



**MISATI** ⇨ ⇩

070309



**PRESENTATION:**

**FASTENING CLAMP**

Company

Products

Fastening Clamp

1. Standard Components
2. Operation Principle
3. Unique Advantages

- 3.1. Holding Clamp
- 3.2. Force / Size
- 3.3. Standard Gripper Fingers
- 3.4. Types of Gripper Fingers
- 3.5. Study of Special Gripper Fingers
- 3.6. Welding Anti-spatter
- 3.7. Air Consumption
- 3.8. Adjustment of the Fastening Clamp
- 3.9. Rolling System
- 3.10. Built-in Connections
- 3.11. Monobloc Body
- 3.12. Non-reversibility
- 3.13. Fastening of the Clamp
- 3.14. Fastening of the Gripper Fingers
- 3.15. Flow Regulators
- 3.16. Pneumatic Cushioning
- 3.17. Air Tightness of the Piston
- 3.18. Pneumatic Spare Parts
- 3.19. Guarantee

4. Comparative Studies
5. Applications
6. Web Site: [www.misati.com](http://www.misati.com)

## COMPANY



Founded in 1979, **MISATI** is a world leading company in the design, manufacturing and worldwide distribution of high-quality pneumatic fastening elements.

In order to provide the best solutions to our customers, we offer:

- ➡ Personalized consulting services of our Research & Development Department
- ➡ Automated own manufacture
- ➡ Patented technology
- ➡ Manufacturing quality standard "ISO 9001"



# PRODUCTS



**FASTENING  
CLAMP**

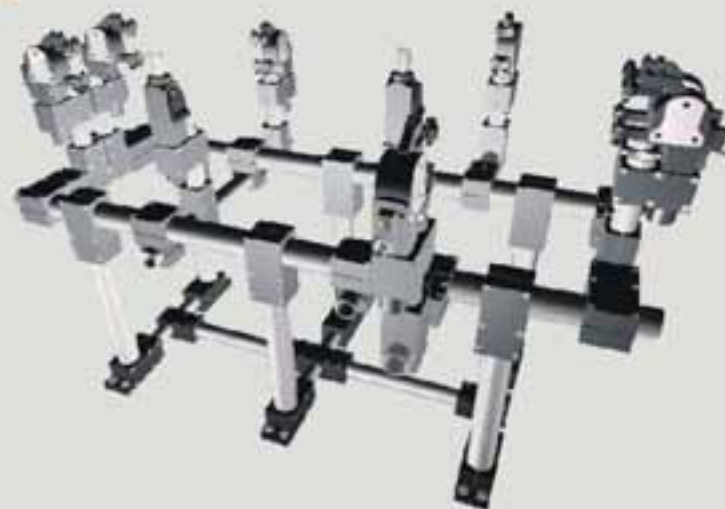


**TRANSFER  
PRESS**

**HANDLING GRIPS  
FOR WELDING AND PRESSES**



**WELDING  
TOOLS**





MISATI clamps have been designed bearing in mind most usual requirements in tools, so their **unique advantages** give a great **added value** to the user.

These unique advantages represent a step forward in this technical field (worldwide patent).

- ✓ Higher Force
- ✓ Smaller
- ✓ Standard Gripper Fingers
- ✓ Welding Anti-spatter
- ✓ Lower Consumption, etc.

# 1. STANDARD COMPONENTS



MISATI has a complete program of standard elements (gripper fingers, mountings, sensors, etc) which will **simplify the design & save** the customer **from producing special parts.**

## 2. OPERATION PRINCIPLE

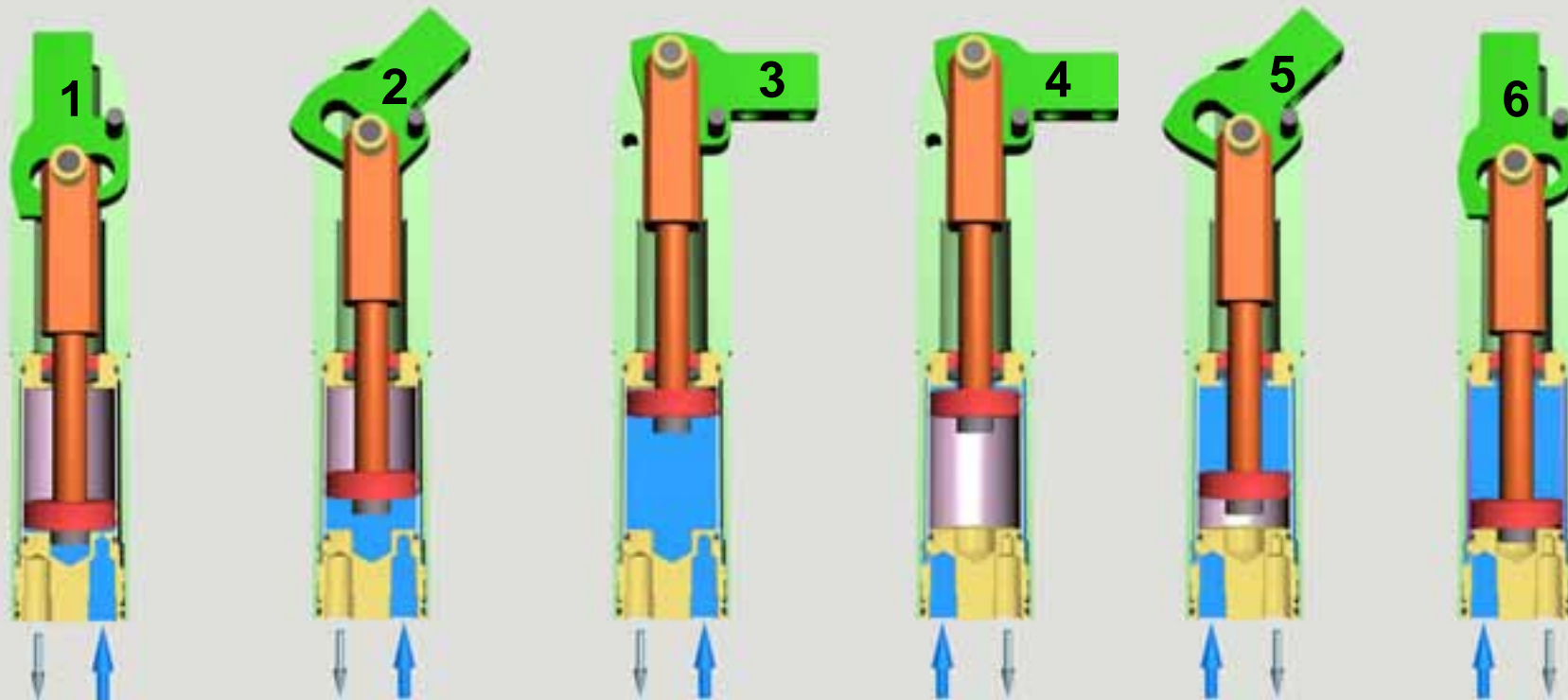


### CLOSING CLAMP

### OPENING CLAMP

State of force

State of rest



The clamp has a double-effect pneumatic cylinder which transmits a turning movement to the clamping arm along the shaft. Thanks to the special shape of the oblong hole, the clamp makes a big force (see paper clamp).

### 3. UNIQUE ADVANTAGES



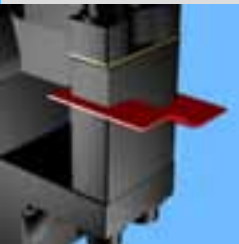
HIGHER  
HOLDING  
FORCE

REDUCED  
SIZE



STANDARD  
TREAD FINGERS  
WITH RIBBED  
BALL-&-SOCKET  
JOINT

GRIPPER  
FINGERS FOR  
MOULDED  
SURFACES

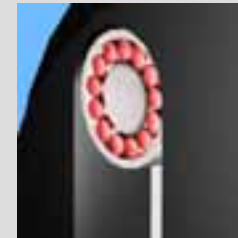


WELDING  
ANTI-SPATTER



LOW AIR  
CONSUMPTION

16.2 cm<sup>3</sup>



ROLLING  
SYSTEM  
(20 mill / cycles)

FASTENING  
OF THE  
HOLDING  
POINT



BUILT-IN  
CONNECTIONS  
WITH NO FLOW  
REGULATORS



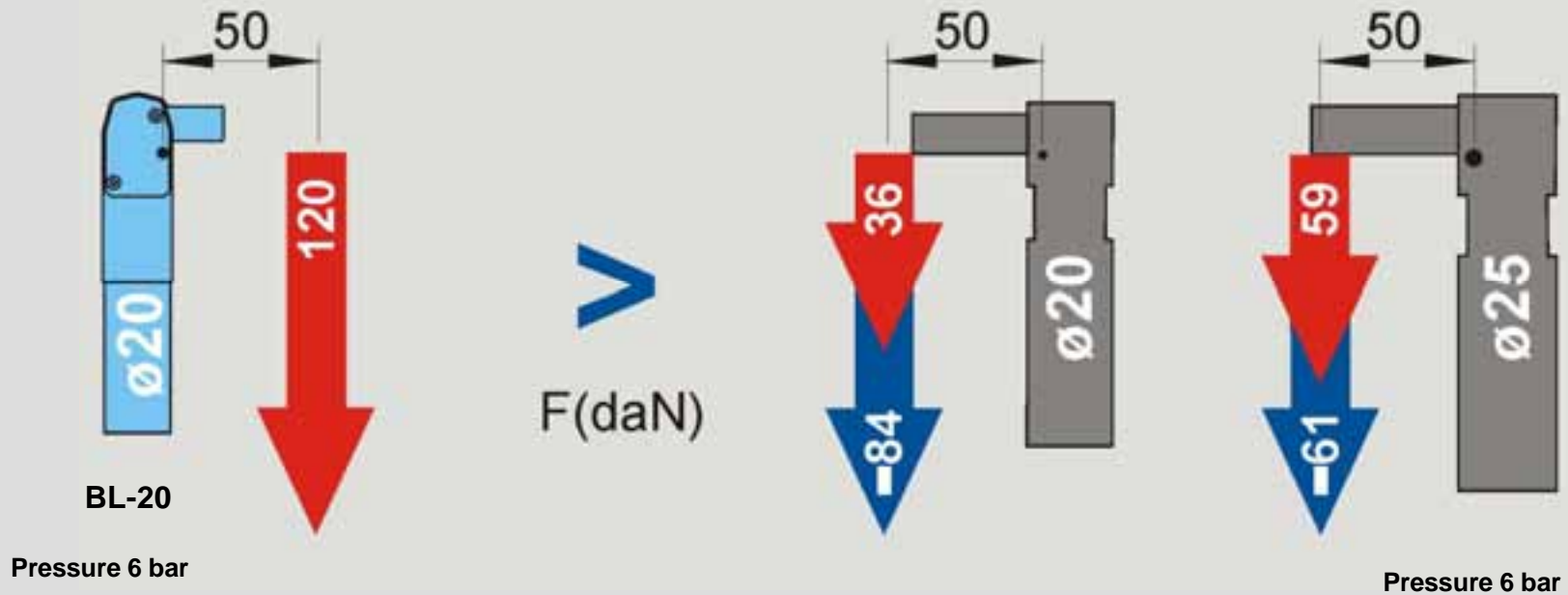
MONOBLOC BODY  
OF MECHANIZED &  
TREATED STEEL



