

# PNEUMATIC PIN CLAMPS

Pneumatic pin clamps are typically designed for centring and clamping metal sheets in BIW underbody applications.

UNIVER offers a wide range of models with standard or high compensation, with 180° orientable hook, with vanishing pin and hook, with compact dimensions or with horizontal shape to fit applications where installation space is reduced.

All pin clamps are equipped with:

- Integrated compensation
- Metal scraper
- Toggle-joint mechanism
- High wear resistance steel pin
- M12 electronic sensor



**UNICLAMP**  
next generation

## MILLIONS OF CYCLE

Millions of operations granted with no maintenance required



## QR CODE

Helps identify products quickly and easily



## LIGHTWEIGHT

Housing in aluminium alloy



## REDUCED DIMENSIONS

Compact end caps



## CUSTOMIZATION

Specifically designed for every application:  
sizing of hook and pin  
sizing of the clamping surface



## IRREVERSIBLE

A toggle-joint mechanism maintains the position even with air lack

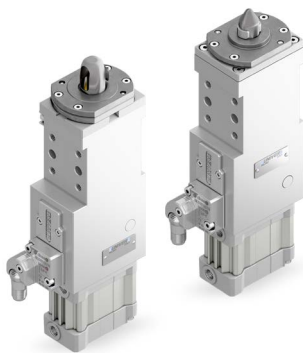




## STANDARD CONSTRUCTION

Pneumatic pin clamps available in different versions, according to compensation range and possibility to select the hook orientation

- Standard compensation Ø32 - 50
- High compensation Ø63
- Orientable hook Ø50 - 63
- Manual size 50

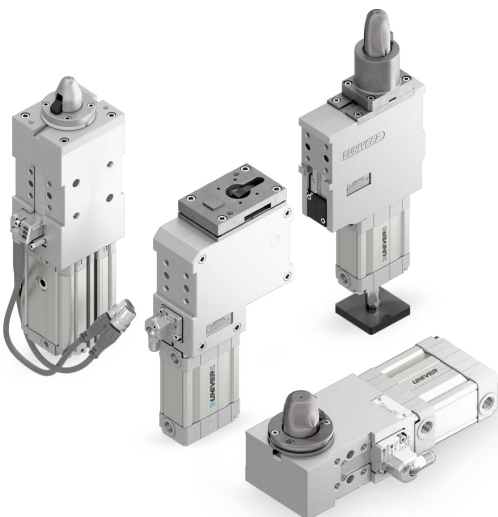


## COMPACT CONSTRUCTION

Compact Pin Clamp with retractable clamping fingers or single/double hook for centring and clamping.

The compact and lightweight construction makes these units suitable for mounting on grippers for handling pieces through a centring hole

- Compact with clamping fingers Ø40
- Compact with single or double hook Ø40



## SPECIAL APPLICATIONS

To complete the range of pin clamps, UNIVER offers many special models to fit special applications

- Laser beam applications Ø50
- Vanishing pin and hook Ø50
- Horizontal shape Ø50
- Vanishing hook Ø50

