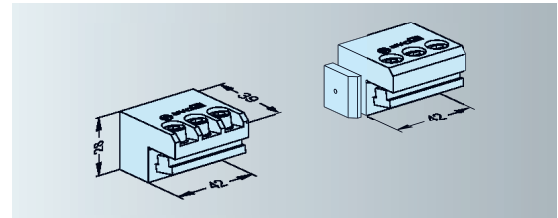
### ER-033958 Jaw holder PalletSet W



**Version** One movable jaw and one fixed jaw. Hardened, ground and corrosion-resistant.

**Application** Variable vise to be fitted to basic holder PSW.

**Mounting** Directly to basic holder ER-031945, using the fittings supplied.



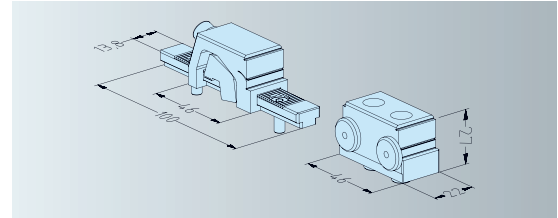
### ER-062788 BeamVise Single



**Version** One movable and one fixed stop jaw. Hardened, ground, corrosion-resistant.

**Application** Variable vise laterally on EROWA clamping beams.

**Assembly** With the enclosed assembly elements to the desired clamping beam Pallet Set W ER-018937.



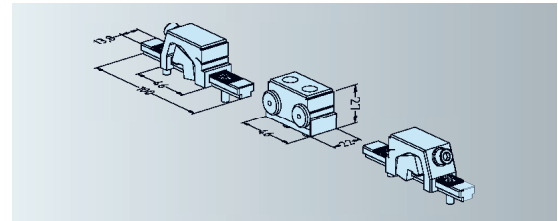
### ER-062789 BeamVise Twin



**Version** Two movable stop jaws and one fixed stop jaw. Hardened, ground, corrosion-resistant.

**Application** Variable vise laterally on EROWA clamping beams.

**Assembly** With the enclosed assembly elements to the desired clamping beam PalletSet W ER-018937.



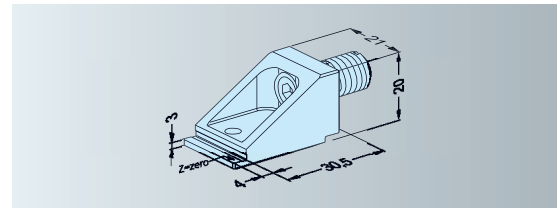
### ER-008231 Mini distance support



**Application** As side support for workpieces, or for clamping small, flat single parts.

**Presetting** The support surface height corresponds to  $Z = 0$  and is not adjustable.

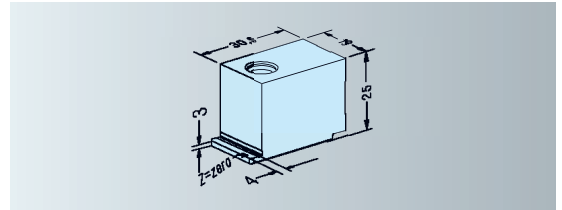
**Use** On all clamping and gripping beam ER-018937.



**ER-008875 Fixed distance support**



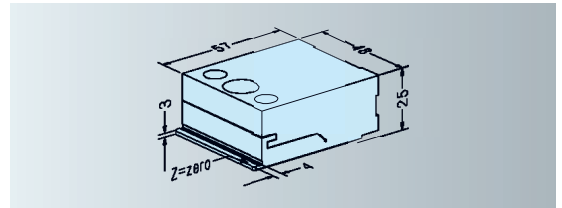
**Application** As side support for workpieces, or for clamping small single parts.  
**Presetting** The support surface height corresponds to  $Z = 0$  and is not adjustable.  
**Use** On all clamping beams up to 460 mm length.



**ER-008873 Adjustable distance support**



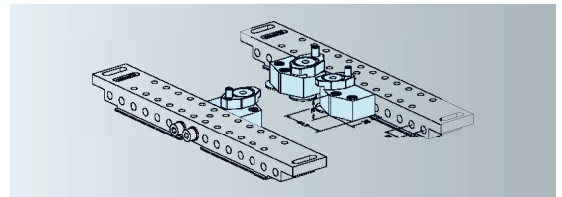
**Application** As side support for workpieces, or for clamping small single parts.  
**Presetting** The support surface height corresponds to  $Z = 0$  and is adjustable  $\pm 0.15$  mm.  
**Use** On all clamping and gripping beams.



**ER-007990 DiaFix 3 pieces**



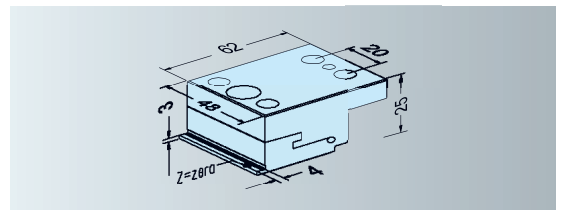
**Application** For supporting round parts with diameters starting at 50 mm, or as a side support for rectangular workpieces.  
**Presetting** The support surface height corresponds to  $Z = 0$  and is not adjustable.  
**Use** On all clamping beams.



**ER-008221 Z beam**



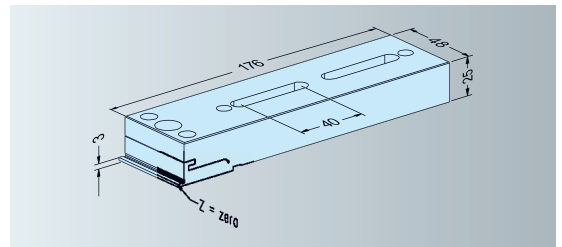
**Application** As side support for workpieces, or for clamping small single parts.  
**Presetting** The support surface height corresponds to  $Z = 0$  and is adjustable  $\pm 0.15$  mm.  
**Use** On all plates and beams with  $Z = + 14$  mm.



**ER-008220 Z universal support**



**Application** As side support for workpieces, or for clamping small single parts.  
**Presetting** The support surface height corresponds to  $Z = 0$  and is adjustable  $\pm 0.15$  mm.  
**Use** On all carrier plates and bases with  $Z = 0$ .





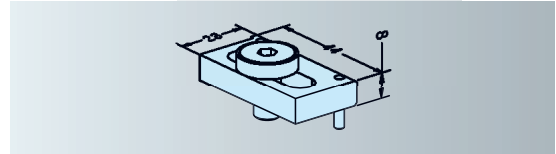
# EROWA Wire EDM Tooling

## Clamping elements for fixtures

### ER-016657 BeamStop set



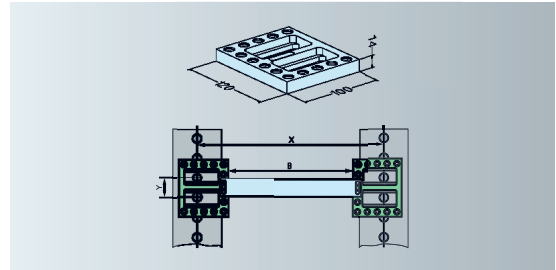
- Version** Set of two stops for EROWA beams. Hardened, ground, corrosion-resistant.
- Application** On ManoSet base rails, on Basic Adapter and in RoboSet Clamping frames.
- Assembly** With the enclosed bolts.



### ER-016652 Basic adapter set, 120x100x14 mm



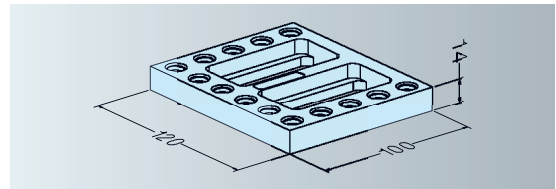
- Version** A pair of ground, hardened, corrosion-resistant steel plates with variable assembly hole grids, including BeamStop.
- Application** Base on WEDM machines unequipped with tooling system for the use of EROWA ManoSet clamping beams.
- Assembly** With the enclosed assembly elements directly onto the existing Z-zero machine structure.



### ER-017198 Basic adapter 120x100x14 mm



- Version** A ground, hardened, corrosion-resistant plate with variable assembly hole grids.
- Application** Base on WEDM machines with no tooling system. With chucks ER-007851/ER-007852.
- Assembly** With the enclosed bolts directly onto the existing Z-zero base.



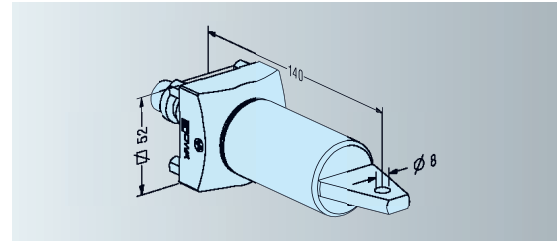
# EROWA Wire EDM Tooling

## Accessories

### ER-012727 Reference pin UnoSet



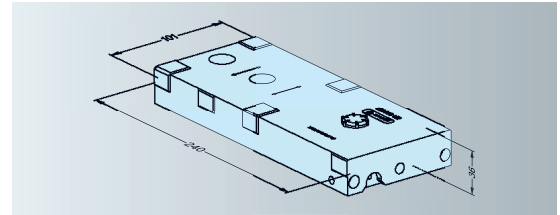
Version Hardened, ground, borehole  $\varnothing$  8 mm.  
 Application To determine reference measurements on horizontal chucks.



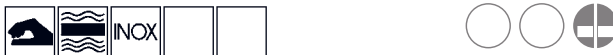
### ER-055158 Alignment pallet for PalletSet W



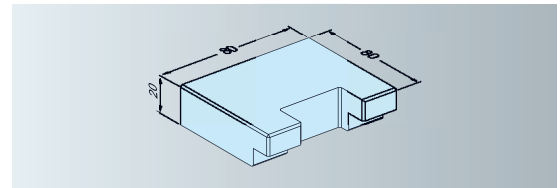
Version Hardened, ground gauge with lateral reference surfaces and two defined reference boreholes.  
 Application To determine the reference point and to align chucks.



### ER-022669 Bracket for flat chuck FSF without fixing borehole, 2 pieces



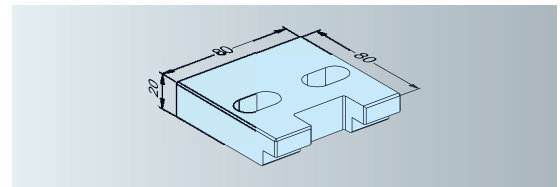
Version Steel, unhardened. Set of 2.  
 Application To fit flat chucks to WEDM centers.



### ER-022670 Bracket for flat chuck FSF Agie, 2 pieces



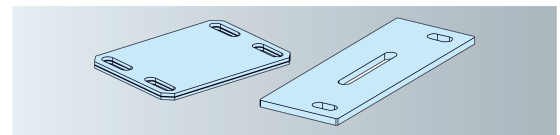
Version Steel, with attachment boreholes. Set of 2.  
 Application To fit flat chucks to Agie WEDM centers.



### ER-028913 Insulation set PalletSet W



Application To fit underneath the flat chucks and Z-supports to insulate the tooling system.

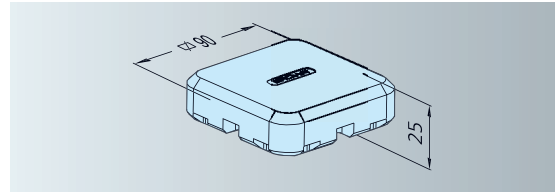


# EROWA Wire EDM Tooling Accessories

## ER-026768 Cover for flat chuck FSF



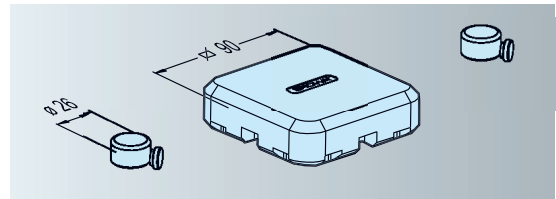
Version Cover for flat chucks  
Application Protects flat chucks that are not in use against contamination and damage.



## ER-027695 Cover for flat clamping chuck PalletSet W



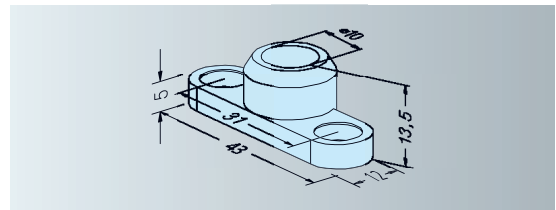
Version Set consisting of 2 covers for flat chucks and 4 covers for Z-supports.  
Application Protects flat chucks and Z-supports that are not use against contamination and damage.



## ER-035156 EWIS™ Rapid chip with chip holder long with chip $\varnothing 12,4 \times 2$ mm



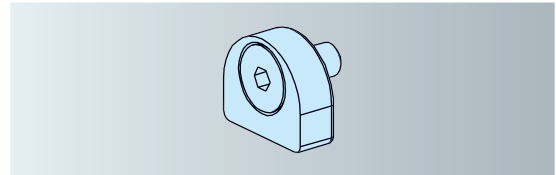
Version Holder with built-in datacarrier.  
Application EWIS™ Chip: read only.  
With EROWA Collet Chuck holders and Square 15/25 holders.  
Mounting With supplied M4 bolts.



## ER-035294 EWIS™ Rapid chip with chip holder RCS with chip $\varnothing 12,4 \times 2$ mm



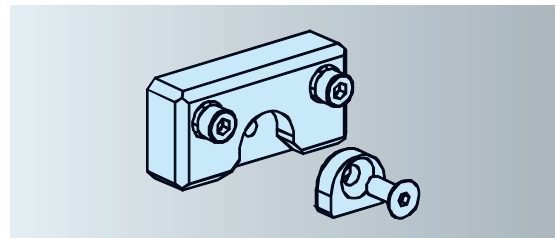
Version Holder with built-in data carrier. EWIS chip: read only.  
Application To build into RCS coupling, PalletSet W holder and Basic WEDM holder.



## ER-041179 Chip holder FrameSet EWIS™ Rapid mit Chip $\varnothing 3,15 \times 13,3$ mm



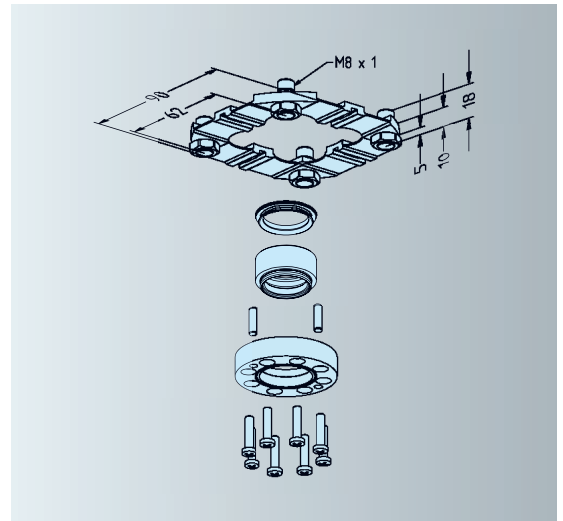
Version Holder with built-in data carrier. EWIS chip: read only.  
Application To build into FrameSet clamping frames.



**ER-030671 Centering plate, G100 M8 x 1 PalletSet W  
5 pieces**



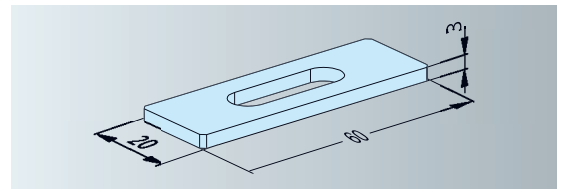
Version Set of 5, including support feet.  
Application To be fitted directly to workpiece and electrodes to be used on flat chucks.



**ER-008910 Spacer plate 3 mm  
8 pieces**



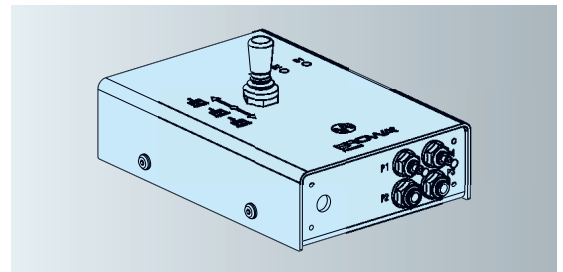
Version Set of 8 plates. Ground, hardened.  
Application To fit underneath clamping beams to raise the Z-support by 3 mm. This prevents collisions in the working range of the lower flushing nozzles.



**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.

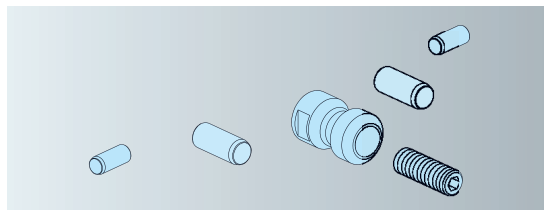


# EROWA Wire EDM Tooling Accessories

## ER-018936 GripperLink RCS PalletSet W

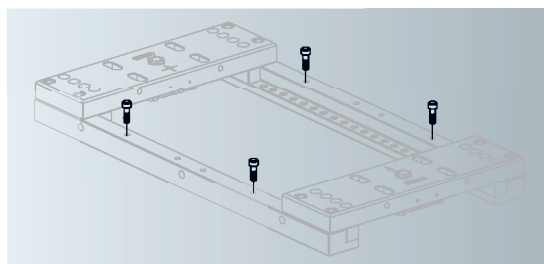


- Version Gripper coupling for RCS gripper, consisting of 4 positioning pins and a chucking spigot.
- Application On all EROWA handling devices equipped with the RCS coupling system.
- Assembly Glue in pins according to instructions, fit chucking spigot with bolt.
- Note Recess for EWIS chip (not included) in the chucking spigot.



## ER-034533 FrameSet gripper bolts 4 pieces

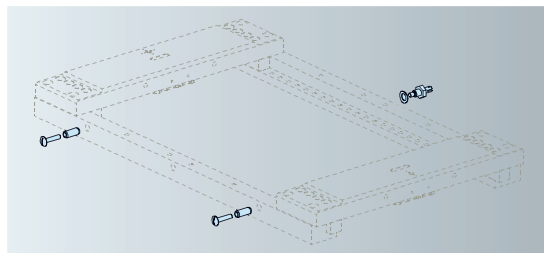
- Version Set of 4 gripper bolts.
- Application For FrameSet clamping frames with EROWA handling facilities.
- Note Can only be used in connection with FrameSet gripper automation.



## ER-022465 Coupling kit FrameSet manual

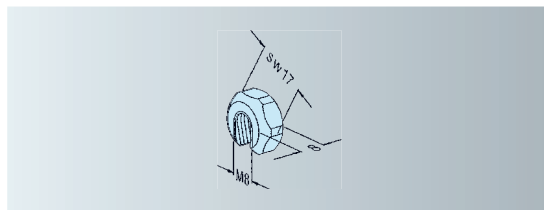


- Version Set including 2 gripper pins, 2 M6x30 bolts, 1 cord holder, 1 spring washer.
- Application To take up FrameSet frames with the EROWA Lift.



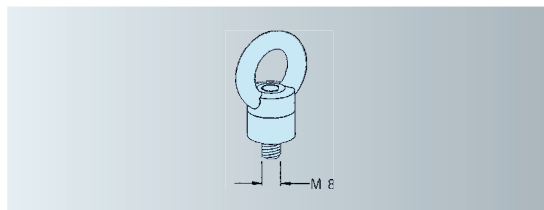
## ER-008846 Slotted nut M8 10 pieces

- Quantity 10
- Application On long setscrews, to avoid time-consuming nut tightening.



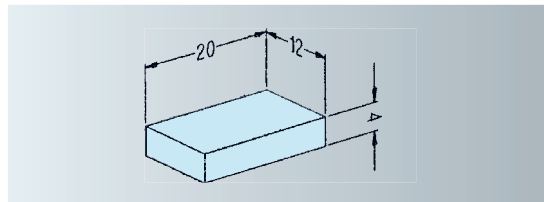
## ER-008848 Eye bolt M8 1 couple

- Quantity 2
- Application To raise loaded clamping frames with a crane or lifting device.



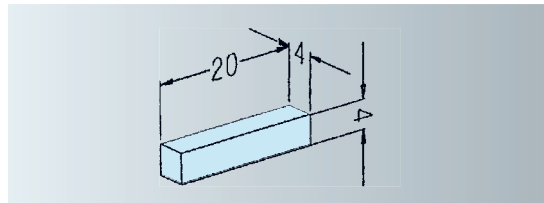
**ER-007799 Spacer plate large  
50 pieces**

Quantity 50  
Application As supports for chucking claws.



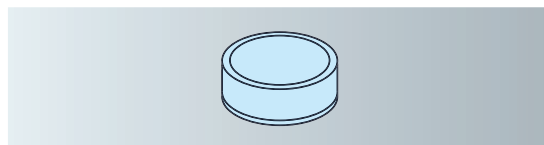
**ER-007781 Spacer plate small  
50 pieces**

Quantity 50  
Application As supports for chucking claws.



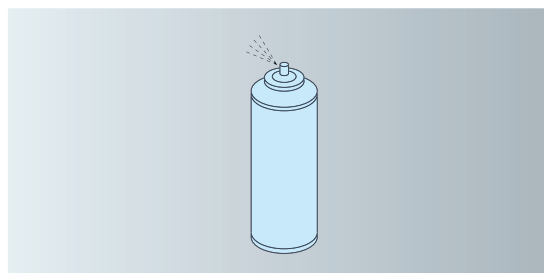
**ER-001674 Erogrease (corrosion protection)  
1 kg OKS 403**

Version 1 kg tin.  
Application For the durable lubrication of guides, joints and threads submerged in water.



**ER-010734 Branotect maintenance spray  
0.4 liter**

Version 0.4 litre aerosol.  
Application For the maintenance and conservation of all the clamping elements used for WEDM purposes.



# EROWA Wire EDM Tooling Kit

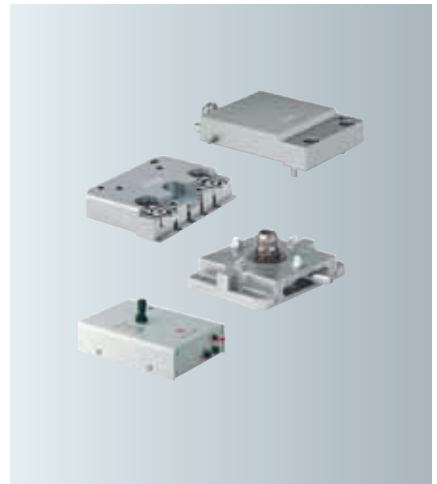
ER-009696	<b>UnoSet Basic Kit manual</b>
ER-007962	<b>UnoSet Basic Kit pneumatic</b>
Version	Basic tooling system equipment for WEDM centers.
Application	Suitable for the palletization of small and medium sized workpieces.
Mounting	Depending on the machine base, we recommend the multi-adapter plate ER-017198.
Kit contains	1 chuck 1 UniVise universal vise
Note	Machine-specific information can be found at <a href="http://www.erowa.com/unoset">www.erowa.com/unoset</a> or at your EROWA dealer.



ER-017198	<b>Multi-adapter plate</b>
Application	To fit the UnoSet chuck to the machine base
Mounting	Through the adjustable borehole grids with the bolts supplied.



ER-021502	<b>Starter Kit PalletSet W, manual</b>
ER-021503	<b>Starter Kit PalletSet W pneumatic</b>
Version	Basic tooling system equipment for WEDM centers.
Application	Suitable for the palletization of medium-sized workpieces.
Mounting	Directly to the machine base with the fittings supplied.
Kit contains	1 chuck 1 fixholder 1 vise 1 manual control unit (pneumatic)
Note	Machine-specific information can be found at <a href="http://www.erowa.com/palletset">www.erowa.com/palletset</a> or at your EROWA dealer.





	<b>Starter Kit FrameSet, fix</b>
	<b>Starter Kit FrameSet, basic</b>
	<b>Starter Kit Frameset, manual</b>
	<b>Starter Kit Frameset, pneumatic</b>
Version	Basic frame tooling system equipment for WEDM centers. Manually or pneumatically controlled chucks according to your choice. With the FrameSet fix version, the clamping frames are firmly bolted to the machine base.
Application	Suitable for the palletization of small and medium-sized workpieces.
Mounting	directly to the machine base with the fittings supplied.
Kit contains	2 FrameSet fix plates or corresponding chucks 1 clamping frame of the machine-specific size 2 fitting clamping beams 1 set clamping equipment 1 set frame supports Fittings and pneumatic materials where necessary
Note	Machine-specific information can be found at <a href="http://www.erowa.com/frameset">www.erowa.com/frameset</a> or at your EROWA dealer.



	<b>ManoSet Kit XXL</b>
Version	Basic frame tooling system equipment for WEDM centers. Fixed rails serve as the basis for the clamping beams.
Application	On large WEDM centers.
Mounting	Directly to the machine base with the fittings supplied.
Kit contains	1 set machine-specific base rails 2 fitting clamping beams 1 set clamping equipment
Note	Machine-specific information can be found at <a href="http://www.erowa.com/manoset">www.erowa.com/manoset</a> or at your EROWA dealer.



# EROWA Wire EDM Tooling

## Set of clamping elements

EROWA's extensive accessory sets contain a number of practical and economically priced auxiliaries which turn clamping jobs into fun.



ER-019989 Set of clamping elements, PalletSet W

These materials have been packed in one solid plastic box.

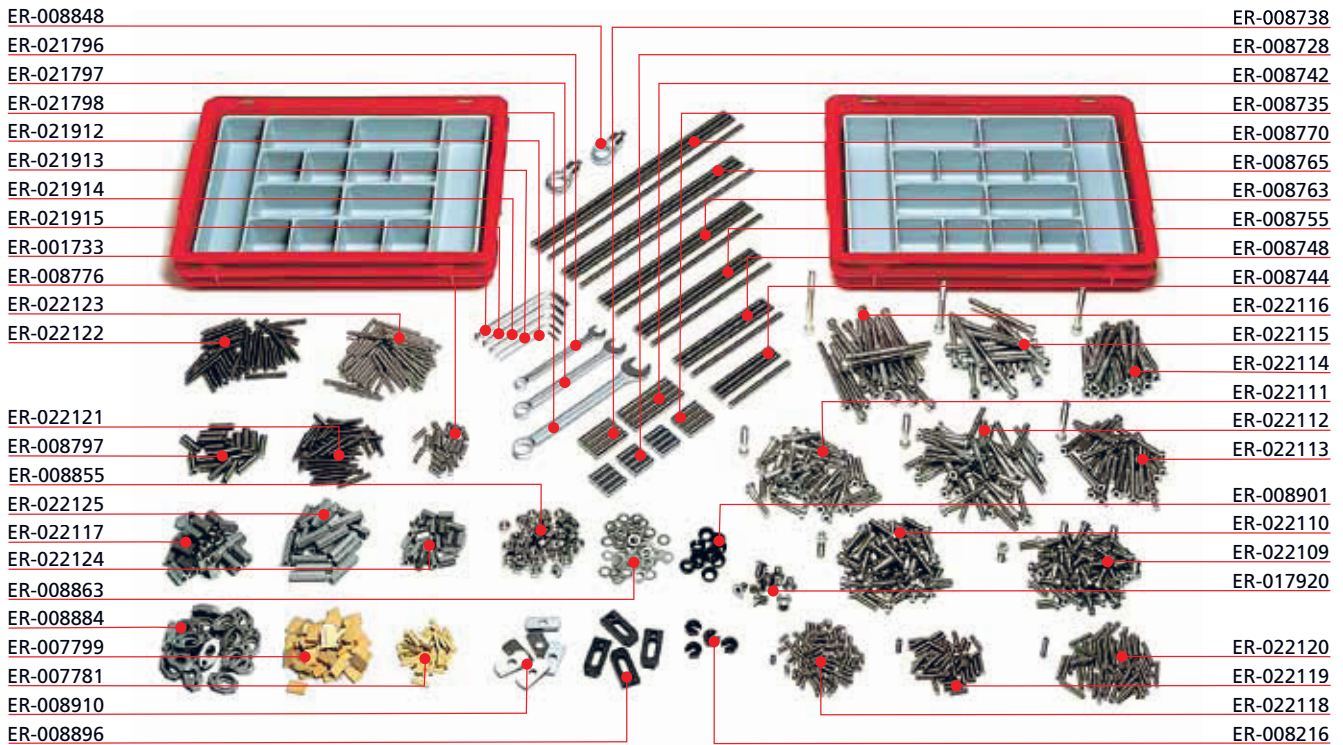
Order number	Description	Units per set	Units supplied by order number
ER-002611	Hex key SW 5	1	1
ER-007729	Z-washer 3 mm	10	1
ER-007768	Hex key SW 3	1	1
ER-007781	Spacer, small	50	50
ER-007799	Spacer, large	50	50
ER-008884	Clip, universal	10	4
ER-017920	Countersunk bolt M8 x 14	10	1
ER-022109	Socket head bolt M8 x 20	10	50
ER-022110	Socket head bolt M8 x 30	10	50
ER-022111	Socket head bolt M8 x 40	10	50
ER-022113	Socket head bolt M8 x 60	10	50
ER-022118	Threaded pin M6 x 12	10	50
ER-022119	Threaded pin M6 x 20	10	50
ER-022120	Threaded pin M6 x 30	10	50
ER-022121	Threaded pin M6 x 40	10	50
ER-022122	Threaded pin M6 x 50	10	50



# EROWA Wire EDM Tooling

## Set of clamping elements for Wire EDM Tooling Standard

EROWA's extensive accessory sets contain a number of practical and economically priced auxiliaries which turn clamping jobs into fun.



### ER-008868 Set of clamping elements, standard

These materials have been packed in one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-001733	Hex key SW 8	1	1
ER-007781	Spacer plate, small	50	50
ER-007799	Spacer plate, large	50	50
ER-008216	Slotted nut M8	4	4
ER-008728	Straight pin $\varnothing 9$ L = 30	12	4
ER-008735	Straight pin $\varnothing 9$ L = 40	4	4
ER-008738	Straight pin $\varnothing 9$ L = 50	4	4
ER-008742	Straight pin $\varnothing 9$ L = 80	4	4
ER-008744	Threaded rod M8 x 100	4	4
ER-008748	Threaded rod M8 x 150	4	4
ER-008755	Threaded rod M8 x 200	4	4
ER-008763	Threaded rod M8 x 250	4	4
ER-008765	Threaded rod M8 x 300	4	4
ER-008770	Threaded rod M8 x 350	4	4
ER-008776	Threaded pin, hex, M8 x 20	20	50

**ER-008868 Set of clamping elements, standard**

These materials have been packed in one solid plastic box.

