

# BRAUER<sup>®</sup>

## CLAMPING PRODUCTS

Including Hoist Rings and Lever Handles



OFICJALNY PRZEDSTAWICIEL W  
POLSCE : **RAIS-TOOLS**

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[biuro@rais.pl](mailto:biuro@rais.pl)



## 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

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

## 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
- Catia v5
- CIP
- DXF
- DWG
- EMS
- Google Sketchup
- Iges
- Inventor
- JT
- MDT (dwg)
- Megacadsat
- Metafile
- NUPAS
- One Space Modelling
- PARACAD
- Parasoid
- PRO
- Solidedge
- Solidworks
- SAT
- STEP
- STEPAP
- STL
- Think 3
- Tribon
- U3D
- Unigraphics
- VRML
- VX
- XGL
- & in many more packages



Web Home Page

## 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.

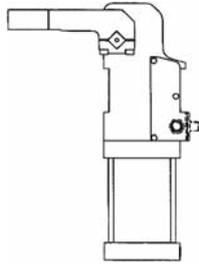
**COMMITTED TO: • QUALITY • INNOVATION • SERVICE**

**BRAUER CLAMPING PRODUCTS ARE MANUFACTURED IN MILTON KEYNES, ENGLAND**

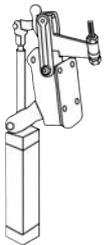
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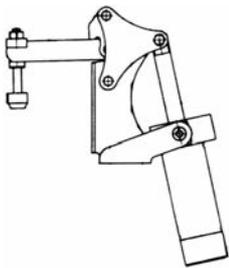
INDEX	Page
TECHNICAL INFORMATION	2-3
NUMERICAL INDEX	4
	182-183



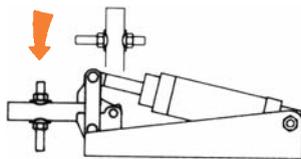
<b>PNEUMATIC POWER CLAMPS</b>	<b>5</b>
BPC 25	6
BPC 32	7



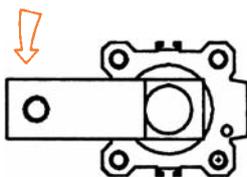
<b>HEAVY DUTY PNEUMATIC POWER CLAMPS</b>	<b>8</b>
VA300BX	9
VA700CX	9
VA1200CX	10
VA2400CX	10



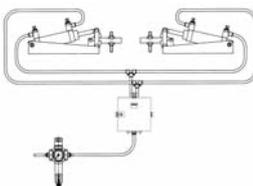
<b>PNEUMATIC VERTICAL SLIM-LINE TOGGLE CLAMPS</b>	<b>11</b>
V100VX	12
V200VX	12
V300VX	12



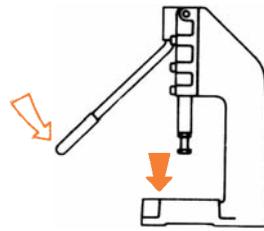
<b>PNEUMATIC VERTICAL &amp; PUSH-PULL CLAMPS</b>	<b>13</b>		
V75X	14	V1750X	16
V150X	14	V2000X	17
V250X	15	P600X	17
V450X	15	P1200X	18
V750X	16	P2500X	18



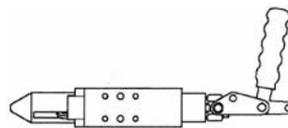
<b>PNEUMATIC SWING CLAMPS</b>	<b>19</b>
PNS25	20
PNS32	20
PNS40	20
PNS50	21
PNS63	21



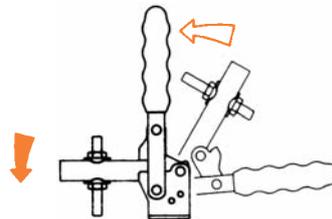
<b>PNEUMATIC ACCESSORIES</b>	<b>22</b>
Stroke Sensing Kit	23



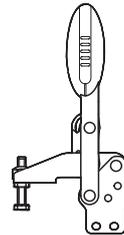
<b>TOGGLE PRESSES – MANUAL, PNEUMATIC &amp; RACK &amp; PINION</b>	<b>24</b>		
P600PR	25	RPP2	28
P1200R	25	P600XPR	29
P2500PR	26	P1200XPR	29
TPR1	26	P2500XPR	30
TPR2	27	PNDP1	30
TPR3	27	PNPR1	31
RPP1	28		



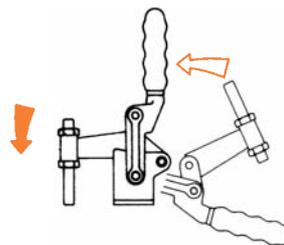
<b>PIN &amp; BODY LOCATION CLAMPS</b>	<b>32</b>
PC25.0	33
PC35.0	33
PC40.0	33
BC25.0	33
BC40.0	33



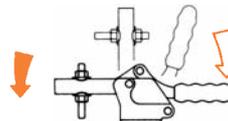
<b>VERTICAL CLAMPS</b>	<b>34</b>		
V70	35	V150/2BSS	41
V70/2BTSS	35	V200	42
V30/2B	35	V250	44
V75	36	V250/1BSS	45
V75/1BSS	36	V250/2BSS	46
V75/2B	36	V300	47
V75/2BSS	37	V350	50
V100	37	V450	52
V150	39	V550	54
V150/1BSS	40		



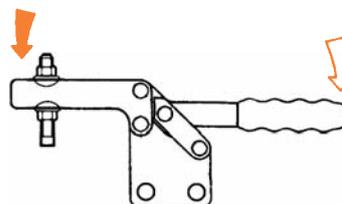
<b>BLACK OXIDIZED NITRO CARBURIZED VERTICAL CLAMPS</b>	<b>57</b>		
V90/2BK	58	V90/1BK	59
V150/2BK	58	V150/1BK	59
V250/2BK	58	V250/1BK	59
V350/2BK	58	V350/1BK	59
V450/2BK	58	V450/1BK	59



<b>HEAVY-DUTY VERTICAL CLAMPS</b>	<b>60</b>
VA300	61
VA700	64
VA1200	68
VA2400	72



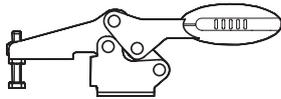
<b>HORIZONTAL CLAMPS</b>	<b>76</b>		
H50	77	H150/1BSS	81
H50/2BSS	77	H150/2BSS	82
H75	79	H250	83
H75/1BSS	79	H350	85
H75/2BSS	80	H450	86
H150	81	H700	87



<b>ADDITIONAL HORIZONTAL CLAMPING PRODUCTS</b>	<b>88</b>
H100	89
H200	91
H300	92

Denotes stainless steel versions

## BLACK OXIDIZED NITRO CARBURIZED HORIZONTAL CLAMPS 93



H50/2BK 94	H75/1BK 95
H80/2BK 94	H150/1BK 95
H150/2BK 94	H250/1BK 95
H250/2BK 94	H350/1BK 95
H350/2BK 94	H450/1BK 95
H450/2BK 94	

## PULL-BACK CLAMP 96



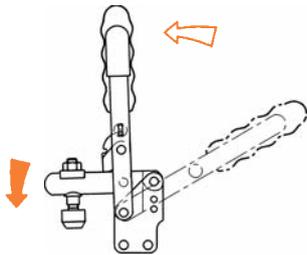
TC79 97
TC345 97

## POSITIVE LOCKING CLAMPS SAFETY INTERLOCK+ 98



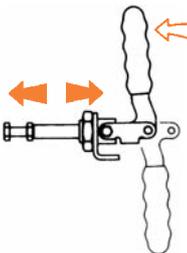
V150/2BKL 99	H150/2BKL 101
V250/2BKL 99	H250/2BKL 101
V350/2BKL 99	H350/2BKL 101
V450/2BKL 99	H450/2BKL 101
V150/1BKL 100	H150/1BKL 102
V250/1BKL 100	H250/1BKL 102
V350/1BKL 100	H350/1BKL 102
V450/1BKL 100	H450/1BKL 102

## POSITIVE LOCKING CLAMPS 103



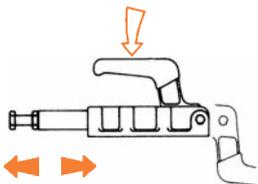
V250 104
V350 104
H350 107

## PUSH-PULL CLAMPS 108



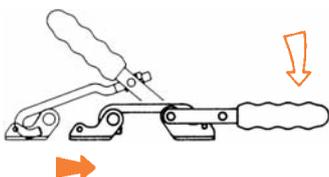
P50 109	P400 112	P1150 Precision114
P50SS 109	P400SS 112	P2250 Precision114
P6015 109	P650 113	P1150L Precision115
P605 110	P350 Slimline 113	P2250L Precision115
P250 110	P550 Slimline 113	P750 Slimline 114
P450 110	P100SS 111	P200 Slimline 114
P100 111	P200 111	P200SS 112
P200SS 112	SP700 Precision114	
		Base Accessories 115

## HEAVY-DUTY & LONG-HANDLED PUSH-PULL CLAMPS 116



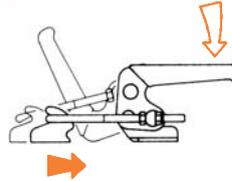
P600 117	P600L 119
P1200 117	P1200L 119
P2500 118	P2500L 120
P5000 118	P5000L 120

## HOOK CLAMPS 121



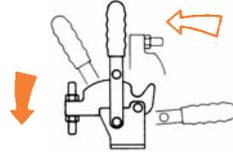
LH200 122
LH200SS 122
LH400 122
LH400SS 123
LH700 123
LH700SS 123

## LATCH CLAMPS – HORIZONTAL & VERTICAL 124



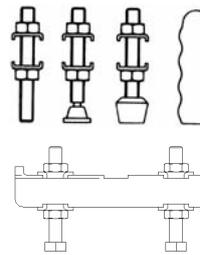
LU200H 125	LU2000H 127	LU200V 129
LU200HSS 125	LU4000H 127	LU200VSS 129
LU400H 125	LU323 128	LU400V 130
LU400HSS 126	LU331 128	LU400VSS 130
LU700H 126	LU341 128	LU700V 130
LU700HSS 126	LU375 129	LU700VSS 131

## VERTICAL CAM CLAMPS 132



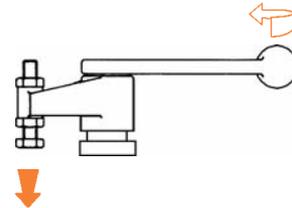
CV75 133
CV250 133
CV350 133

## TOGGLE CLAMPING ACCESSORIES 134



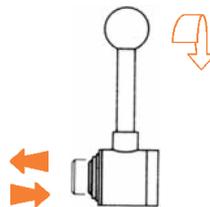
T Bar Assemblies 135	Neoprene Setscrew Covers 136
Front Mounting Brackets 135	Neoprene Pads (Spindle) 136
Mounting Brackets 135	Plastic Covers 137
Setscrews 135	Flanged Washers 137
Plain Spindles 136	Spindle Retainers 137
Swivel Foot Spindles 136	Plastic Grips 137
Neoprene Tipped Spindles 136	

## HEAVY-DUTY CAM CLAMPS 138



CR4000 140	CP1500 143
CR5000 140	CP2000 143
CS300 141	CP3000 143
CS800 141	CP1500L 144
CS1200 142	CP2000L 144
Cam Swing Blocks 142	CP3000L 144

## CAM PUSH/CAM PULL CLAMPS 145



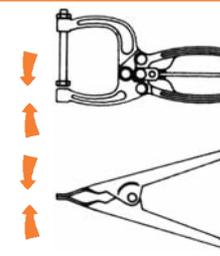
CP1005 146
CP1006 146
CP1007 146
CP1008 146

## SWING CLAMPS & SWING CLAMP ASSEMBLIES 147



1016-08 148	1015-08 150
1016-10 148	1015-10 150
1016-12 149	1015-12 150
1016-16 149	1015-16 150

## TOGGLE PLIERS & CLIP CLAMPS 151



P0 152	P4 154
P1 152	P4B 154
P1A 152	P1C/P2C 154
P1B 152	P3C/P4C 154
P2 153	CC510 155
P3 153	CC610 155
P3A 153	CC701 155
P3B 153	

## CLAMP LEVERS 156



Soft Touch Levers 157	Non-adjustable Clamp Levers 168
Die Cast Zinc Levers 158	Tension Levers 169
Stainless Steel Levers 160	Flat Tension Levers 173
Plastic Handle Levers 162	Steel Clamp Levers 175
Coloured Clamp Levers 166	
	<b>HOIST RINGS 177</b>
	Hoist Rings 177
	Swivel Eyebolt 181

Denotes stainless steel versions

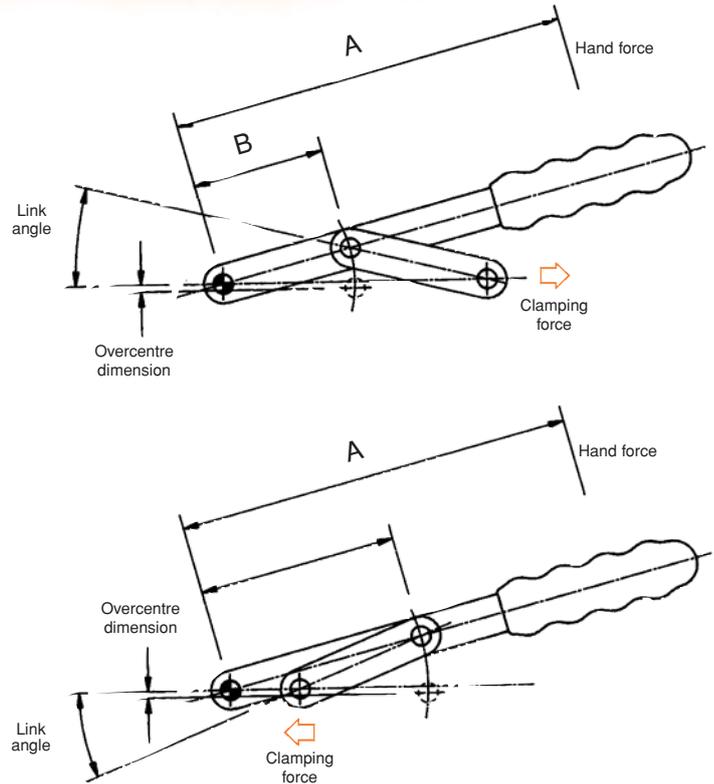
The toggle mechanism in a clamp has three functions:

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

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

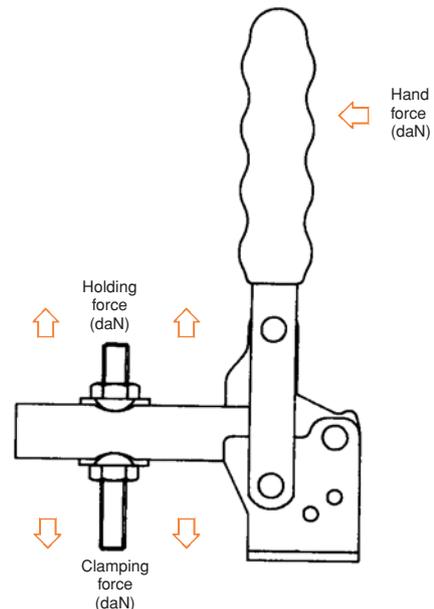
**Holding Force** — is that which the clamp can withstand after being closed without damage to the clamp and without the toggle unlocking due to distortion of the clamp.

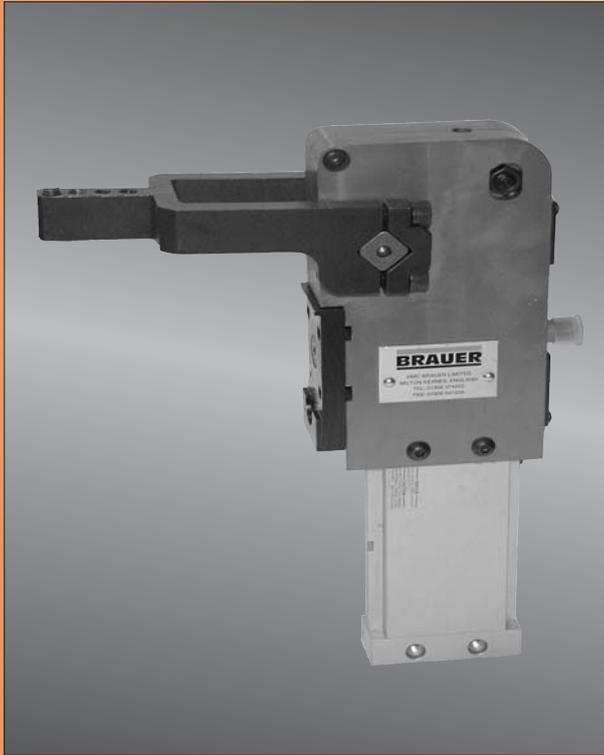
The overcentre dimension is carefully chosen in relation to the elasticity of the clamp to maximise clamping force while ensuring that the clamp locks closed even under vibration or intermittent loading.

**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.





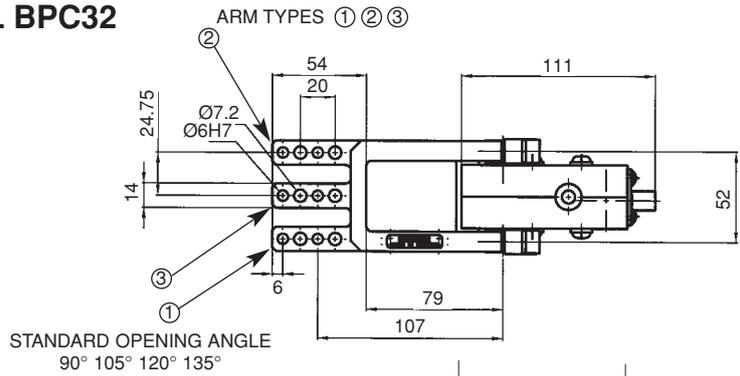
## PNEUMATIC COMPACT POWER CLAMPS

- 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

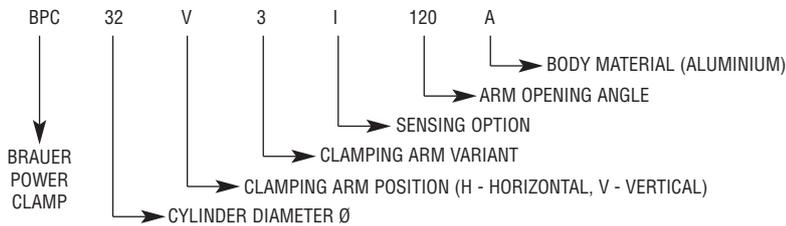
### MODEL BPC32



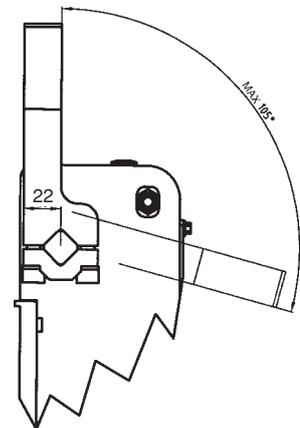
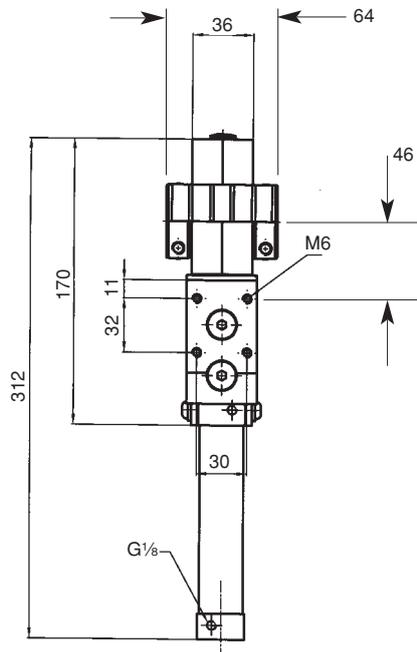
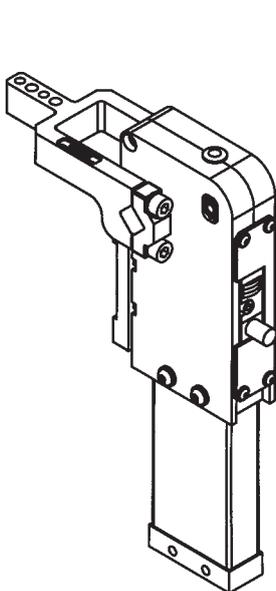
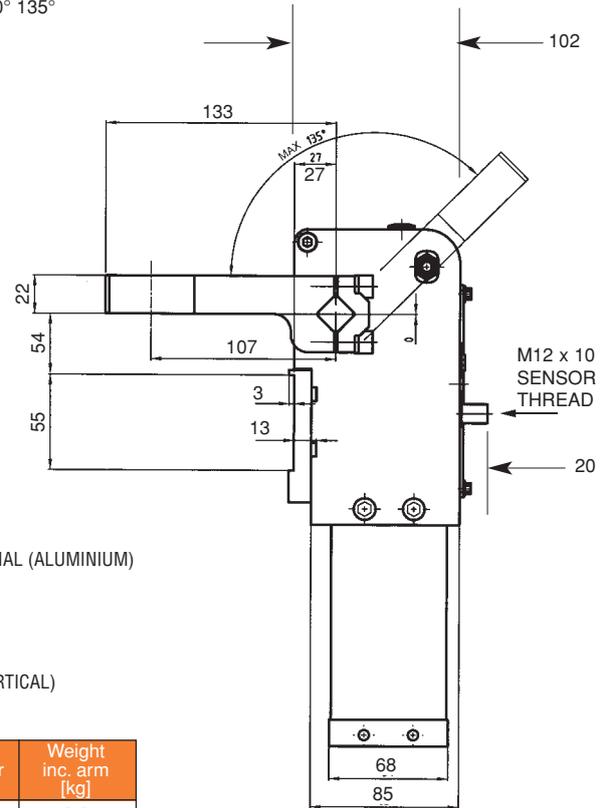
#### Features

- 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





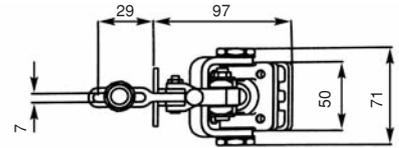
## VA HEAVY DUTY PNEUMATIC POWER CLAMPS

- 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



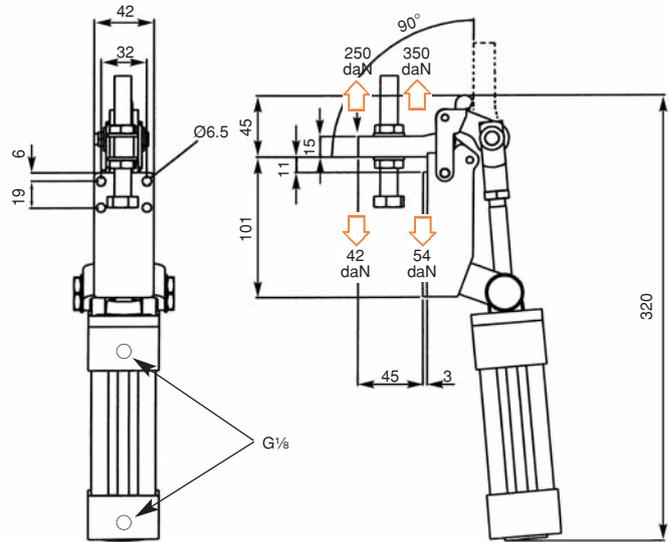
**Arm:**  
The spindle is adjustable along the arm.

**Base:**  
Front mounting.

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

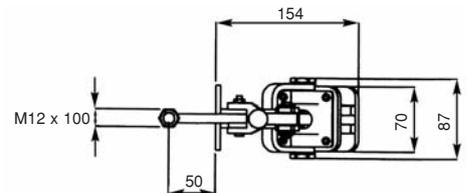
**Weight:**  
2.20 Kg.

**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



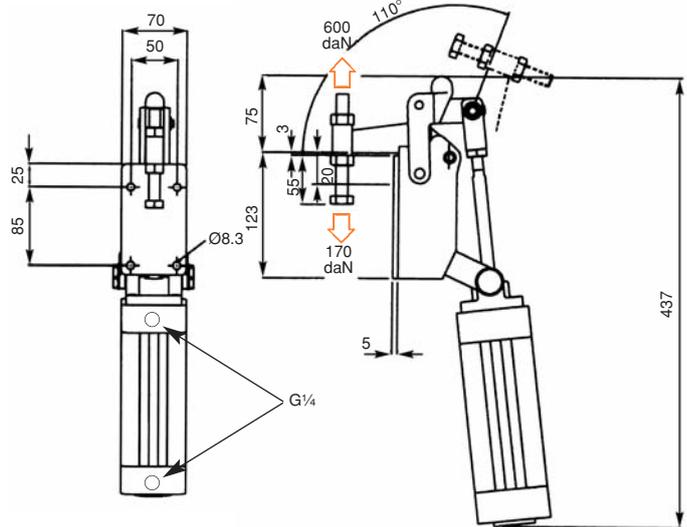
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Front mounting.

**Nominal holding force:**  
700 daN.

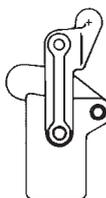
**Weight:**  
4.50 Kg.

**Stroke sensing:**  
SK/10.

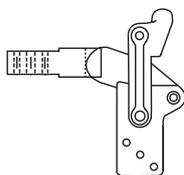


ALTERNATIVE ARM TYPES CAN BE SUPPLIED

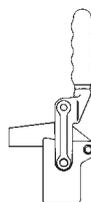
CYLINDERS WITH SCRAPER SEALS ARE AVAILABLE ON REQUEST



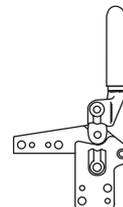
SPECIAL VA2400T



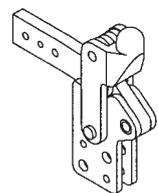
SPECIAL VA1200



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



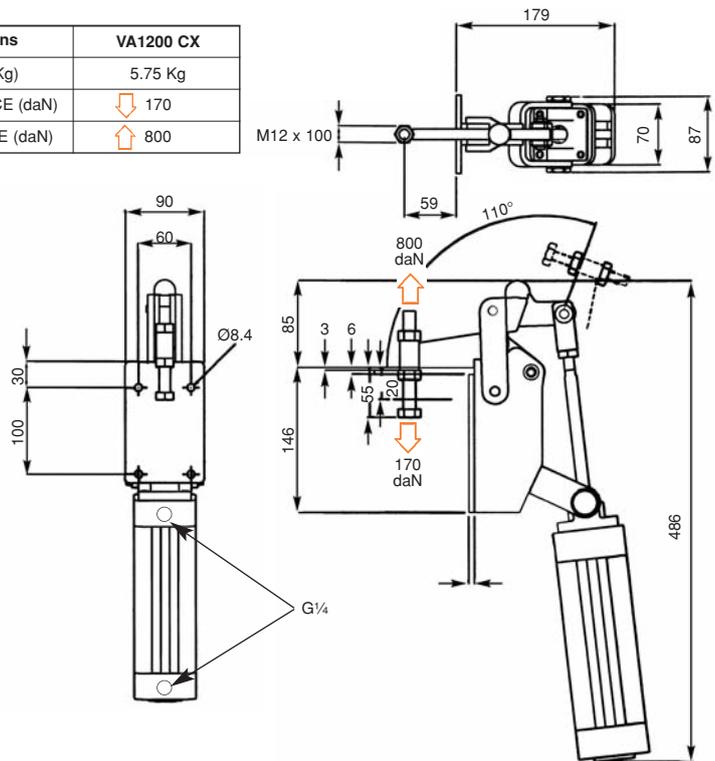
**Arm:**  
The spindle is in a fixed position.

**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



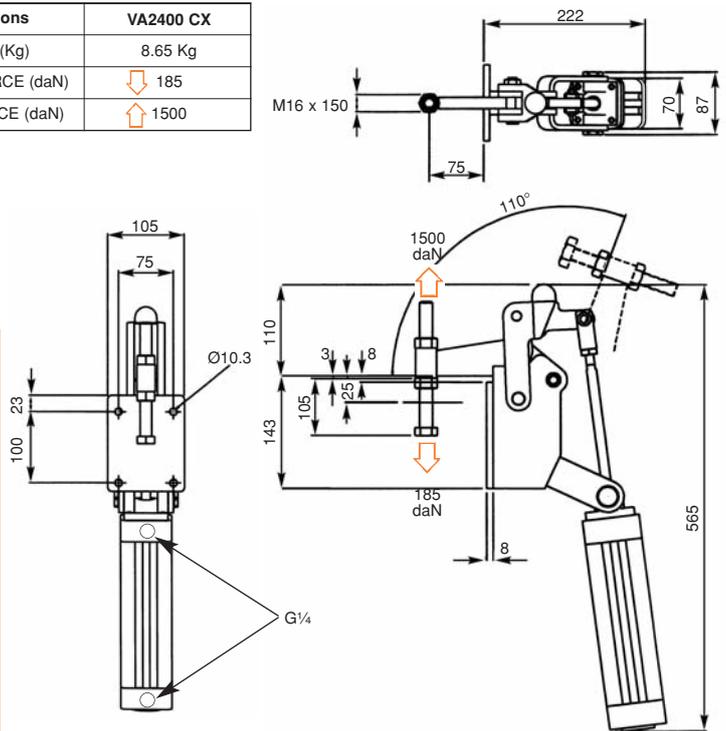
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Front mounting.

**Nominal holding force:**  
2400 daN.

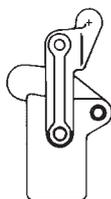
**Weight:**  
8.65 Kg.

**Stroke sensing:**  
SK/10.

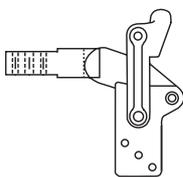


CLAMPING PRODUCTS

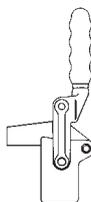
#### ALTERNATIVE ARM TYPES CAN BE SUPPLIED



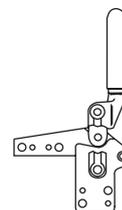
SPECIAL VA2400T



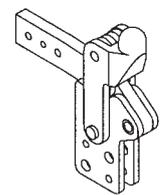
SPECIAL VA1200



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

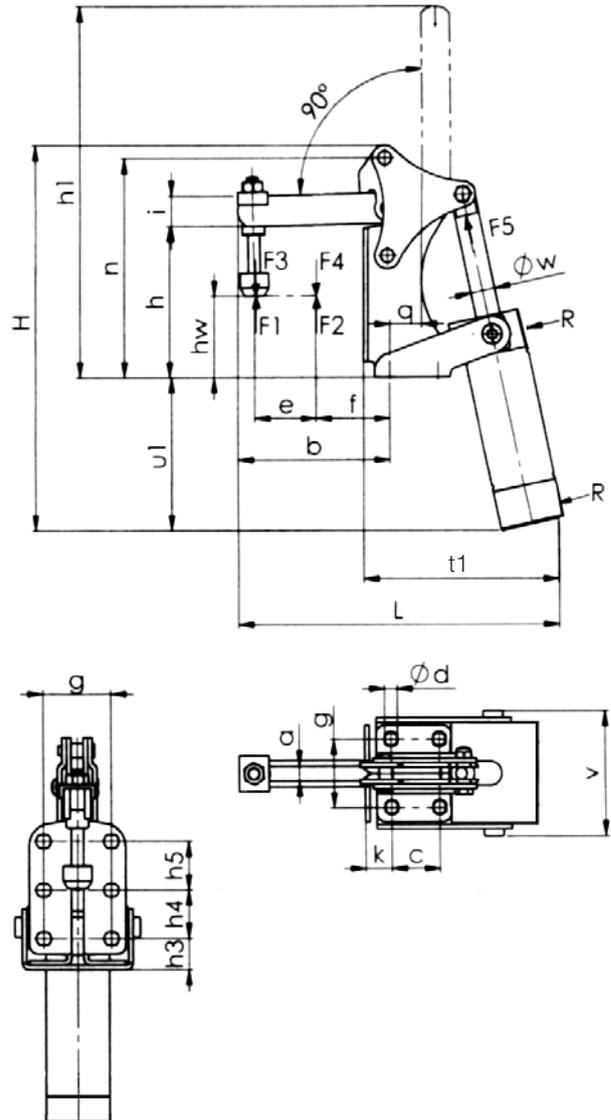


**Arm:**  
The spindle is adjustable along the arm.

**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.

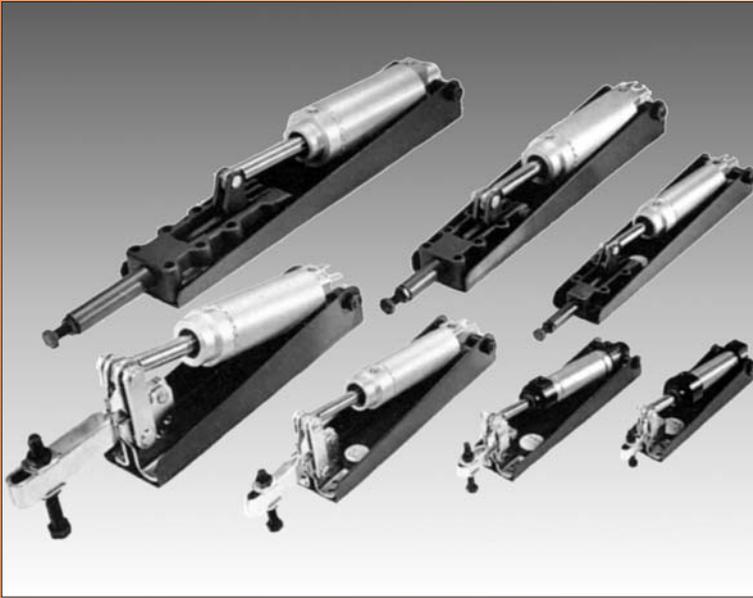


STROKE SENSING SWITCH		
PART NO.	CYLINDER STROKE	CYLINDER PISTON DIA.
SK/11 Ø25	42	25
SK/11 Ø32	52	32
SK/11 Ø40	62	40

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

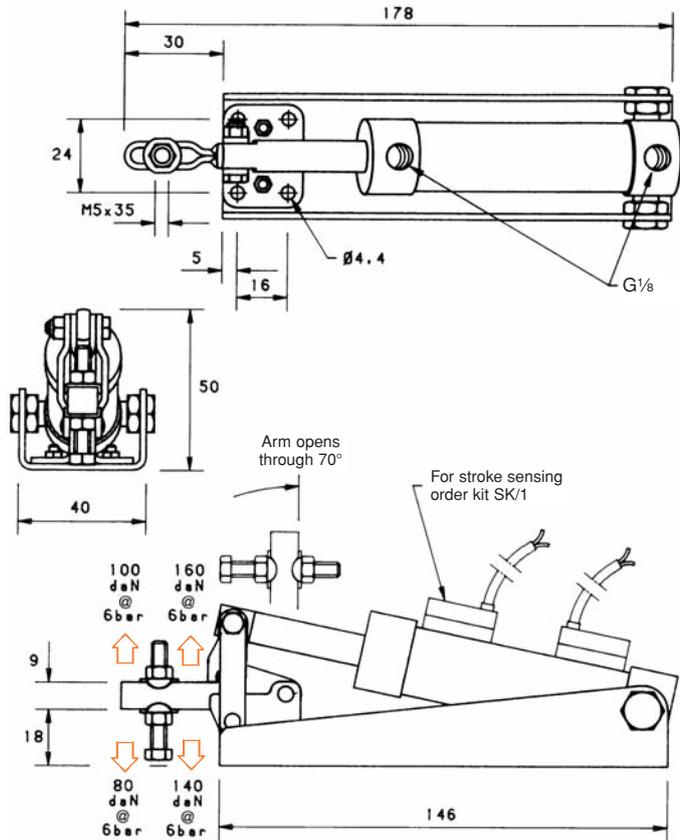
**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**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

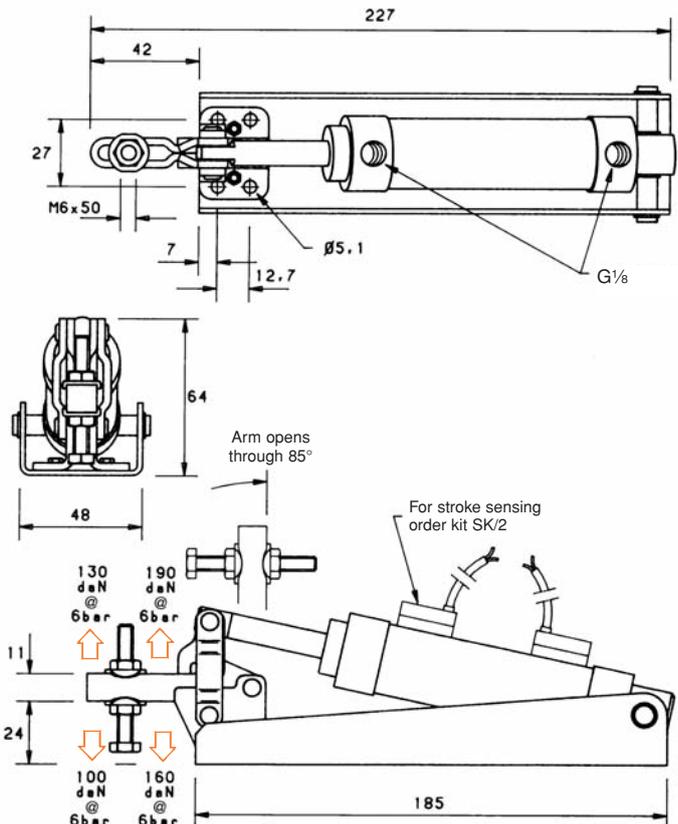
**Operating pressure range:**  
2-6 bar (30-88 p.s.i.g.)

**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.

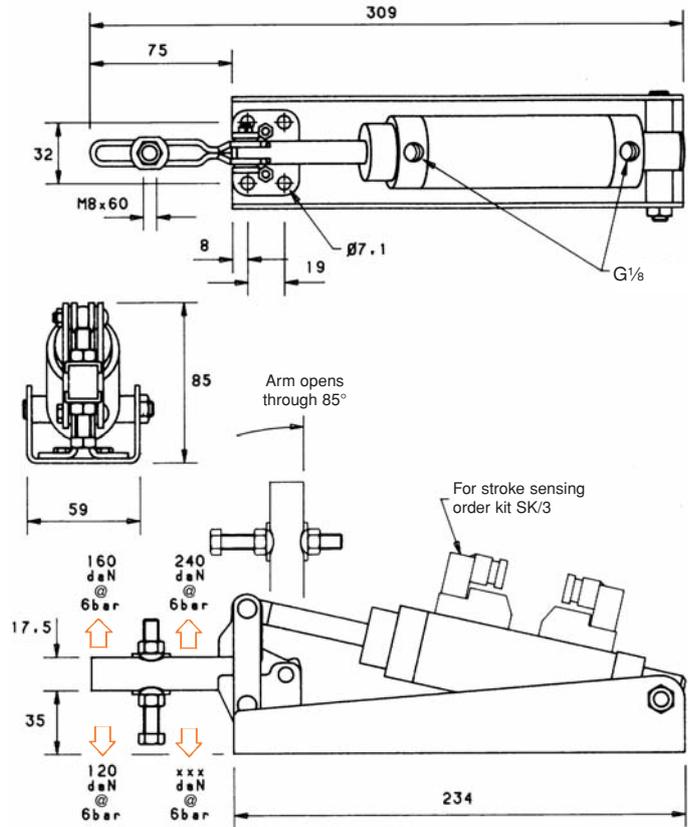
**Swept volume per cycle:**  
0.09 L<sup>3</sup> (5.5 cu. in.)

**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.

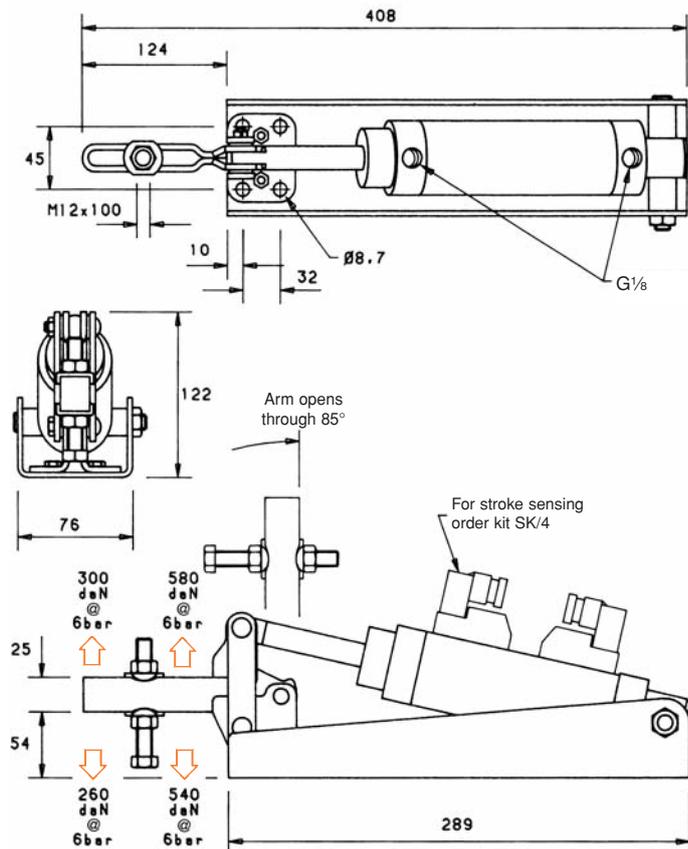
**Swept volume per cycle:**  
0.27 L<sup>3</sup> (16.8 cu. in.)

**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.)

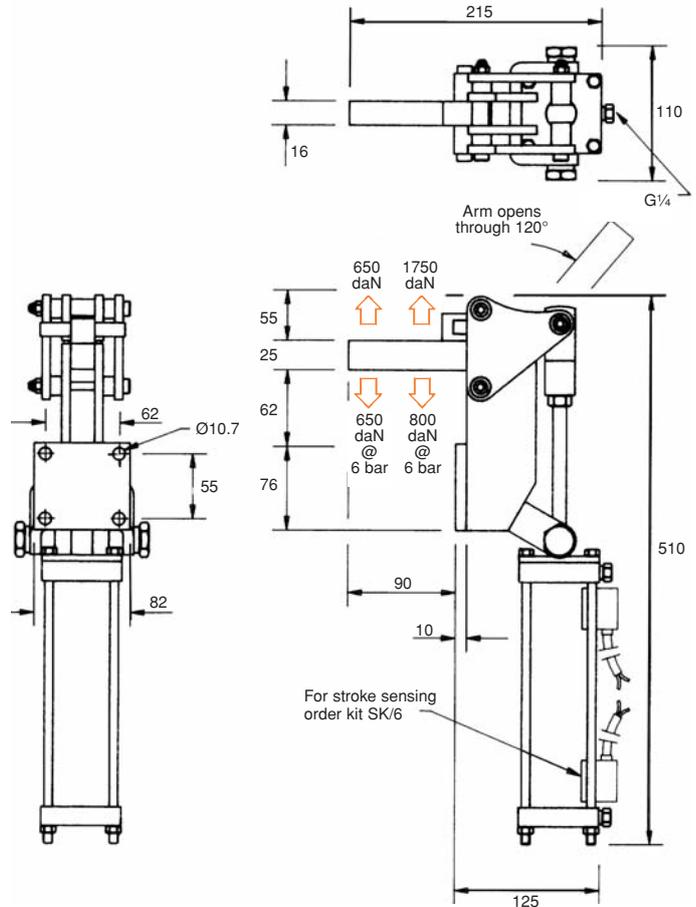
**Max. cycles/min. at 6 bar:**  
30.

**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.)

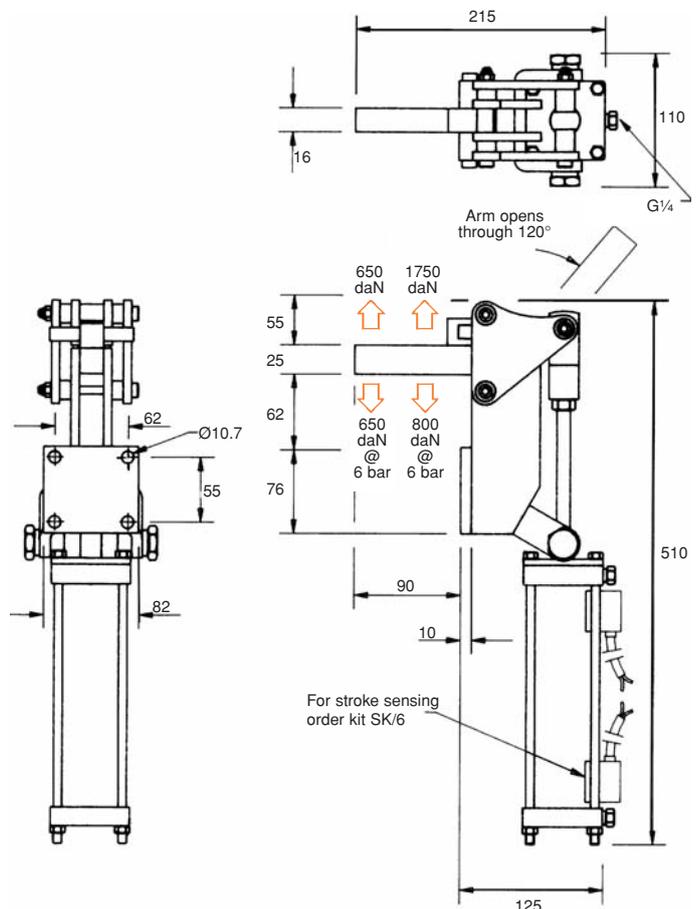
**Max. cycles/min. at 6 bar:**  
15.

**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.

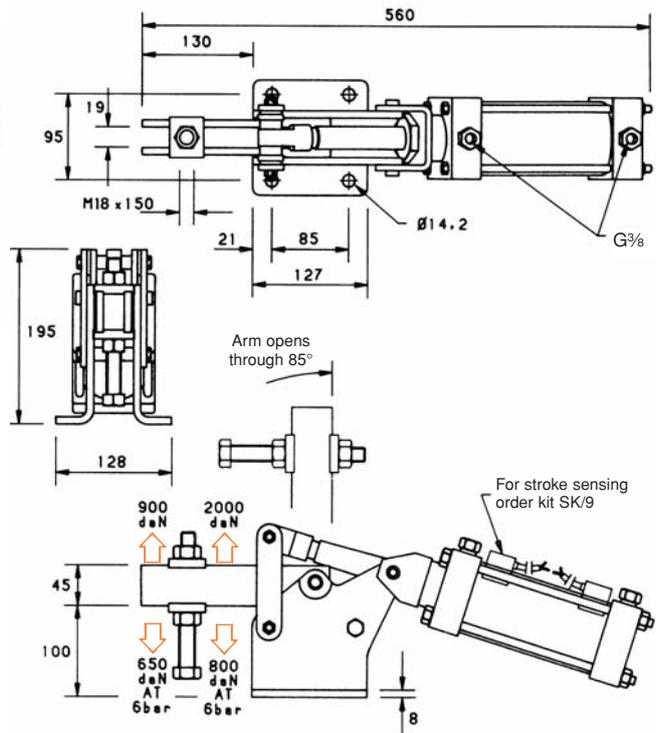
**Swept volume per cycle:**  
0.76 L<sup>3</sup> (46.4 cu. in.)

**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.

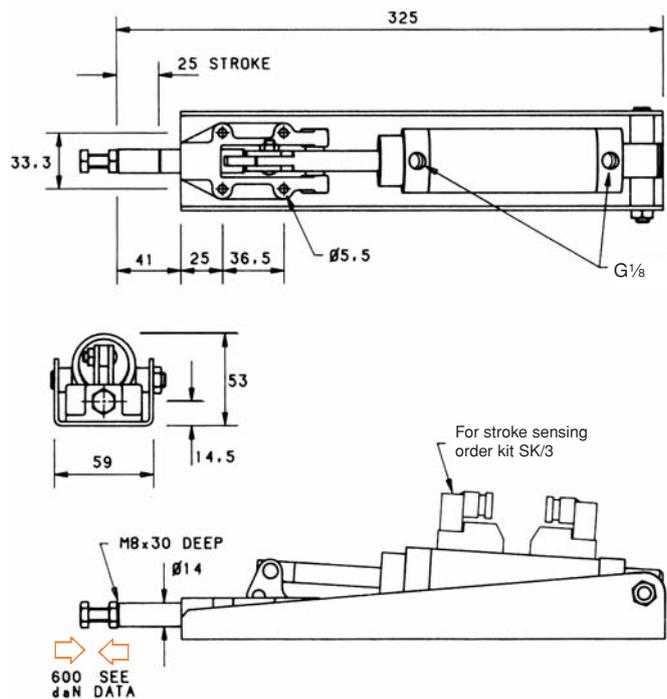
**Swept volume per cycle:**  
0.09 L<sup>3</sup> (5.5 cu. in.)

**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.

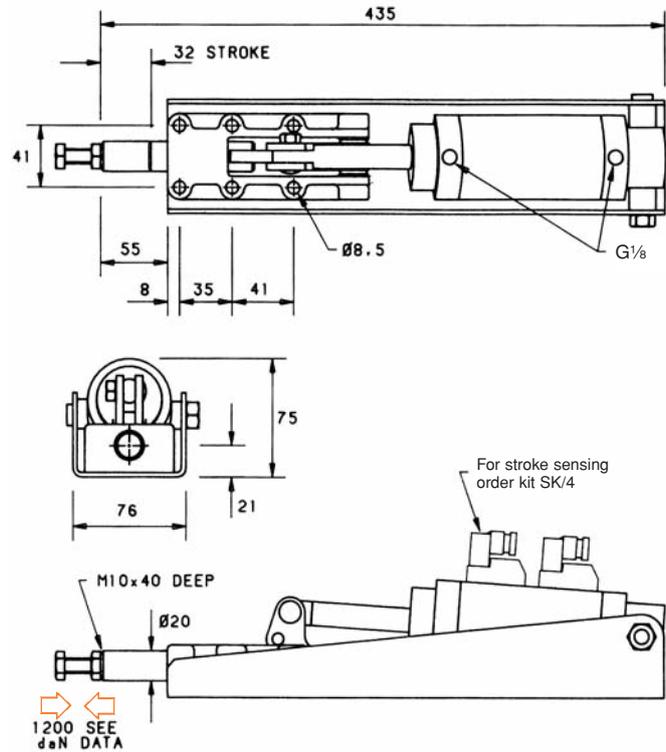
For stroke sensing order SK/4 Sensing Kit.

See "Accessories" for other items.

#### DATA

With 6 bar air supply pressure the output force is:

daN	mm
110	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	



### 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.

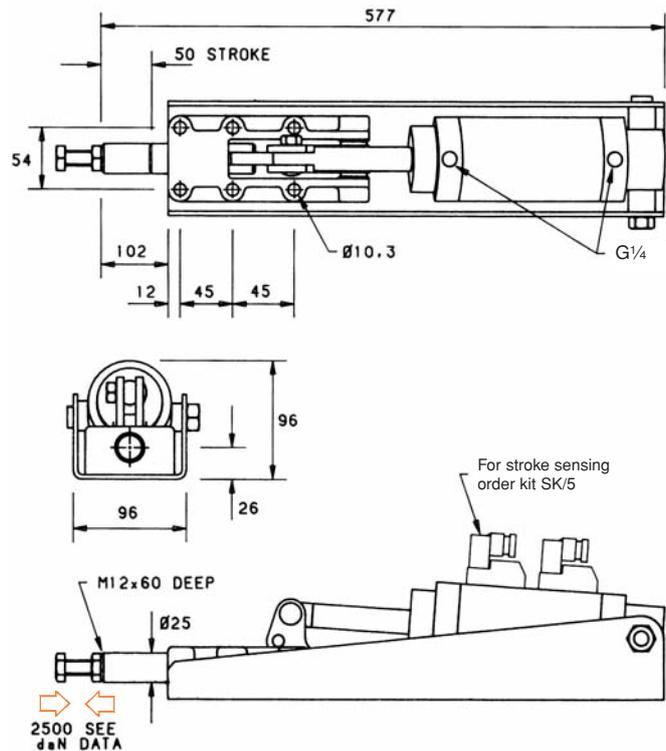
For stroke sensing order SK/5 Sensing Kit.

See "Accessories" for other items.

#### DATA

With 6 bar air supply pressure the output force is:

daN	mm
130	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	





## 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.

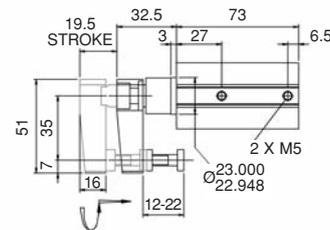
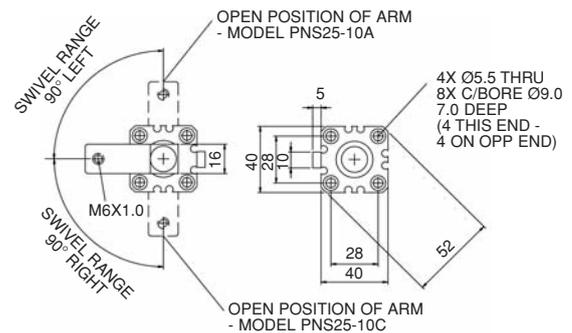
**Swept volume per cycle:**  
0.012 L.

**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.

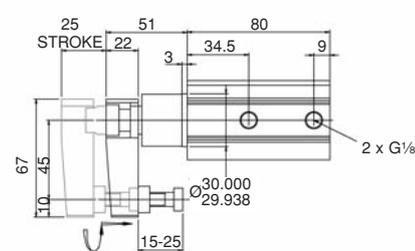
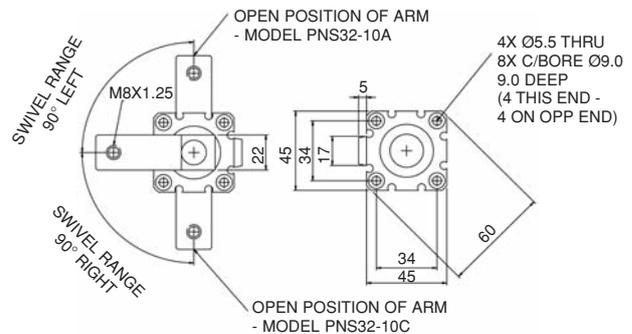
**Swept volume per cycle:**  
0.035 L.

**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.

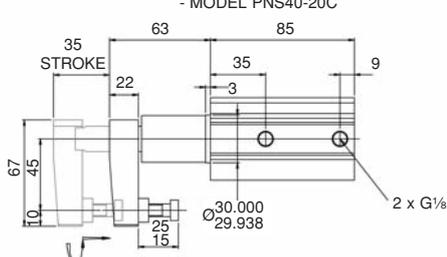
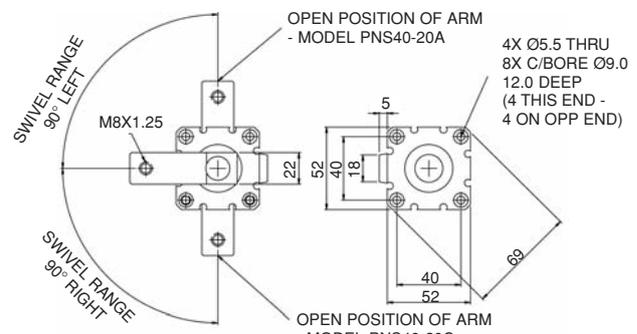
**Swept volume per cycle:**  
0.06 L.

**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.

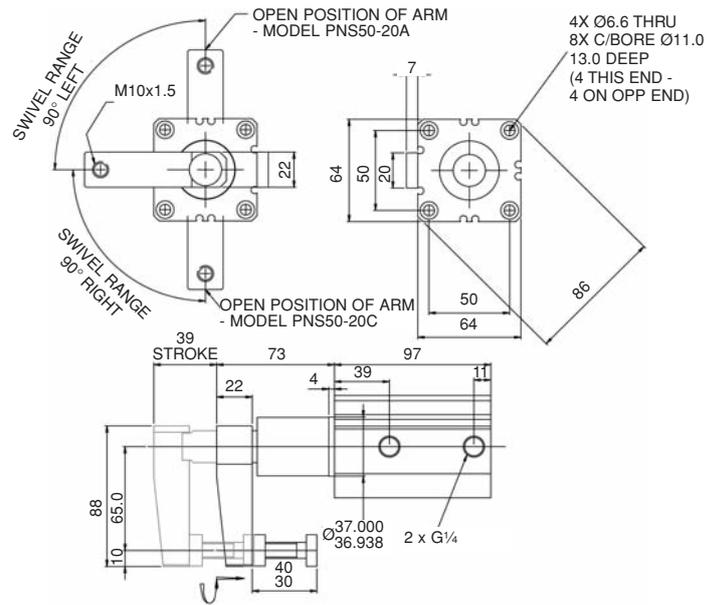
**Rotary stroke:**  
19mm.

**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.

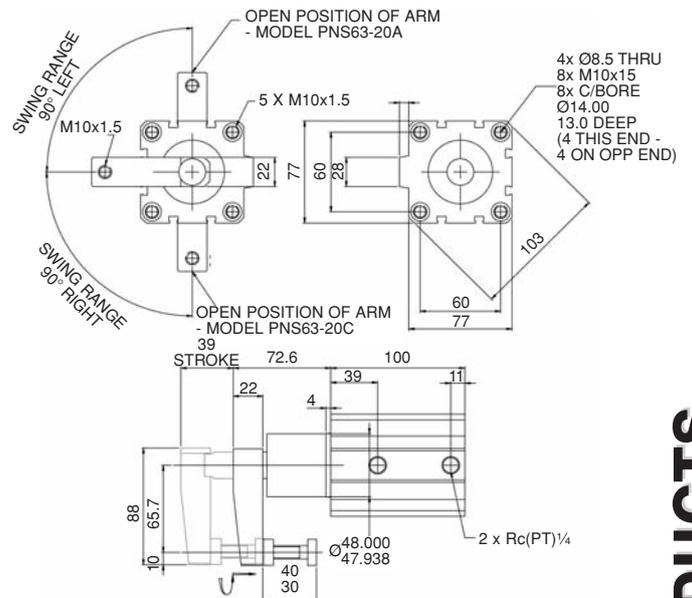
**Rotary stroke:**  
19mm.