# PIN CLAMPS FEATURES

## STANDARD VERSION

### STEEL PIN WITH HARDENING TREATMENT

Special steel to guarantee high wear resistance

### HOOK TRANSLATION

No friction on the meal sheet



### DOUBLE METAL SCRAPER

Protecting the internal mechanism from dust and welding debris



### INTEGRATED COMPENSATION

Allows clamping of different thickness up to **6 mm**

### OPTICAL SENSOR

High precision system  
No adjustment required

### TOGGLE-JOINT

Irreversible without external stops

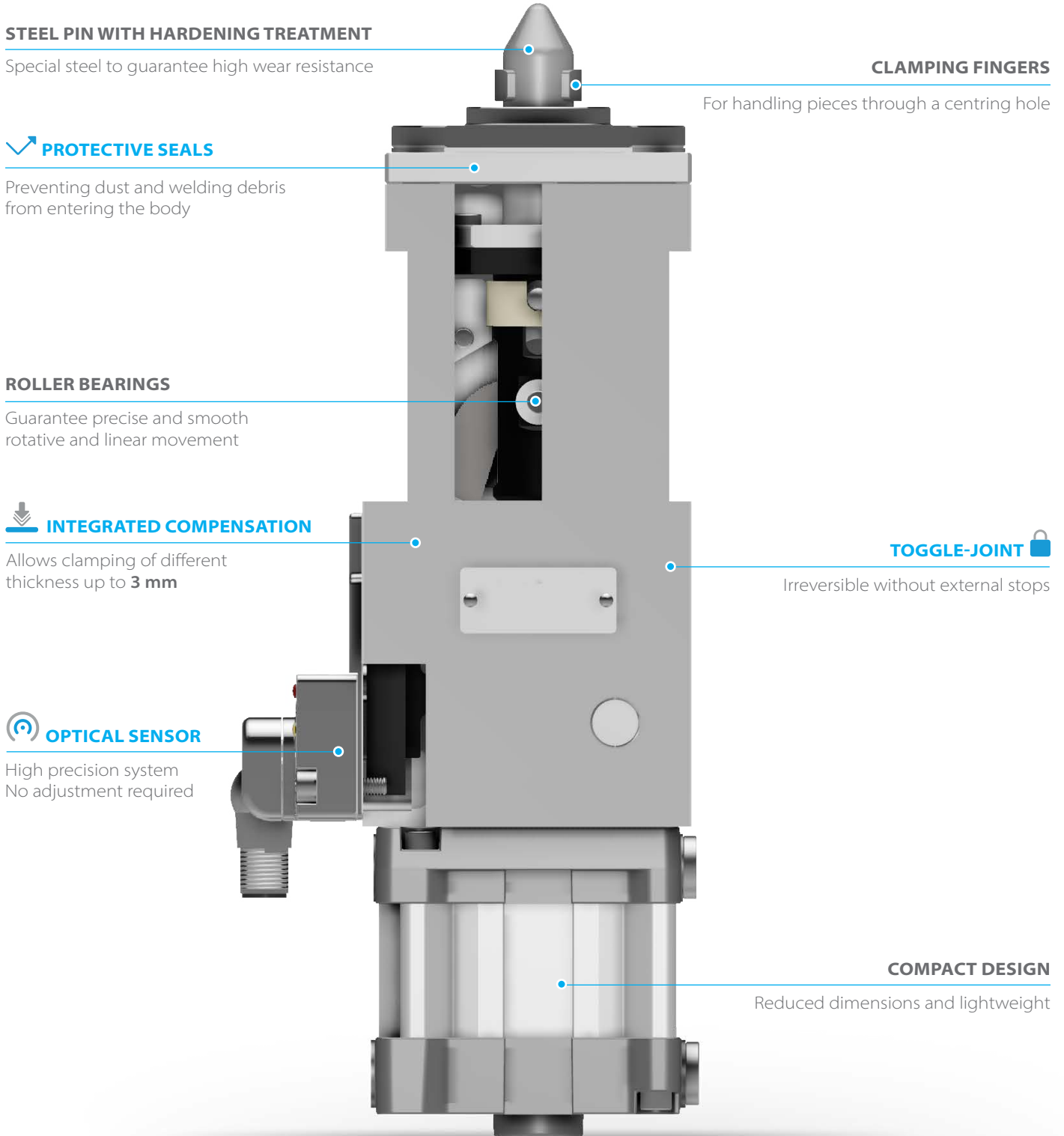
### ROLLER BEARINGS

Guarantee precise and smooth rotative and linear movement

### COMPACT DIMENSION

Reduced end caps

## COMPACT VERSION WITH CLAMPING FINGERS



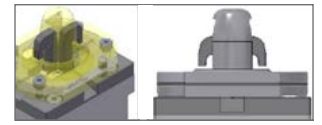
# PIN CLAMPS FEATURES

## COMPACT VERSION WITH SINGLE/DOUBLE HOOK

SINGLE HOOK



DOUBLE HOOK



### STEEL PIN WITH HARDENING TREATMENT

Special steel to guarantee high wear resistance

### DOUBLE ROD SCRAPER

Double rod scraper for each single hook

### HOOK TRANSLATION

No friction on the meal sheet



### INTEGRATED COMPENSATION

Allows clamping of different thickness up to **3 mm**

### TOGGLE-JOINT

Irreversible without external stops

### OPTICAL SENSOR

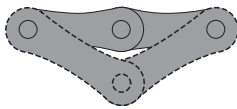
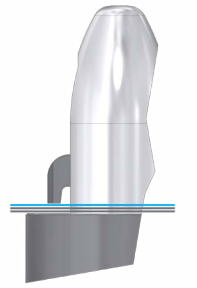
High precision system  
No adjustment required

### ROLLER BEARINGS

Guarantee precise and smooth rotative and linear movement

### COMPACT DESIGN

Reduced dimensions and lightweight



### **INTEGRATED COMPENSATION**

The original UNIVER integrated compensation systems allows to compensate metal sheet thickness variations up to **6 mm**

### **TOGGLE-JOINT MECHANISM**

The original UNIVER toggle joint system allows the pin clamp to maintain the position even with lack of air without external stops

