

# UP – THE PARALLEL-PLANE CLAMP



# NEW

The new  
clamp generation for  
parallel-plane clamping  
with constant  
clamping force



Spannen  
Clamping



Positionieren  
Positioning



Greifen  
Gripping



Umformen  
Forming



Schweißen  
Welding



Dosieren  
Dosing



Drehen  
Rotating



Fördern  
Conveying



Transportieren  
Transporting

 **TUNKERS**<sup>®</sup>  
Ingenuity in series.



- Parallel-Plane clamping → Flexibility, simplification
- **30%** less air → reduced operating costs & CO2 consumption
- Stepless adjustable opening angle → Variable from 5 – 135°
- Two part sensor system **T24** → Query block easy to exchange
- fully encapsulated clamp unit → dustproof mechanics
- Both air connections in the cylinder bottom → better accessibility
- Many new options i.a. welding splatter protection **W**, stop valve in cylinder bottom **H**, integrated retainer for open position **RB**

Special mechanical systems integrated in the housing with two movement steps

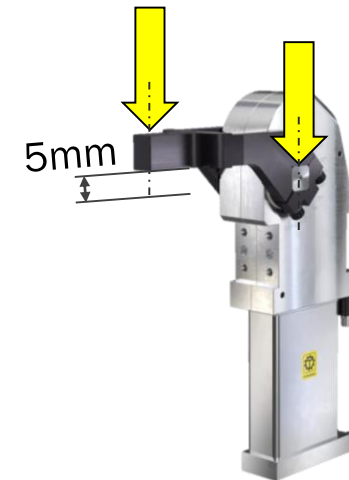
## Step 1: Pivoting

The clamping arm is pivoted/turned a maximum of  $135^\circ$  from open position to the clamping position



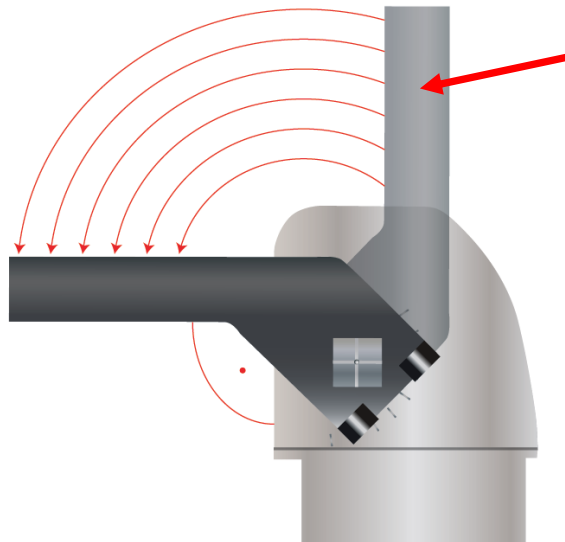
## Step 2: Clamping

Parallel-plane clamping process in which the arm is move vertically up to 5 mm to the workpiece. In the parallel-plane clamping process, constant clamping force is available regardless of the arm length..



## Traditional clamp

Pivoting clamping arm

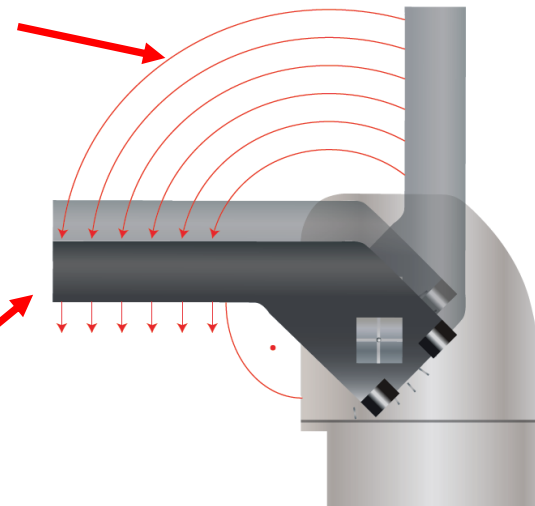


## UP clamp

Parallel-plane increments

*Pivoting*

*Clamping*



- For defined sheet thicknesses
- Defined end position
- Clamping by rotation

- For sheet thickness compensation
- Variable end position
- Clamping by lowering

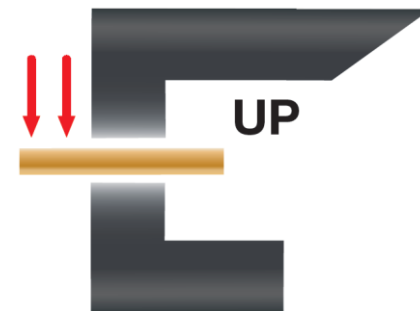
In the clamping range/working range of 0-5 mm, sheet thickness fluctuations caused by model variations, quality fluctuations or contour piece wear are compensated. Due to the new plane-parallel clamping there is no risk of component deformation due to rotational misalignment.

