

# **BRAUER**®

## **CLAMPING PRODUCTS**

**Including Hoist Rings and Lever Handles**



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## INTRODUCTION

Since 1926, Brauer has been providing industry with the finest quality products, expert technical support, on time deliveries and unparalleled customer service. Our brands are now recognised world-wide as products of the **highest quality**, and the breadth of our product portfolio provides our customers with tooling solutions for a wide variety of problems.

Brauer continues to be committed to bringing new innovative tooling products to the market place. This new clamping products catalog updates our long standing, and successful range of clamping products which have led the market for over 50 years.

Our team of highly talented engineers is backed by the latest computer aided design facilities including three dimensional feature based parametric solid modelling.

At Brauer, we continue to be motivated by working with our customers in providing innovative solutions for their particular tooling requirements.

To view the complete tooling portfolio manufactured by Brauer, please consult our web site at [www.brauerclampsusa.com](http://www.brauerclampsusa.com) or [www.brauer.co.uk](http://www.brauer.co.uk).

If, after considering our standard range of products, you are unable to find a solution, then please consult our sales team who will be pleased to progress the design and manufacture of a **custom** designed item to meet your particular needs.

CLAMPING PRODUCTS



# BRAUER®

DAWSON ROAD, MOUNT FARM, MILTON KEYNES ENGLAND MK1 1JP

TELEPHONE: 00 44 (0)1908 374022 FAX: 00 44 (0)1908 641628

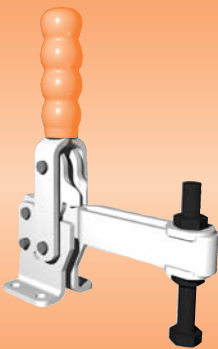
E-MAIL: sales@brauer.co.uk

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## CAD FORMATS FOR BRAUER CLAMPS

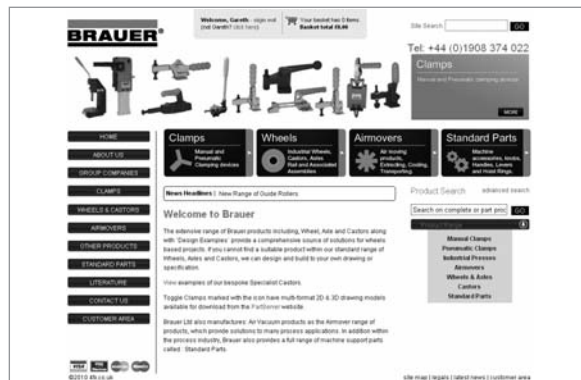
The Brauer range of clamping products are available for design engineers in a number of CAD formats direct from:

[www.brauer.co.uk](http://www.brauer.co.uk)



### 3D:

- 3D Studio Max
- All Plan
- AutoCad (dwg)
- ACIS (.sat)
- Beckercad
- Caddy
- Catia v4
- Catia v5
- CIP
- DXF
- 3D Studio Max
- All Plan
- AutoCad (dwg)
- ACIS (.sat)
- Beckercad
- Caddy
- Catia v4
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## SPECIAL OR CUSTOM MADE PRODUCTS

If none of the standard products shown in this catalogue meets your needs, our engineers are available to modify a standard clamp or to work with you in developing a design to suit your needs.

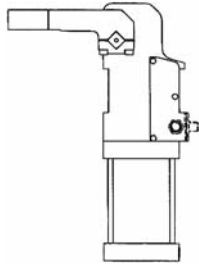
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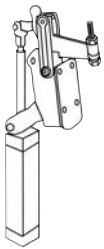
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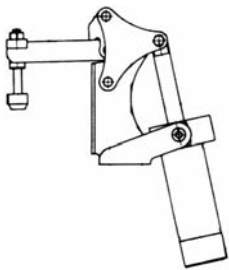
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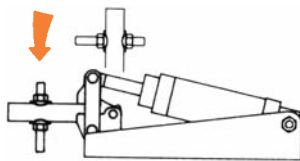
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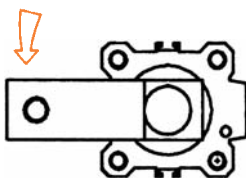
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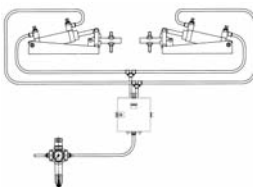
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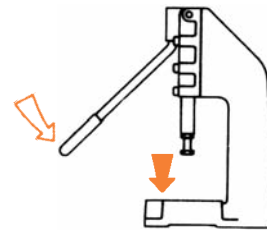
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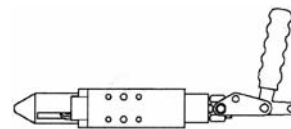
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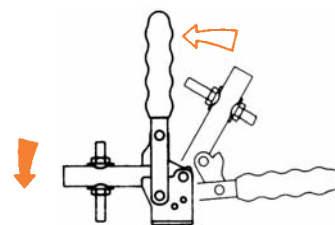
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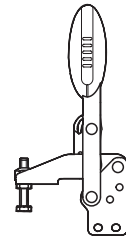
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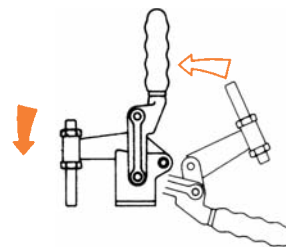
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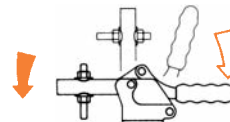
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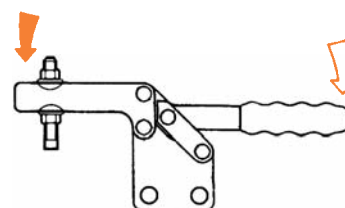
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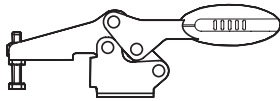
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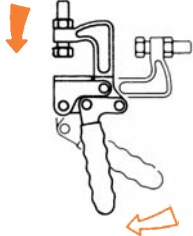
Denotes stainless steel versions

## BLACK OXIDIZED NITRO CARBURIZED HORIZONTAL CLAMPS 93



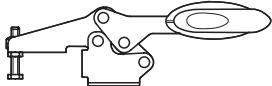
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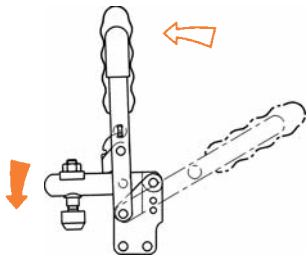
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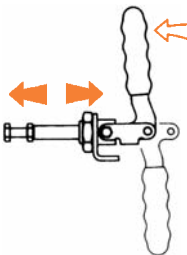
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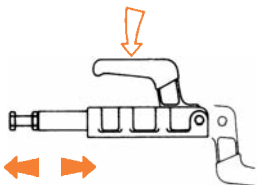
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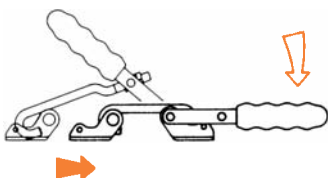
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|------------|-------------------|----------------------|
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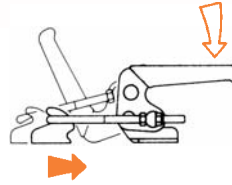
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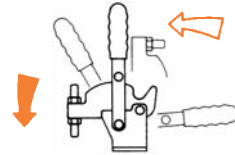
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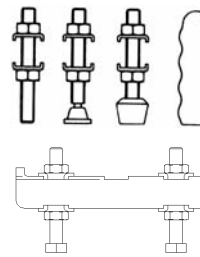
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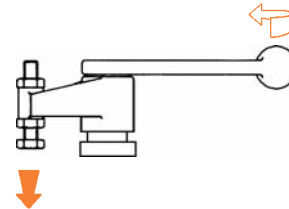
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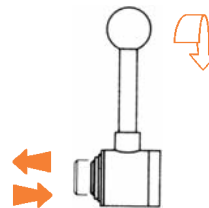
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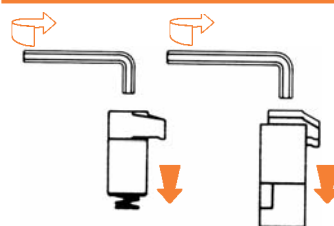
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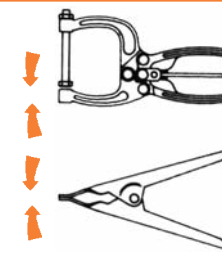
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Denotes stainless steel versions

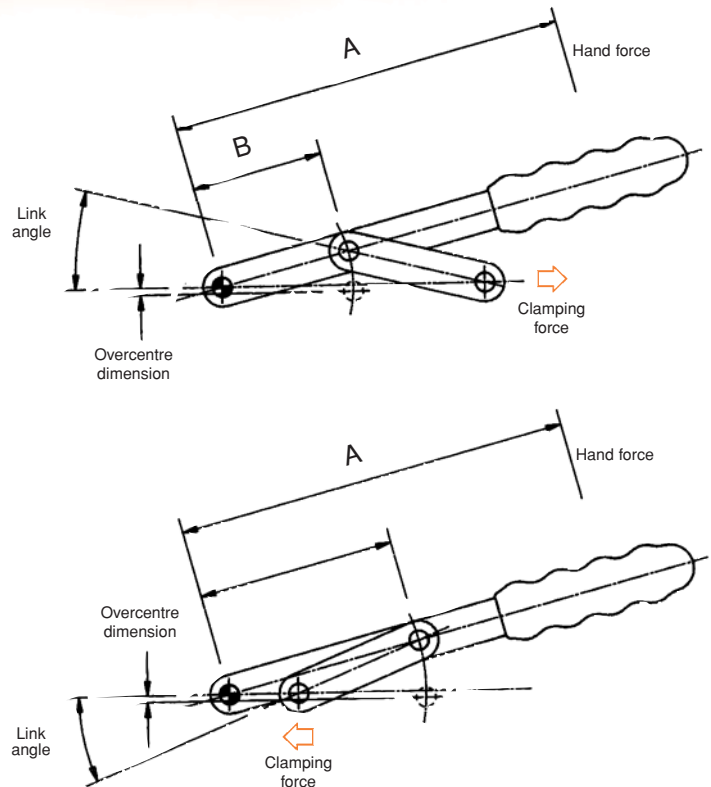
The toggle mechanism in a clamp has three functions:

1. to multiply a hand force at the handle into a high clamping force to hold work.
2. to create an over-centre lock to prevent the clamp from opening and releasing the work until opened by the operator.
3. to rapidly open and close the clamp giving a wide clearance in which to load and unload the workpiece.

The multiplication of input (hand) force to output (clamping) force is created firstly by the leverage of handle length (A) to link length (B), and secondly by the three pivots of the toggle being pushed into alignment.

For example, a clamp with a handle to link leverage of 3 can multiply its hand force to clamping force as follows:

| link angle | toggle multiplier | handle leverage multiplier | overall force multiplier               |
|------------|-------------------|----------------------------|--|
| 2.0°       | 14                | 3                          | 42                                     |
| 1.0°       | 28                | 3                          | 84                                     |
| 0.5°       | 57                | 3                          | 171                                    |
| 0.25°      | 114               | 3                          | 342                                    |
| 0.12°      | 342               | 3                          | 1026                                   |
| 0.0°       | infinity          | -                          | limited by the elasticity of the clamp |



The model numbering system describes the clamp type and strength as shown in the example below:

V 350 / 2 B

|                      |   |
|----------------------|---|
| <b>CLAMP SERIES</b>  | V = vertical<br>H = horizontal<br>P = straight line (push-pull) action        |
| <b>HOLDING FORCE</b> | (daN)   |
| <b>BASE TYPE</b>     | /1 = straight<br>/2 = flanged<br>/3 = front mounting                          |
| <b>ARM TYPE</b>      | A = straight<br>B = adjustable spindle position<br>C = fixed spindle position |

Note: an 'X' within the model number denotes a pneumatic clamp

**Clamping Force** — is that which will result from the quoted Hand Force. Clamps with a fixed clamping position have a single Clamping Force quoted. Those where the threaded spindle may be positioned at any point along an arm (arm type B) and those with solid arms to be cut and welded as required (arm type A) have clamping forces quoted at the inner and outer ends of the arm.

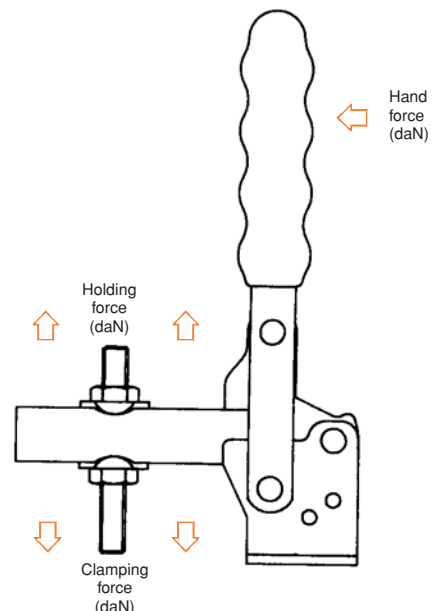
**Holding Force** — is that which the clamp can withstand after being closed without damage to the clamp and without the toggle unlocking due to distortion of the clamp.

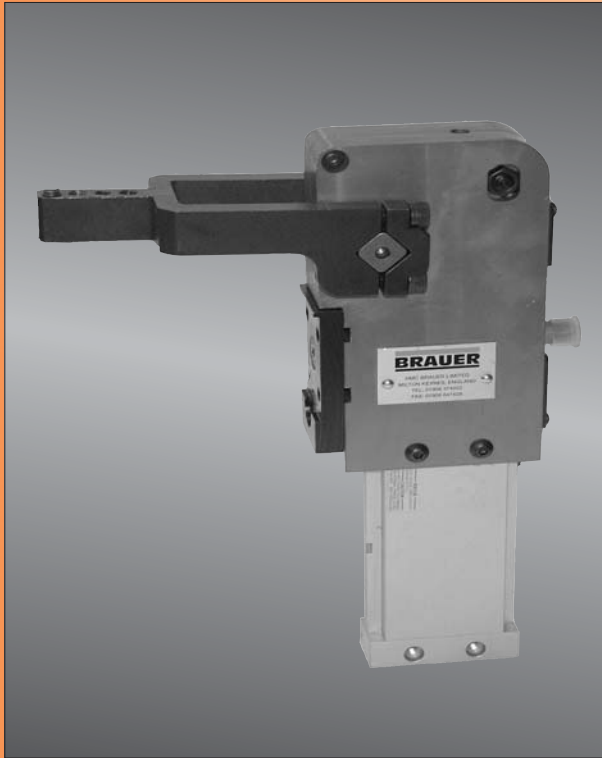
The overcentre dimension is carefully chosen in relation to the elasticity of the clamp to maximise clamping force while ensuring that the clamp locks closed even under vibration or intermittent loading.

**Hand Force** — has been chosen as being that which might be applied in frequent operation.

Forces are given in decaNewtons (daN)

- 1 daN = approximately 1kg.
- = approximately 2.2 lb.



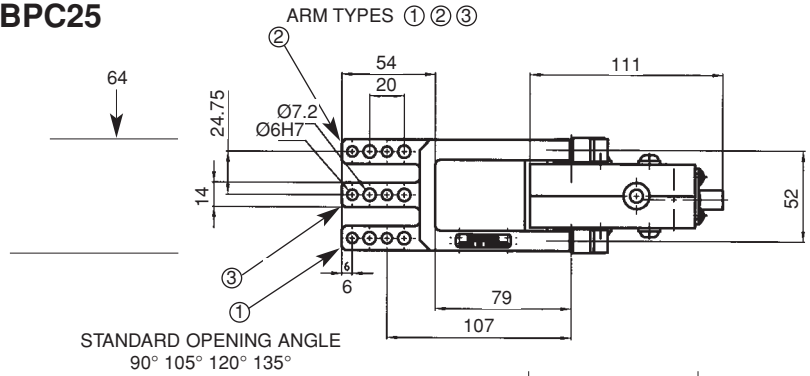


## PNEUMATIC COMPACT POWER CLAMPS

- New compact, slim body design, with oval cylinder
- Fully enclosed patented mechanism
- Steel or aluminium body construction
- Self positioning clamping arm featuring weld immune integrated sensing
- 3D CAD formats including dwg, IGES, ACIS and Catia
- Cycle tested through 5 million cycles

## PNEUMATIC POWER CLAMPS - UK AND INTERNATIONAL PATENTS PENDING

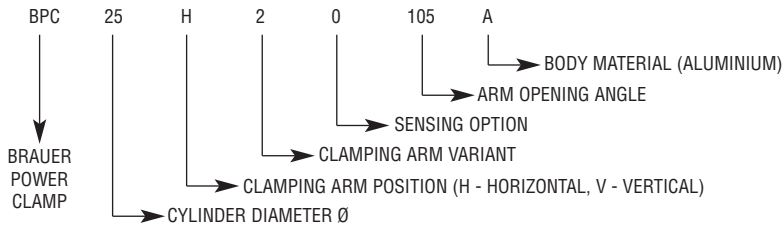
### MODEL BPC25



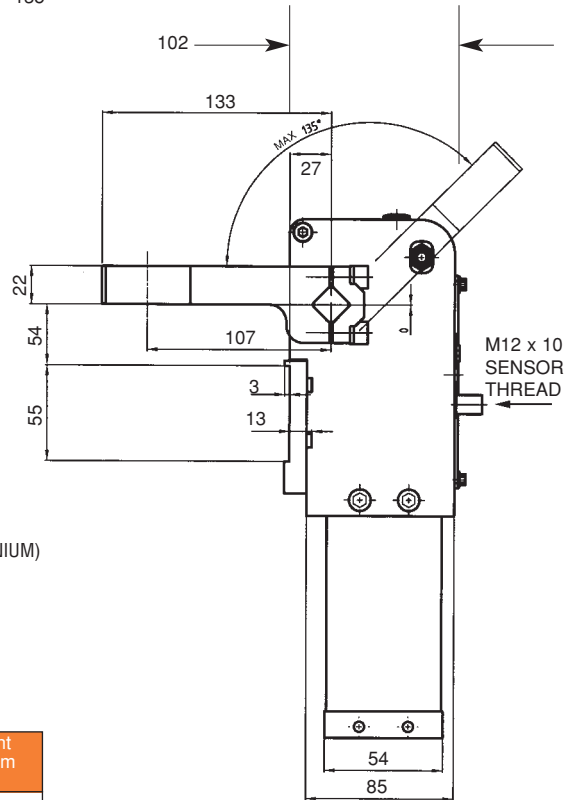
#### Features

- Mounting face hole patterns can be modified to suit customer requirements.
- Enclosed body.
- No reduction of clamping torque as clamp locks.
- Flat, 'slim line' construction.
- Variety of arm types.
- Opening angles up to 135°.
- Long service life.
- Air cylinders max. 8 bar with oil free dry running design.
- Reed switches on cylinder (magnetic piston) (R).
- Sensing Options:  
 ... O = without sensing  
 ... I = supplied with inductive sensing 10-30V weld immune and isolated

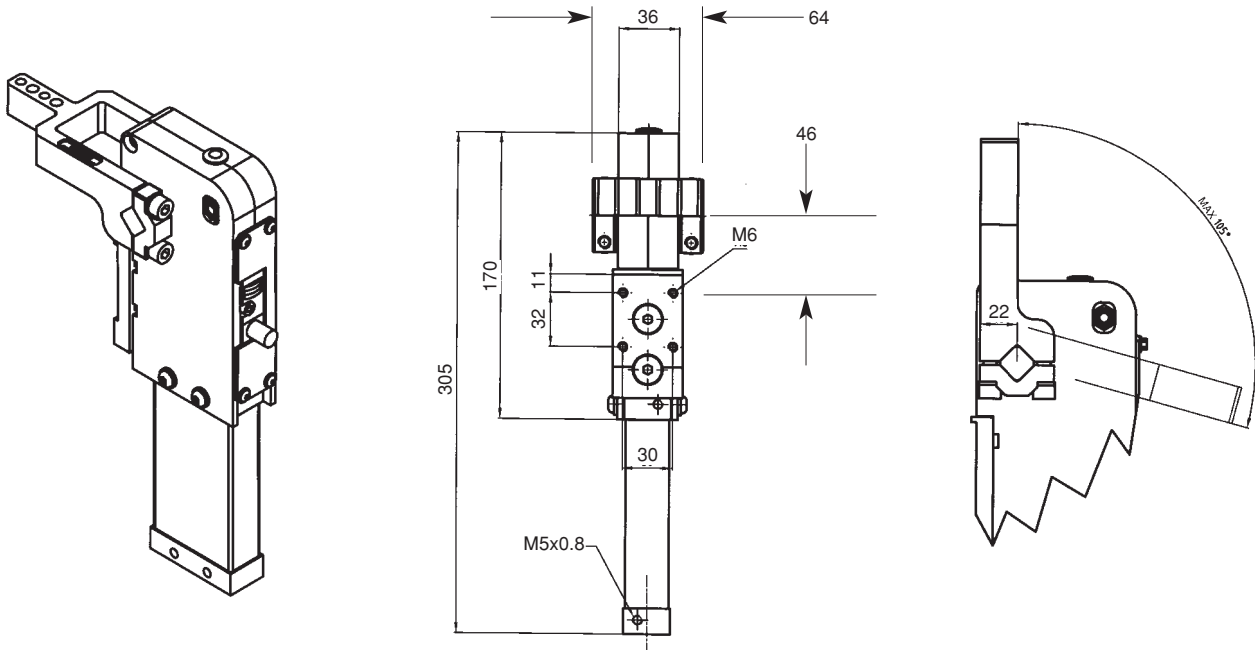
#### ORDER EXAMPLE



| Type   | Holding moment Max (Nm) | Clamping moment at 5 bar | Piston Ø | Cylinder Port | Weight inc. arm [kg] |
|--------|-------------------------|--------------------------|----------|---------------|----------------------|
| BPC 25 | 200 Nm                  | 65 Nm                    | 25       | M5            | 2.4                  |



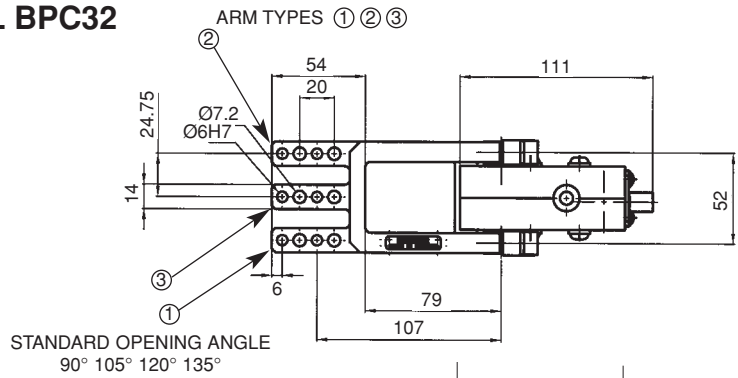
CLAMPING PRODUCTS





## PNEUMATIC POWER CLAMPS - UK AND INTERNATIONAL PATENTS PENDING

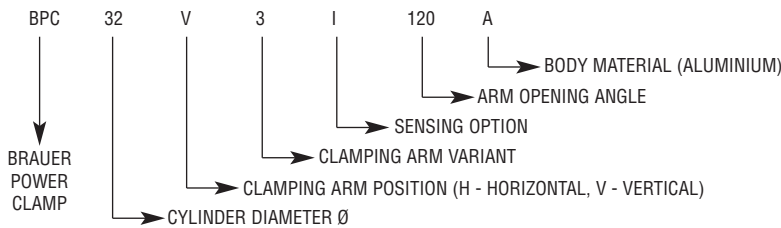
### MODEL BPC32



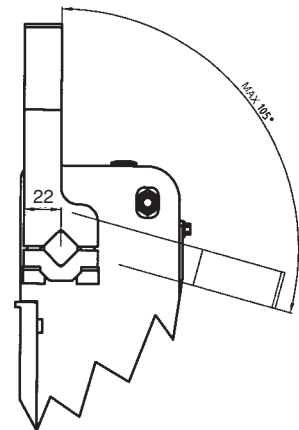
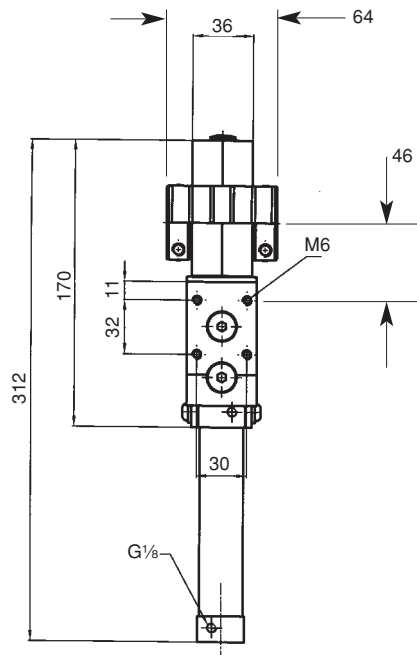
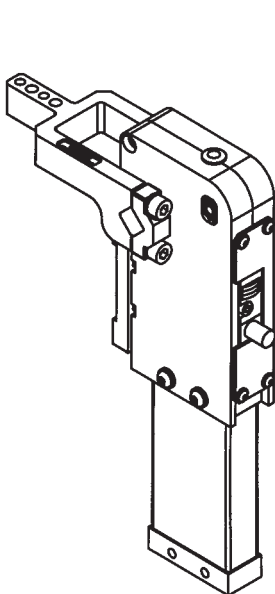
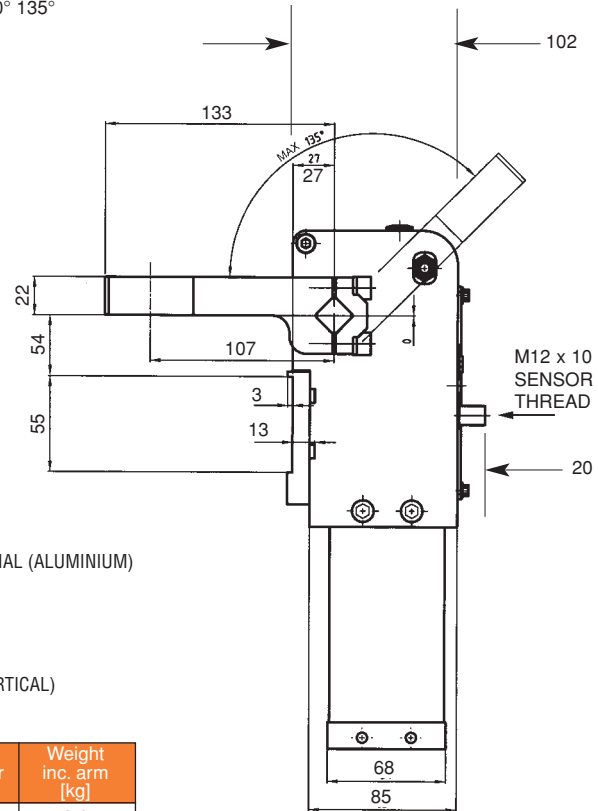
#### Features

- Mounting face hole patterns can be modified to suit customer requirements.
- Enclosed body.
- No reduction of clamping torque as clamp locks.
- Flat, 'slim line' construction.
- Variety of arm types.
- Opening angles up to 135°.
- Long service life.
- Air cylinders max. 8 bar with oil free dry running design.
- Reed switches on cylinder (magnetic piston) (R).
- Sensing Options:  
 ... O = without sensing  
 ... I = supplied with inductive sensing 10-30V weld immune and isolated

#### ORDER EXAMPLE



| Type   | Holding moment Max (Nm) | Clamping moment at 5 bar | Piston Ø | Cylinder Port | Weight inc. arm [kg] |
|--------|-------------------------|--------------------------|----------|---------------|----------------------|
| BPC 32 | 400 Nm                  | 140 Nm                   | 32       | G1/8          | 2.6                  |





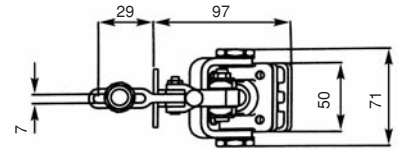
## VA HEAVY DUTY PNEUMATIC POWER CLAMPS

- Pneumatic powered version of Brauer's acclaimed VA heavy duty range
- Arm types shown are standard
- All leading pneumatic cylinders including SMC, ASCO Joucoumatic, etc can be fitted

## VA HEAVY-DUTY PNEUMATIC POWER CLAMPS

### PNEUMATIC POWER CLAMP MODEL VA 300BX

| Specifications       | VA300 BX       |
|----------------------|----------------|
| WEIGHTS (Kg)         | 2.20 Kg        |
| CLAMPING FORCE (daN) | ↓ 42    ↓ 54   |
| HOLDING FORCE (daN)  | ↑ 250    ↑ 350 |



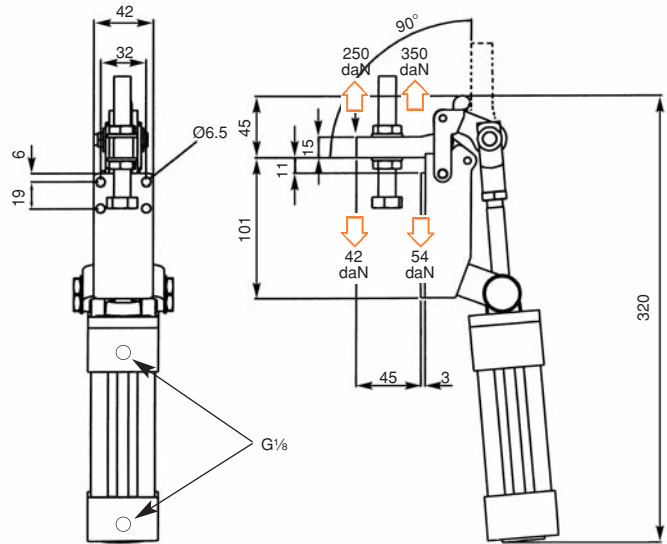
**Arm:**  
The spindle is adjustable along the arm.

**Base:**  
Front mounting.

**Nominal holding force:**  
250-350 daN.

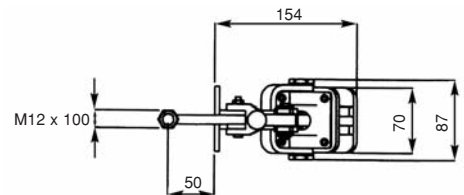
**Weight:**  
2.20 Kg.

**Stroke sensing:**  
SK/10.



### PNEUMATIC POWER CLAMP MODEL VA 700CX

| Specifications       | VA700 CX |
|----------------------|----------|
| WEIGHTS (Kg)         | 4.50 Kg  |
| CLAMPING FORCE (daN) | ↓ 170    |
| HOLDING FORCE (daN)  | ↑ 600    |



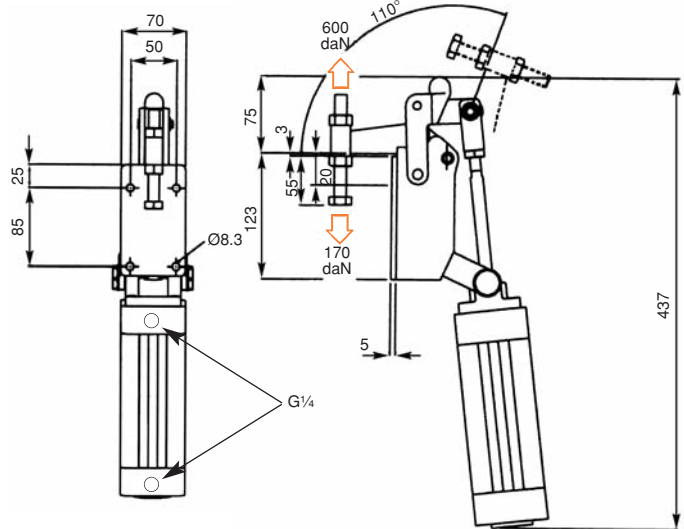
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Front mounting.

**Nominal holding force:**  
700 daN.

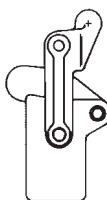
**Weight:**  
4.50 Kg.

**Stroke sensing:**  
SK/10.

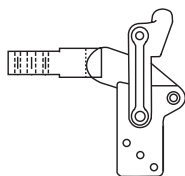


ALTERNATIVE ARM TYPES CAN BE SUPPLIED

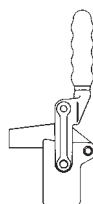
CYLINDERS WITH SCRAPER SEALS ARE AVAILABLE ON REQUEST



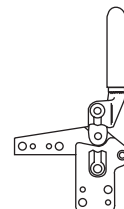
SPECIAL VA2400T



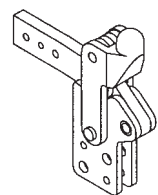
SPECIAL VA1200



SPECIAL VA2400/1A



SPECIAL VA700/1A



SPECIAL VA700

## VA HEAVY-DUTY PNEUMATIC POWER CLAMPS

### PNEUMATIC POWER CLAMP MODEL VA 1200CX

| Specifications       | VA1200 CX |
|----------------------|-----------|
| WEIGHTS (Kg)         | 5.75 Kg   |
| CLAMPING FORCE (daN) | 170       |
| HOLDING FORCE (daN)  | 800       |



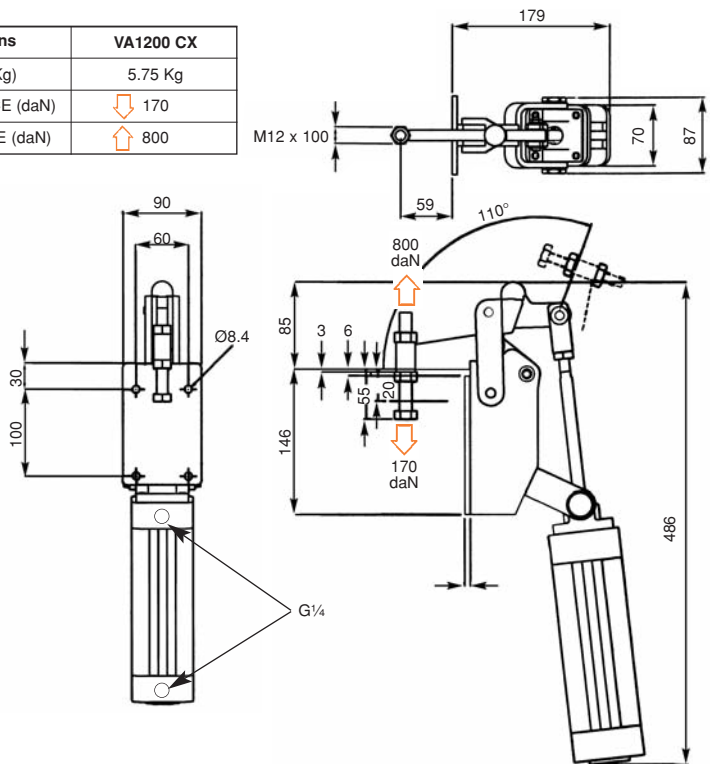
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Front mounting.

**Nominal holding force:**  
1200 daN.

**Weight:**  
5.75 Kg.

**Stroke sensing:**  
SK/10.



### PNEUMATIC POWER CLAMP MODEL VA 2400CX

| Specifications       | VA2400 CX |
|----------------------|-----------|
| WEIGHTS (Kg)         | 8.65 Kg   |
| CLAMPING FORCE (daN) | 185       |
| HOLDING FORCE (daN)  | 1500      |



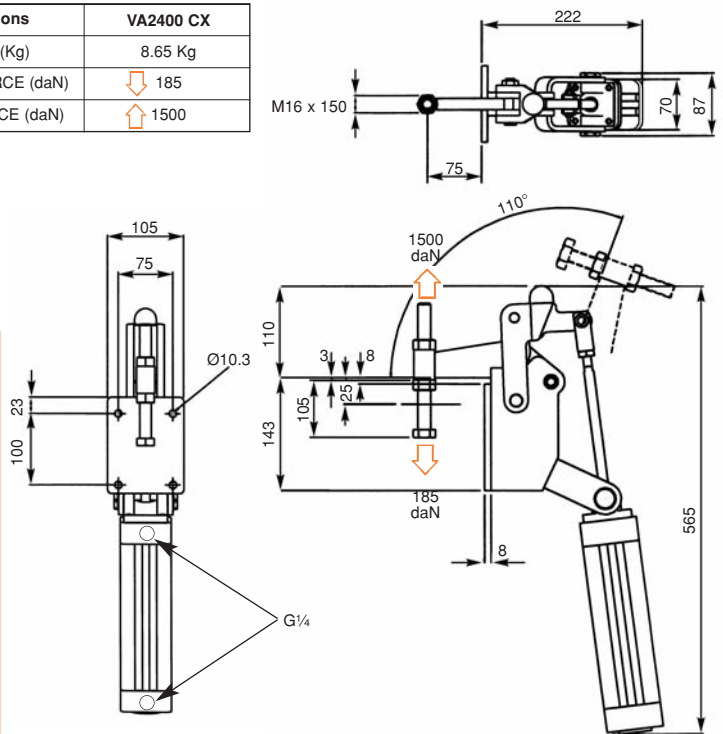
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Front mounting.

**Nominal holding force:**  
2400 daN.

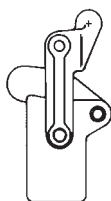
**Weight:**  
8.65 Kg.

**Stroke sensing:**  
SK/10.

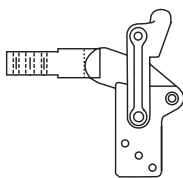


CLAMPING PRODUCTS

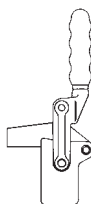
#### ALTERNATIVE ARM TYPES CAN BE SUPPLIED



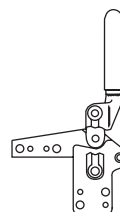
SPECIAL VA2400T



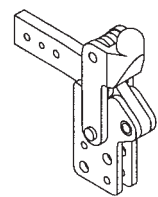
SPECIAL VA1200



SPECIAL VA2400/1A



SPECIAL VA700/1A



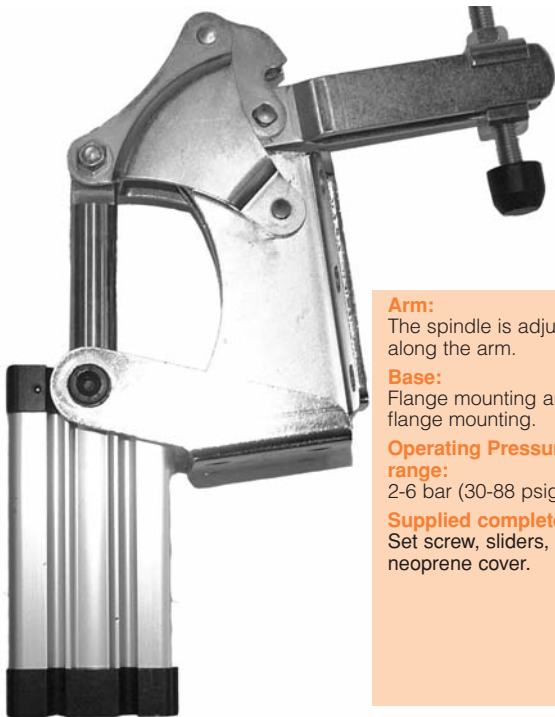
SPECIAL VA700



## PNEUMATIC VERTICAL SLIM-LINE TOGGLE CLAMPS

- Space saving design
- Can be mounted vertically or horizontally
- Fitted with double-acting Norgren or Festo pneumatic cylinders
- Replaceable cylinders
- Magnetic piston for sensor-position monitoring
- Adjustable speed
- Clamp zinc-plated and passivated
- Stainless steel rivets running in case-hardened bushes
- Bearings pre-greased
- Complete with heat-treated, zinc-plated pressure screws

## PNEUMATIC SLIM LINE TOGGLE CLAMP

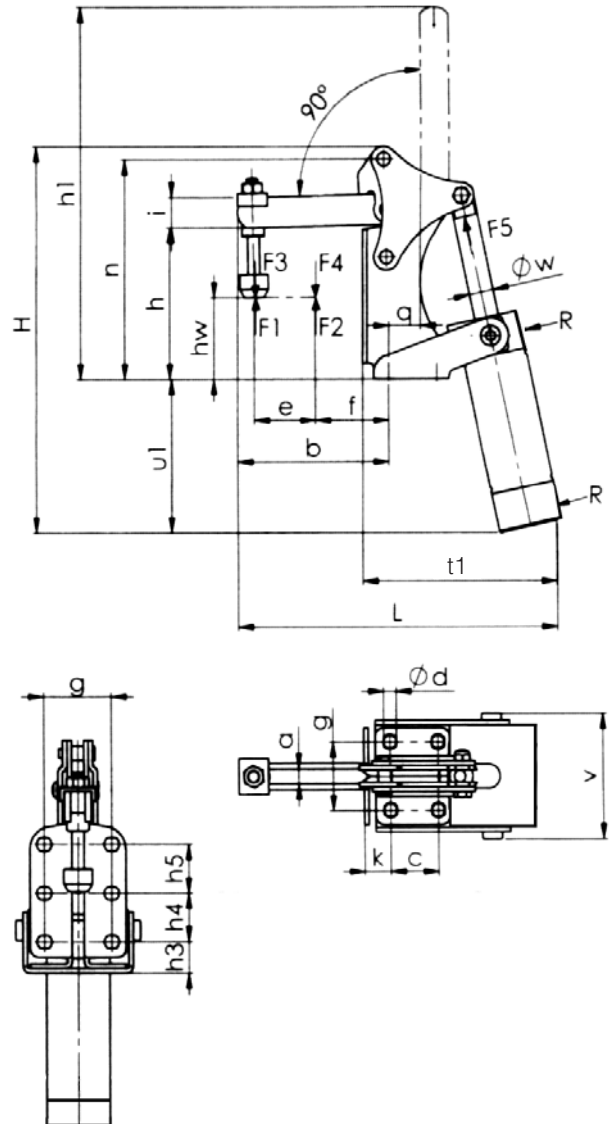


**Arm:**  
The spindle is adjustable along the arm.

**Base:**  
Flange mounting and front flange mounting.

**Operating Pressure range:**  
2-6 bar (30-88 psig)

**Supplied complete with:**  
Set screw, sliders, nuts & neoprene cover.

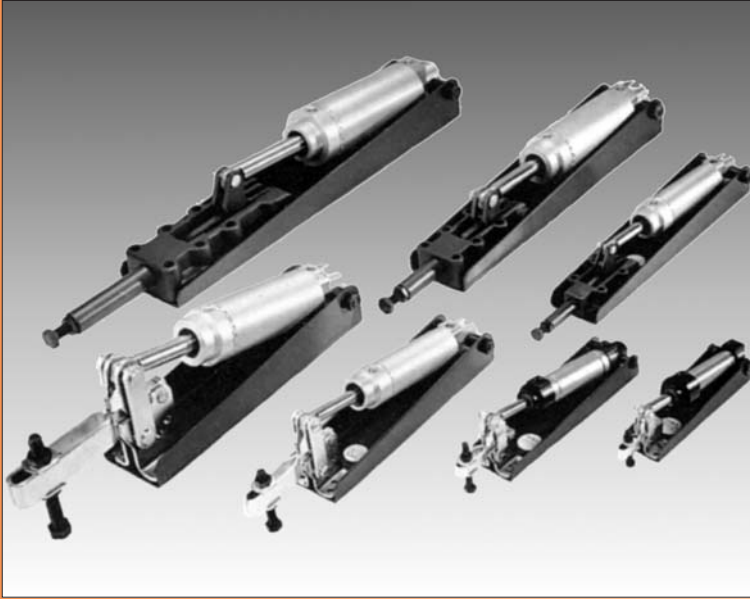


| STROKE SENSING SWITCH |                 |                      |
|-----------------------|-----------------|----------------------|
| PART NO.              | CYLINDER STROKE | CYLINDER PISTON DIA. |
| SK/11 Ø25             | 42              | 25                   |
| SK/11 Ø32             | 52              | 32                   |
| SK/11 Ø40             | 62              | 40                   |

| MODEL  | F1(kN) | F2(kN) | F3(kN) | F4(kN) | F5(kN) | Vn*  | HEIGHT | WIDTH | SCREW | WGT(g) | a  | b  |
|--------|--------|--------|--------|--------|--------|------|--------|-------|-------|--------|----|----|
| V100VX | 1.0    | 1.2    | 0.7    | 1.0    | 0.30   | 0.26 | 170    | 130   | M6x35 | 800    | 6  | 40 |
| V200VX | 1.4    | 2.5    | 0.6    | 1.1    | 0.50   | 0.35 | 205    | 160   | M8x45 | 1100   | 8  | 65 |
| V300VX | 2.0    | 3.0    | 1.5    | 2.2    | 0.75   | 0.80 | 260    | 220   | M8x65 | 1600   | 10 | 85 |

| MODEL  | c    | dia. d | e  | f  | g    | h   | h1  | h3 | h4   | h5   | hw    | i  | k  | n   | q  | t1  | u1  | v  | dia.w |
|--------|------|--------|----|----|------|-----|-----|----|------|------|-------|----|----|-----|----|-----|-----|----|-------|
| V100VX | 12.5 | 5.5    | 27 | 24 | 27   | 65  | 145 | 16 | 12.5 | 12.5 | 37-46 | 12 | 16 | 94  | 8  | 90  | 70  | 62 | 10    |
| V200VX | 16   | 6.5    | 42 | 30 | 25.4 | 72  | 185 | 18 | 16   | -    | 38-50 | 18 | 16 | 108 | 13 | 105 | 90  | 70 | 12    |
| V300VX | 32   | 8.5    | 52 | 40 | 45   | 100 | 240 | 22 | 32   | 32   | 50-79 | 20 | 18 | 144 | 20 | 135 | 105 | 85 | 16    |

| MODEL  | H   | L   | R  |
|--------|-----|-----|----|
| V100VX | 215 | 90  | M5 |
| V200VX | 275 | 105 | G½ |
| V300VX | 319 | 133 | G½ |



## PNEUMATIC VERTICAL AND PUSH-PULL CLAMPS

- **Features and Specifications:**

Vertical models V75X, V150X, V250X and V450X are of zinc plated pressed steel construction and have compact cylinders without tie-rods. The heavier duty models V750X, V1750X and V2000X are of fabricated construction with tie-roded cylinders.

The main components of push-pull models P600X, P1200X and P2500X are machined castings for precision of operation and for durability. The plungers are of steel, their precision ground diameter running in a close-toleranced hole in the s.g. iron base casting.

- **Installation:**

While the cylinders of models V75X, V150X, V250X, V450X, P600X, P1200X and P2500X can be operated with dry air, air lubrication will extend cylinder life on these models and is a requirement for models V750X, V1750X and V2000X.

The air pressure operating range of pneumatic clamps is 30-90 psi.

## PNEUMATIC VERTICAL AND PUSH-PULL CLAMPS

### PNEUMATIC VERTICAL CLAMPS

#### MODEL V75X



**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

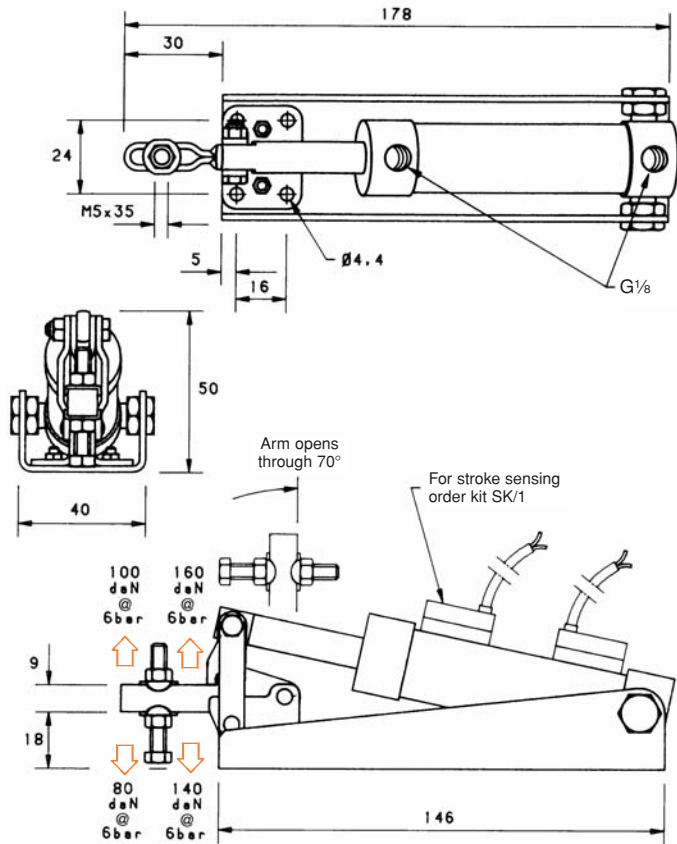
**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
40.

**Swept volume per cycle:**  
0.02 L (1.2 cu. in.)

**Weight:**  
0.40 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
FW05/10 Flanged washers.  
For stroke sensing order SK/1 Sensing Kit.  
See "Accessories" for other items.



### PNEUMATIC VERTICAL CLAMPS

#### MODEL V150X



**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

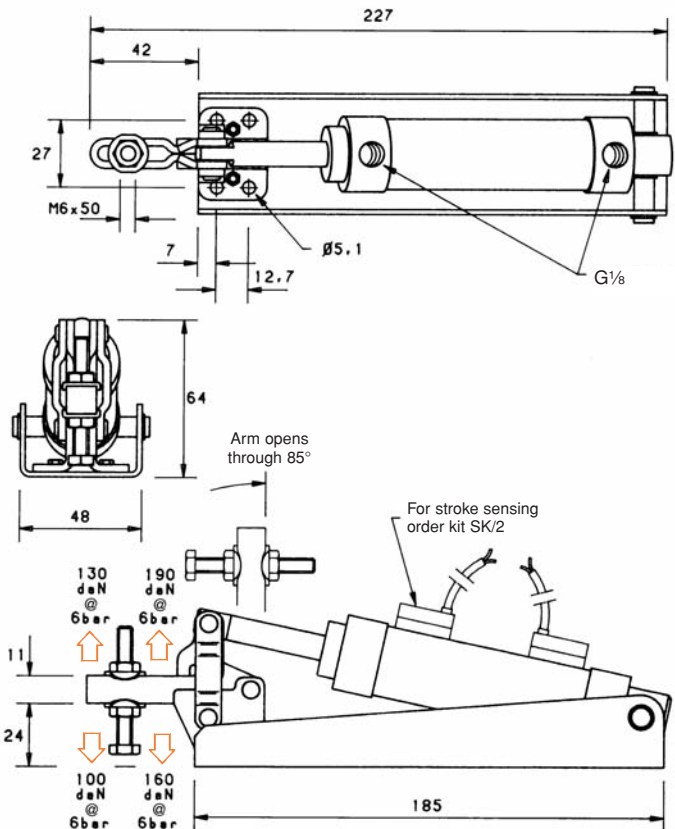
**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
60.

**Swept volume per cycle:**  
0.04 L<sup>3</sup> (2.4 cu. in.)

**Weight:**  
0.65 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
FW06/12 Flanged washers.  
For stroke sensing order SK/2 Sensing Kit.  
See "Accessories" for other items.





## PNEUMATIC VERTICAL AND PUSH-PULL CLAMPS

### PNEUMATIC VERTICAL CLAMPS

#### MODEL V250X



**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
55.

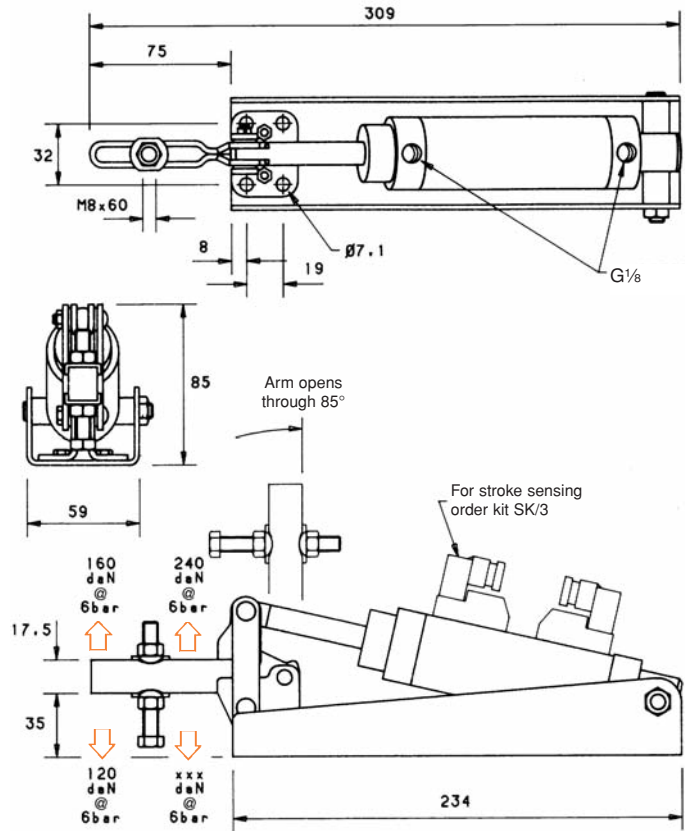
**Swept volume per cycle:**  
0.09 L<sup>3</sup> (5.5 cu. in.)

**Weight:**  
1.20 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts  
FW08/15 Flanged washers.

For stroke sensing order SK/3 Sensing Kit.

See "Accessories" for other items.



### PNEUMATIC VERTICAL CLAMPS

#### MODEL V450X



**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
55.

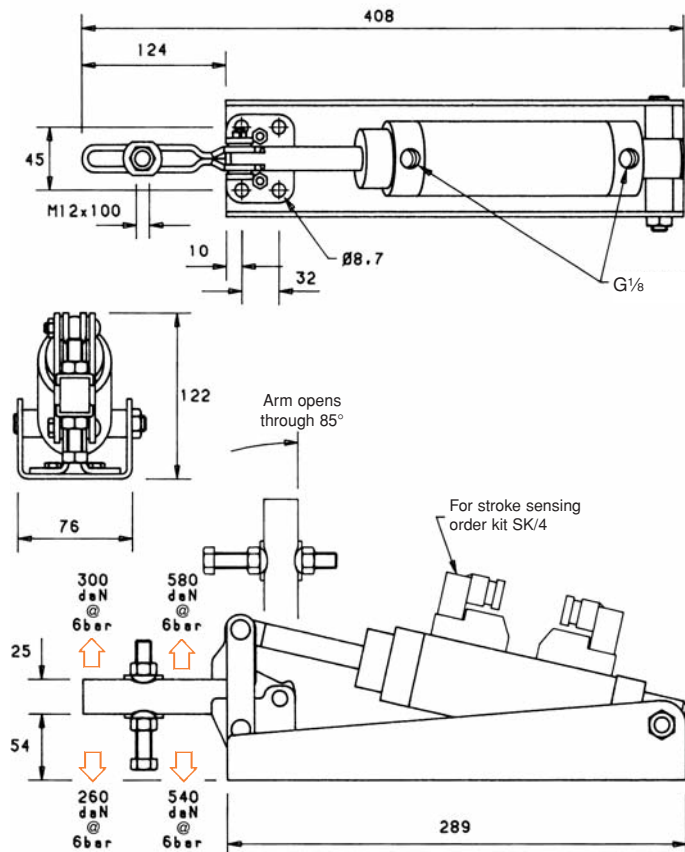
**Swept volume per cycle:**  
0.27 L<sup>3</sup> (16.8 cu. in.)

**Weight:**  
2.75 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.

For stroke sensing order SK/4 Sensing Kit.

See "Accessories" for other items.



## PNEUMATIC VERTICAL AND PUSH-PULL CLAMPS

### PNEUMATIC VERTICAL CLAMPS

MODEL V750X



**Arm:**  
Solid — no spindle supplied.

**Base:**  
Front mounting.

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

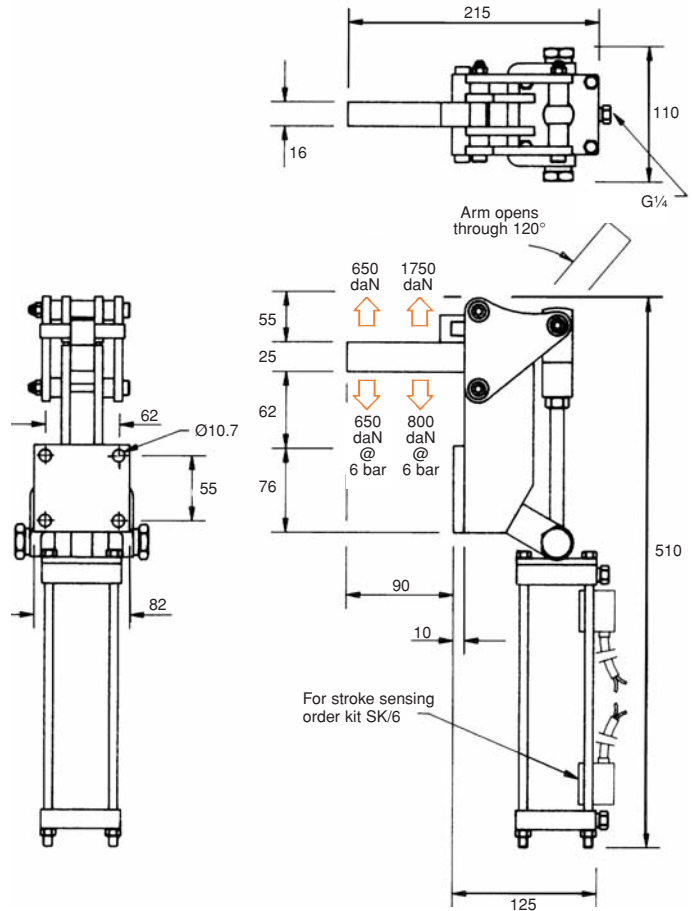
**Max. cycles/min. at 6 bar:**  
30.

**Swept volume per cycle:**  
0.27 L<sup>3</sup> (16.5 cu. in.)

**Nominal Holding Force:**  
750 daN

**Weight:**  
3.85 Kg

For stroke sensing order SK/6 Sensing Kit.  
See "Accessories" for other items.



### PNEUMATIC VERTICAL CLAMPS

MODEL V1750X

CLAMPING PRODUCTS



**Arm:**  
Solid — no spindle supplied.

**Base:**  
Front mounting.

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

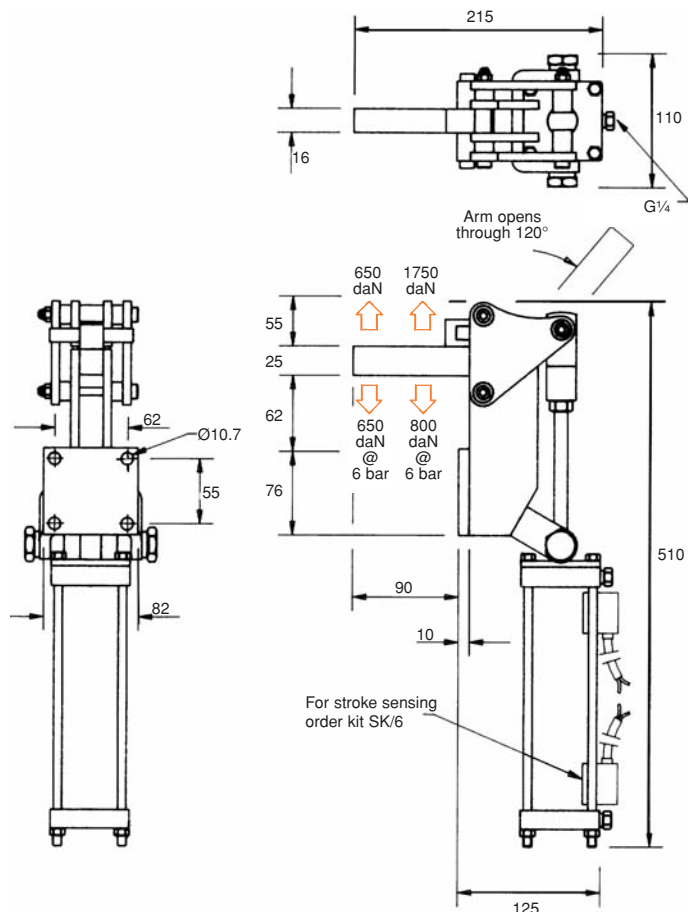
**Max. cycles/min. at 6 bar:**  
15.

**Swept volume per cycle:**  
0.75 L<sup>3</sup> (45.7 cu. in.)

**Nominal Holding Force:**  
1750 daN

**Weight:**  
6.80 Kg

For stroke sensing order SK/6 Sensing Kit.  
See "Accessories" for other items.



## PNEUMATIC VERTICAL AND PUSH-PULL CLAMPS

### PNEUMATIC VERTICAL CLAMPS

#### MODEL V2000X



**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
2000 daN

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
10.

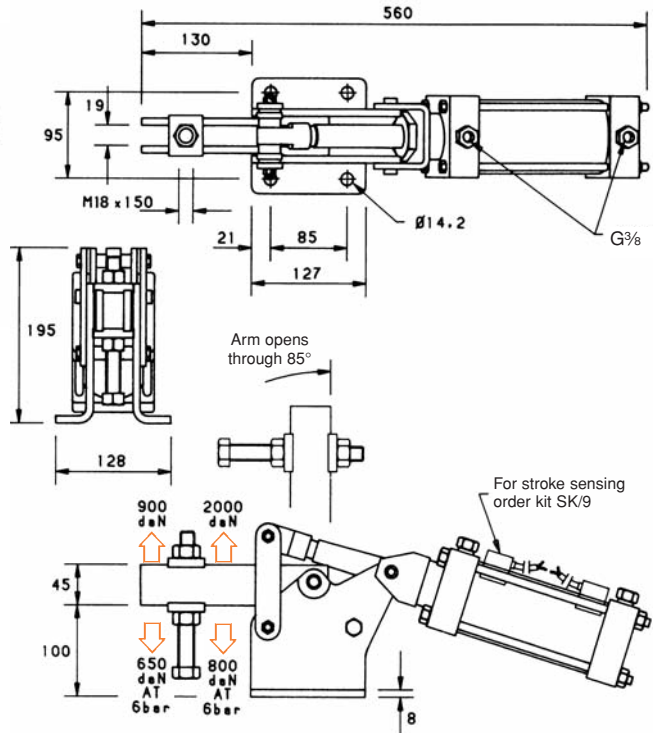
**Swept volume per cycle:**  
0.76 L<sup>3</sup> (46.4 cu. in.)

**Weight:**  
10.30 Kg

**Supplied complete with:**  
MB18 Setscrew & nuts.  
Flanged washers.

For stroke sensing order SK/9 Sensing Kit.

See "Accessories" for other items.



### PNEUMATIC PUSH-PULL CLAMPS

#### MODEL P600X



**Plunger:**  
Locks in fully extended position only.

**Base:**  
Body mounting.

**Nominal Holding Force:**  
600 daN

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
60.

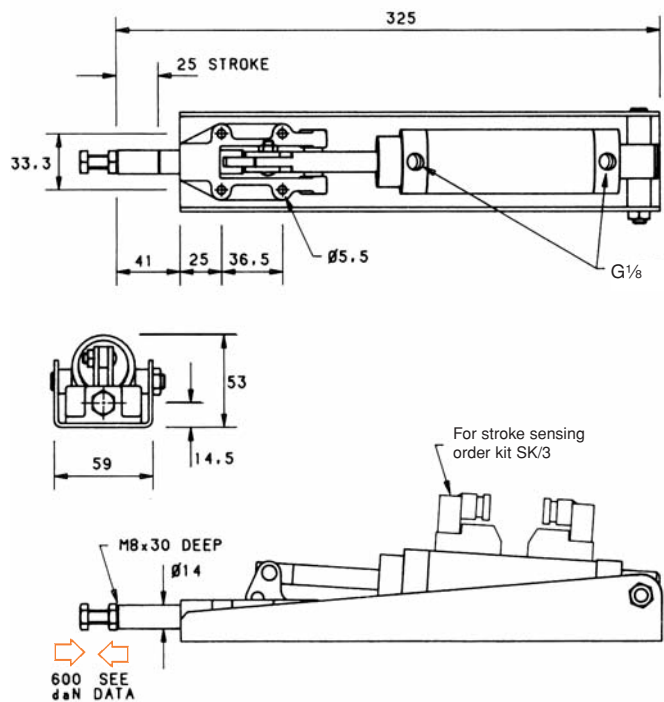
**Swept volume per cycle:**  
0.09 L<sup>3</sup> (5.5 cu. in.)

**Weight:**  
1.45 Kg

**Supplied complete with:**  
MB0840 Setscrew & nut.

For stroke sensing order SK/3 Sensing Kit.

See "Accessories" for other items.



#### DATA

| With 6 bar air supply pressure the output force is: |   | daN |
|---|---|-----|
| Fully retracted                                     |   | 20  |
| 5 mm extended                                       |   | 32  |
| 10 mm   | „ | 43  |
| 15 mm   | „ | 65  |
| 20 mm   | „ | 87  |
| 22 mm   | „ | 100 |
| 24 mm   | „ | 150 |
| Fully extended                                      |   | 253 |

## PNEUMATIC VERTICAL AND PUSH-PULL CLAMPS

### PNEUMATIC PUSH-PULL CLAMPS

#### MODEL P1200X



**Plunger:**  
Locks in fully extended position only.

**Base:**  
Body mounting.

**Nominal Holding Force:**  
1200 daN

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
50.

**Swept volume per cycle:**  
0.28 L<sup>3</sup> (16.8 cu. in.)

**Weight:**  
3.70 Kg

**Supplied complete with:**  
MB1050 Setscrew & nut.

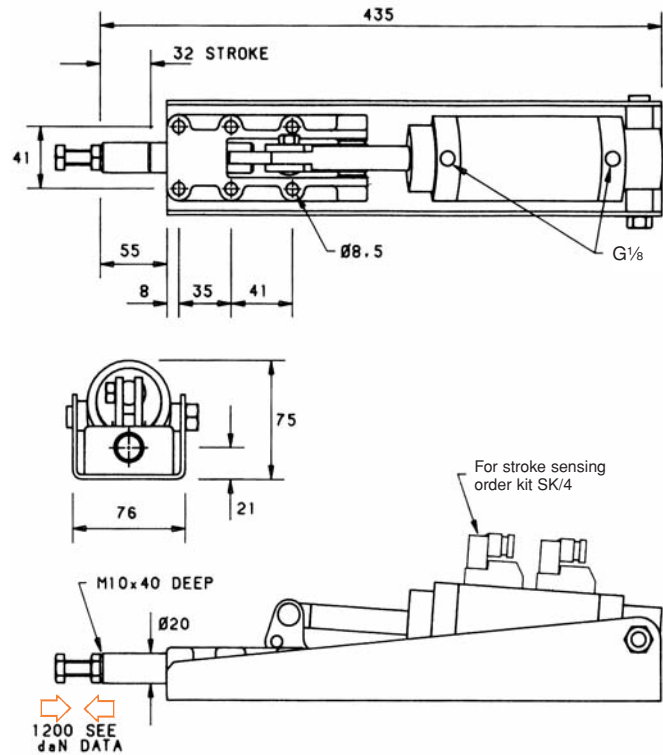
For stroke sensing order SK/4 Sensing Kit.

See "Accessories" for other items.

#### DATA

With 6 bar air supply pressure the output force is:

| daN  | mm              |
|------|-----------------|
| 110  | Fully retracted |
| 120  | 5 mm extended   |
| 140  | 10 mm "         |
| 165  | 15 mm "         |
| 195  | 20 mm "         |
| 230  | 25 mm "         |
| 255  | 27 mm "         |
| 300  | 29 mm "         |
| 430  | 31 mm "         |
| 1150 | Fully extended  |



### PNEUMATIC PUSH-PULL CLAMPS

#### MODEL P2500X



**Plunger:**  
Locks in fully extended position only.

**Base:**  
Body mounting.

**Nominal Holding Force:**  
2500 daN

**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**Max. cycles/min. at 6 bar:**  
45.

**Swept volume per cycle:**  
0.6 L<sup>3</sup> (36.6 cu. in.)

**Weight:**  
7.40 Kg

**Supplied complete with:**  
MB1250 Setscrew & nut.

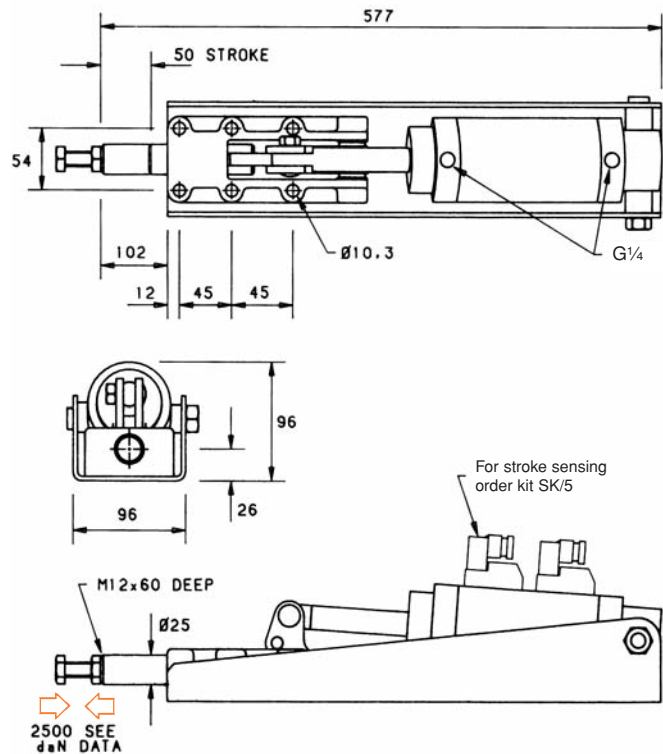
For stroke sensing order SK/5 Sensing Kit.

See "Accessories" for other items.

#### DATA

With 6 bar air supply pressure the output force is:

| daN  | mm              |
|------|-----------------|
| 130  | Fully retracted |
| 140  | 5 mm extended   |
| 160  | 10 mm "         |
| 175  | 15 mm "         |
| 200  | 20 mm "         |
| 210  | 25 mm "         |
| 245  | 30 mm "         |
| 265  | 35 mm "         |
| 325  | 40 mm "         |
| 420  | 45 mm "         |
| 490  | 47 mm "         |
| 700  | 49 mm "         |
| 1450 | Fully extended  |





## PNEUMATIC SWING CLAMPS

- 90° Swing angle over workpiece
- Holding forces from 20 daN to 280 daN
- Clamping strokes of 10mm and 20mm
- Operating pressure range 2-10 bar

## PNEUMATIC SWING CLAMPS

### PNEUMATIC SWING CLAMP

MODELS **PNS25-10C** (clockwise)

**PNS25-10A** (anti-clockwise)



**Maximum holding force:**  
20 daN.

**Operating pressure range:**  
2-10 bar.

**Rotary stroke:**  
9.5mm.

**Clamping stroke:**  
10mm.

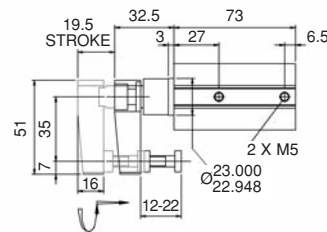
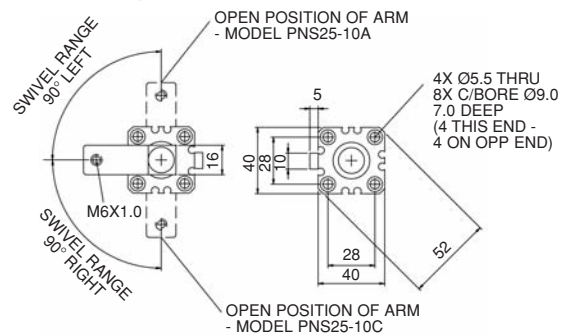
**Swept volume per cycle:**  
0.012 L.

**Weight:**  
0.32 Kg.

**Supplied complete with:**  
Arm, spindle & nut.

**Options:**

SK/8 : Stroke sensing kit.



### PNEUMATIC SWING CLAMP

MODELS **PNS32-10C** (clockwise)

**PNS32-10A** (anti-clockwise)



**Maximum holding force:**  
60 daN.

**Operating pressure range:**  
2-10 bar.

**Rotary stroke:**  
15mm.

**Clamping stroke:**  
10mm.

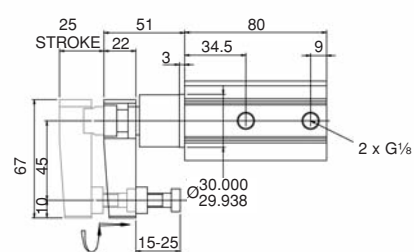
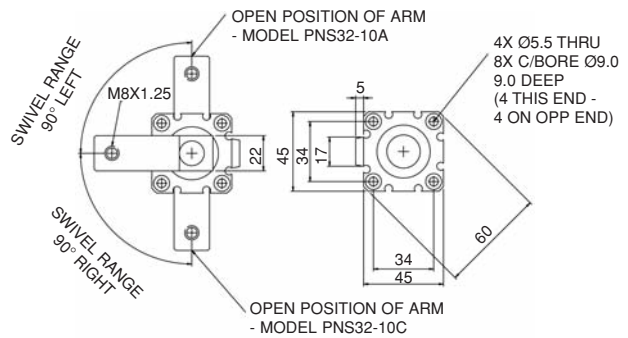
**Swept volume per cycle:**  
0.035 L.

**Weight:**  
0.7 Kg.

**Supplied complete with:**  
Arm, spindle & nut.

**Options:**

SK/8 : Stroke sensing kit.



### PNEUMATIC SWING CLAMP

MODELS **PNS40-20C** (clockwise)

**PNS40-20A** (anti-clockwise)



**Maximum holding force:**  
105 daN.

**Operating pressure range:**  
2-10 bar.

**Rotary stroke:**  
15mm.

**Clamping stroke:**  
20mm.

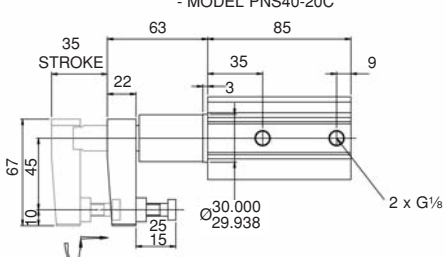
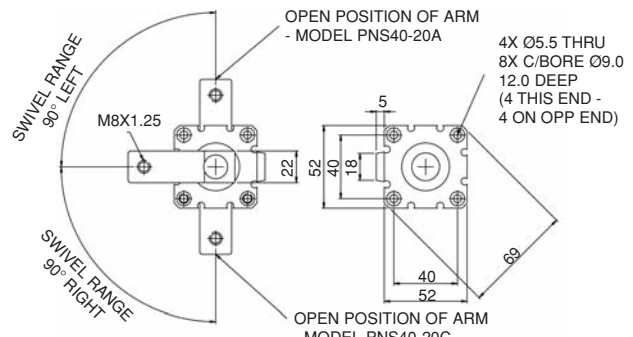
**Swept volume per cycle:**  
0.06 L.

**Weight:**  
0.84 Kg.

**Supplied complete with:**  
Arm, spindle & nut.

**Options:**

SK/8 : Stroke sensing kit.



## PNEUMATIC SWING CLAMPS

### PNEUMATIC SWING CLAMP

MODELS **PNS50-20C** (clockwise)

**PNS50-20A** (anti-clockwise)



**Options:**

SK/8 : Stroke sensing kit.

**Maximum holding force:**

160 daN.

**Operating pressure range:**

2-10 bar.

**Rotary stroke:**

19mm.

**Clamping stroke:**

20mm.

**Swept volume per cycle:**

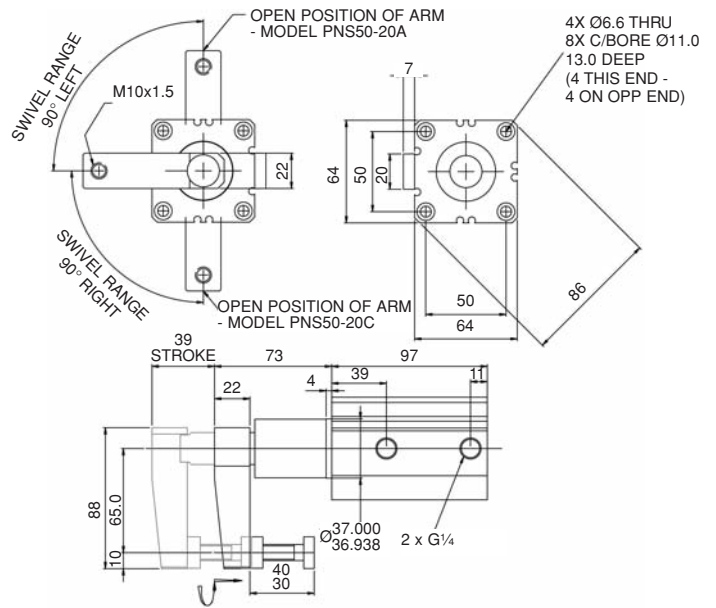
0.14 L.

**Weight:**

1.45 Kg.

**Supplied complete with:**

Arm, spindle & nut.



### PNEUMATIC SWING CLAMP

MODELS **PNS63-20C** (clockwise)

**PNS63-20A** (anti-clockwise)



**Options:**

SK/12 : Stroke sensing kit.

**Maximum holding force:**

280 daN.

**Operating pressure range:**

2-10 bar.

**Rotary stroke:**

19mm.

**Clamping stroke:**

20mm.

**Swept volume per cycle:**

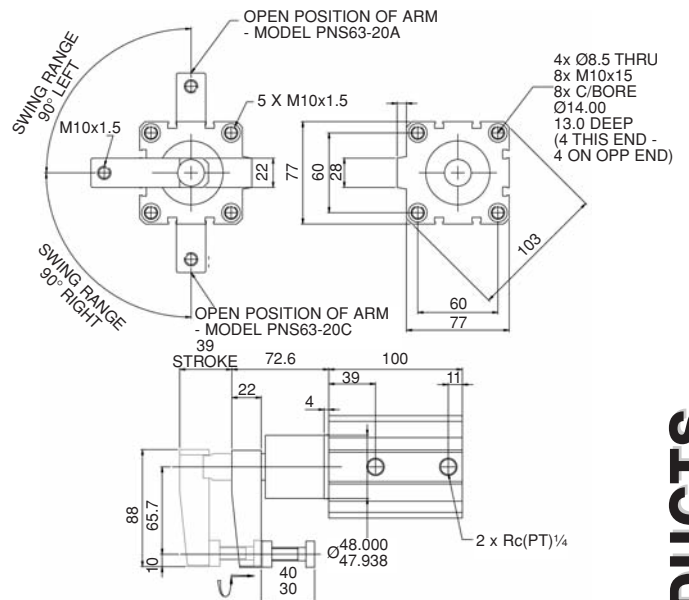
0.24 L.

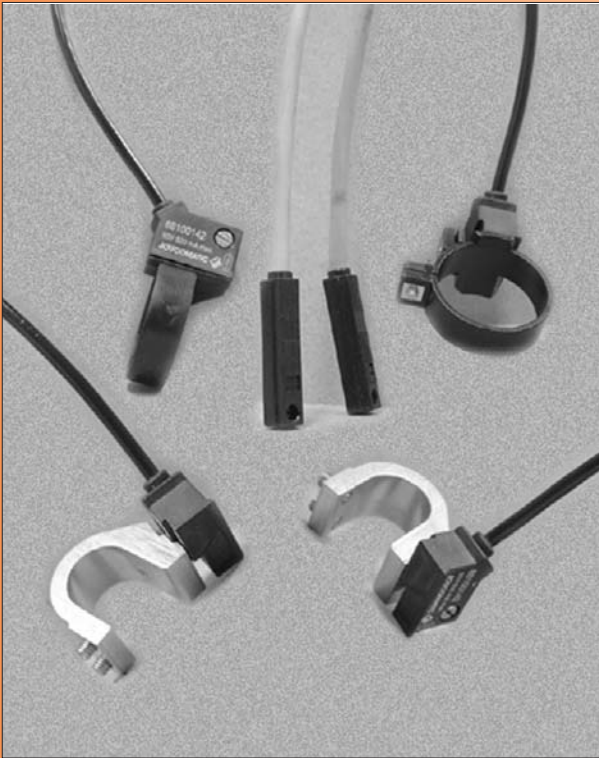
**Weight:**

1.87 Kg.

**Supplied complete with:**

Arm, spindle & nut.





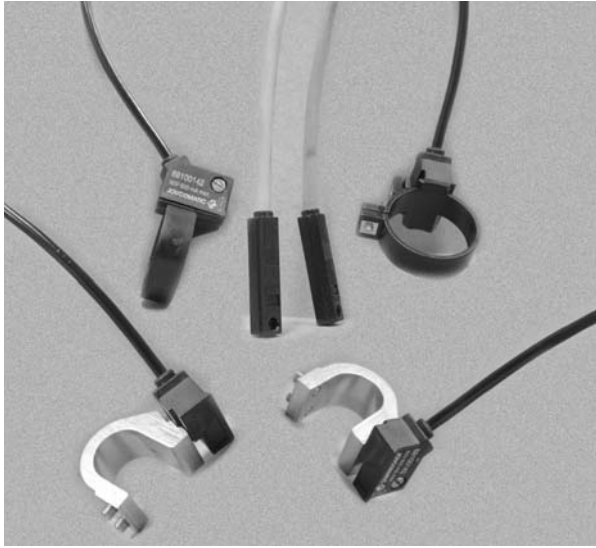
**PNEUMATIC ACCESSORIES**

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# PNEUMATIC ACCESSORIES

## STROKE SENSING KITS



| KIT NUMBER | USED CLAMP MODEL     |
|------------|----------------------|
| SK/1       | V75X                 |
| SK/2       | V150X                |
| SK/3       | V250X, P600X         |
| SK/4       | V450X, P1200X        |
| SK/5       | P2500X               |
| SK/6       | V750X, V1750X        |
| SK/8       | PNS25-10A, PNS25-10C |
|            | PNS32-10A, PNS32-10C |
|            | PNS40-20A, PNS40-20C |
|            | PNS50-20A, PNS50-20C |
| SK/9       | V2000X               |
| SK/10      | VA300BX, VA700CX     |
|            | VA1200CX, VA2400CX   |
| SK/11      | V100VX, V200VX,      |
|            | V300VX               |
| SK/12      | PNS63-20A, PNS63-20C |

NOTE: EACH SK KIT INCLUDES 2 INDIVIDUAL SENSORS



.....  
**TOGGLE PRESSES**  
**MANUAL, PNEUMATIC & RACK**  
**AND PINION**

## TOGGLE HAND PRESSES

### TOGGLE HAND PRESS

#### MODEL P600PR



#### DATA

|   |         |
|---|---------|
| With 14 daN handle force the output force is: |         |
| Fully retracted                               | 470 daN |
| 5 mm extended                                 | 110     |
| 10 mm   | 70      |
| 15 mm   | 75      |
| 20 mm   | 80      |
| 25 mm   | 85      |
| 30 mm   | 146     |
| 31 mm   | 190     |
| Fully extended                                | 580     |

**Type:**  
Bench mounted manual toggle press.

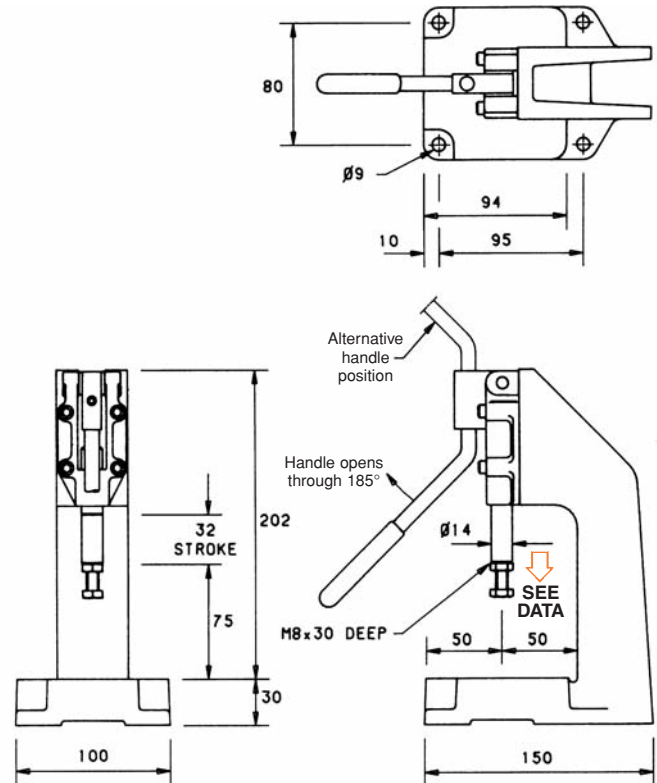
**Nominal holding force:**  
600 daN.

**Weight:**  
3.60 kg.

Quality Features:

- S.G. Iron framecasting.
- precision ground steel plunger.
- fixed height work head.

All toggle presses achieve their maximum force at the end of the stroke. Therefore Brauer toggle presses are best employed where the full force of the press is only used over a short length at the end of the working stroke; e.g. when punching, riveting, embossing, gluing, etc.



### TOGGLE HAND PRESS

#### MODEL P1200PR



#### DATA

|   |         |
|---|---------|
| With 15 daN handle force the output force is: |         |
| Fully retracted                               | 705 daN |
| 5 mm extended                                 | 167     |
| 10 mm   | 90      |
| 15 mm   | 73      |
| 20 mm   | 70      |
| 25 mm   | 72      |
| 30 mm   | 85      |
| 35 mm   | 100     |
| 40 mm   | 110     |
| 45 mm   | 150     |
| 48 mm   | 220     |
| 49 mm   | 290     |
| Fully extended                                | 930     |

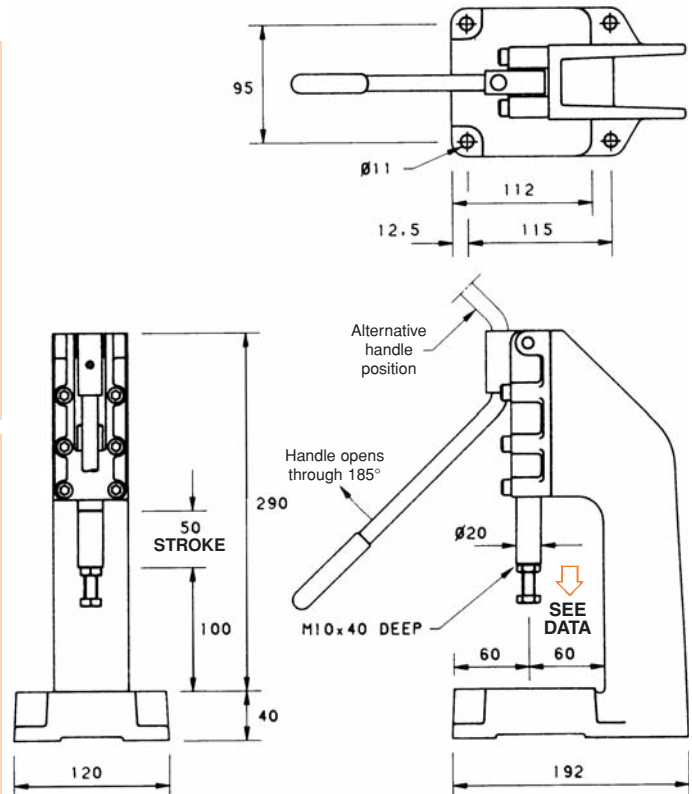
**Type:**  
Bench mounted manual toggle press.

**Nominal holding force:**  
1200 daN.

**Weight:**  
7.35 kg.

Quality Features:

- S.G. Iron framecasting.
- precision ground steel plunger.
- fixed height work head.