### 3.1.1. CLAMP: Holding Force



OTHER CLAMPS



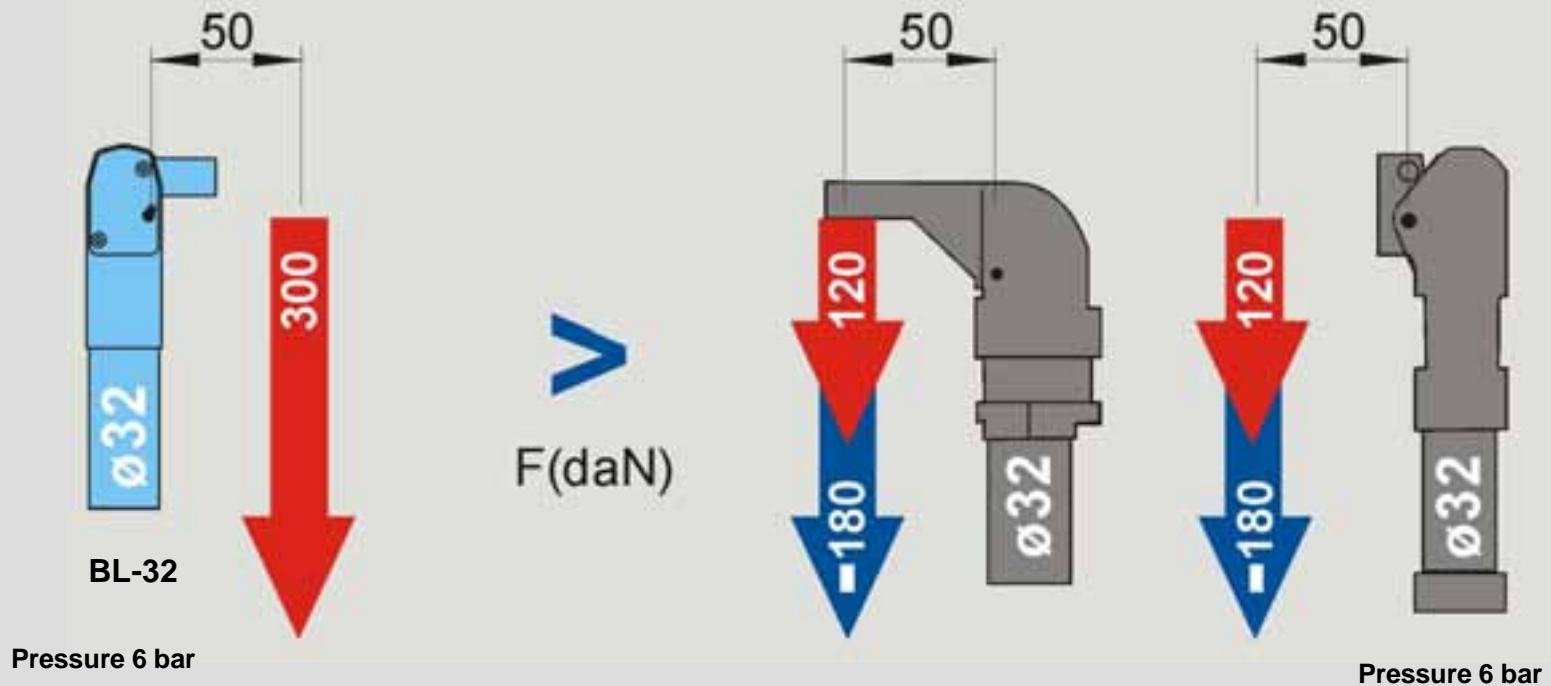
Our clamps reach up to 247 ÷ 333 % more force than other clamps.

**Smaller** MISATI clamps can be used to make the same force as other manufacturers' bigger pincers, so there is a saving in **size, consumption & cost**.

### 3.1.2. CLAMP: Holding Force



OTHER CLAMPS



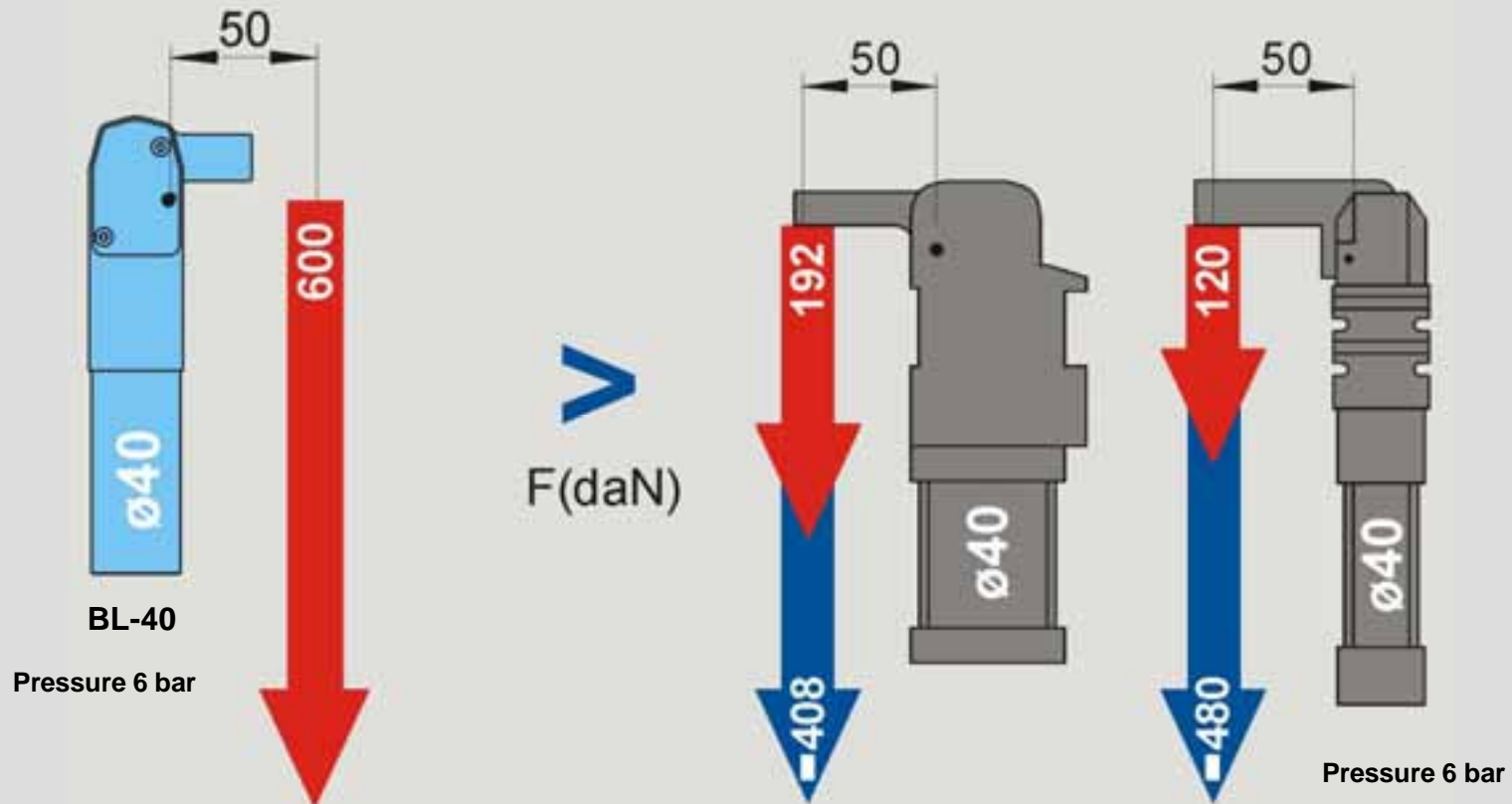
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### 3.1.3. CLAMP: Holding Force



