EROWA®
system solutions

# CleverClamp system
Quick and flexible workholding

Clever clamping

EROWA CleverClamp is the seamless, modular tooling system.
Easy to handle and versatile in use, the EROWA CleverClamp
decrease your set up times while increasing machine running times.

Enjoy the many benefits of EROWA's
CleverClamp tooling system.
Thanks to the standardized EROWA UPC
or MTS interface, CleverClamp workpiece
carriers are quickly and accurately
positioned on the machine and can be
used universally.
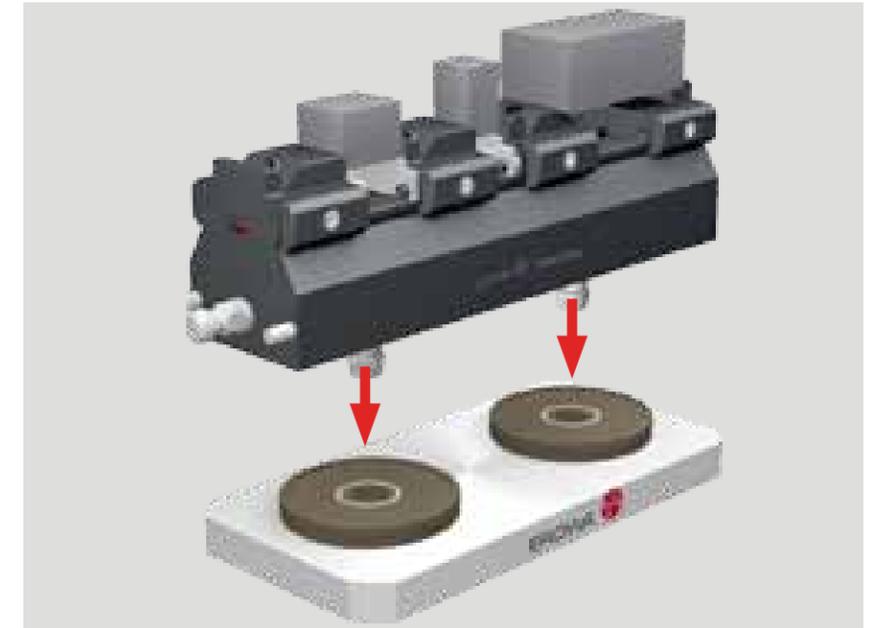
EROWA CleverClamp for clamping large
workpieces with large holding power.

Multiple clamping of identical or differ-
ent workpieces on the same fixture.

Clamping of workpieces with minimal
clamping height.

A wide selection of clamping elements
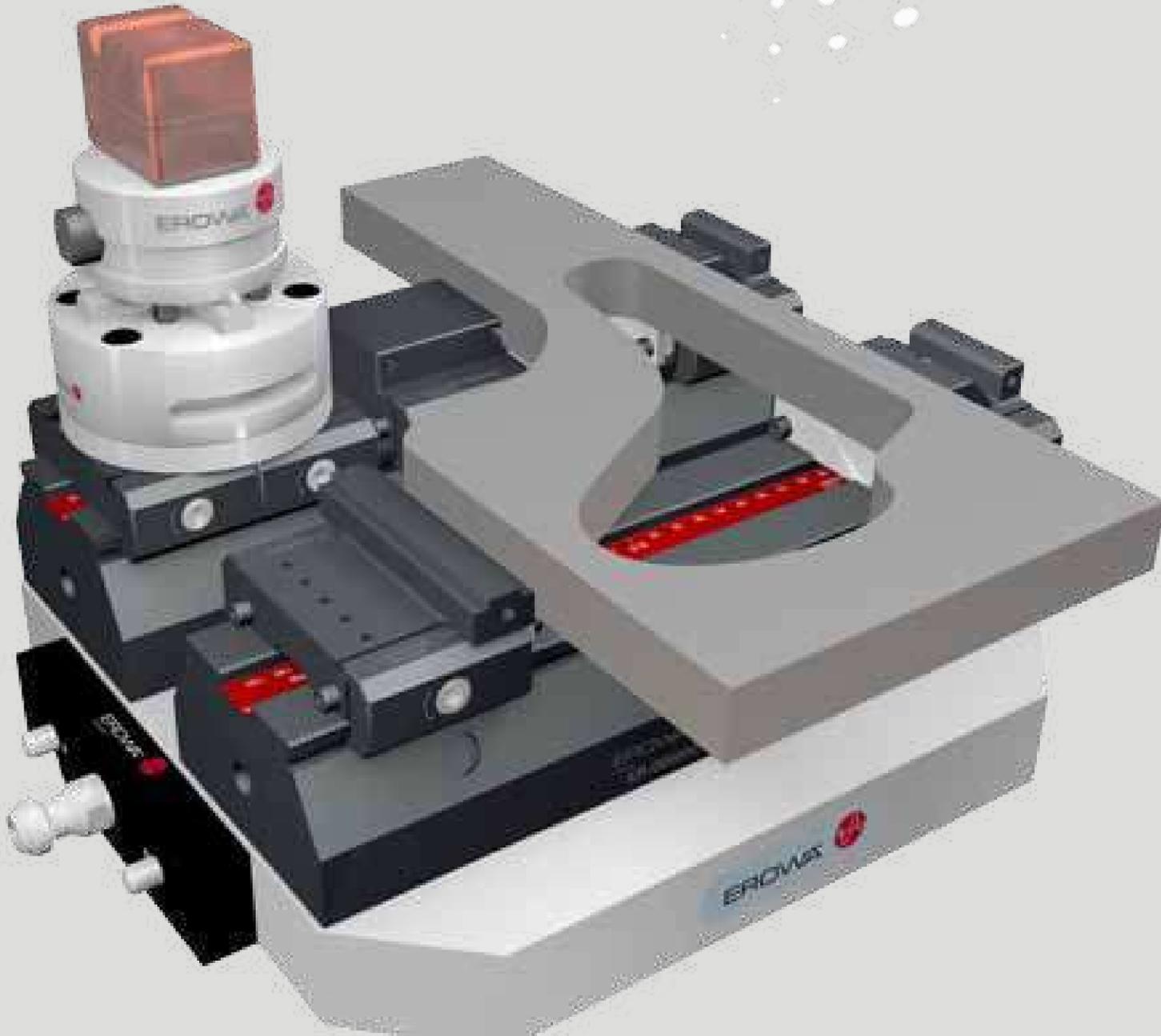and jaws holds any workpiece.

THE FACTS

- Easy to use.
- Quick set-up of workpieces.
- Modular extensions.
- 5-side machining.
- Automatable.

The perfect combination

Everything fits together and can be flexibly combined. CleverClamp holds any workpiece and adapts to any machine situation.

Very high holding power and minimal clamping height (3mm) are easily achieved with CleverClamp pull-down or linear stamping elements.

By custom reworking of soft clamping and stop jaws, the clamping possibilities are almost unlimited.

Clamp many workpieces and make optimized use of the full working area of the machine: CleverClamp mounted on EROWA mineral casting tower.

Use of height increasing elements for clamping workpieces with large diameter.

For 5-axis machining: Ensure optimal accessibility of the machine spindle to the workpiece by increasing height increases and serrated clamping elements.

With the CleverClamp QuickChuck 100 P, electrodes can be adapted to and machined on EROWA electrode holders with ease.

CleverClamp rails enable automatable single or multiple clamping directly on the MTS base plates.

Optimal accessibility for machining from 5 sides. Utilize one CleverClamp rail on our MTS or UPC pallets.

Two CleverClamp rails in combination with pull-down elements allow safe clamping of oversized workpieces.

Easily clamp different workpieces on one pallet using different clamping elements and increase the cycle time of your machine.

Multiple clamping on MTS or UPC pallets with one CleverClamp rail for improved accessibility to the workpiece. Automation enables additional machine running time.
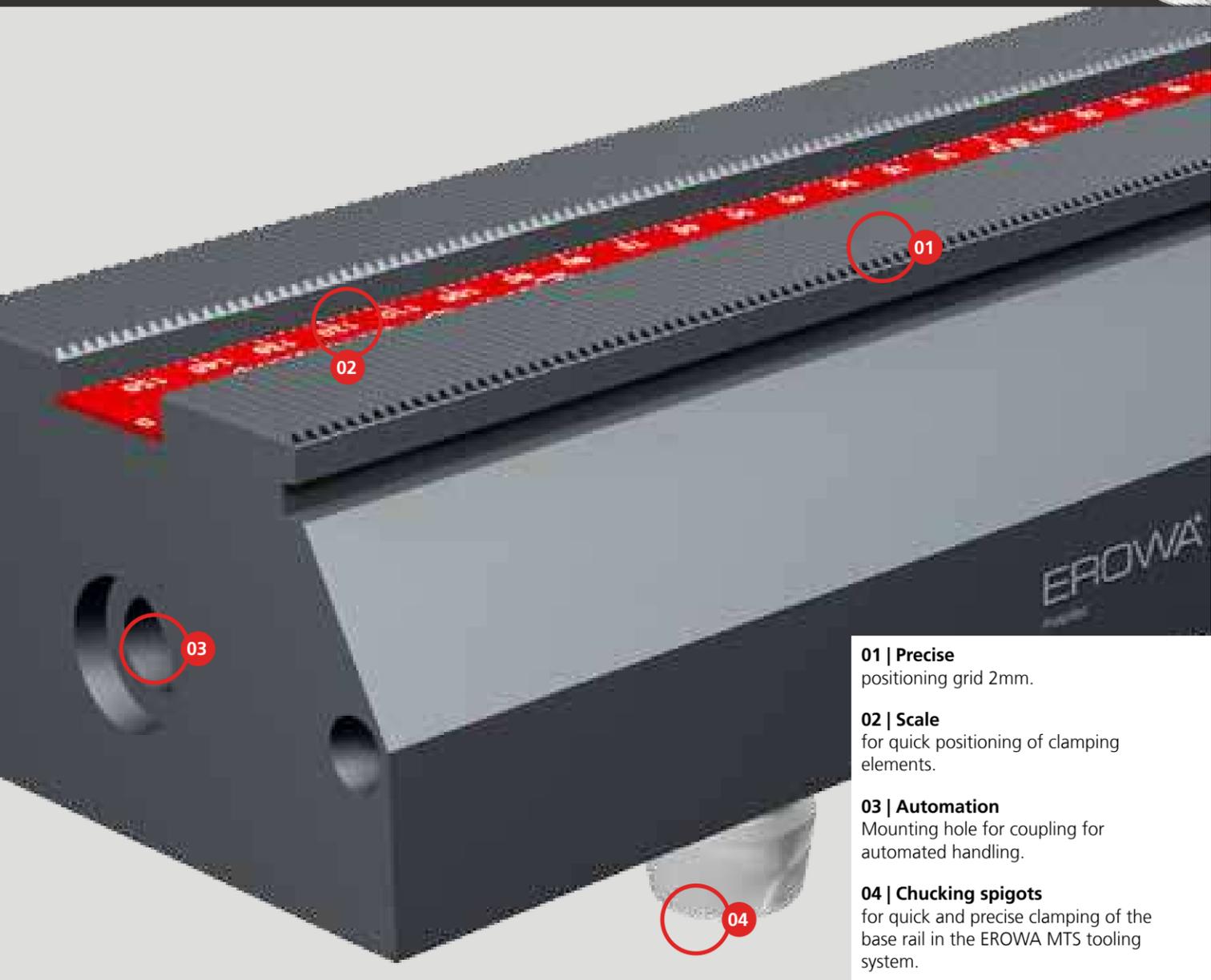
Automatable and usable throughout in the EROWA UPC and MTS tooling system.