## TOGGLE HAND PRESSES

### TOGGLE HAND PRESSES

#### MODEL P2500PR



#### DATA

With 17 daN handle force the output force is:

| daN  | mm              |
|------|-----------------|
| 1000 | Fully retracted |
| 100  | 10 mm extended  |
| 72   | 20 mm           |
| 60   | 30 mm           |
| 70   | 40 mm           |
| 88   | 50 mm           |
| 118  | 60 mm           |
| 190  | 70 mm           |
| 230  | 72 mm           |
| 353  | 74 mm           |
| 1100 | Fully extended  |

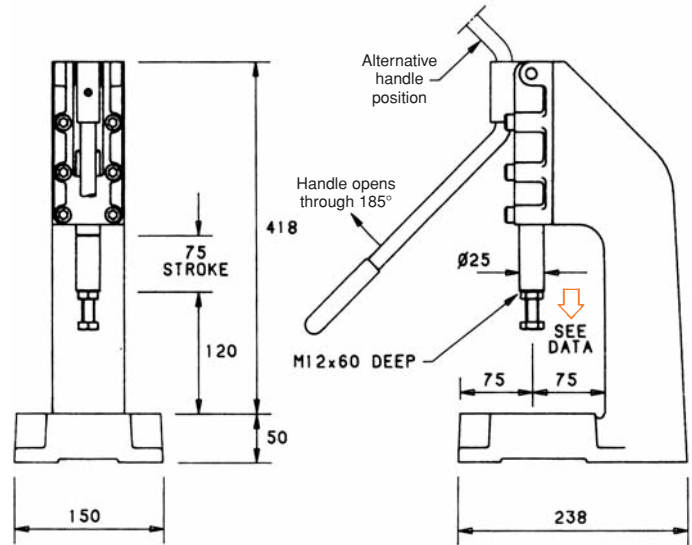
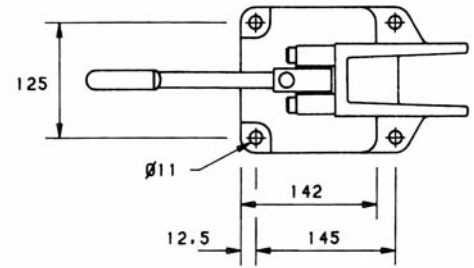
**Type:**  
Bench mounted manual toggle press.

**Nominal holding force:**  
2500 daN.

**Weight:**  
15.50 kg.

**Quality Features:**

- S.G. Iron framecasting.
- precision ground steel plunger.
- fixed height work head.



### TOGGLE HAND PRESSES

#### MODEL TPR 1



#### DATA

With 13 daN handle force the output force is:

| daN | mm              |
|-----|-----------------|
| 48  | Fully retracted |
| 45  | 5 mm extended   |
| 42  | 10 mm           |
| 42  | 15 mm           |
| 45  | 20 mm           |
| 49  | 25 mm           |
| 54  | 30 mm           |
| 75  | 35 mm           |
| 102 | 38 mm           |
| 143 | 39 mm           |
| 500 | Fully extended  |

**Optional Extras: please mention when ordering**  
Table Bore 12<sup>H7</sup> mm TB  
Stroke Counter Z

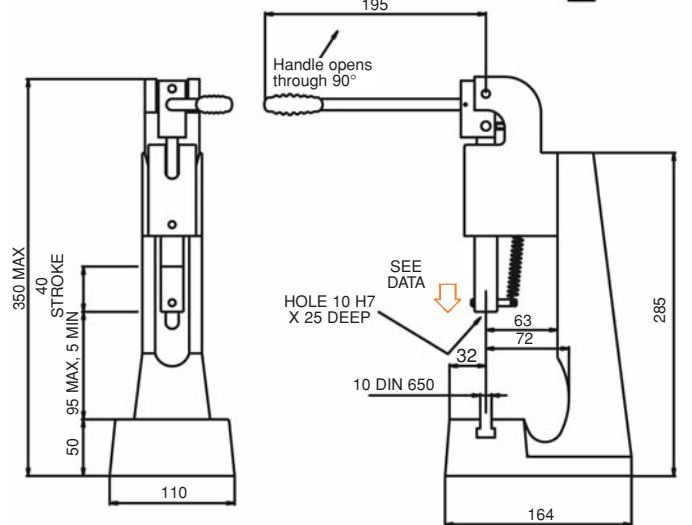
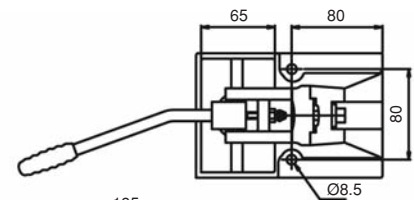
**Type:**  
Bench mounted toggle press

**Nominal holding force:**  
500 daN

**Weight:**  
10 kg

**Quality Features:**

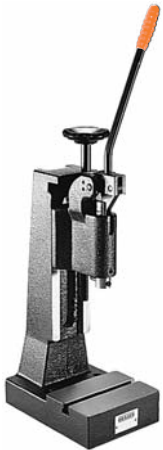
- hardened, ground ram.
- long-design, honed ram.
- ground table, with T-slot.
- adjustable working head height.



## TOGGLE HAND PRESSES

### TOGGLE HAND PRESSES

#### MODEL TPR 2



#### DATA

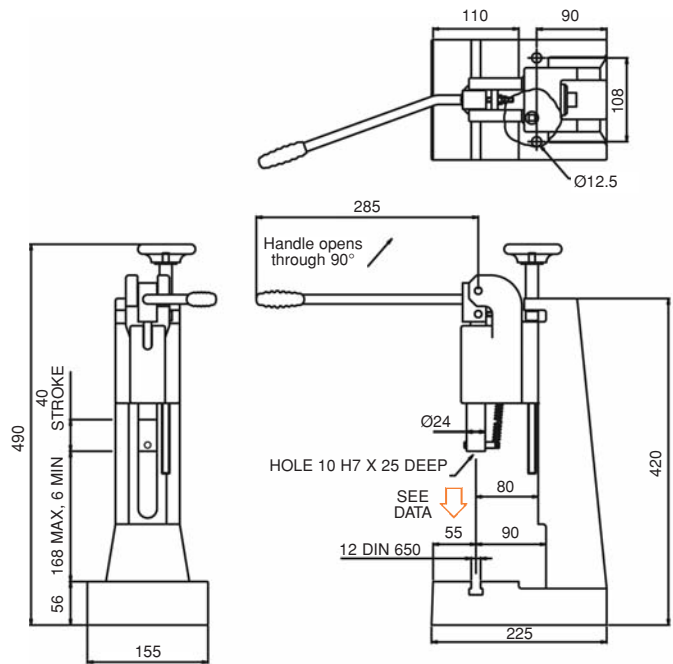
With 15 daN handle force the output force is:

| daN             | mm  |
|-----------------|-----|
| Fully retracted | 76  |
| 5 mm extended   | 74  |
| 10 mm "         | 65  |
| 15 mm "         | 65  |
| 20 mm "         | 72  |
| 25 mm "         | 80  |
| 30 mm "         | 98  |
| 35 mm "         | 125 |
| 38 mm "         | 200 |
| 39 mm "         | 255 |
| Fully extended  | 750 |

**Optional Extras: please mention when ordering**  
 Table Bore 12<sup>H7</sup>mm TB  
 Stroke Counter Z

**Type:** Bench mounted toggle press  
**Nominal holding force:** 750 daN  
**Weight:** 19 kg  
**Quality Features:**

- hardened, ground ram.
- long-design, honed ram.
- ground table, with T-slot.
- adjustable working head height.



### TOGGLE HAND PRESSES

#### MODEL TPR 3



#### DATA

With 20 daN handle force the output force is:

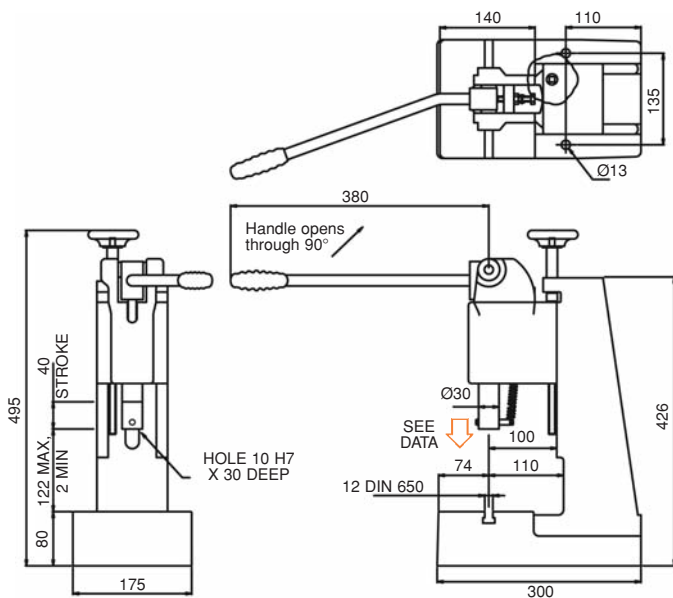
| daN             | mm   |
|-----------------|------|
| Fully retracted | 145  |
| 5 mm extended   | 135  |
| 10 mm "         | 130  |
| 15 mm "         | 130  |
| 20 mm "         | 130  |
| 25 mm "         | 140  |
| 30 mm "         | 160  |
| 35 mm "         | 230  |
| 38 mm "         | 325  |
| 39 mm "         | 440  |
| Fully extended  | 1400 |

**Optional Extras: please mention when ordering**  
 Table Bore 12<sup>H7</sup> mm TB  
 Stroke Counter Z

**Type:** Bench mounted toggle press  
**Nominal holding force:** 1400 daN  
**Weight:** 39 kg  
**Quality Features:**

- hardened, ground ram.
- long-design, honed ram.
- ground table, with T-slot.
- adjustable working head height.

The **extra powerful** hand toggle presses in the TPR 3 series are especially suited to the often changing demands found in tool making and general workshops. Their high capacity up to 15 kN allow for flexible use in various applications.



## RACK & PINION HAND PRESSES

### RACK & PINION PRESSES

#### MODEL RPP 1



#### DATA

With 18 daN handle force the output force is 150 daN

|                         |     |                      |
|-------------------------|-----|----------------------|
| Capacity                | kN  | 1,5                  |
|                         | kgf | 150                  |
| Working Stroke          | mm  | 43                   |
| Clearance               | mm  | 63                   |
| Table Size              | mm  | 100x65               |
| T-Slot width to DIN 650 | mm  | 10                   |
| Ram Bore Øx depth       | mm  | 10 <sup>H7</sup> x25 |
| Ram Ø                   | mm  | 20                   |
| Space required          | mm  | 110x160              |
| Weight                  | kg  | 8,5                  |

#### Optional Extras: please mention when ordering

|                             |    |       |
|-----------------------------|----|-------|
| Table Bore 12 <sup>H7</sup> | mm | TB    |
| Micrometer Screw Gauge      |    | MICRO |
| Stroke Counter              |    | Z     |

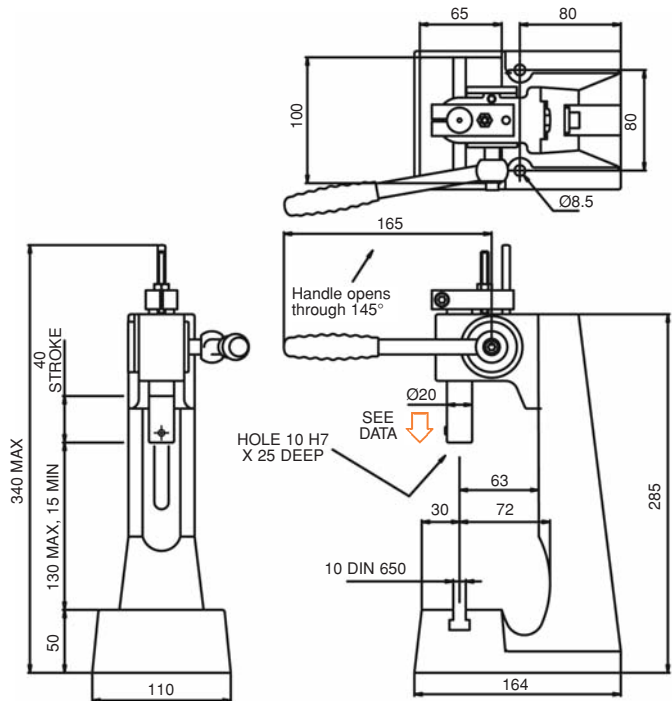
#### Type:

Bench mounted rack and pinion press

#### Quality Features:

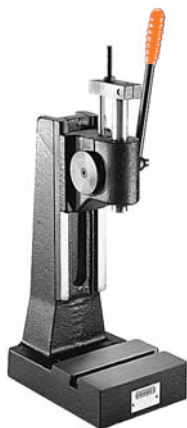
- anti-twist ram.
- stroke adjustment by means of adjustment screw, or micrometer screw.
- hand lever adjustable through 360°.
- long, honed ram guide.
- ground table, with T-slot.

All Brauer rack and pinion presses apply their pressing force constantly throughout the entire working stroke. The direct transmission of force through the lever allows the operator to sense the load being applied. The optional micrometer stop for stroke adjustment allows high precision work.



### RACK & PINION PRESSES

#### MODEL RPP 2



#### DATA

With 20 daN handle force the output force is 150 daN

|                         |     |                      |
|-------------------------|-----|----------------------|
| Capacity                | kN  | 2,5                  |
|                         | kgf | 250                  |
| Working Stroke          | mm  | 50                   |
| Clearance               | mm  | 80                   |
| Table Size              | mm  | 155x115              |
| T-Slot width to DIN 650 | mm  | 12                   |
| Ram Bore Øx depth       | mm  | 10 <sup>H7</sup> x25 |
| Ram Ø                   | mm  | 20                   |
| Space required          | mm  | 155x220              |
| Weight                  | kg  | 21                   |

#### Optional Extras: please mention when ordering

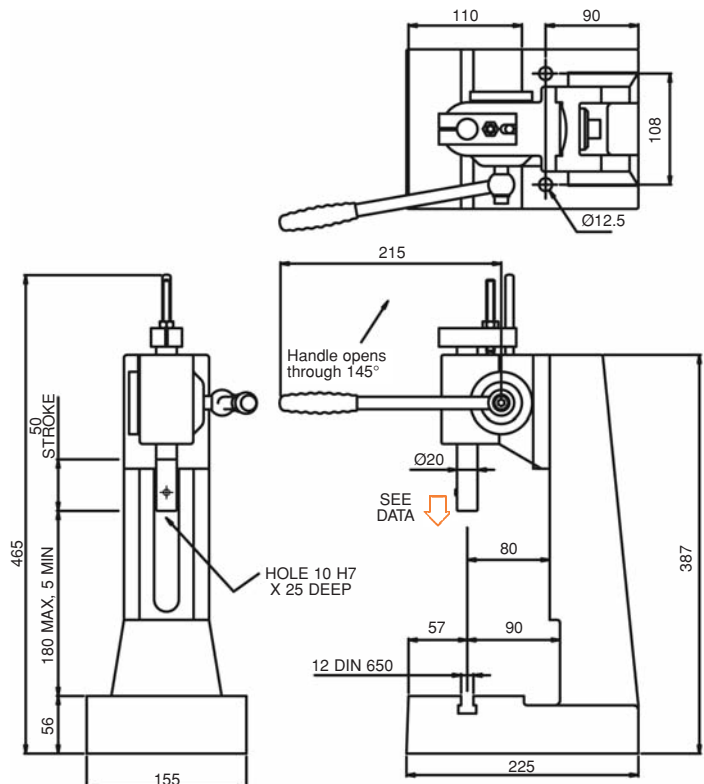
|                             |    |       |
|-----------------------------|----|-------|
| Table Bore 12 <sup>H7</sup> | mm | TB    |
| Micrometer Screw Gauge      |    | MICRO |
| Stroke Counter              |    | Z     |

#### Type:

Bench mounted rack and pinion press

#### Quality Features:

- anti-twist ram.
- stroke adjustment by means of adjustment screw, or micrometer screw.
- hand lever adjustable through 360°.
- long, honed ram guide.
- ground table, with T-slot.



## TOGGLE HAND PRESSES

### PNEUMATIC TOGGLE PRESS

MODEL P600XPR



#### DATA

|   |        |
|---|--------|
| With 6 bar air supply pressure the output force is: |        |
| Fully retracted                                     | 20 daN |
| 5 mm extended                                       | 32     |
| 10 mm "   | 43     |
| 15 mm "   | 65     |
| 20 mm "   | 87     |
| 22 mm "   | 100    |
| 24 mm "   | 150    |
| Fully extended                                      | 253    |

**Type:**  
Bench mounted pneumatic toggle press.

**Nominal holding force:**  
600 daN.

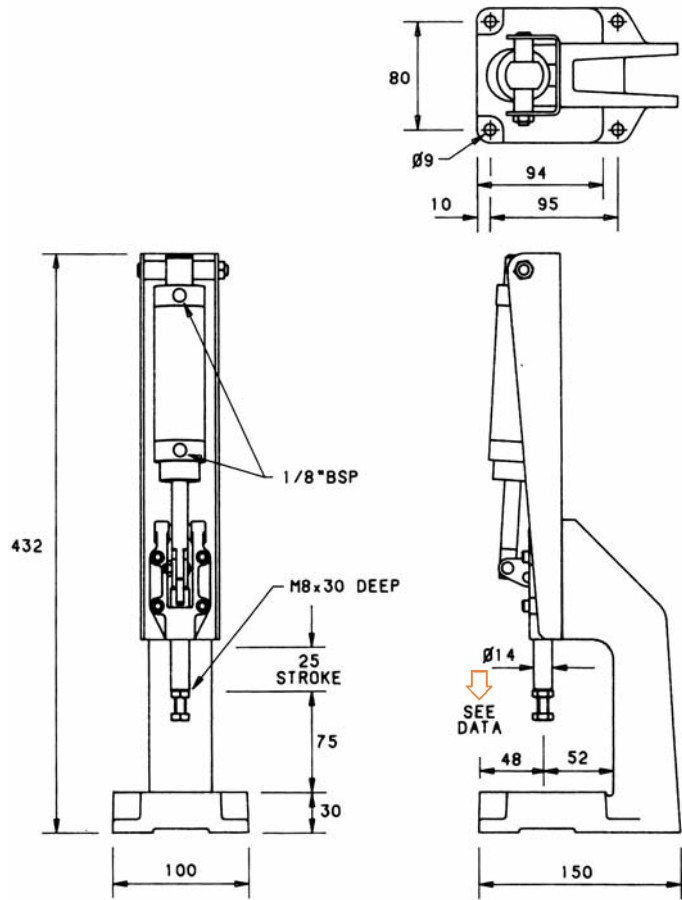
**Operating pressure range:**  
2-6 bar (30-88p.s.i.g.)

**Max. cycles/min. @ 6 bar:**  
60

**Swept volume per cycle:**  
0.09 L<sup>3</sup> (5.49 cu. in.)

For stroke sensing order SK/3 Sensing Kit

**Weight:**  
5.25 kg.



### PNEUMATIC TOGGLE PRESS

MODEL P1200XPR



#### DATA

|   |         |
|---|---------|
| With 6 bar air supply pressure the output force is: |         |
| Fully retracted                                     | 110 daN |
| 5 mm extended                                       | 120     |
| 10 mm "   | 140     |
| 15 mm "   | 165     |
| 20 mm "   | 195     |
| 25 mm "   | 230     |
| 27 mm "   | 255     |
| 29 mm "   | 300     |
| 31 mm "   | 430     |
| Fully extended                                      | 1150    |

**Type:**  
Bench mounted pneumatic toggle press.

**Nominal holding force:**  
1200 daN.

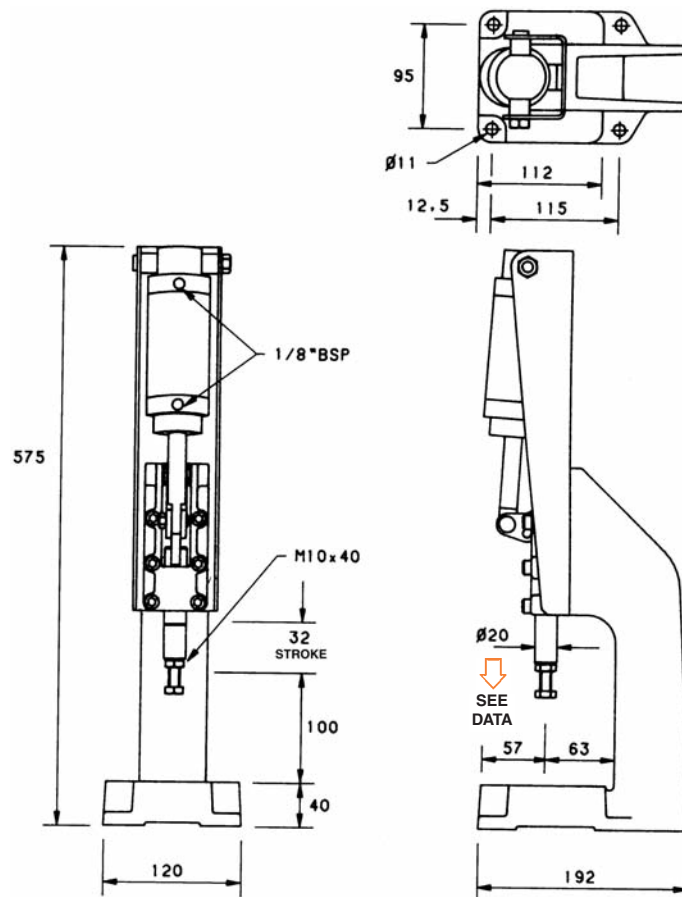
**Operating pressure range:**  
2-6 bar (30-88p.s.i.g.)

**Max. cycles/min. @ 6 bar:**  
50

**Swept volume per cycle:**  
0.28 L<sup>3</sup> (16.80 cu. in.)

For stroke sensing order SK/4 Sensing Kit

**Weight:**  
9.85 kg.



## PNEUMATIC PRESSES

### PNEUMATIC TOGGLE PRESS

MODEL P2500XPR



With 6 bar air supply pressure the output force is:

|                 |         |
|-----------------|---------|
| Fully retracted | 130 daN |
| 5 mm extended   | 140     |
| 10 mm "         | 160     |
| 15 mm "         | 175     |
| 20 mm "         | 200     |
| 25 mm "         | 210     |
| 30 mm "         | 245     |
| 35 mm "         | 265     |
| 40 mm "         | 325     |
| 45 mm "         | 420     |
| 47 mm "         | 490     |
| 49 mm "         | 700     |
| Fully extended  | 1450    |

**Type:**  
Bench mounted pneumatic toggle press.

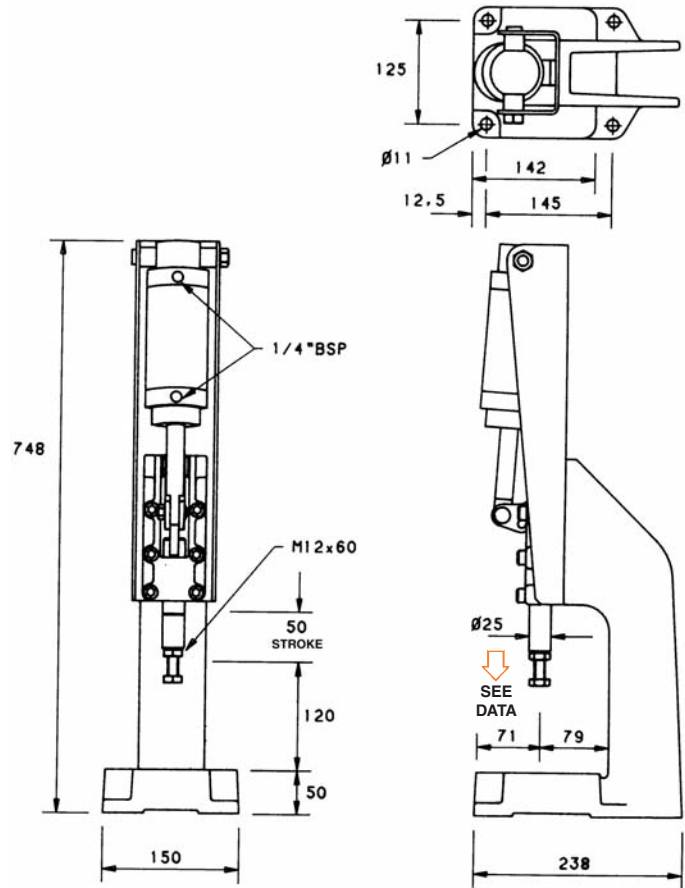
**Nominal holding force:**  
2500 daN.

**Operating pressure range:**  
2-6 bar (30-88p.s.i.g.)

**Max. cycles/min. @ 6 bar:**  
45

**Swept volume per cycle:**  
0.6 L<sup>3</sup> (36.6 cu. in)  
For stroke sensing order SK/5 Sensing Kit

**Weight:**  
19.05 kg.



### DIRECT ACTING PNEUMATIC PRESS

MODEL PNDP 1

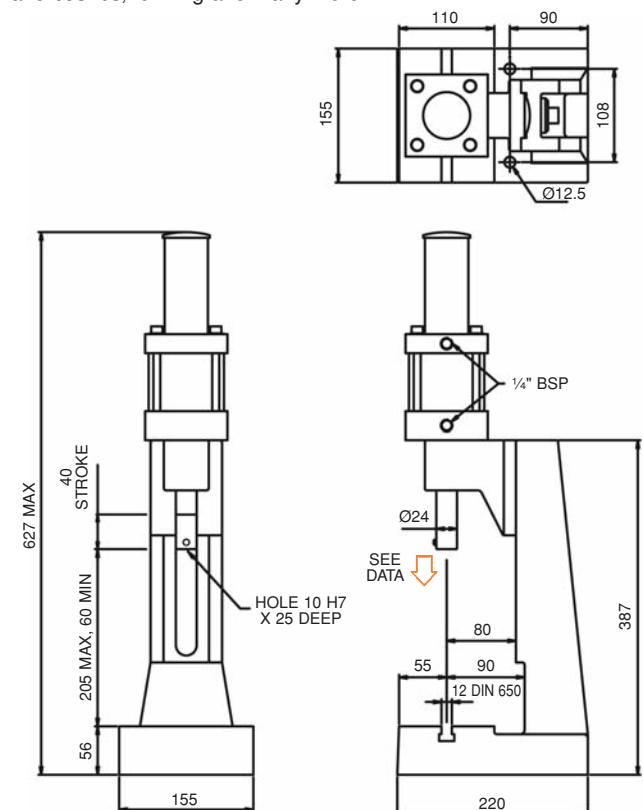


|                           |     |                      |
|---------------------------|-----|----------------------|
| Capacity at 6 bar         | kN  | 2,5                  |
|                           | kgf | 250                  |
| Working Stroke            | mm  | 40                   |
| Clearance                 | mm  | 80                   |
| Table Size                | mm  | 208x48               |
| T-Slot width to DIN 650   | mm  | 12                   |
| Ram Bore                  |     |                      |
| Øxdepth                   | mm  | 12 <sup>H7</sup> x25 |
| Ram Ø                     | mm  | 24                   |
| Space required            | mm  | 155x220              |
| Port Size                 |     | R 1/4"               |
| Air Consumption/cm Stroke | l   | 0,6                  |
| Weight                    | kg  | 18,5                 |

**Quality Features:**

- anti-twist ram.
- stroke adjustable through a length of 30 mm to an accuracy of 0,05 mm.
- long, honed ram guide.
- ground table, with T-slot.

All Brauer direct acting pneumatic presses apply their pressing force constantly throughout the entire working stroke. They offer a wide variety of uses e.g. pressing in and out of dowels, bearings, and bushes, forming and many more.





## PNEUMATIC PRESSES

### PNEUMATIC TOGGLE PRESS

#### MODEL PNPR 1

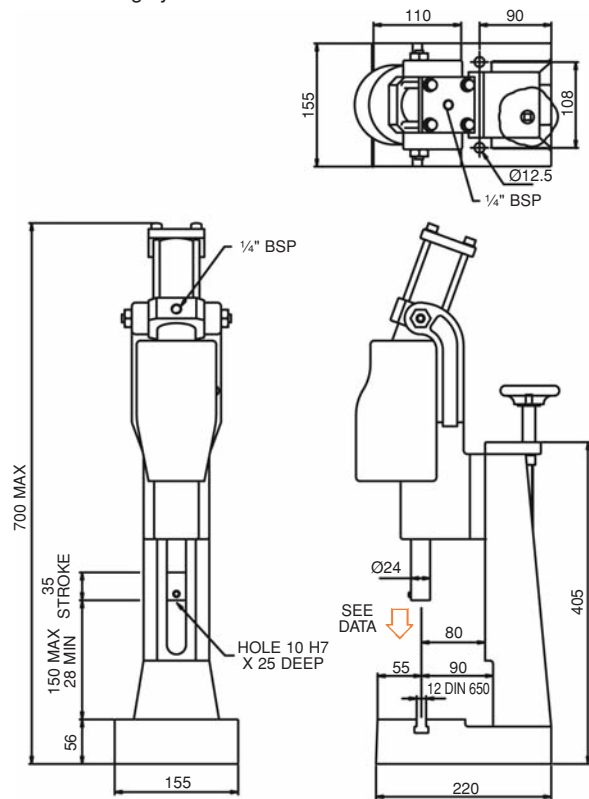


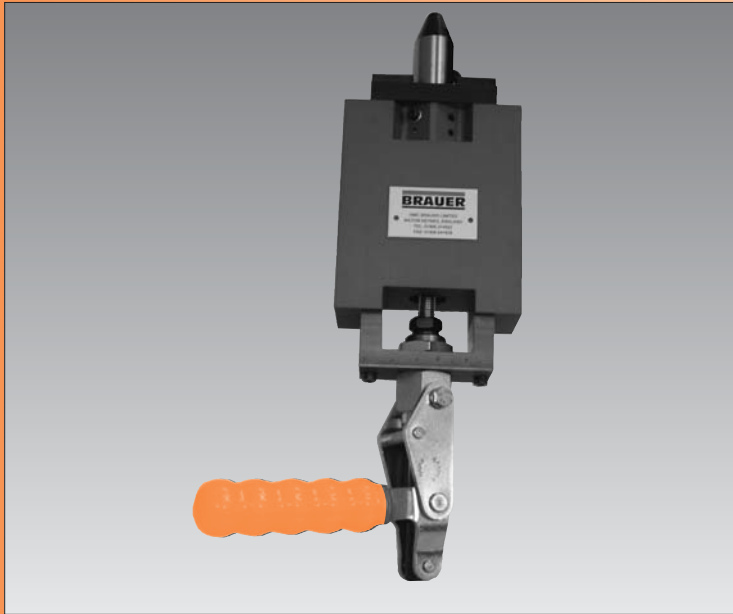
|   |      |
|---|------|
| With 6 bar air supply pressure the output force is: | daN  |
| Fully retracted                                     | 110  |
| 5 mm extended                                       | 120  |
| 10 mm "   | 130  |
| 15 mm "   | 140  |
| 20 mm "   | 155  |
| 25 mm "   | 170  |
| 30 mm "   | 220  |
| 33 mm "   | 290  |
| 34 mm "   | 360  |
| Fully extended                                      | 600  |
| Air Consumption/cm                                  |      |
| Stroke l  | 0,26 |
| Weight kg   | 22   |

#### Quality Features:

- the working height of the press head is easily set by means of the height mechanism on all pneumatic toggle action presses.
- hardened, ground ram.
- ground table, with T-slot.

All Brauer pneumatic toggle presses are employed where the full force of the press is only needed at the end of the stroke. The toggle action results in high force with a low air and therefore energy consumption of the double acting cylinder.





## PIN AND BODY LOCATION CLAMPS

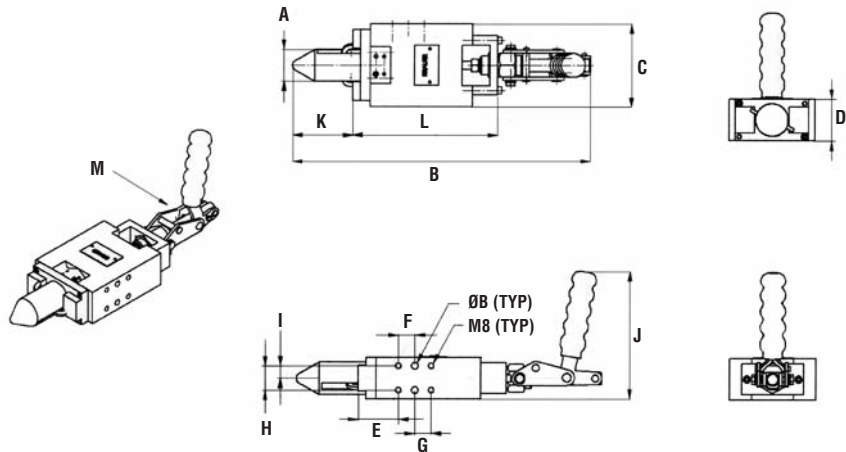
- Used for locating any fabrication, frame or automotive body in an exact position
- Diameter of Location Pin  $\text{Ø}25$   $\text{Ø}35$   $\text{Ø}40$
- Internal clamping fingers which extend out from Locating Pin
- Finger adjustment to accommodate differing material thicknesses

## PIN LOCATION CLAMPS

• Metric dimensions shown for global specification.



| Model # | Dimensions (mm) |     |     |    |    |    |    |    |    |     |    |     |      |
|---------|-----------------|-----|-----|----|----|----|----|----|----|-----|----|-----|------|
|         | A               | B   | C   | D  | E  | F  | G  | H  | I  | J   | K  | L   | M    |
| PC25.0  | 25              | 347 | 105 | 51 | 49 | 20 | 20 | 30 | 15 | 157 | 51 | 181 | P400 |
| PC35.0  | 35              | 370 | 105 | 51 | 49 | 20 | 20 | 30 | 15 | 157 | 74 | 181 | P400 |
| PC40.0  | 40              | 371 | 105 | 51 | 49 | 20 | 20 | 30 | 15 | 157 | 74 | 181 | P400 |

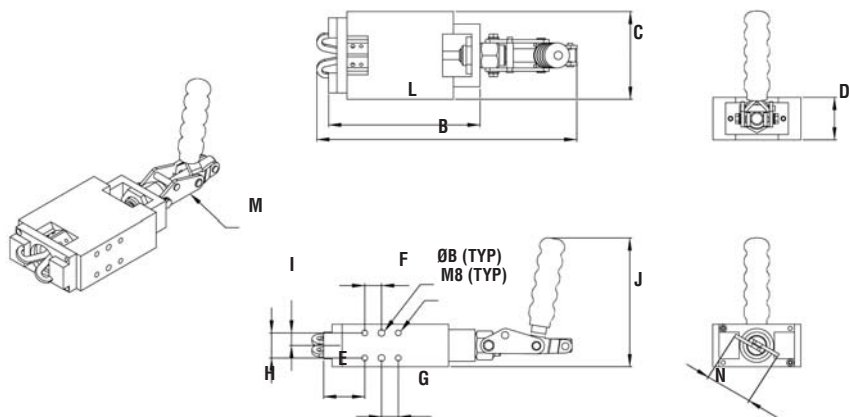


## BODY LOCATION CLAMPS

• Metric dimensions shown for global specification.



| Model # | Dimensions (mm) |     |    |    |    |    |    |    |     |     |      |    |  |
|---------|-----------------|-----|----|----|----|----|----|----|-----|-----|------|----|--|
|         | B               | C   | D  | E  | F  | G  | H  | I  | J   | L   | M    | N  |  |
| BC25.0  | 305             | 105 | 51 | 49 | 20 | 20 | 30 | 15 | 157 | 181 | P400 | 37 |  |
| BC40.0  | 310             | 105 | 51 | 49 | 20 | 20 | 30 | 15 | 157 | 181 | P400 | 37 |  |





## VERTICAL CLAMPS

- **Features:**

Vertical clamps are the most popular type of toggle clamp, the arm and handle rotating in the same direction when applied and retracted, and high clamping and holding forces being generated.

A comfortable, cushioned PVC handle grip is fitted to all Vertical clamps.

Models V75, V150, V250, V350, V450 and V550 feature a base which accurately guides the clamping arm, and a closed end to the arm for rigidity of construction and to retain the spindle or setscrew if it should loosen.

The angles through which the clamping arm and handle open can be altered by re-positioning or removing the stop pin.

- **Specification:**

The main components are of zinc plated and passivated steel.

Rivets are of stainless steel, which burnishes and work-hardens with use, the rivets rotating in hardened bushes in the larger clamps. Setscrews are of chemi-black coated steel.

## VERTICAL CLAMPS

### V70 SERIES

MODEL V70/2BT

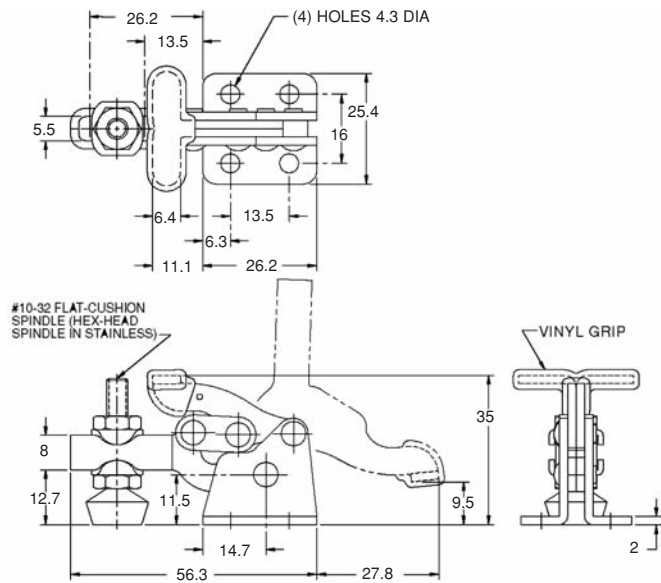


**Holding Force:**  
70 daN

**T-Handle:**  
Miniature hold-down clamp with a unique finger-grip T-handle. Open arm allows spindle adjustment. Arm opens 92° while handle moves 175°.

**Shipping weight:**  
0.1 Kg

**Supplied with:**  
#10-32 flat-cushion spindle  
16112-FC.  
2 TW flanged washers.



### V70 SERIES

MODEL V70/2BTSS

**STAINLESS  
STEEL**



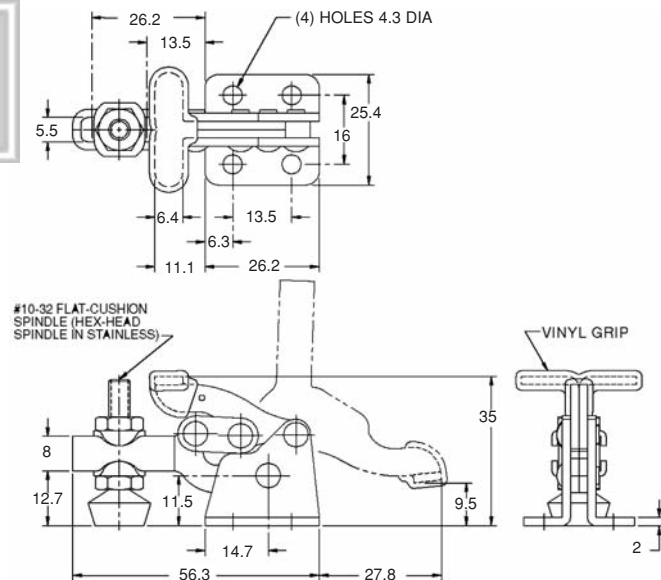
**Holding Force:**  
70 daN

**T-Handle:**  
Miniature hold-down clamp with a unique finger-grip T-handle. Open arm allows spindle adjustment. Arm opens 92° while handle moves 175°.

**Shipping weight:**  
0.1 Kg

**Supplied with:**  
#10-32 flat-cushion spindle  
16112-FC.  
2 TW flanged washers.

**Material:** BS 304 S15



### V30 SERIES

MODEL V30/2B



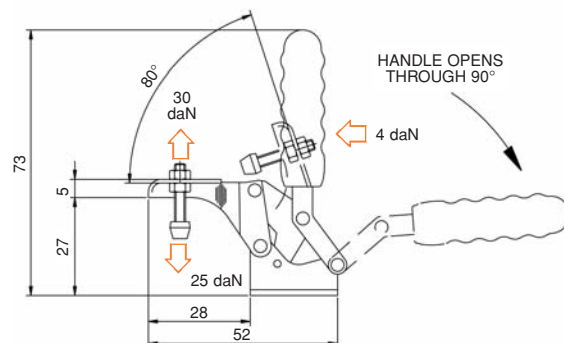
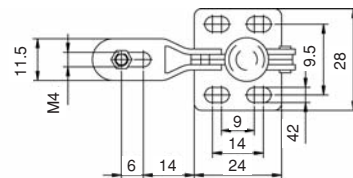
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
30 daN

**Weight:**  
0.04 Kg

**Supplied with:**  
MB0442 Setscrew & nut.



## VERTICAL CLAMPS

### V75 SERIES

#### MODEL V75/1B



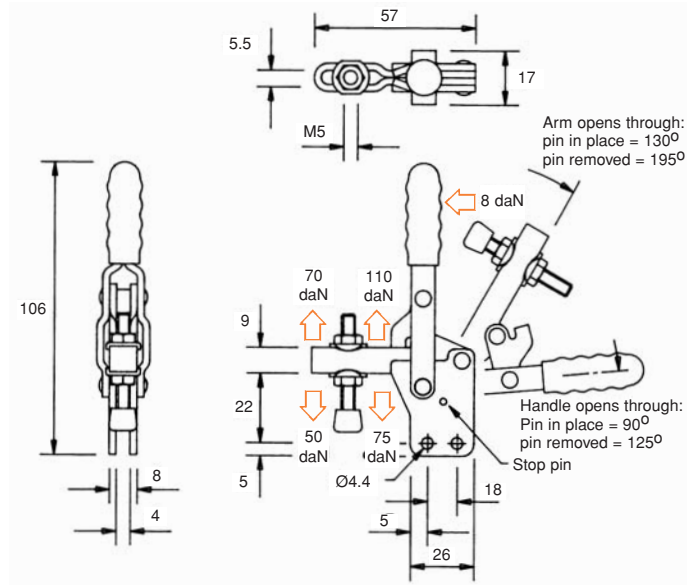
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Straight.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
FW05/10 Flanged washers.  
See "Accessories" for other items.



### V75 SERIES

#### MODEL V75/1BSS



**Arm:**  
The spindle position is adjustable along the arm.

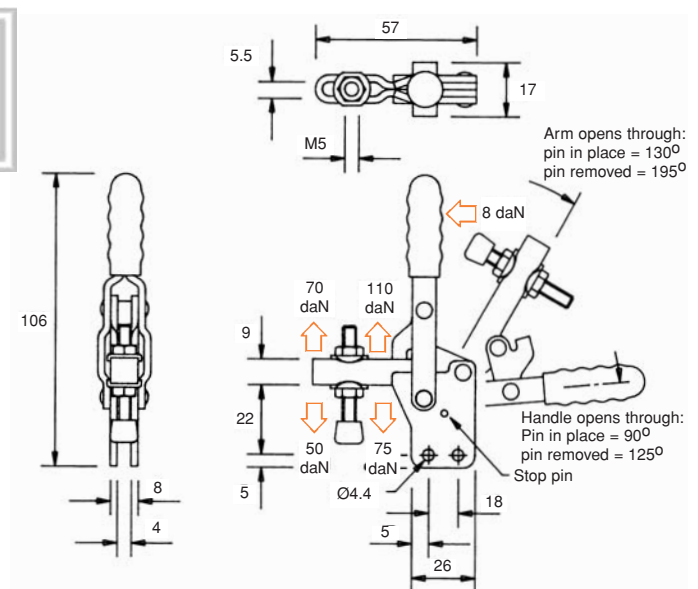
**Base:**  
Straight.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
FW05/10 Flanged washers.

**Material:** BS 304 S15



### V75 SERIES

#### MODEL V75/2B



for front mounting use bracket Model FM1



**Arm:**  
The spindle position is adjustable along the arm.

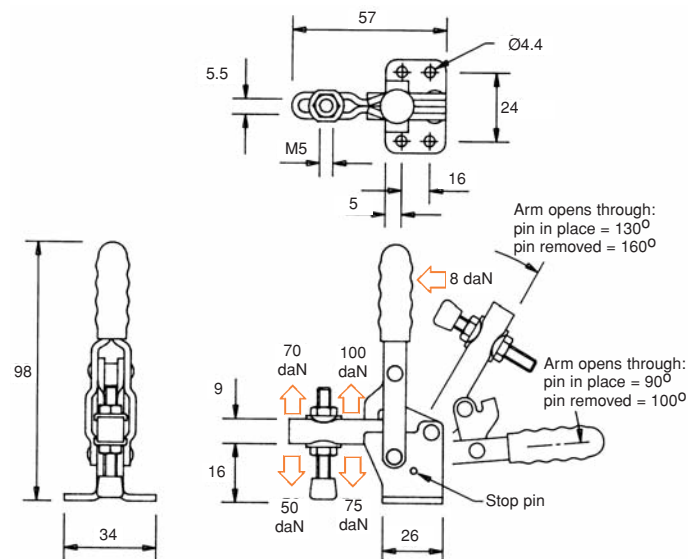
**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
FW05/10 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V75 SERIES

#### MODEL V75/2BSS



**Arm:**  
The spindle position is adjustable along the arm.

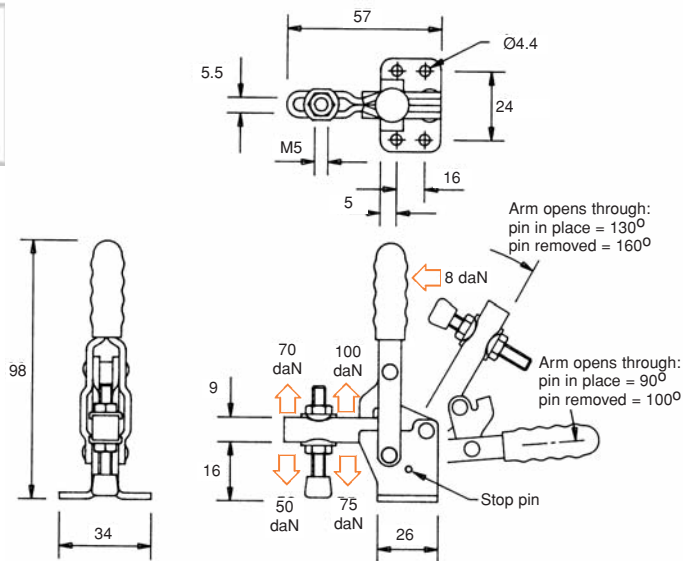
**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
Setscrew & nuts.  
Neoprene cover.  
Flanged washers.

**Material:**  
BS 304 S15



### V100 SERIES

#### MODEL V100/1B



**Arm:**  
The spindle position is adjustable along the arm.

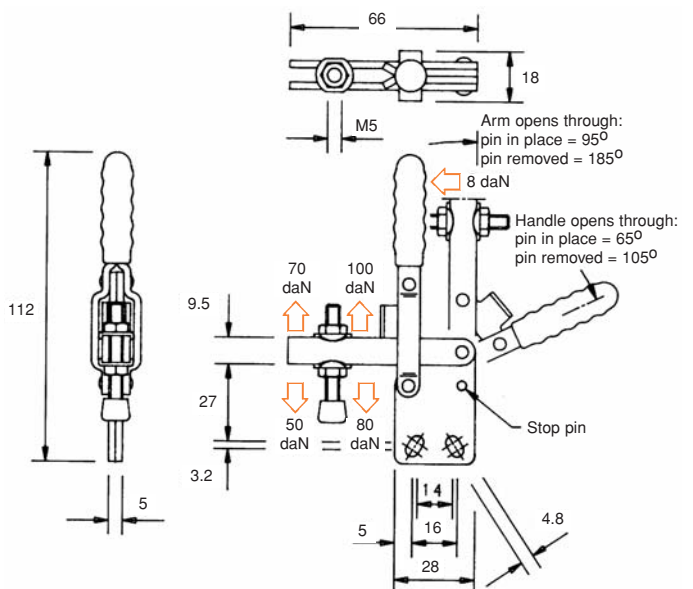
**Base:**  
Straight.

**Nominal Holding Force:**  
100 daN

**Weight:**  
1.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
FW05/10 Flanged washers.

See "Accessories" for other items.



### V100 SERIES

#### MODEL V100/1C



**Arm:**  
The spindle is in a fixed position.

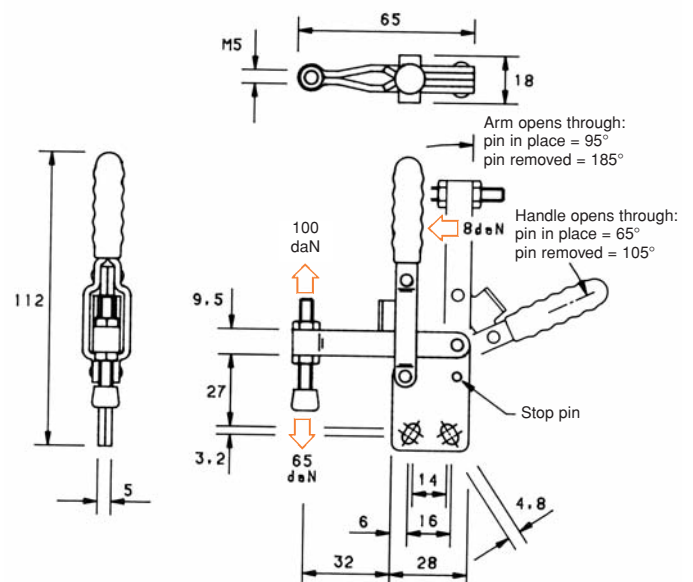
**Base:**  
Straight.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.

See "Accessories" for other items.



## VERTICAL CLAMPS

V100 SERIES  
MODEL V100/2B



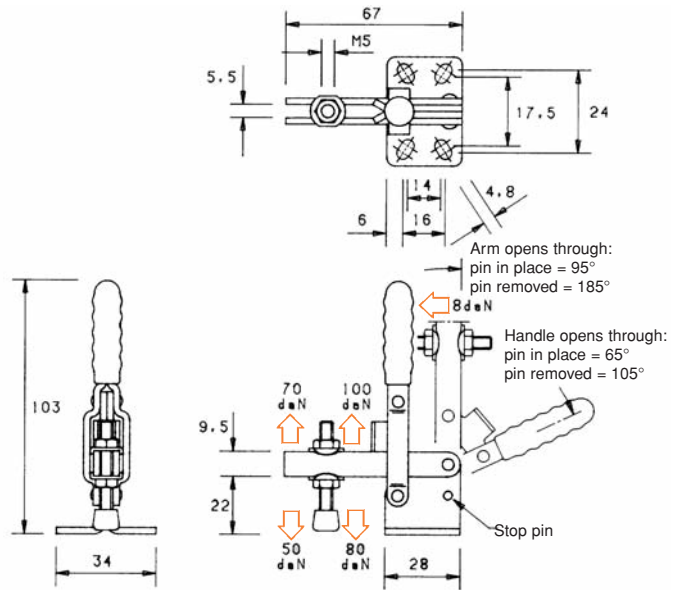
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
FW05/10 Flanged washers.  
See "Accessories" for other items.



V100 SERIES  
MODEL V100/2C



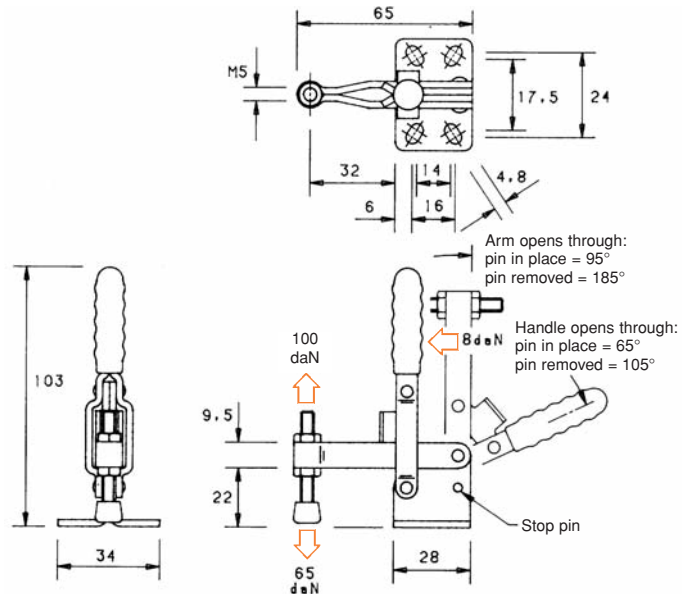
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
See "Accessories" for other items.



V100 SERIES  
MODEL V100/3B



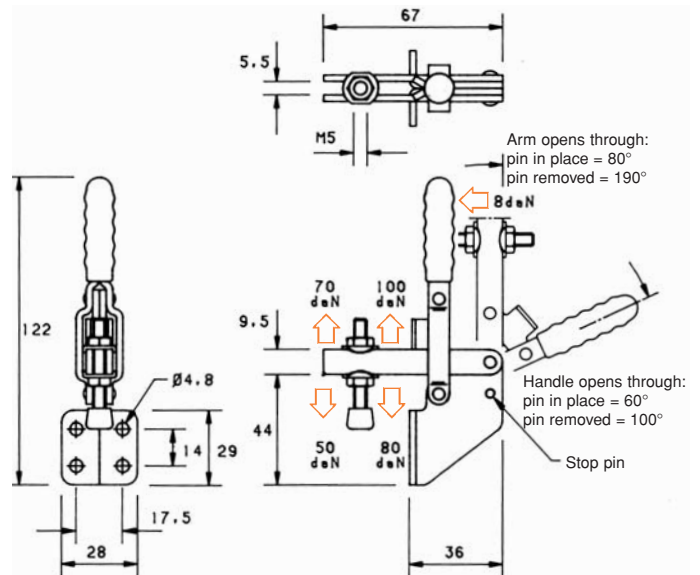
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Front mounting.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.11 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.  
FW05/10 Flanged washers.  
See "Accessories" for other items.





## VERTICAL CLAMPS

### V100 SERIES MODEL V100/3C



**Arm:**  
The spindle is in a fixed position.

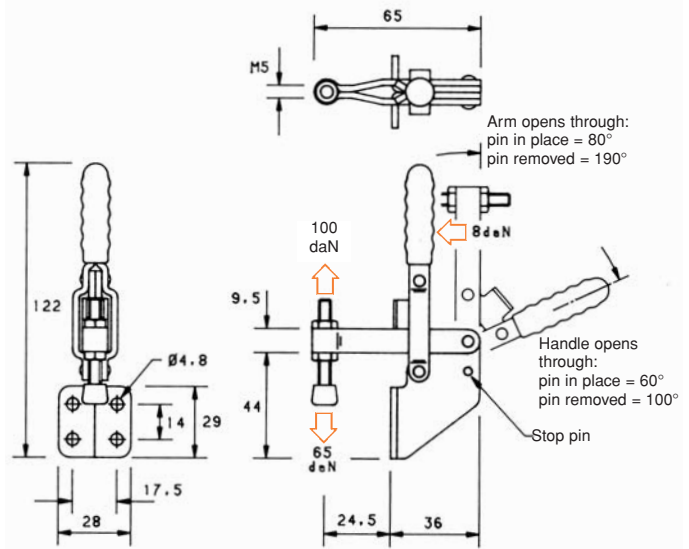
**Base:**  
Front mounting.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.11 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.

See "Accessories" for other items.



### V150 SERIES MODEL V150/1B



**Arm:**  
The spindle position is adjustable along the arm.

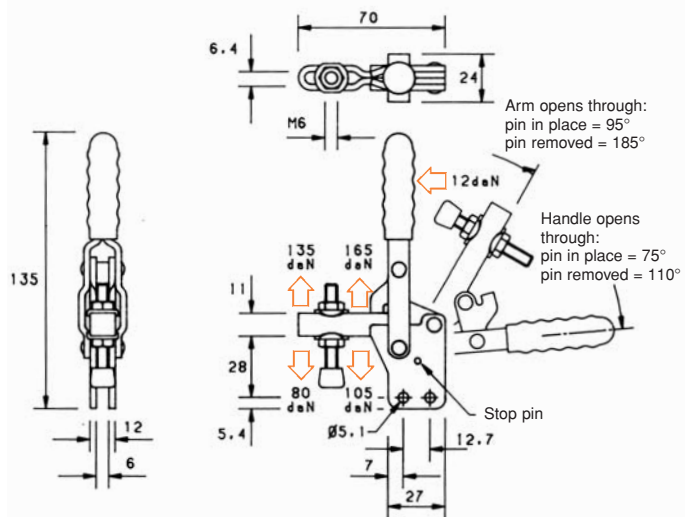
**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.

See "Accessories" for other items.



### V150 SERIES MODEL V150/1BL



**Arm:**  
The spindle position is adjustable along the arm. 15mm added to arm length over V150/1B model.

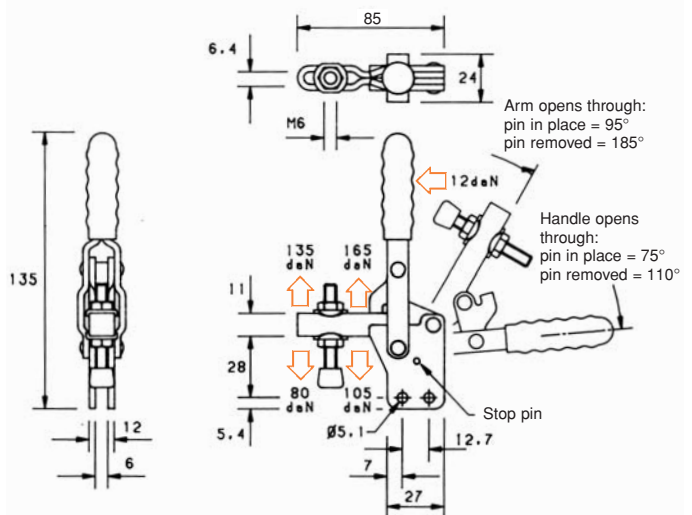
**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

V150 SERIES  
MODEL V150/1BSS

STAINLESS  
STEEL



**Arm:**  
The spindle position is adjustable along the arm.

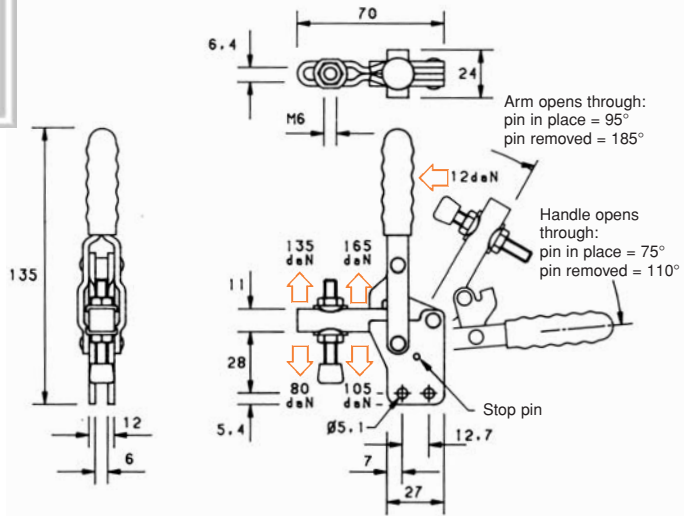
**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.

**Material:** BS 304 S15



V150 SERIES  
MODEL V150/1C



**Arm:**  
The spindle is in a fixed position.

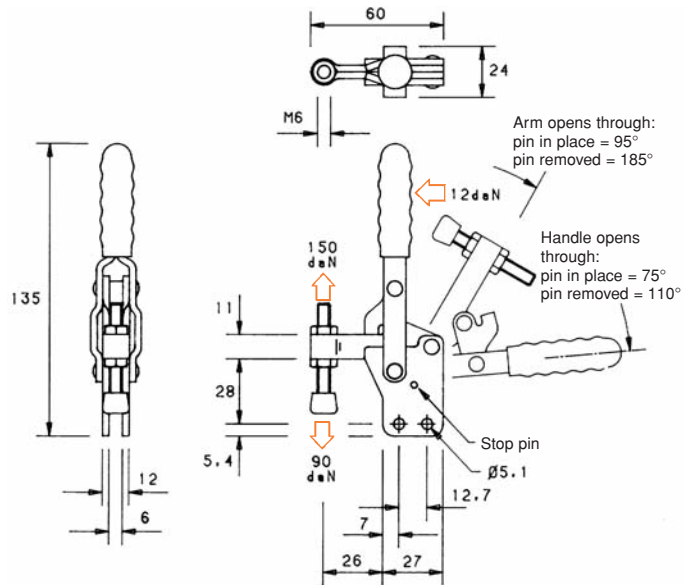
**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

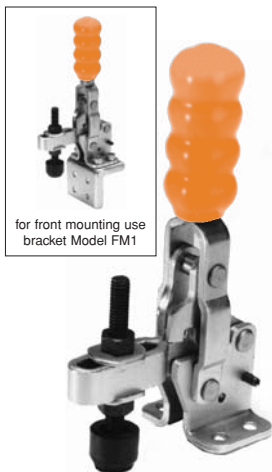
**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.

See "Accessories" for other items.



V150 SERIES  
MODEL V150/2B



**Arm:**  
The spindle position is adjustable along the arm.

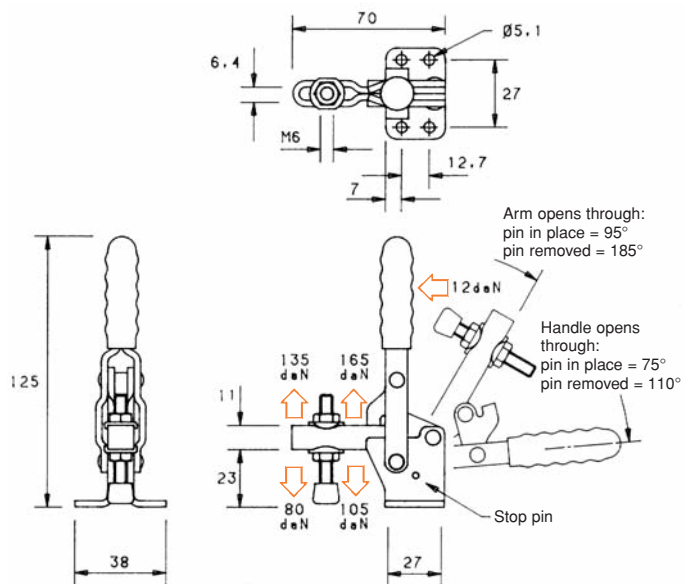
**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V150 SERIES

#### MODEL V150/2BL



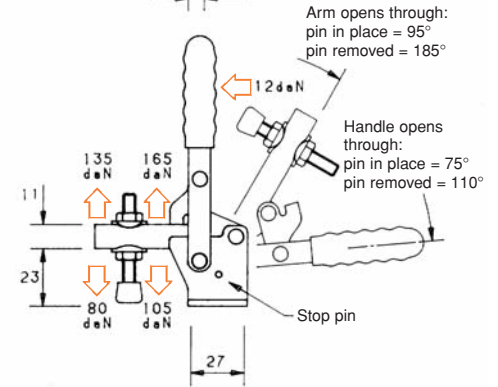
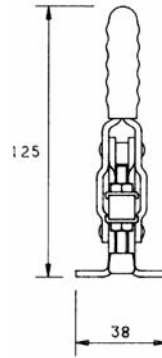
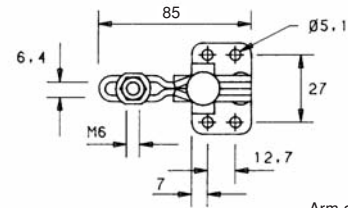
**Arm:**  
The spindle position is adjustable along the arm. 15mm added to arm length over V150/2B model.

**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.  
See "Accessories" for other items.



### V150 SERIES

#### MODEL V150/2BSS



**Arm:**  
The spindle position is adjustable along the arm.

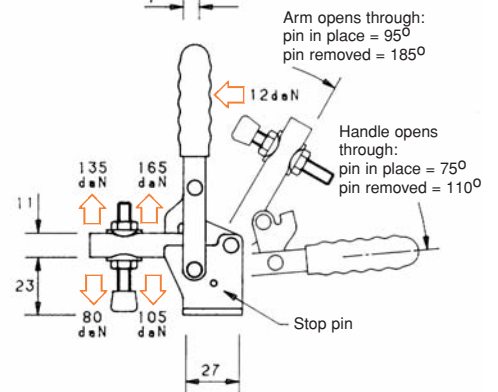
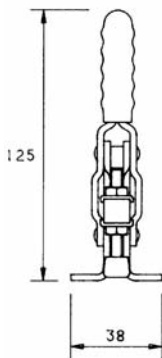
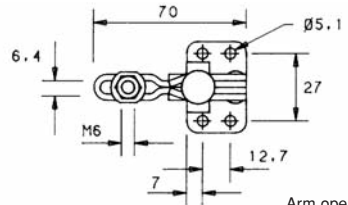
**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
Setscrew & nuts.  
Neoprene cover.  
Flanged washers.

**Material:**  
BS 304 S15



### V150 SERIES

#### MODEL V150/2C



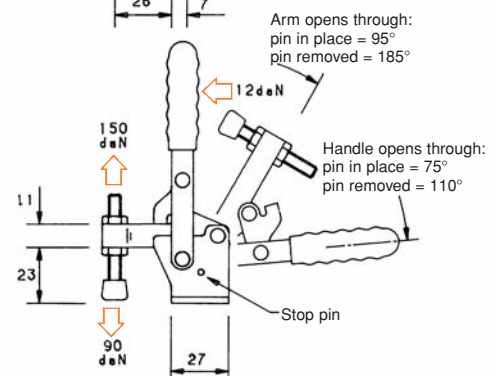
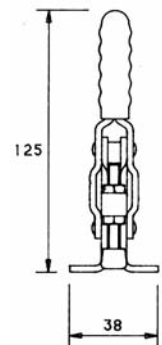
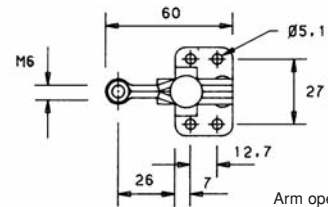
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
See "Accessories" for other items.



## VERTICAL CLAMPS

### V200 SERIES

#### MODEL V200/1B



**Arm:**  
The spindle is in a fixed position.

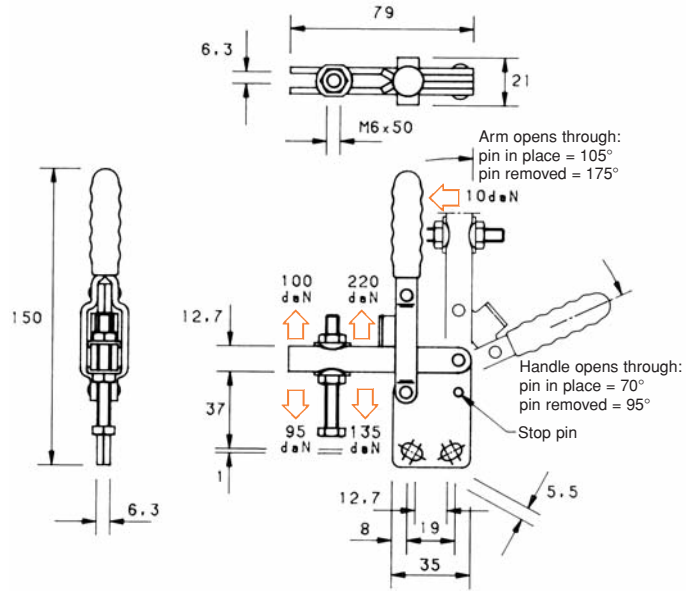
**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.

See "Accessories" for other items.



### V200 SERIES

#### MODEL V200/1C



**Arm:**  
The spindle is in a fixed position.

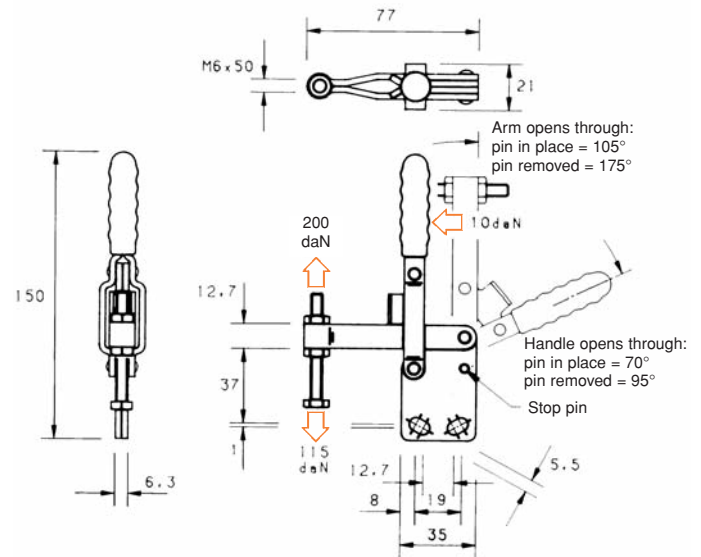
**Base:**  
Straight.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.20 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.

See "Accessories" for other items.



### V200 SERIES

#### MODEL V200/2B



**Arm:**  
The spindle position is adjustable along the arm.

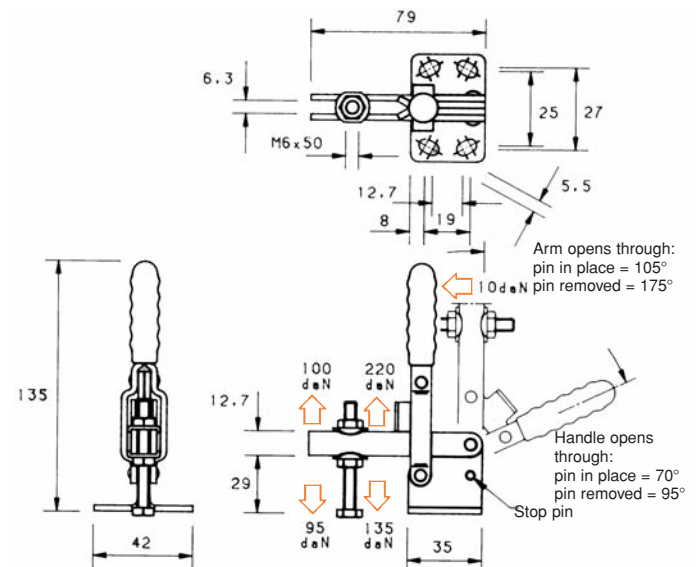
**Base:**  
Flanged.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.20 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
FW06/12 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V200 SERIES

#### MODEL V200/2C



**Arm:**  
The spindle is in a fixed position.

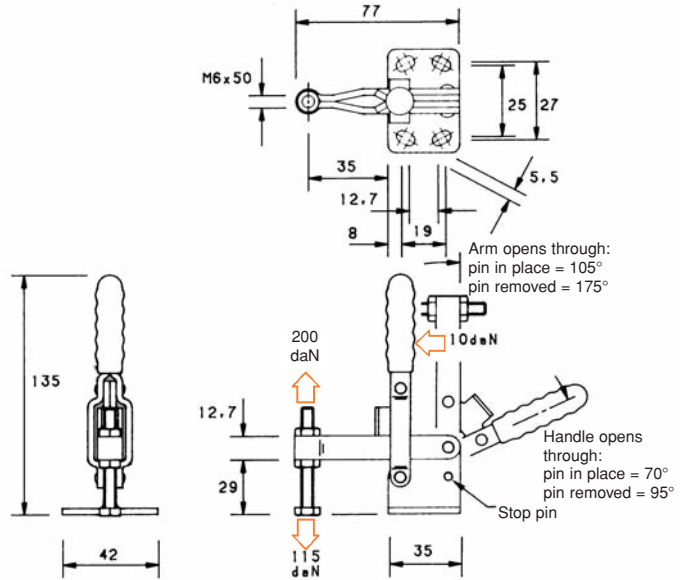
**Base:**  
Flanged.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.20 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
FW06/12 Flanged washers.

See "Accessories" for other items.



### V200 SERIES

#### MODEL V200/3B



**Arm:**  
The spindle position is adjustable along the arm.

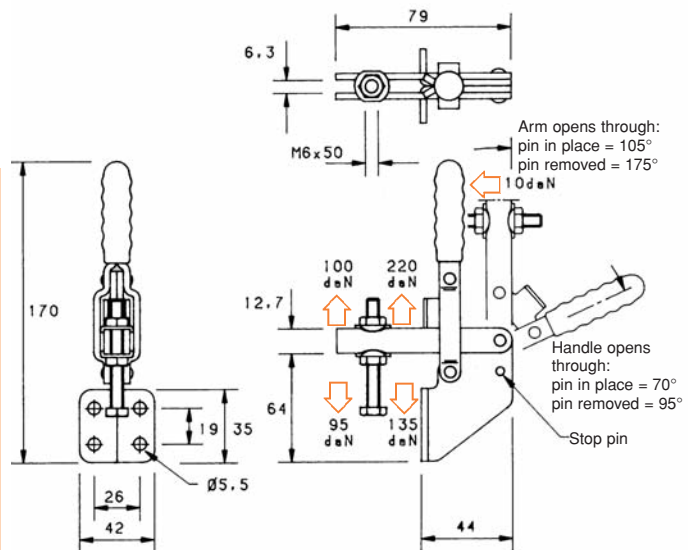
**Base:**  
Front mounting.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
FW06/12 Flanged washers.

See "Accessories" for other items.



### V200 SERIES

#### MODEL V200/3C



**Arm:**  
The spindle is in a fixed position.

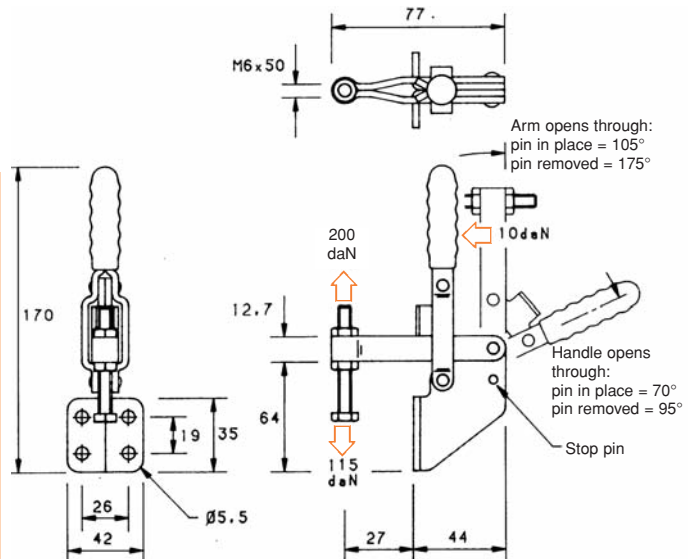
**Base:**  
Front mounting.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V250 SERIES

#### MODEL V250/1A



**Arm:**  
2-piece "solid" arm with spindle retainer supplied loose for welding in the desired position.

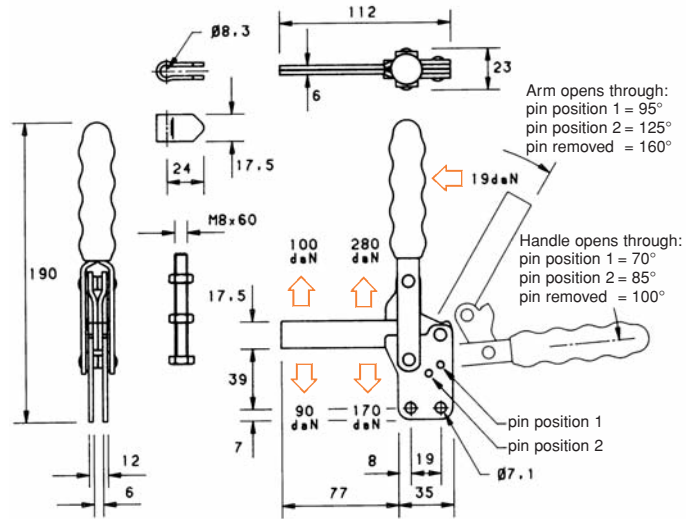
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### V250 SERIES

#### MODEL V250/1AL



**Arm:**  
Solid arm with spindle retainer supplied loose for welding in the desired position. 10mm added to arm length over V250/1A model.

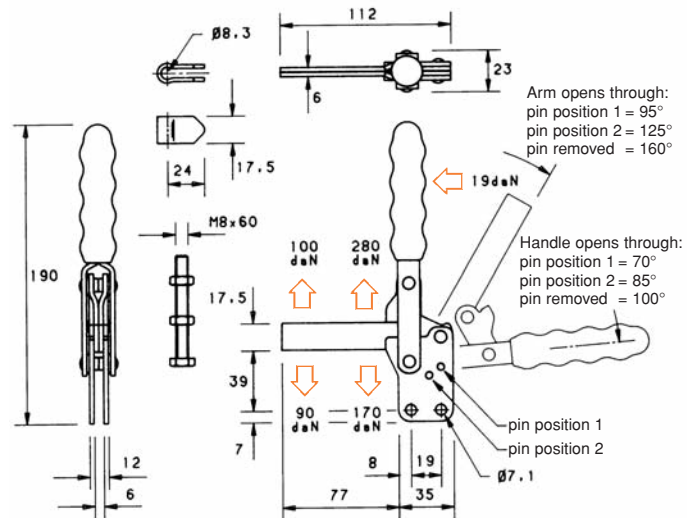
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### V250 SERIES

#### MODEL V250/1B



**Arm:**  
The spindle position is adjustable along the arm.

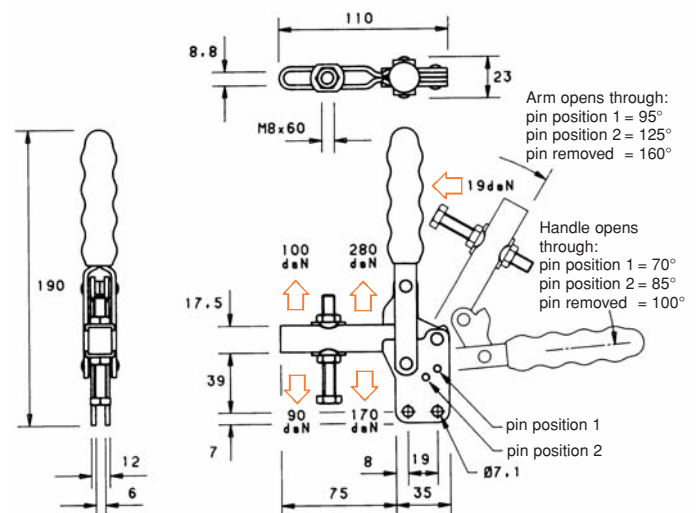
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V250 SERIES

#### MODEL V250/1BSS

**STAINLESS  
STEEL**



**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Straight.

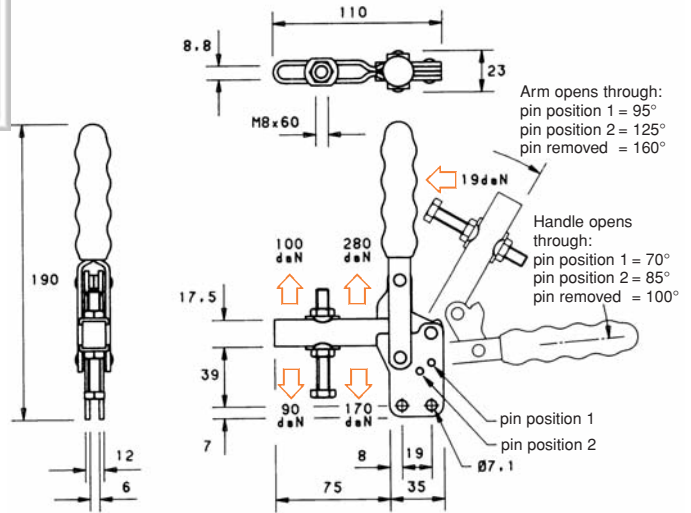
**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

**Material:**  
BS 304 S15

See "Accessories" for other items.



### V250 SERIES

#### MODEL V250/1C



**Arm:**  
The spindle is in a fixed position.

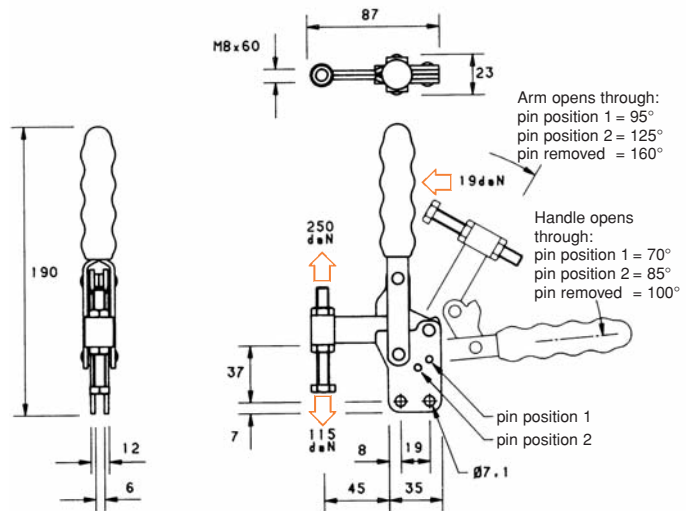
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.

See "Accessories" for other items.



### V250 SERIES

#### MODEL V250/2A



**Arm:**  
2-piece "solid" arm with spindle retainer supplied loose for welding in the desired position.

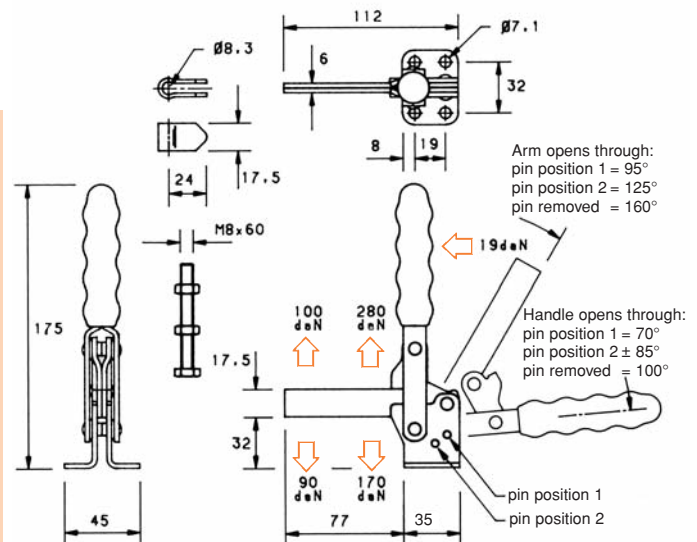
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



## VERTICAL CLAMPS

V250 SERIES  
MODEL V250/2AL



**Arm:**  
Solid arm with spindle retainer supplied loose for welding in the desired position. 10mm added to arm length over V250/2A model.

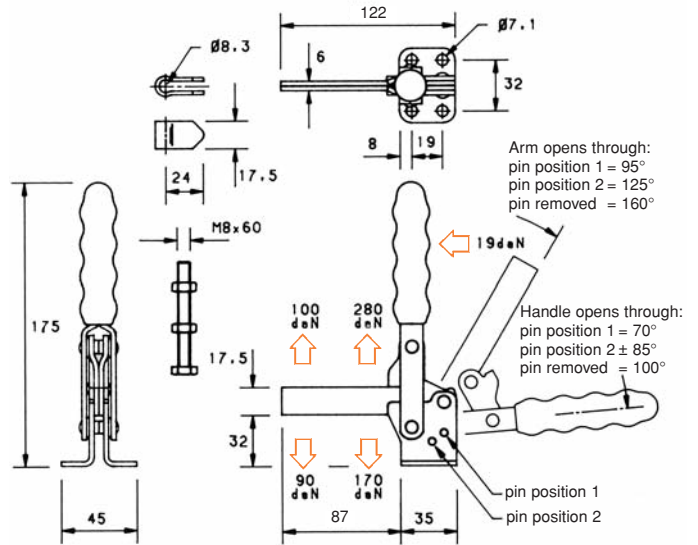
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



V250 SERIES  
MODEL V250/2B



**Arm:**  
The spindle position is adjustable along the arm.

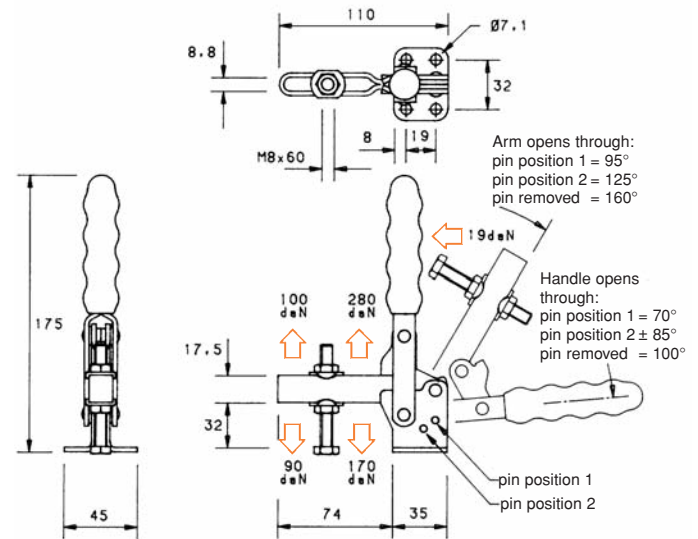
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



V250 SERIES  
MODEL V250/2BSS

**STAINLESS  
STEEL**

**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

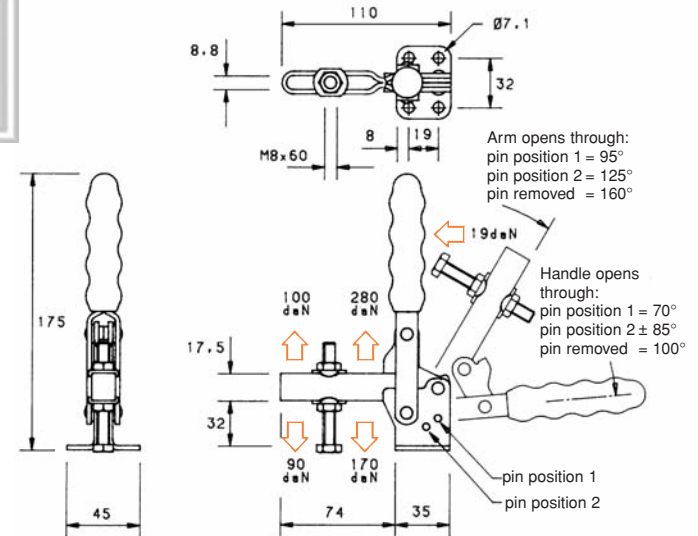
**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
Setscrew & nuts.  
Flanged washers.

**Material:**  
BS 304 S15

See "Accessories" for other items.





## VERTICAL CLAMPS

### V250 SERIES

#### MODEL V250/2C



for front mounting use bracket Model FM2



**Arm:**  
The spindle is in a fixed position.

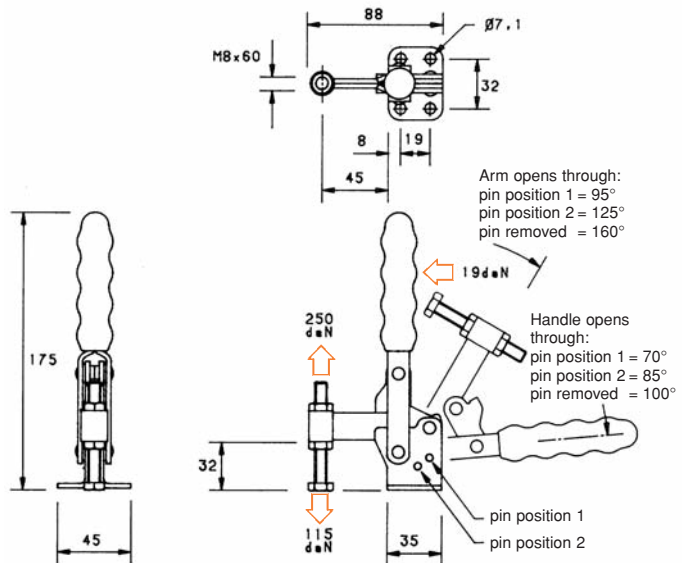
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.

See "Accessories" for other items.