Traditional clamp



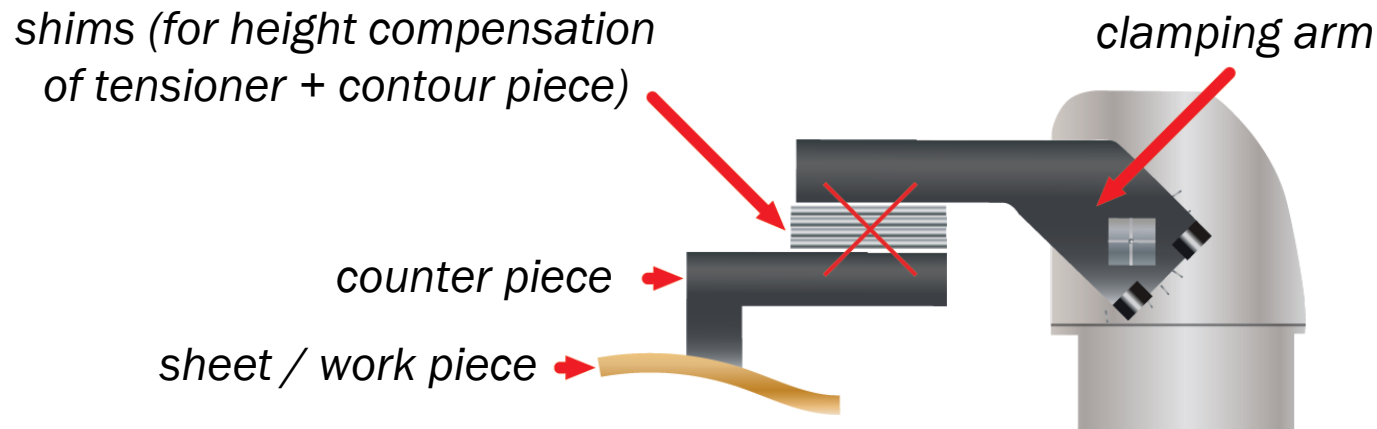
High wear of the contour piece as well as pressure marks on the component become apparent.

UP clamp



Automatic compensation in the clamping range. Clamping force is evenly distributed on the component.

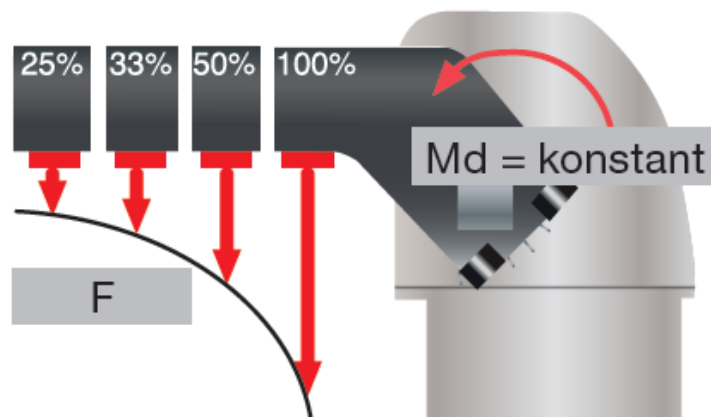
- Since the contour piece/clamping arm is always plane-parallel in the range of 0-5 mm, no special shimming of the clamping point is necessary.