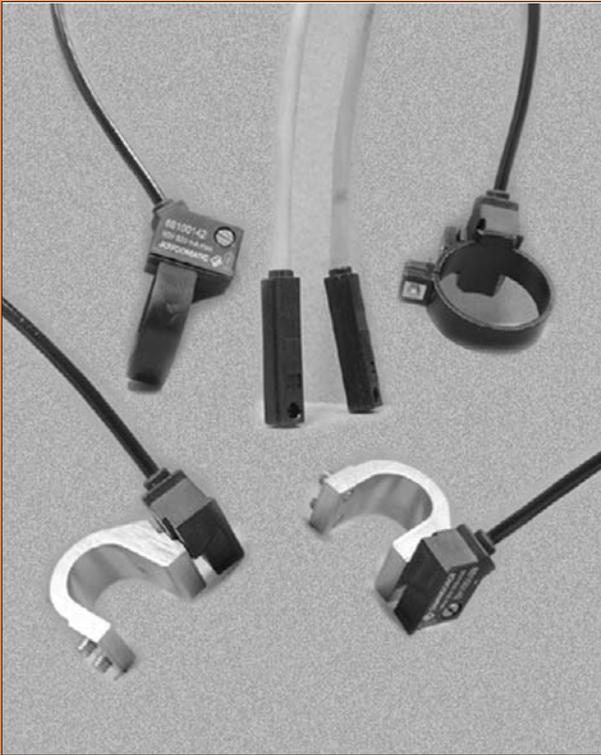
**Clamping stroke:**  
20mm.

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

**Weight:**  
1.87 Kg.

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



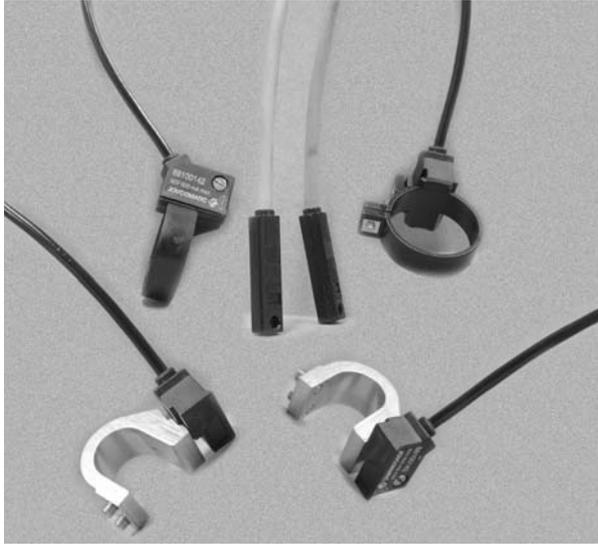


**PNEUMATIC ACCESSORIES**

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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.

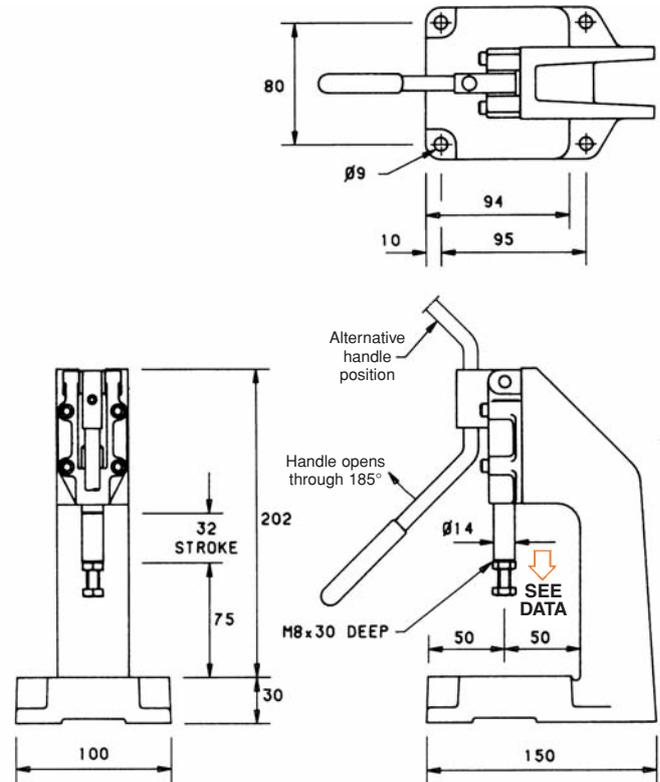
**Nominal holding force:**  
600 daN.

**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

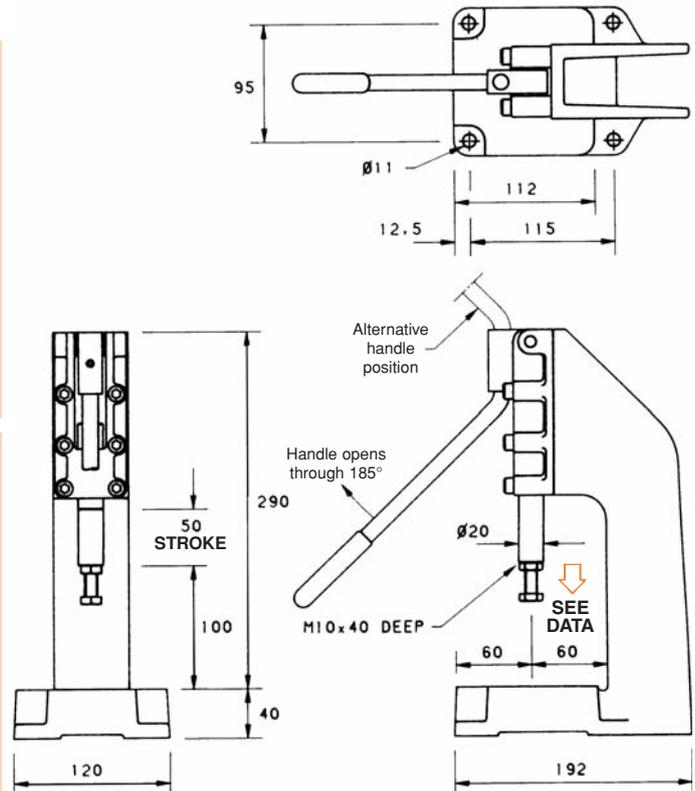
**Type:**  
Bench mounted manual toggle press.

**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

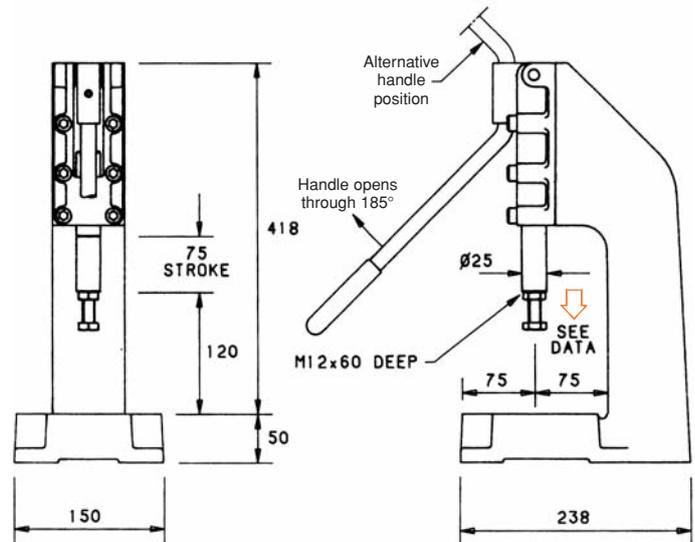
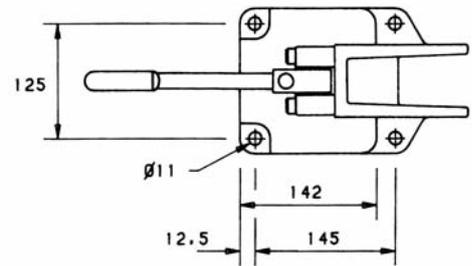
**Type:**  
Bench mounted manual toggle press.

**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

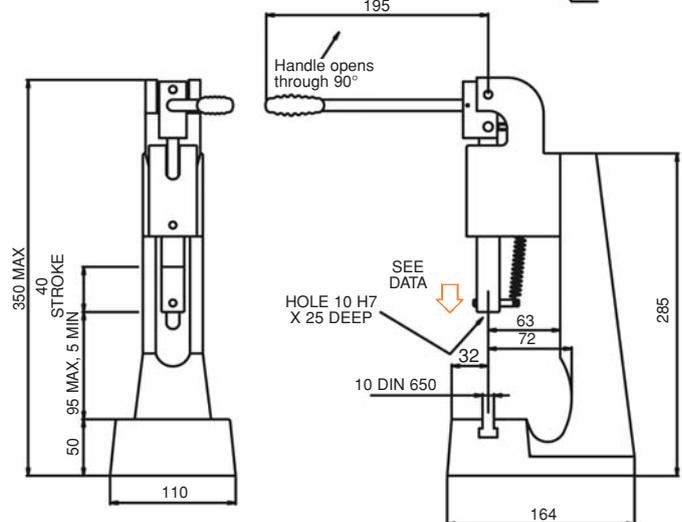
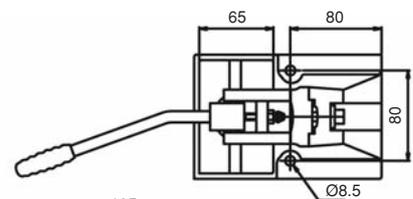
**Type:**  
Bench mounted toggle press

**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

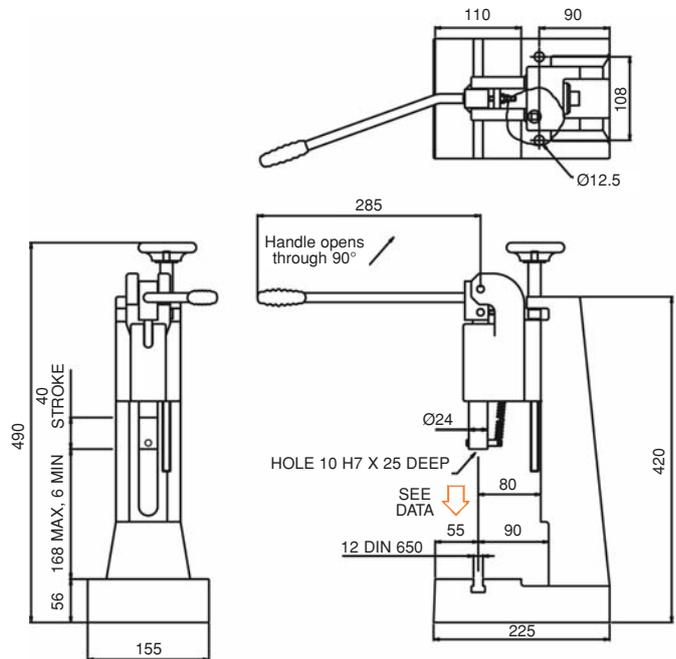
With 15 daN handle force the output force is:

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:

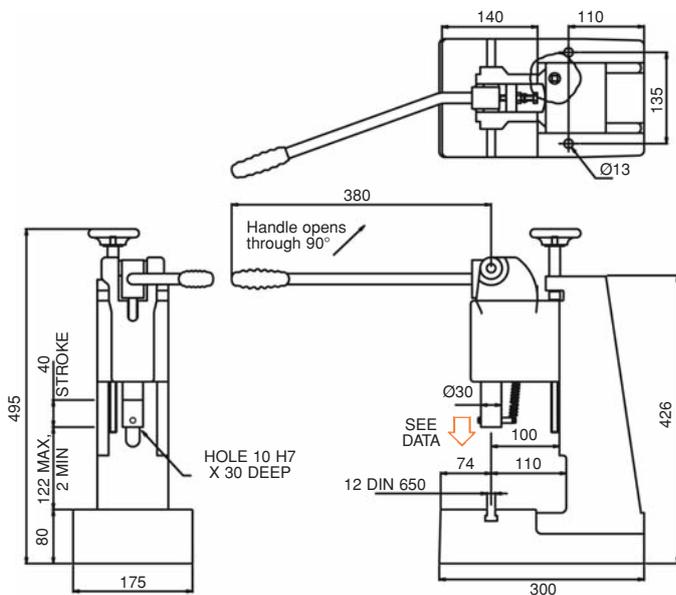
daN	mm
Fully retracted	145
5 mm extended	135
10 mm "	130
15 mm "	130
20 mm "	130
25 mm "	140
30 mm "	160
35 mm "	230
38 mm "	325
39 mm "	440
Fully extended	1400

**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

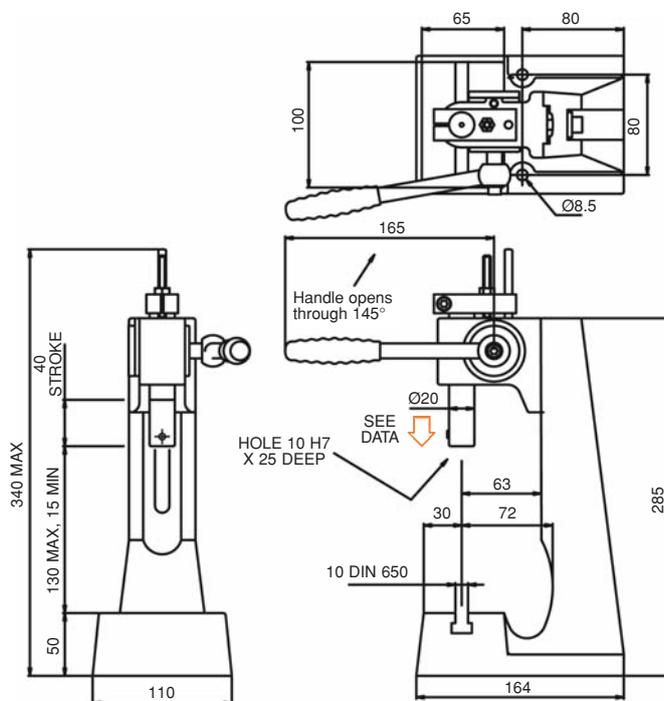
#### Type:

Bench mounted rack and pinion press

#### Quality Features:

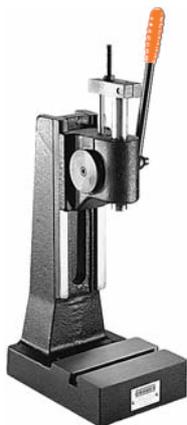
- anti-twist ram.
- stroke adjustment by means of adjustment screw, or micrometer screw.
- hand lever adjustable through 360°.
- long, honed ram guide.
- ground table, with T-slot.

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

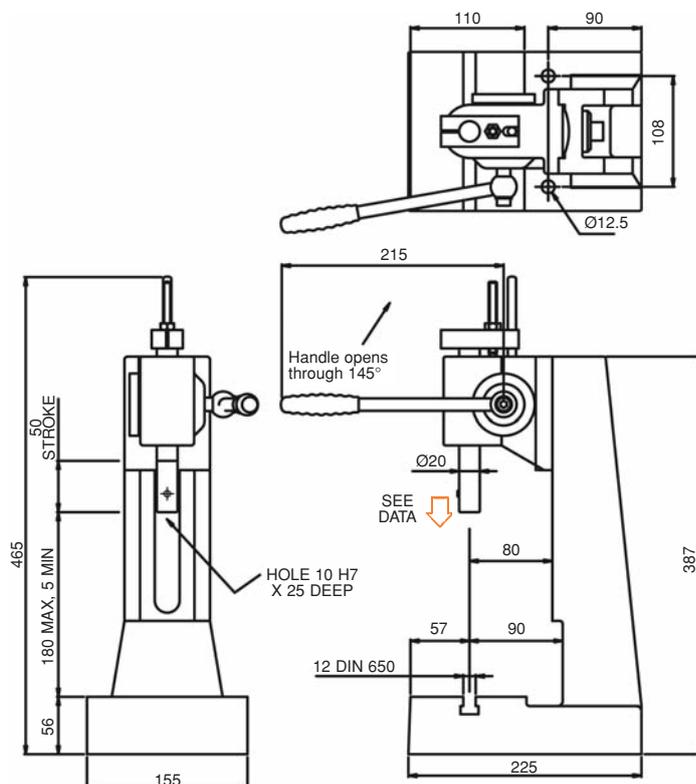
Table Bore 12 <sup>H7</sup>	mm	TB
Micrometer Screw Gauge		MICRO
Stroke Counter		Z

#### 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.

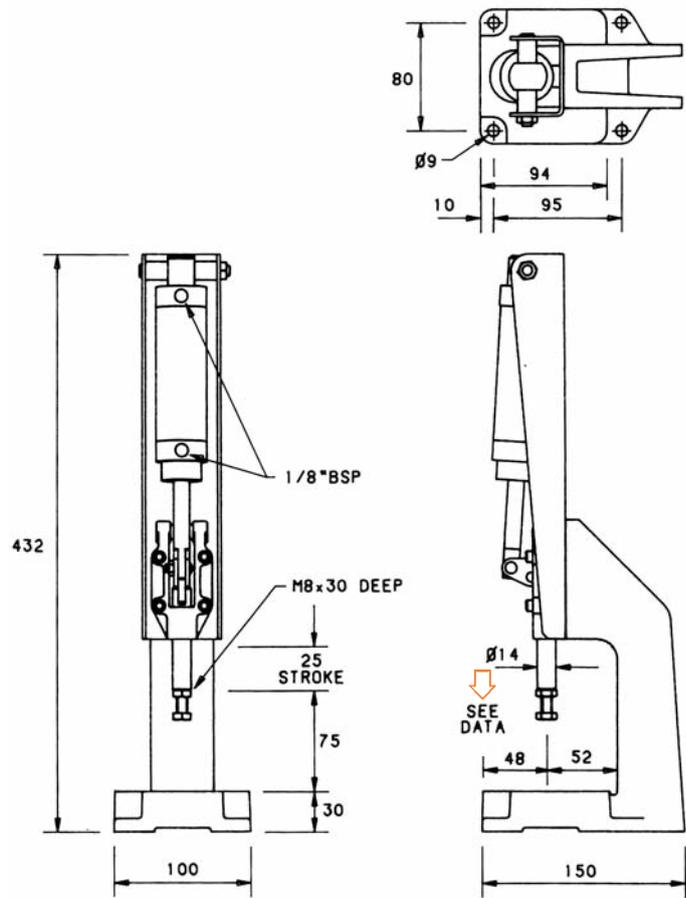
**Operating pressure range:**  
2-6 bar (30-88p.s.i.g.)

**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.

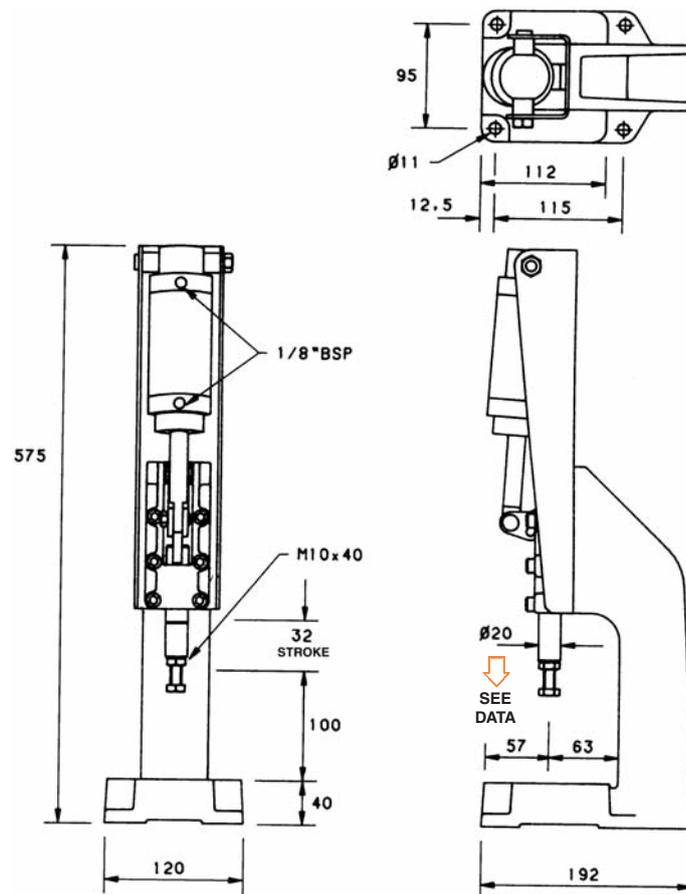
**Operating pressure range:**  
2-6 bar (30-88p.s.i.g.)

**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.

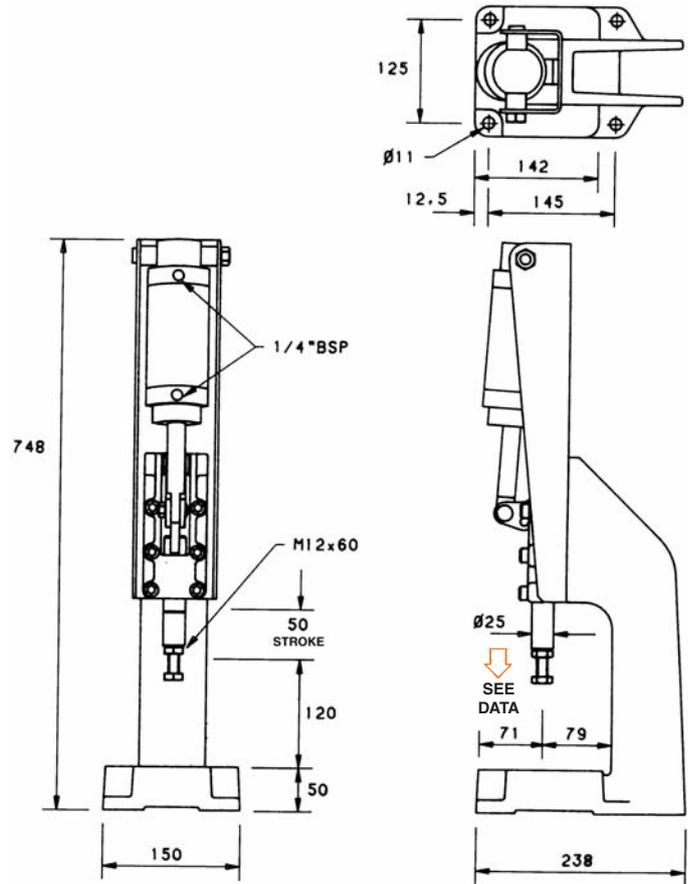
**Nominal holding force:**  
2500 daN.

**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

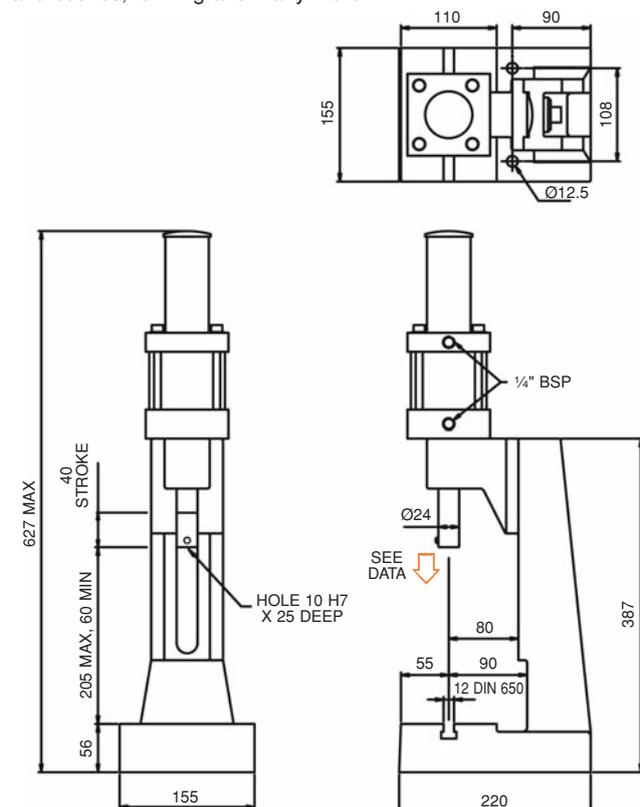


Capacity at 6 bar	kN	2,5
	kgf	250
Working Stroke	mm	40
Clearance	mm	80
Table Size	mm	208x48
T-Slot width to DIN 650	mm	12
Ram Bore		
Øxdepth	mm	12 <sup>H7</sup> x25
Ram Ø	mm	24
Space required	mm	155x220
Port Size		R 1/4"
Air Consumption/cm Stroke	l	0,6
Weight	kg	18,5

**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

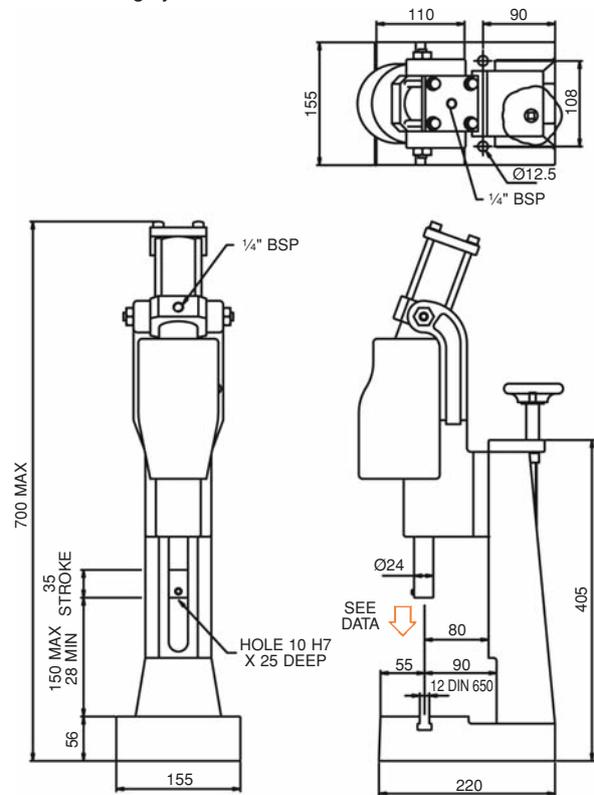


With 6 bar air supply pressure the output force is:	daN
Fully retracted	110
5 mm extended	120
10 mm "	130
15 mm "	140
20 mm "	155
25 mm "	170
30 mm "	220
33 mm "	290
34 mm "	360
Fully extended	600
Air Consumption/cm Stroke	l 0,26
Weight	kg 22

#### 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

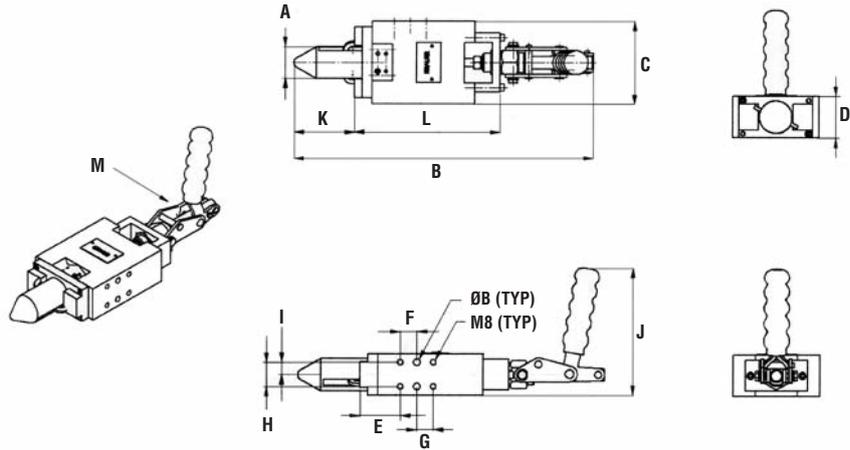
- Used for locating any fabrication, frame or automotive body in an exact position
- Diameter of Location Pin  $\text{Ø}25$   $\text{Ø}35$   $\text{Ø}40$
- Internal clamping fingers which extend out from Locating Pin
- Finger adjustment to accommodate differing material thicknesses

## 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

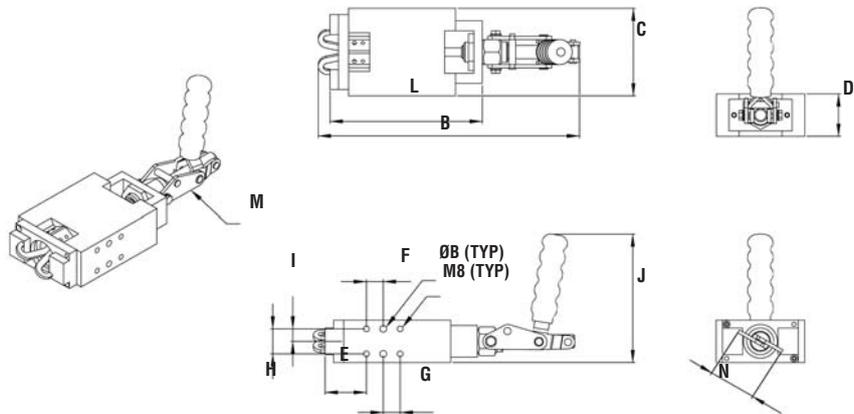


## BODY LOCATION CLAMPS

• 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

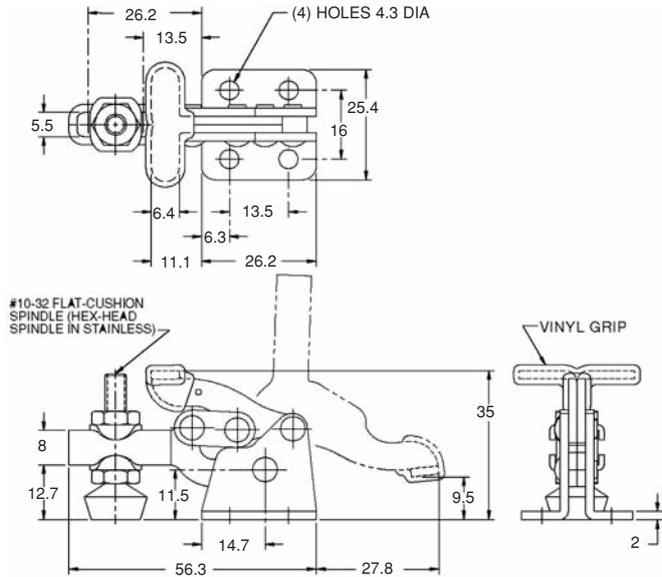


**Holding Force:**  
70 daN

**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**



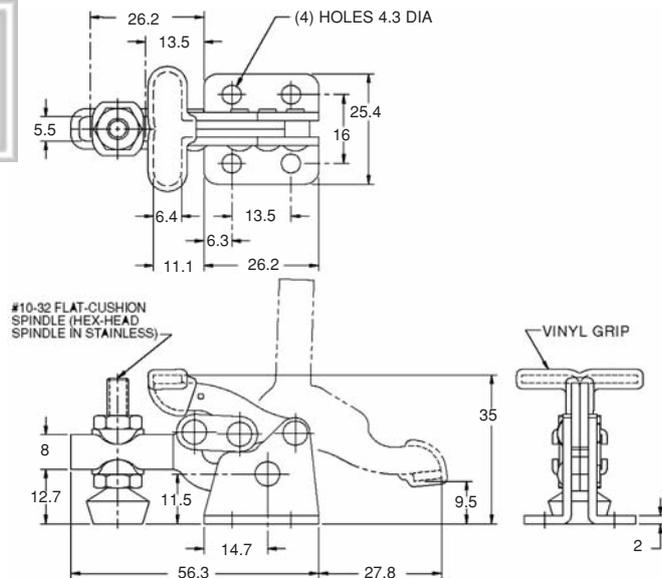
**Holding Force:**  
70 daN

**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



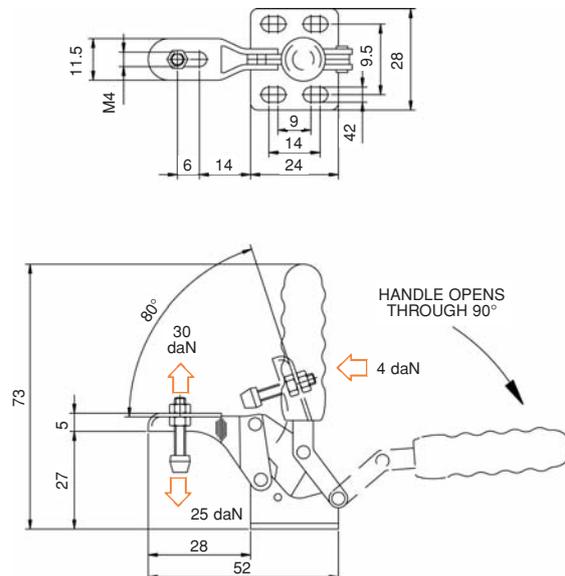
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
30 daN

**Weight:**  
0.04 Kg

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



## VERTICAL CLAMPS

### V75 SERIES

#### MODEL V75/1B



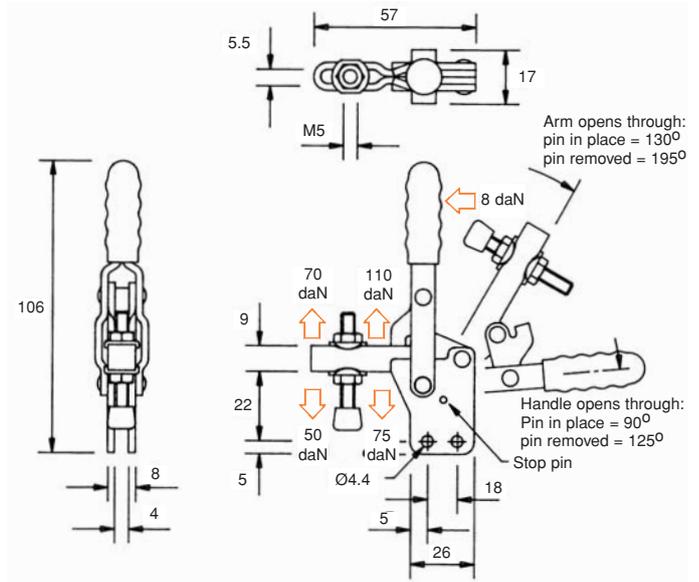
**Arm:**  
The spindle position is adjustable along the arm.

**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.

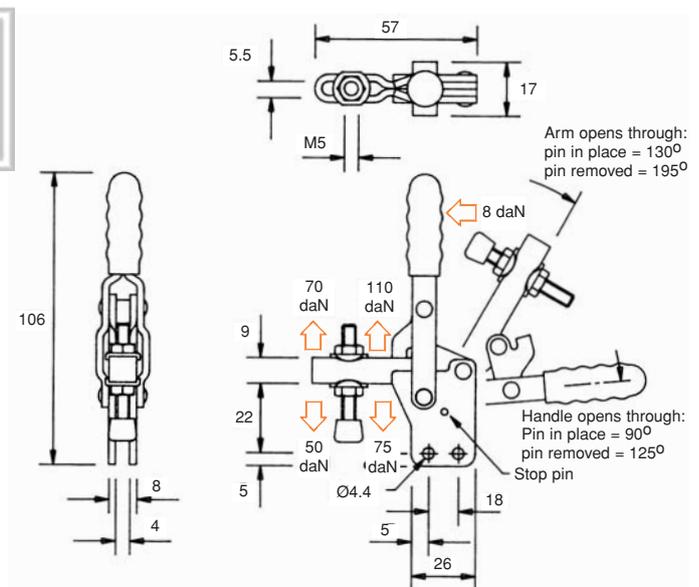
**Base:**  
Straight.

**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.

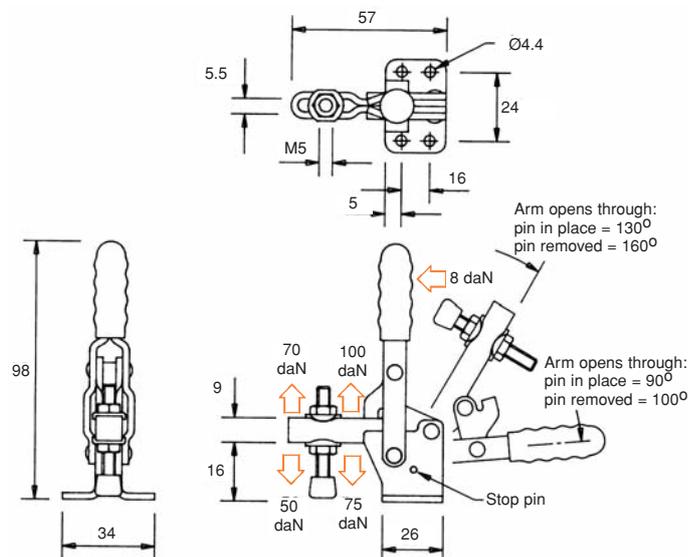
**Base:**  
Flanged.

**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.

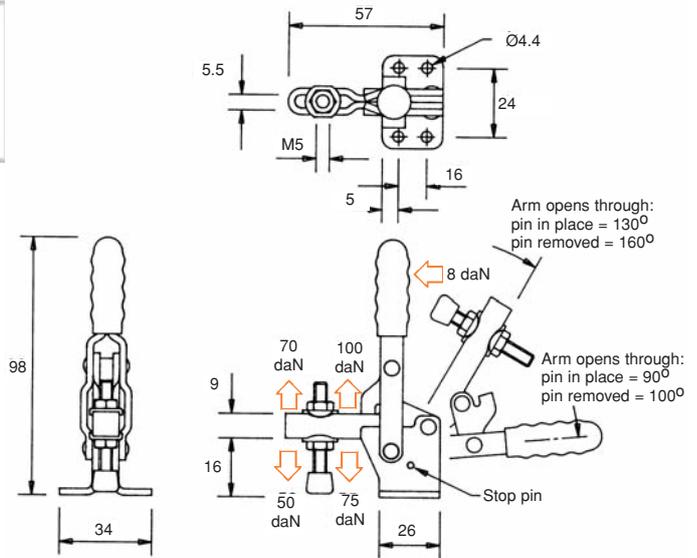
**Base:**  
Flanged.

**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.

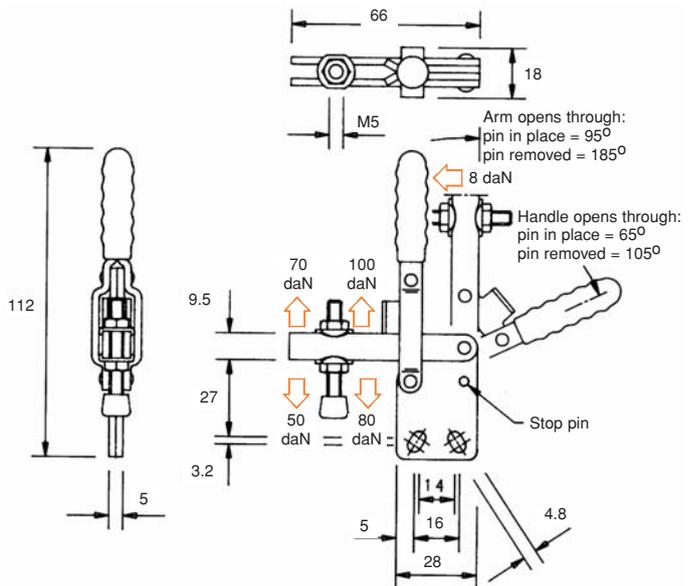
**Base:**  
Straight.

**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.

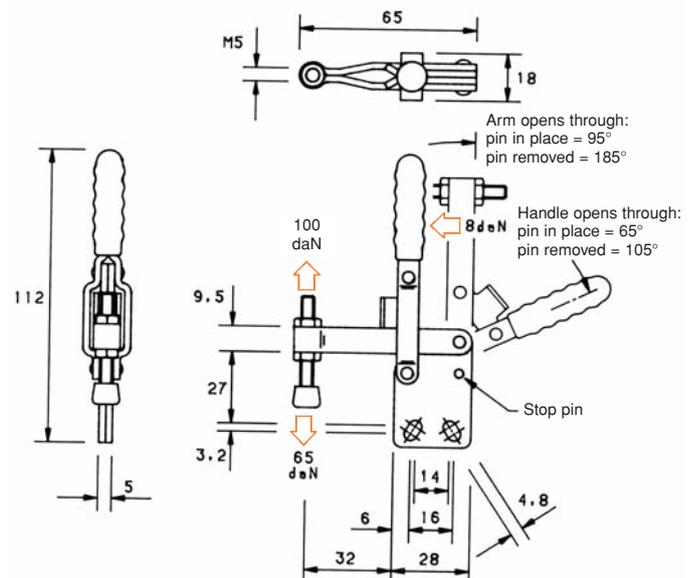
**Base:**  
Straight.

**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



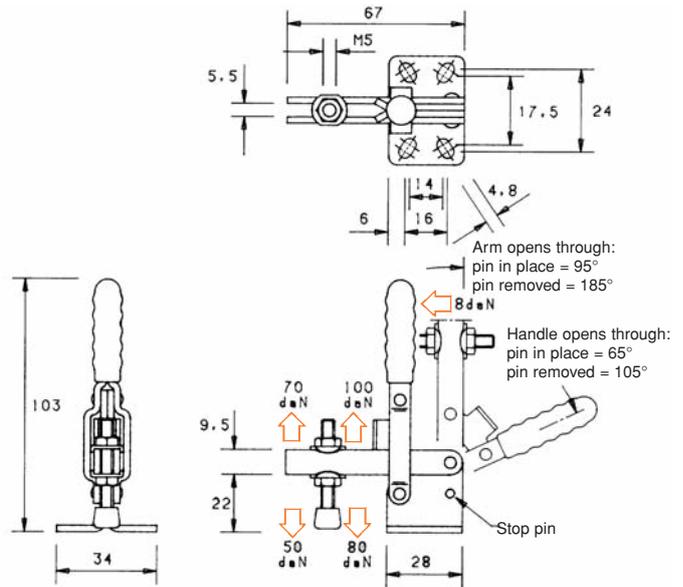
**Arm:**  
The spindle position is adjustable along the arm.

**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



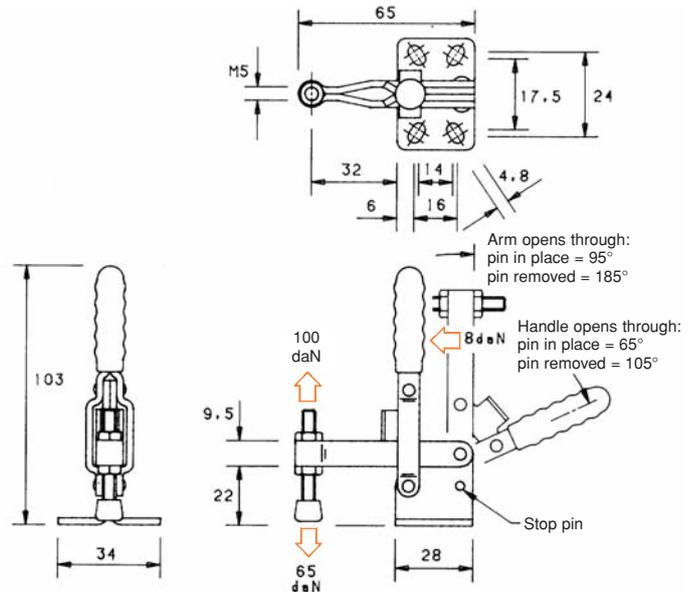
**Arm:**  
The spindle is in a fixed position.

**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



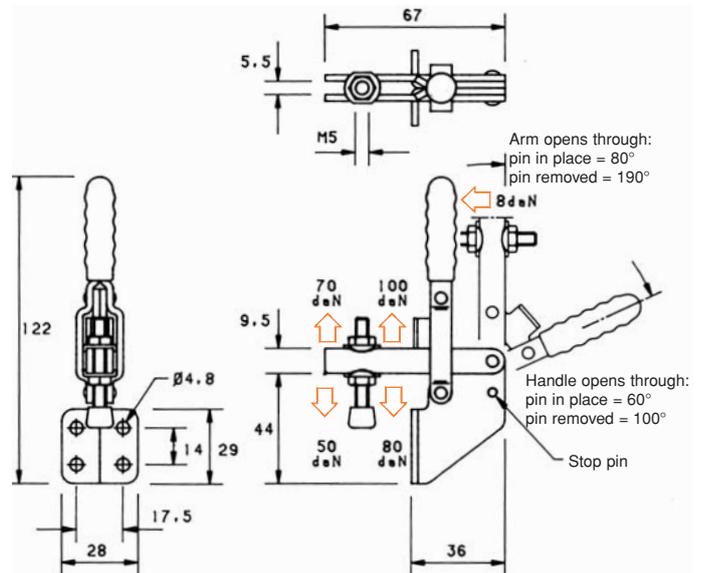
**Arm:**  
The spindle position is adjustable along the arm.

**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.

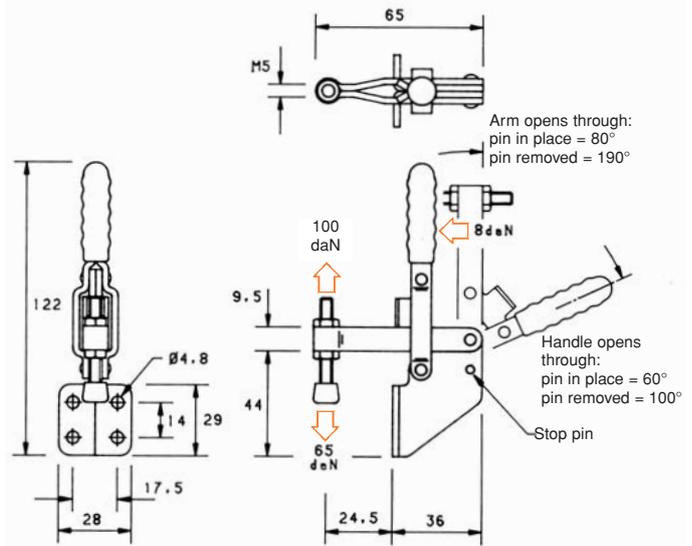
**Base:**  
Front mounting.

**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.

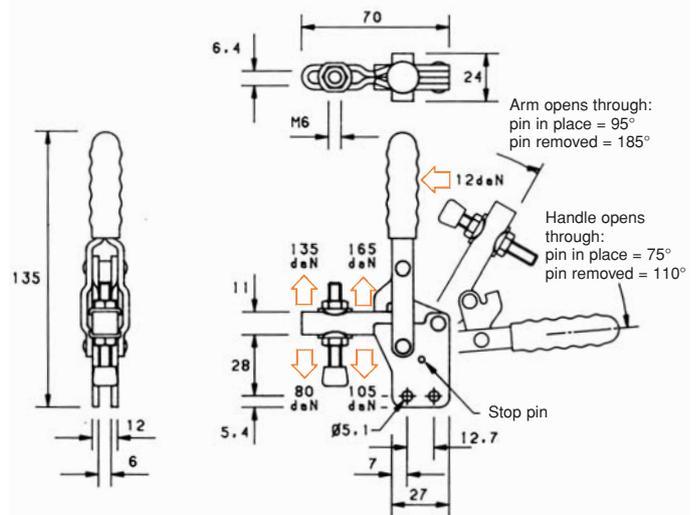
**Base:**  
Straight.

**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.

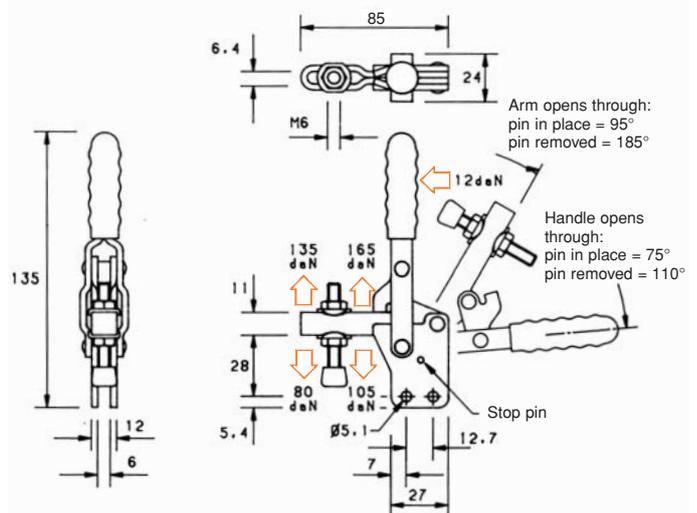
**Base:**  
Straight.

**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.

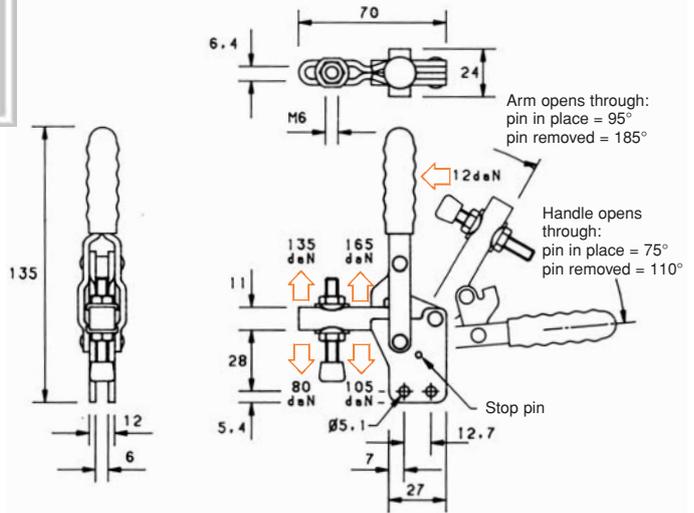
**Base:**  
Straight.

**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.

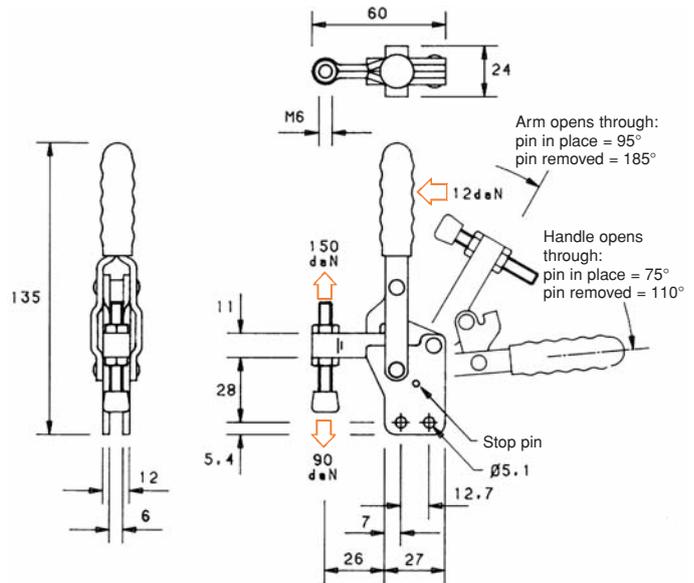
**Base:**  
Straight.

**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.

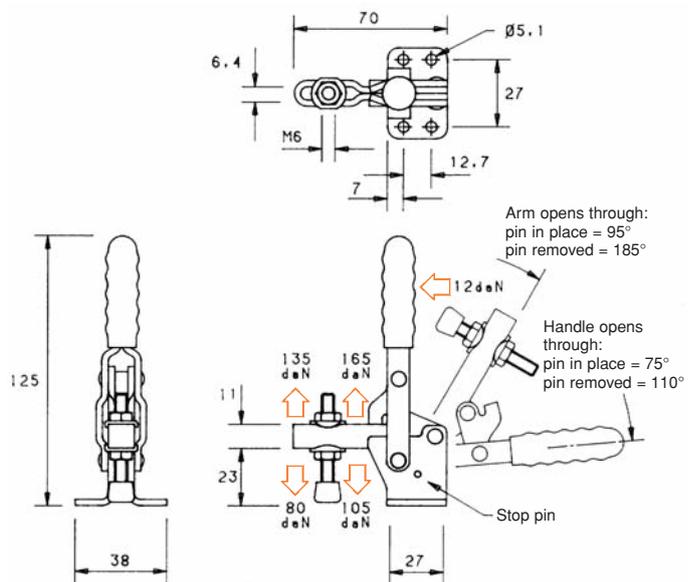
**Base:**  
Flanged.

**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



for front mounting use  
bracket Model FM1



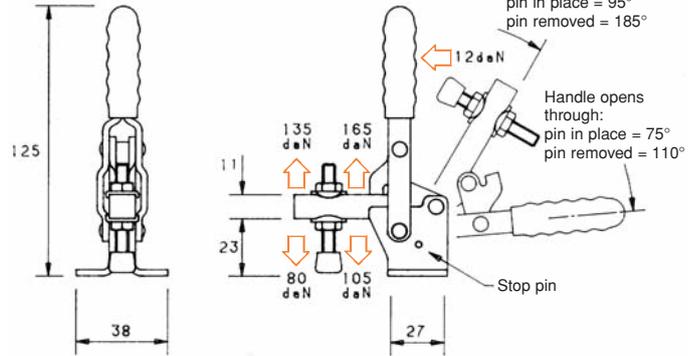
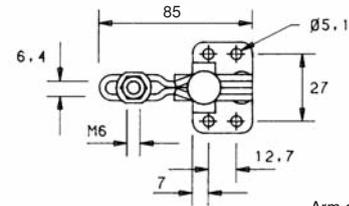
**Arm:**  
The spindle position is adjustable along the arm. 15mm added to arm length over V150/2B model.

**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

**STAINLESS  
STEEL**



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

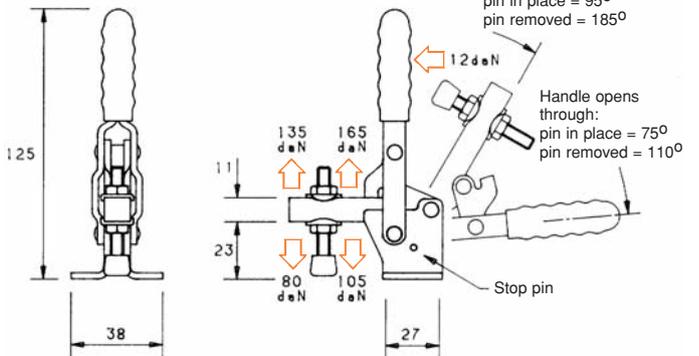
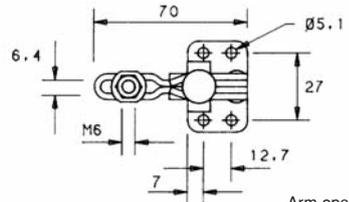
**Base:**  
Flanged.

**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



for front mounting use  
bracket Model FM1



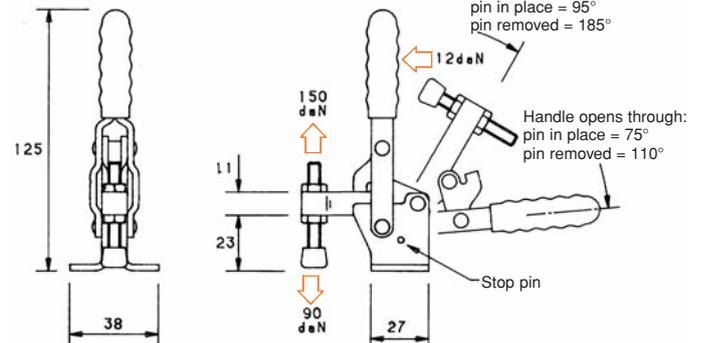
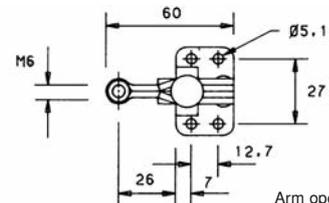
**Arm:**  
The spindle is in a fixed position.

**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.

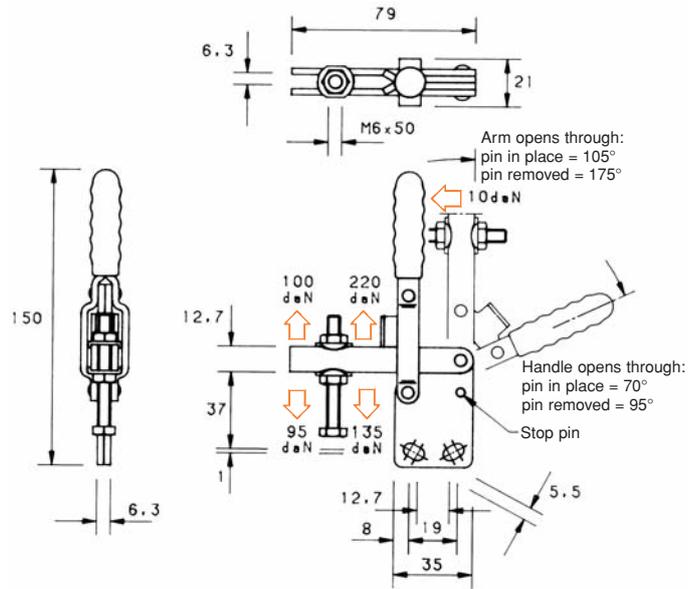
**Base:**  
Flanged.

**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.

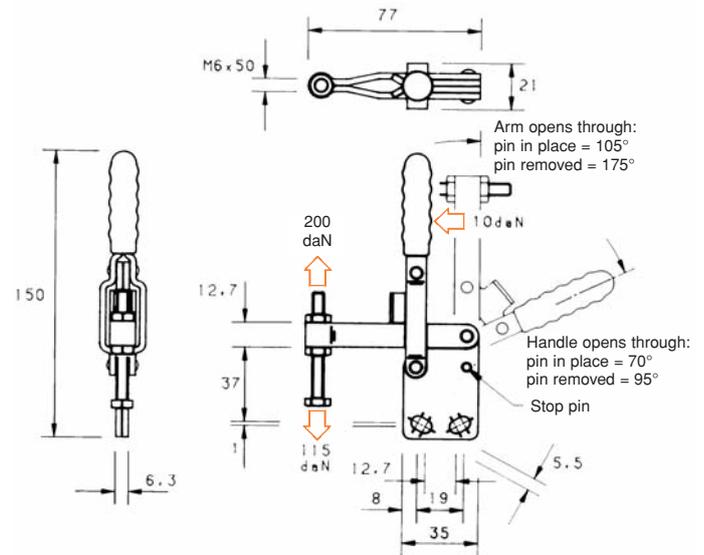
**Base:**  
Straight.

