

EROWA CleverClamp System

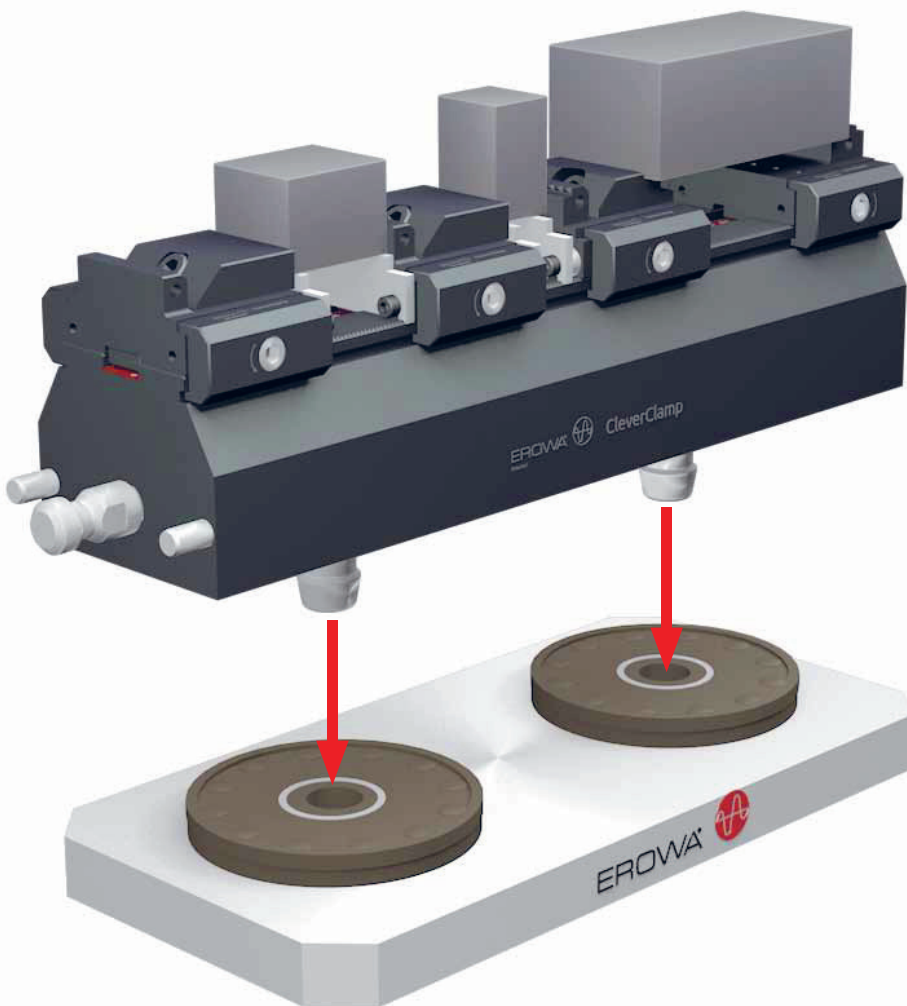
The flexible workpiece clamping system for chip-cutting processes

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.



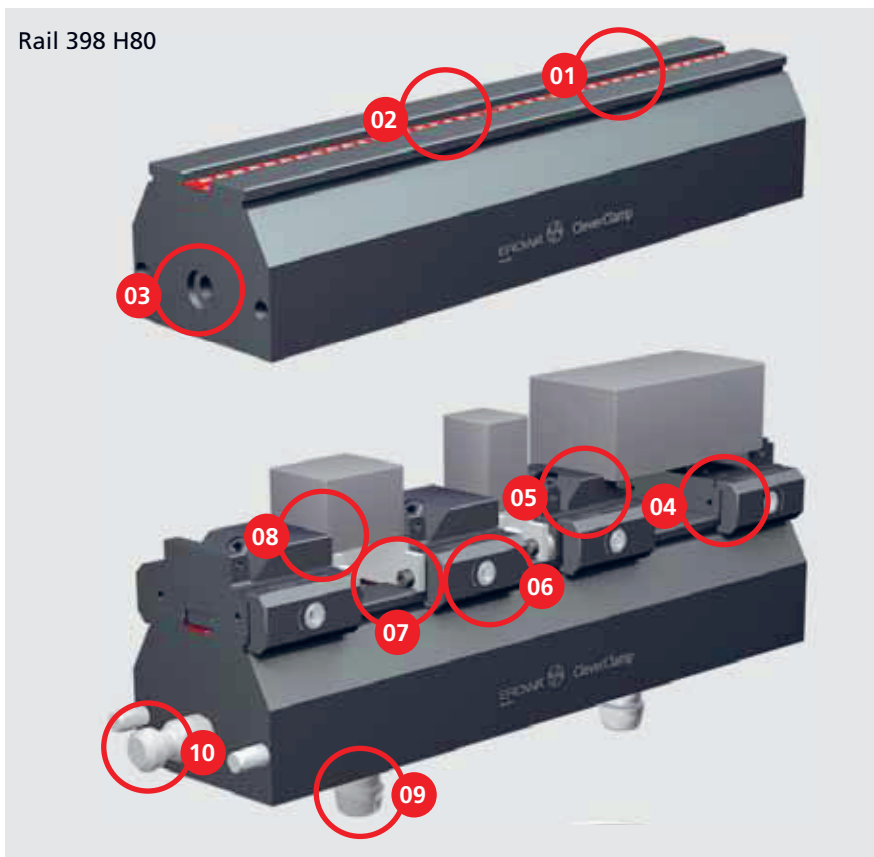
- The base rails constitute the foundation of the CleverClamp workpiece clamping system.
- The base rails are available in various versions.
- Large and well-thought-out selection of clamping and stop elements.
- Precise 2mm positioning grid to place clamping and stop elements.
- MTS clamping spigots 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

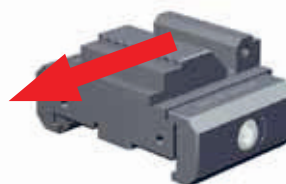
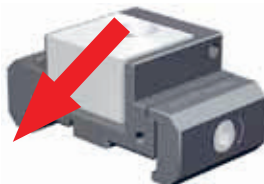
for quick positioning in the EROWA MTS tooling system.