### V300 SERIES

#### MODEL V300/1A



**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

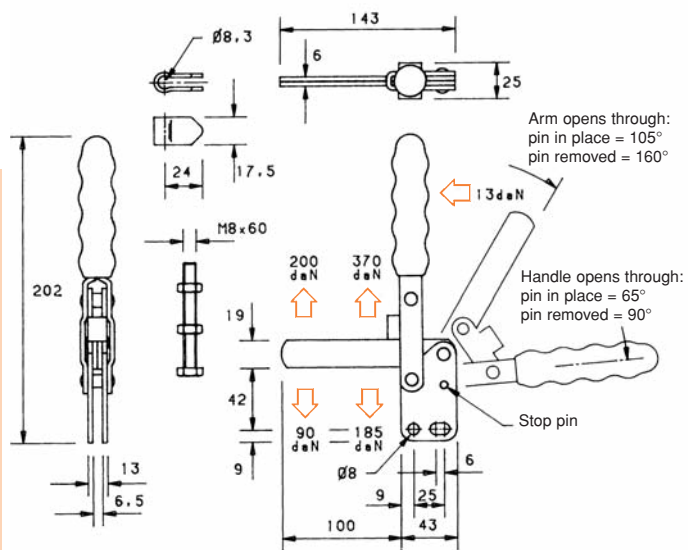
**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.48 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### V300 SERIES

#### MODEL V300/1B



for "T" Bar Accessory order Model T250



**Arm:**  
The spindle position is adjustable along the arm.

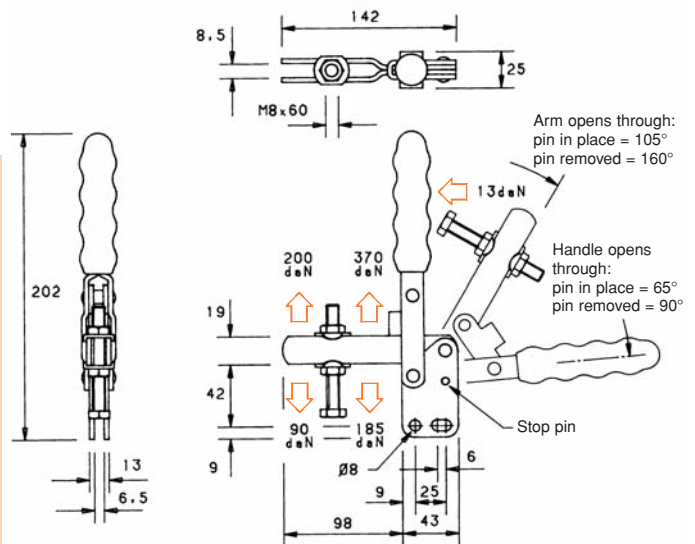
**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.48 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

V300 SERIES

MODEL V300/1C



**Arm:**  
The spindle is in a fixed position.

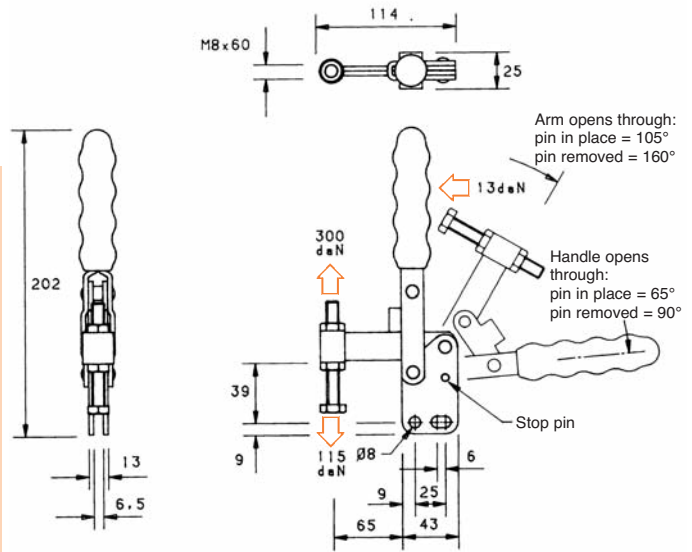
**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.48 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.

See "Accessories" for other items.



V300 SERIES

MODEL V300/2A



**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

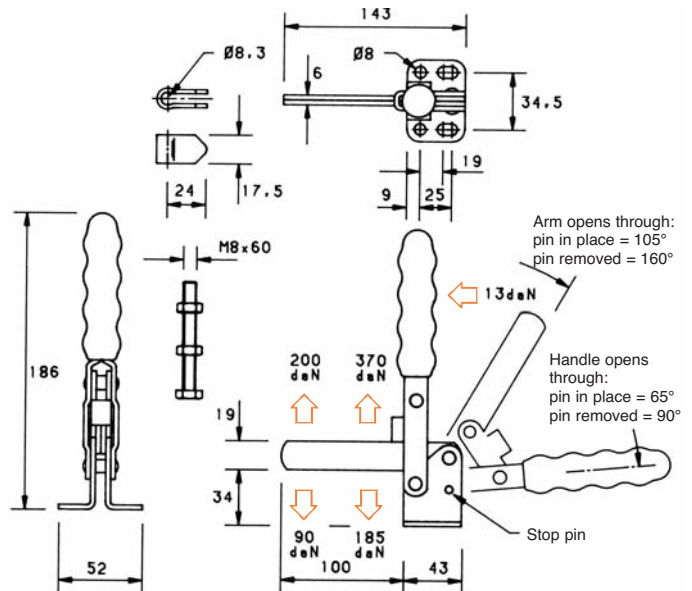
**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.48 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



V300 SERIES

MODEL V300/2B



**Arm:**  
The spindle is adjustable along the arm.

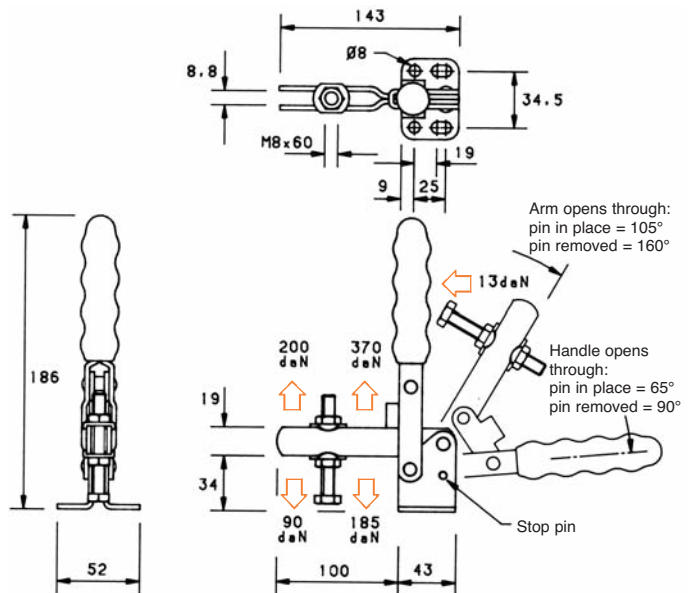
**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.48 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V300 SERIES

#### MODEL V300/2C



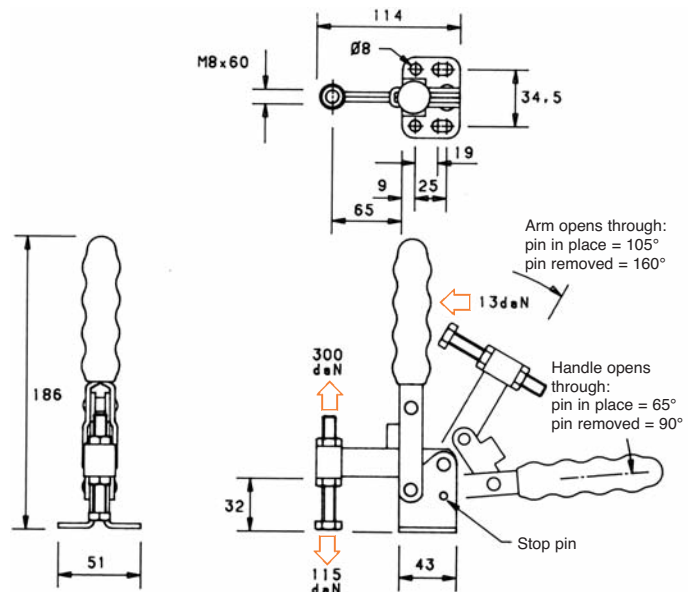
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.48 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
See "Accessories" for other items.



### V300 SERIES

#### MODEL V300/3A



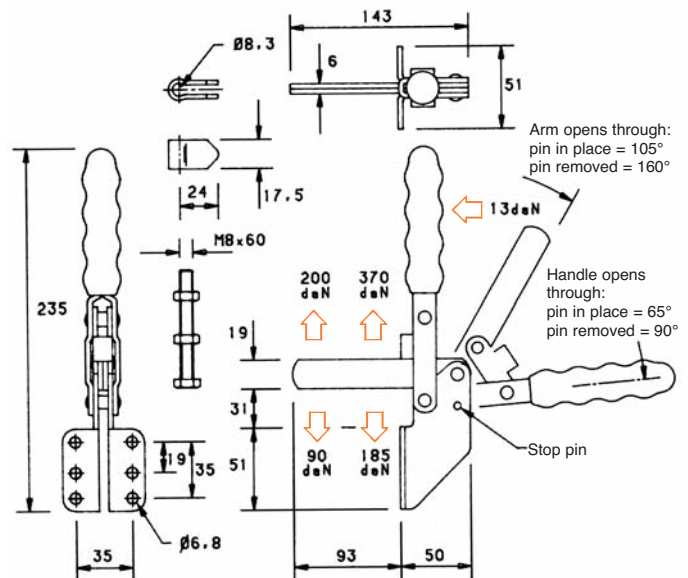
**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

**Base:**  
Front mounting.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.  
See "Accessories" for other items.



### V300 SERIES

#### MODEL V300/3B



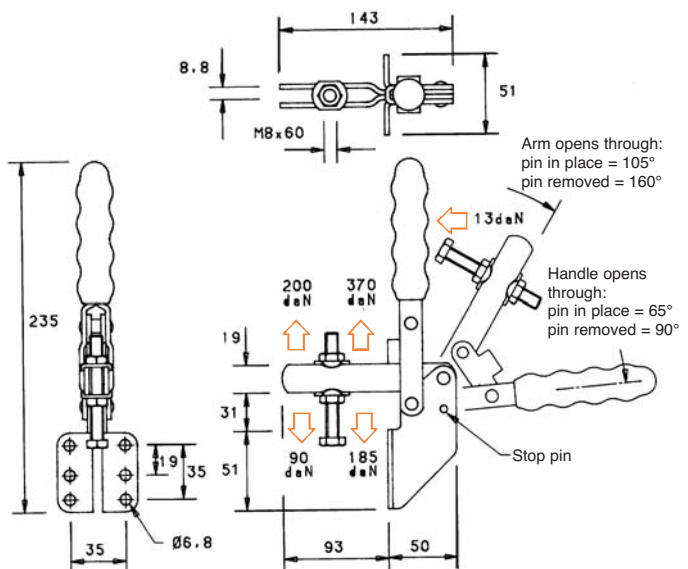
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Front mounting.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.  
See "Accessories" for other items.



## VERTICAL CLAMPS

### V300 SERIES

#### MODEL V300/3C



**Arm:**  
The spindle is in a fixed position.

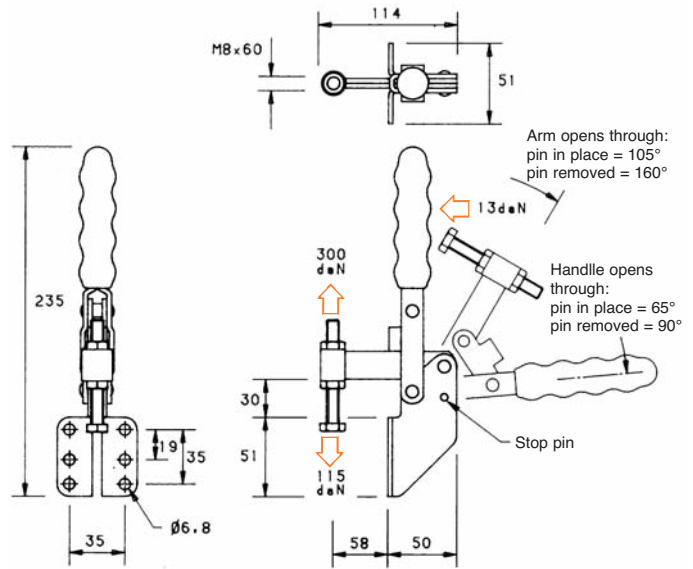
**Base:**  
Front mounting.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.

See "Accessories" for other items.



### V350 SERIES

#### MODEL V350/1A



**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

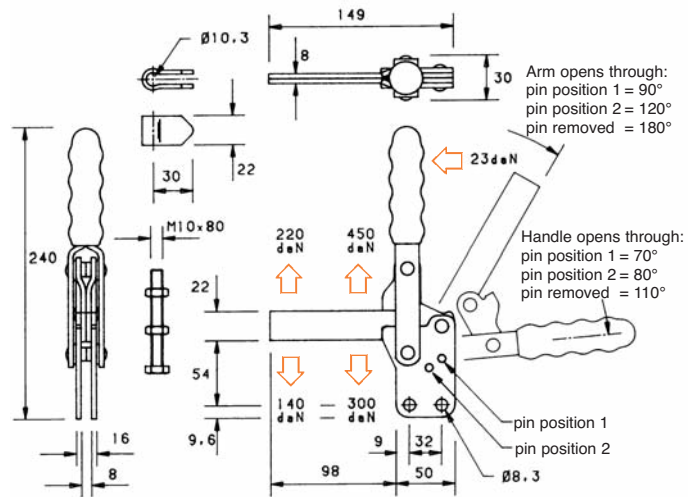
**Base:**  
Straight.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.80 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
R/10 Spindle retainer.

See "Accessories" for other items.



### V350 SERIES

#### MODEL V350/1B



for "T" Bar Accessory  
order Model T350



**Arm:**  
The spindle position is adjustable along the arm.

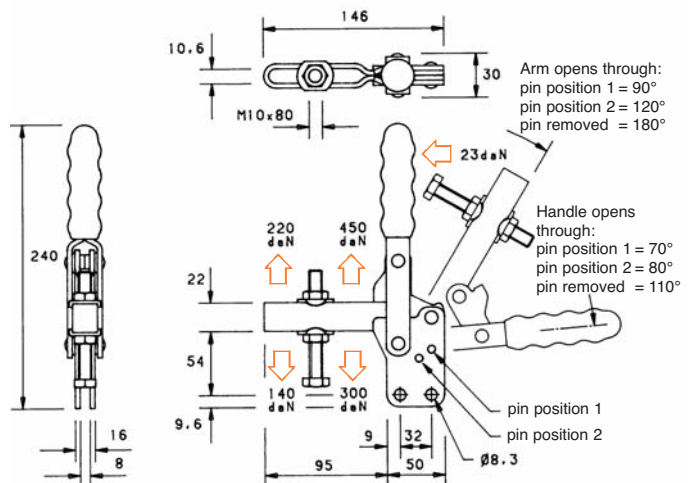
**Base:**  
Straight.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.80 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
FW10/20 Flanged washers.

See "Accessories" for other items.



## VERTICAL CLAMPS

### V350 SERIES

#### MODEL V350/1C



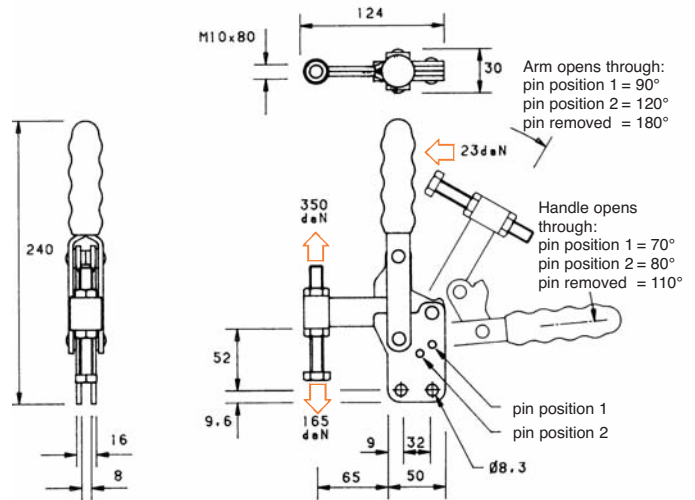
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Straight.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.75 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
See "Accessories" for other items.

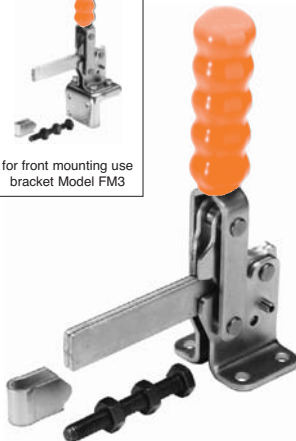


### V350 SERIES

#### MODEL V350/2A



for front mounting use  
bracket Model FM3



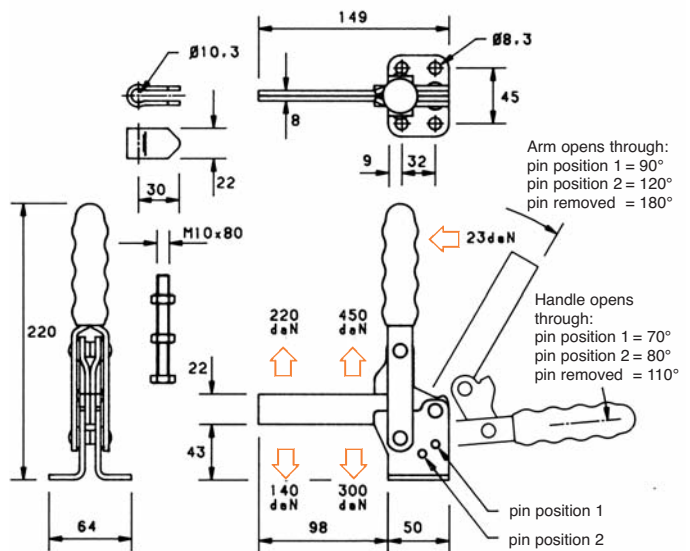
**Arm:**  
Solid with spindle retainer  
supplied loose for welding in the  
desired position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.80 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
R/10 Spindle retainer.  
See "Accessories" for other  
items.

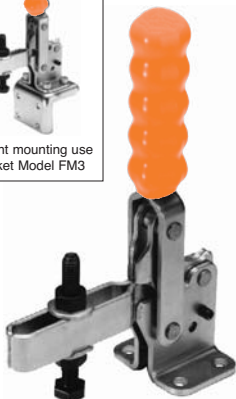


### V350 SERIES

#### MODEL V350/2B



for front mounting use  
bracket Model FM3



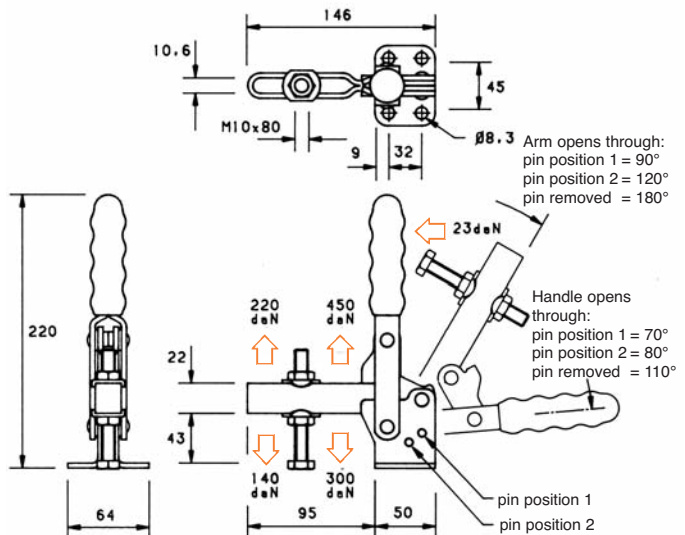
**Arm:**  
The spindle position is  
adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.80 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
FW10/20 Flanged washers.  
See "Accessories" for other  
items.



## VERTICAL CLAMPS

### V350 SERIES

#### MODEL V350/2C



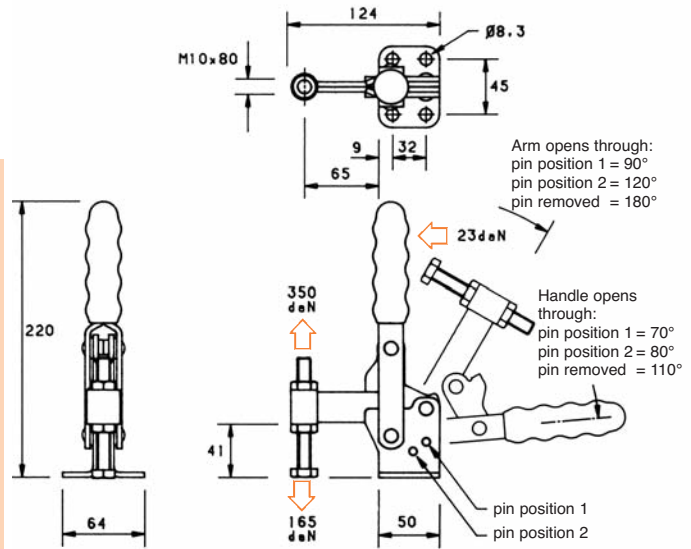
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.75 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
See "Accessories" for other items.



### V450 SERIES

#### MODEL V450/1A



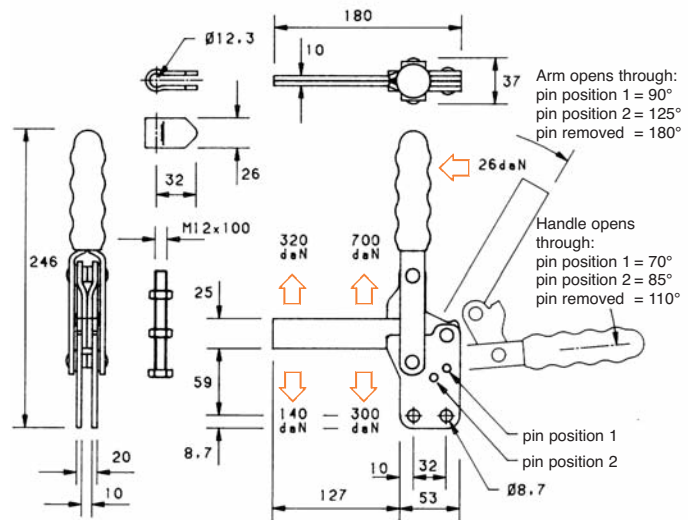
**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

**Base:**  
Straight.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.25 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
R/12 Spindle retainer.  
See "Accessories" for other items.



### V450 SERIES

#### MODEL V450/1B



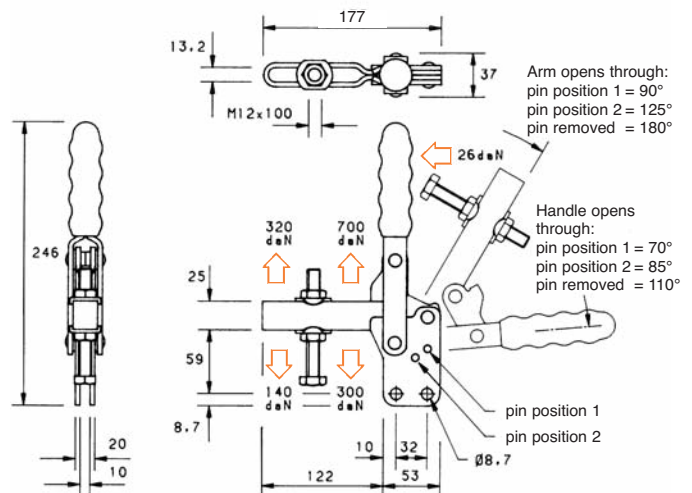
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Straight.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.35 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.  
See "Accessories" for other items.



## VERTICAL CLAMPS

### V450 SERIES

#### MODEL V450/1C



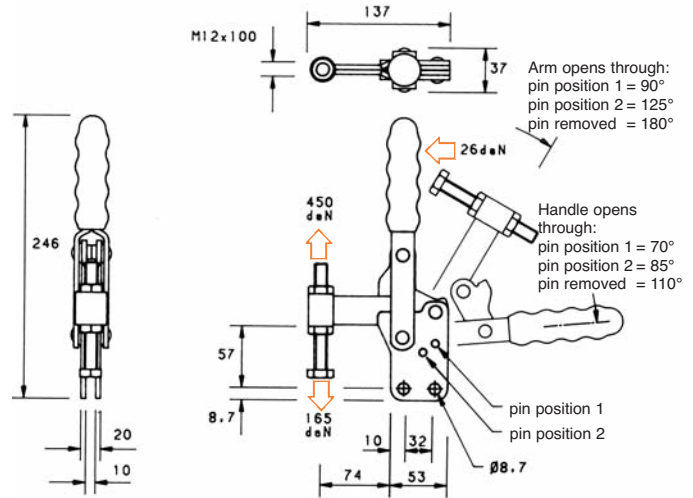
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Straight.

**Nominal Holding Force:**  
450 daN

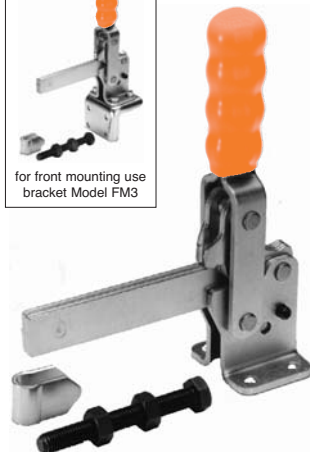
**Weight:**  
1.30 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
See "Accessories" for other items.



### V450 SERIES

#### MODEL V450/2A



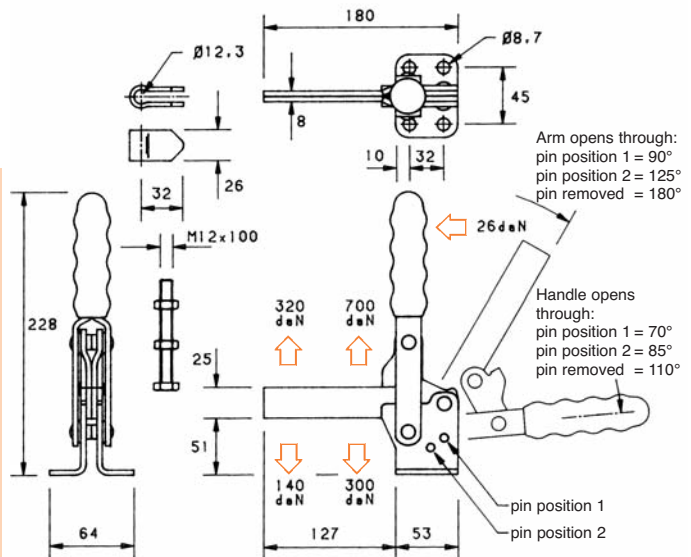
**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

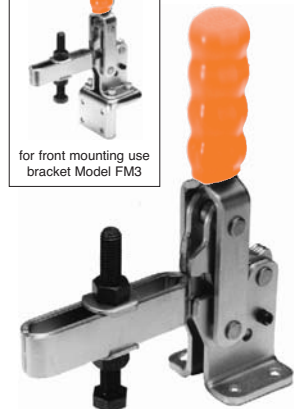
**Weight:**  
1.25 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
R/12 Spindle retainer.  
See "Accessories" for other items.



### V450 SERIES

#### MODEL V450/2B



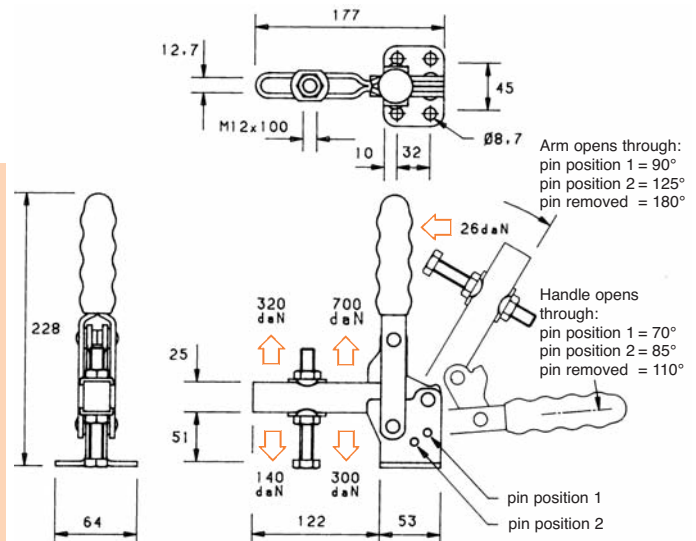
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.35 Kg

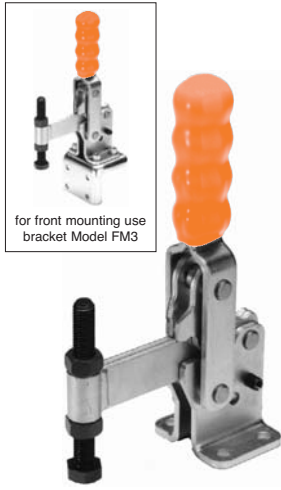
**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.  
See "Accessories" for other items.



## VERTICAL CLAMPS

### V450 SERIES

#### MODEL V450/2C



for front mounting use  
bracket Model FM3

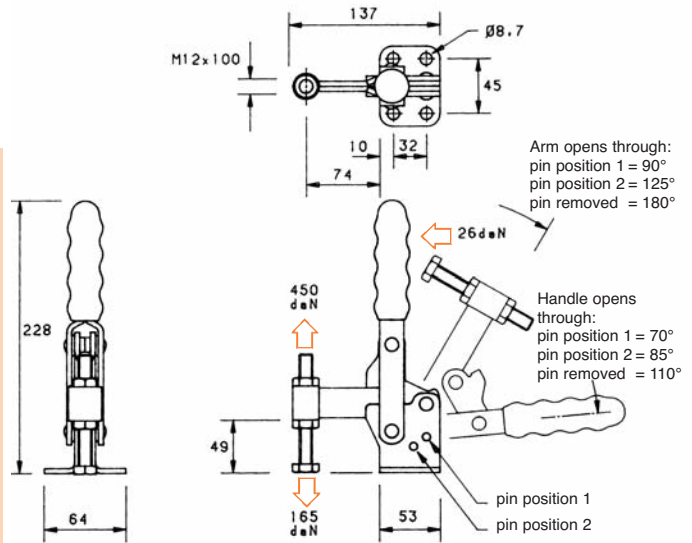
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.30 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
See "Accessories" for other items.



### V550 SERIES

#### MODEL V550/1A



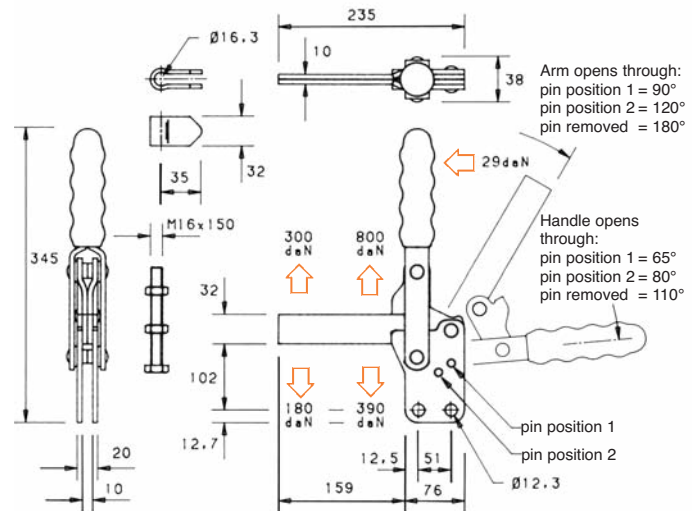
**Arm:**  
Solid with spindle retainer  
supplied loose for welding in the  
desired position.

**Base:**  
Straight.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.20 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.  
R/16 spindle retainer.  
See "Accessories" for other  
items.



### V550 SERIES

#### MODEL V550/1B



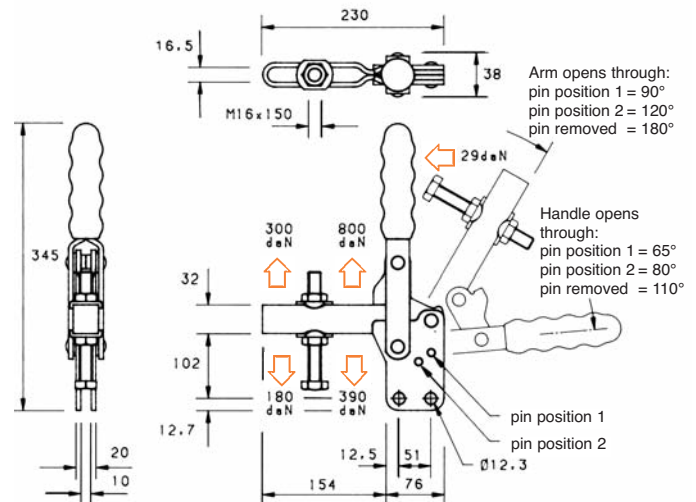
**Arm:**  
The spindle is adjustable along  
the arm.

**Base:**  
Straight.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.40 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.  
FW16/27 Flanged washers.  
See "Accessories" for other  
items.





## VERTICAL CLAMPS

### V550 SERIES

#### MODEL V550/1C



**Arm:**  
The spindle is in a fixed position.

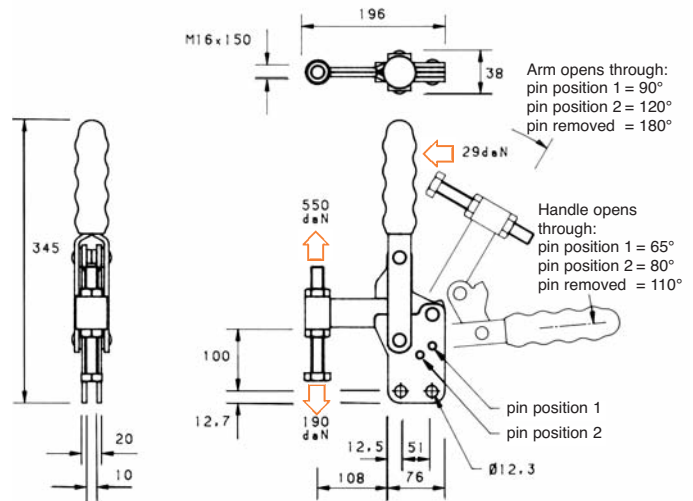
**Base:**  
Straight.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.30 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.

See "Accessories" for other items.



### V550 SERIES

#### MODEL V550/2A



**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

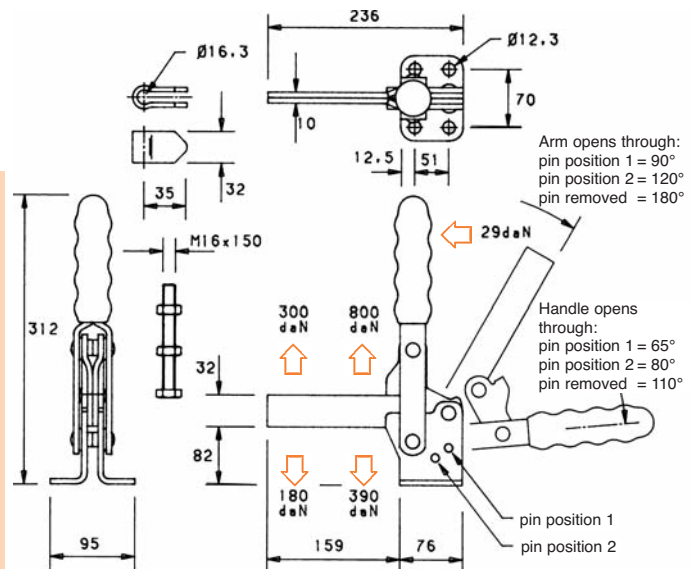
**Base:**  
Flanged.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.20 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.  
R/16 Spindle retainer.

See "Accessories" for other items.



### V550 SERIES

#### MODEL V550/2B



**Arm:**  
The spindle is adjustable along the arm.

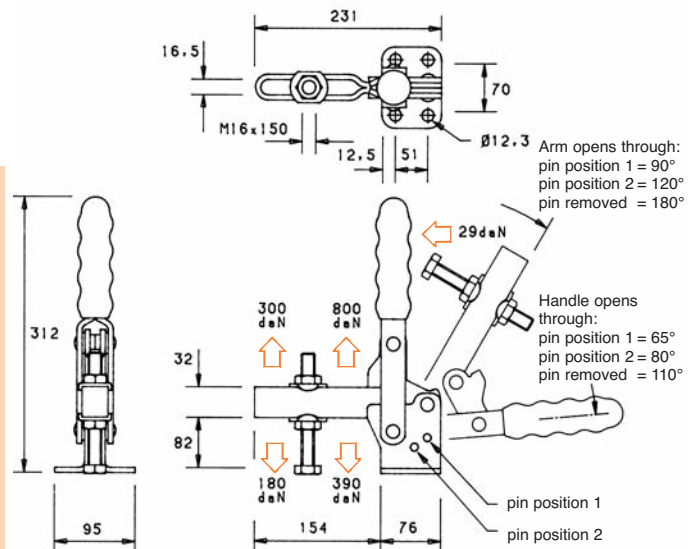
**Base:**  
Flanged.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.40 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.  
FW16/27 Flanged washer.

See "Accessories" for other items.



## VERTICAL CLAMPS

V550 SERIES

MODEL V550/2C



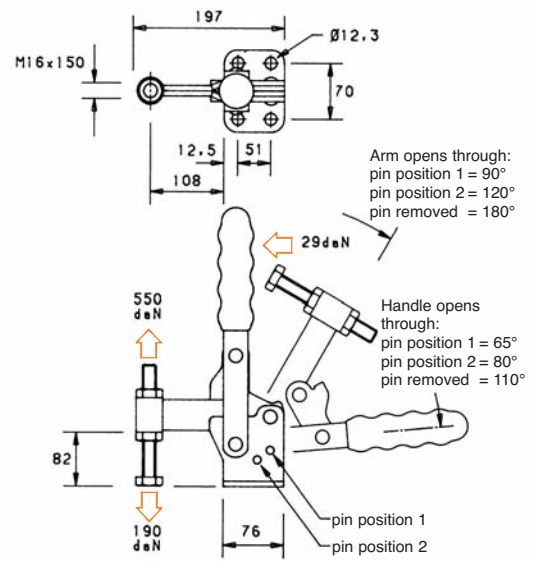
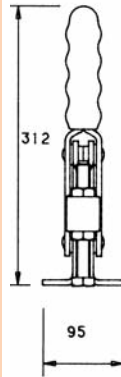
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.30 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.  
See "Accessories" for other items.





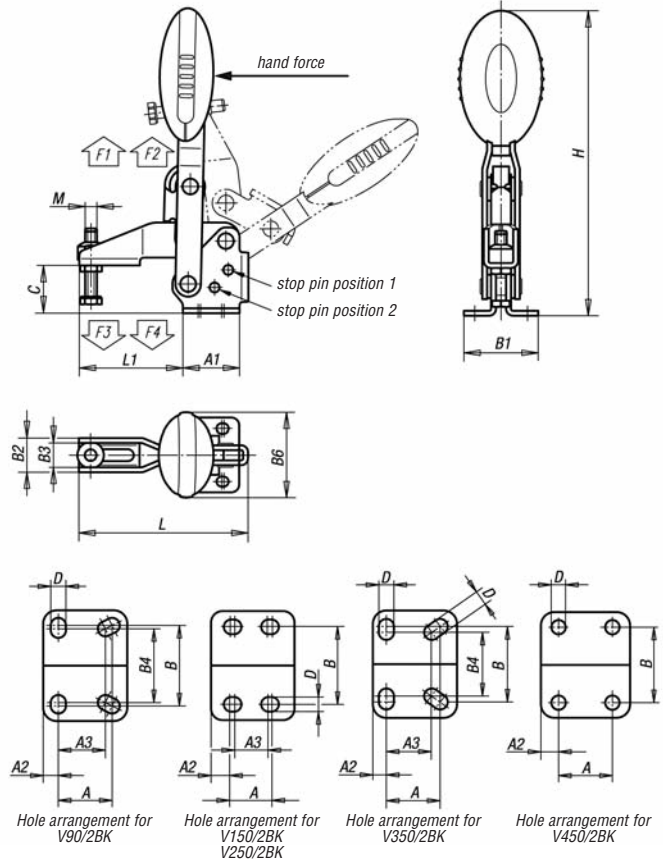
## BLACK OXIDIZED NITRO CARBURIZED VERTICAL CLAMPS

- Steel construction with polyamide handle
- Nitro carburized and black oxidized finish
- High quality bushing tolerances

## VERTICAL CLAMPS

VERTICAL MODELS

V90/2BK - V450/2BK



**Material:**  
Steel, Polyamide handle.

**Surface finish:**  
Nitro carburized and black oxidized.

**Supplied complete with:**  
Setscrew and nuts as shown.

**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Supplied complete with:**  
Setscrew & Nut.

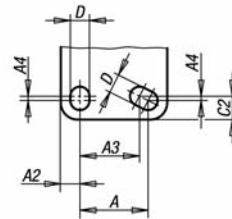
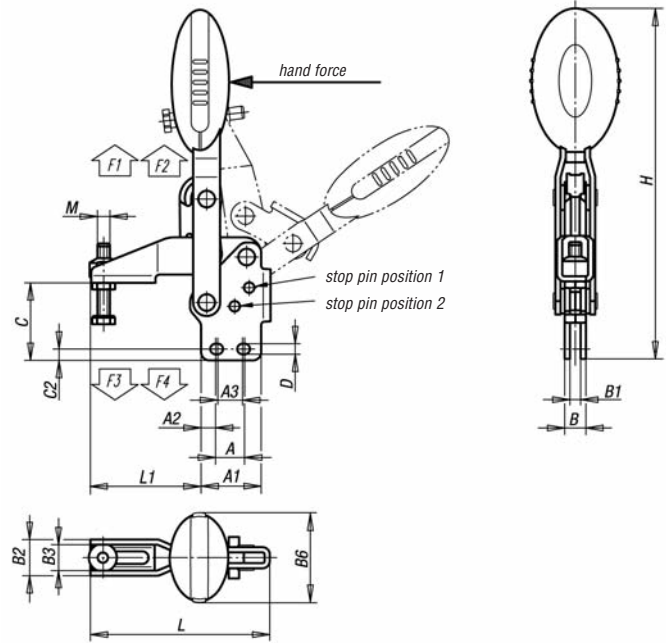
| Order No | Arm opens through, Position 1 | Arm opens through, Position 2 | Arm opens through, pin removed | Handle opens through, Position 1 | Handle opens through, Position 2 | Handle opens through, pin removed | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F3 daN |
|----------|-------------------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|-----------------------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| V90/2BK  | 100°                          | -                             | 131°                           | 64°                              | -                                | 77°                               | 10            | 75                  | 105                 | 62                   | 75                   |
| V150/2BK | 56°                           | 83°                           | 156°                           | 46°                              | 56°                              | 84°                               | 16            | 135                 | 165                 | 92                   | 105                  |
| V250/2BK | 13°                           | 93°                           | 157°                           | 16°                              | 61°                              | 86°                               | 19            | 200                 | 280                 | 94                   | 135                  |
| V350/2BK | 6°                            | 97°                           | 175°                           | 19°                              | 59°                              | 91°                               | 25            | 250                 | 450                 | 150                  | 280                  |
| V450/2BK | 11°                           | 88°                           | 163°                           | 24°                              | 60°                              | 91°                               | 30            | 300                 | 550                 | 140                  | 280                  |

| Order No | M      | A  | A1 | A2   | A3 | B  | B1 | B2   | B3   | B4 | B6   | C    | D   | H     | L     | L1    |
|----------|--------|----|----|------|----|----|----|------|------|----|------|------|-----|-------|-------|-------|
| V90/2BK  | M5x25  | 16 | 25 | 4.5  | 14 | 24 | 33 | 13.2 | 9.1  | 22 | 22.5 | 19.1 | 4.5 | 108.5 | 63.5  | 35.0  |
| V150/2BK | M6x35  | 14 | 29 | 7    | 12 | 27 | 38 | 17.5 | 12.4 | -  | 43.5 | 24.7 | 5.5 | 156.2 | 86.5  | 53.0  |
| V250/2BK | M8x45  | 21 | 39 | 9    | 19 | 32 | 45 | 20.6 | 15.5 | -  | 41.5 | 32.7 | 6.8 | 183.9 | 107.0 | 62.0  |
| V350/2BK | M10x55 | 32 | 50 | 8    | 27 | 45 | 64 | 25.5 | 18.4 | 38 | 47   | 38.7 | 9   | 222.9 | 153.0 | 95.0  |
| V450/2BK | M12x70 | 32 | 53 | 10.5 | -  | 45 | 63 | 28   | 20.9 | -  | 47   | 46.7 | 8.8 | 242.4 | 173.5 | 113.5 |

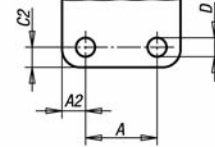
## VERTICAL CLAMPS

VERTICAL MODELS

V90/1BK - V450/1BK



Hole arrangement for  
V90/1BK  
V350/1BK



Hole arrangement for  
V450/1BK

**Material:**

Steel, Polyamide handle.

**Surface finish:**

Nitro carburized and black oxidized.

**Arm:**

The spindle position is adjustable along the arm.

**Base:**

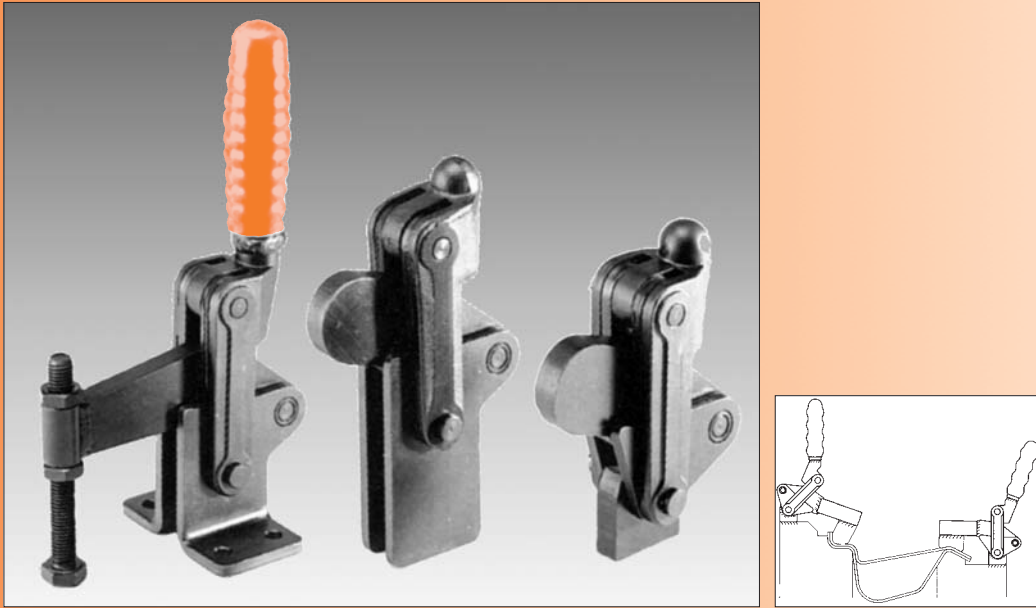
Straight.

**Supplied complete with:**

Setscrew & Nut.

| Order No | Arm opens through, Position 1 | Arm opens through, Position 2 | Arm opens through, pin removed | Handle opens through, Position 1 | Handle opens through, Position 2 | Handle opens through, pin removed | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F3 daN |
|----------|-------------------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|-----------------------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| V90/1BK  | 100°                          | -                             | 131°                           | 64°                              | -                                | 77°                               | 10            | 75                  | 105                 | 62                   | 75                   |
| V150/1BK | 56°                           | 83°                           | 156°                           | 46°                              | 56°                              | 84°                               | 16            | 135                 | 165                 | 92                   | 105                  |
| V250/1BK | 13°                           | 93°                           | 157°                           | 26°                              | 61°                              | 86°                               | 19            | 200                 | 280                 | 94                   | 135                  |
| V350/1BK | 6°                            | 97°                           | 175°                           | 19°                              | 59°                              | 91°                               | 25            | 250                 | 450                 | 150                  | 280                  |
| V450/1BK | 11°                           | 88°                           | 163°                           | 24°                              | 60°                              | 91°                               | 28            | 300                 | 550                 | 140                  | 280                  |

| Order No | M      | A  | A1 | A2   | A3 | A4  | B    | B1  | B2   | B3   | B6   | C    | C2  | D   | H     | L     | L1    |
|----------|--------|----|----|------|----|-----|------|-----|------|------|------|------|-----|-----|-------|-------|-------|
| V90/1BK  | M5x25  | 16 | 25 | 4.5  | 14 | 1   | 8.1  | 4.1 | 13.2 | 9.1  | 22.5 | 30.8 | 5.5 | 4.5 | 120.3 | 63.5  | 35.0  |
| V150/1BK | M6x35  | 14 | 29 | 7    | 12 | -   | 10.2 | 5.2 | 17.5 | 12.4 | 43.5 | 37.6 | 5.5 | 5.5 | 169.1 | 86.5  | 53.0  |
| V250/1BK | M8x45  | 21 | 39 | 9    | 19 | -   | 10.2 | 5.2 | 20.6 | 15.5 | 41.5 | 49   | 6.5 | 6.8 | 200.1 | 107.0 | 62.0  |
| V350/1BK | M10x55 | 32 | 50 | 8    | 27 | 3.5 | 14.1 | 7.1 | 25.5 | 18.4 | 47   | 62.3 | 13  | 9   | 247.4 | 153.0 | 95.0  |
| V450/1BK | M12x70 | 32 | 53 | 10.5 | -  | -   | 14.1 | 7.1 | 28   | 20.9 | 47   | 69.8 | 9   | 8.8 | 265.5 | 173.5 | 113.5 |



## VA SERIES HEAVY DUTY VERTICAL CLAMPS

- **Features:**

All VA series clamps are designed to be adaptable and durable, and to withstand abuse in heavy duty applications.

The new VA300 series helps fill the gap at the smaller end of the range. Only manufactured at Brauer, they have a phosphated corrosion resistant finish.

Models VA300S, VA700S, VA1200S and VA2400S comprise a basic toggle mechanism onto which can be welded at the desired angle the clamping arm and handle which can be specified as accessories. These models feature a swivel base which is welded at the desired angle to the mechanism, and then welded either directly to a fixture, or alternatively to a base which is offered as an accessory for bolt mounting.

Models VA300T, VA700T, VA1200T, and VA2400T share all the features of the above models, but with a straight base which can be directly bolt mounted or welded to a fixture, or alternatively to the accessory base for bolt mounting.

Models VA300T, VA700/1A, VA1200/1A and VA2400/1A are similar to the type 'T' models, but with a handle with a PVC grip fitted vertically, and a longer stub clamping arm which can be modified and the spindle retainer supplied welded in the desired position.

Models VA300T, VA700/2C, VA1200/2C and VA2400/2C feature a flanged base with holes for bolt mounting, a handle with PVC grip fitted vertically, and a fixed spindle or setscrew position which does not require welding.

- **Specification:**

The main components are of steel, the forked lower handles being precision alloy steel castings, and all axles of hardened steel running in either hardened bushes or directly in the close-toleranced holes of hardened parts. The clamps are finished chemi-black.

- **Installation:**

When welding the swivel base of the type 'S' models to the clamp mechanism ensure that the full length of the adjoining surfaces are welded. Ensure that welding spatter does not enter the slots which form the forward stop of the mechanism.

The handle pivot bolt may be adjusted if required to remove excess free play from the mechanism.

Frequent lubrication will extend the life of the clamp.

## HEAVY-DUTY VERTICAL CLAMPS

**VA300 SERIES**  
MODEL VA300/S



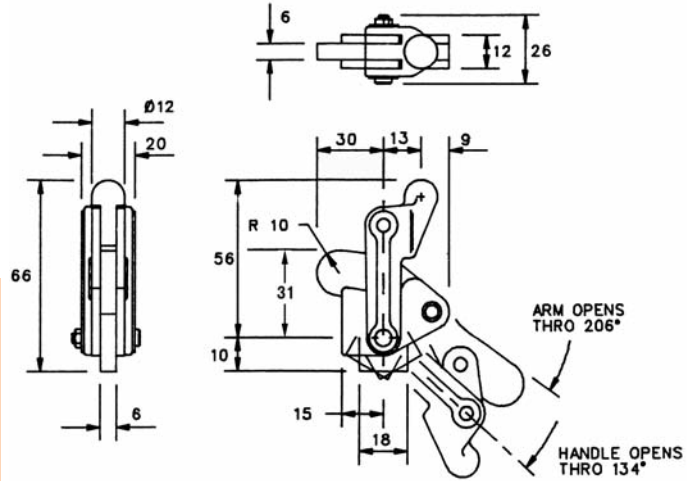
**Arm:**  
Stub nose for welded extension.

**Base:**  
Swivel for welding in the desired position.

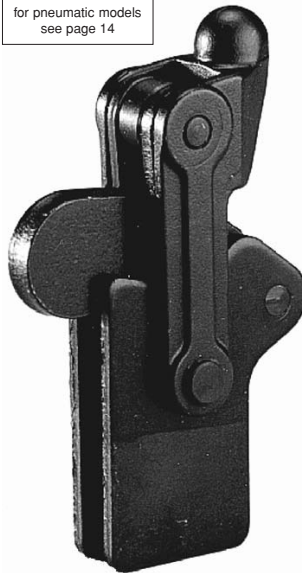
**Nominal Holding Force:**  
300 daN

**Weight:**  
0.15 Kg

See "Accessories" for other items.



**VA300 SERIES**  
MODEL VA300/T



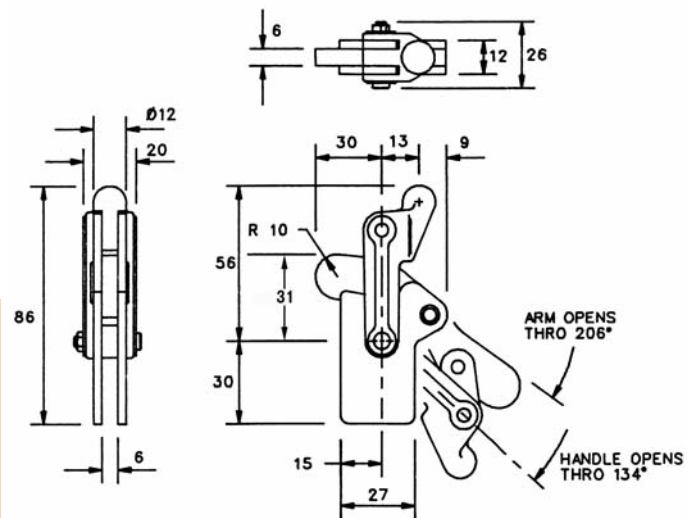
**Arm:**  
Stub nose for welded extension.

**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.15 Kg

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

VA300 SERIES  
MODEL VA300/2S



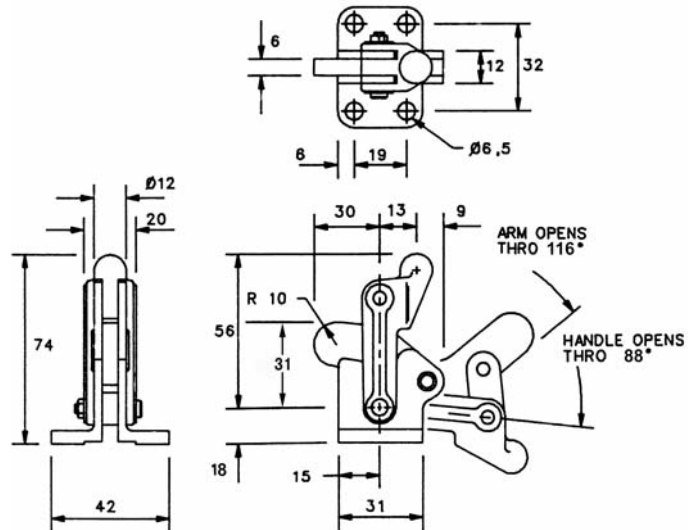
**Arm:**  
Stub nose for welded extension.

**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.20 Kg

See "Accessories" for other items.



VA300 SERIES  
MODEL VA300/1B



**Arm:**  
The spindle is adjustable along the arm.

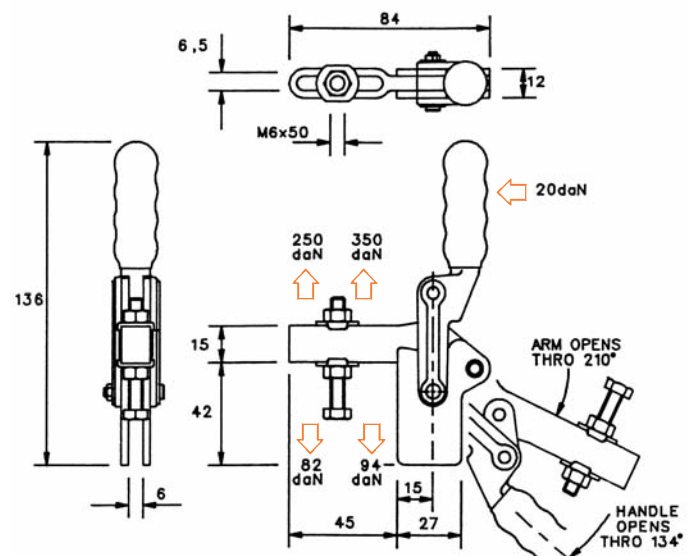
**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Set screw & nuts.  
FW 06/12 Flanged washer.

See "Accessories" for other items.





## HEAVY-DUTY VERTICAL CLAMPS

### VA300 SERIES MODEL VA300/2B



for pneumatic models  
see page 14



**Arm:**  
The spindle is adjustable along the arm.

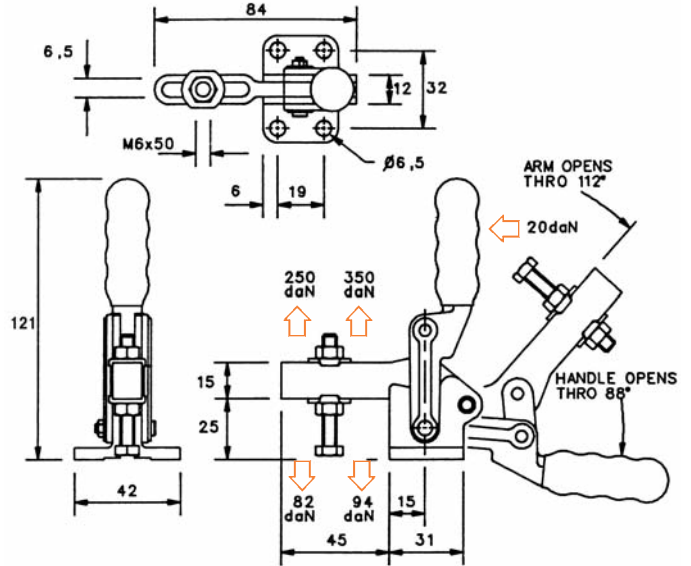
**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Set screw & nuts.  
FW 06/12 Flanged washer.

See "Accessories" for other items.



### VA300 SERIES MODEL VA300/2BT



for pneumatic models  
see page 14



**Arm:**  
The spindle is adjustable along the arm.

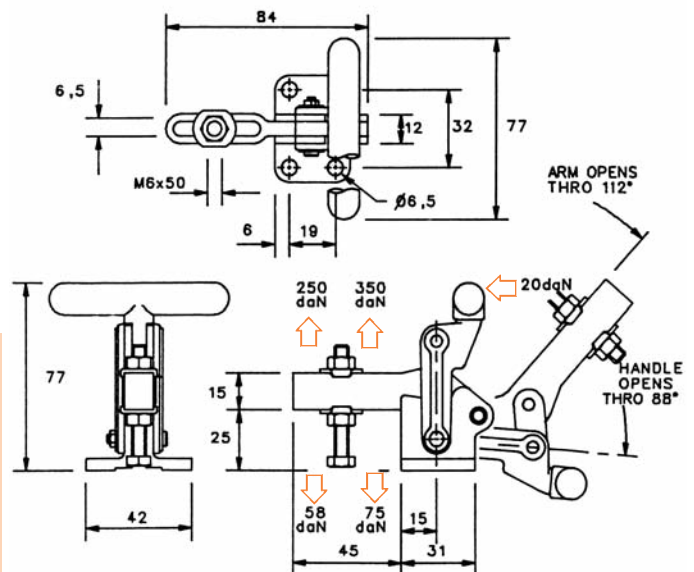
**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.25 Kg

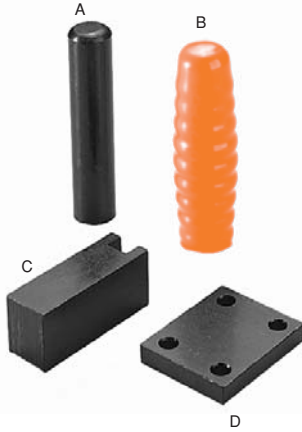
**Supplied complete with:**  
MB0650 Set screw & nuts.  
FW 06/12 Flanged washer.

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA300 SERIES ACCESSORIES

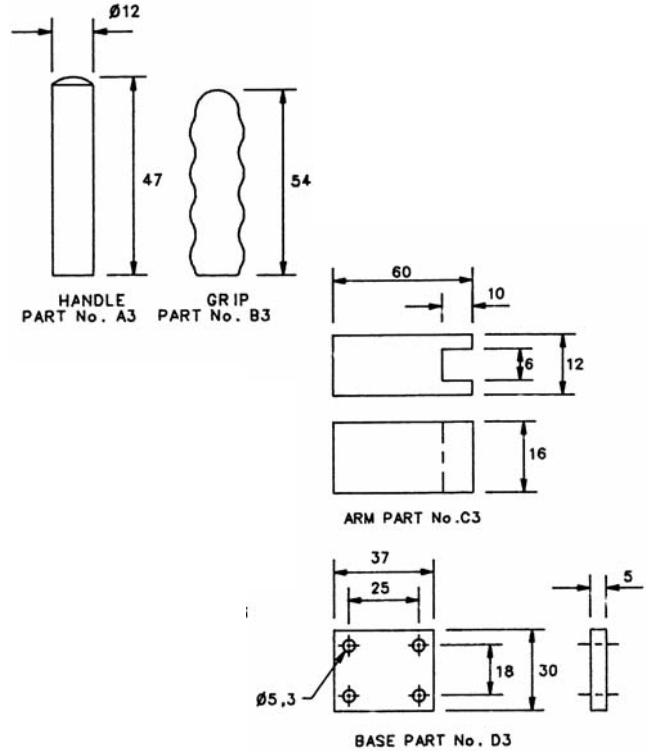


**Model A3 Handle:** Weight: 0.056 Kg  
For welding at the desired angle to VA300S & VA300T.

**Model B3 Grip:** Weight: 0.011 Kg  
To fit A3 handle.

**Model C3 Arm:** Weight: 0.083 Kg  
For extending the stub arms of VA300S & VA300T.

**Model D3 Base:** Weight: 0.040 Kg  
For bolt mounting VA300S & VA300T.

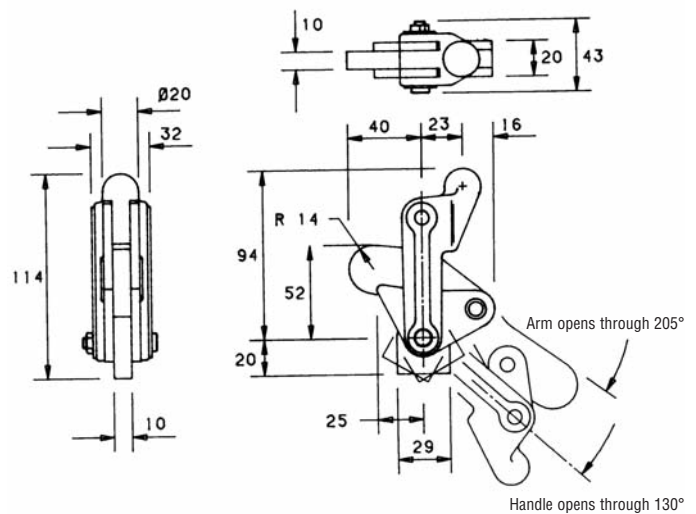


### VA700 SERIES MODEL VA700S

CLAMPING PRODUCTS



**Arm:** Stub nose for welded extensions.  
**Base:** Swivel for welding in the desired position.  
**Nominal Holding Force:** 700 daN  
**Weight:** 0.70 Kg  
See "Features and installation information" page for installation instructions.  
See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA700 SERIES MODEL VA700T



**Arm:**  
Stub nose for welded  
extensions.

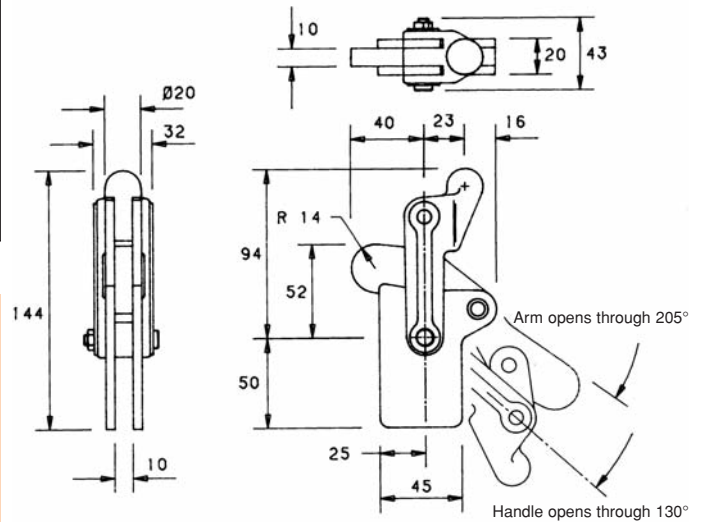
**Base:**  
Straight.

**Nominal Holding Force:**  
700 daN

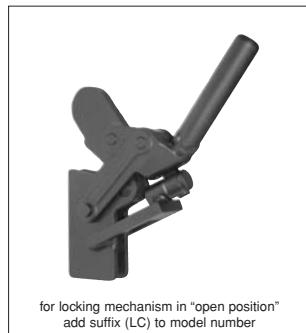
**Weight:**  
0.80 Kg

See "Features and installation  
information" page for installation  
instructions.

See "Accessories" for other  
items.



### VA700 SERIES MODEL VA700/1A



**Arm:**  
Solid arm.

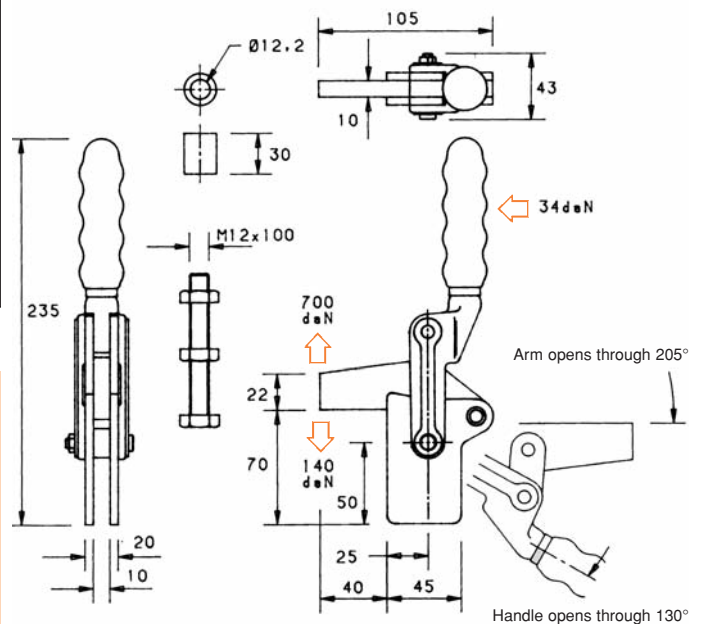
**Base:**  
Straight.

**Nominal Holding Force:**  
700 daN

**Weight:**  
1.10 Kg

**Supplied complete with:**  
Spindle retainer.  
MB12100 Setscrew & nuts.

See "Accessories" for other  
items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA700 SERIES MODEL VA700/2C



for pneumatic models  
see page 14



for locking mechanism in "open position"  
add suffix (LC) to model number



**Arm:**  
The spindle is in a fixed position.

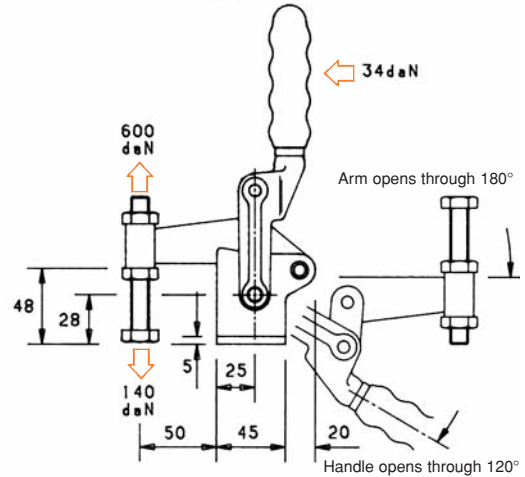
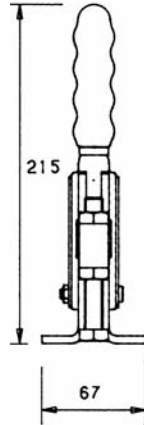
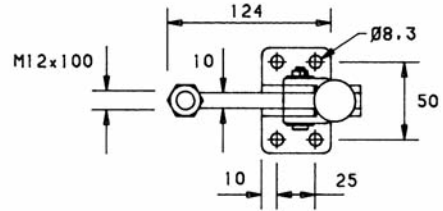
**Base:**  
Flanged.

**Nominal Holding Force:**  
700 daN

**Weight:**  
1.25 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.

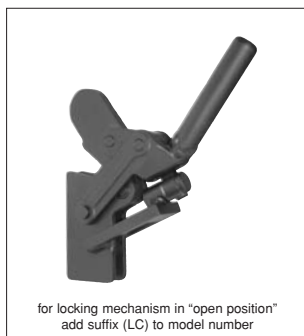
See "Accessories" for other items.



### VA700 SERIES MODEL VA700TD



for pneumatic models  
see page 14



for locking mechanism in "open position"  
add suffix (LC) to model number



**Arm:**  
Stub nose with mounting holes.

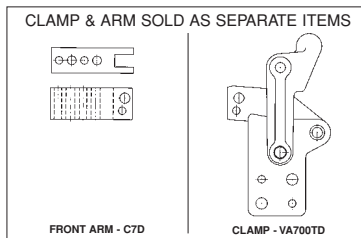
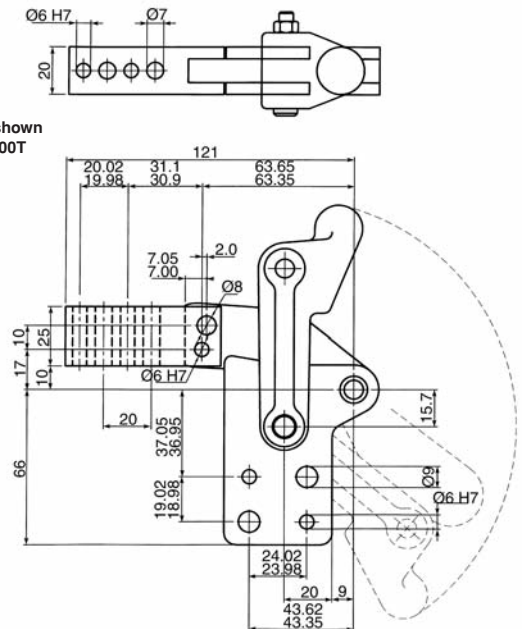
**Base:**  
Straight with mounting holes.

**Nominal Holding Force:**  
700 daN

**Weight:**  
1.01kg

See "Accessories" for other items.

All dimensions not shown  
remain as per VA700T



## HEAVY-DUTY VERTICAL CLAMPS

### VA700 SERIES MODEL VA700TP



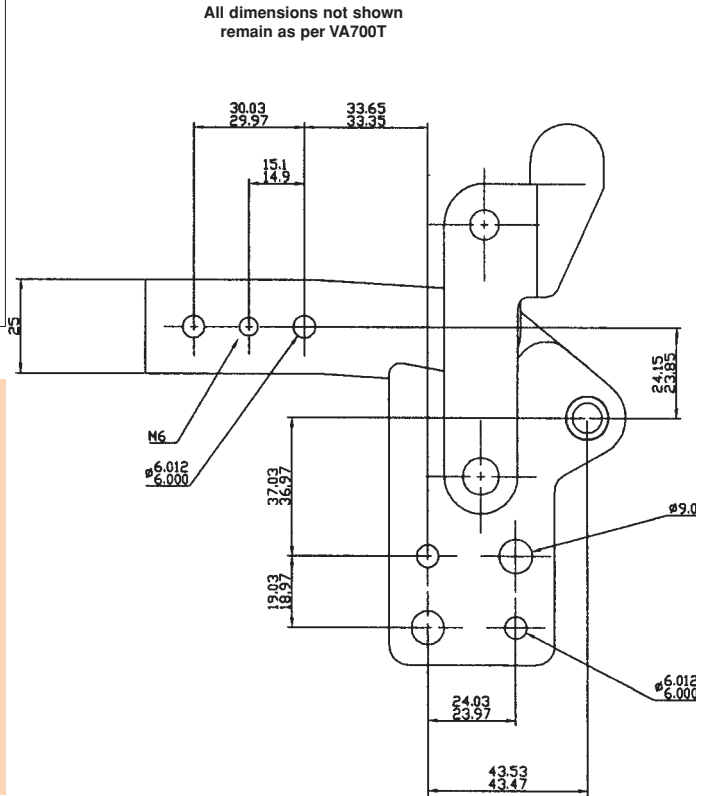
**Arm:**  
Solid arm with mounting holes.

**Base:**  
Straight with mounting holes.

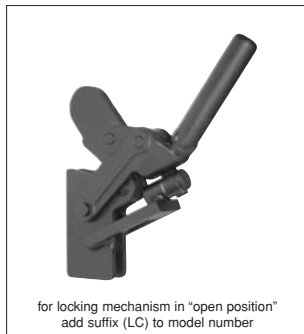
**Nominal Holding Force:**  
700 daN

**Weight:**  
1.01kg

See "Accessories" for other items.



### VA700 SERIES MODEL VA700TV



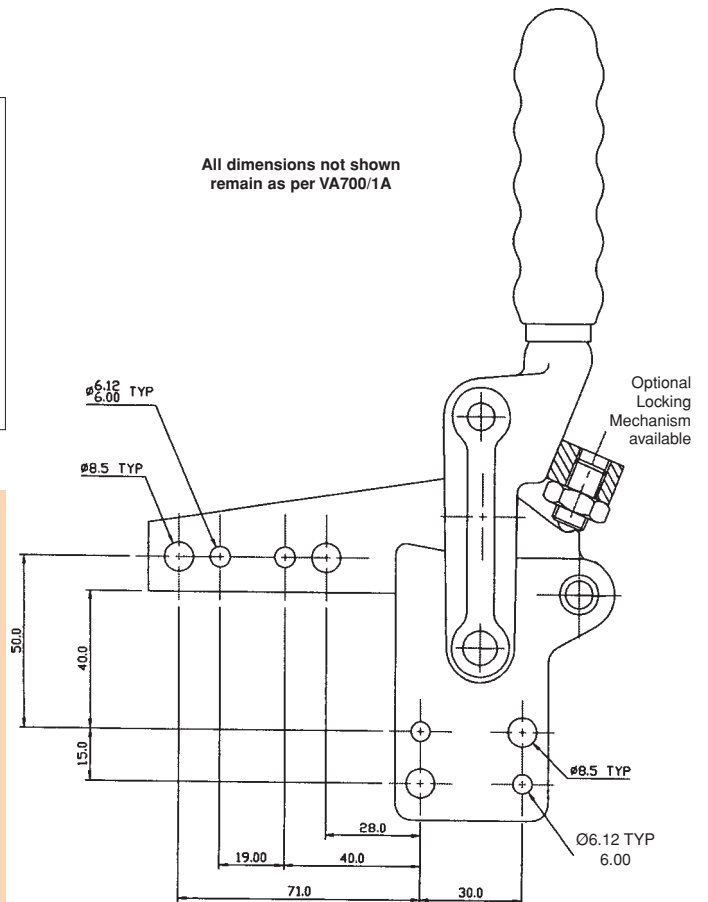
**Arm:**  
Solid arm with mounting holes.

**Base:**  
Straight with mounting holes.

**Nominal Holding Force:**  
700 daN

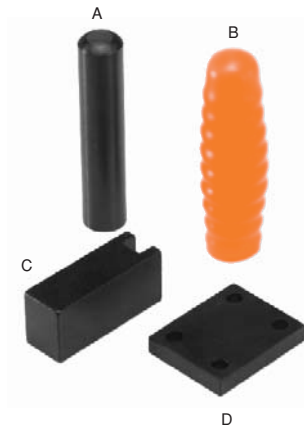
**Weight:**  
1.01kg

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA700 SERIES ACCESSORIES

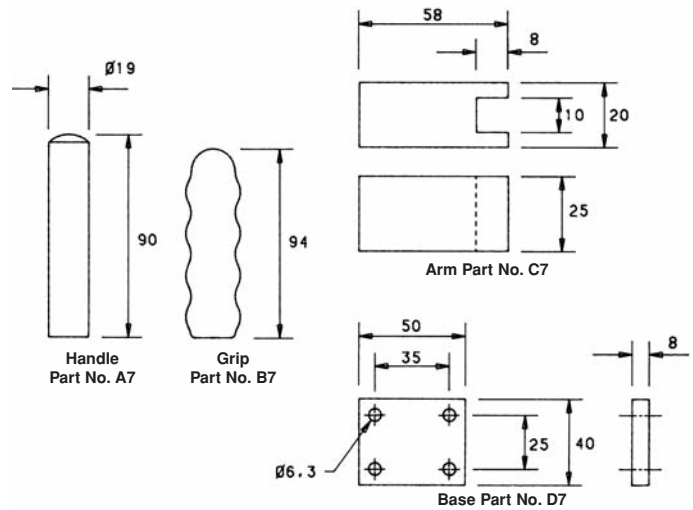


**Model A7 Handle:** Weight: 0.20 Kg  
For welding at the desired angle to VA700S & VA700T.

**Model B7 Grip:** Weight: 0.01 Kg  
To fit A7 handle.

**Model C7 Arm:** Weight: 0.21 Kg  
For extending the stub arms of VA700S & VA700T.

**Model D7 Base:** Weight: 0.11 Kg  
For bolt mounting VA700S and VA700T.



### VA1200 SERIES MODEL VA1200S



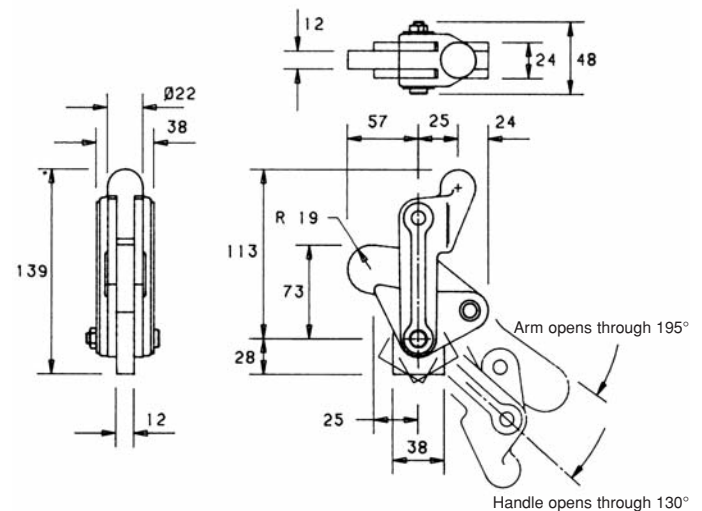
**Arm:** Stub nose for welded extensions.

**Base:** Swivel for welding in the desired position.

**Nominal Holding Force:** 1200 daN

**Weight:** 1.30 Kg

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA1200 SERIES MODEL VA1200T

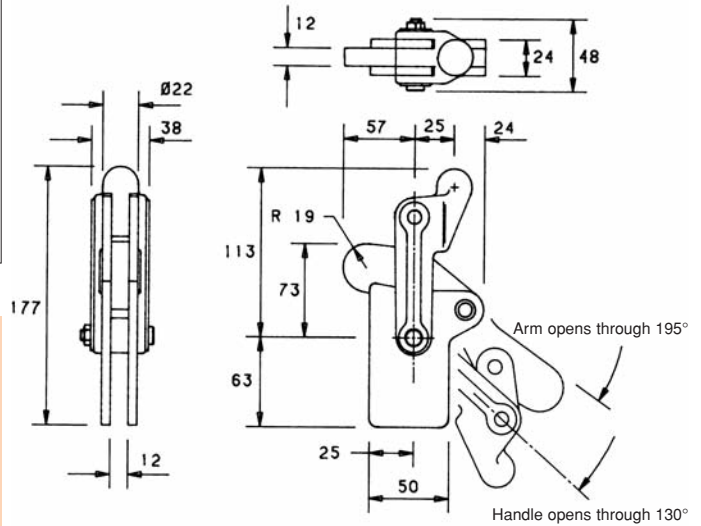


for pneumatic models  
see page 15



for locking mechanism in "open position"  
add suffix (LC) to model number

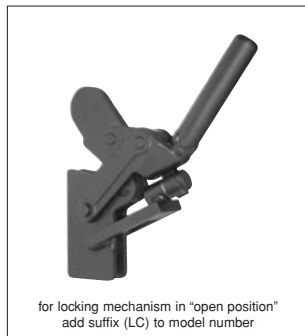
**Arm:**  
Stub nose for welded  
extensions.  
**Base:**  
Straight.  
**Nominal Holding Force:**  
1200 daN  
**Weight:**  
1.45 Kg  
See "Accessories" for other  
items.



### VA1200 SERIES MODEL VA1200/1A

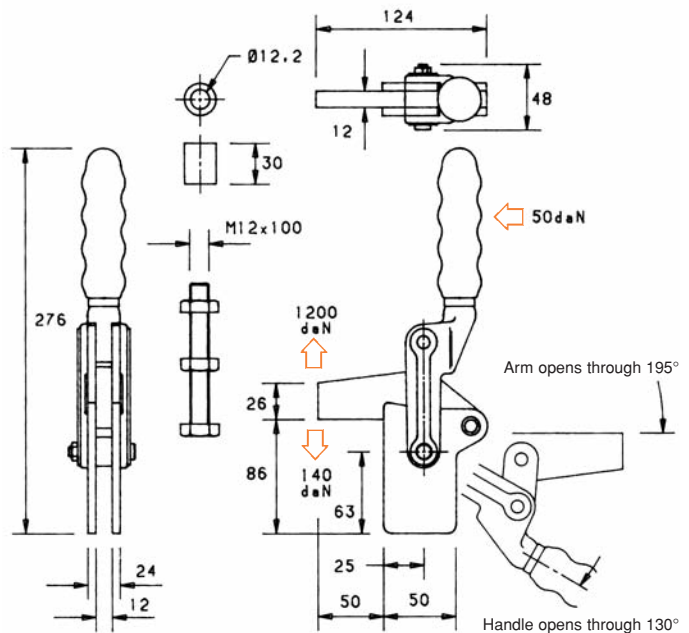


for pneumatic models  
see page 15



for locking mechanism in "open position"  
add suffix (LC) to model number

**Arm:**  
Solid arm.  
**Base:**  
Straight.  
**Nominal Holding Force:**  
1200 daN  
**Weight:**  
1.80 Kg  
**Supplied complete with:**  
Spindle retainer.  
MB12100 Setscrew & nuts.  
See "Accessories" for other  
items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA1200 SERIES MODEL VA1200/2C



for pneumatic models  
see page 15



for locking mechanism in "open position"  
add suffix (LC) to model number

**Arm:**  
The spindle is in a fixed position.

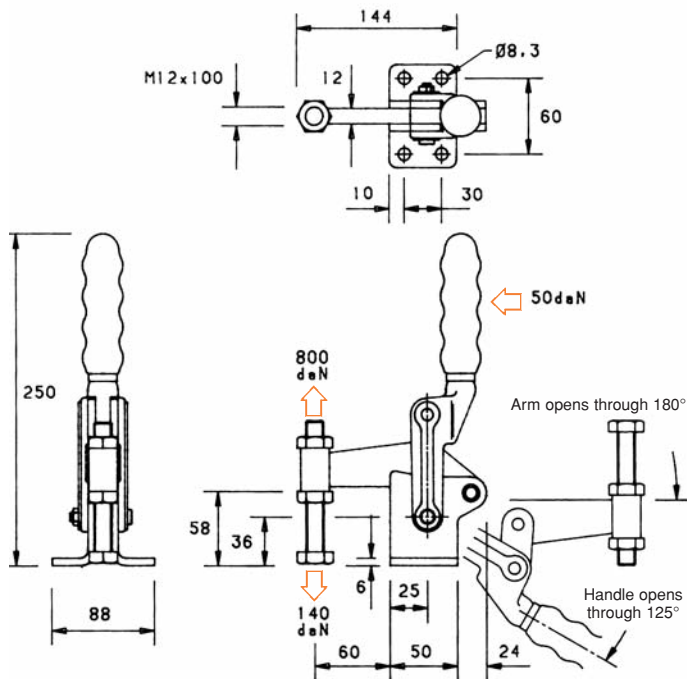
**Base:**  
Flanged.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.95 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.

See "Accessories" for other items.



### VA1200 SERIES MODEL VA1200TD



for pneumatic models  
see page 15



for locking mechanism in "open position"  
add suffix (LC) to model number

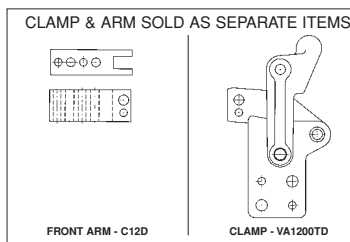
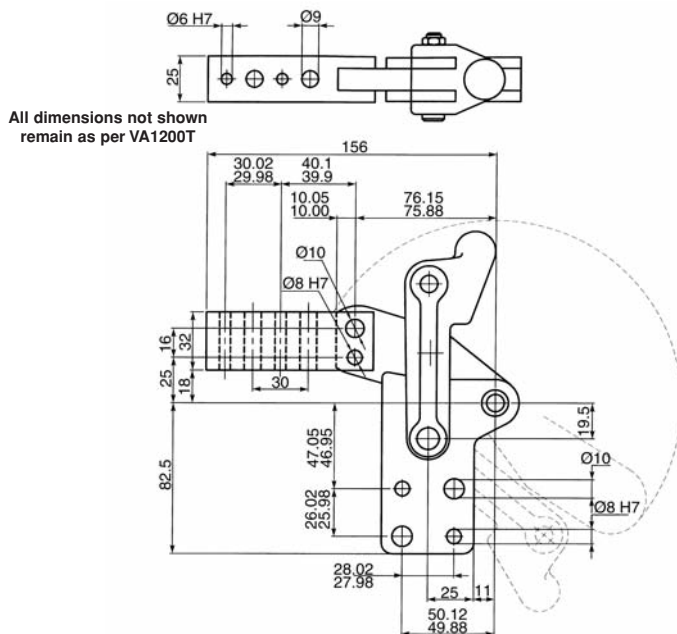
**Arm:**  
Stub nose with mounting holes.

**Base:**  
Straight with mounting holes.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.87kg

See "Accessories" for other items.





## HEAVY-DUTY VERTICAL CLAMPS

**VA1200 SERIES**  
**MODEL VA1200TP**

All dimensions not shown  
 remain as per VA1200T



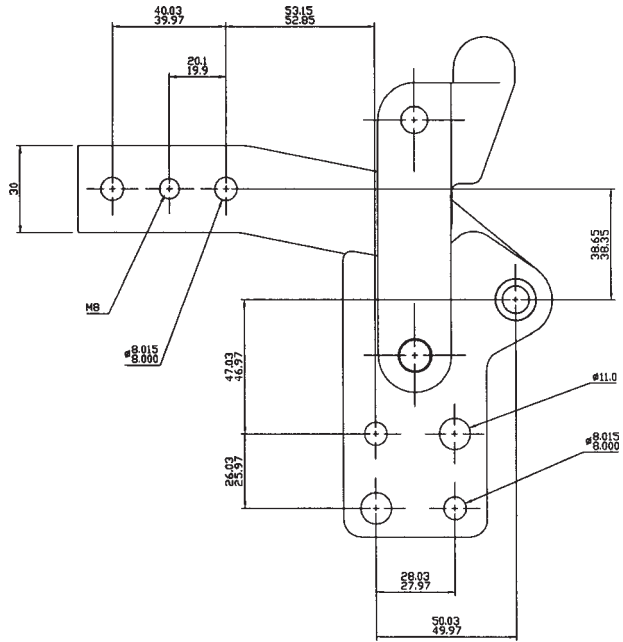
for pneumatic models  
 see page 15



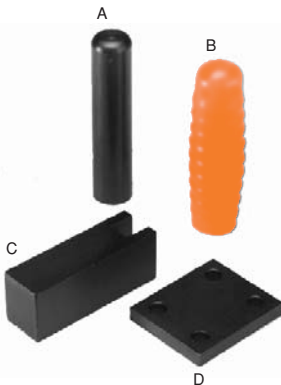
for locking mechanism in "open position"  
 add suffix (LC) to model number



**Arm:**  
 Solid arm with mounting holes.  
**Base:**  
 Straight with mounting holes.  
**Nominal Holding Force:**  
 1200 daN  
**Weight:**  
 1.87kg  
 See "Accessories" for other items.