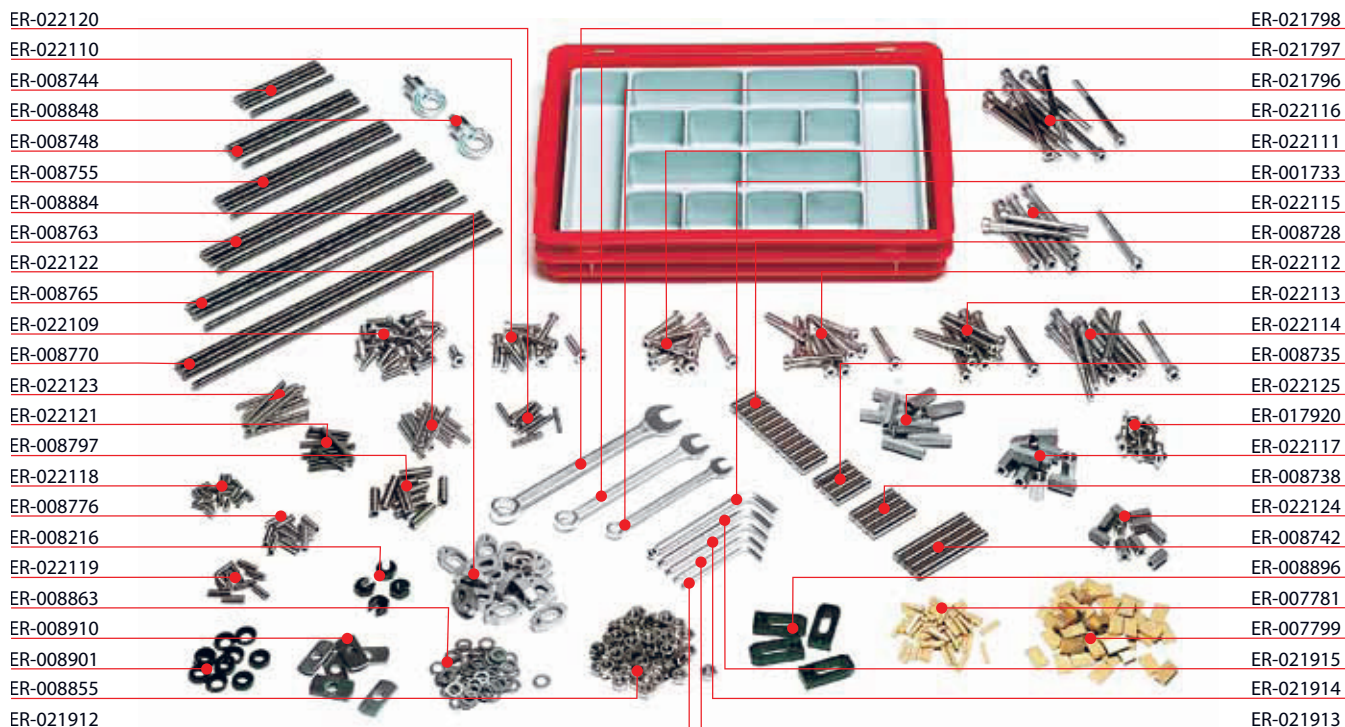
Order number	Description	Units per set	Units supplied by order number
ER-008797	Threaded pin, hex, M10 x 30	20	50
ER-008848	Eye bolt	2	2
ER-008855	Hex nut, M8 x 0.8	50	50
ER-008863	Washer	50	50
ER-008884	Bracket, universal	20	4
ER-008896	Bracket	4	4
ER-008901	Sliding disk	10	20
ER-008910	Spacer plate	8	8
ER-017920	Countersunk head bolt M8 x 14	10	1
ER-021796	Ring spanner, SW 10	1	1
ER-021797	Ring spanner, SW 13	1	1
ER-021798	Ring spanner, SW 17	1	1
ER-021912	Hex key SW 3	1	1
ER-021913	Hex key SW 4	1	1
ER-021914	Hex key SW 5	1	1
ER-021915	Hex key SW 6	1	1
ER-022109	Socket head bolt, hex, M8 x 20	50	50
ER-022110	Socket head bolt, hex, M8 x 30	50	50
ER-022111	Socket head bolt, hex, M8 x 40	40	50
ER-022112	Socket head bolt, hex, M8 x 50	40	50
ER-022113	Socket head bolt, hex, M8 x 60	20	50
ER-022114	Socket head bolt, hex, M8 x 70	20	20
ER-022115	Socket head bolt, hex, M8 x 80	20	20
ER-022116	Socket head bolt, hex, M8 x 100	20	20
ER-022117	Hex extension nut M8	20	20
ER-022118	Threaded pin, hex, M6 x 12	100	50
ER-022119	Threaded pin, hex, M6 x 20	50	50
ER-022120	Threaded pin, hex, M6 x 30	50	50
ER-022121	Threaded pin, hex, M6 x 40	50	50
ER-022122	Threaded pin, hex, M6 x 50	50	50
ER-022123	Threaded pin, hex, M6 x 60	50	50
ER-022124	Extension nut, hex / M6	20	20
ER-022125	Spacer, hex / M6 / L = 40	20	20



# EROWA Wire EDM Tooling

## set of clamping elements for Wire EDM Tooling Economy

EROWA's extensive accessory sets contain a number of practical and economically priced auxiliaries which turn clamping jobs into fun.



### ER-008215 Set of clamping elements Economy

These materials have been packed in one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-001733	Hex key SW 8	1	1
ER-007781	Spacer plate, small	50	50
ER-007799	Spacer plate, large	50	50
ER-008216	Slotted nut M8	4	4
ER-008728	Straight pin, $\varnothing 9$ L = 30	12	4
ER-008735	Straight pin, $\varnothing 9$ L = 40	4	4
ER-008738	Straight pin, $\varnothing 9$ L = 50	4	4
ER-008742	Straight pin, $\varnothing 9$ L = 80	4	4
ER-008744	Threaded rod M8 x 100	4	4
ER-008748	Threaded rod M8 x 150	4	4
ER-008755	Threaded rod M8 x 200	4	4
ER-008763	Threaded rod M8 x 250	4	4
ER-008765	Threaded rod M8 x 300	4	4
ER-008770	Threaded rod M8 x 350	4	4
ER-008776	Threaded pin, hex, M8 x 20	10	50

## ER-008215 Set of clamping elements Economy

These materials have been packed in one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-008797	Threaded pin, hex, M10 x 30	10	50
ER-008848	Eye bolt	2	2
ER-008855	Hex nut, M8 x 0.8	50	50
ER-008863	Washer	50	50
ER-008884	Bracket universal	15	4
ER-008896	Bracket	4	4
ER-008901	Sliding disk	10	20
ER-008910	Spacer plate	8	8
ER-017920	Countersunk head bolt M8 x 14	10	1
ER-021796	Ring spanner, SW 10	1	1
ER-021797	Ring spanner, SW 13	1	1
ER-021798	Ring spanner, SW 17	1	1
ER-021912	Hex key SW 3	1	1
ER-021913	Hex key SW 4	1	1
ER-021914	Hex key SW 5	1	1
ER-021915	Hex key SW 6	1	1
ER-022109	Socket head bolt, hex, M8 x 20	20	50
ER-022110	Socket head bolt, hex, M8 x 30	10	50
ER-022111	Socket head bolt, hex, M8 x 40	10	50
ER-022112	Socket head bolt, hex, M8 x 50	10	50
ER-022113	Socket head bolt, hex, M8 x 60	10	50
ER-022114	Socket head bolt, hex, M8 x 70	10	20
ER-022115	Socket head bolt, hex, M8 x 80	10	20
ER-022116	Socket head bolt, hex, M8 x 100	10	20
ER-022117	Hex extension nut, M8	10	20
ER-022118	Threaded pin, hex, M6 x 12	20	50
ER-022119	Threaded pin, hex, M6 x 20	10	50
ER-022120	Threaded pin, hex, M6 x 30	10	50
ER-022121	Threaded pin, hex, M6 x 40	10	50
ER-022122	Threaded pin, hex, M6 x 50	10	50
ER-022123	Threaded pin, hex, M6 x 60	10	50
ER-022124	Extension nut, hex / M6	10	20
ER-022125	Spacer, hex/M6/L = 40	10	20



EROWA Wire EDM Tooling

# Set of clamping elements for Wire EDM Tooling XL

EROWA's extensive accessory sets contain a number of practical and economically priced auxiliaries which turn clamping jobs into fun.



## ER-008301 Set of clamping elements, XL

These materials have been packed in one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-001417	Wrench SW13	1	1
ER-002613	Hex key SW 5	1	1
ER-007781	Spacer plate, small, 4 x 4 x 20 mm	50	50
ER-007799	Spacer plate, large, 4 x 12 x 20 mm	50	50
ER-008744	Threaded rod M8 x 100	4	4
ER-008748	Threaded rod M8 x 150	4	4
ER-008755	Threaded rod M8 x 200	4	4
ER-008763	Threaded rod M8 x 250	4	4
ER-008765	Threaded rod M8 x 300	4	4
ER-008770	Threaded rod M8 x 350	4	4
ER-008776	Threaded rod M8 x 20	10	50
ER-008786	Threaded rod M8 x 30	10	50
ER-008790	Threaded rod M8 x 40	10	50
ER-008794	Threaded rod M8 x 50	10	50
ER-008812	Countersunk head bolt M8 x 40	20	40
ER-008855	Hex nut M8 x 0.8D	20	50
ER-008861	Hex nut M8 x 3D	4	10
ER-008863	Washer $\varnothing$ 15 x 8,4 x 1.6	20	50
ER-008896	Clamp 45 mm	8	4

**ER-008301 Set of clamping elements XL**

These materials have been packed in one solid plastic box.

Order number	Description	Units per set	Units supplied by order number
ER-008901	Sliding disk	20	20
ER-010115	Clamps, aluminum, bronzed	4	1
ER-010120	Column, 100 mm	4	1
ER-010123	Column, 60 mm	4	1
ER-010126	Adjustment supports	4	1

EROWA Wire EDM Tooling

# Set of clamping elements for Wire EDM Tooling

EROWA's extensive accessory sets contain a number of practical and economically priced auxiliaries which turn clamping jobs into fun.

ER-008868 Set of clamping elements, standard



ER-019989 Set of clamping elements PalletSet W



ER-008215 Set of clamping elements Economy



ER-008301 Set of clamping elements XL









EROWA Sine Dividing Head ITS

# The highest precision- the simplest handling

---

## Your advantages

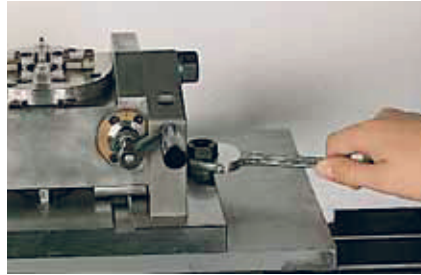
**Workpieces and electrodes are clamped and machined simply, quickly, and with precision.**

**Thanks to the precision of the integrated ITS rapid-action chuck, workpieces need not be realigned when they are changed.**

**Full ITS universality is guaranteed.**

**Simple to fit on any milling, grinding or EDM center.**

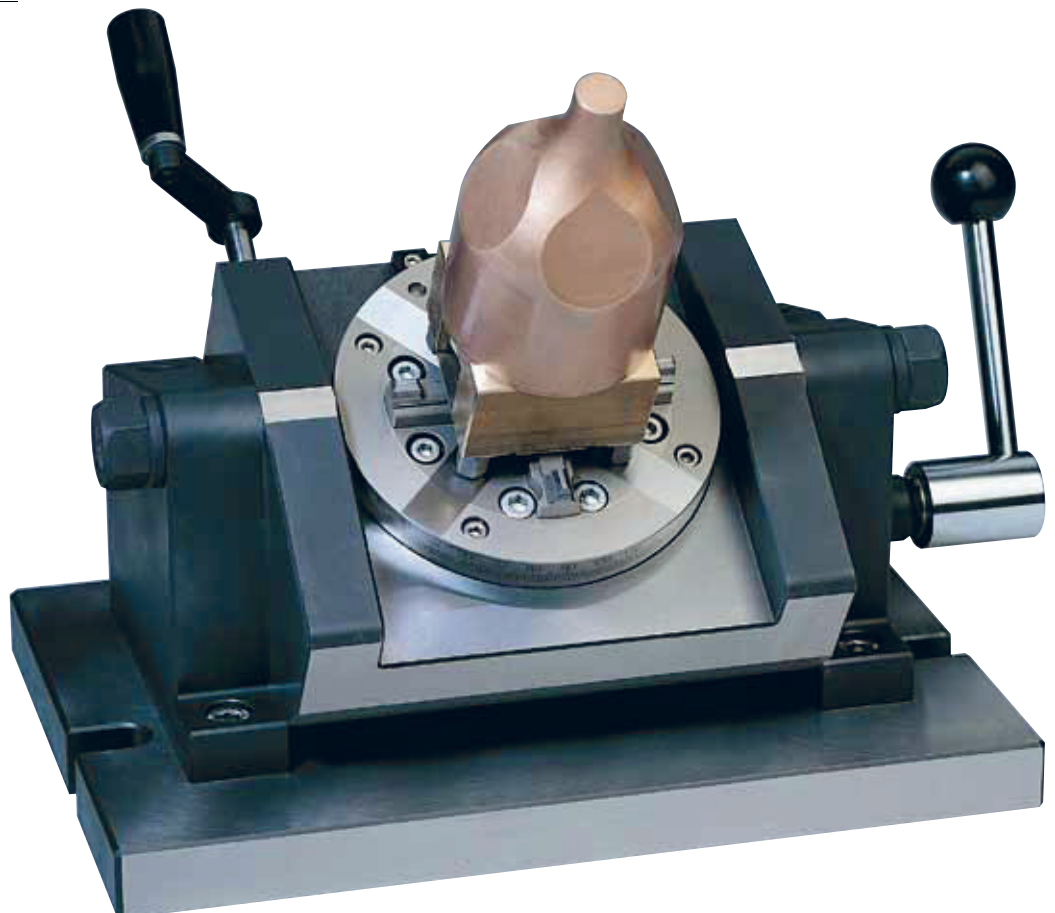
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The EROWA Sine Dividing Head ITS is easy and quick to fit on the machine table, with only two bolts.



The workpiece is clamped with the precision of the ITS tooling system, with a repeatability of 0.002 mm.



## Function

The Sine Dividing Head offers you the following possibilities:



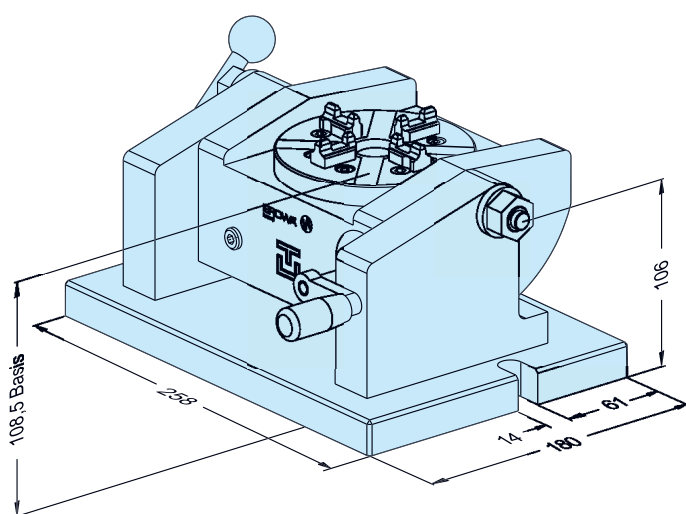
ITS S rapid-action chuck, able to rotate round 360°, indexing vernier 5 minutes (0.08°).



... swivelable round 90° with ...



... sine function.

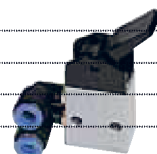


## Technical data

ER-010427	EROWA Sine Dividing Head
Titling range	0°–90°
Rotating axis, rapid-action chuck	360°
Chuck indexing	4 x 90°
1 turn on crank	4,5°
Air connection	M5
Air pressure	7 bar
Weight	22 kg
Concentricity	
rapid action chuck/rotating axis	± 0,015 mm
Axial load	500 N
Clamping, indexing and rotating axes	mechanical
Materials	Corrosion resistant

Option  
ER-010567

Manual valve

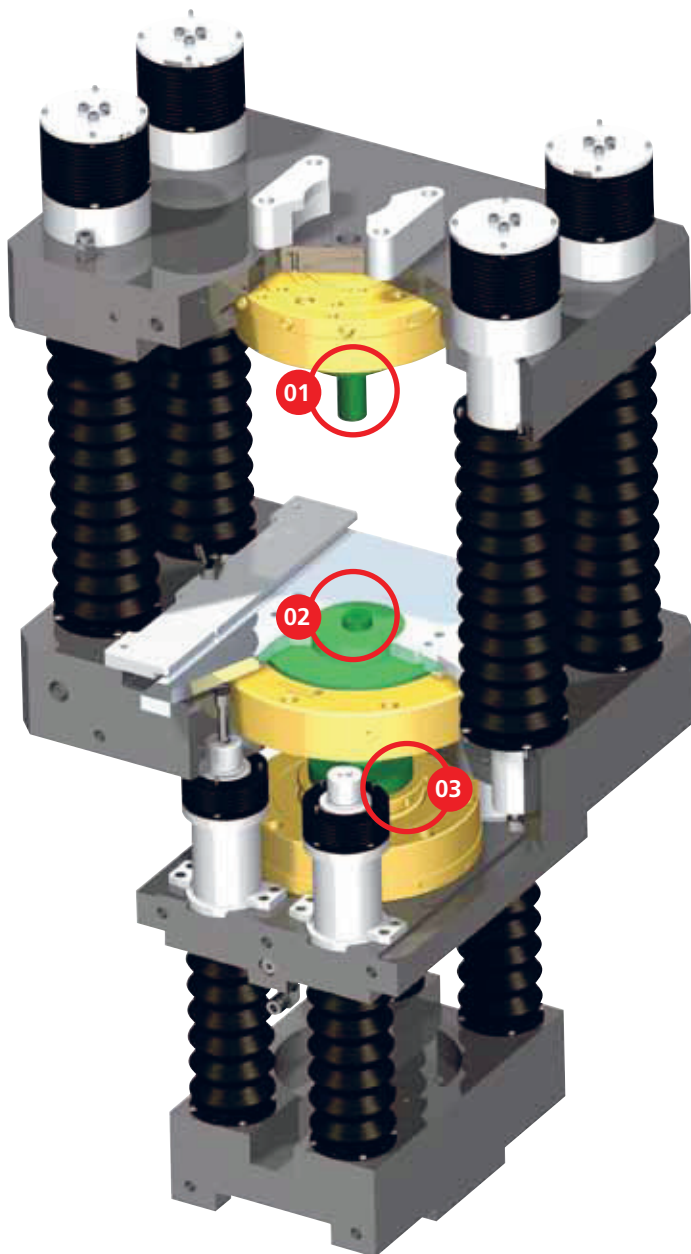


## EROWA PM Tooling

# 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**

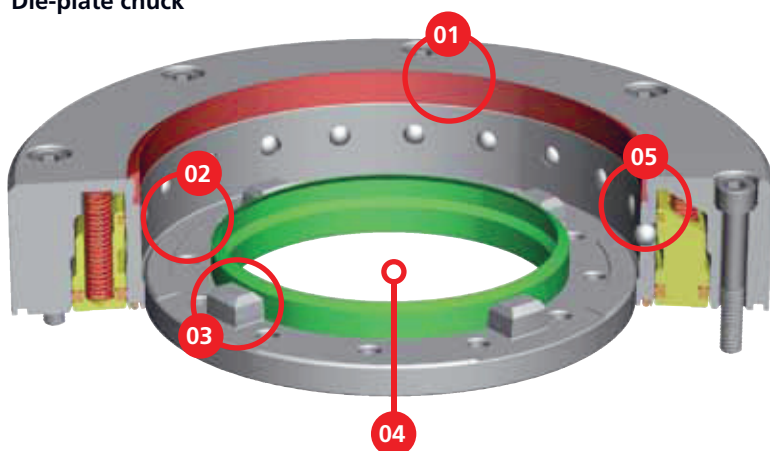


**Handling**

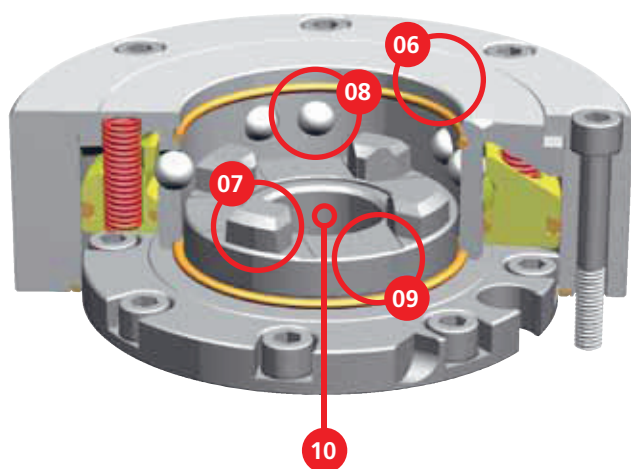
Manual / Loading facility / Robot

**Function**

**Die-plate chuck**



**Punch 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.

**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.

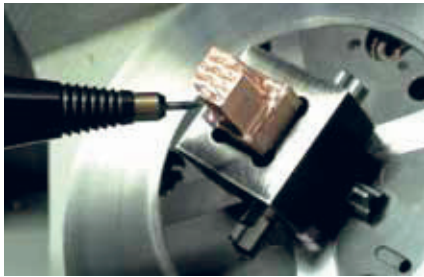
**Technical data - PM Tooling Precise**

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

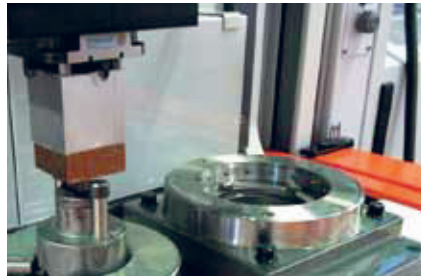
## Universal from milling to pressing

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:



### Milling

Electrodes used to EDM the molds are machined on ITS system holders.



### EDM

Shapes in the surface of the punches are EDMed.



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



### Grinding

Punches may also be machined on cylindrical grinding machines.



### Wire-EDM

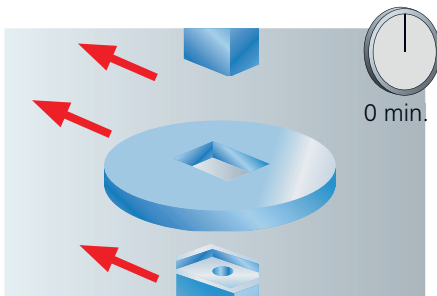
The contours are produced on a WEDM center. The reference position is provided by the chuck.



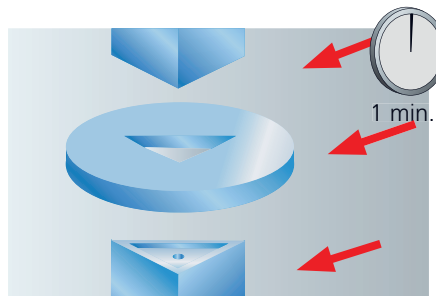
### Powder pressing

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

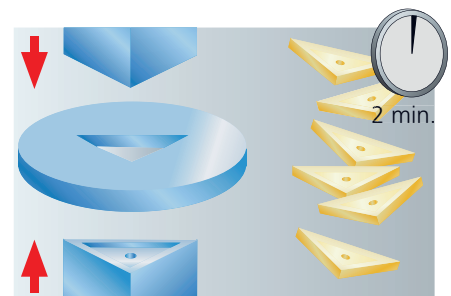
### Changing variants in 2 minutes



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 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

## EROWA PM TOOLING

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For chip-removing processes



For EDM sinking



For WEDM

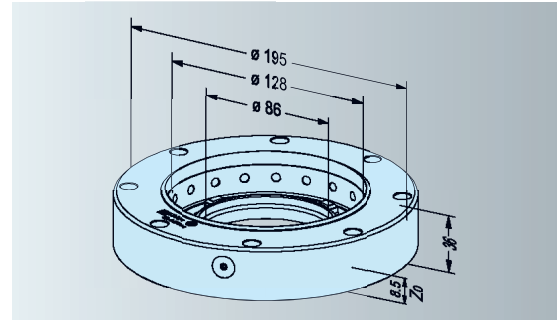
# EROWA PM Tooling Precise Chucks

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



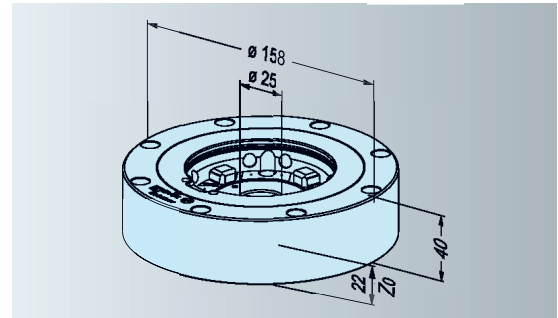
Version	Steel, hardened. Through borehole $\varnothing$ 86. External seal.
Clamping power	23000 N (reclamped at 6 bar).
Connections	At the rear, with two lines.
Operation	With control unit.
Application	On milling machines and powder presses. To accommodate die-plate pallets PM128 Precise.



## ER-040697 Chuck PM85 Precise



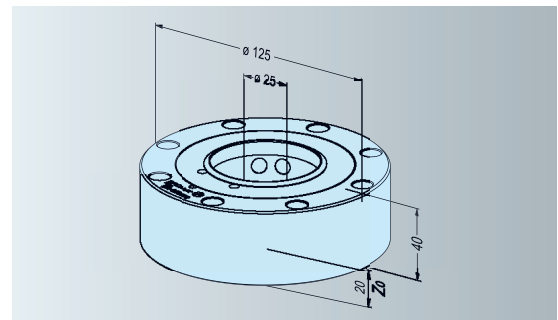
Version	Steel, hardened, corrosion-resistant. Through borehole $\varnothing$ 25.
Clamping power	9000 N.
Connections	At the rear, with two lines.
Operation	With control unit.
Application	On milling machines, lathes, EDM/WEDM centers and powder presses. To accommodate pallets PM85 Precise.



## ER-055370 Chuck PM60 Precise



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



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

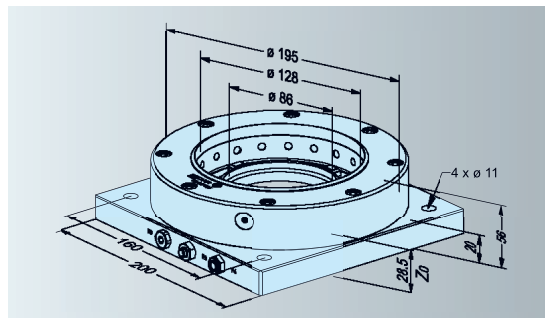


Version Steel, hardened, corrosion-resistant.  
Through borehole  $\varnothing 86$ . External seal.

Clamping power 20000 N (reclamped at 6 bar)

Operation Laterally with compressed-air gun or with control unit.

Application On milling machines, lathes, grinding machines and EDM/WEDM centers.  
To accommodate die-plate pallets PM128 Precise and Multi.



**ER-040696 Chuck PM85 Precise with base plate**



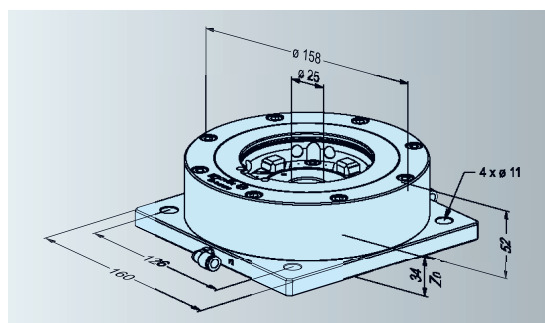
Version Steel, hardened, corrosion-resistant.  
Through borehole  $\varnothing 25$ .

Clamping power 9000 N.

Connections Laterally, with two lines.

Operation With control unit.

Application On milling and grinding machines and on EDM/WEDM centers.  
To accommodate pallets PM85 Precise and Multi.



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



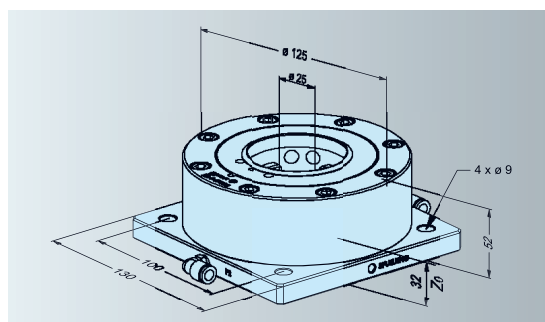
Version Steel, hardened, corrosion-resistant.  
Through borehole  $\varnothing 25$ .

Clamping power 6500 N.

Connections Laterally, with two lines.

Operation With control unit.

Application On milling and grinding machines and on EDM/WEDM centers.  
To accommodate pallets PM60 Precise.

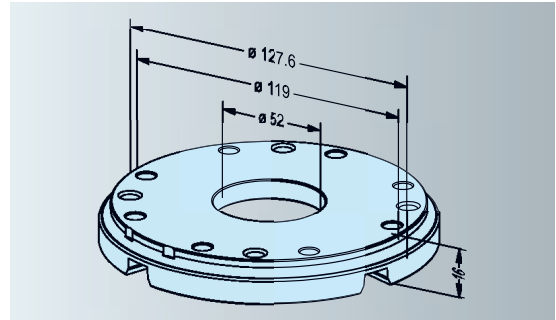


# EROWA PM Tooling Precise Pallets

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



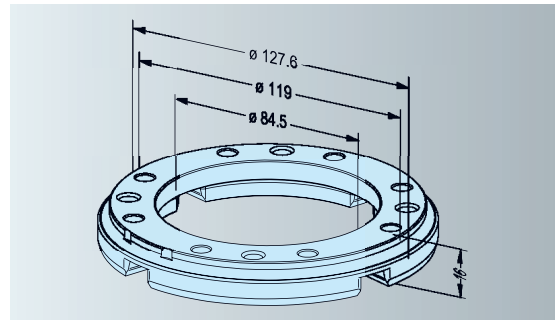
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  52.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks**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



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



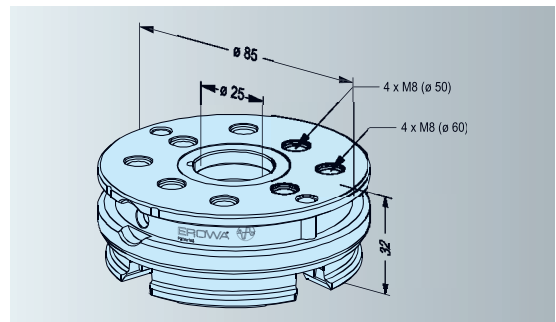
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  84.5.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks**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



## ER-040701 Pallet PM85 Precise 1 piece



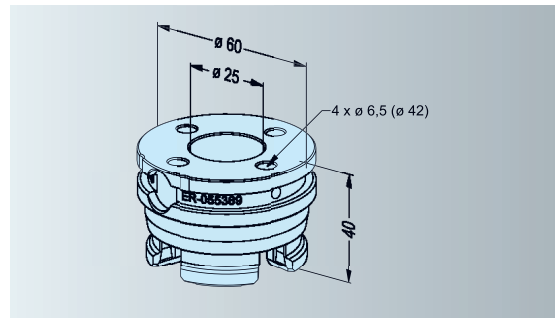
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  25.
- Application** For use on Chuck PM85 Precise. With chucking spigot ER-039839 on ProductionChuck 210 Combi, PowerChuck P, ITS Chuck 100 P and QuickChuck 100 P. To accommodate workpieces and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



## ER-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.



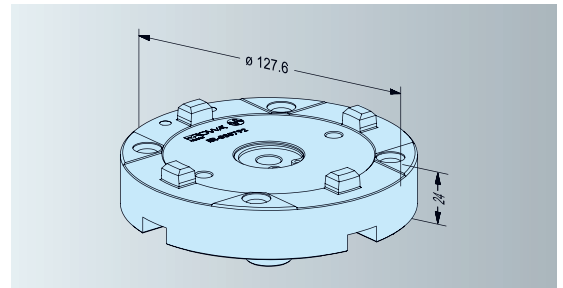


# EROWA PM Tooling Accessories

**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.

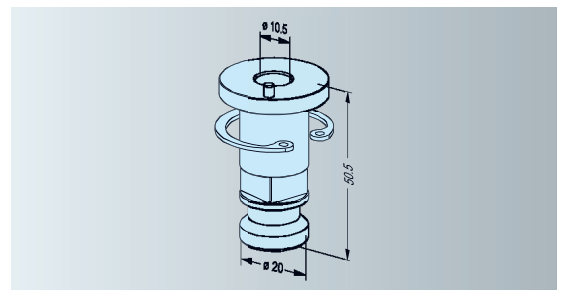


**ER-039839 Chucking spigot PM85 automatic 8 pieces**

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



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

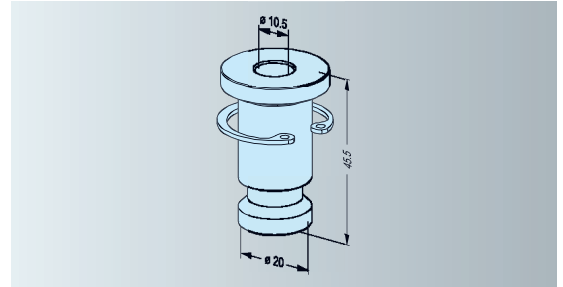


**ER-041429 Chucking spigot PM56 / PM60 manual 8 pieces**

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



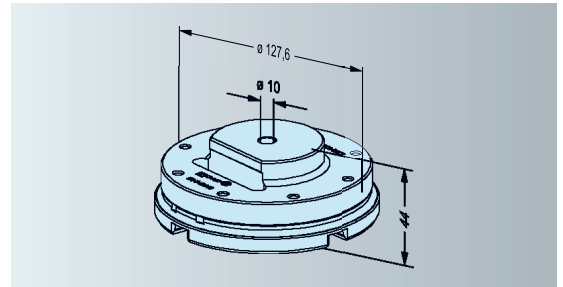
Version Steel, hardened. Manual, with borehole  $\varnothing$  10.5.  
Application In pallets PM56 and PM60 Precise. To be fitted with securing ring.