**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.

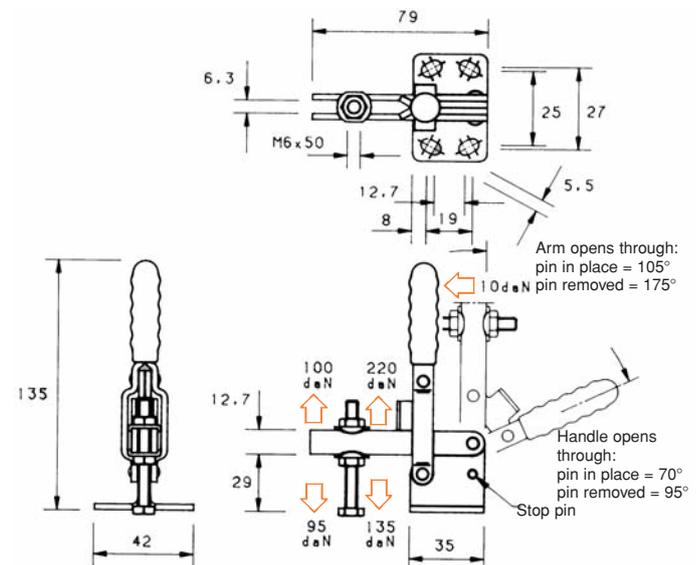
**Base:**  
Flanged.

**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.

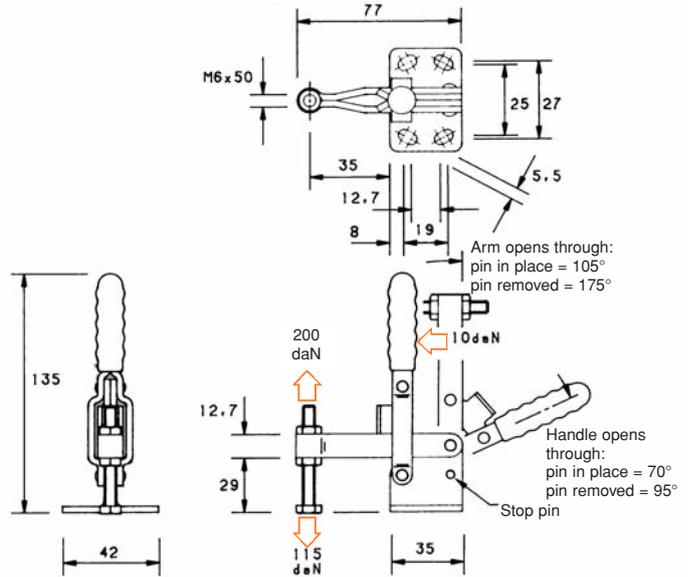
**Base:**  
Flanged.

**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.

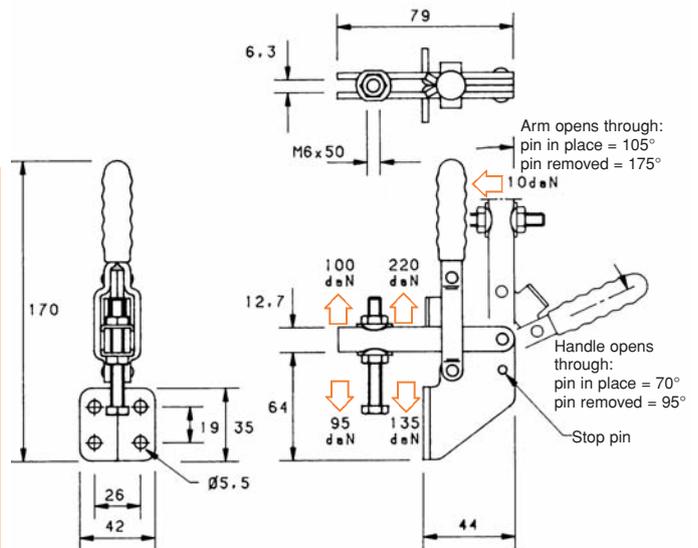
**Base:**  
Front mounting.

**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.

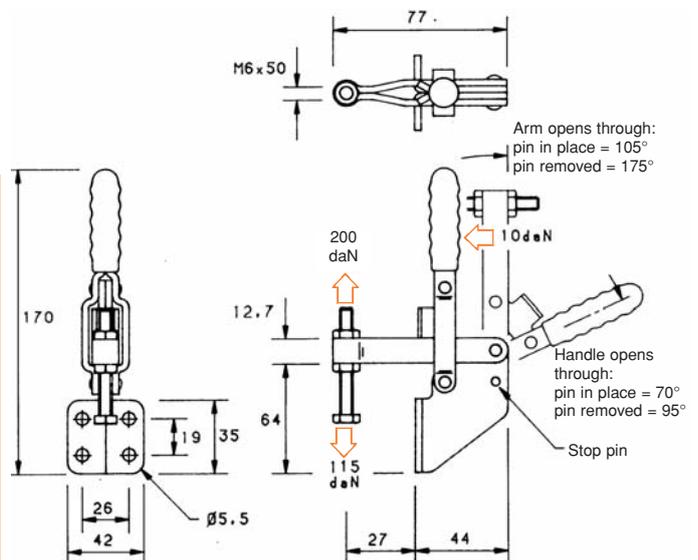
**Base:**  
Front mounting.

**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.

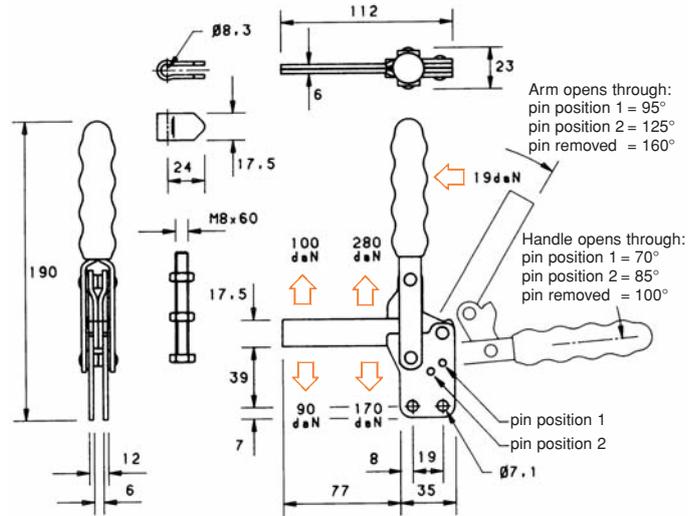
**Base:**  
Straight.

**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.

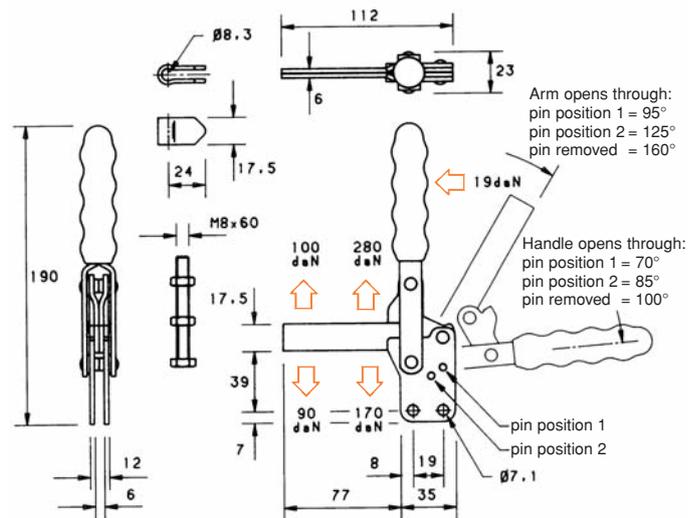
**Base:**  
Straight.

**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



for "T" Bar Accessory  
order Model T250



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

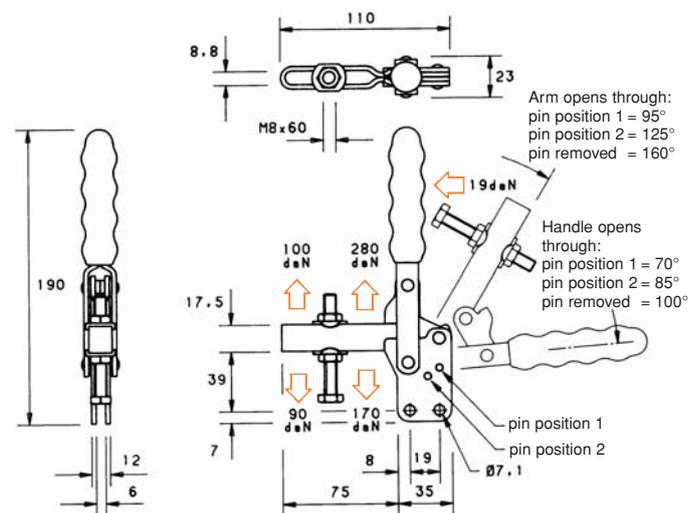
**Base:**  
Straight.

**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.

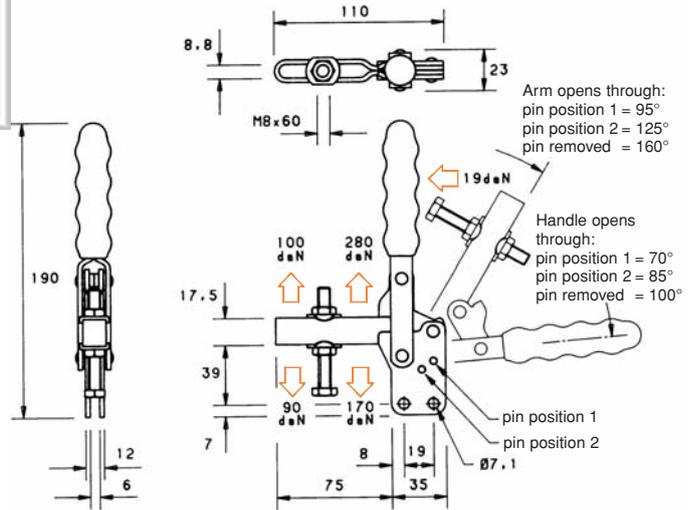
**Nominal Holding Force:**  
250 daN

**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.

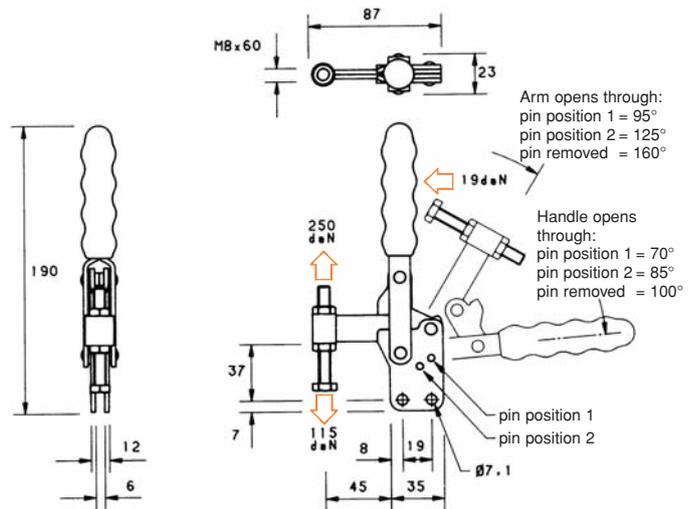
**Base:**  
Straight.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

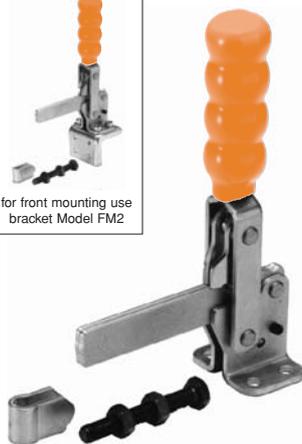
**Supplied complete with:**  
MB0860 Setscrew & nuts.

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.

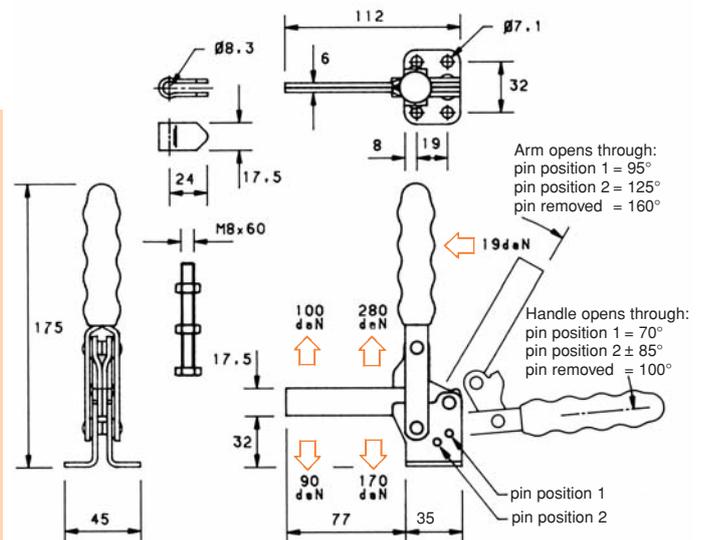
**Base:**  
Flanged.

**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.

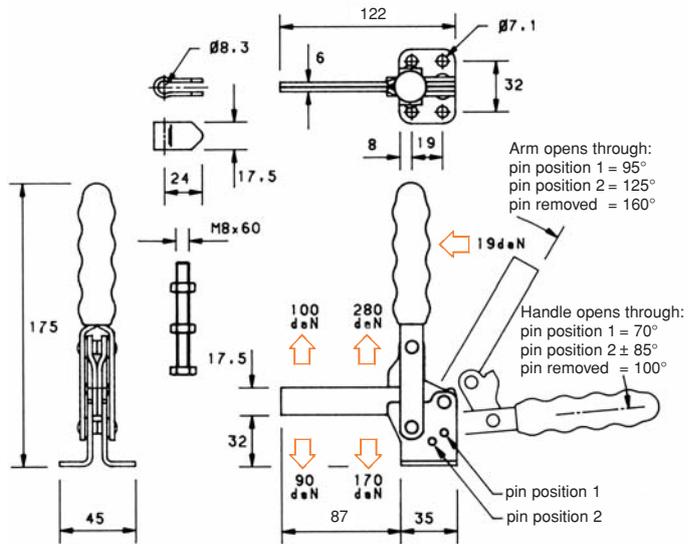
**Base:**  
Flanged.

**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

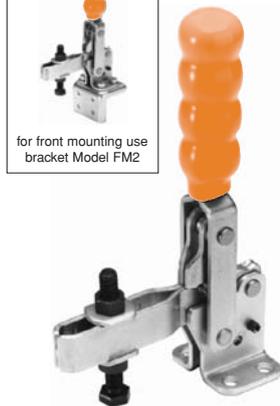
**Supplied complete with:**  
MB0860 Setscrew & nuts.  
R/08 Spindle retainer.

See "Accessories" for other items.



### V250 SERIES

#### MODEL V250/2B



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

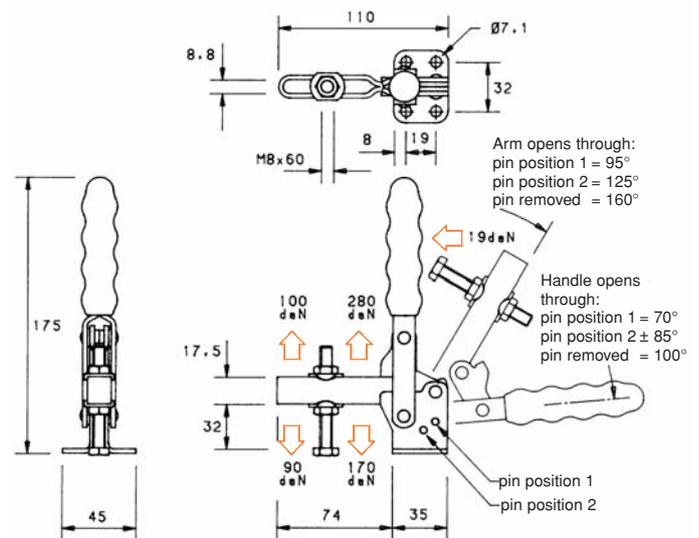
**Base:**  
Flanged.

**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



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

**Base:**  
Flanged.

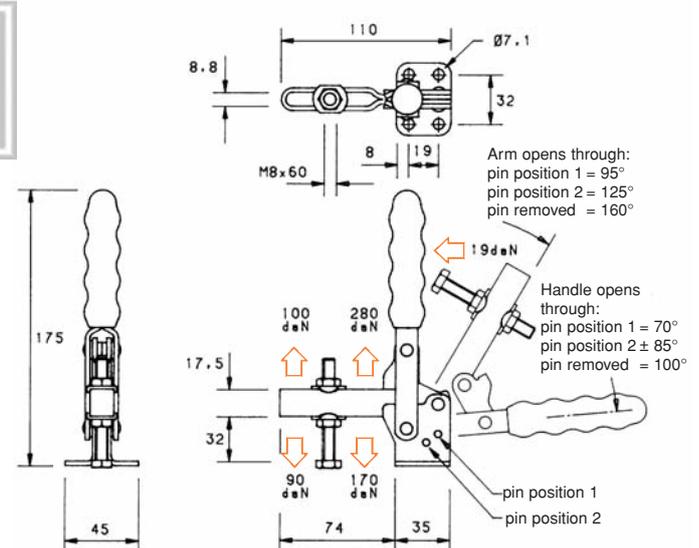
**Nominal Holding Force:**  
250 daN

**Weight:**  
0.38 Kg

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

**Material:**  
BS 304 S15

See "Accessories" for other items.





## VERTICAL CLAMPS

V300 SERIES

MODEL V300/1C



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

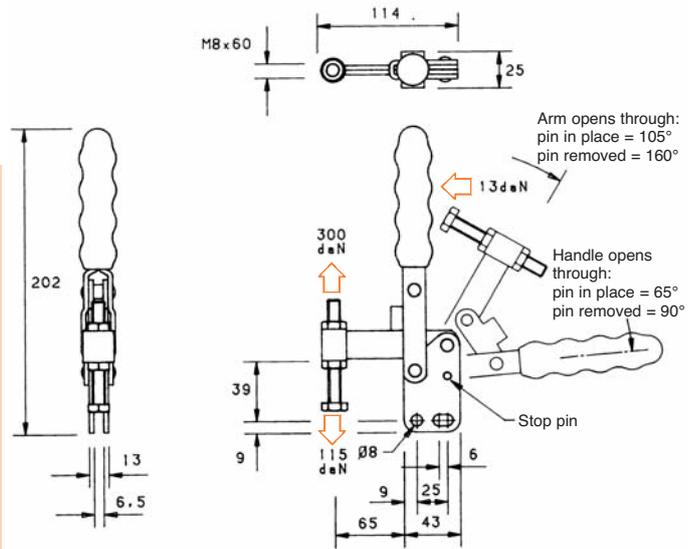
**Base:**  
Straight.

**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.

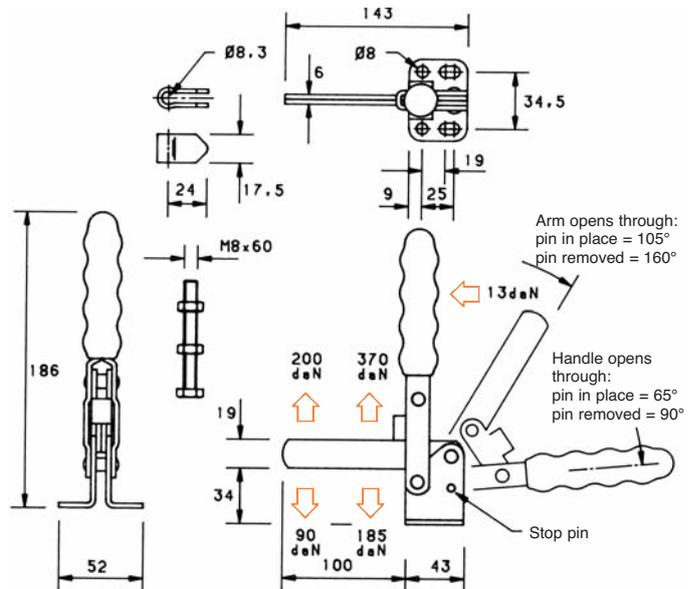
**Base:**  
Flanged.

**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.

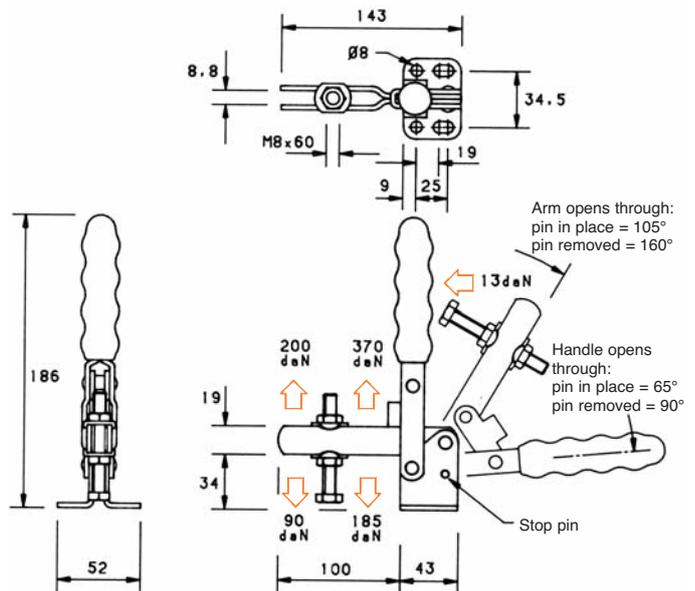
**Base:**  
Flanged.

**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



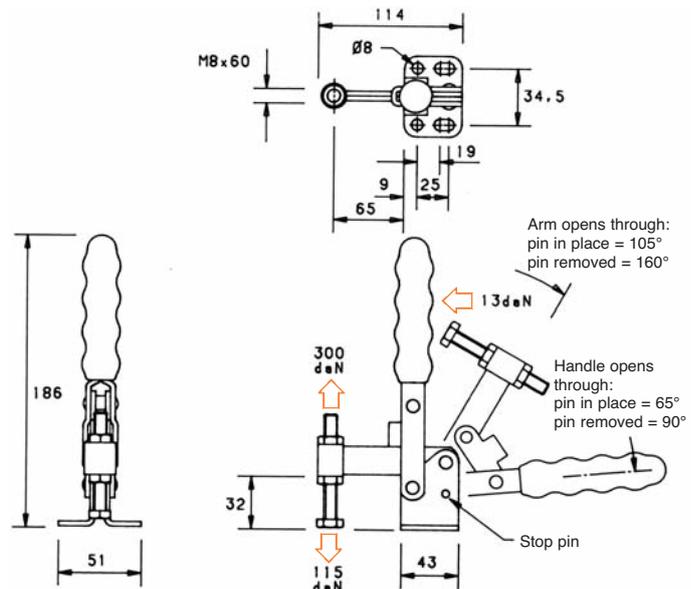
**Arm:**  
The spindle is in a fixed position.

**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



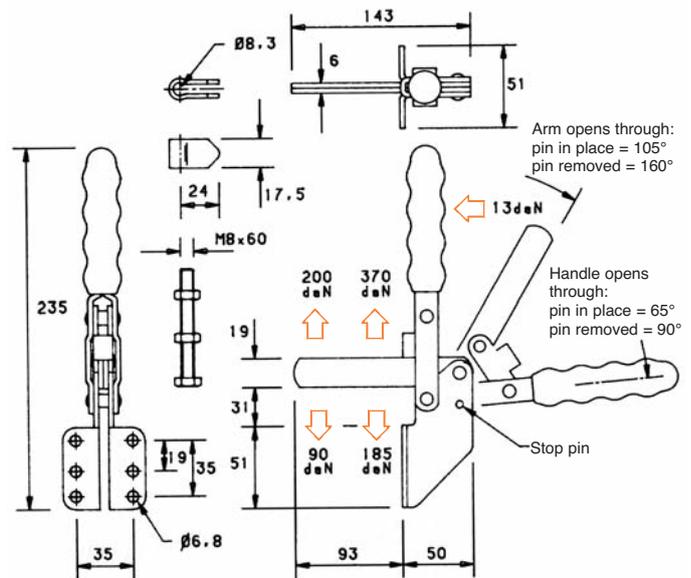
**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

**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



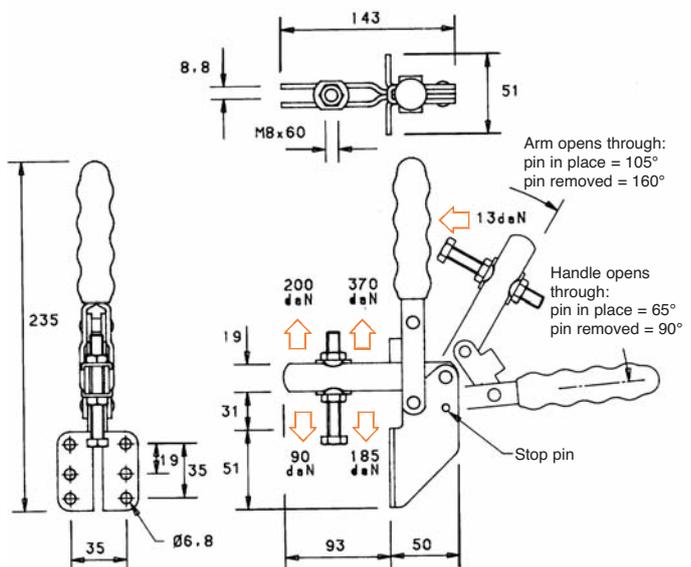
**Arm:**  
The spindle position is adjustable along the arm.

**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.

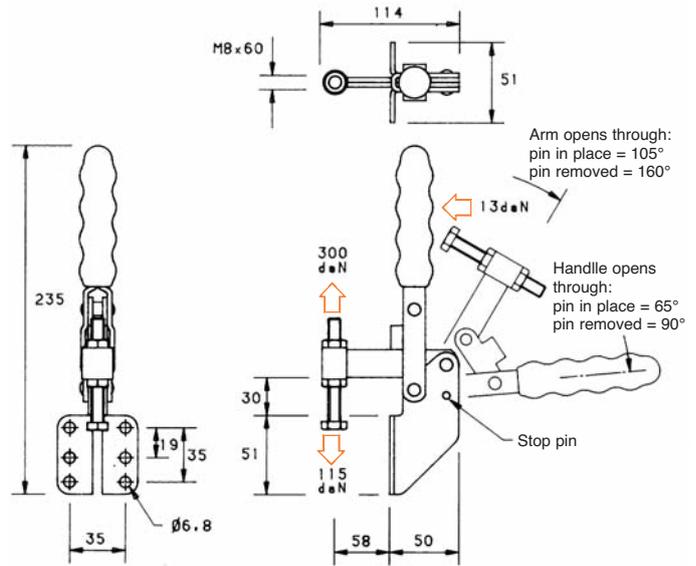
**Base:**  
Front mounting.

**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.

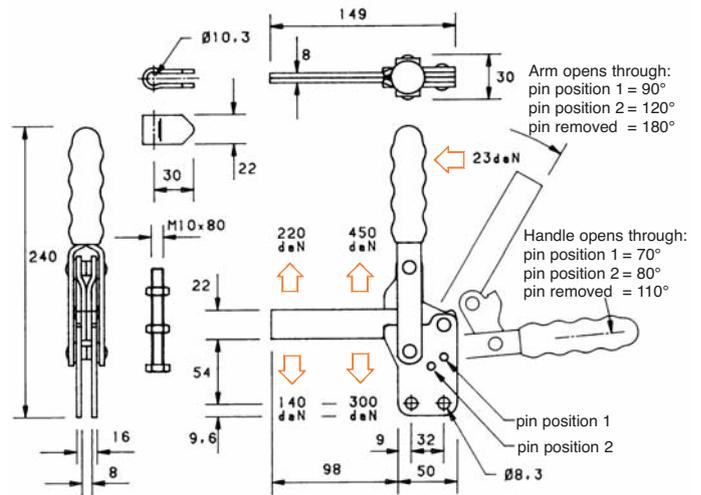
**Base:**  
Straight.

**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.

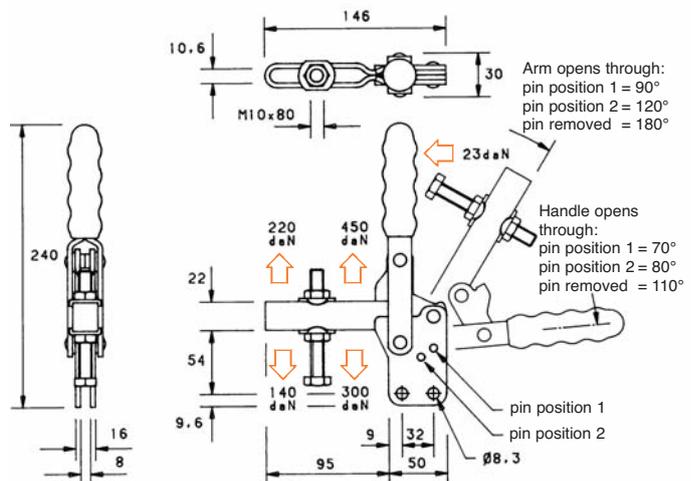
**Base:**  
Straight.

**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.

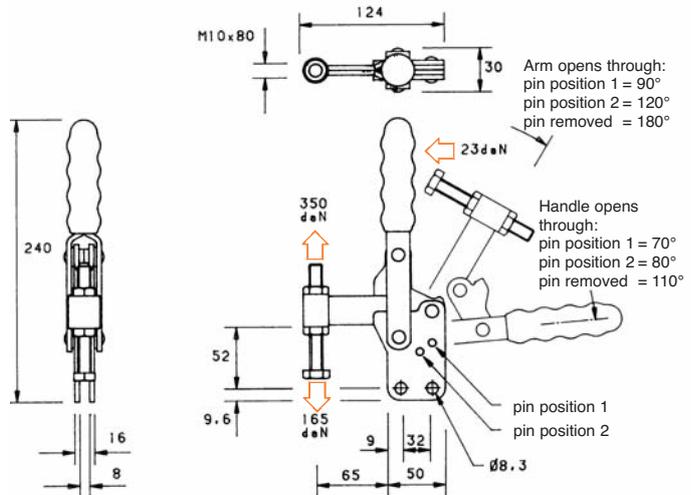
**Base:**  
Straight.

**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



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

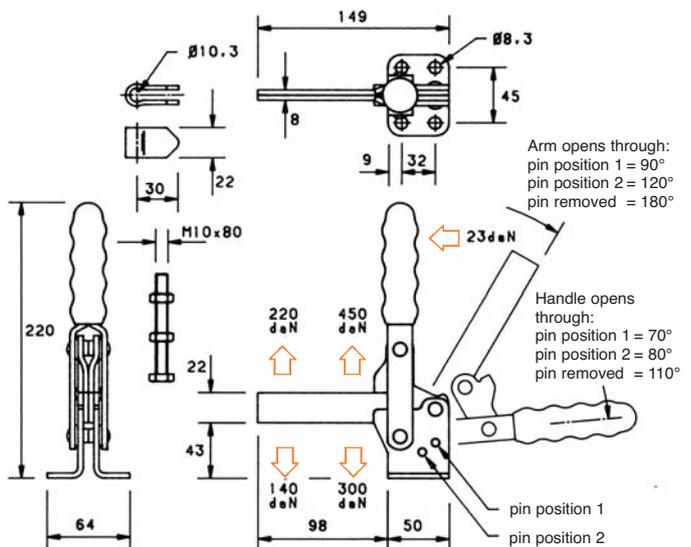
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.80 Kg

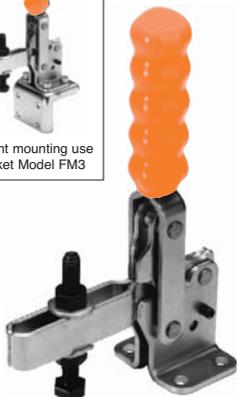
**Supplied complete with:**  
MB1080 Setscrew & nuts.  
R/10 Spindle retainer.

See "Accessories" for other items.



### V350 SERIES

#### MODEL V350/2B



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

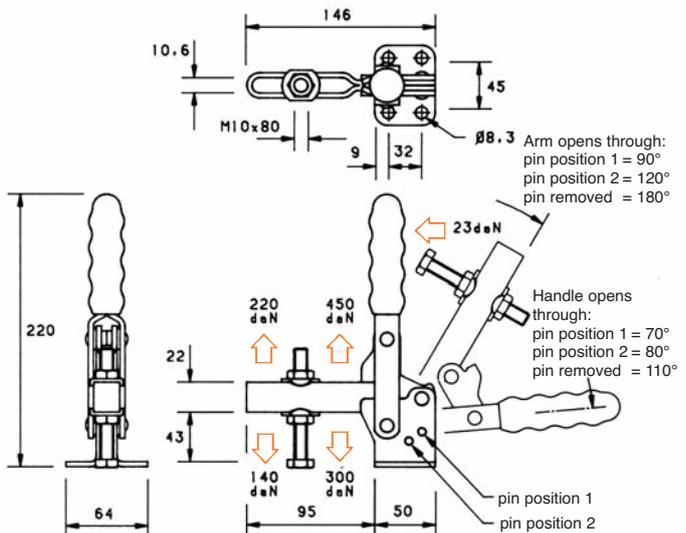
**Base:**  
Flanged.

**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

### V450 SERIES

#### MODEL V450/1C



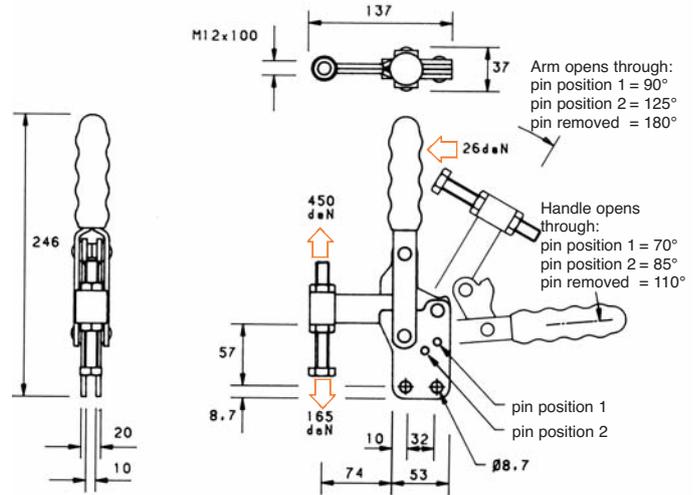
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Straight.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.30 Kg

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

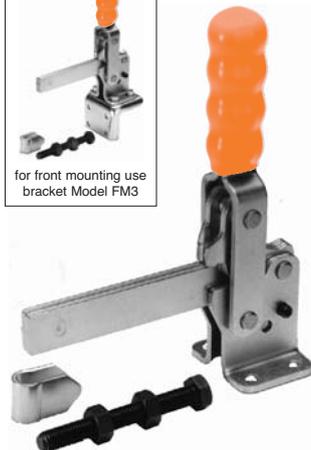


### V450 SERIES

#### MODEL V450/2A



for front mounting use bracket Model FM3



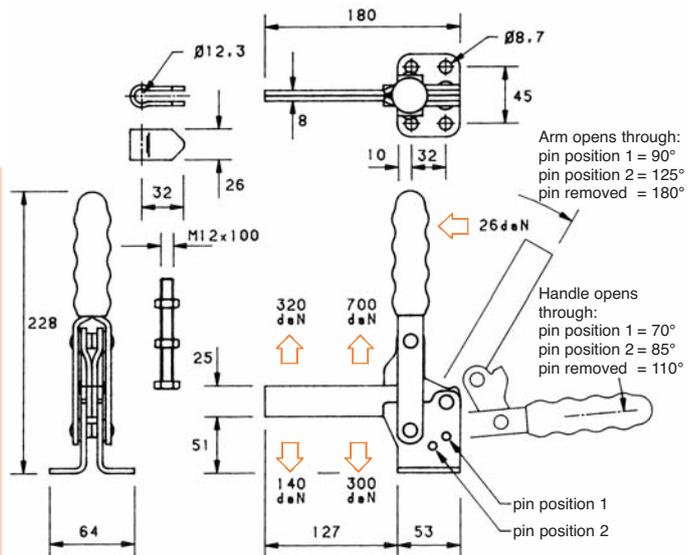
**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.25 Kg

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



### V450 SERIES

#### MODEL V450/2B



for front mounting use bracket Model FM3



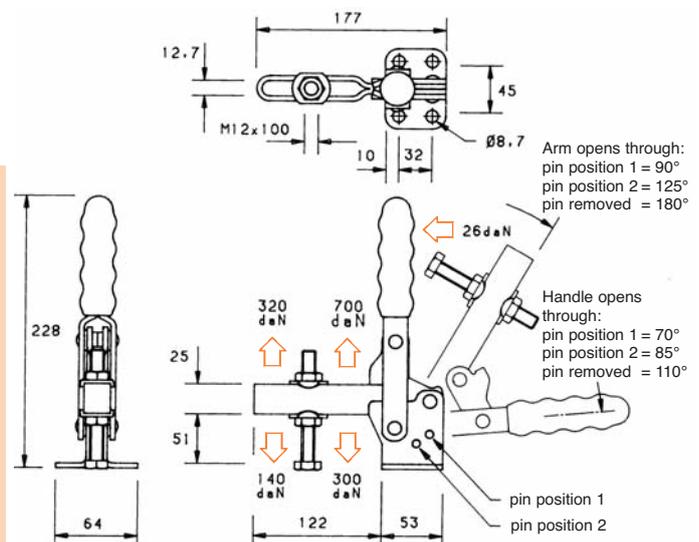
**Arm:**  
The spindle position is adjustable along the arm.

**Base:**  
Flanged.

**Nominal Holding Force:**  
450 daN

**Weight:**  
1.35 Kg

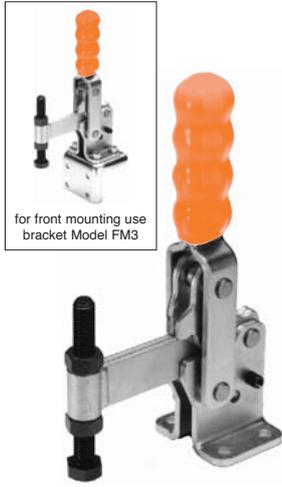
**Supplied complete with:**  
MB12100 Setscrew & nuts.  
FW12/23 Flanged washers.  
See "Accessories" for other items.



## VERTICAL CLAMPS

### V450 SERIES

#### MODEL V450/2C



for front mounting use bracket Model FM3

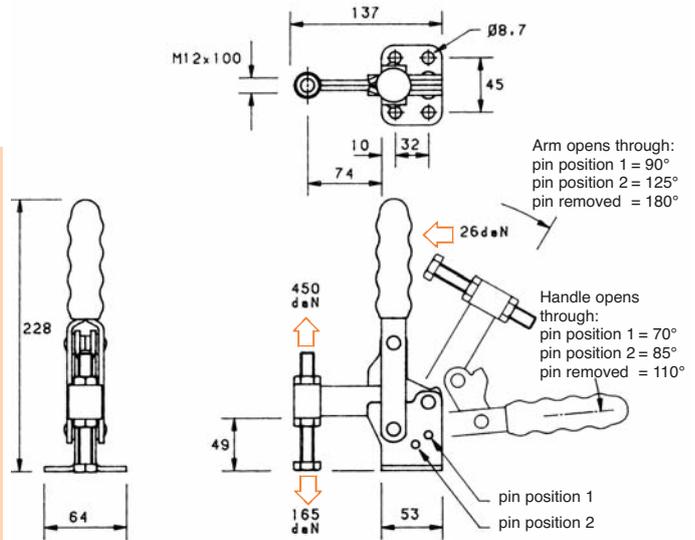
**Arm:**  
The spindle is in a fixed position.

**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



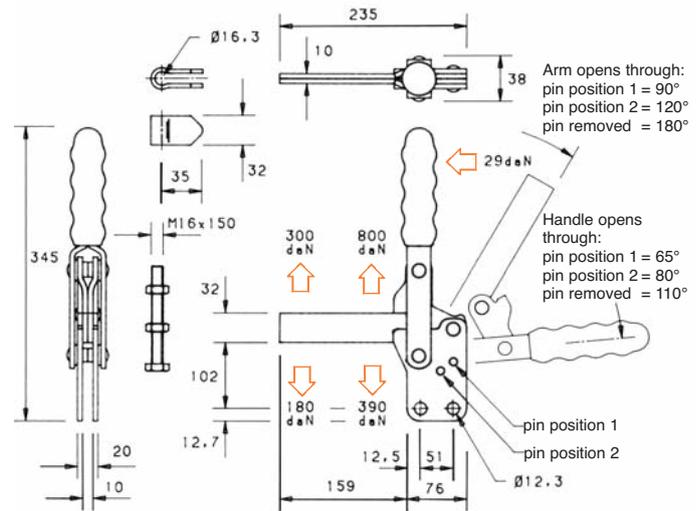
**Arm:**  
Solid with spindle retainer supplied loose for welding in the desired position.

**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



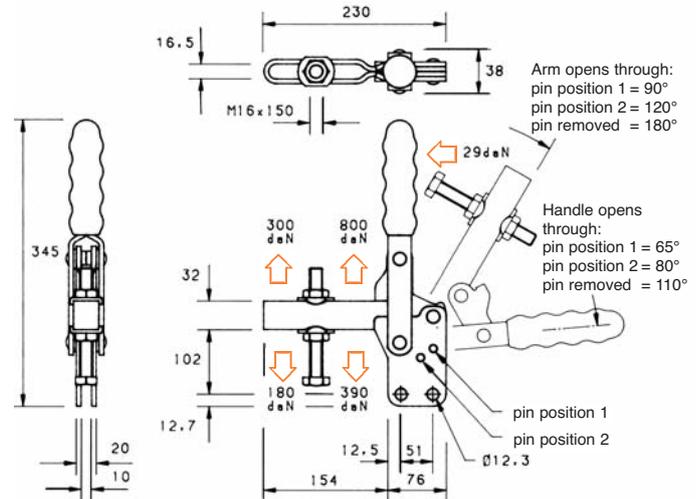
**Arm:**  
The spindle is adjustable along the arm.

**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.

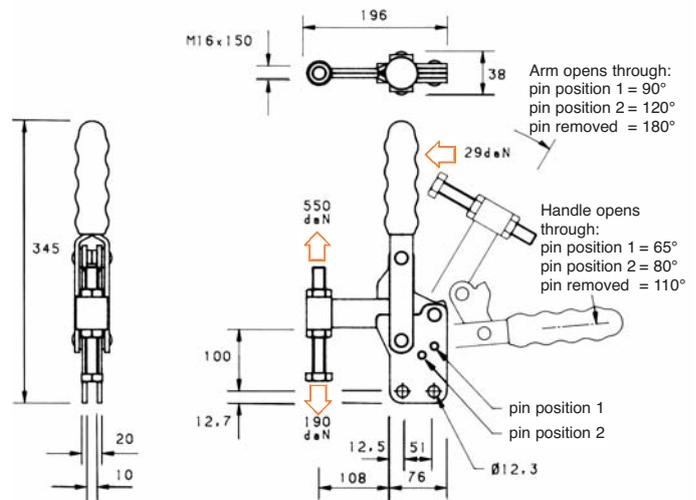
**Base:**  
Straight.

**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.

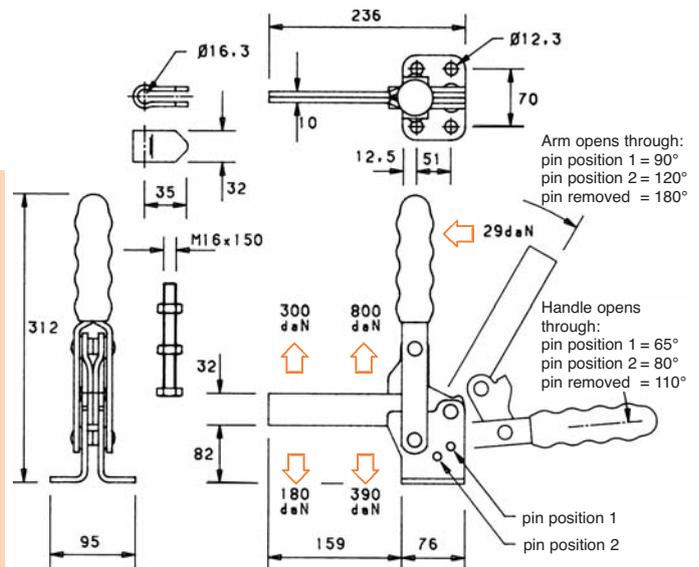
**Base:**  
Flanged.

**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.

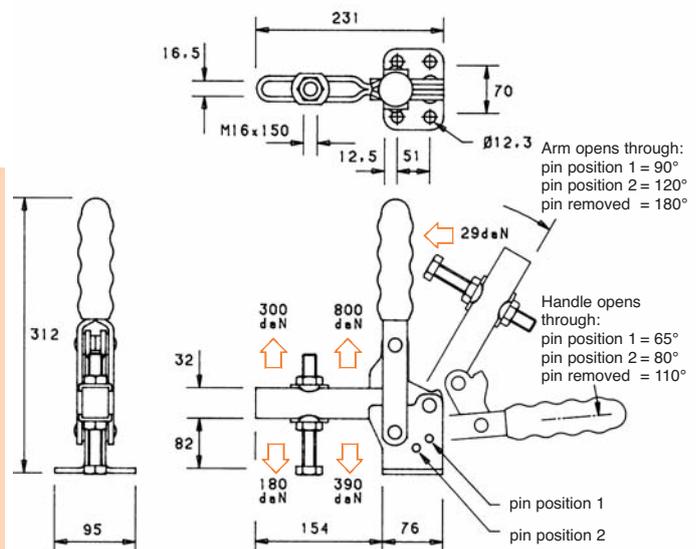
**Base:**  
Flanged.

**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



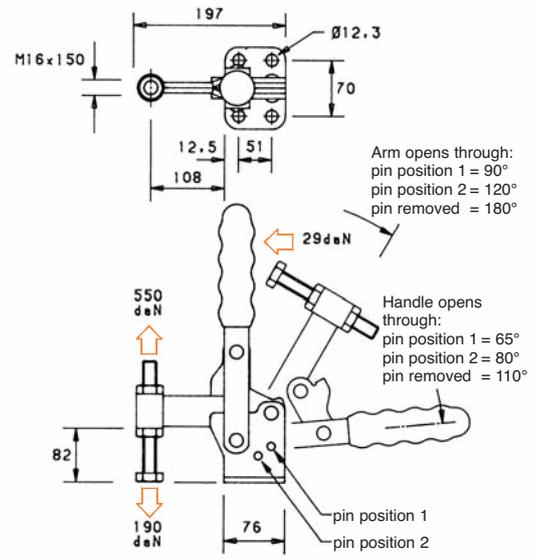
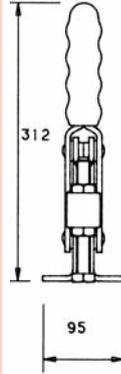
**Arm:**  
The spindle is in a fixed position.

**Base:**  
Flanged.

**Nominal Holding Force:**  
550 daN

**Weight:**  
2.30 Kg

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





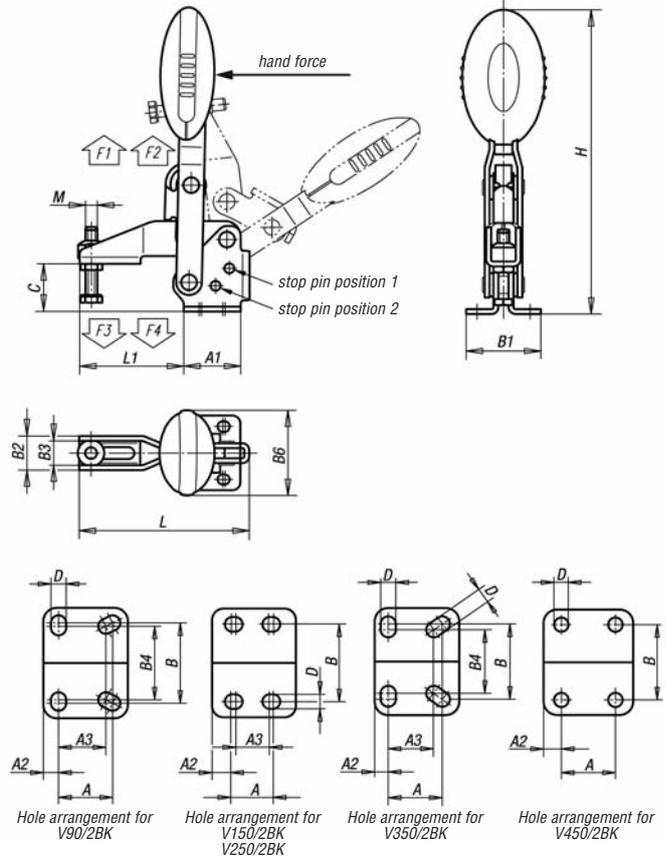
## BLACK OXIDIZED NITRO CARBURIZED VERTICAL CLAMPS

- 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.

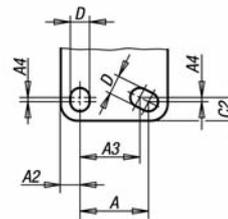
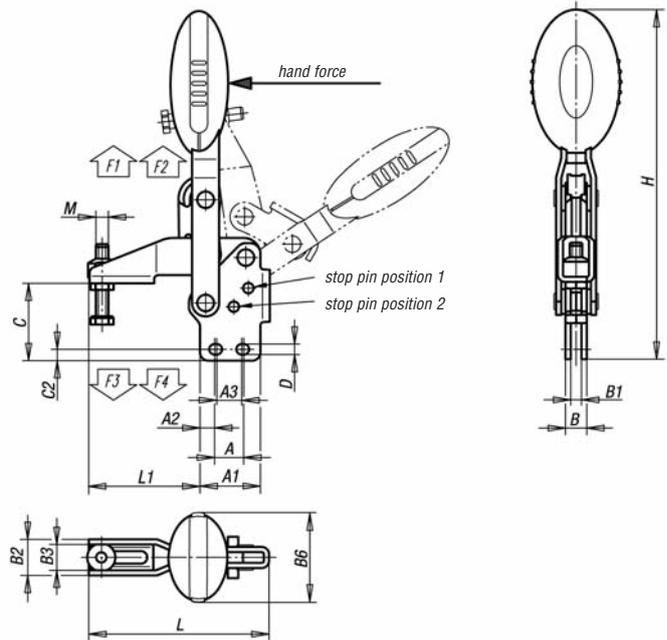
Order No	Arm opens through, Position 1	Arm opens through, Position 2	Arm opens through, pin removed	Handle opens through, Position 1	Handle opens through, Position 2	Handle opens through, pin removed	Handforce daN	Holdingforce F1 daN	Holdingforce F2 daN	Clampingforce F3 daN	Clampingforce F3 daN
V90/2BK	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

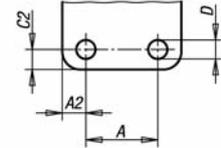
## VERTICAL CLAMPS

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:**

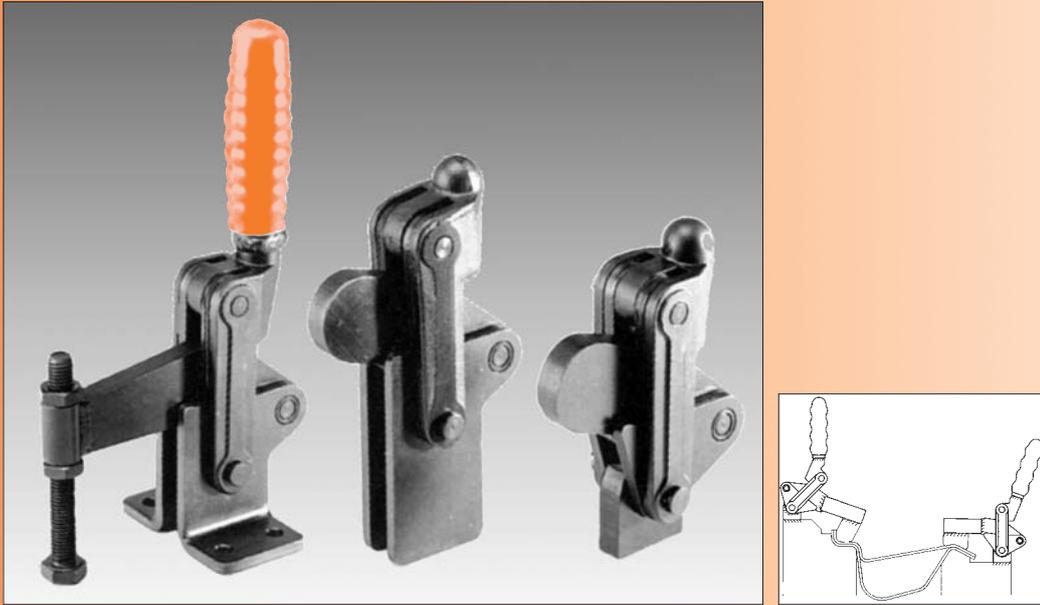
Straight.

**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



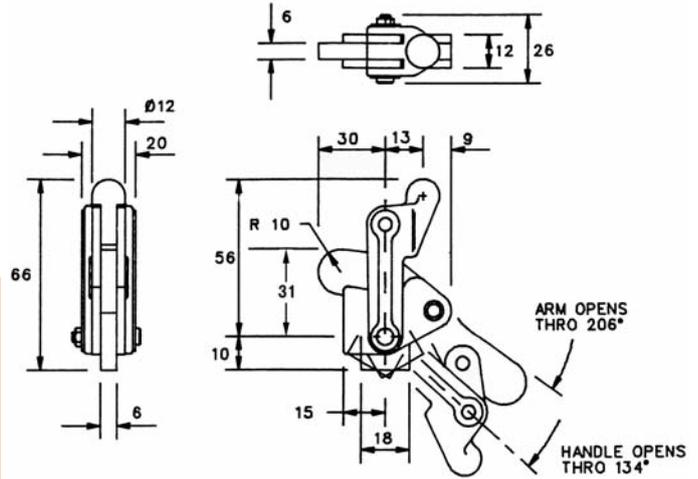
**Arm:**  
Stub nose for welded extension.

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

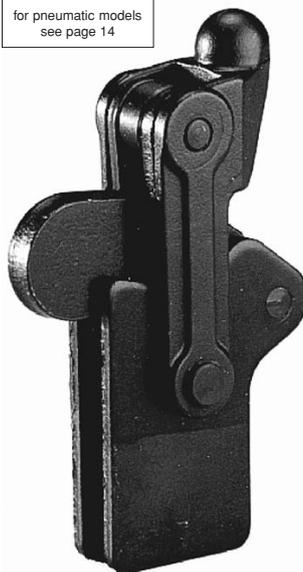
**Nominal Holding Force:**  
300 daN

**Weight:**  
0.15 Kg

See "Accessories" for other items.



**VA300 SERIES**  
MODEL VA300/T



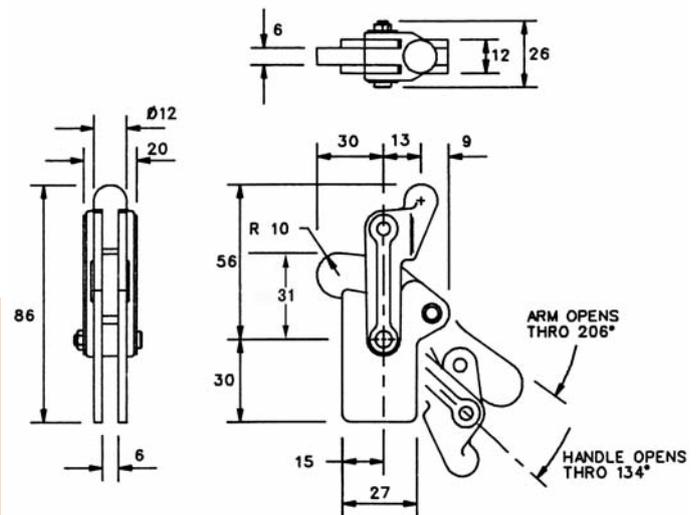
**Arm:**  
Stub nose for welded extension.

**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



for pneumatic models  
see page 14



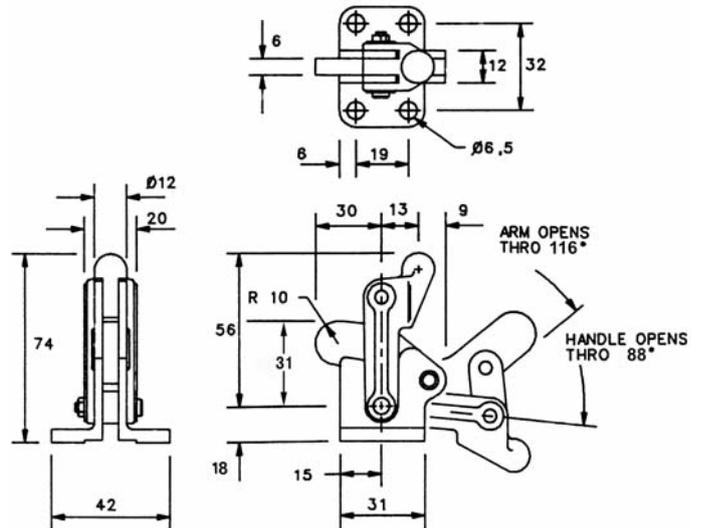
**Arm:**  
Stub nose for welded extension.

**Base:**  
Flanged.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.20 Kg

See "Accessories" for other items.