## VA1200 SERIES ACCESSORIES

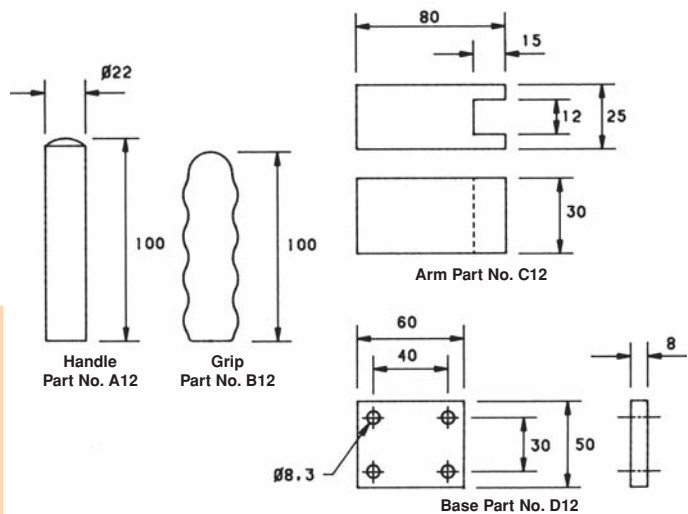


**Model A12 Handle:** Weight: 0.30 Kg  
 For welding at the desired angle to VA1200S & VA1200T.

**Model B12 Grip:** Weight: 0.01 Kg  
 To fit A12 handle.

**Model C12 Arm:** Weight: 0.42 Kg  
 For extending the stub arms of VA1200S & VA1200T.

**Model D12 Base:** Weight: 0.17 Kg  
 For bolt mounting VA1200S & VA1200T.



## HEAVY-DUTY VERTICAL CLAMPS

VA2400 SERIES  
MODEL VA2400S



for pneumatic models  
see page 15



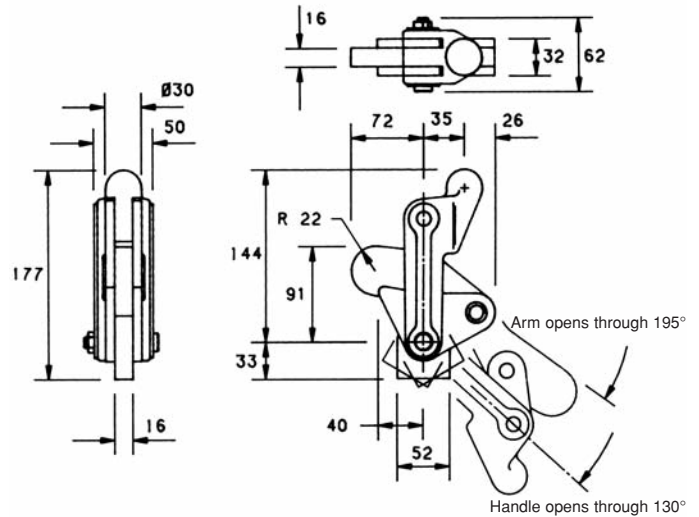
**Arm:**  
Stub nose for welded extensions.

**Base:**  
Swivel for welding in the desired position.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
2.90 Kg

See "Accessories" for other items.



VA2400 SERIES  
MODEL VA2400T



for pneumatic models  
see page 15



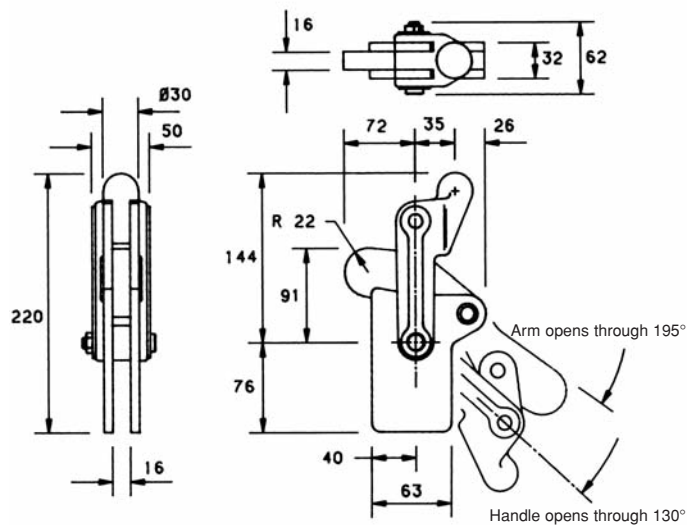
**Arm:**  
Stub nose for welded extensions.

**Base:**  
Straight.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
3.20 Kg

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

### VA2400 SERIES MODEL VA2400TD



for pneumatic models  
see page 15



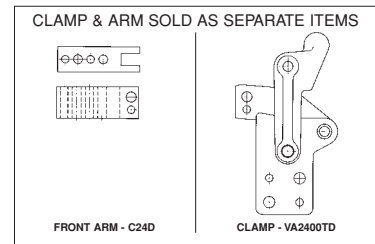
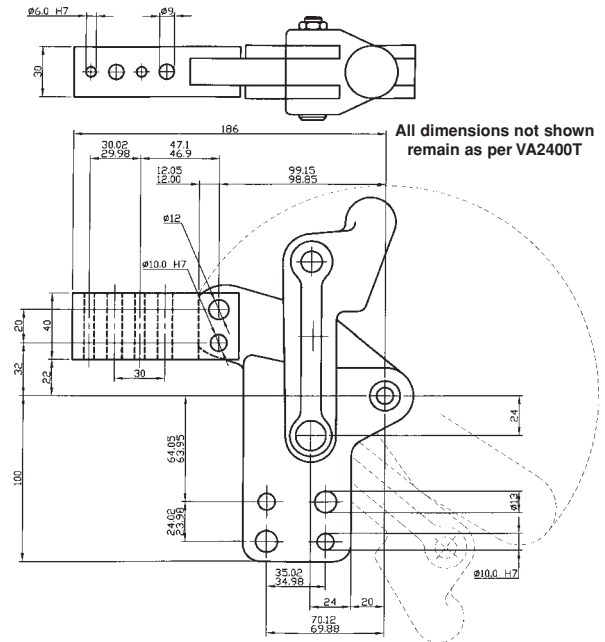
**Arm:**  
Stub nose with mounting holes.

**Base:**  
Straight with mounting holes.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
3.96kg

See "Accessories" for other items.



### VA2400 SERIES MODEL VA2400TP



for pneumatic models  
see page 15



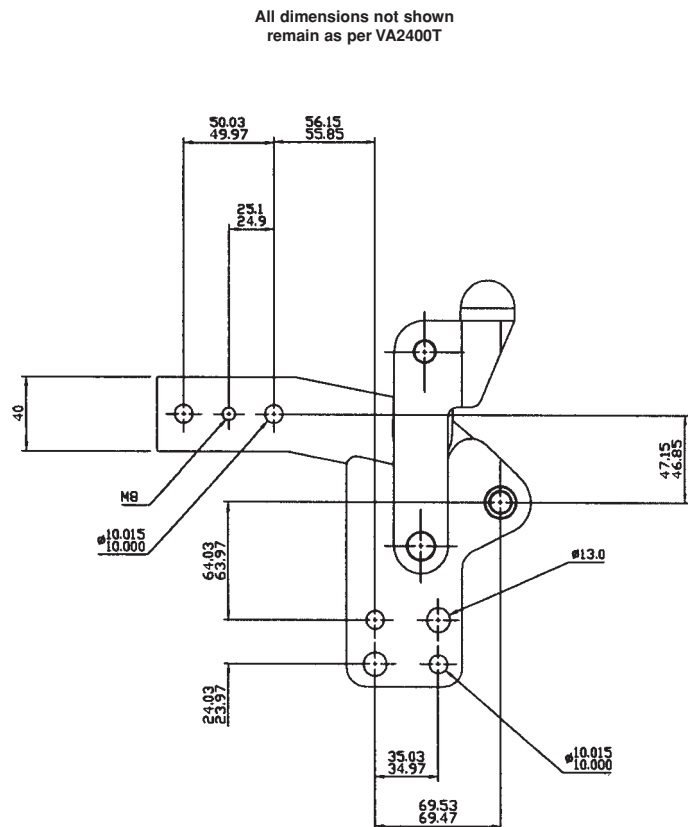
**Arm:**  
Solid arm with mounting holes.

**Base:**  
Straight with mounting holes.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
3.96kg

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

**VA2400 SERIES**  
MODEL VA2400/1A



**Arm:**  
Solid arm.

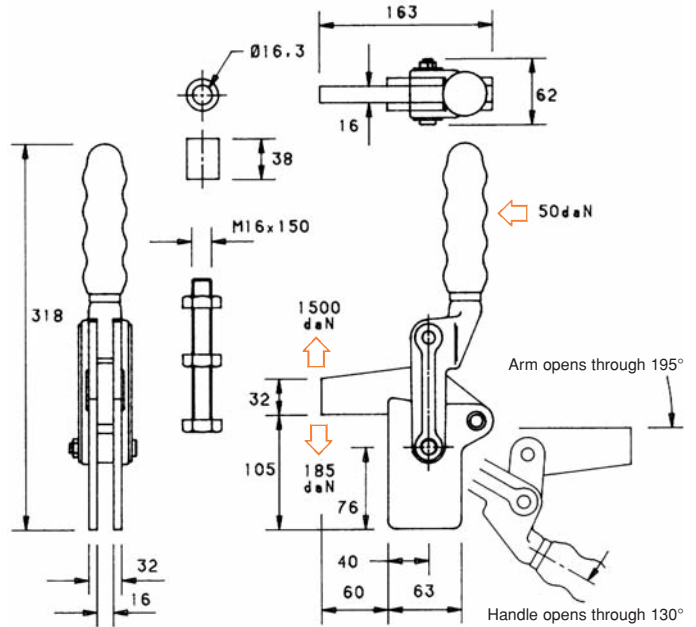
**Base:**  
Straight.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
3.75 Kg

**Supplied complete with:**  
Spindle retainer.  
MB16150 Setscrew & nuts.

See "Accessories" for other items.



**VA2400 SERIES**  
MODEL VA2400/2C



**Arm:**  
The spindle is in a fixed position.

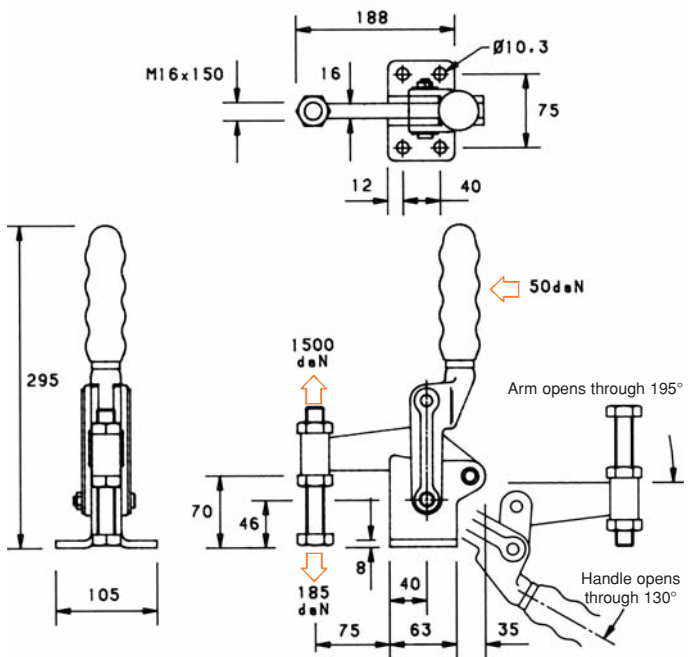
**Base:**  
Flanged.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
4.10 Kg

**Supplied complete with:**  
MB16150 Setscrew & nuts.

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

VA2400 SERIES  
ACCESSORIES

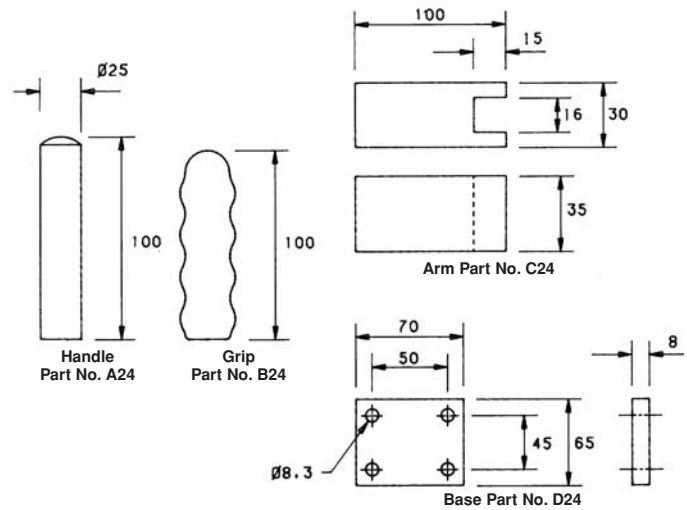


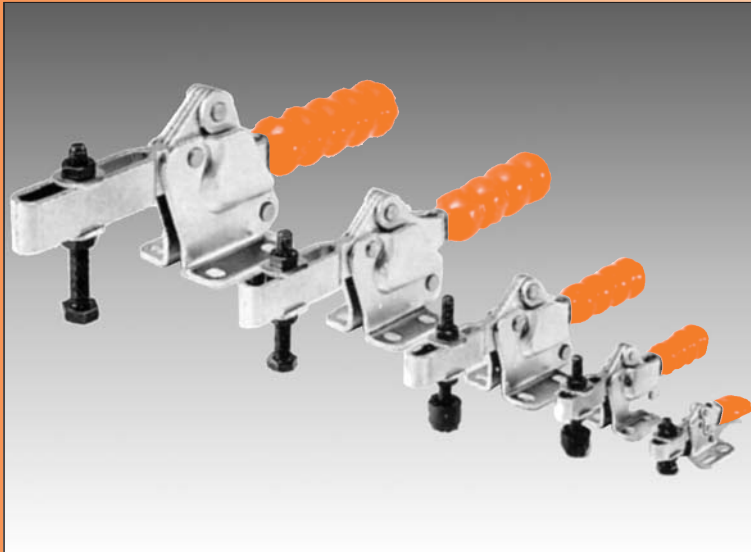
**Model A24 Handle:** **Weight:**  
For welding at the  
desired angle to  
VA2400S & VA2400T. 0.39Kg

**Model B24 Grip:** **Weight:**  
To fit A24 handle. 0.02 Kg

**Model C24 Arm:** **Weight:**  
For extending the  
stub arms of  
VA2400S & VA2400T. 0.76 Kg

**Model D24 Base:** **Weight:**  
For bolt mounting  
VA2400S & VA2400T. 0.26 Kg





## HORIZONTAL CLAMPS

- **Features:**

Horizontal clamps are used where height restrictions prevent the use of a Vertical clamp, or where the action of the clamping arm and handle rotating in opposite directions is more suitable.

The geometry of Brauer Horizontal clamps has been designed to ensure that the clamp opens and closes with a smooth and continuous action.

The side plates have been designed so as to provide a guard against mechanism finger trapping.

A comfortable, cushioned PVC handle grip is fitted to all Horizontal clamps.

Horizontal models except H700 and additional products have a closed end to the clamping arm for rigidity of construction and to retain the spindle or setscrew if it should loosen.

- **Specification:**

The main components are of zinc plated and passivated steel.

Rivets are of stainless steel which burnishes and work-hardens with use, the rivets of the larger clamps rotating in hardened bushes or directly in the close-toleranced holes of hardened parts.

## HORIZONTAL CLAMPS

### H50 SERIES MODEL H50/1B



**Arm:**  
The spindle position is adjustable along the arm.

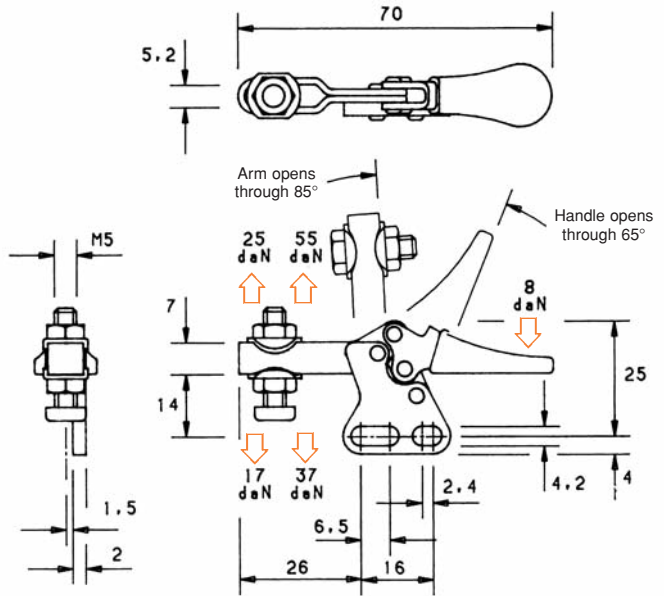
**Base:**  
Straight.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.033 Kg

**Supplied complete with:**  
MB0520 Setscrew & nuts.  
FW05/09 Flanged washers.

See "Accessories" for other items.



### H50 SERIES MODEL H50/2B



**Arm:**  
The spindle position is adjustable along the arm.

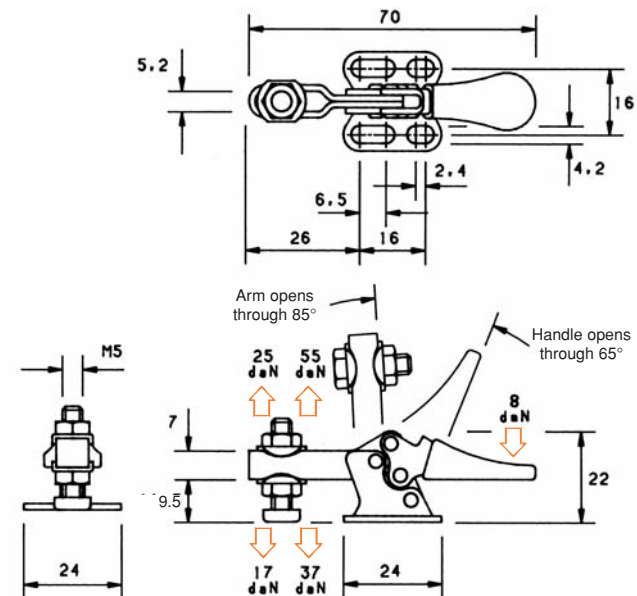
**Base:**  
Flanged.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.036 Kg

**Supplied complete with:**  
MB0520 Setscrew & nuts.  
FW05/09 Flanged washers.

See "Accessories" for other items.



### H50 SERIES MODEL H50/2BSS



**Arm:**  
The spindle position is adjustable along the arm.

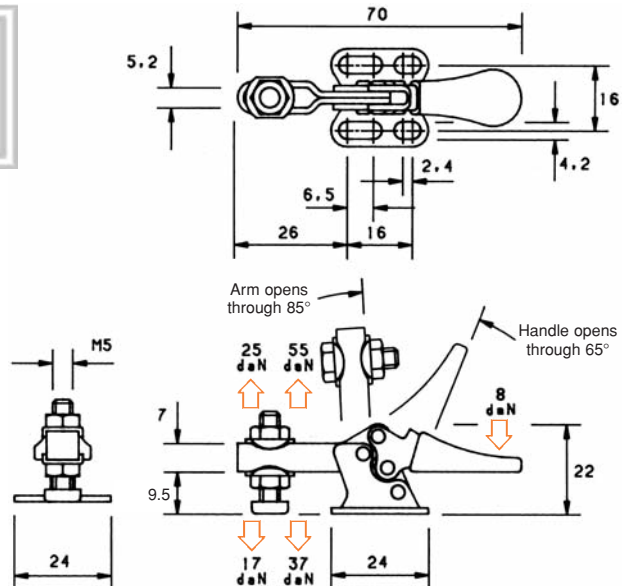
**Base:**  
Flanged.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.036 Kg

**Supplied complete with:**  
Setscrew & nuts.  
Flanged washers.

**Material:**  
BS 304 S15.



## HORIZONTAL CLAMPS

### H50 SERIES MODEL H50/2C



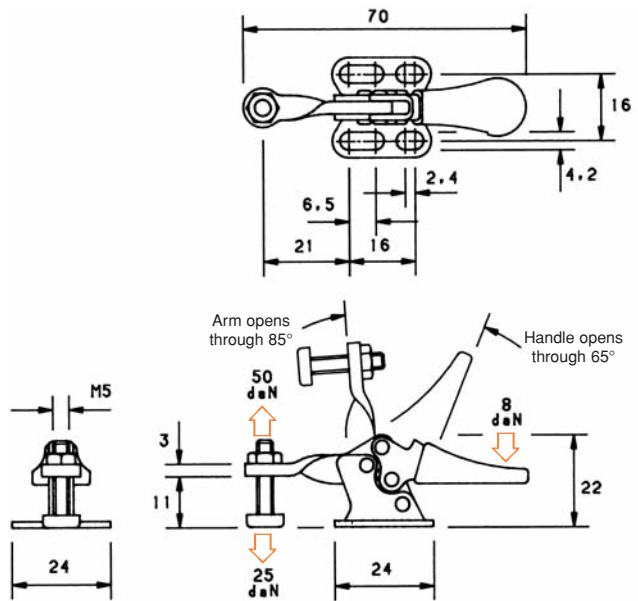
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.025 Kg

**Supplied complete with:**  
MB0520 Setscrew & nuts.  
See "Accessories" for other items.



### H50 SERIES MODEL H50/2BL



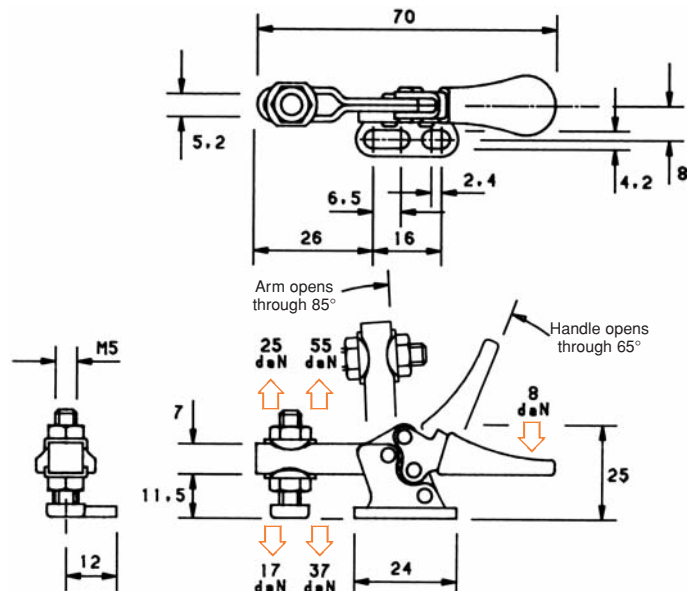
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Left hand flanged.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.02 Kg

**Supplied complete with:**  
MB0520 Setscrew & nuts.  
FW05/09 Flanged washers.  
See "Accessories" for other items.



### H50 SERIES MODEL H50/2BR



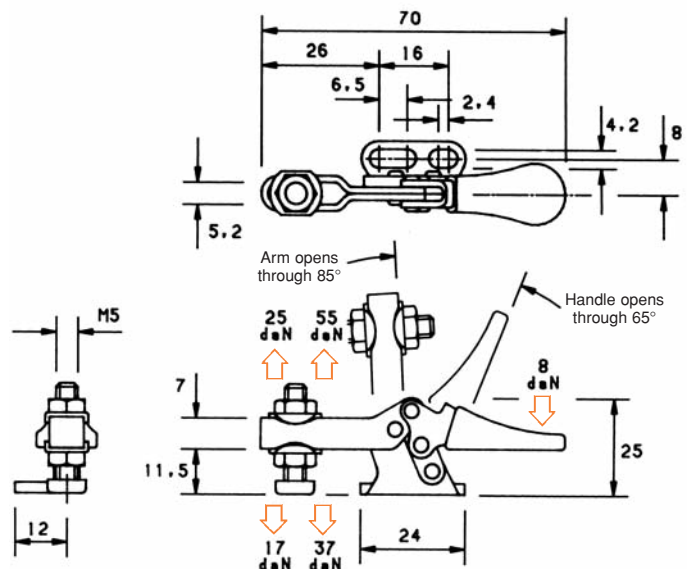
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Right hand flanged.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.02 Kg

**Supplied complete with:**  
MB0520 Setscrew & nuts.  
FW05/09 Flanged washers.  
See "Accessories" for other items.





## HORIZONTAL CLAMPS

**H75 SERIES**  
MODEL H75/1B



**Arm:**  
The spindle position is adjustable along the arm.

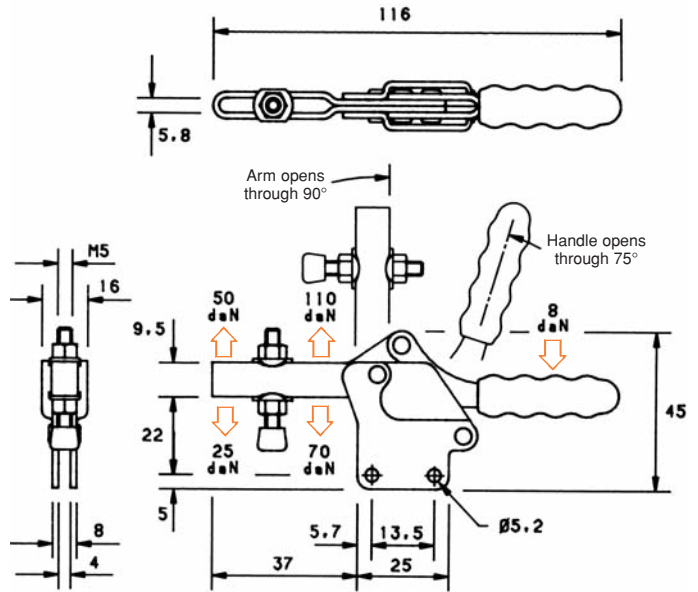
**Base:**  
Straight.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
FW05/10 Flanged washers.  
NC/05 Neoprene cover.

See "Accessories" for other items.



**H75 SERIES**  
MODEL H75/1BSS

**STAINLESS  
STEEL**



**Arm:**  
The spindle position is adjustable along the arm.

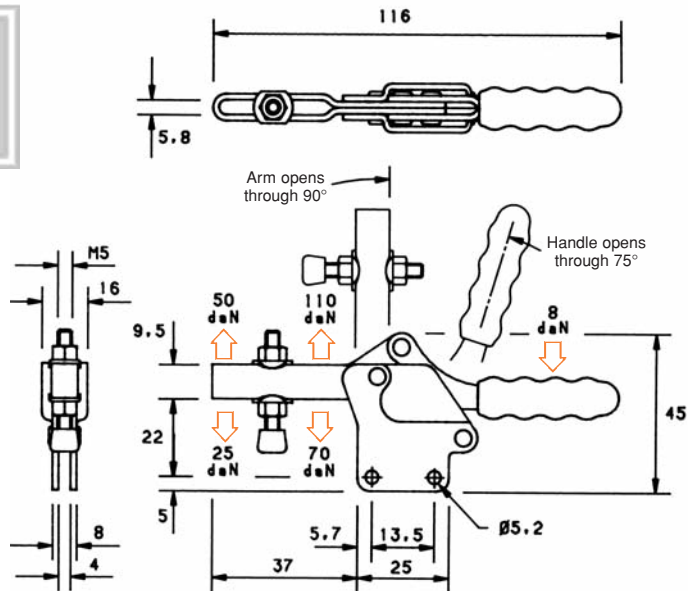
**Base:**  
Straight.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
FW05/10 Flanged washers.  
NC/05 Neoprene cover.

**Material:**  
BS 304 S15.



**H75 SERIES**  
MODEL H75/1C



**Arm:**  
The spindle is in a fixed position.

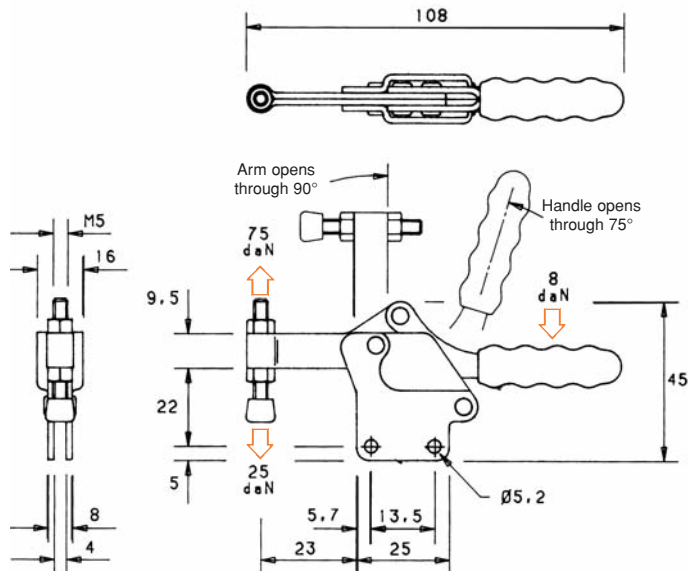
**Base:**  
Straight.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/05 Neoprene cover.

See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H75 SERIES

#### MODEL H75/2B



**Arm:**  
The spindle position is adjustable along the arm.

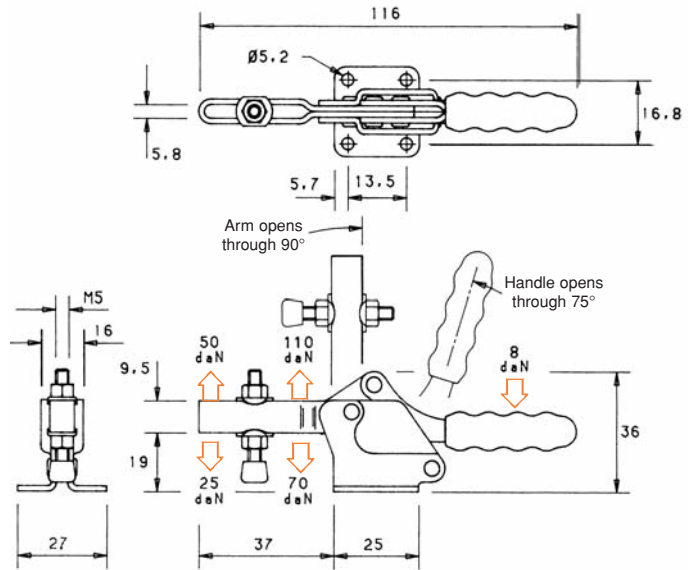
**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
FW05/10 Flanged washers.  
NC/05 Neoprene cover.

See "Accessories" for other items.



### H75 SERIES

#### MODEL H75/2BSS

**STAINLESS  
STEEL**



**Arm:**  
The spindle position is adjustable along the arm.

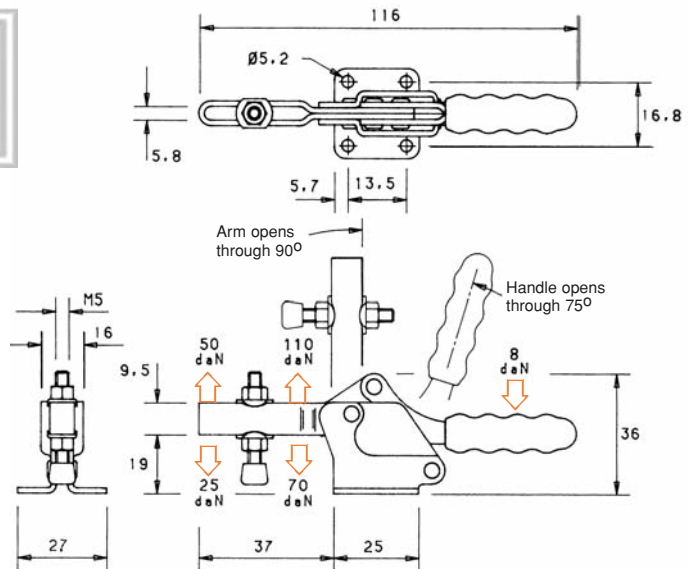
**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
Setscrew & nuts.  
Flanged washers.  
Neoprene cover.

**Material:**  
BS 304 S15.



### H75 SERIES

#### MODEL H75/2C



**Arm:**  
The spindle is in a fixed position.

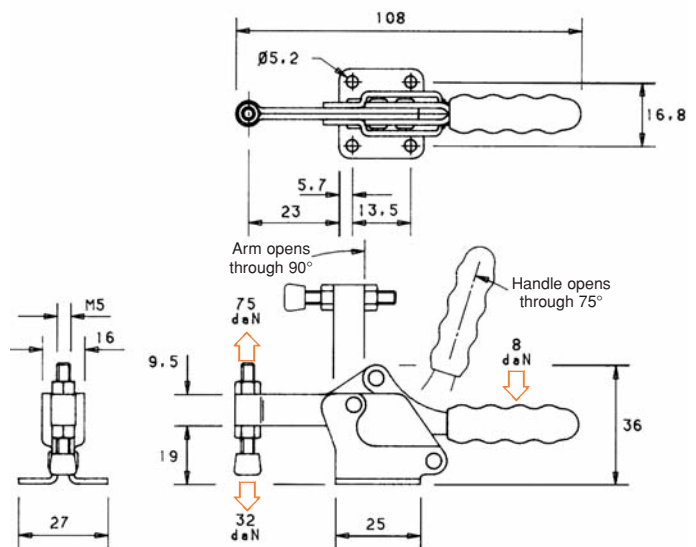
**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.  
NC/Neoprene cover.

See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H150 SERIES

#### MODEL H150/1B



**Arm:**

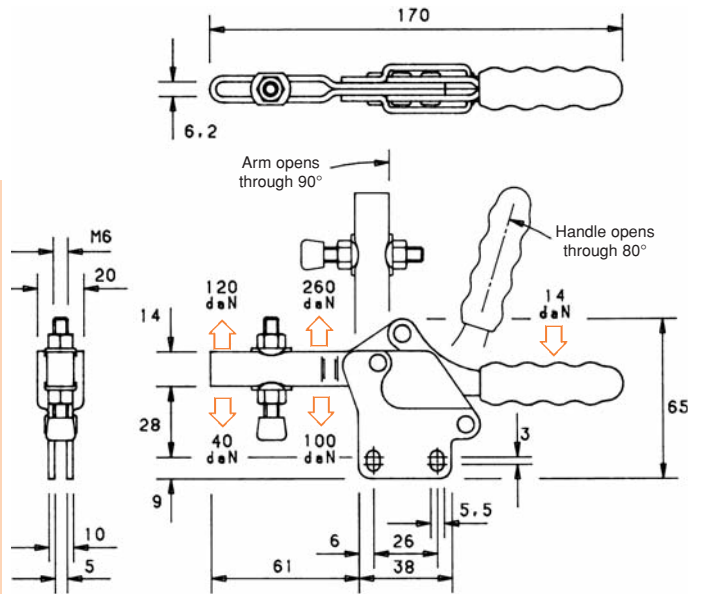
The spindle position is adjustable along the arm.

**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.  
See "Accessories" for other items.



### H150 SERIES

#### MODEL H150/1BSS

**STAINLESS  
STEEL**



**Arm:**

The spindle position is adjustable along the arm.

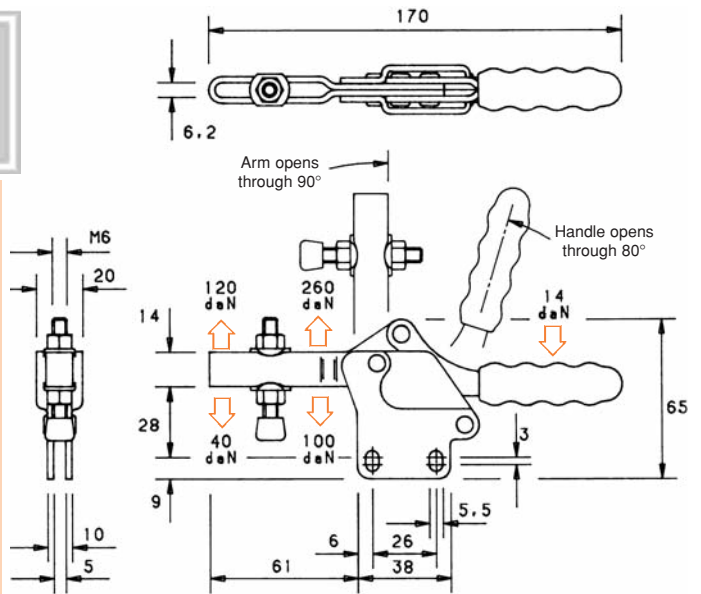
**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.

**Material:**  
BS 304 S15.



### H150 SERIES

#### MODEL H150/1C



**Arm:**

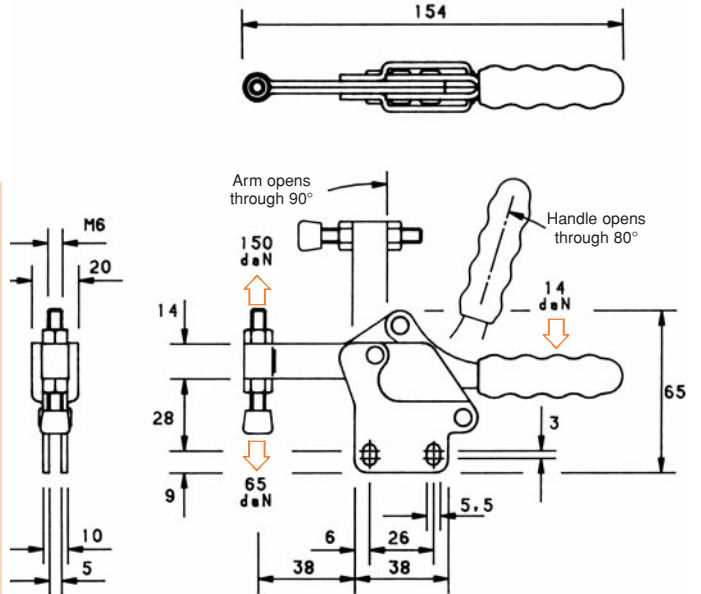
The spindle is in a fixed position.

**Base:**  
Straight.

**Nominal Holding Force:**  
150 daN

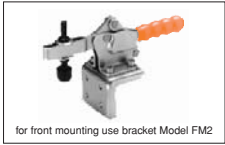
**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H150 SERIES MODEL H150/2B



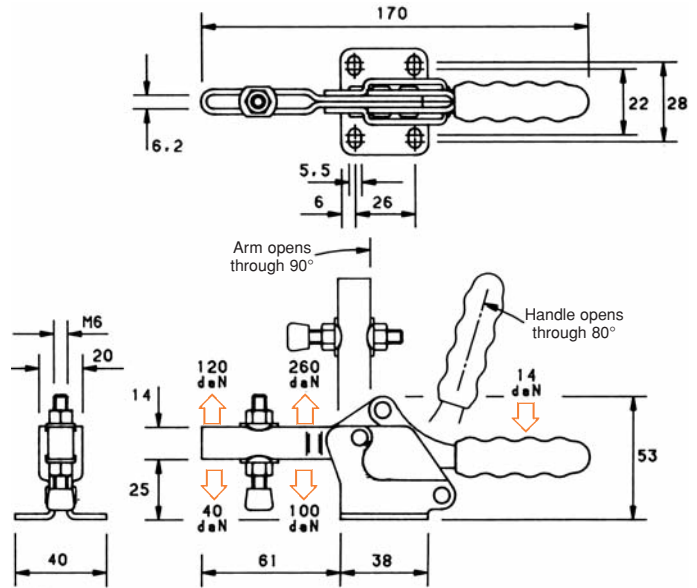
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
FW06/12 Flanged washers.  
See "Accessories" for other items.



### H150 SERIES MODEL H150/2BSS



**Arm:**  
The spindle position is adjustable along the arm.

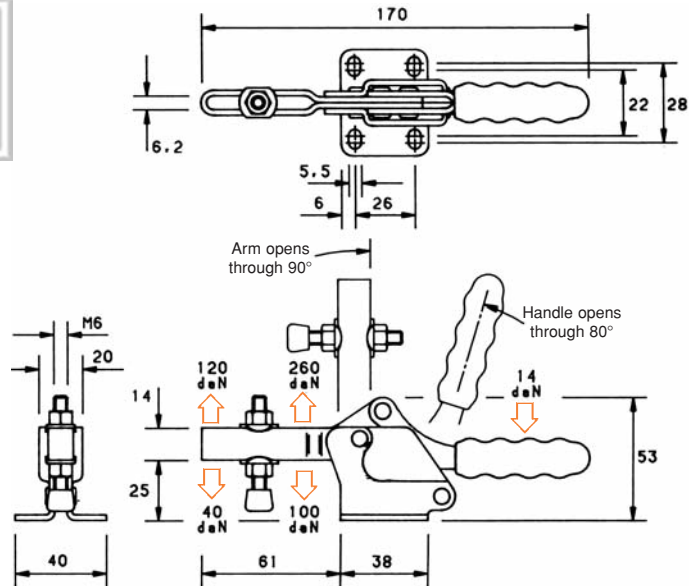
**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.10 Kg

**Supplied complete with:**  
Setscrew & nuts.  
Flanged washers.

**Material:**  
BS 304 S15.



### H150 SERIES MODEL H150/2C



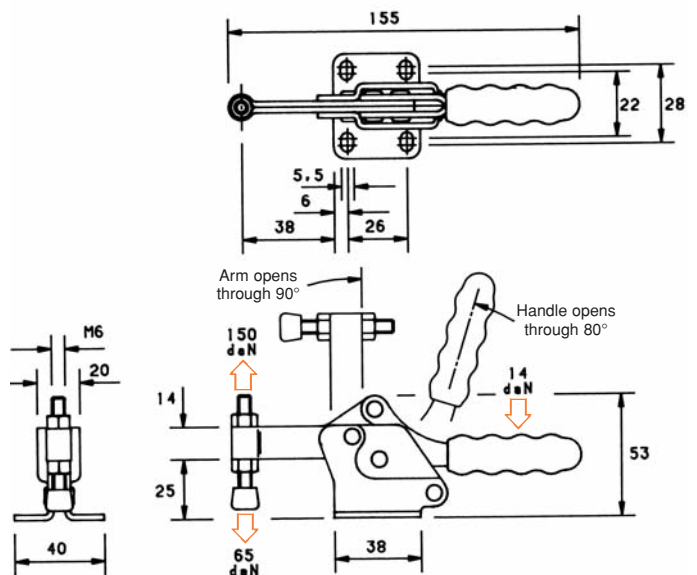
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
150 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
MB0650 Setscrew & nuts.  
NC/06 Neoprene cover.  
See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H250 SERIES

#### MODEL H250/1A



**Arm:**  
2-piece "solid" arm with spindle retainer supplied loose for welding in the desired position.

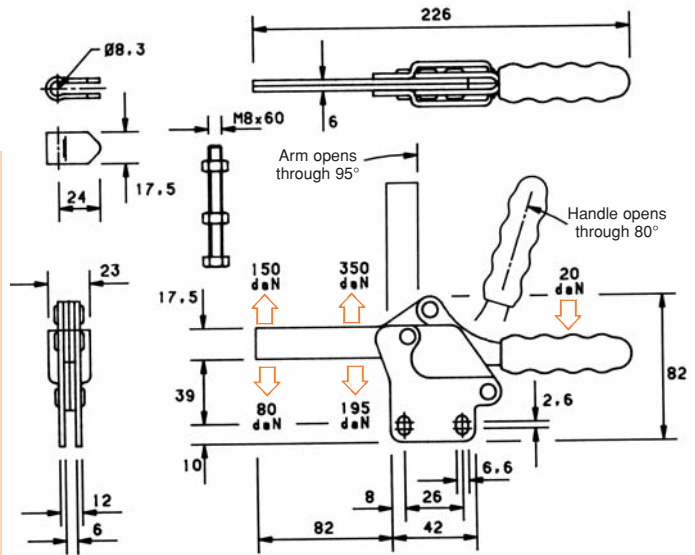
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### H250 SERIES

#### MODEL H250/1AL



**Arm:**  
Solid arm with spindle retainer supplied loose for welding in the desired position. 10mm added to arm length over H250/1A model.

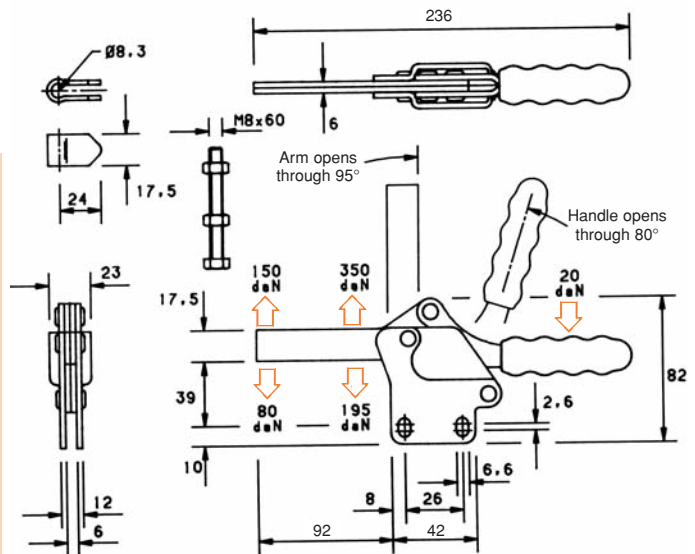
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### H250 SERIES

#### MODEL H250/1B



**Arm:**  
The spindle position is adjustable along the arm.

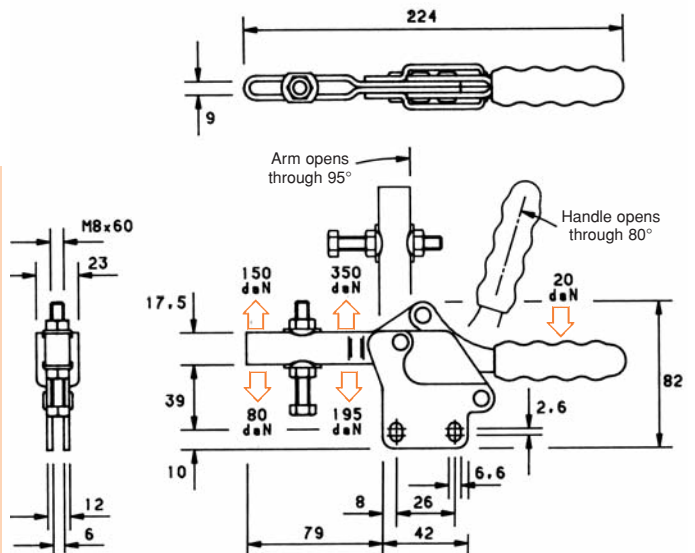
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H250 SERIES MODEL H250/2A



**Arm:**  
2-piece "solid" arm with spindle retainer supplied loose for welding in the desired position.

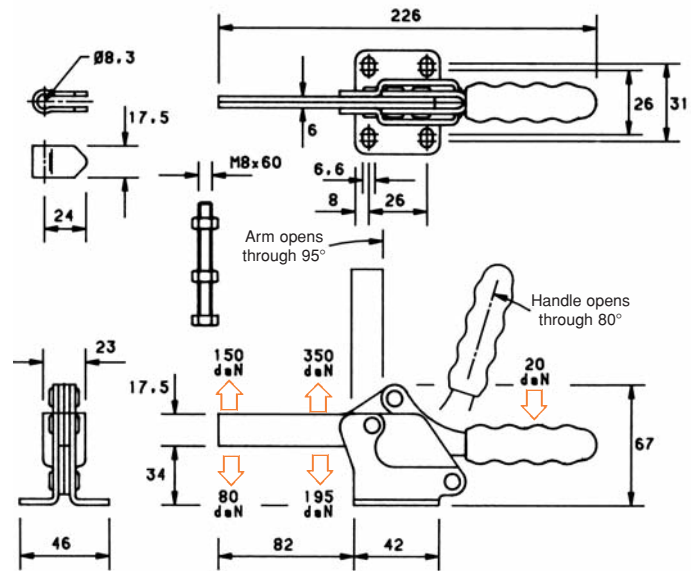
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### H250 SERIES MODEL H250/2AL



**Arm:**  
Solid arm with spindle retainer supplied loose for welding in the desired position. 10mm added to arm length over H250/2A model.

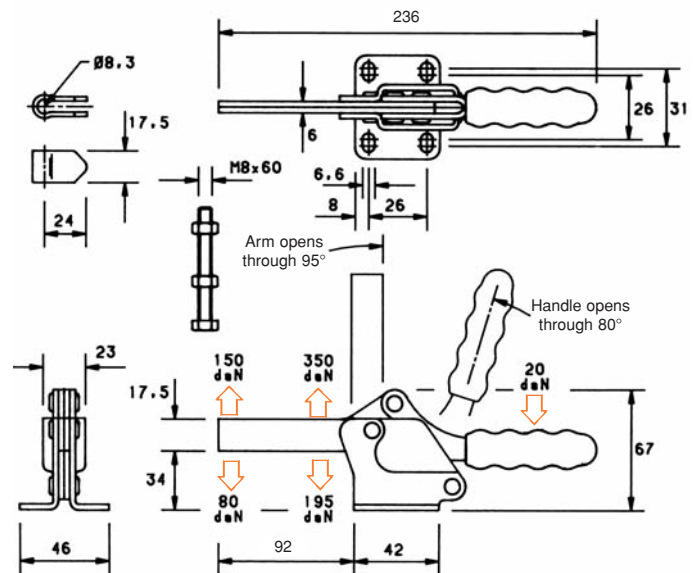
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

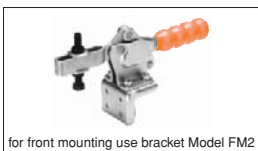
**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### H250 SERIES MODEL H250/2B



**Arm:**  
The spindle position is adjustable along the arm.

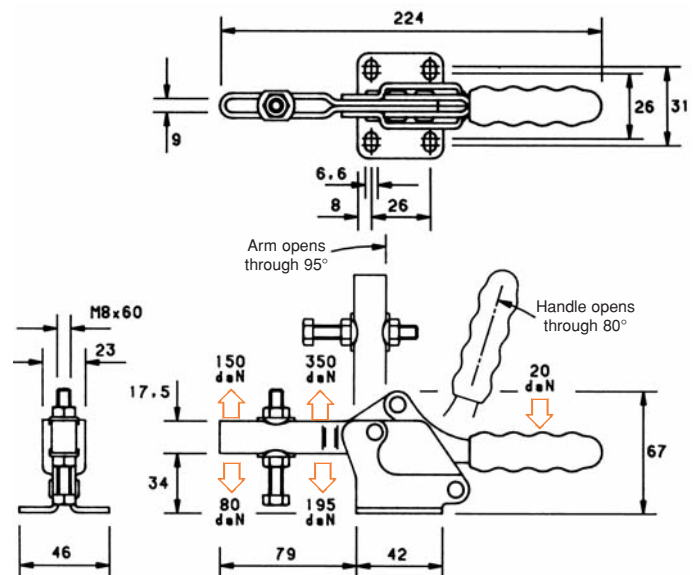
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.50 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H350 SERIES

#### MODEL H350/1A



**Arm:**  
2-piece "solid" arm with spindle retainer supplied loose for welding in the desired position.

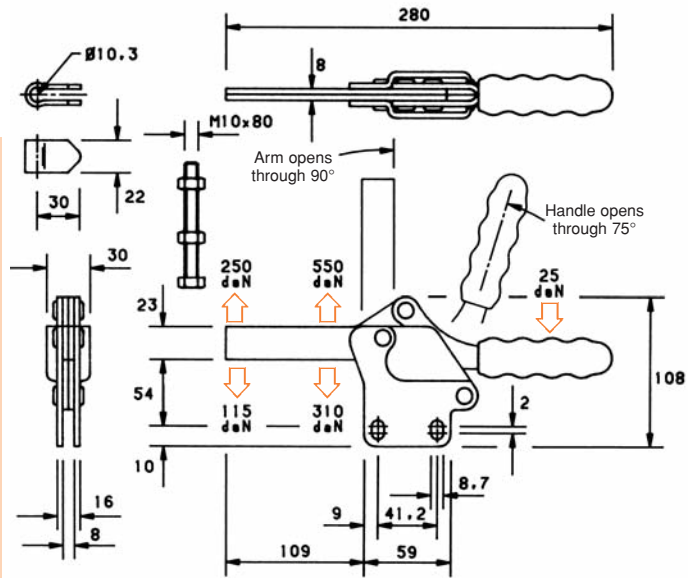
**Base:**  
Straight.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.90 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
R/10 Spindle retainer.

See "Accessories" for other items.



### H350 SERIES

#### MODEL H350/1B



for "T" Bar Accessory order Model T350



**Arm:**  
The spindle position is adjustable along the arm.

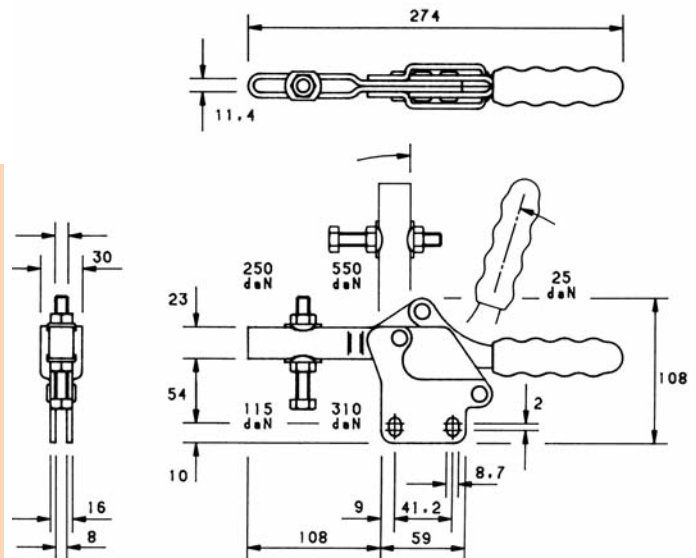
**Base:**  
Straight.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.90 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
FW10/20 Flanged washers.

See "Accessories" for other items.



### H350 SERIES

#### MODEL H350/2A



for front mounting use bracket Model FM3



**Arm:**  
2-piece "solid" arm with spindle retainer supplied loose for welding in the desired position.

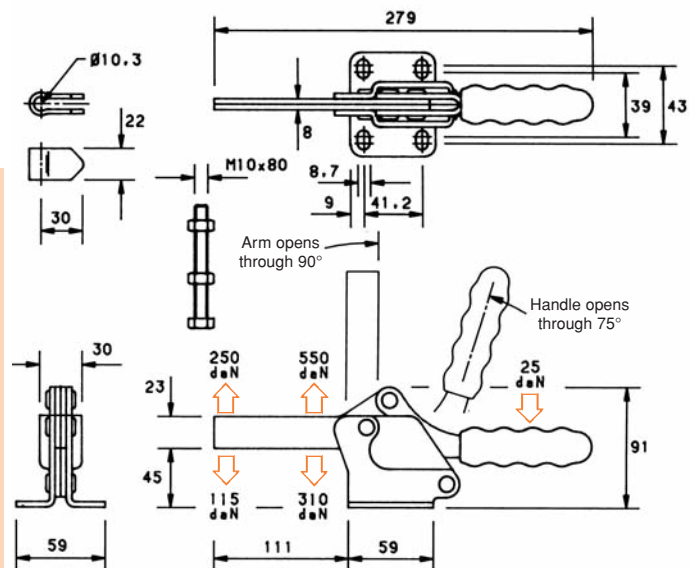
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.90 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
R/10 Spindle retainer.

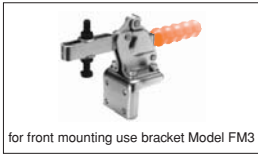
See "Accessories" for other items.



## HORIZONTAL CLAMPS

### H350 SERIES

#### MODEL H350/2B



**Arm:**  
The spindle position is adjustable along the arm.

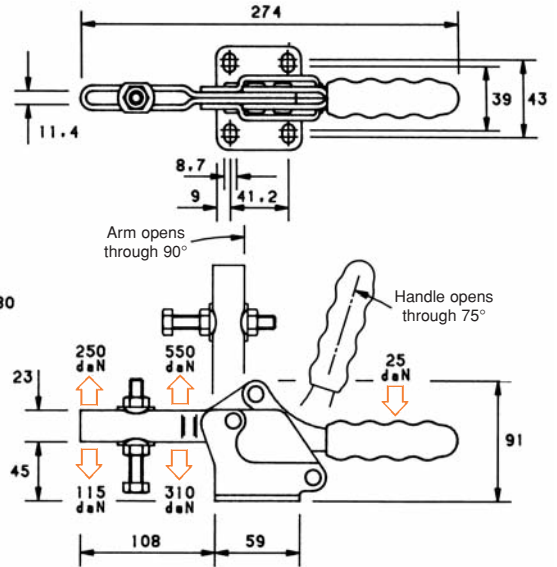
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.90 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
FW10/20 Flanged washers.

See "Accessories" for other items.



### H450 SERIES

#### MODEL H450/1A



**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

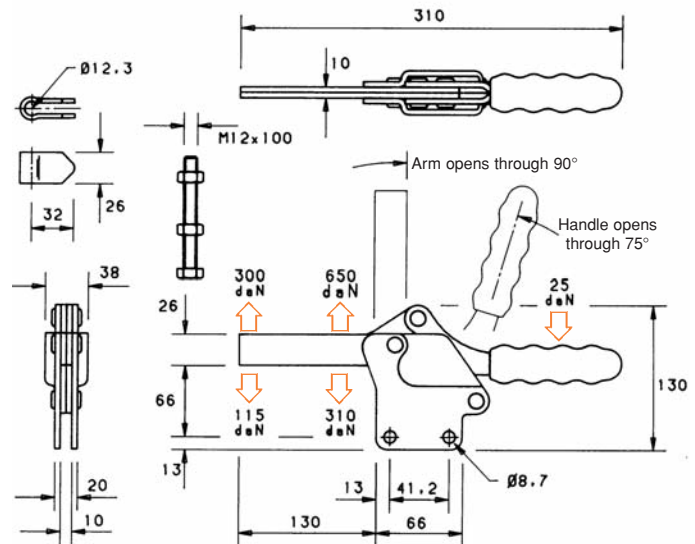
**Base:**  
Straight.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.60 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
R/12 Spindle retainer.

See "Accessories" for other items.



### H450 SERIES

#### MODEL H450/1B



**Arm:**  
The spindle position is adjustable along the arm.

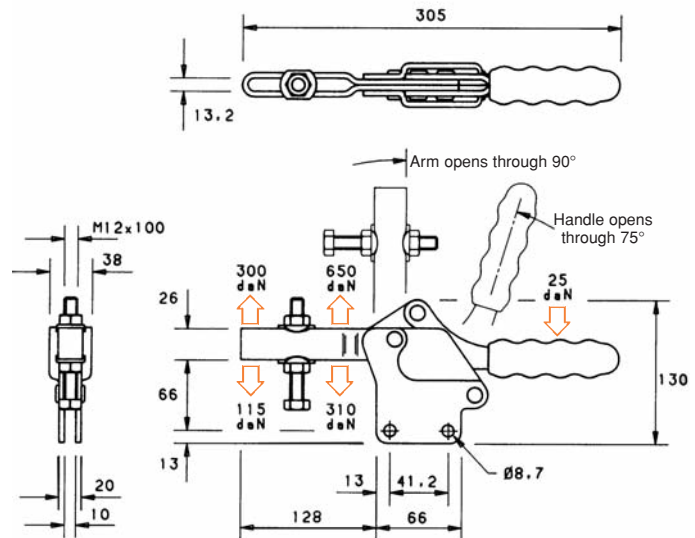
**Base:**  
Straight.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.60 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.

See "Accessories" for other items.





## HORIZONTAL CLAMPS

### H450 SERIES

#### MODEL H450/2A



for front mounting use bracket Model FM3



**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

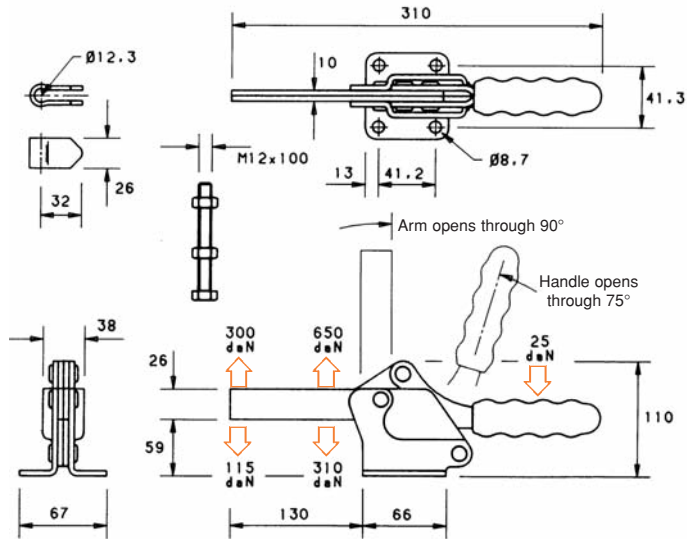
**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.60 Kg

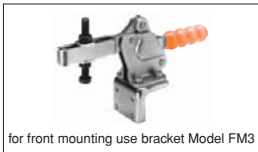
**Supplied complete with:**  
MB12100 Setscrew & nuts.  
R/12 Spindle retainer.

See "Accessories" for other items.



### H450 SERIES

#### MODEL H450/2B



for front mounting use bracket Model FM3



**Arm:**  
The spindle position is adjustable along the arm.

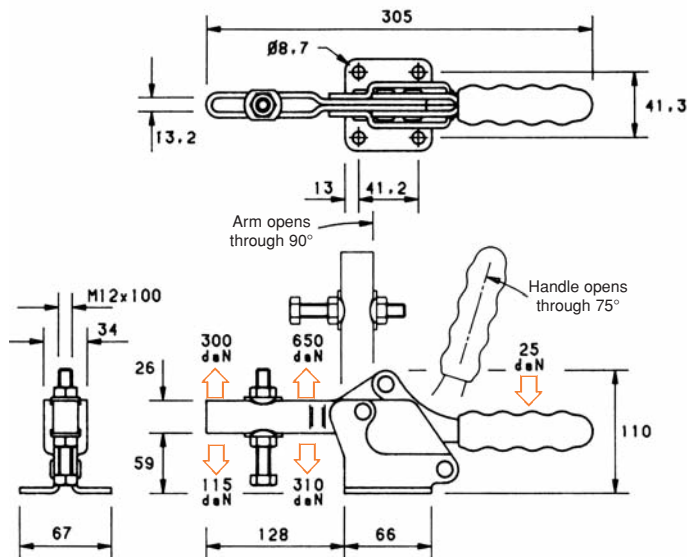
**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.60 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.

See "Accessories" for other items.



### H700 SERIES

#### MODEL H700



for "T" Bar Accessory order Model T450



**Arm:**  
The spindle position is adjustable along the arm.

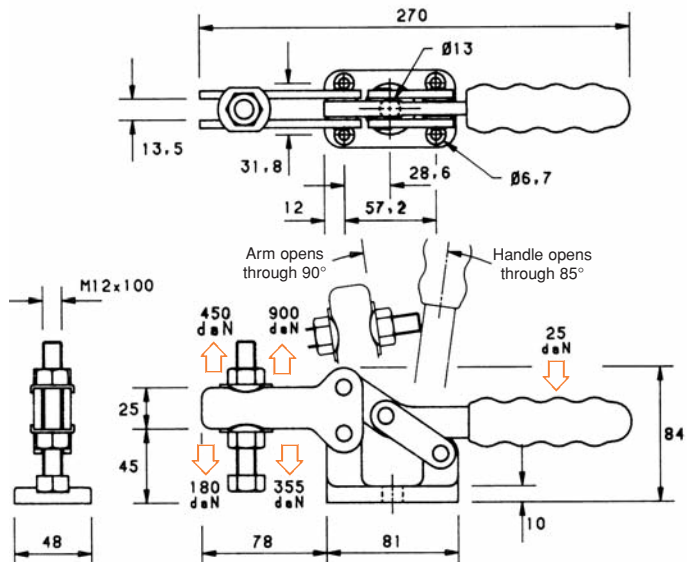
**Base:**  
Flanged.

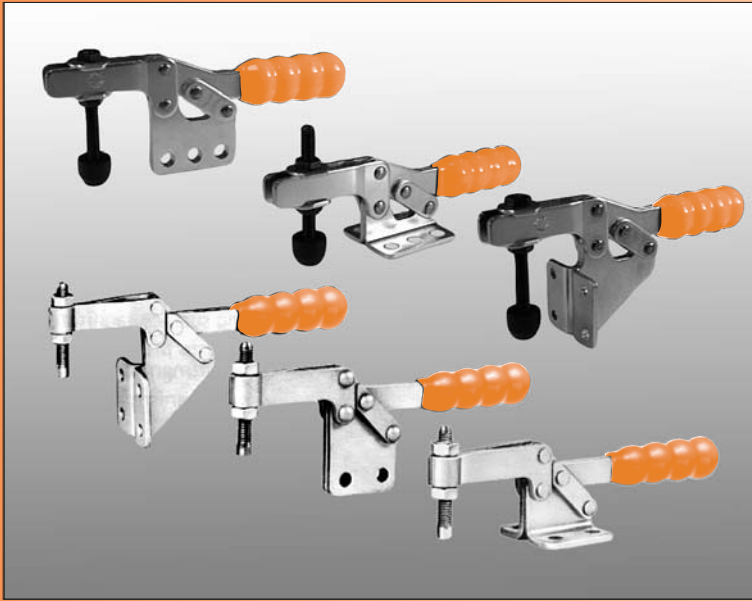
**Nominal Holding Force:**  
700 daN

**Weight:**  
1.15 Kg

**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.  
This heavy duty clamp features a cast steel base with central hole for optional "tee" bolt mounting.

See "Accessories" for other items.





.....  
**ADDITIONAL HORIZONTAL  
CLAMPING PRODUCTS**

## ADDITIONAL HORIZONTAL CLAMPING PRODUCTS

### MODEL H100/1B



**Arm:**  
The spindle position is adjustable along the arm.

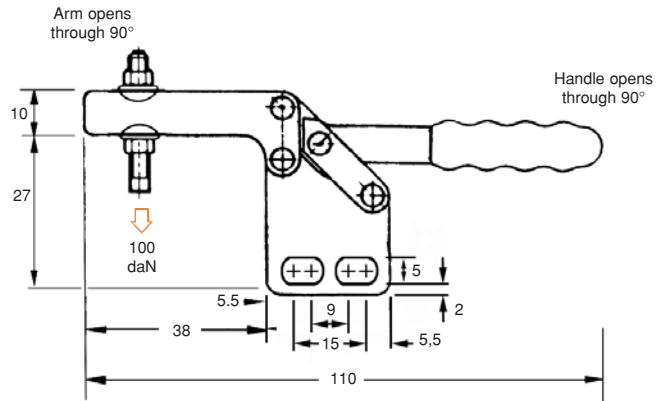
**Base:**  
Straight.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.085 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H100/1C



**Arm:**  
The spindle is in a fixed position.

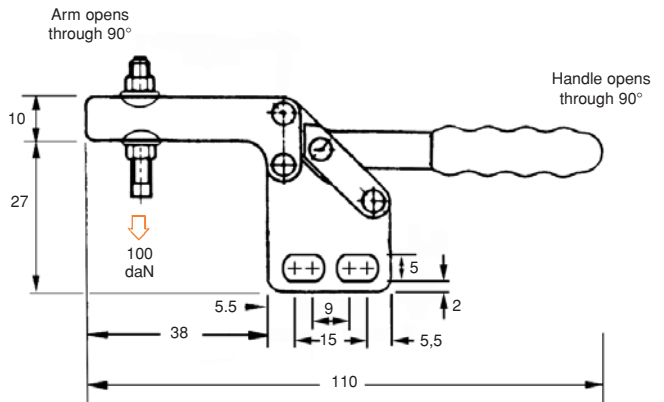
**Base:**  
Straight.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.085 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H100/2B



**Arm:**  
The spindle position is adjustable along the arm.

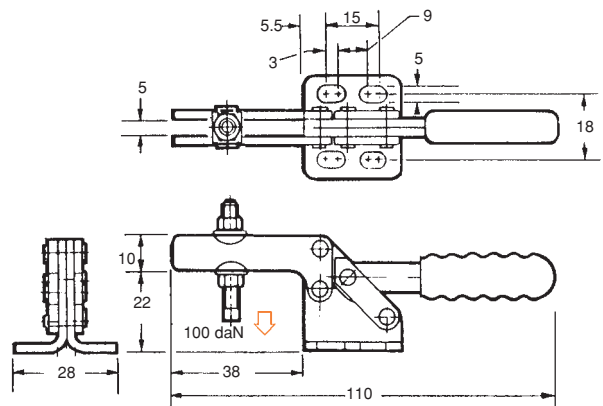
**Base:**  
Flanged.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.085 kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



## ADDITIONAL HORIZONTAL CLAMPING PRODUCTS

### MODEL H100/2C



**Arm:**  
The spindle is in a fixed position.

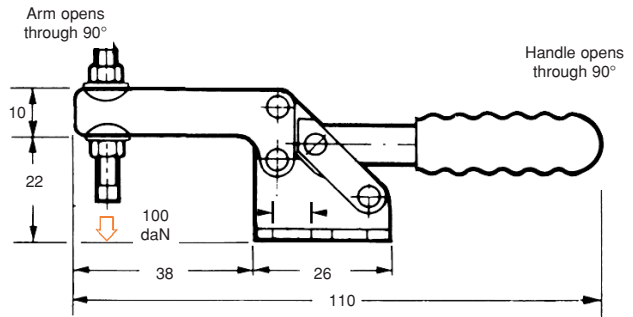
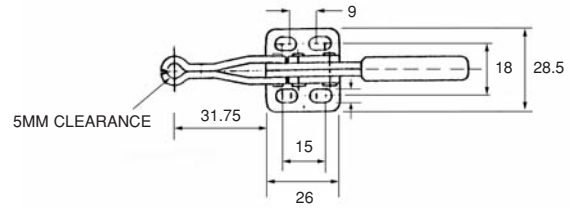
**Base:**  
Flanged.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.085 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H100/3B



**Arm:**  
The spindle position is adjustable along the arm.

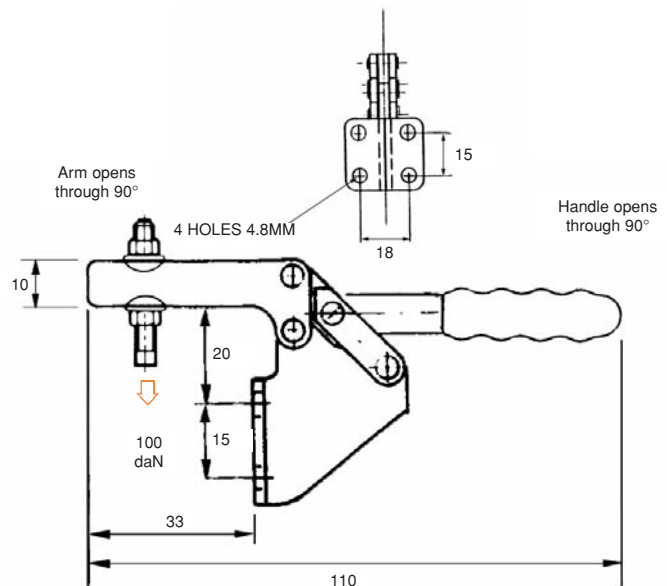
**Base:**  
Front mounting.

**Nominal Holding Force:**  
100 daN

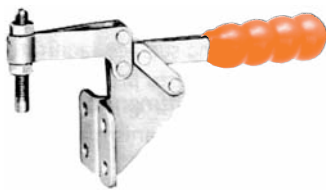
**Weight:**  
0.085 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H100/3C



**Arm:**  
The spindle is in a fixed position.

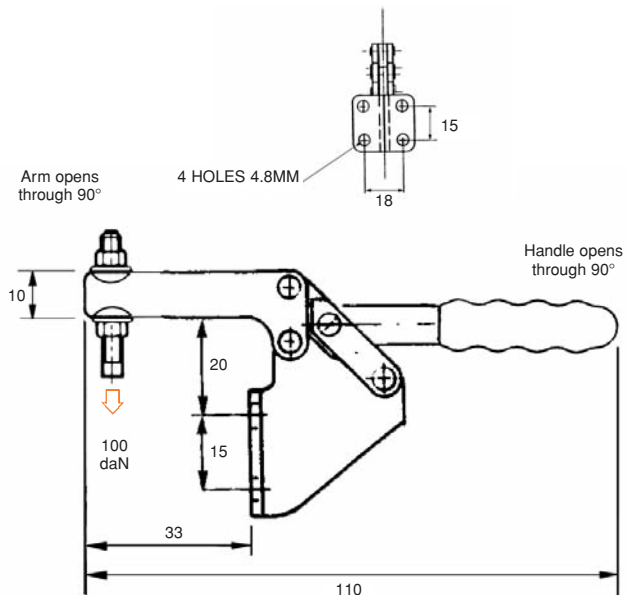
**Base:**  
Front mounting.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.085 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



## ADDITIONAL HORIZONTAL CLAMPING PRODUCTS

### MODEL H200/1B



**Arm:**  
The spindle position is adjustable along the arm.

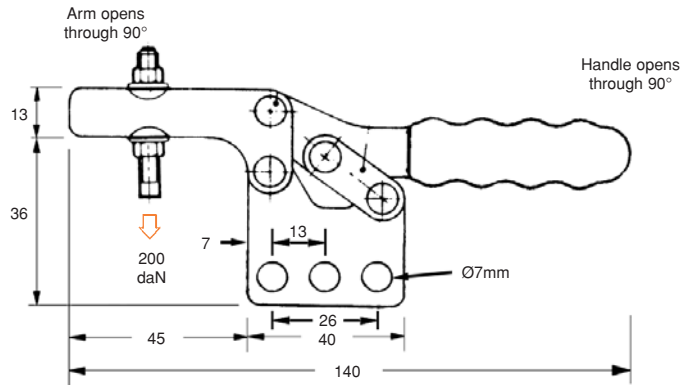
**Base:**  
Straight.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.17 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H200/2B



**Arm:**  
The spindle position is adjustable along the arm.

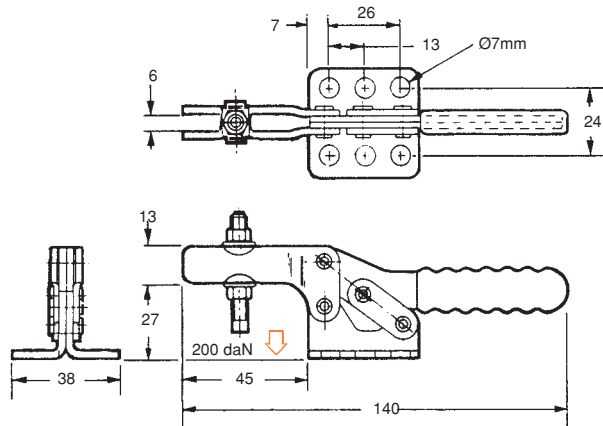
**Base:**  
Flanged.

**Nominal Holding Force:**  
200 daN

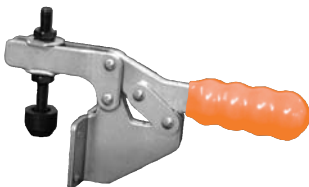
**Weight:**  
0.17 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H200/3B



**Arm:**  
The spindle position is adjustable along the arm.

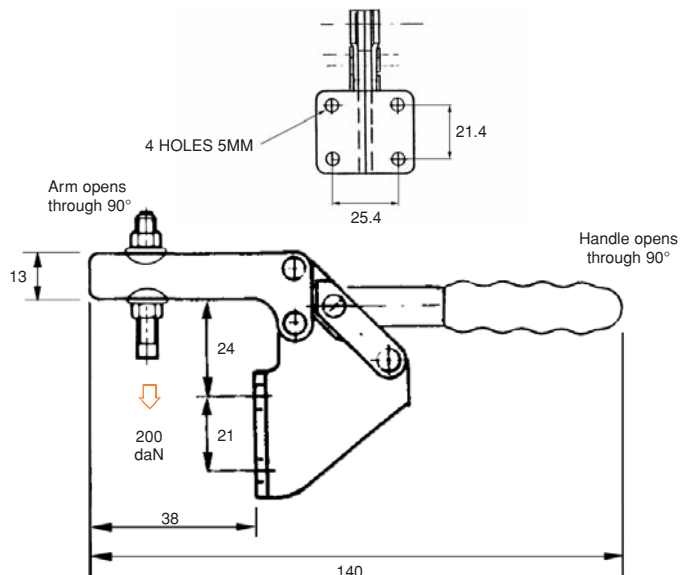
**Base:**  
Front mounting.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.17 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



## ADDITIONAL HORIZONTAL CLAMPING PRODUCTS

### MODEL H300/1B



**Arm:**  
The spindle position is adjustable along the arm.

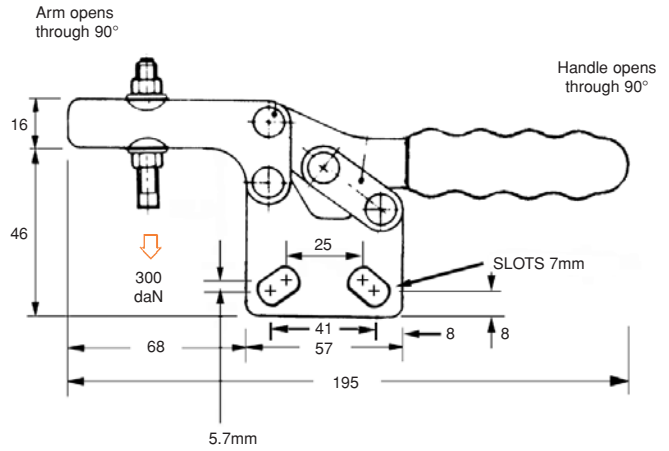
**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.34 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H300/2B



**Arm:**  
The spindle position is adjustable along the arm.

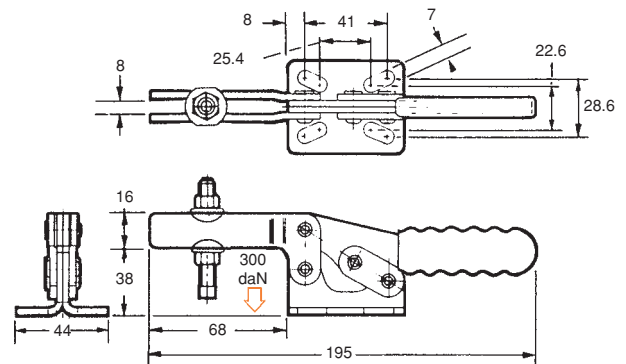
**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.34 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



### MODEL H300/3B



**Arm:**  
The spindle position is adjustable along the arm.

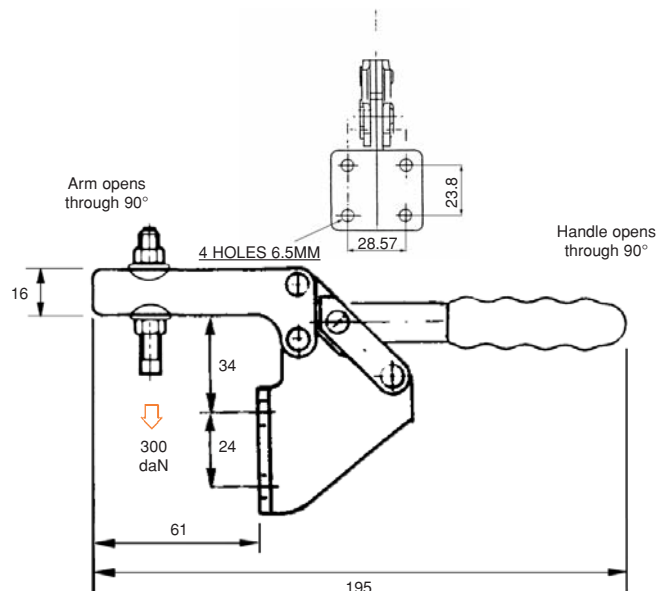
**Base:**  
Front mounting.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.34 Kg

**Supplied complete with:**  
standard spindle, nuts and flanged washers

*See "Accessories" for other items.*



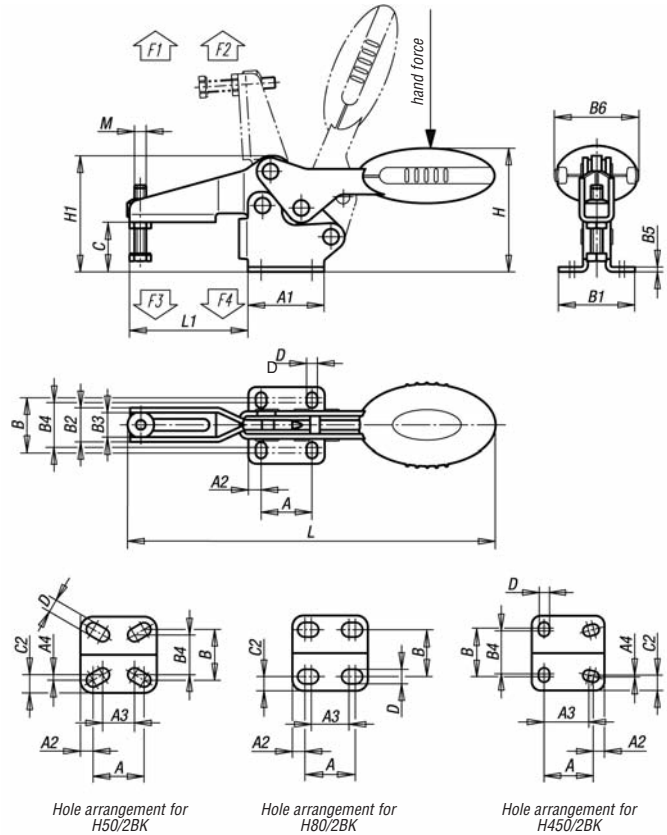


## BLACK OXIDIZED NITRO CARBURIZED HORIZONTAL CLAMPS

- Steel construction with polyamide handle
- Nitro carburized and black oxidized finish
- High quality bushing tolerances

## HORIZONTAL CLAMPS

HORIZONTAL MODELS  
H50/2BK - H450/2BK



**Material:**

Steel, Polyamide handle.

**Surface finish:**

Nitro carburized and black oxidized.

**Arm:**

The spindle position is adjustable along the arm.

**Base:**

Flanged.

**Supplied complete with:**

Setscrew & Nut.

| Order No | Arm opens through | Handle opens through | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F4 daN |
|----------|-------------------|----------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| H50/2BK  | 86°               | 69°                  | 8             | 40                  | 50                  | 25                   | 30                   |
| H80/2BK  | 86°               | 66°                  | 10            | 65                  | 90                  | 55                   | 62                   |
| H150/2BK | 87°               | 68°                  | 16            | 135                 | 190                 | 72                   | 120                  |
| H250/2BK | 88°               | 68°                  | 20            | 200                 | 280                 | 83                   | 140                  |
| H350/2BK | 90°               | 71°                  | 25            | 220                 | 450                 | 120                  | 280                  |
| H450/2BK | 88°               | 68°                  | 28            | 240                 | 550                 | 100                  | 280                  |

| Order No | M      | A    | A1 | A2  | A3   | A4   | B    | B1 | B2   | B3   | B4   | B5  | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|----------|--------|------|----|-----|------|------|------|----|------|------|------|-----|------|------|------|-----|-------|-------|-------|-------|
| H50/2BK  | M4x16  | 16   | 24 | 4   | 11.4 | 1.75 | 16   | 24 | 10.2 | 7.1  | 13.1 | 1.5 | 20   | 11.7 | 5.75 | 4.2 | 29.3  | 26.3  | 91.8  | 23.7  |
| H80/2BK  | M5x25  | 18   | 27 | 4.5 | 13.5 | -    | 16.8 | 27 | 13.2 | 9.1  | -    | 2   | 22.5 | 18   | 5.1  | 5.5 | 43.4  | 38.9  | 126.3 | 42.6  |
| H150/2BK | M6x35  | 26   | 39 | 6.5 | -    | -    | 28   | 39 | 17.5 | 12.4 | 23   | 2.5 | 43.5 | 25.5 | -    | 5.5 | 63.2  | 59.5  | 186.7 | 60.5  |
| H250/2BK | M8x45  | 26   | 44 | 9   | -    | -    | 31   | 45 | 21   | 15.7 | 24   | 2.5 | 41.5 | 32.2 | -    | 6.2 | 73.9  | 70    | 223.2 | 74.9  |
| H350/2BK | M10x55 | 41.5 | 59 | 9   | -    | -    | 43   | 59 | 26   | 18.7 | 39   | 3.5 | 47   | 40   | -    | 8.8 | 94.8  | 87.9  | 279.4 | 103.9 |
| H450/2BK | M12x70 | 44   | 65 | 10  | 40   | 1    | 42   | 67 | 28   | 20.9 | 40   | 3.5 | 47   | 52.3 | 13.5 | 8.5 | 104.8 | 101.6 | 314.7 | 122   |



## HORIZONTAL CLAMPS

HORIZONTAL MODELS  
H75/1BK - H450/1BK



**Material:**

Steel, Polyamide handle.

**Surface finish:**

Nitro carburized and black oxidized.

**Arm:**

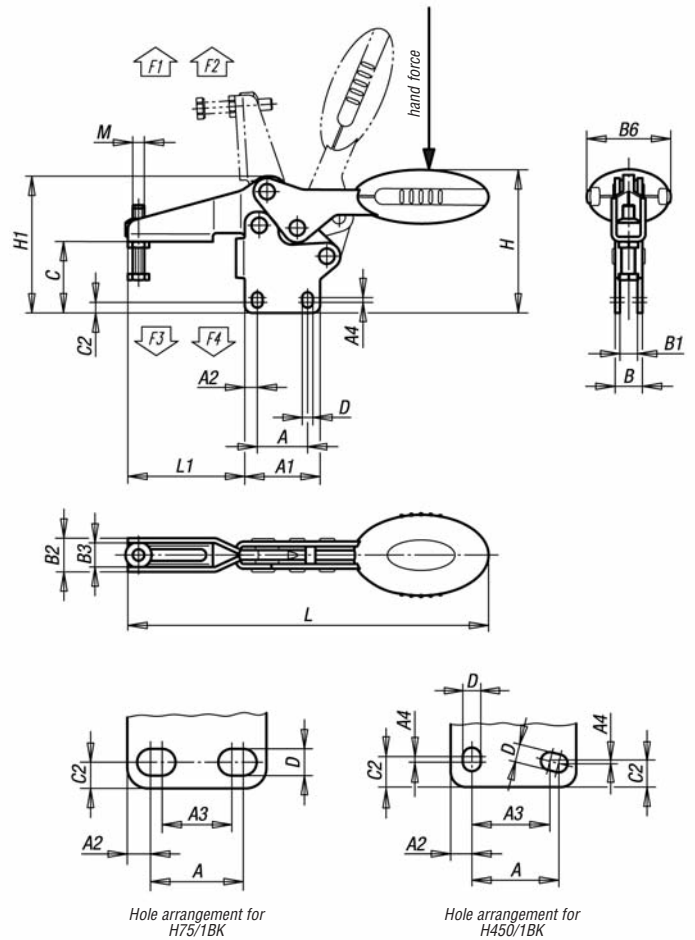
The spindle position is adjustable along the arm.

**Base:**

Straight.