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

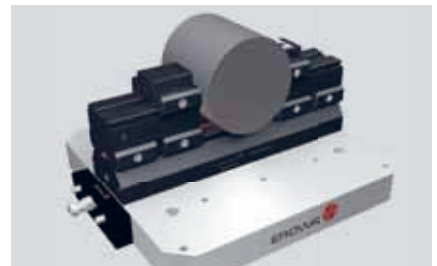
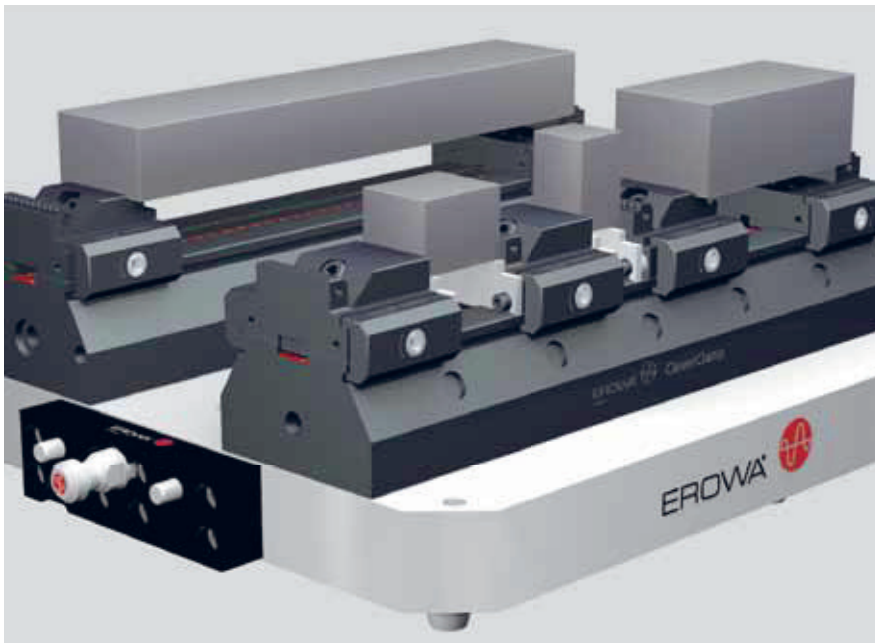
Perfect combination

EXTREMELY VERSATILE

Everything matches up and can be combined flexibly.

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

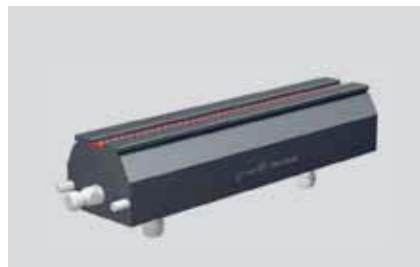
Suitable clamping and stop elements can be placed quickly with the help of the precise positioning grid. The base rails take up hardly any room but still provide a great deal of space for the flexible attachment of a wide variety of workpiece shapes and sizes.



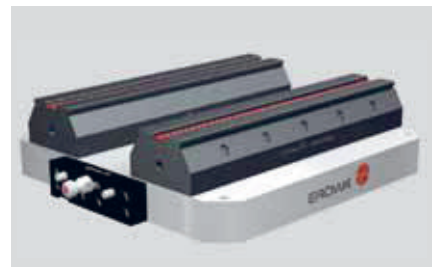
Use of elevation elements to clamp larger workpieces.



- 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.

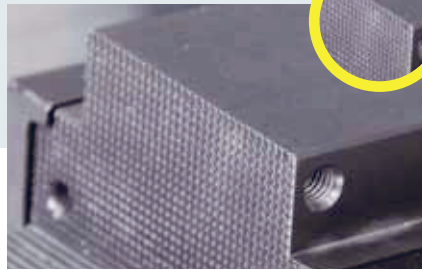


- On EROWA UPC and MTS pallets.

Smooth clamping surface



Clamping surface with grip contours



Clamping surface with stamping contours



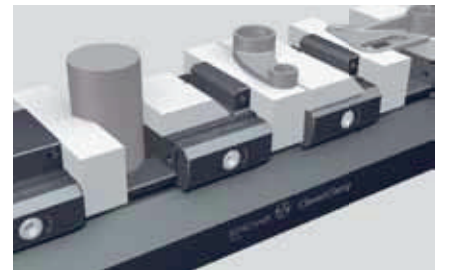
You can choose the clamping surface structure according to materials and workpieces.



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.



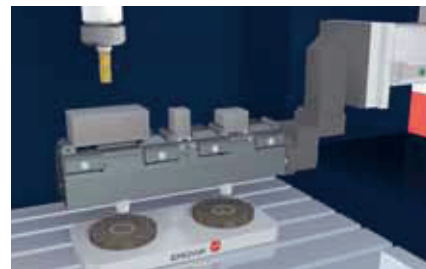
EROWA CleverClamp to clamp big workpieces with great holding power.



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.

