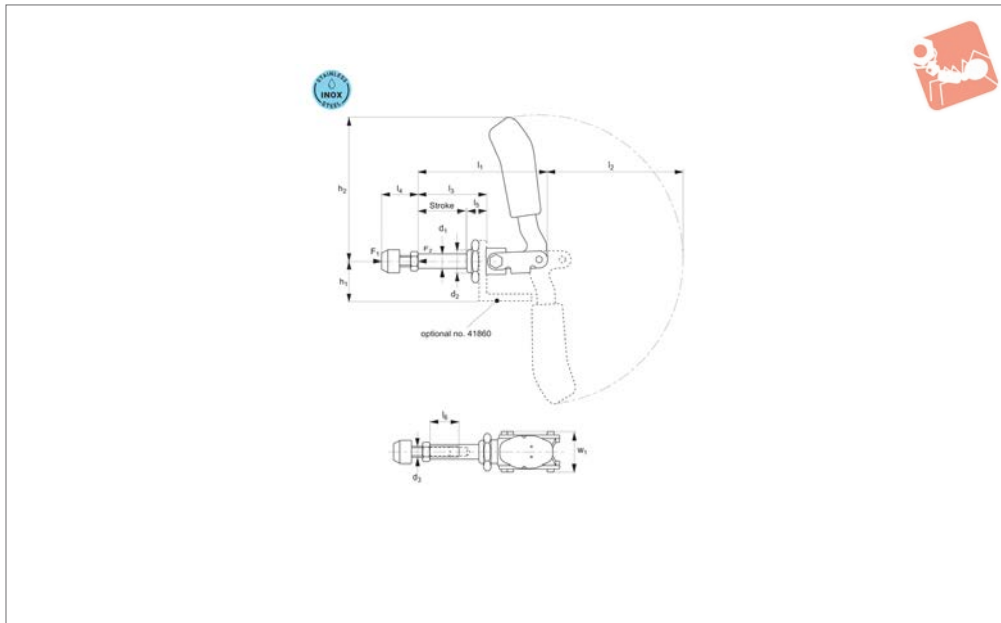




# Push-Pull Toggle Clamps

stainless steel - compact version

# Stainless Steel Toggle Clamps



## 41840.4

STAINLESS STEEL TOGGLE CLAMPS

### Material

Body: stainless steel (AISI 304, 1.4301), polished.  
Rivets: stainless steel running in hardened bushes. Pre-lubricated bearings.

Ergonomic soft feel oil-resistant handle with large grip area.  
Supplied complete with stainless clamping screw (with rubber pad).

### Technical Notes

Compact version with long rod guide.  
Temperature range -10°C to +80°C.

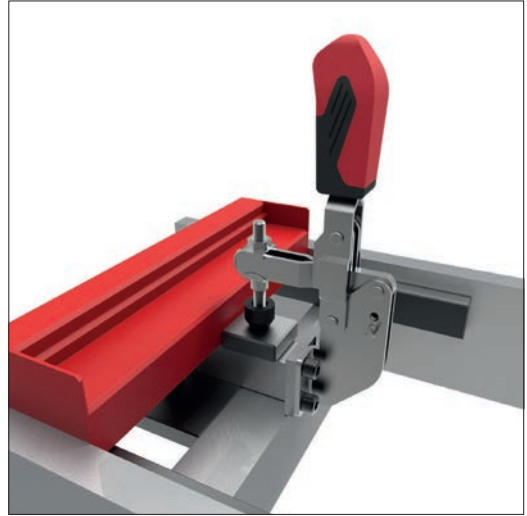
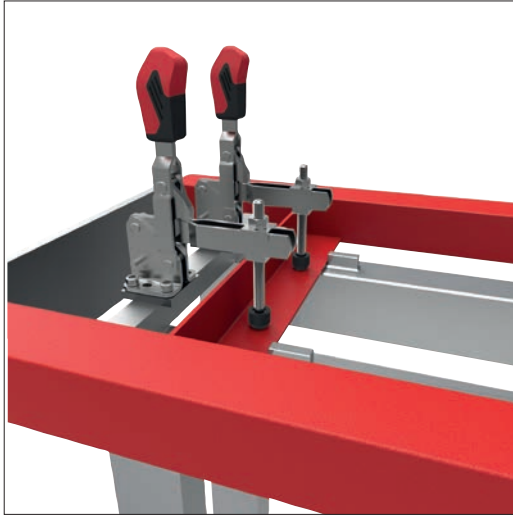
| Order No.   | Size | F <sub>1</sub><br>kN | F <sub>2</sub><br>kN | Clamping screw | Stroke s <sub>1</sub> | h <sub>1</sub> | h <sub>2</sub> | l <sub>1</sub> | l <sub>2</sub> | Weight<br>g |
|-------------|------|----------------------|----------------------|----------------|-----------------------|----------------|----------------|----------------|----------------|-------------|
| 41840.W0302 | 2    | 1.0                  | 1.0                  | M 6x25         | 21.5                  | 24             | 73.0           | 68.5           | 69             | 130         |
| 41840.W0303 | 3    | 2.5                  | 2.5                  | M 8x35         | 40.0                  | 33             | 120.5          | 108.0          | 115            | 320         |
| 41840.W0305 | 5    | 4.0                  | 4.0                  | M12x50         | 67.0                  | 37             | 149.0          | 175.0          | 139            | 1200        |