**Supplied complete with:**

Setscrew & Nut.



| Order No | Arm opens through | Handle opens through | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F4 daN |
|----------|-------------------|----------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| H75/1BK  | 86°               | 66°                  | 10            | 65                  | 90                  | 55                   | 62                   |
| H150/1BK | 87°               | 68°                  | 16            | 135                 | 190                 | 72                   | 120                  |
| H250/1BK | 88°               | 68°                  | 20            | 200                 | 280                 | 83                   | 140                  |
| H350/1BK | 90°               | 71°                  | 25            | 220                 | 450                 | 120                  | 280                  |
| H450/1BK | 88°               | 68°                  | 28            | 240                 | 550                 | 100                  | 280                  |

| Order No | M      | A    | A1 | A2  | A3   | A4  | B    | B1  | B2   | B3   | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|----------|--------|------|----|-----|------|-----|------|-----|------|------|------|------|------|-----|-------|-------|-------|-------|
| H75/1BK  | M5x25  | 18   | 27 | 4.5 | 13.5 | -   | 8.1  | 4.1 | 13.2 | 9.1  | 22.5 | 26   | 5.1  | 5.5 | 51.8  | 47.7  | 125.7 | 41.8  |
| H150/1BK | M6x35  | 26   | 39 | 6.5 | -    | 2.5 | 14.1 | 9.1 | 17.5 | 12.4 | 43.5 | 37   | 5.5  | 5.5 | 74.2  | 71    | 186.8 | 60.5  |
| H250/1BK | M8x45  | 26   | 44 | 9   | -    | 3.5 | 14.1 | 9.1 | 21   | 15.7 | 41.5 | 46.5 | 7    | 6.2 | 88.2  | 84.4  | 223.2 | 74.9  |
| H350/1BK | M10x55 | 41.5 | 59 | 9   | -    | 2   | 16.2 | 9.2 | 26   | 18.7 | 47   | 59.6 | 8    | 8.8 | 114.4 | 107.5 | 279.3 | 103.9 |
| H450/1BK | M12x70 | 44   | 65 | 11  | 40   | 1   | 16.2 | 67  | 28   | 20.9 | 47   | 75.9 | 13.5 | 8.5 | 128.4 | 125.2 | 314.7 | 122   |



## PULL BACK CLAMP MODEL TC79 & TC345

- **Features:**

This clamp is unique in having an action similar to a wide-opening locking plier, but having a flanged body which can be fastened to the fixture or mould against which the work-piece or mould half is to be clamped.

A comfortable, cushioned PVC grip is fitted.

- **Specification:**

The pressed components are of zinc plated and passivated steel. The jaw is a machined casting which is also zinc plated and passivated. Rivets are of stainless steel.

## PULL BACK CLAMPS

**PULL BACK CLAMP**  
**MODEL TC79**



**Arm:**  
The spindle is in a fixed position.

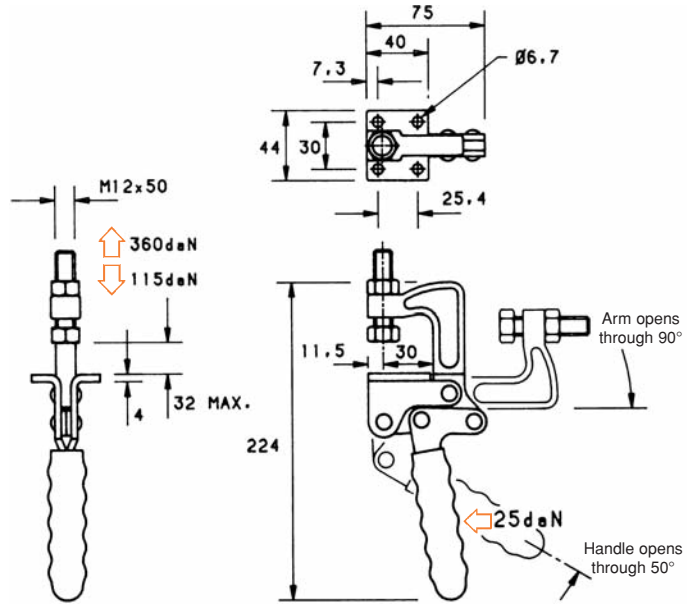
**Base:**  
Flanged.

**Nominal Holding Force:**  
360 daN

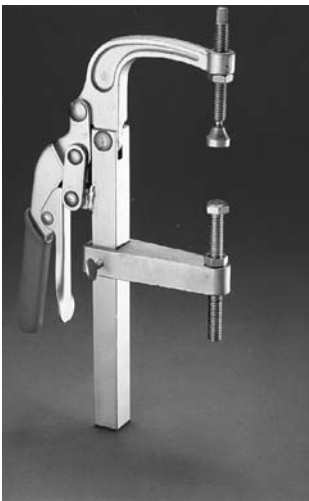
**Weight:**  
0.50 Kg

**Supplied complete with:**  
Setscrew & nuts.

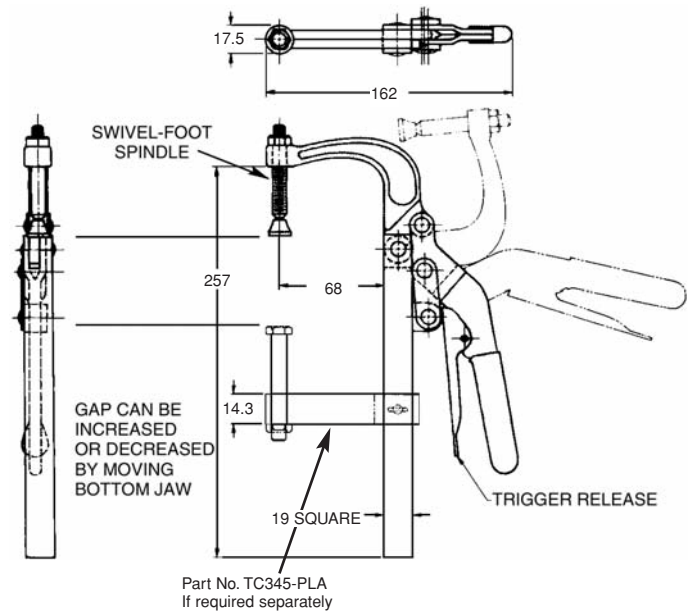
See "Accessories" for other items.



## QUICK CLAMPING TOGGLE PLIERS



- multi-purpose rail clamp with forged steel clamping jaw.
- quick clamping and trigger release mechanism.
- 360 daN / 800 lb. clamping force from the toggle mechanism.
- comes supplied with lower jaw (part nos. TC345-PLA) which is also available separately.
- also supplied with SA-38314-SF swivel foot spindle.



| Product Code | Opening mm | Depth mm | Rail mm | Weight kg |
|--------------|------------|----------|---------|-----------|
| TC345        | 215        | 68.3     | 19 x 19 | 1.3       |



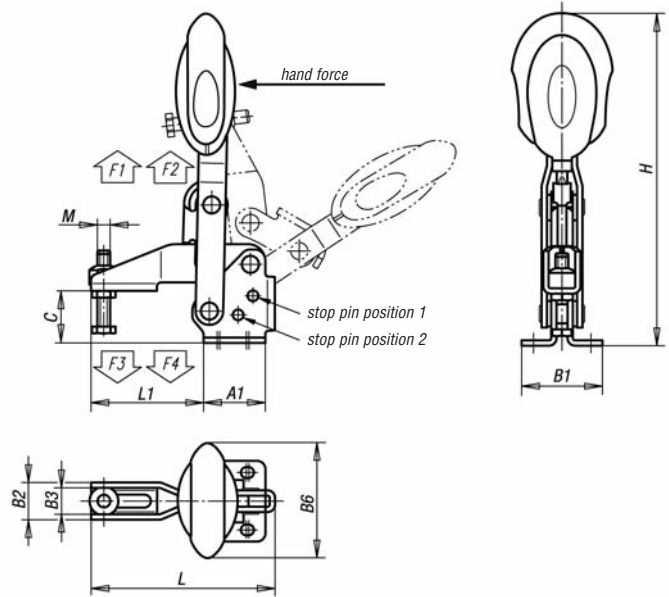
## **POSITIVE LOCKING CLAMPS SAFETY INTERLOCK +**

- **New generation of Locking Toggle Clamps**
- **Nitro carburized & black oxidized finish**
- **Steel construction with polycarbonate handle**
- **Unique Interlocking+ locking mechanism**

## VERTICAL CLAMPS SAFETY INTERLOCK+

VERTICAL MODELS

V150/2BKL - V450/2BKL



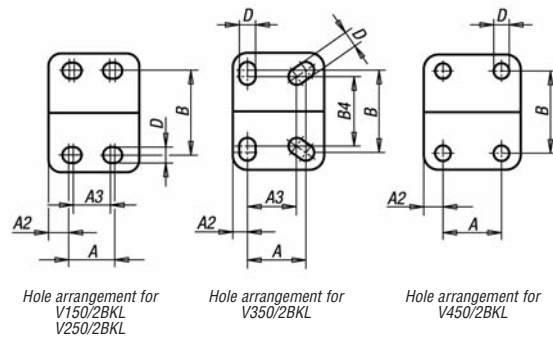
**Material:**  
Steel, Polyamide handle, TPE unlocking bracket.

**Surface finish:**  
Nitro carburized and black oxidized.

**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Supplied complete with:**  
Setscrew & Nut.



Includes an internal bar lock with automatic safety and maintenance free high quality swivel bushings

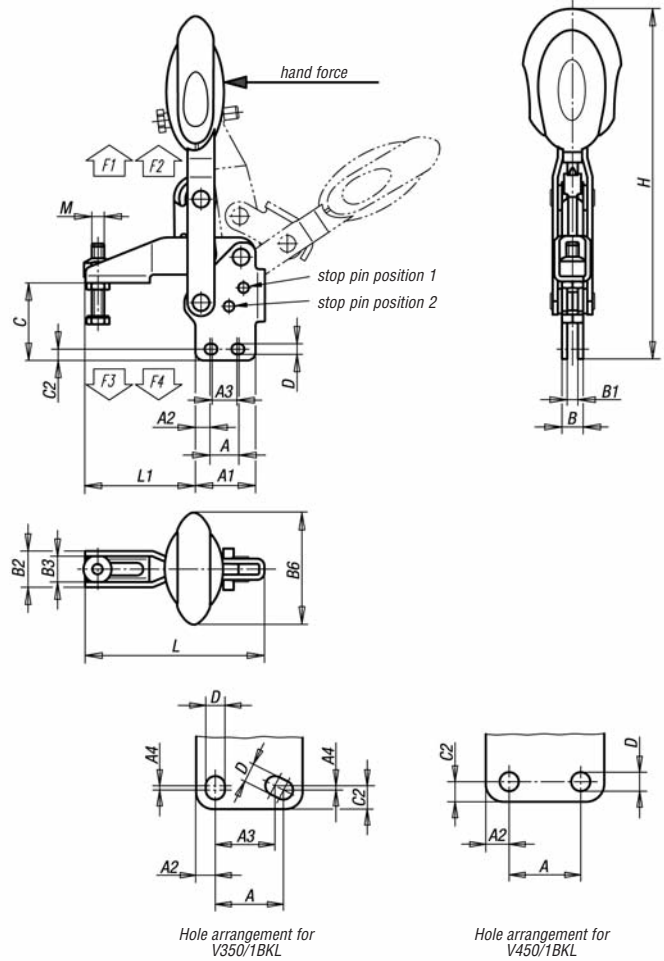
| Order No  | Arm opens through, Position 1 | Arm opens through, Position 2 | Arm opens through, pin removed | Handle opens through, Position 1 | Handle opens through, Position 2 | Handle opens through, pin removed | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F3 daN |
|-----------|-------------------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|-----------------------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| V150/2BKL | 56°                           | 83°                           | 156°                           | 46°                              | 56°                              | 84°                               | 16            | 135                 | 165                 | 92                   | 105                  |
| V250/2BKL | 13°                           | 93°                           | 157°                           | 26°                              | 61°                              | 86°                               | 19            | 200                 | 280                 | 94                   | 135                  |
| V350/2BKL | 6°                            | 97°                           | 175°                           | 19°                              | 59°                              | 91°                               | 25            | 250                 | 450                 | 150                  | 280                  |
| V450/2BKL | 11°                           | 88°                           | 163°                           | 24°                              | 60°                              | 91°                               | 30            | 300                 | 550                 | 140                  | 280                  |

| Order No  | M      | A  | A1 | A2   | A3 | B  | B1 | B2   | B3   | B4 | B6   | C    | D   | H     | L     | L1    |
|-----------|--------|----|----|------|----|----|----|------|------|----|------|------|-----|-------|-------|-------|
| V150/2BKL | M6x35  | 14 | 29 | 7    | 12 | 27 | 38 | 17.5 | 12.4 | -  | 53.4 | 24.7 | 5.5 | 162.9 | 86.5  | 53.0  |
| V250/2BKL | M8x45  | 21 | 39 | 9    | 19 | 32 | 45 | 20.6 | 15.5 | -  | 51.1 | 32.7 | 6.8 | 191.4 | 107.0 | 62.0  |
| V350/2BKL | M10x55 | 32 | 50 | 8    | 27 | 45 | 64 | 25.5 | 18.4 | 38 | 56.5 | 38.7 | 9   | 230.5 | 153.0 | 95.0  |
| V450/2BKL | M12x70 | 32 | 53 | 10.5 | -  | 45 | 63 | 28   | 20.9 | -  | 56.5 | 46.7 | 8.8 | 249.1 | 173.5 | 113.5 |

## VERTICAL CLAMPS SAFETY INTERLOCK+

VERTICAL MODELS

V150/1BKL - V450/1BKL



**Material:**  
Steel, with Polyamide handle, TPE unlocking bracket.

**Surface finish:**  
Nitro carburized and black oxidized.

**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Straight.

**Supplied complete with:**  
Setscrew & Nut.

Includes an internal bar lock with automatic safety and maintenance free high quality swivel bushings

CLAMPING PRODUCTS

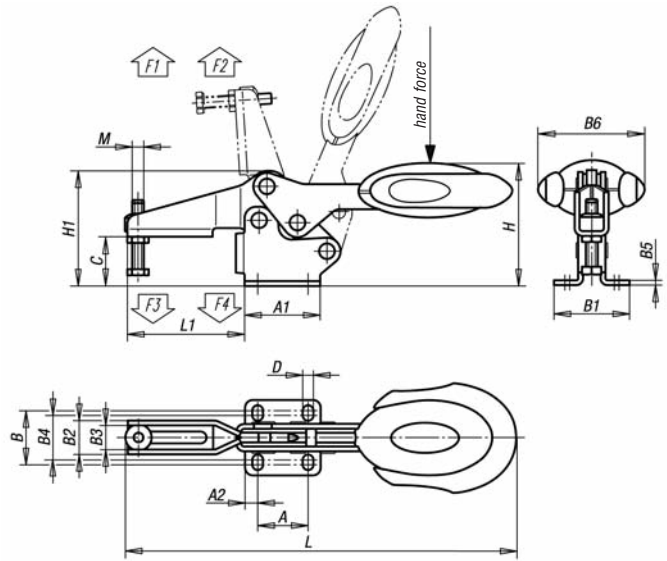
| Order No  | Arm opens through, Position 1 | Arm opens through, Position 2 | Arm opens through, pin removed | Handle opens through, Position 1 | Handle opens through, Position 2 | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F3 daN |
|-----------|-------------------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| V150/1BKL | 56°                           | 83°                           | 156°                           | 46°                              | 56°                              | 16            | 135                 | 165                 | 92                   | 105                  |
| V250/1BKL | 13°                           | 93°                           | 157°                           | 26°                              | 61°                              | 19            | 200                 | 280                 | 94                   | 135                  |
| V350/1BKL | 6°                            | 97°                           | 175°                           | 19°                              | 59°                              | 25            | 250                 | 450                 | 150                  | 280                  |
| V450/1BKL | 11°                           | 88°                           | 163°                           | 24°                              | 60°                              | 28            | 300                 | 550                 | 140                  | 280                  |

| Order No  | M      | A  | A1 | A2   | A3 | A4  | B    | B1  | B2   | B3   | B6   | C    | C2  | D   | H     | L     | L1    |
|-----------|--------|----|----|------|----|-----|------|-----|------|------|------|------|-----|-----|-------|-------|-------|
| V150/1BKL | M6x35  | 14 | 29 | 7    | 12 | -   | 10.2 | 5.2 | 17.5 | 12.4 | 53.4 | 37.6 | 5.5 | 5.5 | 175.7 | 86.5  | 53.0  |
| V250/1BKL | M8x45  | 21 | 39 | 9    | 19 | -   | 10.2 | 5.2 | 20.6 | 15.5 | 51.1 | 49   | 6.5 | 6.8 | 207.6 | 107.0 | 62.0  |
| V350/1BKL | M10x55 | 32 | 50 | 8    | 27 | 3.5 | 14.1 | 7.1 | 25.5 | 18.4 | 56.5 | 62.3 | 13  | 9   | 254   | 153.0 | 95.0  |
| V450/1BKL | M12x70 | 32 | 53 | 10.5 | -  | -   | 14.1 | 7.1 | 28   | 20.9 | 56.5 | 69.8 | 9   | 8.8 | 271.9 | 173.5 | 113.5 |

## HORIZONTAL CLAMPS SAFETY INTERLOCK+

HORIZONTAL MODELS

H150/2BKL - H450/2BKL



**Material:**

Steel, with Polyamide handle, TPE unlocking bracket.

**Surface finish:**

Nitro carburized and black oxidized.

**Arm:**

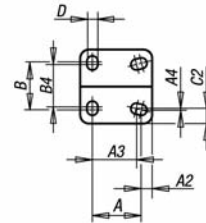
The spindle position is adjustable along the arm.

**Base:**

Flanged.

**Supplied complete with:**

Setscrew & Nut.



Hole arrangement for H450/2BKL

Includes an internal bar lock with automatic safety and maintenance free high quality swivel bushings

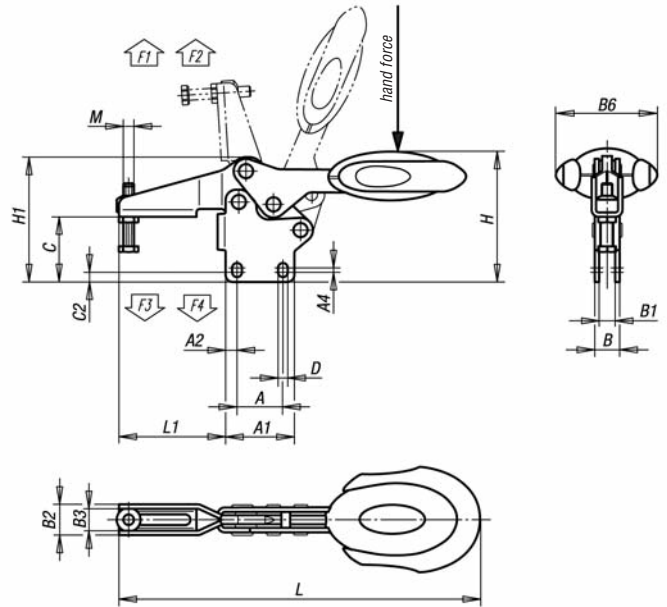
| Order No  | Arm opens through | Handle opens through | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F4 daN |
|-----------|-------------------|----------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| H150/2BKL | 87°               | 68°                  | 16            | 135                 | 190                 | 72                   | 120                  |
| H250/2BKL | 88°               | 68°                  | 20            | 200                 | 280                 | 83                   | 140                  |
| H350/2BKL | 90°               | 71°                  | 25            | 220                 | 450                 | 120                  | 280                  |
| H450/2BKL | 88°               | 68°                  | 28            | 240                 | 550                 | 100                  | 280                  |

| Order No  | M      | A    | A1 | A2  | A3 | A4 | B  | B1 | B2   | B3   | B4 | B5  | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|-----------|--------|------|----|-----|----|----|----|----|------|------|----|-----|------|------|------|-----|-------|-------|-------|-------|
| H150/2BKL | M6x35  | 26   | 39 | 6.5 | -  | -  | 28 | 39 | 17.5 | 12.4 | 23 | 2.5 | 43.5 | 25.5 | -    | 5.5 | 63.2  | 59.5  | 186.7 | 60.5  |
| H250/2BKL | M8x45  | 26   | 44 | 9   | -  | -  | 31 | 45 | 21   | 15.7 | 24 | 2.5 | 41.5 | 32.2 | -    | 6.2 | 73.9  | 70    | 223.2 | 74.9  |
| H350/2BKL | M10x55 | 41.5 | 59 | 9   | -  | -  | 43 | 59 | 26   | 18.7 | 39 | 3.5 | 47   | 40   | -    | 8.8 | 94.8  | 87.9  | 279.4 | 103.9 |
| H450/2BKL | M12x70 | 44   | 65 | 10  | 40 | 1  | 42 | 67 | 28   | 20.9 | 40 | 3.5 | 47   | 52.3 | 13.5 | 8.5 | 104.8 | 101.6 | 314.7 | 122   |

## HORIZONTAL CLAMPS SAFETY INTERLOCK+

HORIZONTAL MODELS

H150/1BKL - H450/1BKL



**Material:**  
Steel, with Polyamide handle, TPE unlocking bracket.

**Surface finish:**  
Nitro carburized and black oxidized.

**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Straight.

**Supplied complete with:**  
Setscrew & Nut.

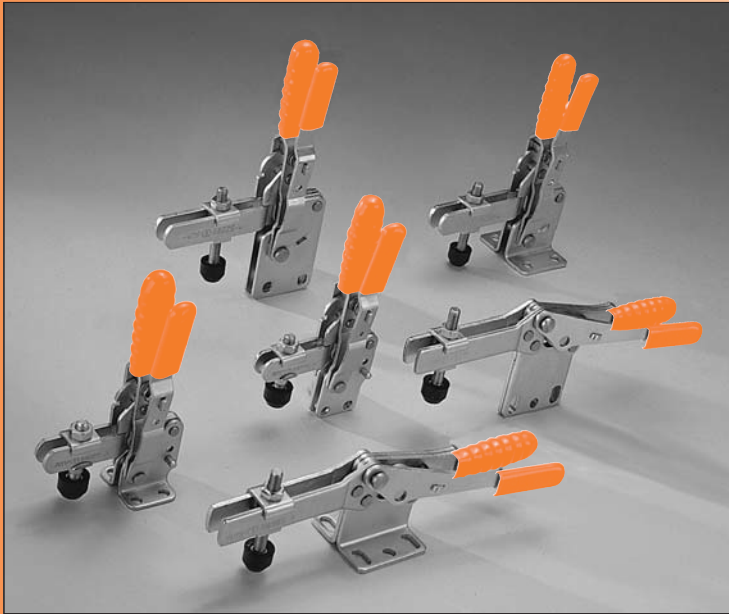
*Includes an internal bar lock with automatic safety and maintenance free high quality swivel bushings*

CLAMPING PRODUCTS

| Order No  | Arm opens through | Handle opens through | Handforce daN | Holdingforce F1 daN | Holdingforce F2 daN | Clampingforce F3 daN | Clampingforce F4 daN |
|-----------|-------------------|----------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| H150/1BKL | 87°               | 68°                  | 16            | 135                 | 190                 | 72                   | 120                  |
| H250/1BKL | 88°               | 68°                  | 20            | 200                 | 280                 | 83                   | 140                  |
| H350/1BKL | 90°               | 71°                  | 25            | 220                 | 450                 | 120                  | 280                  |
| H450/1BKL | 88°               | 68°                  | 28            | 240                 | 550                 | 100                  | 280                  |

| Order No  | M      | A    | A1 | A2  | A3 | A4  | B    | B1  | B2   | B3   | B6   | C    | C2   | D   | H     | H1    | L     | L1    |
|-----------|--------|------|----|-----|----|-----|------|-----|------|------|------|------|------|-----|-------|-------|-------|-------|
| H150/1BKL | M6x35  | 26   | 39 | 6.5 | -  | 2.5 | 14.1 | 9.1 | 17.5 | 12.4 | 43.5 | 37   | 5.5  | 5.5 | 74.2  | 71    | 186.8 | 60.5  |
| H250/1BKL | M8x45  | 26   | 44 | 9   | -  | 3.5 | 14.1 | 9.1 | 21   | 15.7 | 41.5 | 46.5 | 7    | 6.2 | 88.2  | 84.4  | 223.2 | 74.9  |
| H350/1BKL | M10x55 | 41.5 | 59 | 9   | -  | 2   | 16.2 | 9.2 | 26   | 18.7 | 47   | 59.6 | 8    | 8.8 | 114.4 | 107.5 | 279.3 | 103.9 |
| H450/1BKL | M12x70 | 44   | 65 | 11  | 40 | 1   | 16.2 | 67  | 28   | 20.9 | 47   | 75.9 | 13.5 | 8.5 | 128.4 | 125.2 | 314.7 | 122   |





## POSITIVE LOCKING CLAMPS

- Positive safety lock, in clamped and open position
- Unique mechanical locking mechanism
- Ideal for applications where the toggle clamp is used upside down or inverted
- Stainless steel rivets and hardened bushes for longer life

## POSITIVE LOCKING CLAMPS

V250 SERIES  
MODEL V250/2BBLC



**Arm:**  
The spindle position is adjustable along the arm.

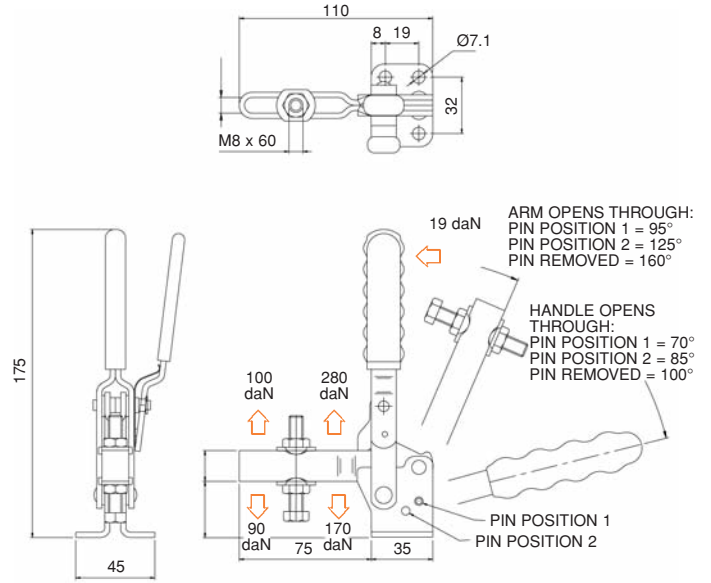
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



V250 SERIES  
MODEL V250/1BBLC



**Arm:**  
The spindle position is adjustable along the arm.

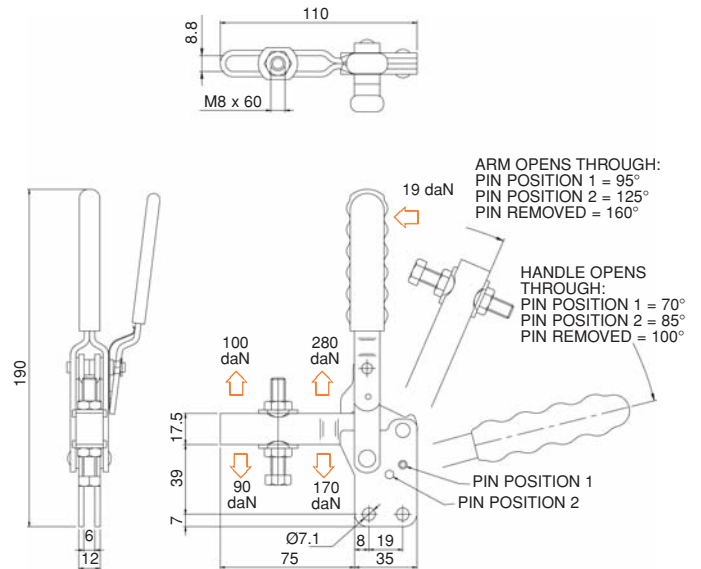
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

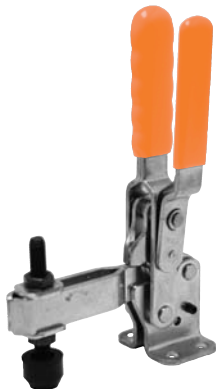
**Weight:**  
0.38 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.  
FW08/15 Flanged washers.

See "Accessories" for other items.



V350 SERIES  
MODEL V350/2BBLC



**Arm:**  
The spindle position is adjustable along the arm.

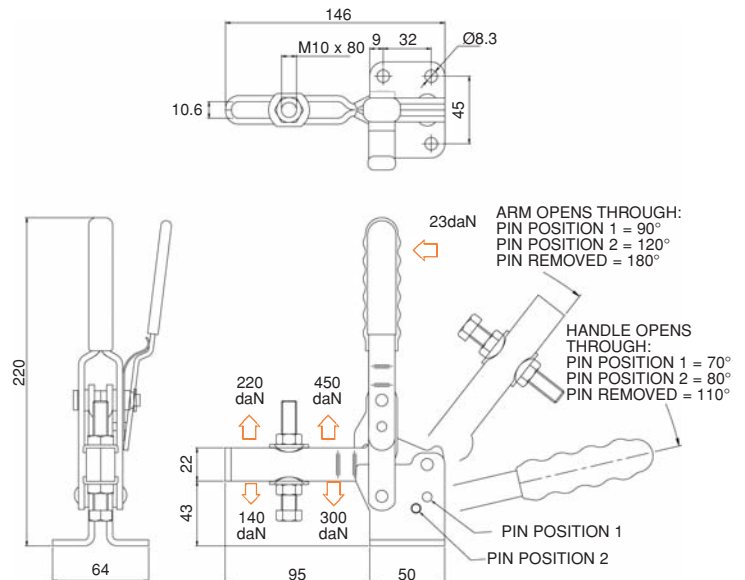
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.8 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.  
FW10/20 Flanged washers.

See "Accessories" for other items.



## POSITIVE LOCKING CLAMPS

**V350 SERIES**  
**MODEL V350/1BBLC**



**Arm:**  
 The spindle position is adjustable along the arm.

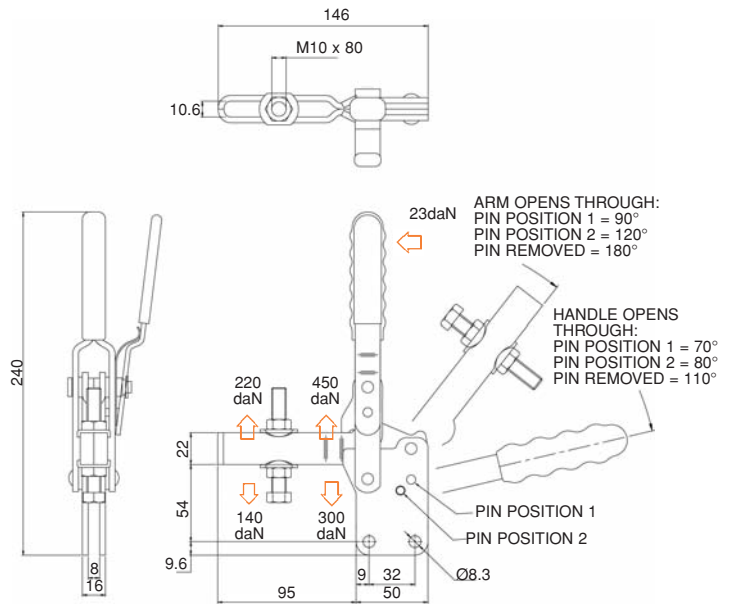
**Base:**  
 Straight.

**Nominal Holding Force:**  
 350 daN

**Weight:**  
 0.8 Kg

**Supplied complete with:**  
 MB1080 Setscrew & nuts.  
 FW10/20 Flanged washers.

See "Accessories" for other items.



**V250 SERIES**  
**MODEL V250/1BLC**



**Arm:**  
 The spindle position is adjustable along the length of the arm.

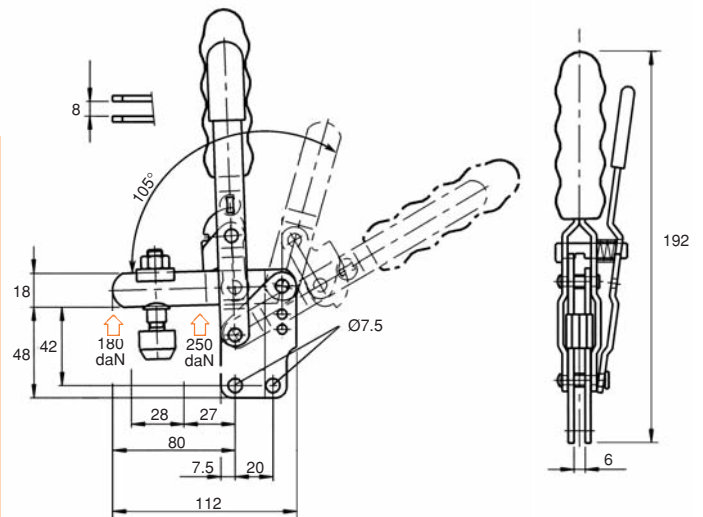
**Base:**  
 Straight.

**Nominal Holding Force:**  
 250 daN

**Weight:**  
 0.47 Kg

**Supplied complete with:**  
 Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.



**V250 SERIES**  
**MODEL V250/2BLC**



**Arm:**  
 The spindle position is adjustable along the length of the arm.

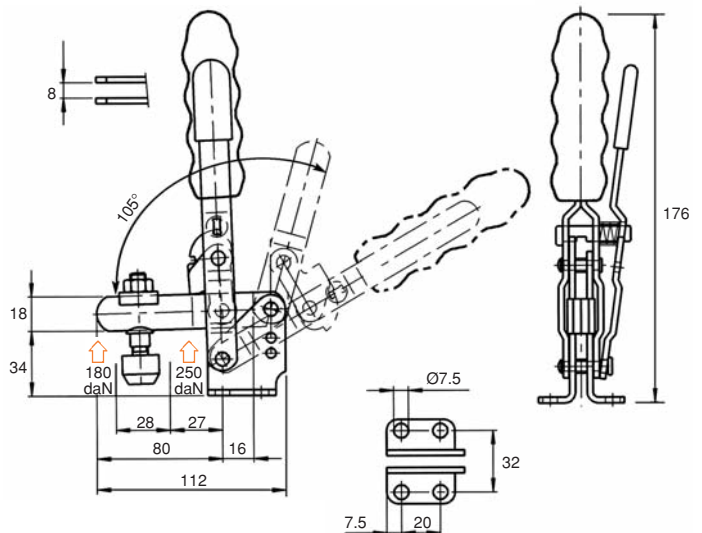
**Base:**  
 Flanged.

**Nominal Holding Force:**  
 250 daN

**Weight:**  
 0.47 Kg

**Supplied complete with:**  
 Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.



## POSITIVE LOCKING CLAMPS

V250 SERIES

MODEL V250/3BLC



**Arm:**  
The spindle position is adjustable along the length of the arm.

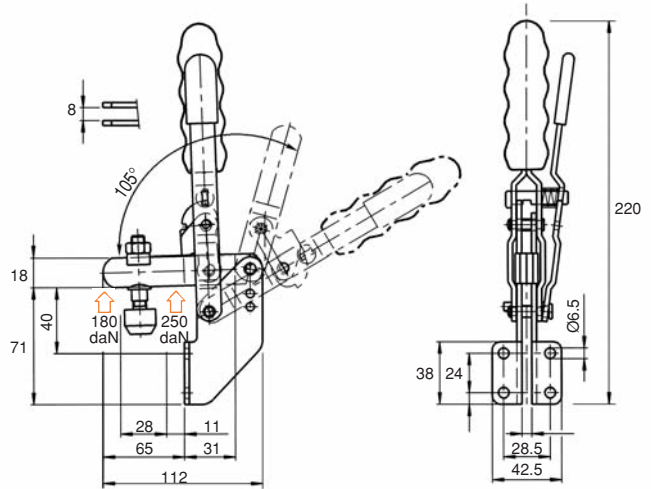
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.535 Kg

**Supplied complete with:**  
Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.



V350 SERIES

MODEL V350/1BLC



**Arm:**  
The spindle position is adjustable along the length of the arm.

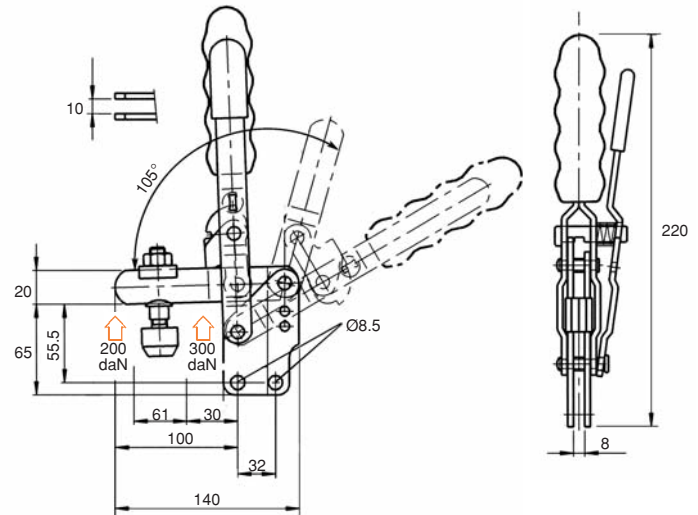
**Base:**  
Straight.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.69 Kg

**Supplied complete with:**  
Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.



V350 SERIES

MODEL V350/2BLC



**Arm:**  
The spindle position is adjustable along the length of the arm.

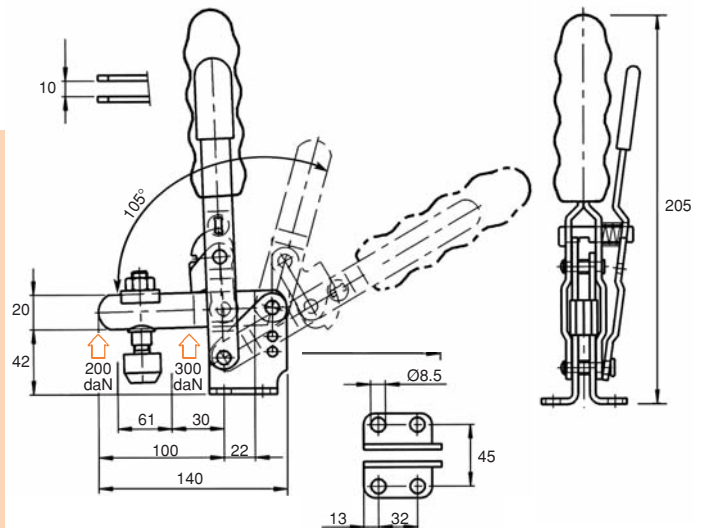
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.69 Kg

**Supplied complete with:**  
Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.



## POSITIVE LOCKING CLAMPS

### H350 SERIES

#### MODEL H350/1BLC



**Arm:**

The spindle position is adjustable along the length of the arm.

**Base:**

Straight.

**Nominal Holding Force:**

350 daN

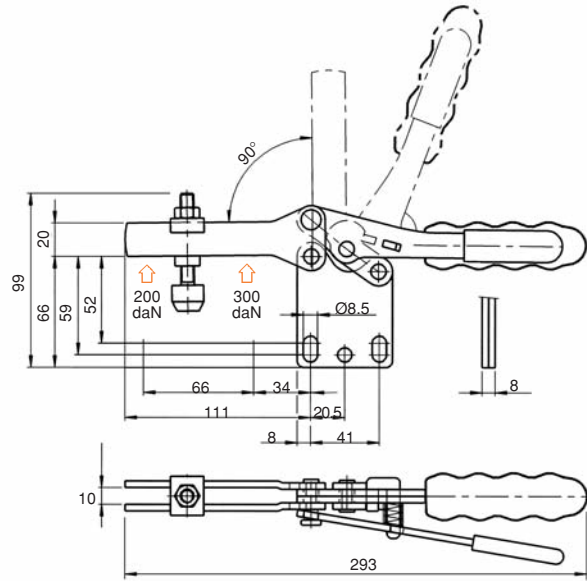
**Weight:**

0.8 Kg

**Supplied complete with:**

Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.



### H350 SERIES

#### MODEL H350/2BLC



**Arm:**

The spindle position is adjustable along the length of the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**

350 daN

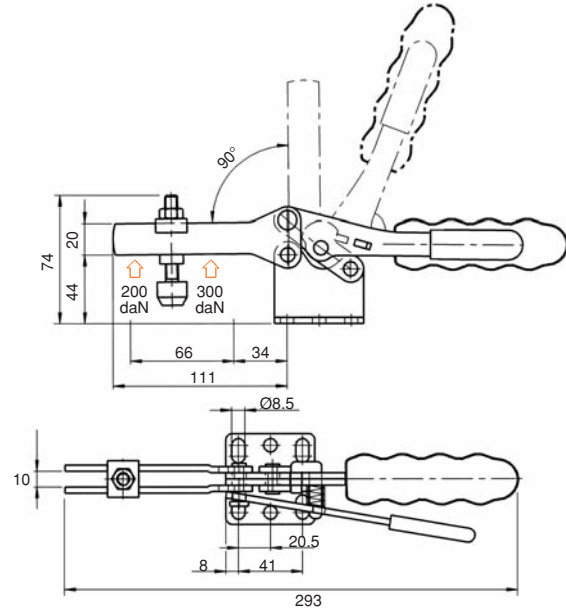
**Weight:**

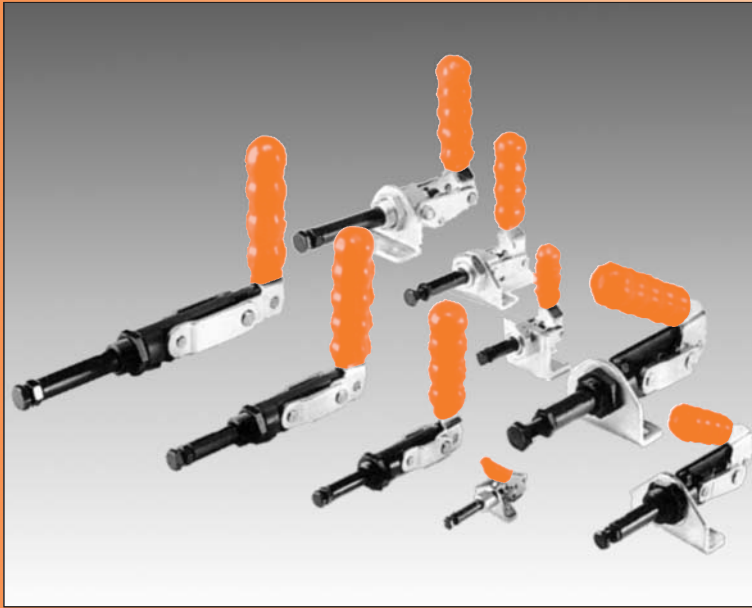
0.8 Kg

**Supplied complete with:**

Zinc plated screw, nut, washers and neoprene cover.

See "Accessories" for other items.





## PUSH-PULL CLAMPS

- **Features:**

With the exception of model P50, which is a light duty base mounted clamp, these push-pull clamps are mounted either directly into a threaded or plain hole in a fixture, or can be mounted in a bracket which is either supplied with the clamp or offered as an accessory.

Nose mounting allows the clamp to be rotated to the required angle and locked by means of the locknut provided.

Models P100, P200 and P400 offer long strokes in light-duty clamps, while models P350, P550 and P750 are compact and robust, with their plunger movement tightly controlled.

A comfortable, cushioned PVC handle grip is fitted to all push-pull clamps.

- **Specification:**

The main components are of steel with either a zinc plated and passivated or manganese phosphated finish. All models are supplied with a steel setscrew and locknut finished chemi-black.

- **Installation:**

When mounting clamps ensure that the mechanism clears the mounting bracket or fixture.

## PUSH-PULL CLAMPS

### P50 SERIES MODEL P50



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

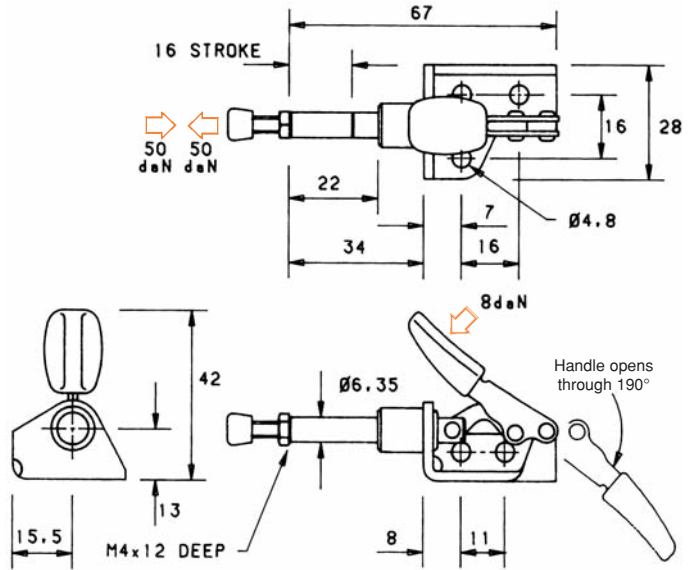
**Base:**  
Fixed Flange with bottom or side mounting.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
MB0420 Setscrew & nut.  
NC/04 Neoprene cover.

See "Accessories" for other items.



### P50 SERIES MODEL P50SS

STAINLESS  
STEEL



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

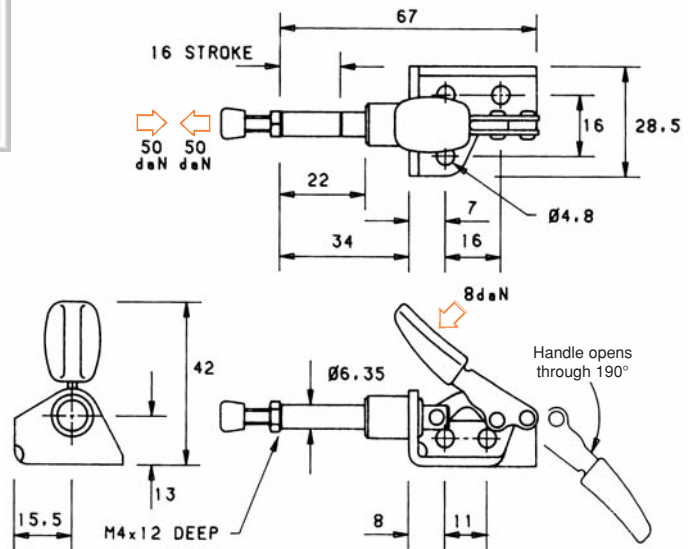
**Base:**  
Fixed Flange with bottom or side mounting.

**Nominal Holding Force:**  
50 daN

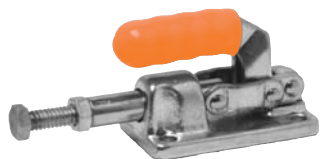
**Weight:**  
0.05 Kg

**Supplied complete with:**  
Setscrew & nut.  
Neoprene cover.

**Material:**  
BS 304 S15



### P6015 SERIES MODEL P6015



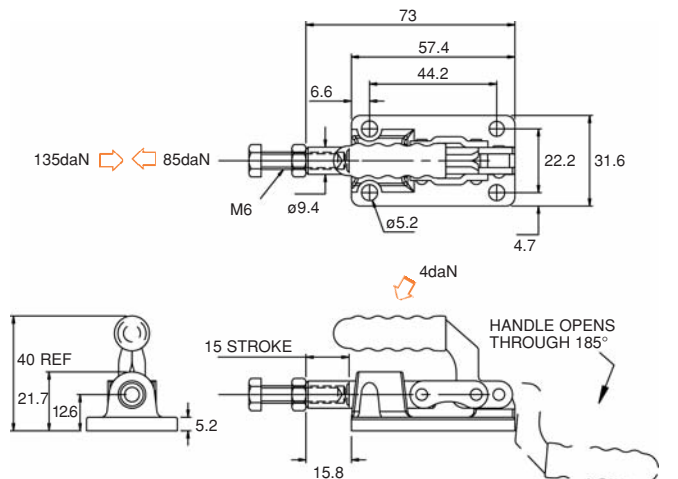
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Body mounting.

**Nominal Holding Force:**  
135 daN

**Weight:**  
0.150 Kg

**Supplied complete with:**  
MB0625 Setscrew & nut.



## PUSH-PULL CLAMPS

### P605 SERIES

#### MODEL P605



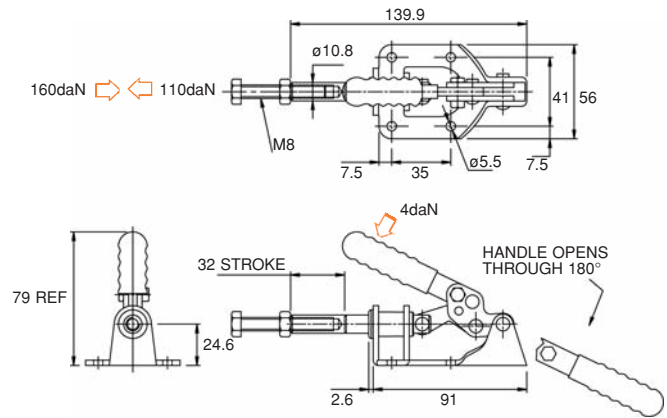
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Body mounted fixed flange.

**Nominal Holding Force:**  
160 daN

**Weight:**  
0.30 Kg

**Supplied complete with:**  
MB0840 Setscrew & nut.



### P250 SERIES

#### MODEL P250



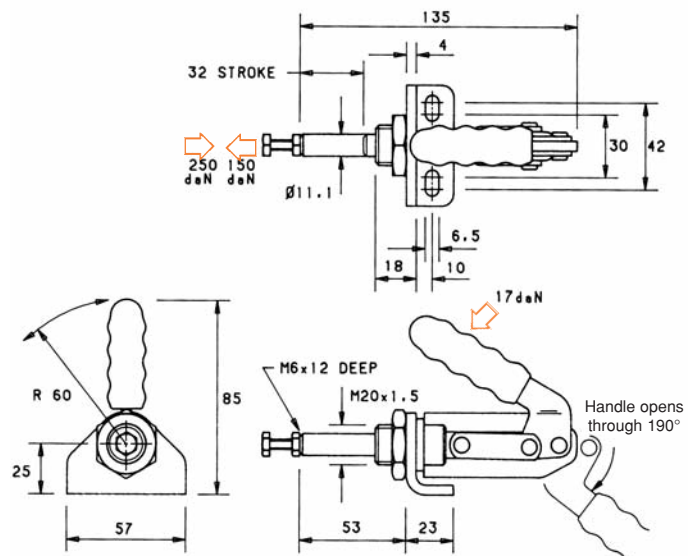
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.30 Kg

**Supplied complete with:**  
MB0625 Setscrew & nut.  
Mounting bracket & locknut.  
*See "Accessories" for alternative FM20 Mounting Bracket & other items.*



### P450 SERIES

#### MODEL P450



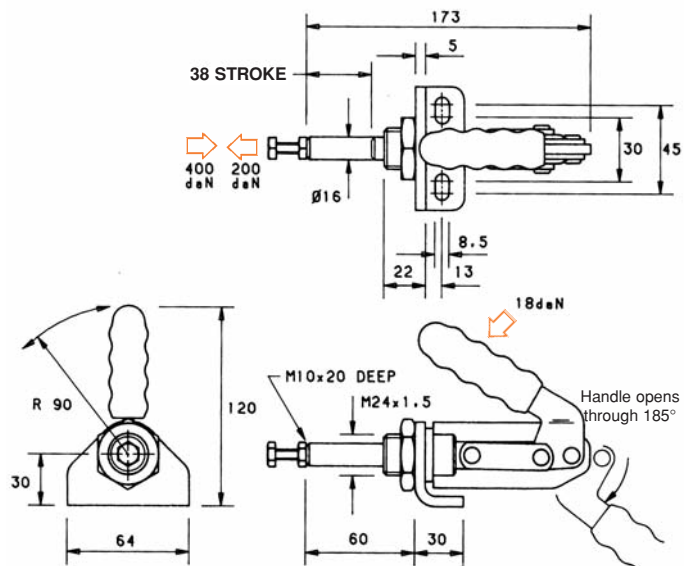
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
450 daN

**Weight:**  
0.75 Kg

**Supplied complete with:**  
MB1050 Setscrew & nut.  
Mounting bracket & locknut.  
*See "Accessories" for alternative FM24 Mounting Bracket & other items.*





## PUSH-PULL CLAMPS

### P100 SERIES MODEL P100



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

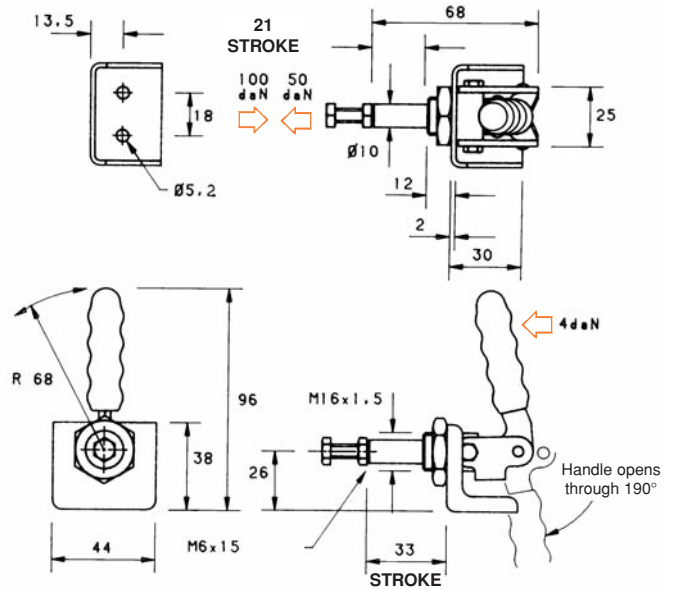
**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
MB0625 Setscrew & nut.  
Mounting bracket & locknut.

See "Accessories" for  
alternative FM16 Mounting  
Bracket & other items.



### P100 SERIES MODEL P100SS



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

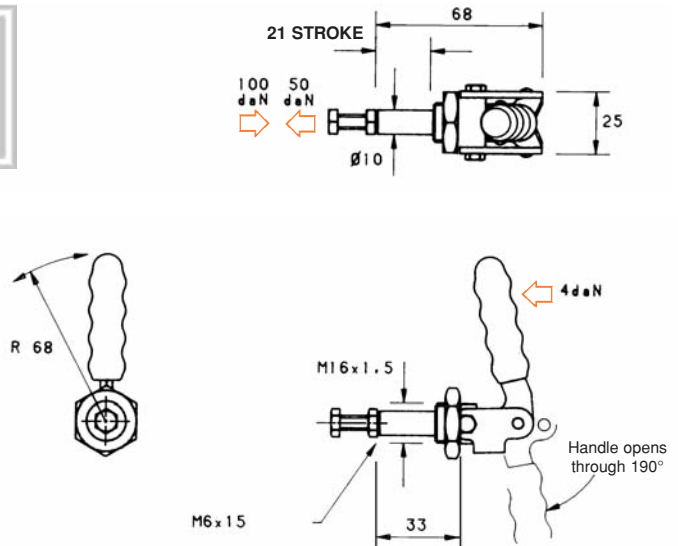
**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
100 daN

**Weight:**  
0.15 Kg

**Supplied complete with:**  
Setscrew & nut.

**Material:**  
BS 304 S15



### P200 SERIES MODEL P200



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

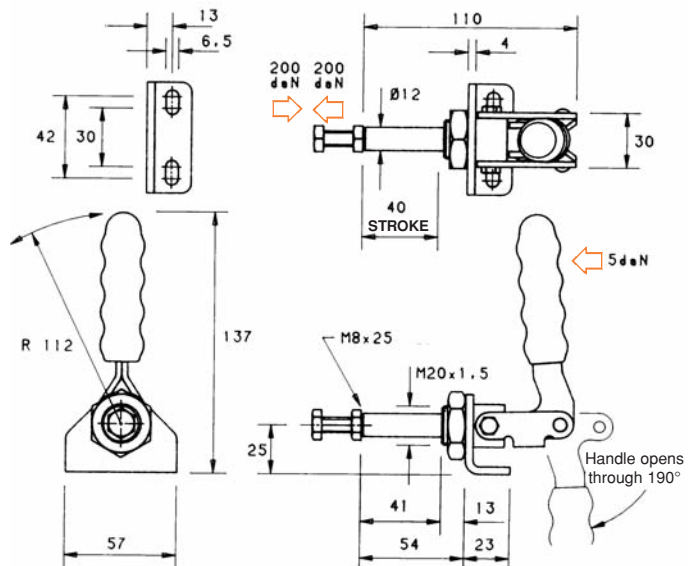
**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.35 Kg

**Supplied complete with:**  
MB0840 Setscrew & nut.  
Mounting bracket & locknut.

See "Accessories" for  
alternative FM20 Mounting  
Bracket & other items.



## PUSH-PULL CLAMPS

**P200 SERIES**  
MODEL P200SS

**STAINLESS  
STEEL**



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

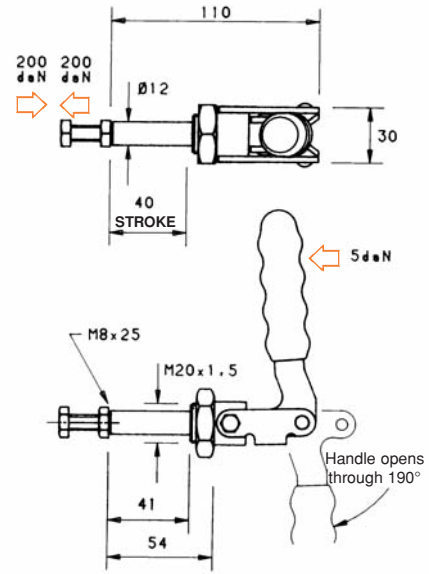
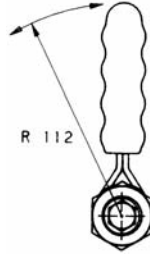
**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
200 daN

**Weight:**  
0.35 Kg

**Supplied complete with:**  
Setscrew & nut.

**Material:**  
BS 304 S15



**P400 SERIES**  
MODEL P400



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

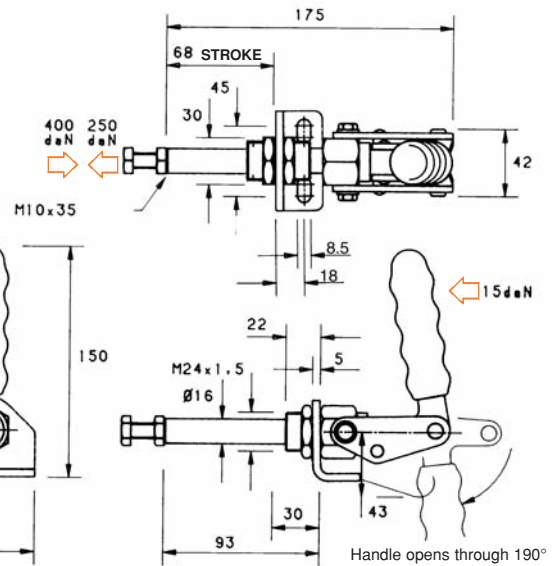
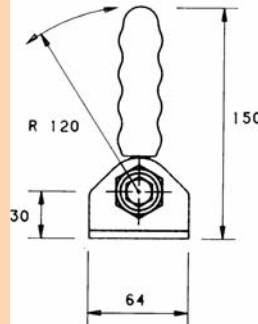
**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
400 daN

**Weight:**  
0.80 Kg

**Supplied complete with:**  
MB1050 Setscrew & nut.  
Mounting bracket & locknut.

See "Accessories" for  
alternative FM24 Mounting  
Bracket & other items.



**P400 SERIES**  
MODEL P400SS

**STAINLESS  
STEEL**



**Plunger:**  
Locks at both extended & retracted ends of the stroke.

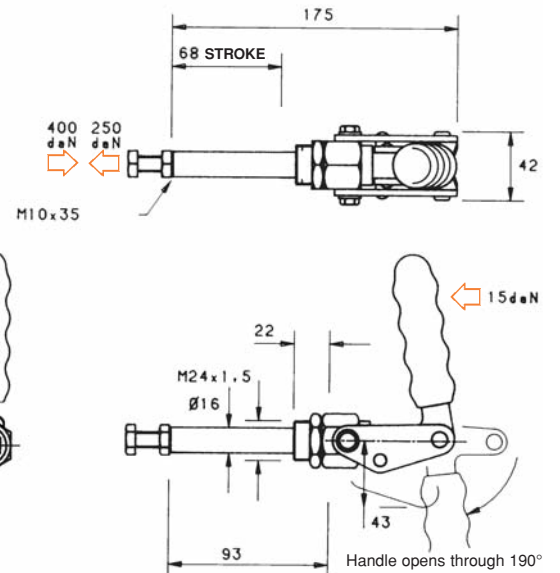
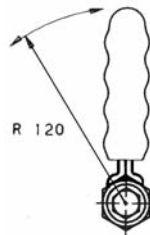
**Base:**  
Nose or flange mounting.

**Nominal Holding Force:**  
400 daN

**Weight:**  
0.80 Kg

**Supplied complete with:**  
Setscrew & nut.

**Material:**  
BS 304 S15



## PUSH-PULL CLAMPS

**P650 SERIES**  
**MODEL P650**



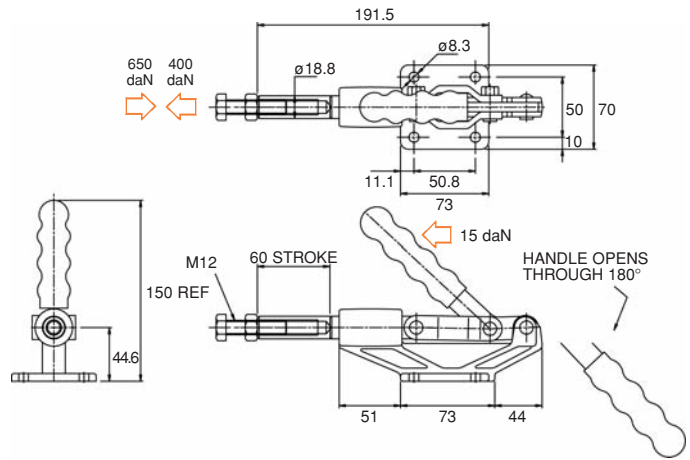
**Plunger:**  
 Locks at both extended & retracted ends of the stroke.

**Base:**  
 Body mounting.

**Nominal Holding Force:**  
 650 daN

**Weight:**  
 1.48 Kg

**Supplied complete with:**  
 MB1050 Setscrew & nut.



**'SLIMLINE' PUSH-PULL CLAMPS**  
**MODEL P350**



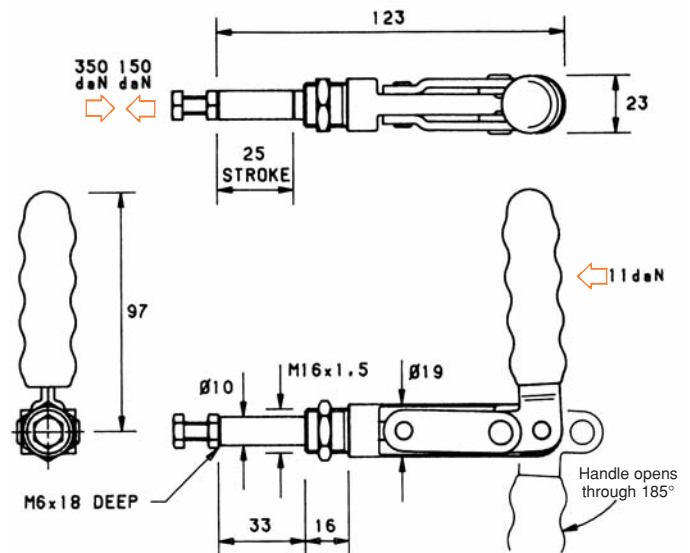
**Plunger:**  
 Locks at both extended & retracted ends of the stroke.

**Base:**  
 Nose mounting.

**Nominal Holding Force:**  
 350 daN

**Weight:**  
 0.20 Kg

**Supplied complete with:**  
 MB0625 Setscrew & nut.  
 See "Accessories" for FM16 Mounting Bracket & other items.



**'SLIMLINE' PUSH-PULL CLAMPS**  
**MODEL P550**



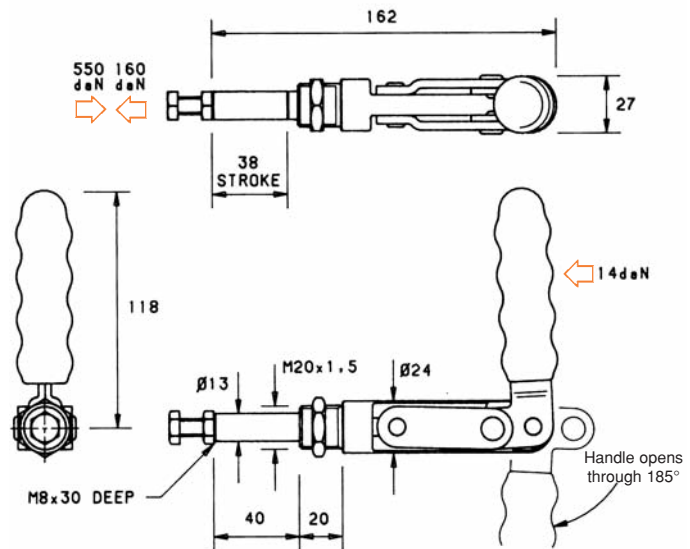
**Plunger:**  
 Locks at both extended & retracted ends of the stroke.

**Base:**  
 Nose mounting.

**Nominal Holding Force:**  
 550 daN

**Weight:**  
 0.45 Kg

**Supplied complete with:**  
 MB0840 Setscrew & nut.  
 See "Accessories" for FM20 Mounting Bracket & other items.



## PUSH-PULL CLAMPS

### 'SLIMLINE' PUSH-PULL CLAMPS

MODEL P750



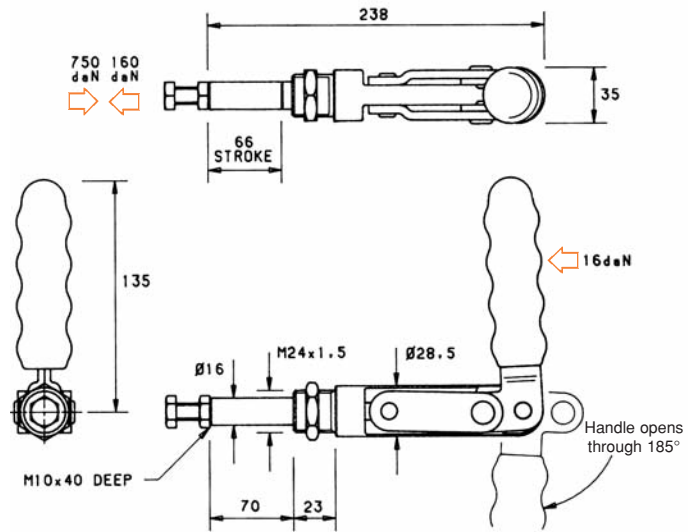
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Nose mounting.

**Nominal Holding Force:**  
750 daN

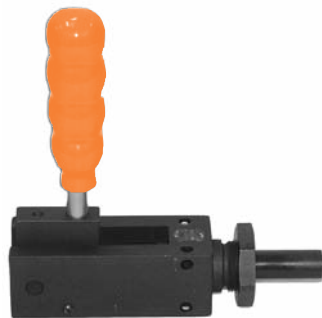
**Weight:**  
1.00 Kg

**Supplied complete with:**  
MB1050 Setscrew & nut.  
See "Accessories" for FM24 Mounting Bracket & other items.



### 'PRECISION' PUSH-PULL CLAMP

MODEL SP700



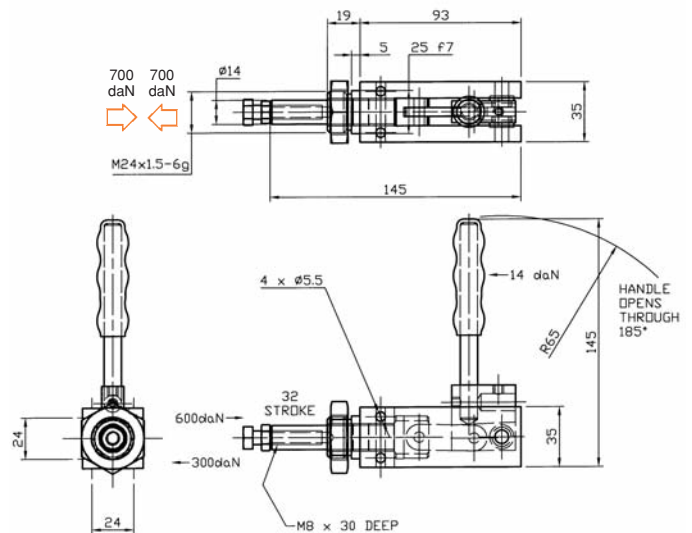
**Plunger:**  
Ground steel precision self-locking at forward stroke position.

**Base:**  
Carbon steel precision machined, nose mounting or body mounting.

**Nominal Holding Force:**  
700 daN

**Weight:**  
0.83 Kg

**Supplied complete with:**  
MB0840 setscrew & nuts.



### 'PRECISION' PUSH-PULL CLAMP

MODEL P1150

P2250

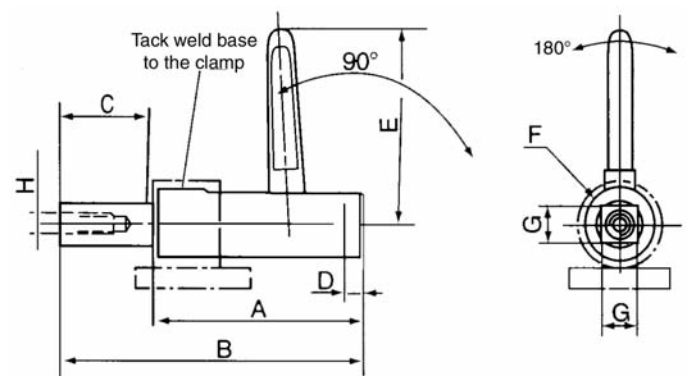


**Piston:**  
Locks at the extended end of the stroke.

**Base:**  
Fixed by using accessories overleaf.

**Holding Force:**  
P1150 - 1 150 daN  
P2250 - 2 250 daN

**Weight:**  
P1150 - 1,150Kg  
P2250 - 1,850Kg



| MODEL | A   | B     | C  | D  | E   | F  | G    | H   |
|-------|-----|-------|----|----|-----|----|------|-----|
| P1150 | 108 | 159   | 46 | 10 | 112 | 35 | 19   | M12 |
| P2250 | 141 | 212.5 | 55 | 14 | 127 | 45 | 24.8 | M16 |

## PUSH-PULL CLAMPS

### 'PRECISION' PUSH-PULL CLAMP

MODEL **P1150L**  
**P2250L**

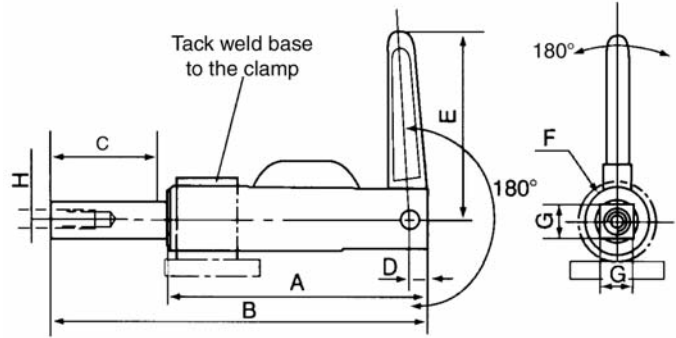


**Piston:**  
Locks at the extended end of the stroke.

**Base:**  
Fixed by using accessories overleaf.

**Holding Force:**  
P1150L - 1 150 daN  
P2250L - 2 250 daN

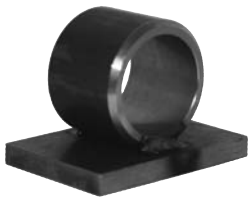
**Weight:**  
P1150L - 1,150Kg  
P2250L - 1,850Kg



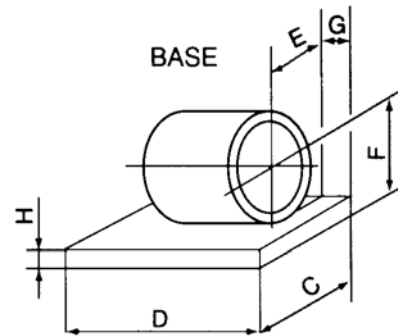
| MODEL  | A     | B     | C  | D  | E   | F  | G    | H   |
|--------|-------|-------|----|----|-----|----|------|-----|
| P1150L | 149.9 | 215.9 | 60 | 10 | 112 | 35 | 19   | M12 |
| P2250L | 194   | 281   | 78 | 14 | 127 | 45 | 24.8 | M16 |

### BASE ACCESSORIES

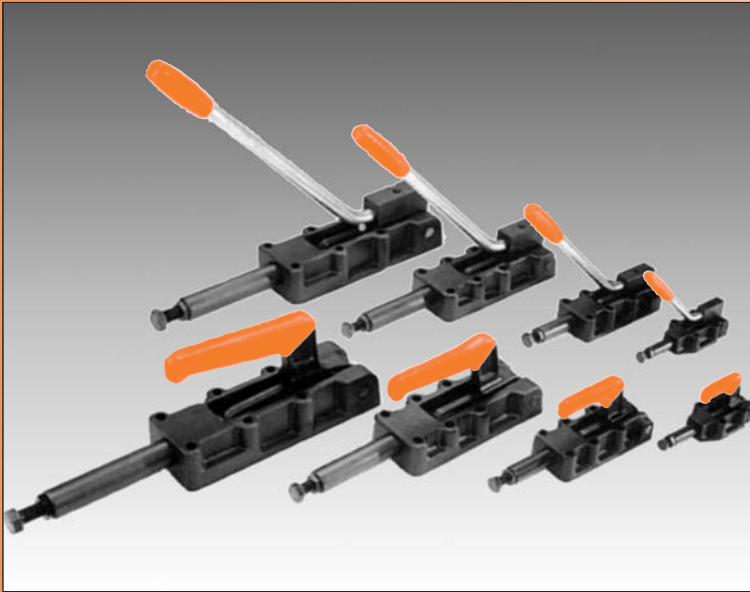
MODEL **P1150, P1150L, P2250 & P2250L**



**Weight of base:**  
1150B - 0.38Kg  
2250B - 0.90Kg



| BASE  | C  | D  | E  | F    | G   | H   |
|-------|----|----|----|------|-----|-----|
| 1150B | 70 | 50 | 35 | 30.1 | 6.5 | 7.6 |
| 2250B | 90 | 70 | 45 | 40   | 7   | 12  |



## HEAVY DUTY PUSH-PULL CLAMPS

- **Features:**

These clamps are of exceptionally robust construction featuring cast and machined handles and bases. The clamps are designed with a low plunger height and with the mechanism guarded within the base to avoid finger traps.

- Models P600, P1200, P2500 and P5000 have handles of normal length for clamping. The long handled 'L' versions (P600L, P1200L, P2500L, and P5000L) have their handles either to the front or rear of the clamp according to the application and produce high forces which make them suitable for clamping or for light work such as swaging, rivetting, press fitting components, etc. All models are fitted with a comfortable, cushioned PVC handle grip.

- **Specification:**

The bases of all models, and the handles of models P600, P1200, P2500 and P5000 are machined S.G. iron castings.

The handles of the 'L' versions are of steel bar and mount in housings which are either machined steel castings or machined from steel bar.

- The plungers are of steel, and their precision ground diameter runs in a close-toleranced hole in the base casting.

All axles are of hardened steel and run in either the S.G. iron of the handle, or in the close-toleranced holes of hardened parts.

All models are supplied with a steel setscrew finished chemi-black.

## HEAVY-DUTY PUSH-PULL CLAMPS

MODEL P600



**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.

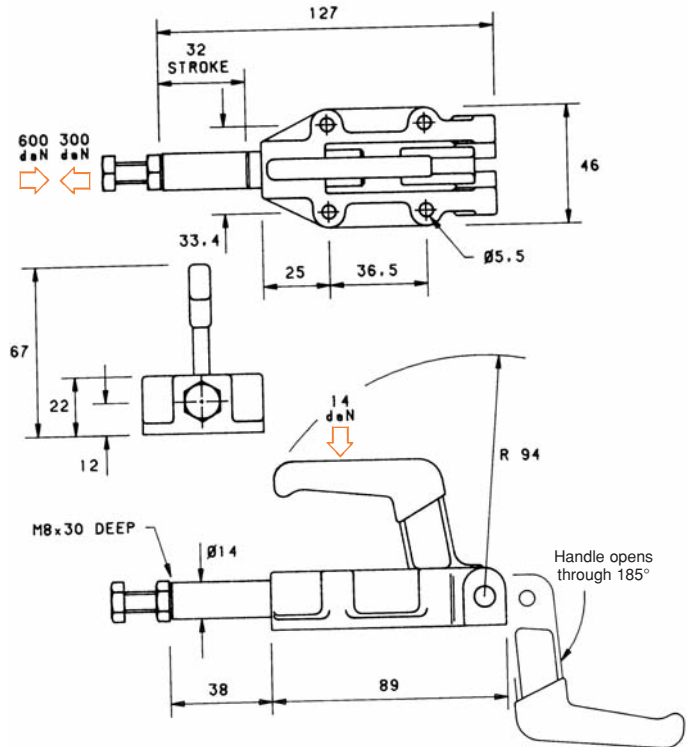
**Base:** SG Iron Casting.  
Body mounting.

**Nominal Holding Force:**  
600 daN

**Weight:**  
0.45 Kg

**Supplied complete with:**  
MB0840 Setscrew & nut.

See "Accessories" for other items.



MODEL P1200



**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.

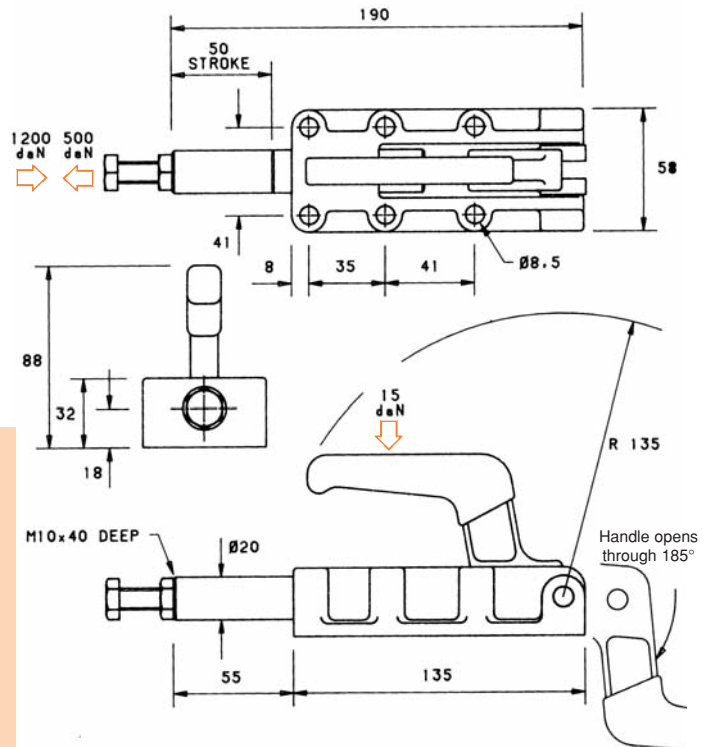
**Base:** SG Iron Casting.  
Body mounting.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.35 Kg

**Supplied complete with:**  
MB1050 Setscrew & nut.

See "Accessories" for other items.

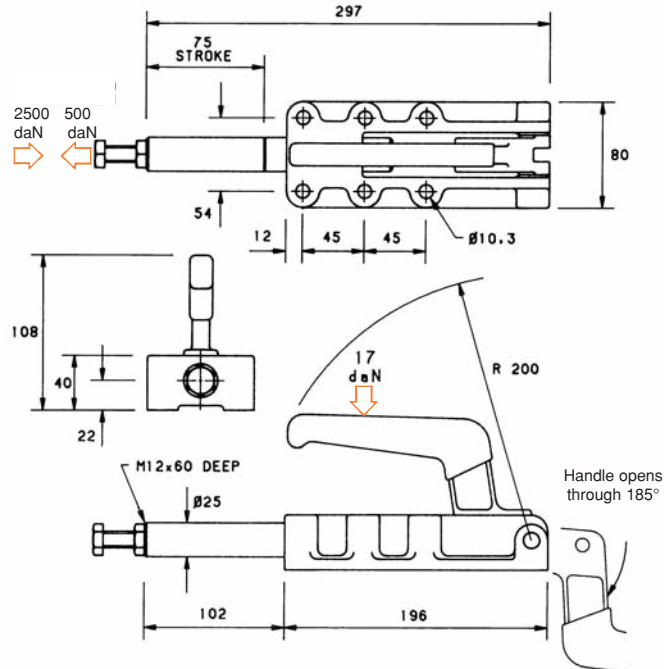


## HEAVY-DUTY PUSH-PULL CLAMPS

MODEL P2500



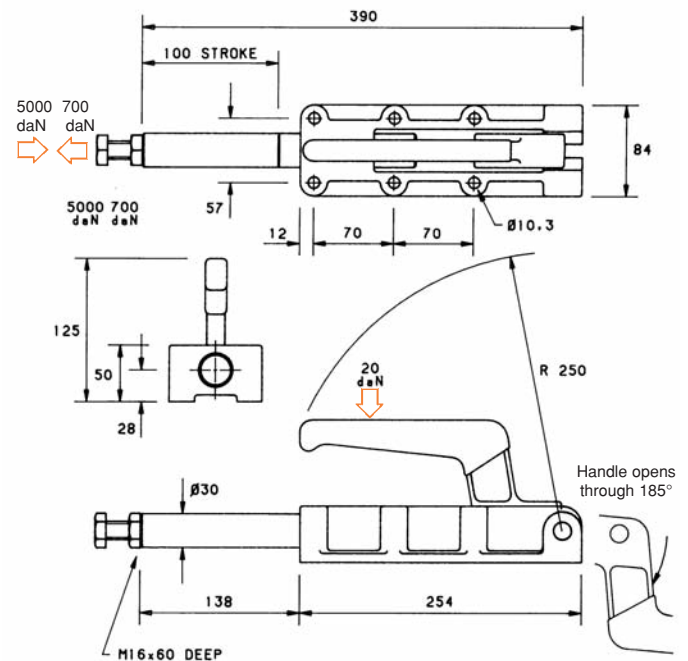
**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.  
**Base:** SG Iron Casting.  
Body mounting.  
**Nominal Holding Force:**  
2500 daN  
**Weight:**  
3.60 Kg  
**Supplied complete with:**  
MB1250 Setscrew & nut.  
*See "Accessories" for other items.*



MODEL P5000



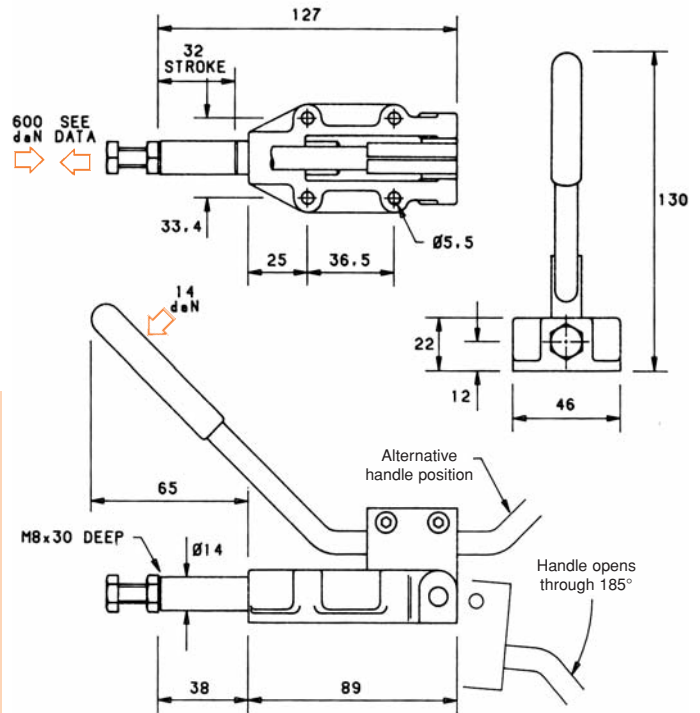
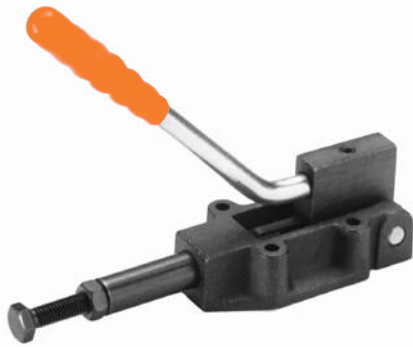
**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.  
**Base:** SG Iron Casting.  
Body mounting.  
**Nominal Holding Force:**  
5000 daN  
**Weight:**  
6.20 Kg  
**Supplied complete with:**  
MB1680 Setscrew & nut.  
*See "Accessories" for other items.*





## HEAVY-DUTY PUSH-PULL CLAMPS

### MODEL P600L



**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.

**Base:** SG Iron Casting.  
Body mounting.

**Nominal Holding Force:**  
600 daN

**Weight:**  
0.55 Kg

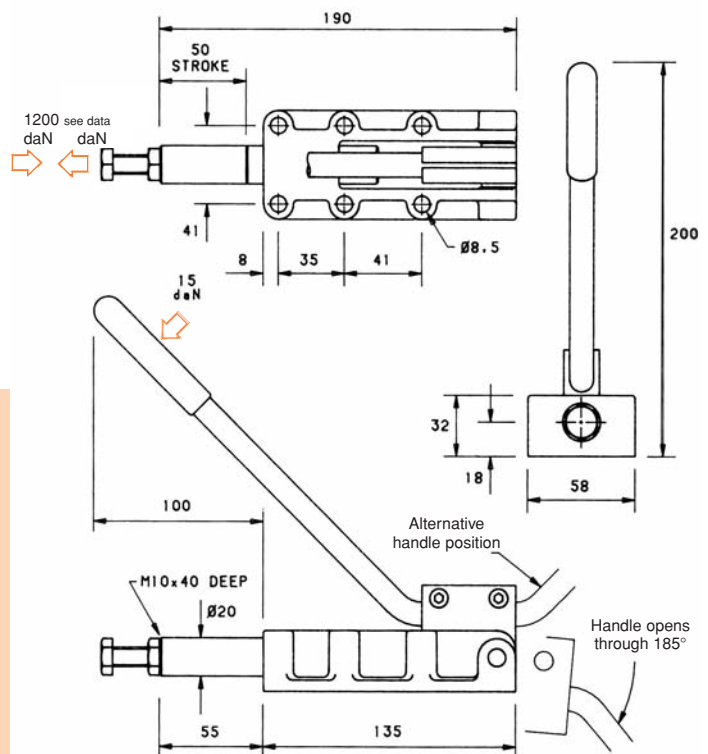
**Supplied complete with:**  
MB0840 Setscrew & nut.

See "Accessories" for other items.

With 14 daN handle force the output force is:

| Extension       | daN |
|-----------------|-----|
| Fully retracted | 470 |
| 5 mm extended   | 110 |
| 10 mm "         | 70  |
| 15 mm "         | 75  |
| 20 mm "         | 80  |
| 25 mm "         | 85  |
| 30 mm "         | 146 |
| 31 mm "         | 190 |
| Fully extended  | 580 |

### MODEL P1200L



**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.

**Base:** SG Iron Casting.  
Body mounting.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.60 Kg

**Supplied complete with:**  
MB1050 Setscrew & nut.

See "Accessories" for other items.