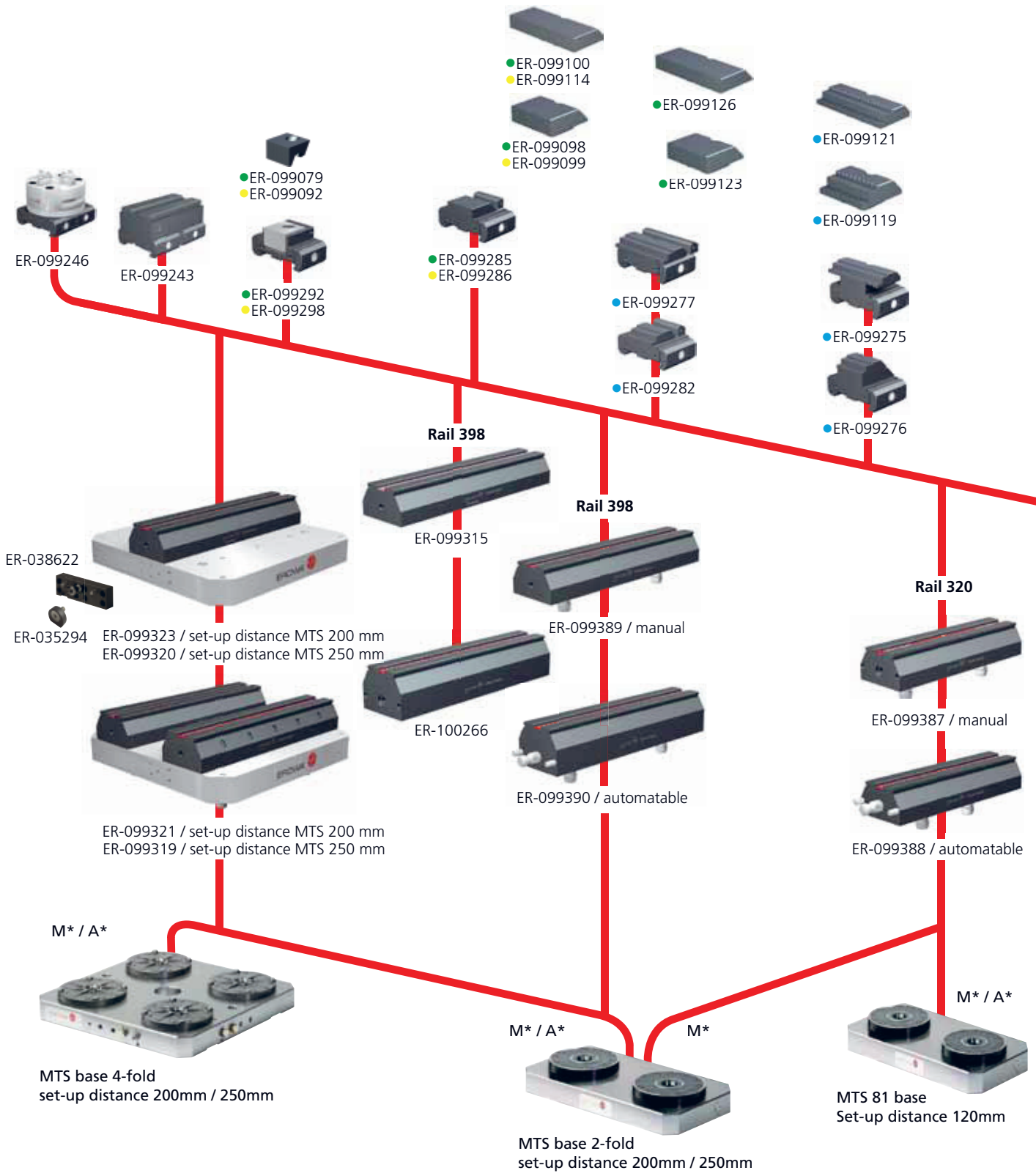


The CleverClamp can be directly automated. The Robot places the workpiece carrier on the machine with precision and speed.