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



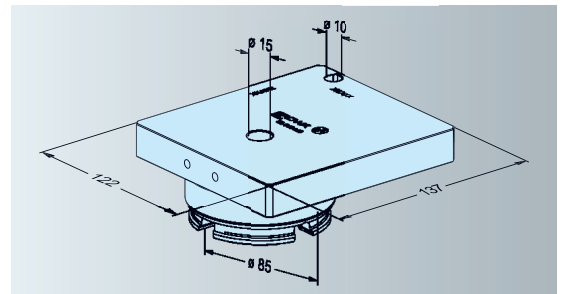
Version Steel hardened, corrosion-resistant. Ground alignment surface and centering borehole  $\varnothing$  10.  
Application In tool- and mold-making. For alignment of the angle position and determination of the center of the die-plate chuck PM128 Precise.



**ER-042440 Alignment pallet PM85 Precise**



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





# EROWA PM Tooling Accessories

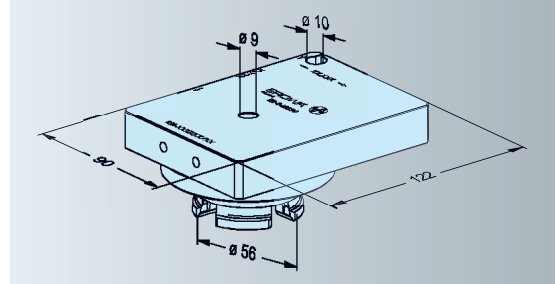
## ER-042350 Alignment pallet PM56 / PM60 Precise

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.



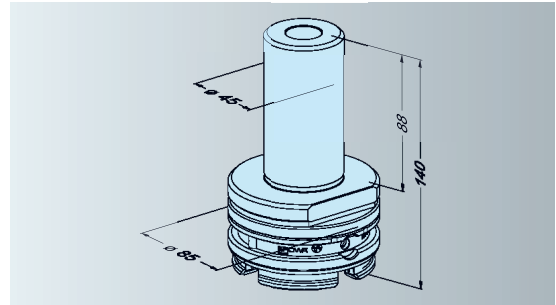
## ER-043427 Alignment pin PM85 Precise

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.



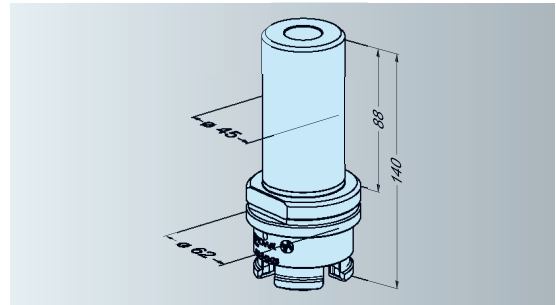
## ER-043428 Alignment pin PM56 / PM60 Precise

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.



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



## EROWA spindle adaptation The universal interface

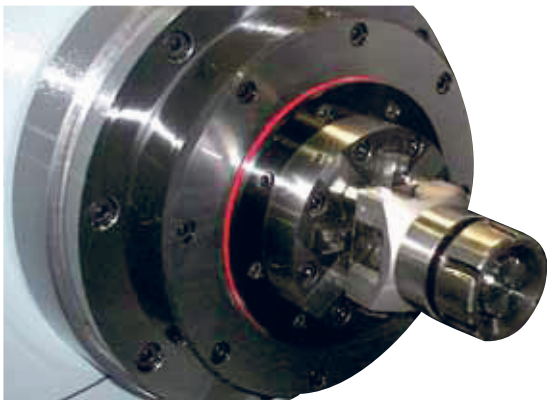
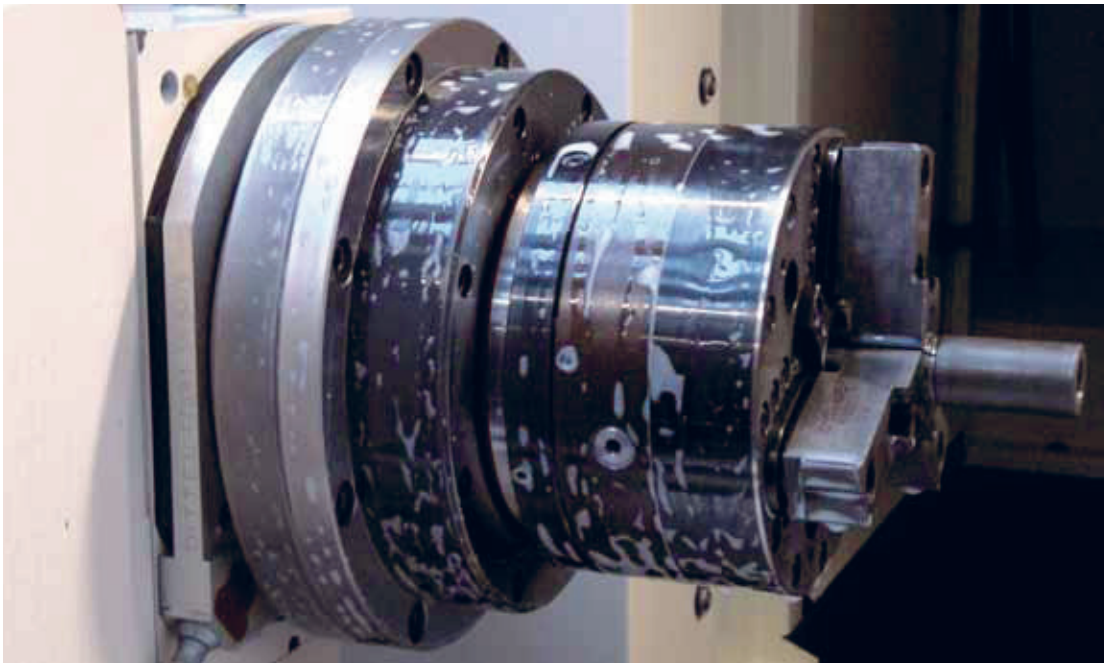
### Minimize resetting time - increase productivity!

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.



More information.



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.



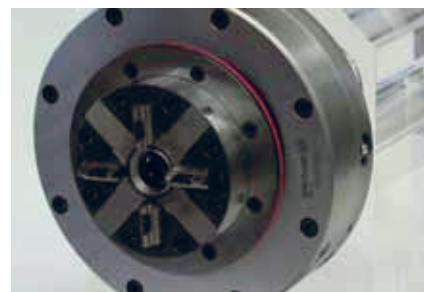
The system is ready for operation in next to no time. Resetting is no longer an essential time factor.



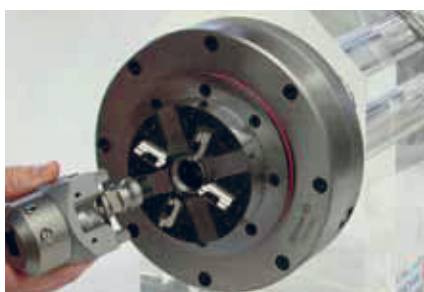
The base chuck is opened and the three-jaw chuck is removed.



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 work-pieces or electrode blanks.

# EROWA spindle adaptation

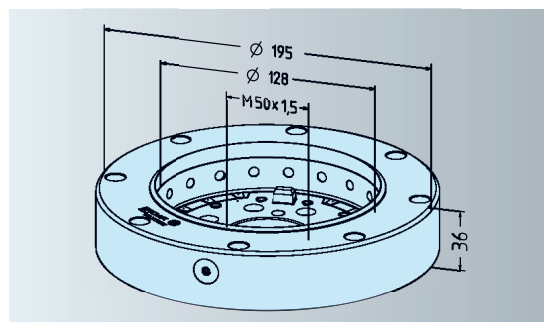
## Chucks

Technical data	PM chuck
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



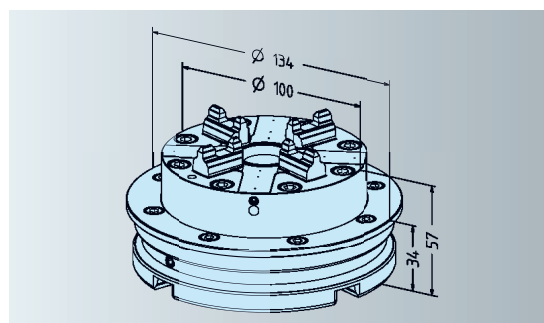
Version	Hardened steel. Through hole: $\varnothing 48$ . Outside seal. Positioning ring, including 2 AirDock valves. Max. speed 4000 min <sup>-1</sup> .
Clamping power	23,000 N (reclamped at 6 bar).
Connections	At the rear through customized base plate, flange or rotatable pneumatic connector (not supplied 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



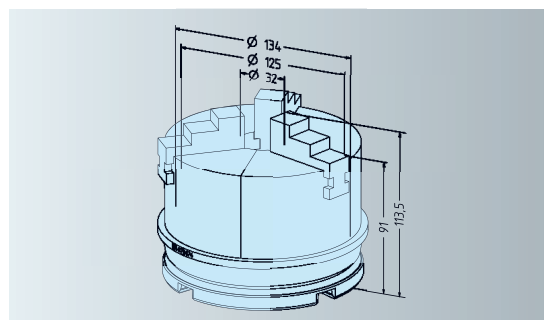
Version	Hardened steel.
Clamping power	ITS Chuck 100 P: 6,000 N.
Connections	At the rear, to die-plate PM128.
Operation	Through AirDock valves. With compressed-air gun, control unit or through the machine control unit.
Application	As adapter chuck in the die-plate chuck PM 128 II AirDock. To accommodate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



### ER-078474 Manual 3-jaw concentric chuck $\varnothing 125$ mm on die-plate pallet PM128 Precise



Version	Manual 3-jaw concentric chuck $\varnothing 125$ mm. Central clamping area 3-53mm. 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 <sup>-1</sup> .
Application	As adapter chuck in the die-plate chuck PM128 II AirDock.

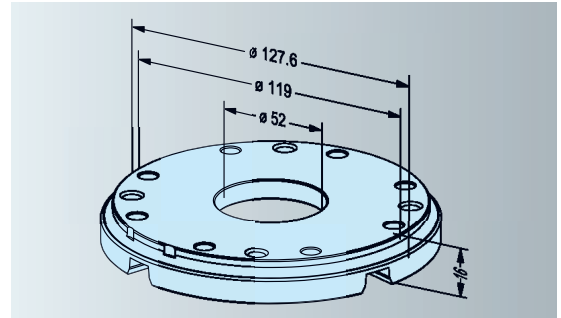


# EROWA spindle adaptation Pallets

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



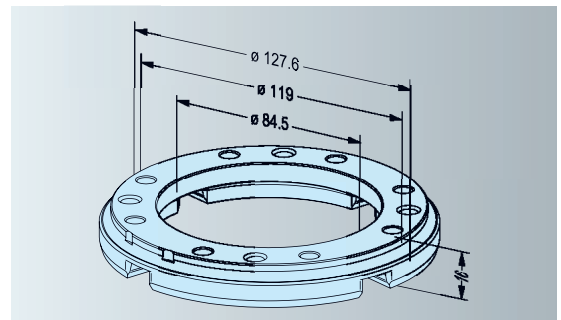
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  52.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks**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



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



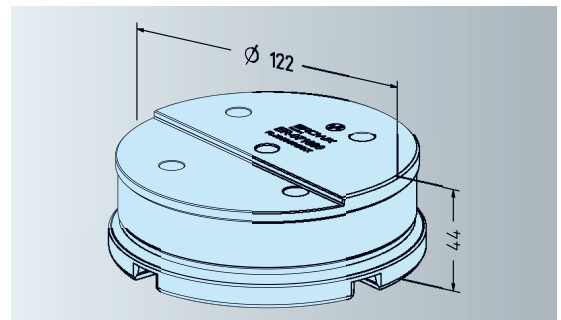
- Version** Steel, hardened, corrosion-resistant.  
Centering integrated in pallet. Inside  $\varnothing$  84.5.
- Application** For use on die-plate chuck PM128 Precise. To accommodate die plates, workpieces and fixtures for chip-cutting machines, EDM/WEDM centers and powder presses.
- Fitting blanks**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



## ER-071890 Alignment pallet PM128 Precise for die-plate chuck PM128 AirDock

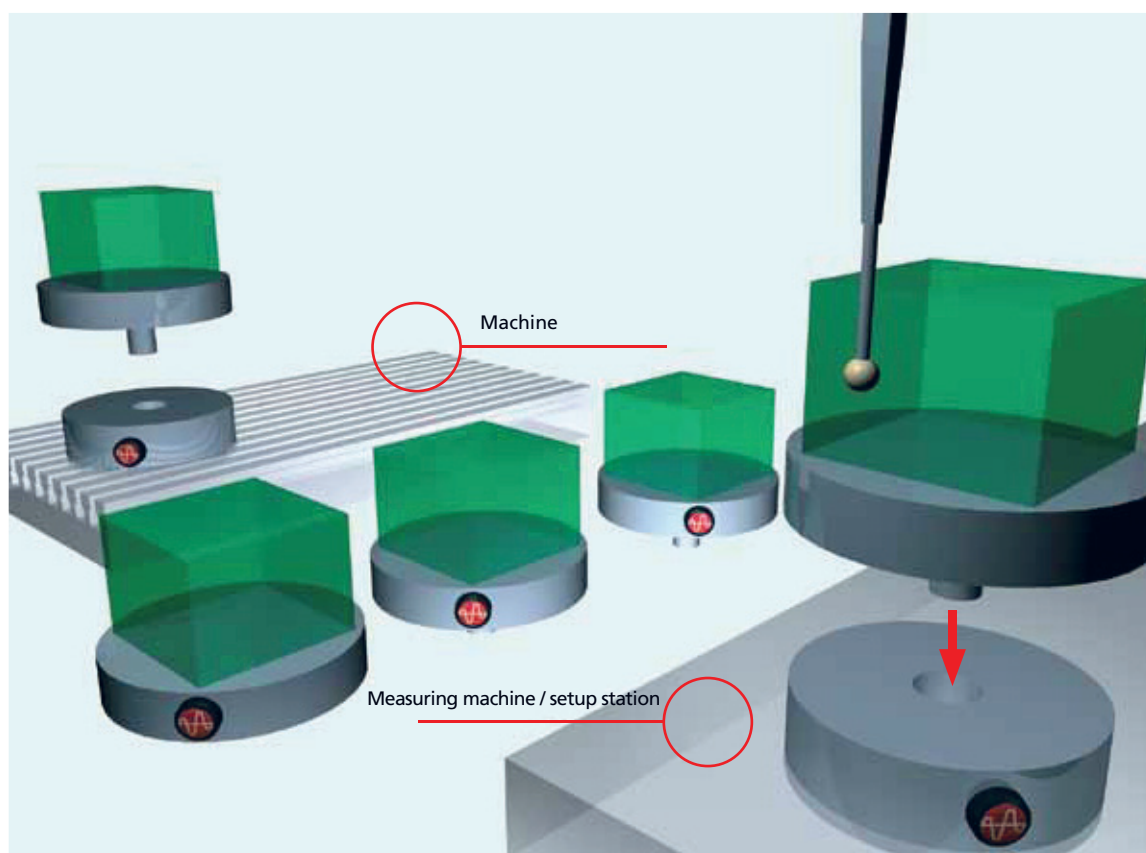


- Version** Hardened steel, corrosion-resistant. With ground alignment surface and  $\varnothing$  122. Including M50x1.5 threaded insert.
- Application** In tool- and mold-making. To align angle position and determine the center of die-plate chucks PM128 AirDock.





# EROWA quality measuring and presetting systems



For chip-removing processes



For EDM sinking



For WEDM

**Organization** of electrodes and workpieces. All the workpieces and electrodes are set up outside the machine. If necessary, their offset values are determined outside the machine. Thus programs can be generated in advance, and automation becomes possible. Quality measurements enhance process safety and are an important factor for successful quality management.



## EROWA QUALITY MEASURING AND PRESETTING SYSTEMS

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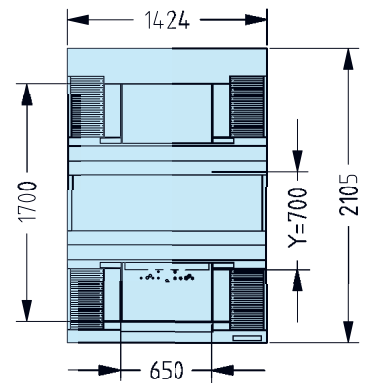
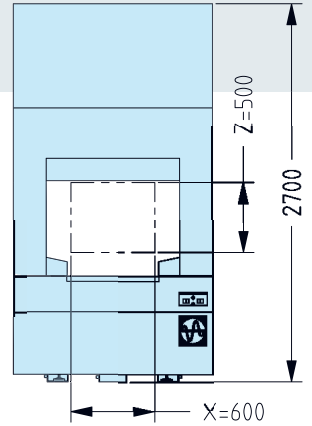
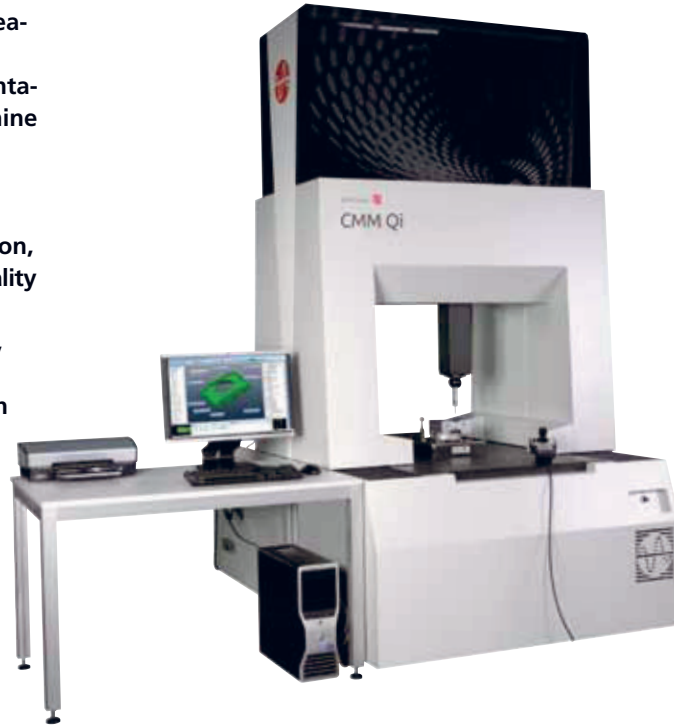
EROWA CMM Qi



# Top-precision quality measurements

Precision is produced, not measured – this is an old saying. Nevertheless, it is very advantageous if the measuring machine can measure as accurately as possible.

Thanks to its solid construction, the EROWA CMM Qi high-quality measuring machine provides utmost mechanical precision, combining EROWA products to a consistent high-precision system.



## EROWA CMM Qi

- Measuring machine (working plate with borehole grid for all EROWA tooling systems)
- Pneumatic control system
- PC and color printer (option)
- Software for presetting and quality measuring
- Renishaw measuring probe (option)
- Calibration ball

For additional details, please contact your EROWA dealer.

## Technical data

	<b>CMM Qi</b>
X-axis travel	600 mm
Y-axis travel	700 mm
Z-axis travel	500 mm
Maximum distance between table and probe holder (without probe)	668 mm
Maximum distance between the columns at table height	650 mm
Usable area of the granite slab (with EROWA hole pattern)	650 x 1700 mm
Resolution	0.0001 mm
Standard	0.0001 mm
High Precision	0.00002 mm
Measurement uncertainty in the volume (according to ISO 10360/2)	
Standard	1.5 µm + L/500
High Precision (SP25 probe system)	0.7 µm + L/500 (L in mm)
<b>Machine dimensions</b>	
Dimensions LxWxH	2100 x 1500 x 2700 mm
Maximum loadable workpiece weight	650 kg
Machine weight (no load)	2350 kg
Ambient conditions	
Standard	19°-21° Delta 0.5°/h
High Precision	19°-21° Delta 0.2°/h
<b>Software</b>	
Presetting software	- PreSoft by EROWA - EROWA PreSet Configurator
Measuring software	- ARCO CAD - Metrolog X4

### EROWA CMM Qi

A quality measuring machine with crucial benefits:

- Over 100 animated PreSet programs
- Integrated hole grid for clamping EROWA chucks.
- Extensive software package for presetting, quality measurements and automation.
- Prepared for automation.
- Secure workpiece recognition possible with EWIS™.
- Mechanical precision.
- Many post-processors for conversion of measured data.
- Temperature compensation available as an option.



CMM Qi

#### 01 | Rails

High-precision Renishaw rails with optical read heads ensure excellent results.

#### 02 | Renishaw probing systems

high-precision measuring probe systems for the greatest flexibility.

#### 03 | Centric drives

Centric drives for symmetric movements.

#### 04 | Symmetric machine layout

Special aluminum casting for excellent shape and temperature stability as well as guide rails made from granite.

#### 05 | Software

With the EROWA presetting and measuring software, presetting data can be recorded in a very simple way and quality measurements are both precise and re-traceable.

#### 06 | Various clamping systems

Depending on your requirements, one or more EROWA tooling systems can be mounted to the solid table. All the necessary boreholes already exist. FrameSet, MTS, UPC or ITS – all variants are supported.

#### 07 | Integrated operation

Already prepared for the control of the various tooling systems.

#### 08 | Joystick control

Optimal operation for secure measurements. One control lever for all axes. Optionally also available as a wireless joystick.

#### 09 | Natural granite

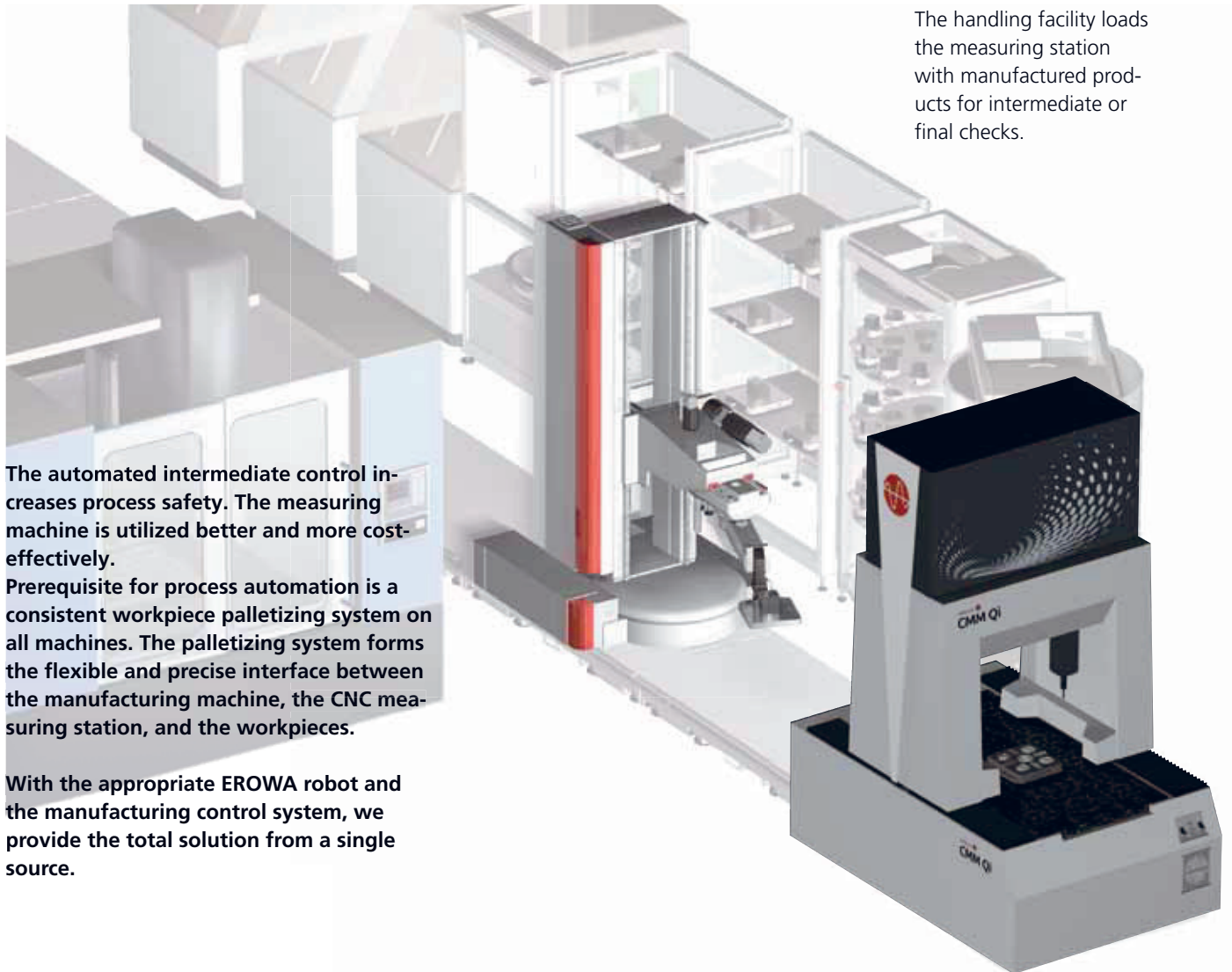
The solid granite slab combined with the specially cast portal constitutes the basis for precision.

#### 10 | Closed casing

The best possible shield against ambient influences, as well as a controlled airflow around the measuring system.

# EROWA CMM Qi

## Continuous quality monitoring



The handling facility loads the measuring station with manufactured products for intermediate or final checks.

The automated intermediate control increases process safety. The measuring machine is utilized better and more cost-effectively.

Prerequisite for process automation is a consistent workpiece palletizing system on all machines. The palletizing system forms the flexible and precise interface between the manufacturing machine, the CNC measuring station, and the workpieces.

With the appropriate EROWA robot and the manufacturing control system, we provide the total solution from a single source.



With the automatic pallet detection feature via a chip, you can view where each part is located in the manufacturing chain at any time. Status messages can also be sent to the operator via SMS.



Using the automation kit (option), the CMM Qi can be loaded by an EROWA robot. The CNC control allows automatic quality measurements.



The automatic in-process or final check boosts process reliability to an essential degree. The machine is used to better capacity and thus becomes more profitable. Also, reject costs can be reduced.



# EROWA CMM Qi

## Integrated automation

Are you looking for a favorably priced way of automating a measuring machine with the aim of achieving more autonomy?

The solution: CMM Qi measuring machine with a gripper and an integrated workpiece magazine.



The advantages:

- Favorably priced automation.
- Simple operation.
- Stand-alone solution.
- Saves space since no additional loading robot is required.
- Autonomy for several hours of unmanned measuring.
- Independent automation for Q-Measure.
- Retrofit option for existing CMM Qi measuring machines.
- Operation with EROWA process control system possible.
- EROWA EWIST™ identification possible.
- All the necessary safety components are integrated.

CMM Qi



Capacity: up to 30 ITS 50/72 electrode holders. Max. workpiece weight: 5 kg (including holder).



Integrated safety components



The integrated automation of the CMM Qi can be retrofitted to all CMM Qi measuring machines.

EROWA CMM Qi

# Scanning – High-precision shape and profile measurements

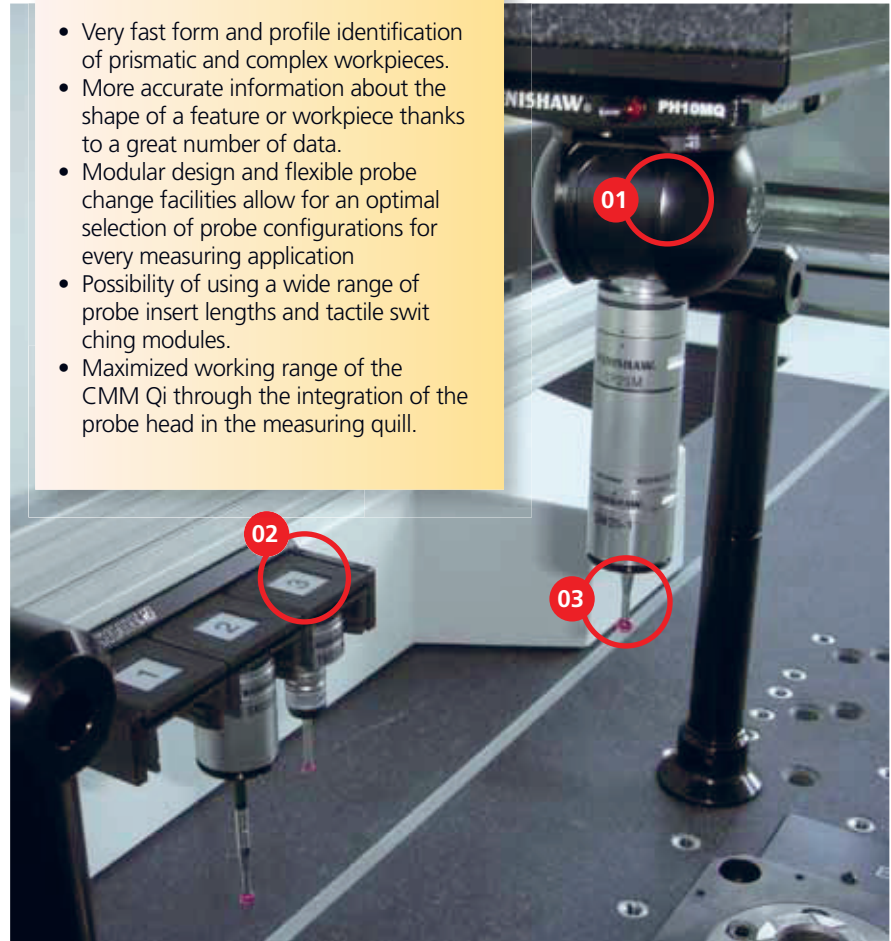
While “normal measurement” only results in individual measured points, scanning provides a large number of data giving much more detailed information on the form and shape of the feature or the workpiece.

Scanning is therefore used anywhere where complex freeform geometries are reproduced or where dimensional accuracy and complex surfaces must be within certain tolerances.

## EROWA Scanning

the crucial advantages.

- Very fast form and profile identification of prismatic and complex workpieces.
- More accurate information about the shape of a feature or workpiece thanks to a great number of data.
- Modular design and flexible probe change facilities allow for an optimal selection of probe configurations for every measuring application
- Possibility of using a wide range of probe insert lengths and tactile switching modules.
- Maximized working range of the CMM Qi through the integration of the probe head in the measuring quill.



### 01 | Rotary/swivel head

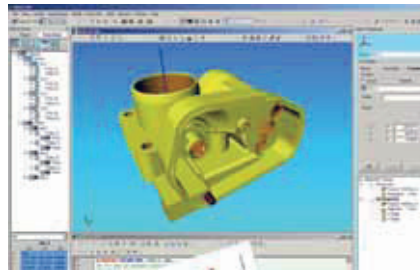
The PH10MQ is a motorized rotary/swivel head with 7.5° indexation. It is mounted directly in the measuring quill. This maximizes working range of the CMM Qi.

### 02 | Change magazine

The FCR25 change magazine allows a quick and automatic probe change to select the best probe configuration for each measuring application.

### 03 | Scanning accuracy

The SP25M allows a scanning functionality. The Renishaw scanning modules 1 and 2 recommended by EROWA are optimized for probe lengths of 20 mm to 105 mm to achieve a superior scanning accuracy.



The EROWA measuring software assists you in all your measuring applications.