#### OTHER CLAMPS



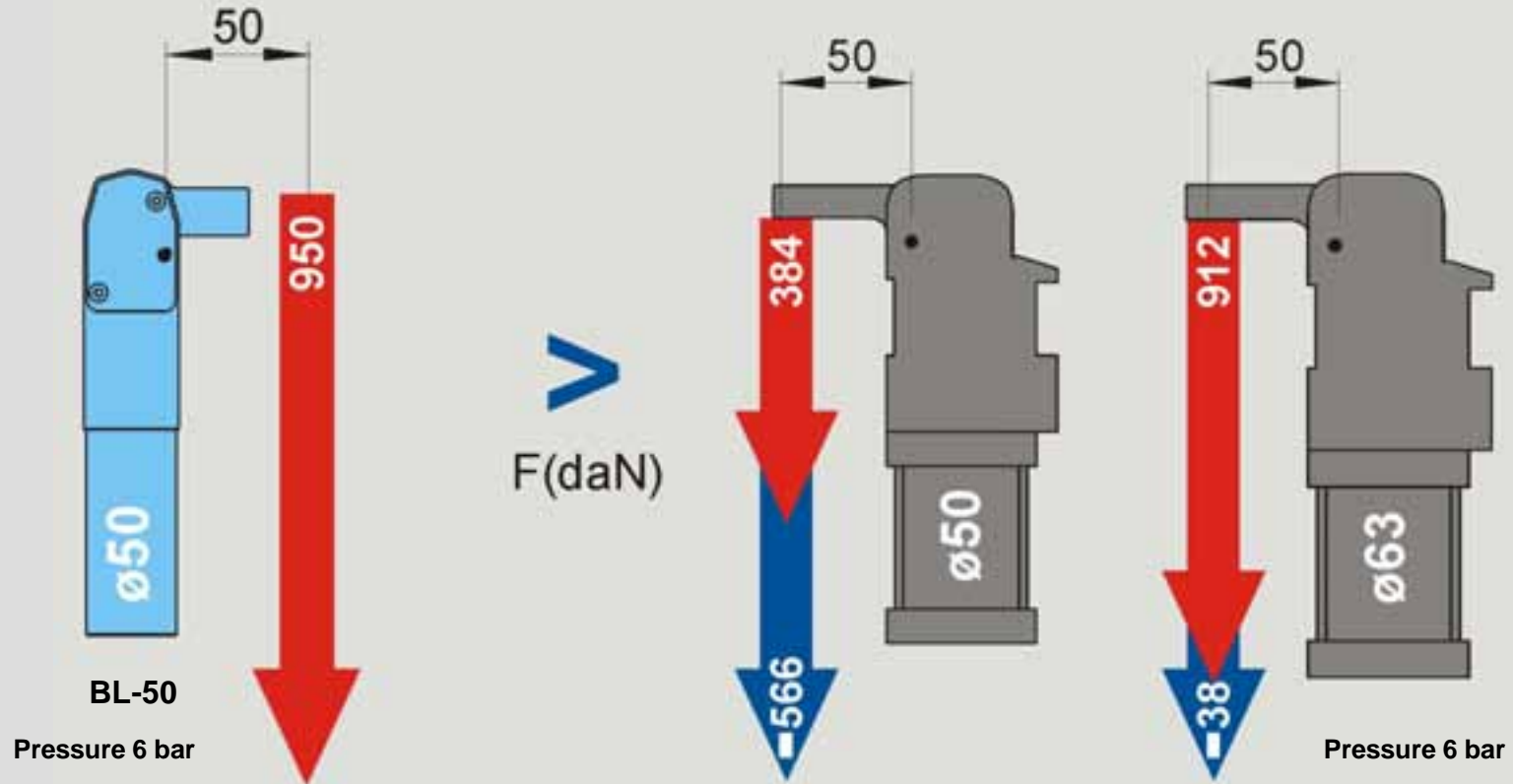
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### 3.1.4. CLAMP: Holding Force



OTHER CLAMPS



Our clamps reach up to 247 ÷ 333 % more force than other clamps.

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### 3.2.1. CLAMP: Force / Size

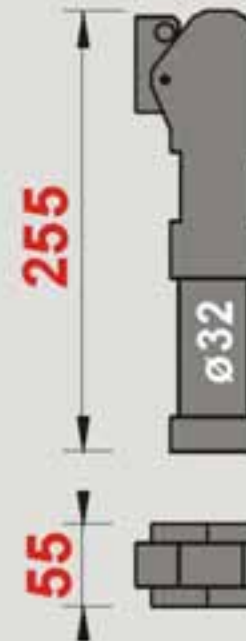


F=120 daN



OTHER CLAMPS

F=120 daN



If we compare two clamps that make the same force, we can notice that Misati clamps are narrower (between 16-42%).

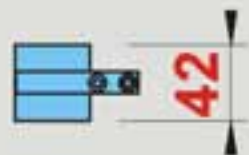
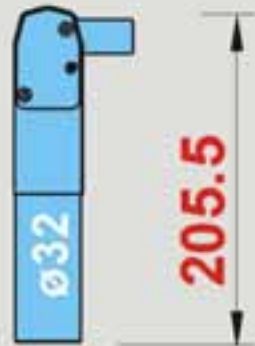
With a narrower clamp, it will be easier to gain access to **small areas of the tools**.

### 3.2.2. CLAMP: Force / Size

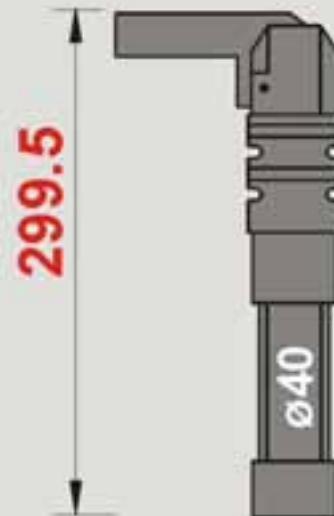


#### OTHER CLAMPS

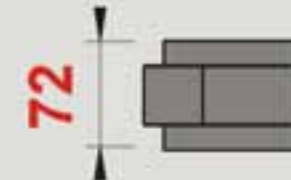
F=300 daN



F=120 daN



F=360 daN



If we compare two clamps that make the same force, we can notice that Misati clamps are narrower (between 16-42%).

With a narrower clamp, it will be easier to gain access to **small areas of the tools**.

### 3.2.3. CLAMP: Force / Size



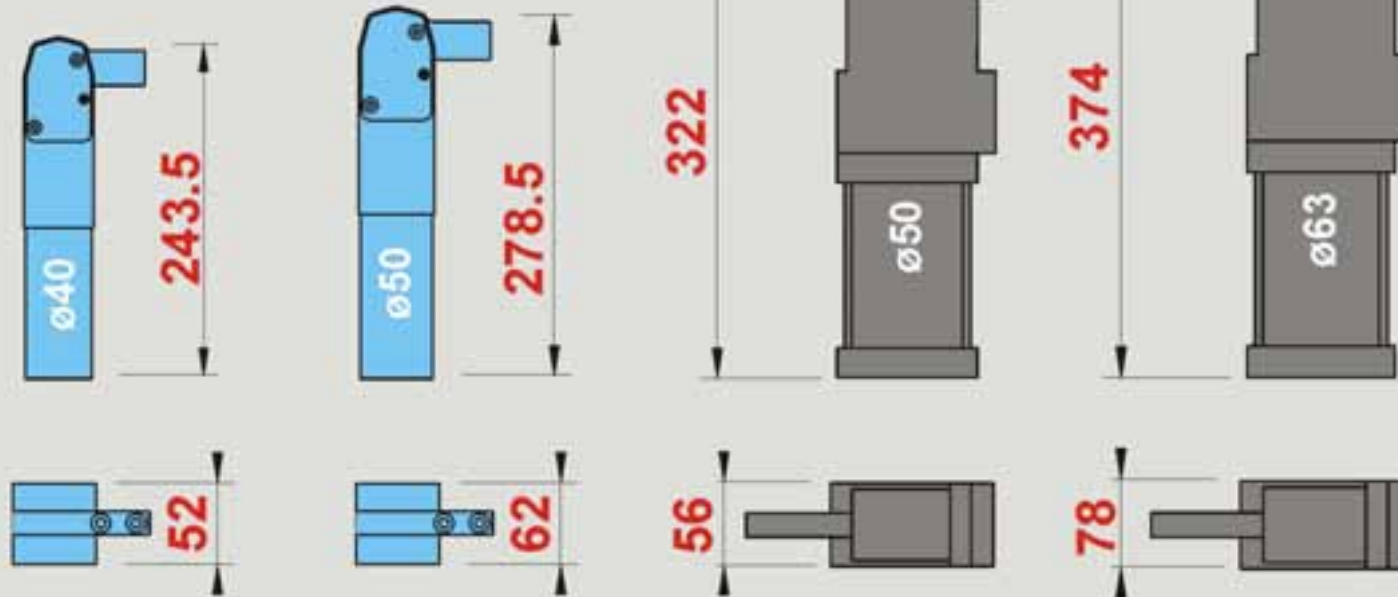
#### OTHER CLAMPS

F=600 daN

F=950 daN

F=380 daN

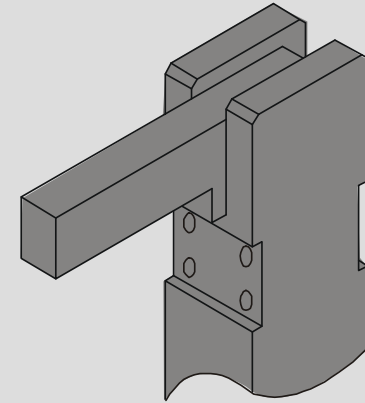
F=912 daN



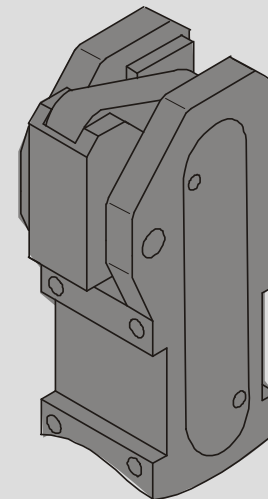
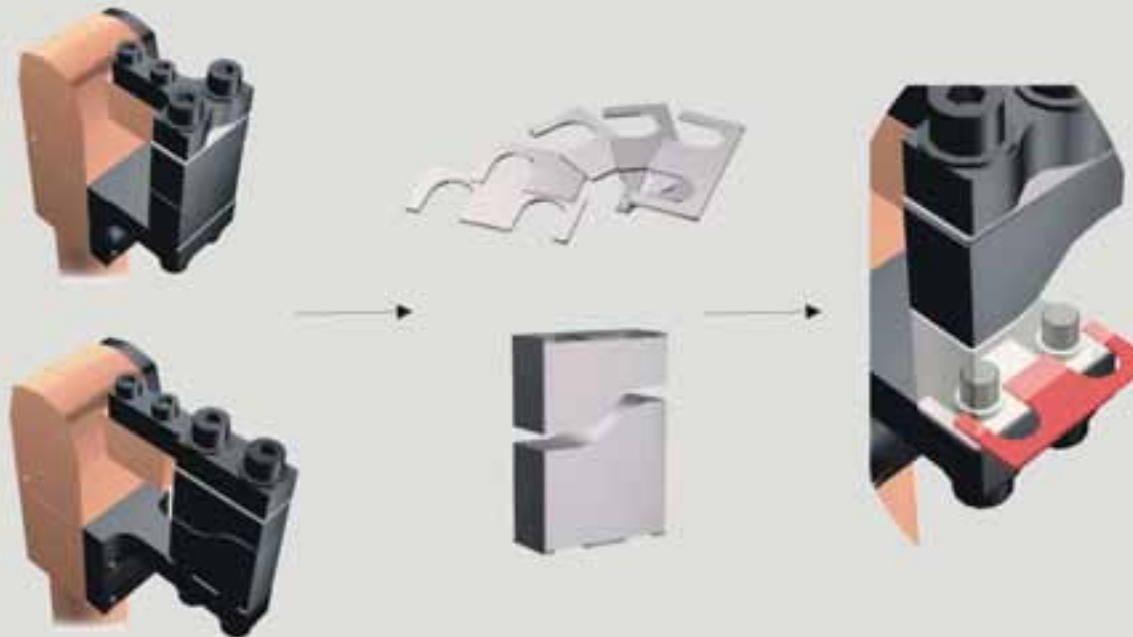
If we compare two clamps that make the same force, we can notice that Misati clamps are narrower (between 16-42%).