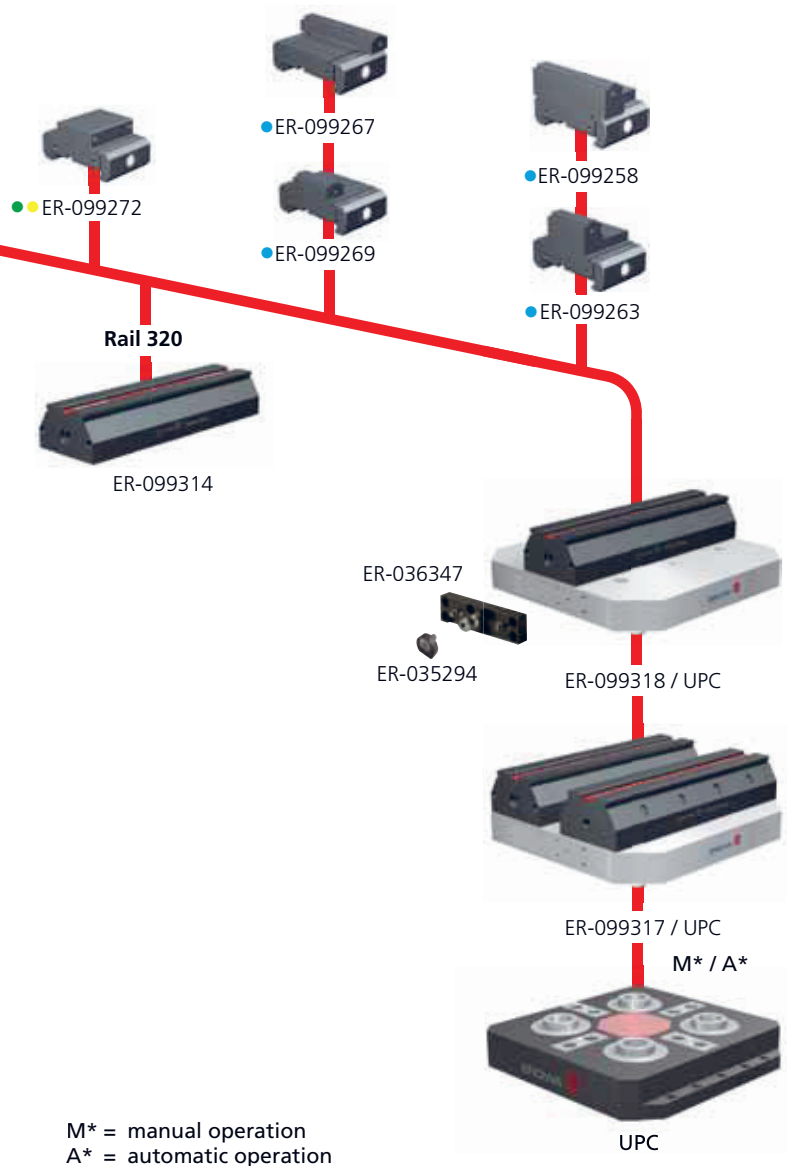
EROWA CleverClamp System

Tooling system

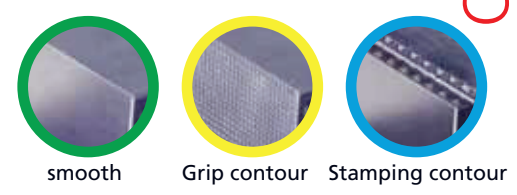
The components



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

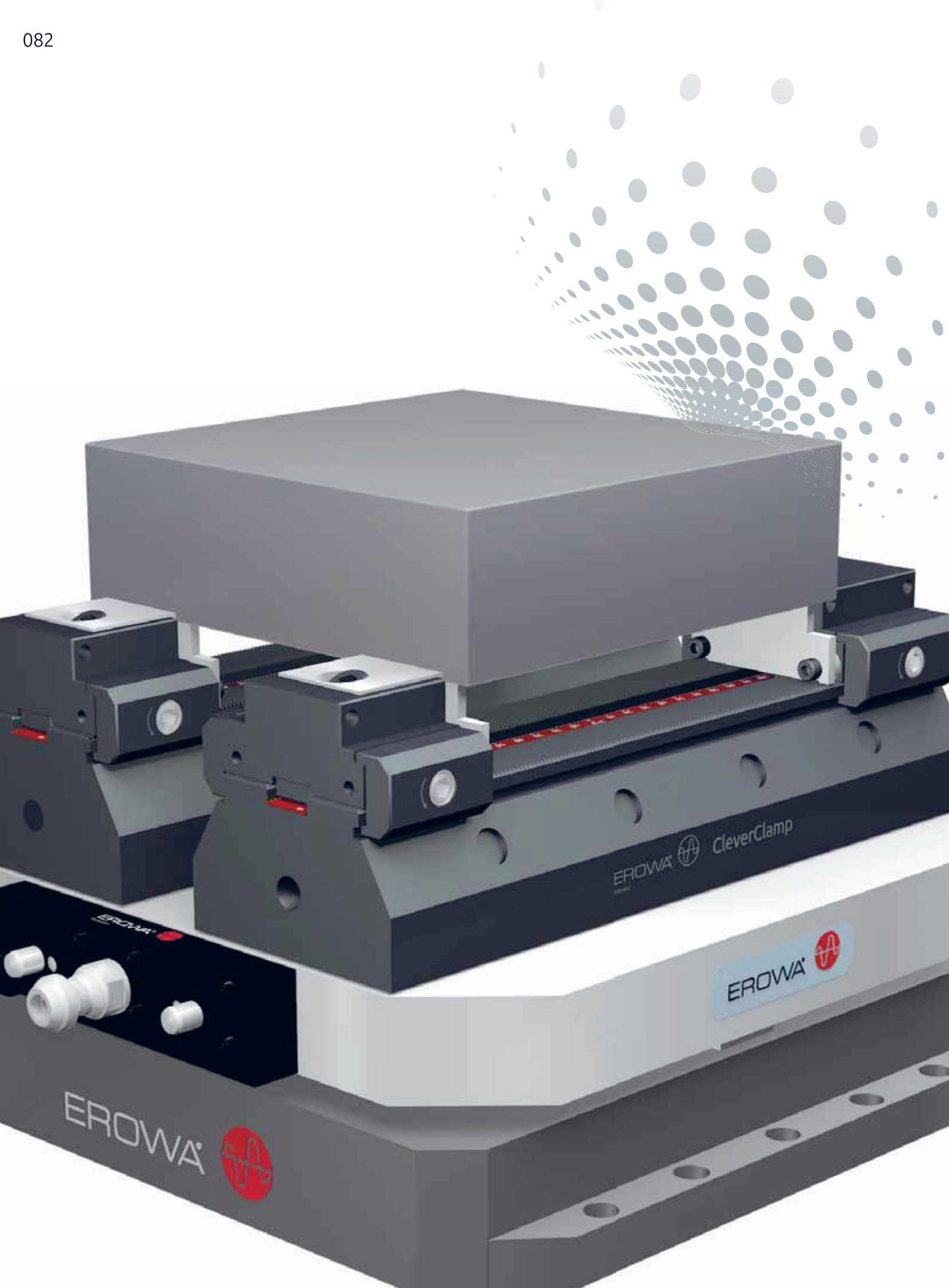


M* = manual operation
A* = automatic operation




















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



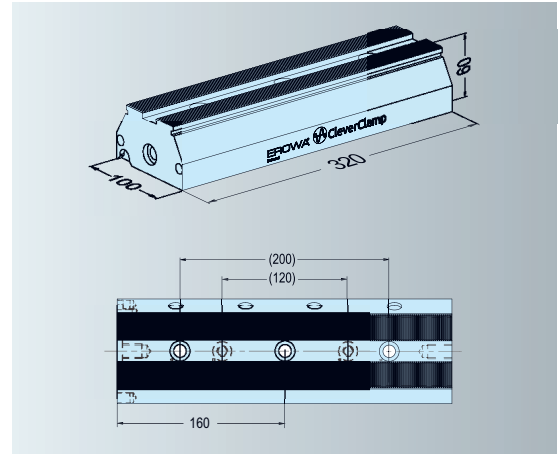
For WEDM

EROWA CleverClamp System Rails

ER-099314 Rail 320 H60 CleverClamp



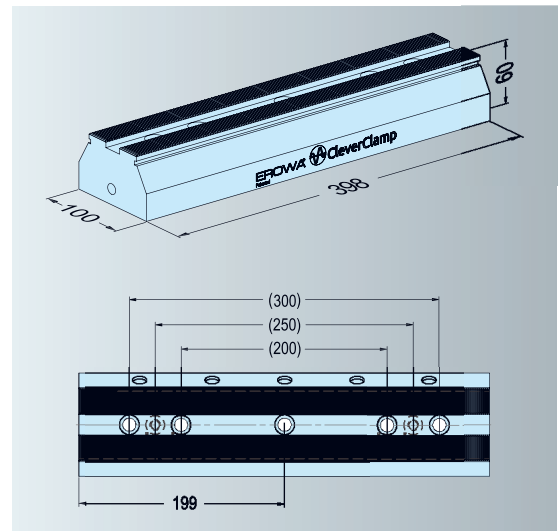
- Version** Steel, hardened. H60 clamping element carrier with 2mm positioning grid.
- Application** Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
- Mounting** To mount on R50 grid plates, pallets, tombstones and machine tables
- Accessories** Clamping and 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



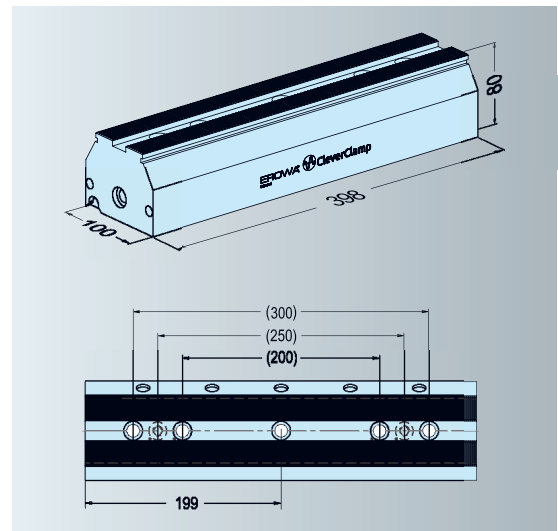
- Version** Steel, hardened. H60 clamping element carrier with 2mm positioning grid.
- Application** Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
- Mounting** To fit on R50 grid plates, pallets, tombstones and machine tables.
- Accessories** Clamping and stop 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

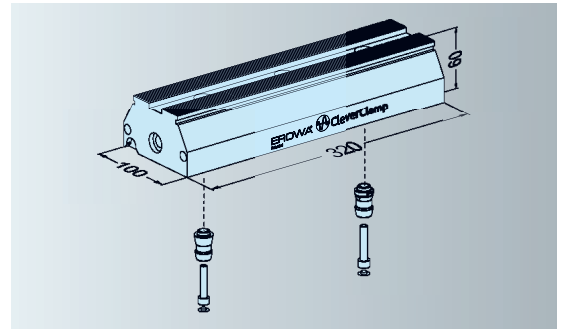


- Version** Steel, hardened. H80 clamping element carrier with 2mm positioning grid.
- Application** Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
- Mounting** To fit on R50 grid plates, pallets, tombstones and machine tables.
- Accessories** Clamping and stop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

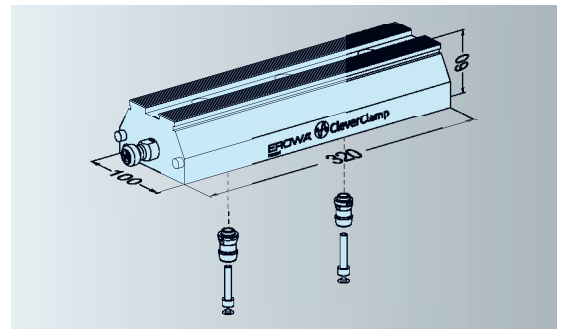


ER-099387 Rail 320 H60 manual CleverClamp

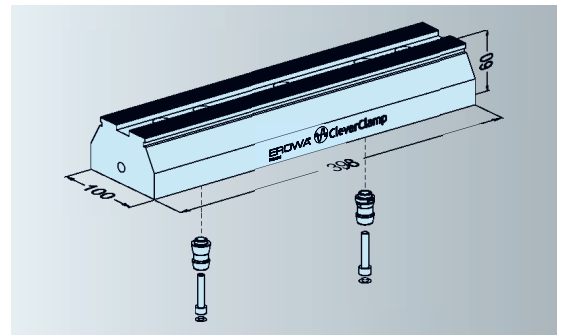
Version	Steel, hardened. H60 clamping element carrier with 2mm positioning grid. With MTS spigot, manual.
Operation	Manual application on MTS81 base plates with 120mm pitch and MTS base plates with 200m pitch.
Application	Serves as a base to clamp workpieces with various CleverClamp clamping and stop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