With 15 daN handle force the output force is:

| Extension       | daN |
|-----------------|-----|
| Fully retracted | 705 |
| 5 mm extended   | 167 |
| 10 mm "         | 90  |
| 15 mm "         | 73  |
| 20 mm "         | 70  |
| 25 mm "         | 72  |
| 30 mm "         | 85  |
| 35 mm "         | 100 |
| 40 mm "         | 110 |
| 45 mm "         | 150 |
| 48 mm "         | 220 |
| 49 mm "         | 290 |
| Fully extended  | 930 |

## HEAVY-DUTY PUSH-PULL CLAMPS

### MODEL P2500L



**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.

**Base:** SG Iron Casting.  
Body mounting.

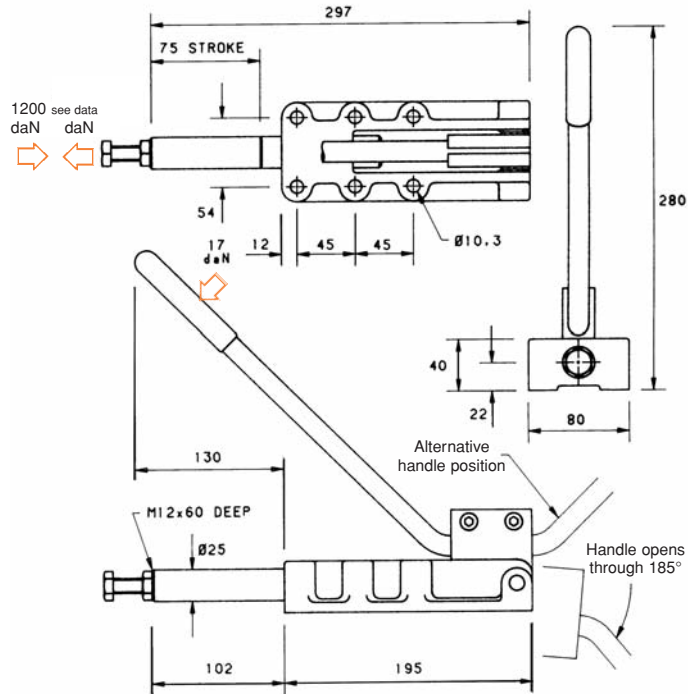
**Nominal Holding Force:**  
2500 daN

**Weight:**  
4.15 Kg

**Supplied complete with:**  
MB1250 Setscrew & nut.

See "Accessories" for other items.

| With 17 daN handle force the output force is: | daN  |
|---|------|
| Fully retracted                               | 1000 |
| 10 mm extended                                | 100  |
| 20 mm "                                       | 72   |
| 30 mm "                                       | 60   |
| 40 mm "                                       | 70   |
| 50 mm "                                       | 88   |
| 60 mm "                                       | 118  |
| 70 mm "                                       | 190  |
| 72 mm "                                       | 230  |
| 74 mm "                                       | 353  |
| Fully extended                                | 1100 |



### MODEL P5000L



**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.

**Base:** SG Iron Casting.  
Body mounting.

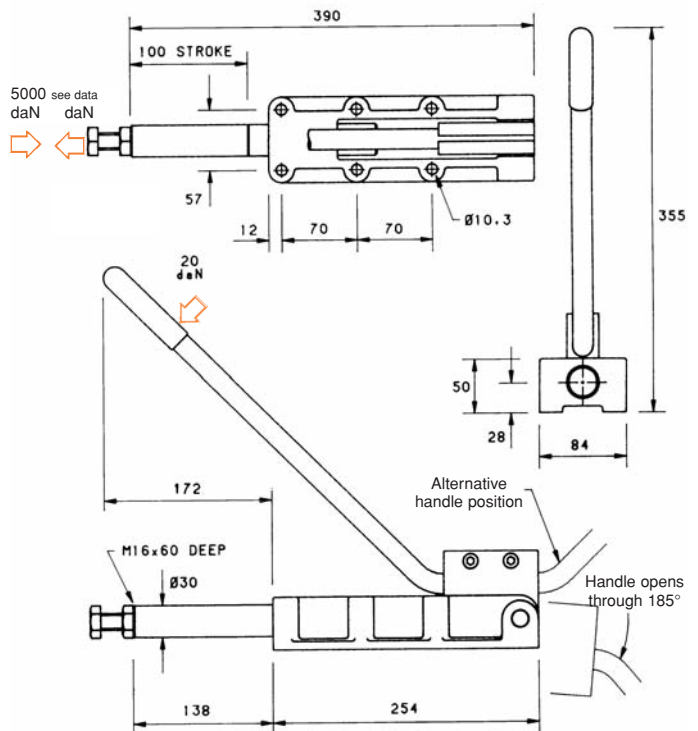
**Nominal Holding Force:**  
5000 daN

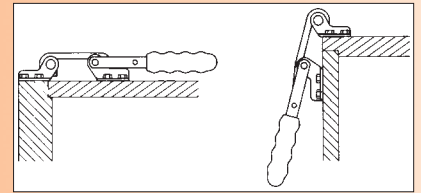
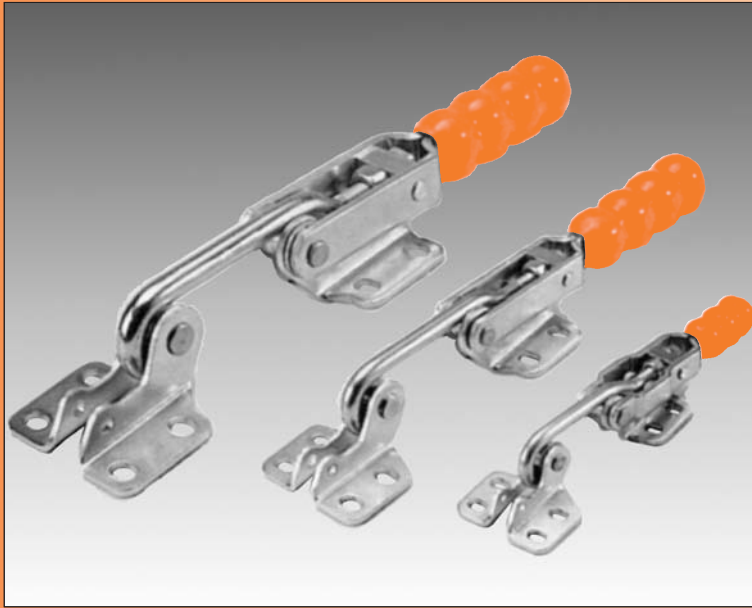
**Weight:**  
7.10 Kg

**Supplied complete with:**  
MB1680 Setscrew & nut.

See "Accessories" for other items.

| With 20 daN handle force the output force is: | daN  |
|---|------|
| Fully retracted                               | 1100 |
| 10 mm extended                                | 180  |
| 20 mm "                                       | 110  |
| 30 mm "                                       | 75   |
| 40 mm "                                       | 80   |
| 50 mm "                                       | 82   |
| 60 mm "                                       | 100  |
| 70 mm "                                       | 100  |
| 80 mm "                                       | 130  |
| 90 mm "                                       | 190  |
| 95 mm "                                       | 250  |
| 97 mm "                                       | 310  |
| 99 mm "                                       | 450  |
| Fully extended                                | 1210 |





## HOOK CLAMPS

- **Features:**

The action of Hook clamps in pulling two parts together makes them suitable for applications such as closing and holding doors, lids, moulds, etc.

A benefit of Hook clamps is that while the clamp and the interface bracket it engages must be in alignment when viewed from the top, there is no such requirement when viewed from the side — the clamp will lock securely over centre regardless of the angle of the hook shown in the diagram above.

The hook may be engaged either directly to a bolt or pin on one of the parts to be pulled together, or to the latch bracket provided.

All Hook clamps are fitted with a comfortable, cushioned handle grip.

- **Specification:**

All components are of zinc plated and passivated steel, the hooks being of high tensile alloy steel.

- **Installation:**

These clamps generate high forces and should not be over adjusted as damage could result. The clamp and its latch bracket must be in alignment when viewed from the top.

## HOOK CLAMPS

MODEL LH200



**Nominal Holding Force:**

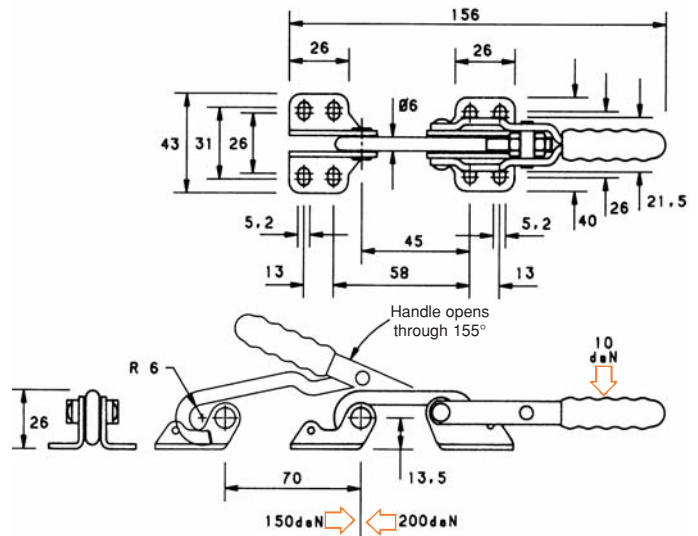
200 daN

**Weight:**

0.10 Kg

**Supplied complete with:**  
Latch Bracket as shown.

See "Features and installation information" page for installation instructions.



MODEL LH200SS

**STAINLESS  
STEEL**



**Nominal Holding Force:**

200 daN

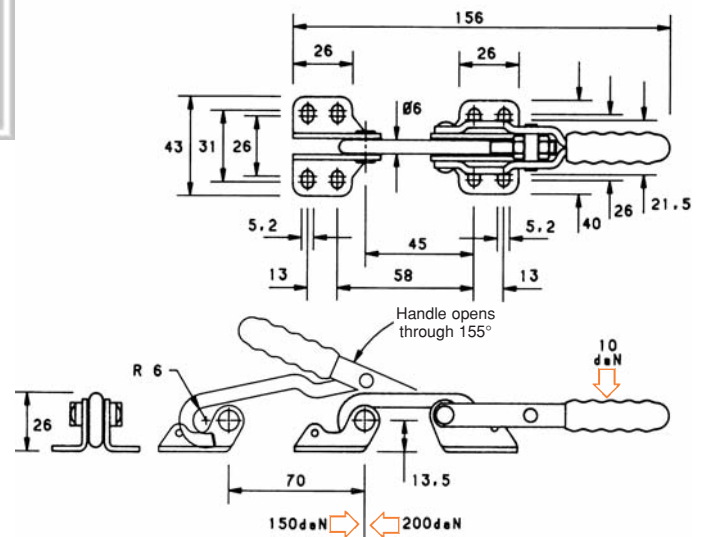
**Weight:**

0.10 Kg

**Supplied complete with:**  
Latch Bracket as shown.

**Material:**  
BS 304 S15

See "Features and installation information" page for installation instructions.



MODEL LH400



**Nominal Holding Force:**

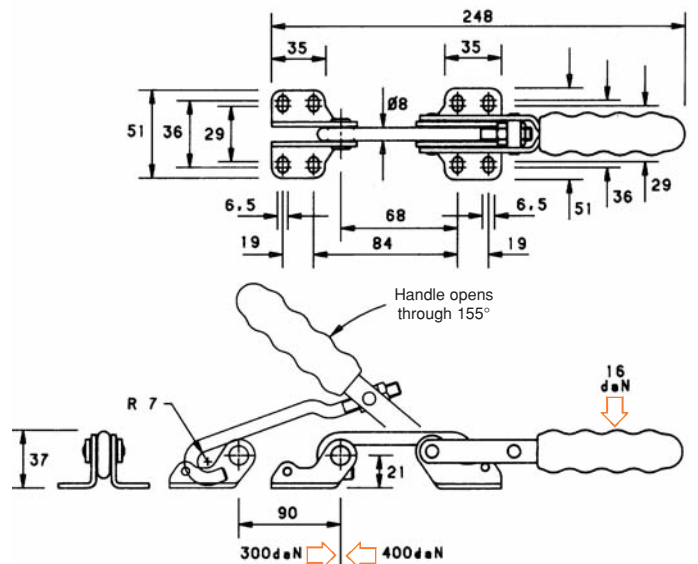
400 daN

**Weight:**

0.35 Kg

**Supplied complete with:**  
Latch Bracket as shown.

See "Features and installation information" page for installation instructions.



## HOOK CLAMPS

MODEL LH400SS

STAINLESS  
STEEL



**Nominal Holding Force:**

400 daN

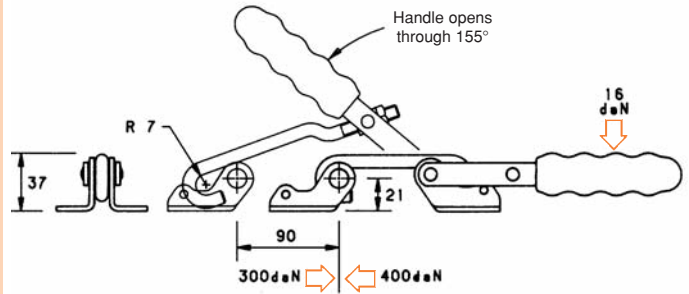
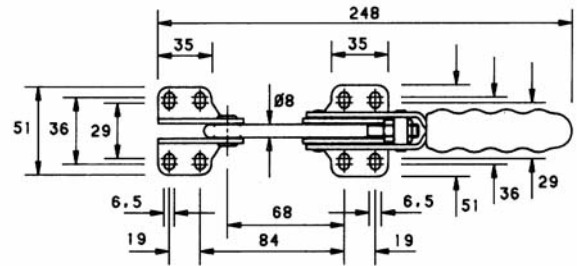
**Weight:**

0.35 Kg

**Supplied complete with:**  
Latch Bracket as shown.

**Material:**  
BS 304 S15

See "Features and installation information" page for installation instructions.



MODEL LH700



**Nominal Holding Force:**

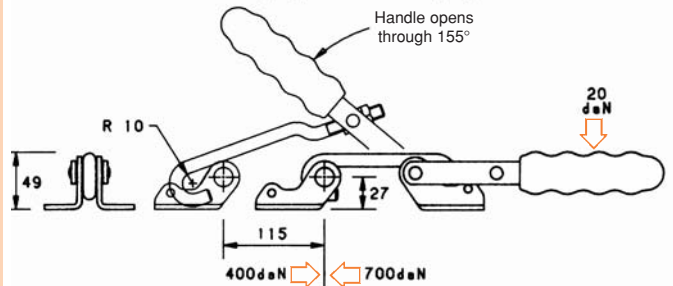
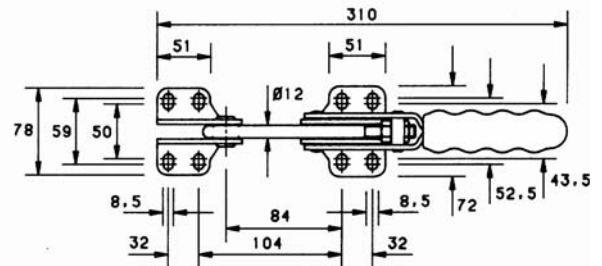
700 daN

**Weight:**

1.00 Kg

**Supplied complete with:**  
Latch Bracket as shown.

See "Features and installation information" page for installation instructions.



MODEL LH700SS

STAINLESS  
STEEL



**Nominal Holding Force:**

700 daN

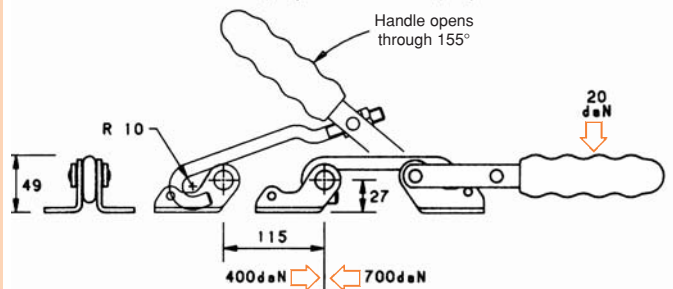
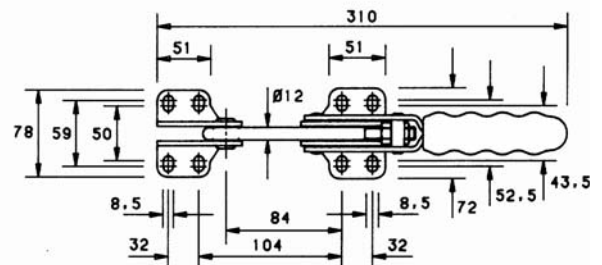
**Weight:**

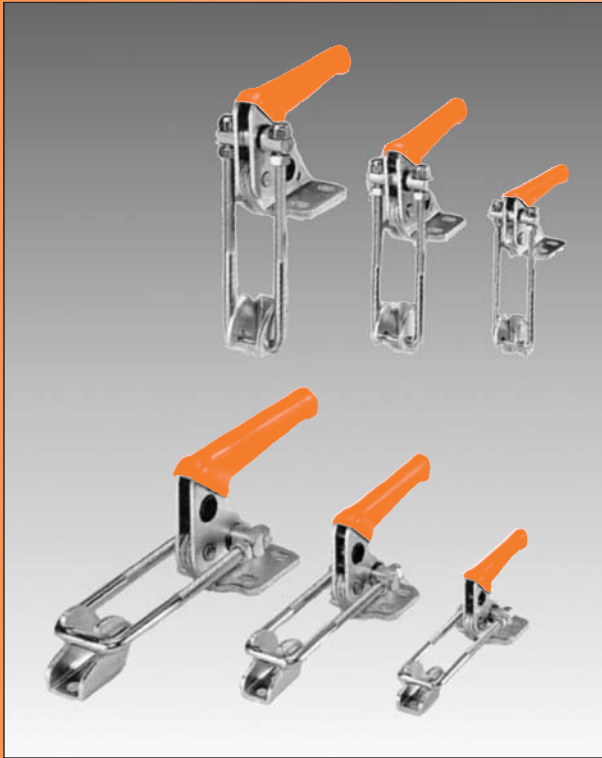
1.00 Kg

**Supplied complete with:**  
Latch Bracket as shown.

**Material:**  
BS 304 S15

See "Features and installation information" page for installation instructions.





## LATCH CLAMPS HORIZONTAL & VERTICAL

- **Features:**

Latch clamps are available in two configurations; horizontal as per bottom of the above photograph, with the clamp and latch bracket in the same plane (LU200H, LU400H, LU700H, LU2000H and LU4000H) or a vertical (corner) configuration as per top of the above photograph, the clamp and bracket being at right angles to each other (LU200V, LU400V, and LU700V).

All latch clamps are fitted with PVC handle grips.

- **Specification:**

The components of both variants of LU200, LU400 and LU700 clamps are of zinc plated and passivated steel, the rivet being of stainless steel and rotating in the close-toleranced hole of hardened parts or in hardened bushes. The handle and the trunnion which holds the 'U'-bolt are also hardened to resist wear.

Clamps LU2000H and LU4000H have precision cast steel bases and latch brackets and handles of S.G. iron.

- **Installation:**

It is important that the clamp and latch bracket of horizontal (H) variants are in alignment when viewed from both the top and the side to ensure that the clamp locks over centre correctly.

Vertical (V) variants should be in alignment when viewed from the top, and, when viewed from the side, the base of the latch bracket should be aligned with the flat front edge of the clamp base and at right angles to it. As illustrated in the top of the above photograph

The 'U' bolt should be adjusted to ensure an equal pull on either side.

## LATCH CLAMPS

### HORIZONTAL MODEL LU200H



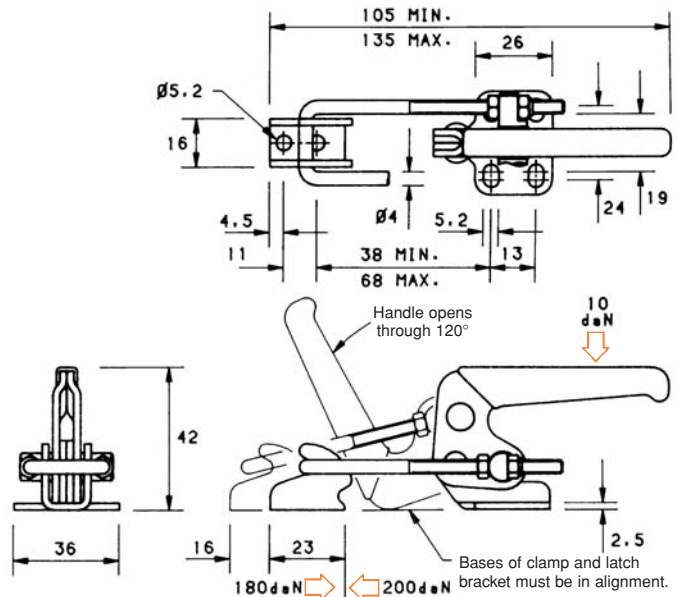
**Nominal Holding Force:**

200 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
Latch Bracket as shown.

See "Features and installation information" page for installation instructions.



### HORIZONTAL MODEL LU200HSS

**STAINLESS  
STEEL**



**Nominal Holding Force:**

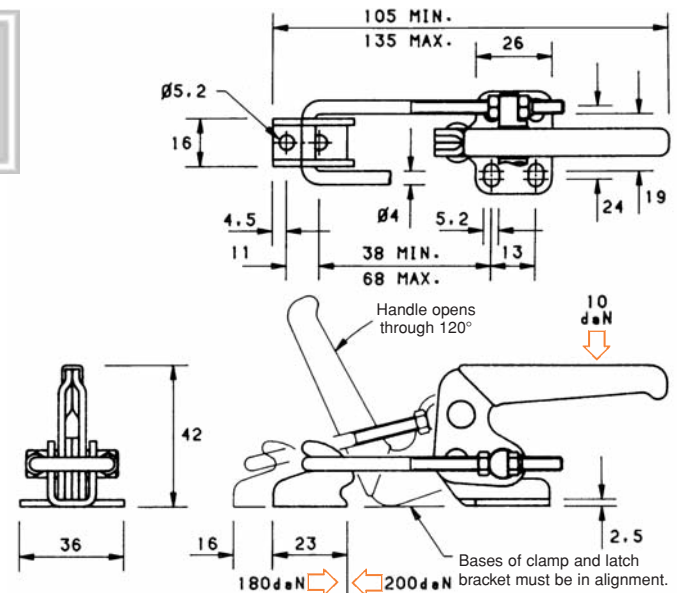
200 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
Latch Bracket as shown.

**Material:**  
BS 304 S15.

See "Features and installation information" page for installation instructions.



### HORIZONTAL MODEL LU400H



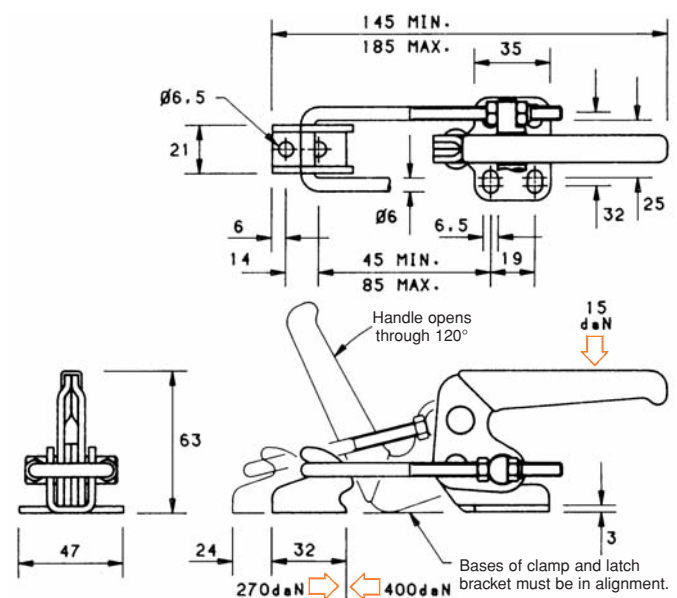
**Nominal Holding Force:**

400 daN

**Weight:**  
0.25 Kg

**Supplied complete with:**  
Latch Bracket as shown.

See "Features and installation information" page for installation instructions.



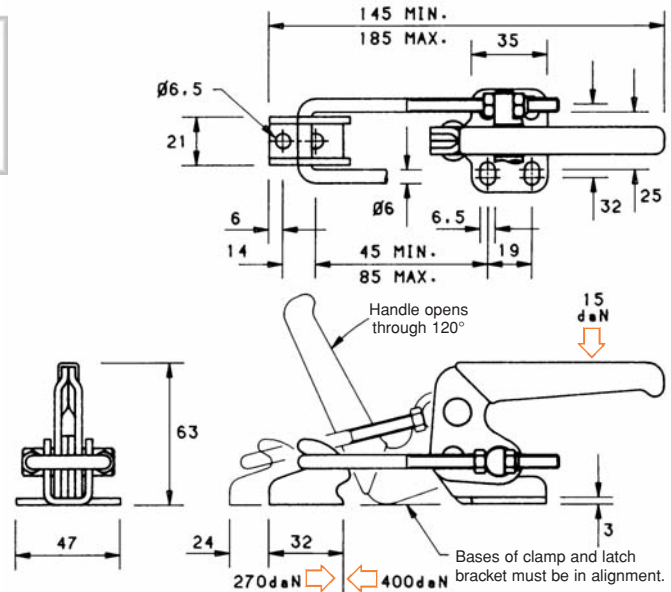
## LATCH CLAMPS

**HORIZONTAL**  
MODEL LU400HSS

**STAINLESS  
STEEL**



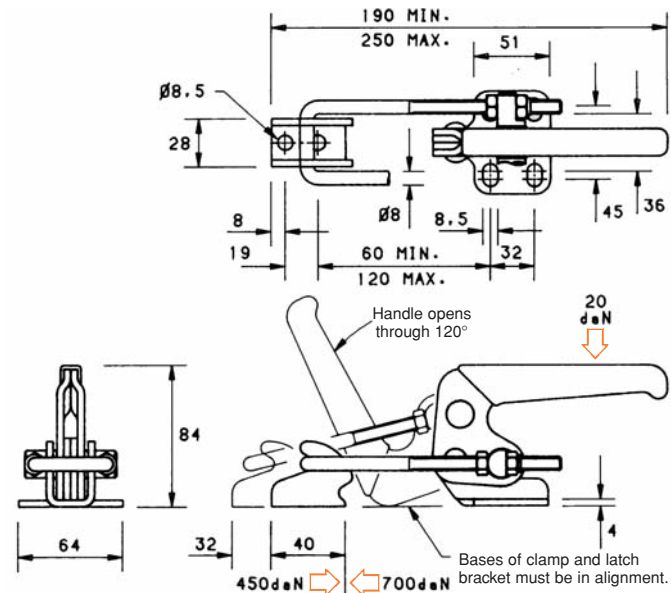
**Nominal Holding Force:**  
400 daN  
**Weight:**  
0.25 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
**Material:**  
BS 304 S15.  
See "Features and installation information" page for installation instructions.



**HORIZONTAL**  
MODEL LU700H



**Nominal Holding Force:**  
700 daN  
**Weight:**  
0.70 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
See "Features and installation information" page for installation instructions.

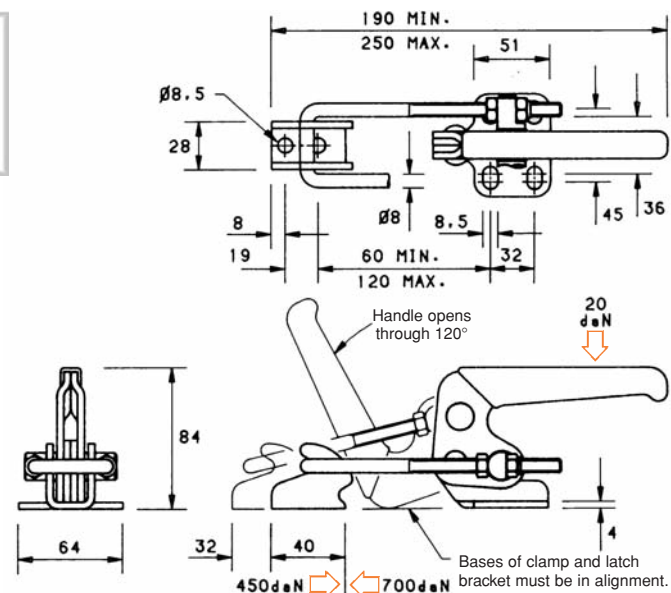


**HORIZONTAL**  
MODEL LU700HSS

**STAINLESS  
STEEL**



**Nominal Holding Force:**  
700 daN  
**Weight:**  
0.70 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
**Material:**  
BS 304 S15.  
See "Features and installation information" page for installation instructions.



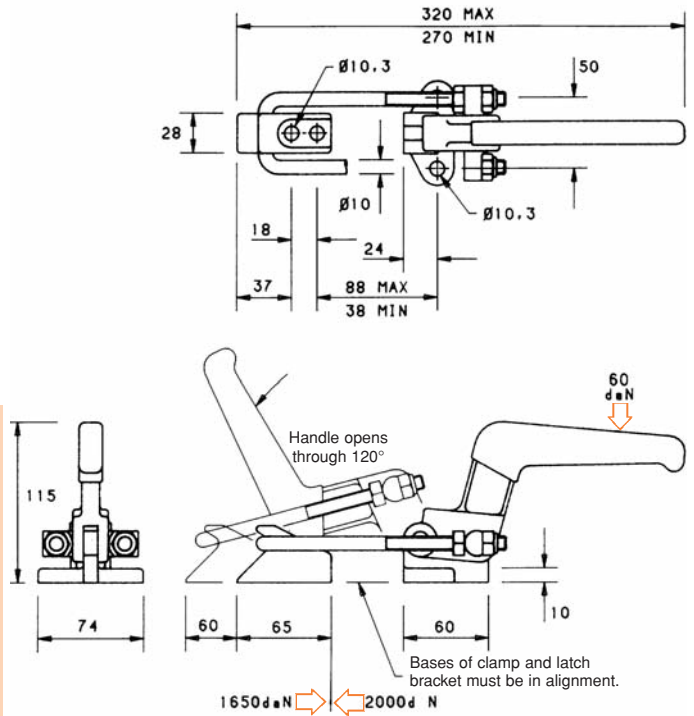


## LATCH CLAMPS

**HORIZONTAL**  
MODEL LU2000H



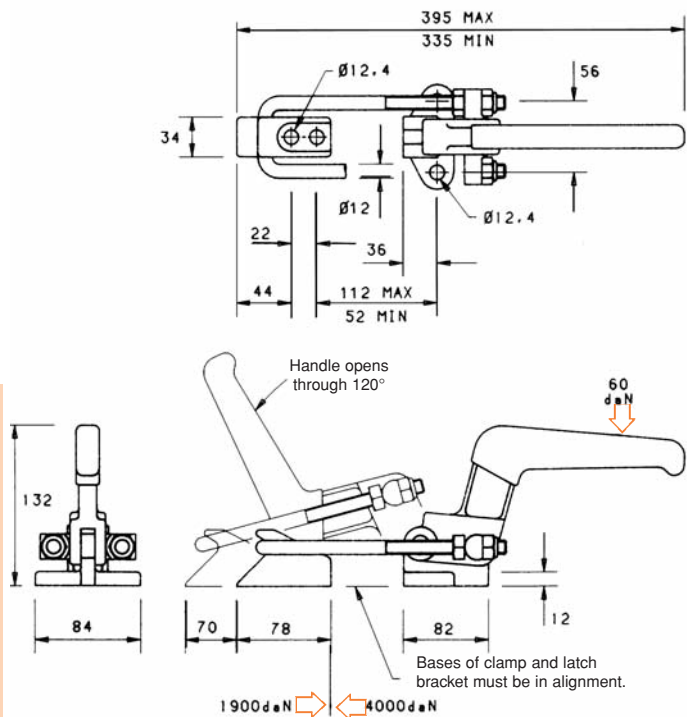
**Nominal Holding Force:**  
2000 daN  
**Weight:**  
1.40 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
See "Features and installation information" page for installation instructions.



**HORIZONTAL**  
MODEL LU4000H



**Nominal Holding Force:**  
4000 daN  
**Weight:**  
2.60 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
See "Features and installation information" page for installation instructions.

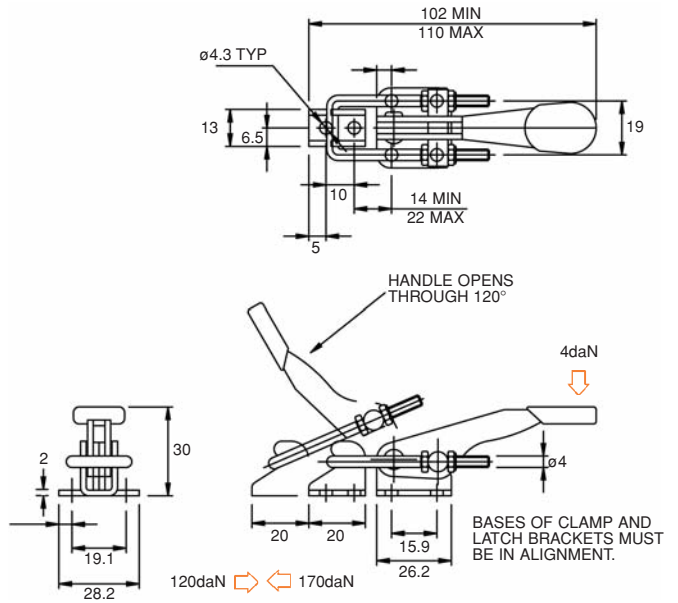


## LATCH CLAMPS

**HORIZONTAL**  
**MODEL LU323**



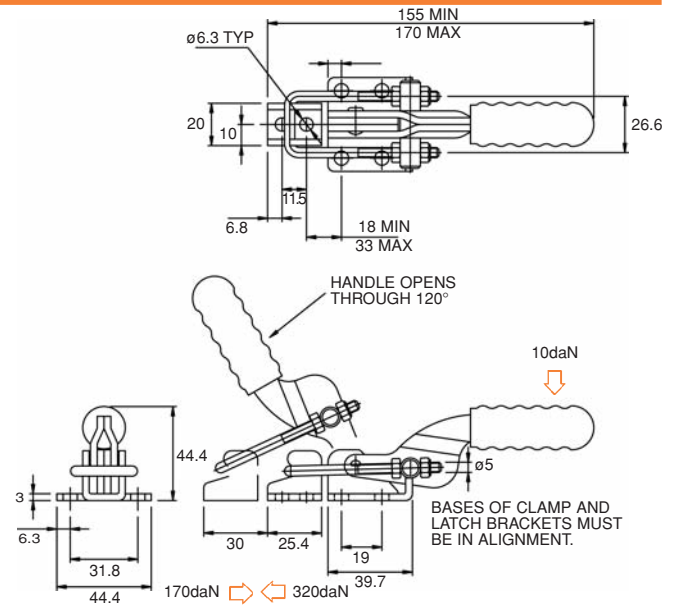
**Nominal Holding Force:**  
170 daN  
**Weight:**  
0.16 Kg  
**Supplied complete with:**  
Latch Bracket as shown.



**HORIZONTAL**  
**MODEL LU331**



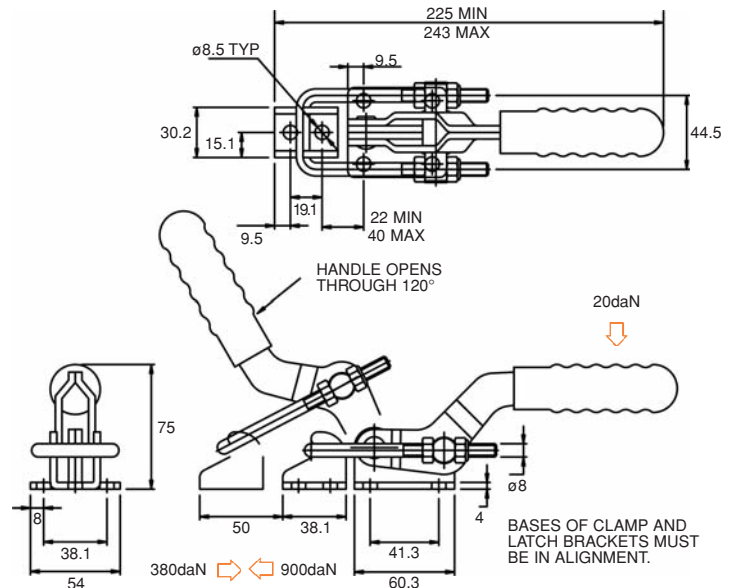
**Nominal Holding Force:**  
320 daN  
**Weight:**  
0.23 Kg  
**Supplied complete with:**  
Latch Bracket as shown.



**HORIZONTAL**  
**MODEL LU341**



**Nominal Holding Force:**  
900 daN  
**Weight:**  
0.68 Kg  
**Supplied complete with:**  
Latch Bracket as shown.

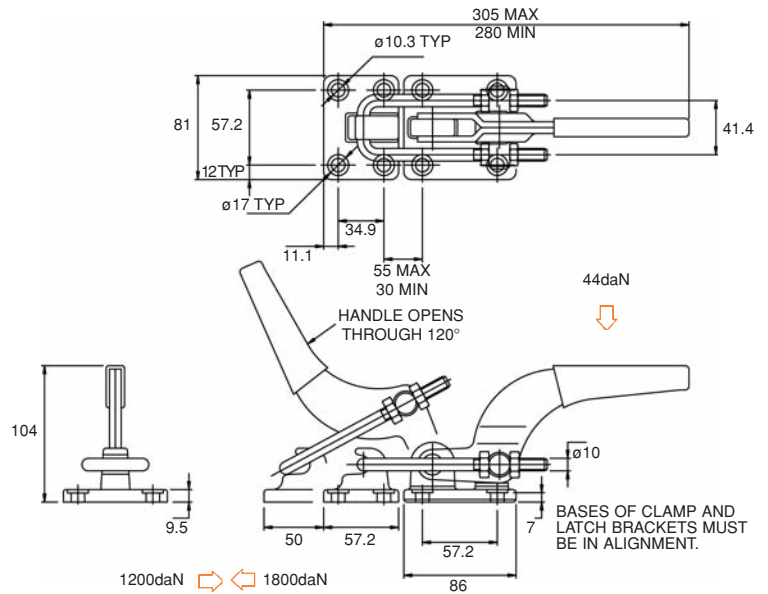


## LATCH CLAMPS

**HORIZONTAL**  
**MODEL LU375**



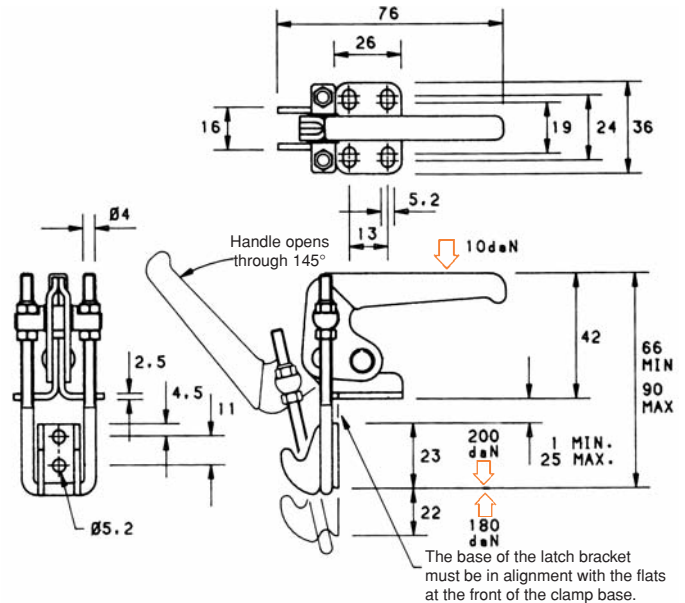
**Nominal Holding Force:**  
900 daN  
**Weight:**  
0.68 Kg  
**Supplied complete with:**  
Latch Bracket as shown.



**VERTICAL**  
**MODEL LU200V**



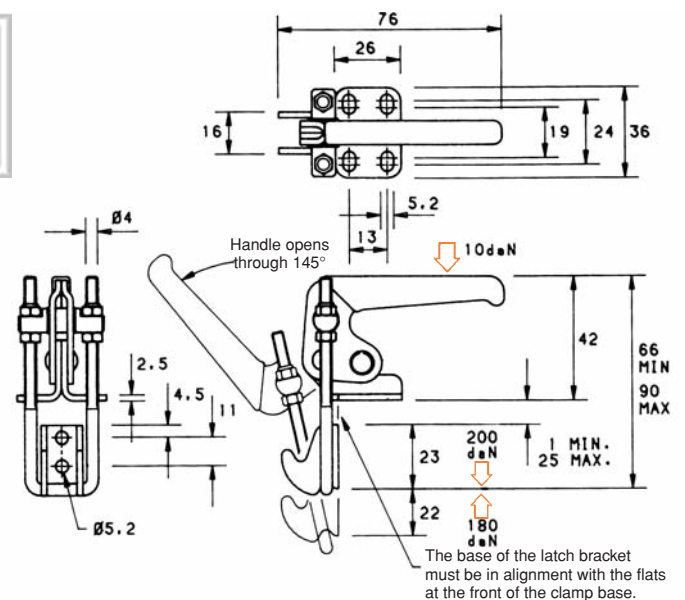
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.05 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
*See "Features and installation information" page for installation instructions.*



**VERTICAL**  
**MODEL LU200VSS**



**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.05 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
**Material:**  
BS 304 S15.  
*See "Features and installation information" page for installation instructions.*



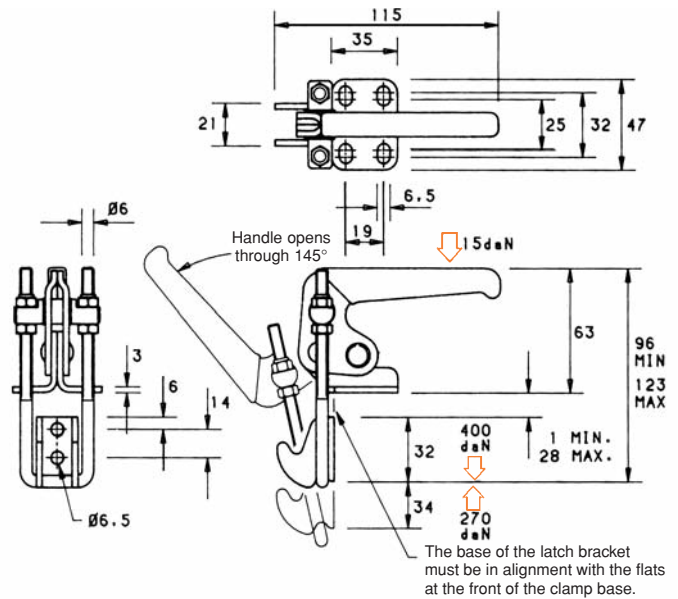
## LATCH CLAMPS

VERTICAL

MODEL LU400V



**Nominal Holding Force:**  
400 daN  
**Weight:**  
0.25 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
*See "Features and installation information" page for installation instructions.*



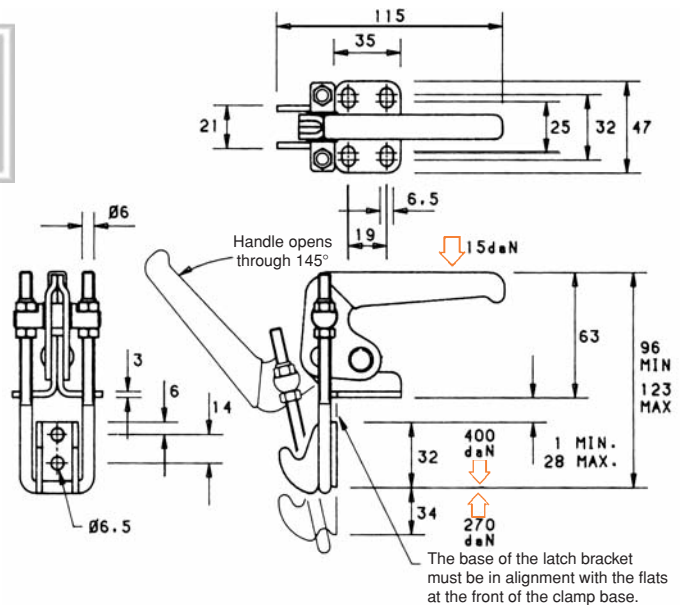
VERTICAL

MODEL LU400VSS

**STAINLESS  
STEEL**



**Nominal Holding Force:**  
400 daN  
**Weight:**  
0.25 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
**Material:**  
BS 304 S15.  
*See "Features and installation information" page for installation instructions.*

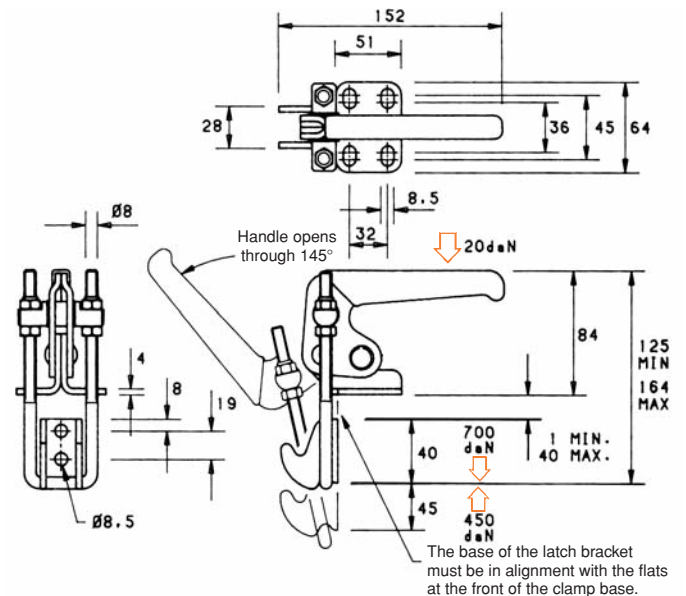


VERTICAL

MODEL LU700V



**Nominal Holding Force:**  
700 daN  
**Weight:**  
0.70 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
*See "Features and installation information" page for installation instructions.*



## LATCH CLAMPS

VERTICAL

MODEL LU700VSS

STAINLESS  
STEEL



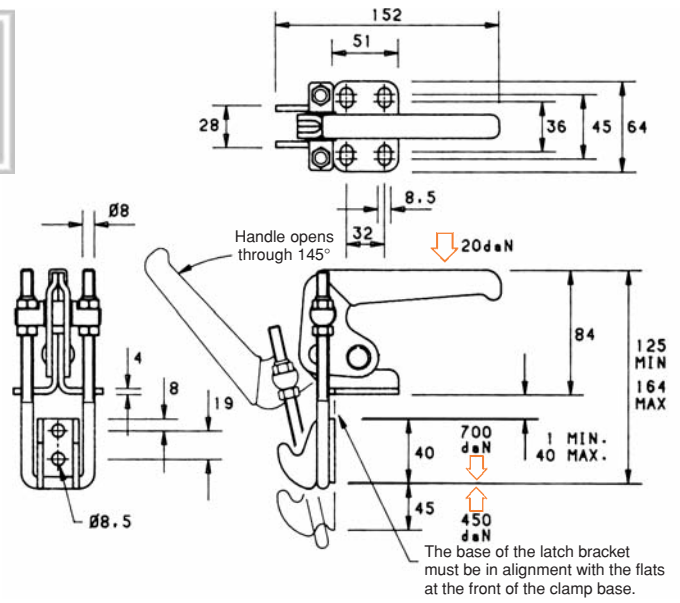
**Nominal Holding Force:**  
700 daN

**Weight:**  
0.70 Kg

**Supplied complete with:**  
Latch Bracket as shown.

**Material:**  
BS 304 S15.

See "Features and installation information" page for installation instructions.





## VERTICAL CAM CLAMPS

- **Features:**

Cam clamps are similar to vertical clamps but the clamping force is generated not by a toggle linkage, but by the action of a roller on a cam.

The cam action allows components of differing thickness to be clamped without readjustment of the clamping spindle.

Model CV75 can clamp parts with thickness varying by up to 1.5mm, and models CV250 and CV350 thickness varying by up to 2mm.

A comfortable, cushioned PVC handle grip is fitted to all three models of cam clamp.

- **Specification:**

The main components are of zinc plated and passivated steel, the cam and its roller being case hardened to resist wear.

Rivets are of stainless steel, which burnishes and work-hardens with use, the rivets of models CV250 and CV350 rotating in hardened bushes. The setscrews are of steel with a chemi-black finish.

## VERTICAL CAM CLAMPS

### VERTICAL CAM CLAMPS

#### MODEL CV75



for front mounting use bracket Model FM1



**Arm:**  
The spindle is in a fixed position.

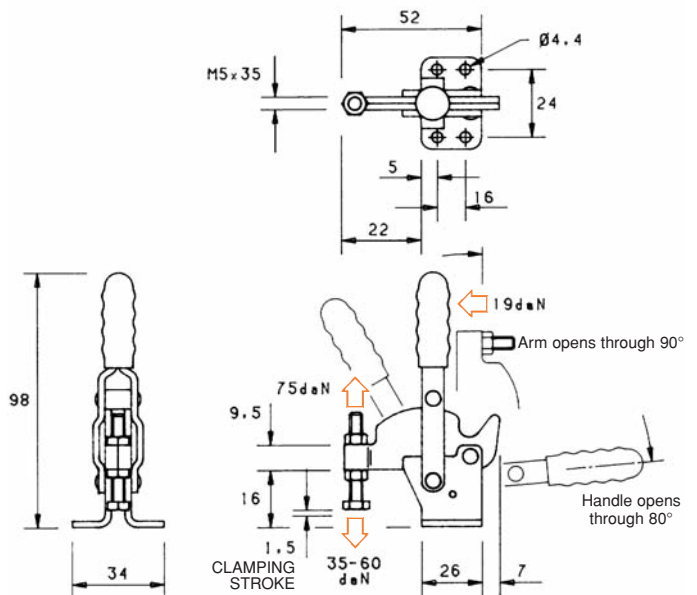
**Base:**  
Flanged.

**Nominal Holding Force:**  
75 daN

**Weight:**  
0.05 Kg

**Supplied complete with:**  
MB0535 Setscrew & nuts.

See "Accessories" for other items.

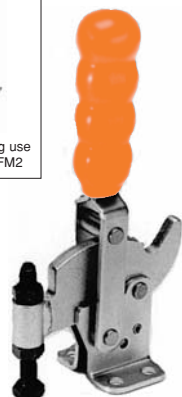


### VERTICAL CAM CLAMPS

#### MODEL CV250



for front mounting use bracket Model FM2



**Arm:**  
The spindle is in a fixed position.

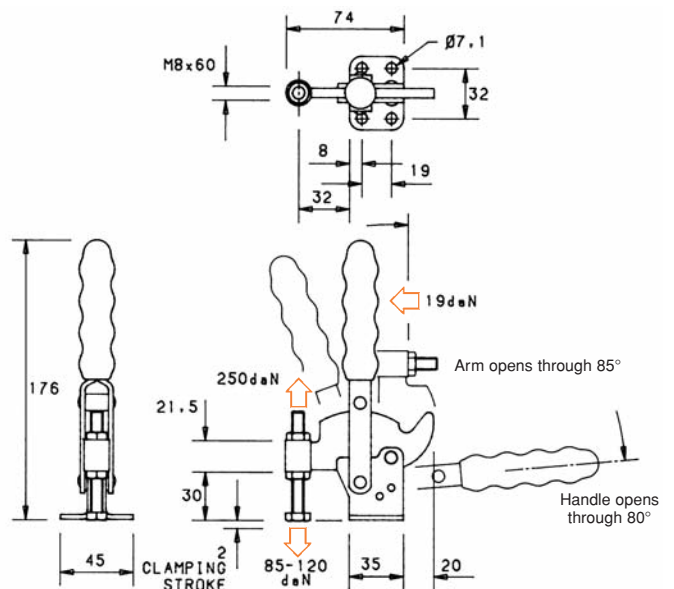
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.35 Kg

**Supplied complete with:**  
MB0860 Setscrew & nuts.

See "Accessories" for other items.



### VERTICAL CAM CLAMPS

#### MODEL CV350



for front mounting use bracket Model FM3



**Arm:**  
The spindle is in a fixed position.

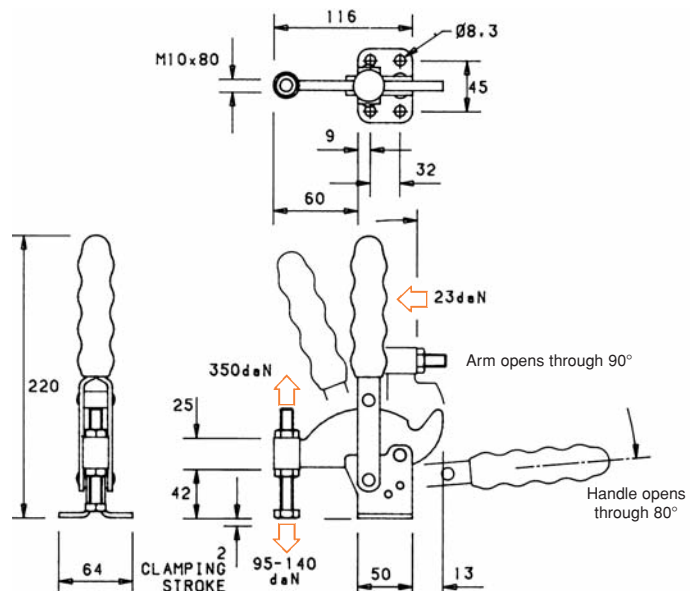
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.70 Kg

**Supplied complete with:**  
MB1080 Setscrew & nuts.

See "Accessories" for other items.





.....  
**TOGGLE CLAMPING  
ACCESSORIES**



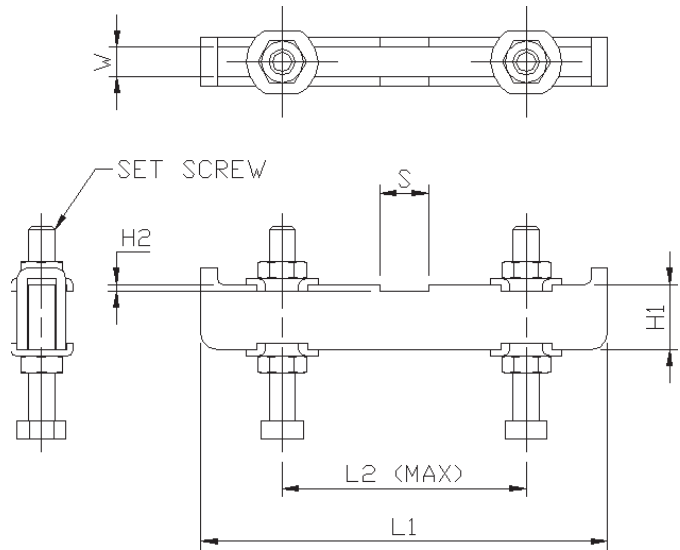
## CLAMPING ACCESSORIES

### 'T' BAR ASSEMBLIES

MODELS T250, T350, T450



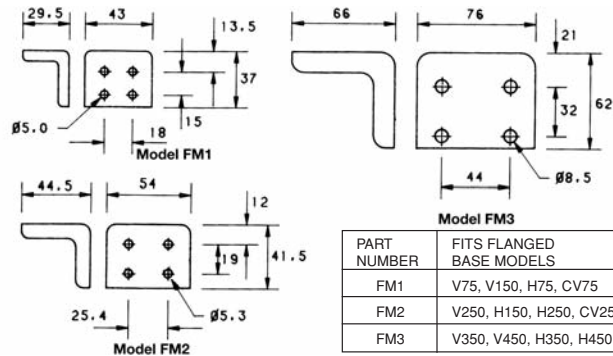
Neoprene tipped spindles, set screw covers or pads can also be used in conjunction with this 'T' Bar Assembly – see below.



| MODEL | FOR USE WITH     | SUPPLIE SET SCREW | L1  | L2  | H1 | H2 | S    | W  |
|-------|------------------|-------------------|-----|-----|----|----|------|----|
| T250  | H250, V250, V300 | MB0860            | 125 | 95  | 20 | 2  | 15   | 9  |
| T350  | H350, V350       | MB1085            | 145 | 110 | 24 | 2  | 19.5 | 11 |
| T450  | H450, V450, H700 | MB12100           | 200 | 160 | 25 | 2  | 23.3 | 13 |

### FRONT MOUNTING BRACKETS

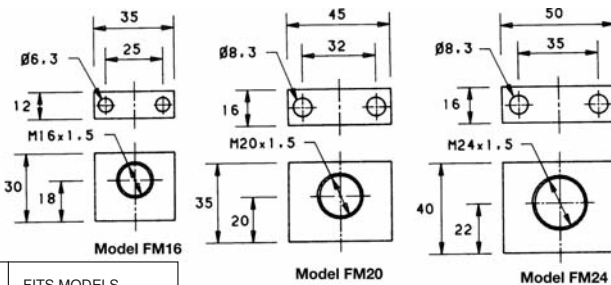
—VERTICAL AND HORIZONTAL CLAMPS



| PART NUMBER | FITS FLANGED BASE MODELS      |
|-------------|-------------------------------|
| FM1         | V75, V150, H75, CV75          |
| FM2         | V250, H150, H250, CV250       |
| FM3         | V350, V450, H350, H450, CV350 |

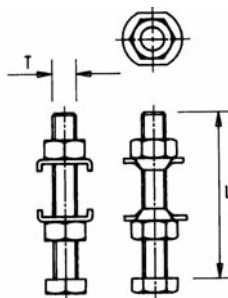
### MOUNTING BRACKETS

—NOSE MOUNTING PUSH-PULL CLAMPS



| PART NUMBER | FITS MODELS      |
|-------------|------------------|
| FM16        | P100, P350       |
| FM20        | P200, P250, P550 |
| FM24        | P400, P450, P750 |

### SETSCREWS

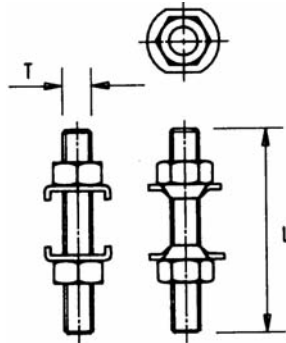


| PART NUMBER | TH'D T | L   | FITS MODELS                               |
|-------------|--------|-----|---|
| MB0520      | M5     | 20  | H50                                       |
| MB0535      | M5     | 35  | V75, H75, V100, CV75, V75X                |
| MB0650      | M6     | 50  | V150, V200, H150, V150X                   |
| MB0860      | M8     | 60  | V250, V300, CV250, H250, V250X            |
| MB1080      | M10    | 80  | V350, H350, CV350                         |
| MB12100     | M12    | 100 | V450, V450X, H450, H700, VA700, VA1200    |
| M16150      | M16    | 150 | V550, VA2400                              |
| MB0420      | M4     | 20  | P50** (INCLUDES NEOPRENE PAD)             |
| MB0625      | M6     | 25  | P100, P250, P350**                        |
| MB0840      | M8     | 40  | P200, P550, P600, P600L, P600X**          |
| MB1050      | M10    | 50  | P400, P450, P750, P1200, P1200L, P1200X** |
| MB1250      | M12    | 50  | P2500, P2500L, P2500X**                   |
| MB1680      | M16    | 80  | P5000, P5000L**                           |

\*\*DENOTES – SETSCREW SUPPLIED WITH ONE NUT ONLY

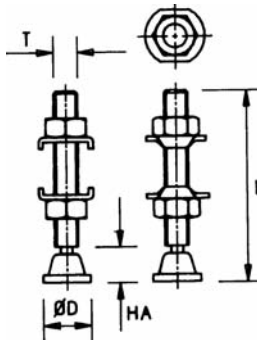
## CLAMPING ACCESSORIES

### PLAIN SPINDLES



| PART NUMBER | TH'D T | L   | FITS MODELS   |
|-------------|--------|-----|---|
| M0525       | M5     | 25  | H50   |
| M0535       | M5     | 35  | V75, H75, V100, CV75, V75X                                    |
| M0650       | M6     | 50  | V150, V200, H150, P250, P350                                  |
| M0865       | M8     | 65  | V250, V300, CV250, P300, P550<br>P600, P600L, P600X, P200     |
| M1085       | M10    | 85  | V350, CV350, H350, P400, P450,<br>P750, P1200, P1200L, P1200X |
| M12100      | M12    | 100 | V450, VA700, VA1200, H450, H700,<br>V450X                     |
| M16150      | M16    | 150 | V550, VA2400  |

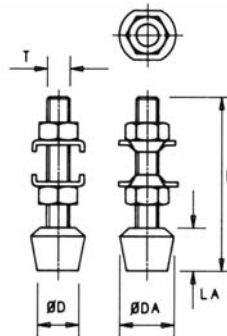
### SWIVEL FOOT SPINDLES



| PART NUMBER | TH'D T | L   | ØD | HA | FITS MODELS   |
|-------------|--------|-----|----|----|---|
| MS0535      | M5     | 35  | 12 | 10 | V75, H75, V100, CV75, V75X                                    |
| MS0650      | M6     | 50  | 12 | 10 | V150, V200, H150, P250,<br>P350                               |
| MS0865      | M8     | 65  | 20 | 13 | V250, V300, CV250, P300, P550,<br>P600, P600L, P600X, P200    |
| MS1085      | M10    | 85  | 20 | 15 | V350, CV350, H350, P400, P450,<br>P750, P1200, P1200L, P1200X |
| MS12100     | M12    | 100 | 25 | 20 | V450, VA700, VA1200, H45C,<br>H700, V450X                     |
| MS16150     | M16    | 150 | 45 | 30 | V550, VA2400  |

### NEOPRENE TIPPED SPINDLES

MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20° +70°

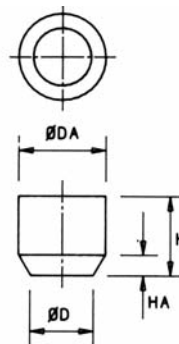


| PART NUMBER | TH'D T | L   | LA | ØD | ØDA | FITS CLAMP MODEL  |
|-------------|--------|-----|----|----|-----|---|
| NTS0432     | M4     | 3   | 10 | 8  | 12  | P50 (1)   |
| NTS0538     | M5     | 38  | 10 | 10 | 13  | H50, V75, H75,<br>V100, CV75, V75X                                  |
| NTS0645     | M6     | 45  | 13 | 11 | 16  | V150, V200, H150,<br>P100, P250, P350                               |
| NTS0865     | M8     | 63  | 19 | 12 | 17  | V250, V300, CV250,<br>P200, P300, P550,<br>P600, P600L, P600X       |
| NTS1085     | M10    | 86  | 20 | 22 | 27  | V350, CV350,<br>H350, P400, P450,<br>P750, P1200,<br>P1200L, P1200X |
| NTS12100    | M12    | 100 | 35 | 22 | 32  | V450, VA700,<br>VA1200, H450,<br>H700, V450X                        |

(1) NO SLIDERS, ONE NUT ONLY

### NEOPRENE SETSCREW COVERS

MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20° +70°

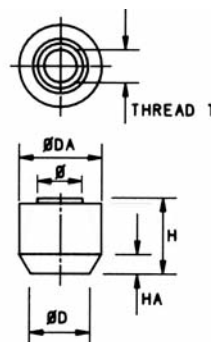


MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20 +70

| PART NUMBER | H  | HA | ØD | ØDA | FITS SCREW      |
|-------------|----|----|----|-----|-----------------|
| NC/04       | 8  | 4  | 7  | 11  | MB0420          |
| NC/05       | 10 | 4  | 8  | 13  | MB0525, MB0535  |
| NC/06       | 12 | 4  | 11 | 15  | MB0650          |
| NC/08       | 15 | 6  | 13 | 19  | MB0860          |
| NC/10       | 18 | 7  | 16 | 23  | MB1080          |
| NC/12       | 20 | 7  | 19 | 26  | MB1250, MB12100 |

### NEOPRENE PADS

— TO FIT PLAIN SPINDLES  
MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20° +70°



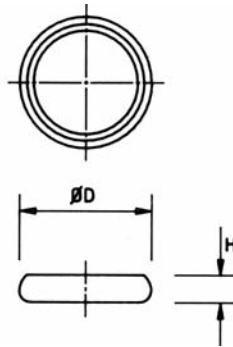
MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20 +70

| PART NUMBER | TH'D T | H  | HA | ØD | ØDA | Ø  | FITS SPINDLE |
|-------------|--------|----|----|----|-----|----|--------------|
| NP/05       | -      | 10 | 1  | -  | 12  | -  | M0525, M0535 |
| NP/06       | M6     | 14 | 4  | 11 | 15  | 11 | M0650        |
| NP/08       | M8     | 18 | 6  | 13 | 19  | 15 | M0865        |
| NP/10       | M10    | 21 | 7  | 16 | 23  | 17 | M1085        |
| NP/12       | M12    | 23 | 7  | 19 | 26  | 21 | M12100       |

## CLAMPING ACCESSORIES

### PLASTIC COVERS

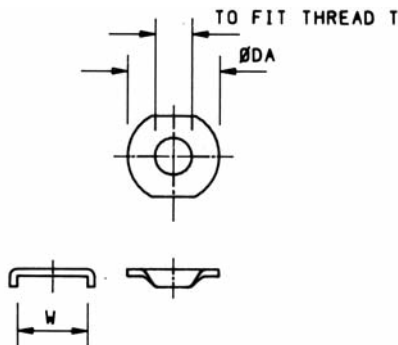
TO FIT SWIVEL FOOT SPINDLES



| PART NUMBER | ØD | H  | FITS SPINDLE   |
|-------------|----|----|----------------|
| NPS/05/06   | 16 | 6  | MS0535, MS0650 |
| NPS/08/10   | 24 | 10 | MS0865, MS1085 |
| NPS/12      | 30 | 10 | MS12100        |

MATERIAL: PVC  
OPERATING TEMP RANGE: -35°C +60°C

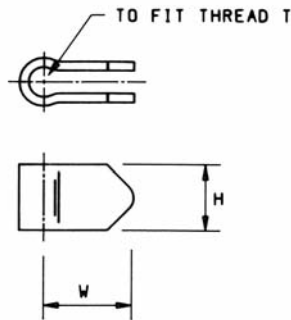
### FLANGED WASHERS



| PART NUMBER | TH'D T | W  | ØDA | FITS CLAMP MODELS WITH TYPE B ARM |
|-------------|--------|----|-----|-----------------------------------|
| FW05/09     | M5     | 9  | 13  | H50                               |
| FW05/10     | M5     | 10 | 15  | H75, V75, V75X, V100              |
| FW06/12     | M6     | 12 | 18  | H150, V150, V150X, V200           |
| FW08/15     | M8     | 15 | 22  | H250, V250, V250X, V300           |
| FW10/20     | M10    | 20 | 26  | H350, V350                        |
| FW12/23     | M12    | 23 | 32  | H450, V450, V450X, H700           |
| FW16/27     | M16    | 27 | 35  | V550                              |

### SPINDLE RETAINERS

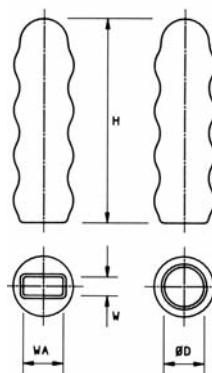
- TO FIT SPINDLES AND SETSCREWS



| PART NUMBER | TH'D T | H    | W  | FITS CLAMP MODELS WITH TYPE A ARM |
|-------------|--------|------|----|-----------------------------------|
| R/08        | M8     | 17.5 | 24 | V250, H250, V300                  |
| R/10        | M10    | 22   | 30 | V350, H350                        |
| R/12        | M12    | 26   | 32 | V450, H450                        |
| R/16        | M16    | 32   | 35 | V550                              |

### PLASTIC GRIPS

MATERIAL: PVC  
OPERATING TEMP RANGE: -35°C +60°C



| PART NUMBER | H   | TO FIT HANDLE DIM'S |      |    | FITS CLAMP MODEL                           |
|-------------|-----|---------------------|------|----|--|
|             |     | W                   | WA   | ØD |  |
| GR/01       | 45  | 4                   | 8    |    | H75, V75, CV75, V100, H100                 |
| GR/02       | 60  | 5                   | 10   |    | H150                                       |
| GR/03       | 53  | 6                   | 10   |    | V150, LH200                                |
| GR/04       | 55  | 5                   | 13   |    | H200                                       |
| GR/05       | 58  | 4                   | 13   |    | V200, P100                                 |
| GR/06       | 85  | 6                   | 15   |    | V250, H250, CV250, V300, LH400, P200, P350 |
| GR/07       | 65  | 6                   | 16   |    | H300                                       |
| GR/08       | 60  | 5                   | 13   |    | P250                                       |
| GR/09       | 105 | 8                   | 17   |    | V350, CV350, H350, P400, P450, P550, TC79  |
| GR/10       | 95  | 10                  | 22   |    | V450, H450, LH700                          |
| GR/11       | 120 | 10                  | 25   |    | V550                                       |
| GR/12       | 105 | 8                   | 19   |    | H700                                       |
| GR/13       | 115 | 8                   | 22   |    | P750                                       |
| BR/1        | 70  |                     | 9.5  |    | P600L                                      |
| BR/2        | 75  |                     | 12.7 |    | P1200L                                     |
| BR/3        | 100 |                     | 16   |    | P2500L                                     |
| B7          | 90  |                     | 19   |    | VA700, P5000L                              |
| B12         | 100 |                     | 22   |    | VA1200                                     |
| B24         | 100 |                     | 25   |    | VA2400                                     |



## MAGNA FORCE HEAVY DUTY CAM CLAMPS

- A fraction of the cost of hydraulic system clamping
- Clamping forces from 300 daN to 5000 daN
- Rugged build quality, ideal for machine shops
- Significant cost benefits over clamps in repetitive machining
- Unique, patented range of manually operated cam clamps with advantages over hydraulic automated clamping systems

## TECHNICAL INFORMATION

### MAGNA FORCE CAM RAM CLAMPS

- All components are case hardened for toughness.
- Two stage cam gives 'daylight' for loading and unloading with fast plunger travel, and slow, high-force travel for clamping.
- The clamping sequence is as follows:
  - From the parked position the initial 20 degrees of rotation of the handle expands the clamp through its 'daylight' travel
  - A further 80 degrees of rotation expands the clamp through its 'clamping' travel.
- Indicator marks on the handle and base show the maximum allowable rotation for safe clamping, their alignment leaving 10 degrees overlap between the two mating cams. If the marks reach alignment the clamp should be adjusted to reduce the rotational travel between the handle and the base.
- The clamps feature a threaded bore which allows attachment of a set screw and locknut for pushing (compression) or a tie-rod for pulling.
- The plunger is keyed to the base to prevent its rotation to allow tightening of locknuts or, alignment of attached tools or fixtures:
- The clamps are available in both clockwise and counter-clockwise rotation variants.
- Both sizes of cam ram may be finally closed by a blow from a soft faced mallet if high clamping forces are required.
- Due to the shallow angle of the 'clamping' travel cam, there is no tendency for the clamp to unlock even under vibration.
- No positive stops on rotational movement are provided to give the following benefits:

If stops were provided the operator would not know if rotational movement of the handle had stopped because of proper clamping of the work piece or because a stop had been reached. He could believe the workpiece was firmly held when, in fact, the stop had been reached and the workpiece was not firmly held. Allowing over-stroking gives audible and visual warning that the work is not held.
- If the clamp is inadvertently over-stroked (the cams jump over their high points on to the next cam). The clamp can be reset by lifting the handle against its return spring and resetting its rotational position.

### MAGNA FORCE CAM SWING CLAMPS

- All components are case hardened for toughness.
- The **clamp setting sequence** (see page 4) is as follows
  - From the parked position (fig. 1) the initial 80 degrees of rotation of the handle and arm together bring the arm over the workpiece (fig. 2).
  - The next 8 degrees of rotation moves the clamping arm vertically through fast 'daylight' travel (fig. 3).
  - To set for correct clamping position move handle a further 10 degrees (approx) and adjust spindle to make contact with workpiece (fig. 3a).
  - The final rotation to a maximum of 100 degrees moves the clamping arm through slow 'clamping' travel (fig. 4).
- Indicator marks on the handle and arm show the maximum rotational travel allowable for safe clamping, their alignment leaving 10 degrees overlap between the two mating cams (fig. 4a). If the marks reach alignment the spindle needs to be reset to reduce the rotational travel between handle and arm (fig. 5a).
- As with Cam Push Clamps, the two larger sizes 411/00 and 412/00 may be finally closed by a blow from a soft faced mallet if high clamping forces are required.
- Due to the shallow angle of the 'clamping' travel cam there is no tendency for the clamp to unlock, even under vibration.
- No positive stops on rotational movement are provided to give the following benefits:

If stops were provided the operator would not know if rotational movement of the handle had stopped because of proper clamping of the workpiece or because a stop had been reached – he could believe the workpiece was firmly held when, in fact, the stop had been reached and the workpiece was not firmly held. Allowing over-stroking gives audible and visual warning that the work is not held.
- If the clamp is inadvertently over-stroked (the cams jump over their high points onto the next cam) (fig. 5), the clamp can be reset by pushing the arm down against its return spring and resetting the rotational position of the handle (figs. 6+7).
- The clamps are available in both clockwise and counter-clockwise rotation variants.

### MAGNA FORCE CAM PUSH CLAMPS

- All components are case hardened for toughness.
- Two stage cam gives 'daylight' for loading and unloading with fast plunger travel, and slow, high-force travel for clamping.
- The end of the fast travel/start of the clamping travel is clearly identifiable being when the handle is straight along the axis of the clamp.
- The load path being along the centre line of the clamp there is no tendency for the clamp to unlock, even under vibration.
- The plunger has a slot which engages the sides of the cam, to prevent its rotation to allow, tightening of locknut or, alignment of attached tools or fixtures.
- The larger two sizes of the short handled versions 401/00 and 402/00 may be finally closed by a blow from a soft faced mallet if high clamping forces are required.
- The long handled versions allow high clamping forces and easy release by hand, the handle being removable after clamping if it is in the way.
- The clamps have threaded bodies for hole mounting, and mounting brackets are supplied as standard.

## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

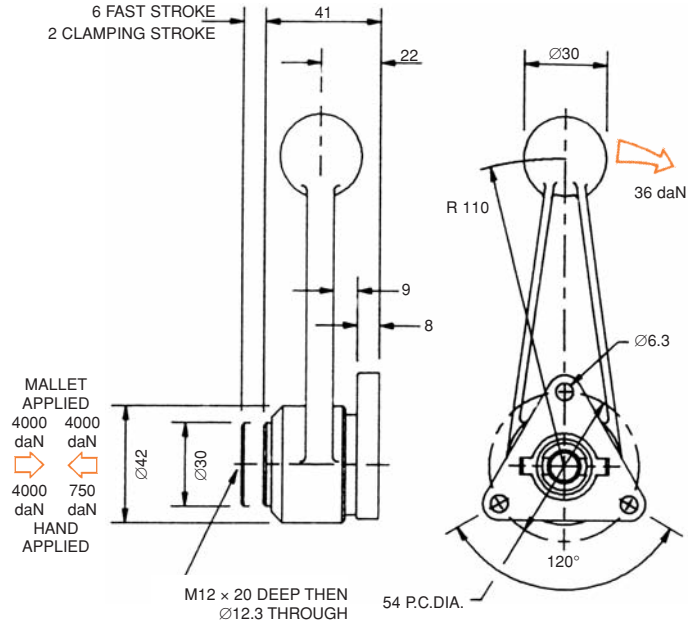
### CAM RAM CLAMPS

MODELS **CR4000** (CLOCKWISE)

**CR4000A** (ANTI-CLOCKWISE)



**Operating clamping force:**  
750 daN (hand applied),  
4000 daN (mallet applied)  
**Weight:**  
0.55 Kg



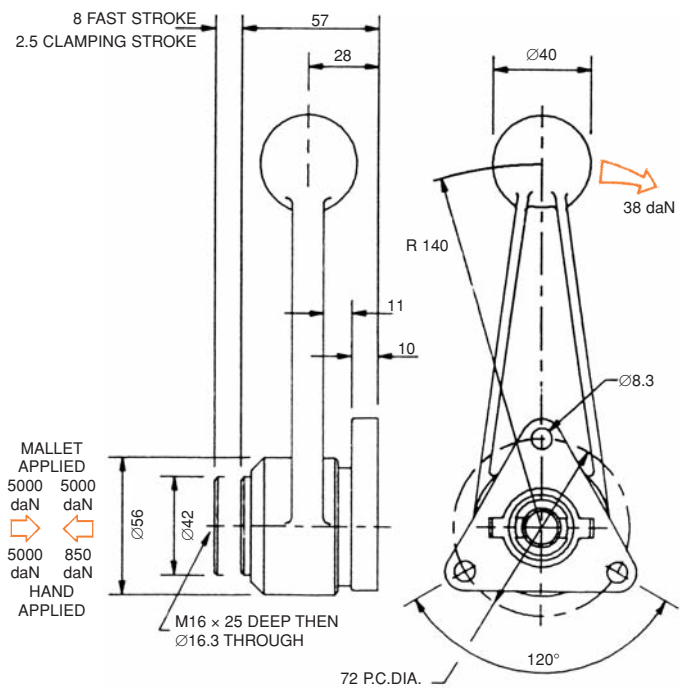
### CAM RAM CLAMPS

MODELS **CR5000** (CLOCKWISE)

**CR5000A** (ANTI-CLOCKWISE)



**Operating clamping force:**  
850 daN (hand applied),  
5000 daN (mallet applied)  
**Weight:**  
1.3 Kg



#### TECHNICAL INFORMATION

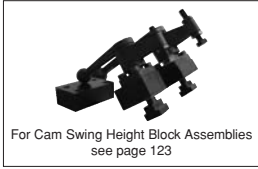
| Clamp No. | Applied Handle Force (Hand Push) | Clamping Force | Clamping Force using Mallet Blows | Daylight Travel | Clamping Travel |
|-----------|----------------------------------|----------------|-----------------------------------|-----------------|-----------------|
| CR4000    | 36 daN                           | 750 daN        | 4000 daN                          | 6.0mm           | 2.0mm           |
| CR4000A   | 36 daN                           | 750 daN        | 4000 daN                          | 6.0mm           | 2.0mm           |
| CR5000    | 38 daN                           | 850 daN        | 5000 daN                          | 8.0mm           | 2.5mm           |
| CR5000A   | 38 daN                           | 850 daN        | 5000 daN                          | 8.0mm           | 2.5mm           |

## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

### CAM SWING CLAMPS

MODELS **CS300** (CLOCKWISE)

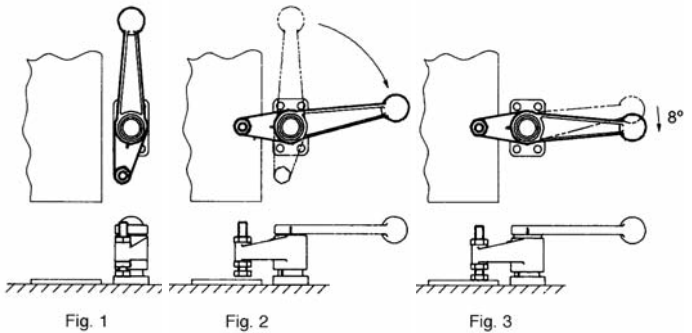
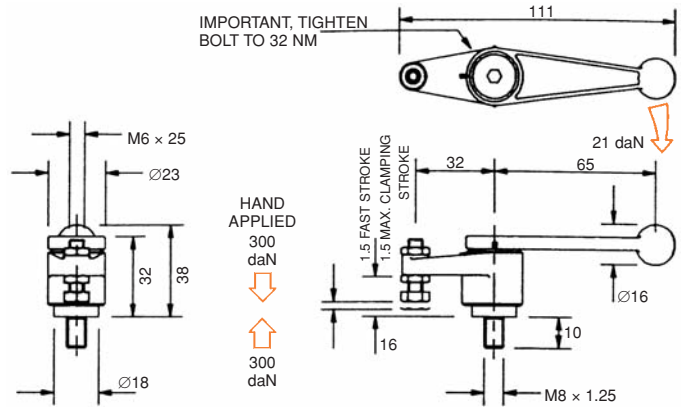
**CS300A** (ANTI-CLOCKWISE)



**Operating clamping force:**  
300 daN (hand applied).

**Weight:**  
0.20 Kg

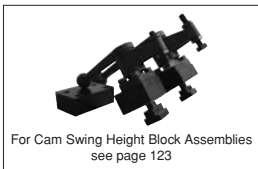
**Supplied complete with:**  
MB0625 Set screw & nuts.



### CAM SWING CLAMPS

MODELS **CS800** (CLOCKWISE)

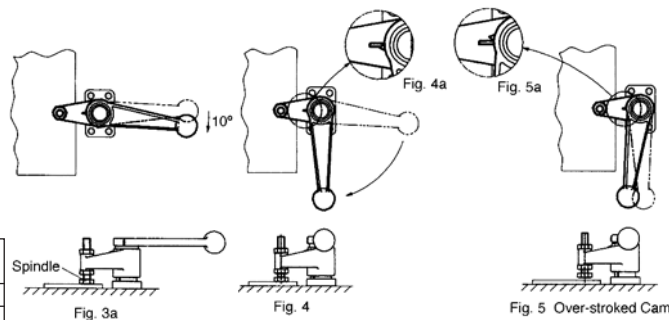
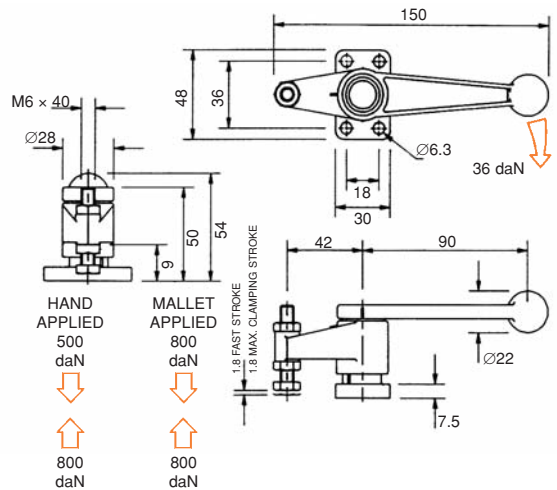
**CS800A** (ANTI-CLOCKWISE)



**Operating clamping force:**  
500 daN (hand applied),  
800 daN (mallet applied).

**Weight:**  
0.40 Kg

**Supplied complete with:**  
MB0840 Set screw & nuts.



#### TECHNICAL INFORMATION

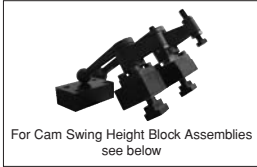
| Clamp No. | Applied Handle Force (Hand Push) | Clamping Force | Clamping Force using Mallet Blows | Daylight Travel | Clamping Travel |
|-----------|----------------------------------|----------------|-----------------------------------|-----------------|-----------------|
| CS300     | 21 daN                           | 300 daN        | N/A                               | 1.5mm           | 1.5mm           |
| CS300A    | 21 daN                           | 300 daN        | N/A                               | 1.5mm           | 1.5mm           |
| CS800     | 36 daN                           | 500 daN        | 800 daN                           | 1.8mm           | 1.8mm           |
| CS800A    | 36 daN                           | 500 daN        | 800 daN                           | 1.8mm           | 1.8mm           |

## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

### CAM SWING CLAMPS

MODELS **CS1200** (CLOCKWISE)

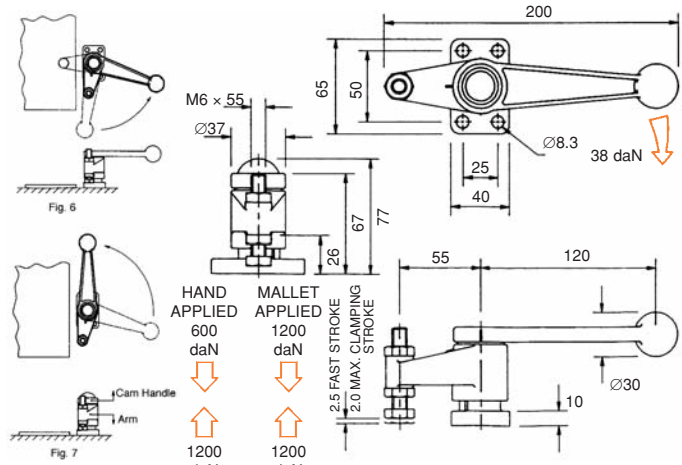
**CS1200A** (ANTI-CLOCKWISE)



**Operating clamping force:**  
600 daN (hand applied),  
1200 daN (mallet applied).

**Weight:**  
0.90 Kg

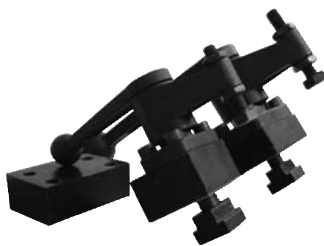
**Supplied complete with:**  
MB1055 Set screw & nuts.



#### TECHNICAL INFORMATION

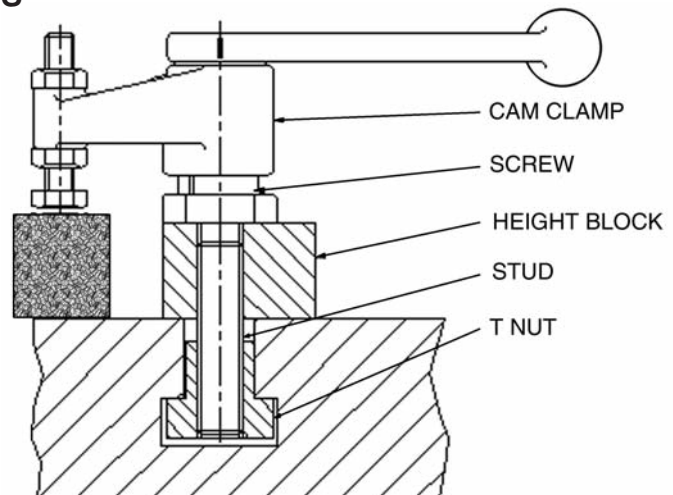
| Clamp No. | Applied Handle Force (Hand Push) | Clamping Force | Clamping Force using Mallet Blows | Daylight Travel | Clamping Travel |
|-----------|----------------------------------|----------------|-----------------------------------|-----------------|-----------------|
| CS1200    | 38 daN                           | 600 daN        | 1200 daN                          | 2.5mm           | 2.0mm           |
| CS1200A   | 38 daN                           | 600 daN        | 1200 daN                          | 2.5mm           | 2.0mm           |

### CAM SWING HEIGHT BLOCK ASSEMBLIES



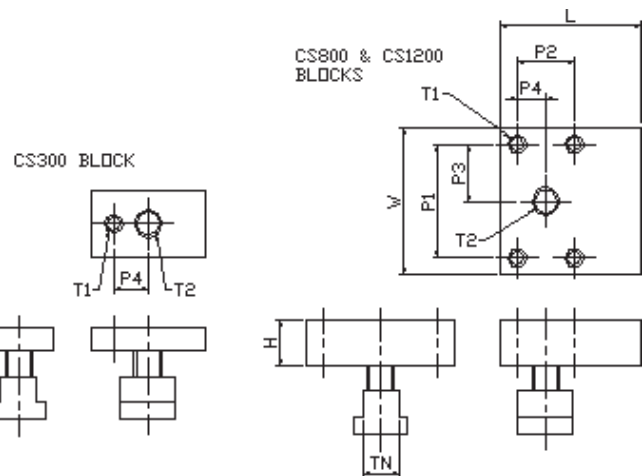
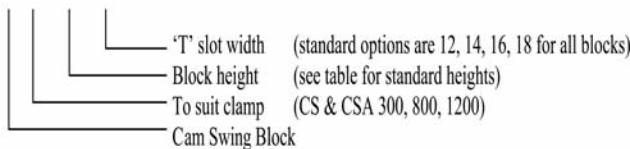
The height block assembly provides the user with a convenient method of setting the height of the Cam Swing Clamp when in operation. The act of locking the clamp onto the work piece also locks the block into position along the Tee Slot.