With a narrower clamp, it will be easier to gain access to **small areas of the tools**.

### 3.3. CLAMP: Standard Gripper Fingers



OTHER CLAMPS

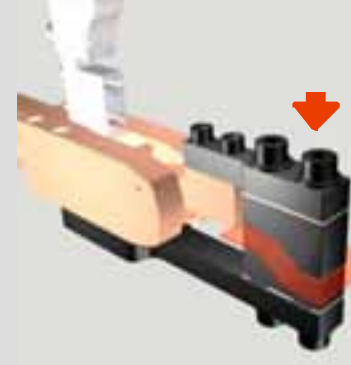
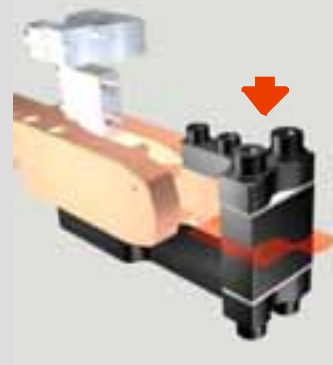
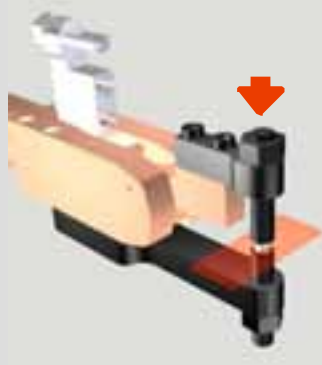


Designing & manufacturing special gripper fingers increases the total price of the tool. Misati offers a wide range of standard gripper fingers, so that the customer may **save up to 353€ per clamp**.

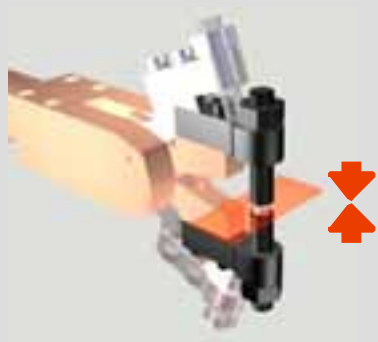
### 3.4. CLAMP: Types of Gripper Fingers



BL-20  
BL-32  
BL-40  
BL-50



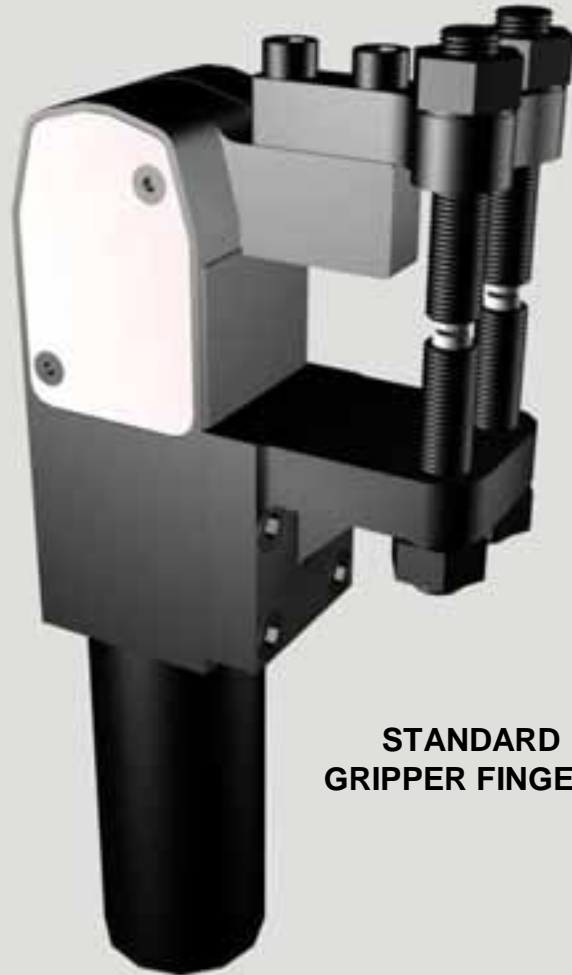
BI-20  
BI-32  
BI-40  
BI-50



BC-20  
BC-32  
BC-40

Our program of gripper fingers offers one or two screws, and moulded surfaces to **combine with all our types of clamps.**

### 3.5. CLAMP: Study of Special Gripper Fingers



**STANDARD  
GRIPPER FINGERS**



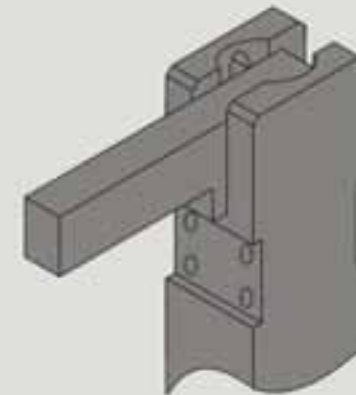
**SPECIAL  
GRIPPER FINGERS**

In this example, the holding force had to be the same on 4 points (on different distance from the turning point of the arm). We proposed a compensation system with rocker arm to our customer. Our Research & Development Department can suggest **the best solution when applying clamps**, so our customers can **reduce the number of hours working on a project**.

### 3.6. CLAMP: Welding Anti-spatter



**OTHER CLAMPS**



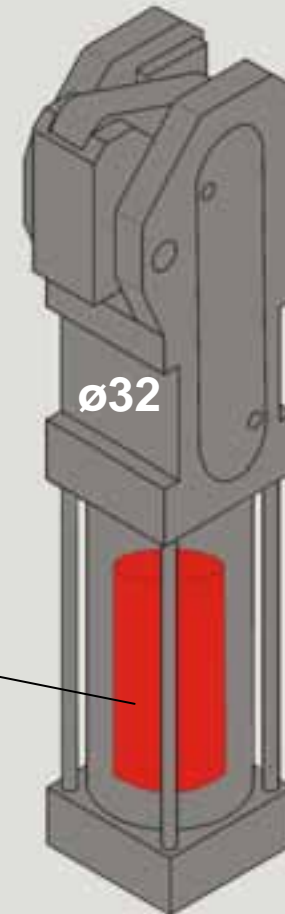
We strongly recommend to use protected clamps in aggressive welding environments (resistance or arc) or, generally, anywhere with sparks.

With our full protective anti-spatter coating, sparks won't stick to the clamp, so **any production stoppage will be avoided** and, definitely, the customer will **save in maintenance**.

### 3.7. CLAMP: Air Consumption



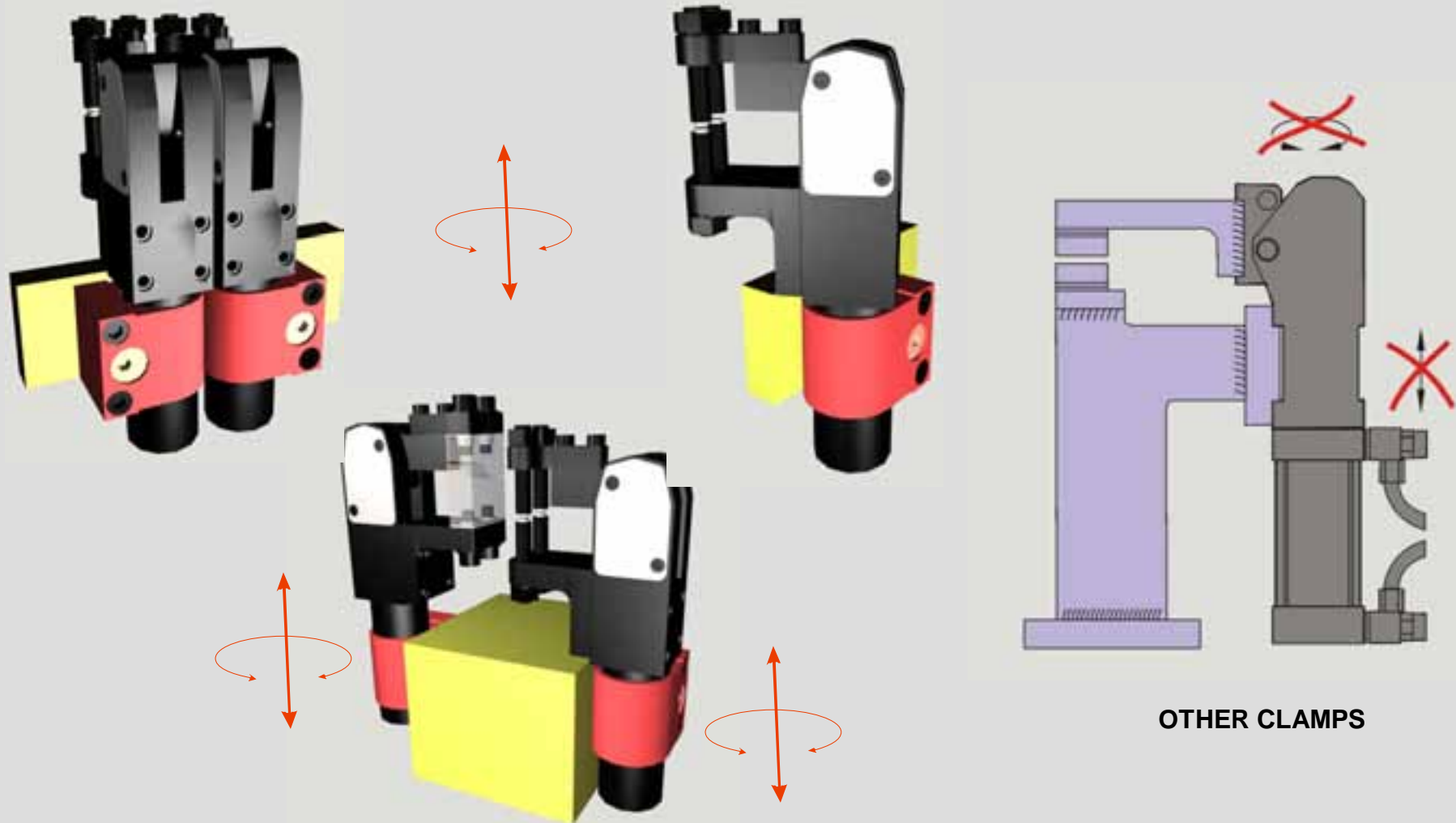
OTHER CLAMPS



**59** < **73.9**  
cm<sup>3</sup>

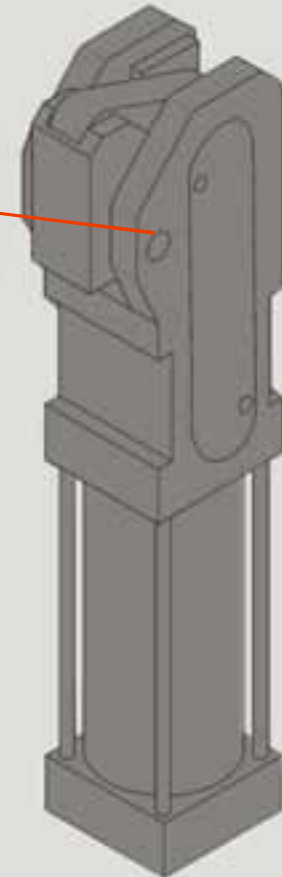
The lower air consumption of our clamps means a saving up to **130 €/ year per clamp**, i.e., there is a recovery of the investment made on the tool in a shorter time.