VA300 SERIES  
MODEL VA300/1B



for pneumatic models  
see page 14



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

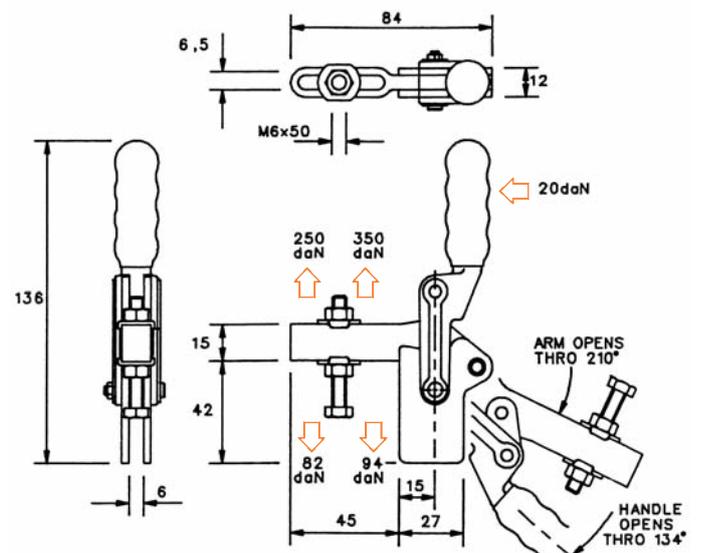
**Base:**  
Straight.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.25 Kg

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

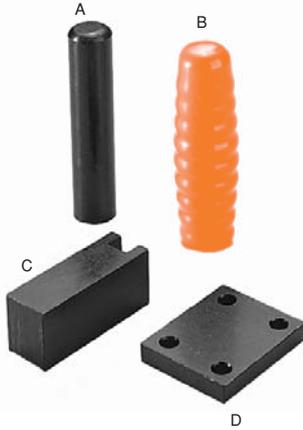
See "Accessories" for other items.





## HEAVY-DUTY VERTICAL CLAMPS

### VA300 SERIES ACCESSORIES

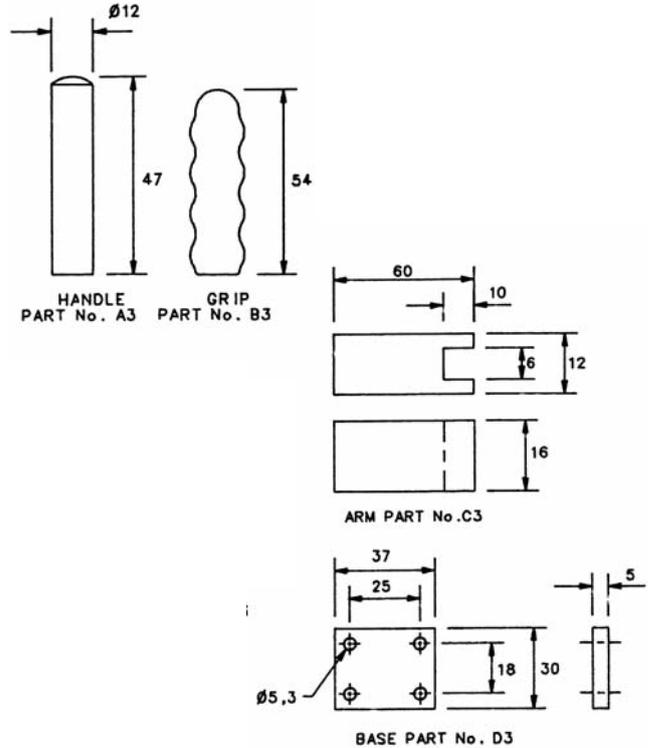


**Model A3 Handle:** Weight: 0.056 Kg  
For welding at the desired angle to VA300S & VA300T.

**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.

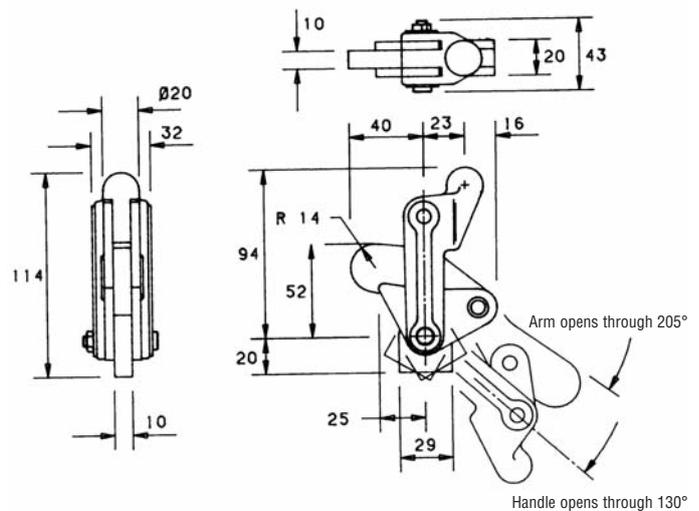


### VA700 SERIES MODEL VA700S

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.

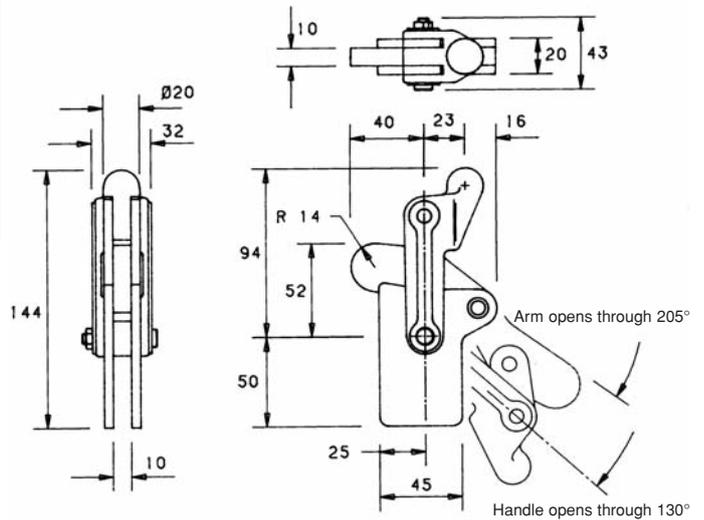
**Base:**  
Straight.

**Nominal Holding Force:**  
700 daN

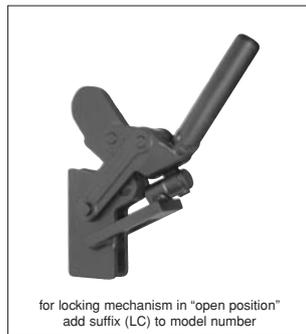
**Weight:**  
0.80 Kg

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

See "Accessories" for other  
items.



### VA700 SERIES MODEL VA700/1A



**Arm:**  
Solid arm.

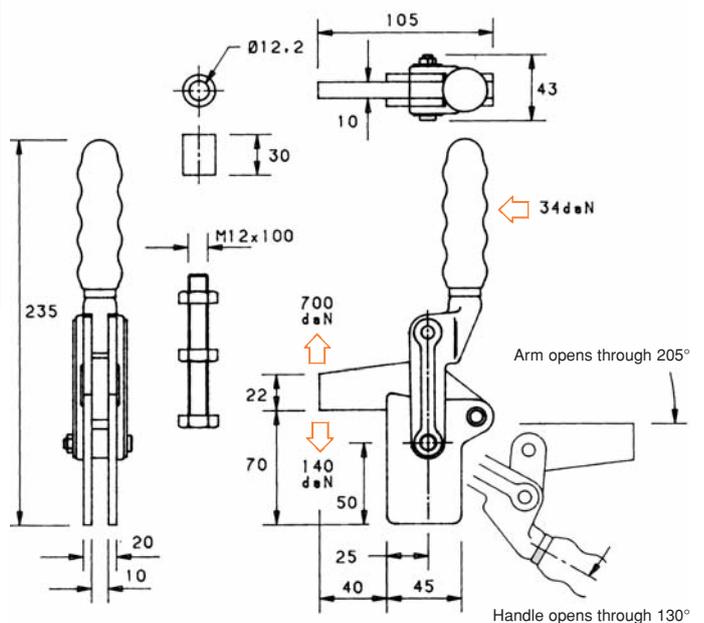
**Base:**  
Straight.

**Nominal Holding Force:**  
700 daN

**Weight:**  
1.10 Kg

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

See "Accessories" for other  
items.

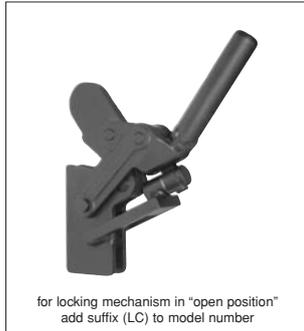


## HEAVY-DUTY VERTICAL CLAMPS

### 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.

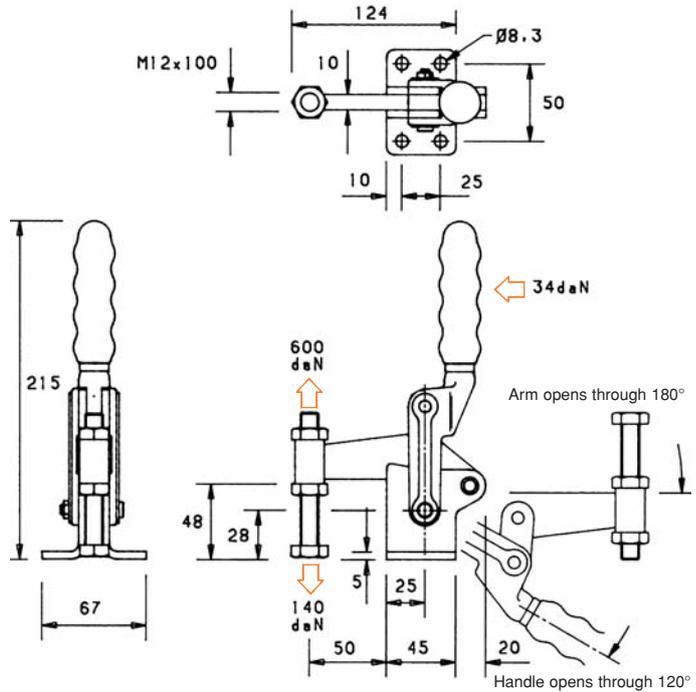
**Base:**  
Flanged.

**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



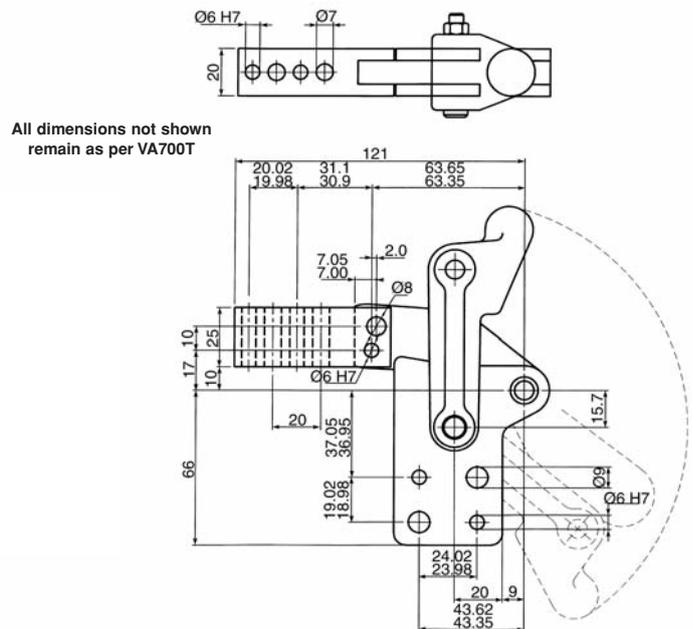
**Arm:**  
Stub nose with mounting holes.

**Base:**  
Straight with mounting holes.

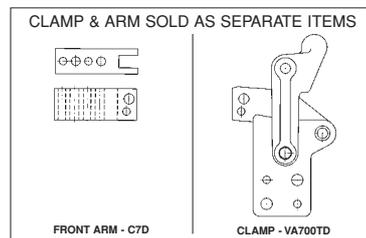
**Nominal Holding Force:**  
700 daN

**Weight:**  
1.01kg

See "Accessories" for other items.

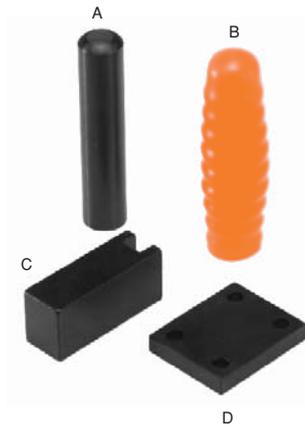


All dimensions not shown  
remain as per VA700T



## HEAVY-DUTY VERTICAL CLAMPS

### VA700 SERIES ACCESSORIES

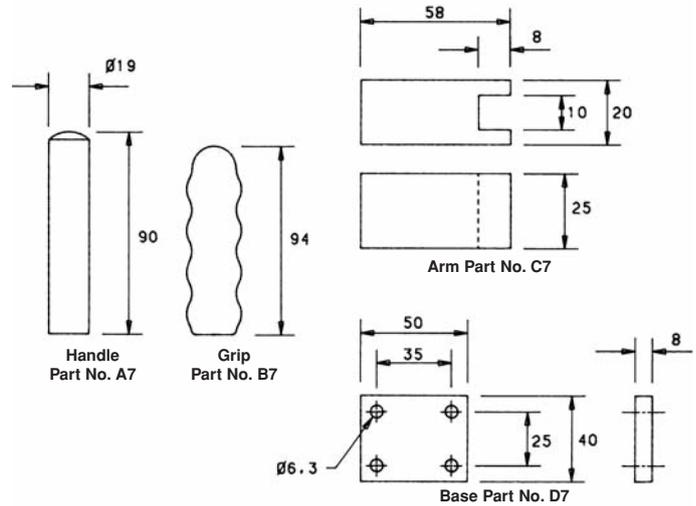


**Model A7 Handle:** Weight: 0.20 Kg  
For welding at the desired angle to VA700S & VA700T.

**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.

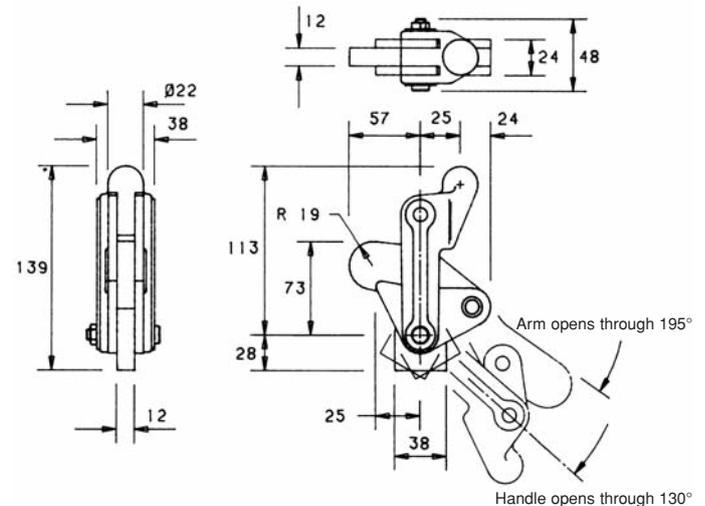
**Model D7 Base:** Weight: 0.11 Kg  
For bolt mounting VA700S and VA700T.



### 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



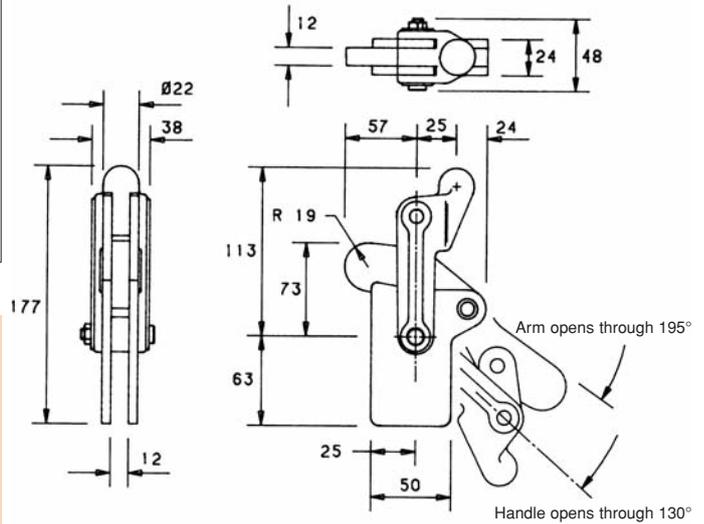
**Arm:**  
Stub nose for welded  
extensions.

**Base:**  
Straight.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.45 Kg

See "Accessories" for other  
items.



### VA1200 SERIES MODEL VA1200/1A



**Arm:**  
Solid arm.

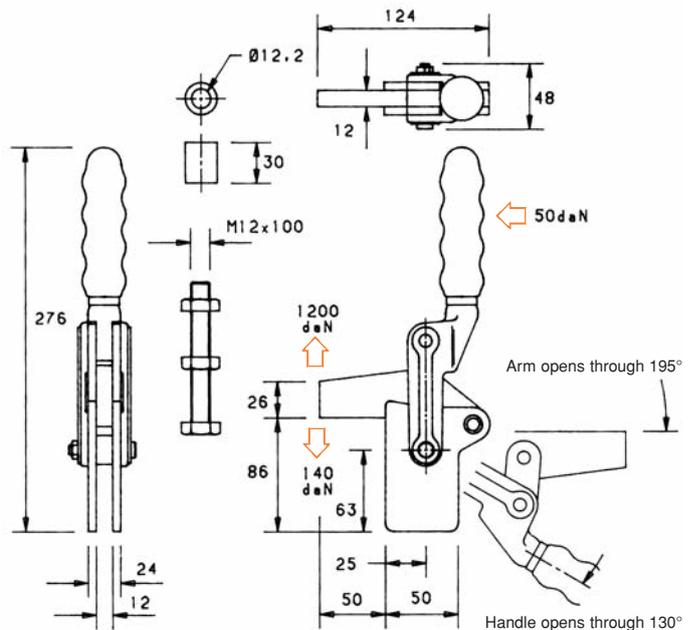
**Base:**  
Straight.

**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**



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

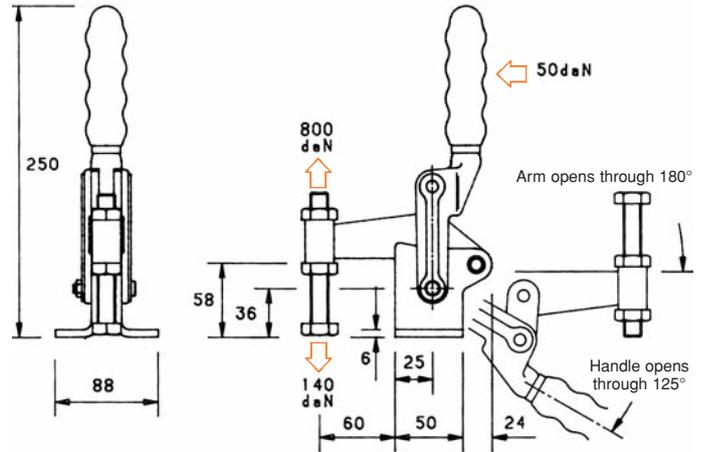
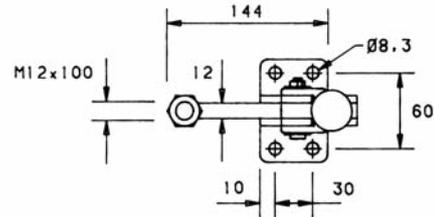
**Base:**  
Flanged.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.95 Kg

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

See "Accessories" for other items.



**VA1200 SERIES**  
**MODEL VA1200TD**



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

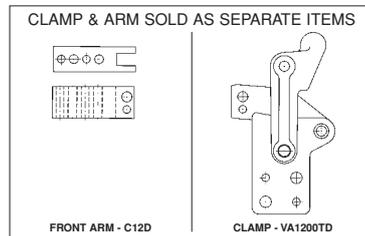
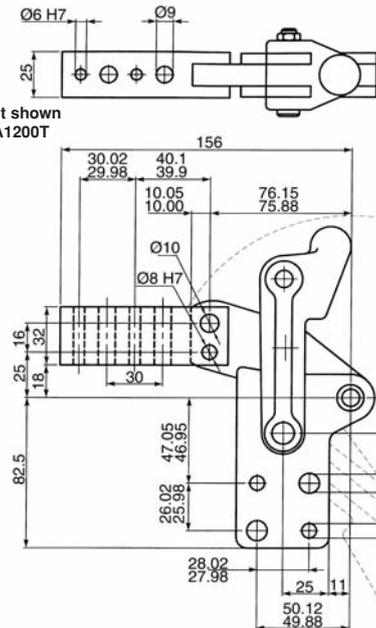
**Base:**  
Straight with mounting holes.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.87kg

See "Accessories" for other items.

All dimensions not shown  
remain as per VA1200T



## HEAVY-DUTY VERTICAL CLAMPS

### VA2400 SERIES

#### MODEL VA2400S



for pneumatic models  
see page 15



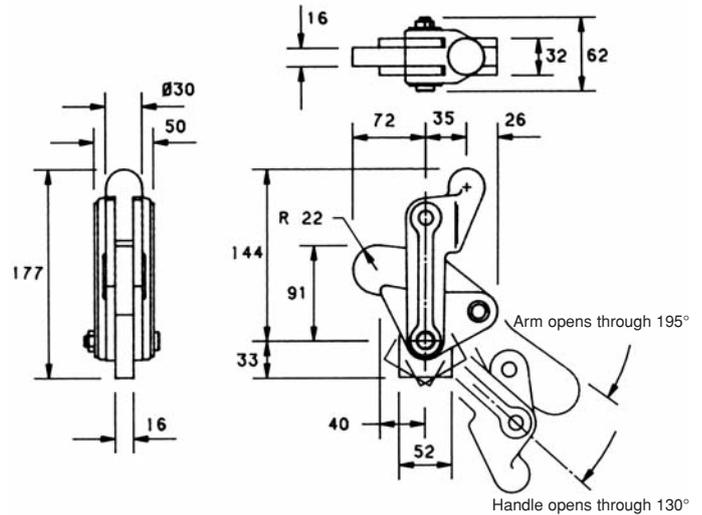
**Arm:**  
Stub nose for welded extensions.

**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



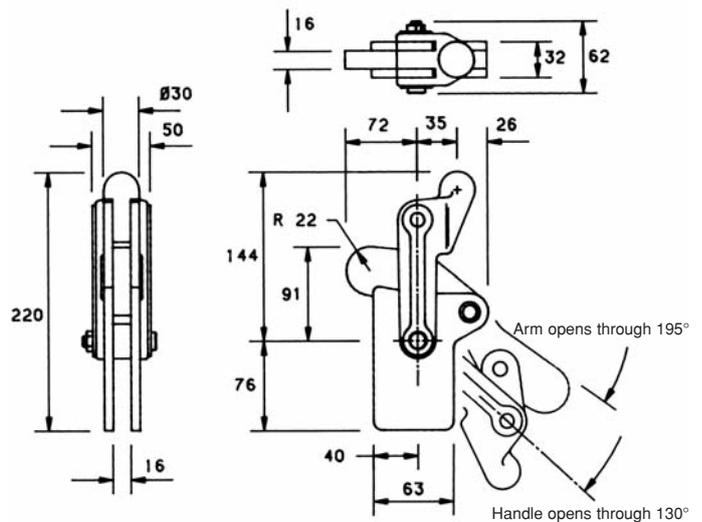
**Arm:**  
Stub nose for welded extensions.

**Base:**  
Straight.

**Nominal Holding Force:**  
2400 daN

**Weight:**  
3.20 Kg

See "Accessories" for other items.



## HEAVY-DUTY VERTICAL CLAMPS

**VA2400 SERIES**  
**MODEL VA2400/1A**



**Arm:**  
Solid arm.

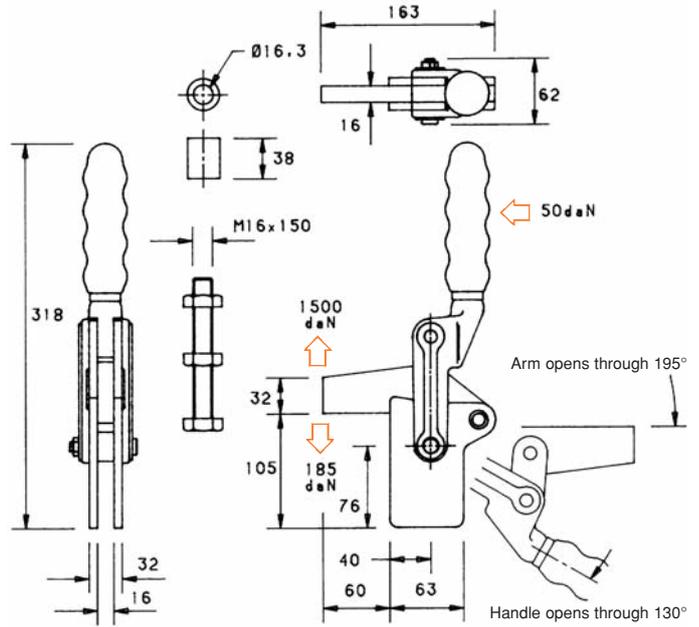
**Base:**  
Straight.

**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.

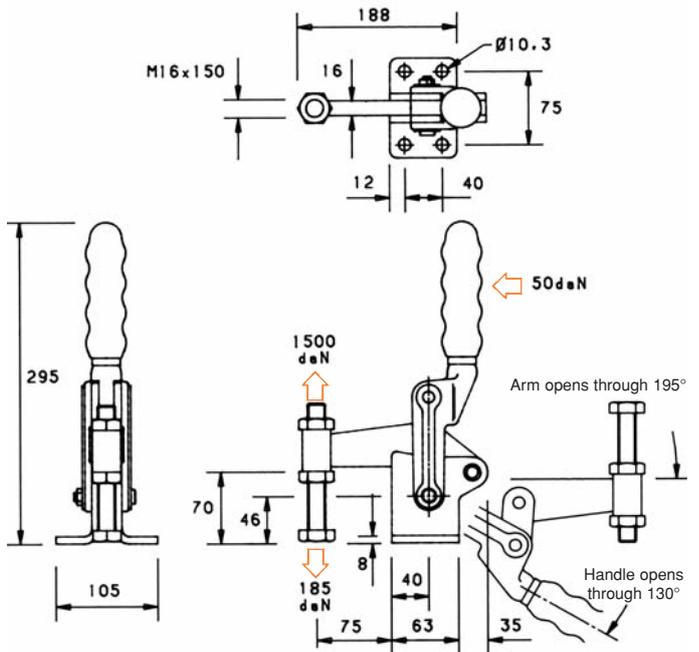
**Base:**  
Flanged.

**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

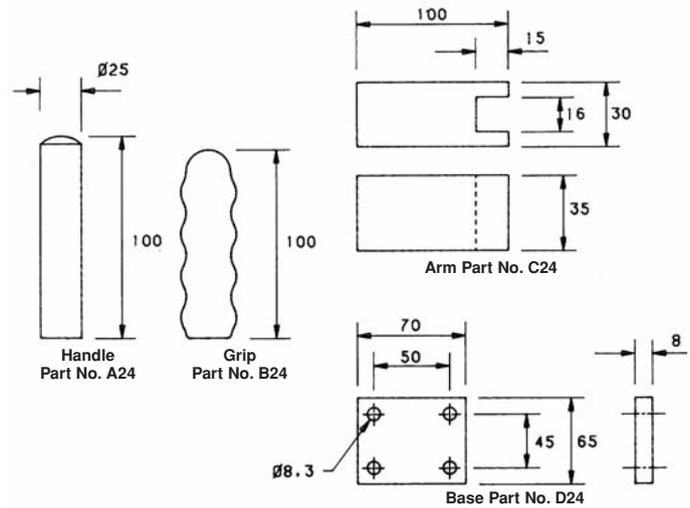


**Model A24 Handle:** **Weight:**  
For welding at the  
desired angle to  
VA2400S & VA2400T. 0.39Kg

**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.

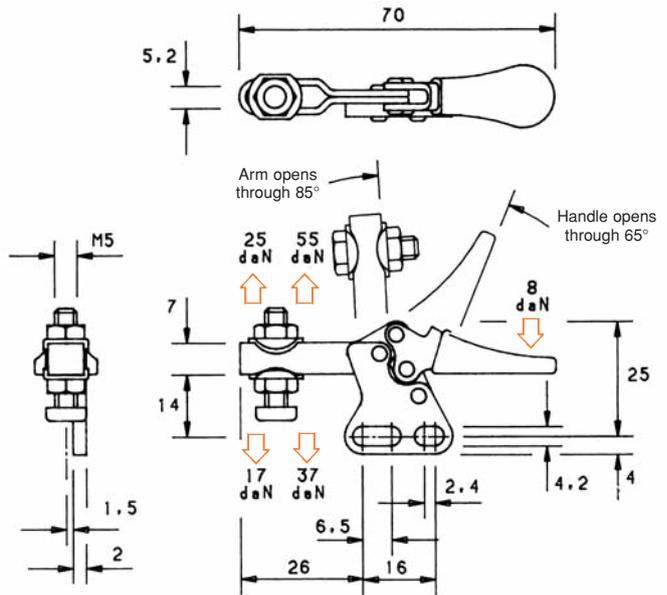
**Base:**  
Straight.

**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.

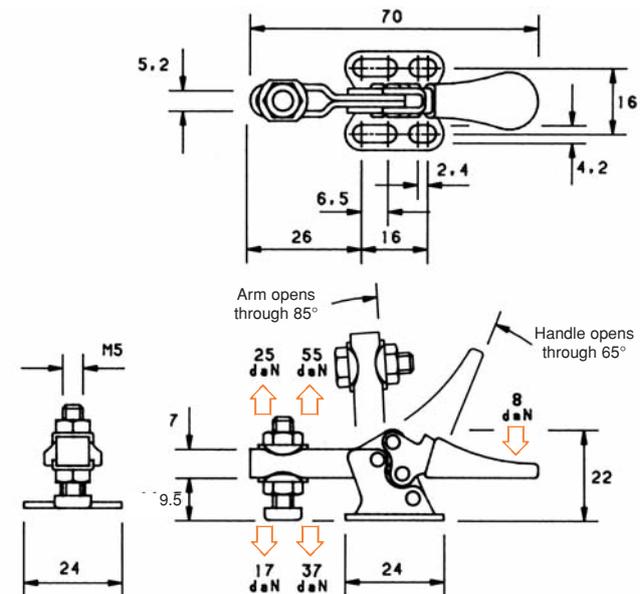
**Base:**  
Flanged.

**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.

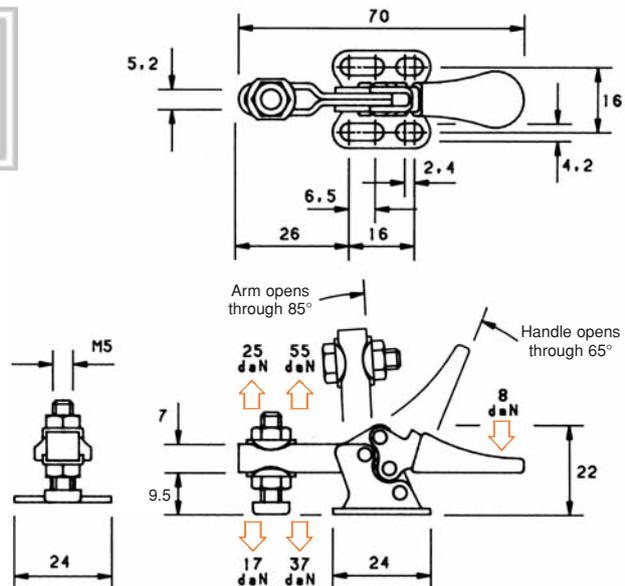
**Base:**  
Flanged.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.036 Kg

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

**Material:**  
BS 304 S15.



CLAMPING PRODUCTS

## HORIZONTAL CLAMPS

### H50 SERIES MODEL H50/2C



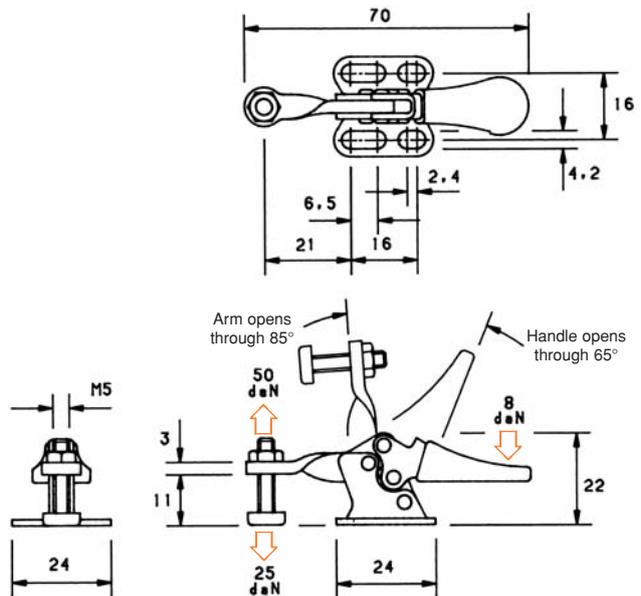
**Arm:**  
The spindle is in a fixed position.

**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



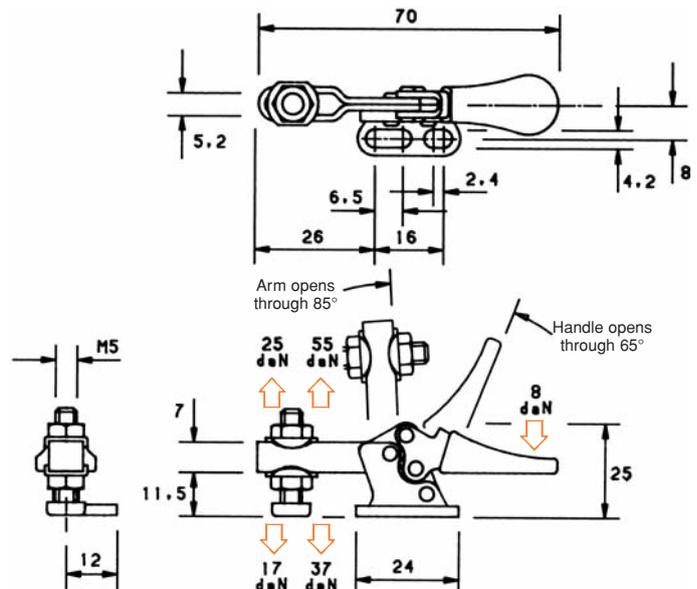
**Arm:**  
The spindle position is adjustable along the arm.

**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



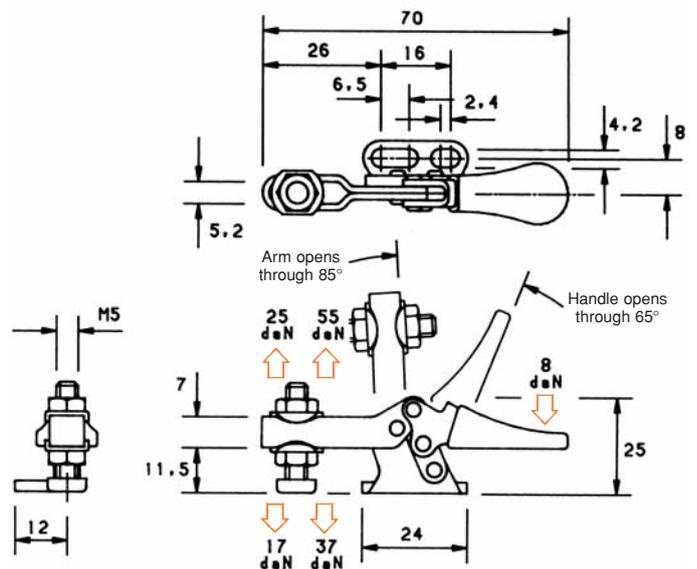
**Arm:**  
The spindle position is adjustable along the arm.

**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.

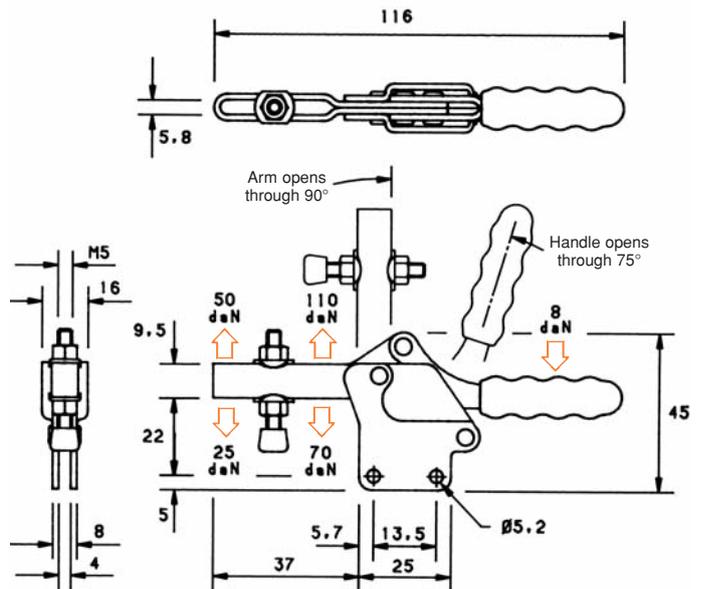
**Base:**  
Straight.

**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.

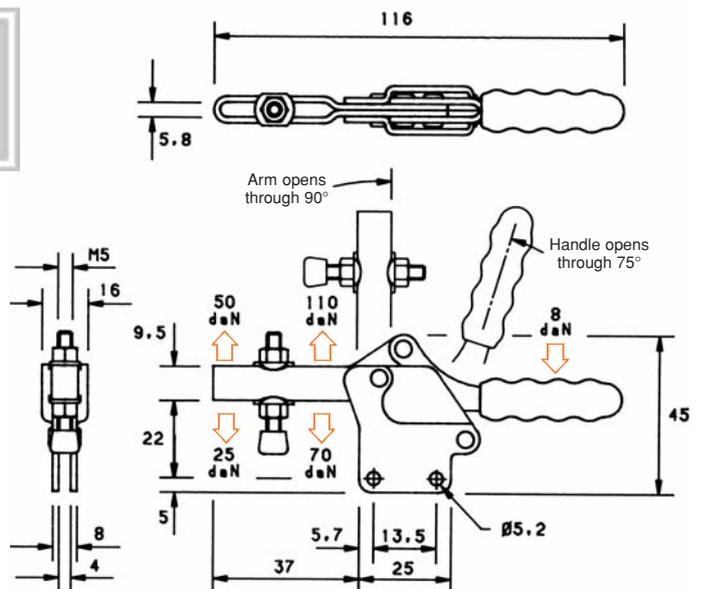
**Base:**  
Straight.

**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.

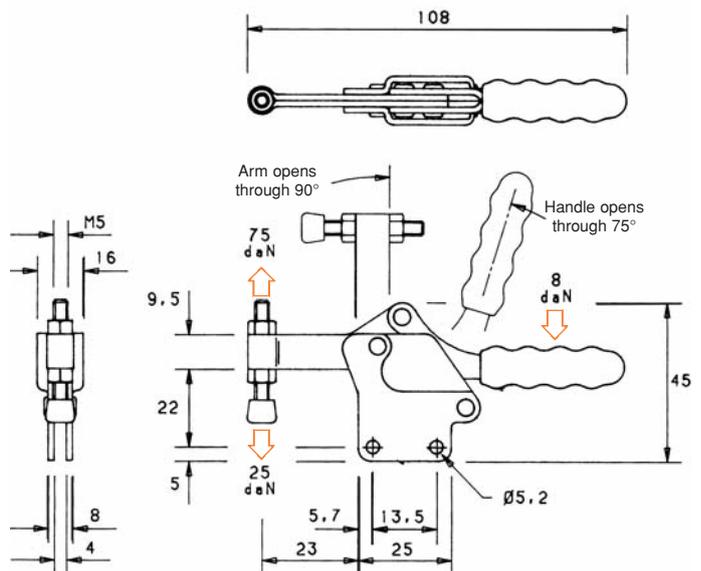
**Base:**  
Straight.

**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.

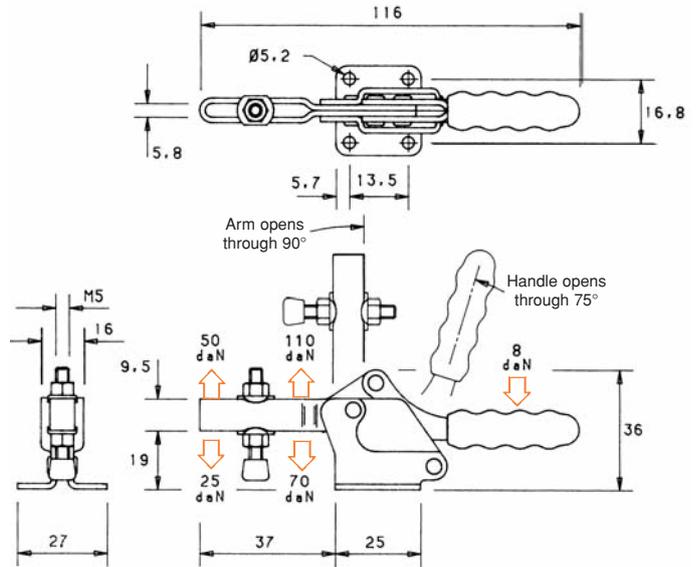
**Base:**  
Flanged.

**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.

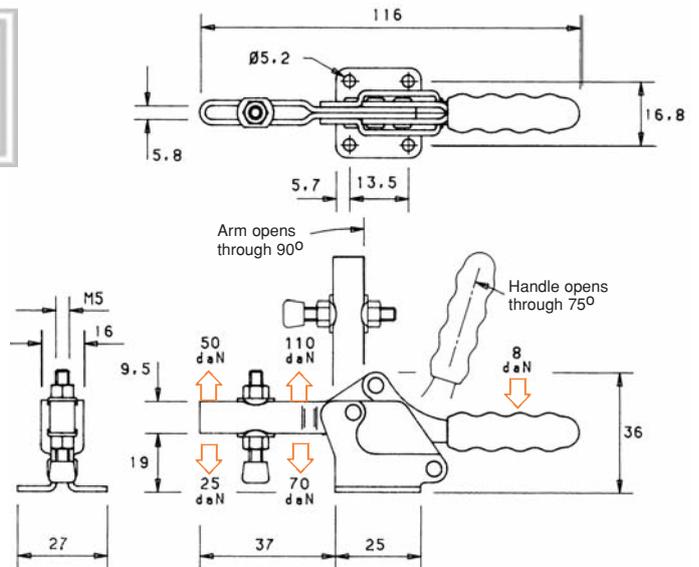
**Base:**  
Flanged.

**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.

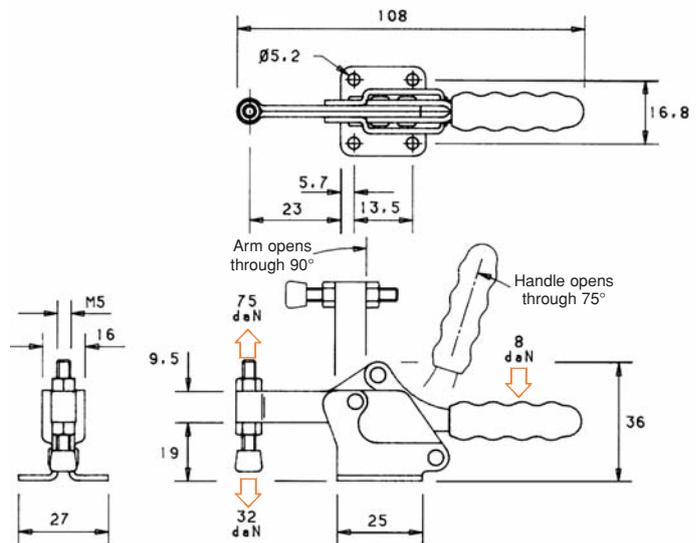
**Base:**  
Flanged.

**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:**

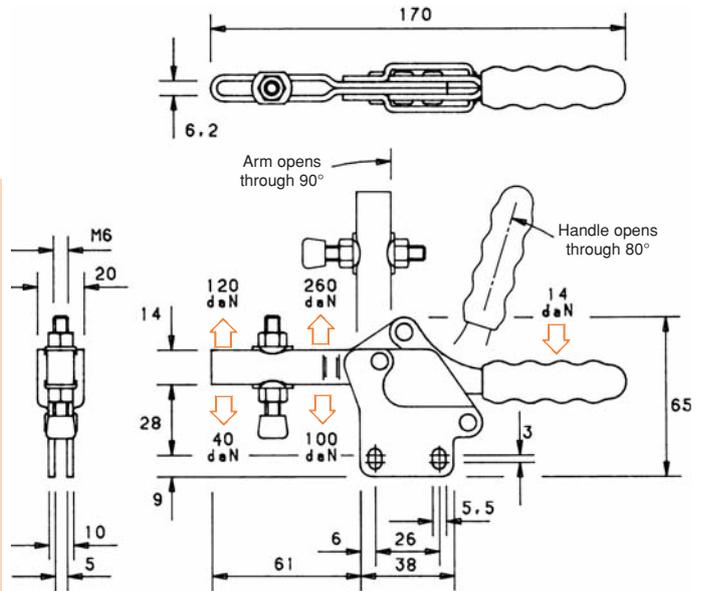
The spindle position is adjustable along the arm.

**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.

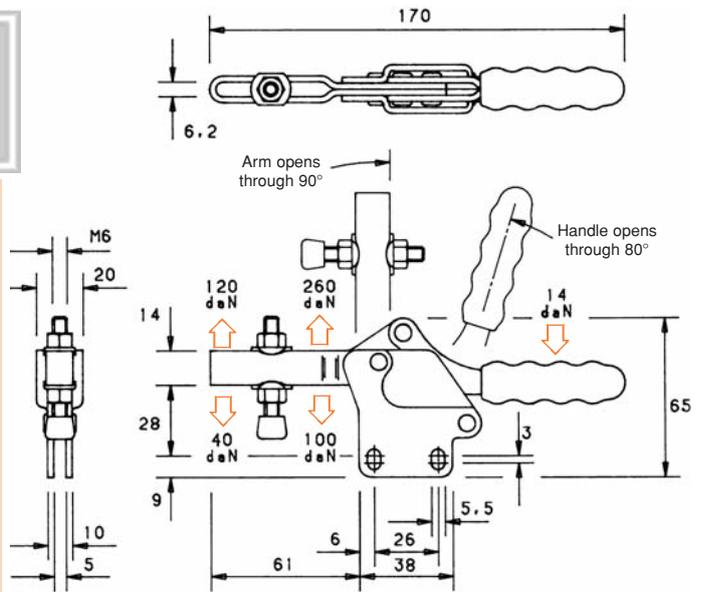
**Base:**  
Straight.

**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:**

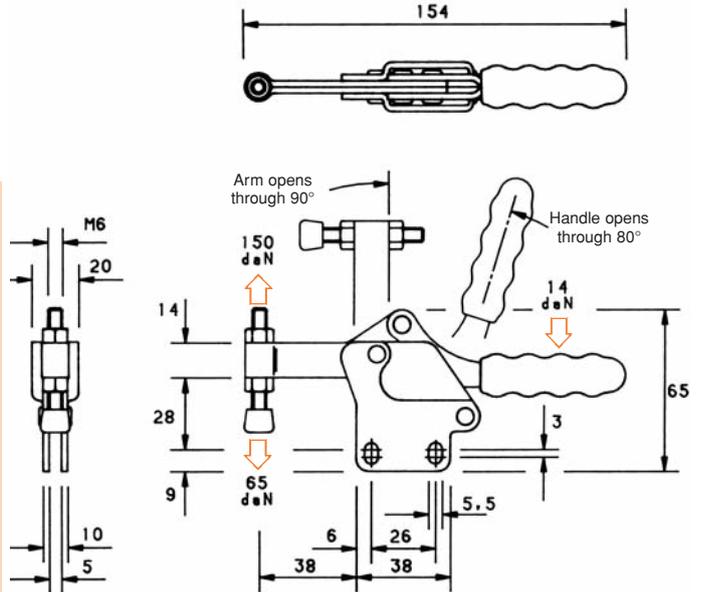
The spindle is in a fixed position.

**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



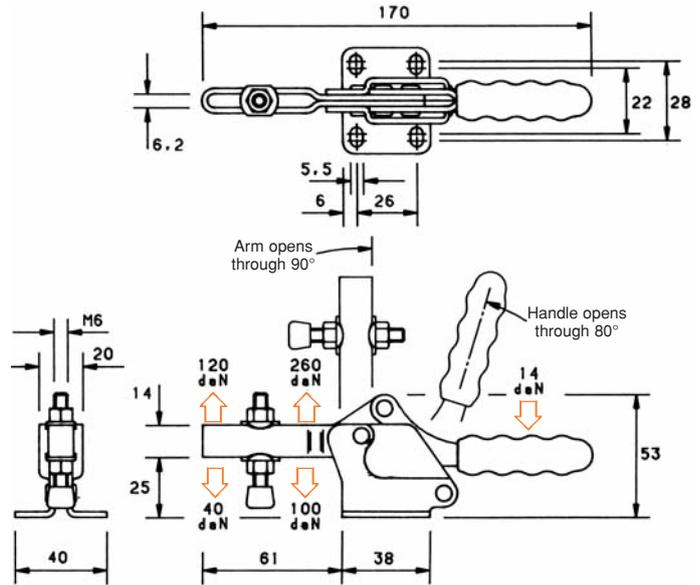
**Arm:**  
The spindle position is adjustable along the arm.

**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

**STAINLESS  
STEEL**



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

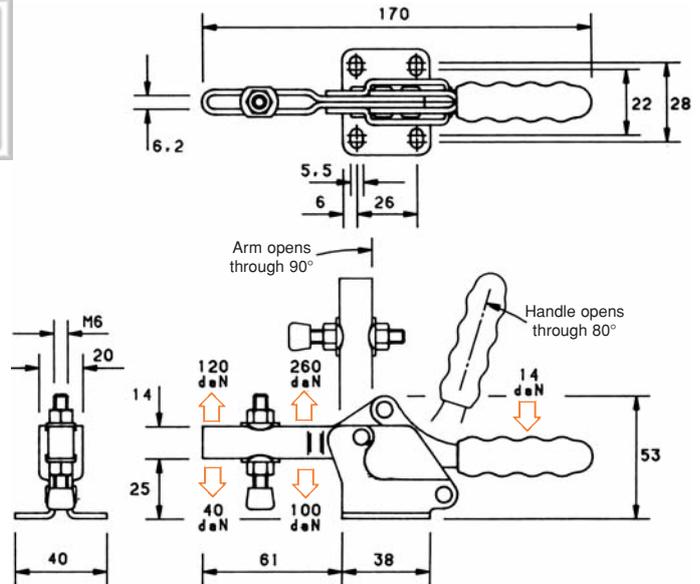
**Base:**  
Flanged.

**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



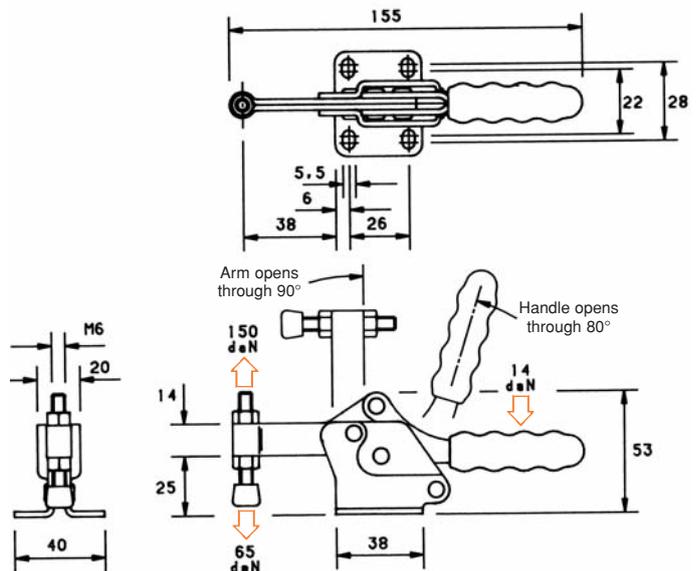
**Arm:**  
The spindle is in a fixed position.

**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.

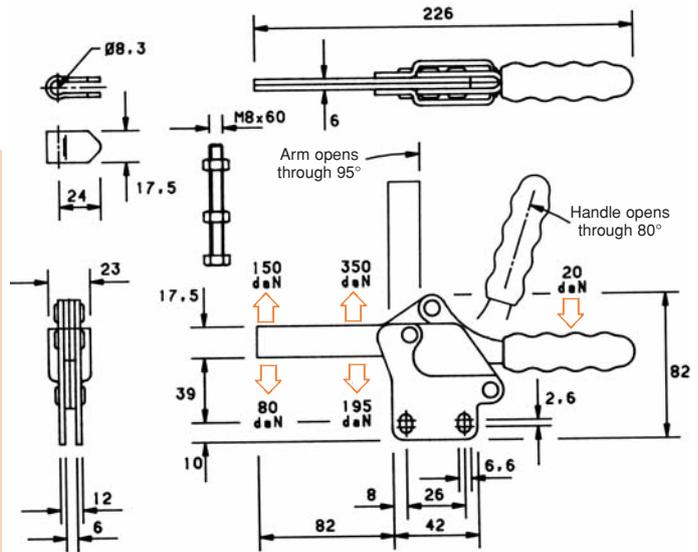
**Base:**  
Straight.

**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.

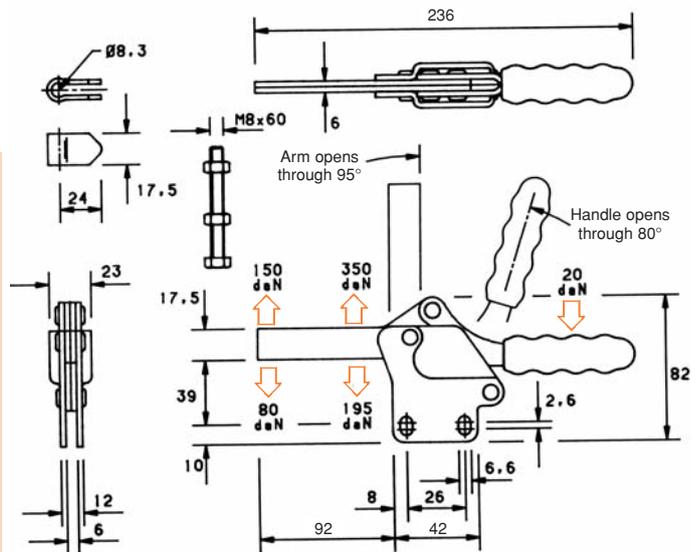
**Base:**  
Straight.

**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.

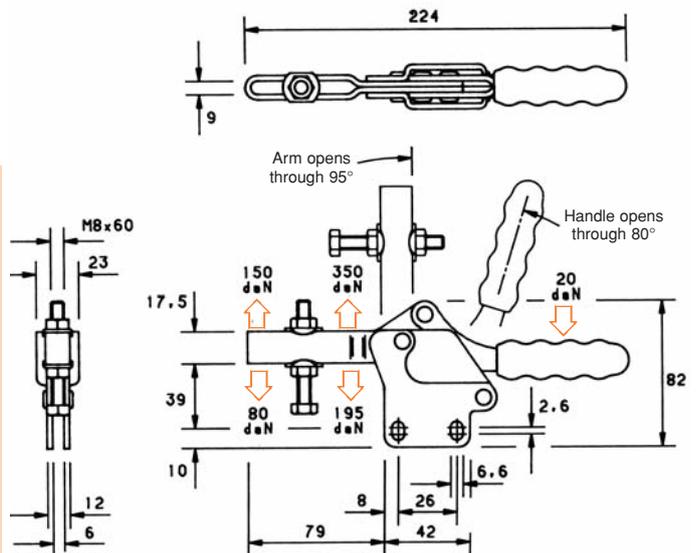
**Base:**  
Straight.

**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.

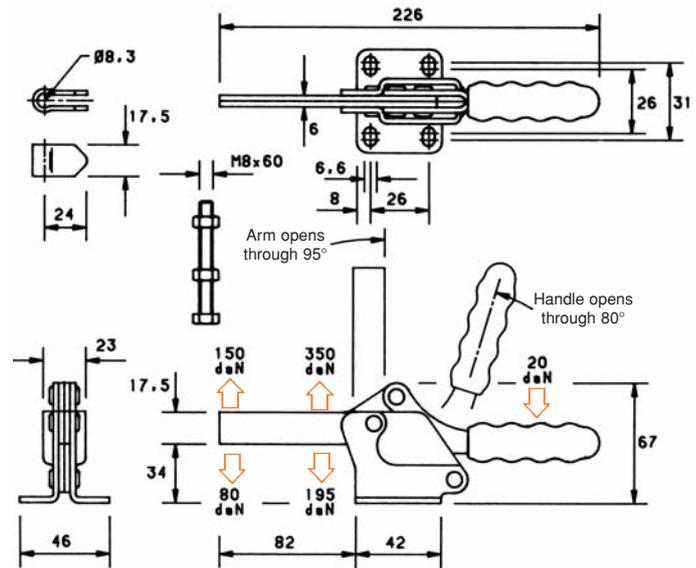
**Base:**  
Flanged.

**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.

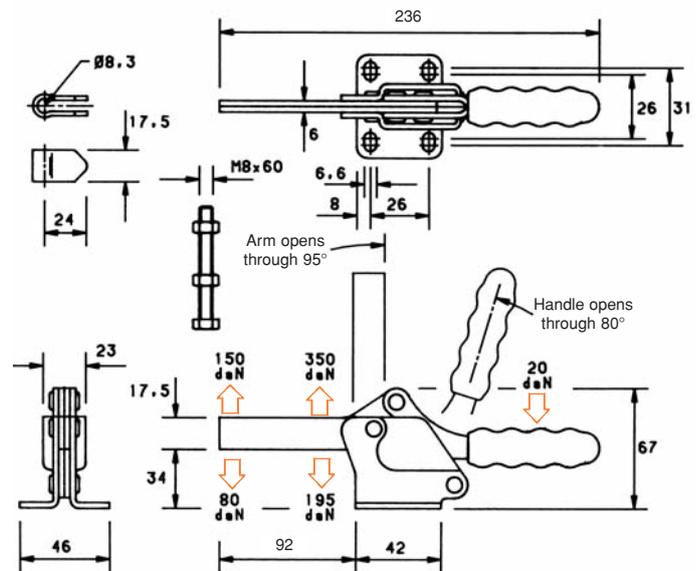
**Base:**  
Flanged.