- Since the clamping force is linear to the operating pressure, it is easy to determine. Pretensioning as with traditional clamps is not necessary

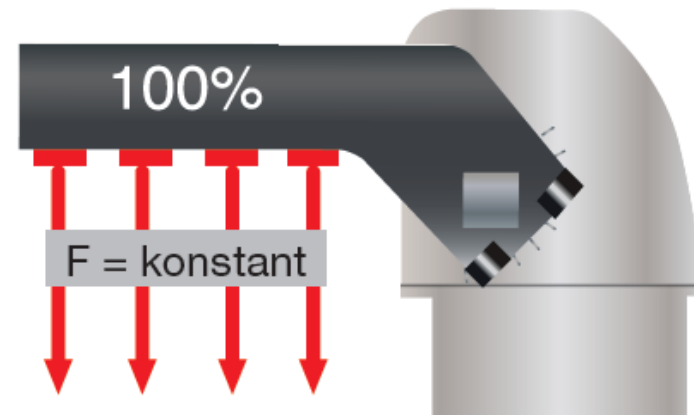
The clamping force of the UP series is always constant and **independent** of clamping arm length due to a special transmission mechanism. The clamping force can be continuously adjusted to the application by means of a pressure reducer.

## Traditional clamp



With traditional clamps, the clamping force decreases with the distance from the pivot point

## UP clamp



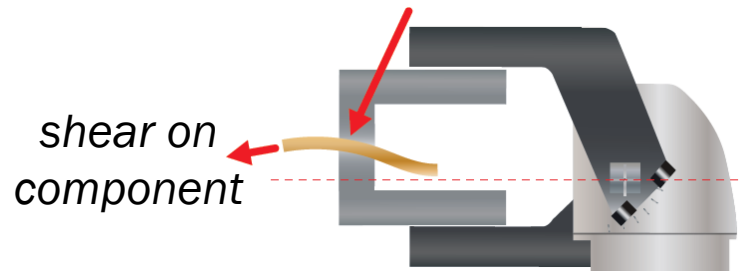
Defined clamping force

In order to avoid tensile or shear forces on the pivot, the clamping point of traditional clamps must be placed in the pivot point!

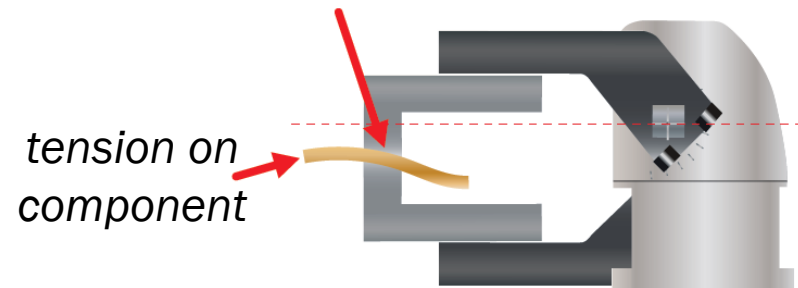
→ less flexibility when setting up fixtures.

## Traditional clamp

*Clamping above pivot point*



*Clamping under pivot point*

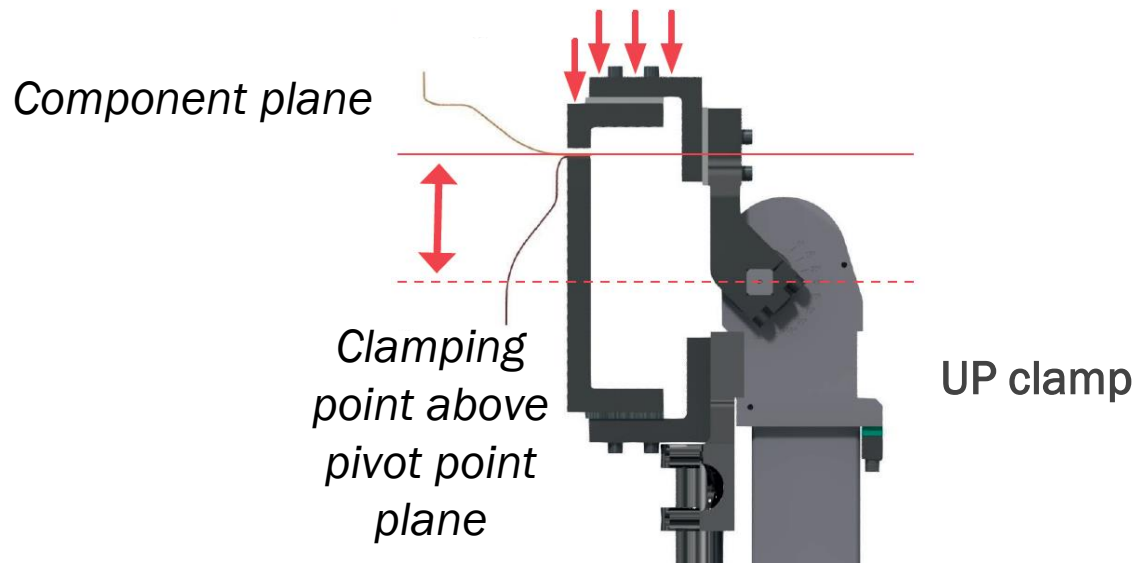


If the clamping plane does not run through the pivot point, a component offset occurs.