**Note:**  
Clamp ordered separately



Example Part Code:

CSB1200-20-TN12



| To Suit Clamp | H                  | W  | L  | TN             | P1  | P2  | P3  | P4   | T1      | T2       | Screw ×4 |
|---------------|--------------------|----|----|----------------|-----|-----|-----|------|---------|----------|----------|
| CS300         | 10, 20, 30, 40, 50 | 30 | 50 | 12, 14, 16, 18 | N/A | N/A | N/A | 15   | M8×1.25 | M12×1.25 | N/A      |
| CS800         | 12, 25, 40, 50     | 48 | 40 | 12, 14, 16, 18 | 36  | 18  | 18  | 9    | M6×1.0  | M12×1.25 | M6×18    |
| CS1200        | 20, 40, 60, 76     | 65 | 62 | 12, 14, 16, 18 | 50  | 25  | 25  | 12.5 | M8×1.25 | M12×1.25 | M8×25    |



## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

### CAM PUSH CLAMPS

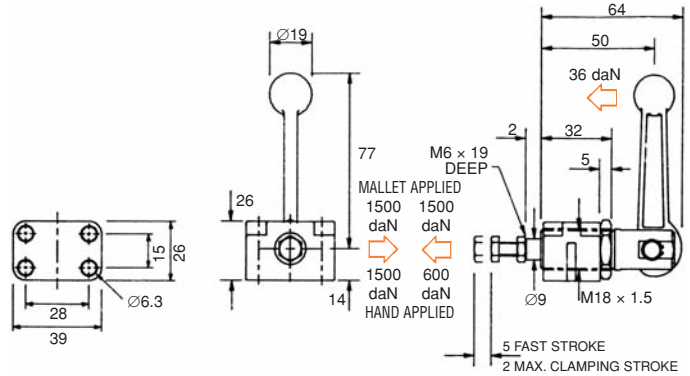
#### MODELS CP1500



**Operating clamping force:**  
1500 daN (mallet applied),  
600 daN (hand applied).

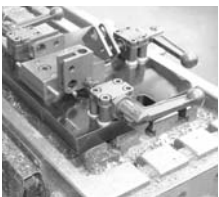
**Weight:**  
0.27 Kg

**Supplied complete with:**  
MB0625 Set screw & nuts.  
CMB18 Mounting base and  
locknuts.



### CAM PUSH CLAMPS

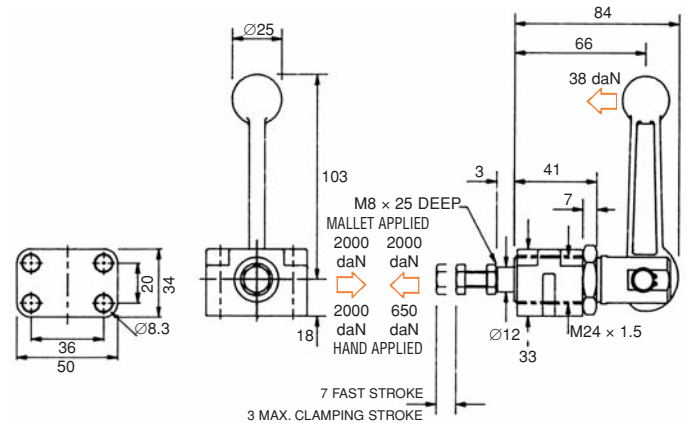
#### MODELS CP2000



**Operating clamping force:**  
2000 daN (mallet applied),  
650 daN (hand applied).

**Weight:**  
0.60 Kg

**Supplied complete with:**  
MB0840 Set screw & nuts.  
CMB24 Mounting base &  
locknuts.

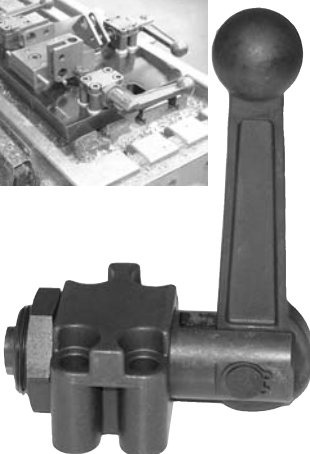
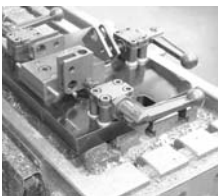


#### TECHNICAL INFORMATION

| Clamp No. | Applied Handle Force (Hand Push) | Clamping Force | Clamping Force using Mallet Blows | Daylight Travel | Clamping Travel |
|-----------|----------------------------------|----------------|-----------------------------------|-----------------|-----------------|
| CP1500    | 36 daN                           | 600 daN        | 1500 daN                          | 5.2mm           | 2.2mm           |
| CP2000    | 38 daN                           | 650 daN        | 2000 daN                          | 7.0mm           | 3.0mm           |
| CP3000    | 43 daN                           | 650 daN        | 3000 daN                          | 11.0mm          | 4.0mm           |

### CAM PUSH CLAMPS

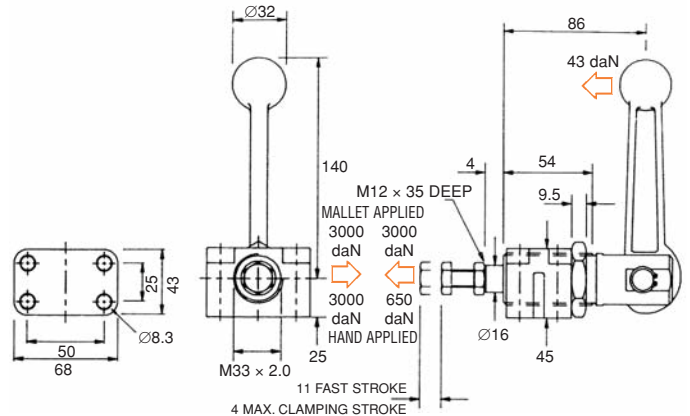
#### MODELS CP3000



**Operating clamping force:**  
3000 daN (mallet applied),  
650 daN (hand applied).

**Weight:**  
1.50 Kg

**Supplied complete with:**  
MB0840 Set screw & nuts.  
CMB33 Mounting base &  
locknuts.



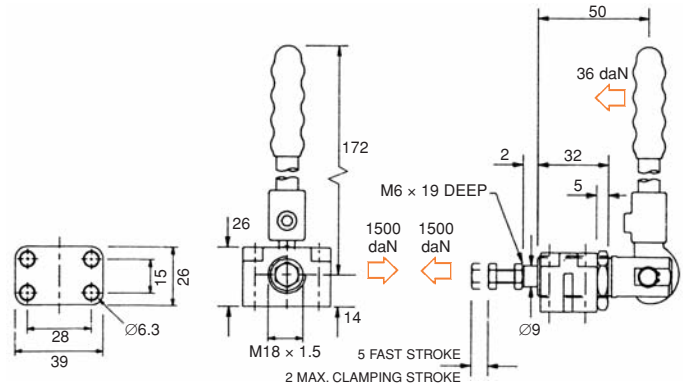
## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

### CAM PUSH CLAMPS

MODELS CP1500L



**Operating clamping force:**  
1500 daN  
**Weight:**  
0.35 Kg  
**Supplied complete with:**  
MB0625 Set screw & nuts.  
CMB18 Mounting base & locknuts.

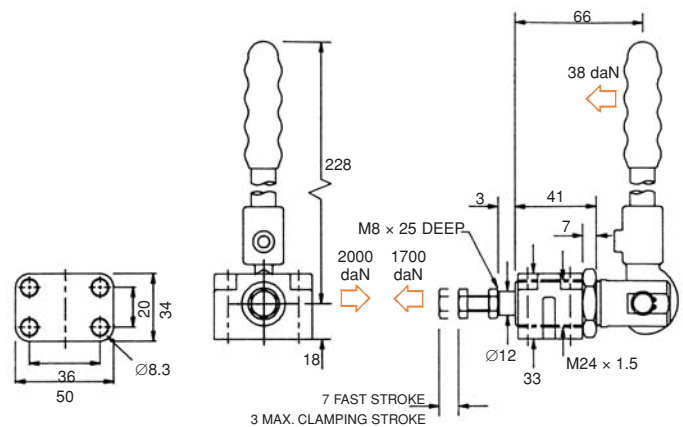


### CAM PUSH CLAMPS

MODELS CP2000L



**Operating clamping force:**  
1700 daN  
**Weight:**  
0.75 Kg  
**Supplied complete with:**  
MB0840 Set screw & nuts.  
CMB24 Mounting base & locknuts.  
**Nominal holding force:**  
2000 daN



#### TECHNICAL INFORMATION

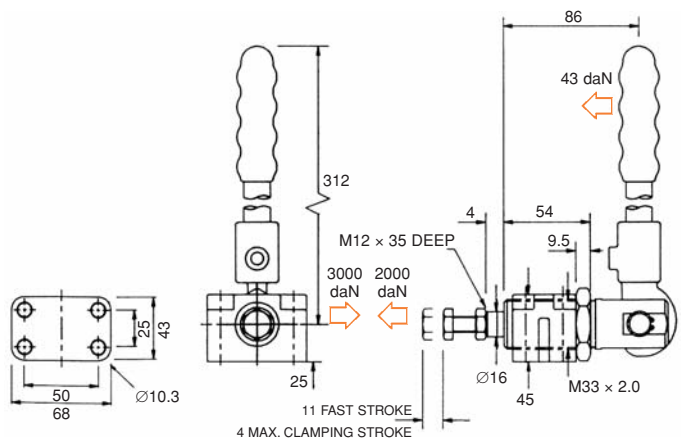
| Clamp No. | Applied Handle Force (Hand Push) | Clamping Force | Clamping Force using Mallet Blows | Daylight Travel | Clamping Travel |
|-----------|----------------------------------|----------------|-----------------------------------|-----------------|-----------------|
| CP1500L   | 36 daN                           | 1500 daN       | N/A                               | 5.2mm           | 2.2mm           |
| CP2000L   | 38 daN                           | 1700 daN       | N/A                               | 7.0mm           | 3.0mm           |
| CP3000L   | 43 daN                           | 2000 daN       | N/A                               | 11.0mm          | 4.0mm           |

### CAM PUSH CLAMPS

MODELS CP3000L



**Operating clamping force:**  
2000 daN  
**Weight:**  
2.00 Kg  
**Supplied complete with:**  
MB1250 Set screw & nuts.  
CMB33 Mounting base & locknuts.  
**Nominal holding force:**  
3000 daN





## CAM PUSH/CAM PULL CLAMPS

- **Uses:**

The actima cylinder is used when the clamping space is limited. Its robust design and closed mechanism offer indisputable advantages. Actima lever cylinders are usually actuated by pushing. But when you turn the lever bush around, pulling can also actuate the cylinder.

- **Features:**

These clamps are offered in four configurations — push action or pull action in either right hand or left hand rotation. The approach travel is 10mm and does not allow for clamping. In the 2mm clamping travel, the lever remains locked in all positions. Consequently, workpieces can be fastened safely with tolerances of up to 1.5mm. The Actima lever cylinder can be fitted horizontally or vertically.

The mechanism is totally enclosed to avoid finger traps and the ingress of dirt or metal cuttings.

- **Specification:**

All external parts are finished black except the knob which is dull red plastic. The cam roller and the cam faces are case hardened to minimise wear.

- **Installation:**

It is essential that the clamps are installed to clamp on the 'clamping stroke'. Clamping on the 'fast travel' part of the stroke can result in the clamp releasing itself, and allowing the clamp to reach the end of its 'clamping stroke' does not ensure secure clamping.

Hand force only should be used in closing the clamps as over tightening with a hammer or lever can result in damage to the units.

## CAM PUSH/CAM PULL CLAMPS

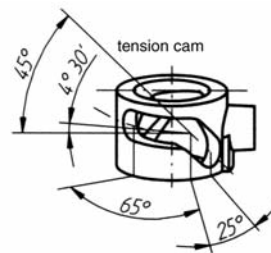
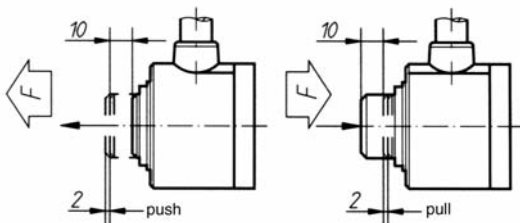
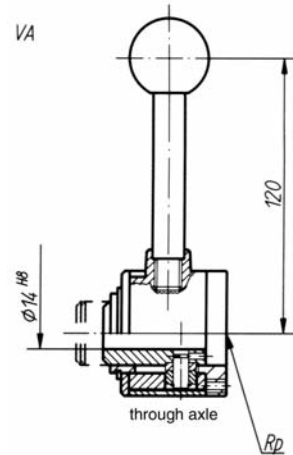
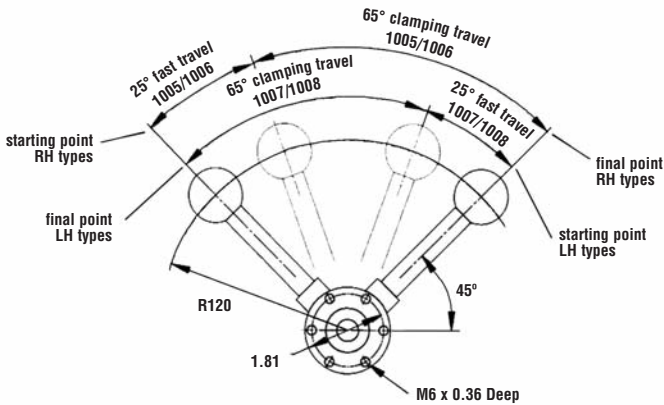
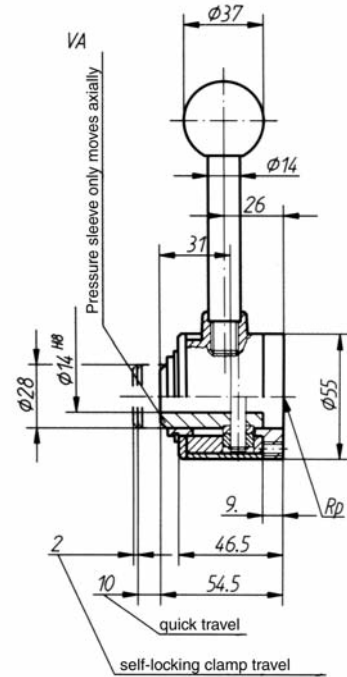
### CAM PUSH/CAM PULL CLAMPS



Cam operated.  
Right hand push.  
Rear mounted.

#### TECHNICAL INFORMATION

| Clamp No. | Nominal Holding Force | Weight Kg | Rotation |
|-----------|-----------------------|-----------|----------|
| CP1005    | 500 daN               | 0.86 Kg   | Push RH  |
| CP1006    | 500 daN               | 0.86 Kg   | Pull RH  |
| CP1007    | 500 daN               | 0.86 Kg   | Push LH  |
| CP1008    | 500 daN               | 0.86 Kg   | Pull LH  |





## SWING CLAMPS, SWING CLAMP ASSEMBLIES AND HEAVY-DUTY HOOK CLAMPS

- **Features:**

High clamping forces are generated by tightening the socket head bolt making these clamps suitable for applications where secure clamping is required, such as in heavy machining operations, the clamping of heavy moulds, or the holding of lids on vessels, etc,

On release, the clamping arm tends to swing open through 90 degrees automatically, but sometimes requires opening by hand, leaving the clamp arm clear for unloading.

The 1015 series comprises the clamping arm and return spring, the user providing a mounting hole to the dimensions shown in the catalogue. The 1016 series comprises complete assemblies of clamping arm, clamping bolt, return spring and housing, ready for bolting to a fixture.

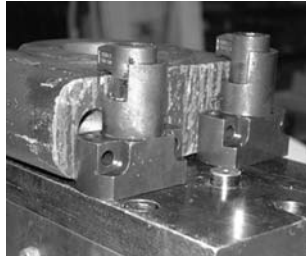
- **Specification:**

The 1015 clamping arm and, the 1016 assembly, are heat treated alloy steel precision castings machined to tight tolerances to ensure a positive and smooth action. All parts except the return spring are finished chemi-black.

## SWING CLAMP ASSEMBLIES

### SWING CLAMP ASSEMBLIES

MODEL 1016-08



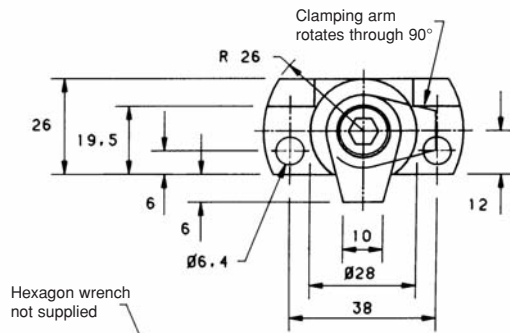
- Base or Front Mounted.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**

1800 daN

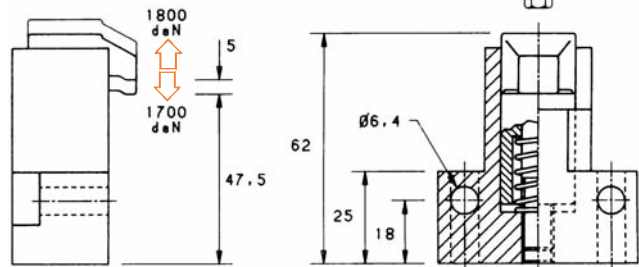
**Weight:**

0.33 Kg



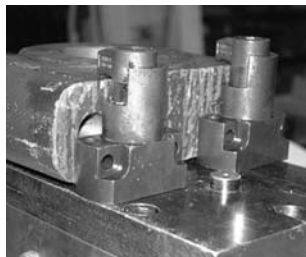
Hexagon wrench not supplied

30Nm MAX



### SWING CLAMP ASSEMBLIES

MODEL 1016-10



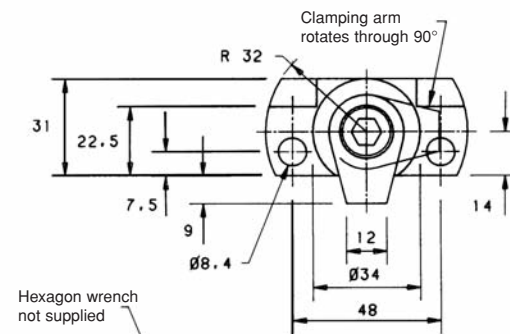
- Base or Front Mounted.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**

2000 daN

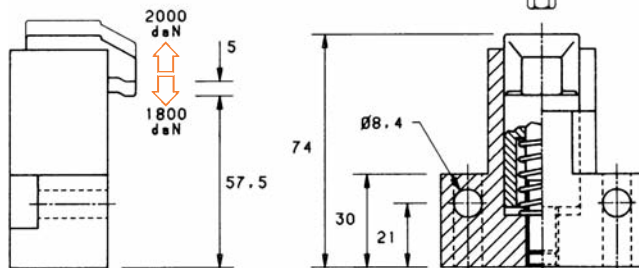
**Weight:**

0.56 Kg



Hexagon wrench not supplied

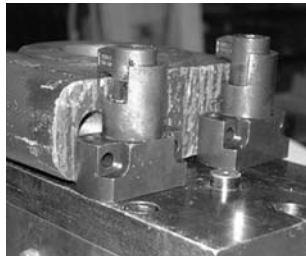
50Nm MAX



## HEAVY-DUTY SWING CLAMPS

### SWING CLAMP ASSEMBLIES

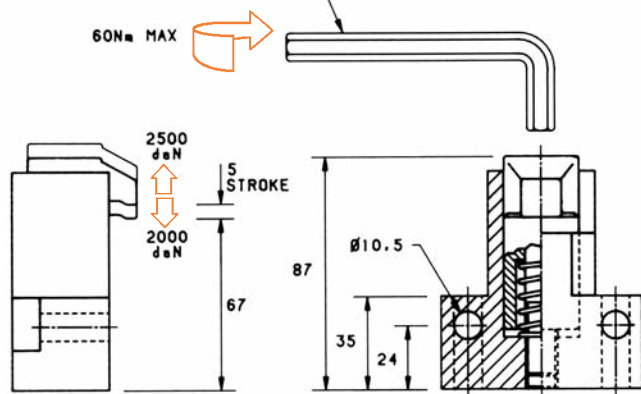
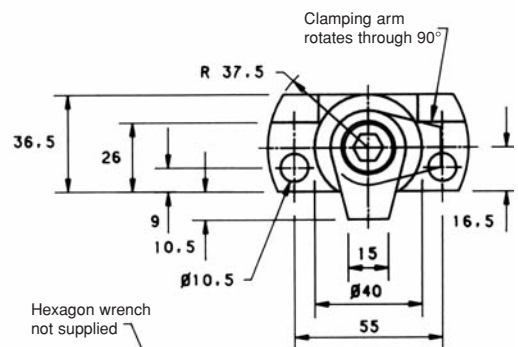
MODEL 1016-12



- Base or Front Mounted.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

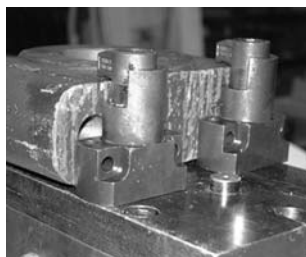
**Nominal Holding Force:**  
2500 daN

**Weight:**  
0.81 Kg



### SWING CLAMP ASSEMBLIES

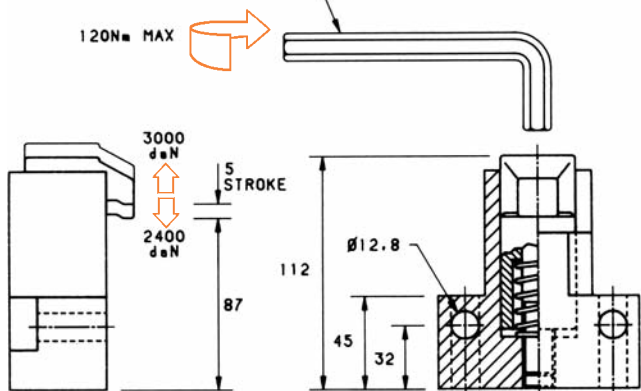
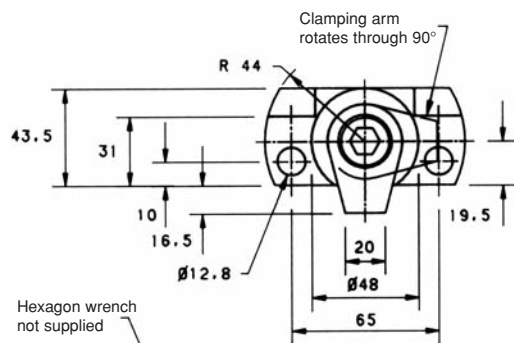
MODEL 1016-16



- Base or Front Mounted.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**  
3000 daN

**Weight:**  
1.60 Kg



## HEAVY-DUTY SWING CLAMPS

### SWING CLAMPS

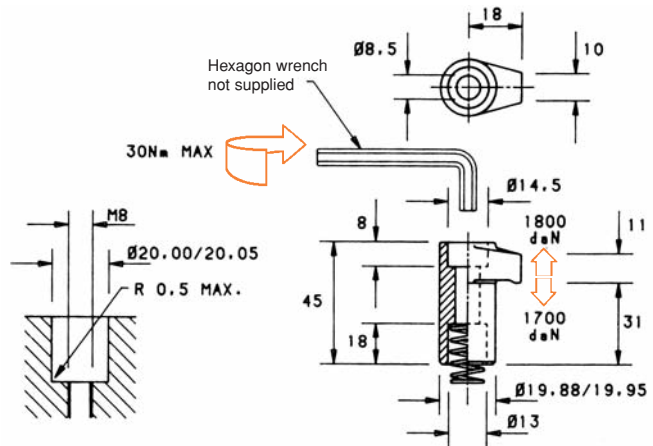
MODEL 1015-08



- Hole mounted by customer.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**  
1800 daN

**Weight:**  
0.08 Kg



### SWING CLAMPS

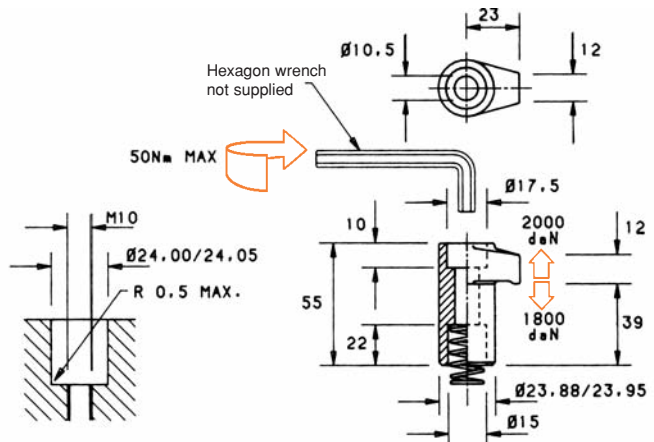
MODEL 1015-10



- Hole mounted by customer.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**  
2000 daN

**Weight:**  
0.15 Kg



### SWING CLAMPS

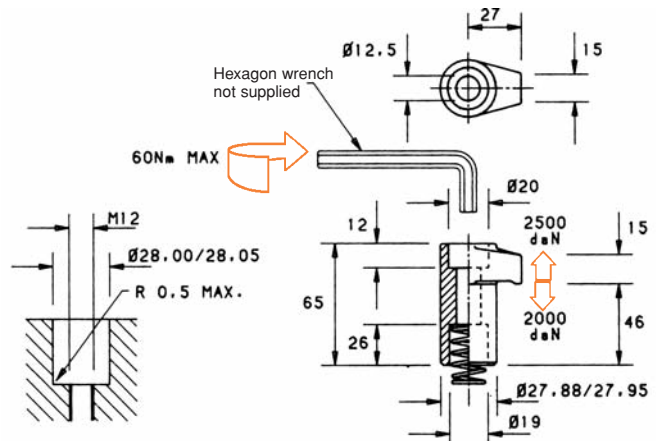
MODEL 1015-12



- Hole mounted by customer.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**  
2500 daN

**Weight:**  
0.23 Kg



### SWING CLAMPS

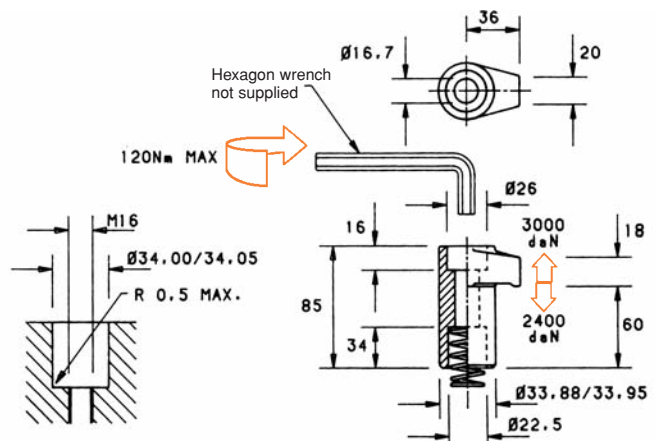
MODEL 1015-16



- Hole mounted by customer.
- Manually turned.
- Tightened & released by hexagonal key.
- Spring return.

**Nominal Holding Force:**  
3000 daN

**Weight:**  
0.44 Kg







## TOGGLE PLIERS AND CLIP CLAMPS

- **Features:**

Toggle pliers, unlike 'G' or sash clamps, can have their clamping position pre-set for quick, repetitious clamping. The range of jaw openings and depths allow clamping over obstacles such as flanges, and the central release lever ensures easy opening.

Clip clamps are closed by means of a torsion spring and can clamp any thickness of material up to a maximum shown without having to be pre-set.

- **Specification:**

Toggle pliers models P0, P1A, P1B, P3A, P3B, P4 and P4B have jaws and handles made from machined alloy steel forgings and are finished zinc plated and passivated.

Models P1 and P3 have jaws and one handle made from machined alloy steel forgings, the other handle being a steel pressing. These two pliers have a black painted finish to the forgings, the pressed parts being finished chemi blacked.

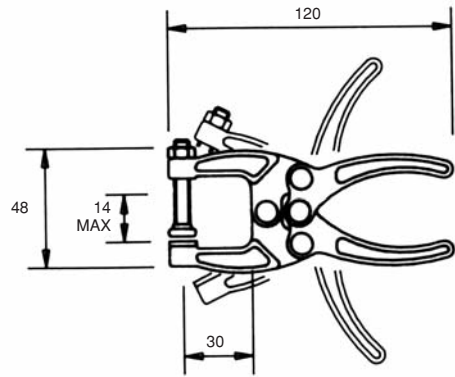
## TOGGLE PLIERS AND CLIP CLAMPS

### TOGGLE PLIERS MODEL P0



**Spindle:**  
Plastic coated tip.  
**Nominal Holding Force:**  
150 daN  
**Weight:**  
0.10 Kg

150 daN ↑  
100 daN ↓  
100 daN ↓  
150 daN ↑



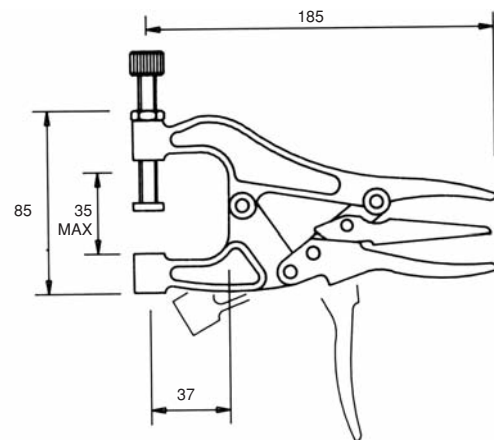
20 daN ↓  
20 daN ↑

### TOGGLE PLIERS MODEL P1



**Spindle:**  
Steel copper plated.  
**Nominal Holding Force:**  
550 daN  
**Weight:**  
0.55 Kg

550 daN ↑  
330 daN ↓  
330 daN ↓  
550 daN ↑



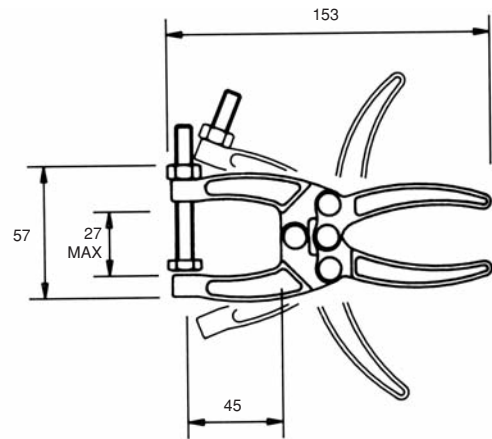
20 daN ↓  
20 daN ↑

### TOGGLE PLIERS MODEL P1A



**Spindle:**  
Steel zinc plated.  
**Nominal Holding Force:**  
180 daN  
**Weight:**  
0.20 Kg

180 daN ↑  
100 daN ↓  
100 daN ↓  
180 daN ↑



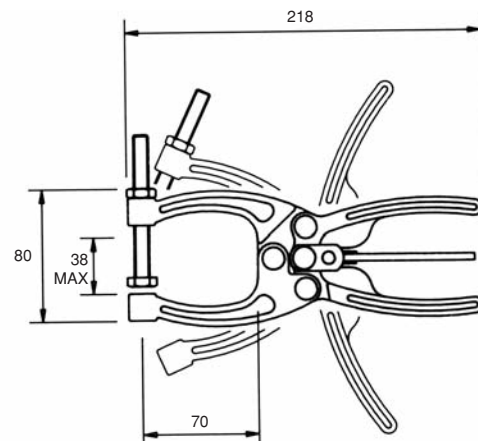
20 daN ↓  
20 daN ↑

### TOGGLE PLIERS MODEL P1B



**Spindle:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.60 Kg

200 daN ↑  
125 daN ↓  
125 daN ↓  
200 daN ↑



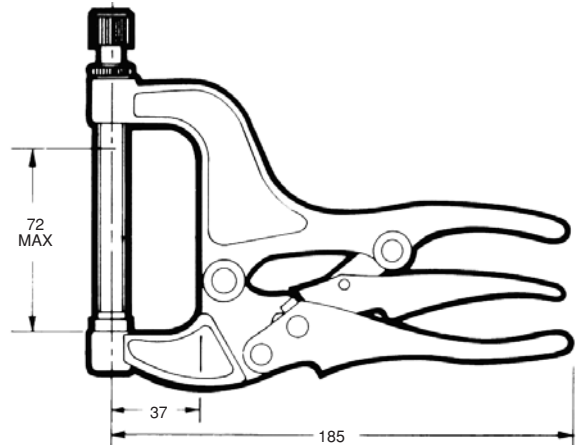
25 daN ↓  
25 daN ↑

## TOGGLE PLIERS AND CLIP CLAMPS

### TOGGLE PLIERS MODEL P2



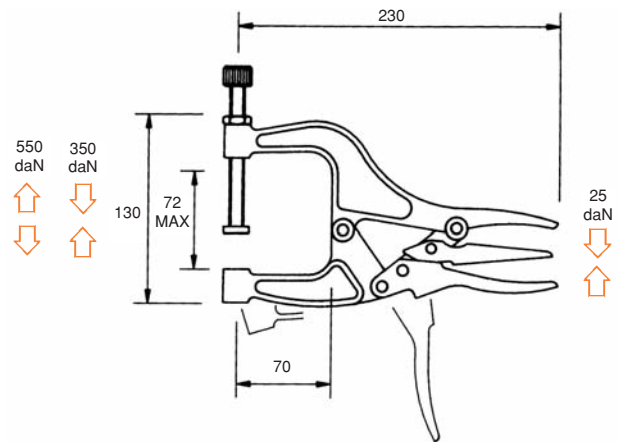
**Spindle:**  
Steel copper plated.  
**Nominal Holding Force:**  
1000 daN  
**Weight:**  
0.65 kg



### TOGGLE PLIERS MODEL P3



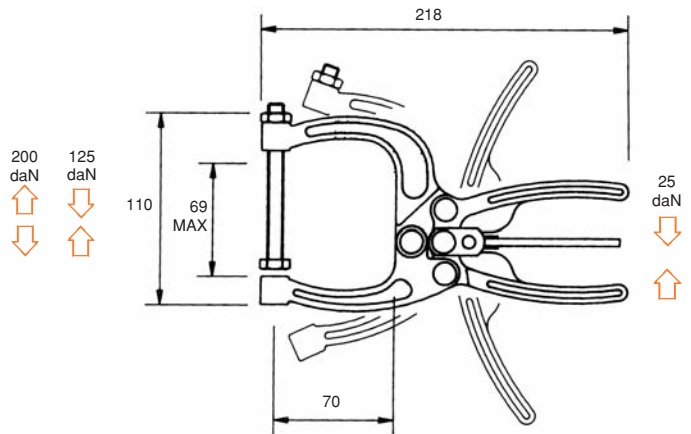
**Spindle:**  
Steel copper plated.  
**Nominal Holding Force:**  
550 daN  
**Weight:**  
0.80 Kg



### TOGGLE PLIERS MODEL P3A



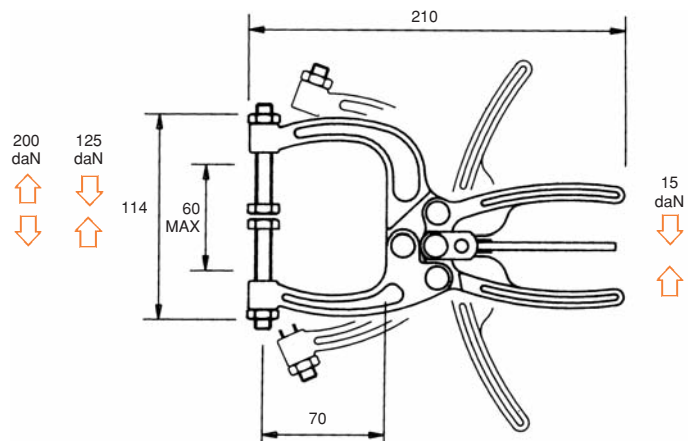
**Spindle:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.65 Kg



### TOGGLE PLIERS MODEL P3B



**Spindles:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.70 Kg

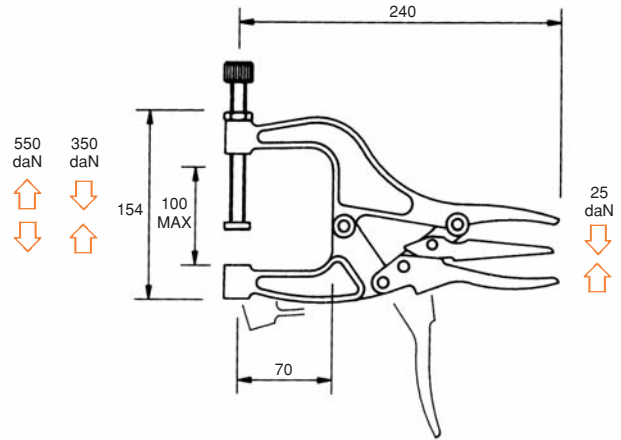


## TOGGLE PLIERS AND CLIP CLAMPS

### TOGGLE PLIERS MODEL P4



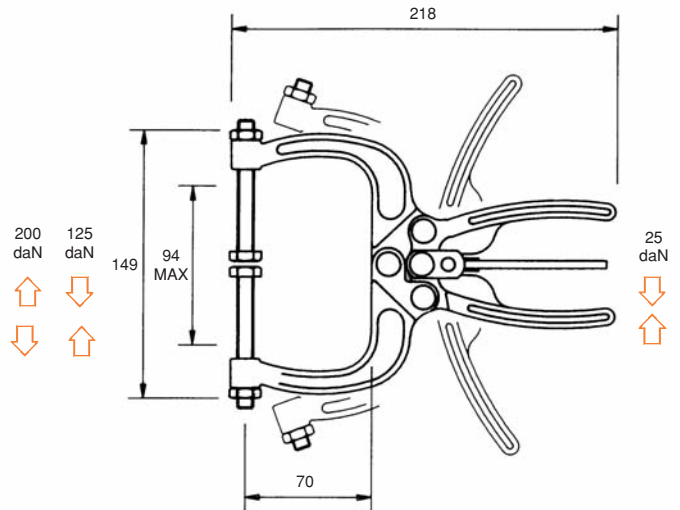
**Spindle:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.75 Kg



### TOGGLE PLIERS MODEL P4B



**Spindles:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.75 Kg



### CLAMPS WITH COPPER PLATED THREAD SHIELD MODELS P1C / P2C / P3C / P4C



1. specially designed thread shield.
2. copper plated to protect from weld spatter.

For dimensions and nominal holding forces see standard models above, except all spindle gaps reduce by 5mm.

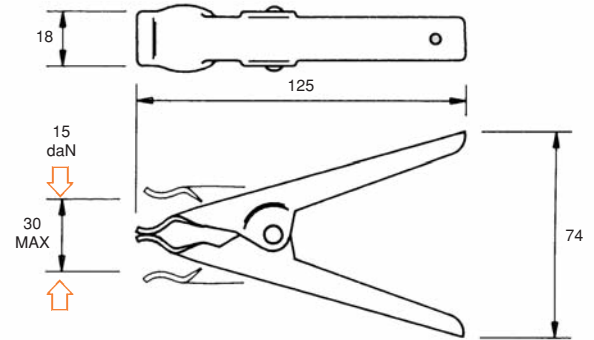
## TOGGLE PLIERS AND CLIP CLAMPS

### CLIP CLAMPS MODEL CC510



**Gripping Force:**  
6 daN closed.  
15 daN open.  
**Weight:**  
0.09 Kg

6 daN  
↓  
↑

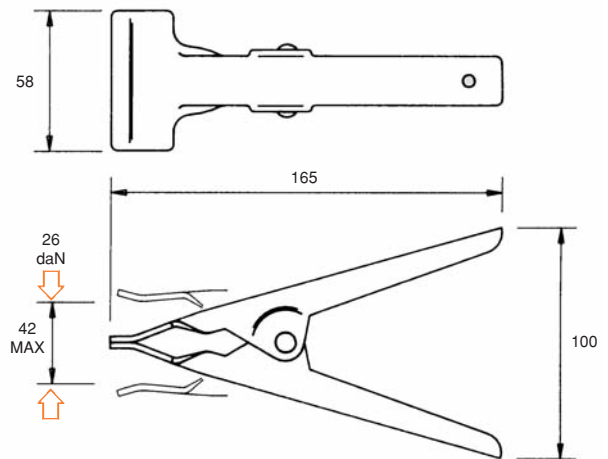


### CLIP CLAMPS MODEL CC610



**Gripping Force:**  
15 daN closed.  
26 daN open.  
**Weight:**  
0.29 Kg

15 daN  
↓  
↑

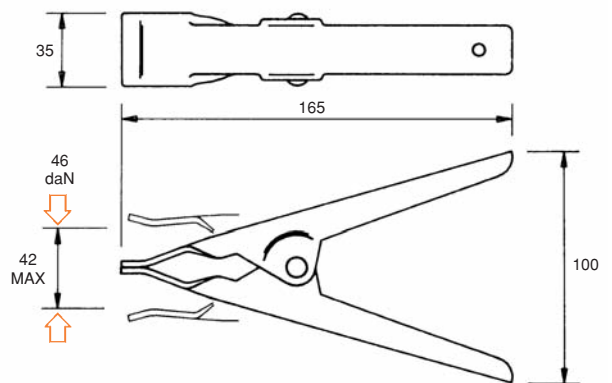


### CLIP CLAMPS MODEL CC701



**Gripping Force:**  
25 daN closed.  
46 daN open.  
**Weight:**  
0.27 Kg

25 daN  
↓  
↑





**CLAMP LEVERS**

.....

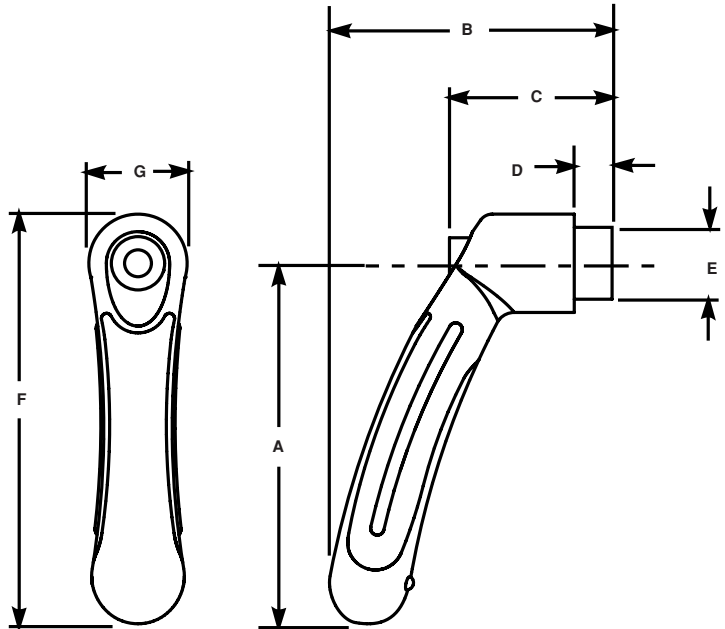
## Soft Touch - Clamp levers



### Material:

Manufactured in thermoplastic elastomer Soft Touch giving a unique tactile feel.

Available in custom colours, metric and imperial threads, stainless steel hardware and adjustment screw choices including hex heads for security applications.



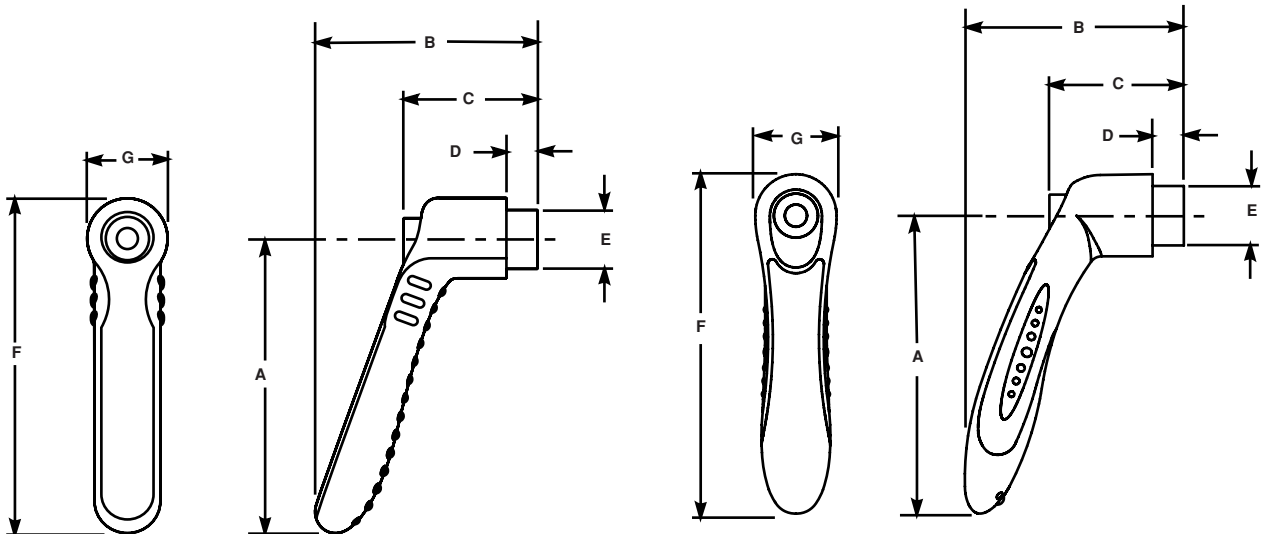
### Dimensions in (mm)

| PART NO.    | A               | B               | C               | D               | E               | F                | G               |
|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|
| PT-AXL-3-40 | 1.57<br>(40.00) | 1.46<br>(37.00) | 0.96<br>(24.50) | 0.22<br>(5.50)  | 0.39<br>(10.00) | 1.87<br>(47.50)  | 0.55<br>(14.00) |
| PT-AXL-3-65 | 2.56<br>(65.00) | 1.99<br>(50.50) | 1.12<br>(28.50) | 0.26<br>(6.50)  | 0.49<br>(12.50) | 2.91<br>(74.00)  | 0.75<br>(19.00) |
| PT-AXL-3-80 | 3.15<br>(80.00) | 2.54<br>(64.50) | 1.46<br>(37.00) | 0.39<br>(10.00) | 0.63<br>(16.00) | 3.58<br>(91.00)  | 0.87<br>(22.00) |
| PT-AXL-3-95 | 3.74<br>(95.00) | 2.94<br>(74.70) | 1.69<br>(43.00) | 0.39<br>(10.00) | 0.75<br>(19.00) | 4.25<br>(108.00) | 1.02<br>(26.00) |

### Inserts and Studs

| PART NO.       | 10-32 | 1/4-20 | 5/16-18 | 3/8-16 | 1/2-13 | M6 | M8 | M10 | M12 |
|----------------|-------|--------|---------|--------|--------|----|----|-----|-----|
| PT-CL-AXL-*-40 | X     | X      |         |        |        | X  |    |     |     |
| PT-CL-AXL-*-65 |       | X      | X       | X      |        | X  | X  | X   |     |
| PT-CL-AXL-*-80 |       |        | X       | X      |        |    | X  | X   |     |
| PT-CL-AXL-*-95 |       |        |         | X      | X      |    |    | X   | X   |

Add -st to part number to indicate stud selection. Popular stud lengths are more readily available



## Clamp Levers with internal thread



**Material:**

Handle in die cast zinc to DIN 1743, steel parts quality class 5.8

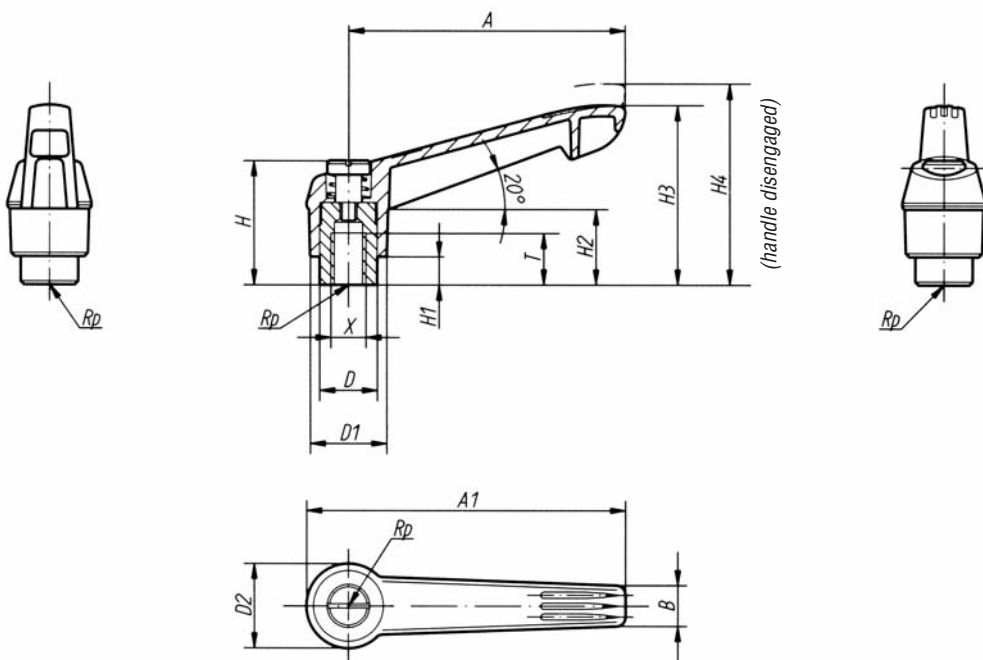
**Surface finish:**

Handle plastic-coated, steel parts black oxide finish

**Note:**

Standard colours are:  
black satin finish, orange RAL 2004

Other colours available on request.  
Other materials, surface finishes, special versions, etc. are available.



CLAMPING PRODUCTS

**Clamp Levers with internal thread**

| Order No.<br>black satin<br>finish | Order No.<br>orange | Size | Internal<br>thread<br>X* | T  | D    | D1   | D2   | H    | H1** | H2   | H3   | H4   | A   | A1    | B    | No. of<br>teeth | Approx.<br>weight kg |
|------------------------------------|---------------------|------|--------------------------|----|------|------|------|------|------|------|------|------|-----|-------|------|-----------------|----------------------|
| 50 104000 01                       | 50 104000 02        | 1    | M 4                      | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16              | 0,030                |
| 50 105000 01                       | 50 105000 02        | 1    | M 5                      | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16              | 0,030                |
| 50 106000 01                       | 50 106000 02        | 1    | M 6                      | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16              | 0,030                |
| 50 206000 01                       | 50 206000 02        | 2    | M 6                      | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20              | 0,070                |
| 50 208000 01                       | 50 208000 02        | 2    | M 8                      | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20              | 0,070                |
| 50 308000 01                       | 50 308000 02        | 3    | M 8                      | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22              | 0,110                |
| 50 310000 01                       | 50 310000 02        | 3    | M 10                     | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22              | 0,110                |
| 50 410000 01                       | 50 410000 02        | 4    | M 10                     | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24              | 0,190                |
| 50 412000 01                       | 50 412000 02        | 4    | M 12                     | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24              | 0,190                |
| 50 512000 01                       | 50 512000 02        | 5    | M 12                     | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26              | 0,300                |
| 50 516000 01                       | 50 516000 02        | 5    | M 16                     | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26              | 0,300                |

Sample order: Clamp Lever 5031000001

\*Other internal threads available on request \*\*Dimension "H1" available in other lengths at extra charge



## Clamp Levers with external thread



**Material:**

Handle in die cast zinc to DIN 1743, steel parts quality class 5.8

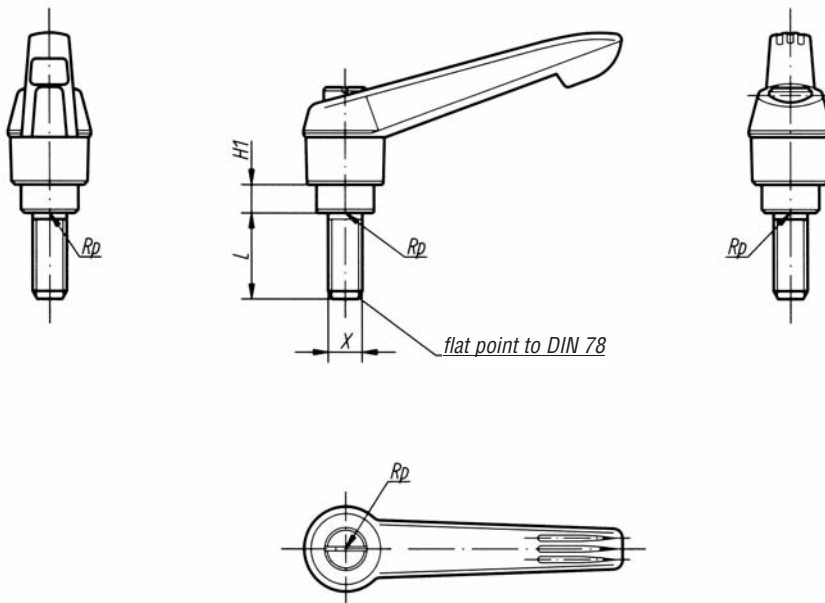
**Surface finish:**

Handle plastic-coated, steel parts black oxide finish

**Note:**

Standard colours are:  
black satin finish, orange RAL 2004

Other colours available on request.  
Other materials, surface finishes, special versions, etc. are available.



disengage  
by lifting



### Clamp Levers with external thread

| Order No.<br>black satin<br>finish | Order No.<br>orange | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------------------------|---------------------|------|---------------------------|-----|---------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 50 105*** 01                       | 50 105*** 02        | 1    | M 5                       | 4   | 10                  | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | -  | -  | -  | -  | -  |
| 50 106*** 01                       | 50 106*** 02        | 1    | M 6                       | 4   | 10                  | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | -  | -  | -  | -  | -  |
| 50 206*** 01                       | 50 206*** 02        | 2    | M 6                       | 6,5 | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 50 208*** 01                       | 50 208*** 02        | 2    | M 8                       | 6,5 | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 50 210*** 01                       | 50 210*** 02        | 2    | M 10                      | 6,5 | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 50 310*** 01                       | 50 310*** 02        | 3    | M 10                      | 10  | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 50 410*** 01                       | 50 410*** 02        | 4    | M 10                      | 10  | -                   | -  | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 50 412*** 01                       | 50 412*** 02        | 4    | M 12                      | 10  | -                   | -  | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 50 512*** 01                       | 50 512*** 02        | 5    | M 12                      | 12  | -                   | -  | -  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 50 516*** 01                       | 50 516*** 02        | 5    | M 16                      | 12  | -                   | -  | -  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |

Sample order: Clamp Lever 5031005002  
(Length L)

\*Dimension "H1" available in other lengths at extra charge  
\*\*\*Add the desired screw length here, e.g. 050 for L = 50 mm

\*\*Other external threads and screw lengths available on request

## Clamp Levers with internal thread, steel parts in stainless steel

ALSO AVAILABLE IN STAINLESS STEEL



**Material:**

Handle in die cast zinc to DIN 1743, steel parts in stainless steel, X 10 CrNiS 18 9 = 1.4305

**Surface finish:**

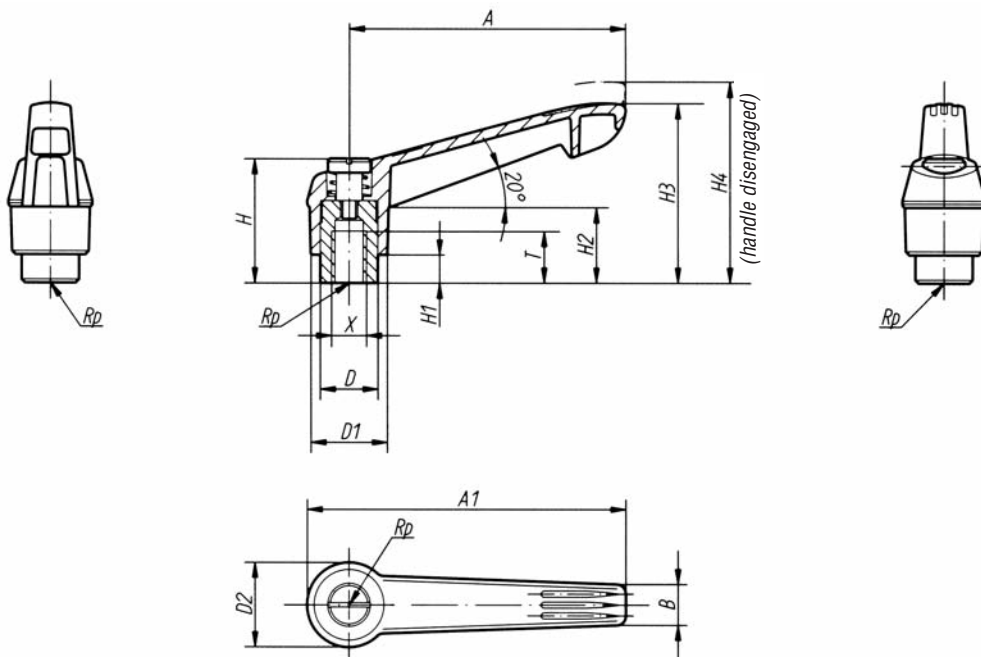
Handle plastic-coated, steel parts natural finish

**Note:**

Standard colours are:  
black satin finish, orange RAL 2004

Other colours available on request.

Other materials, surface finishes, special versions, etc. are available.



disengage by lifting



CLAMPING PRODUCTS

**Clamp Levers with internal thread, steel parts in stainless steel**

| Order No. black satin finish      | Order No. orange | Size | Internal thread X* | T  | D    | D1   | D2   | H    | H1** | H2   | H3   | H4   | A   | A1    | B    | No. of teeth | Approx. weight kg |
|-----------------------------------|------------------|------|--------------------|----|------|------|------|------|------|------|------|------|-----|-------|------|--------------|-------------------|
| 50 105000 01 OS0 50 105000 02 OS0 |                  | 1    | M 5                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,030             |
| 50 106000 01 OS0 50 106000 02 OS0 |                  | 1    | M 6                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,030             |
| 50 206000 01 OS0 50 206000 02 OS0 |                  | 2    | M 6                | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20           | 0,070             |
| 50 208000 01 OS0 50 208000 02 OS0 |                  | 2    | M 8                | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20           | 0,070             |
| 50 308000 01 OS0 50 308000 02 OS0 |                  | 3    | M 8                | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22           | 0,110             |
| 50 310000 01 OS0 50 310000 02 OS0 |                  | 3    | M 10               | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22           | 0,110             |
| 50 410000 01 OS0 50 410000 02 OS0 |                  | 4    | M 10               | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24           | 0,190             |
| 50 412000 01 OS0 50 412000 02 OS0 |                  | 4    | M 12               | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24           | 0,190             |
| 50 512000 01 OS0 50 512000 02 OS0 |                  | 5    | M 12               | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26           | 0,300             |
| 50 516000 01 OS0 50 516000 02 OS0 |                  | 5    | M 16               | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26           | 0,300             |

Sample order: Clamp Lever 50310000010S0

\*Other internal threads available on request

\*\*Dimension "H1" available in other lengths at extra charge

## Clamp Levers with external thread, steel parts in stainless steel



**Material:**

Handle in die cast zinc to DIN 1743, steel parts in stainless steel, X 10 CrNiS 18 9 = 1.4305

**Surface finish:**

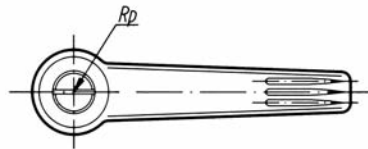
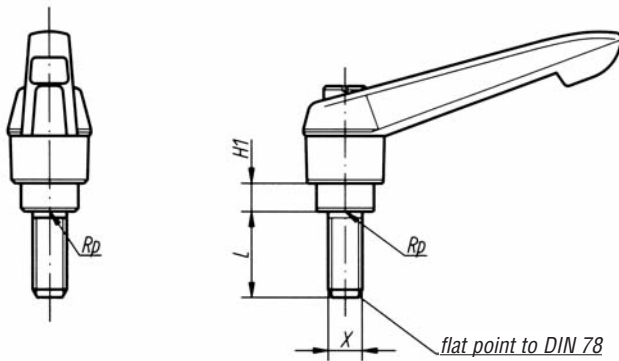
Handle plastic-coated, steel parts natural finish

**Note:**

Standard colours are:  
black satin finish, orange RAL 2004

Other colours available on request.

Other materials, surface finishes, special versions, etc. are available.



disengage  
by lifting



### Clamp Levers with external thread, steel parts in stainless steel

| Order No.<br>black satin<br>finish | Order No.<br>orange | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |    |    |   |
|------------------------------------|---------------------|------|---------------------------|-----|---------------------|----|----|----|----|----|----|----|---|
| 50 105*** 01 OS0 50 105*** 02 OS0  |                     | 1    | M 5                       | 4   | -                   | 15 | 20 | 25 | -  | -  | -  | -  | - |
| 50 106*** 01 OS0 50 106*** 02 OS0  |                     | 1    | M 6                       | 4   | 10                  | 15 | 20 | 25 | 30 | 40 | 50 | -  | - |
| 50 206*** 01 OS0 50 206*** 02 OS0  |                     | 2    | M 6                       | 6,5 | -                   | 15 | 20 | 25 | 30 | 40 | 50 | 60 | - |
| 50 208*** 01 OS0 50 208*** 02 OS0  |                     | 2    | M 8                       | 6,5 | -                   | 15 | 20 | 25 | 30 | 40 | 50 | 60 | - |
| 50 210*** 01 OS0 50 210*** 02 OS0  |                     | 2    | M 10                      | 6,5 | -                   | -  | 20 | 25 | 30 | 40 | 50 | 60 | - |
| 50 310*** 01 OS0 50 310*** 02 OS0  |                     | 3    | M 10                      | 10  | -                   | -  | 20 | 25 | 30 | 40 | 50 | 60 | - |
| 50 412*** 01 OS0 50 412*** 02 OS0  |                     | 4    | M 12                      | 10  | -                   | -  | -  | 25 | 30 | 40 | 50 | 60 | - |
| 50 516*** 01 OS0 50 516*** 02 OS0  |                     | 5    | M 16                      | 12  | -                   | -  | -  | -  | 30 | 40 | 50 | 60 | - |

Sample order: Clamp Lever 50310050020S0  
(Length L)

\* Dimension "H1" available in other lengths at extra charge

\*\* Other external threads and screw lengths available on request

\*\*\* Add the desired screw length here, e.g. 050 for L = 50 mm

## Clamp Levers with internal thread and plastic handle



**Material:**

Handle in glass-fibre reinforced plastic with toothed wheel in die cast zinc, steel parts quality class 5.8

**Surface finish:**

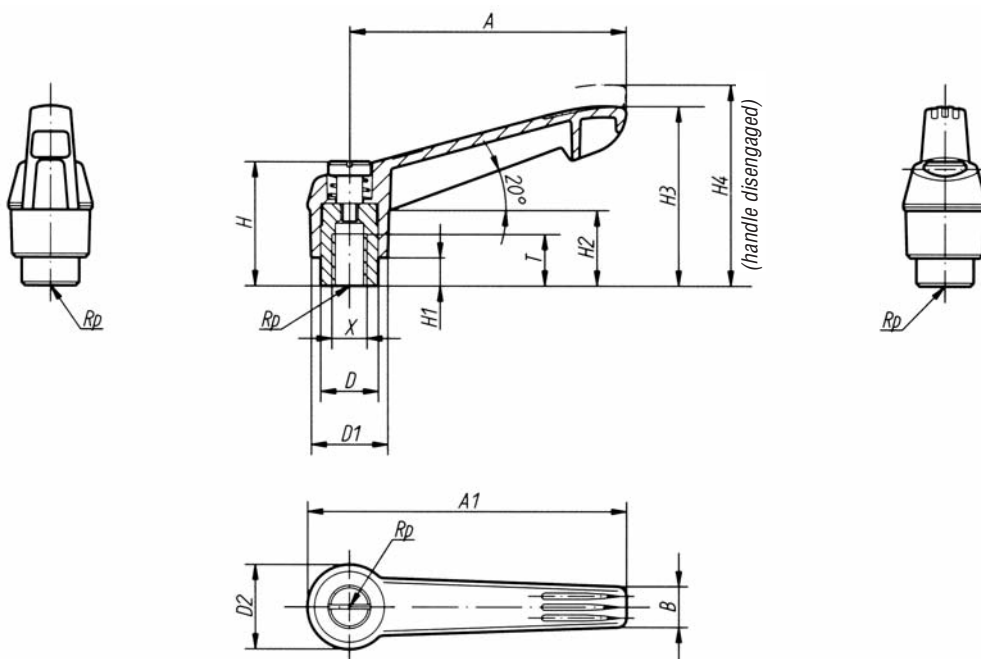
Steel parts black oxide finish

**Note:**

Standard colours are: anthracite grey RAL 7021, orange RAL 2004

Other colours available on request.

Other materials, surface finishes, special versions, etc. are available.



disengage by lifting

CLAMPING PRODUCTS

**Clamp Levers with internal thread and plastic handle**

| Order No. anthracite grey | Order No. orange | Size | Internal thread X* | T  | D    | D1   | D2   | H    | H1** | H2   | H3   | H4   | A   | A1    | B    | No. of teeth | Approx. weight kg |
|---------------------------|------------------|------|--------------------|----|------|------|------|------|------|------|------|------|-----|-------|------|--------------|-------------------|
| 51 104000 90              | 51 104000 02     | 1    | M 4                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,013             |
| 51 105000 90              | 51 105000 02     | 1    | M 5                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,013             |
| 51 106000 90              | 51 106000 02     | 1    | M 6                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,013             |
| 51 206000 90              | 51 206000 02     | 2    | M 6                | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20           | 0,029             |
| 51 208000 90              | 51 208000 02     | 2    | M 8                | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20           | 0,029             |
| 51 308000 90              | 51 308000 02     | 3    | M 8                | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22           | 0,050             |
| 51 310000 90              | 51 310000 02     | 3    | M 10               | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22           | 0,050             |
| 51 410000 90              | 51 410000 02     | 4    | M 10               | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24           | 0,078             |
| 51 412000 90              | 51 412000 02     | 4    | M 12               | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24           | 0,078             |
| 51 512000 90              | 51 512000 02     | 5    | M 12               | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26           | 0,130             |
| 51 516000 90              | 51 516000 02     | 5    | M 16               | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26           | 0,130             |

Sample order: Clamp Lever 5120800090

\*Other internal threads available on request

\*\*Dimension "H1" available in other lengths at extra charge

## Clamp Levers with external thread and plastic handle



**Material:**

Handle in glass-fibre reinforced plastic with toothed wheel in die cast zinc, steel parts quality class 5.8

**Surface finish:**

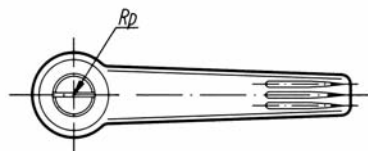
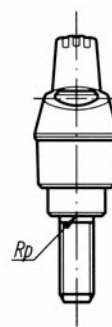
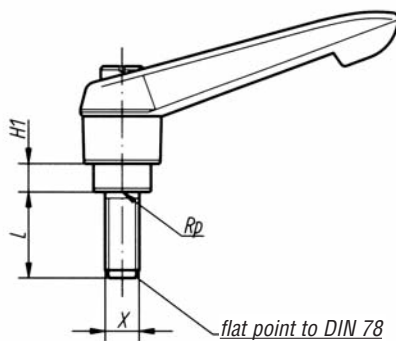
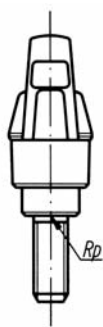
Steel parts black oxide finish

**Note:**

Standard colours are: anthracite grey RAL 7021, orange RAL 2004

Other colours available on request.

Other materials, surface finishes, special versions, etc. are available.



disengage by lifting



### Clamp Levers with external thread and plastic handle

| Order No.<br>anthracite grey | Order No.<br>orange | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------------------|---------------------|------|---------------------------|-----|---------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 51 105*** 90                 | 51 105*** 02        | 1    | M 5                       | 4   | 10                  | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | -  | -  | -  | -  | -  |
| 51 106*** 90                 | 51 106*** 02        | 1    | M 6                       | 4   | 10                  | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | -  | -  | -  | -  | -  |
| 51 206*** 90                 | 51 206*** 02        | 2    | M 6                       | 6,5 | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 208*** 90                 | 51 208*** 02        | 2    | M 8                       | 6,5 | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 210*** 90                 | 51 210*** 02        | 2    | M 10                      | 6,5 | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 310*** 90                 | 51 310*** 02        | 3    | M 10                      | 10  | -                   | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 410*** 90                 | 51 410*** 02        | 4    | M 10                      | 10  | -                   | -  | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 51 412*** 90                 | 51 412*** 02        | 4    | M 12                      | 10  | -                   | -  | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 51 512*** 90                 | 51 512*** 02        | 5    | M 12                      | 12  | -                   | -  | -  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 51 516*** 90                 | 51 516*** 02        | 5    | M 16                      | 12  | -                   | -  | -  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |

Sample order: Clamp Lever 5141205002  
(Length L)

\*Dimension "H1" available in other lengths at extra charge  
\*\*\*Add the desired screw length here, e.g. 050 for L = 50 mm

\*\*Other external threads and screw lengths available on request

## Clamp Levers with internal thread and plastic handle, steel parts in stainless steel



**Material:**

Handle in glass-fibre reinforced plastic with toothed wheel in die cast zinc; steel parts in stainless steel, X 10 CrNiS 18 9 = 1.4305

**Surface finish:**

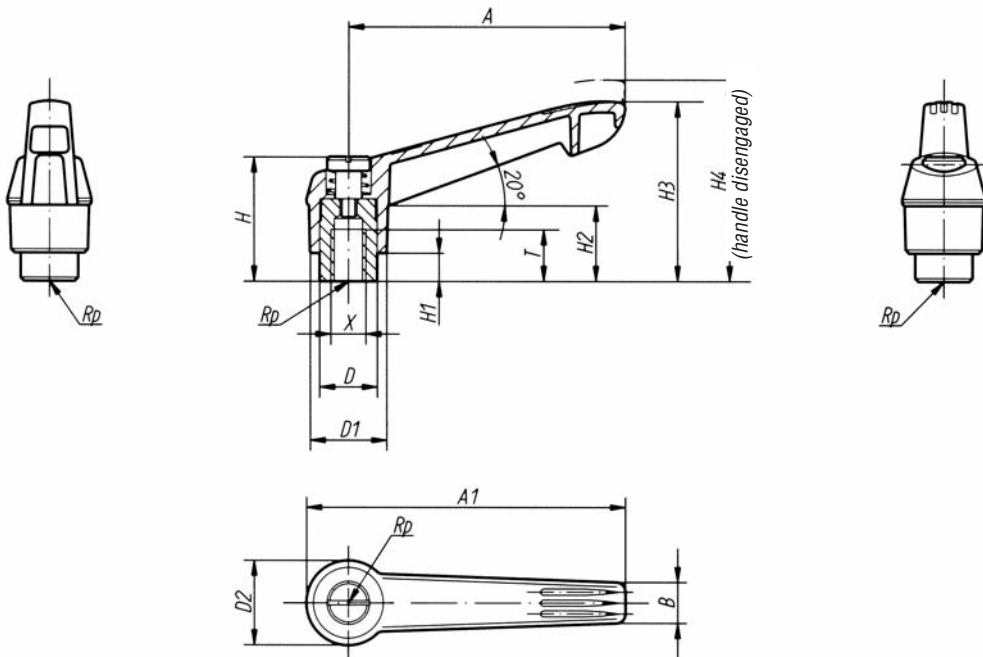
Steel parts natural finish

**Note:**

Standard colours are: anthracite grey RAL 7021, orange RAL 2004

For other colours are also available.

Other materials, surface finishes, special versions, etc. are available.



disengage by lifting

CLAMPING PRODUCTS

**Clamp Levers with internal thread and plastic handle, steel parts in stainless steel**

| Order No. anthracite grey         | Order No. orange | Size | Internal thread X* | T  | D    | D1   | D2   | H    | H1** | H2   | H3   | H4   | A   | A1    | B    | No. of teeth | Approx. weight kg |
|-----------------------------------|------------------|------|--------------------|----|------|------|------|------|------|------|------|------|-----|-------|------|--------------|-------------------|
| 51 105000 90 0S0 51 105000 02 0S0 |                  | 1    | M 5                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,013             |
| 51 106000 90 0S0 51 106000 02 0S0 |                  | 1    | M 6                | 9  | 10   | 13   | 14,5 | 24   | 4    | 15   | 29,5 | 33,5 | 40  | 47    | 7,5  | 16           | 0,013             |
| 51 206000 90 0S0 51 206000 02 0S0 |                  | 2    | M 6                | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20           | 0,029             |
| 51 208000 90 0S0 51 208000 02 0S0 |                  | 2    | M 8                | 12 | 13,5 | 18   | 19,5 | 29   | 6,5  | 17,5 | 41   | 45   | 65  | 75    | 9,5  | 20           | 0,029             |
| 51 308000 90 0S0 51 308000 02 0S0 |                  | 3    | M 8                | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22           | 0,050             |
| 51 310000 90 0S0 51 310000 02 0S0 |                  | 3    | M 10               | 14 | 16   | 21,5 | 23   | 37,5 | 10   | 24   | 53   | 57   | 80  | 91,5  | 11   | 22           | 0,050             |
| 51 410000 90 0S0 51 410000 02 0S0 |                  | 4    | M 10               | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24           | 0,078             |
| 51 412000 90 0S0 51 412000 02 0S0 |                  | 4    | M 12               | 17 | 19   | 25,5 | 27,5 | 42,5 | 10   | 27   | 61   | 65   | 95  | 109   | 13   | 24           | 0,078             |
| 51 512000 90 0S0 51 512000 02 0S0 |                  | 5    | M 12               | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26           | 0,130             |
| 51 516000 90 0S0 51 516000 02 0S0 |                  | 5    | M 16               | 23 | 23   | 30   | 32,5 | 51   | 12   | 33   | 72,5 | 77,5 | 110 | 126,5 | 15,5 | 26           | 0,130             |

Sample order: Clamp Lever 51310000020S0

\*Other internal threads available on request

\*\*Dimension "H1" available in other lengths at extra charge

## Clamp Levers with external thread and plastic handle, steel parts in stainless steel



**Material:**

Handle in glass-fibre reinforced plastic with toothed wheel in die cast zinc; steel parts in stainless steel, X 10 CrNiS 18 9 = 1.4305

**Surface finish:**

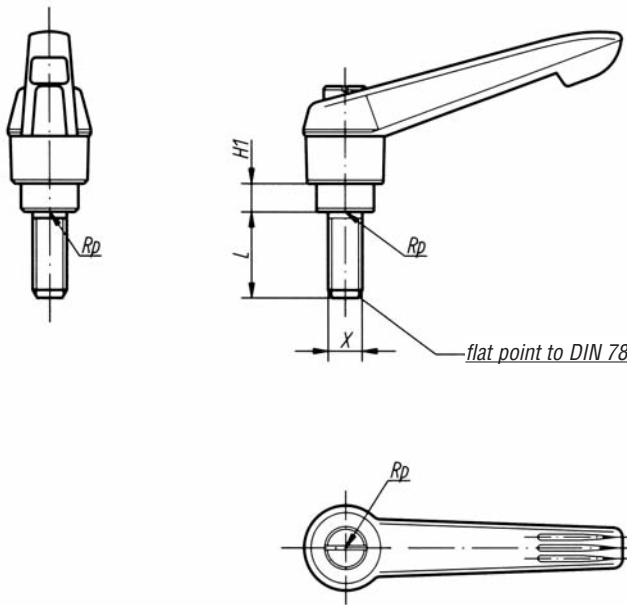
Steel parts natural finish

**Note:**

Standard colours are: anthracite grey RAL 7021, orange RAL 2004

For other colours are also available.

Other materials, surface finishes, special versions, etc. are available.



disengage by lifting



### Clamp Levers with external thread and plastic handle, steel parts in stainless steel

| Order No.<br>anthracite grey | Order No.<br>orange | Size   | External<br>thread<br>X** | H1*  | L = Screw length ** |    |    |    |    |    |    |    |    |
|------------------------------|---------------------|--------|---------------------------|------|---------------------|----|----|----|----|----|----|----|----|
| 51 105***                    | 90 0S0 51 105***    | 02 OS0 | 1                         | M 5  | 4                   | –  | 15 | 20 | 25 | –  | –  | –  | –  |
| 51 106***                    | 90 0S0 51 106***    | 02 OS0 | 1                         | M 6  | 4                   | 10 | 15 | 20 | 25 | 30 | 40 | 50 | –  |
| 51 206***                    | 90 0S0 51 206***    | 02 OS0 | 2                         | M 6  | 6,5                 | –  | 15 | 20 | 25 | 30 | 40 | 50 | 60 |
| 51 208***                    | 90 0S0 51 208***    | 02 OS0 | 2                         | M 8  | 6,5                 | –  | 15 | 20 | 25 | 30 | 40 | 50 | 60 |
| 51 210***                    | 90 0S0 51 210***    | 02 OS0 | 2                         | M 10 | 6,5                 | –  | –  | 20 | 25 | 30 | 40 | 50 | 60 |
| 51 310***                    | 90 0S0 51 310***    | 02 OS0 | 3                         | M 10 | 10                  | –  | –  | 20 | 25 | 30 | 40 | 50 | 60 |
| 51 412***                    | 90 0S0 51 412***    | 02 OS0 | 4                         | M 12 | 10                  | –  | –  | –  | 25 | 30 | 40 | 50 | 60 |
| 51 516***                    | 90 0S0 51 516***    | 02 OS0 | 5                         | M 16 | 12                  | –  | –  | –  | –  | 30 | 40 | 50 | 60 |

Sample order: Clamp Lever 50310050020S0  
(Length L)

\* Dimension "H1" available in other lengths at extra char \*\*Other external threads and screw lengths available on request  
\*\*\* Add the desired screw length here, e.g. 050 for L = 50 mm

## Coloured Clamp Levers with internal thread



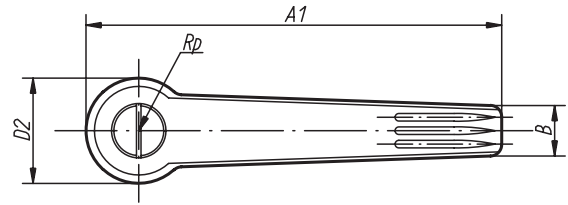
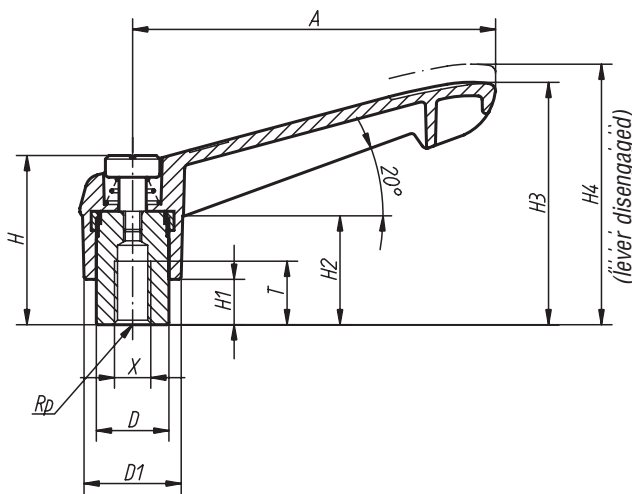
For many people the Clamp Lever represents the key to secure and comfortable gripping. This lever provides a future-oriented and powerful solution for almost any operating and clamping problem.

### Material, surface finish:

Lever in glass-fibre reinforced plastic, toothed wheel in die cast zinc, steel parts 5.8 black oxide finish or stainless steel, X 10 CrNiS 18 9 = 1.4305 natural finish

### Note:

Other internal threads X available on request. Dimension H1 available in other lengths on request at extra cost.



anthracite grey  $\Delta\Delta = 90$



RAL 7021

signal green  $\Delta\Delta = 86$



RAL 6032

traffic red  $\Delta\Delta = 84$



RAL 3020

bright yellow  $\Delta\Delta = 16$



RAL 1021

traffic blue  $\Delta\Delta = 87$



RAL 5017

### Clamp Levers with internal thread

| Order No. steel          | Order No. stainless steel    | Size | X   | T  | D    | D1   | D2   | H    | H1  | H2   | H3   | H4   | A   | A1  | B    | No. of teeth | Approx. weight g |
|--------------------------|------------------------------|------|-----|----|------|------|------|------|-----|------|------|------|-----|-----|------|--------------|------------------|
| 51 104000 $\Delta\Delta$ | -                            | 1    | M4  | 9  | 10   | 13   | 14,5 | 24   | 4   | 15   | 29,5 | 33,5 | 40  | 47  | 7,5  | 16           | 13               |
| 51 105000 $\Delta\Delta$ | 51 105000 $\Delta\Delta$ OSO | 1    | M5  | 9  | 10   | 13   | 14,5 | 24   | 4   | 15   | 29,5 | 33,5 | 40  | 47  | 7,5  | 16           | 13               |
| 51 106000 $\Delta\Delta$ | 51 106000 $\Delta\Delta$ OSO | 1    | M6  | 9  | 10   | 13   | 14,5 | 24   | 4   | 15   | 29,5 | 33,5 | 40  | 47  | 7,5  | 16           | 13               |
| 51 206000 $\Delta\Delta$ | 51 206000 $\Delta\Delta$ OSO | 2    | M6  | 12 | 13,5 | 18   | 19,5 | 29   | 6,5 | 17,5 | 41   | 45   | 65  | 75  | 9,5  | 20           | 30               |
| 51 208000 $\Delta\Delta$ | 51 208000 $\Delta\Delta$ OSO | 2    | M8  | 12 | 13,5 | 18   | 19,5 | 29   | 6,5 | 17,5 | 41   | 45   | 65  | 75  | 9,5  | 20           | 30               |
| 51 308000 $\Delta\Delta$ | 51 308000 $\Delta\Delta$ OSO | 3    | M8  | 14 | 16   | 21,5 | 23   | 37,5 | 10  | 24   | 53   | 57   | 80  | 92  | 11   | 22           | 52               |
| 51 310000 $\Delta\Delta$ | 51 310000 $\Delta\Delta$ OSO | 3    | M10 | 14 | 16   | 21,5 | 23   | 37,5 | 10  | 24   | 53   | 57   | 80  | 92  | 11   | 22           | 52               |
| 51 410000 $\Delta\Delta$ | 51 410000 $\Delta\Delta$ OSO | 4    | M10 | 17 | 19   | 25,5 | 27,5 | 42,5 | 10  | 27   | 61   | 65   | 95  | 109 | 13   | 24           | 82               |
| 51 412000 $\Delta\Delta$ | 51 412000 $\Delta\Delta$ OSO | 4    | M12 | 17 | 19   | 25,5 | 27,5 | 42,5 | 10  | 27   | 61   | 65   | 95  | 109 | 13   | 24           | 82               |
| 51 512000 $\Delta\Delta$ | 51 512000 $\Delta\Delta$ OSO | 5    | M12 | 23 | 23   | 30   | 32,5 | 51   | 12  | 33   | 72,5 | 77,5 | 110 | 127 | 15,5 | 26           | 136              |
| 51 516000 $\Delta\Delta$ | 51 516000 $\Delta\Delta$ OSO | 5    | M16 | 23 | 23   | 30   | 32,5 | 51   | 12  | 33   | 72,5 | 77,5 | 110 | 127 | 15,5 | 26           | 136              |

Sample order: Clamp Lever 51412 000 86 OSO (clamp lever signal green)

$\Delta\Delta$  Add the desired colour of the clamp lever here



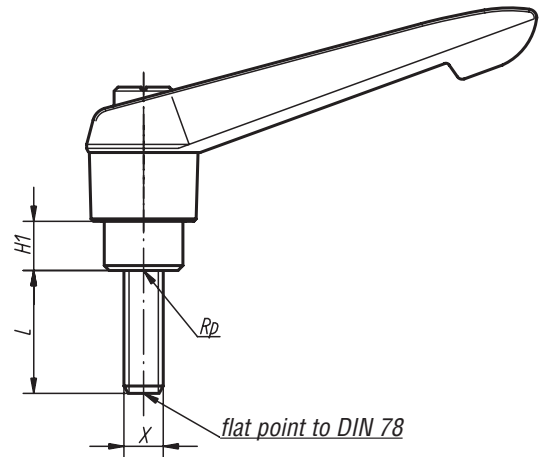
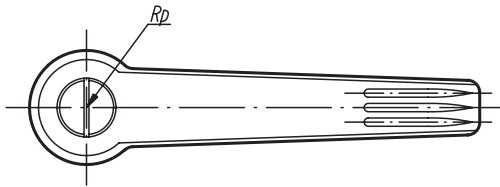
## Coloured Clamp Levers with external thread



**Note:**

Other external threads X and screw lengths available on request. Dimension H1 available in other lengths on request at extra cost.

Material specification, missing dimensions and colour coding on previous page.



### Clamp Levers with external thread in stainless steel

| Order No.<br>stainless steel  | Size | X    | H1  | L = Screw length |    |    |    |    |    |    |    |   |   |   |   |
|-------------------------------|------|------|-----|------------------|----|----|----|----|----|----|----|---|---|---|---|
| 51 105 *** $\Delta\Delta$ OSO | 1    | M 5  | 4   | -                | 15 | 20 | 25 | -  | -  | -  | -  | - | - | - | - |
| 51 106 *** $\Delta\Delta$ OSO | 1    | M 6  | 4   | 10               | 15 | 20 | 25 | 30 | 40 | 50 | -  | - | - | - | - |
| 51 206 *** $\Delta\Delta$ OSO | 2    | M6   | 6,5 | -                | 15 | 20 | 25 | 30 | 40 | 50 | 60 | - | - | - | - |
| 51 208 *** $\Delta\Delta$ OSO | 2    | M 8  | 6,5 | -                | 15 | 20 | 25 | 30 | 40 | 50 | 60 | - | - | - | - |
| 51 210 *** $\Delta\Delta$ OSO | 2    | M 10 | 6,5 | -                | -  | 20 | 25 | 30 | 40 | 50 | 60 | - | - | - | - |
| 51 310 *** $\Delta\Delta$ OSO | 3    | M 10 | 10  | -                | -  | 20 | 25 | 30 | 40 | 50 | 60 | - | - | - | - |
| 51 412 *** $\Delta\Delta$ OSO | 4    | M 12 | 10  | -                | -  | -  | 25 | 30 | 40 | 50 | 60 | - | - | - | - |
| 51 516 *** $\Delta\Delta$ OSO | 5    | M 16 | 12  | -                | -  | -  | -  | 30 | 40 | 50 | 60 | - | - | - | - |

### Clamp Levers with external thread in steel

| Order No.<br>steel        | Size | X    | H1  | L = Screw length |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---------------------------|------|------|-----|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 51 105 *** $\Delta\Delta$ | 1    | M 5  | 4   | 10               | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | -  | -  | -  | -  | -  |
| 51 106 *** $\Delta\Delta$ | 1    | M 6  | 4   | 10               | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | -  | -  | -  | -  | -  |
| 51 206 *** $\Delta\Delta$ | 2    | M6   | 6,5 | -                | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 208 *** $\Delta\Delta$ | 2    | M 8  | 6,5 | -                | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 210 *** $\Delta\Delta$ | 2    | M 10 | 6,5 | -                | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 310 *** $\Delta\Delta$ | 3    | M 10 | 10  | -                | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | -  | -  | -  |
| 51 410 *** $\Delta\Delta$ | 4    | M 10 | 10  | -                | -  | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 51 412 *** $\Delta\Delta$ | 4    | M 12 | 10  | -                | -  | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 51 512 *** $\Delta\Delta$ | 5    | M 12 | 12  | -                | -  | -  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 51 516 *** $\Delta\Delta$ | 5    | M 16 | 12  | -                | -  | -  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |

Sample order: Clamp Lever 51 310  $\Delta\Delta$  90 (clamp lever anthracite grey)  
(length L)

$\Delta\Delta$  Add the desired clamp lever colour here  
\*\*\*Add the desired screw length here, e.g. 040 for L = 40 mm

## Non-adjustable clamp levers



**Material:**

Handle in glass-fibre reinforced plastic, steel parts quality class 5.8

**Surface finish:**

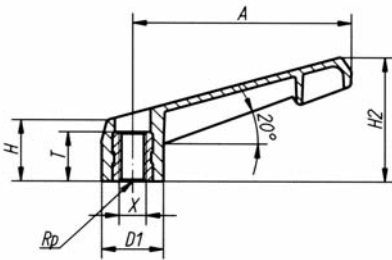
Handle in anthracite grey, steel parts yellow chromated

**Note:**

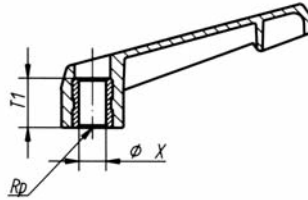
Other materials, surface finishes, special versions, etc. are available.

Non-Adjustable Clamp Levers can be used for simple applications. Generally there must be enough space so that the lever can be turned 360°.