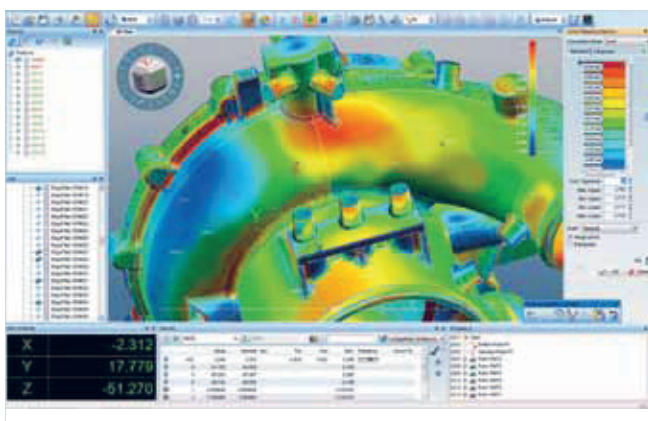
EROWA scanning solutions are configured individually to meet your needs. We are happy to advise you personally in order for you to find the optimal solution.

EROWA CMM Qi

# Laser scanning

## High-speed data collection

Laser scanning is a non-contact and efficient measuring process. Objects are digitally recorded to a high level of detail and within a short period of time.



The laser scanner generates a point cloud. The easy-to-view and colored surface diagram (color mapping) allows for an intuitive inspection of dimensional accuracy.

### EROWA laser scanning

The crucial advantages:

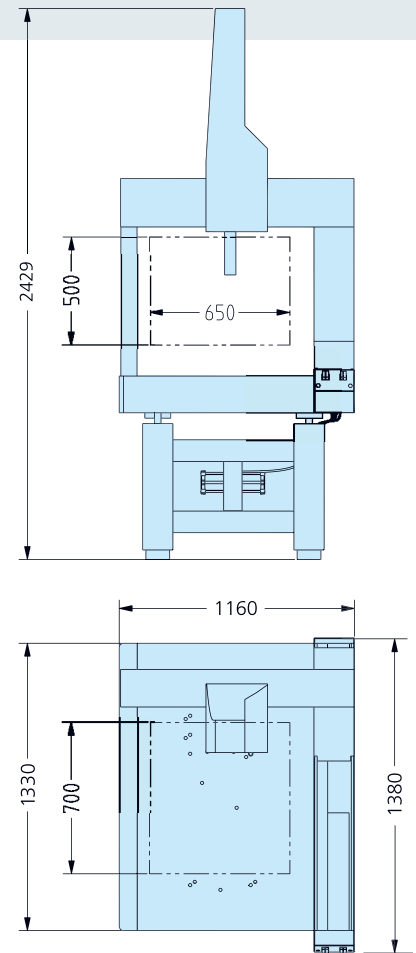
- Fast and economical measuring process.
- Very high level of detail.
- Efficient processing of a large amount of data in a short period of time.
- Non-contact measuring process for workpiece geometries which are difficult to record.
- Quick and easy recording of the entire part geometry freeform surfaces (as well as geometry features) for measuring and reverse engineering application.
- For complex freeform surfaces.
- For big surfaces.
- The measured data can be easily evaluated on the basis of the generated point cloud (color mapping).
- Can be combined with all tactile measuring systems.





# Simple presetting - automatic series measurements

Machining centers must be relieved of any unproductive work as much as possible. Presetting and measuring workpieces and electrodes are jobs that can be more efficiently done on a measuring station. The motto is presetting while the machine is working. With the PreSet 3D CNC, you provide your operators with a facility that has been optimally designed for such a purpose.



## EROWA PreSet 3D CNC

- Measuring machine (working plate with borehole grid for all EROWA tooling systems)
- Pneumatic control system
- PC and color printer (option)
- Presetting software
- Renishaw measuring probe (option)
- Calibration ball

## Technical data

	PreSet 3D CNC
Range, X-axis*	650 mm
Range, Y-axis*	700 mm
Range, Z-axis*	500 mm
Maximum distance between table and probe holder (without probe)	688 mm
Maximum distance between the columns at table height	819 mm
Usable surface of the granite plate (with EROWA borehole pattern)	819 x 1330 mm
Resolution, scales	0.0005 mm
Measuring accuracy according to volume (according ISO 10360/2)	2.5 µm + L/300
<b>Machine dimensions</b>	
Dimensions LxWxH	1380 x 1160 x 2429 mm
Maximum workpiece load	650 kg
Machine weight (without load)	775 kg

For additional details, please contact your EROWA dealer.

\* Other axis ranges on request.

## EROWA PreSet 3D CNC

A measuring and presetting cell with many advantages.

- More than 100 animated PreSet programs.
- Integrated hole grid for clamping EROWA chucks.
- Extensive software package for presetting, quality measurements and automation.
- Prepared for automation.
- Safe workpiece identification possible with EWIS™
- Temperature control.
- Many postprocessors additionally available for the conversion of measured data into the machine language.



### 01 | Rails

High-precision Renishaw rails with optical probe heads guarantee the best results.

#### Renishaw probe unit

For top quality and unmatched flexibility.

### 02 | Machine design

Specially cast aluminum for optimal dimensional and thermal stability.

### 03 | Natural granite

The high-precision workplate of black granite constitutes the base for all EROWA tooling systems that can be set up. Attachment boreholes have been prepared.

### 04 | Joystick control

Optimal operation for safe measurement. One joystick for all the axes.

### Software

With the EROWA presetting software, presetting data can be collected very simply and with graphic support.

### Tooling system operation

All the systems can be opened by means of simple levers.

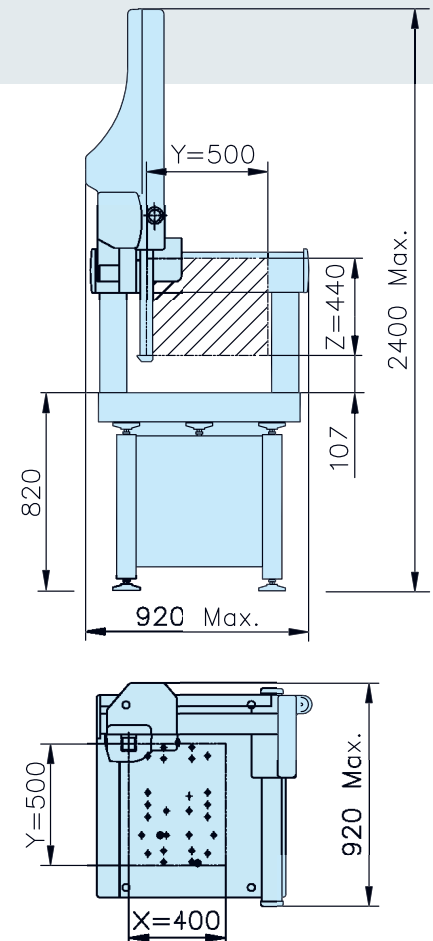
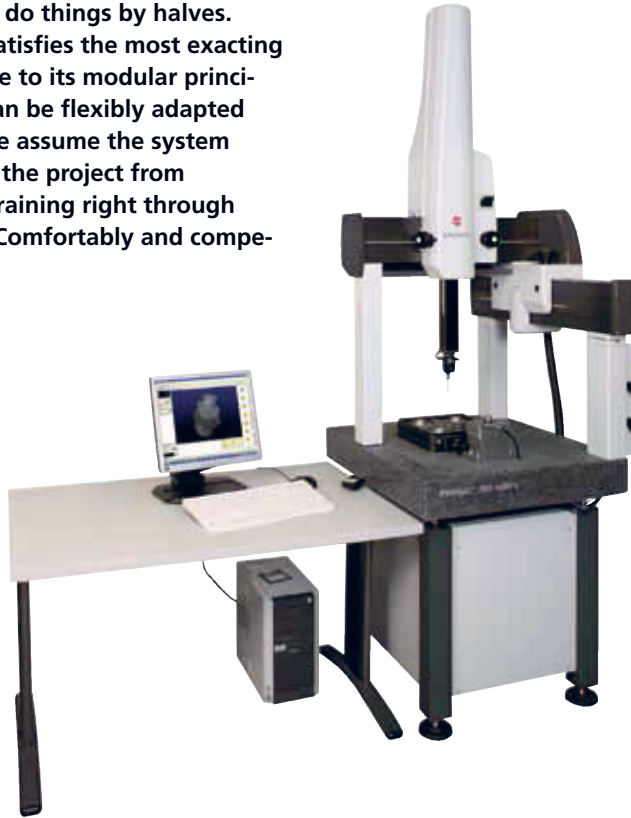
### Motorized axes

All the axes are driven by DC servo motors.



# Presetting, setting up and measuring

When it comes to thousandths of a millimeter, you can't do things by halves. PreSet 3D MAN satisfies the most exacting requirements. Due to its modular principle, the system can be flexibly adapted and extended. We assume the system responsibility for the project from installation and training right through to maintenance. Comfortably and competently.



## EROWA PreSet 3D MAN

- Measuring machine (working plate with borehole grid for all EROWA tooling systems)
- Pneumatic control system
- PC and color printer (option)
- Presetting software
- Renishaw measuring probe (option)
- Calibration ball

For additional details, please contact your EROWA dealer.

## Technical data

	PreSet 3D MAN
Range, X-axis	400 mm
Range, Y-axis	500 mm
Range, Z-axis	440 mm
Maximum distance between table and probe holder (without probe)	547 mm
Maximum distance between the columns at table height	590 mm
Usable surface of the granite plate (with EROWA borehole pattern)	590 x 840 mm
Resolution, scales	0.0005 mm
Measuring accuracy according to volume (according ISO 10360/2)	2.5 $\mu$ m + 3 $\mu$ m x L/1000
<b>Machine dimensions</b>	
Dimensions LxWxH	920 x 920 x 2400 mm
Maximum workpiece load	130 kg
Machine weight (without load)	210 kg

### EROWA PreSet 3D MAN

A measuring and presetting cell with many advantages:

- More than 100 animated PreSet programs.
- Integrated hole grid for clamping EROWA chucks.
- Safe workpiece identification possible with EWIS™.
- Many postprocessors additionally available for the conversion of measured data into the machine language.



#### 01 | Rails

High-precision Renishaw rails with optical probe heads guarantee the best results.

#### Renishaw probe unit

For top quality and unmatched flexibility.

#### 02 | Machine design

Specially cast aluminum for optimal dimensional and thermal stability.

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#### Tooling system operation

All the systems can be opened by means of simple levers.

#### Software

With the EROWA presetting software, presetting data can be collected very simply and with graphic support.

# EROWA PreSet 2D

## Electrode preset made easy



The electrode presetting station for every contingency. The matured design does justice to everyday life in the workshop. Measurements in the X-, Y-, Z- and C-axes can be carried out quickly and safely. The data output of the measured values are integrated. The presetting station can be equipped with various tooling systems.



Simply ingenious: the 2D edge probe (EROWA patent) enables you to make the necessary measurements on radii, edges, corners and oblique surfaces.



The practical user guidance in the EROWA mode shows step by step how offset values are determined.



With cutting-edge air bearing technology and perfect settings, the height measuring unit moves with maximum precision at minimal effort.

### EROWA PreSet 2D

- Measuring slab with trolley
- Integrated chuck
- PT880 digital display with presetting macros
- Two-axis measuring facility
- EROWA 2D edge probe
- Detergent for hard-stone slab

### Order numbers EROWA PreSet 2D

#### without C-axis

ER-057208	PreSet 2D UnoSet
ER-057209	PreSet 2D PalletSet W
ER-057210	PreSet 2D UPC / ITS Chuck 100 P
ER-057211	PreSet 2D ITS Compact Combi
ER-057212	PreSet 2D ProductionChuck 210

#### with C-axis

ER-057213	PreSet 2D+C ITS Chuck 100
ER-057214	PreSet 2D+C ITS Compact Combi

For additional details, please contact your EROWA dealer.



## EROWA PreSet 2D

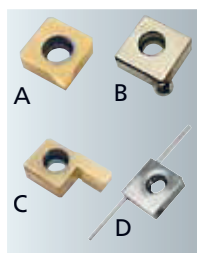
# Options and accessories



EROWA 2D edge probe      ER-057471  
Precise probing of sharp edges, angles, diameters and lengths.



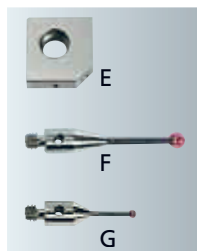
Measuring pin      ER-008617  
Alignment of radial and axial and angular positions of ITS chucks.



Probe insert      A ER-008623  
                            B ER-008562  
                            C ER-008831  
                            D ER-008628  
for 2D edge probe.



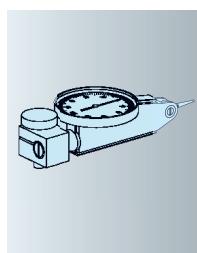
Microscope      ER-008756  
To view profiles, indentations and bore-holes, with a magnifying factor of 30.



3xM2 probe insert      E ER-009899  
ø 2 mm      F ER-003350  
ø 1 mm      G ER-003358  
for 2D edge probe.



Cold light      ER-095529  
for the microscope: for optimal light on the area to be magnified.



Lever gauge      ER-059439  
Analogue gauge with a diameter of 38 mm and a resolution of 0.002 mm.



Software for EROWA PreSet 2D  
- EROWA EMC  
- EROWA QuickLink  
- EROWA JMS<sup>®</sup> Pro Organization  
For data entry, conversion to machine-specific formats, and data transfer from the EROWA PreSet 2D station to a machine control

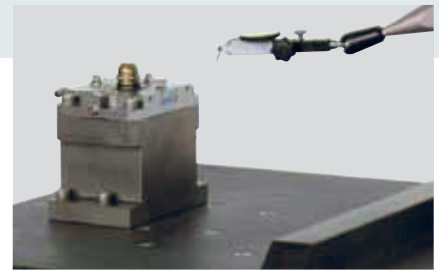
### Technical data

	PreSet 2D
Movement X-axis	240 mm
Movement Y-axis	320 mm
Movement Z-axis	335 mm
Evaluation unit	Heidenhain Positip 880 with EROWA presetting macros
Interface	Serial RS232 for data transfer to QuickLink / parallel output for printer
Probe system	EROWA 2D edge probe
Space requirements	500 x 800 x 1000 mm
Compressed-air supply	min. 6bar, dry

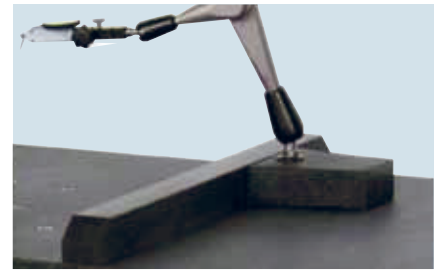


# Setup and alignment

PreSet Basic is the ideal setting and presetting station for a quick check of the Z-plane or to align workpieces in the Y-axis. Its stable trolley enables you to place it wherever it makes most sense in terms of work.



Choice of clamping system (here PalletSet W). The presetting station has a modular design. Select the clamping system as required.



Using the dial indicator on a flexible base, align workpieces in the Z-plane or the Y-axis along the stop guide rail.



Measuring slab made of top quality natural stone according to DIN 876/00. Delivered with certificate and measurement record.

## Technical data

PreSet Basic	UPC	PalletSet W	UnoSet
Operational weight (kg)	230	220	230
Max. load (kg)	100	25	10
Gauge gradation (mm)	0.002	0.002	0.002
Probe system	Analog dial gauge on flexible stand		
Space requirements (mm)	800 x 500 x 1000		





**ER-057206 PreSet Basic UPC**

Version Presetting station with trolley, measuring top, UPC chuck and probe.  
 Load 100 kg.  
 Application Setting and aligning of workpieces on UPC pallets.



**ER-057205 PreSet Basic PalletSet W**

Version Presetting station with trolley, measuring top,PSW chuck and probe.  
 Load 25 kg.  
 Application Setting and aligning of workpieces on PalletSet W holders.



**ER-057204 PreSet Basic UnoSet**

Version Presetting station with trolley, measuring top, UnoSet chuck and probe.  
 Load 10 kg.  
 Application Setting and aligning of workpieces on UnoSet holders.

# EROWA CMM Qi / PreSet 3D

## Basic equipment

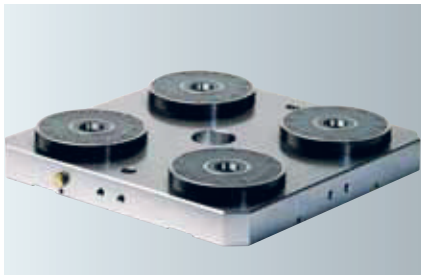


Measuring stations are equipped with EROWA tooling systems according to requirements. Some of these tooling systems can be mounted on one and the same table in combination.



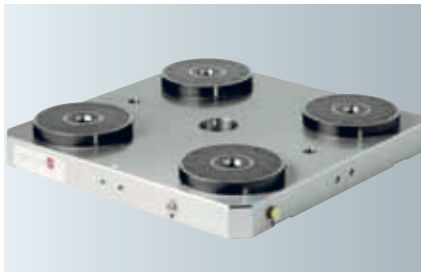
### ER-035526 MTS Chuck 3D

Version Pneumatic MTS Single Chuck for PreSet 3D.  
 Mounting With clamping ring directly to prepared borehole pattern.  
 Application To accommodate MTS Single ITS 148 P pallets.  
 Combination The MTS Chuck 3D can be fitted in combination with one of the following systems: FrameSet (on 3D CNC only), PalletSet W, UnoSet, ITS Compact CombiChuck, Power Chuck P.



### ER-035527 MTS 360 3D ER-067489 MTS+ 360 3D

Version MTS Base plate with four clamping units.  
 Plate dimension 360 x 360 mm.  
 Mounting With fitting accessories directly to prepared borehole pattern.  
 Application To accommodate MTS twofold and fourfold pallets with set-up distance of 200 mm.



### ER-035528 MTS 410 3D ER-067493 MTS+ 410 3D

Version MTS Base plate with four clamping units.  
 Plate dimension 410 x 410 mm.  
 Mounting With fitting accessories directly to prepared borehole pattern.  
 Application To accommodate MTS twofold and fourfold pallets with set-up distance of 250mm.



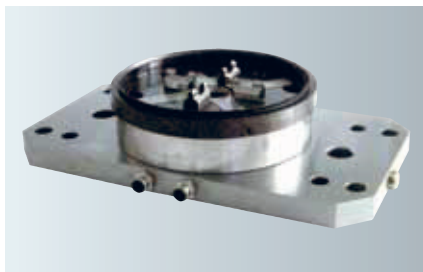
### ER-076397 UPC / ITS Chuck 100 P PreSet 3D ER-076398 UPC PreSet 3D

Version ER-076397 = UPC chuck with integrated ITS chuck.  
 ER-076398 = UPC chuck  
 Mounting Directly to prepared borehole pattern.  
 Application To accommodate all UPC, ITS 148 and ITS 115 pallets, as well as holders 72 and 50.  
 Combination The UPC can be fitted in combination with one of the following systems: FrameSet (3D CNC only), PalletSet W, UnoSet.



### ER-035529 PC 210 3D ER-035530 PC 210 Combi 3D

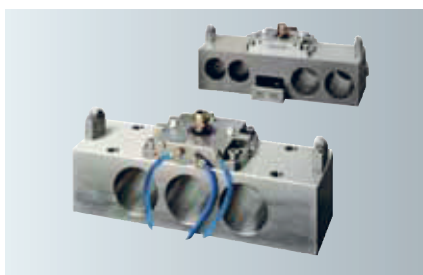
Version Pneumatic chucks. PC 210 Combi 3D with integrated PowerChuck.  
 Mounting With fitting accessories directly to prepared borehole pattern.  
 Application To accommodate PC 210 pallets. In the combined version, pallets 148 and 115 and holder 72 and 50 can also be clamped.  
 Combination The PC 210 can be fitted in combination with one of the following systems: PalletSet W, UnoSet.


**ER-029434 PowerChuck P 3D**

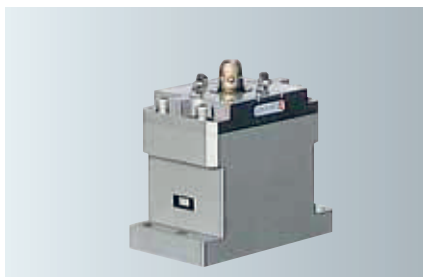
Version	Pneumatic chuck on base plate.
Mounting	Directly to prepared borehole pattern.
Application	To accommodate ITS 148 P, 148 and 115 pallets, as well as holders 72 and 50.
Combination	The PowerChuck can be fitted in combination with one of the following systems: FrameSet (on 3D CNC only), PalletSet W, UnoSet, MTS chuck.


**ER-025060 ITS Compact CombiChuck 3D**  
**ER-077292 ITS Chuck 100P 3D**

Version	ER-025060 = ITS chuck with integrated Compact Chuck. ER-077292 = ITS Schuck
Mounting	Directly to prepared borehole pattern.
Application	To accommodate ITS 148 and ITS 115 pallets, holders 72 and 50, and all the Compact 30 holders.
Combination	The ITS Compact CombiChuck can be fitted in combination with one of the following systems: FrameSet (on 3D CNC only), PalletSet W, UnoSet, MTS chuck.


**ER-046080 FrameSet Base 3D**

Version	Pneumatic chuck (only for PreSet 3D CNC).
Mounting	With fitting accessories directly to prepared borehole pattern.
Application	To accommodate FrameSet clamping frame.
Combination	The FrameSet can be fitted in combination with one of the following systems: UPC, PowerChuck P, ITS Compact CombiChuck, MTS Single Chuck.


**ER-022683 PalletSet W Base 3D**

Version	Pneumatic flat chuck mounted on column.
Mounting	Directly to prepared borehole pattern.
Application	To accommodate all PalletSet W holders.
Combination	The PalletSet W can be fitted in combination with one of the following systems: UPC, PowerChuck P, ITS Compact CombiChuck, MTS Single Chuck, PC 210.


**ER-012580 UnoSet Kit Support 3D**

Version	Pneumatic chuck mounted on column.
Mounting	Directly to prepared borehole pattern.
Application	To accommodate all UnoSet holders, as well as holders 72 and 50, in a horizontal position.
Combination	The UnoSet can be fitted in combination with one of the following systems: UPC, PowerChuck P, ITS Compact CombiChuck, MTS Single Chuck, PC 210.



# Measuring tools and options

Various ingenious components make it easy for you to have everything under control in a practical way.

For questions on measuring devices and options for EROWA measuring stations, please contact your authorized EROWA dealer.



Alignment pallet MTS 200 ER-037870  
Alignment pallet MTS 250 ER-037875

To align the angular position and to establish the center of MTS chucks.

Pallet 396 x 198 mm  
Alignment length 200 / 250 mm



Alignment gauge ER-055158  
PalletSet W

To align the angular position and to establish the center of flat chucks.

Pallet PalletSet W



Alignment pallet MTS ø 148 ER-078823

To align the angular position and to establish the center of MTS single chucks.

Pallet ø 148 mm  
Alignment length 130 mm



Measuring pin ER-008617

Alignment of radial and axial and angular positions of ITS chucks.



Alignment pallet UPC ER-048377

To align the angular position and to establish the center of UPC chucks.

Pallet 320 x 320 mm  
Alignment length 320 mm



Checking pin 50 ER-010723

Alignment of radial and axial positions of ITS chucks.



Alignment pallet PC 210 ER-040932

To align the angular position and to establish the center of PC-210 chucks.

Pallet Clamping ring PC 210  
Alignment length 210 mm



Checking pin for Compact ER-017541

To align the tooling system on the PreSet station.



Alignment pallet ITS ER-032819

To align the angular position and to establish the center of ITS chucks.

Pallet  $\varnothing$  115 mm  
Alignment length 110 mm



Evaluation system ER-007805

To run the EROWA measurement and presetting software. Consists of a computer with operating system, flat screen, keyboard, printer and mouse.



Zero master ER-007796

To check the «Z = 0 height».



EWIST™ identification system ER-035990

Hardware module.  
Read/write head and evaluation unit.



Reference pin UnoSet ER-012727

Determination of reference measurements on horizontal chucks.

Borehole  $\varnothing$  8 mm



EWIS Chip with holder SW14 ER-035154

For pallets and electrode holders. EWIST™ Chip: read only. Compatible with the EWIST™ Rapid system.



Detergent ER-001516

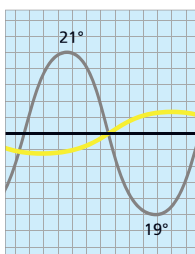
For granite tables.



Wireless Joystick CMM Qi ER-067640

Wireless joystick CMM Qi ER-103113

«Upgrade» to wireless control panel.  
Wireless control panel including receiver.  
Machine control by joystick, control of the measurement software on the PC as well as CNC travel speed override.



Automatic temperature compensation CMM Qi ER-067638

For automatic temperature absorption and consistent compensation.

With three sensors for the axes and one sensor for the workpiece.



Software maintenance contract ER-054645

Hardware maintenance contract ER-064410

The maintenance contract ensures that the CMM Qi is checked at regular intervals.



Preparatory kit for CMM Qi automation, including barrier ER-077882

Automation interface for robotic loading of the CMM Qi.



Air filter unit for air conditioning CMM Qi ER-067636

Supplies the air bearings of the CMM Qi measuring machine with high-quality compressed air.

# EROWA PreSoft XP

## Efficient presets

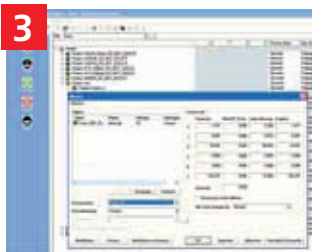
**Presetting provides more productive time on machine tools. However, presetting must be as efficient as possible in itself. PreSoft XP takes this demand into account.**



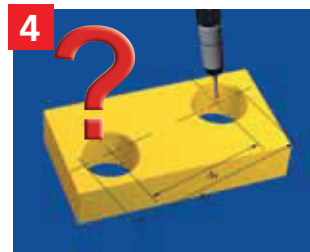
**01** | Graphic user guidance enables every operator to preset parts correctly within a short period of time. The processes can be learned intuitively. Knowledge of 3D measurements is not required.



**02** | The reference positions are controlled, which guarantees that the offset values always receive the correct reference point.



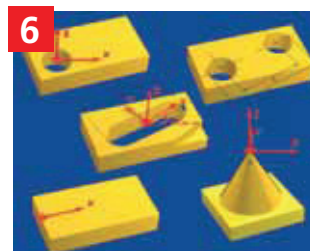
**03** | The automatic assignment of offset values to the ID numbers of electrodes and workpieces creates a high degree of process safety.



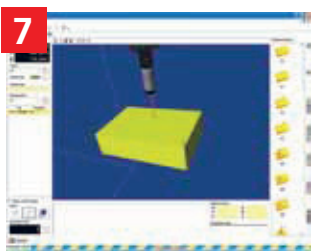
**04** | Diameters or sections can be quickly checked using simple measuring macros.



**05** | Generate your own macros for quick and safe measurements. Process safety will increase since the optimized macros cover exactly your requirements.



**06** | Already integrated: more than 100 frequently used measuring processes as macros. Select, move, done!



**07** | The animated arrow symbol shows the right measurement sequence: anyone can determine presetting data correctly without any prior training.



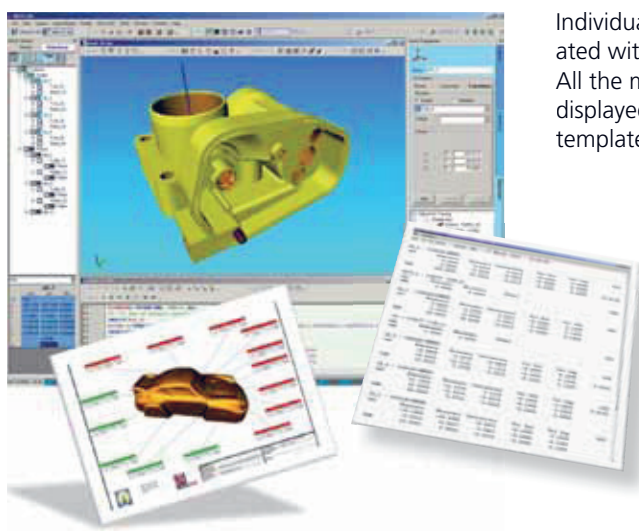
**08** | PreSoft XP is seamlessly integrated in JMS<sup>®</sup> Pro. The presetting function is activated by a mouseclick. The offset data that have been recorded are automatically transmitted from the measuring station into the JMS<sup>®</sup> Pro system.



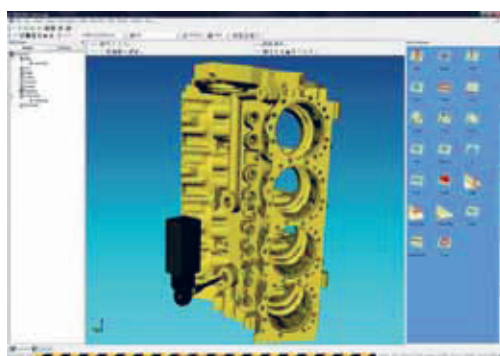
## ARCO-CAD measuring software

# Compelling benefits

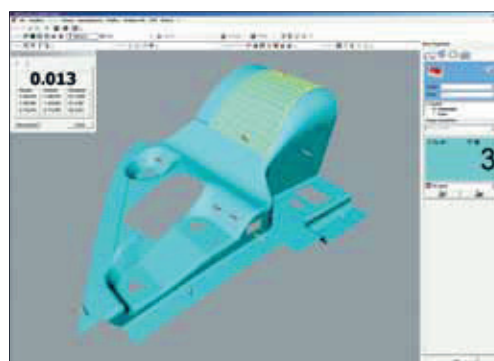
**ARCO-CAD includes all functions to import CAD models and to create measuring programs based on them or to measure them directly against CAD nominal values. This allows real quality measurements with complete data logging after corresponding training.**



Individual and complex reports can be generated with the help of the ARCO-CAD reporter. All the measured features can be graphically displayed using CAD, charts or tables. Individual templates facilitate the creation of reports.



User guidance is based on ARCO-CAD using animated symbols. All users are able to operate the machine intuitively and safely thanks to the pictorial representation of the measurement tasks in this program.



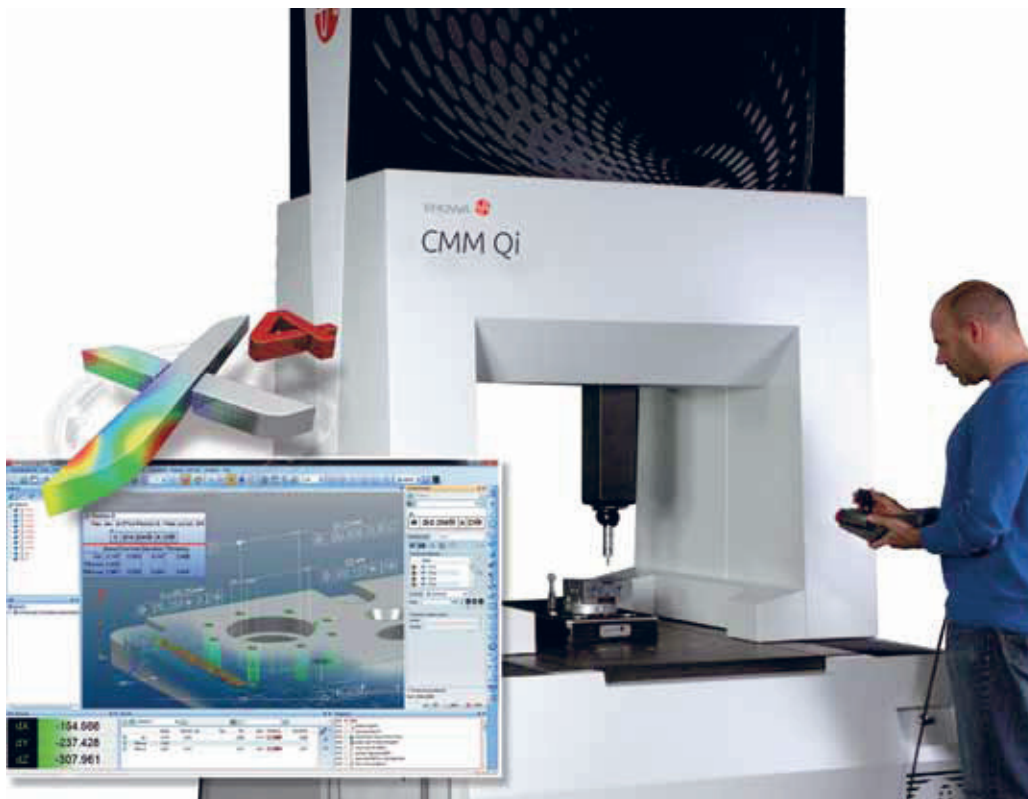
ARCO-CAD allows the integration of CAD data. The areas to be measured are selected and calculated on the basis of the imported data. This feature is particularly suitable for measuring complex 3D shapes.