Reliable base

The base rails are the backbone of the CleverClamp workpiece holding system. They can be used horizontally or vertically.

The suitable clamping elements can be placed quickly with the precise positioning grid.
Base rails offer plenty of room in the smallest space for flexible fastening of different workpiece shapes and sizes.

Very convenient – the integrated scale with 2mm gradation help in quick and repeatable positioning of the clamping elements during set-up.
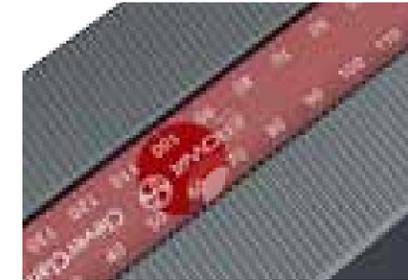
Very clever – the scale protects the mounting holes from contamination.

Very precise – the dowel holes in a 50mm grid allow you to position the base rails quickly and accurately on the machine table.

CleverClamp base rails are available in various versions.

- As a single rail for individual mounting on a machine, fixture, EROWA UPC or an MTS pallet, etc.

- With mounted couplings and automation coupling (option) for direct integration in the EROWA MTS tooling system.

- On EROWA UPC and MTS pallets.

01 | Precise
positioning grid 2mm.

02 | Scale
for quick positioning of clamping elements.

03 | Automation
Mounting hole for coupling for automated handling.

04 | Chucking spigots
for quick and precise clamping of the base rail in the EROWA MTS tooling system.

Heavy fixtures can be handled easily with a crane. The CleverClamp base rails have holes on both sides to attach eye bolts.

The height of the machining position can be varied on the base using the convenient raise module.

THE FACTS

- Flexible clamping element carriers.
- Precise 2mm positioning grid.
- Fast mounting.
- Scale for fast positioning.
- Mounting of chucking spigots directly in the base rail.
- Minimal contamination.
- Directly automatable.

Faster setups

The convenient and elaborate selection of different stop and clamping elements hold workpieces flexibly and accurately in any desired position.
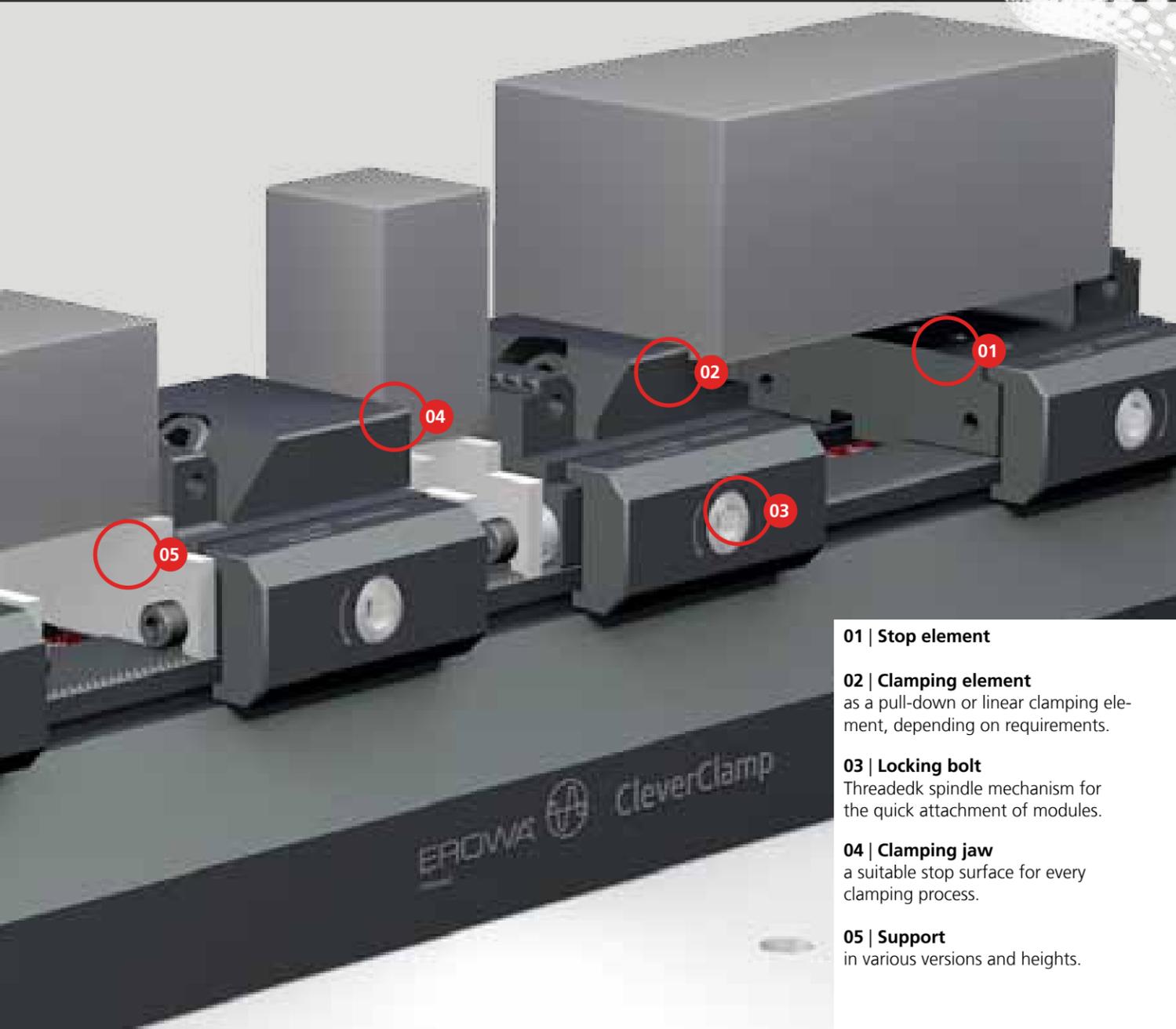
01 | **Stop element**

02 | **Clamping element**
as a pull-down or linear clamping element, depending on requirements.

03 | **Locking bolt**
Threadedk spindle mechanism for the quick attachment of modules.

04 | **Clamping jaw**
a suitable stop surface for every clamping process.

05 | **Support**
in various versions and heights.

Stop elements

The stop element is used in combination with a clamping element as a fixed jaw on the base rail. Available in widths of 48mm or 94mm and with different clamping surfaces as required.

Clamping elements

The clamping element holds the workpiece reliably and with great power. For multiple clamping, the clamping element also serves as stop element for further clamping.

Available in widths of 48mm or 94mm (stamping elements only) and with different clamping surfaces and jaws as required.
Clamping elements are available as pull-down and linear type elements.

Pull-down clamping elements

Clamping range: 0 - 4.1mm
Clamping power: up to 28kN

• High holding forces.
• Powerful clamping also of large workpieces.
• With exchangeable jaws.

Linear clamping elements

Clamping range: 0 - 5mm
Clamping power: up to 16kN

• Vise-like clamping.
• With exchangeable jaws.
• Process-reliable positioning of second mounting.
• Suitable for manufacture of custom form jaws.
• Secure hold with stamping technology.

Set-up and changeover in a few steps. Position and fasten stop element.

Position and fasten the clamping element based on the size of the workpiece.


Securely clamp the workpiece.

Ingenious screw spindle mechanism – only one screw accurately secures the elements. The toothing grid ensures reliable positioning.

THE FACTS

• Quickly positioned and fastened.
• Quick change of workpieces.
• Easy cleaning of the elements.
• Powerful workholding.
• Single and multiple clamping.

Everything fits

Various types of clamping surfaces, additional clamping jaws and accessories make sure that each type of workpiece and material is mounted reliably.
Whether round, angled or irregular workpiece shapes – CleverClamp holds everything.
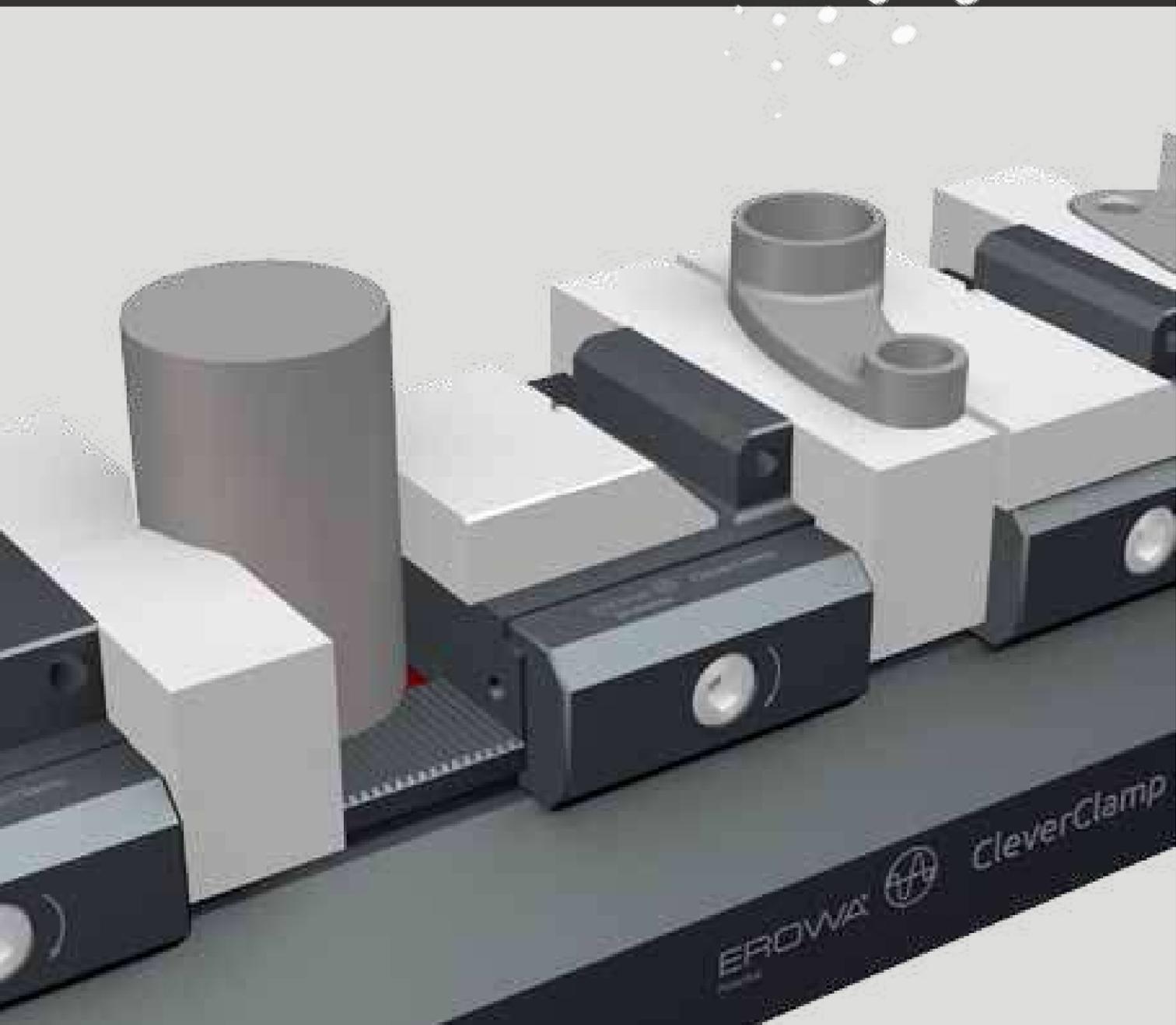
Select the appropriate properties of the clamping surface depending on the material and workpiece.