### 3.8. BRIDA: Adjustment of the Fastening Clamp



Assembling the clamp through its cylinder allows us to fasten both gripper fingers simultaneously (action-reaction), so we can adapt to the different levels of the part to be fastened. **Time used to adjust the tool is reduced.**

### 3.9. CLAMP: Rolling System



**OTHER CLAMPS**

The force mechanism has been designed with rolling elements in order to guarantee **20 million cycles** or 7 years.

## 3.10. CLAMP: Built-in Connections

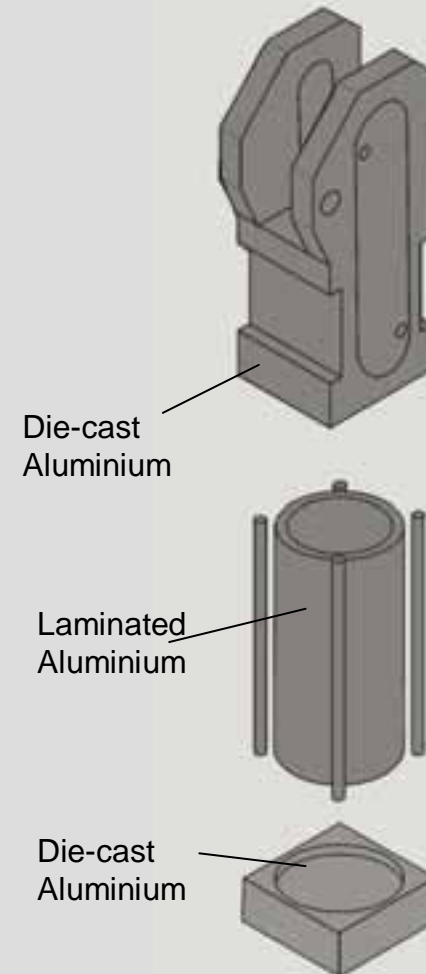


Pneumatic connections are placed at the bottom of the clamp, so that they do not interfere on the working area. **Clamps can, then, be grouped.**

### 3.11. CLAMP: Monobloc Body



MECHANIZED & TREATED STEEL



Die-cast Aluminium

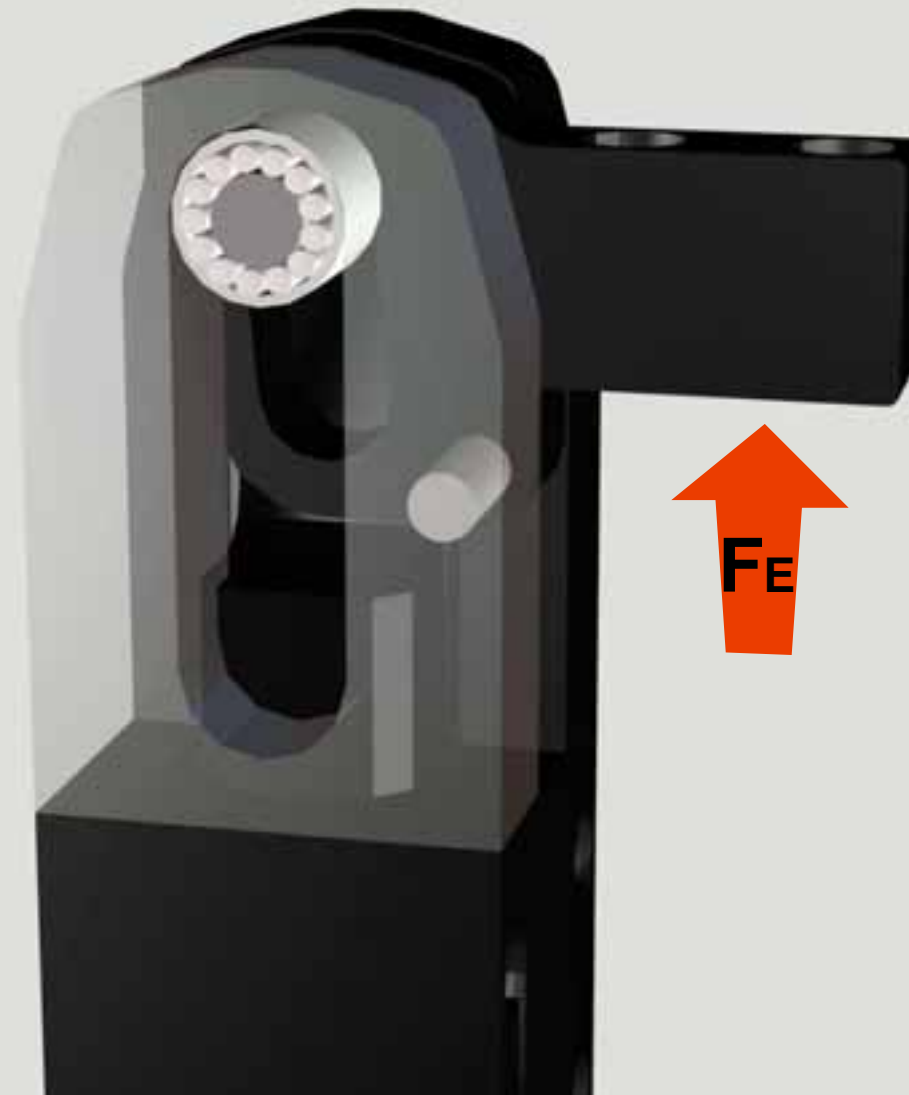
Laminated Aluminium

Die-cast Aluminium

OTHER CLAMPS

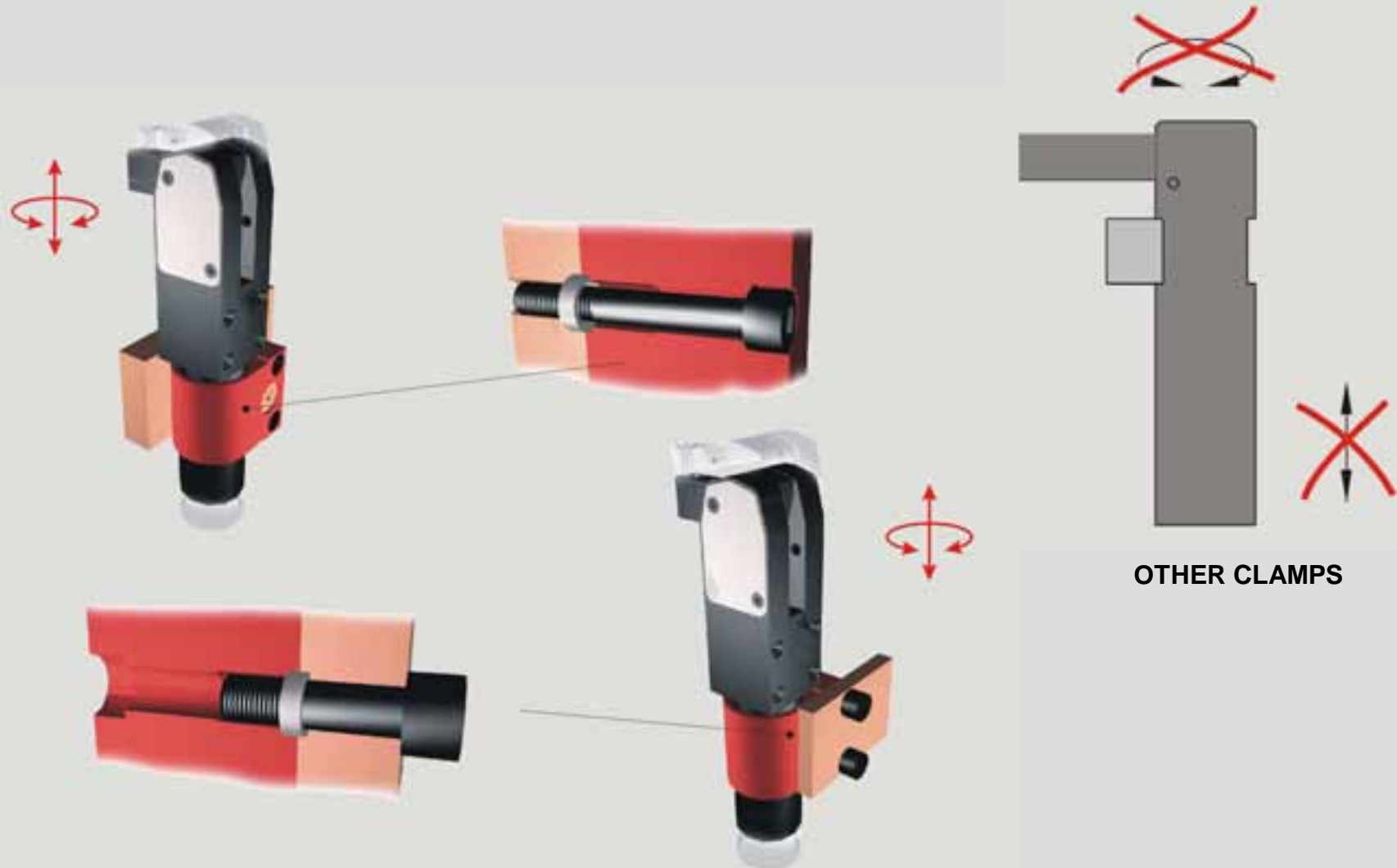
The pneumatic cylinder & the force mechanism on a monobloc body give the clamp the **maximum rigidity** to withstand the environmental aggressiveness.