**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.

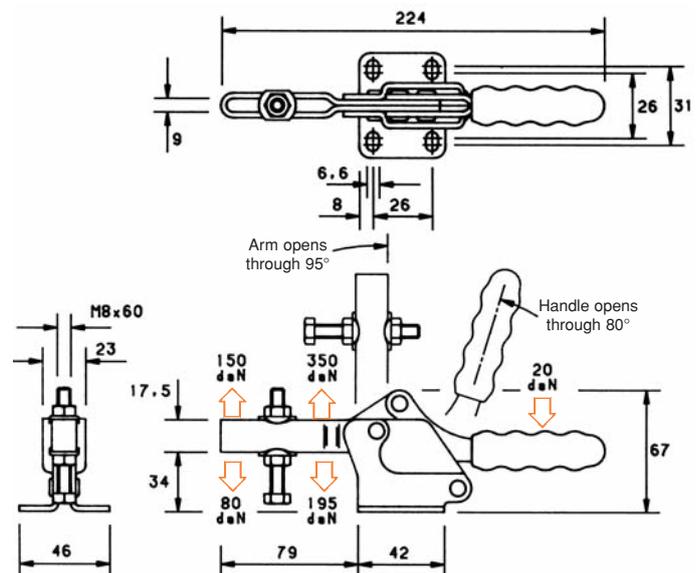
**Base:**  
Flanged.

**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.

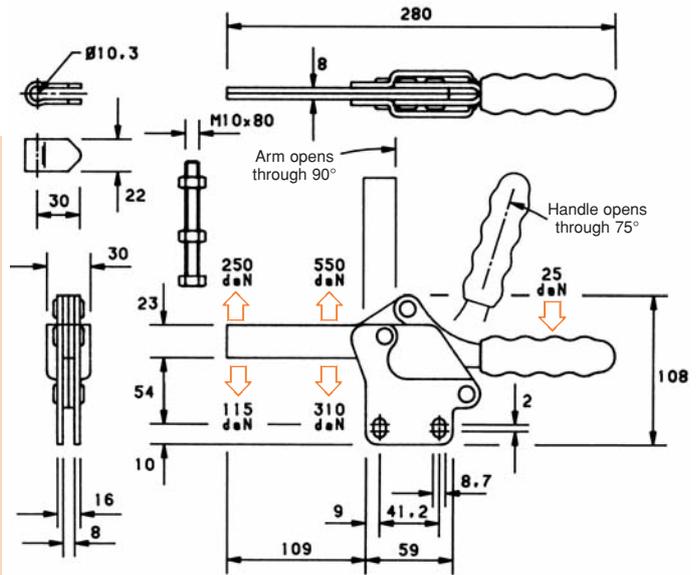
**Base:**  
Straight.

**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.

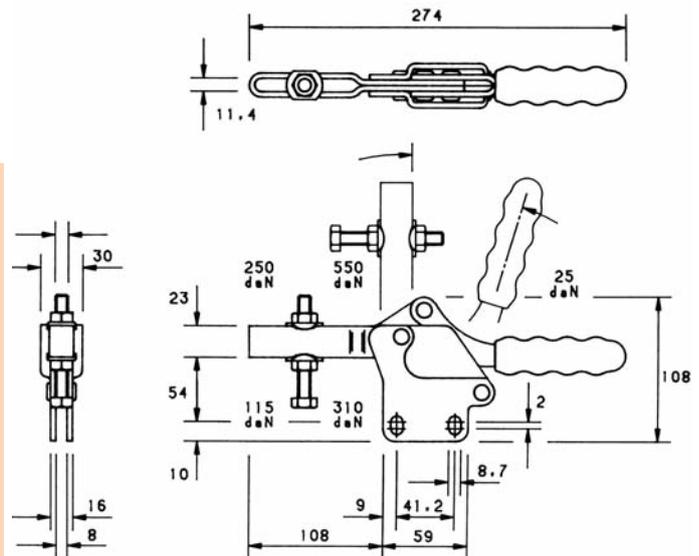
**Base:**  
Straight.

**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.

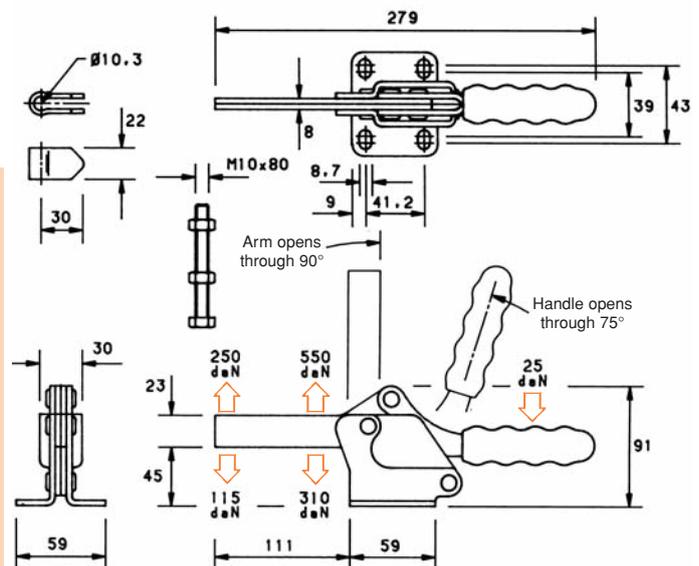
**Base:**  
Flanged.

**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.

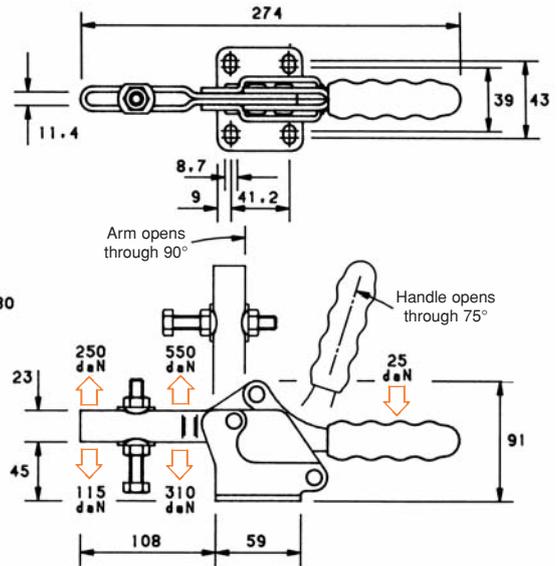
**Base:**  
Flanged.

**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.

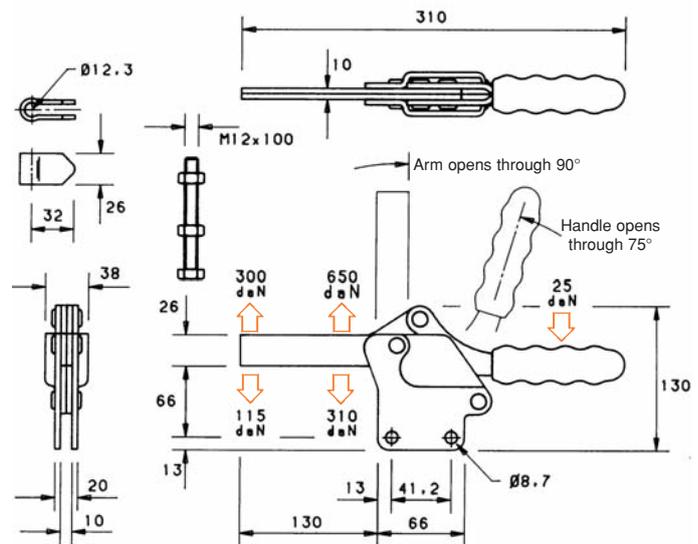
**Base:**  
Straight.

**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.

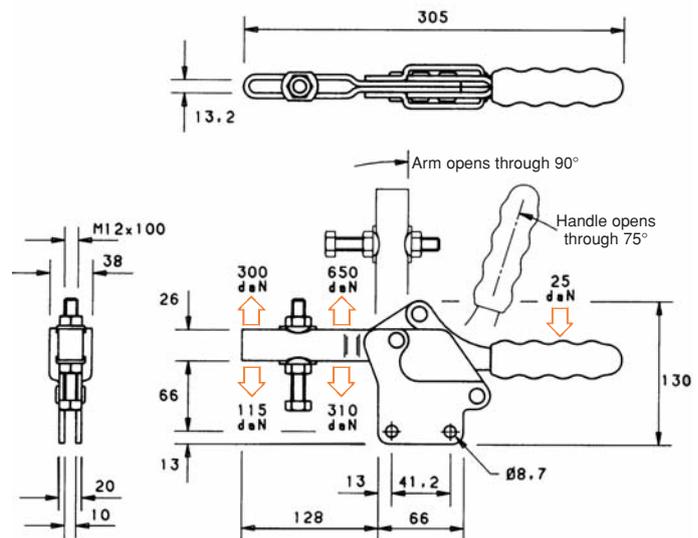
**Base:**  
Straight.

**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.

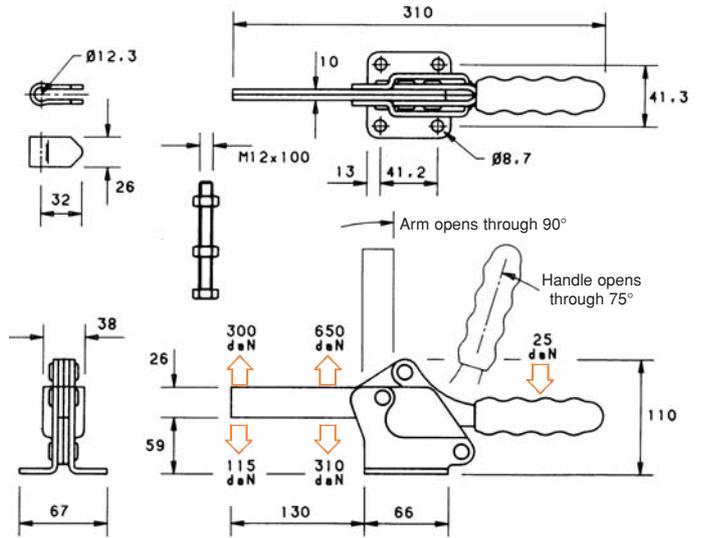
**Base:**  
Flanged.

**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.

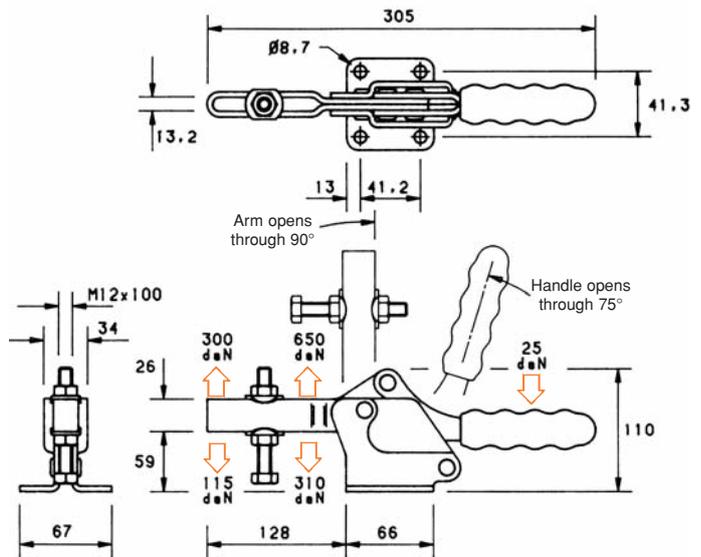
**Base:**  
Flanged.

**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.

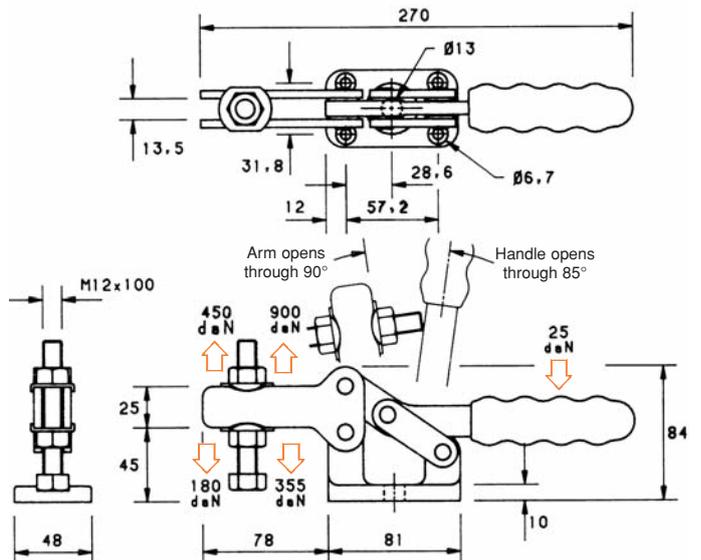
**Base:**  
Flanged.

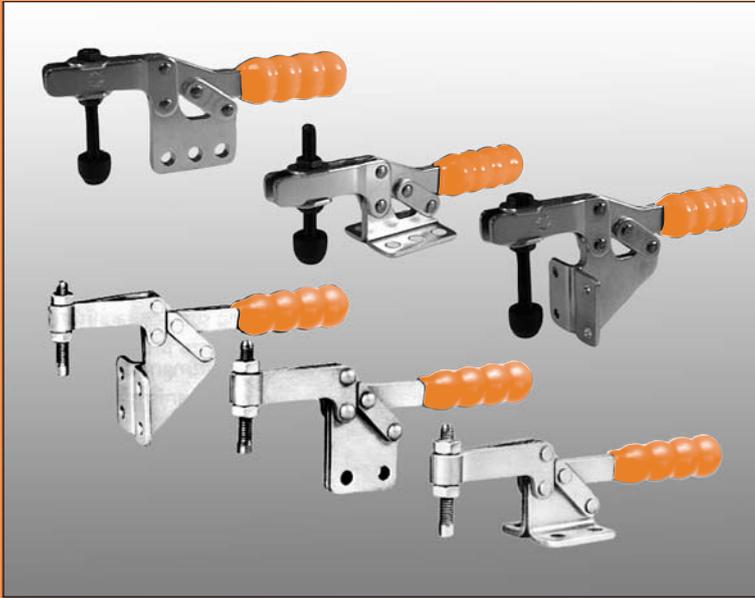
**Nominal Holding Force:**  
700 daN

**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.

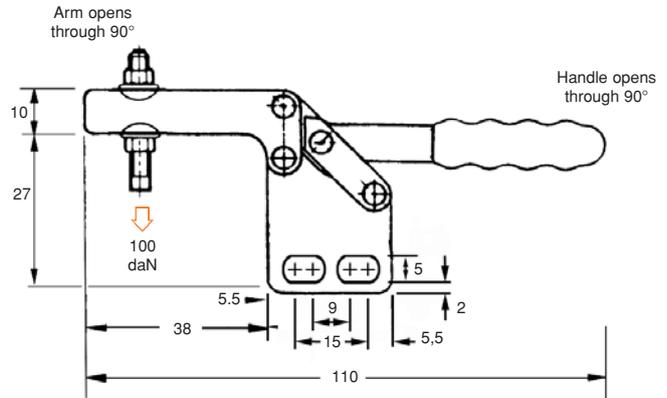
**Base:**  
Straight.

**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.

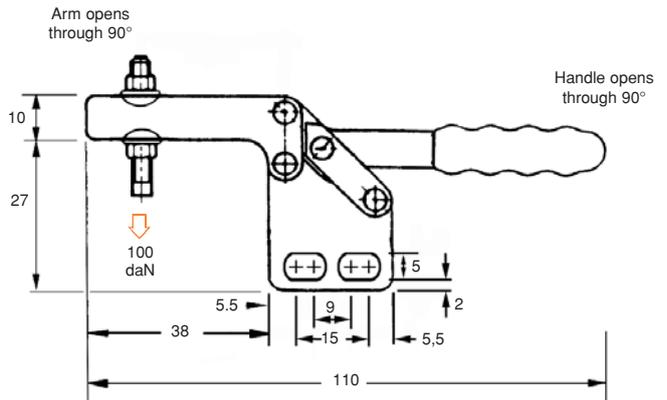
**Base:**  
Straight.

**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.

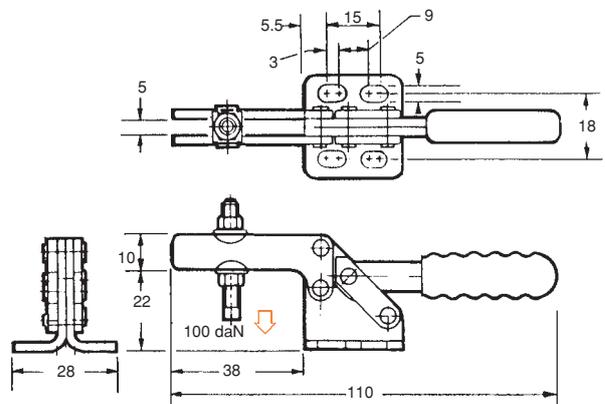
**Base:**  
Flanged.

**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.

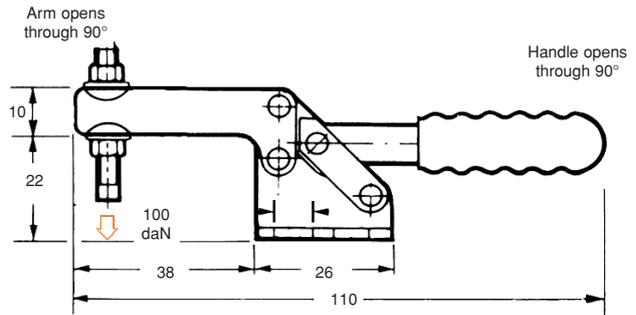
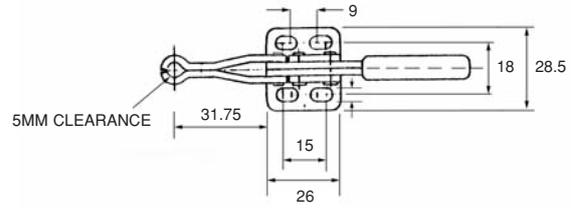
**Base:**  
Flanged.

**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.

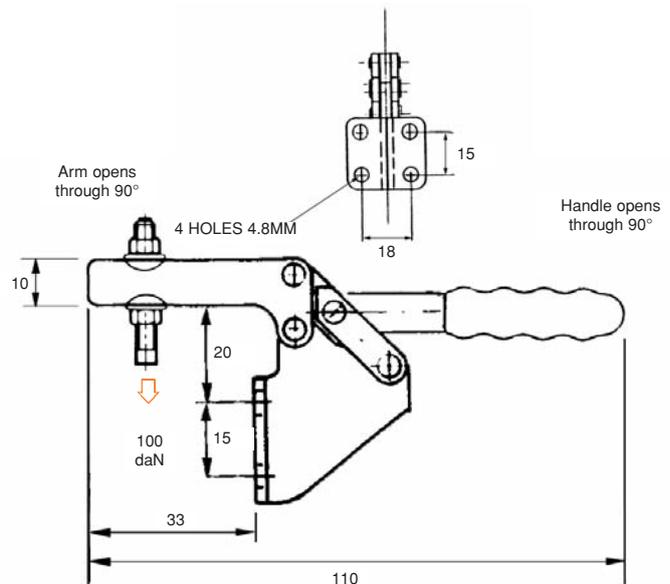
**Base:**  
Front mounting.

**Nominal Holding Force:**  
100 daN

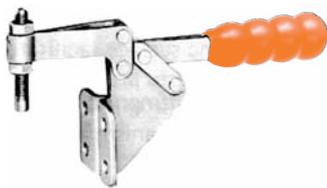
**Weight:**  
0.085 Kg

**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.

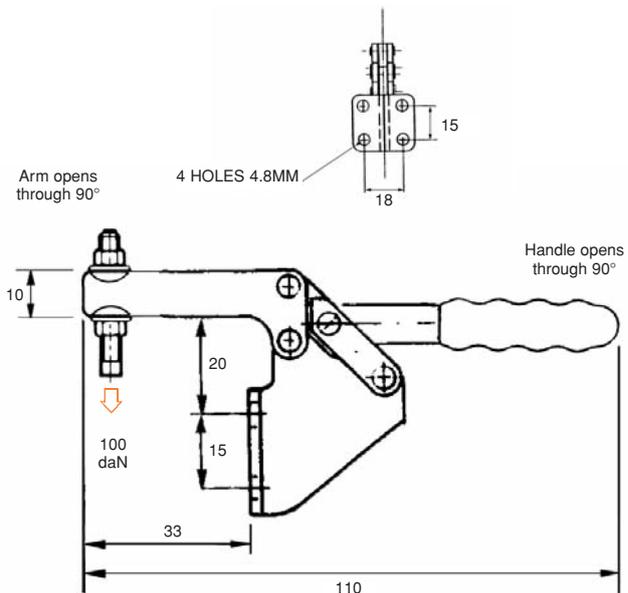
**Base:**  
Front mounting.

**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.

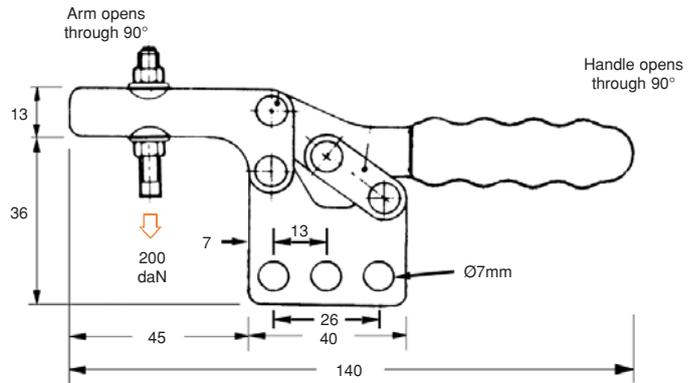
**Base:**  
Straight.

**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.

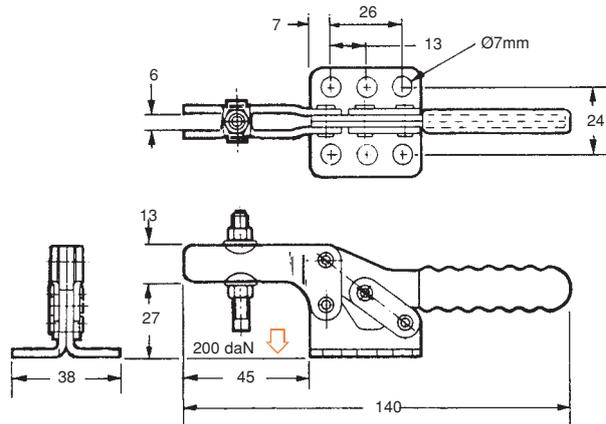
**Base:**  
Flanged.

**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.

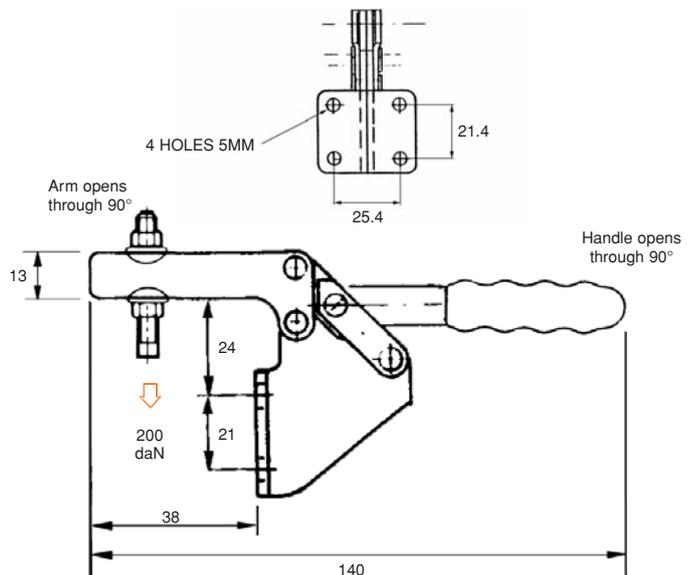
**Base:**  
Front mounting.

**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.

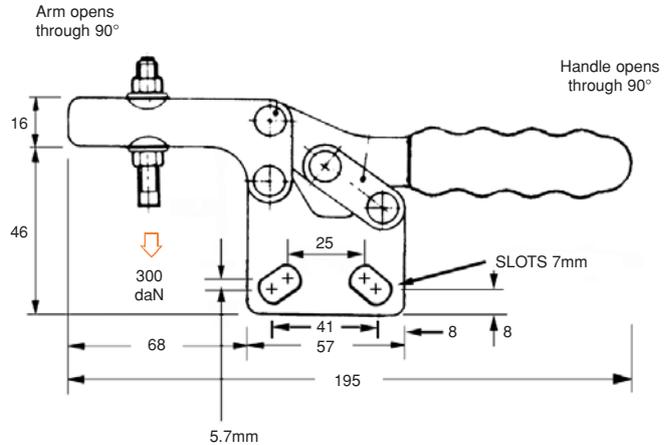
**Base:**  
Straight.

**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.

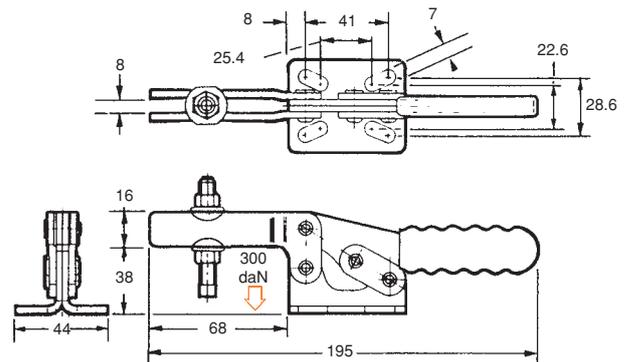
**Base:**  
Flanged.

**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.

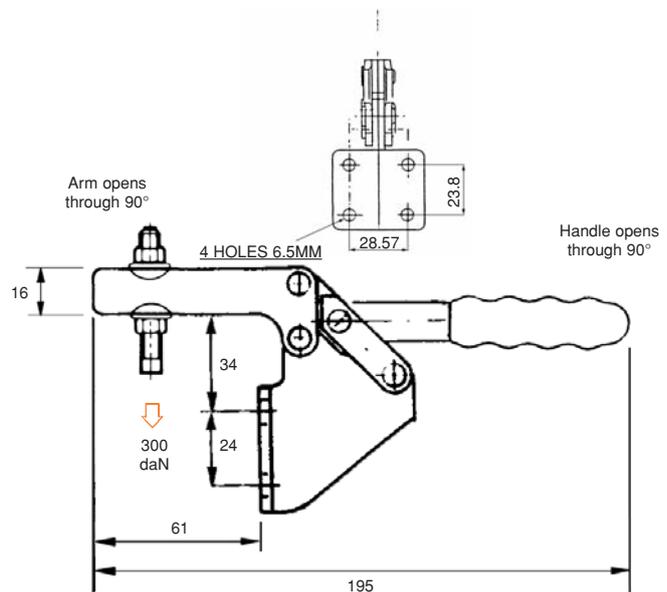
**Base:**  
Front mounting.

**Nominal Holding Force:**  
300 daN

**Weight:**  
0.34 Kg

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

*See "Accessories" for other items.*



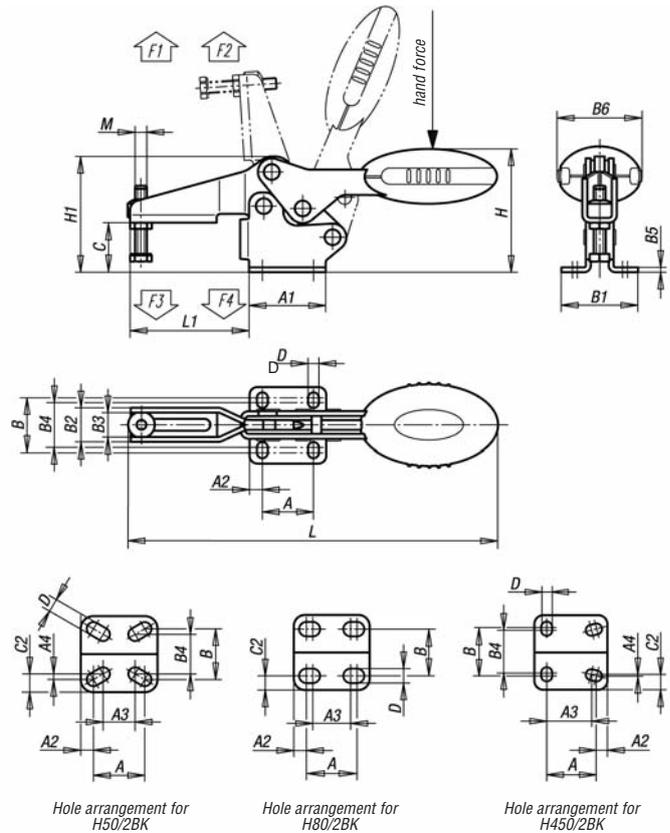


## BLACK OXIDIZED NITRO CARBURIZED HORIZONTAL CLAMPS

- 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:**

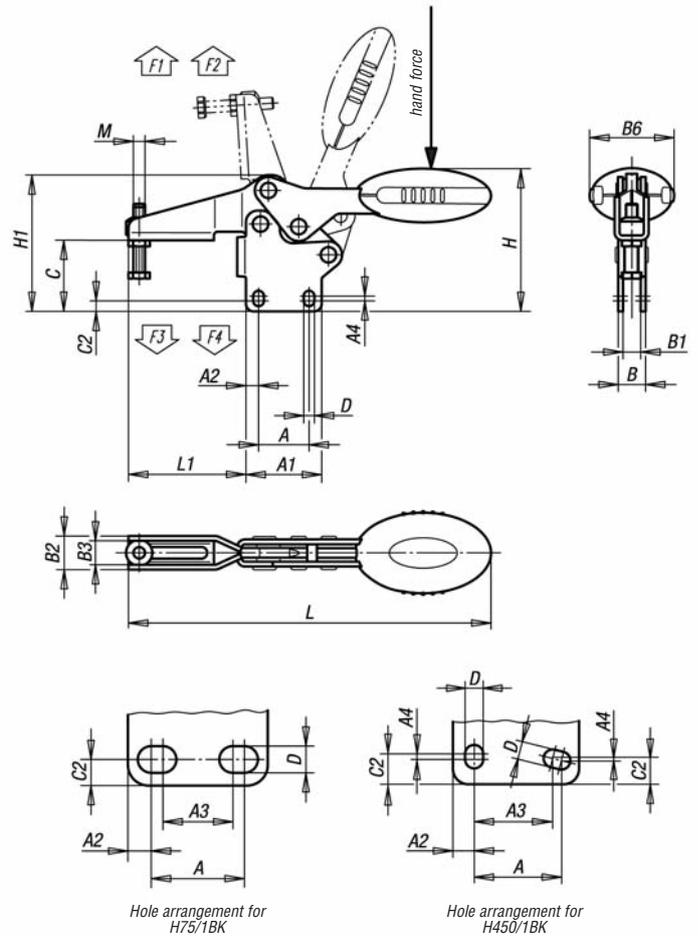
The spindle position is adjustable along the arm.

**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.

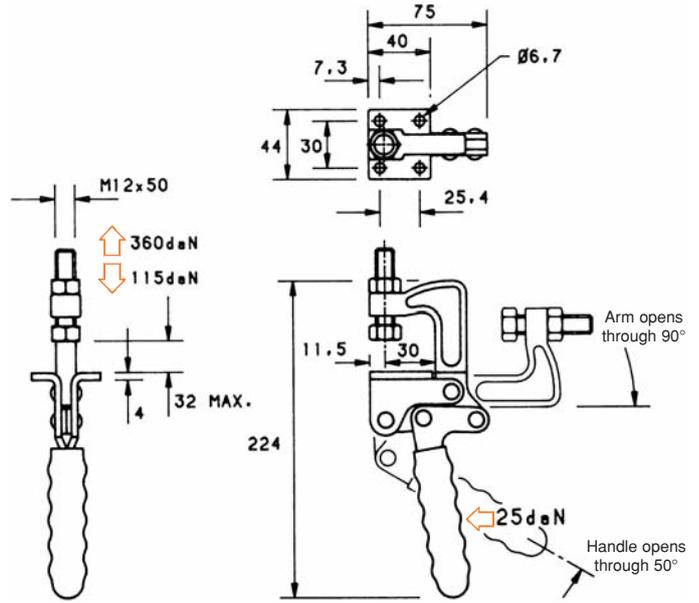
**Base:**  
Flanged.

**Nominal Holding Force:**  
360 daN

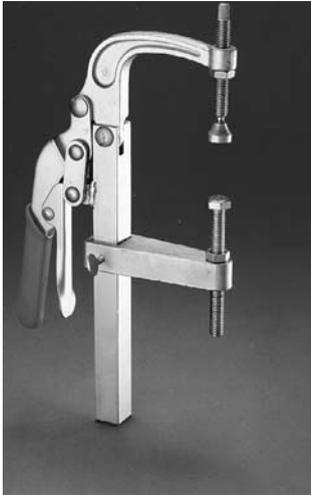
**Weight:**  
0.50 Kg

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

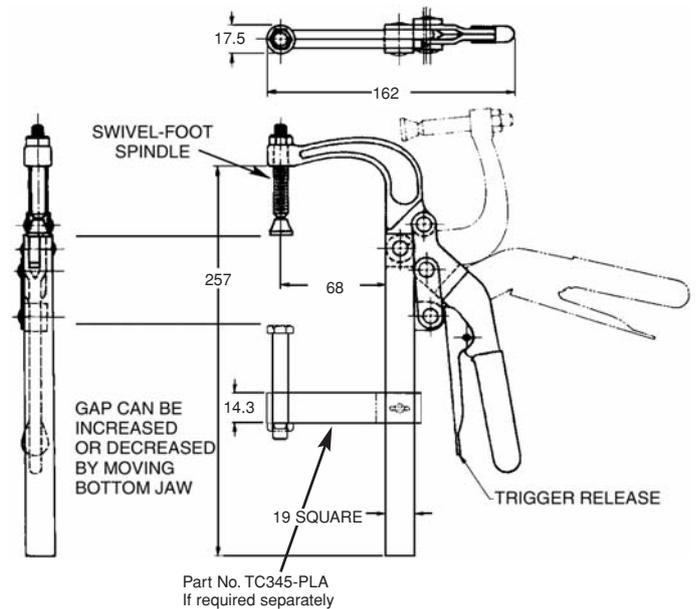
See "Accessories" for other items.



## 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



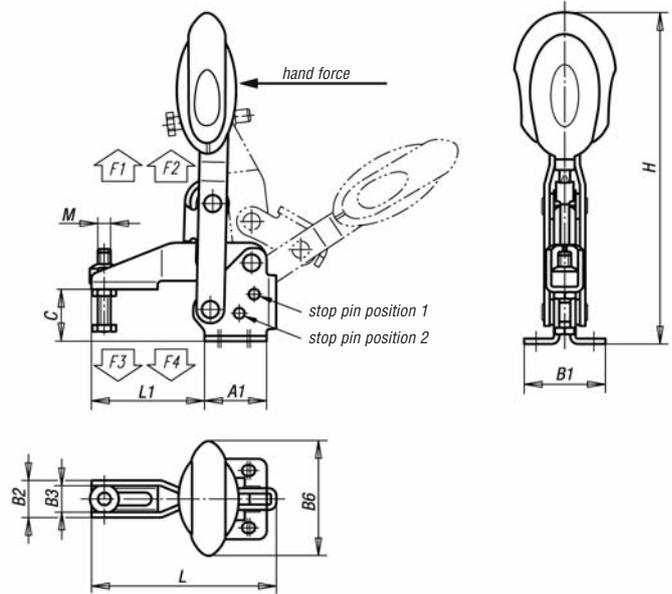
## **POSITIVE LOCKING CLAMPS SAFETY INTERLOCK +**

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

## VERTICAL CLAMPS SAFETY INTERLOCK+

VERTICAL MODELS

V150/2BKL - V450/2BKL



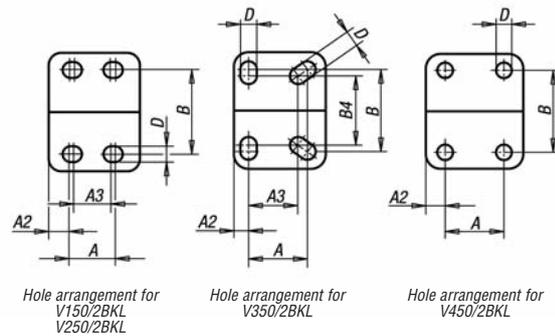
**Material:**  
Steel, Polyamide handle, TPE unlocking bracket.

**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

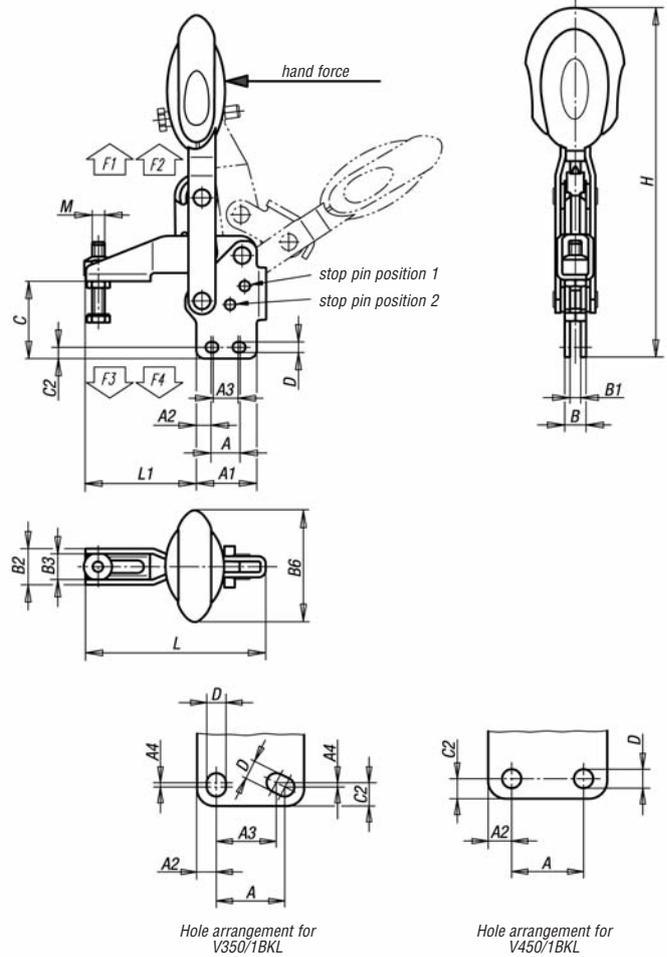
Order No	Arm opens through, Position 1	Arm opens through, Position 2	Arm opens through, pin removed	Handle opens through, Position 1	Handle opens through, Position 2	Handle opens through, pin removed	Handforce daN	Holdingforce F1 daN	Holdingforce F2 daN	Clampingforce F3 daN	Clampingforce F3 daN
V150/2BKL	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

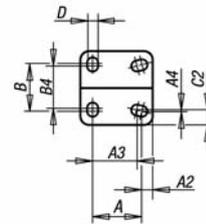
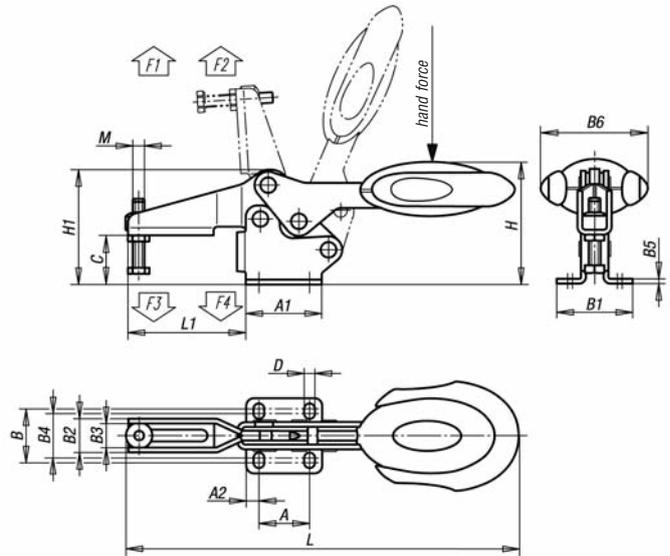
Order No	Arm opens through, Position 1	Arm opens through, Position 2	Arm opens through, pin removed	Handle opens through, Position 1	Handle opens through, Position 2	Handforce daN	Holdingforce F1 daN	Holdingforce F2 daN	Clampingforce F3 daN	Clampingforce F3 daN
V150/1BKL	56°	83°	156°	46°	56°	16	135	165	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



Hole arrangement for H450/2BKL

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

**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.

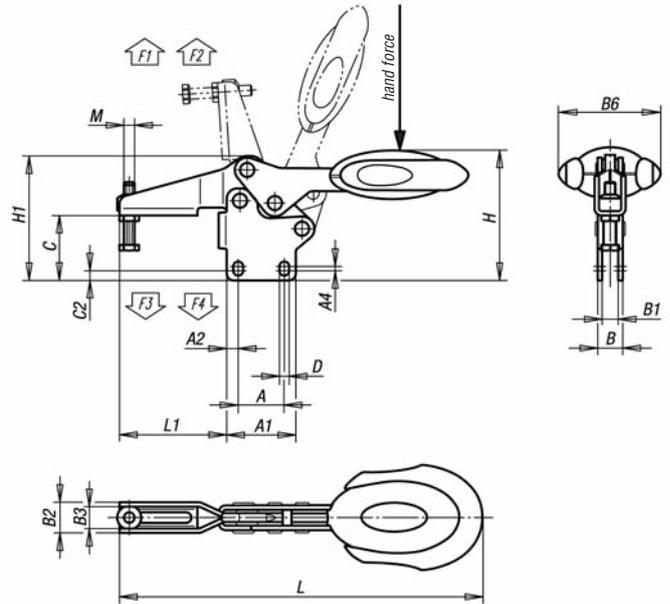
Order No	Arm opens through	Handle opens through	Handforce daN	Holdingforce F1 daN	Holdingforce F2 daN	Clampingforce F3 daN	Clampingforce F4 daN
H150/2BKL	87°	68°	16	135	190	72	120
H250/2BKL	88°	68°	20	200	280	83	140
H350/2BKL	90°	71°	25	220	450	120	280
H450/2BKL	88°	68°	28	240	550	100	280

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



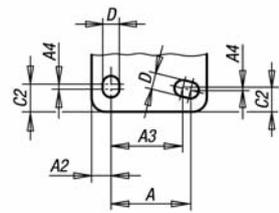
**Material:**  
Steel, with Polyamide handle, TPE unlocking bracket.

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

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

**Base:**  
Straight.

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



Hole arrangement for H450/1BKL

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.

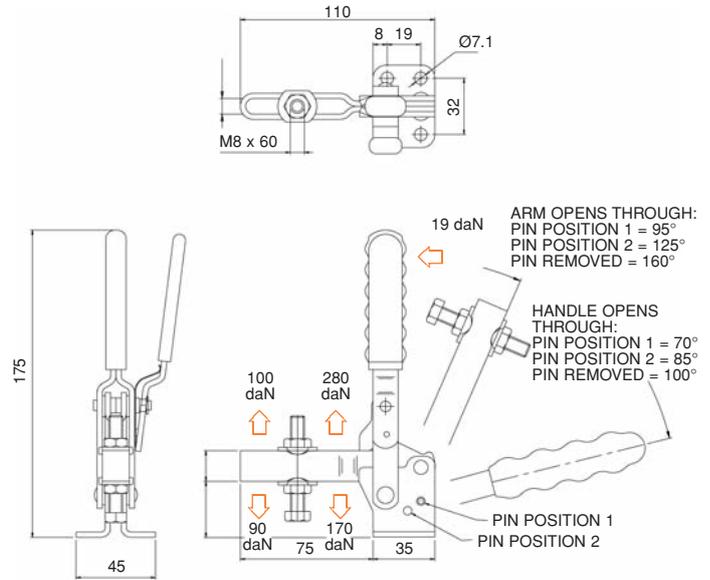
**Base:**  
Flanged.

**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.

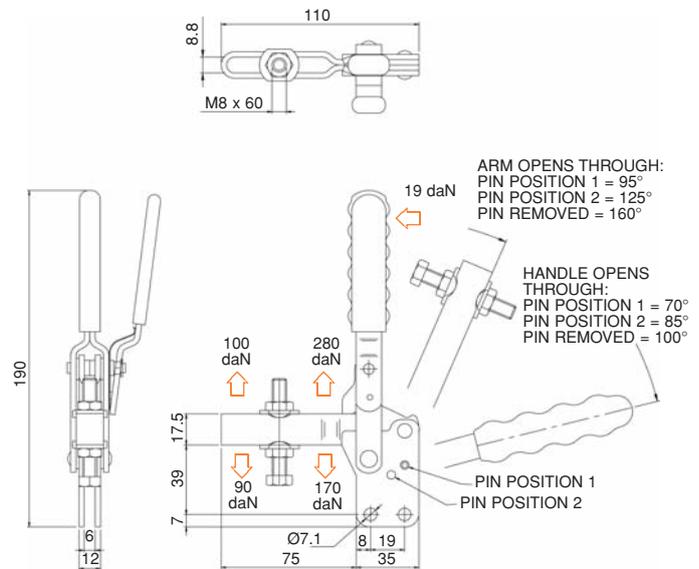
**Base:**  
Straight.

**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.

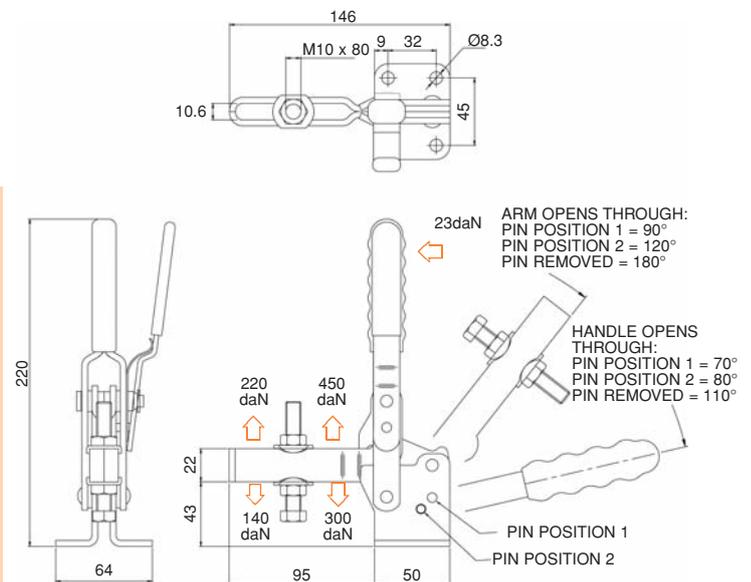
**Base:**  
Flanged.

**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.

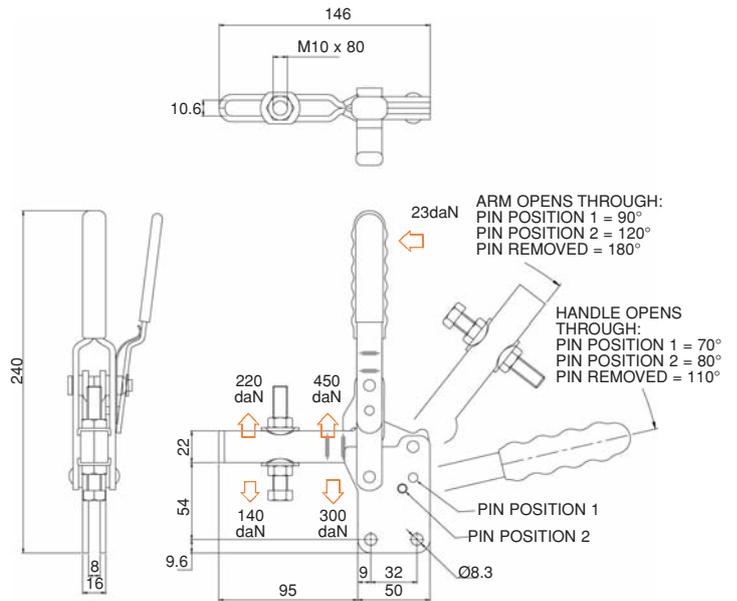
**Base:**  
Straight.

**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.

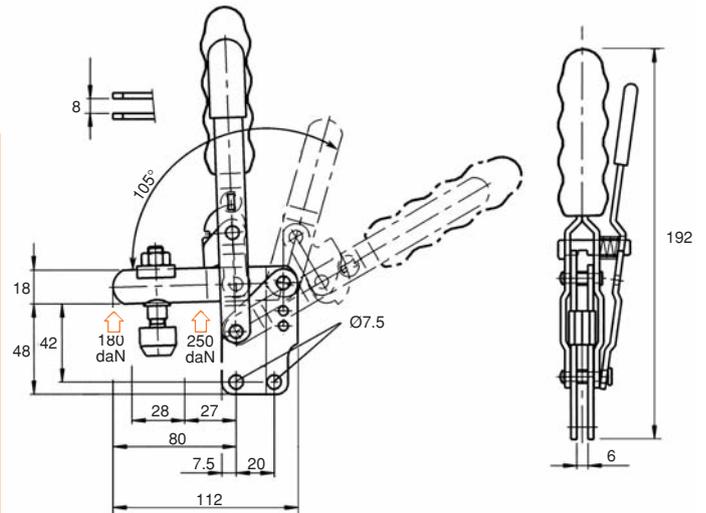
**Base:**  
Straight.

**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.

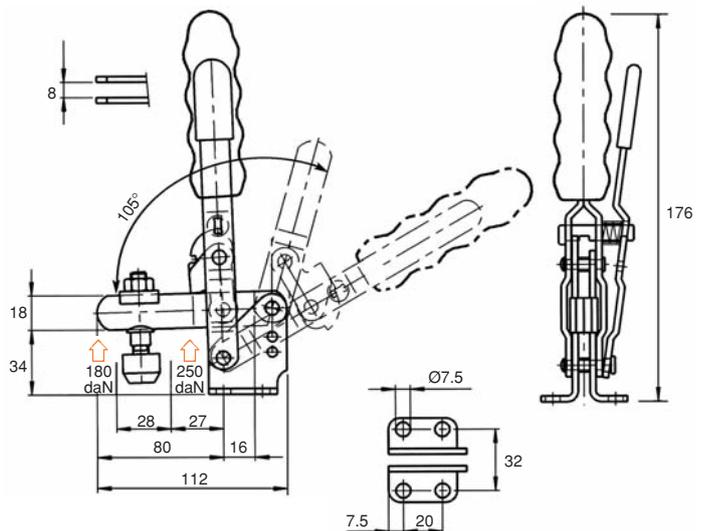
**Base:**  
Flanged.

**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.

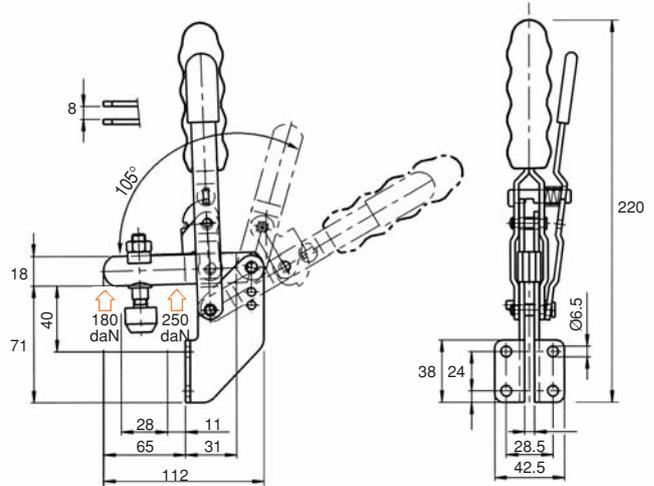
**Base:**  
Flanged.

**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.

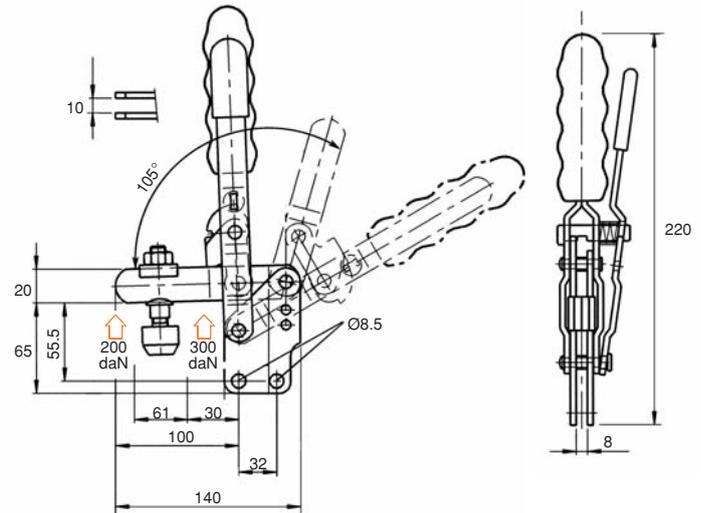
**Base:**  
Straight.

**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.

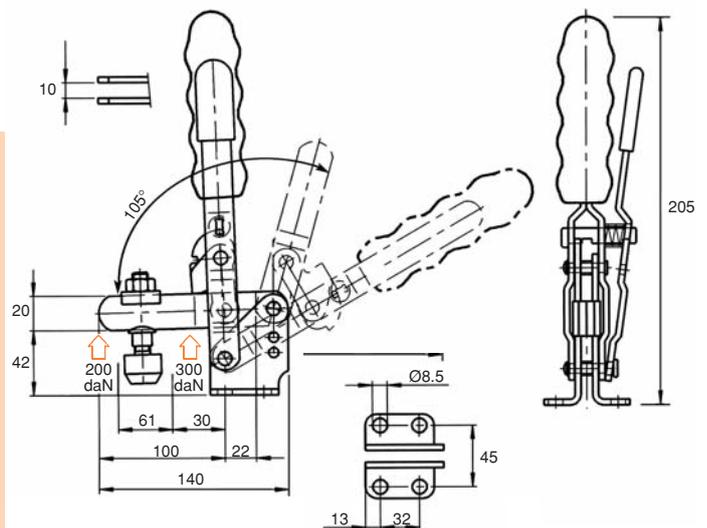
**Base:**  
Flanged.

**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:**

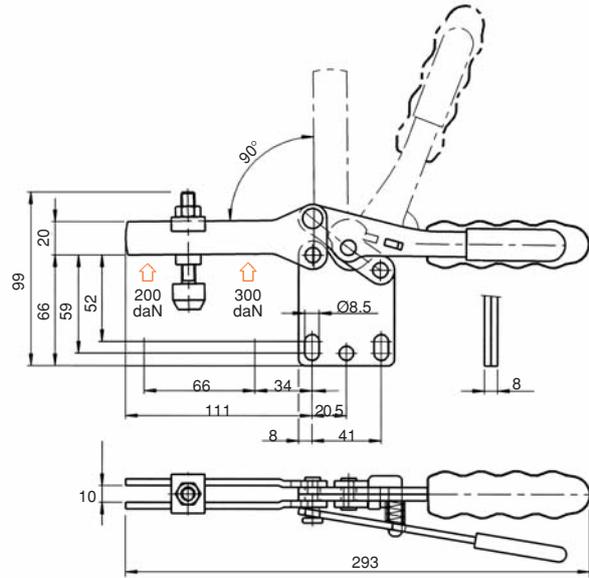
The spindle position is adjustable along the length of the arm.

**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:**

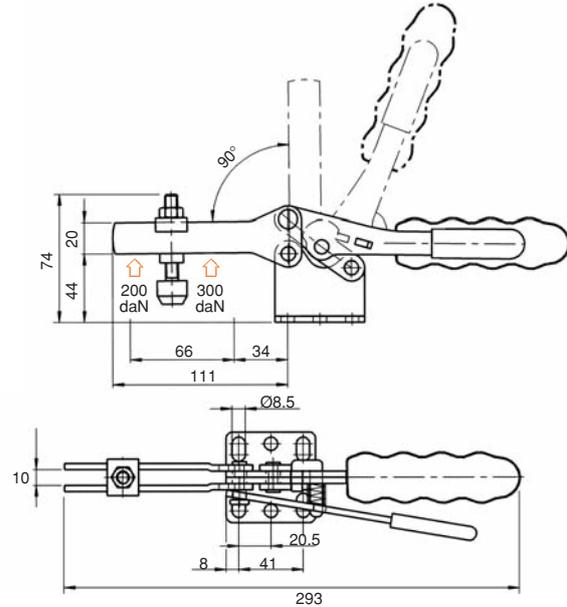
The spindle position is adjustable along the length of the arm.

**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.

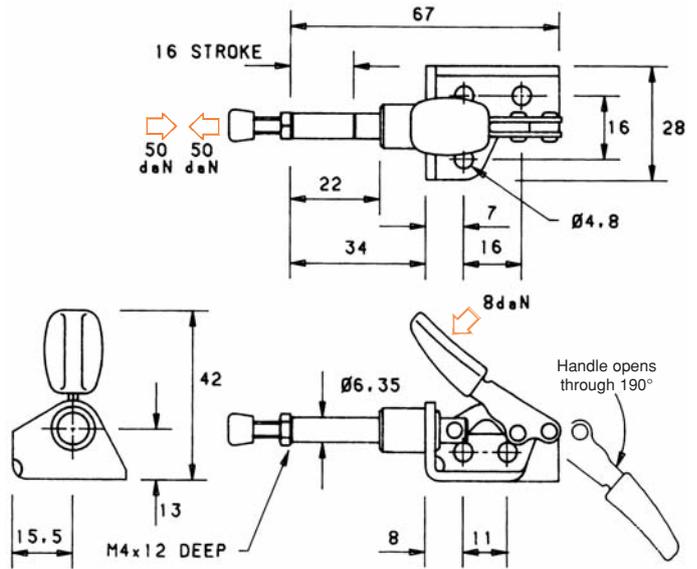
**Base:**  
Fixed Flange with bottom or side mounting.

**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.

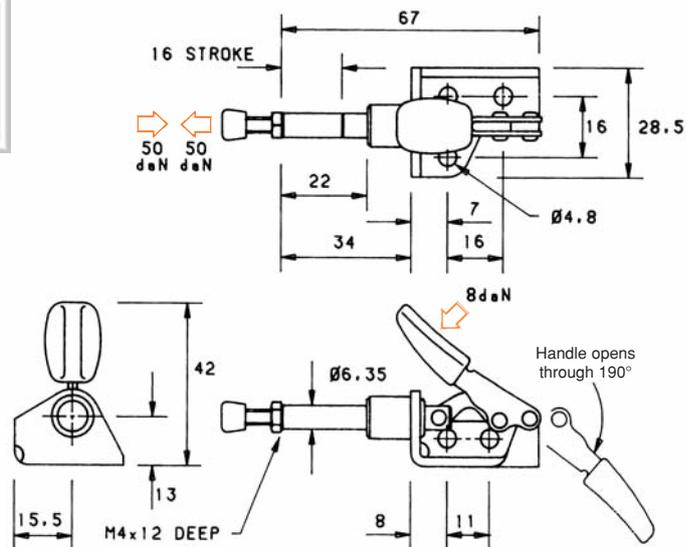
**Base:**  
Fixed Flange with bottom or side mounting.