Smooth clamping and stop sides – ideal for clamping of workpieces with finished surfaces.

Clamping and stop sides with grip contour – ideal for clamping of raw material and workpieces with increased demands on holding power during machining.

Clamping and stop side with stamping contour - ideal for clamping of raw parts at minimal clamping height and irregular parts.

Ingenious stamping contour - The workpieces are held at 3mm minimal clamping height with up to 1.6 tons of holding power (linear element) form and friction locked. This achieves maximum holding forces.
The workpiece can be nearly finish-machined on 5 sides if necessary.
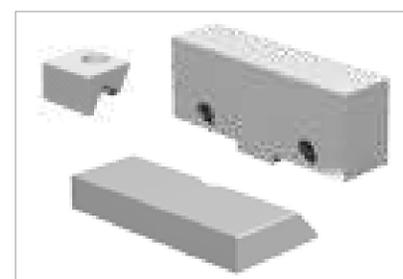
**Various clamping and stop jaws** for each requirement.

Soft jaws – for manufacturing jaws with contours as required.

THE FACTS

- Large assortment.
- Clamping surface in different finishes.
- Machining with contour of your choice.

Clever technology to increase productivity

The CleverClamp workpiece is automatable throughout.
The proportion of productive machine
hours is significantly increased.
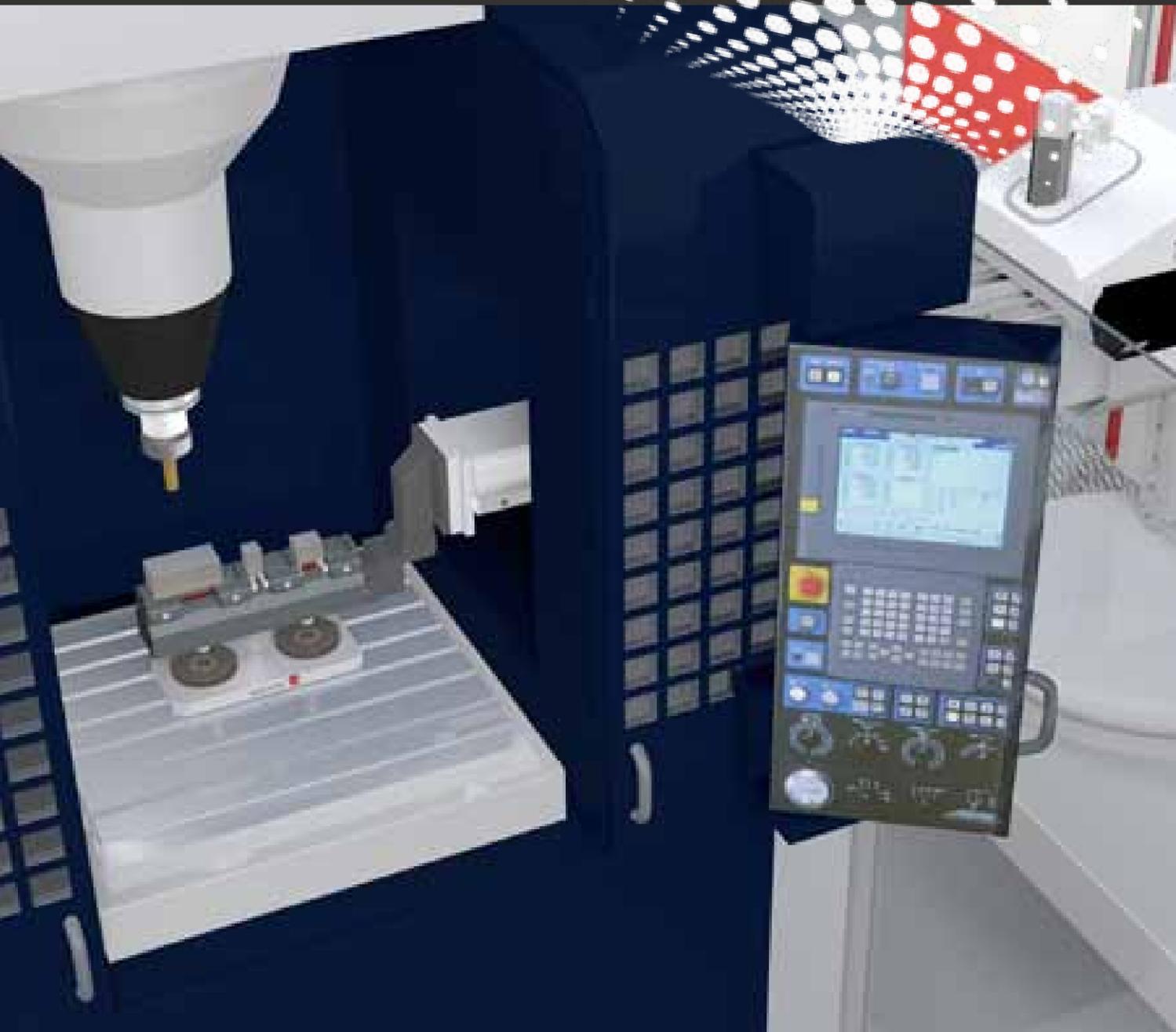
By setting up and adjusting the workpieces outside the machine, time is optimally used and cost is reduced.

The workpieces to be machined are palletized with CleverClamp and stored in the magazine of the handling unit. The EWIS™ identification system provides a clear overview of magazine locations and pallets.

For setups with recurring workpieces: single part recognition with identification chip and the EROWA Manufacturing Control process control system.

With the EROWA Process Control System, the operator is always in control of all data of the manufacturing cell.

Integrated quality control - Intermediate and final inspections increase process reliability in production.

A highly efficient production cell for automating the manufacture of single parts and small batches. An EROWA linear robot loads two milling centers and one measuring machine in combination.