### 3.12. CLAMP: Non-reversibility



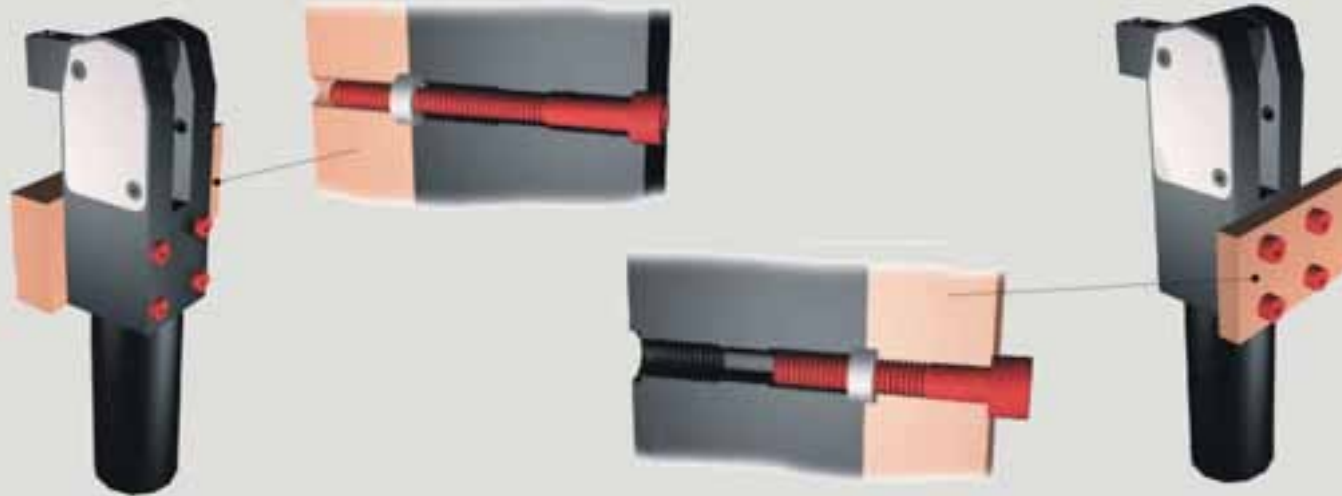
Thanks to the design of the force mechanism, no external force can open the movable arm. So, even though air is missing, **detachments** of the piece that is being fastened are **prevented**.

### 3.13.1. CLAMP: Fastening of the Clamp (with adjustment)

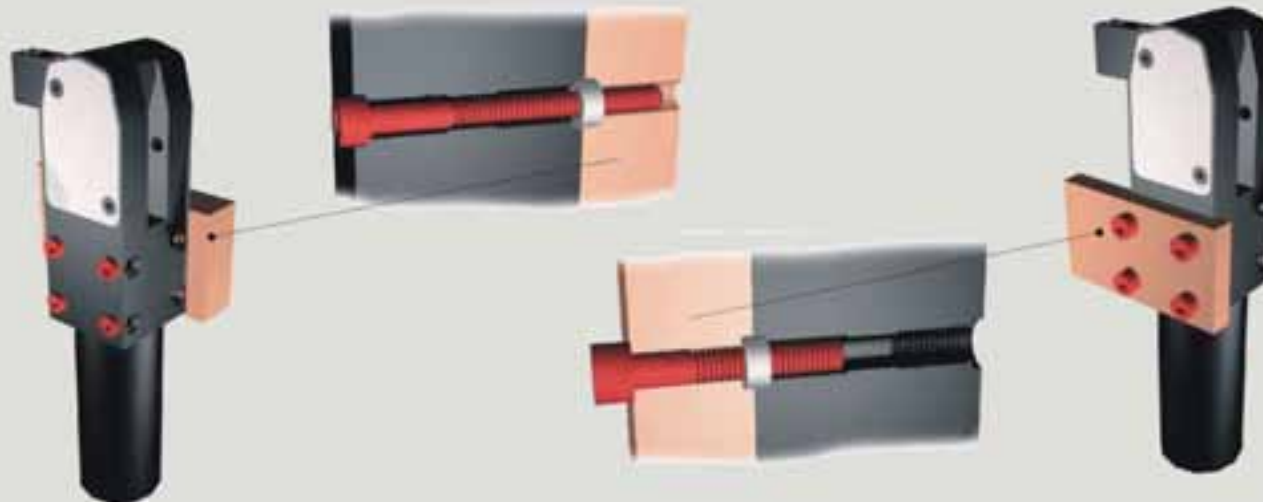


The clamp can be fastened through the cylinder body in order to get an **adjustment in position and height** with regard to the clamping point.

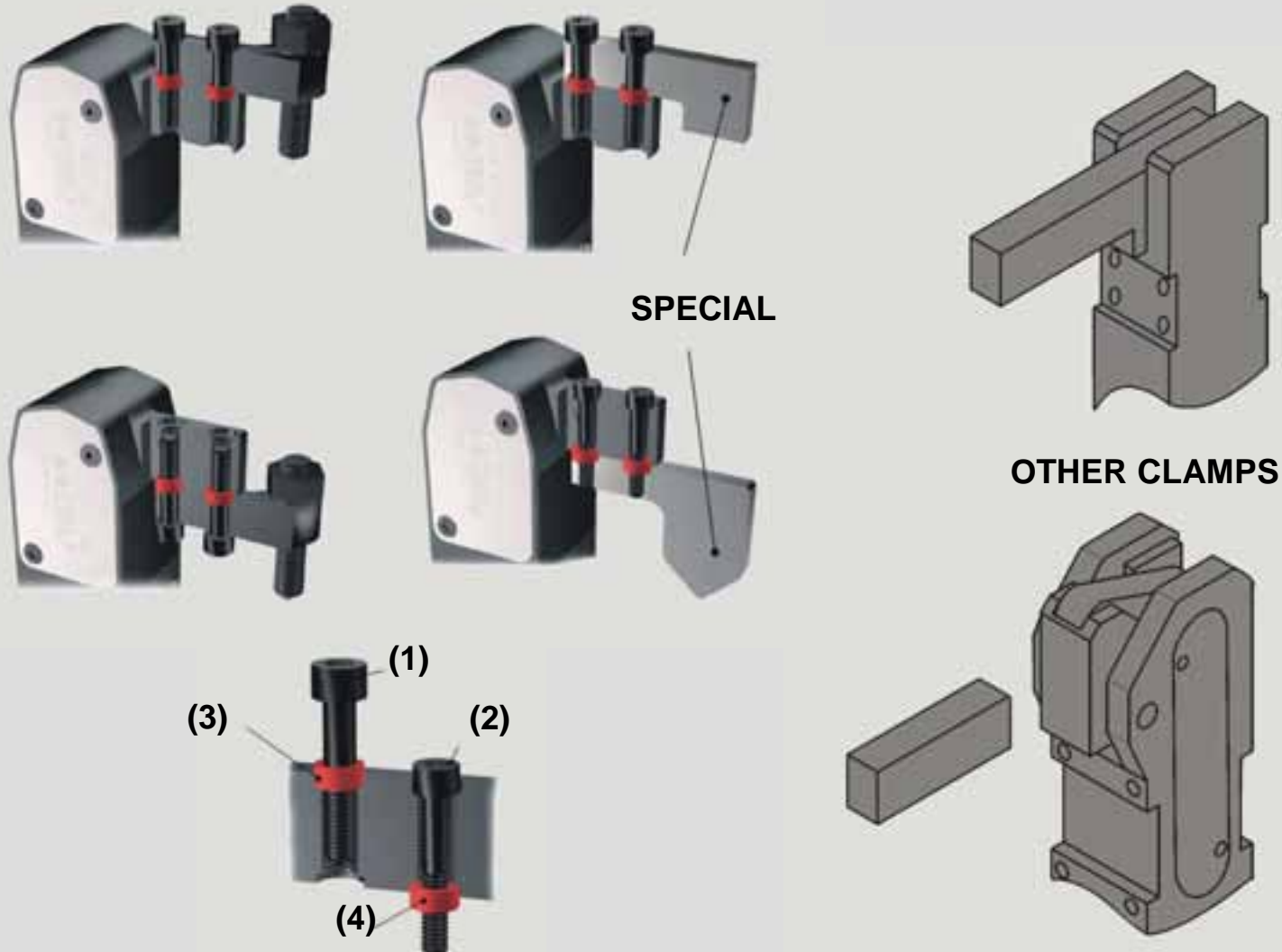
### 3.13.2. CLAMP: Fastening of the Clamp (fixed position)



The clamp can also be fastened through the body (front or lateral) with centring guide bushings.  
The **position** is, then, **accurate** and it's **easy to interchange clamps**.