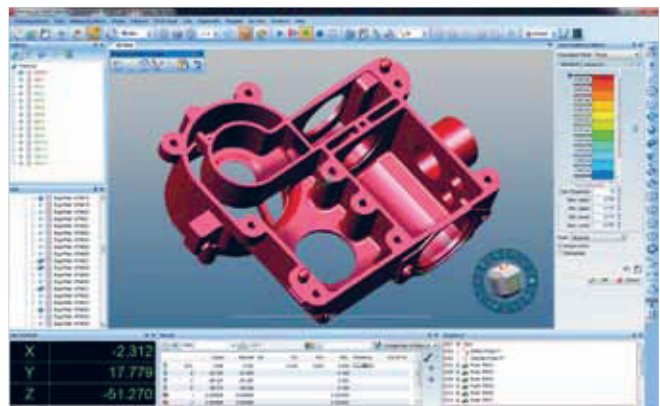
Measuring Software Metrolog X4

# High-end software to satisfy the highest standards

The Metrolog X4 3D measuring software offers advanced technology and the know-how for even faster and more efficient measurements. Profit from an optimal user surface for excellent user-friendliness, as well as a high performance capability even with large volumes of data.



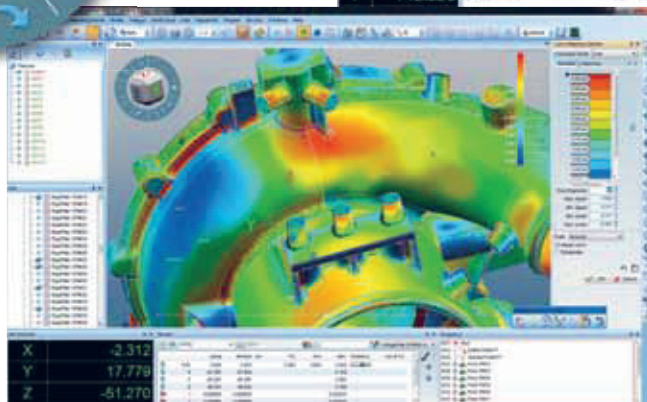
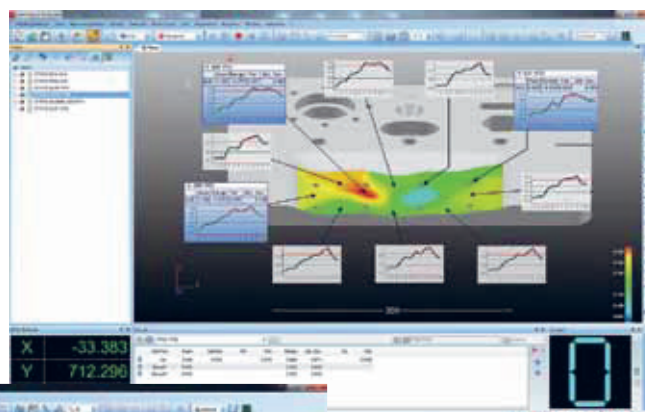
- Simple-to-operate graphic user interface, completely adaptable to operator requirements in line with individual machine and measuring types.
- Assistant for manual measurements.
- Automatic adaptation of the display during point collection.
- Adjustable information windows.



Simple CAD import function capable of processing big data sets in all established formats.



- Handling of form and position tolerances of the most complex kind within record time.
- Simplified definition of form and position tolerances.
- Comprehensive support for tolerance evaluation in accordance with applicable standards.
- Support of the ANSI and ISO standards.

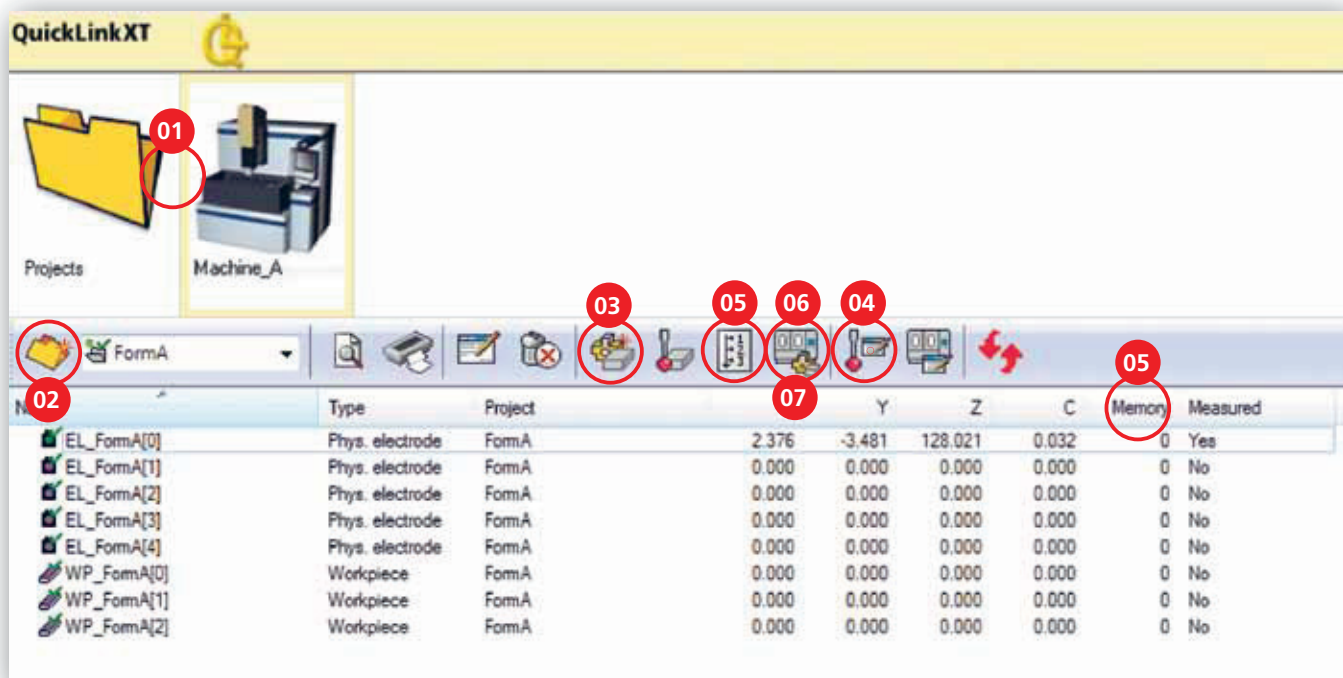


- High capacity for the evaluation and analysis of big and dense point clouds.
- Point cloud comparison as against CAD (color mapping).
- Intuitive handling/inspection of gap and flush.
- Measurement of material thickness.
- Component surface analyses in an area of mm<sup>2</sup> (surface calculation).

# EROWA QuickLink<sup>XT</sup>

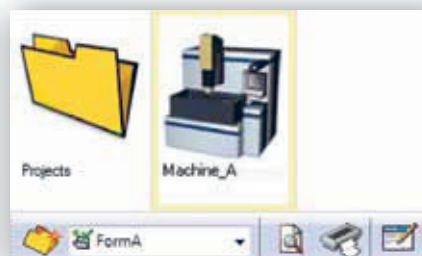
## Simple data transfer

QuickLink<sup>XT</sup> is a simple program for the data transfer from the EROWA PreSet 2D presetting station to a machine control unit. Set up a PC, insert the CD, install the program, plug in the connecting cable between PC and display, and the comfortable data transfer to the machine or the programming station is ready.



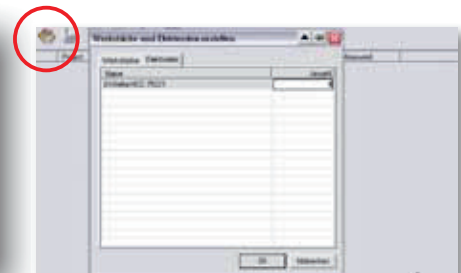
### 01 | Stored projects

The projects are stored to document the working steps. This information can be called up and printed out at any time.



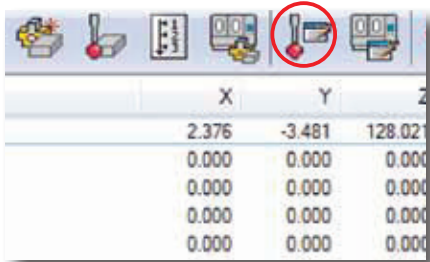
### 02 | New project

Every new job is given a designation. In this way, it can easily be found again. Even at this early stage, the job has been allocated to a machine.



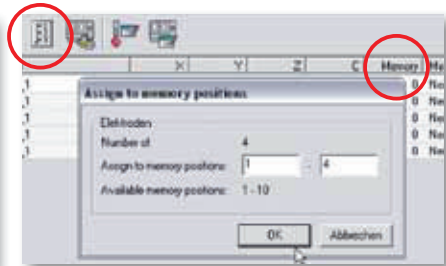
### 03 | Number of electrodes

At the beginning, the number of electrodes to be measured is defined. This will guarantee an overview of the working progress.



#### 04 | Data export

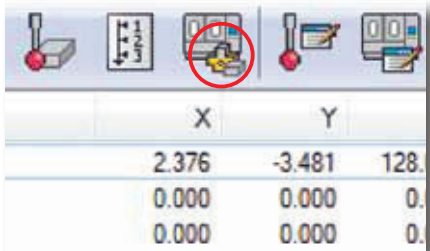
All the selected measured data are converted into the specific machine format at the push of a button. They can be stored on a diskette or in a network directory.



#### 05 | Control is good

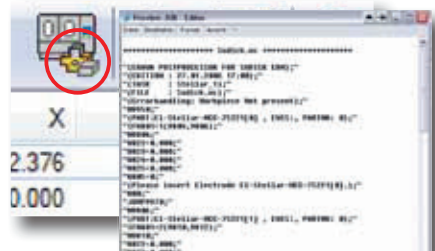
Before the export, you can check whether the result comes up to expectations.

Presetting data of electrodes are transferred to the machine with ease and speed. The X-, Y-, Z- and C-values are determined on the PreSet 2D presetting station and transmitted to QuickLinkXT at the push of a button. All the data of one job are converted into the specific machine format.



#### 06 | Receive measured data

QuickLinkXT is ready to take over the data from the presetting station. The transmission command is triggered in the control unit of the presetting station.



#### 07 | Allocate memory space

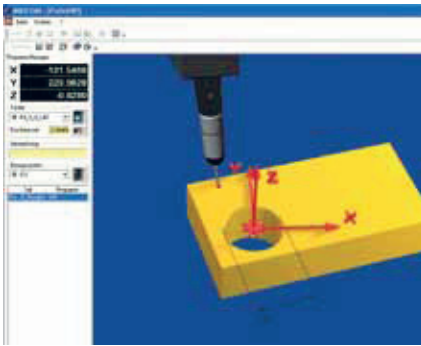
The memory positions are defined at once in order to avoid any confusion during the transfer to the machine control unit.



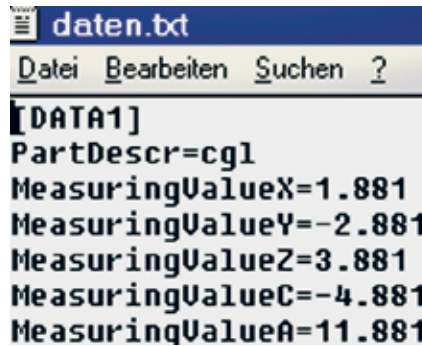
# Presetting and measuring made simple

**JMS® Pro Organization** consists of program modules that are connected with data import, setting up and presetting. Presetting data are the most important feature of job preparation. They must be accessible from everywhere at all times.

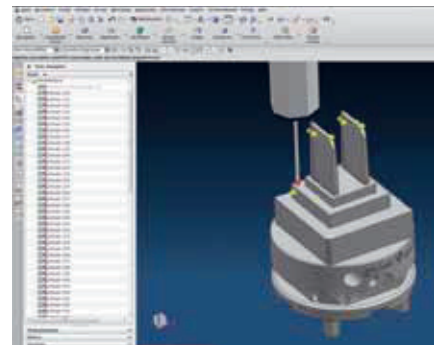
For this reason, the EROWA JMS® Pro software stores all the data in a machine-neutral format. Only the relevant JMS® Pro Cell Integration products will convert the data into the desired machine format. The decision as to the center on which the job will be processed need not be made at the point in time when the part is preset. Any available machine can be chosen just before the job is done.



**JMS® Pro PreSet 3D**  
the presetting software with user guidance and automatic data recording in JMS® Pro.



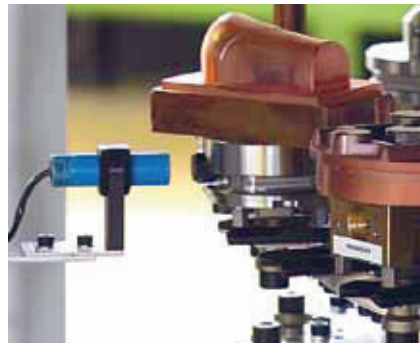
**JMS® Pro PreSet Import**  
links up the most popular measuring stations with JMS® Pro. Data import is largely automatic.



**JMS® Pro Q-Measure**  
The measured points and tolerances are determined in the CAD system. On the EROWA CMM Qi measuring machine, the relevant measuring program is generated through EROWA Q-Measure, after which the quality measurement is carried out.

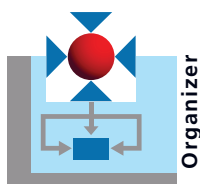


On the set-up and measuring stations, hand-held reading devices are used. (The EWIS™ Rapid equipment is available as an option).



The EWIS™ Rapid identification system provides an overview of holders and pallets. With the modern transponder chips, every pallet can be identified at any time. The handling facilities examine the magazine loads automatically.

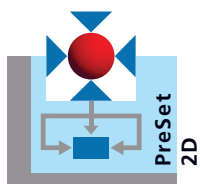
The EROWA JMS® Pro PreSet software package offers you all the necessary tools for productive, routine-informed presetting.



Organizer

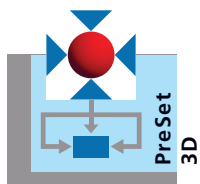
#### JMS® Pro Organizer

Data organization module for data management and to set up and identify workpieces.

PreSet  
2D

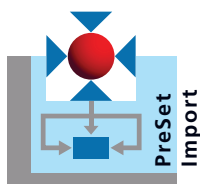
#### JMS® Pro PreSet 2D

Data organization module for the integration of the timetested electrode presetting station.

PreSet  
3D

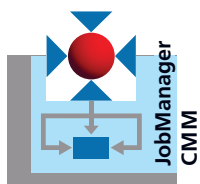
#### JMS® Pro PreSet 3D

Data organization module for the integration of the EROWA 3D measuring station.

PreSet  
Import

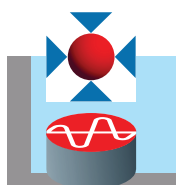
#### JMS® Pro PreSet Import

Data organization module for the import of data from other measuring stations.

JobManager  
CMM

#### JMS® Pro JobManager CMM

Control module for automatic quality measurements on PreSet 3D CNC.



#### EWIS™ Rapid Identification System

The assignment of data to workpieces provides a good overview. With the modern transponder chips, every pallet can be identified at any time. On set-up and measuring stations, identification is carried out with manual scanners, while EROWA handling facilities identify their magazine content automatically.

#### Your advantages:

- Entry into the EROWA Job Management System.
- A fully developed measuring software is included.
- More than 100 presetting programs are available.
- Quick change from presetting to measuring software with the help of a button.
- Automated quality control.



#### JMS® Pro JobManager

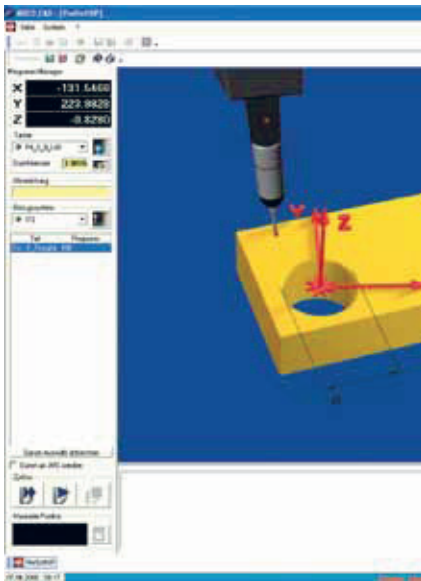
Automatic quality control: The measuring station is equipped with a Robot. The JMS® Pro JobManager will link up the right parts with the suitable measuring programs.

# EROWA Organization with EROWA Manufacturing Control V3

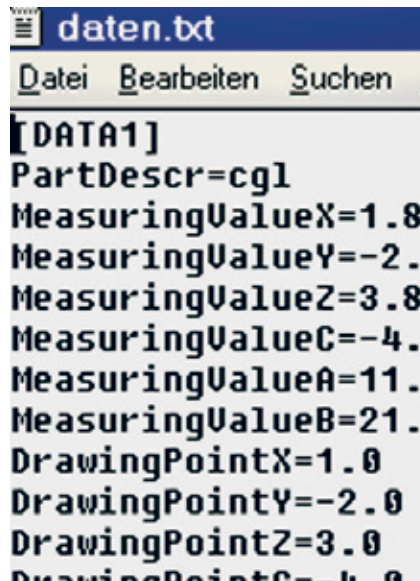
## Presetting and measuring made simple

EROWA Manufacturing Control V3 Organization consists of program modules that are connected with data import, setting up and presetting. Presetting data is the most important feature of job preparation. It must be accessible from everywhere at all times.

For this reason, the EROWA Manufacturing Control V3 software stores all the data in a machine-neutral format. Only the relevant EROWA Manufacturing Control V3 products will convert the data into the desired machine format. The decision as to the center on which the job will be processed need not be made at the point in time when the part is preset. Any available machine can be chosen just before the job is done.



**JMS® Pro PreSet 3D**  
the presetting software with user guidance and automatic data recording in EROWA Manufacturing Control V3.



EROWA Manufacturing Control V3 PreSet Import Standard links up the most popular measuring stations with EROWA Manufacturing Control V3. Data import is largely automatic.



The EWIS™ Rapid identification system provides an overview of holders and pallets. With the modern transponder chips, every pallet can be identified at any time. The handling facilities examine the magazine loads automatically.

On the set-up and measuring stations, hand-held reading devices are used. (The EWIS™ Rapid equipment is available as an option).





The EROWA Manufacturing Control V3 software package offers you all the necessary tools for productive, routine-informed presetting.



PreSet 2D

#### PreSet Import 2D

Option for connecting the proven electrode presetting station.



PreSet 3D

#### PreSet Import 3D

Option for the integration of the EROWA 3D measuring machine CMM Qi.



PreSet Standard

#### PreSet Import Standard

Option for importing data from other measuring machines.



Cell Manager CMM

#### Cell Manager CMM

Control module for automatic quality measurements using the 3D CNC measuring machine.



EWIS™ AutoLink

#### Cell Manager Auto Qi

Organizes an autonomously automated measuring cell with the user-friendly surface of the control system.



EWIS™ AutoLink

#### EWIS™ Rapid Identification System

The assignment of data to workpieces provides a good overview. With the modern transponder chips, every pallet can be identified at any time. On set-up and measuring stations, identification is carried out with manual scanners, while EROWA handling facilities identify their magazine content automatically.



#### The CMM Cell Manager

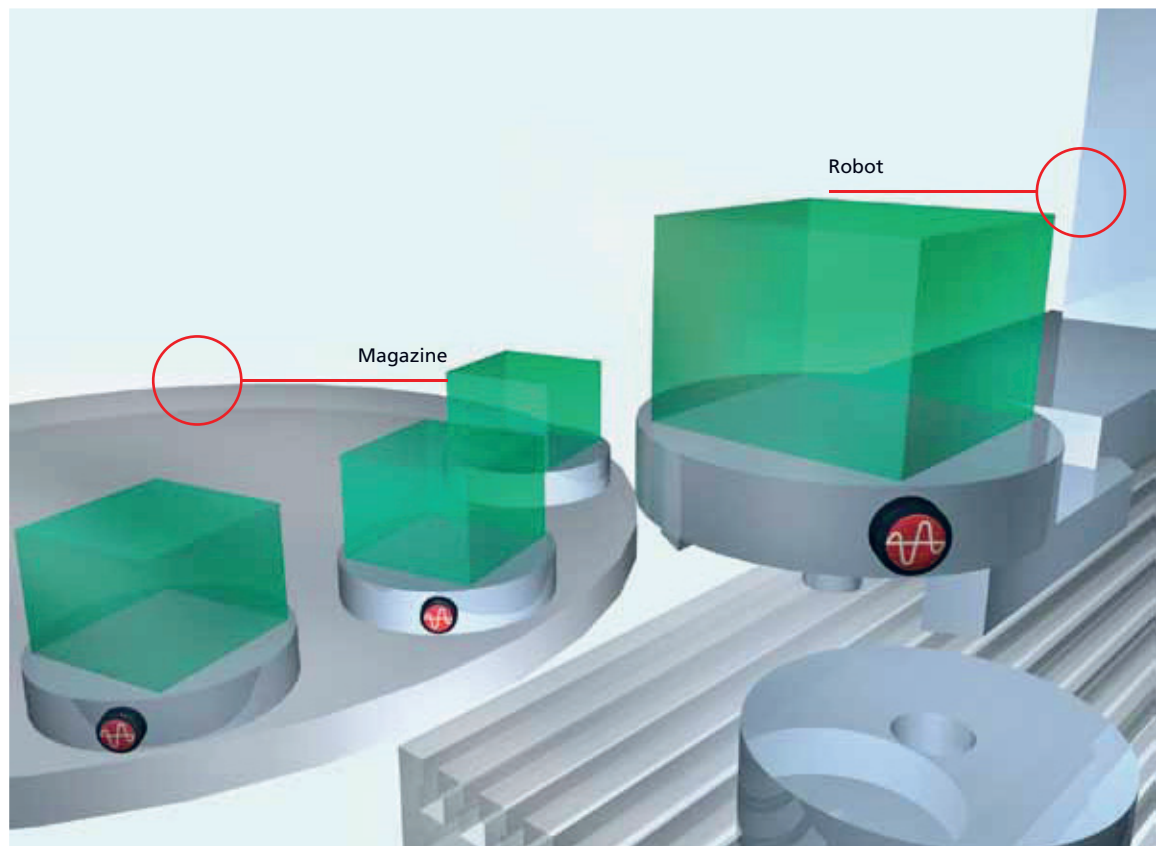
Automatic quality control: The measuring machine is equipped with a robot. The CMM Cell Manager associates the right parts with the appropriate measuring programs.



#### The Auto Qi Cell Manager

Autonomously automated stand-alone measuring machine for presetting and quality measurements. The EROWA CMM Qi measuring machine is equipped with an integrated handling device. The CMM Cell Manager connects the right parts with suitable measuring programs.

# EROWA loading systems



**Automation** of machine tools. This relieves personnel of monotonous work, while at the same time creating a multiple capacity for the output of parts and for preparation. It also provides more space for your personnel's creativity.



For chip-removing processes



For EDM sinking



For WEDM

## EROWA LOADING SYSTEMS



up to 250 kg

EROWA Robot Easy

352



up to 80 kg

EROWA Robot Compact 80

354



up to 80 kg

EROWA Multi

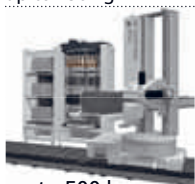
356



up to 250 kg

EROWA Robot Dynamic

358



up to 500 kg

EROWA Robot Dynamic 500

362



up to 500 kg

EROWA Robot Six

366



up to 250 kg

EROWA Lift

368































up to 250 kg

EROWA LiftGear

370

# The automatic EROWA Handling Devices

Type	Robot Easy							Robot Compact 80	Robot Multi		
	ITS 50 / 72	ITS115 ITS148	PSW	PC210	UPC	MTS 400	MTS 500	Maximum capacity	Loading station	Rack	Rotary
											
Tooling system/ magazine positions per level											
Compact 	-	-	-	-	-	-	-	11	-	-	30
ITS 50 	60	-	-	-	-	-	-	11	-	-	30
Holder 72 	60	-	-	-	-	-	-	11	-	-	30
PM 56 	-	-	-	-	-	-	-	11	-	-	30
PM 85 	-	-	-	-	-	-	-	9	-	-	30
PM 130 	-	-	-	-	-	-	-	5	-	-	15
ITS 115 	-	24	-	-	-	-	-	5	2	-	15
ITS 148 	-	24	-	-	-	-	-	5	2	-	15
MTS 148 	-	-	-	-	-	-	-	5	-	-	15
PC 210 	-	-	-	12	-	-	-	3	2	5	10
UPC 320 	-	-	-	-	10	-	-	2	2	3	3/5
MTS 400 	-	-	-	-	-	6	-	-	-	3	3
MTS 500 	-	-	-	-	-	-	4	-	-	2	-
UnoSet 	-	-	-	-	-	-	-	9	-	-	30*
PalletSet W 	-	-	15	-	-	-	-	2/3	2	7	15
PalletSet W frame 	-	-	7	-	-	-	-	-	-	4	3
FrameSet 	-	-	-	-	-	-	-	-	-	2	-
Transfer weight (incl. pallet)	20	40	30/15	130	130	250	250	80**	80	80**	80**
Number of possible machine levels	1	1	1	1	1	1	1	3 x 12	3 x 4	12	12
Gripper arm swiveling	-	-	-	-	-	-	-	option	option	option	option
Automatic gripper change	-	-	-	-	-	-	-	option	-	option	option
Double gripper	-	-	-	-	-	-	-	-	-	option	option
Loading station	-	-	-	-	-	-	-	option	option	option	option
EWIS™ Rapid	option	option	option	option	option	option	option	option	option	option	option
Remote diagnosis	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

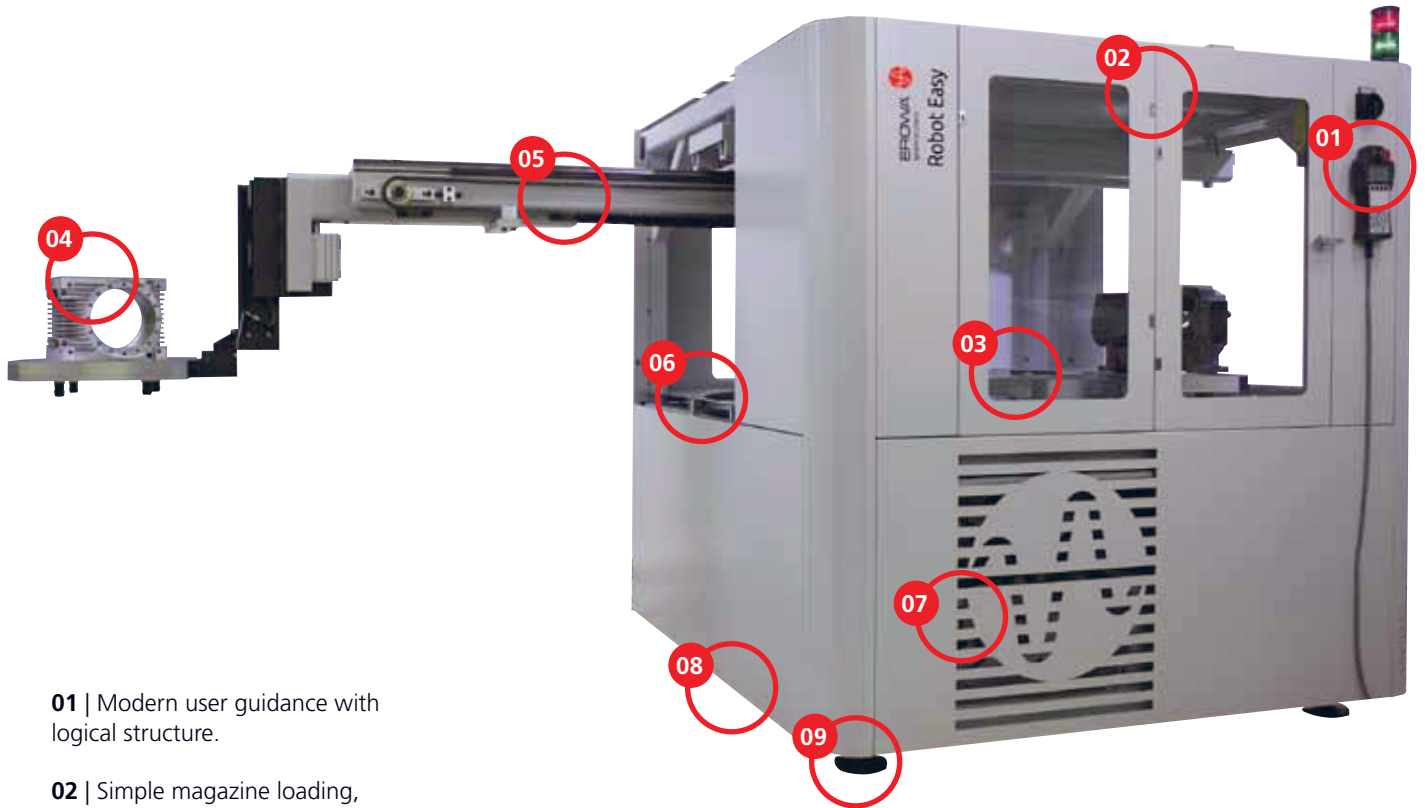
Technical modifications reserved.

EROWA Robot Dynamic				EROWA Robot Dynamic 500				EROWA Robot Six					
EROWA Robot		Dynamic Linear		EROWA Robot Dynamic		500 Linear		EROWA Robot		Six Linear			
Transfer unit	Linear	Transfer unit	Linear	Transfer unit	Linear	Transfer unit	Linear	Transfer unit	Linear	Transfer unit	Linear		
-	30	-	-	-	30	-	-	-	-	-	-	Compact	
-	30	15	-	-	30	-	-	-	-	-	-	ITS 50	
-	30	15	-	-	30	-	-	-	-	-	-	Holder 72	
-	30	15	-	-	30	-	-	-	-	-	-	PM 56	
-	30	15	-	-	30	-	-	-	-	-	-	PM 85	
-	15	7	-	-	15	-	-	-	-	-	-	PM 130	
-	15	7	-	-	15	-	-	-	-	-	-	ITS 115	
-	15	7	-	-	15	-	-	-	-	-	-	ITS 148	
-	15	7	-	-	15	-	-	-	-	-	-	MTS 148	
-	10	5	-	-	10	-	-	-	-	-	-	PC 210	
-	3/5	3	-	-	5	3	-	-	-	-	-	UPC 320	
-	3	2	-	-	3	2	1	-	-	-	-	MTS 400	
-	-	2	-	-	-	2	1	-	-	-	-	MTS 500	
-	30*	15	-	-	30	-	-	-	-	-	-	UnoSet	
-	15	3/4	-	-	15	-	-	-	-	-	-	PalletSet W	
-	3	-	-	-	3	-	-	-	-	-	-	PalletSet W frame	
-	-	1	-	-	-	-	-	-	-	-	-	FrameSet	
200/250**	-	-	-	500**	-	-	-	-	130/500**	-	-	-	Transfer weight (incl. pallet)
-	12	12	-	-	12	12	12	-	-	- like Robot Dynamic - individual	-	-	Number of possible machine levels
option	-	-	-	-	-	-	-	-	yes	-	-	-	Gripper arm swiveling
option	-	-	-	option	-	-	-	-	option	-	-	-	Automatic gripper change
option	-	-	-	-	-	-	-	-	option	-	-	-	Double gripper
option	-	-	-	option	-	-	-	-	option	-	-	-	Loading station
option	-	-	-	option	-	-	-	-	option	-	-	-	EWIS™ Rapid
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	Remote diagnosis

\* Suspended in the magazine  
 \*\* Depending on gripper, tooling system and the RCS or WGS coupling system



# Handling facility for large and heavy workpieces



**01** | Modern user guidance with logical structure.

**02** | Simple magazine loading, accessible to loading crane.

**03** | Up to 60 magazine positions per level.

**04** | Max. 250 kg transfer weight.

**05** | X-stroke: ~1600 mm.

**06** | For big/overloaded pallets also with drip pan and controlled drainage.

**07** | Integrated control system.

**08** | Servicing-friendly casing.

**09** | Integrated level adjustment.

**10** | EWIS™ AutoLink Rapid as an option.



## Simple magazine loading

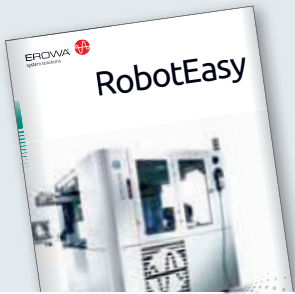
Open, freely accessible loading positions for up to 60 workpieces.