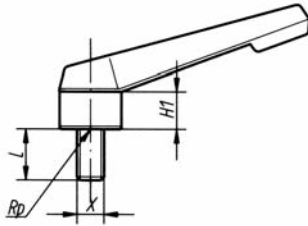
Non-Adjustable Clamp Levers with internal thread



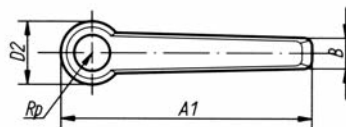
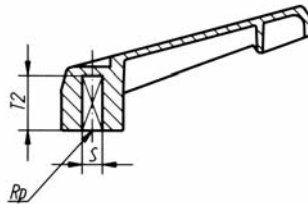
Non-Adjustable Clamp Levers with locating hole



Non-Adjustable Clamp Levers with external thread



Non-Adjustable Clamp Levers with square socket



### Non-Adjustable Clamp Levers

| Order No.    | Internal thread |    | Approx. weight g | Size | D1   | D2   | H  | H1 | H2   | A   | A1  | B  |
|--------------|-----------------|----|------------------|------|------|------|----|----|------|-----|-----|----|
|              | X               | T  |                  |      |      |      |    |    |      |     |     |    |
| 20 104000 90 | M 4             | 10 | 11               | 1    | 13,8 | 14   | 17 | 11 | 27   | 40  | 47  | 8  |
| 20 105000 90 | M 5             | 10 | 10               | 1    | 13,8 | 14   | 17 | 11 | 27   | 40  | 47  | 8  |
| 20 106000 90 | M 6             | 10 | 10               | 1    | 13,8 | 14   | 17 | 11 | 27   | 40  | 47  | 8  |
| 20 208000 90 | M 8             | 14 | 20               | 2    | 18,3 | 18,5 | 18 | 11 | 36,5 | 65  | 75  | 9  |
| 20 310000 90 | M 10            | 14 | 41               | 3    | 21,8 | 22   | 22 | 14 | 45   | 80  | 91  | 11 |
| 20 412000 90 | M 12            | 18 | 65               | 4    | 25,8 | 26   | 26 | 17 | 54   | 95  | 108 | 13 |
| 20 516000 90 | M 16            | 18 | 105              | 5    | 30,8 | 31   | 31 | 21 | 63   | 110 | 126 | 16 |

| Order No.    | External thread |                  | Approx. weight g | Size | D1   | D2   | H  | H1 | H2   | A   | A1  | B  | Locating hole |                 | Square socket |           | Approx. weight g |                  |      |    |    |      |     |     |    |
|--------------|-----------------|------------------|------------------|------|------|------|----|----|------|-----|-----|----|---------------|-----------------|---------------|-----------|------------------|------------------|------|----|----|------|-----|-----|----|
|              | X               | L = Screw length |                  |      |      |      |    |    |      |     |     |    | Order No.     | X <sup>H9</sup> | T1            | Order No. |                  | S <sup>H11</sup> | T2   |    |    |      |     |     |    |
| 20 105*** 90 | M 5             | 20               | 14               | 1    | 13,8 | 14   | 17 | 11 | 27   | 40  | 47  | 8  | 20 105002 90  | 5               | 13            | 5         | 1                | 13,8             | 14   | 17 | 11 | 27   | 40  | 47  | 8  |
| 20 106*** 90 | M 6             | 20               | 15               | 1    | 13,8 | 14   | 17 | 11 | 27   | 40  | 47  | 8  | 20 106001 90  | 6               | 10            | 10        | 1                | 13,8             | 14   | 17 | 11 | 27   | 40  | 47  | 8  |
| 20 208*** 90 | M 8             | 15               | 29               | 2    | 18,3 | 18,5 | 18 | 11 | 36,5 | 65  | 75  | 9  | 20 208001 90  | 8               | 14            | 19        | 2                | 18,3             | 18,5 | 18 | 11 | 36,5 | 65  | 75  | 9  |
| 20 310*** 90 | M 10            | 30               | 65               | 3    | 21,8 | 22   | 22 | 14 | 45   | 80  | 91  | 11 | 20 310001 90  | 10              | 14            | 38        | 3                | 21,8             | 22   | 22 | 14 | 45   | 80  | 91  | 11 |
| 20 412*** 90 | M 12            | 30               | 102              | 4    | 25,8 | 26   | 26 | 17 | 54   | 95  | 108 | 13 | 20 412001 90  | 12              | 18            | 62        | 4                | 25,8             | 26   | 26 | 17 | 54   | 95  | 108 | 13 |
| 20 516*** 90 | M 16            | 40               | 195              | 5    | 30,8 | 31   | 31 | 21 | 63   | 110 | 126 | 16 | 20 516001 90  | 16              | 18            | 102       | 5                | 30,8             | 31   | 31 | 21 | 63   | 110 | 126 | 16 |

Sample order: Non-Adjustable Clamp Lever 2020802090

\*\*\* Add the desired screw length here, e.g. 020 for L = 20 mm

## Tension Levers with internal thread



**Material:**

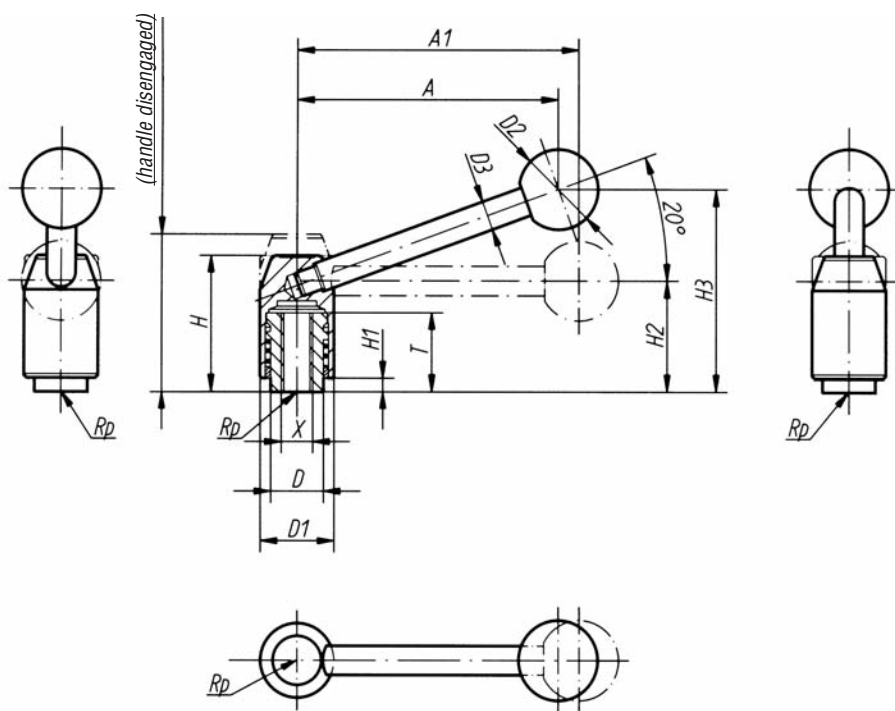
Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



**Tension Levers with internal thread**

| Order No.<br>black oxide finish<br>0 degrees | Order No.<br>black oxide finish<br>20 degrees | Size | Internal<br>thread<br>X* | T  | D  | D1 | D2 | D3 | H  | H1** | H2   | H3  | H4 | A** | A1** | No. of<br>teeth | Approx.<br>weight kg |
|--|---|------|--------------------------|----|----|----|----|----|----|------|------|-----|----|-----|------|-----------------|----------------------|
| 05 108000 00                                 | 05 108000 20                                  | 1    | M 8                      | 23 | 17 | 24 | 25 | 10 | 44 | 4    | 36,5 | 64  | 49 | 81  | 87   | 28              | 0,170                |
| 05 110000 00                                 | 05 110000 20                                  | 1    | M 10                     | 23 | 17 | 24 | 25 | 10 | 44 | 4    | 36,5 | 64  | 49 | 81  | 87   | 28              | 0,170                |
| 05 210000 00                                 | 05 210000 20                                  | 2    | M 10                     | 26 | 20 | 28 | 30 | 11 | 51 | 5    | 41,5 | 76  | 49 | 98  | 106  | 30              | 0,260                |
| 05 212000 00                                 | 05 212000 20                                  | 2    | M 12                     | 26 | 20 | 28 | 30 | 11 | 51 | 5    | 41,5 | 76  | 57 | 98  | 106  | 30              | 0,260                |
| 05 312000 00                                 | 05 312000 20                                  | 3    | M 12                     | 30 | 24 | 33 | 32 | 12 | 57 | 5    | 46   | 87  | 64 | 118 | 128  | 35              | 0,400                |
| 05 316000 00                                 | 05 316000 20                                  | 3    | M 16                     | 30 | 24 | 33 | 32 | 12 | 57 | 5    | 46   | 87  | 64 | 118 | 128  | 35              | 0,400                |
| 05 416000 00                                 | 05 416000 20                                  | 4    | M 16                     | 35 | 30 | 41 | 37 | 14 | 67 | 6    | 55   | 100 | 75 | 136 | 147  | 38              | 0,670                |
| 05 420000 00                                 | 05 420000 20                                  | 4    | M 20                     | 35 | 30 | 41 | 37 | 14 | 67 | 6    | 55   | 100 | 75 | 136 | 147  | 38              | 0,670                |
| 05 424000 00                                 | 05 424000 20                                  | 4    | M 24                     | 35 | 30 | 41 | 37 | 14 | 67 | 6    | 55   | 100 | 75 | 136 | 147  | 38              | 1,000                |

Sample order: Tension Lever 0531200020

\*Other internal threads available on request \*\*Dimension "H1", "A" and "A1" available in other lengths at extra charge

## Tension Levers with external thread



**Material:**

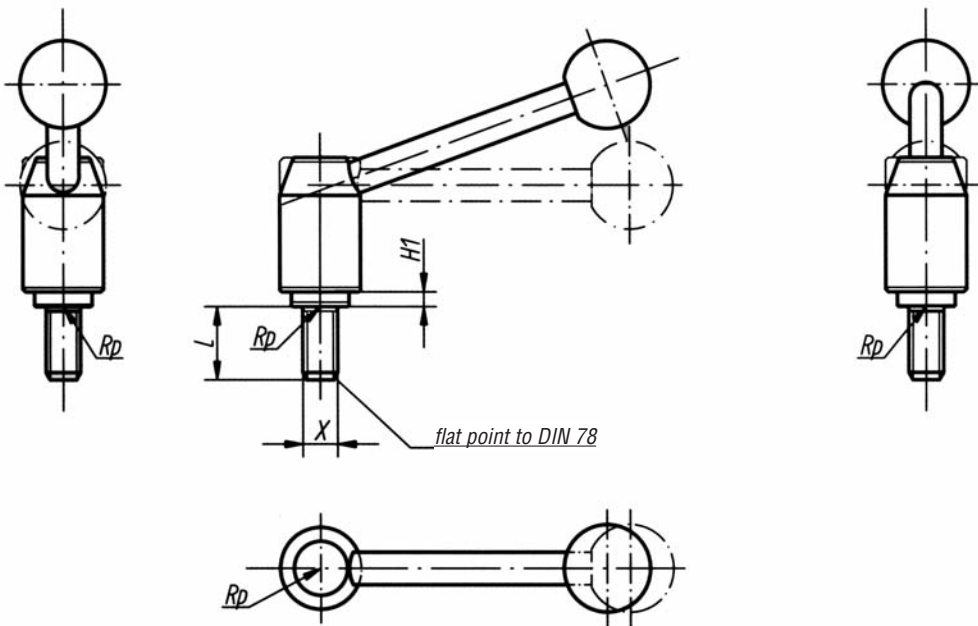
Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



CLAMPING PRODUCTS

**Clamp Levers with external thread and plastic handle, steel parts in stainless steel**

| Order No.<br>black oxide finish<br>0 degrees | Order No.<br>black oxide finish<br>20 degrees | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |    |    |    |    |  |
|--|---|------|---------------------------|-----|---------------------|----|----|----|----|----|----|----|----|----|--|
| 05 108*** 00                                 | 05 108*** 20                                  | 1    | M 8                       | 4   | 15                  | 20 | 25 | 30 | 40 | 50 | 60 | -  | -  | -  |  |
| 05 110*** 00                                 | 05 110*** 20                                  | 1    | M 10                      | 4   | 15                  | 20 | 25 | 30 | 40 | 50 | 60 | -  | -  | -  |  |
| 05 112*** 00                                 | 05 112*** 20                                  | 1    | M 12                      | 4   | 15                  | 20 | 25 | 30 | 40 | 50 | 60 | -  | -  | -  |  |
| 05 212*** 00                                 | 05 212*** 20                                  | 2    | M 12                      | 5   | -                   | 20 | 25 | 30 | 40 | 50 | 60 | -  | -  | -  |  |
| 05 312*** 00                                 | 05 312*** 20                                  | 3    | M 12                      | 5   | -                   | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |  |
| 05 316*** 00                                 | 05 316*** 20                                  | 3    | M 16                      | 5   | -                   | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |  |
| 05 416*** 00                                 | 05 416*** 20                                  | 4    | M 16                      | 6   | -                   | -  | -  | 30 | 40 | 50 | 60 | 70 | 80 | 90 |  |
| 05 420*** 00                                 | 05 420*** 20                                  | 4    | M 20                      | 6   | -                   | -  | -  | 30 | 40 | 50 | 60 | 70 | 80 | 90 |  |
| 05 424*** 00                                 | 05 424*** 20                                  | 4    | M 24                      | 6   | -                   | -  | -  | 30 | 40 | 50 | 60 | 70 | 80 | 90 |  |

Sample order: Tension Lever 0541605000  
(Length L)

\* Dimension "H1" available in other lengths at extra charge \*\*Other external threads and screw lengths available on request  
\*\*\* Add the desired screw length here, e.g. 050 for L = 50 mm

## Tension Levers with internal thread



**Material:**

Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

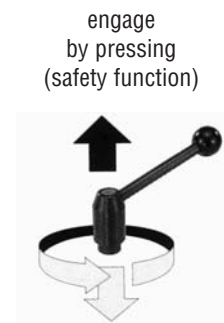
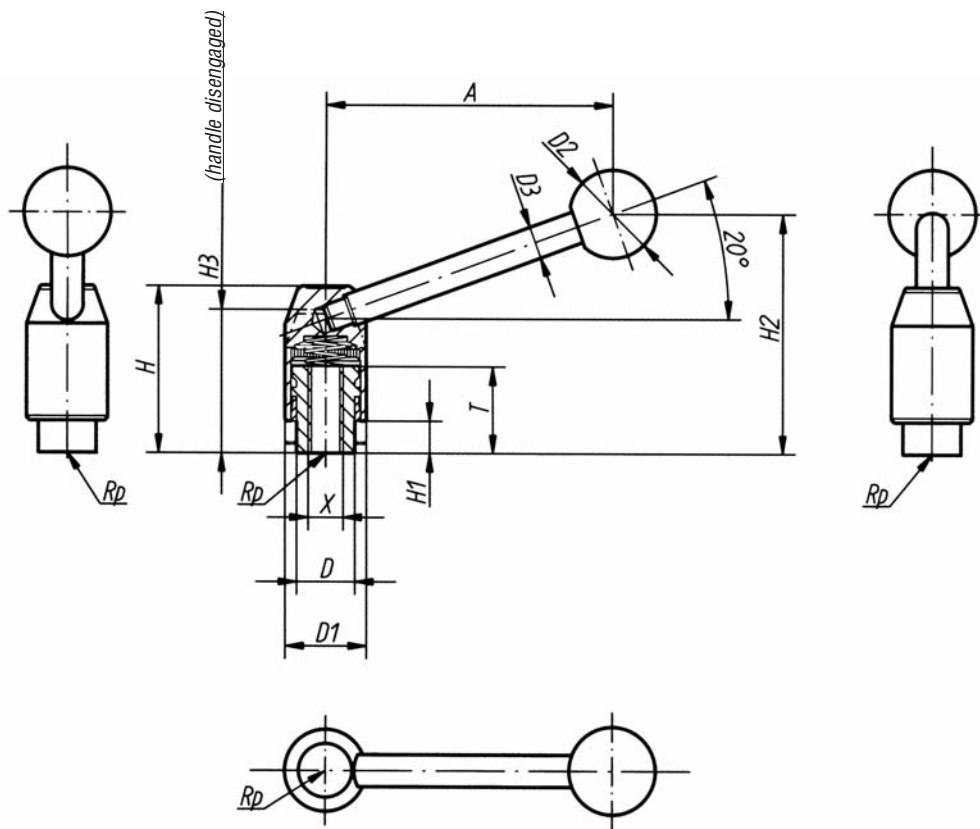
Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.

**Method of operation:**

To operate Safety Tension Levers, press the handle down until the teeth are fully engaged. The object concerned can now be clamped or released. Spring pressure releases the locking mechanism immediately, thereby restoring the safety function (handle can be turned effortlessly).



**Safety Tension Levers with internal thread**

| Order No.<br>black oxide finish | Size | Internal<br>thread<br>X | T  | D  | D1 | D2 | D3 | H  | H1* | H2 | H3 | A*  | No. of<br>teeth | Approx.<br>weight kg |
|---------------------------------|------|-------------------------|----|----|----|----|----|----|-----|----|----|-----|-----------------|----------------------|
| 06 108000 20                    | 1    | M 8                     | 23 | 17 | 24 | 25 | 10 | 49 | 9   | 69 | 44 | 81  | 28              | 0,160                |
| 06 110000 20                    | 1    | M 10                    | 23 | 17 | 24 | 25 | 10 | 49 | 9   | 69 | 44 | 81  | 28              | 0,160                |
| 06 210000 20                    | 2    | M 10                    | 26 | 20 | 28 | 30 | 11 | 57 | 11  | 82 | 44 | 99  | 30              | 0,250                |
| 06 212000 20                    | 2    | M 12                    | 26 | 20 | 28 | 30 | 11 | 57 | 11  | 82 | 51 | 99  | 30              | 0,250                |
| 06 312000 20                    | 3    | M 12                    | 30 | 24 | 33 | 32 | 12 | 64 | 12  | 94 | 57 | 118 | 35              | 0,370                |
| 06 316000 20                    | 3    | M 16                    | 30 | 24 | 33 | 32 | 12 | 64 | 12  | 94 | 57 | 118 | 35              | 0,370                |

Sample order: Safety Tension Lever 0621000020

Dimensions "H1", "A" and "A1" available in other lengths at extra charge

## Tension Levers with external thread



**Material:**

Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

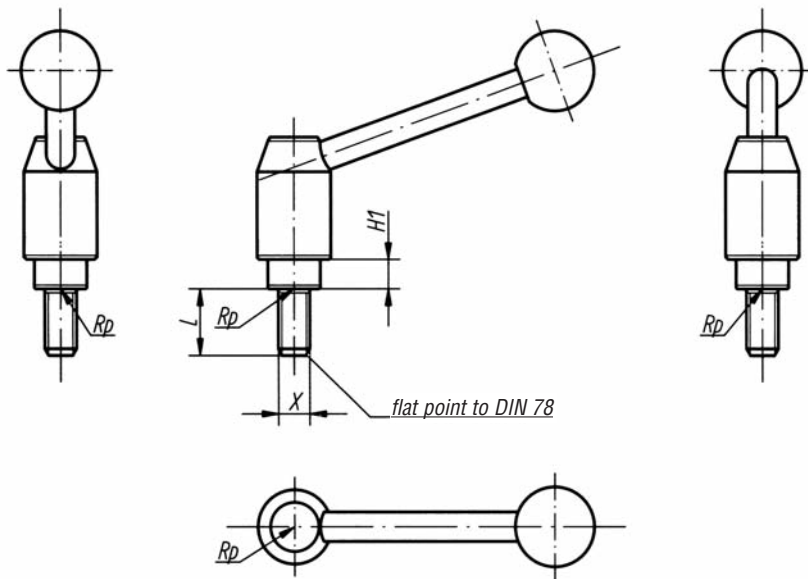
Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.

**Method of operation:**

To operate Safety Tension Levers, press the handle down until the teeth are fully engaged. The object concerned can now be clamped or released. Spring pressure releases the locking mechanism immediately, thereby restoring the safety function (handle can be turned effortlessly).



engage  
by pressing  
(safety function)



**Safety Tension Levers with external thread**

| Order No.<br>black oxide finish | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |
|---------------------------------|------|---------------------------|-----|---------------------|----|----|----|----|----|
| 06 108*** 20                    | 1    | M 8                       | 9   | 20                  | 25 | 30 | 40 | 50 | 60 |
| 06 110*** 20                    | 1    | M 10                      | 9   | 20                  | 25 | 30 | 40 | 50 | 60 |
| 06 112*** 20                    | 1    | M 12                      | 9   | 20                  | 25 | 30 | 40 | 50 | 60 |
| 06 212*** 20                    | 2    | M 12                      | 11  | 20                  | 25 | 30 | 40 | 50 | 60 |
| 06 312*** 20                    | 3    | M 12                      | 12  | 20                  | 25 | 30 | 40 | 50 | 60 |
| 06 316*** 20                    | 3    | M 16                      | 12  | 20                  | 25 | 30 | 40 | 50 | 60 |

Sample order: Safety Tension Lever 0631605020  
(Length L)

\* Dimension "H1" available in other lengths at extra charge  
 \*\* Other external threads and screw lengths available on request  
 \*\*\* Add the desired screw length here, e.g. 050 for L = 50 mm

## Flat Tension Levers with internal thread



**Material:**

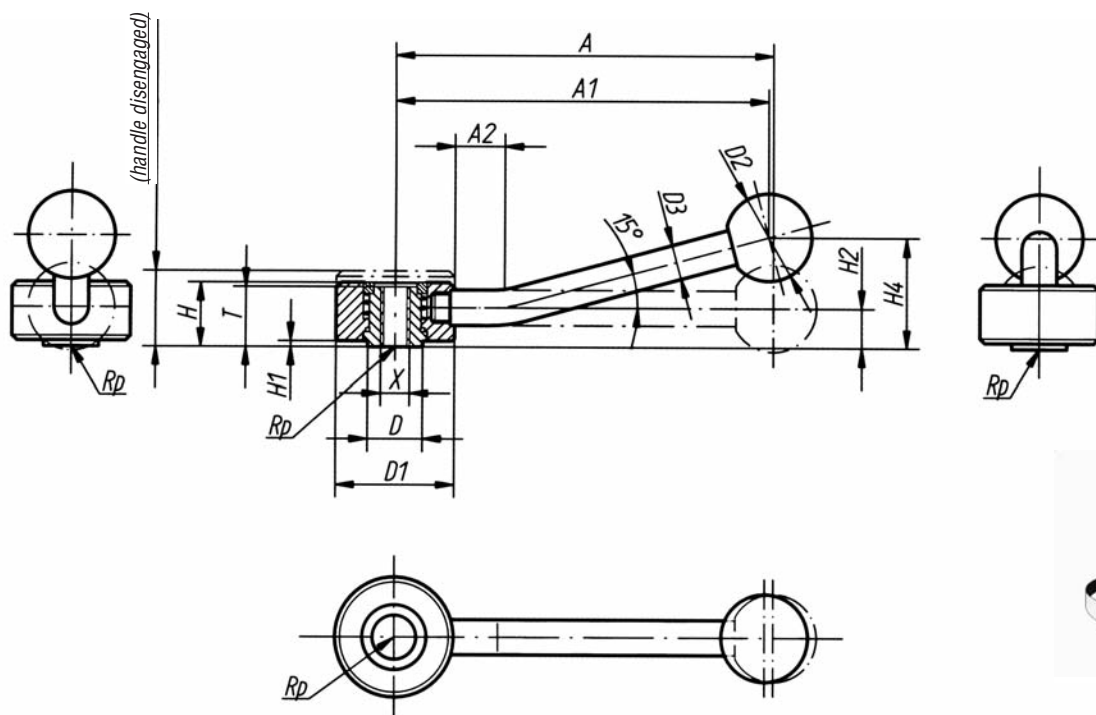
Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



**Flat Tension Levers with internal thread**

| Order No.<br>black oxide finish<br>0 degrees | Order No.<br>black oxide finish<br>15 degrees | Size | Internal<br>thread<br>X* | T  | D    | D1 | D2 | D3 | H  | H1** | H2   | H3 | H4 | A** | A1** | A2 | No. of<br>teeth | Approx.<br>weight kg |
|--|---|------|--------------------------|----|------|----|----|----|----|------|------|----|----|-----|------|----|-----------------|----------------------|
| 07 106000 00                                 | 07 106000 15                                  | 1    | M 6                      | 18 | 13,5 | 33 | 25 | 10 | 19 | 2    | 12   | 23 | 29 | 102 | 100  | 15 | 26              | 0,160                |
| 07 108000 00                                 | 07 108000 15                                  | 1    | M 8                      | 18 | 13,5 | 33 | 25 | 10 | 19 | 2    | 12   | 23 | 29 | 102 | 100  | 15 | 26              | 0,160                |
| 07 210000 00                                 | 07 210000 15                                  | 2    | M 10                     | 21 | 19   | 41 | 30 | 12 | 22 | 2    | 13,5 | 26 | 38 | 130 | 127  | 15 | 30              | 0,290                |
| 07 212000 00                                 | 07 212000 15                                  | 2    | M 12                     | 21 | 19   | 41 | 30 | 12 | 22 | 2    | 13,5 | 26 | 38 | 130 | 127  | 15 | 30              | 0,290                |
| 07 312000 00                                 | 07 312000 15                                  | 3    | M 12                     | 27 | 23   | 45 | 37 | 14 | 28 | 2    | 17   | 33 | 48 | 148 | 145  | 15 | 36              | 0,450                |
| 07 316000 00                                 | 07 316000 15                                  | 3    | M 16                     | 27 | 23   | 45 | 37 | 14 | 28 | 2    | 17   | 33 | 48 | 148 | 145  | 15 | 36              | 0,450                |

Sample order: Flat Tension Lever 0710600000

\*Other internal threads available on request \*\*Dimensions "H1", "A" and "A1" available in other lengths at extra charge

## Flat Tension Levers with external thread



**Material:**

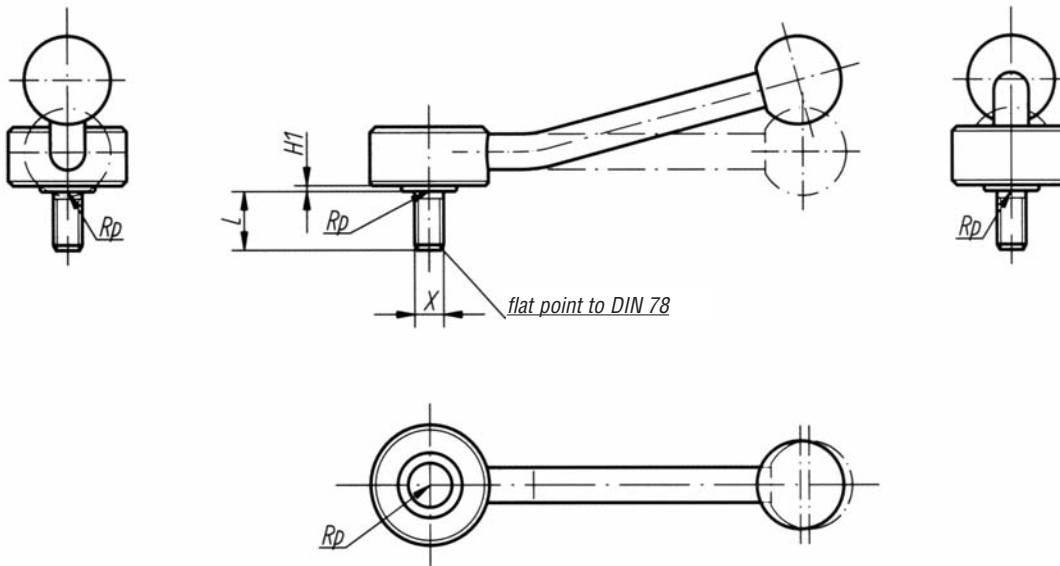
Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

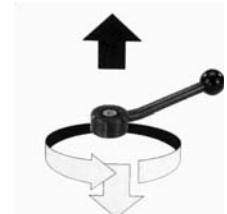
Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



disengage  
by lifting



CLAMPING PRODUCTS

**Flat Tension Levers with external thread**

| Order No.<br>black oxide finish<br>0 degrees | Order No.<br>black oxide finish<br>15 degrees | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |    |
|--|---|------|---------------------------|-----|---------------------|----|----|----|----|----|----|
| 07 108*** 00                                 | 07 108*** 15                                  | 1    | M 8                       | 2   | 15                  | 20 | 25 | 30 | 40 | 50 | 60 |
| 07 110*** 00                                 | 07 110*** 15                                  | 1    | M 10                      | 2   | 15                  | 20 | 25 | 30 | 40 | 50 | 60 |
| 07 210*** 00                                 | 07 210*** 15                                  | 2    | M 10                      | 2   | -                   | 20 | 25 | 30 | 40 | 50 | 60 |
| 07 212*** 00                                 | 07 212*** 15                                  | 2    | M 12                      | 2   | -                   | 20 | 25 | 30 | 40 | 50 | 60 |
| 07 312*** 00                                 | 07 312*** 15                                  | 3    | M 12                      | 2   | -                   | 20 | 25 | 30 | 40 | 50 | 60 |
| 07 316*** 00                                 | 07 316*** 15                                  | 3    | M 16                      | 2   | -                   | 20 | 25 | 30 | 40 | 50 | 60 |

Sample order: Flat Tension Lever 0731605015  
(Length L)

\*Dimension "H1" available in other lengths at extra charge  
\*\* Other external threads and screw lengths available on request  
\*\*\* Add the desired screw length here, e.g. 050 for L = 50 mm



## Steel Clamp Levers with internal thread



**Material:**

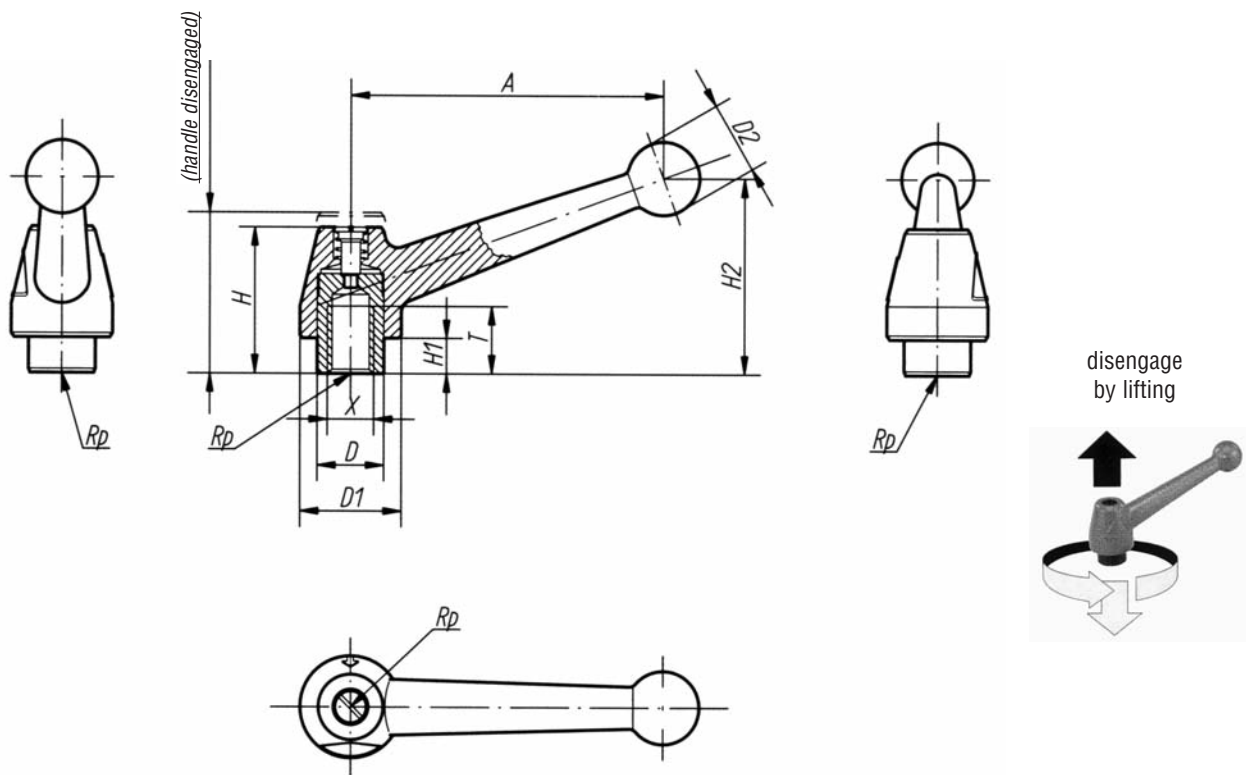
Steel handle in C 35 drop forged steel, all other steel parts quality class 5.8

**Surface finish:**

Handle painted silver-grey with hammertone finish, steel black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



### Steel Clamp Levers with internal thread

| Order No.<br>silver-grey<br>hammertone finish | Size | Internal<br>thread<br>X* | T  | D  | D1 | D2 | H    | H1** | H2 | H3 | A   | No. of<br>teeth | Approx.<br>weight kg |
|---|------|--------------------------|----|----|----|----|------|------|----|----|-----|-----------------|----------------------|
| 03 108000                                     | 1    | M 8                      | 17 | 19 | 28 | 20 | 44   | 12   | 54 | 49 | 83  | 24              | 0,230                |
| 03 110000                                     | 1    | M 10                     | 17 | 19 | 28 | 20 | 44   | 12   | 54 | 49 | 83  | 24              | 0,230                |
| 03 112000                                     | 1    | M 12                     | 17 | 19 | 28 | 20 | 44   | 12   | 54 | 49 | 83  | 24              | 0,230                |
| 03 212000                                     | 2    | M 12                     | 23 | 23 | 35 | 25 | 50   | 12   | 69 | 56 | 108 | 26              | 0,440                |
| 03 216000                                     | 2    | M 16                     | 23 | 23 | 35 | 25 | 50   | 12   | 69 | 56 | 108 | 26              | 0,440                |
| 03 316000                                     | 3    | M 16                     | 27 | 30 | 43 | 30 | 58,5 | 12   | 78 | 65 | 132 | 36              | 0,730                |
| 03 320000                                     | 3    | M 20                     | 27 | 30 | 43 | 30 | 58,5 | 12   | 78 | 65 | 132 | 36              | 0,730                |

Sample order: Steel Clamp Lever 03216000

\*Other internal threads available on request

\*\*Dimension "H1" available in other lengths at extra charge

## Steel Clamp Levers with external thread



**Material:**

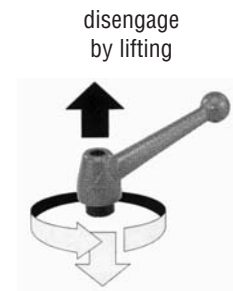
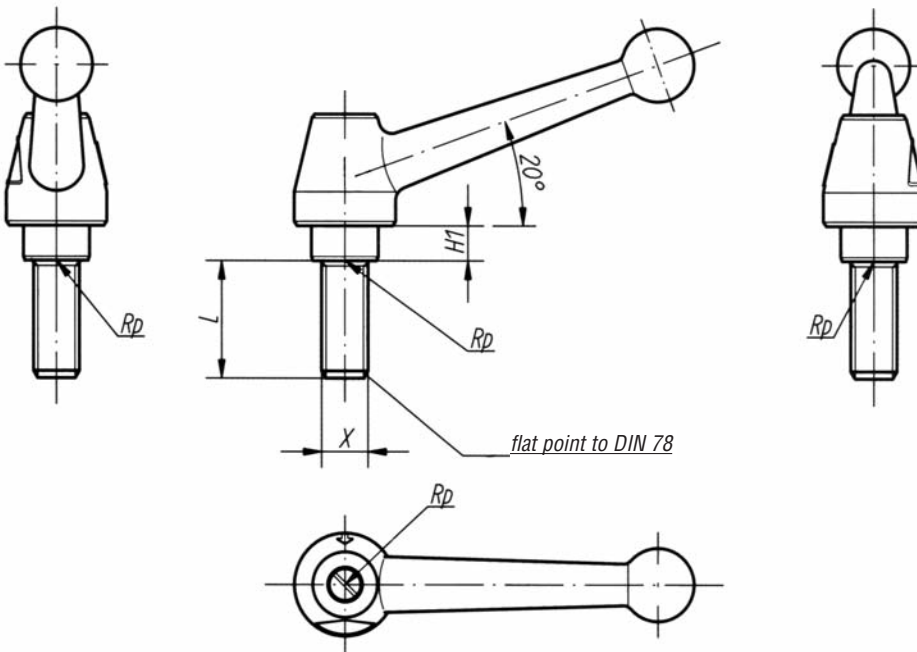
Steel handle in C 35 drop forged steel, all other steel parts quality class 5.8

**Surface finish:**

Handle painted silver-grey with hammertone finish, steel black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



CLAMPING PRODUCTS

**Steel Clamp Levers with external thread**

| Order No.<br>silver-grey<br>hammertone finish | Size | External<br>thread<br>X** | H1* | L = Screw length ** |    |    |    |    |    |    |    |    |    |    |    |
|---|------|---------------------------|-----|---------------------|----|----|----|----|----|----|----|----|----|----|----|
| 03 110***                                     | 1    | M 10                      | 12  | 20                  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 03 112***                                     | 1    | M 12                      | 12  | 20                  | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 03 212***                                     | 2    | M 12                      | 12  | -                   | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 03 216***                                     | 2    | M 16                      | 12  | -                   | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 | 90 |
| 03 316***                                     | 3    | M 16                      | 12  | -                   | -  | 30 | -  | 40 | -  | 50 | -  | 60 | 70 | 80 | 90 |
| 03 320***                                     | 3    | M 20                      | 12  | -                   | -  | 30 | -  | 40 | -  | 50 | -  | 60 | 70 | 80 | 90 |

Sample order: Steel Clamp Lever 03216030  
(Length L)

\* Dimension "H1" available in other lengths at extra charge  
 \*\*\* Add the desired screw length here, e.g. 030 for L = 30 mm  
 \*\*Other external threads and screw lengths available on request



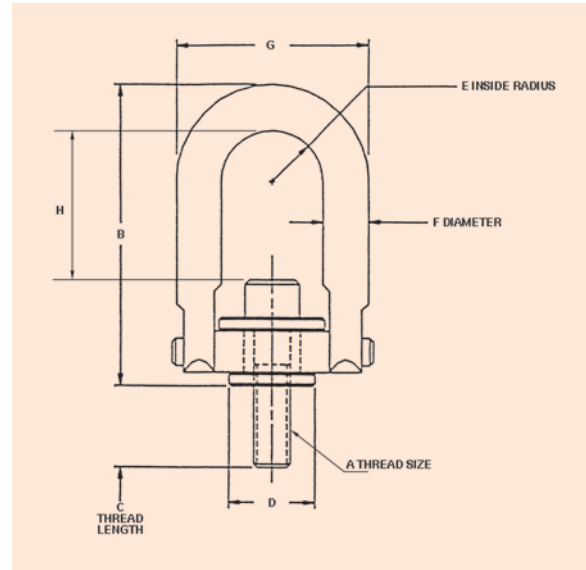
## HOIST RINGS

- **Material is certified alloy steel**
- **Components are machined prior to manufacture to remove surface defects**
- **Components are heat treated and certified to manufacturing specifications**
- **All hoist rings are pull-tested and certified to 200% of rated load capacity**
- **All hoist rings are designed for 5:1 strength factor**

## HOIST RINGS - Centre Pull Style

- Full Swivel and Pivot Action
- Rated at 5:1 Strength Factor
- Material: Alloy Steel
- Finish: Black Oxide (Except Washer)
- Clevis, Bolt, Pins, Base, Washer and Bushing are magnetic particle inspected
- Washer: Zinc Plated with clear conversion coating
- Proof Tested to 200% of Rated Load Capacity
- All products are CE marked

Available with Envirolox™ protective finish.



### Metric Centre-Pull Hoist Rings

| THREAD SIZE A | LOAD <sup>1</sup> CAPACITY (Kg) | STD. CLEVIS |       | LONG CLEVIS |       | ENVIROLOX PART NUMBER <sup>4</sup> | THREAD LENGTH |       |      |       |       | STD. CLEVIS H | LONG CLEVIS H | TORQUE <sup>2</sup> (Kg m.) | WT. (Kg) |
|---------------|---------------------------------|-------------|-------|-------------|-------|------------------------------------|---------------|-------|------|-------|-------|---------------|---------------|-----------------------------|----------|
|               |                                 | PART NUMBER | B     | PART NUMBER | B     |                                    | C             | D     | E    | F     | G     |               |               |                             |          |
| M8x1.25       | 400                             | 23456       | 67.8  | —           | —     | 23356                              | 12.5          | 19.0  | 10.9 | 9.7   | 46.7  | 32            | —             | 1.0                         | .17      |
| M10x1.50      | 450                             | 23458       | 67.8  | —           | —     | 23358                              | 17.5          | 19.0  | 10.9 | 9.7   | 46.7  | 30            | —             | 1.7                         | .17      |
| M12x1.75      | 1050                            | 23462       | 121.4 | 23562       | 170.7 | 23362                              | 19.0          | 38.1  | 22.4 | 19.0  | 89.4  | 60.5          | 108           | 3.8                         | 1.08     |
| M16x2.0       | 1900                            | 23465       | 121.4 | 23565       | 170.7 | 23365                              | 29.0          | 38.1  | 22.4 | 19.0  | 89.4  | 56.5          | 106           | 8.2                         | 1.12     |
| M20x2.5       | 1250                            | 23468       | 121.4 | 23568       | 170.7 | 23368                              | 34.0          | 38.1  | 22.4 | 19.0  | 89.4  | 52.5          | 101           | 13.6                        | 1.19     |
| M20x2.5       | 3000                            | 23471       | 165.6 | 23571       | 206.0 | 23371                              | 32.0          | 58.7  | 35.6 | 25.4  | 130.6 | 73            | 101           | 13.6                        | 3.03     |
| M24x3.0       | 4200                            | 23474       | 165.6 | 23574       | 206.0 | 23374                              | 37.0          | 58.7  | 35.6 | 25.4  | 130.6 | 69            | 111           | 31.0                        | 3.10     |
| M30x3.5       | 7000                            | 23478       | 221.7 | —           | —     | 23378                              | 41.9          | 81.0  | 44.5 | 31.7  | 165.1 | 107.4         | —             | 60.0                        | 6.3      |
| M30x3.5       | 7000                            | 23479       | 21.7  | —           | —     | 23379                              | 61.7          | 81.0  | 44.5 | 31.7  | 165.1 | 107.4         | —             | 60.0                        | 6.4      |
| M36x4.0       | 11000                           | 23483       | 316.7 | —           | —     | 23383                              | 63.5          | 106.4 | 57.2 | 44.4  | 217.2 | 166.5         | —             | 100.0                       | 15.5     |
| M42x4.5       | 12500                           | 23484       | 316.7 | —           | —     | 23384                              | 68.0          | 106.4 | 57.2 | 44.4  | 217.2 | 160.5         | —             | 100.0                       | 16.0     |
| M48x5.0       | 13500                           | 23485       | 316.7 | —           | —     | 23385                              | 88.0          | 106.4 | 57.2 | 44.4  | 217.2 | 154.5         | —             | 100.0                       | 16.8     |
| M64x6.0       | 22500                           | 23488       | 419.1 | —           | —     | 23388                              | 96.0          | 146.0 | 76.2 | 57.15 | 297.6 | 210           | —             | 290.0                       | 40.0     |

### Replacement Bolt Kits<sup>3</sup>

| PART NUMBER | WT. (Kg) |
|-------------|----------|
| 23656       | .01      |
| 23658       | .01      |
| 23662       | .03      |
| 23665       | .05      |
| 23668       | .09      |
| 23671       | .10      |
| 23674       | .18      |
| 23678       | .36      |
| 23679       | .41      |
| 23683       | .69      |
| 23684       | 1.25     |
| 23685       | 1.5      |
| 23688       | 7        |

All dimensions are in millimetres.

<sup>1</sup> Stated load capacity is based upon specific thread torques shown in chart.

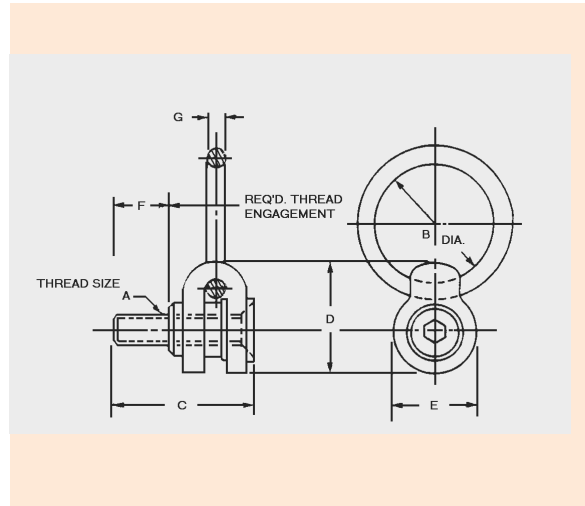
<sup>2</sup> It is recommended that these torques be used when installing hoist rings.

<sup>3</sup> Replacement Bolt Kit contains bolt and retaining ring. Bolt Kits for Envirolox Hoist Rings available upon request.

<sup>4</sup> Available from stock as Standard Clevis.

## HOIST RINGS - Side Pull Style

- Convenient Part Handling
- Rated at 5:1 strength factor
- Bushing: Zinc plated silver passivate
- Material: Alloy Steel
- Clevis, Ring, Bushing and Cap Screw are magnetic particle inspected
- Available with Envirolox Protective Finish upon request.
- Clevis is x-rayed
- Finish: Black Oxide
- Proof Tested to 200% of Rated Load Capacity
- All products are **CE** marked



### Metric Side-Pull Hoist Rings

| PART NUMBER | LOAD <sup>1</sup> CAPACITY (Kg) | A           | B     | C     | D     | E     | F    | G    | THREAD <sup>2</sup> TORQUE (Kg m.) | WT. (Kg) |
|-------------|---------------------------------|-------------|-------|-------|-------|-------|------|------|------------------------------------|----------|
| 47351       | 325                             | M 8 X 1.25  | 50.8  | 61    | 50.8  | 38.1  | 16   | 9.5  | 0.43                               | 0.12     |
| 47352       | 500                             | M 10 X 1.50 | 50.8  | 63    | 50.8  | 38.1  | 20   | 9.5  | 0.60                               | 0.12     |
| 47353       | 725                             | M 12 X 1.75 | 76.2  | 85    | 81    | 60.3  | 24   | 15.9 | 2.00                               | 1.47     |
| 47354       | 1400                            | M 16 X 2.0  | 76.2  | 94    | 81    | 60.3  | 31   | 15.9 | 3.50                               | 1.47     |
| 47355       | 2290                            | M 20 X 2.5  | 101.6 | 133   | 125.4 | 95.3  | 40   | 25.4 | 7.00                               | 5.10     |
| 47356       | 3050                            | M 24 X 3.0  | 101.6 | 147   | 125.4 | 95.3  | 47   | 25.4 | 12.50                              | 5.22     |
| 47357       | 4850                            | M 30 X 3.5  | 127.0 | 173.8 | 173.0 | 117.5 | 43.6 | 31.7 | 34.6                               | 12.61    |

### Replacement Bolts

| PART NUMBER | THREAD SIZE | WT. (Kg) |
|-------------|-------------|----------|
| 47391       | M 8         | 0.02     |
| 47392       | M 10        | 0.03     |
| 47393       | M 12        | 0.07     |
| 47394       | M 16        | 0.14     |
| 47395       | M 20        | 0.32     |
| 47396       | M 24        | 0.53     |
| 47397       | M 30        | 1.03     |

All dimensions are in millimetres.

<sup>1</sup> Stated load capacity is based upon specific thread torques shown in charts.

<sup>2</sup> It is recommended that these torques be used when installing hoist rings.

### The Envirolox™ Protective Finish

The Envirolox™ Protective Finish is a *proprietary coating that helps to prevent rusting and other environmental hazards from affecting the Hoist Rings*. This coating is *environmentally friendly* and is proven to be *effective in extreme conditions*. Envirolox Protective Finish is available as a standard on Centre-Pull Style Hoist Rings. It is also available on the Side-Pull Style Hoist Rings upon special request. It is not recommended for the Swivel Eyebolt or the SP 2000 products.

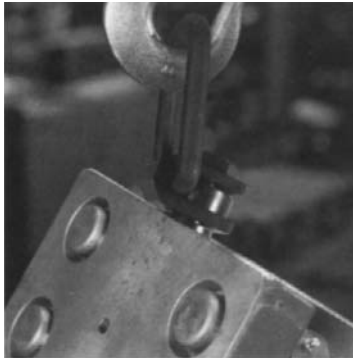
- Available as standard on Centre-Pull Style Hoist Rings
- Available upon request for Side-Pull Style
- Prevents rusting
- Environmentally safe



## HOIST RINGS - Side Pull 2000 Style

The SP2000 Side-Pull Style Hoist Ring is ideal for flipping fixtures, dies and moulds. The hoist ring is low profile and has a unique bolt retention design. The oversized forged bale easily adapts to larger hoist hooks. Its relatively light weight makes it easier to handle than similar hoist rings and the installation is conveniently done with external wrenching (47581, 47582) or internal/external wrenching (all other sizes). All parts are made in the USA.

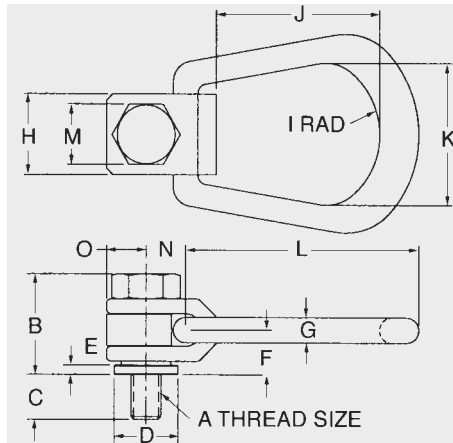
- Can be used for top lifts
- Full swivel and pivot action
- Rated at 5:1 strength factor
- All products are **CE** marked
- Material: Alloy Steel
- Finish: Black Oxide
- Proof Tested to 200% of Rated Load Capacity



SIDE PULL APPLICATION

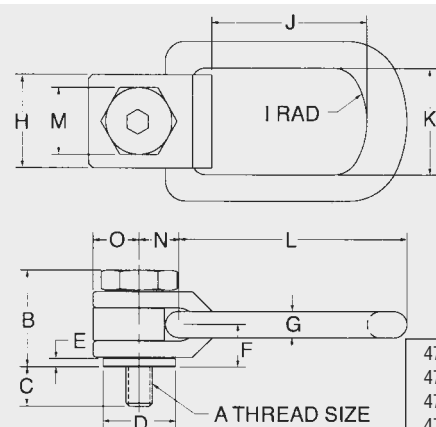


TOP PULL APPLICATION



47581  
47582

EXTERNAL WRENCH MOUNTING



47583  
47584  
47585  
47586  
47587  
47588  
47589

INTERNAL/EXTERNAL WRENCH MOUNTING

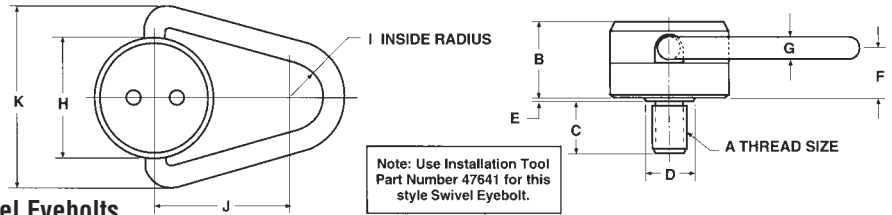
### Metric SP2000 Side-Pull Hoist Rings

| PART NUMBER (Kg) | LOAD CAPACITY | THREAD SIZE |    |    |    |   |    |    |    |    |     |     |     |    |    |    | HEX SIZE | WT. (Kg) |
|------------------|---------------|-------------|----|----|----|---|----|----|----|----|-----|-----|-----|----|----|----|----------|----------|
|                  |               | A           | B  | C  | D  | E | F  | G  | H  | I  | J   | K   | L   | M  | N  | O  |          |          |
| 47581            | 325           | M 8 X 1.25  | 33 | 16 | 21 | 3 | 14 | 8  | 25 | 25 | 52  | 44  | 76  | 19 | 13 | 13 | —        | .25      |
| 47582            | 500           | M 10 X 1.5  | 33 | 20 | 21 | 3 | 14 | 8  | 25 | 25 | 52  | 44  | 76  | 19 | 13 | 13 | —        | .25      |
| 47583            | 725           | M 12 X 1.75 | 48 | 24 | 35 | 4 | 21 | 13 | 44 | 38 | 75  | 51  | 110 | 32 | 19 | 22 | 6        | 1        |
| 47584            | 1400          | M 16 X 2    | 48 | 32 | 35 | 4 | 21 | 13 | 44 | 38 | 75  | 51  | 110 | 32 | 19 | 22 | 8        | 1        |
| 47585            | 2290          | M 20 X 2.5  | 59 | 40 | 48 | 6 | 26 | 16 | 57 | 51 | 102 | 67  | 145 | 44 | 25 | 29 | 10       | 2        |
| 47586            | 3050          | M 24 X 3    | 59 | 48 | 48 | 6 | 26 | 16 | 57 | 51 | 102 | 67  | 145 | 44 | 25 | 29 | 12       | 2        |
| 47587            | 4850          | M 30 X 3.5  | 90 | 60 | 83 | 9 | 42 | 27 | 95 | 76 | 196 | 111 | 265 | 76 | 49 | 48 | 19       | 9        |
| 47588            | 7500          | M36 X 4     | 90 | 72 | 83 | 9 | 42 | 27 | 95 | 76 | 196 | 111 | 265 | 76 | 49 | 48 | 19       | 9        |
| 47589            | 10000         | M48 X 5     | 90 | 96 | 83 | 9 | 42 | 27 | 95 | 76 | 196 | 111 | 265 | 76 | 49 | 48 | 19       | 10       |

## SWIVEL EYEBOLT

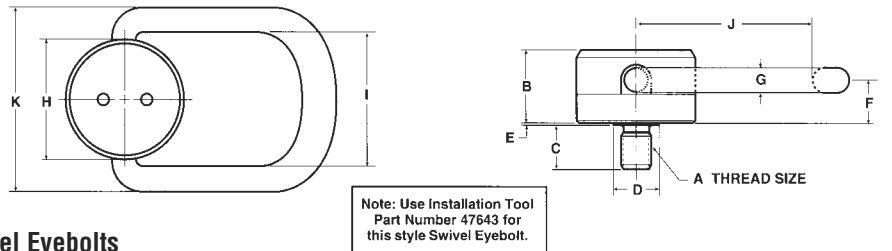
The Swivel Eyebolt lifting product has a full swivel and pivoting action that allows for the flipping and turning of the part without unhooking. The patented tamper resistant design is ideal for permanent mounting on OEM applications or on moulds, dies and fixtures.

- Tamper resistant design
- Swivels 360°, Pivots 180°
- Eliminates bending (of eyebolt) problem
- Forged, oversized, one-piece lift ring
- Rated at 5:1 strength factor
- All products are CE marked
- Load capacities to 2000Kg
- Economically priced
- Material: Alloy steel or 316 stainless steel
- Finish: Black oxide or passivated (SS)



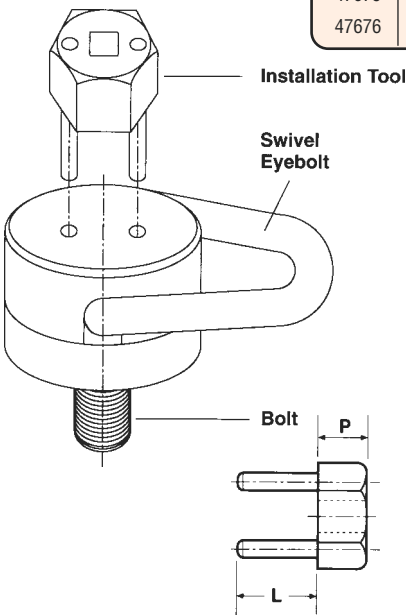
Metric Swivel Eyebolts

| PART NUMBER |                 | LOAD CAPACITY(Kg) |                 | THREAD SIZE A | B    | C    | D    | E   | F    | G   | H    | I    | J    | K    |
|-------------|-----------------|-------------------|-----------------|---------------|------|------|------|-----|------|-----|------|------|------|------|
| ALLOY STEEL | STAINLESS STEEL | ALLOY STEEL       | STAINLESS STEEL |               |      |      |      |     |      |     |      |      |      |      |
| 47671       | 47681           | 500               | 250             | M10 X 1.5     | 27.8 | 14.6 | 19.1 | 1.2 | 17.9 | 7.9 | 44.5 | 12.7 | 50.8 | 66.7 |
| 47672       | 47682           | 700               | 350             | M12 X 1.75    | 27.8 | 19.1 | 19.1 | 1.2 | 17.9 | 7.9 | 44.5 | 12.7 | 50.8 | 66.7 |



Metric Swivel Eyebolts

| PART NUMBER |                 | LOAD CAPACITY(Kg) |                 | THREAD SIZE A | B    | C    | D    | E  | F    | G    | H    | I    | J    | K    |
|-------------|-----------------|-------------------|-----------------|---------------|------|------|------|----|------|------|------|------|------|------|
| ALLOY STEEL | STAINLESS STEEL | ALLOY STEEL       | STAINLESS STEEL |               |      |      |      |    |      |      |      |      |      |      |
| 47675       | 47683           | 1500              | 750             | M16 X 2.0     | 38.5 | 23.8 | 22.2 | .8 | 22.6 | 12.7 | 63.5 | 70.0 | 88.9 | 96.8 |
| 47676       | 47684           | 2000              | 1000            | M20 X 2.5     | 38.5 | 30.2 | 25.4 | .8 | 22.6 | 12.7 | 63.5 | 70.0 | 88.9 | 96.8 |

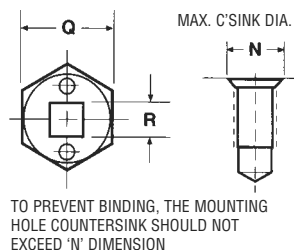


Installation Tool Information

| INSTALLATION TOOL PART NUMBER | PIN LENGTH L (mm) | HEAD THICKNESS P (mm) | HEX SIZE Q (in) | SQUARE DRIVE R (in) |
|-------------------------------|-------------------|-----------------------|-----------------|---------------------|
| 47641                         | 17.5              | 14                    | 15/16           | 1/4                 |
| 47643                         | 28.5              | 16.5                  | 1/4             | 3/8                 |

Installation Tool Information

| SWIVEL EYEBOLT PART NUMBER | INSTALLATION TOOL PART NUMBER | RECOMMENDED TORQUE | MAXIMUM COUNTERSINK DIAMETER N |
|----------------------------|-------------------------------|--------------------|--------------------------------|
| 47671                      | 47641                         | 10 N•m             | 13mm                           |
| 47672                      | 47641                         | 25 N•m             | 16mm                           |
| 47681                      | 47641                         | 10 N•m             | 13mm                           |
| 47682                      | 47641                         | 25 N•m             | 16mm                           |
| 47675                      | 47643                         | 50 N•m             | 19mm                           |
| 47676                      | 47643                         | 80 N•m             | 22mm                           |
| 47683                      | 47643                         | 50 N•m             | 19mm                           |
| 47684                      | 47643                         | 80 N•m             | 22mm                           |



| Clamp Model | Page | Clamp Model | Page | Clamp Model | Page | Clamp Model | Page | Clamp Model         | Page |
|-------------|------|-------------|------|-------------|------|-------------|------|---------------------|------|
| BC25.0      | 33   | H300/1B     | 92   | P600PR      | 25   | V150/2C     | 41   | VA300/S             | 61   |
| BC40.0      | 33   | H300/2B     | 92   | P600X       | 17   | V150X       | 41   | VA300/T             | 61   |
| BPC25       | 6    | H300/3B     | 92   | P600XPR     | 29   | V200/1B     | 42   | VA300/2S            | 62   |
| BPC32       | 7    | H350/1A     | 85   | P605        | 110  | V200/1C     | 42   | VA300/1B            | 62   |
| CC510       | 155  | H350/1B     | 85   | P650        | 113  | V200/2B     | 42   | VA300/2B            | 63   |
| CC610       | 155  | H350/1BK    | 95   | P750        | 114  | V200/2C     | 43   | VA300/2BT           | 63   |
| CC701       | 155  | H350/1BKl   | 102  | P1150       | 114  | V200/3B     | 43   | VA700CX             | 9    |
| CP1005      | 146  | H350/1BLc   | 107  | P1150L      | 115  | V200/3C     | 43   | VA700S              | 64   |
| CP1006      | 146  | H350/2A     | 85   | P1200       | 117  | V200VX      | 12   | VA700T              | 65   |
| CP1007      | 146  | H350/2B     | 86   | P1200L      | 119  | V250/1A     | 44   | VA700/1A            | 65   |
| CP1008      | 146  | H350/2BK    | 94   | P1200PR     | 25   | V250/1AL    | 44   | VA700/2C            | 66   |
| CP1500      | 143  | H350/2BKl   | 101  | P1200X      | 18   | V250/1B     | 46   | VA700/TD            | 66   |
| CP2000      | 143  | H350/2BLc   | 107  | P1200XPR    | 29   | V250/1BSS   | 45   | VA700/TP            | 67   |
| CP3000      | 143  | H450/1A     | 86   | P2250       | 114  | V250/1BBLC  | 104  | VA700/TV            | 67   |
| CP1500L     | 144  | H450/1B     | 86   | P2250L      | 115  | V250/1BK    | 59   | VA1200CX            | 10   |
| CP2000L     | 144  | H450/1BK    | 95   | P2500       | 118  | V250/1BKl   | 100  | VA1200S             | 68   |
| CP3000L     | 144  | H450/1BKl   | 102  | P2500L      | 120  | V250/1BLc   | 105  | VA1200T             | 69   |
| CR4000      | 140  | H450/2A     | 87   | P2500PR     | 26   | V250/1C     | 45   | VA1200/1A           | 69   |
| CR4000A     | 140  | H450/2B     | 87   | P2500X      | 18   | V250/2A     | 45   | VA1200/2C           | 70   |
| CR5000      | 140  | H450/2BK    | 94   | P2500XPR    | 30   | V250/2AL    | 46   | VA1200/TD           | 70   |
| CR5000A     | 140  | H450/2BKl   | 101  | P5000       | 118  | V250/2B     | 46   | VA1200/TP           | 69   |
| CS300       | 141  | H700        | 87   | P5000L      | 120  | V250/2BBLC  | 104  | VA2400CX            | 10   |
| CS300A      | 141  | LH200       | 122  | P6015       | 109  | V250/2BSS   | 46   | VA2400S             | 72   |
| CS800       | 141  | LH200SS     | 122  | PC25.0      | 33   | V250/2BK    | 58   | VA2400T             | 72   |
| CS800A      | 141  | LH400       | 122  | PC35.0      | 33   | V250/2BKl   | 99   | VA2400/1A           | 74   |
| CS1200      | 142  | LH400SS     | 123  | PC40.0      | 33   | V250/2BLc   | 105  | VA2400/2C           | 74   |
| CS1200A     | 142  | LH700       | 123  | PNDP1       | 30   | V250/2C     | 47   | VA2400/TD           | 73   |
| CV75        | 133  | LH700SS     | 123  | PNPR1       | 31   | V250/3BLc   | 106  | VA2400/TP           | 73   |
| CV250       | 133  | LU200H      | 125  | PNS25-10C   | 20   | V250X       | 15   | 1015-08             | 150  |
| CV350       | 133  | LU200HSS    | 125  | PNS25-10A   | 20   | V300/1A     | 47   | 1015-10             | 150  |
| H50/1B      | 77   | LU323       | 128  | PNS32-10C   | 20   | V300/1B     | 47   | 1015-12             | 150  |
| H50/2B      | 77   | LU331       | 128  | PNS32-10A   | 20   | V300/1C     | 48   | 1015-16             | 150  |
| H50/2BSS    | 77   | LU341       | 128  | PNS40-20C   | 20   | V300/2A     | 48   | 1016-08             | 148  |
| H50/2BK     | 94   | LU375       | 129  | PNS40-20A   | 20   | V300/2B     | 48   | 1016-10             | 148  |
| H50/2BL     | 78   | LU400H      | 125  | PNS50-20C   | 21   | V300/2C     | 49   | 1016-12             | 149  |
| H50/2BR     | 78   | LU400HSS    | 126  | PNS50-20A   | 21   | V300/3A     | 49   | 1016-16             | 149  |
| H50/2C      | 78   | LU700H      | 126  | PNS63-20C   | 21   | V300/3B     | 49   |                     |      |
| H75/1B      | 79   | LU700HSS    | 126  | PNS63-20A   | 21   | V300/3C     | 50   | <b>Clamp Levers</b> |      |
| H75/1BSS    | 79   | LU2000H     | 127  | RPP1        | 28   | V300VX      | 12   | PT-AXL-3-40         | 157  |
| H75/1BK     | 95   | LU4000H     | 127  | RPP2        | 28   | V350/1A     | 50   | PT-AXL-3-65         | 157  |
| H75/1C      | 79   | LU200V      | 129  | SP700       | 114  | V350/1B     | 50   | PT-AXL-3-80         | 157  |
| H75/2B      | 80   | LU200VSS    | 129  | TC345       | 97   | V350/1BBLC  | 105  | PT-AXL-3-95         | 157  |
| H75/2BSS    | 80   | LU400V      | 130  | TC79        | 97   | V350/1BK    | 59   | PT-CL-AXL-*-40      | 157  |
| H75/2C      | 80   | LU400VSS    | 130  | TPR1        | 26   | V350/1BKl   | 100  | PT-CL-AXL-*-65      | 157  |
| H80/2BK     | 94   | LU700V      | 130  | TPR2        | 27   | V350/1BLc   | 106  | PT-CL-AXL-*-80      | 157  |
| H100/1B     | 89   | LU700VSS    | 131  | TPR3        | 27   | V350/1C     | 51   | PT-CL-AXL-*-95      | 157  |
| H100/1C     | 89   | P0          | 152  | V30/2B      | 35   | V350/2A     | 51   | 03 108000           | 175  |
| H100/2B     | 89   | P1          | 152  | V70/2BT     | 35   | V350/2B     | 51   | 03 110***           | 176  |
| H100/2C     | 90   | P1A         | 152  | V70/2BTSS   | 35   | V350/2BBLC  | 104  | 03 110000           | 175  |
| H100/3B     | 90   | P1B         | 152  | V75/1B      | 36   | V350/2BK    | 58   | 03 112***           | 176  |
| H100/3C     | 90   | P1C         | 154  | V75/1BSS    | 36   | V350/2BKl   | 99   | 03 112000           | 175  |
| H150/1B     | 81   | P2          | 153  | V75/2B      | 36   | V350/2BLc   | 106  | 03 212***           | 176  |
| H150/1BSS   | 81   | P2C         | 154  | V75/2BSS    | 37   | V350/2BLC   | 106  | 03 212000           | 175  |
| H150/1BK    | 95   | P3          | 153  | V75X        | 14   | V350/2C     | 52   | 03 216***           | 176  |
| H150/1BKl   | 102  | P3A         | 153  | V90/1BK     | 59   | V450/1A     | 52   | 03 216000           | 175  |
| H150/1C     | 81   | P3B         | 153  | V90/2BK     | 58   | V450/1B     | 52   | 03 316***           | 176  |
| H150/2B     | 82   | P3C         | 154  | V100/1B     | 37   | V450/1BK    | 59   | 03 316000           | 175  |
| H150/2BSS   | 82   | P4          | 154  | V100/1C     | 37   | V450/1BKl   | 100  | 03 320***           | 176  |
| H150/2BK    | 94   | P4B         | 154  | V100/2B     | 38   | V450/1C     | 53   | 03 320000           | 175  |
| H150/2BKl   | 101  | P4C         | 154  | V100/2C     | 38   | V450/2A     | 53   | 05 108*** 00        | 170  |
| H150/2C     | 82   | P50         | 109  | V100/3B     | 38   | V450/2B     | 53   | 05 108000 20        | 169  |
| H200/1B     | 91   | P50SS       | 109  | V100/3C     | 39   | V450/2BK    | 58   | 05 108*** 20        | 170  |
| H200/2B     | 91   | P100        | 111  | V100VX      | 12   | V450/2BKl   | 99   | 05 108000 20        | 169  |
| H200/3B     | 91   | P100SS      | 111  | V150/1B     | 39   | V450/2C     | 54   | 05 110*** 00        | 170  |
| H250/1A     | 83   | P200        | 111  | V150/1BK    | 59   | V450X       | 15   | 05 110000 20        | 169  |
| H250/1AL    | 83   | P200SS      | 112  | V150/1BKl   | 59   | V550/1A     | 54   | 05 110000 20        | 169  |
| H250/1B     | 83   | P250        | 110  | V150/1BL    | 39   | V550/1B     | 54   | 05 112*** 00        | 170  |
| H250/1BK    | 95   | P350        | 113  | V150/1BLc   | 39   | V550/1C     | 55   | 05 112*** 20        | 170  |
| H250/1BKl   | 102  | P400        | 112  | V150/1BSS   | 40   | V550/2A     | 55   | 05 210000 00        | 169  |
| H250/2A     | 84   | P400SS      | 112  | V150/1C     | 40   | V550/2B     | 55   | 05 210000 20        | 169  |
| H250/2AL    | 84   | P450        | 110  | V150/2B     | 40   | V550/2C     | 56   | 05 212*** 00        | 170  |
| H250/2B     | 84   | P550        | 113  | V150/2BK    | 58   | V750X       | 16   | 05 212*** 20        | 170  |
| H250/2BK    | 94   | P600        | 117  | V150/2BKl   | 99   | V1750X      | 16   | 05 212000 20        | 169  |
| H250/2BKl   | 101  | P600L       | 119  | V150/2BL    | 41   | V2000X      | 17   | 05 312*** 00        | 170  |
|             |      |             |      | V150/2BSS   | 41   | VA300BX     | 9    | 05 312000 00        | 169  |



| Clamp Model      | Page | Clamp Model      | Page | Clamp Model      | Page | Clamp Model        | Page   | Clamp Model | Page |
|------------------|------|------------------|------|------------------|------|--------------------|--------|-------------|------|
| 05 312*** 20     | 170  | 50 106000 01 OSO | 160  | 51 106 *** ΔΔ    | 167  | 51 412000 90 OSO   | 164    | M1085       | 136  |
| 05 312000 20     | 169  | 50 106*** 02     | 159  | 51 106000 ΔΔ     | 166  | 51 512 *** ΔΔ      | 167    | M12100      | 116  |
| 05 316*** 00     | 170  | 50 106000 02     | 158  | 51 106 ***ΔΔ OSO | 167  | 51 512000 ΔΔ       | 166    | M16150      | 136  |
| 05 316000 00     | 169  | 50 106*** 02 OSO | 161  | 51 106000 ΔΔ OSO | 166  | 51 512000 ΔΔ OSO   | 166    | MB0420      | 135  |
| 05 316*** 20     | 170  | 50 106000 02 OSO | 160  | 51 106*** 02     | 163  | 51 512*** 02       | 163    | MB0520      | 135  |
| 05 316000 20     | 169  | 50 206*** 01     | 159  | 51 106000 02     | 162  | 51 512000 02       | 162    | MB0535      | 135  |
| 05 416*** 00     | 170  | 50 206000 01     | 158  | 51 106*** 02 OSO | 165  | 51 512000 02 OSO   | 164    | MB0625      | 135  |
| 05 416000 00     | 169  | 50 206*** 01 OSO | 161  | 51 106000 02 OSO | 164  | 51 512*** 90       | 163    | MB0650      | 135  |
| 05 416*** 20     | 170  | 50 206000 01 OSO | 160  | 51 106*** 90     | 163  | 51 512000 90       | 162    | MB0840      | 135  |
| 05 416000 20     | 169  | 50 206*** 02     | 159  | 51 106000 90     | 162  | 51 512000 90 OSO   | 164    | MB0860      | 135  |
| 05 420*** 00     | 170  | 50 206000 02     | 158  | 51 106*** 90 OSO | 165  | 51 516 *** ΔΔ      | 167    | MB1050      | 135  |
| 05 420000 00     | 169  | 50 206*** 02 OSO | 161  | 51 106000 90 OSO | 164  | 51 516000 ΔΔ       | 166    | MB1080      | 135  |
| 05 420*** 20     | 170  | 50 206000 02 OSO | 160  | 51 206 *** ΔΔ    | 167  | 51 516 ***ΔΔ OSO   | 167    | MB1250      | 135  |
| 05 420000 20     | 169  | 50 208*** 01     | 159  | 51 206000 ΔΔ     | 166  | 51 516000 ΔΔ OSO   | 166    | MB12100     | 135  |
| 05 424*** 00     | 170  | 50 208000 01     | 158  | 51 206 ***ΔΔ OSO | 167  | 51 516*** 02       | 163    | MB1680      | 135  |
| 05 424000 00     | 169  | 50 208*** 01 OSO | 161  | 51 206000 ΔΔ OSO | 166  | 51 516000 02       | 162    | MS0535      | 136  |
| 05 424*** 20     | 170  | 50 208000 01 OSO | 160  | 51 206*** 02     | 163  | 51 516*** 02 OSO   | 165    | MS0650      | 136  |
| 05 424000 20     | 169  | 50 208*** 02     | 159  | 51 206000 02     | 162  | 51 516000 02 OSO   | 164    | MS0865      | 136  |
| 06 108*** 20     | 172  | 50 208000 02     | 158  | 51 206*** 02 OSO | 165  | 51 516*** 90       | 163    | MS1085      | 136  |
| 06 108000 20     | 171  | 50 208*** 02 OSO | 161  | 51 206000 02 OSO | 164  | 51 516*** 90 OSO   | 165    | MS12100     | 136  |
| 06 110*** 20     | 172  | 50 208000 02 OSO | 160  | 51 206*** 90     | 163  | 51 516000 90       | 162    | MS16150     | 135  |
| 06 110000 20     | 171  | 50 210*** 01     | 159  | 51 206000 90     | 162  | 51 516*** 90 OSO   | 165    | MS2500      | 136  |
| 06 112*** 20     | 172  | 50 210*** 01 OSO | 161  | 51 206*** 90 OSO | 165  | 51 516000 90 OSO   | 164    | MS2500      | 136  |
| 06 210000 20     | 171  | 50 210*** 02     | 159  | 51 206000 90 OSO | 164  |                    |        | MS2500      | 136  |
| 06 212*** 20     | 172  | 50 210*** 02 OSO | 161  | 51 208 *** ΔΔ    | 167  | <b>Accessories</b> |        | MS2500      | 136  |
| 06 212000 20     | 171  | 50 308000 01     | 158  | 51 208000 ΔΔ     | 166  | A3                 | 64     | MS2500      | 136  |
| 06 312*** 20     | 172  | 50 308000 01 OSO | 160  | 51 208 ***ΔΔ OSO | 167  | A7                 | 68     | NC/04       | 136  |
| 06 312000 20     | 171  | 50 308000 02     | 158  | 51 208000 ΔΔ OSO | 166  | A12                | 71     | NC/05       | 136  |
| 06 316*** 20     | 172  | 50 308000 02 OSO | 160  | 51 208*** 02     | 163  | A24                | 75     | NC/06       | 136  |
| 06 316000 20     | 171  | 50 310*** 01     | 159  | 51 208000 02     | 162  | B3                 | 64     | NC/08       | 136  |
| 07 106000 00     | 173  | 50 310000 01     | 158  | 51 208*** 02 OSO | 165  | B7                 | 68/137 | NC/10       | 136  |
| 07 106000 15     | 173  | 50 310*** 01 OSO | 161  | 51 208000 02 OSO | 164  | B12                | 71/137 | NC/12       | 136  |
| 07 108*** 00     | 174  | 50 310000 01 OSO | 160  | 51 208*** 90     | 163  | B24                | 75/137 | NP/05       | 136  |
| 07 108000 00     | 173  | 50 310*** 02     | 159  | 51 208000 90     | 162  | BR/1               | 137    | NP/06       | 136  |
| 07 108*** 15     | 174  | 50 310000 02     | 158  | 51 208*** 90 OSO | 165  | BR/2               | 137    | NP/08       | 136  |
| 07 108000 15     | 173  | 50 310*** 02 OSO | 161  | 51 208000 90 OSO | 164  | BR/3               | 137    | NP/10       | 136  |
| 07 110*** 00     | 174  | 50 310000 02 OSO | 160  | 51 210 *** ΔΔ    | 167  | C3                 | 64     | NP/12       | 136  |
| 07 110*** 15     | 174  | 50 410*** 01     | 159  | 51 210 ***ΔΔ OSO | 167  | C7                 | 68     | NPS/05/06   | 137  |
| 07 210*** 00     | 174  | 50 410000 01     | 158  | 51 210*** 02     | 163  | C12                | 71     | NPS/08/10   | 137  |
| 07 210000 00     | 173  | 50 410000 01 OSO | 160  | 51 210*** 02 OSO | 165  | C24                | 75     | NPS/12      | 137  |
| 07 210*** 15     | 174  | 50 410*** 02     | 159  | 51 210*** 90     | 163  | CSB300             | 142    | NTS0432     | 136  |
| 07 210000 15     | 173  | 50 410000 02     | 158  | 51 210*** 90 OSO | 165  | CSB800             | 142    | NTS0538     | 136  |
| 07 212*** 00     | 174  | 50 410000 02 OSO | 160  | 51 308000 ΔΔ     | 166  | CSB1200            | 142    | NTS0645     | 136  |
| 07 212000 00     | 173  | 50 412*** 01     | 159  | 51 308000 ΔΔ OSO | 166  | D3                 | 64     | NTS0865     | 136  |
| 07 212*** 15     | 174  | 50 412000 01     | 158  | 51 308000 02     | 162  | D7                 | 68     | NTS1085     | 136  |
| 07 212000 15     | 173  | 50 412*** 01 OSO | 161  | 51 308000 02 OSO | 164  | D12                | 71     | NTS12100    | 136  |
| 07 312*** 00     | 174  | 50 412000 01 OSO | 160  | 51 308000 90     | 162  | D24                | 75     | 1150B       | 115  |
| 07 312000 00     | 173  | 50 412*** 02     | 159  | 51 308000 90 OSO | 164  | FM1                | 135    | 2250B       | 115  |
| 07 312*** 15     | 174  | 50 412000 02     | 158  | 51 310 *** ΔΔ    | 167  | FM2                | 135    | R/08        | 137  |
| 07 312000 15     | 173  | 50 412*** 02 OSO | 161  | 51 310000 ΔΔ     | 166  | FM3                | 135    | R/10        | 137  |
| 07 316*** 00     | 174  | 50 412000 02 OSO | 160  | 51 310 ***ΔΔ OSO | 167  | FM16               | 135    | R/12        | 137  |
| 07 316000 00     | 173  | 50 512*** 01     | 159  | 51 310000 ΔΔ OSO | 166  | FM20               | 135    | R/16        | 137  |
| 07 316*** 15     | 174  | 50 512000 01     | 158  | 51 310*** 02     | 163  | FM24               | 135    | SK/1        | 23   |
| 07 316000 15     | 173  | 50 512000 01 OSO | 160  | 51 310*** 02 OSO | 165  | FW05/09            | 137    | SK/2        | 23   |
| 20 104000 90     | 168  | 50 512*** 02     | 159  | 51 310*** 02 OSO | 165  | FW05/10            | 137    | SK/3        | 23   |
| 20 105*** 90     | 168  | 50 512000 02     | 158  | 51 310000 02 OSO | 164  | FW06/12            | 137    | SK/4        | 23   |
| 20 105000 90     | 168  | 50 512000 02 OSO | 160  | 51 310*** 90     | 163  | FW08/15            | 137    | SK/5        | 23   |
| 20 106*** 90     | 168  | 50 516*** 01     | 159  | 51 310000 90     | 162  | FW10/20            | 137    | SK/6        | 23   |
| 20 106000 90     | 168  | 50 516000 01     | 158  | 51 310*** 90 OSO | 165  | FW12/23            | 137    | SK/8        | 23   |
| 20 208*** 90     | 168  | 50 516*** 01 OSO | 161  | 51 310000 90 OSO | 164  | FW16/27            | 137    | SK/9        | 23   |
| 20 208000 90     | 168  | 50 516000 01 OSO | 160  | 51 410 *** ΔΔ    | 167  | GR/01              | 137    | SK/10       | 23   |
| 20 310*** 90     | 168  | 50 516*** 02     | 159  | 51 410000 ΔΔ     | 166  | GR/02              | 137    | SK/11       | 23   |
| 20 310000 90     | 168  | 50 516000 02     | 158  | 51 410000 ΔΔ OSO | 166  | GR/03              | 137    | SK/12       | 23   |
| 20 412*** 90     | 168  | 50 516000 02 OSO | 160  | 51 410*** 02     | 163  | GR/04              | 137    | T250        | 135  |
| 20 412000 90     | 168  | 50 516*** 02 OSO | 161  | 51 410000 02     | 162  | GR/05              | 137    | T350        | 135  |
| 20 516*** 90     | 168  | 51 104000 ΔΔ     | 166  | 51 410000 02 OSO | 164  | GR/06              | 137    | T450        | 135  |
| 20 516000 90     | 168  | 51 104000 02     | 162  | 51 410*** 90     | 163  | GR/07              | 137    |             |      |
| 50 104000 01     | 158  | 51 104000 90     | 162  | 51 410000 90     | 162  | GR/08              | 137    |             |      |
| 50 104000 02     | 158  | 51 105 *** ΔΔ    | 167  | 51 410000 90 OSO | 164  | GR/09              | 137    |             |      |
| 50 105*** 01     | 159  | 51 105000 ΔΔ     | 166  | 51 412 *** ΔΔ    | 167  | GR/10              | 137    |             |      |
| 50 105000 01     | 158  | 51 105 ***ΔΔ OSO | 167  | 51 412000 ΔΔ     | 164  | GR/11              | 137    |             |      |
| 50 105*** 01 OSO | 161  | 51 105000 ΔΔ OSO | 166  | 51 412 ***ΔΔ OSO | 167  | GR/12              | 137    |             |      |
| 50 105000 01 OSO | 160  | 51 105*** 02     | 163  | 51 412000 ΔΔ OSO | 166  | GR/13              | 137    |             |      |
| 50 105*** 02     | 159  | 51 105000 02     | 162  | 51 412*** 02     | 163  | M0525              | 136    |             |      |
| 50 105000 02     | 158  | 51 105*** 02 OSO | 165  | 51 412000 02     | 162  | M0535              | 136    |             |      |
| 50 105*** 02 OSO | 161  | 51 105000 02 OSO | 164  | 51 412*** 02 OSO | 165  | M0650              | 136    |             |      |
| 50 105000 02 OSO | 160  | 51 105*** 90     | 163  | 51 412000 02 OSO | 164  | M0865              | 136    |             |      |
| 50 106*** 01     | 159  | 51 105000 90     | 162  | 51 412*** 90     | 163  |                    |        |             |      |
| 50 106000 01     | 158  | 51 105*** 90 OSO | 165  | 51 412000 90     | 162  |                    |        |             |      |
| 50 106*** 01 OSO | 161  | 51 105000 90 OSO | 164  | 51 412*** 90 OSO | 165  |                    |        |             |      |

# BRAUER®

## Manufacturers of AIRMOVERS

See our web site for the full product range, including stainless steel models.

**AM10**  
Fixed Gap Airmovers



**MATERIALS:** Zinc Alloy  
**I.D.** 10mm **WEIGHT:** 0.100Kg  
**STANDARD GAP:** 0.05mm

**AM35**  
Fixed Gap Airmover



**MATERIALS:** Zinc Alloy & Alumin.  
**I.D.** 35mm **WEIGHT:** 0.19Kg  
**STANDARD GAP:** 0.05mm

**AM40**  
Fixed Gap Airmover



**MATERIALS:** Zinc Alloy  
**WEIGHT:** 0.9Kg  
**STANDARD GAP:** 0.05mm

**AM75**  
Fixed Gap Airmover



**MATERIALS:** Zinc Alloy  
**WEIGHT:** 2.7Kg  
**STANDARD GAP:** 0.05mm

**AM125**  
Fixed Gap Airmovers



**MATERIALS:** Aluminium Alloy  
**I.D.** 125mm **WEIGHT:** 7.55Kg  
**STANDARD GAP:** 0.15mm

**AM20A**  
Adjustable Airmover



**MATERIALS:** Aluminium Alloy  
**I.D.** 20mm **WEIGHT:** 0.13Kg  
**STANDARD GAP:** Adjustable

**AM35A**  
Adjustable Airmover



**MATERIALS:** Aluminium Alloy  
**I.D.** 35mm **WEIGHT:** 0.28Kg  
**STANDARD GAP:** Adjustable

**SS10A**  
Stainless Steel Airmover



**MATERIALS:** Stainless Steel  
**I.D.** 10mm **WEIGHT:** 0.13Kg  
**STANDARD GAP:** Adjustable

**AA10A - Acetal**  
Adjustable Airmover



**MATERIALS:** Acetal Copolymer  
**I.D.** 10mm **WEIGHT:** 0.05Kg  
**STANDARD GAP:** Adjustable

**Ring Blade**



**MATERIALS:** Aluminium & S.steel  
**STANDARD GAP:** 0.05mm  
**DBA at: 5.5 bar is 80**

**EV8**  
Extractor Ventilator



**MATERIALS:** GRP  
**WEIGHT:** 7Kg  
**DBA at: 5.5 bar is 75**

**DP175**  
Liquid Drum Pump



**MATERIALS:** Stainless Steel/Nylon  
**WEIGHT:** 1.6Kg  
**DBA at: 5.5 bar is 92**

**CG4**  
Cold Air Gun



**MATERIALS:** Stainless Steel  
**WEIGHT:** 1.7Kg  
**DBA at: 5.5 bar is 80**

**AG32LC**  
Blow Gun



**MATERIALS:** Aluminium alloy  
**WEIGHT:** 0.54Kg  
**STANDARD GAP:** Adjustable

**SE150 - Strip**  
(Air Curtain) Airmover



**MAT:** Alumin./Zinc plated steel  
**WEIGHT:** 0.3Kg  
**STANDARD GAP:** 0.05-0.10mm

**Airmiser Nozzles**



**MATERIALS:** Aluminium alloy  
**WEIGHT:** 0.025Kg  
**STANDARD GAP:** 0.15

For further details contact

# BRAUER®

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E-mail: [sales@brauer.co.uk](mailto:sales@brauer.co.uk) Web: [www.brauer.co.uk](http://www.brauer.co.uk)

# **BRAUER**<sup>®</sup>

Manufacturers of **WHEELS AND CASTORS**

See our web site for the full product range, including stainless steel models.

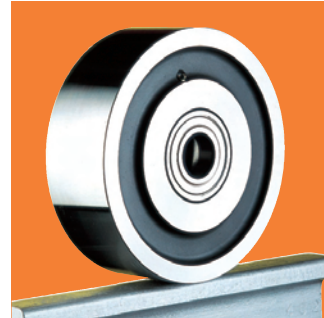
**WG Series**



**Special Pivoting Castors**



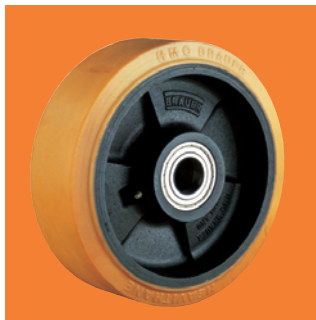
**Steel Flat Tread Rail Wheels**



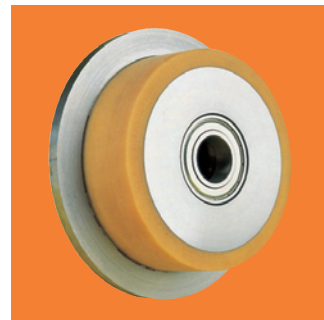
**Polyurethane Press-on Band Tyred Wheels**



**Polyurethane Tyred Wheels**



**Polyurethane Tyred Single Flanged Rail Wheels**



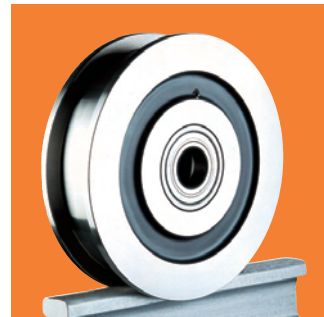
**Steel Single Flanged Rail Wheel**



**Single Flanged 'I' Beam & Channel Wheels**



**Steel Double Flanged Rail Wheels**



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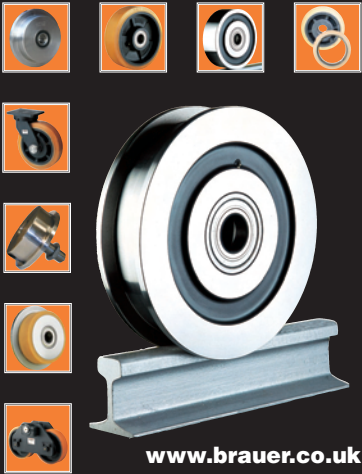
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HMC




HMC BRAUER - WHEELS AND CASTORS

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**BRAUER**<sup>®</sup>




AIRMOVERS  
(AIR AMPLIFIERS)



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