Position repeatability

No backlash in closed position

### **OPTICAL SENSOR**

Fully metal body

One single sensor for the whole range of products

IP67 protection

M12 swivel connector (0-90°)

High precision

No set up

Two-parts design: electronic part outside the unit (available as spare part), optical part inside the unit (no touch point)

Insensitive to high magnetic fields, typical of new and modern welding systems like aluminium welding

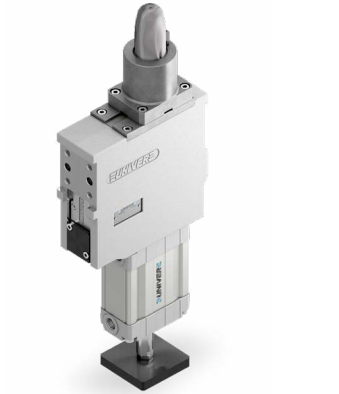
Industry-recognized, tested and proven sensor

### **DOUBLE METAL SCRAPER**

UNIVER original system with double metal scraper to prevent dust and welding debris from entering the internal body

The two scrapers follow the hook movement and thanks to some dirt elimination slots on the clamp plate the dust cannot enter the body thus avoiding affecting negatively the internal mechanical parts

# PIN CLAMPS FOR SPECIAL APPLICATIONS



## PIN CLAMPS FOR LASER BEAM APPLICATIONS

Pin clamps for laser beam application are specifically designed for applications where the detection of the position is done by a laser beam instead of a position sensor



## PIN CLAMPS WITH VANISHING HOOK AND PIN

In these special pin clamps there is no need to raise and lower the metal sheet during positioning operations thanks to the vanishing hook and pin



## PIN CLAMPS WITH VANISHING HOOK

They are specifically designed for applications where large pins are required. Furthermore, the wide movement of the vanishing hook is perfect in case pretty shaped metal sheets are to be clamped



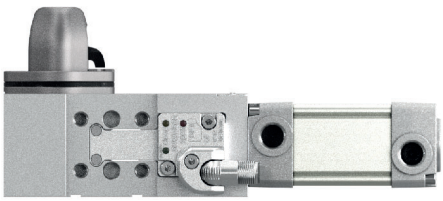
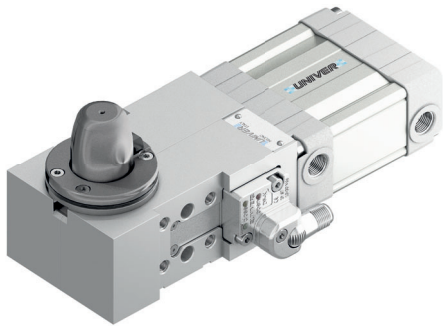
## PIN CLAMPS WITH HORIZONTAL SHAPE