## Workpiece identification within seconds

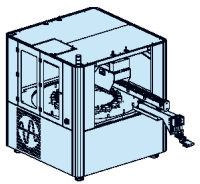
EWIS™ Rapid identifies all the cell positions and transmits them to the cell computer.





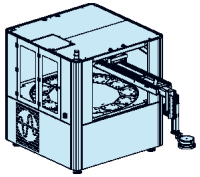
for more information!

Number of possible magazine positions per Robot version

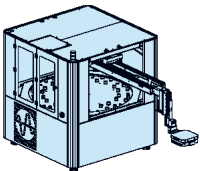


**Robot Easy PalletSet W**  
7 x Frame  
15 x Holder

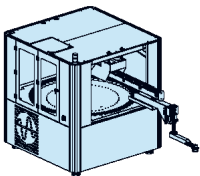
(Light axis)



**Robot Easy PC 210**  
12 x PC 210

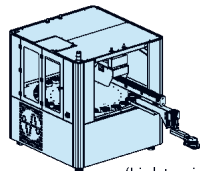


**Robot Easy UPC**  
10 x UPC



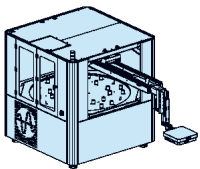
**Robot Easy ITS 50/72**  
60 x ITS 50  
Holder 72

(Light axis)

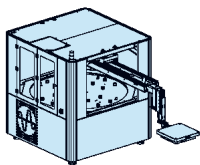


**Robot Easy ITS 115/148**  
24 x ITS 115/148

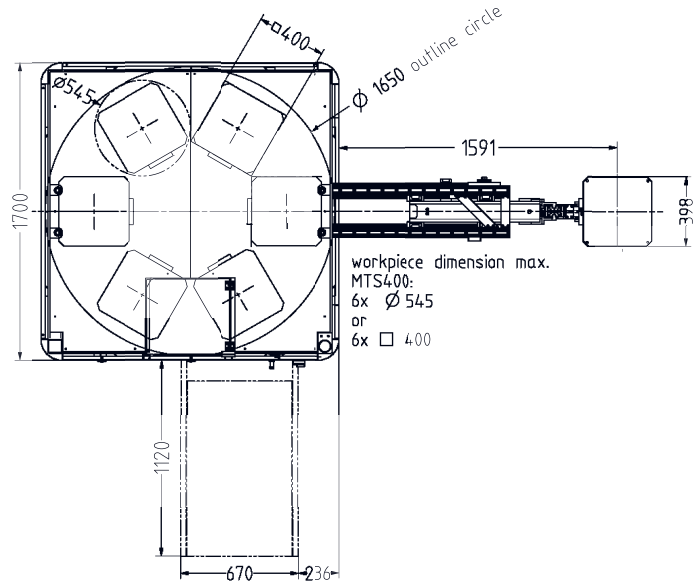
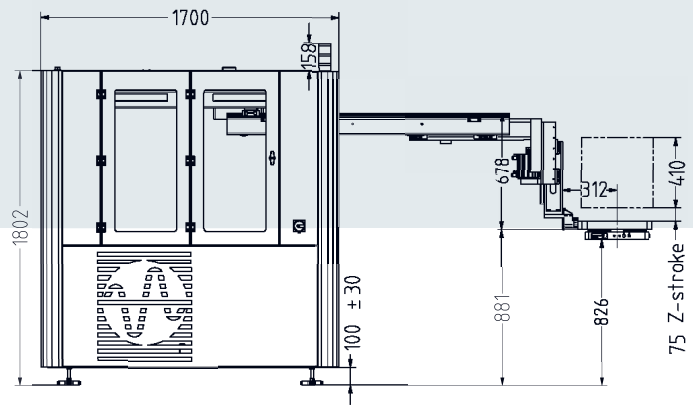
(Light axis)



**Robot Easy MTS 400**  
6 x MTS 400



**Robot Easy MTS 500**  
4 x MTS 500



**Technical Data**

EROWA Robot Easy MTS	
Transfer weight	40 kg / 250 kg
<b>Axes</b>	
M- and X-axes controlled	X: stroke ~1600 mm (option long axis)
Z-axis pneumatic	Z: stroke 75 mm
<b>Pneumatic</b>	
Min. pressure / max. consumption	5 bar / 200 l/min.
<b>Electrical system</b>	
Voltage (V+PE)	3x400
Frequency (Hz)	50/60
Power (VA)	710
Nominal current (A)	1.8
<b>Control system</b>	
Interface	Ethernet Serial RS232 M-function Parallel I/O Bit
Workpiece identification	EWIS™ Rapid
JobManagement	Erowa Manufacturing Control JMS® Pro

Robot Easy



# EROWA Robot Compact 80

## Productivity on 2m<sup>2</sup>



for more information!

Examples of the number of possible magazine positions. Possible mixed use.

### Robot Compact 80 Standard magazine

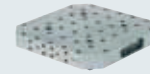
217 x ITS 50  
217 x Holder 72  
217 x PM 56



70 x ITS 115/148  
70 x MTS 148  
70 x PM 85/130



8 x UPC



### Robot Compact 80 3. Magazine/Rack

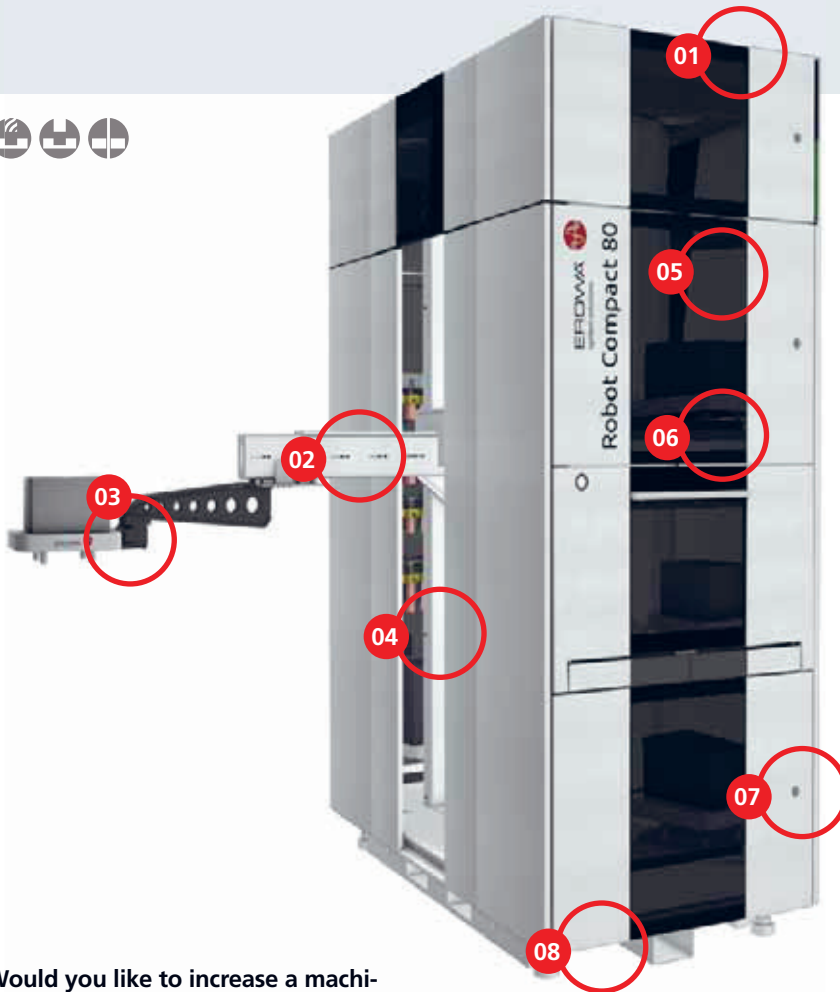
327 x ITS 50  
327 x Holder 72  
327 x PM 56



105 x ITS 115/148  
105 x MTS 148  
105 x PM 85/130



8 x UPC



Would you like to increase a machine's autonomy? Are the workpieces numerous but not very big? Do you only have a little room left around the machine? Do you want to serve two machines with the same handling facility? If you can answer one of these questions with YES, then we are just what you're looking for. The EROWA Robot Compact 80 is the answer to your requirements.

**01** | Symmetrical design to enable positioning to the left or right of the machine.

**02** | X-stroke 1380 mm.

**03** | Max. 80 kg transfer weight.

**04** | 330° swivel axis for the operation of the two frame magazines and up to two machines.

**05** | 2 rack magazines with more than 200 magazine positions. A third magazine can be installed as an option.

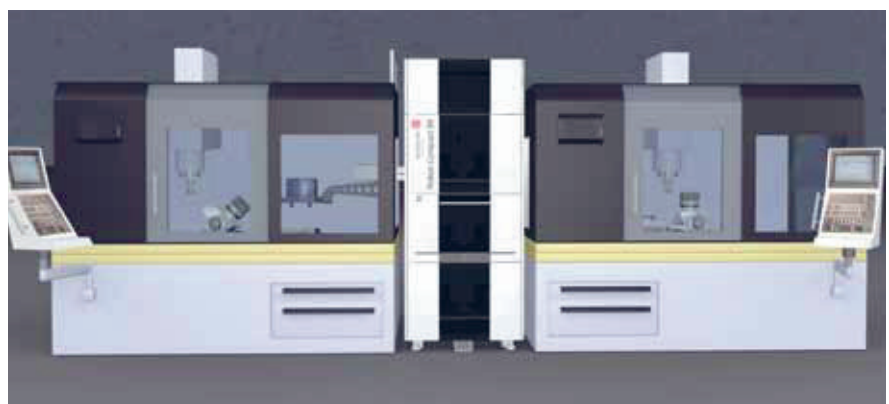
**06** | Freely adjustable height of magazine levels.

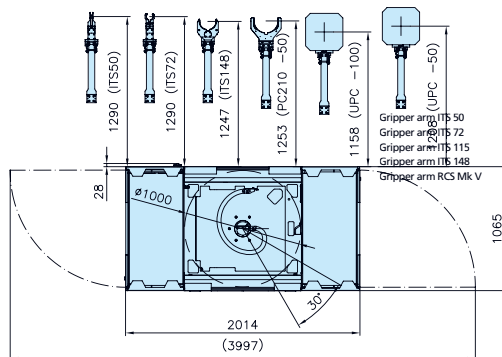
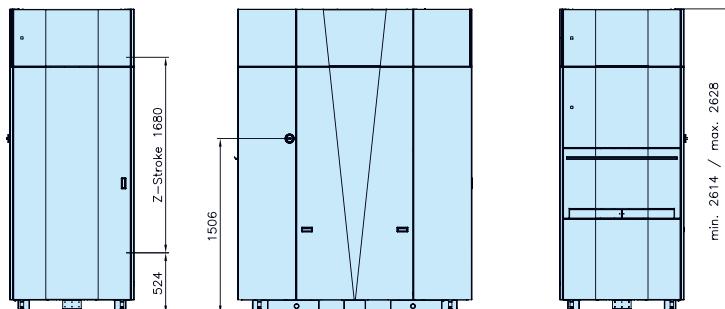
**07** | Compact Monobloc construction on a mere 2 m<sup>2</sup>.

**08** | Option: DockOn trolley for Robot Compact 80.

### Layout example

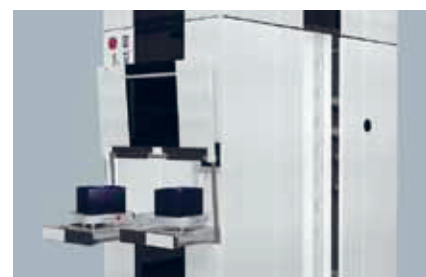
With longer machining times, it is worth using one Robot to serve two machines. The Robot's capacity is put to better use, and precious shop-floor space is optimally utilized.





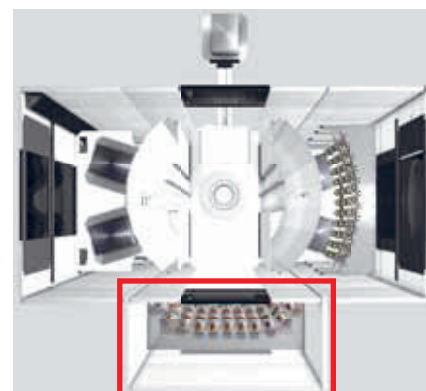
**DockOn**

The Robot can often only be placed on the operator's side of the machine. This blocks access for manual work. With the optional „DockOn“ equipment, the facility can simply be moved to the side if the operator wants to do some manual work.



**Integrated loading station (option)**

To set up big and heavy workpieces at an ergonomically correct height. UPC pallets of up to 80kg in weight can be moved to the loading station, for instance with the help of an underslung crane. At the same time, the Robot continues to operate without any interruption.



**50% more magazine capacity**

The third magazine for the EROWA Robot Compact 80 can be retrofitted quickly, simply and with minimum space requirements.

**Technical Data**

EROWA Robot Compact 80	
Transfer weight	80 kg
Magazine positions	> 200 ( > 300 with 3. Magazine / Option )
Magazine levels	12 per Rack Magazine
Magazinbeladung max.	1000 kg
Axes electrically powered and controlled	X-stroke 1380 mm    Z-stroke 1680 mm
Swivel range, C-axis	330°
Loading station UPC/PC210 (Option)	yes
Axis control	Electrically controlled axes
<b>Connections</b>	
<b>Pneumatic</b>	
Min. pressure/max. consumption	5 bar / 150 l/min.
<b>Electrical system</b>	
Voltage (V+PE)	3x400
Frequency (Hz)	50/60
Power (kVA)	1.4
Nominal current (A)	2.1
<b>Control system</b>	
Interface	Ethernet Serial RS232 / 422 M-function Parallel I/O Bit
Workpiece identification	EWIS™ Scan
JobManagement	Erowa Manufacturing Control JMS® Pro

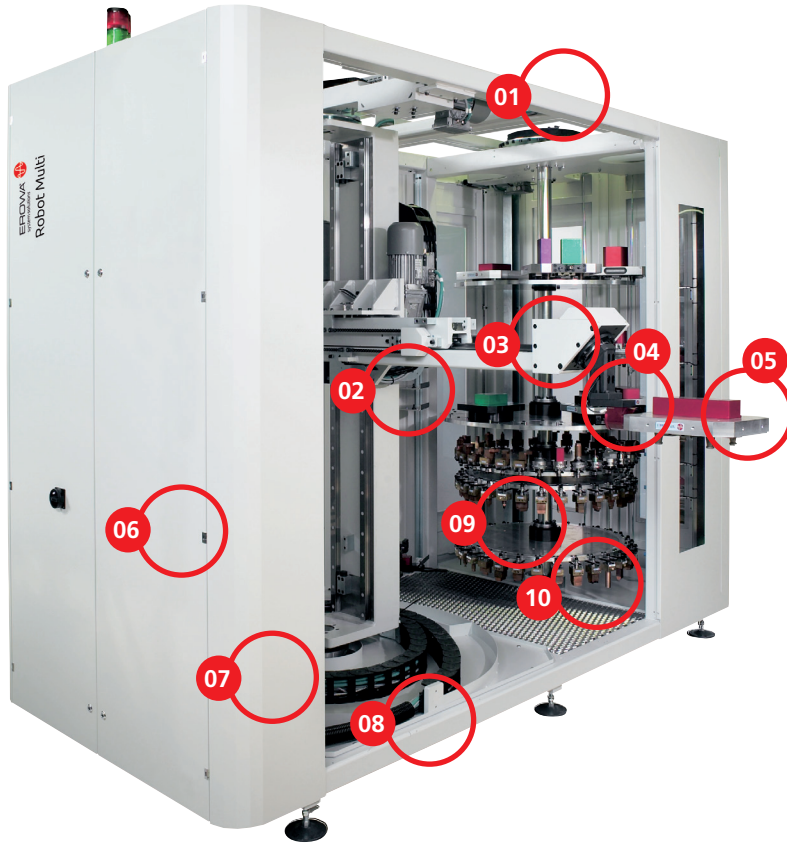
Robot Compact 80

# EROWA Robot Multi

## For 270 workpieces and electrodes



To load one or two machines.



**01** | Magazine can be loaded from 3 sides and is accessible for loading crane.

**02** | Fast change times with double gripper.

**03** | Gripper arm with swivel axis.

**04** | X-stroke 1200 mm.

**05** | 80 kg transfer weight.

**06** | Integrated control system.

**07** | Servicing-friendly casing.

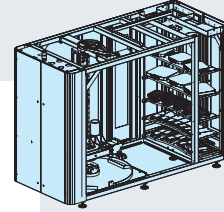
**08** | Short starting-up times through compact monobloc design.

**09** | Up to 270 magazine positions.

**10** | Reading time < 30 seconds for the whole magazine with workpiece identification EWIS™ Rapid.

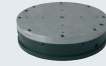
To load one or two machines with 6 chucks max.

Examples of the number of possible magazine positions.

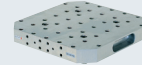


### Robot Multi Rack Magazine

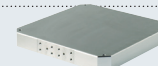
5 x PC 210



3 x UPC



3 x MTS 400



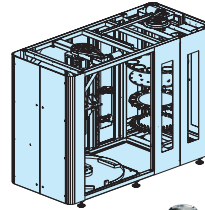
2 x MTS 500



PalletSet W  
2 x Frame  
7 x Holder



FrameSet  
2 x Frame



### Robot Multi Rotary Magazine

30 x Compact



30 x ITS 50  
30 x Holder 72



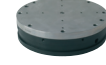
30 x PM 85  
30 x PM 56  
15 x PM 130



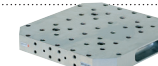
15 x ITS 115/148  
15 x MTS 148



10 x PC 210



5 x UPC



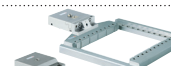
3 x MTS 400



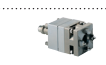
HSK, CAT, ISO, BT  
Tooling / up to 60  
Holder

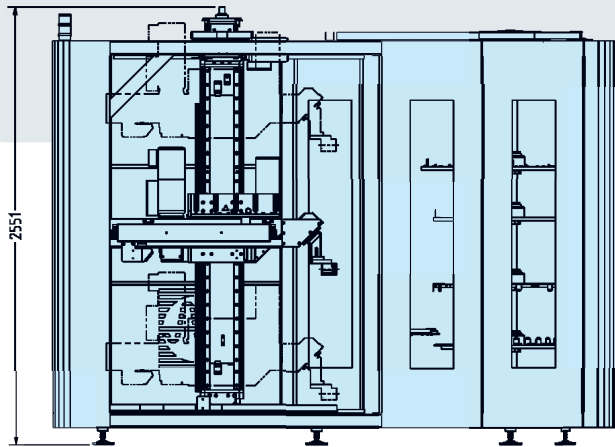


PalletSet W  
3 x Frame  
15 x Holder



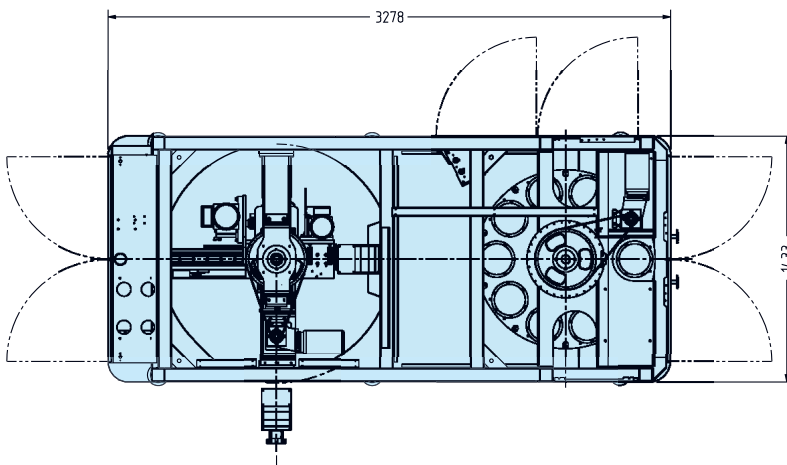
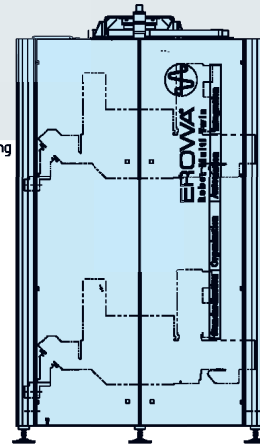
30 x UnoSet





Griperarm swivelling

Griperarm fix



Loading station for user-friendly loading/unloading cycles.

**Technical Data**

**EROWA Robot Multi**

Transfer weight	80 kg	
Magazine levels, max.	Rotary 12	Rack 12
Magazine level load, max.	Rotary 600 kg	Rack 400 kg
Magazine load max.	Rotary 1500 kg	Rack 1900 kg
electrically driven and controlled axes	X-stroke 1200 mm	Z-stroke 1450 mm

**Pneumatic**

Min. pressure/max. consumption	5 bar / 200 l/min.
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**Electrical system**

Voltage (V+PE)	3x400
Frequency (Hz)	50/60
Power (kVA)	3.6
Nominal current (A)	3.5

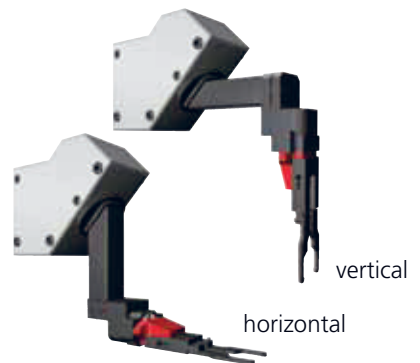
**Control system**

Interface	Ethernet Serial RS232 / 422 M-function Parallel I/O I/O-Bit
-----------	--

Remote diagnosis	yes
------------------	-----

Workpiece identification	EWIS™ Rapid
--------------------------	-------------

JobManagement	Erowa Manufacturing Control JMS® Pro
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**Swiveling Gripper arm**

The Robot Multi also serves CNC machines with vertically aligned chucks. The swiveling gripper arm turns the palletized workpiece into the right position.

for more information!



# EROWA Robot Dynamic Modular extensions to suit your wishes

The concept of the EROWA Robot Dynamics is as simple as it is ingenious. Depending on requirements, the Robot can be adapted and extended time and again, whilst the basic investment is preserved. As a stand-alone model to serve one single machine, or on rails to serve up to eight machines, everything is possible.



**01** | Up to 9 magazines in the system; they can also be used in mixed composition. We will be glad to advise you about configurations.

**02** | The X stroke varies between 1500 mm and 2350 mm depending on the axis.

**03** | Great freedom of movement and lateral loading with the swivel arm.

**04** | Maximum transfer weight: 250 kg.

**05** | Surface scanner for additional safety.

**06** | Reading time: <30 seconds for the entire magazine workpiece identification with EWIS™ Rapid.

**07** | Transfer unit with +/- 225° swivel C-axis. Machines and magazines can be placed freely in a circle.



Examples of the number of possible magazine positions.

## Rack Magazine



5 x PC 210



3 x UPC



2 x MTS 400



2 x MTS 500



Examples of the number of possible magazine positions.

## Rotary Magazine

30 x Compact



30 x ITS 50  
Holder 72



30 x PM 85



15x ITS 115/148  
15 x MTS 148



10 x PC 210



5 x UPC



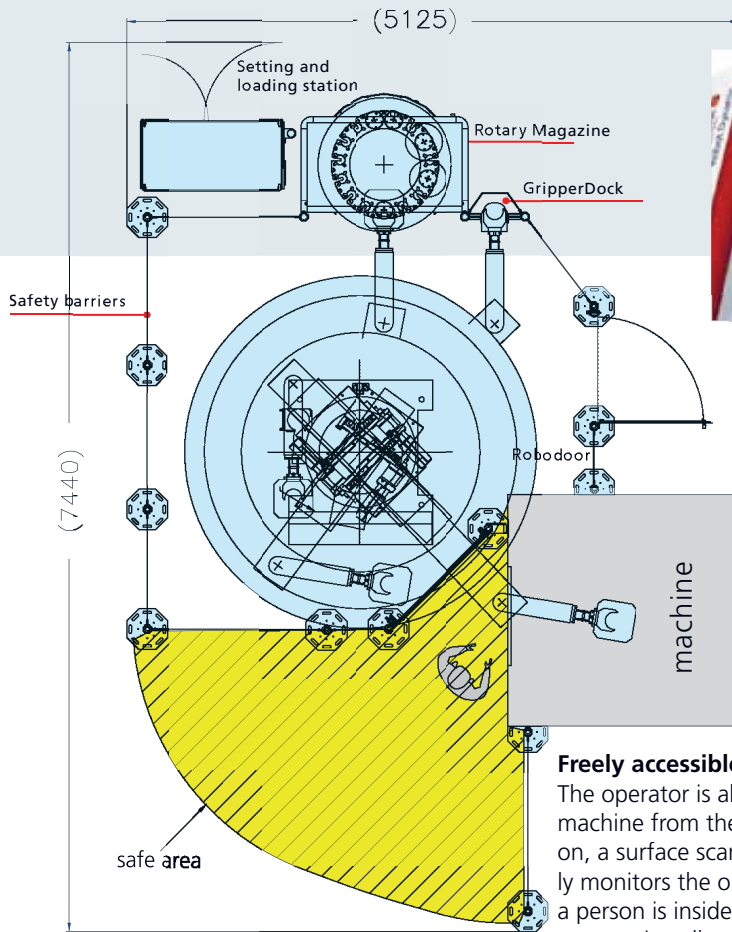
3 x MTS 400



PalletSet W  
15 x Holder



PalletSet W  
3 x Frame



**Long range**

The XT (telescopic) axis can extend to a maximum of 2000 mm.



**Extending the machine tool store**

This is made simple by a rotary magazine for workpiece holders.

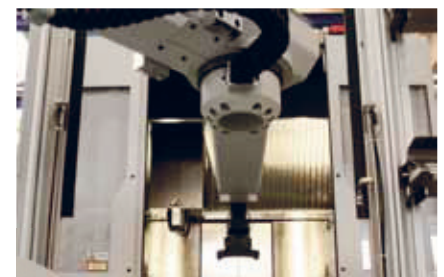
**Freely accessible and safe**

The operator is able to access the machine from the side. In addition, a surface scanner permanently monitors the operator area. If a person is inside this area, no automatic pallet change will be executed.



**Workpiece identification within seconds**

Each magazine position and each pallet is being monitored at all times. The EWIS™ Rapid identification system provides an overview.



**Buckling arm, axis**

The additional joint allows operating even in a small space.

**Technical Data**

		EROWA Robot Dynamic
Transfer weight	- RCS coupling	130 kg
	- Fixed gripper	250 kg
Travel range, X-axis		1500 mm (transfer weight 250 kg)
Travel range, (telescopic) axis		2000 mm (transfer weight 250 kg)
Travel range, X/D-axis		2350 mm (transfer weight 170 kg)
Travel range, Z-axis		1750 mm
Travel range, Y (linear) axis		up to 20 m
Magazine positions		variable up to 1200
Magazine levels <b>Rack</b>		up to 12
Magazine levels, load max		500 kg
Magazine capacity max.		2000 kg
Magazine levels <b>Rotary</b>		up to 12
Magazine levels, load max		650 kg
Magazine capacity max.		2000 kg
Number of machine operations		up to 8
Automatic pallet recognition		EWIS™ Rapid
Swivel range, C-axis		+/- 225°
Swivel range, D-axis		+/- 135°
Swivel arm		+/- 180°
<b>Pneumatic system</b>		
Min./max. consumption		5 bar / 300 l/min.
<b>Electrical system</b>		
Voltage (V+PE)		3x400
Frequency (Hz)		50/60
Power (kVA)		6
Rated current (A)		9
Control system		
Process control system interface		Yes



for more information!

# EROWA Robot Dynamic Linear Flexible automation

The Robot Dynamic is capable of handling both big and small workpieces. One of the important features of the automatic manufacture of one-off parts and small series is the fact that the facility should be able to change autonomously from one different pallet size to the next.

The EROWA process control system provides you with an overview of all important information at a glance. All the relevant data and various planning aids are available to the machine operator on site and online

## Modular - step by step



The first step is to equip the machine in such a way that most of the night hours can be utilized. One magazine is sufficient for this; with an average machine time of 30 minutes per workpiece, 5 hours can be put to productive use in this way.



## Various system sizes

There is a gripper to fit each system size (different pallet sizes). The grippers are stored in the GripperDock and are automatically exchanged whenever required.

The Robot Dynamic loads/unloads pallets with an overall weight of up to 250 kg.



The production cell is extended and multiple machines are integrated. The Robot is equipped with a rail, additional magazines and a loading station. The initial investment is still used and extended, but now the production cell has the original capacity several times over.





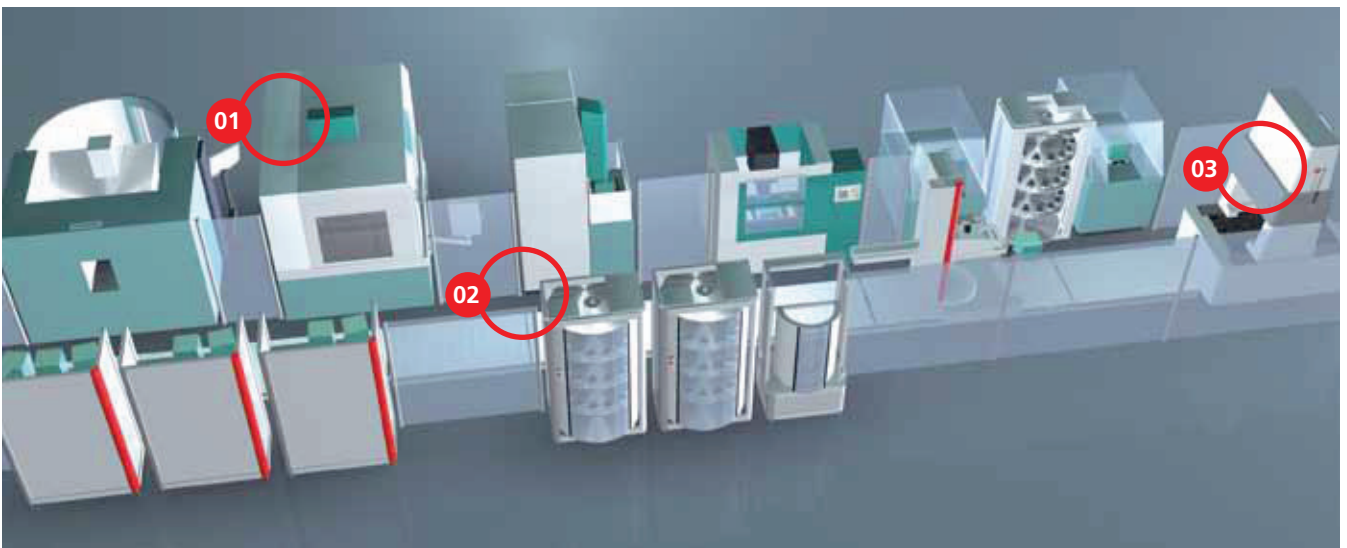
**01** | The process control system is a crucial factor for manufacturing security and helps operators to retain an overview at all times.



**02** | The stable linear rail is extended to the required length in segments.

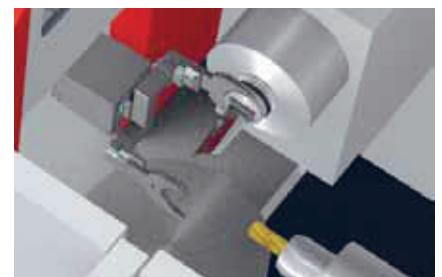


**03** | The handling facility serves the measuring station with manufactured products for interim and final checks.



**Additional stroke**

If the Robot Dynamic cannot be placed close enough to the machine tool, it can be equipped with an additional XT (telescopic) axis. The XT axis has a stroke of 2000 mm and loads pallets with up to 200 kg weight on the machine.