Simply ingenious: The CleverClamp base rail is directly automatable.
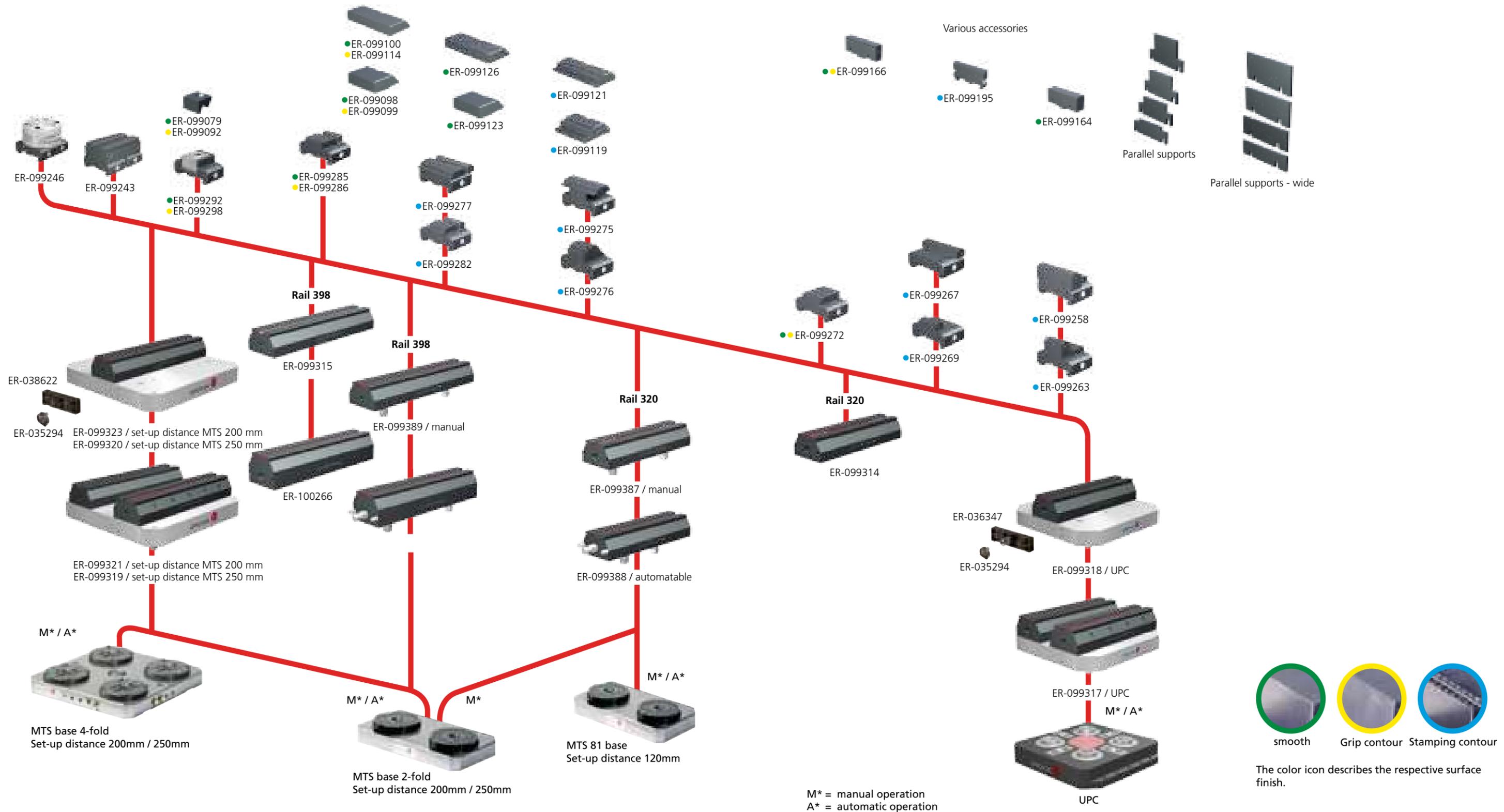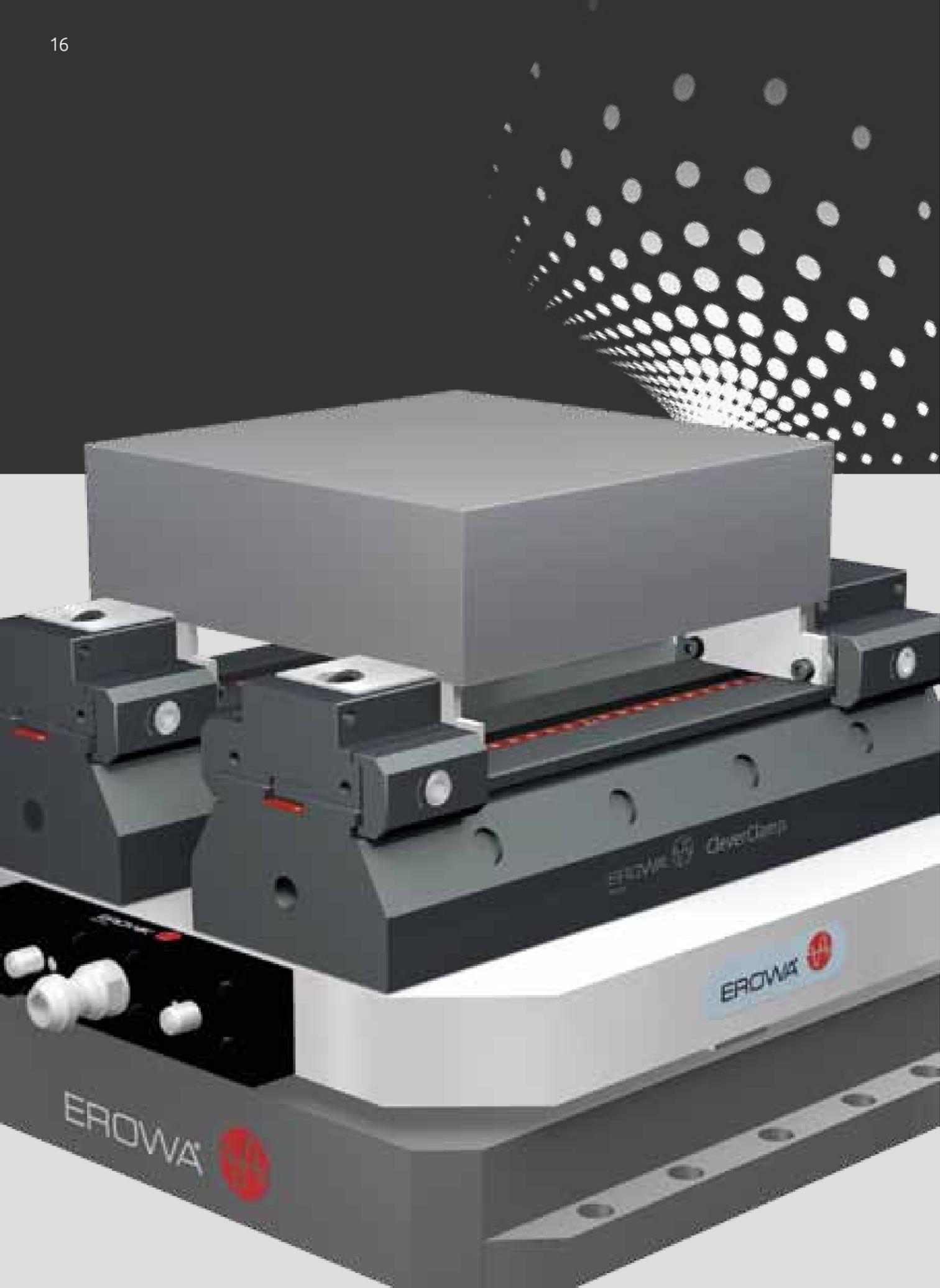The robot places the workpiece carrier quickly and accurately on the machine.
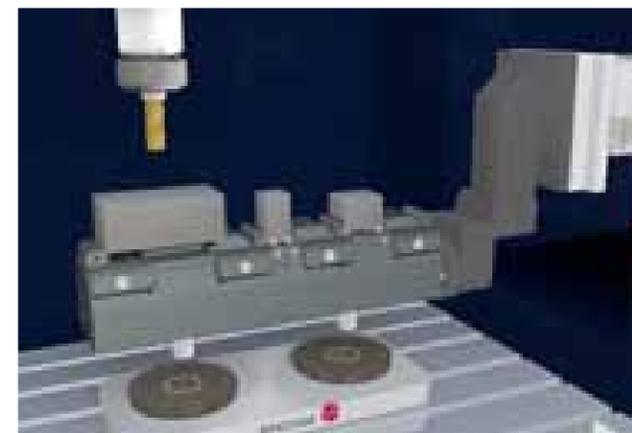
THE FACTS

- Direct automation of CleverClamp.
- Use of peripheral and night time hours.
- Automated quality measurement.
- Chip identification for pallets and single parts.

The components

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

Various accessories

● ●ER-099166

●ER-099195

●ER-099164

Parallel supports

Parallel supports - wide

●ER-099100
●ER-099114

●ER-099126

●ER-099098
●ER-099099

●ER-099121

●ER-099079
●ER-099092

●ER-099123

●ER-099119

ER-099246

ER-099243

●ER-099285
●ER-099286

●ER-099292
●ER-099298

●ER-099277

●ER-099275

●ER-099282

●ER-099276

Rail 398

●ER-099267

●ER-099258

● ●ER-099272

●ER-099269

●ER-099263

ER-099315

Rail 398

Rail 320

Rail 320

ER-038622

ER-099323 / set-up distance MTS 200 mm
ER-099320 / set-up distance MTS 250 mm

ER-099389 / manual

ER-099314

ER-035294

ER-100266

ER-099387 / manual

ER-036347

ER-099321 / set-up distance MTS 200 mm
ER-099319 / set-up distance MTS 250 mm

ER-099388 / automatable

ER-035294

ER-099318 / UPC

M* / A*

ER-099317 / UPC

M* / A*

M* / A*   M*

M* / A*

MTS base 4-fold
Set-up distance 200mm / 250mm

MTS base 2-fold
Set-up distance 200mm / 250mm

MTS 81 base
Set-up distance 120mm

UPC

smooth   Grip contour   Stamping contour

The color icon describes the respective surface finish.

M* = manual operation
A* = automatic operation

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

1. Manual operation

2. Operate with compressed air jet

3. Operate with manual valve

4. Operate with manual control unit

5. Operate with electro-pneumatic control unit

6. With central flushing clearance

7. Suited for submerged operation

8. Corrosion-resistant material

9. Suited for automatic operation

10. Handling with EROWA Robot gripper S

11. Handling with EROWA Combi gripper

12. Handling with EROWA Robot gripper 72

13. Handling with EROWA Robot gripper 115

14. Handling with EROWA Robot gripper 148

15. Handling with EROWA gripper RN PC 210

16. Handling with EROWA RCS gripper

CLEVERCLAMP WORKPIECE TOOLING SYSTEM

EROWA CleverClamp System
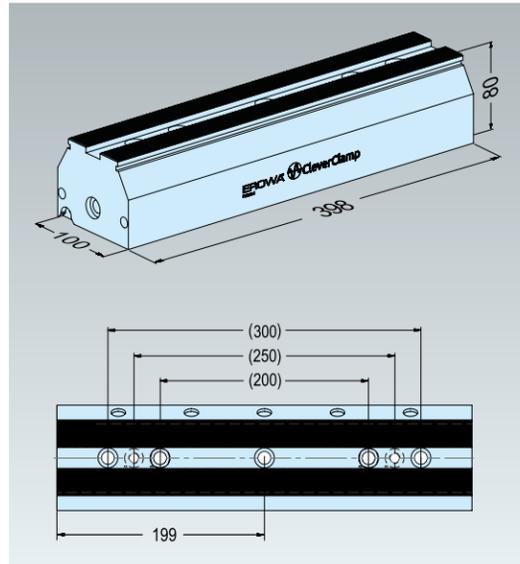# Rails

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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 Clever-Clamp 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 set-up distance (M) or MTS81, 120mm set-up distance (A/M).
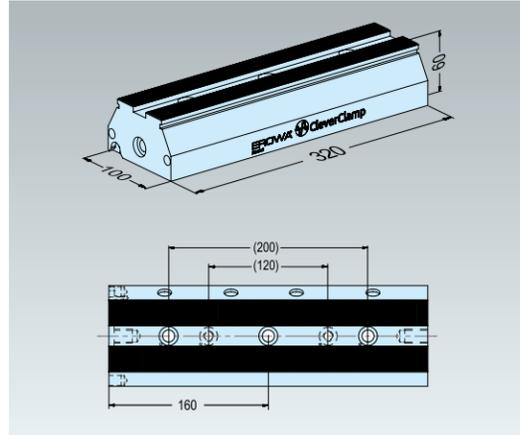
ER-099315   Rail 398 H60
CleverClamp

Version — Steel, hardened. H60 clamping element carrier with 2mm positioning grid.
Application — Serves as a base to clamp workpieces with various Clever-Clamp 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 set-up distance (M) or 250mm set-up distance (M).
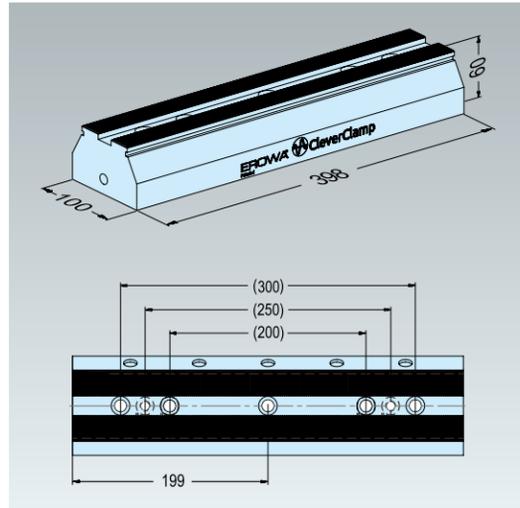
ER-100266   Rail 398 H80
CleverClamp