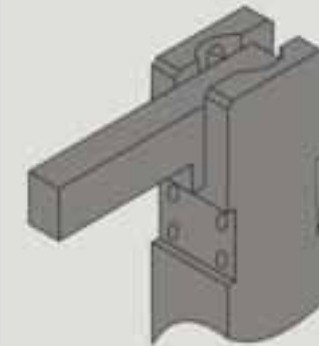
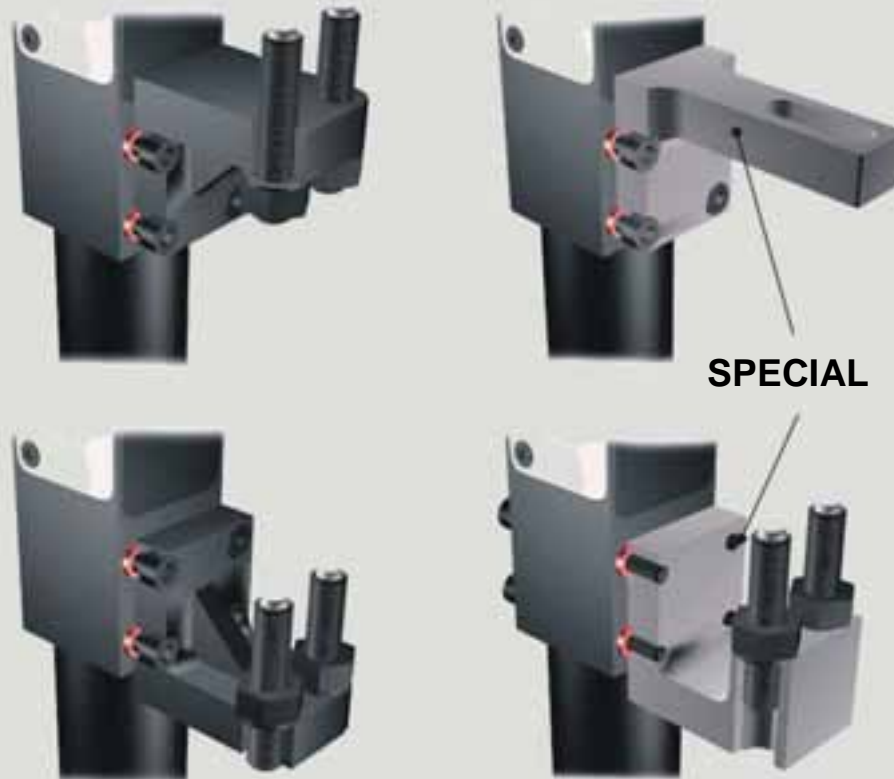


### 3.14.1. CLAMP: Fastening of Movable Gripper Fingers

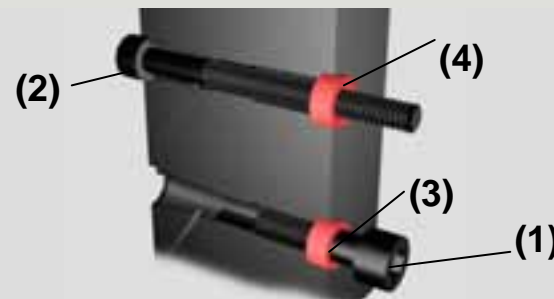


Fastening of movable gripper fingers to the arm of the clamp is made with threaded screws (1), passing screws (2) and upper (3) or lower (4) centring guide bushings. In this way, it's **easier to assemble, centre and interchange gripper fingers.**

### 3.14.2. CLAMP: Fastening of Static Gripper Fingers

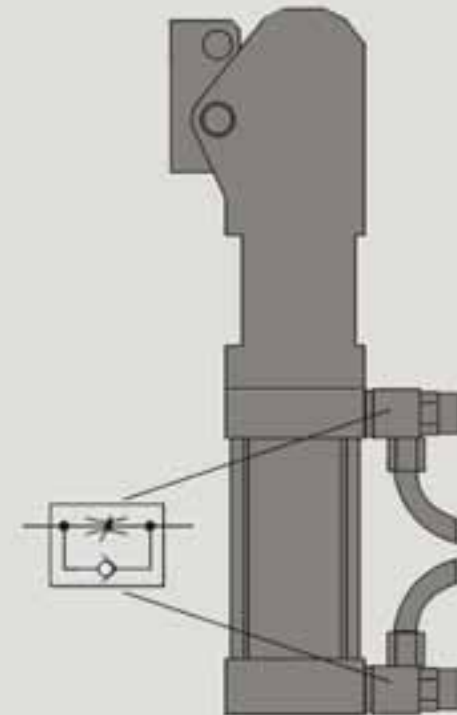
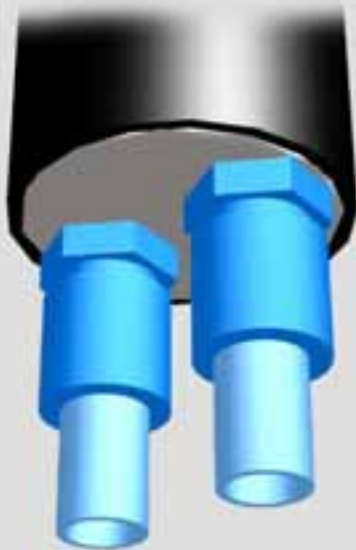


OTHER CLAMPS



Fastening of static gripper fingers to the body of the clamp is made with threaded screws (1), passing screws (2) and upper (3) or lower (4) centring guide bushings. In this way, it's **easier to assemble, centre and interchange gripper fingers**.

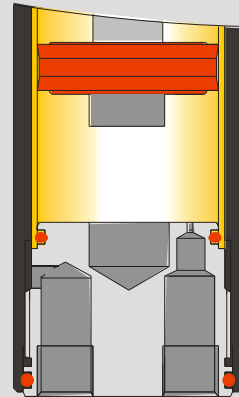
### 3.15. CLAMP: Flow Regulators



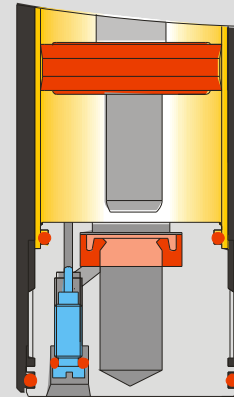
OTHER CLAMPS

With standard gripper fingers, Misati clamps don't need any flow regulators: **the cost of the pneumatic installation is reduced.**

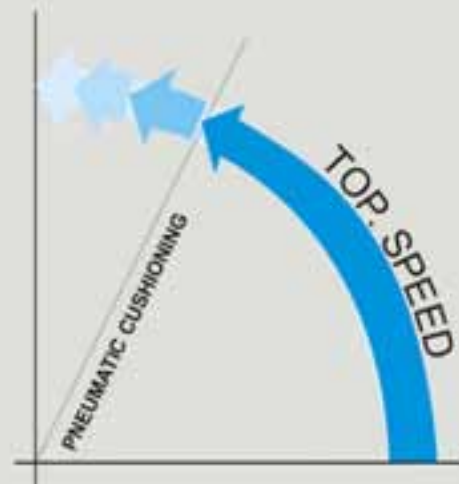
### 3.16. CLAMP: Pneumatic Cushioning



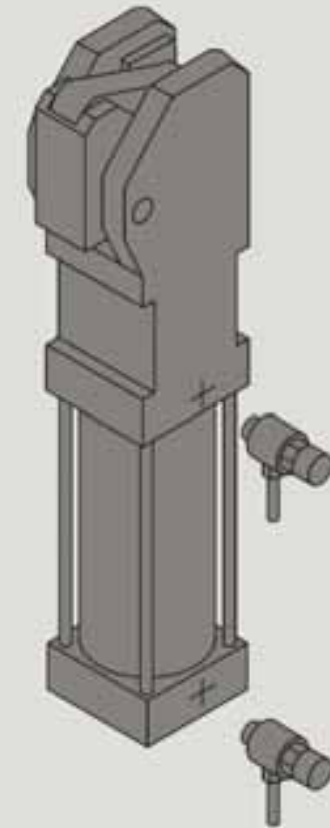
Standard Head



Head with Cushioning (Optional)



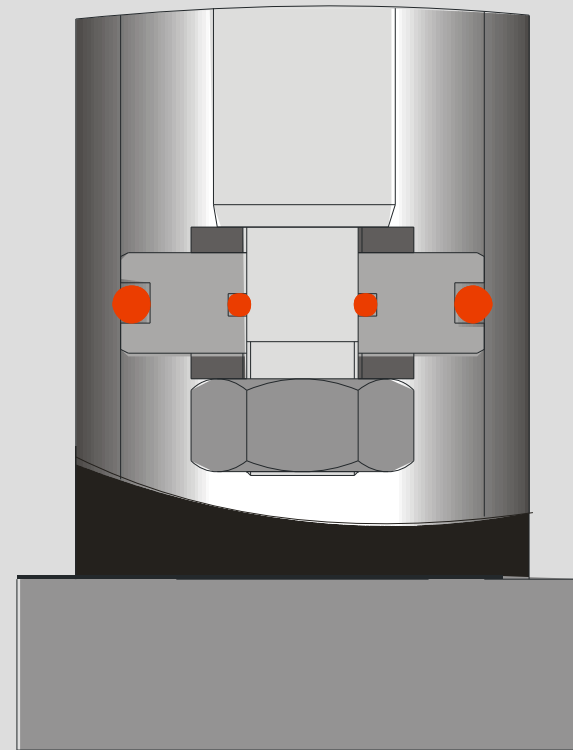
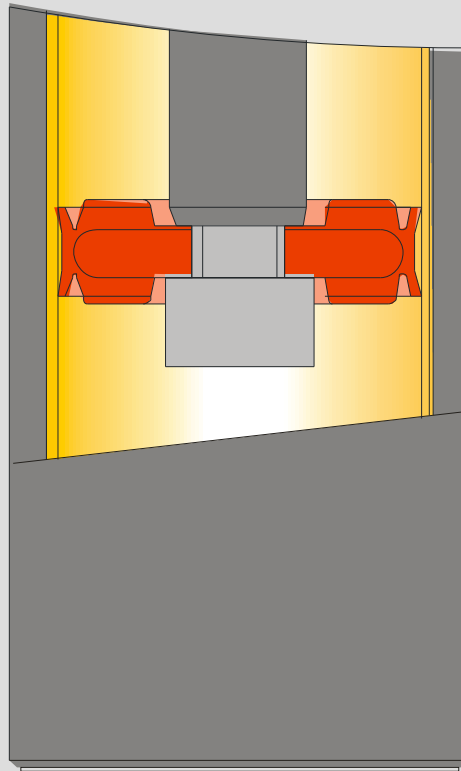
Adjustment of Cushioning



OTHER CLAMPS

With special couplings (with an excess length or mass), Misati has prepared a pneumatic cushioning system, which works on the lastest degrees when opening the arm, and which **doesn't cause a loss of speed or productivity.**

### 3.17. CLAMP: Air Tightness of the Piston



OTHER CLAMPS

Misat clamps have a double-lip sealing piston and a stainless cylinder bush, which guarantee a higher air tightness, less friction and, in the long run, **less consumption of spare parts**.

### 3.18. CLAMP: Pneumatic Spare Parts



Replacement of weared elements means a minimum repair cost: it's very **easy to dismantle** the clamp and **change the damaged part**.

### 3.19. CLAMP: Guarantee






**17 0709**

LOT      MONTH      YEAR

Our clamps, marked with manufacturing lot, month and year, are guaranteed for 7 years or with 20 million manoeuvres. This makes it possible to **reuse and amortize them easily**.