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

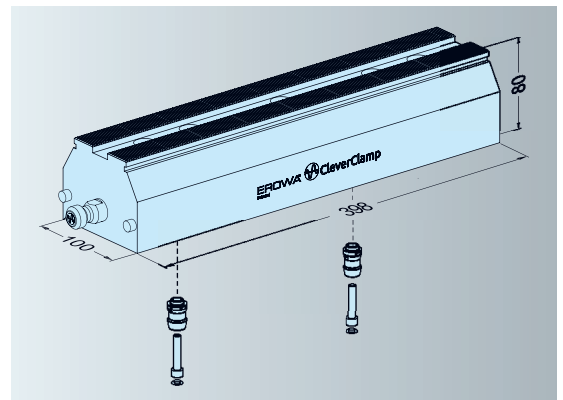
Version	Steel, hardened. H60 clamping element carrier with 2mm positioning grid. With MTS spigot, automatic, and Grip-perLink.
Operation	Automated application on MTS81 base plates with 120mm pitch.
Application	Serves as a base to clamp workpieces with various CleverClamp clamping and stop elements.
Accessories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



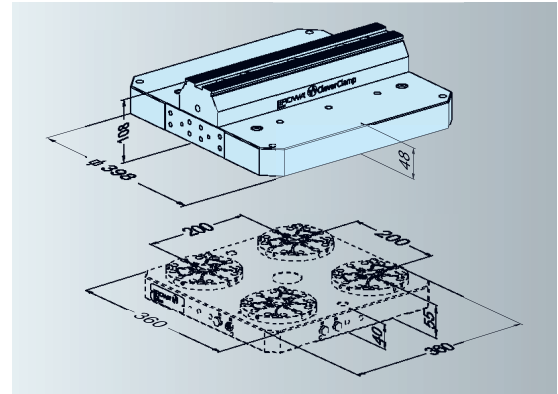
EROWA CleverClamp System

MTS Base rails

ER-099323 Base MTS 200 mono CleverClamp



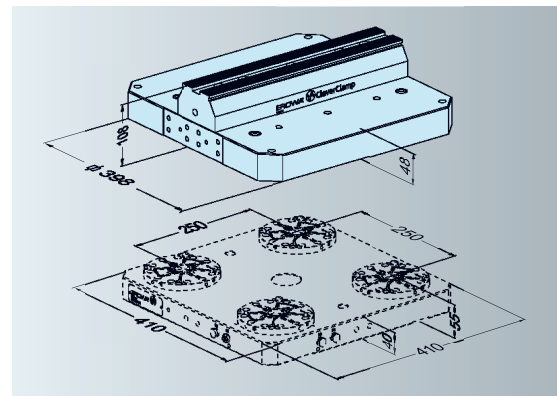
- Version Combination of MTS aluminum pallet with 398 rail (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



ER-099320 Base MTS 250 mono CleverClamp



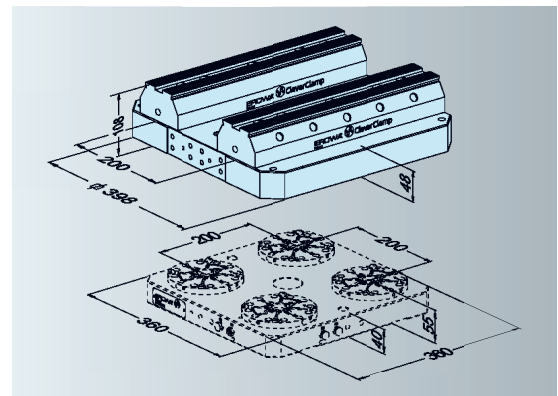
- Version Combination of MTS aluminum pallet with 298 rail (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) with GripperLink Rapid ER-038622.



ER-099321 Base MTS 200 duo CleverClamp



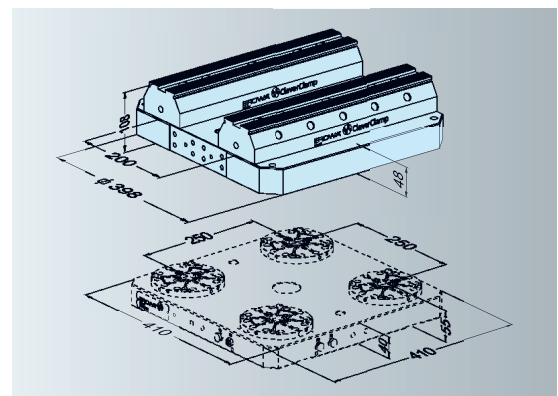
- Version Combination of MTS aluminum pallet with two 298 rails (MTS spigot set ER-041461 (M) / ER-041464 (A)).
- Application Optimal for multiple fixtures and for clamping big workpieces.
- Accessories Order separately: ER-041461 (M) / ER-041464 (A) or MTS GripperLink Rapid ER-038622.



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.



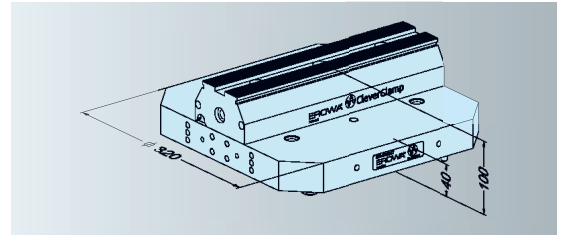
EROWA CleverClamp System

UPC Base rails

ER-099318 Base UPC mono CleverClamp



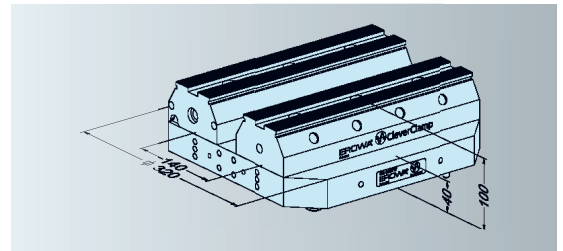
- Version** Combination of UPC aluminum pallet with 320 rail; centering segments and chucking spigots fitted. Z-Support hard.
- Application** Optimal accessibility for 5-axis applications with single and multiple fixtures.
- Accessories** Order separately: GripperLink RCS / EWIS™ Rapid ER-036347 for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