Version — Steel, hardened. H80 clamping element carrier with 2mm positioning grid.
Application — Serves as a base to clamp workpieces with various Clever-Clamp 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 set-up distance (A/M) or 250mm set-up distance (A/M).
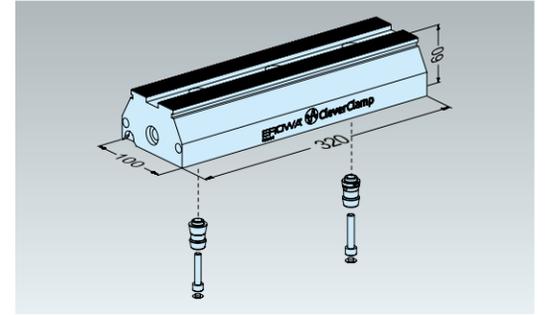

ER-099387   Rail 320 H60 manual
CleverClamp

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

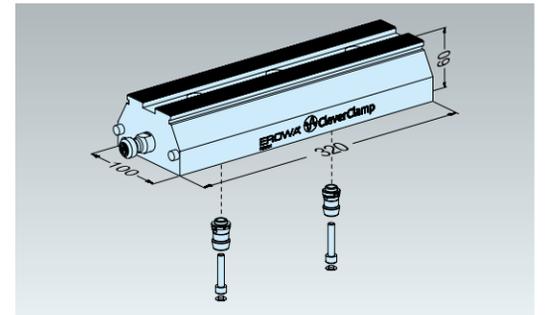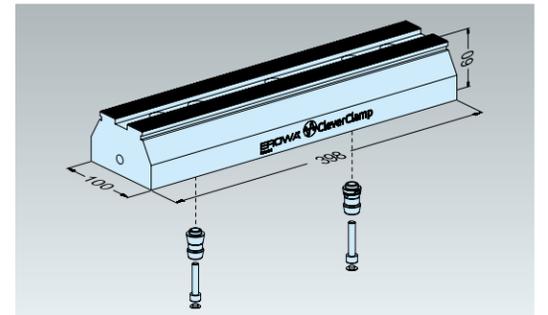


ER-099388   Rail 320 H60 automated
CleverClamp

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 set-up distance.
Application — Serves as a base to clamp workpieces with various Clever-Clamp 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 set-up distance.
Application — Serves as a basis to clamp workpieces with various Clever-Clamp 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 set-up distance.
Application — Serves as a base to clamp workpieces with various Clever-Clamp clamping and stop elements.
Accessories — Clamping and stop elements, etc.
Important — Automated application.
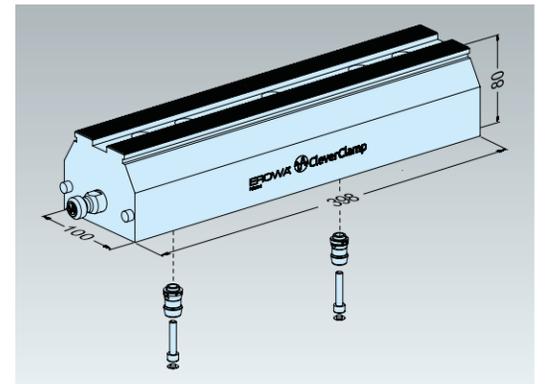
EROWA CleverClamp System
MTS Base rails

EROWA CleverClamp System
UPC Base rails

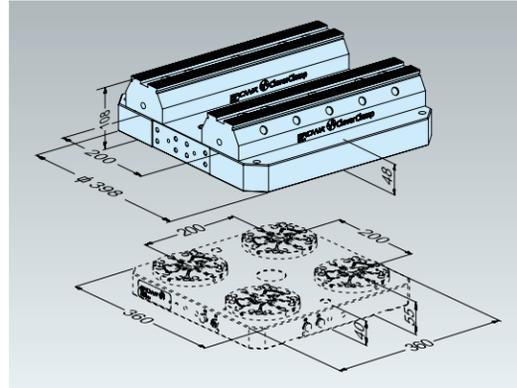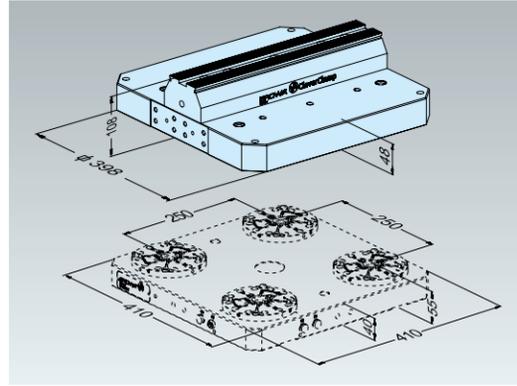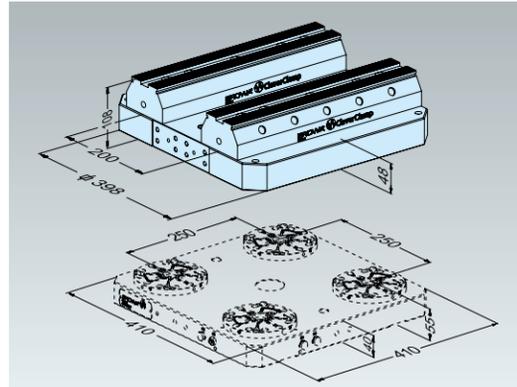**ER-099323 | Base MTS 200 mono CleverClamp**

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.
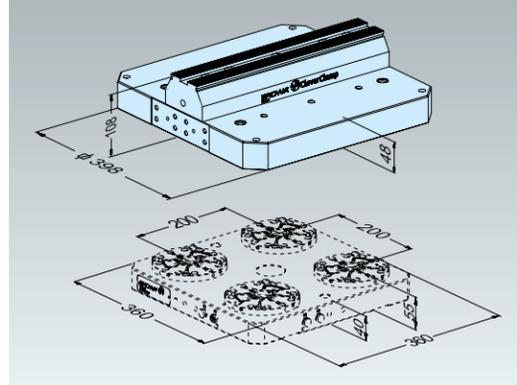
ER-099321 | Base MTS 200 duo CleverClamp

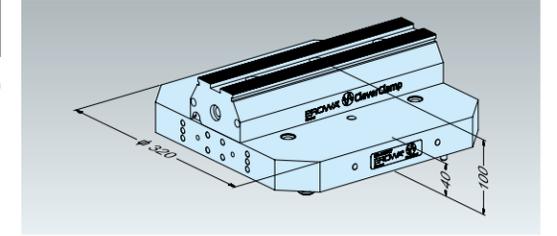|	
Version	Combination of MTS aluminum pallet with two 298 rails (MTS spigot set ER-041461 (M) / ER-041464 (A)).
Application	Optimal for multiple fixtures and for clamping big workpieces.
Accessories	Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.

ER-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 workpieces.
Accessories	Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.

**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 / EWIS 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 / EWIS RAPID ER-036347 for Automation.
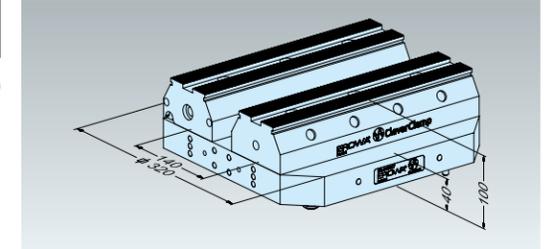
EROWA CleverClamp System
Pull down clamping elements

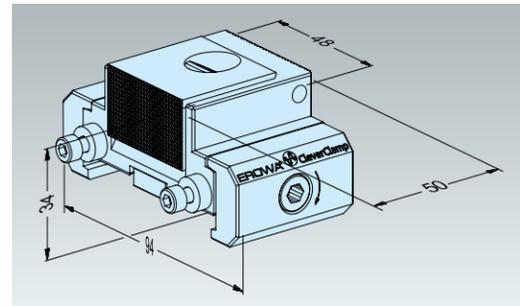| ER-099292	**Pull Down Slide Multi Flat CleverClamp**

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.
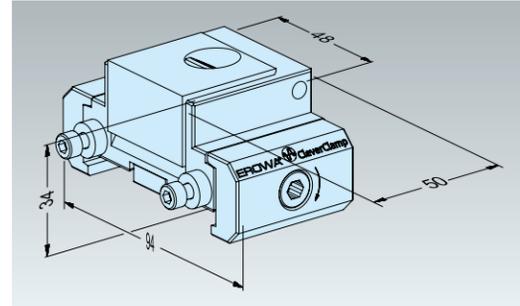
ER-099298	**Pull Down Slide Multi Grip CleverClamp**

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.
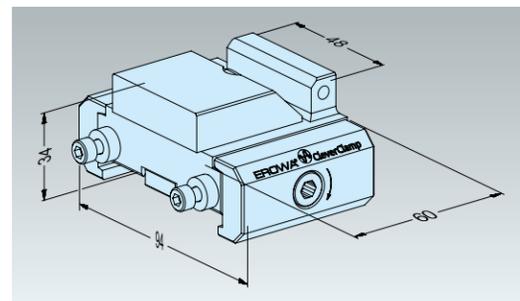
EROWA CleverClamp System
Linear clamping elements

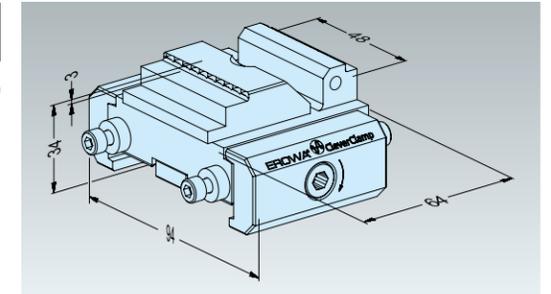| ER-099286	**Linear Slide Multi Grip CleverClamp**

Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides with grip contours.
Application	Linear clamping with grip contours for additional purchase.
Mountaing	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.
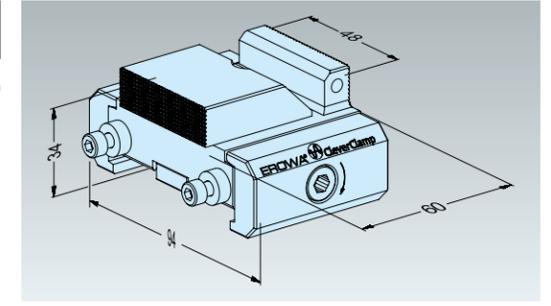
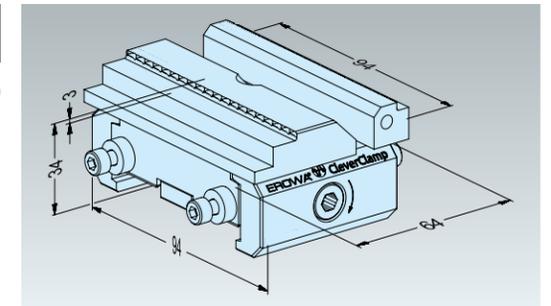| ER-099282	**Linear Slide Multi Stamp CleverClamp**