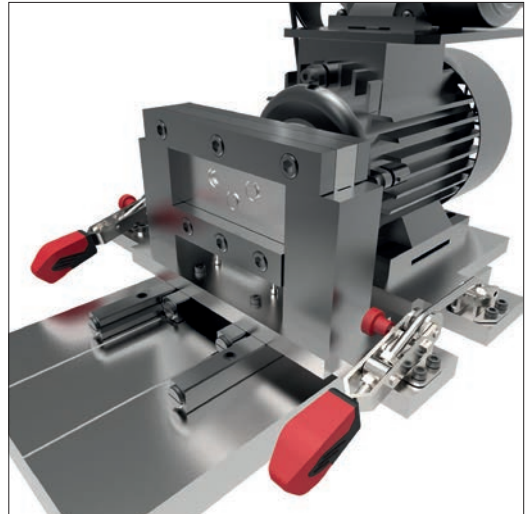
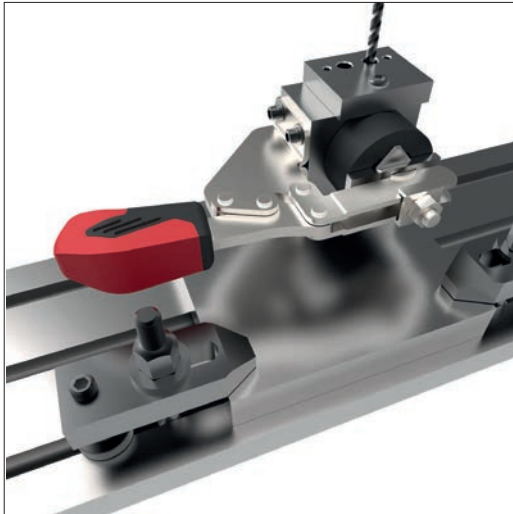
| Order No.   | l <sub>3</sub> | l <sub>4</sub><br>min. | l <sub>4</sub><br>max. | l <sub>5</sub> | l <sub>6</sub> | w <sub>1</sub> | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> |
|-------------|----------------|------------------------|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 41840.W0302 | 36             | 17                     | 27.0                   | 13             | 15             | 30.5           | 10             | M16x1,5        | M 6            |
| 41840.W0303 | 57             | 22                     | 37.5                   | 16             | 25             | 33.0           | 12             | M20x1,5        | M 8            |
| 41840.W0305 | 92             | 30                     | 50.0                   | 24             | 45             | 49.0           | 16             | M24x1,5        | M12            |



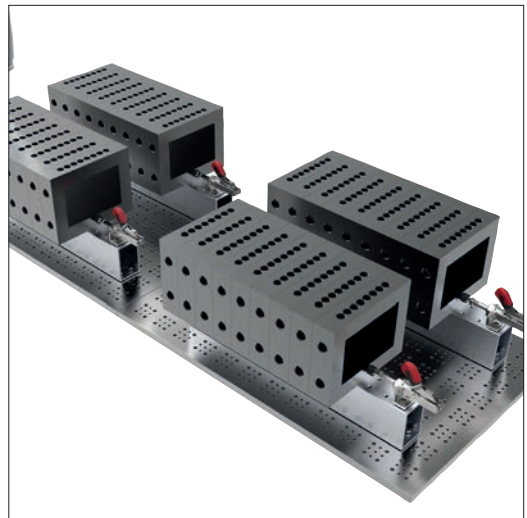
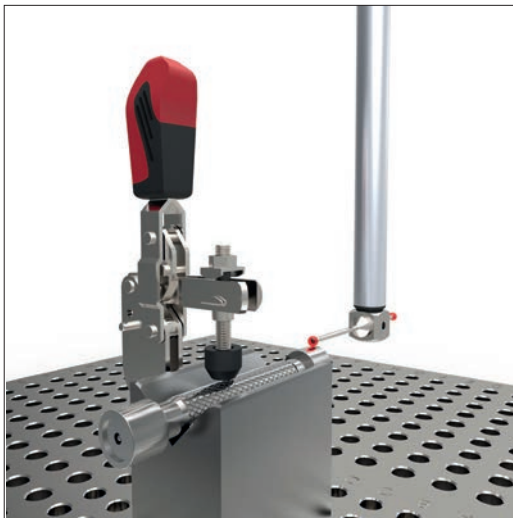
## Welding Fixtures