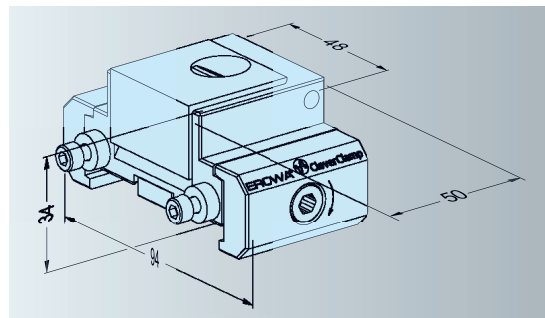
EROWA CleverClamp System

Pull down clamping elements

ER-099292 Pull Down Slide Multi Flat CleverClamp



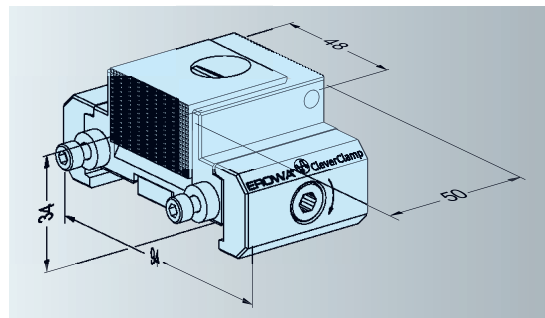
Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides smooth.
Application	Pull-down element for clamping jobs with high clamping forces. Surface: smooth. Ideal for two-side machining and for clamping workpieces with machined surfaces.
Mounting	On a CleverClamp rail.
Important	Suitable 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.



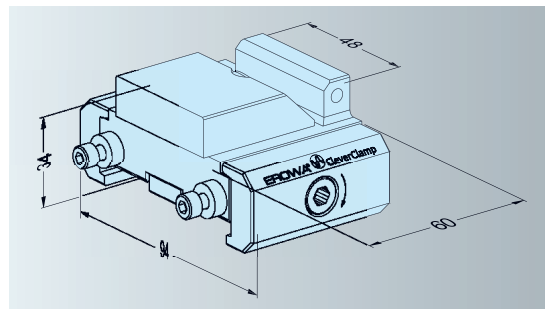
EROWA CleverClamp System

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.



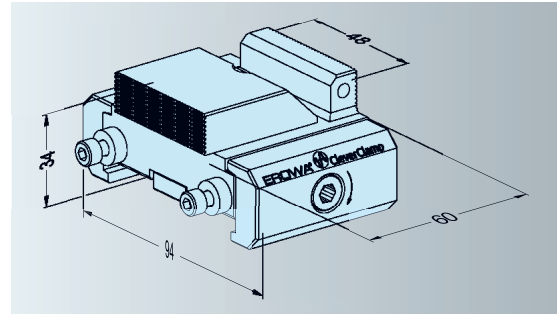
EROWA CleverClamp System

Linear clamping elements

ER-099286 Linear Slide Multi Grip CleverClamp



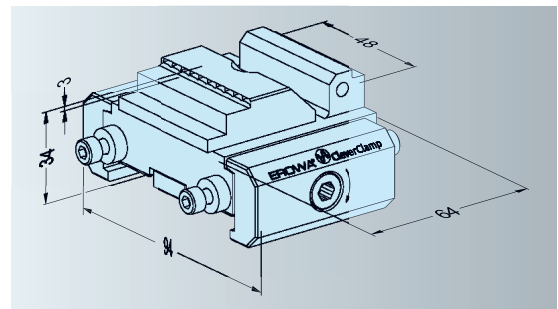
Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides with grip contours.
Application	Linear clamping with grip contours for additional purchase.
Mounting	On CleverClamp rail.
Important	Modularly compatible with all linear jaws. Suitable for single and multiple fixtures.
Clamping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



ER-099282 Linear Slide Multi Stamp CleverClamp



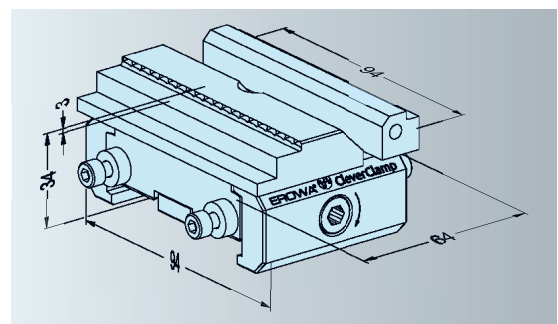
Version	Steel, hardened, width 48mm, height 34mm, clamping and stop sides with stamp contours
Application	Ideal for clamping blanks at the minimum clamping height of 3mm. Secure grip thanks to stamp technology for direct stamping. Can also be used for two-side machining.
Mounting	On CleverClamp rail.
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.



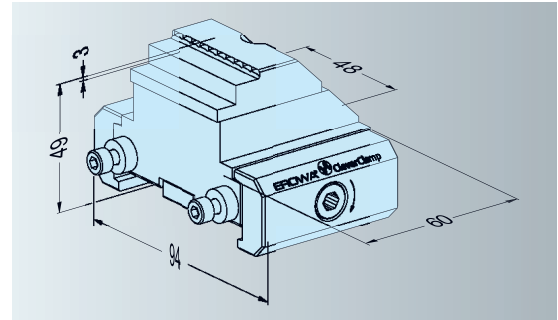
EROWA CleverClamp System

Linear clamping elements

ER-099276 Linear Slide 5X Stamp CleverClamp



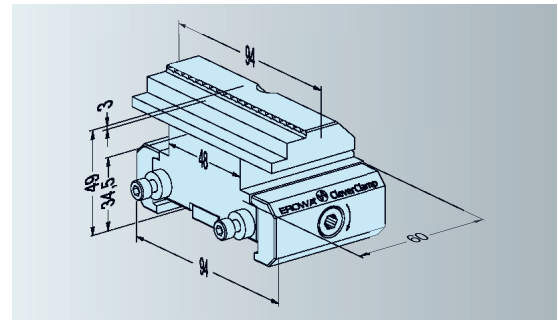
Version	Steel, hardened, width 48mm, height 49mm, clamping side with stamp contours.
Application	Optimised machine spindle accessibility for 5-axis applications. Ideal for clamping blanks at a minimum clamping height of 3mm. Secure grip thanks to stamp technology for direct stamping.
Mounting Important	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.



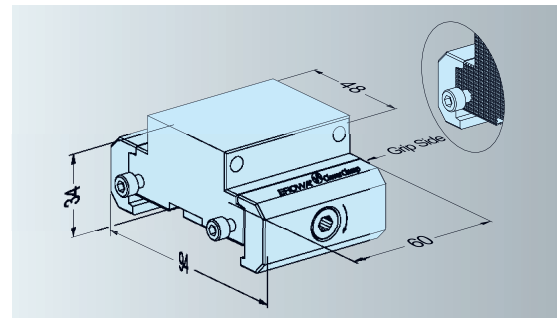
EROWA CleverClamp System

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.