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 mutliple 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

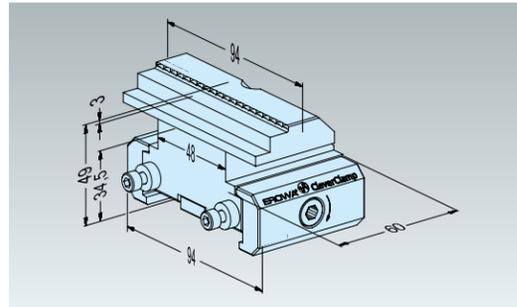| ER-099276	Linear Slide 5X Stamp CleverClamp

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	On CleverClamp rail.
Important	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	On CleverClamp rail.
Important	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

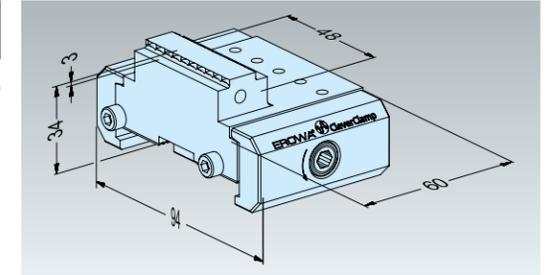|	
Version	Steel, hardened, width 48mm, height 34mm; two stop sides: one smooth, one with grip contours.
Application	Stop element in the modular CleverClamp system. Smooth stop side for workpieces with a machined surface, grip side for additional purchase.
Mounting	On CleverClamp rail.
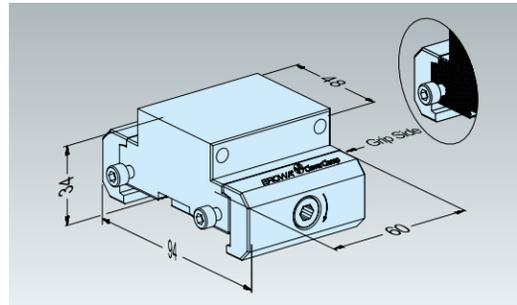
EROWA CleverClamp System
Stop elements

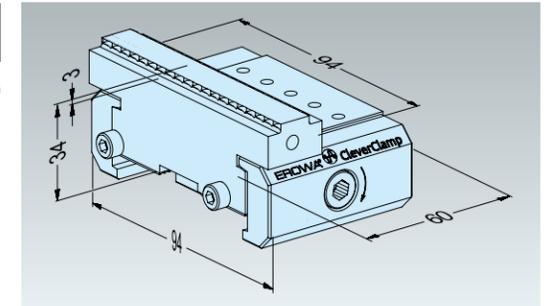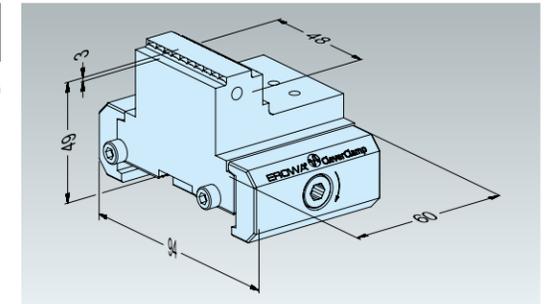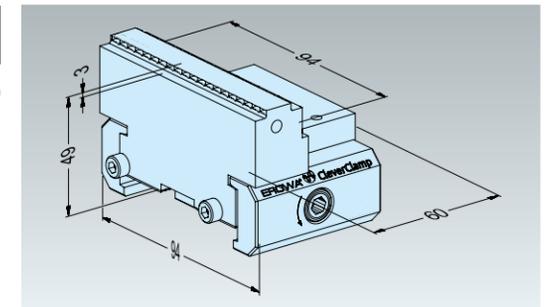| ER-099269	Stop Multi Stamp CleverClamp

|	
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 mimimum clamping height of 3mm.
Mounting	On CleverClamp rail.

ER-099267	Stop Multi Stamp Wide CleverClamp

Version	Steel, hardened, width 94mm, height 34mm, with stamp countours.
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 accessiblity 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 countours.
Application	Stop element in the modular CleverClamp system. Stop element with better machine spindle accessibility for 5-axis applications. With stamp countours, 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

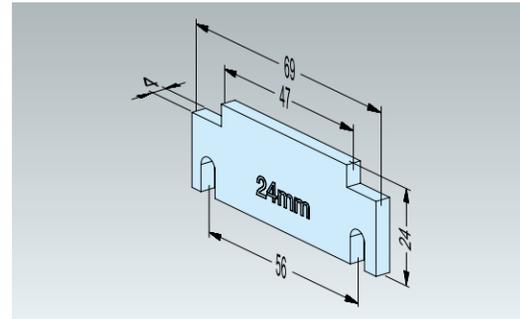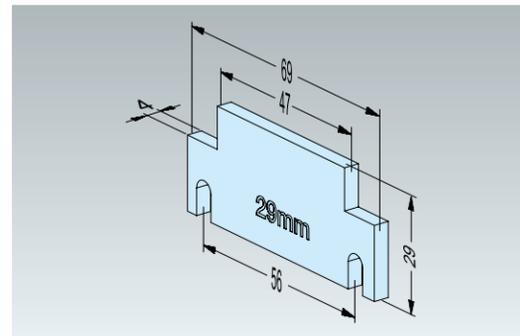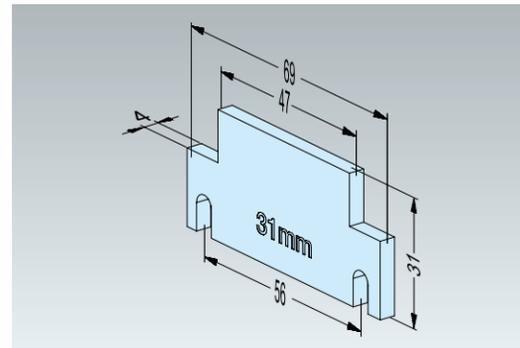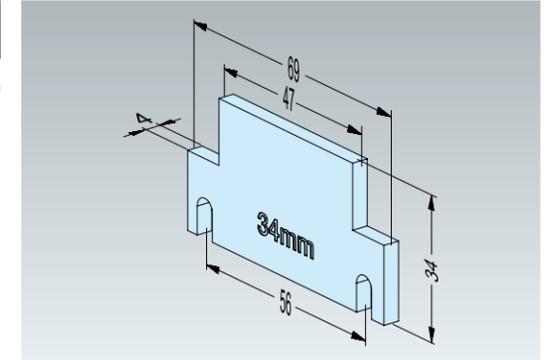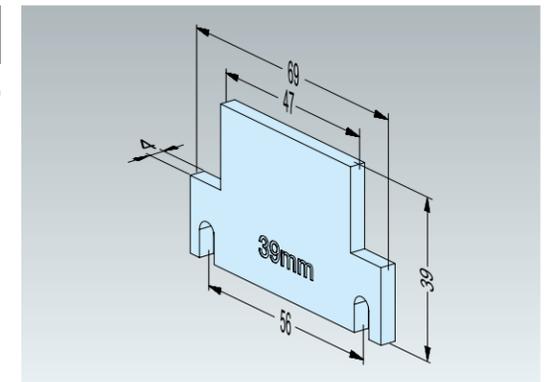| ER-099204	Support 20 CleverClamp

Version — Steel, hardened, width 47mm, height 20mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.
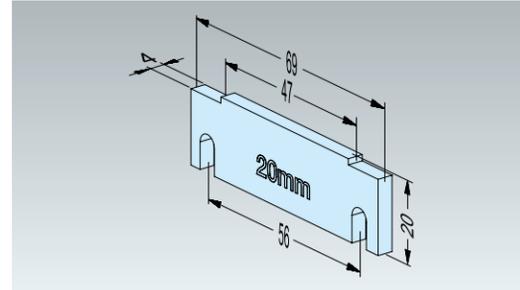
ER-099206	Support 24 CleverClamp

Version — Steel, hardened, width 47mm, height 24mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.

ER-099227	Support 29 CleverClamp

Version — Steel, hardened, width 47mm, height 29mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.

ER-099228	Support 31 CleverClamp

Version — Steel, hardened, width 47mm, height 31mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.

ER-099229	Support 34 CleverClamp

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

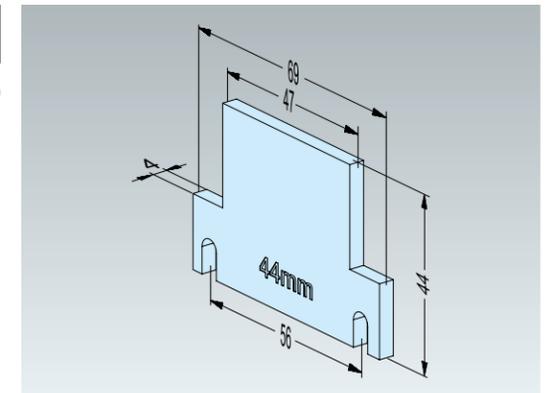| ER-099230	Support 39 CleverClamp

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

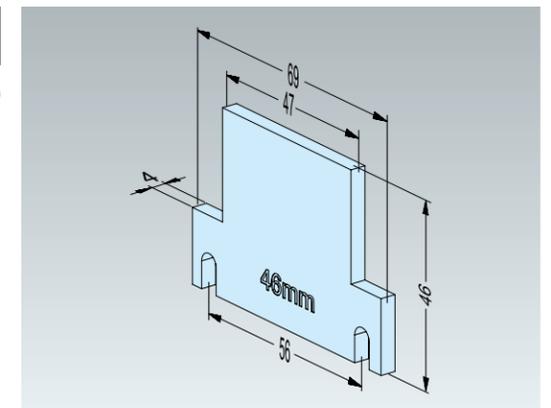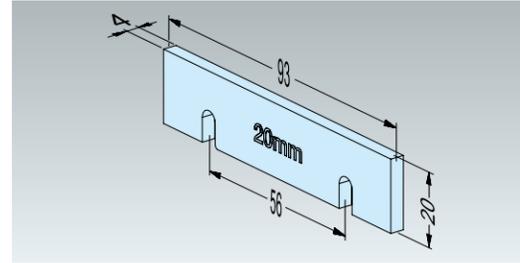| ER-099231	Support 44 CleverClamp