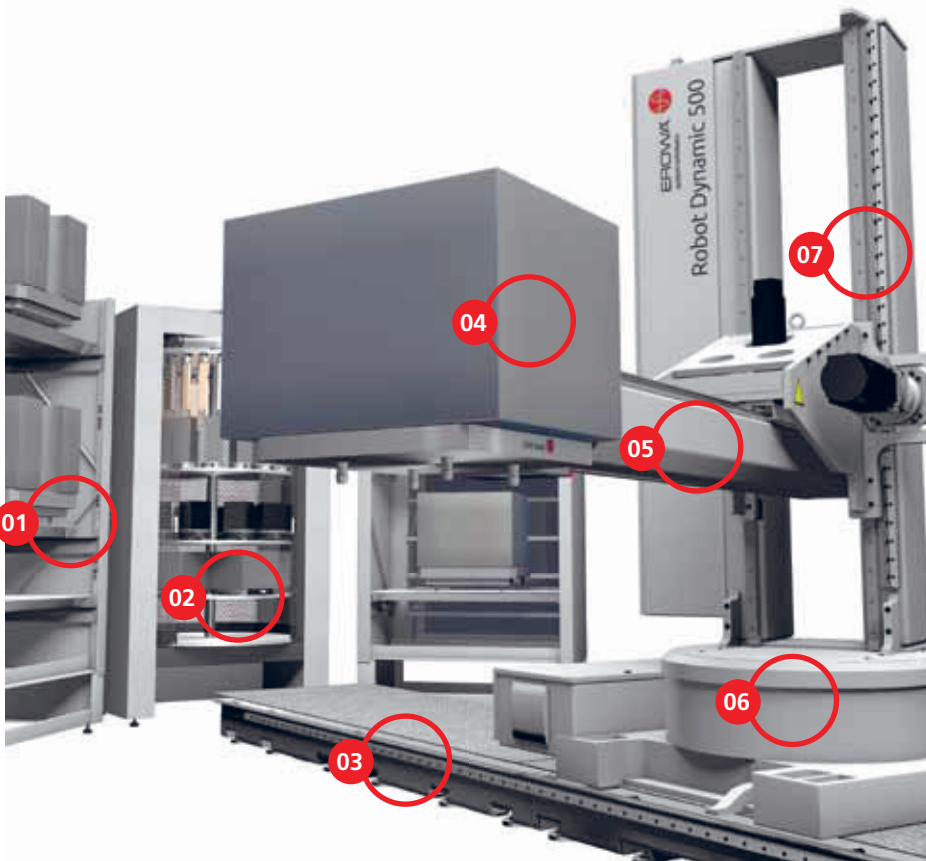
**Double gripper**

Quick part change with the double gripper.

# EROWA Robot Dynamic 500

## For small and large up to 500 kg

Small batch and mixed workpiece sizes as well as different machining techniques require flexible production systems. With the exchange gripper system, the Robot Dynamic 500 automatically retrieves the largest MTS pallets from the rack and immediately afterward small electrodes from the rotary magazine.



**01** | Rack magazine for large and heavy workpieces up to 500 kg per pallet.

**02** | Rotary magazine with many storage locations for small workpieces and electrodes.

**03** | Linear rail up to 20 m.

**04** | Ingenious exchange gripper system - also for large MTS pallets of 800 x 800 x 500 mm and up to 500 kg capacity.

**05** | The X travel is 1500 mm.

**06** | Transfer unit with +/- 225° swiveling C-axis. Machines and magazines can be freely placed in a circle.

**07** | Z-axis with 1520 mm gripper movement.



Specification based on maximum possible magazine positions per level.

(max. 2000 kg per magazine)

### Rack M 1475

3 x UPC of 130 kg



### Rack M 1475 Rack M 1000

2 x MTS 400 of 200 kg  
1 x MTS 400 of 400 kg



### Rack M 1475 Rack M 1000

2 x MTS 500 of 200 kg  
1 x MTS 500 of 500 kg



Specification based on maximum possible magazine positions per level.

(max. 2000 kg per magazine)

### Rotary Magazine

30 x Compact



30 x ITS 50  
Holder 72



30 x PM 85



15x ITS 115/148  
15 x MTS 148



10 x PC 210



5 x UPC



3 x MTS 400



30 x UnoSet

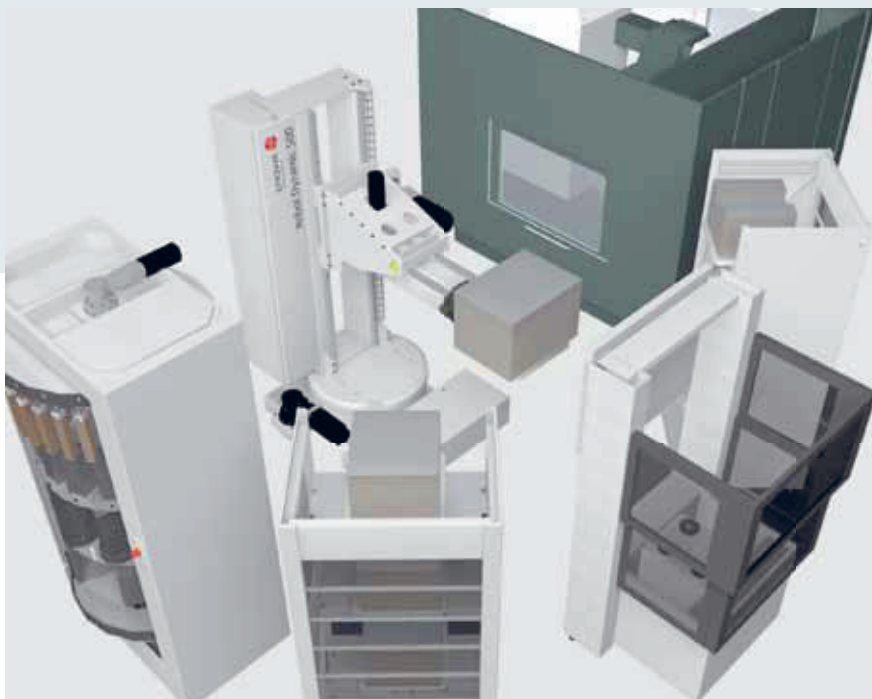


PalletSet W  
15 x Holder



PalletSet W  
3 x Frame



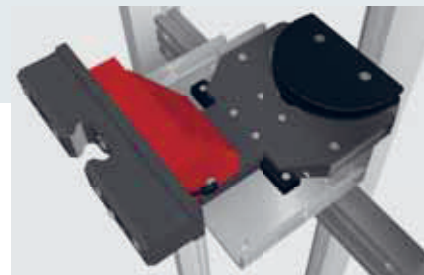
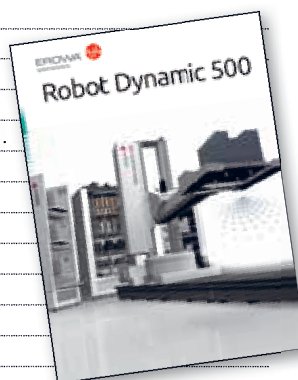


### Standalone or linear solution

A Robot Dynamic 500 consists basically of a transfer unit and various magazines. They are supplemented with a gripper pool, loading station, and linear axis. Up to 8 machine tools can be operated.

### Technical Data

	EROWA Robot Dynamic 500
Transfer weight	up to 500 kg
Workpiece size max.	800 x 800 x 500 mm
Gripper exchange	Yes
Gripper types	Fixed mounted fork grippers Exchangeable fork grippers WGS gripper system (New)
Swivel arm	No
X-axis gripper movement	1500 mm
Z-axis gripper movement	1520 mm
Y (linear axis) gripper movement	up to 20 m
Rotation range	+/-225°
System height	2800 mm / with linear axis 3100 mm
Room height min.	3500 mm for linear
Magazine levels <b>Rack</b>	max. 12
Magazine levels load max.	500 kg
Magazine capacity max.	2000 kg
Magazine levels <b>Rotary</b>	max. 12
Magazine levels load max.	500 kg
Magazine capacity max.	2000 kg
Number of machine operations	up to 8
<b>Pneumatic system</b>	
Minimum pressure / maximum consumption	5 bar / 300 l/min.
<b>Electrical system</b>	
Voltage (V+PE)	3x400
Frequency (Hz)	50/60
Power (kVA)	16
Rated current (A)	25
Control system	
Process control system interface	Yes
Integrated safety system	Yes



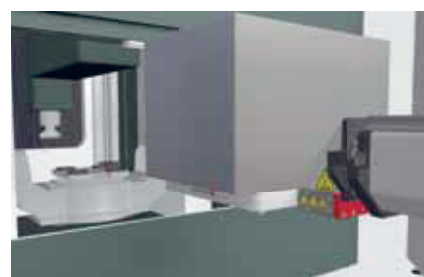
### GripperDock

The right gripper for each tooling system size. They are stored in the GripperDock and automatically employed when needed.



### New - Exchange gripper system WGS 500

Heavy MTS pallets of up to 500 kg are clamped in combination with WGS Gripper Link directly in the WGS 500 coupling. For smaller system sizes, the appropriate WGS gripper is used.



### For large workpieces

MTS pallets with part sizes up to 800 x 800 x 500 mm are easily loaded on the machine.

For more information!



## EROWA Robot Dynamic 500

# Flexible and modular automation

The EROWA Robot Dynamic 500 can always be adapted and extended. Due to the modular design, it is very easy to adapt the handling facility at any time exactly to the individual needs of the production plant.

Today ...



The right gripper for each pallet size. That is flexible and productive manufacturing of small and large workpieces.

**Basic investment** – The machine tool is equipped with a transfer unit, different workpiece magazines, a loading station, and a process control system. So the production cell continues to produce after the manned shift efficiently and autonomously.

... tomorrow



**Expand as needed** – More machines are added. The robot is equipped with rails and additional workpiece magazines. The initial investment is used further and supplemented. The capacity of the production line is multiplied, and more unmanned shifts can be realized.



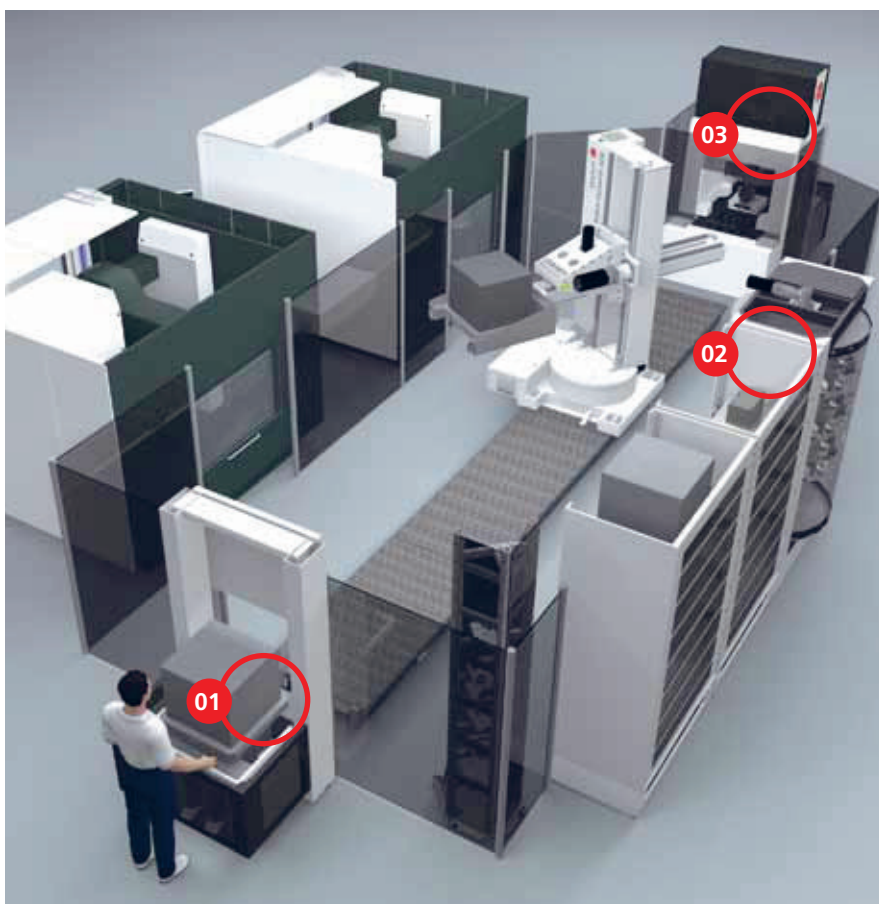
**01** | A loading station is available to facilitate the setup and preparation of heavy parts.



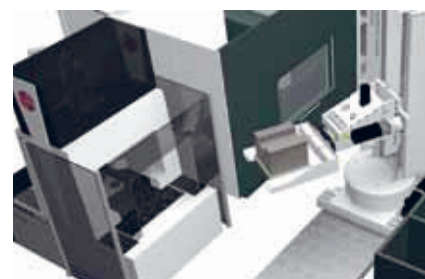
Each pallet is equipped with an EWIS™ identification chip. So you always have an overview of all magazine positions and pallets.



**02** | The different EROWA pallet sizes are used on one and the same machine. Depending on the assigned jobs, the Robot Dynamic 500 switches to the fitting system size automatically.



A highly efficient system for automating the manufacture of single parts and small batches. Workpieces are supplied and removed via the integrated setting-up and loading stations. When needed, simply another magazine is added.



**03** | Integrated quality control. Integrating an EROWA CMM Qi measuring machine in your process line will also take care of this requirement.



The EROWA process control system provides the operator with all relevant information and various planning tools online and at any time. This is one of the prerequisites to be able to manufacture small series and individual components flexibly and automatically.

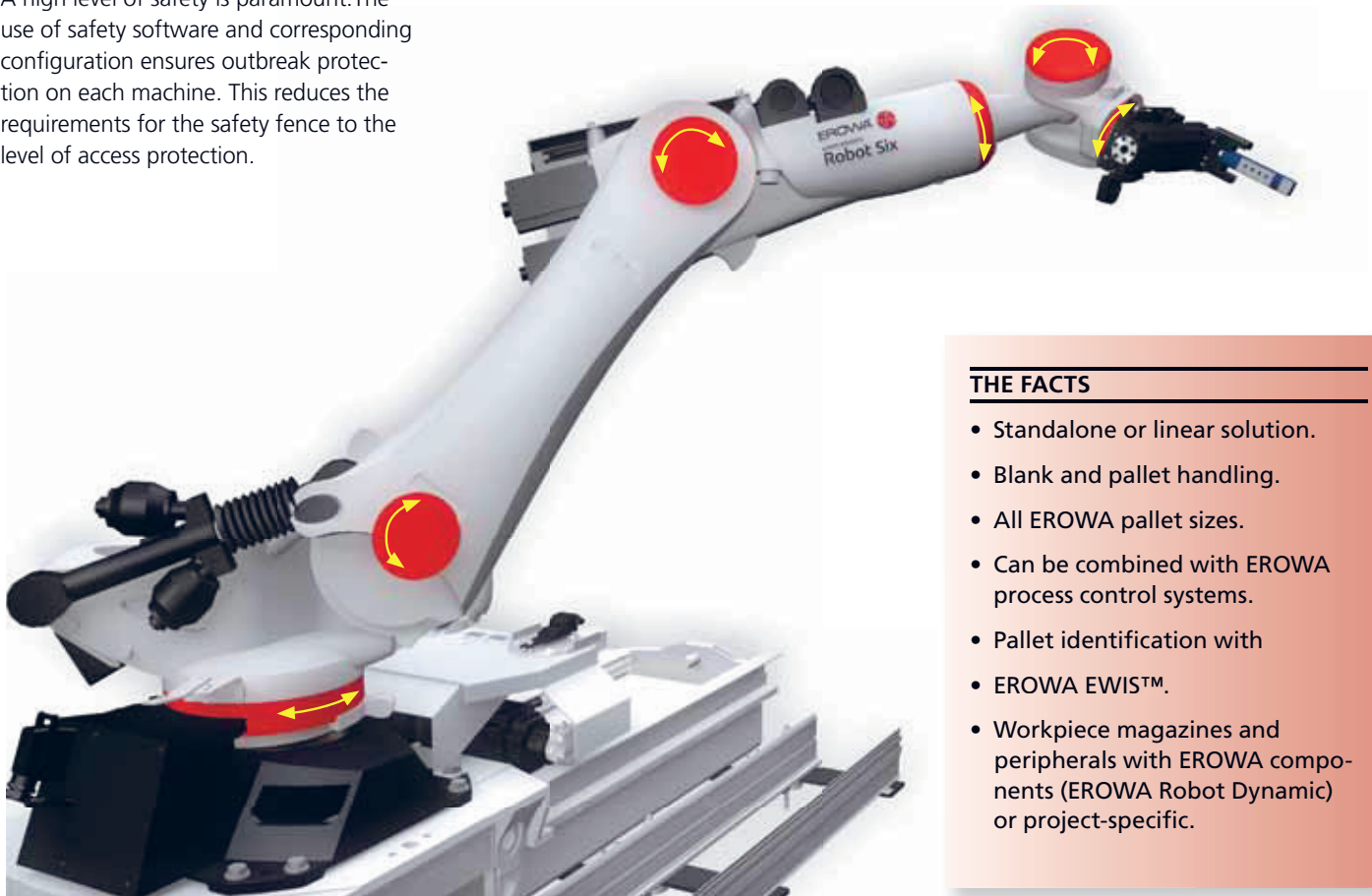
EROWA Robot Six



# Maximum versatility and flexibility

Using a 6-axis robot basically allows you to utilize more degrees of freedom and to use types of different weight classes. This is based on standardized interfaces and options, to ensure optimal integration into the "EROWA World."

A high level of safety is paramount. The use of safety software and corresponding configuration ensures outbreak protection on each machine. This reduces the requirements for the safety fence to the level of access protection.



## THE FACTS

- Standalone or linear solution.
- Blank and pallet handling.
- All EROWA pallet sizes.
- Can be combined with EROWA process control systems.
- Pallet identification with EROWA EWIS™.
- Workpiece magazines and peripherals with EROWA components (EROWA Robot Dynamic) or project-specific.

	EROWA Robot Six (ER6 K180L as shown)	EROWA Robot Six individual
Transfer weight	up to 180 kg	-
- with RCS5 coupling	up to 130 kg	-
- with WGS coupling	-	up to 500 kg
Max. range (overhang)	R = 2500 mm	Depending on robot and gripper type
Swiveling/indexing range	+/- 180°	
Y linear axis	Yes, length on request	
Magazine type	Base - ERD* Rack magazine Components, or project-specific upon request	

ERD\* = EROWA Robot Dynamic



For more information!



**01 | Measuring software**  
Full functionality for the highest demands. For intermediate and final inspection and quality measurement.

**02 | CMM Qi**  
Swiss quality measuring machine. The measuring machine fulfils all the criteria for successful automation.

**03 | Machine tool**  
Milling, turning, drilling, grinding.

**04 | RoboSpa**  
Cleaning station for workpieces and electrodes.

**05 | Standard Rack magazine.**  
with configurable levels and pallet positions:

- MTS and/or UPC pallets
- Pallets of sorted blanks
- Pallets with fixture

**06 | Standard Rotary magazine**  
with high capacity for pallets:

- ITS 50 / ITS 50 C, ITS 72 / ITS 148 pallets
- PC 210 / UPC pallets

**07 | Process control system**  
Control panel for loading station and rotary.

**08 | Robot control**  
Control including peripheral and machine connections.

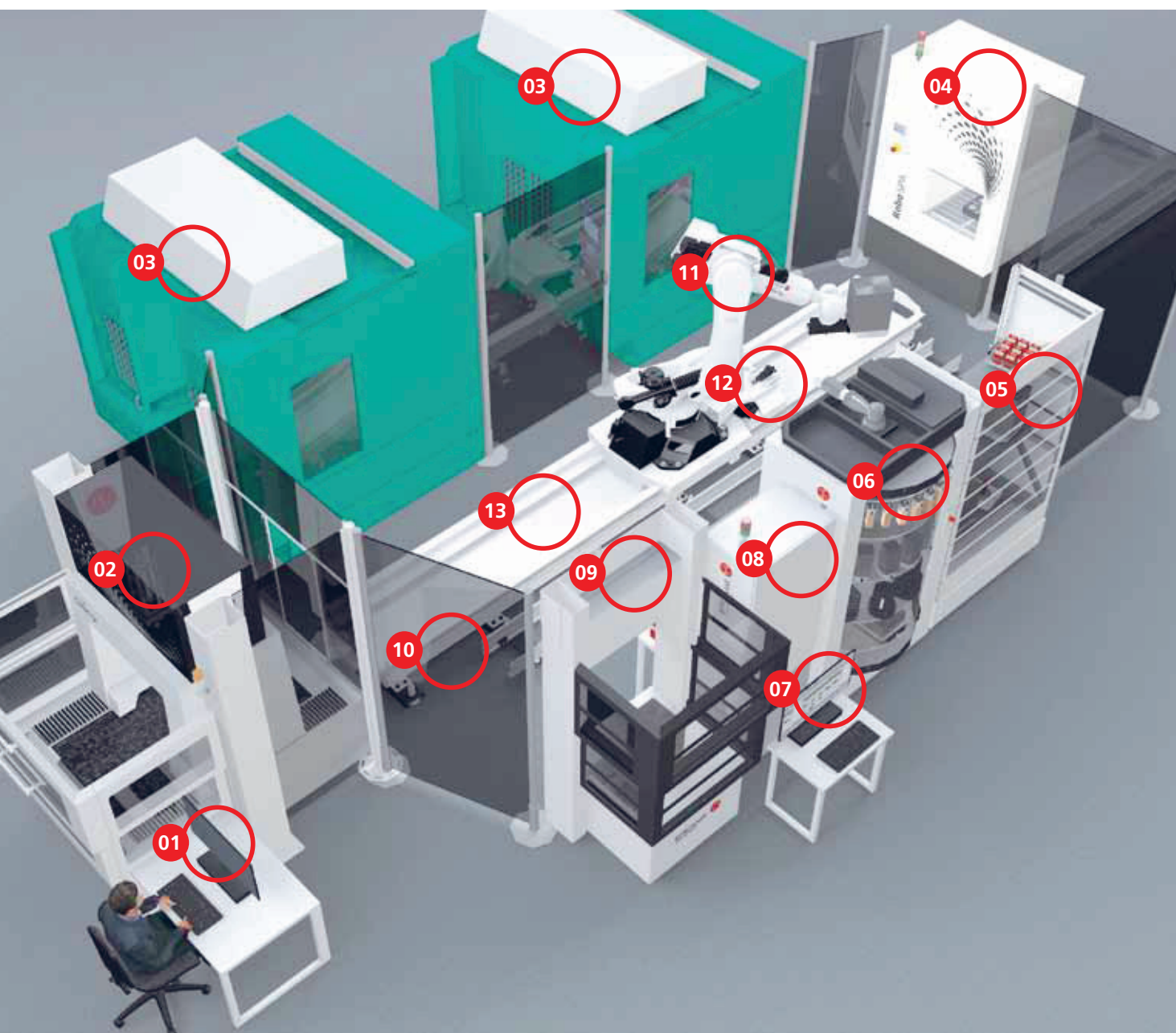
**09 | Loading station**  
for input and output of palletized workpieces in the production cell or for conversion operations.

**10 | Safety / access protection**  
No outbreak protection is necessary thanks to safe logic.

**11 | EROWA Robot Six**  
6-axis robot for blank and pallet change. Transfer weight 130 kg with RCS5 coupling.

**12 | Mobile gripper station**  
for efficient gripper change.

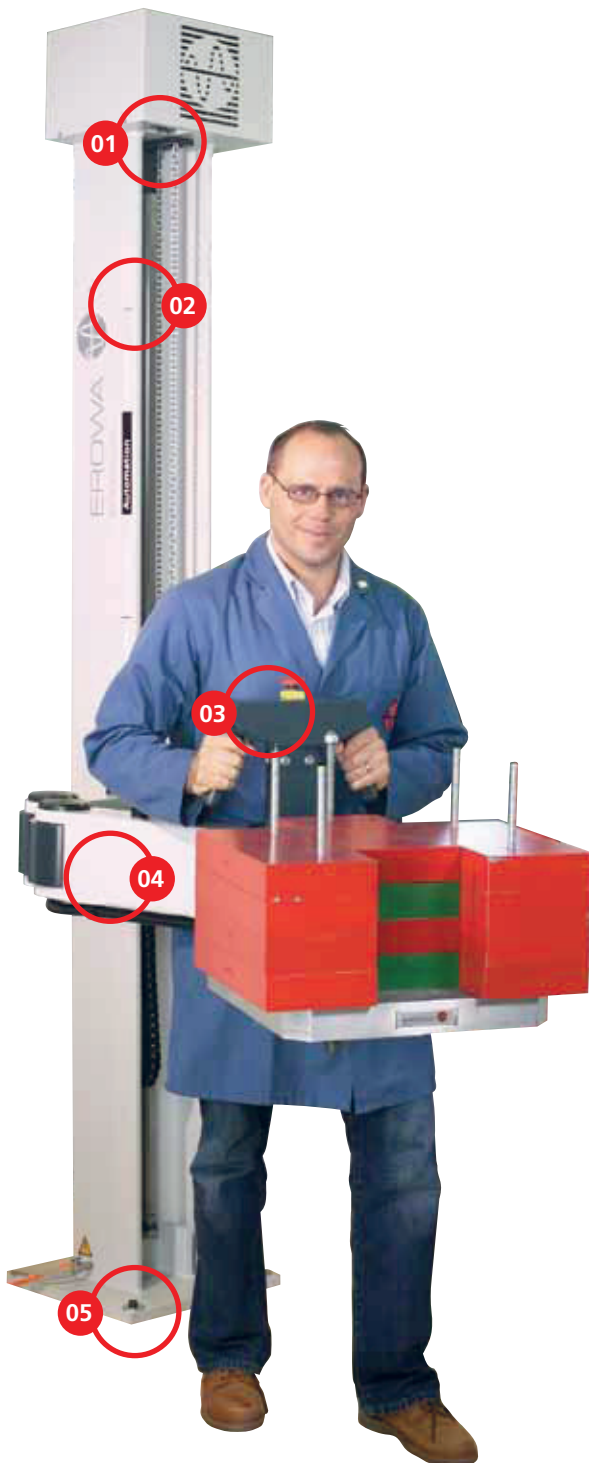
**13 | Rail system.**







# Loading machines made easy



The EROWA Lift has been designed for frequent pallet changes directly onto the machine or into the handling facility. Fitted in a fixed position next to the machine, it is always where it is needed and moves palletized workpieces from transport pallets even up to the topmost magazine rack.

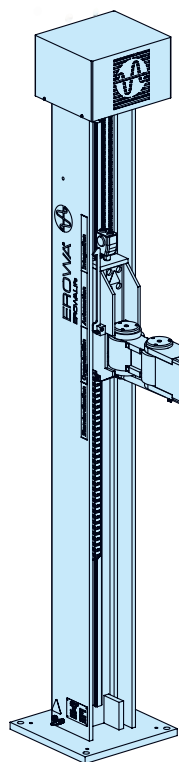




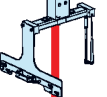





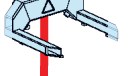
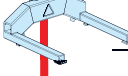
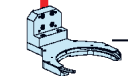

- 01 | Strong drive with two speeds.
- 02 | Stable guidance of the Z-axis.
- 03 | Two-handed control system with integrated operation.
- 04 | Segmented arm for optimal accessibility.
- 05 | Solid anchorage to the floor with leveling facility.
- 06 | Up/down movement at two speeds at the push of a button.
- 07 | "Open gripper" button.
- 08 | RCS 5 control light "Gripper clamped".

Lift pallets without straining your back. Directly from the shop-floor trolley into the magazine, even right to the top rack.



for more information!



-  — **Gripper ITS 148**  
ER-030192
-  — **Gripper ITS 148 90° swivelable**  
ER-030194
-  — **Gripper FrameSet**  
ER-030218
-  — **Gripper RCS 5 90° swivelable**  
ER-033290
-  — **Gripper FrameSet/RCS**  
ER-044612
-  — **Gripper RoboSet**  
ER-046144
-  — **Gripper RCS 2**  
ER-046161
-  — **Gripper RCS 5**  
ER-046162
-  — **Gripper fork UPC/RCS**  
ER-046164
-  — **Gripper MTS 400**  
ER-042568
-  — **Gripper MTS 500**  
ER-070088
-  — **Gripper PC210 RN**  
ER-047400

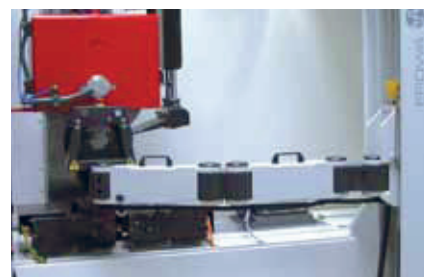
(Order grippers separately.  
Special grippers on request.)



We also supply special grippers, for instance for the handling of large grinding wheels.



Simple and safe handling even of heavy workpieces up to 250 kg.



Flexible pallet positioning with the swivel arm.



Lifting the pallet from the transport system.

**Technical Data**

<b>ER-046250</b>	<b>EROWA Lift</b>
Transfer weight	max. 250 kg
Movements	Z = 1660 mm X = 1300 mm Swivel range 360°
Installation	4 heavy-duty anchors M12 concrete strength min. C20/25
Pneumatic	min. 5 bar
Voltage	3 x 380/400 V
Frequency	50 Hz
Drive	High speed 4m/min Low speed 1m/min

# EROWA LiftGear



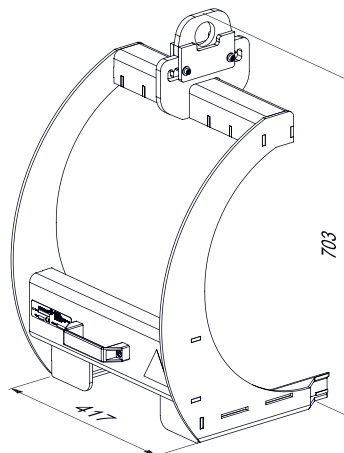
Pallets weighing more than 20 kg must be inserted into the UPCs or MTS chucks on the machine in a gentle and accurate manner. With the LiftGear and an overhead crane, this is child's play.

#### Your advantages

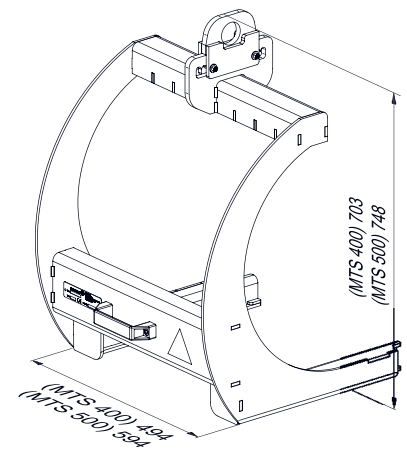
- Gentle machine loading.
- Increase in quality through careful and safe handling.
- Safety-conforming work

#### Applications:

Loading of machine tools, pallet magazines, Robot magazines, presetting and measuring stations.