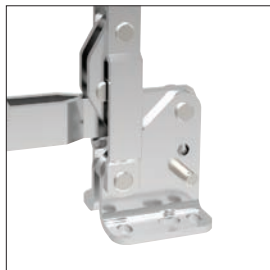
## Machining and Jig Assemblies



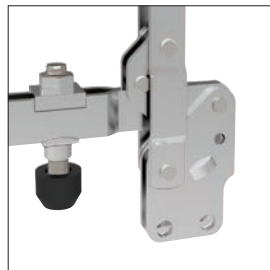
## Cmm's



STAINLESS STEEL TOGGLE CLAMPS



Horizontal base



Vertical base



Angled base

### Mounting Base Variations



Vertical acting



Horizontal acting



Push-pull

### Clamping Variations



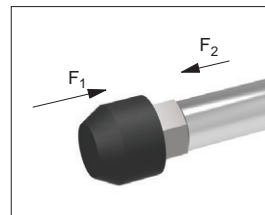
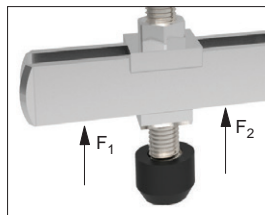
Hook type



Latch type

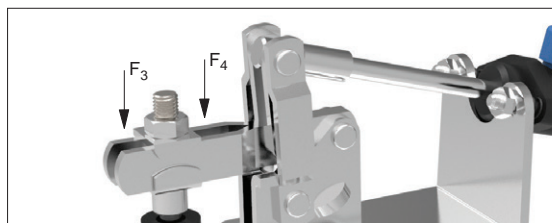
### Explanation of forces

The force transmitted to the workpiece by the toggle clamp's closed arm, without itself being deformed when machine forces are applied. The holding force value is dependent upon the proximity of the measuring load point to the toggle clamp's pivot point (therefore two values,  $F_1$  and  $F_2$  are provided).



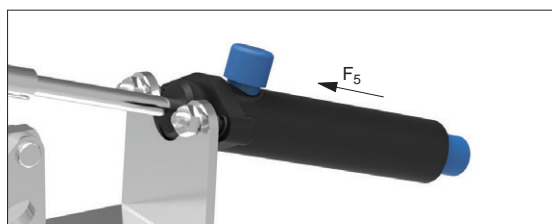
### Holding Forces $F_1$ or $F_2$

The force applied to the workpiece when the toggle clamp's arm is closed. These clamping forces can only be stated for pneumatic toggle clamps, clamping forces of manual clamps cannot be easily measured as they are dependent upon the operator.



### Clamping Forces $F_3$ or $F_4$

For pneumatically controlled toggle clamps only,  $F_5$  is the piston force required (at 6 bar to) achieve the stated clamping force.



### Piston Forces $F_5$

STAINLESS STEEL TOGGLE CLAMPS

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### Quality Features



Ergonomic soft grip  
2-component handle



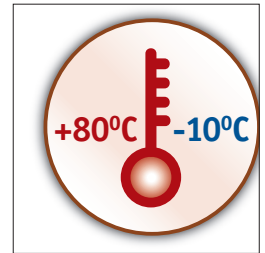
Stainless rivets and  
hardened bushings



Moveable stop for  
variable opening angle



Operator  
finger protection



Temperature resistant

### Unique Features



Safety catches



Heavy duty versions



Pneumatic versions



Matt black surface for  
optical measurement

### Materials



Steel, zinc plated  
and passivated



Stainless steel (304)



Steel, matt black  
vario-spektron coated



Protective cap and  
handle made of an  
electrostatic conductive  
(dissipative) material.