**Nominal Holding Force:**  
50 daN

**Weight:**  
0.05 Kg

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

**Material:**  
BS 304 S15



### P6015 SERIES MODEL P6015



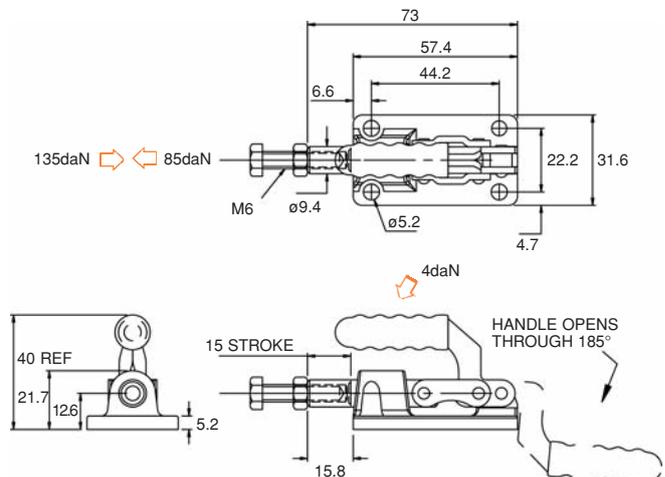
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**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



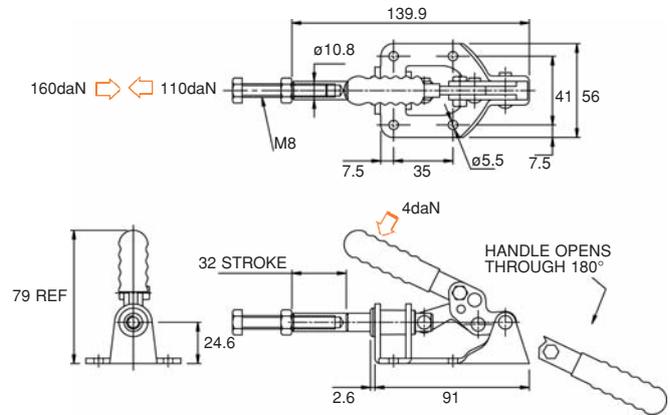
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Body mounted fixed flange.

**Nominal Holding Force:**  
160 daN

**Weight:**  
0.30 Kg

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



### P250 SERIES MODEL P250



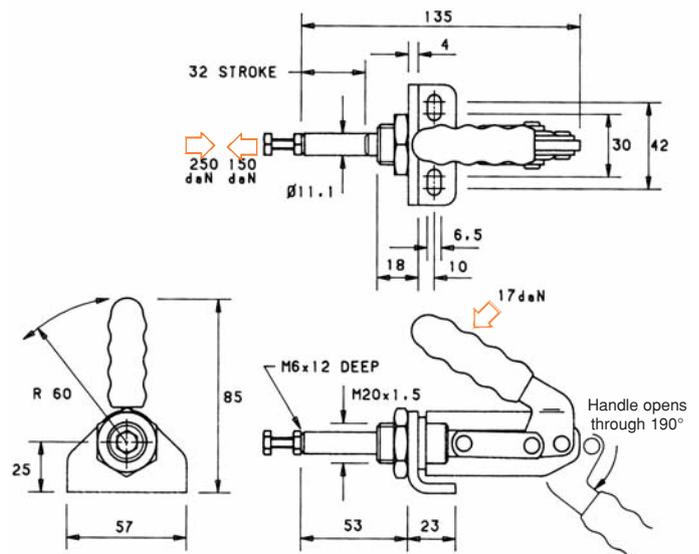
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**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



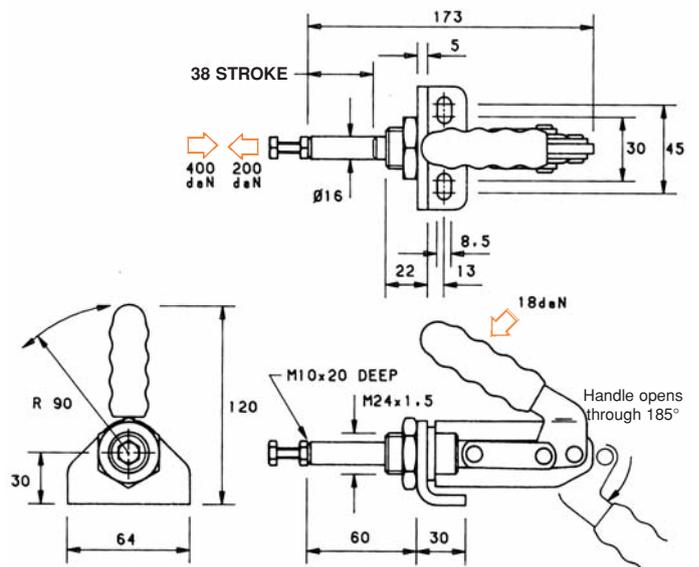
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**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.

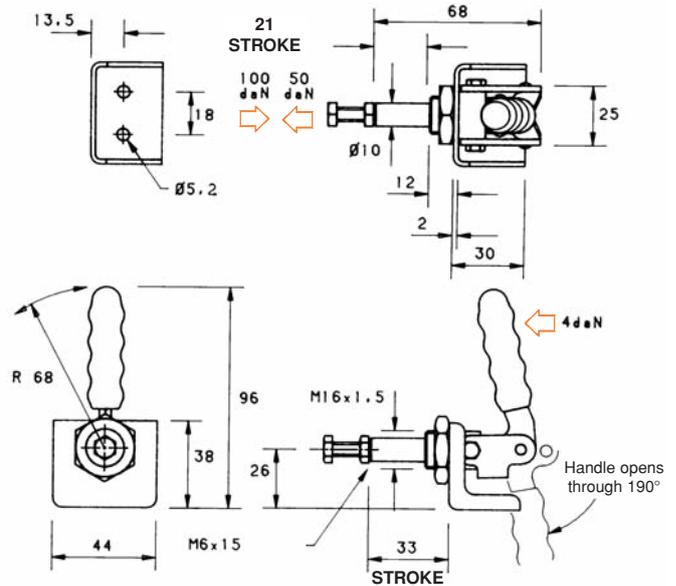
**Base:**  
Nose or flange mounting.

**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.

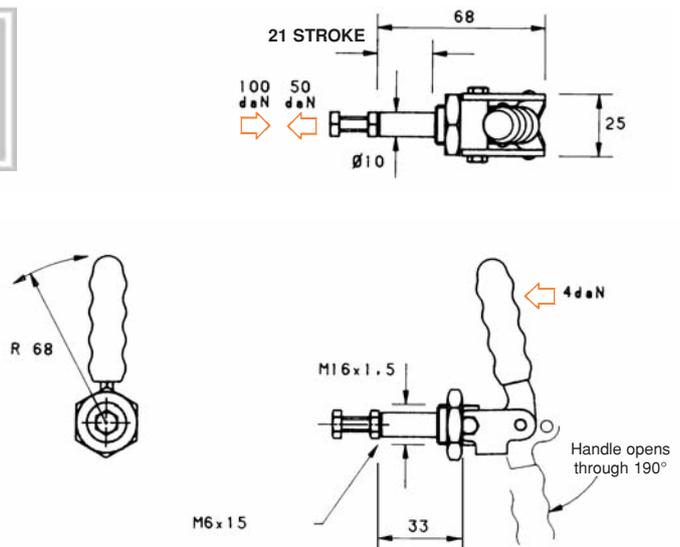
**Base:**  
Nose or flange mounting.

**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.

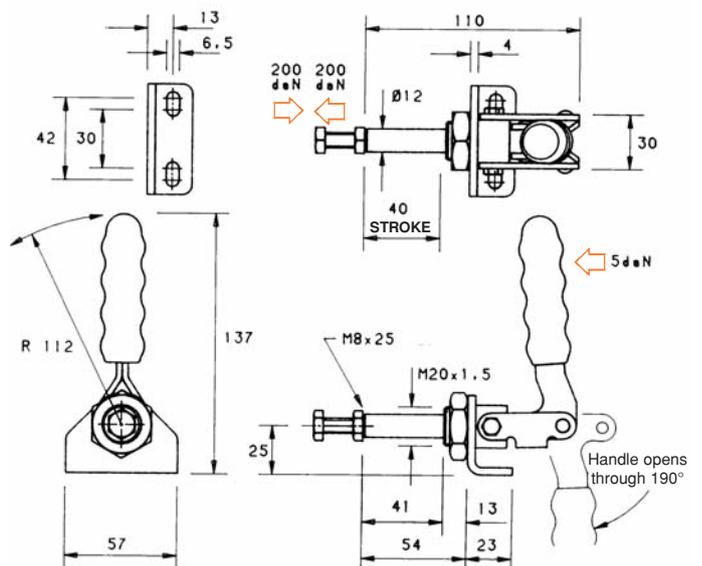
**Base:**  
Nose or flange mounting.

**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.

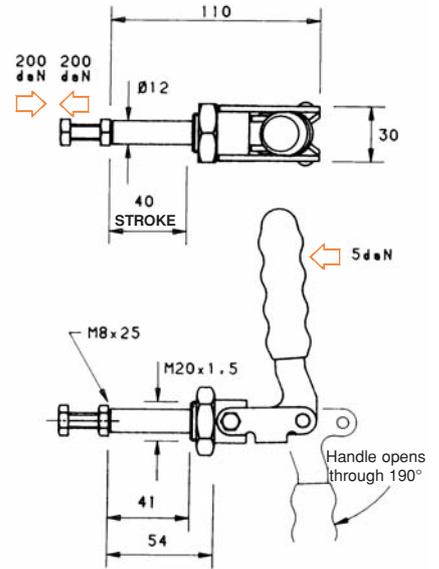
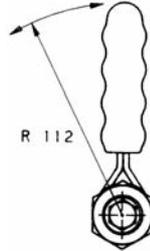
**Base:**  
Nose or flange mounting.

**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.

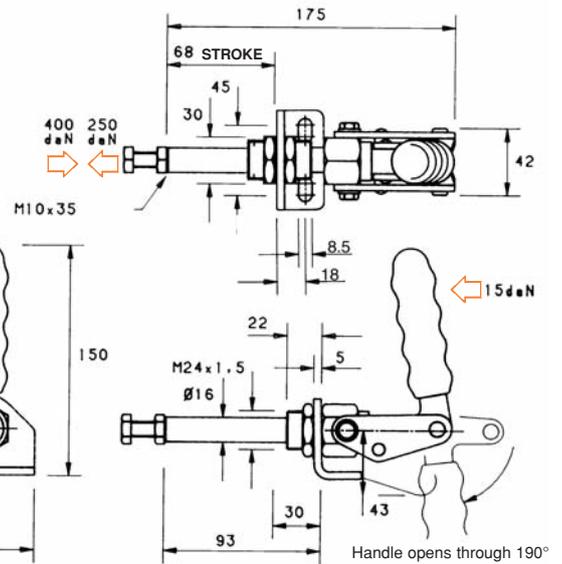
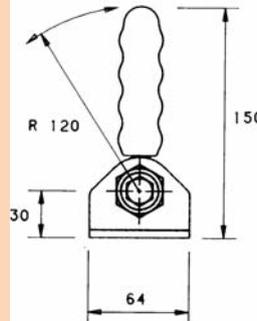
**Base:**  
Nose or flange mounting.

**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.

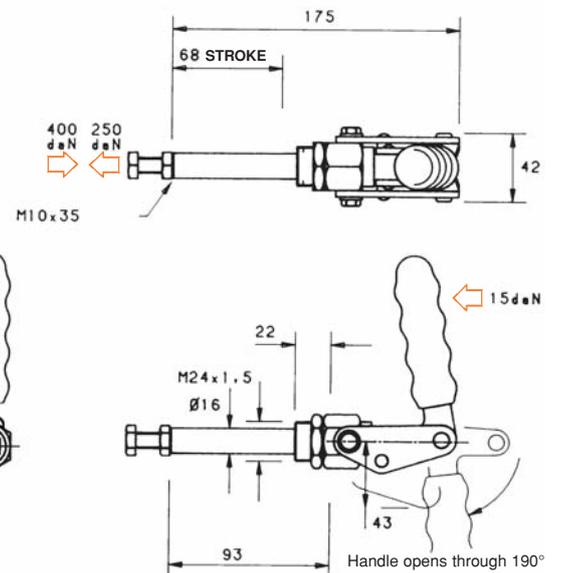
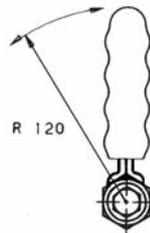
**Base:**  
Nose or flange mounting.

**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



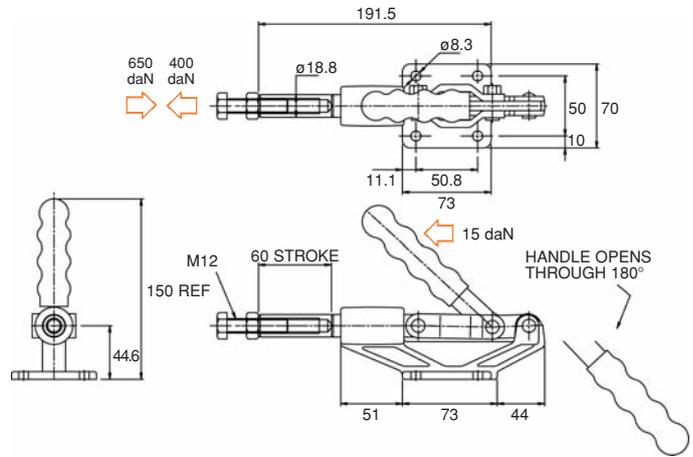
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**Base:**  
Body mounting.

**Nominal Holding Force:**  
650 daN

**Weight:**  
1.48 Kg

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



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



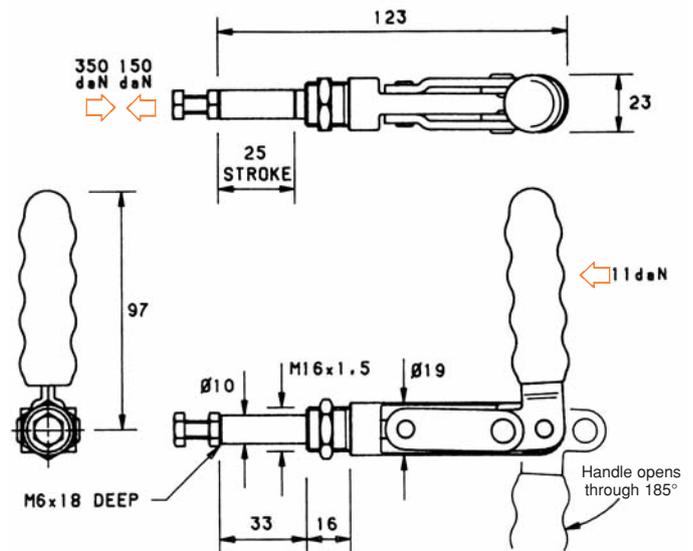
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**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



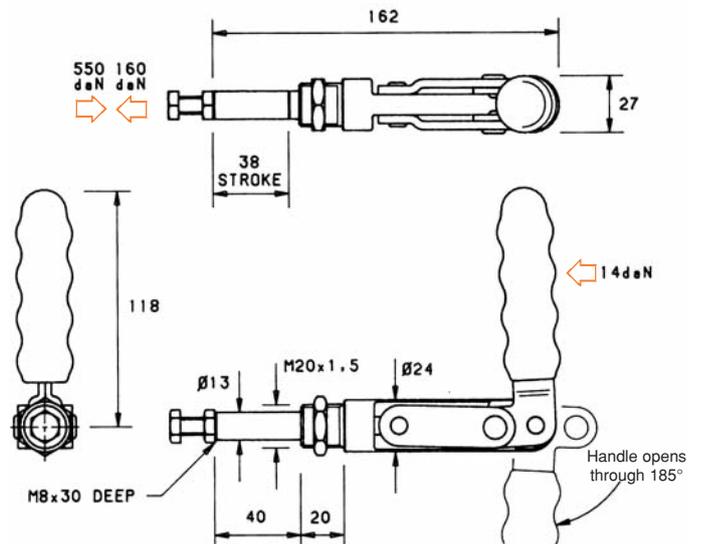
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**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



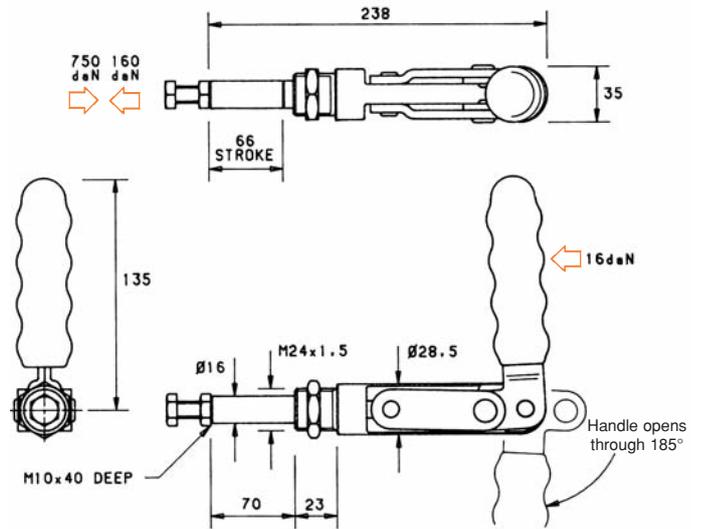
**Plunger:**  
Locks at both extended & retracted ends of the stroke.

**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



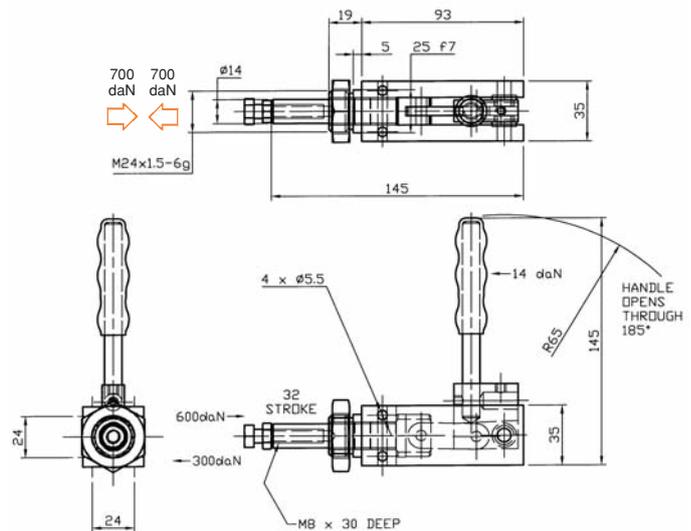
**Plunger:**  
Ground steel precision self-locking at forward stroke position.

**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

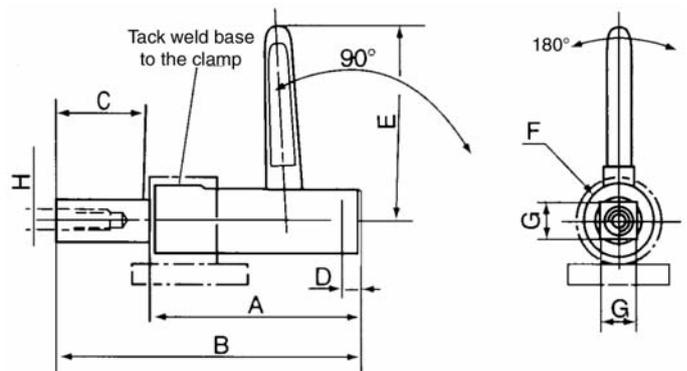


**Piston:**  
Locks at the extended end of the stroke.

**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**

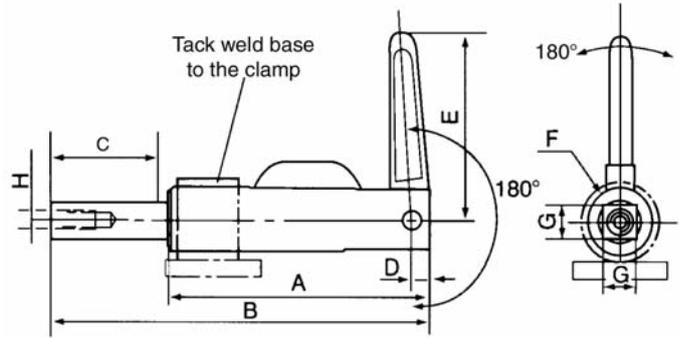


**Piston:**  
Locks at the extended end of the stroke.

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

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

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



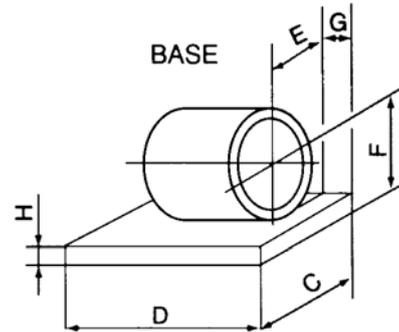
MODEL	A	B	C	D	E	F	G	H
P1150L	149.9	215.9	60	10	112	35	19	M12
P2250L	194	281	78	14	127	45	24.8	M16

### 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.

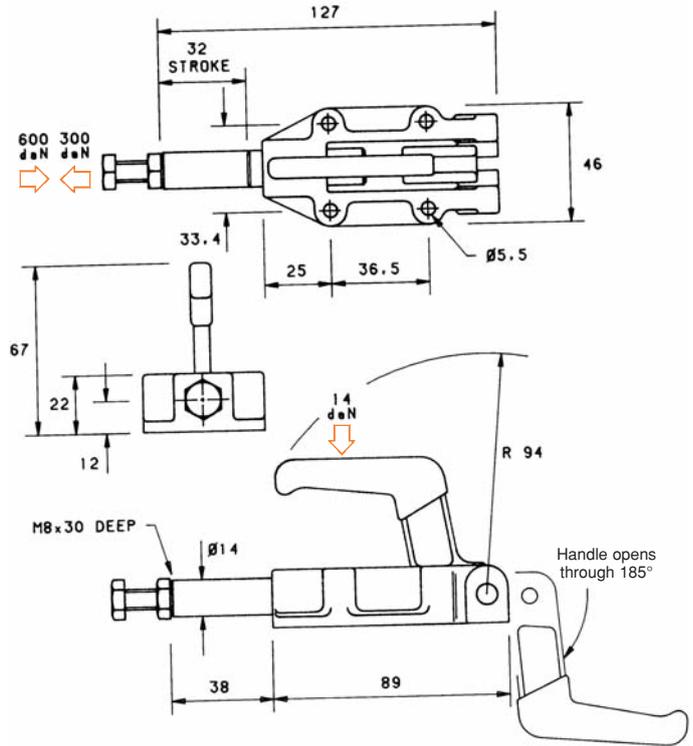
**Base:** SG Iron Casting.  
Body mounting.

**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.

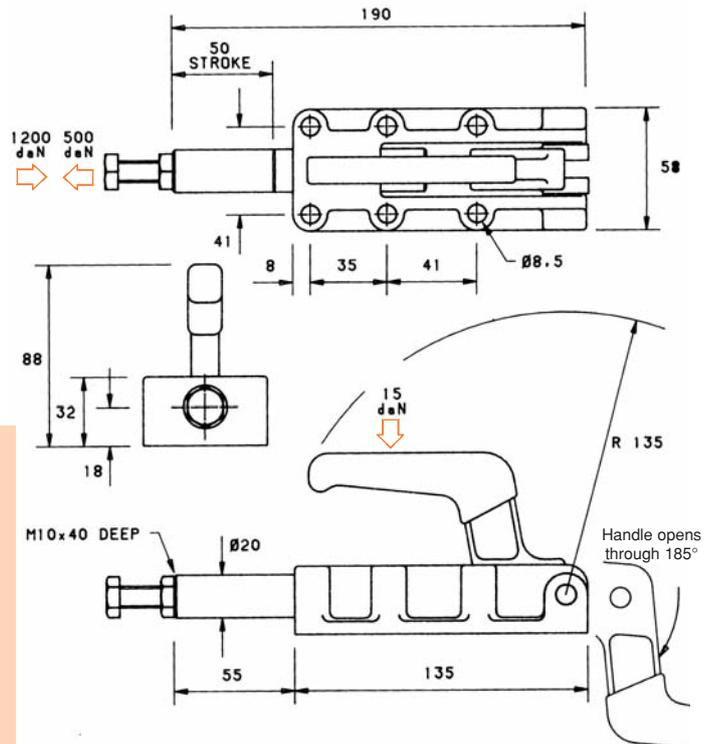
**Base:** SG Iron Casting.  
Body mounting.

**Nominal Holding Force:**  
1200 daN

**Weight:**  
1.35 Kg

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

See "Accessories" for other items.

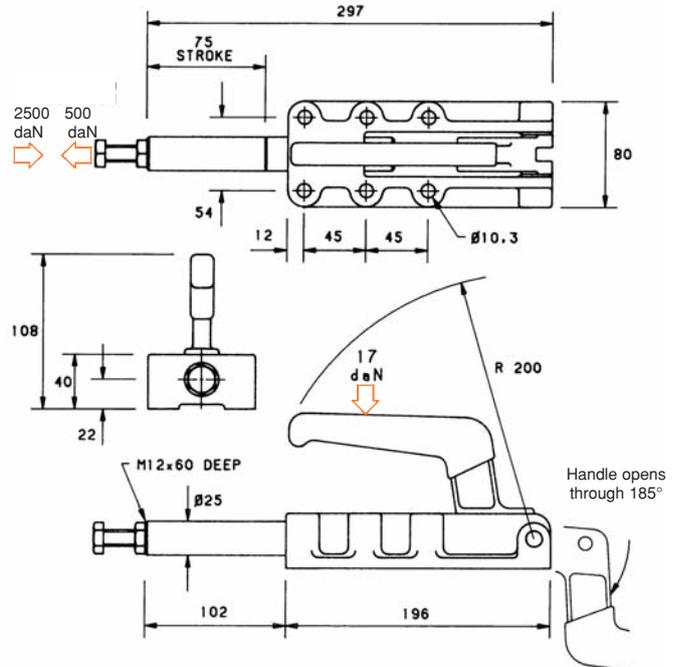


## HEAVY-DUTY PUSH-PULL CLAMPS

MODEL P2500



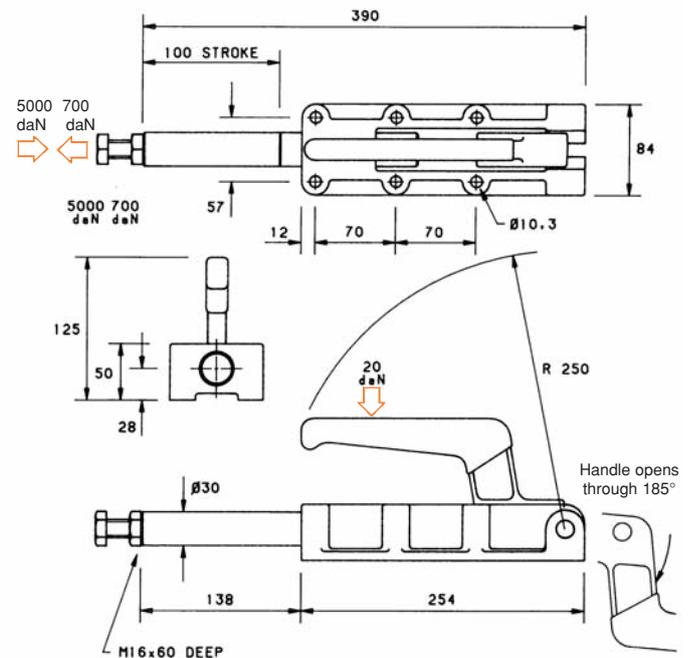
**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.  
**Base:** SG Iron Casting.  
Body mounting.  
**Nominal Holding Force:**  
2500 daN  
**Weight:**  
3.60 Kg  
**Supplied complete with:**  
MB1250 Setscrew & nut.  
*See "Accessories" for other items.*



MODEL P5000

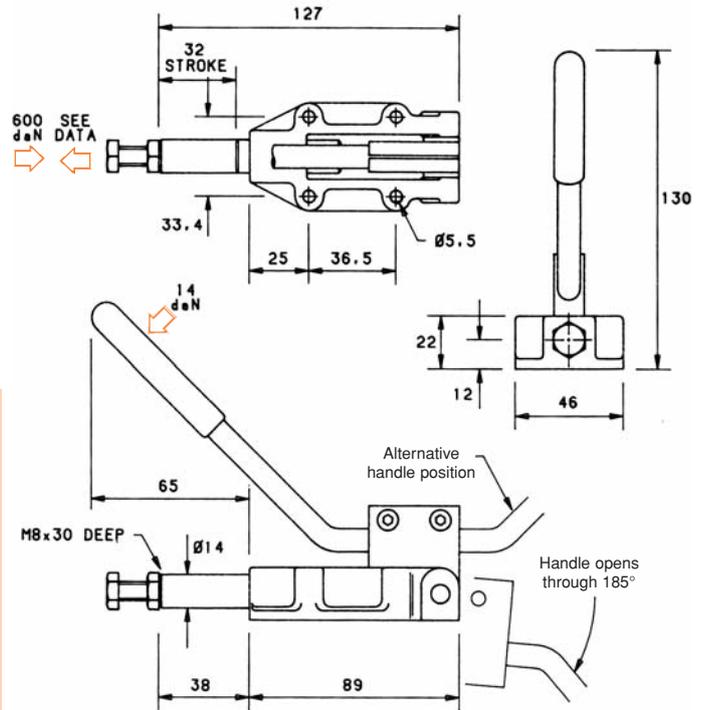


**Plunger:** Ground Steel.  
Locks at both extended & retracted ends of the stroke.  
**Base:** SG Iron Casting.  
Body mounting.  
**Nominal Holding Force:**  
5000 daN  
**Weight:**  
6.20 Kg  
**Supplied complete with:**  
MB1680 Setscrew & nut.  
*See "Accessories" for other items.*



## 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

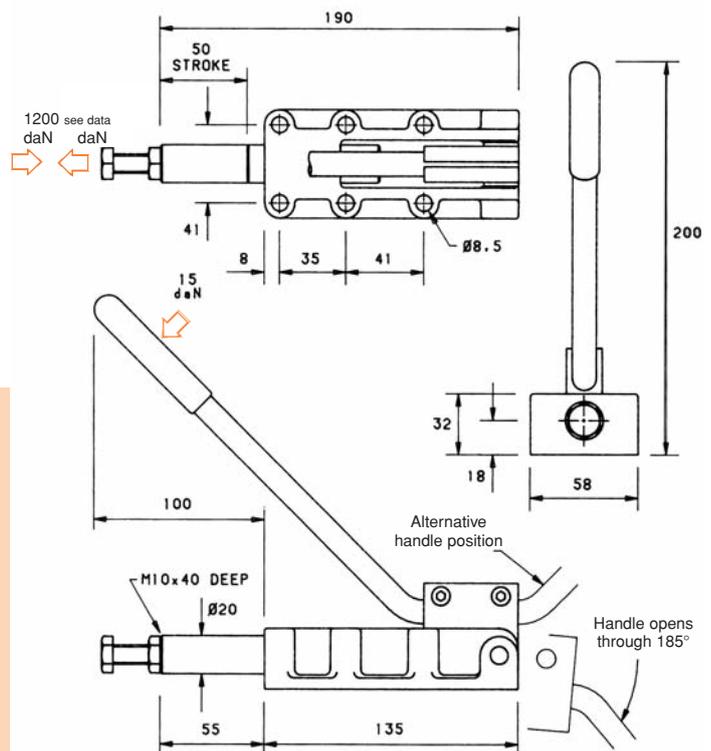
**Supplied complete with:**  
MB0840 Setscrew & nut.

See "Accessories" for other items.

With 14 daN handle force the output force is:

Stroke	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:

Stroke	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.

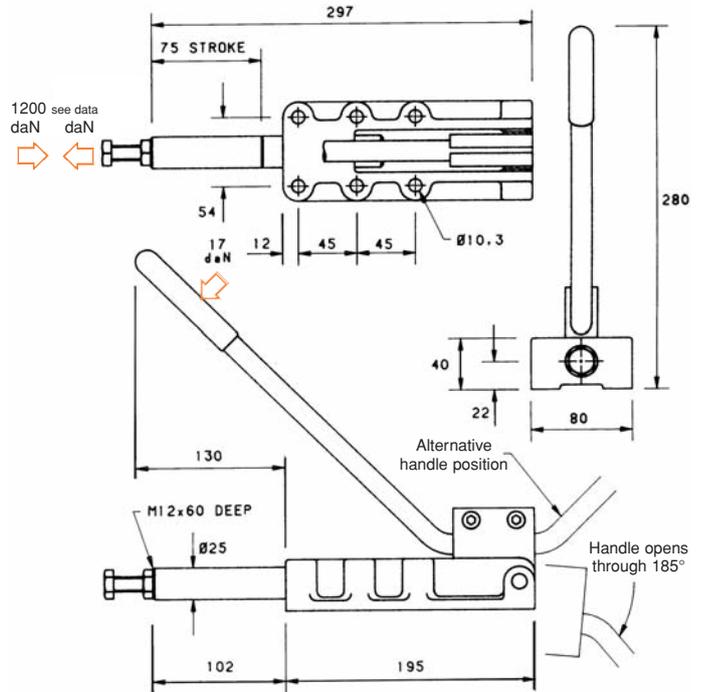
**Nominal Holding Force:**  
2500 daN

**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.

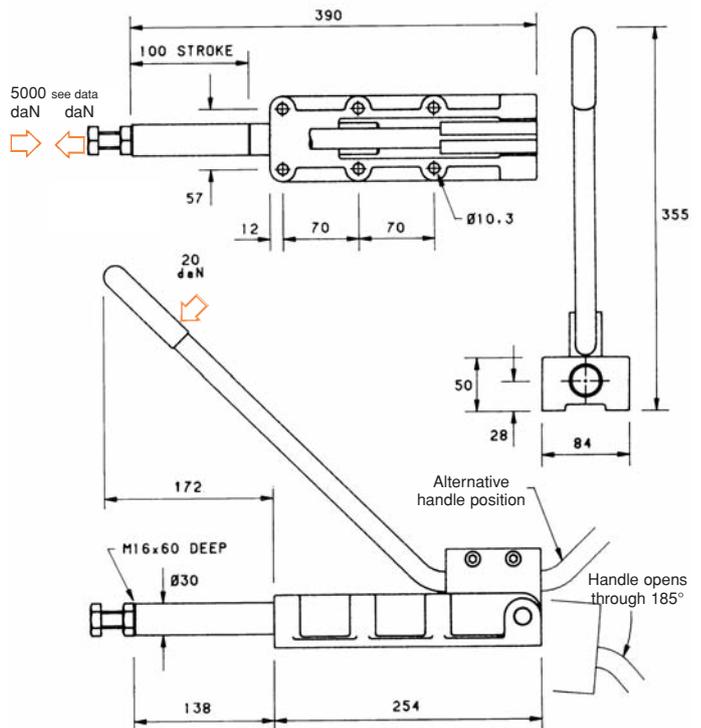
**Nominal Holding Force:**  
5000 daN

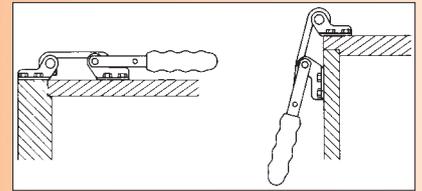
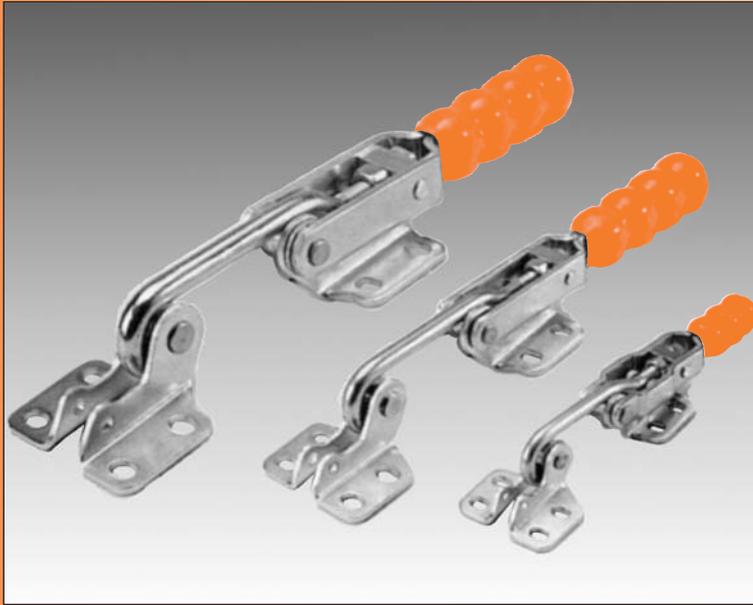
**Weight:**  
7.10 Kg

**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:**

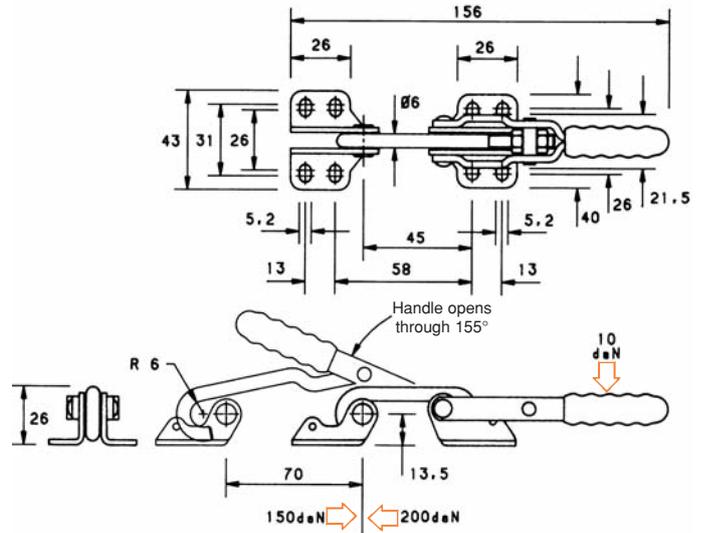
200 daN

**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

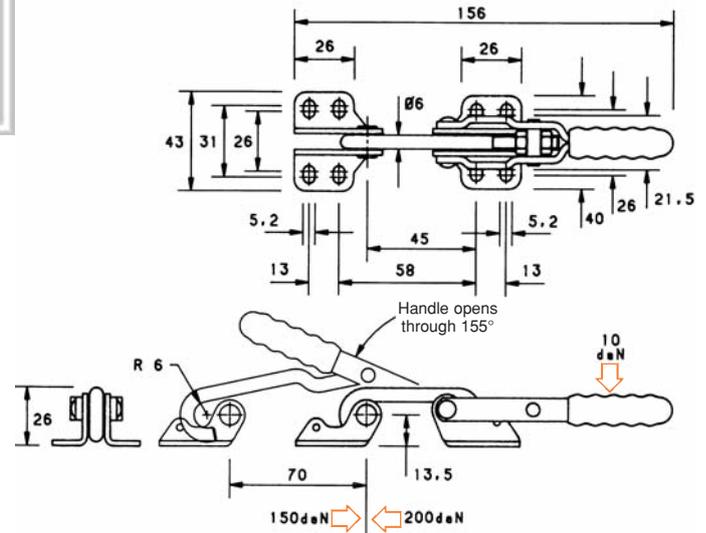
**Weight:**

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:**

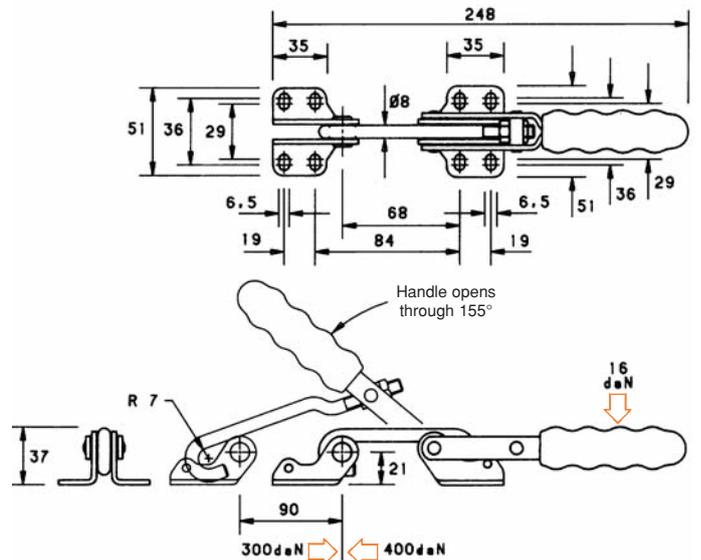
400 daN

**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

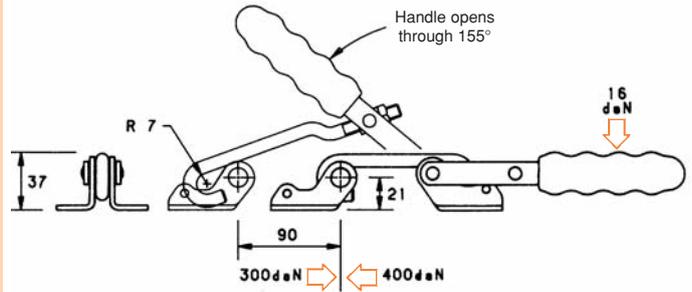
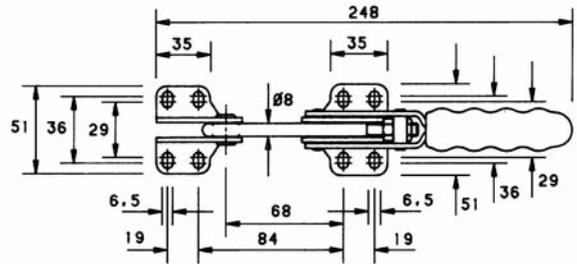
**Weight:**

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:**

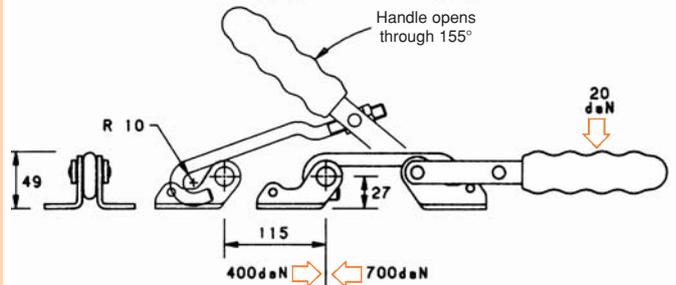
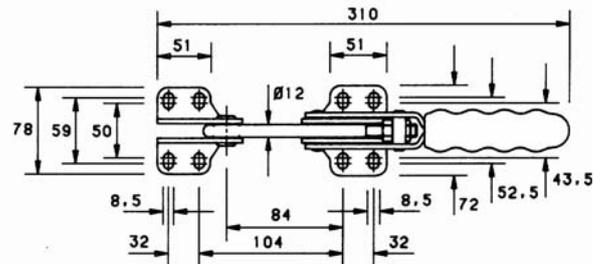
700 daN

**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

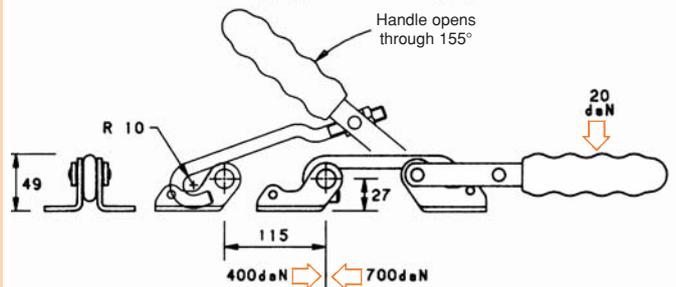
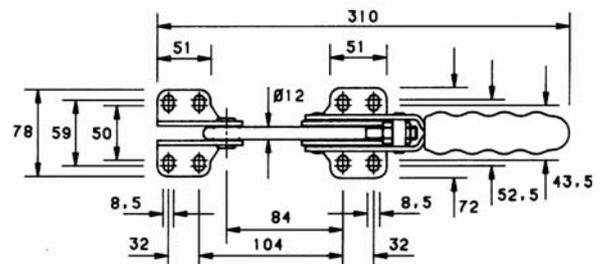
**Weight:**

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:**

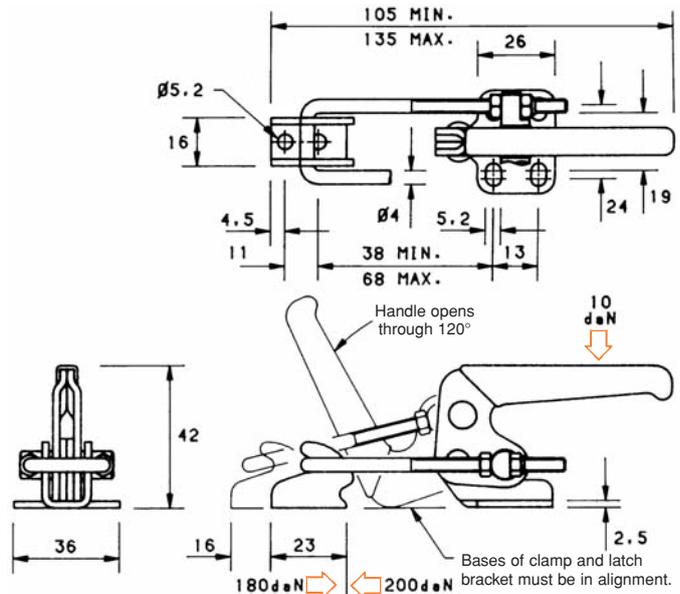
200 daN

**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

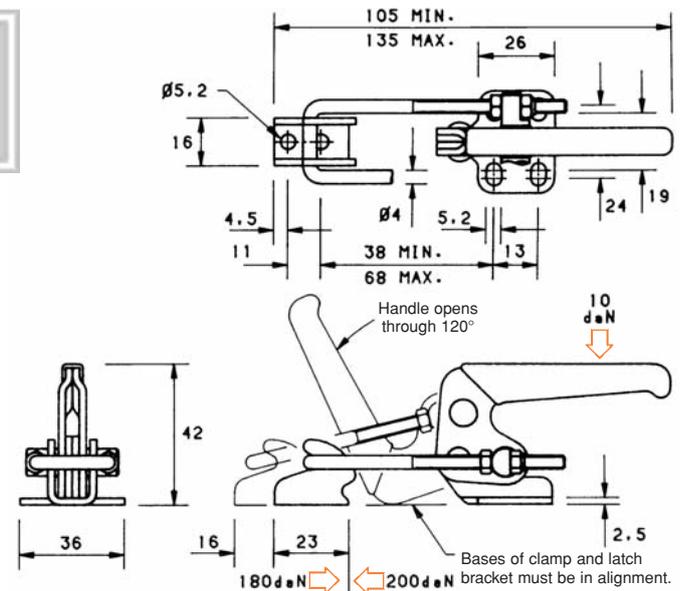
**Weight:**

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:**

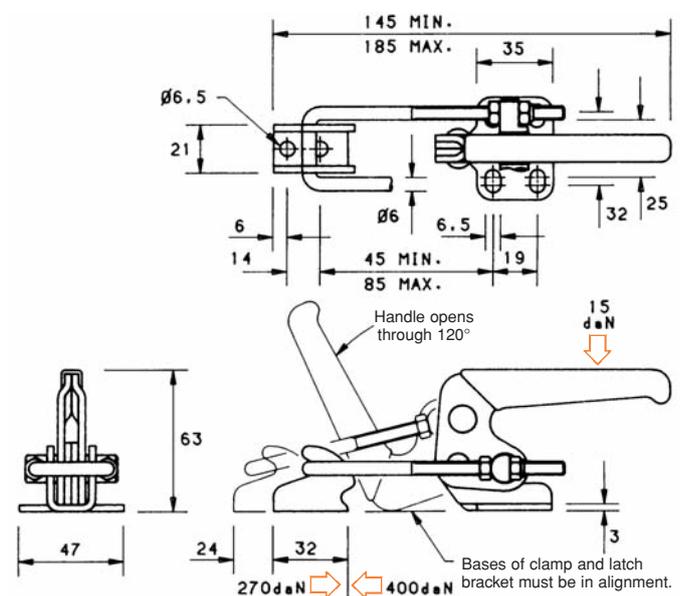
400 daN

**Weight:**

0.25 Kg

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

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



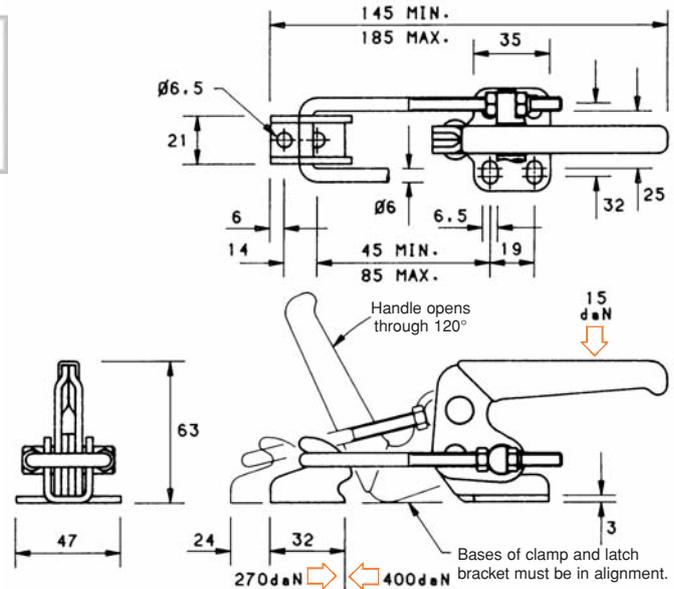
## LATCH CLAMPS

**HORIZONTAL**  
MODEL LU400HSS

**STAINLESS  
STEEL**



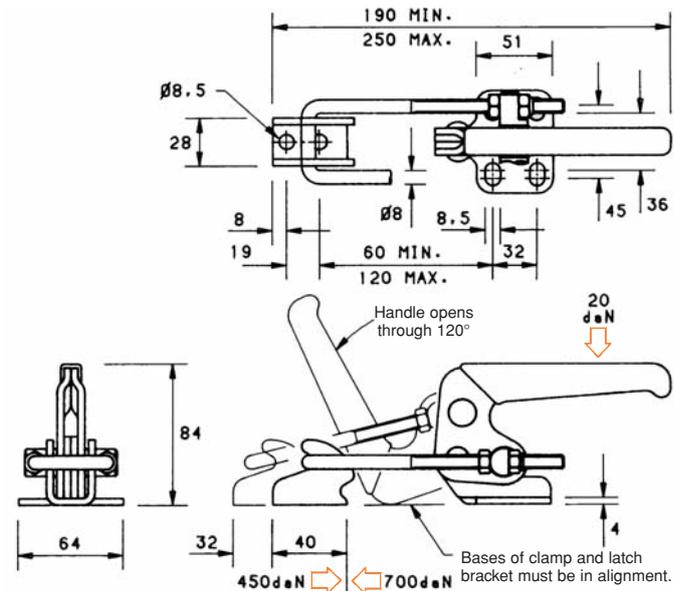
**Nominal Holding Force:**  
400 daN  
**Weight:**  
0.25 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
**Material:**  
BS 304 S15.  
See "Features and installation information" page for installation instructions.



**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.

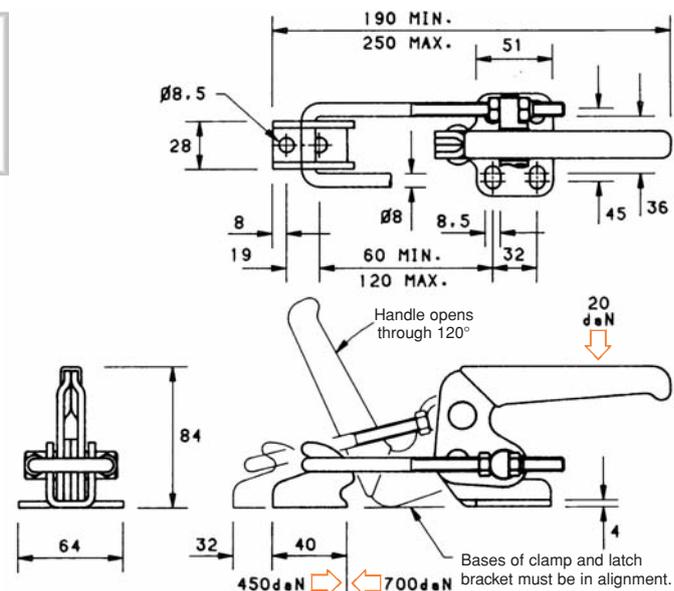


**HORIZONTAL**  
MODEL LU700HSS

**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.

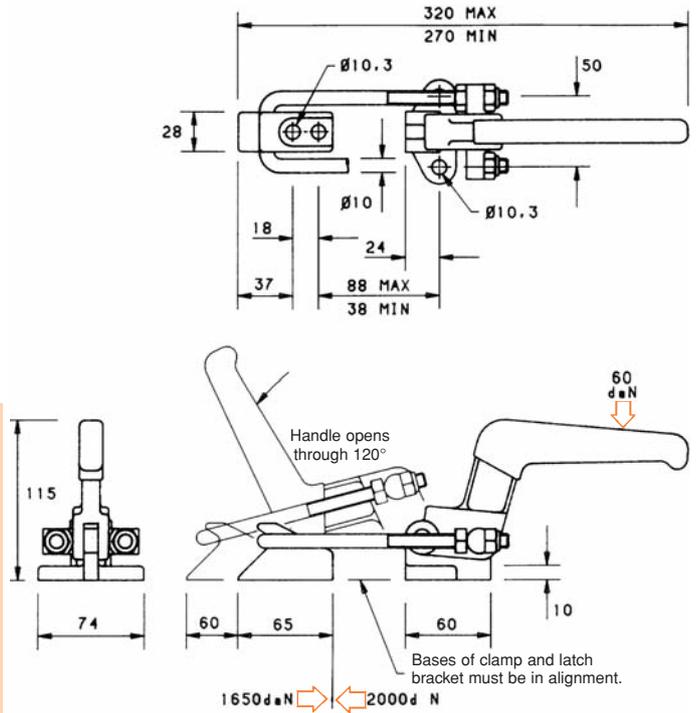


## LATCH CLAMPS

**HORIZONTAL**  
MODEL LU2000H



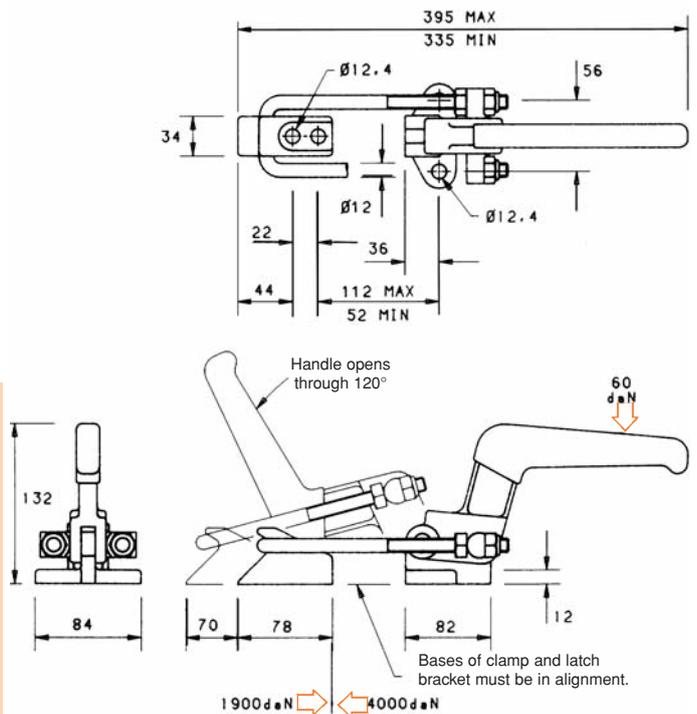
**Nominal Holding Force:**  
2000 daN  
**Weight:**  
1.40 Kg  
**Supplied complete with:**  
Latch Bracket as shown.  
See "Features and installation information" page for installation instructions.



**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.

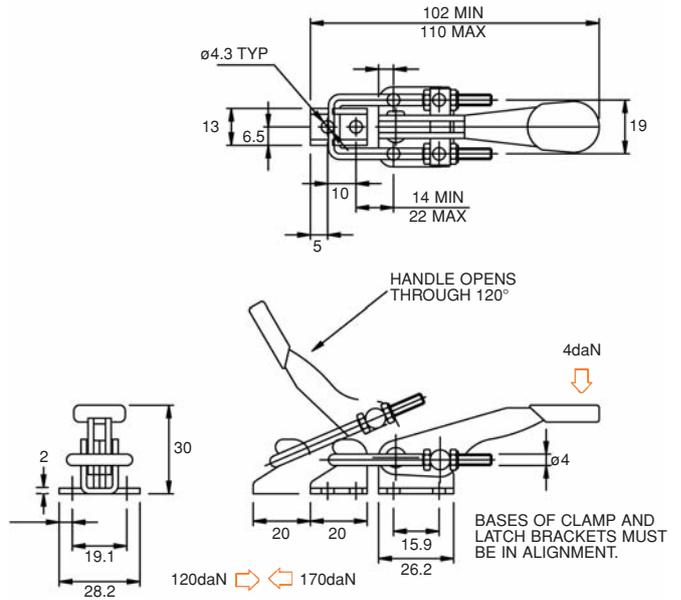


## LATCH CLAMPS

**HORIZONTAL**  
**MODEL LU323**



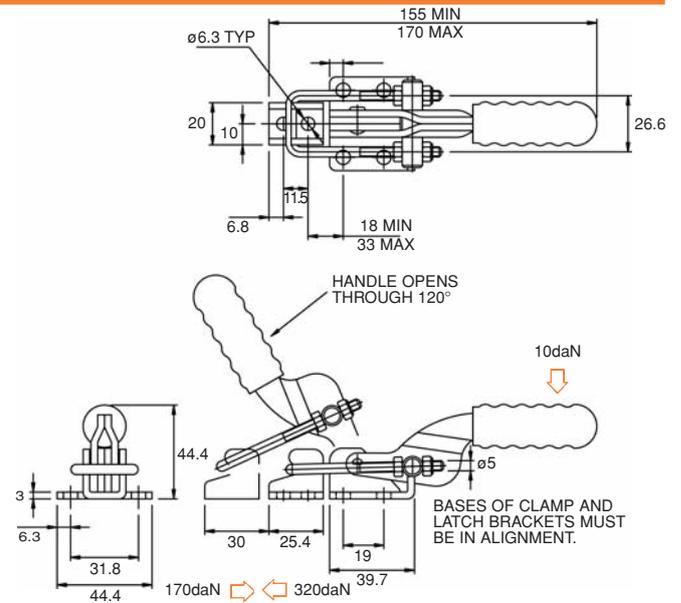
**Nominal Holding Force:**  
170 daN  
**Weight:**  
0.16 Kg  
**Supplied complete with:**  
Latch Bracket as shown.