Thanks to its flat shape, this pin clamp is recommended for and easily fits applications where the installation space is very small

# USP 50U

Pneumatic pin clamp - Horizontal shape, Ø50 mm

Pneumatic pin clamp with horizontal shape, mainly designed for centering and clamping metal sheets in BIW underbody applications. Thanks to the flat shape it is widely used in applications where the installation space is very small



- Integrated compensation up to 0,5 mm
- Protection against welding debris and dust
- Toggle-joint mechanism
- High repeatability
- Two sided sensor mounting
- Electronic sensor

## CHARACTERISTICS

Operating temperature	5° ÷ 45° C
Min./Max. Operating pressure	0,4 / 0,6 MPa
Bore Ø	50 mm
Clamping force	2500 N
Weight (without plate, pin and hook)	2,2 kg
Pneumatic supply ports	G1/8 on both sides
Sensor	electronic (optical)
Supply voltage	10 ÷ 30 Vdc
IP code	IP 65

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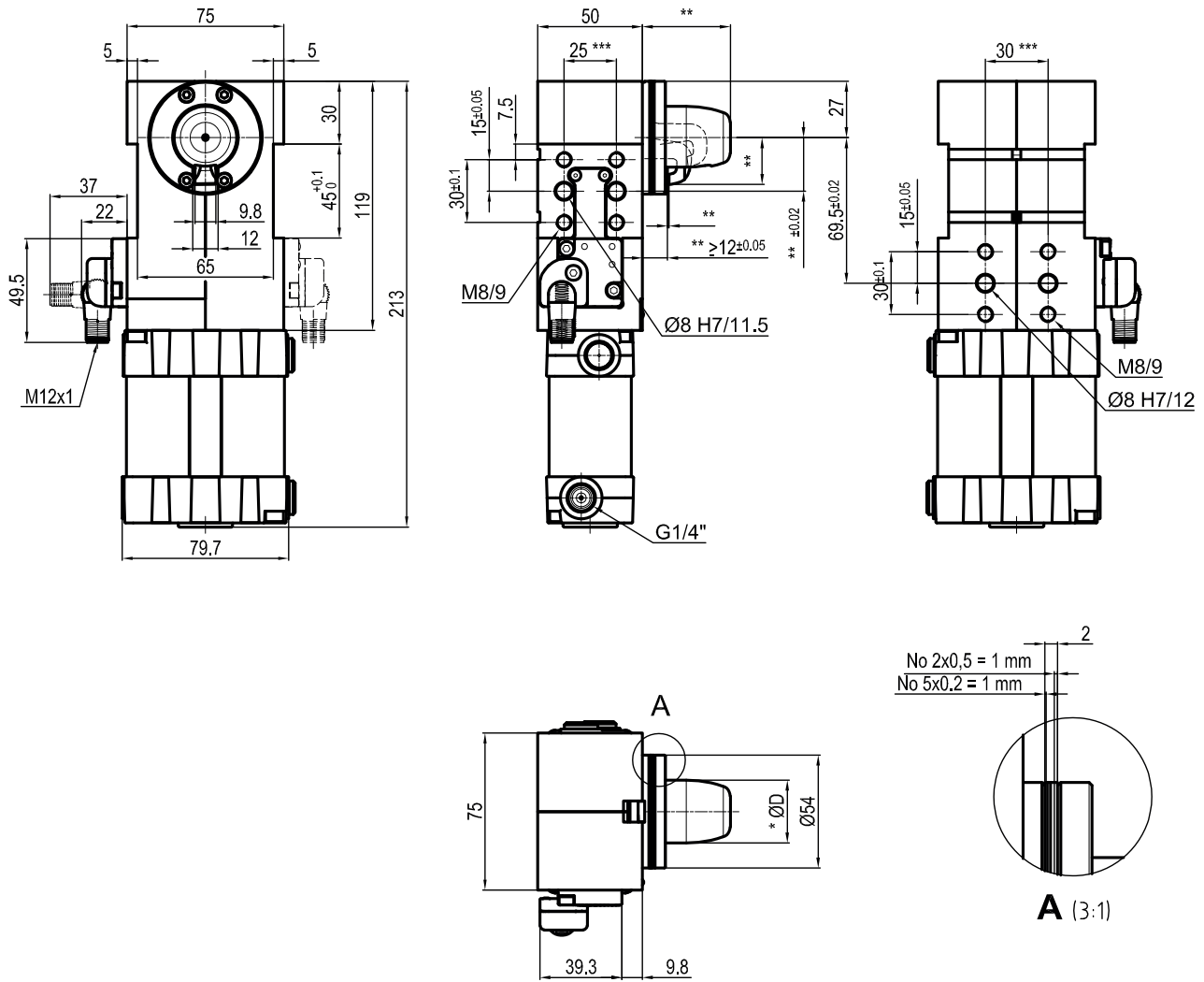
## CODIFICATION KEY