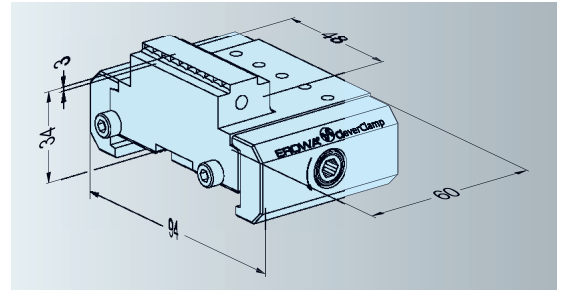
EROWA CleverClamp System

Stop elements

ER-099269 Stop Multi Stamp CleverClamp



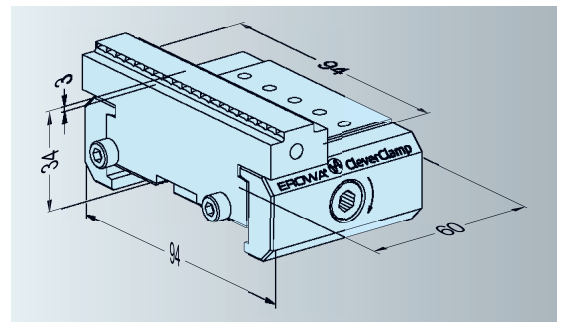
- Version** Steel, hardened, width 48mm, height 34mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with stamp contours, ideal in combination with stamp clamping elements for clamping blanks at a minimum clamping height of 3mm.
- Mounting** On CleverClamp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



ER-099267 Stop Multi Stamp Wide CleverClamp



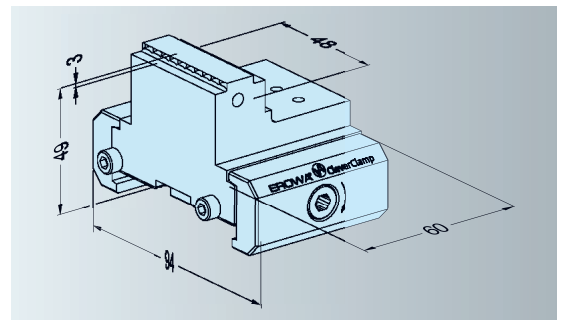
- Version** Steel, hardened, width 94mm, height 34mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with stamp contours, ideal in combination with stamp clamping elements for clamping blanks at a minimum clamping height of 3mm.
- Mounting** On CleverClamp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



ER-099263 Stop 5X Stamp CleverClamp



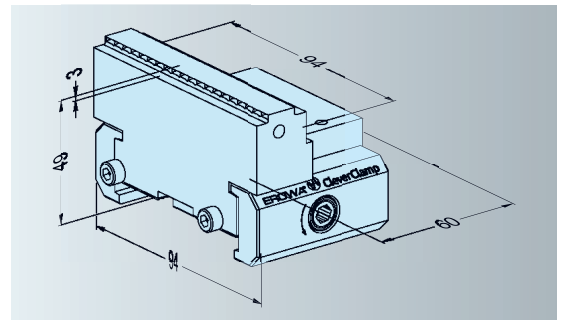
- Version** Steel, hardened, width 48mm, height 49 mm, with stamp contours.
- Application** Stop element in the modular CleverClamp system. Stop element with better machine spindle accessibility for 5-axis applications. With stamp contours, ideal in combination with stamp clamping elements for clamping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



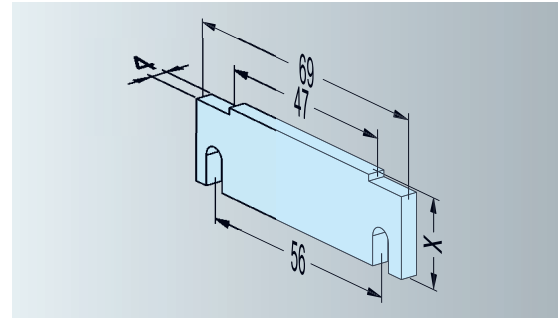
EROWA CleverClamp System

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



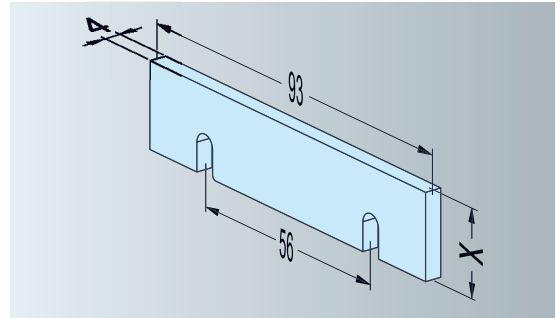
Version	Steel, hardened, width 47mm, height x mm.
Application	Ground support for setting the workpiece clamping height between the CleverClamp clamping and stop elements.
Important	Supports of the heights 34, 39, 44 and 46 can only be used in combination with the 5-axis clamping and stop elements.



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.



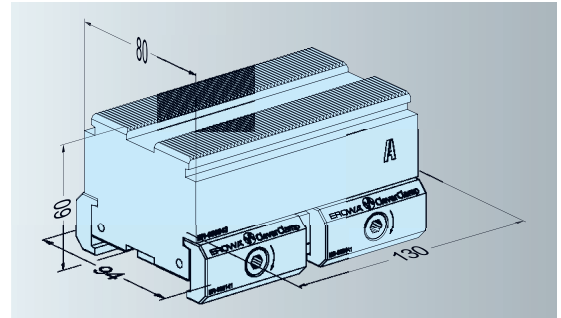
EROWA CleverClamp System

Accessories

ER-099243 Elevation for rail H60 CleverClamp



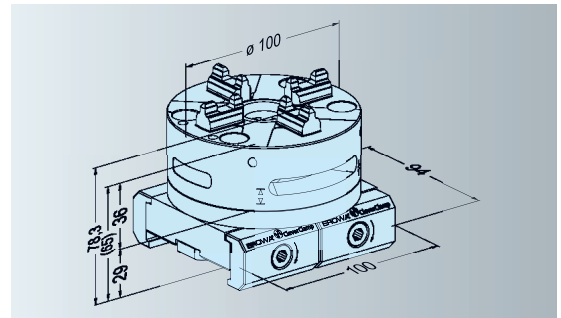
Version	Steel, hardened, height 60mm, width 94mm, length 130mm.
Application	CleverClamp 5-axis elevation - enables optimal machine spindle accessibility in 5-axis applications.
Mounting	On CleverClamp rail.



ER-099246 Quick Chuck 100 P CleverClamp



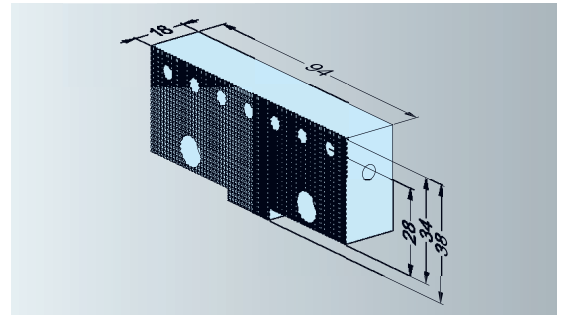
Version	CleverClamp carrier element with QuickChuck 100P, manual.
Application	Adapter between CleverClamp and EROWA ITS pallets/holders.
Mounting	On CleverClamp rail.