**HORIZONTAL**  
**MODEL LU331**



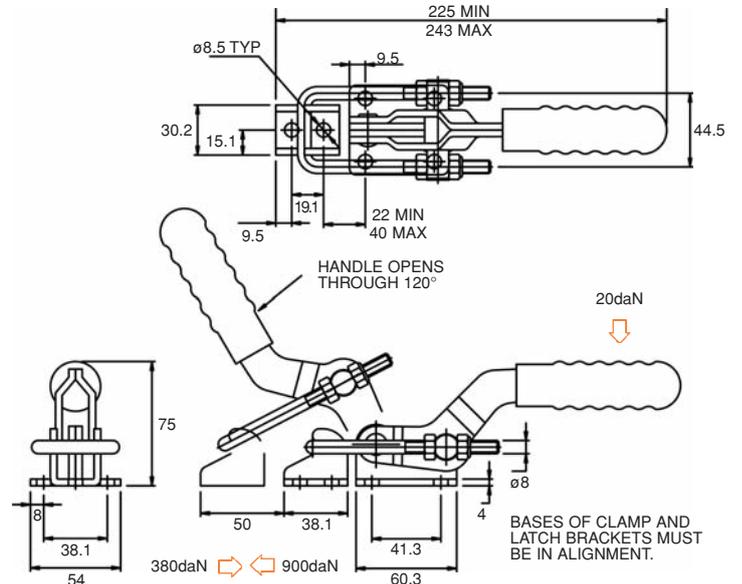
**Nominal Holding Force:**  
320 daN  
**Weight:**  
0.23 Kg  
**Supplied complete with:**  
Latch Bracket as shown.



**HORIZONTAL**  
**MODEL LU341**



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





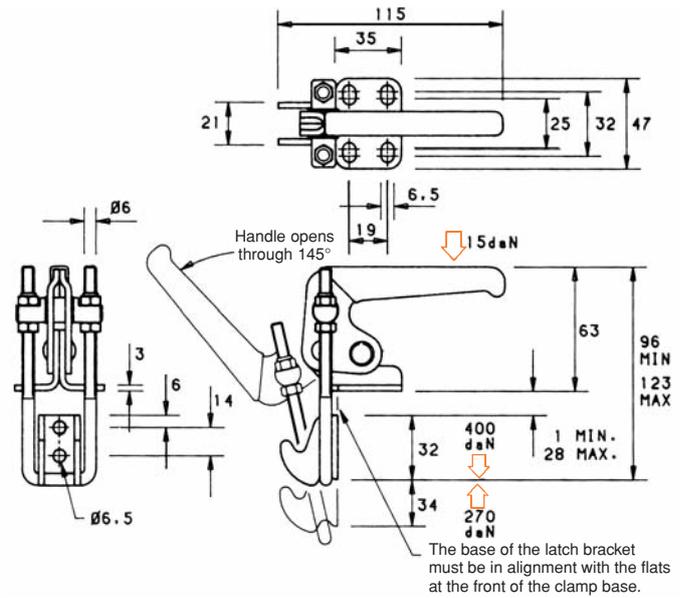
## LATCH CLAMPS

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.*



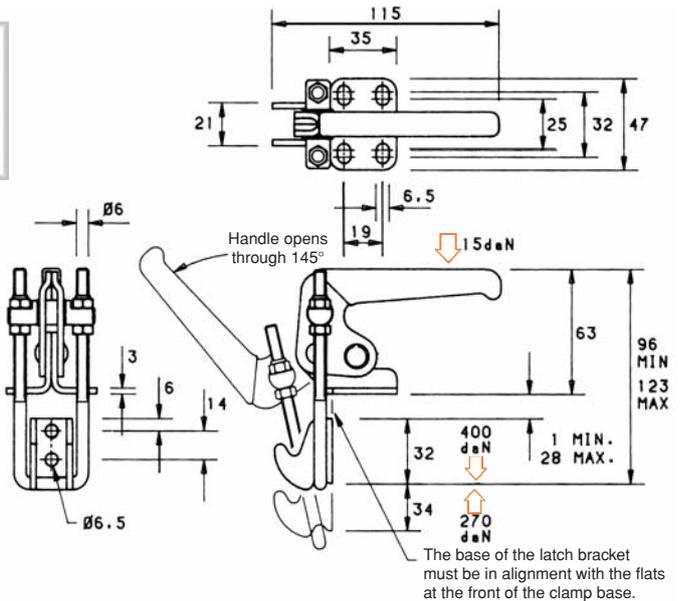
VERTICAL

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.*

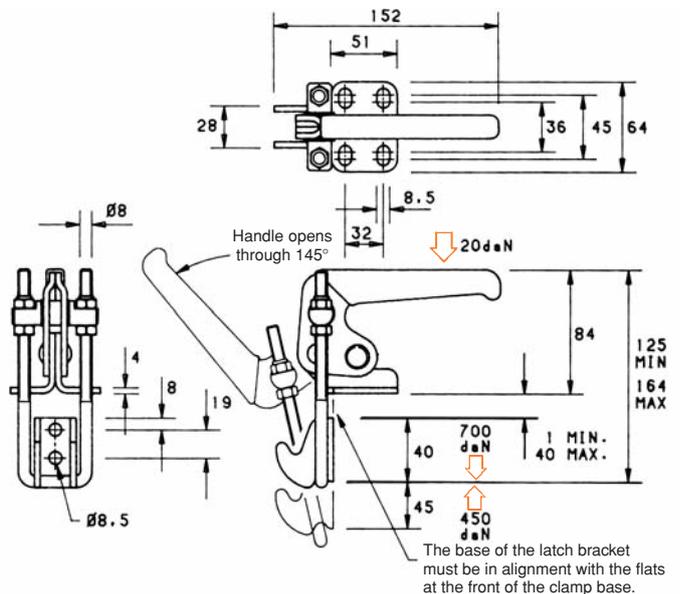


VERTICAL

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



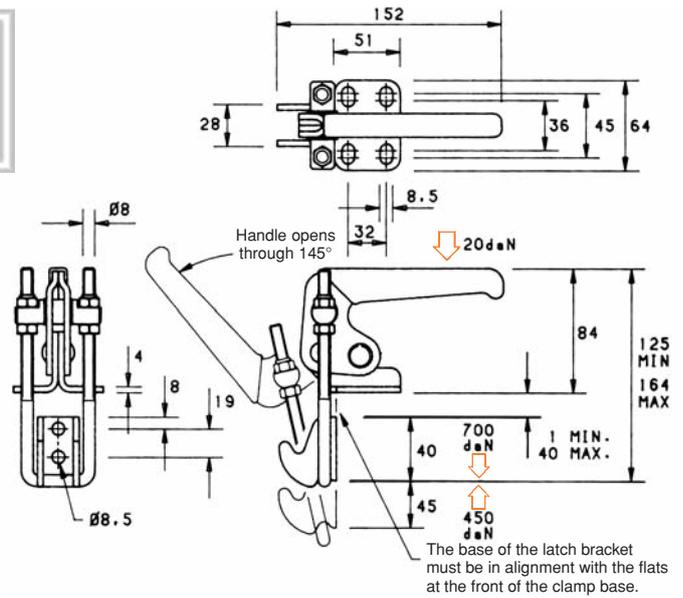
**Nominal Holding Force:**  
700 daN

**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.

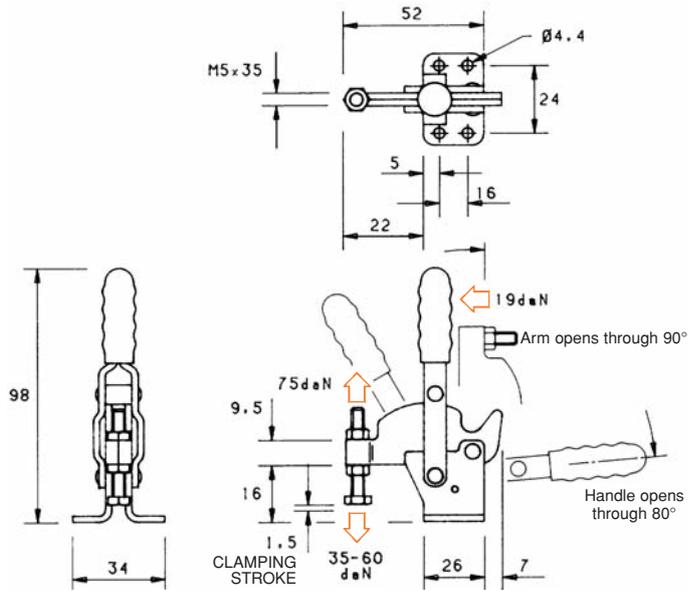
**Base:**  
Flanged.

**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.

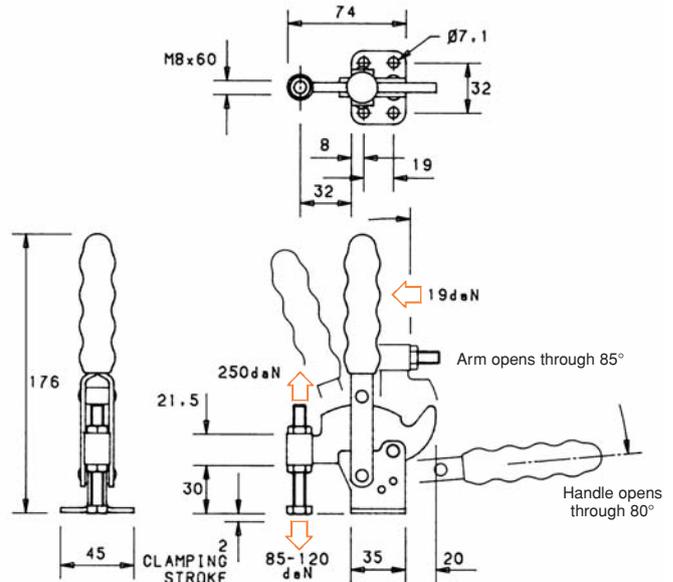
**Base:**  
Flanged.

**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.

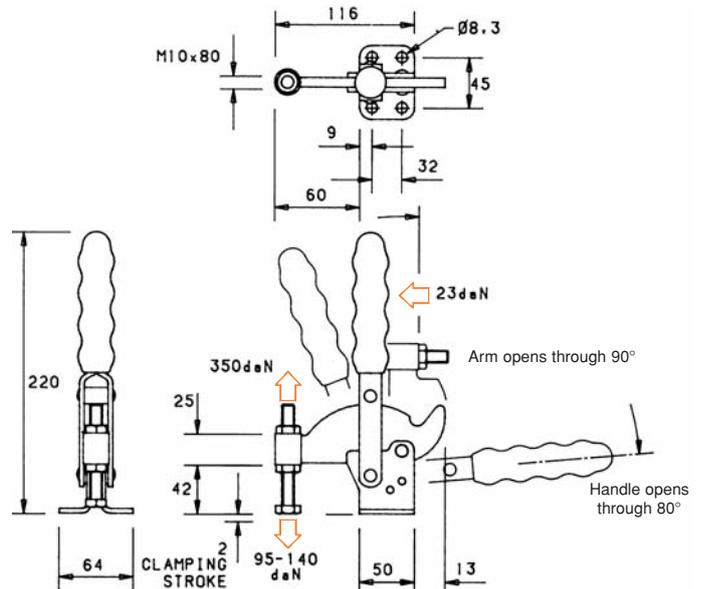
**Base:**  
Flanged.

**Nominal Holding Force:**  
350 daN

**Weight:**  
0.70 Kg

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

See "Accessories" for other items.





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

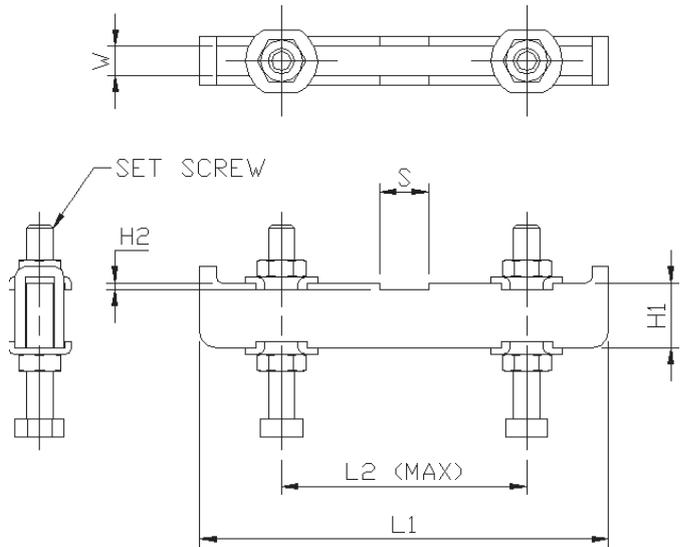
## CLAMPING ACCESSORIES

### 'T' BAR ASSEMBLIES

MODELS T250, T350, T450



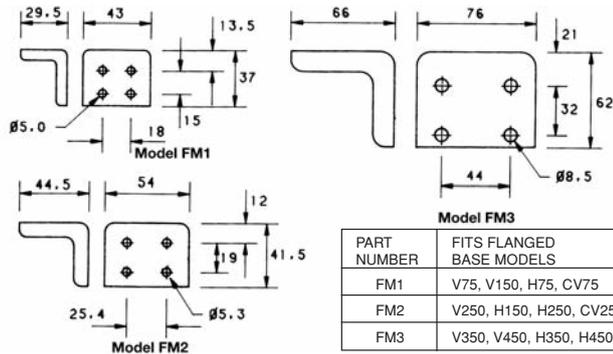
Neoprene tipped spindles, set screw covers or pads can also be used in conjunction with this 'T' Bar Assembly – see below.



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

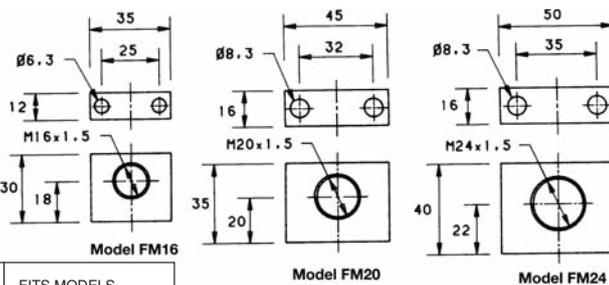
—VERTICAL AND HORIZONTAL CLAMPS



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

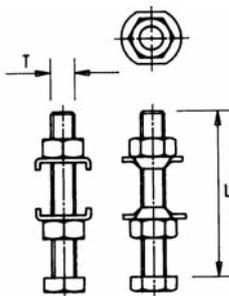
### MOUNTING BRACKETS

—NOSE MOUNTING PUSH-PULL CLAMPS



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

### SETSCREWS

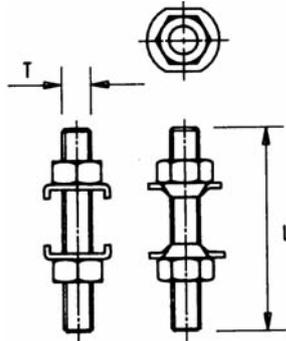


PART NUMBER	TH'D T	L	FITS MODELS
MB0520	M5	20	H50
MB0535	M5	35	V75, H75, V100, CV75, V75X
MB0650	M6	50	V150, V200, H150, V150X
MB0860	M8	60	V250, V300, CV250, H250, V250X
MB1080	M10	80	V350, H350, CV350
MB12100	M12	100	V450, V450X, H450, H700, VA700, VA1200
M16150	M16	150	V550, VA2400
MB0420	M4	20	P50** (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

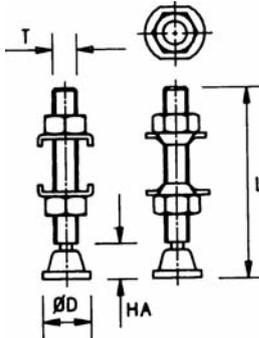
## CLAMPING ACCESSORIES

### 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 P600, P600L, P600X, P200
M1085	M10	85	V350, CV350, H350, P400, P450, P750, P1200, P1200L, P1200X
M12100	M12	100	V450, VA700, VA1200, H450, H700, V450X
M16150	M16	150	V550, VA2400

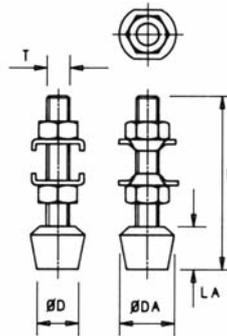
### SWIVEL FOOT SPINDLES



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, P350
MS0865	M8	65	20	13	V250, V300, CV250, P300, P550, P600, P600L, P600X, P200
MS1085	M10	85	20	15	V350, CV350, H350, P400, P450, P750, P1200, P1200L, P1200X
MS12100	M12	100	25	20	V450, VA700, VA1200, H45C, H700, V450X
MS16150	M16	150	45	30	V550, VA2400

### NEOPRENE TIPPED SPINDLES

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

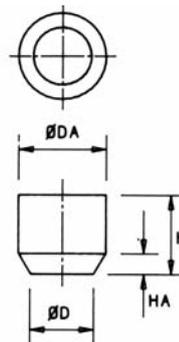


PART NUMBER	TH'D T	L	LA	ØD	ØDA	FITS CLAMP MODEL
NTS0432	M4	3	10	8	12	P50 (1)
NTS0538	M5	38	10	10	13	H50, V75, H75, V100, CV75, V75X
NTS0645	M6	45	13	11	16	V150, V200, H150, P100, P250, P350
NTS0865	M8	63	19	12	17	V250, V300, CV250, P200, P300, P550, P600, P600L, P600X
NTS1085	M10	86	20	22	27	V350, CV350,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

(1) NO SLIDERS, ONE NUT ONLY

### NEOPRENE SETSCREW COVERS

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

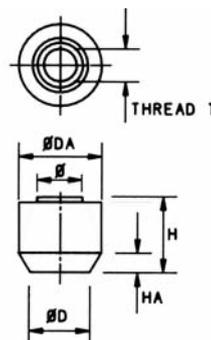


MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20 +70

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°



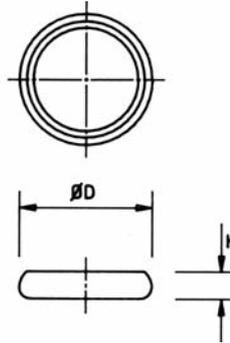
MATERIAL: NEOPRENE  
HARDNESS: 85 SHORE A  
OPERATING TEMP: -20 +70

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

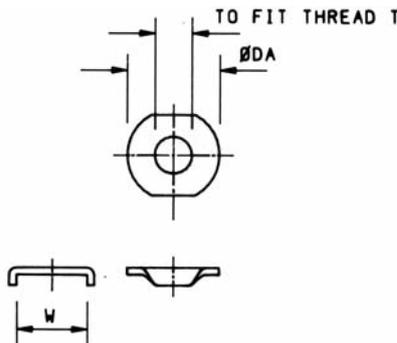
TO FIT SWIVEL FOOT SPINDLES



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

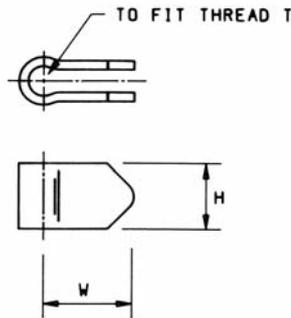
### FLANGED WASHERS



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

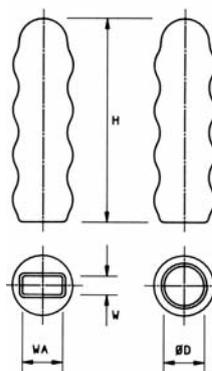
- TO FIT SPINDLES AND SETSCREWS



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

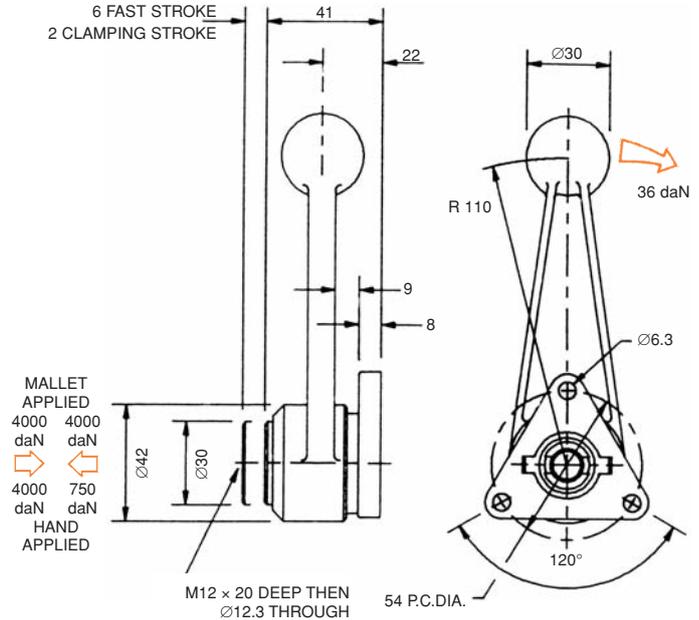
### CAM RAM CLAMPS

MODELS **CR4000** (CLOCKWISE)

**CR4000A** (ANTI-CLOCKWISE)



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



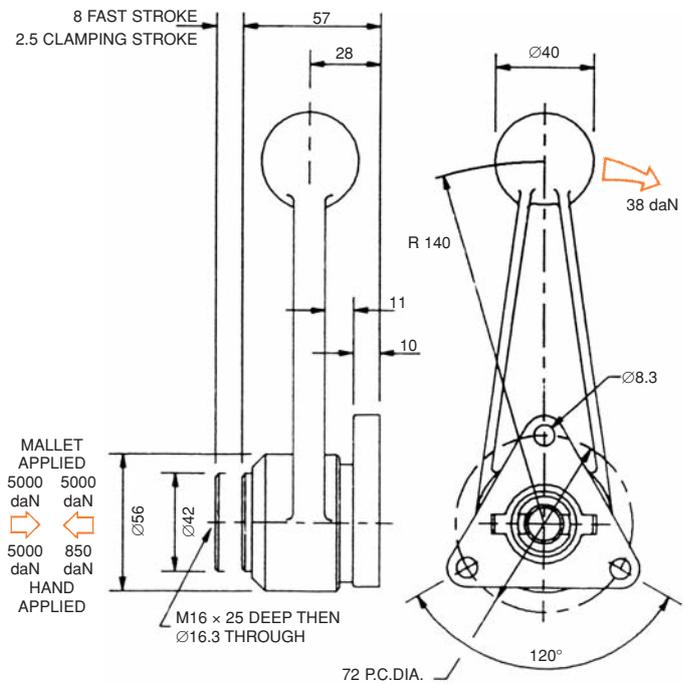
### CAM RAM CLAMPS

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)

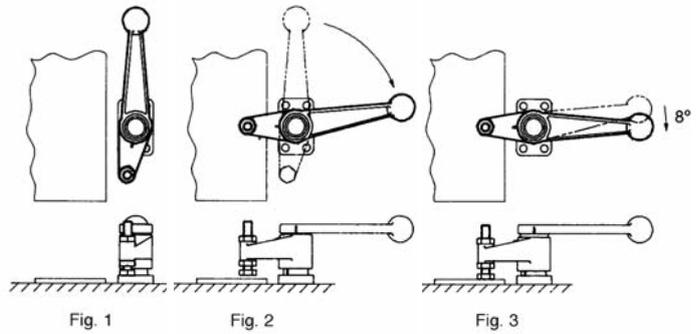
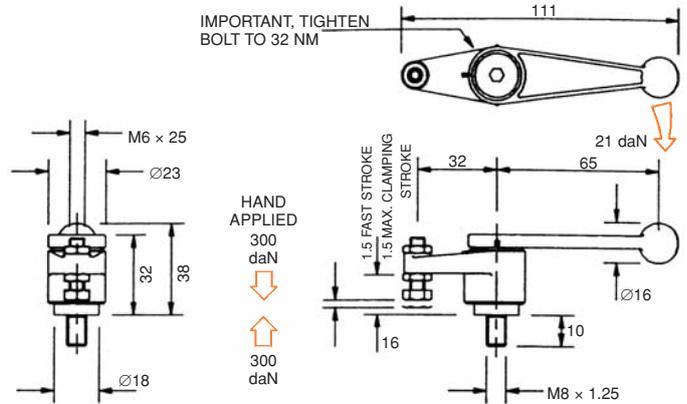
**CS300A** (ANTI-CLOCKWISE)



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

**Weight:**  
0.20 Kg

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



### CAM SWING CLAMPS

MODELS **CS800** (CLOCKWISE)

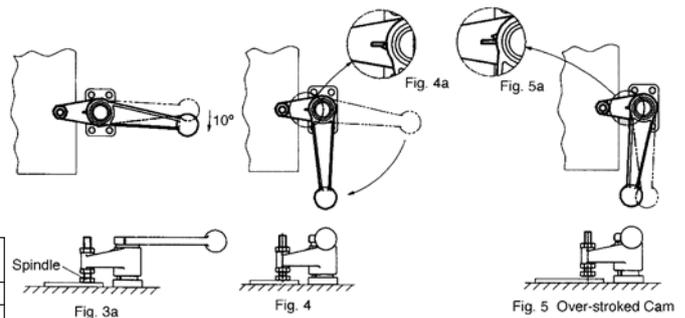
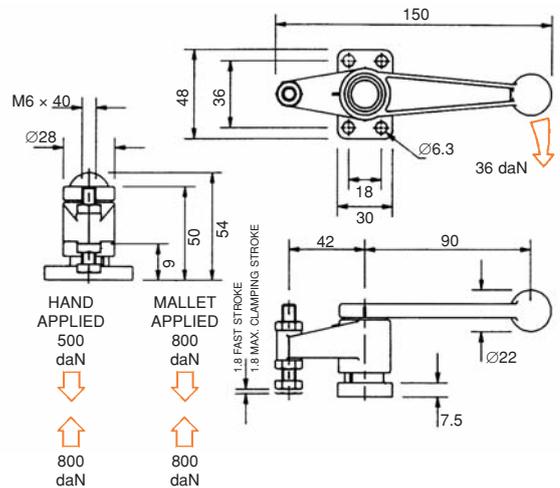
**CS800A** (ANTI-CLOCKWISE)



**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)

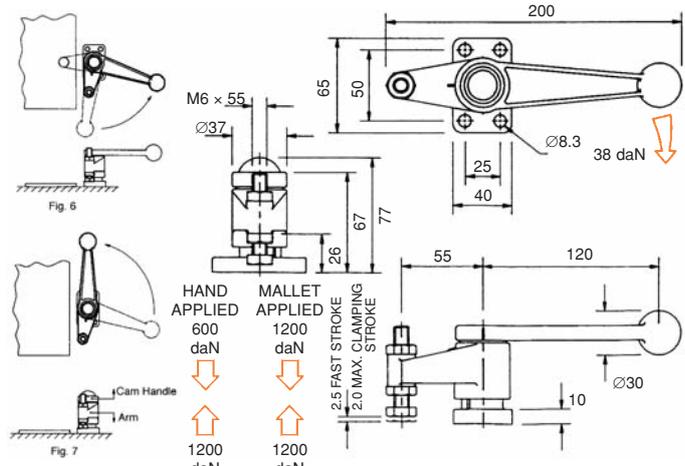
**CS1200A** (ANTI-CLOCKWISE)



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

**Weight:**  
0.90 Kg

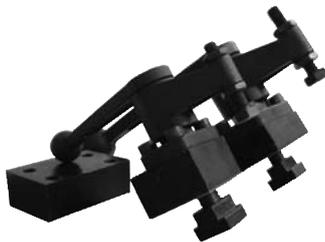
**Supplied complete with:**  
MB1055 Set screw & nuts.



#### TECHNICAL INFORMATION

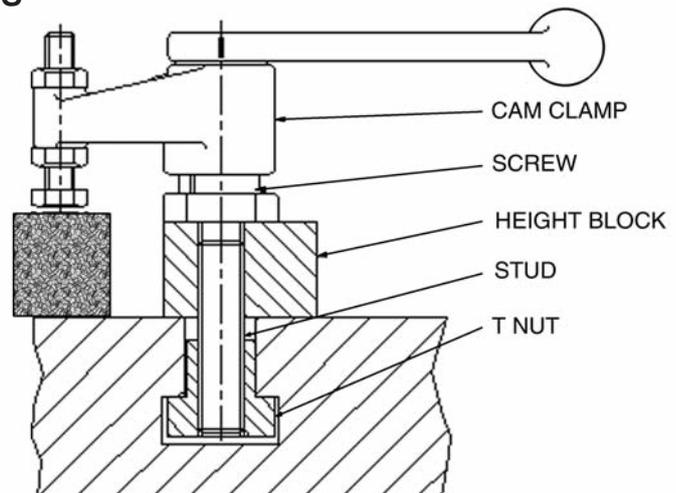
Clamp No.	Applied Handle Force (Hand Push)	Clamping Force	Clamping Force using Mallet Blows	Daylight Travel	Clamping Travel
CS1200	38 daN	600 daN	1200 daN	2.5mm	2.0mm
CS1200A	38 daN	600 daN	1200 daN	2.5mm	2.0mm

### CAM SWING HEIGHT BLOCK ASSEMBLIES



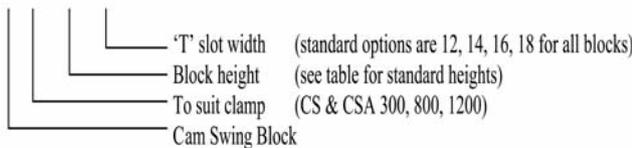
The height block assembly provides the user with a convenient method of setting the height of the Cam Swing Clamp when in operation. The act of locking the clamp onto the work piece also locks the block into position along the Tee Slot.

**Note:**  
Clamp ordered separately

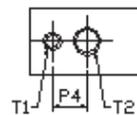


Example Part Code:

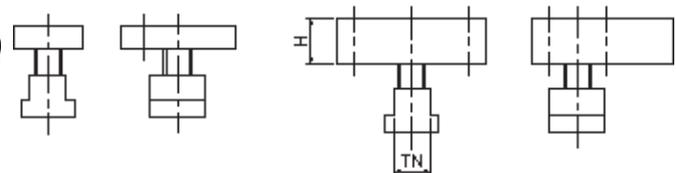
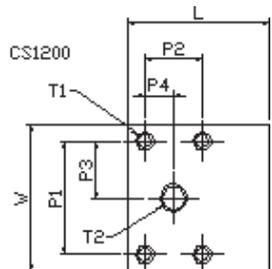
CSB1200-20-TN12



CS300 BLOCK



CS800 & CS1200 BLOCKS

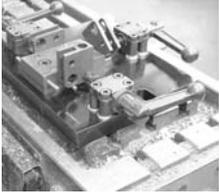


To Suit Clamp	H	W	L	TN	P1	P2	P3	P4	T1	T2	Screw x4
CS300	10, 20, 30, 40, 50	30	50	12, 14, 16, 18	N/A	N/A	N/A	15	M8x1.25	M12x1.25	N/A
CS800	12, 25, 40, 50	48	40	12, 14, 16, 18	36	18	18	9	M6x1.0	M12x1.25	M6x18
CS1200	20, 40, 60, 76	65	62	12, 14, 16, 18	50	25	25	12.5	M8x1.25	M12x1.25	M8x25

## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

### CAM PUSH CLAMPS

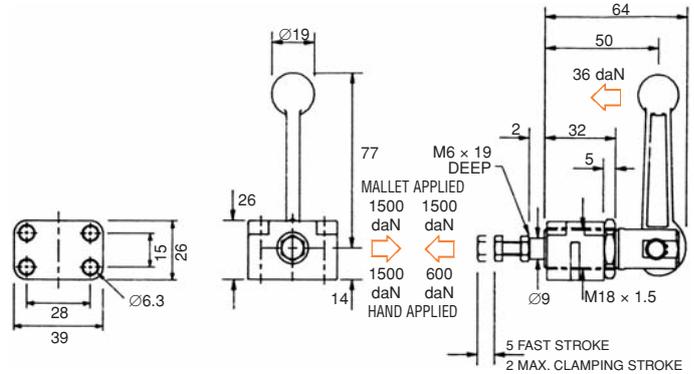
MODELS CP1500



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

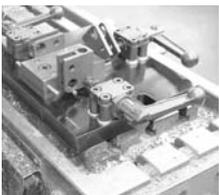
**Weight:**  
0.27 Kg

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



### CAM PUSH CLAMPS

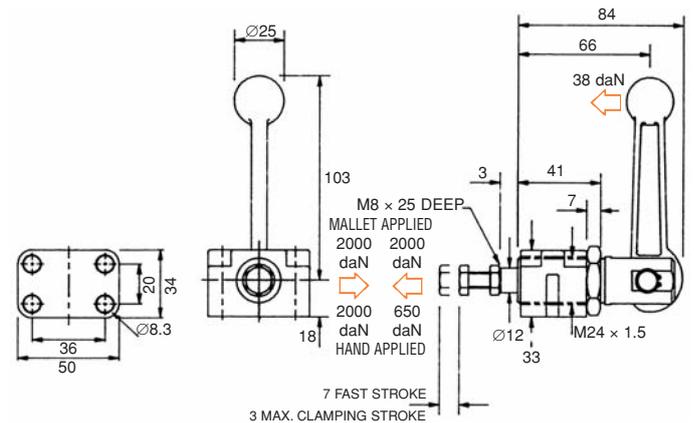
MODELS CP2000



**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

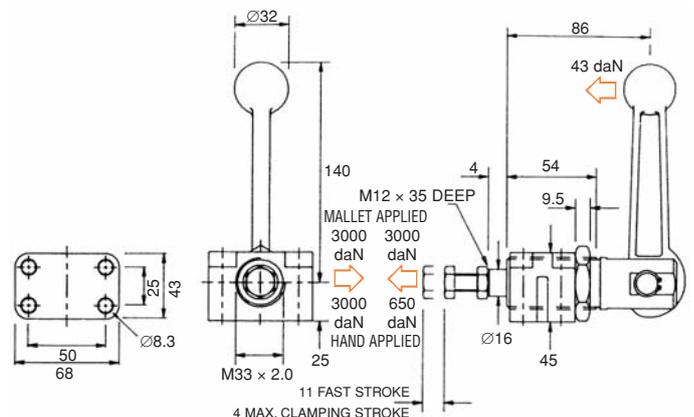
MODELS CP3000



**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.

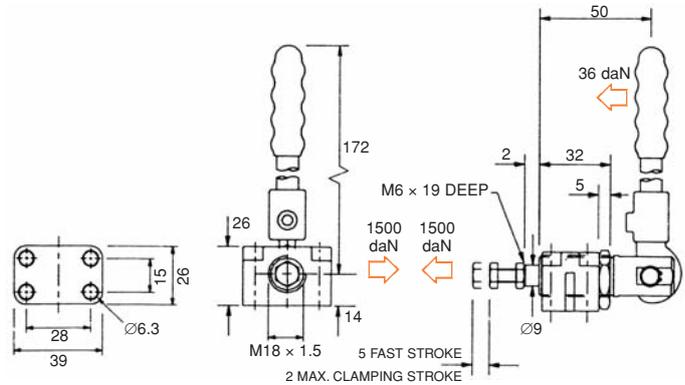


## MAGNA FORCE HEAVY-DUTY CAM CLAMPS

### CAM PUSH CLAMPS MODELS CP1500L



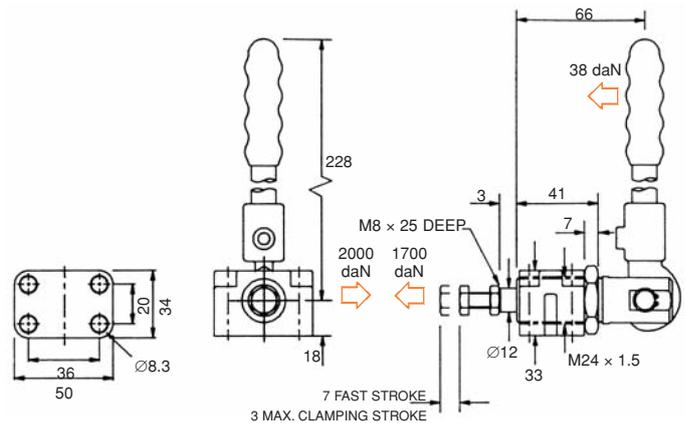
**Operating clamping force:**  
1500 daN  
**Weight:**  
0.35 Kg  
**Supplied complete with:**  
MB0625 Set screw & nuts.  
CMB18 Mounting base & locknuts.



### 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



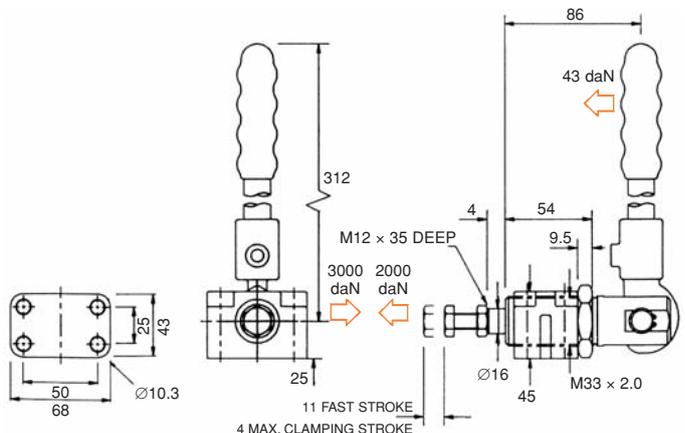
#### TECHNICAL INFORMATION

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

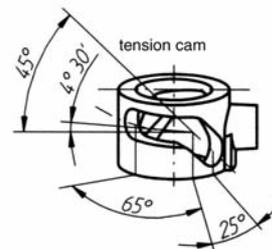
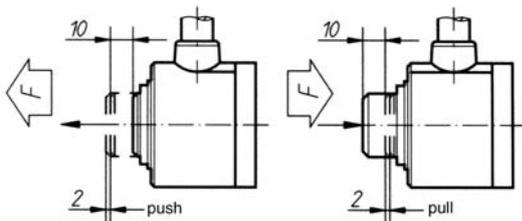
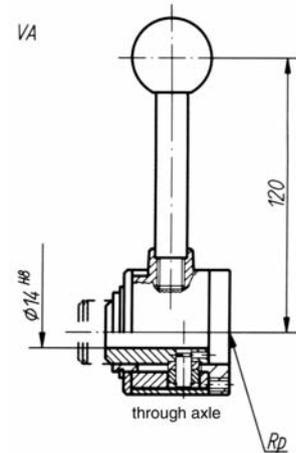
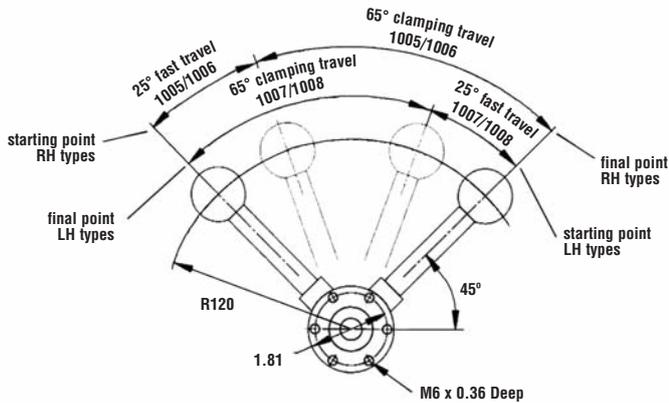
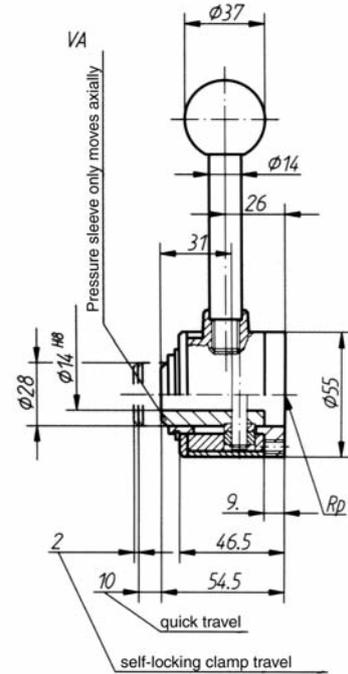
### CAM PUSH/CAM PULL CLAMPS



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.

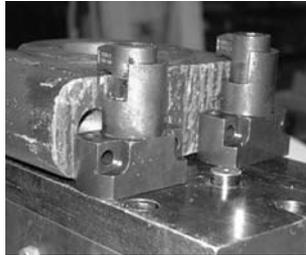
- **Specification:**

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

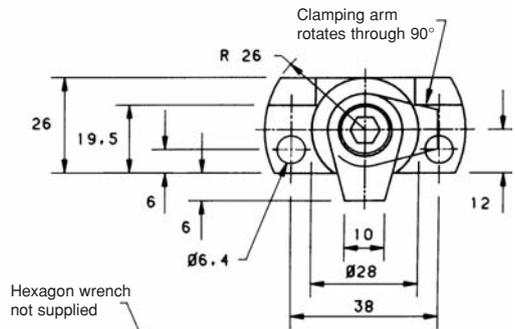
MODEL 1016-08



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

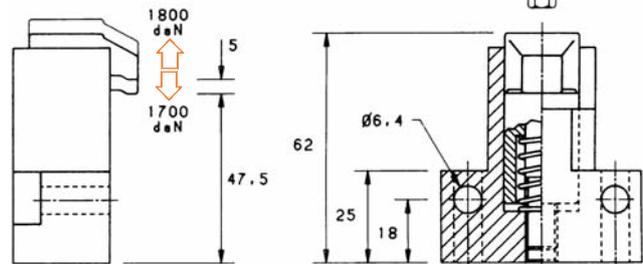
**Nominal Holding Force:**  
1800 daN

**Weight:**  
0.33 Kg



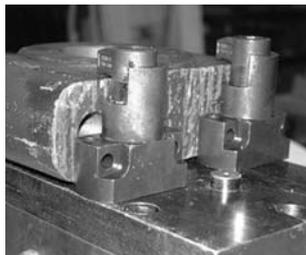
Hexagon wrench not supplied

30Nm MAX



### SWING CLAMP ASSEMBLIES

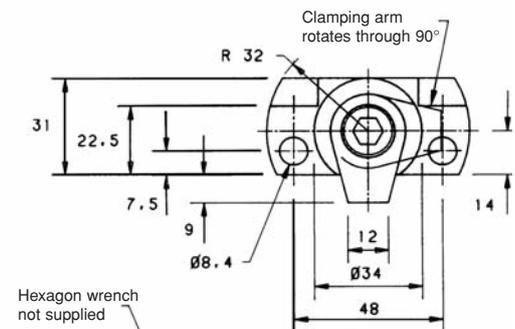
MODEL 1016-10



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

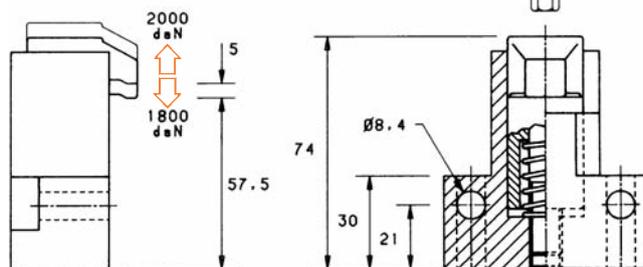
**Nominal Holding Force:**  
2000 daN

**Weight:**  
0.56 Kg



Hexagon wrench not supplied

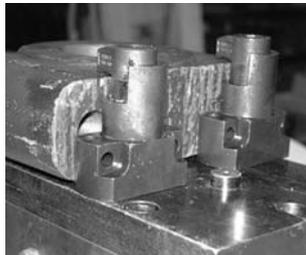
50Nm MAX



## HEAVY-DUTY SWING CLAMPS

### SWING CLAMP ASSEMBLIES

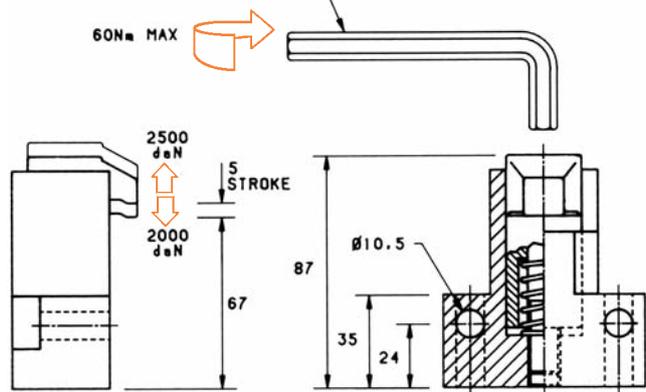
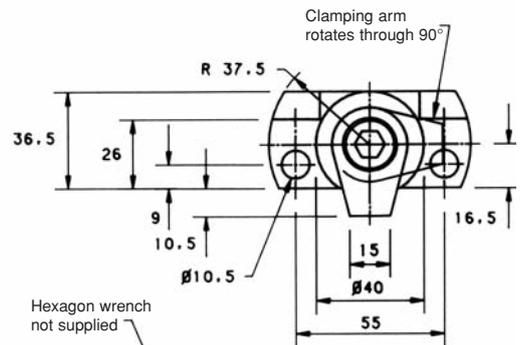
MODEL 1016-12



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

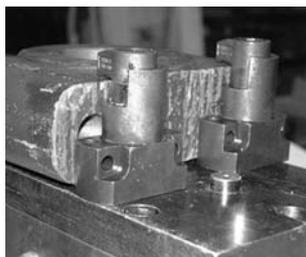
**Nominal Holding Force:**  
2500 daN

**Weight:**  
0.81 Kg



### SWING CLAMP ASSEMBLIES

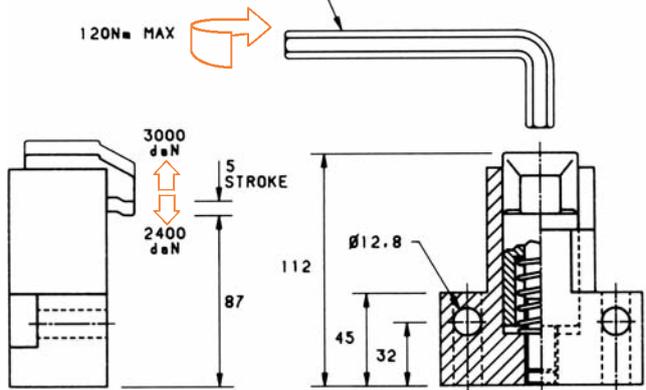
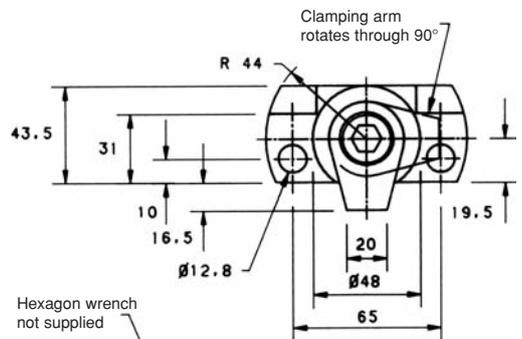
MODEL 1016-16



- 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

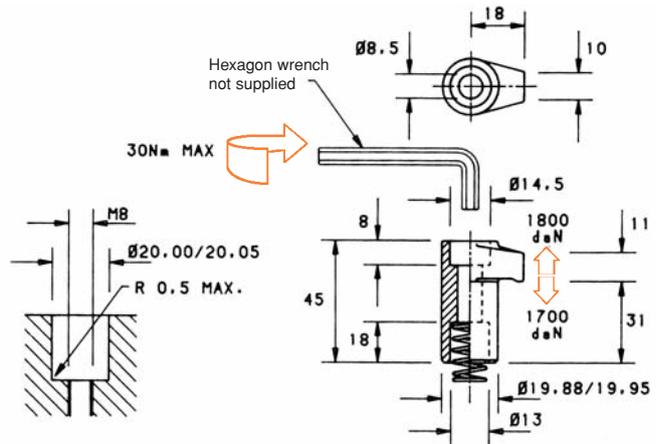
MODEL 1015-08



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

**Nominal Holding Force:**  
1800 daN

**Weight:**  
0.08 Kg



### SWING CLAMPS

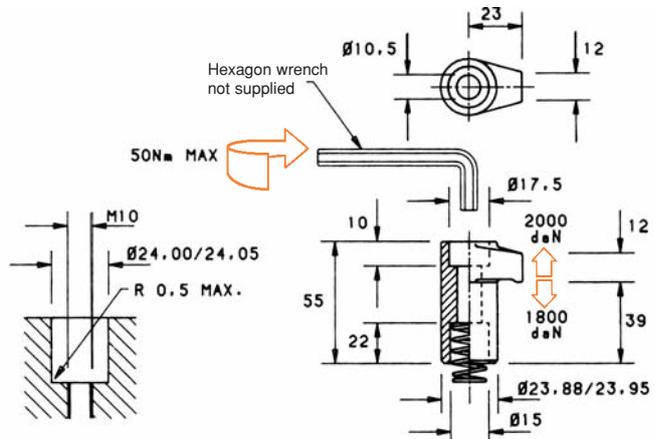
MODEL 1015-10



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

**Nominal Holding Force:**  
2000 daN

**Weight:**  
0.15 Kg



### SWING CLAMPS

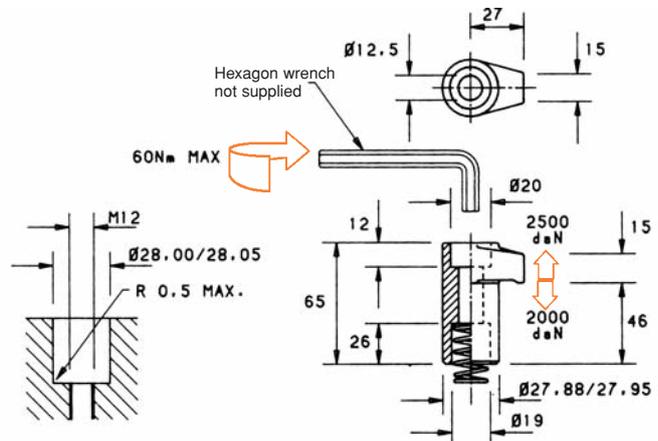
MODEL 1015-12



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

**Nominal Holding Force:**  
2500 daN

**Weight:**  
0.23 Kg



### SWING CLAMPS

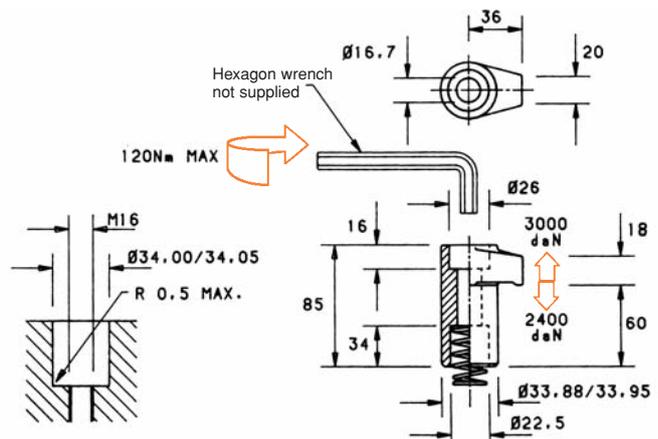
MODEL 1015-16



- 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.