The UP clamp on the other hand is independent of the pivot point. This means that the arrangement of the clamping point can be chosen flexibly, since the thrust piece is always fed in vertically. There is no danger of shear or tensile forces on the component.

→ Space-saving arrangement of the clamp below the component level. This results in optimum access for e.g. welding guns.



- Air connection at the frontside „LV“ (cylinder bottom must be rotated incl. the cylinder tube)

- T24 sensor system with an several sensor block for easy exchange



Bild: T24.2



Bild: T24.3

- Integrated check valve „H“ or “HD” in cylinder bottom



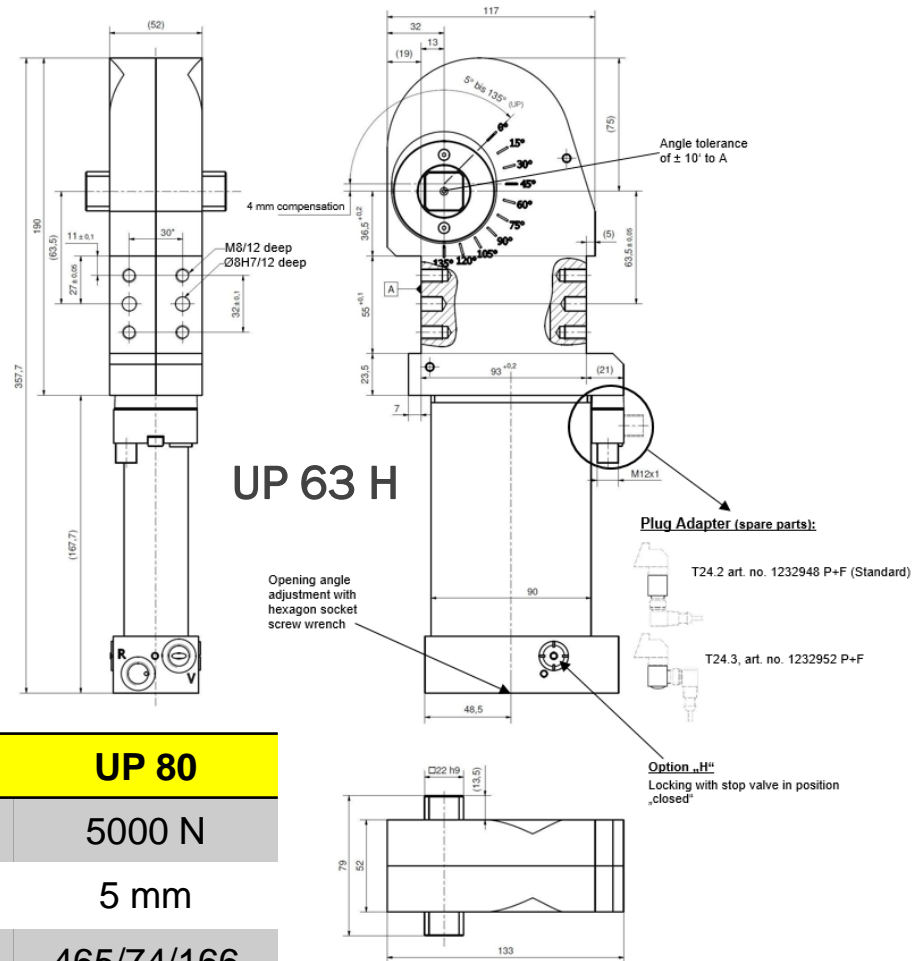
- Retaining clip for open position „RB“ integrated in cylinder bottom



- Weld resistant coating on the housing „W“



# Comparison of Sizes



	UP 40	UP 63	UP 80
Clamping force	1000 N	3000 N	5000 N
Force stroke	3 mm	4 mm	5 mm
Dimension (H/W/D)	290/33/111 mm	344/52/133 mm	465/74/166 mm
Weight	ca. 2.3 kg	ca. 4.8 kg	ca. 20 kg

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