US | P | 50 | U | 3 | 1 | L | - | K | | | |  
 1 2 3 4 5 6 7 8 9 10 11

- IRREVERSIBLE
- LIGHTWEIGHT
- METAL SCRAPER
- OPTICAL SENSOR
- HIGH REPEATABILITY

- |   |  |
|---|--|
| <p><b>1</b> SERIES<br/>US = UNICLAMP Pin clamp with compensation</p> <p><b>2</b> VERSION<br/>P = Pneumatic</p> <p><b>3</b> SIZE<br/>50 = Ø50 mm</p> <p><b>4</b> MODEL<br/>U = Horizontal shape</p> <p><b>5</b> PIN DIAMETER<br/>1 &lt; = Ø19 mm<br/>2 = Ø20 mm<br/>3 = Ø25 mm<br/>4 = Ø30 mm<br/>5 = Ø35 mm<br/><small>For pin Ø outside the mentioned range, please contact our sales department</small></p> | <p><b>6</b> LOCATING PIN<br/>0 = Locating pin not included<br/>1 = Locating pin included</p> <p><b>7</b> SENSOR POSITION<br/>L = Left side<br/>R = Right side</p> <p><b>8</b> PROGRESSIVE NUMBERING<br/>Progressive numbers for special products are assigned by the Sales Department</p> <p><b>9</b> SENSOR<br/>N = No sensor (with protection plate)<br/>K = Electronic sensor PNP, M12 (DF-K)<br/>J = Electronic sensor NPN, optical (DF-J)<br/>Y = Electronic sensor PNP, M12 (DF-Y) white LED</p> <p><b>10</b> PRODUCT REVISION<br/>Assigned by UNIVER</p> <p><b>11</b> ATEX<br/>X = ATEX option<br/><small>See ATEX Catalogue for types and versions</small></p> |
|---|--|





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\*\* MISSING DIMENSION TO BE DEFINED ACCORDING TO CUSTOMER SPECIFICATIONS  
 \*\*\* TOLERANCE BETWEEN DOWEL HOLES  $\pm 0,02$ , BETWEEN SCREW HOLES  $\pm 0,1$   
 THE SENSOR CAN BE MOUNTED ON EITHER RIGHT OR LEFT SIDE

*Pin Option	ØD
1	$\leq 19$
2	20
3	25
4	30
5	35
6	40

## Sensors



Electronic (optical)

- DF-K PNP M12
- DF-J NPN M12
- DF-Y PNP M12 White LED