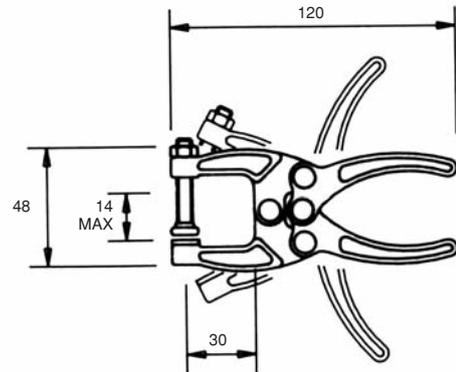
## TOGGLE PLIERS AND CLIP CLAMPS

### 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 ↑



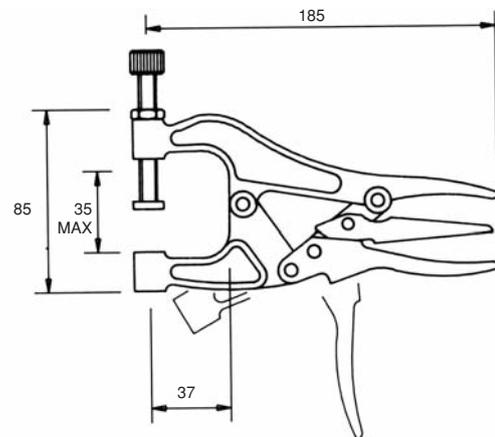
20 daN ↓  
20 daN ↑

### 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 ↑



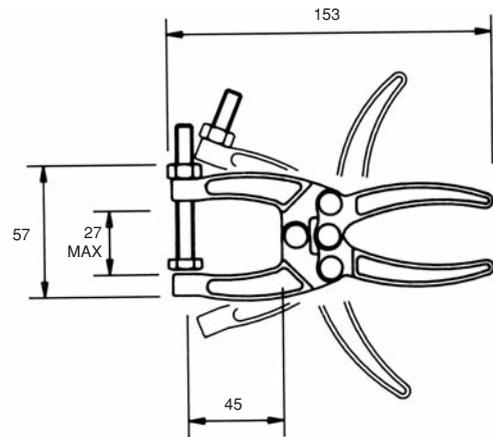
20 daN ↓  
20 daN ↑

### 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 ↑



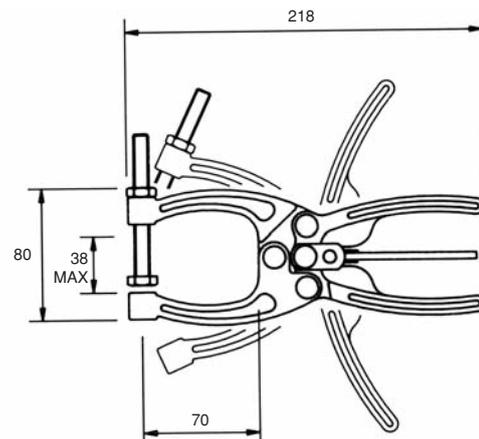
20 daN ↓  
20 daN ↑

### 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 ↑



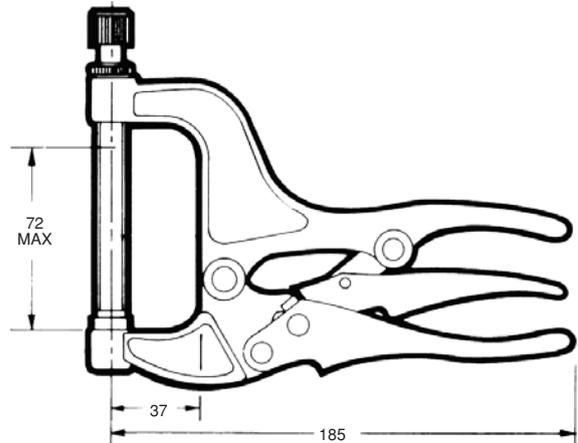
25 daN ↓  
25 daN ↑

## TOGGLE PLIERS AND CLIP CLAMPS

### TOGGLE PLIERS MODEL P2



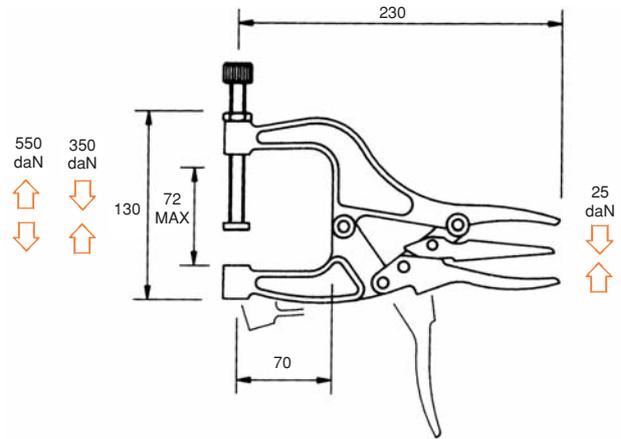
**Spindle:**  
Steel copper plated.  
**Nominal Holding Force:**  
1000 daN  
**Weight:**  
0.65 kg



### TOGGLE PLIERS MODEL P3



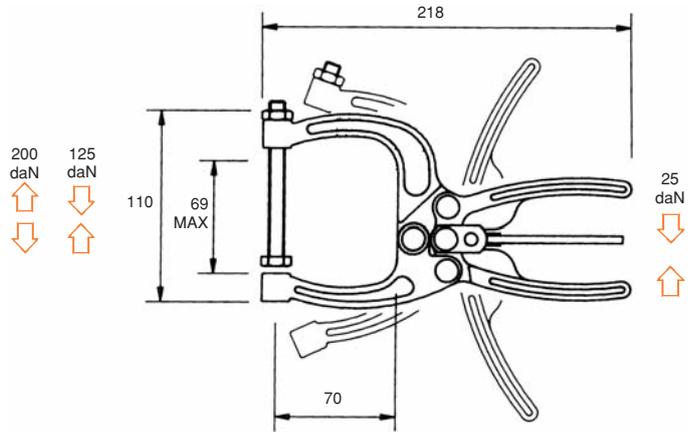
**Spindle:**  
Steel copper plated.  
**Nominal Holding Force:**  
550 daN  
**Weight:**  
0.80 Kg



### TOGGLE PLIERS MODEL P3A



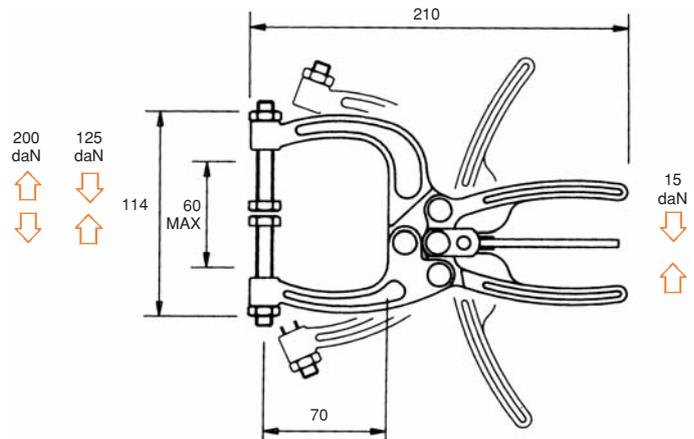
**Spindle:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.65 Kg



### TOGGLE PLIERS MODEL P3B



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

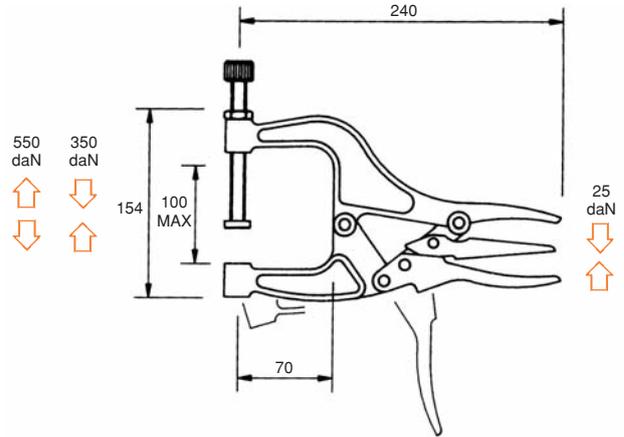


## TOGGLE PLIERS AND CLIP CLAMPS

### TOGGLE PLIERS MODEL P4



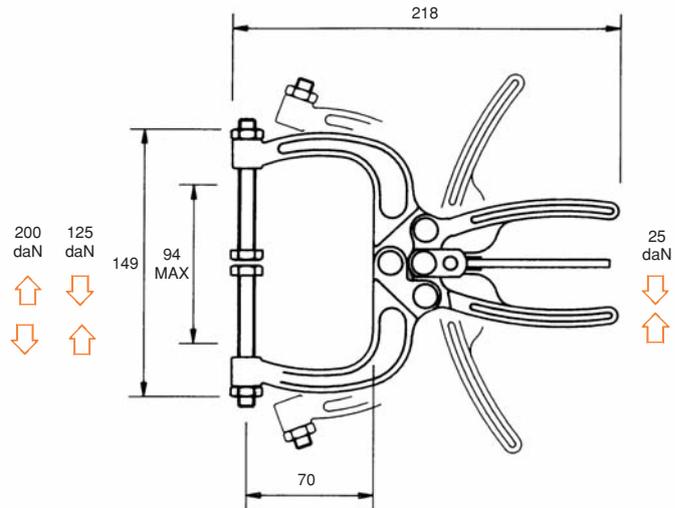
**Spindle:**  
Steel zinc plated.  
**Nominal Holding Force:**  
200 daN  
**Weight:**  
0.75 Kg



### 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.

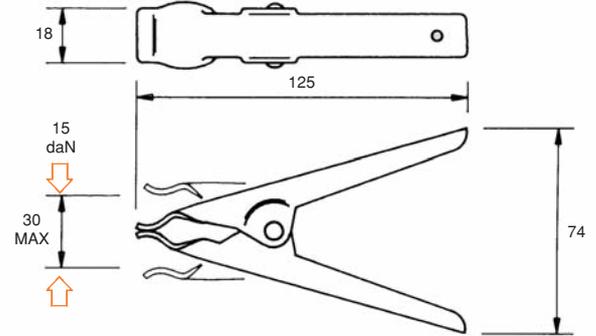
## TOGGLE PLIERS AND CLIP CLAMPS

### CLIP CLAMPS MODEL CC510



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

6 daN  
↓  
↑

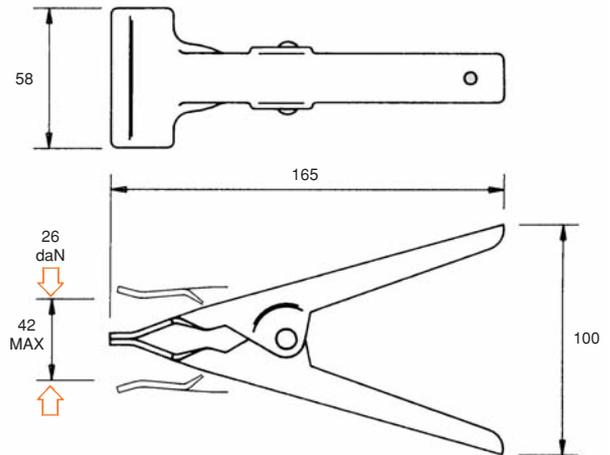


### CLIP CLAMPS MODEL CC610



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

15 daN  
↓  
↑

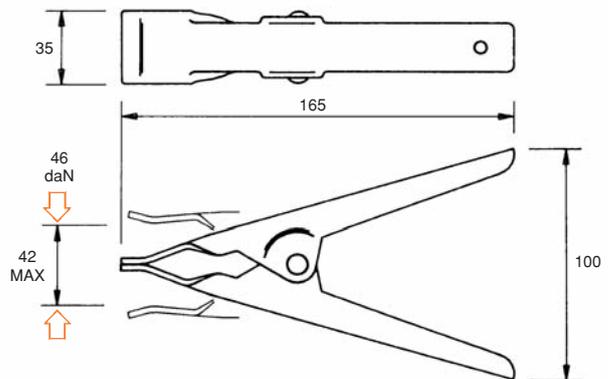


### CLIP CLAMPS MODEL CC701



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

25 daN  
↓  
↑





**CLAMP LEVERS**

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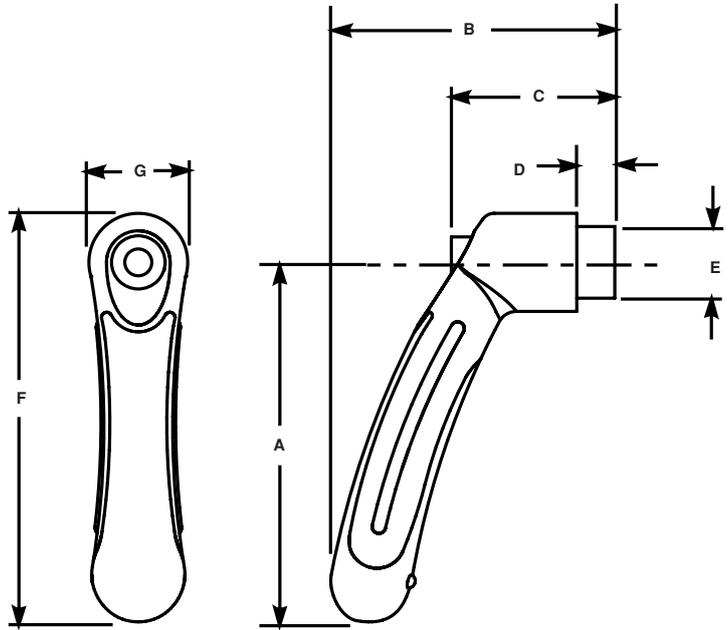
## Soft Touch - Clamp levers



### 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.



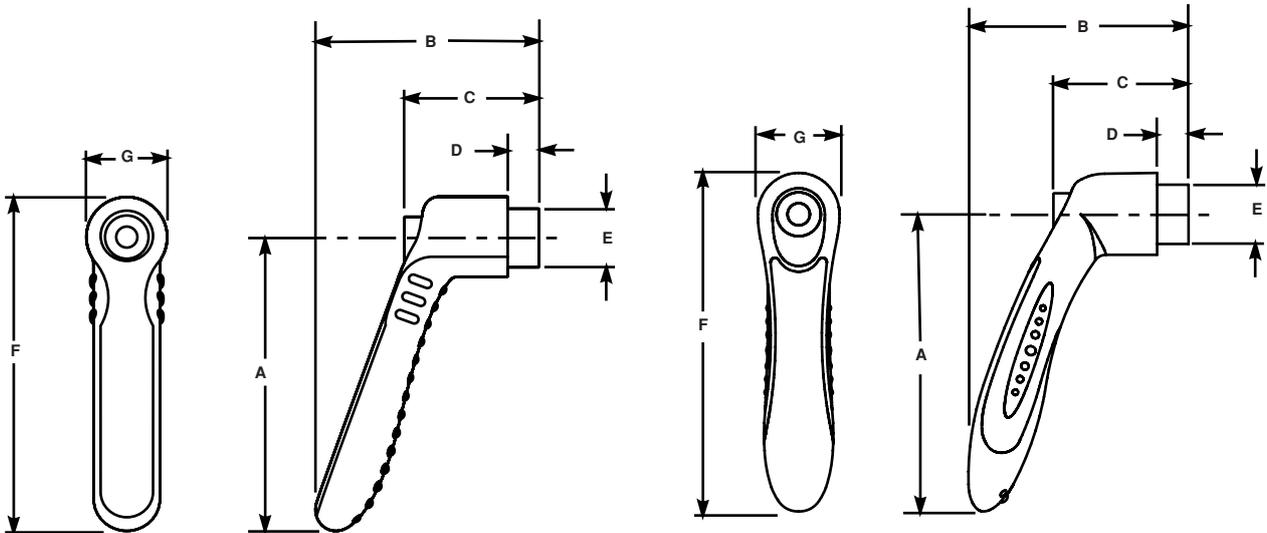
### Dimensions in (mm)

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

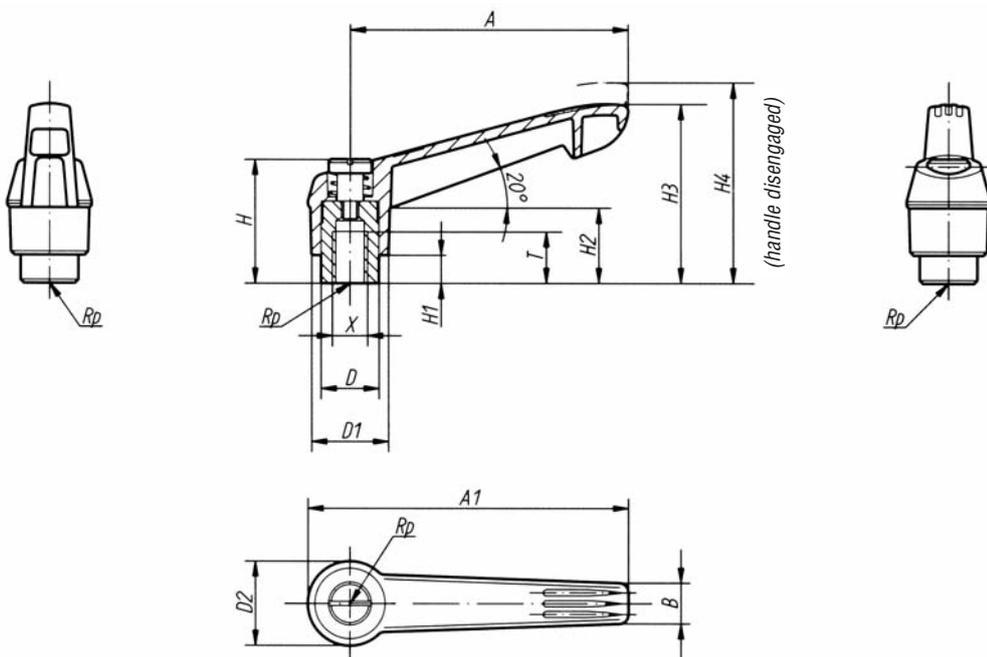
**Surface finish:**

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. 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 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

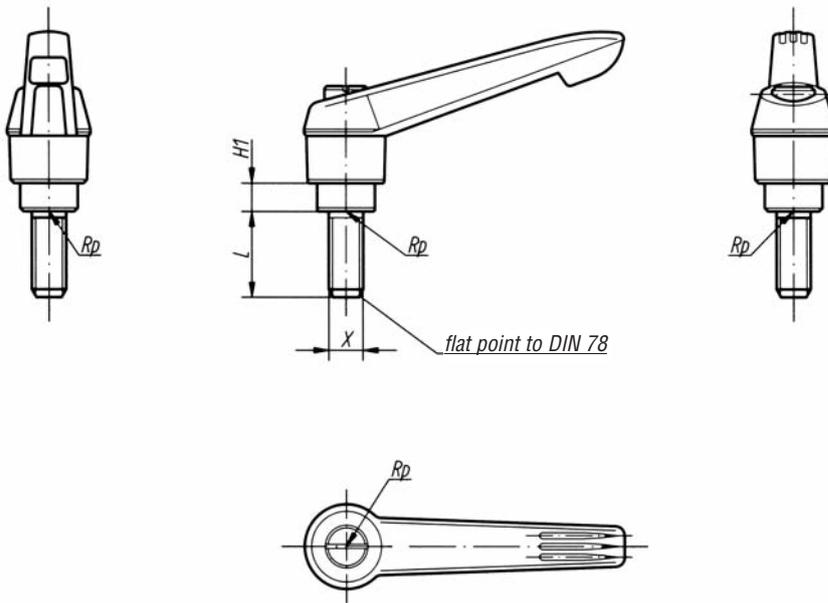
**Surface finish:**

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. black satin finish	Order No. orange	Size	External thread 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:**

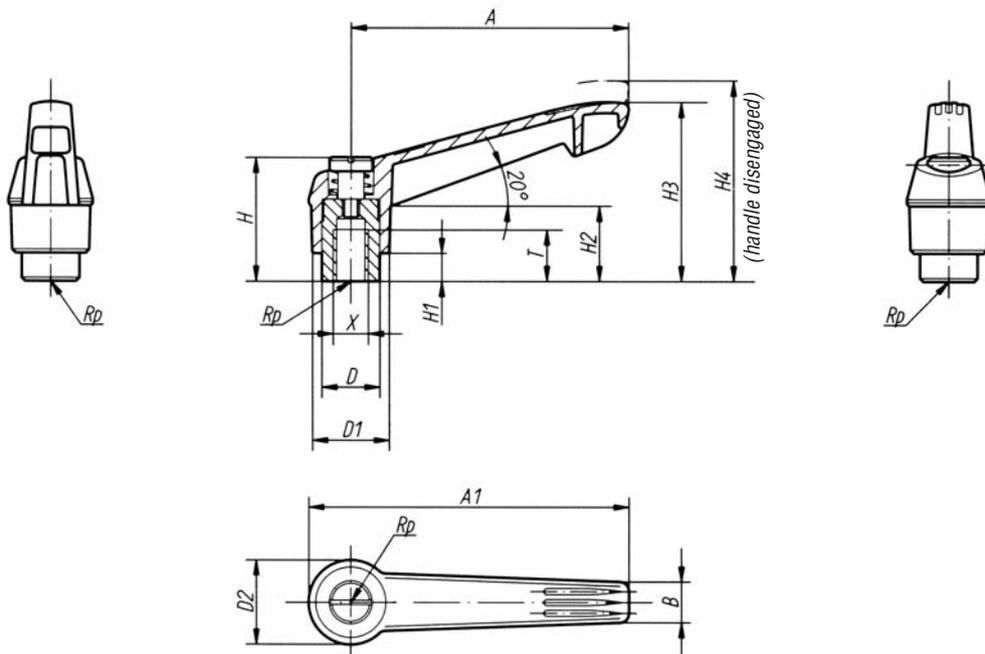
Handle plastic-coated, steel parts natural finish

**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:**

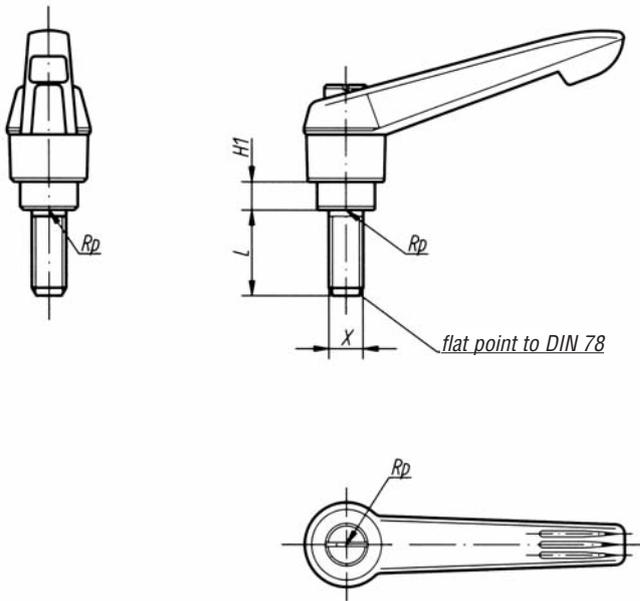
Handle plastic-coated, steel parts natural finish

**Note:**

Standard colours are:  
black satin finish, orange RAL 2004

Other colours available on request.

Other materials, surface finishes, special versions, etc. are available.



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### Clamp Levers with external thread, steel parts in stainless steel

Order No. black satin finish	Order No. orange	Size	External thread 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:**

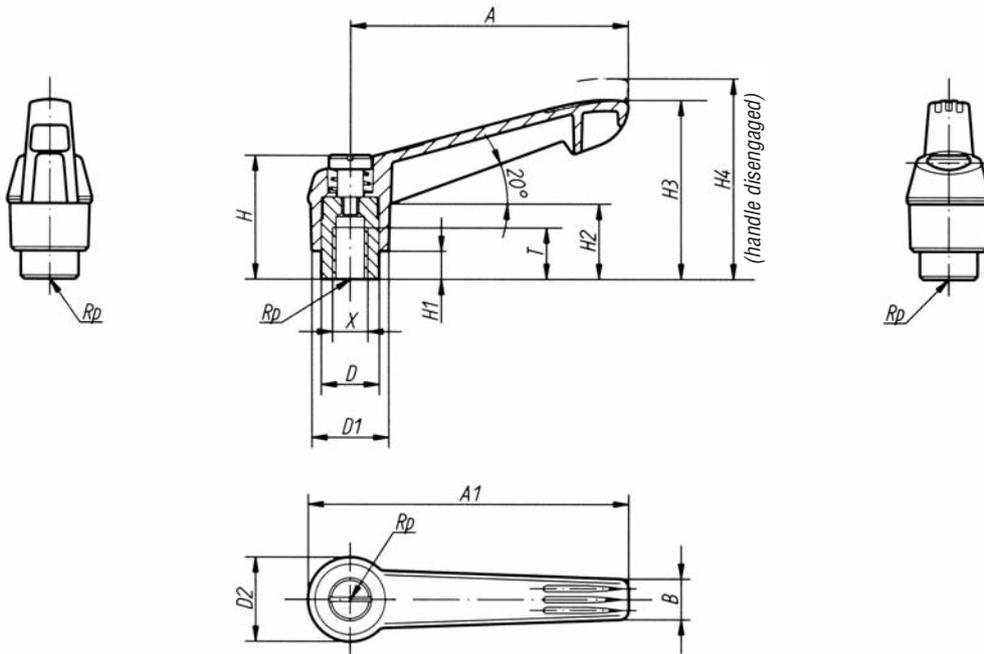
Steel parts black oxide finish

**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:**

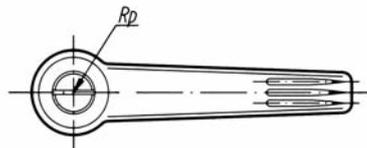
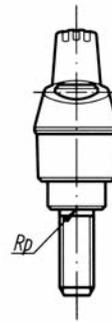
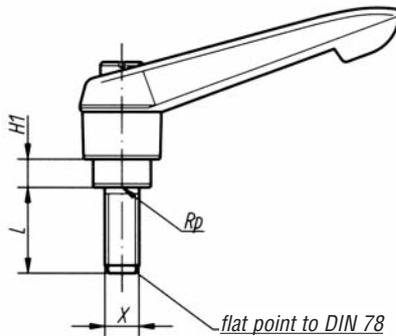
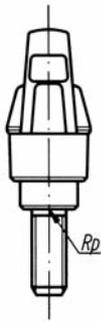
Steel parts black oxide finish

**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.



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### Clamp Levers with external thread and plastic handle

Order No. anthracite grey	Order No. orange	Size	External thread 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:**

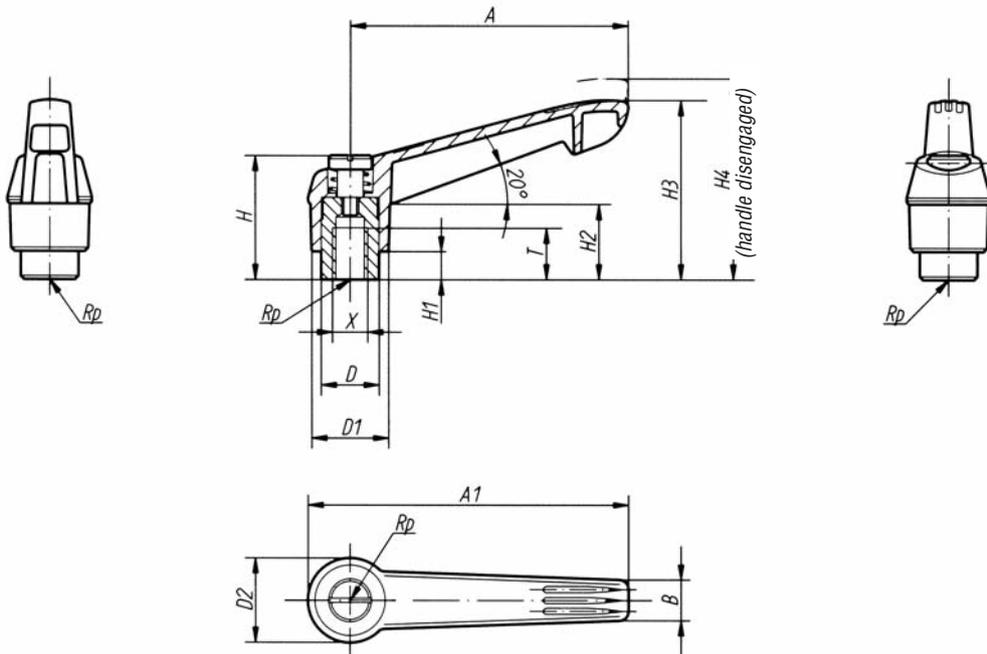
Steel parts natural finish

**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.



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:**

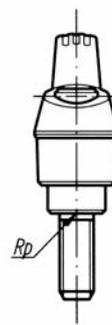
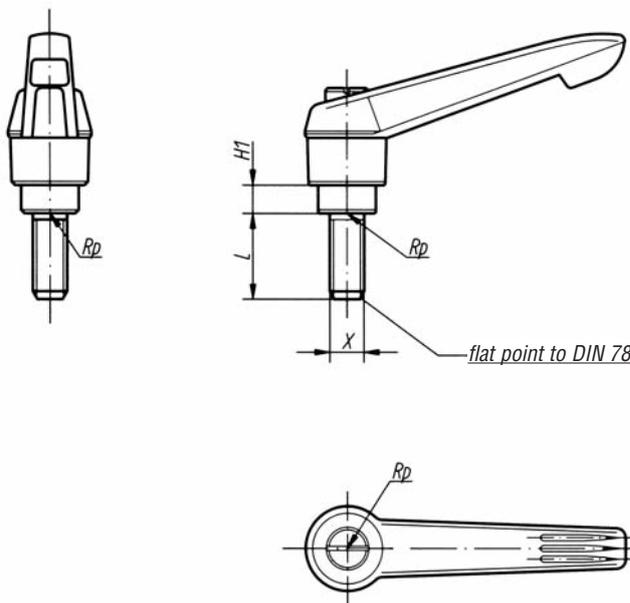
Steel parts natural finish

**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. anthracite grey	Order No. orange	Size	External thread 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



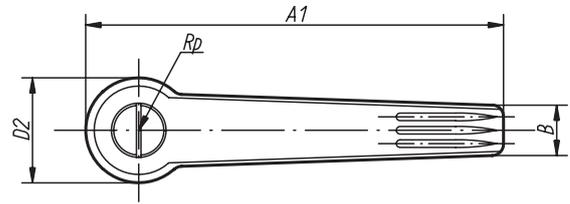
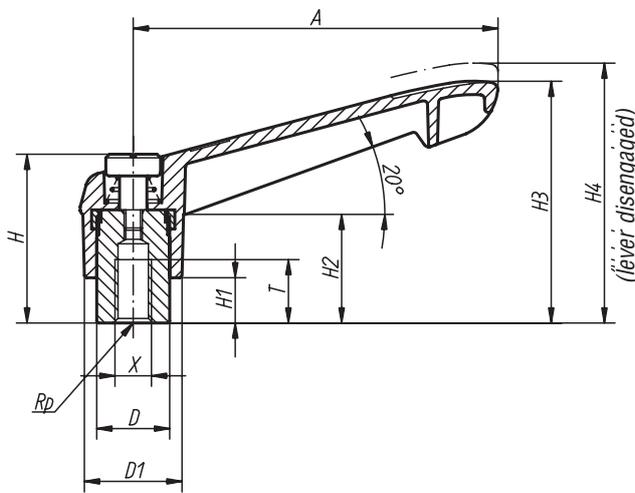
For many people the Clamp Lever represents the key to secure and comfortable gripping. This lever provides a future-oriented and powerful solution for almost any operating and clamping problem.

### 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

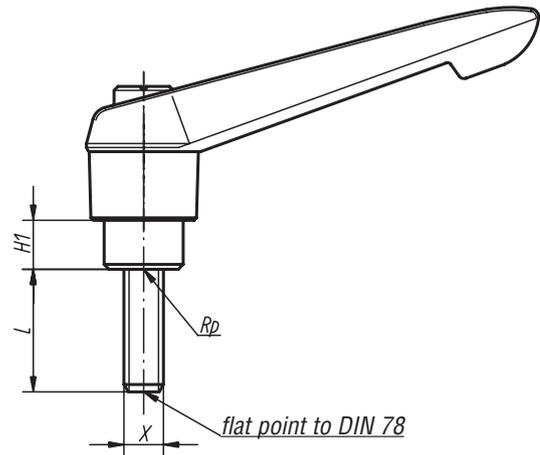
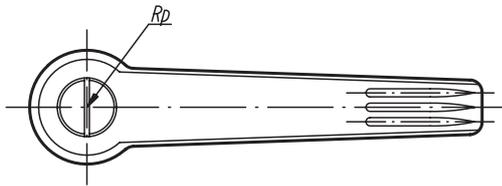
## Coloured Clamp Levers with external thread



**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. 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. 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

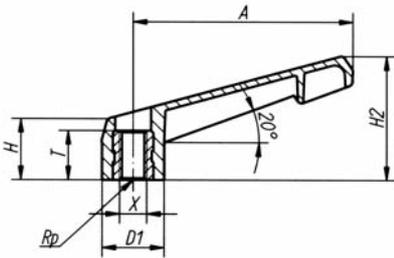
**Surface finish:**

Handle in anthracite grey, steel parts yellow chromated

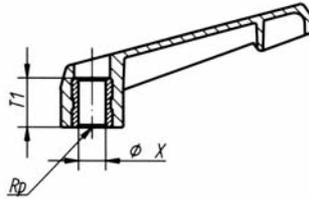
**Note:**

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°.

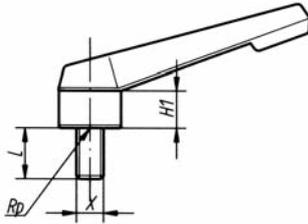
Non-Adjustable Clamp Levers with internal thread



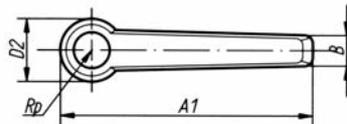
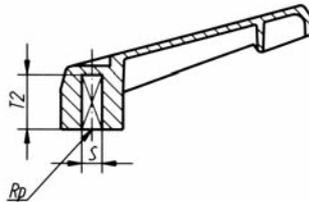
Non-Adjustable Clamp Levers with locating hole



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	Order No.	Locating hole		Approx. weight g	Square socket		Approx. weight g	Size	D1	D2	H	H1	H2	A	A1	B
	X	L = Screw length			X <sup>H9</sup>	T1		Order No.	S <sup>H11</sup>										
20 105*** 90	M 5	20	14	20 105002 90	5	13	5	1	13,8	14	17	11	27	40	47	8	8		
20 106*** 90	M 6	20	15	20 106001 90	6	10	10	1	13,8	14	17	11	27	40	47	8	8		
20 208*** 90	M 8	15	29	20 208001 90	8	14	19	2	18,3	18,5	18	11	36,5	65	75	9	9		
20 310*** 90	M 10	30	65	20 310001 90	10	14	38	3	21,8	22	22	14	45	80	91	11	11		
20 412*** 90	M 12	30	102	20 412001 90	12	18	62	4	25,8	26	26	17	54	95	108	13	13		
20 516*** 90	M 16	40	195	20 516001 90	16	18	102	5	30,8	31	31	21	63	110	126	16	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:**

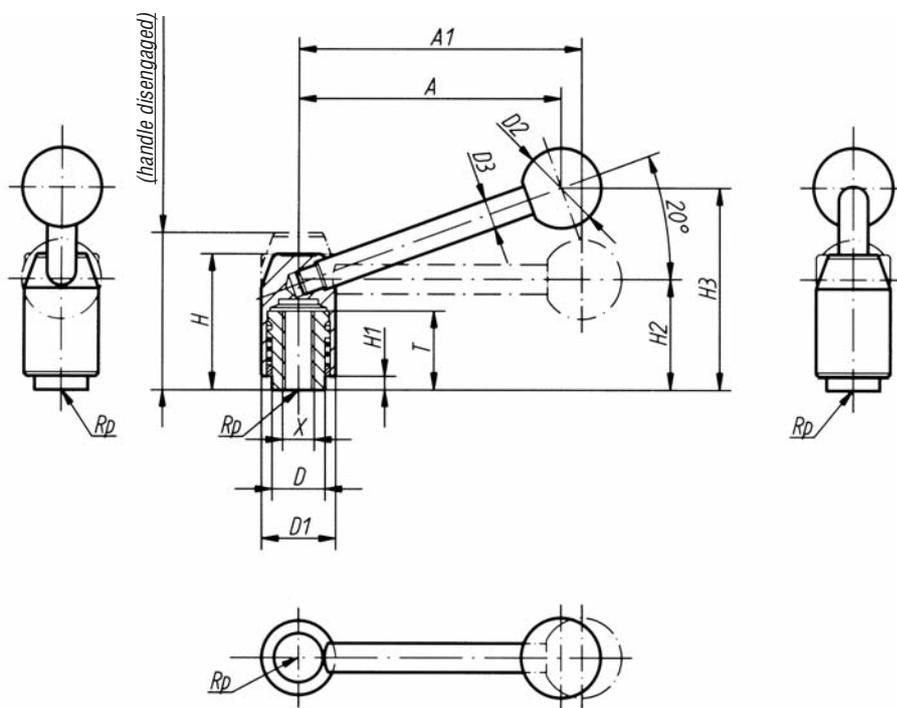
Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



**Tension Levers with internal thread**

Order No. black oxide finish 0 degrees	Order No. black oxide finish 20 degrees	Size	Internal thread X*	T	D	D1	D2	D3	H	H1**	H2	H3	H4	A**	A1**	No. of teeth	Approx. 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:**

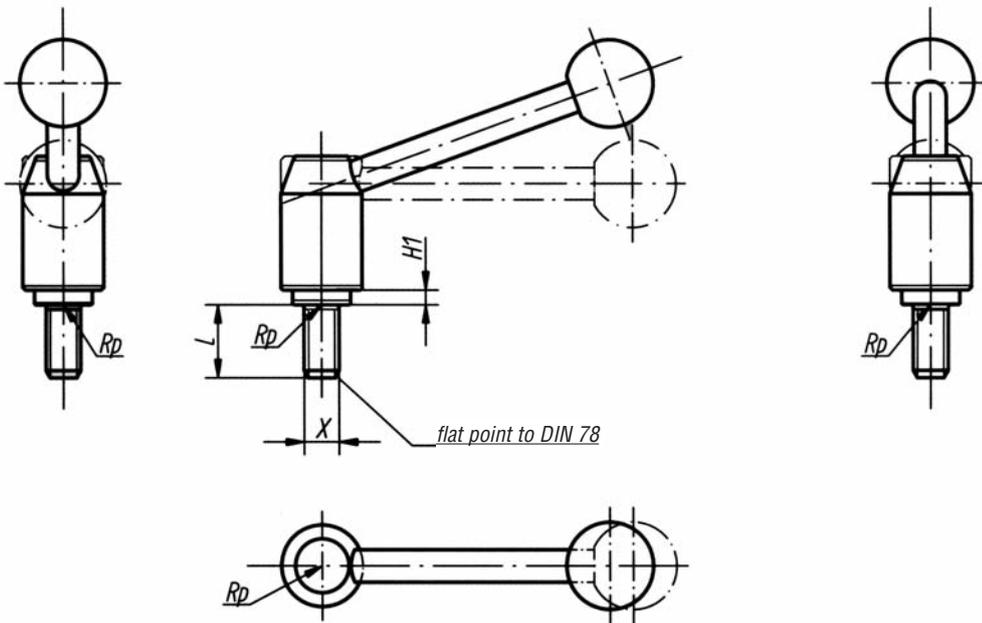
Steel parts quality class 5.8, black plastic ball knob

**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. black oxide finish 0 degrees	Order No. black oxide finish 20 degrees	Size	External thread 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:**

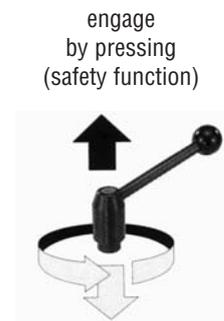
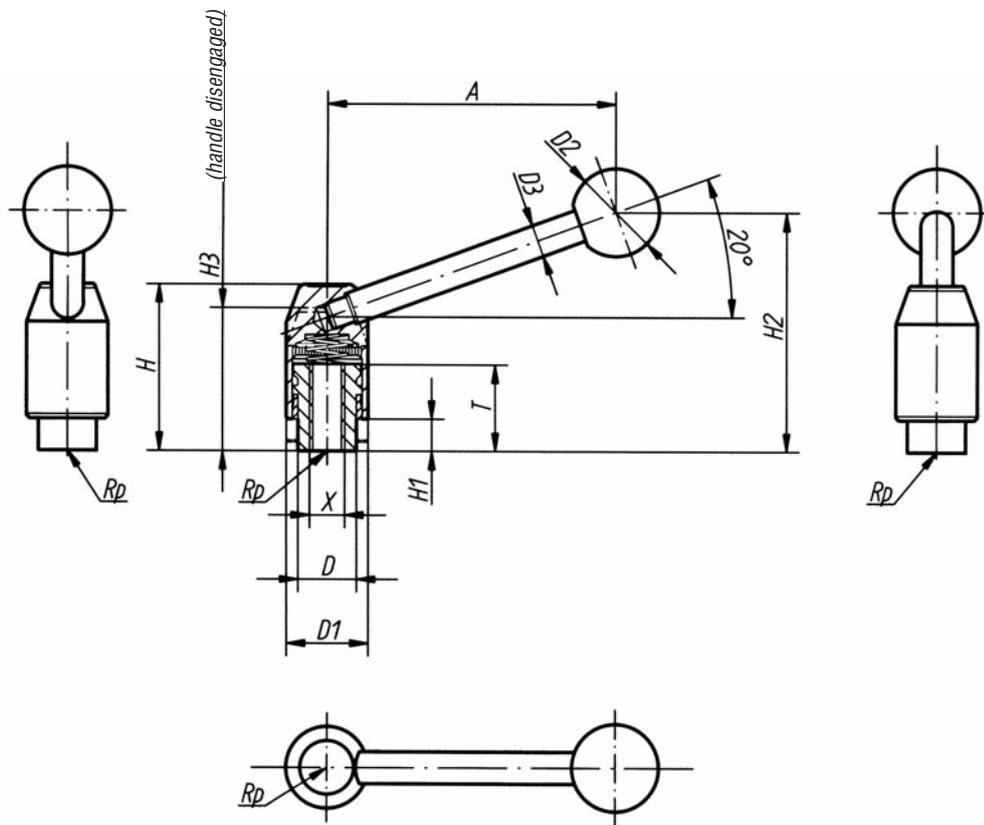
Black oxide finish

**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. black oxide finish	Size	Internal thread X	T	D	D1	D2	D3	H	H1*	H2	H3	A*	No. of teeth	Approx. 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:**

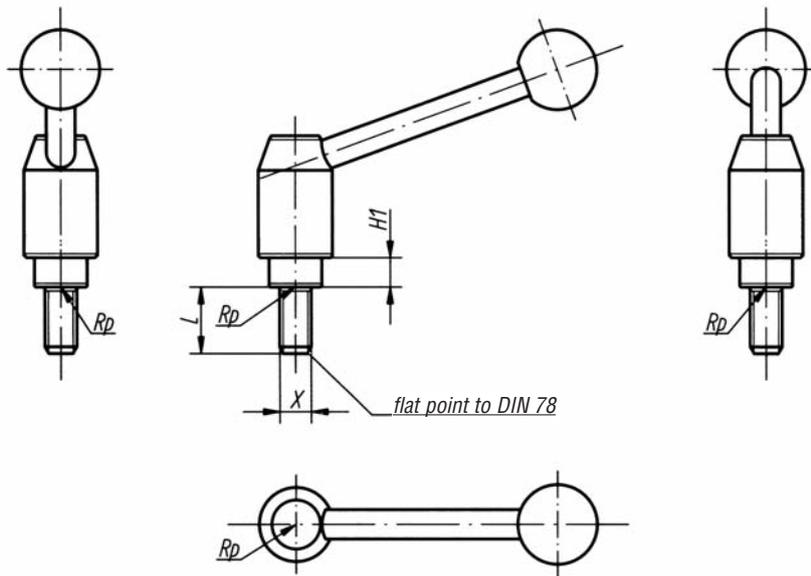
Black oxide finish

**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)



CLAMPING PRODUCTS

**Safety Tension Levers with external thread**

Order No. black oxide finish	Size	External thread 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:**

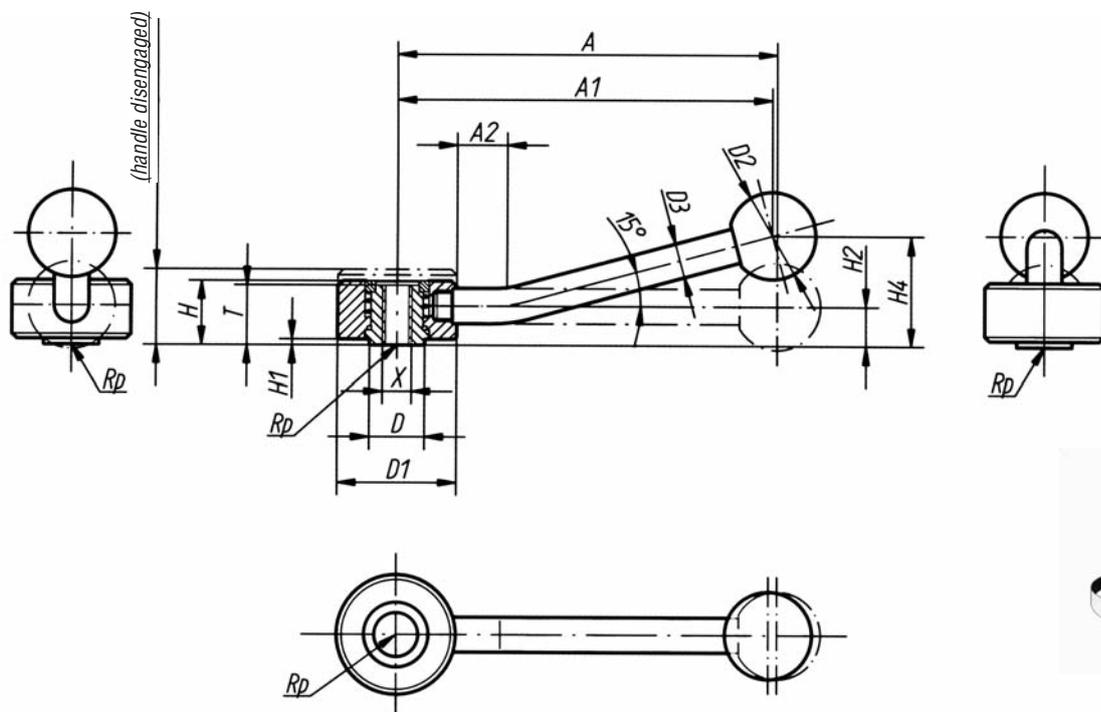
Steel parts quality class 5.8, black plastic ball knob

**Surface finish:**

Black oxide finish

**Note:**

Other materials, surface finishes, special versions, etc. are available.



**Flat Tension Levers with internal thread**

Order No. black oxide finish 0 degrees	Order No. black oxide finish 15 degrees	Size	Internal thread X*	T	D	D1	D2	D3	H	H1**	H2	H3	H4	A**	A1**	A2	No. of teeth	Approx. 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:**

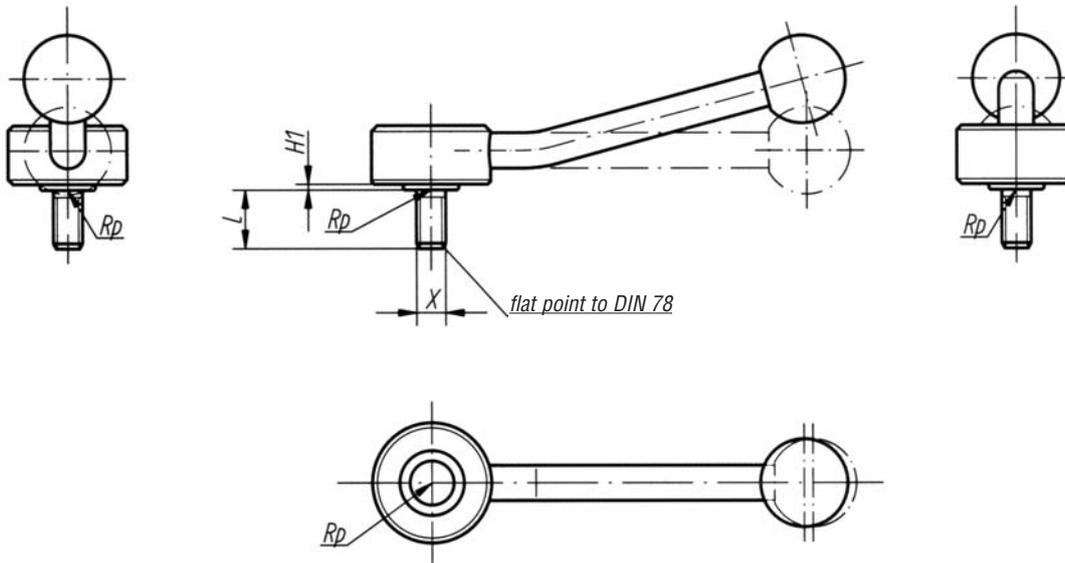
Steel parts quality class 5.8, black plastic ball knob

**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. black oxide finish 0 degrees	Order No. black oxide finish 15 degrees	Size	External thread 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:**

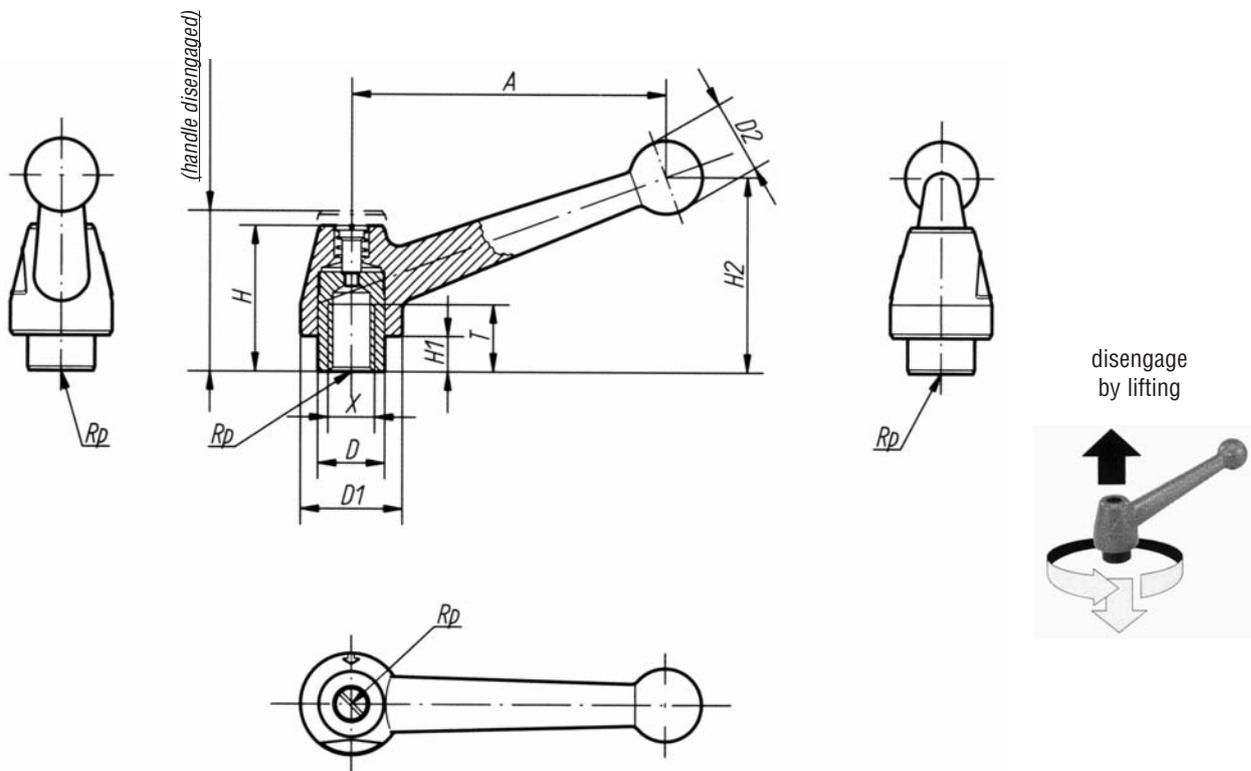
Steel handle in C 35 drop forged steel, all other steel parts quality class 5.8

**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. silver-grey hammertone finish	Size	Internal thread X*	T	D	D1	D2	H	H1**	H2	H3	A	No. of teeth	Approx. 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:**

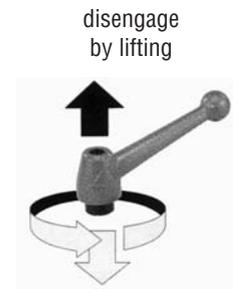
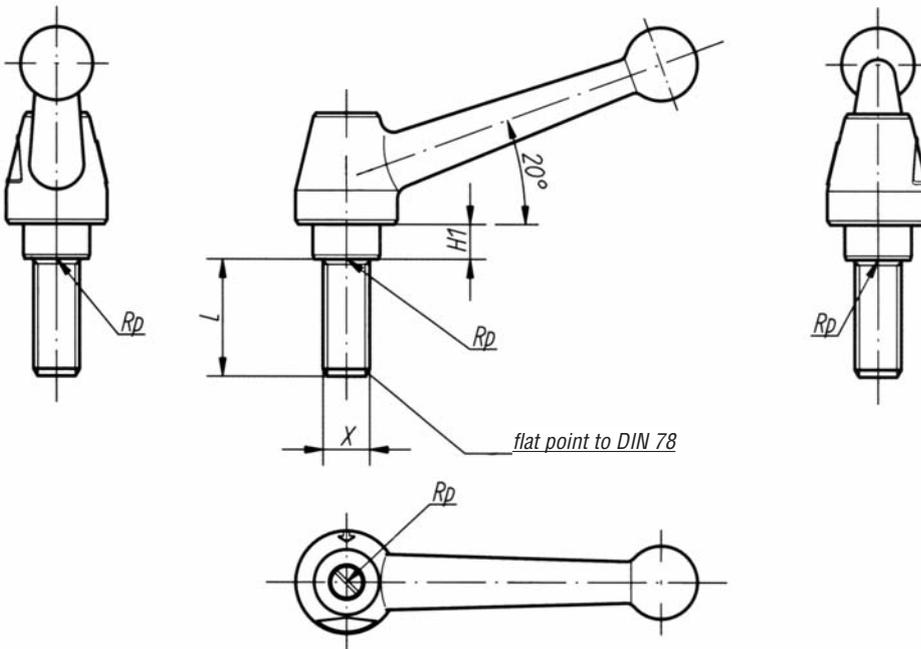
Steel handle in C 35 drop forged steel, all other steel parts quality class 5.8

**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. silver-grey hammertone finish	Size	External thread 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



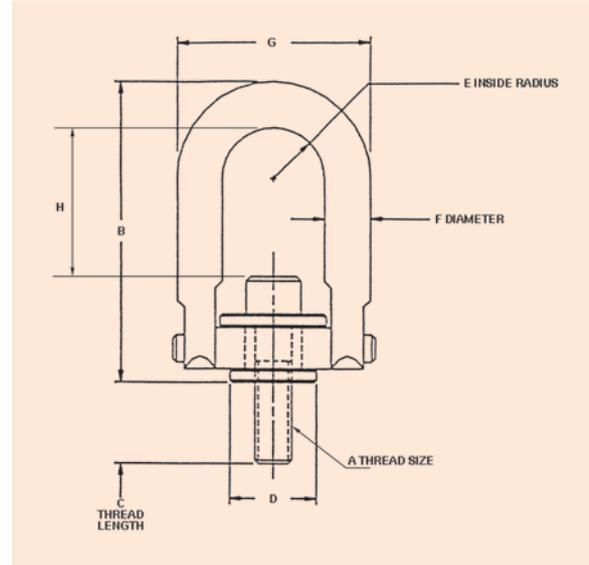
## HOIST RINGS

- **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.

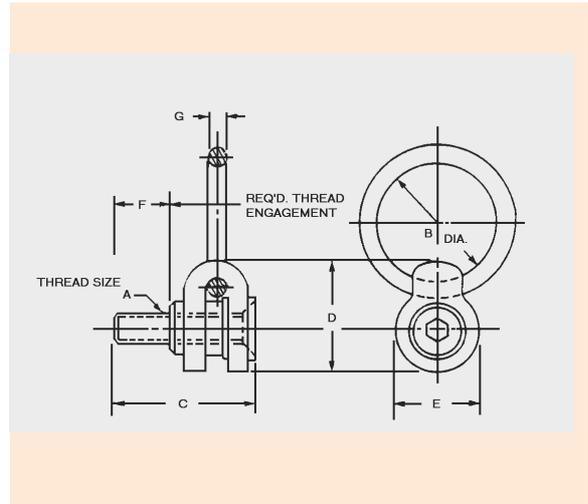
<sup>2</sup> It is recommended that these torques be used when installing hoist rings.

<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.

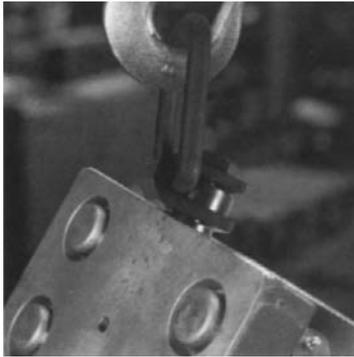
- Available as standard on Centre-Pull Style Hoist Rings
- Available upon request for Side-Pull Style
- Prevents rusting
- Environmentally safe



## 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.

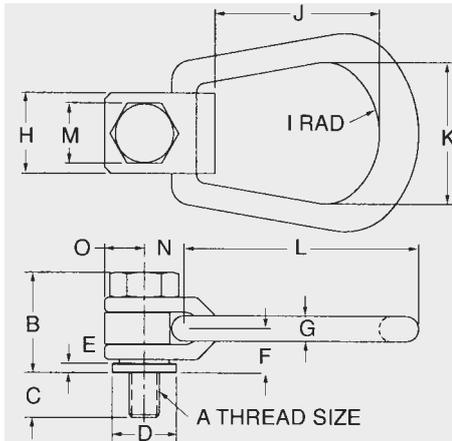
- Can be used for top lifts
- Full swivel and pivot action
- Rated at 5:1 strength factor
- All products are CE marked
- Material: Alloy Steel
- Finish: Black Oxide
- Proof Tested to 200% of Rated Load Capacity



SIDE PULL APPLICATION

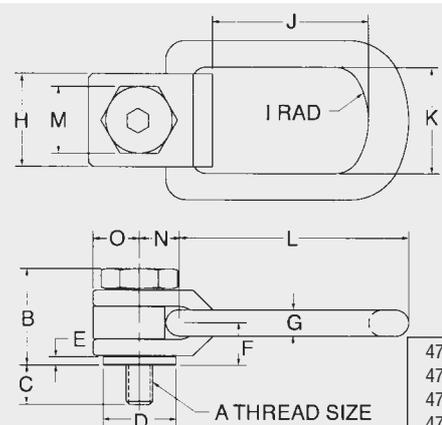


TOP PULL APPLICATION



47581  
47582

EXTERNAL WRENCH MOUNTING



47583  
47584  
47585  
47586  
47587  
47588  
47589

INTERNAL/EXTERNAL WRENCH MOUNTING

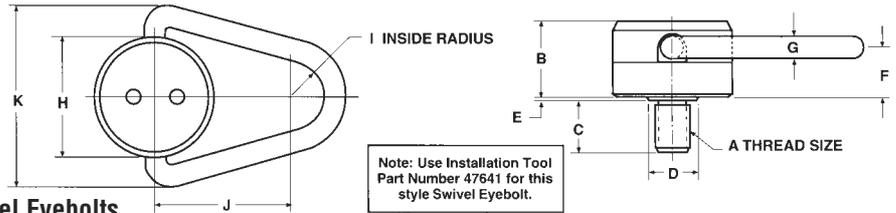
### Metric SP2000 Side-Pull Hoist Rings

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

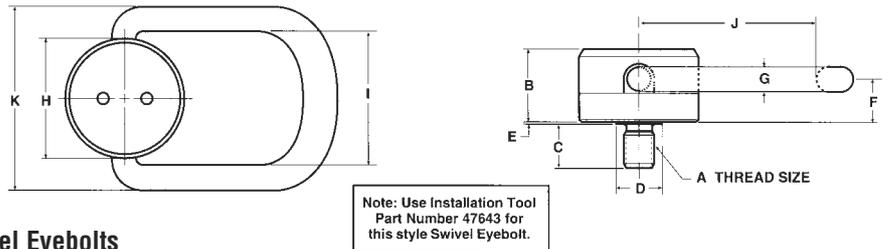
The Swivel Eyebolt lifting product has a full swivel and pivoting action that allows for the flipping and turning of the part without unhooking. The patented tamper resistant design is ideal for permanent mounting on OEM applications or on moulds, dies and fixtures.

- 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)



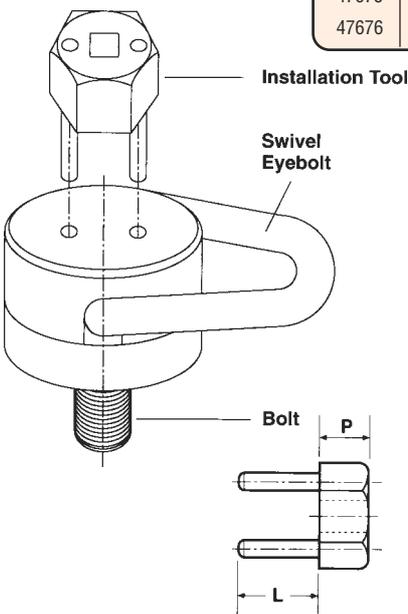
Metric Swivel Eyebolts

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

TO PREVENT BINDING, THE MOUNTING HOLE COUNTERSINK SHOULD NOT EXCEED 'N' DIMENSION

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 12000	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	V150/1BKl	59	V550/1B	54	05 112*** 00	170
H250/1BK	95	P350	113	V150/1Bl	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 212000 20	169
				V150/2BSS	41	VA300BX	9	05 312*** 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	Hoist Rings	
50 104000 01	158	51 104000 90	162	51 410000 90	162	GR/08	137	Centre Pull style	178
50 104000 02	158	51 105 *** ΔΔ	167	51 410000 90 OSO	164	GR/09	137	Side Pull style	179
50 105*** 01	159	51 105000 ΔΔ	166	51 412 *** ΔΔ	167	GR/10	137	Side Pull 2000 style	180
50 105000 01	158	51 105 ***ΔΔ OSO	166	51 412000 ΔΔ	164	GR/11	137	Swivel Eyebolt	181
50 105000 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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Manufacturers of **WHEELS AND CASTORS**

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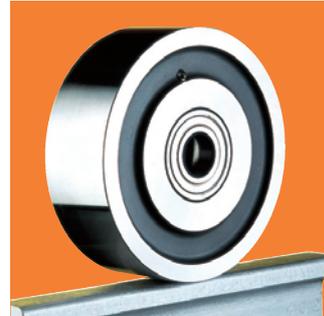
**WG Series**



**Special Pivoting Castors**



**Steel Flat Tread Rail Wheels**



**Polyurethane Press-on Band Tyred Wheels**



**Polyurethane Tyred Wheels**



**Polyurethane Tyred Single Flanged Rail Wheels**



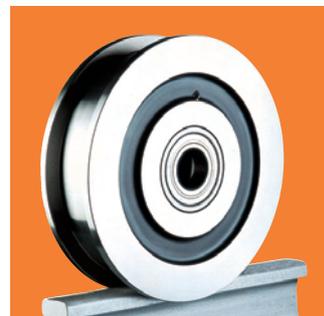
**Steel Single Flanged Rail Wheel**



**Single Flanged 'I' Beam & Channel Wheels**



**Steel Double Flanged Rail Wheels**



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AIRMOVERS  
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