EROWA LiftGear UPC



EROWA LiftGear MTS 400 / MTS 500

**Technical Data**

	ER-069551 <b>LiftGear UPC</b>	ER-042800 <b>LiftGear MTS 400</b>	ER-077012 <b>LiftGear MTS 500</b>
Transfer weight	250 kg, incl. pallet	250 kg, incl. pallet	250 kg, incl. pallet
Pallet type	UPC 320 x 320 mm	MTS 400	MTS 500
Maximum workpiece dimensions L x W x H	320 x 380 x 450 mm	400 x 450 x 450 mm	500 x 550 x 450 mm



EROWA LiftGear UPC

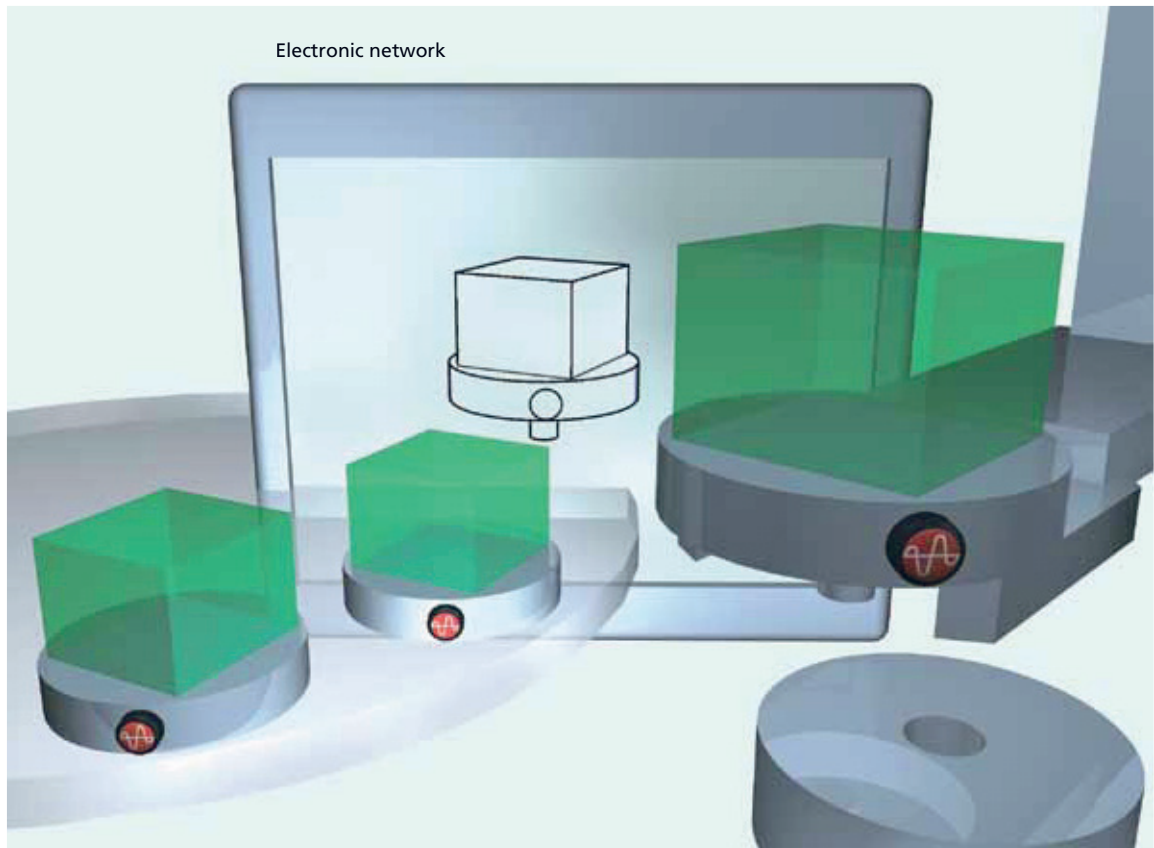


The EROWA LiftGear moves UPC and MTC pallets to the right place - quickly, safely and accurately.



EROWA LiftGear MTS

# EROWA data transfer systems



**Integration** of systems and communication channels. This precludes sources of error as much as possible, and will guarantee a faster flow of communication.



For chip-removing processes



For EDM sinking



For WEDM

**EROWA DATA TRANSFER SYSTEMS**

EROWA Manufacturing Control V3 374  
Cell control for production machines

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EROWA JMS<sup>®Pro</sup> 376  
From the production cell to  
networked production

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# EROWA Manufacturing Control V3

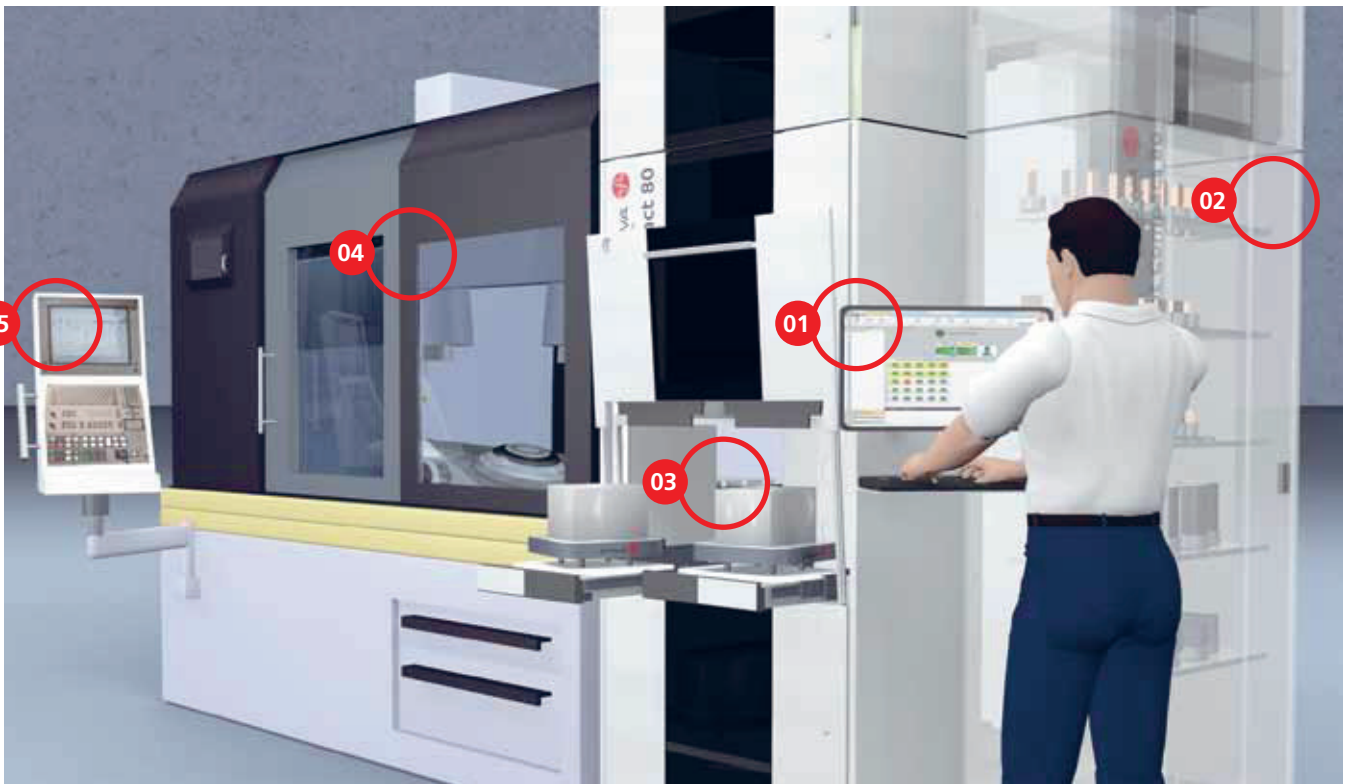
## Everything at a glance

### FLEXIBLE MANUFACTURING

EROWA Manufacturing Control V3 controls and monitors the entire production cell.

Integration is the last step towards the successful implementation of EROWA FMC. The EROWA Manufacturing Control V3 process control system makes this step easy. The EROWA Manufacturing Control V3 software is the overriding tool through which the individual cells can be checked and controlled.

With EROWA Manufacturing Control V3, the machine operator has his production cell under control at all times. The refined features which have existed so far are now becoming even simpler thanks to active user guidance. Standard processes can be virtually run at the touch of a button. EROWA Manufacturing Control V3 is compatible with all the major control systems of lathes, milling and grinding machines.



Made for milling! With EROWA Manufacturing Control V3, it's easy to keep an overview. More productive hours are seen at a glance.

#### 01 | Cell control

The EROWA Manufacturing Control V3 software is the overriding tool through which the operator checks and controls the cell.

#### 02 | Identification

The Robot with the magazine: the entire work reserve is available on demand and is unmistakably identified with the help of chips.

#### 03 | Loading station

The control system automatically loads/unloads pallets between the loading station and the Robot magazine.

#### 04 | Production cell

The machine tool with the EROWA table equipment, the automatic door and the tool magazine.

#### 05 | Data transmission

The machine control system transmits data from the tool changer to the EROWA Manufacturing Control V3.



# EROWA Manufacturing Control V3 Supported and guided user inputs



For more information, please contact your specialist EROWA dealer.



Everything at a glance: in this way, the machine operator can always see what is going on. The user surface in the current Microsoft Office look is the same for all cells, which facilitates a substitute operator's work



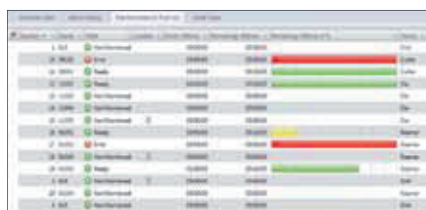
This is how much work reserve is still available. With each load, the system calculates how long the milling cell will still be productive.



If there is a malfunction, this will automatically trigger off an alarm and information about the type of defect, if necessary by e-mail or SMS.



Workpiece oversize - working with oversized workpieces without any collisions and in optimized space conditions. The process control system takes into account workpiece sizes when placing workpieces in the magazine. Positions that are not available will be blocked automatically.



Clearly arranged representation of the tools on the machine, including status, downtime and tool breakage.



Fixture Manager - quick reclamping made easy! Fixtures are managed jointly with the individual and pallet-specific offset data.

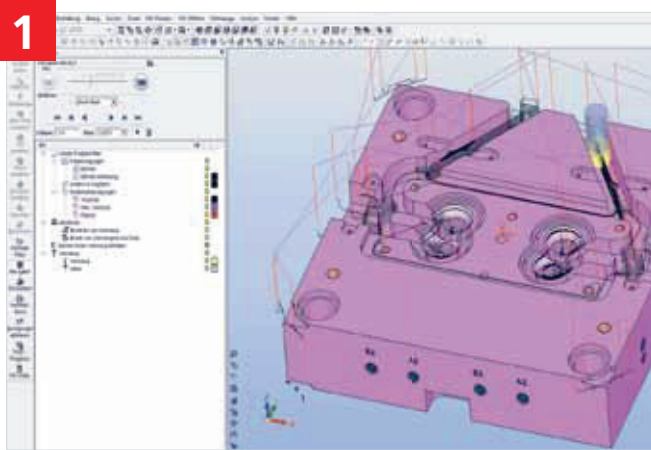
EROWA JMS® Pro

# Automatically documented production process

## WORKFLOW-MANAGEMENT

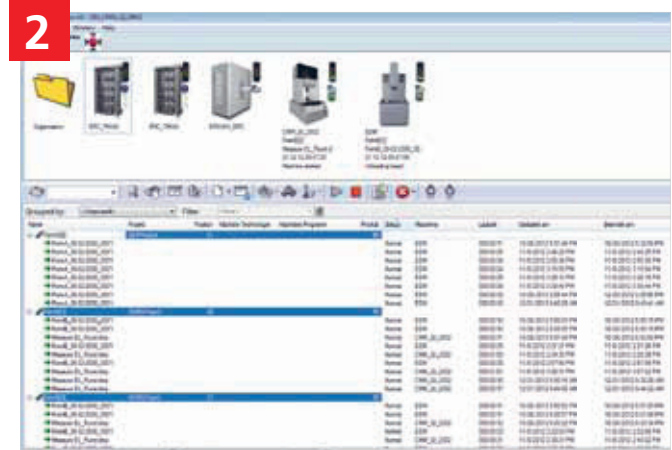
Planning, controlling and monitoring individual operations.

**JMS® Pro Workflow-Management is not a slogan but a program.** By making the data completely universal, it allows for comprehensive control throughout the workshop. From the CAD/CAM data import to the reporting of the completed jobs, everything can be viewed online.



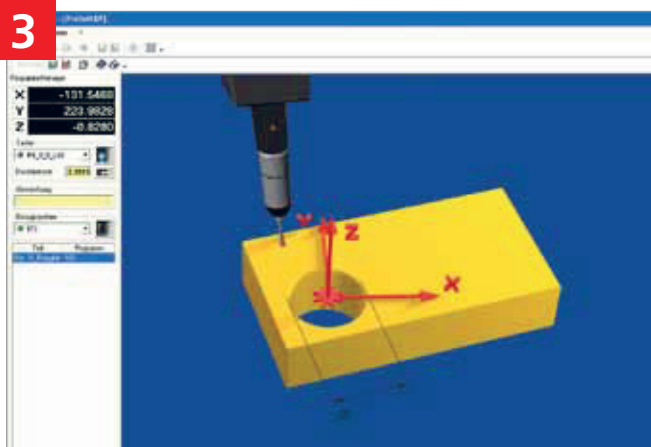
### 01 | Data import from CAD/CAM & PPS

Import of the job structure and generation of the work steps.



### 02 | Setting up and management of production data

Preparation of jobs while machine is at work. Identification of pallets through the electronic identification system EWIS™ Rapid. The pallets are automatically identified on the basis of the built-in chip. The data is then transmitted to JMS® Pro.



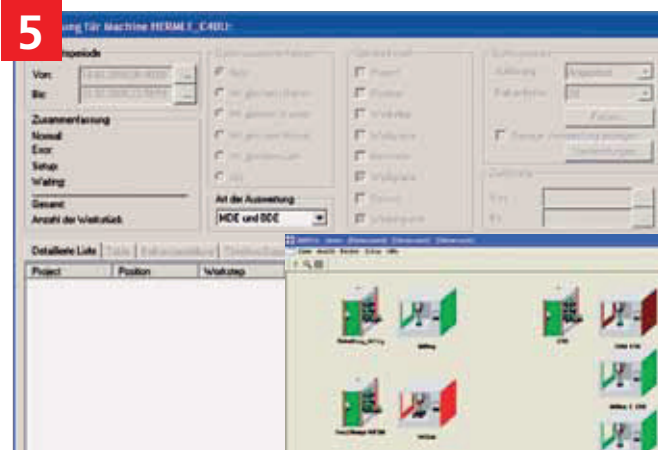
### 03 | Determine presetting data.

This is stored in an efficient database, in a machine-neutral format, and is available for all the users at any time.



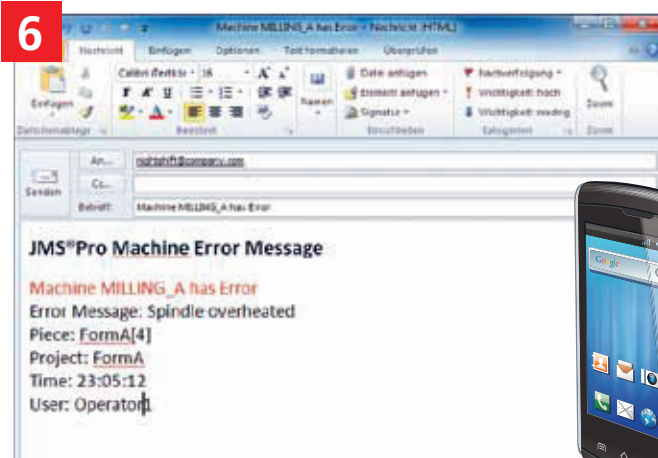
### 04 | Machining

The production cell is controlled online. The user is able to influence all the priorities. This will guarantee a quick response.



**05 | Status and evaluation**

The entire production process is displayed in a clear structure: current status, registration of operational data, and utilization in the time axis.



**06 | Monitoring**

Collects and transmits special events from the production cells. The relevant users are always informed.

**JMS® Pro is workflow-management with crucial advantages.**

- The production data is stored in a clear structure. You can access them at any time.
- The entire production process is displayed in JMS® Pro. You have an overview.
- Changes to the production process are effective online. You always know what is happening.
- JMS® Pro documents all the processes automatically. Traceability is guaranteed. You are in control of all the changes.
- The complete electronic dataflow from CAD to evaluation replaces the paper avalanche.
- JMS® Pro interlinks machines of a wide variety of technologies and generations. You choose yourself what should be part of the network.
- You determine the degree of integration yourself. Whether simple postprocessor or integrated workshop solution - we give you comprehensive advice.
- Workplaces become more interesting. With JMS® Pro users become machine managers.
- Whether EDM or WEDM, milling, drilling, turning, grinding or measuring: JMS® Pro integrates the facilities.

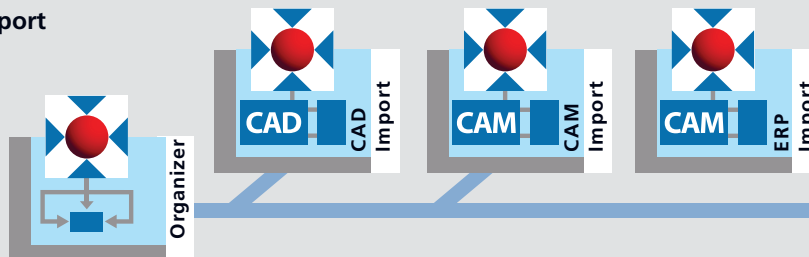
EROWA JMS<sup>®</sup> Pro

# From production cell to integrated manufacturing

JMS<sup>®</sup> Pro is characterized by its consistent modular structure. Starting with a simple postprocessor which outputs the offset values as defined for a given machine format to the fully interlinked workshop, everything can be extended in small, manageable steps.

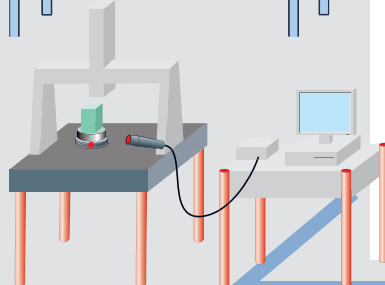
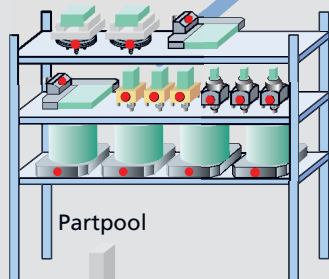
Work preparation

CAD/CAM Import

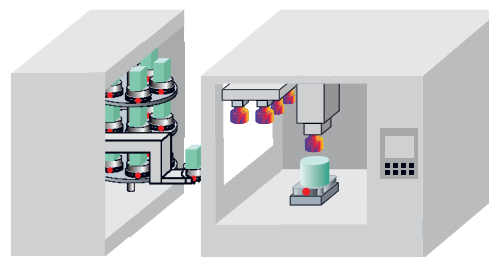
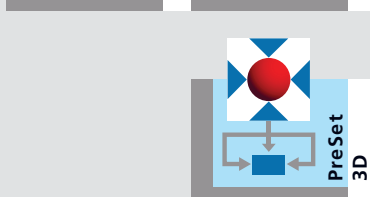
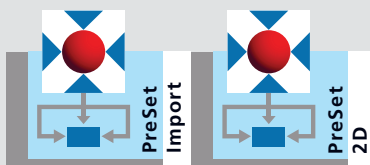


Workshop

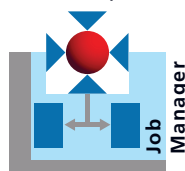
Setup, Presetting



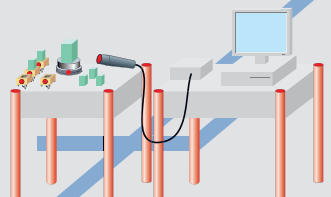
Presetting station with an EWIST<sup>™</sup> Rapid identification system



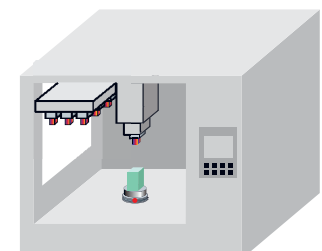
Machine with automatic pallet and workpiece changer



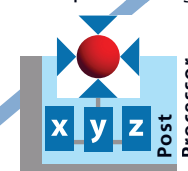
Job Manager



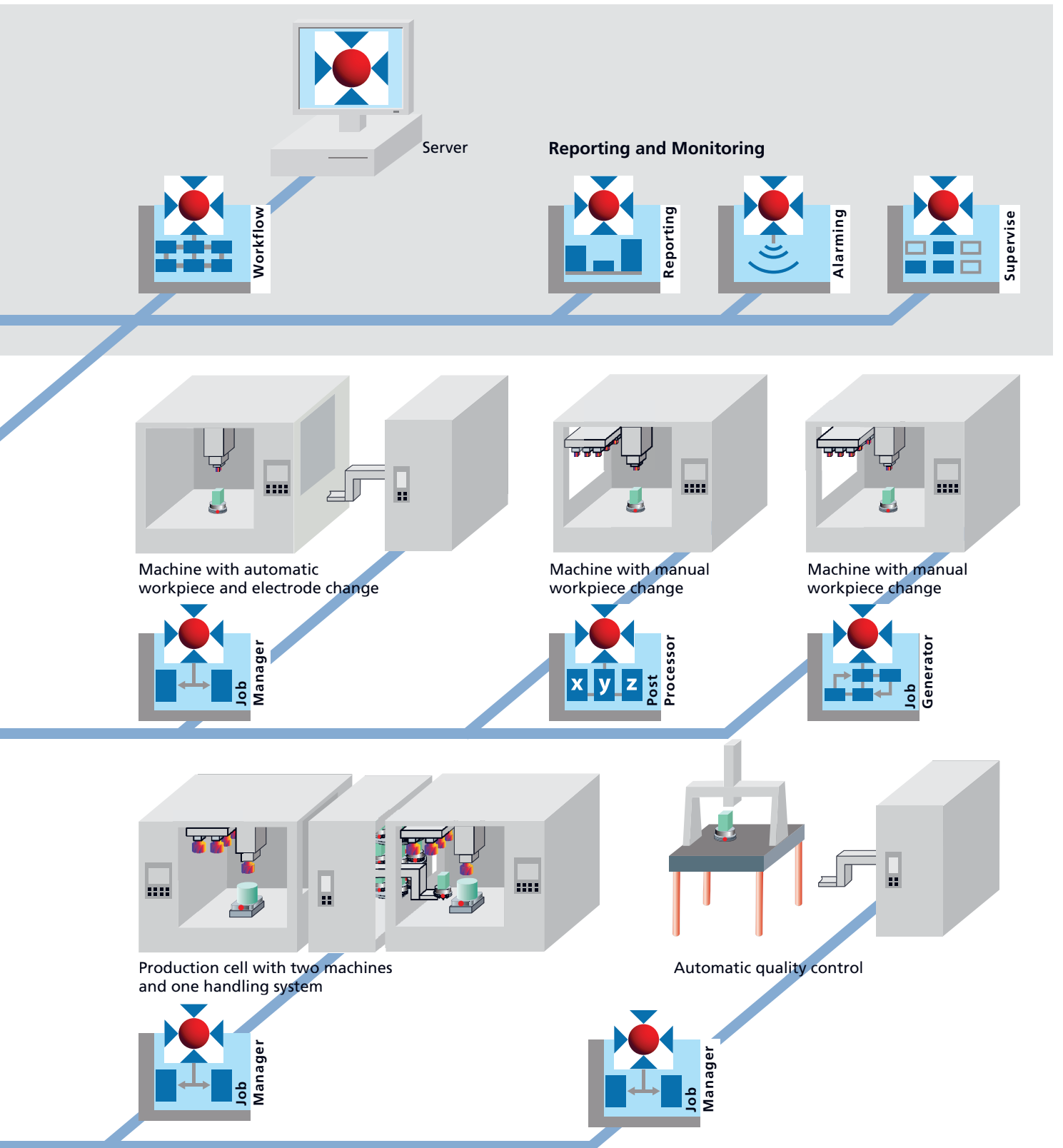
Setting-up station with an EWIST<sup>™</sup> Rapid identification system



Machine for manual workpiece change



Post Processor





This is where you will find all the EROWA order numbers in numerically ascending order, together with the numbers of the pages on which the products are presented in pictures.

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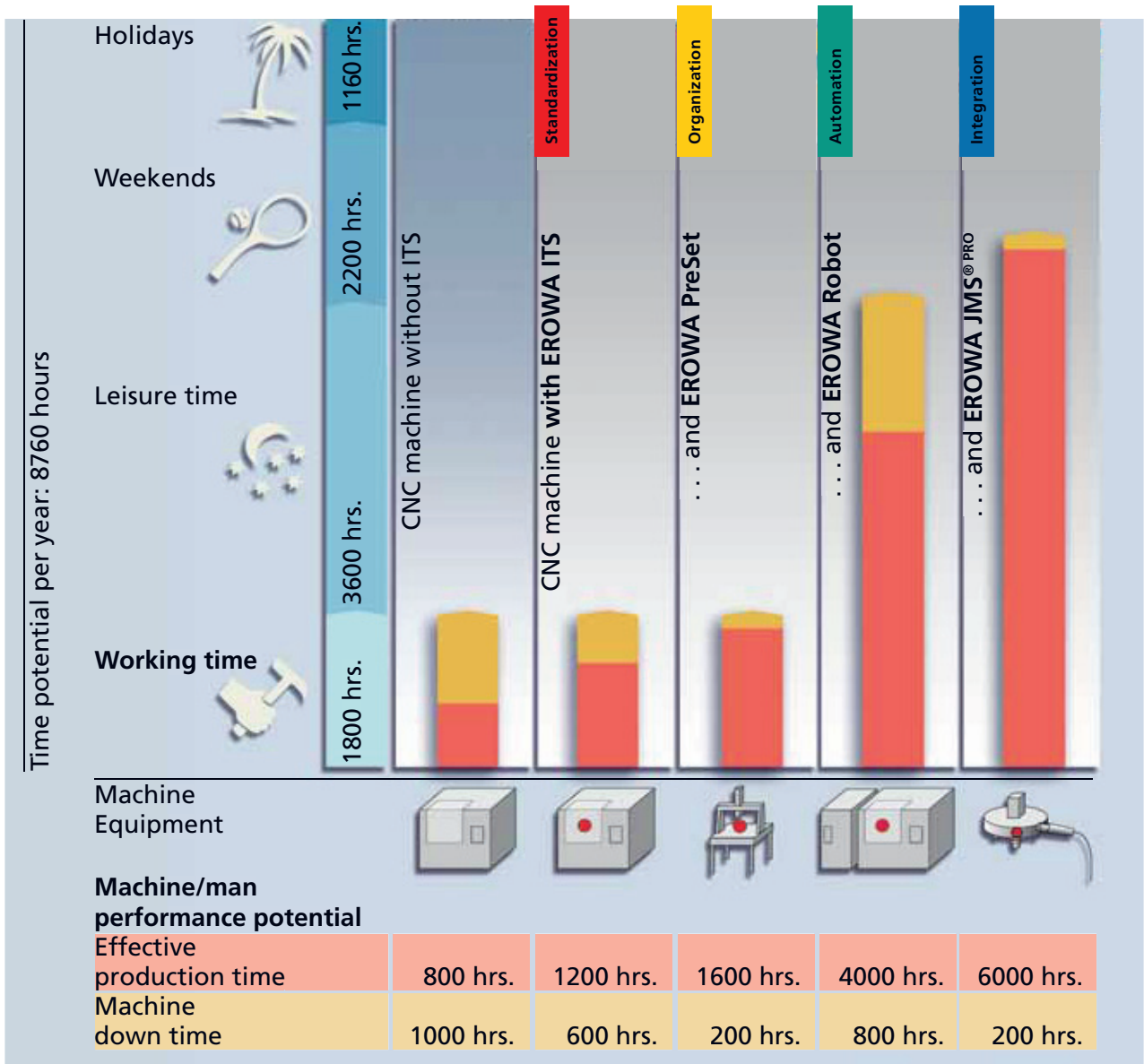






# Optimal use of resources

Suitable EROWA components will enable you to put your machines to optimal use. We'll gladly assist you with our many years of experience. You call - we'll come.




## The next step

Important matters require planning. And your next step is certain to be such an important matter. After all, you are setting off into a new, rational age.

We will gladly accompany you on your way with advice, in daily operating procedures, so that you will know at any time what you are letting yourself in for. The nearest EROWA agency is not far away.

# Take that important step.



ER-0706



#### USA

EROWA Technology, Inc.  
North American Headquarters  
2535 South Clearbrook Drive  
Arlington Heights, IL 60005  
USA  
Phone 847 290 0295  
Fax 847 290 0298  
e-mail: [info@erowa.com](mailto:info@erowa.com)  
[www.erowa.com](http://www.erowa.com)

#### Italy

EROWA Tecnologie S.r.l.

#### **Sede Legale e Amministrativa:**

Strada Statale 24 km 16,200  
IT-10091 Alpignano (TO)  
Italia  
Tel. 011 9664873  
[info@erowa.it](mailto:info@erowa.it)  
[www.erowa.com](http://www.erowa.com)

#### **Unità di Treviso:**

Via Leonardo Da Vinci 8  
IT-31020 Villorba (TV)  
Tel. 0422 1627132

#### Singapore

EROWA (South East Asia) Pte. Ltd.  
CSE Global Building  
No.2 Ubi View, #03-03  
Singapore 408556  
Singapore  
Phone 65 6547 4339  
Fax 65 6547 4249  
[sales.singapore@erowa.com](mailto:sales.singapore@erowa.com)  
[www.erowa.com](http://www.erowa.com)

#### Japan

EROWA Nippon Ltd.  
Shiba Shimizu Bldg.  
2-3-11 Shiba Daimon, Minato-ku  
105-0012 Tokyo  
Japan  
Phone 03 3437 0331  
Fax 03 3437 0353  
[info@erowa.co.jp](mailto:info@erowa.co.jp)  
[www.erowa.co.jp](http://www.erowa.co.jp)

#### Switzerland

EROWA AG  
Knutwilerstrasse 3  
CH-6233 Büron  
Schweiz  
Phone 041 935 11 11  
Fax 041 935 12 13  
[info@erowa.com](mailto:info@erowa.com)  
[www.erowa.com](http://www.erowa.com)

#### France

EROWA Distribution France Sàrl  
PAE Les Glaisins  
12, rue du Bulloz  
FR-74940 Annecy-le-Vieux  
France  
Phone 4 50 64 03 96  
Fax 4 50 64 03 49  
[info@erowa.tm.fr](mailto:info@erowa.tm.fr)  
[www.erowa.com](http://www.erowa.com)

#### Spain

EROWA Technology Ibérica S.L.  
c/ Avda. Cornellà, 142 7ª 3ª ext.  
E-08950 Esplugues de Llobregat - Barcelona  
España  
Phone 093 265 51 77  
Fax 093 244 03 14  
[erowa.iberica.info@erowa.com](mailto:erowa.iberica.info@erowa.com)  
[www.erowa.com](http://www.erowa.com)

#### China

EROWA Technology (Shanghai) Co., Ltd.  
G/F, No. 24 Factory Building House  
69 Gui Qing Road (Caohejing Hi-tech Park)  
Shanghai 200233, PRC  
China  
Phone 021 6485 5028  
Fax 021 6485 0119  
[info@erowa.cn](mailto:info@erowa.cn)  
[www.erowa.cn](http://www.erowa.cn)

#### Germany

EROWA System Technologien GmbH  
Gewerbepark Schwadernmühle  
Rossendorferstrasse 1  
DE-90556 Cadolzburg b. Nbg.  
Deutschland  
Phone 09103 7900-0  
Fax 09103 7900-10  
[info@erowa.de](mailto:info@erowa.de)  
[www.erowa.de](http://www.erowa.de)

#### Scandinavia

EROWA Technology Scandinavia A/S  
Fasanvej 2  
DK-5863 Ferritslev Fyn  
Denmark  
Phone 65 98 26 00  
Fax 65 98 26 06  
[info@erowa.com](mailto:info@erowa.com)  
[www.erowa.com](http://www.erowa.com)

#### Eastern Europe

EROWA Technology Sp. z o.o.  
Eastern Europe  
ul. Spółdzielcza 37-39  
55-080 Kały Wrocławskie  
Poland  
Phone 71 363 5650  
Fax 71 363 4970  
[info@erowa.com.pl](mailto:info@erowa.com.pl)  
[www.erowa.com](http://www.erowa.com)

#### India

EROWA Technology (India) Private Limited  
No: 6-3-1191/6, Brij Tarang Building  
Unit No-3F, 3rd Floor, Greenlands, Begumpet,  
Hyderabad 500 016 (Andhra Pradesh)  
India  
Phone 040 4013 3639  
Fax 040 4013 3630  
[sales.india@erowa.com](mailto:sales.india@erowa.com)  
[www.erowa.com](http://www.erowa.com)