Version — Steel, hardened, width 47mm, height 44mm.
Application — Ground surface 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-099232	Support 46 CleverClamp

Version — Steel, hardened, width 47mm, height 46mm.
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 / Parallel supports wide
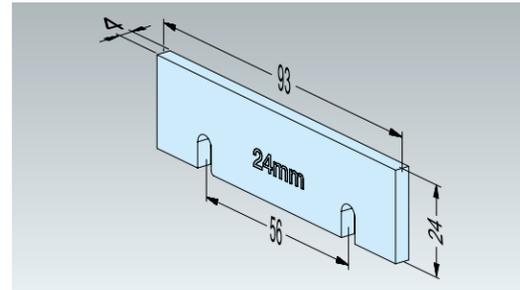
ER-099233 Support 20 Wide CleverClamp

Version — Steel, hardened, width 93mm, height 20mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.
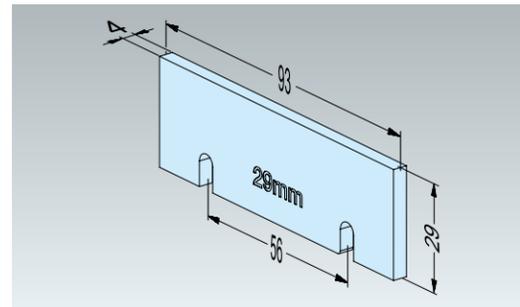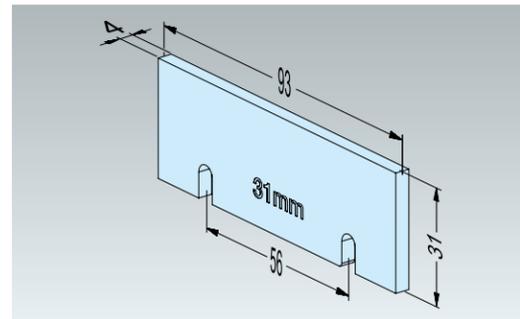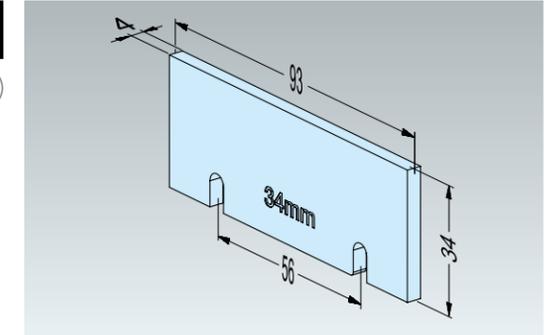
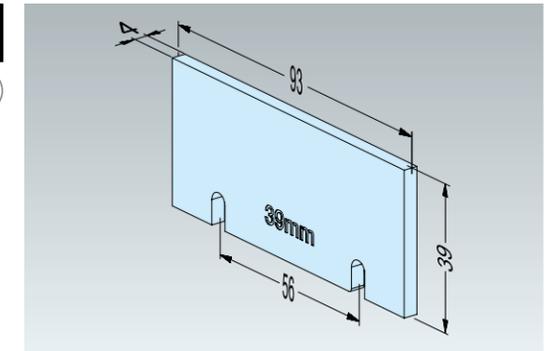**ER-099234 Support 24 Wide CleverClamp**

Version — Steel, hardened, width 93mm, height 24mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.

ER-099235 Support 29 Wide CleverClamp

Version — Steel, hardened, width 93mm, height 29mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.

ER-099236 Support 31 Wide CleverClamp

Version — Steel, hardened, width 93mm, height 31mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.

ER-099237 Support 34 Wide CleverClamp

Version — Steel, hardened, width 93mm, height 34mm.
Application — Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.
Important — Supports with the heights 34, 39, 44 and 46 can only be used in combination with the 5-axis clamping and stop elements.
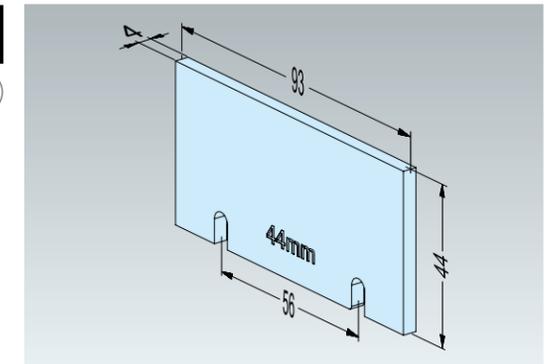
ER-099238 Support 39 Wide CleverClamp

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

ER-099239 Support 44 Wide CleverClamp

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

ER-099240 Support 46 Wide CleverClamp

Version — Steel, hardened,width 93mm, height 46mm.
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.
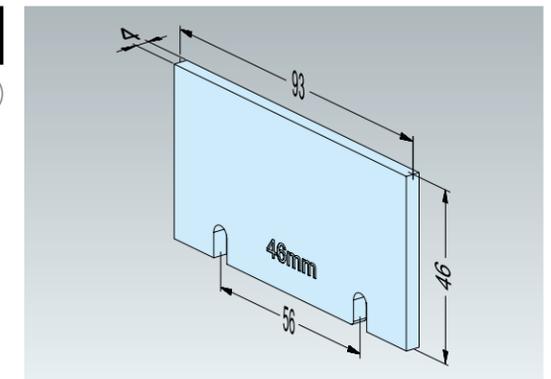
EROWA CleverClamp System
# Accessories

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.
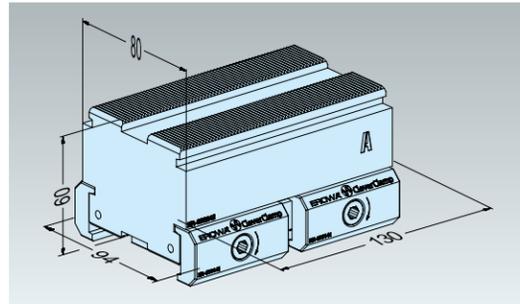
ER-099246	Quick Chuck 100 P CleverClamp

Version	CleverClamp carrier element with QuickChuck 100P, manual.
Application	Adapter between CleverClamp and EROWA ITS pallets/holders.
Mounting	On CleverClamp rail.
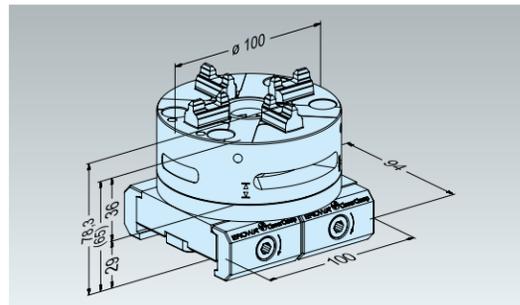
| ER-099241	Support Holder CleverClamp

|	
Version	Steel, hardened, width 94mm, height 15mm.
Application	Holder for ground supports used to bridge big clamping distances.
Important	A mill stop can be fitted to the holder additionally.
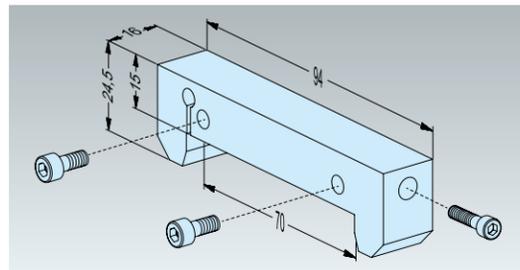
ER-099201	MillStop CleverClamp

|	
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.
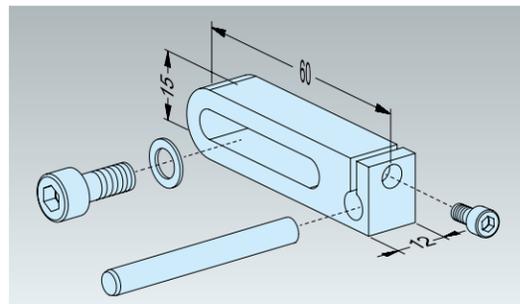
ER-082273	Magnetic stop CleverClamp

Version	Stop made of anodized aluminum.
Application	Magnetic stop used for positioning workpieces in vises.
Important	Remove the magnetic stop before machining the part.
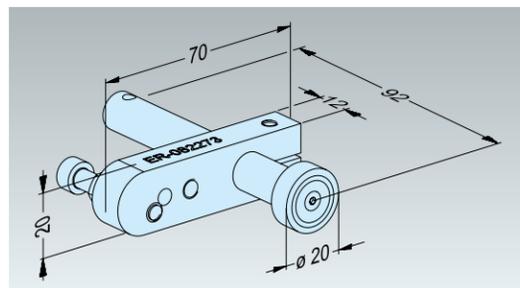
| ER-099166	Stop Jaw Flat / Grip Wide CleverClamp

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 Clever-Clamp clamping or stop elements of your choice.
Important	Can be ideally combined for use with the 94mm-width linear jaws.
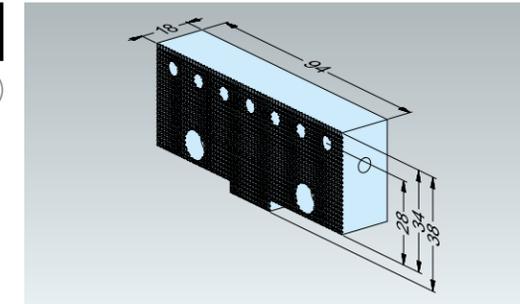
| ER-099195	Stop Jaw Stamp Wide CleverClamp

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.
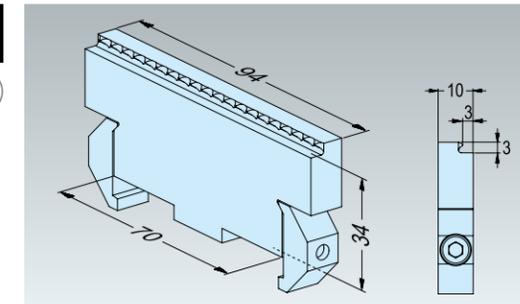
ER-099164	Stop Jaw Soft Wide CleverClamp

|	
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 Clever-Clamp clamping or stop elements of your choice.
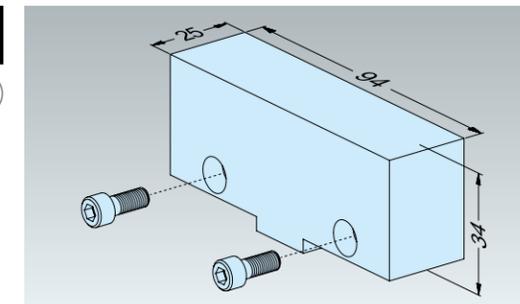
ER-099079	Pull Down Jaw Flat CleverClamp
ER-099092	Pull Down Jaw Grip CleverClamp

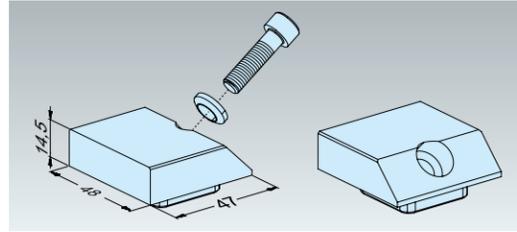|	
Version	Steel, hardened, stop side smooth or with grip contours.
Application	ER-099079: stop side smooth - ideal for clamping workpieces with machined surfaces. ER-099092: stop side with grip contours for additional grip.
Mounting	Can be used on all CleverClamp pull-down clamping elements.