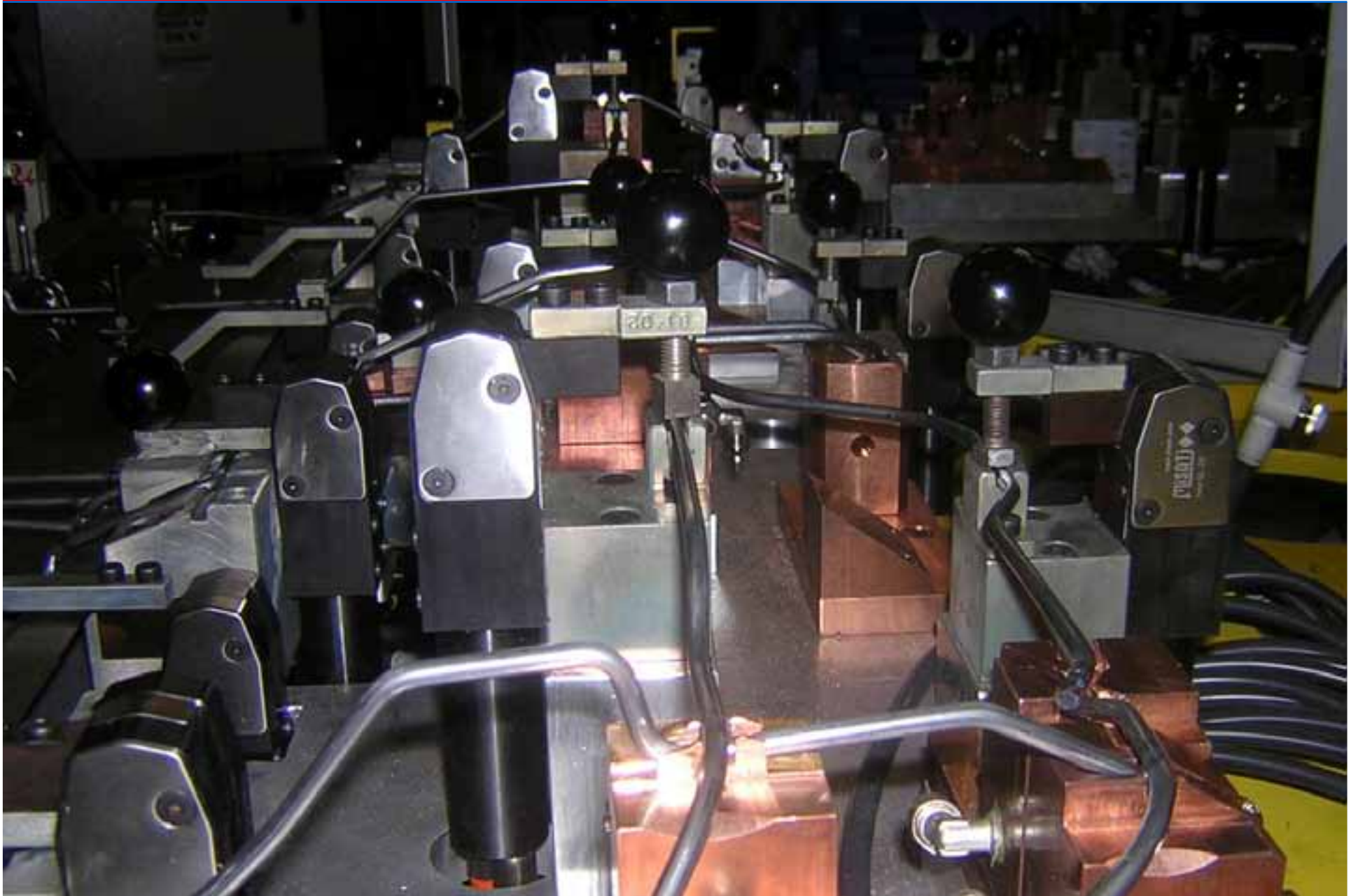
## 4. COMPARATIVE STUDIES



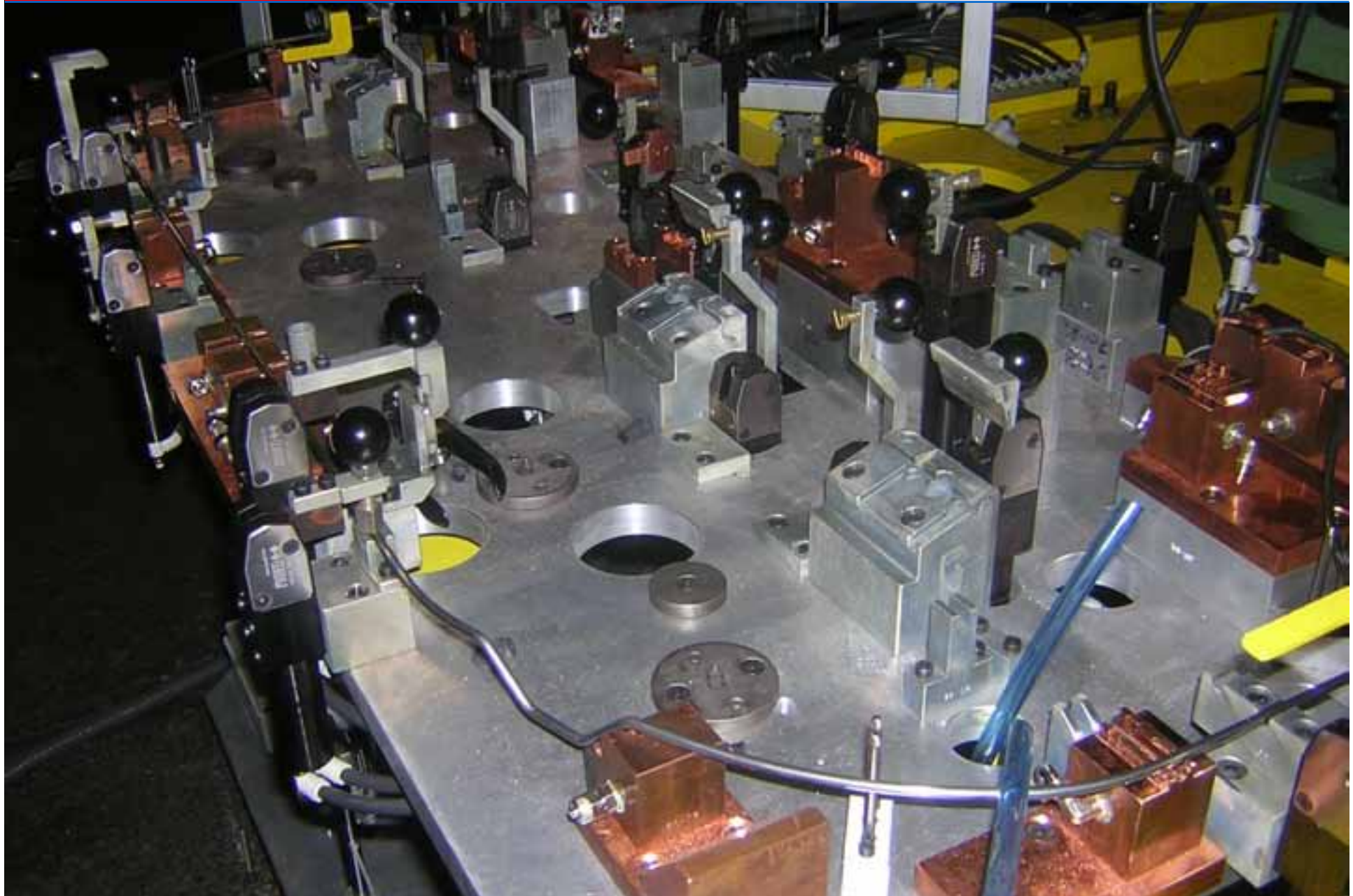
<div style="text-align: right;">MODELS</div> <div style="text-align: left;">CHARACTERISTICS</div>	 <b>TÜNKERS</b> <b>PKS 32</b> <b>H T00 090</b>	 <b>MISATj</b>  <b>BL-20</b>	<b>COMMENTS</b>
HOLDING FORCE (6bar) (r=50mm)	120 daN	120 daN	Same force
REDUCED SIZE	55 x 255 mm	32 x 150mm	-41.8% Narrower
STANDARD GRIPPER FINGER	NO	YES	Saving up to 353 € in design & construction
WELDING PROTECTIONS	NO	YES	Welding Anti-spatter
AIR CONSUMPTION	73.9 cm <sup>3</sup>	16.22 cm <sup>3</sup>	Saving of 60.82 €/year per clamp in consumption
ADJUSTMENT OF GRIPPER FINGERS	NO	Adjustable in height & position	Easy adjustment of the tool
FORCE MECHANISM	Friction	Rolling System	Prepared for 20 million cycles
PNEUMATIC CONNECTIONS	Lateral	Built-in	Easy adjustment & grouping
MONOBLOC BODY	NO	YES	Tougher
MATERIAL	Aluminium	Mechanized & treated steel	
FASTENING OF GRIPPER FINGERS	Welded	Screwed on + centring guides	Easy assembly & interchangeability of the gripper finger
FLOW REGULATORS	yes	Not required	Saving of 6.52 €/clamp in the pneumatic installation
WEIGHT	1.500 kg	0.610 kg	-60%. Less weight
GUARANTEE	2 years (1.5 million/cycles)	7 years (20 million/cycles)	Date of guarantee marked on the clamp
PRICE	€	€	?

This study has been based on two clamps with the same HOLDING FORCE (the most important characteristic in a fastening element). **Please, ask for a comparative study between the clamp you use and Misati's equivalent.**

## 5.1. APPLICATIONS



## 5.2. APPLICATIONS





**NEW  
GENERATION**  
DOWNLOAD PRESENTATION OF CLAMP



## FASTENING CLAMP

Updated 15-01-09

Company

Catalogues

Technical data

CAD

Spare parts

Newsletter

Automobile sector

Transfer press

Welding grips

Welding tools

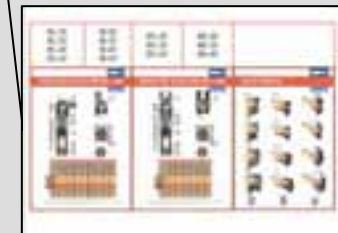
**ACCESSORIES**

**HANNOVER  
MESSE**  
20 - 24 APRIL 2009  
**!INNOVATION!**

Fransais Deutsch Español

© MISATI, S.L. (2009)

e-mail: [misati@misati.es](mailto:misati@misati.es)



In Internet, you will find all the information you may need to apply correctly our fastening clamps.