ER-099166 Stop Jaw Flat / Grip Wide CleverClamp



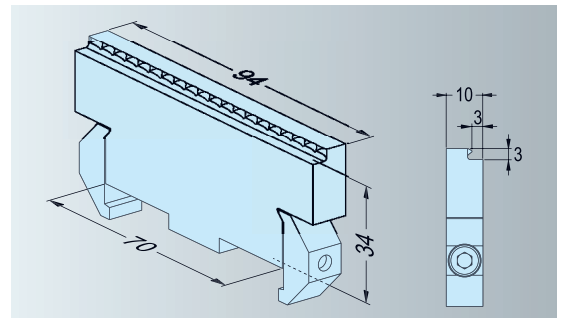
Version	Steel, hardened, width 94mm, height 34mm, one side smooth, the other with grip contours.
Application	Widening the stop surface for better grip when clamping wide workpieces.
Mounting	Use the bolts supplied to fit it to the front of the CleverClamp clamping or stop elements of your choice.
Important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



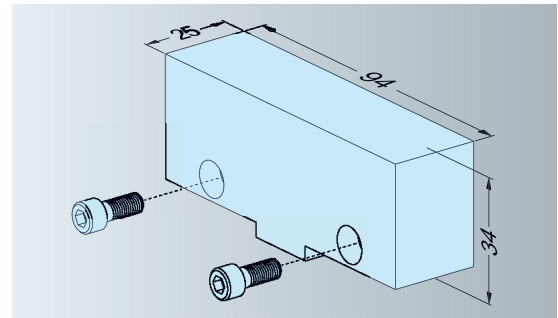
EROWA CleverClamp System

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.

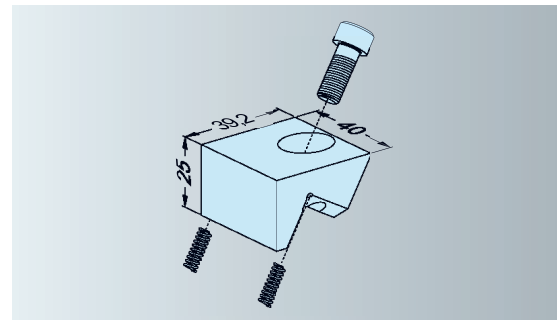


ER-099079 Pull Down Jaw Flat CleverClamp

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.

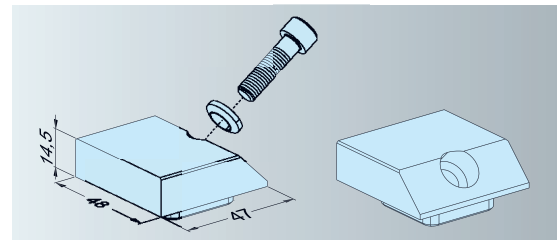


ER-099098 Linear Jaw Flat CleverClamp

ER-099099 Linear Jaw Grip CleverClamp



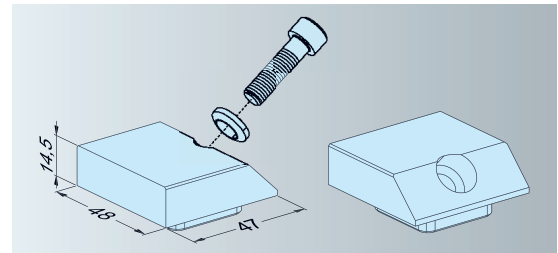
Version Steel, hardened, width 48mm, stop side smooth or with grip contours.
 Application **ER-099098:** stop side smooth - ideal for clamping workpieces with machined surfaces.
ER-099099: stop side with grip contours for additional grip.
 Mounting Can be used on all CleverClamp linear clamping elements.



ER-099123 Linear Jaw Soft CleverClamp

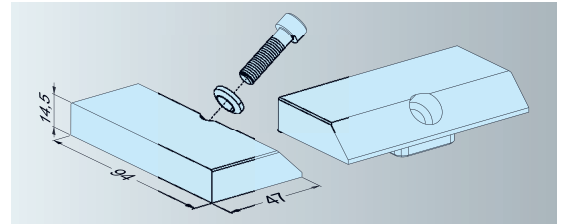


Version Steel, soft, width 48mm.
 Application To produce jaws with contours of your choice.
 Mounting Can be used on all CleverClamp linear clamping elements.

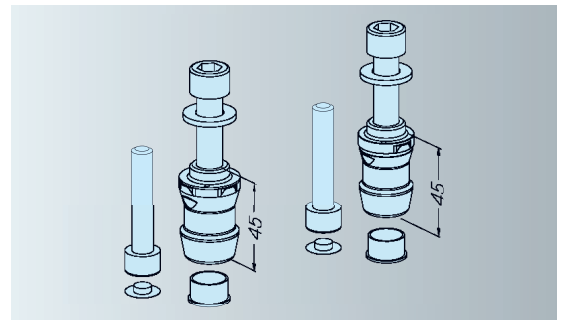


**ER-099126 Linear Jaw Soft Wide
CleverClamp**

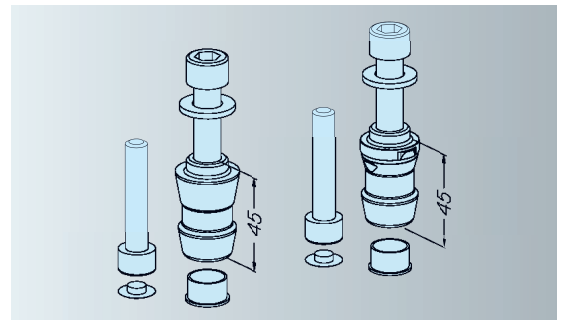
Version Steel, soft, width 94mm.
 Application To produce jaws with contours of your choice.
 Mounting Can be used on all CleverClamp linear clamping elements.

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

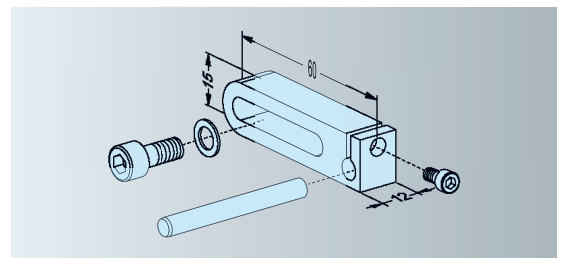
Version 1 centering spigot / A, 1 compensation spigot / A.
 Application For CleverClamp rails "320 H60 automated" and „398 automated“, which are automatically loaded / unloaded in the MTS System.
 To be fitted From below to the CleverClamp base rails.

**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.