EROWA CleverClamp System
Accessories
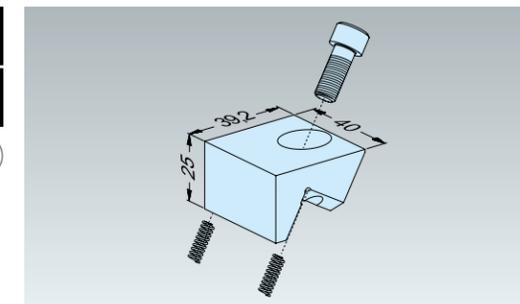
EROWA CleverClamp System
Accessories

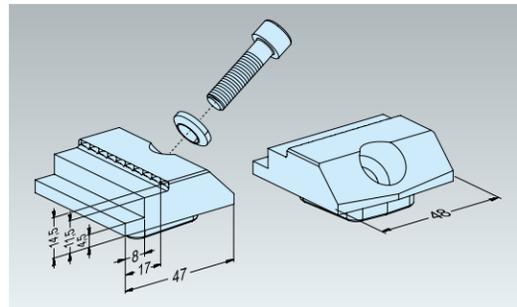| ER-099098 | Linear Jaw Flat CleverClamp |
| ER-099099 | Linear Jaw Grip CleverClamp |

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

| ER-099100 | Linear Jaw Flat Wide CleverClamp |
| ER-099114 | Linear Jaw Grip Wide CleverClamp |

Version	Steel, hardened, width 94mm, stop side smooth or with grip contours.
Application	**ER-099100**: stop side smooth - ideal for clamping work-pieces with machined surfaces.
	ER-099114: stop side with grip contours for additional grip.
Mounting	Can be used on all CleverClamp linear clamping elements.
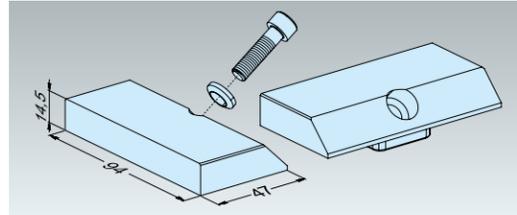
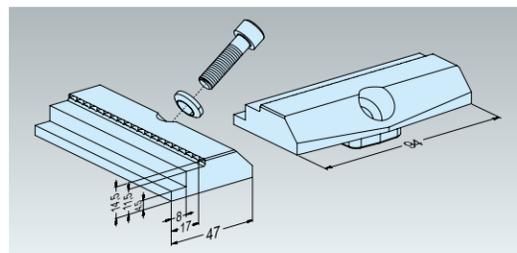| ER-099119 | Linear Jaw Stamp CleverClamp |

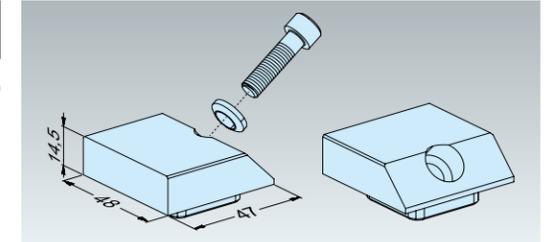| Version | Steel, hardened, width 48mm, with stamp contours and smooth step. |
| Application | Ideal for clamping blanks at the minimum clamping height of 3mm and parts with angle error. |
| Mounting | Can be used on all CleverClamp linear clamping elements. |

| ER-099121 | Linear Jaw Stamp Wide CleverClamp |

Version	Steel, hardened, width 94mm, with stamp contours.
Application	Ideal for clamping blanks at the minimum clamping height of 3mm and parts with angle error.
Mounting	Can be used on all CleverClamp linear clamping elements.

| ER-099123 | Linear Jaw Soft CleverClamp |

| Version | Steel, soft, width 48mm. |
| Appliacation | 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.
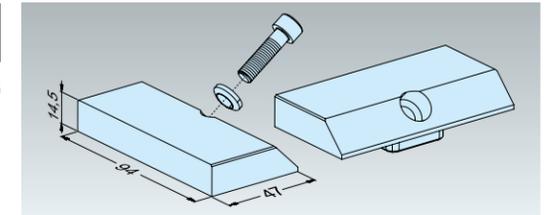
| ER-099313 | EWIS™ Chip Set CleverClamp |

| Version | EWIS Rapid chip with 5 ø14 chip holders. |
| Application | For the identification of individual parts when using Clever-Clamp rails as a recurring machining fixture in combination with the EROWA Manufacturing Control and EROWA JMS® Pro Process Control Systems. |
| Mounting | Chips have to be glued on (ref. instruction manual of the relevant CleverClamp rails). |
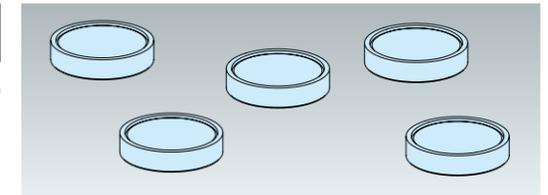
EROWA CleverClamp System
Operation tools

| ER-007769 | **Hexagon socket head wrench SW 6 with grip, PB 207** |
| ER-007770 | **Hexagon socket head wrench SW 8 with grip, PB 207** |

Version   Steel, hardened, with plastic handle, key size 8.
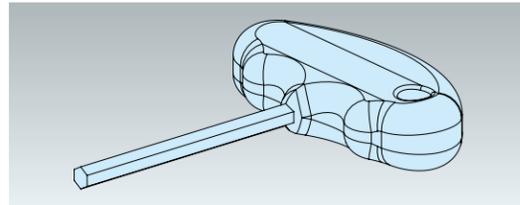
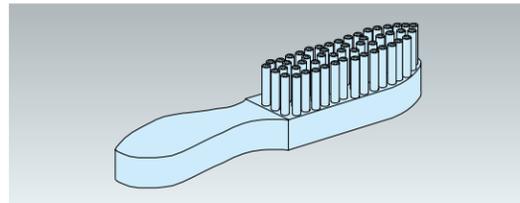| ER-052602 | **Torque wrench Tohnichi 10 - 50 Nm to self centering vise 100/150/200** |

Version   Torque wrench, 10-50 Nm.

| ER-099312 | **Brush CleverClamp** |

Version   Brass-wire brush.
Application   Recommended for cleaning the teeth of the CleverClamp rails.

| ER-099484 | **Hex bit 3/8" extra long CleverClamp** |

Version   Steel, hardened, hex size 10.
Application   To fit the M12 bollts in the attachment boreholes of the CleverClamp rails.
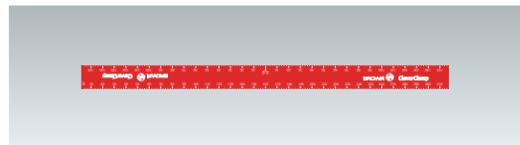
EROWA CleverClamp System
Spare parts

| ER-099155 | **Ruler 320 (Ruler length 320) CleverClamp** |

Version   Ruler with scale, aluminum, underside magnetic, length 320mm.
Application   On CleverClamp rail 320 to cover the attachment bore-holes and for the simple, repeatably accurate positioning of the CleverClamp clamping and stop elements.

EROWA CleverClamp System
Spare parts

| ER-099157 | **Ruler 398 (Ruler length 398) CleverClamp** |

Version   Ruler with scale, aluminum, underside magnetic, length 398mm.
Application   On CleverClamp rail 398 to cover the attachment bore-holes and for the simple, repeatably accurate positioning of the CleverClamp clamping and stop elements.
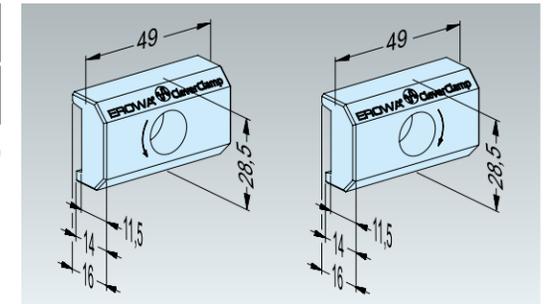
| ER-099132 | **Claw 50L CleverClamp** |
| ER-099134 | **Claw 50R CleverClamp** |

Version   **ER-099132:** steel, hardened, length 50, with left-hand thread.
               ER-099134: steel, hardened, length 50, with right-hand thread.
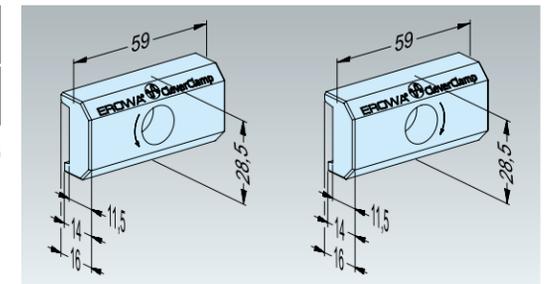Application   Attachment claw for CleverClamp elements on CleverClamp rails.

| ER-099137 | **Claw 60L CleverClamp** |
| ER-099141 | **Claw 60R CleverClamp** |

Version   **ER-099137:** steel, hardened, length 60, with left-hand thread.
               ER-099141: steel, hardened, length 60, with right-hand thread.
Application   Attachment claw for CleverClamp elements on CleverClamp rails.

| ER-099309 | **Replacement kit pull-down-/stop element CleverClamp** |

Version   Spare parts for CleverClamp pull-down and stop elements.

| ER-099654 | **Replacement kit linear and stop element CleverClamp** |

Version   Spare parts for CleverClamp linear and stop elements.

The next step

Important things need to be planned. And your next step is certainly among the important things. For it is your start into a new, efficient era. We are pleased to be with you on the way. As consultants, in practice. For you to know at all times what you're engaging in.

The next EROWA branch office is not far – **take the step.**

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