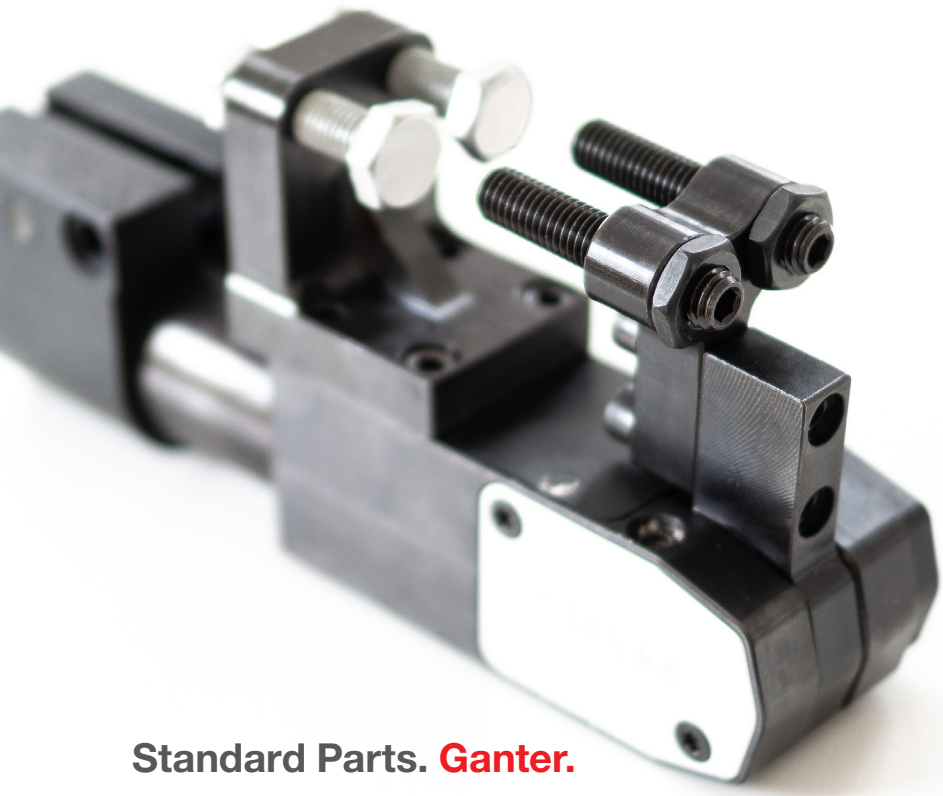
Ganter Norm®

Highlights

Pneumatic clamps



Standard Parts. Ganter.

Contents

Pneumatic clamps

Product index	→ *Page*	*2*
General notes	→ *Page*	*6*
Overview of types	→ *Page*	*10*
Toggle clamps	→ *Page*	*12*
Power clamps	→ *Page*	*36*
Swing clamps	→ *Page*	*56*
Numerical product index	→ *Page*	*68*

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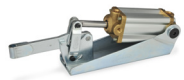
Otto GANTER GmbH & Co. KG, September 2019

Toggle clamps



GN 860
Toggle clamps
pneumatic
Steel
Page 14

GN 861
Toggle clamps
pneumatic,
heavy duty
Steel
Page 16

GN 862
Toggle clamps
pneumatic,
with angled base
Steel
Page 18

GN 962
Toggle clamps
pneumatic,
heavy duty „Longlife“
Steel
Page 20

GN 862.1
Toggle clamps
pneumatic,
with additional manual
operation, Steel
Page 22

GN 863
Toggle clamps
pneumatic,
heavy duty
Steel
Page 24

GN 890
Toggle clamps
pneumatic,
for push clamping
Steel
Page 26

Accessory

GN 896.1
Proximity switch
for toggle clamps
GN 860 / GN 890
Page 28

GN 896.2
Proximity switch
for toggle clamps
GN 860 / GN 862 /
GN 862.1 / GN 890
Page 28

GN 896.3
Proximity switch
for toggle clamps
GN 861 / GN 863
Page 28

GN 804
Clamping screws
with adjustable spring
loaded thrust pad
Page 29

GN 807
Clamping screws
Steel
Page 30

GN 807
Stainless Steel-
Clamping screws
Page 30

Accessory
continued

GN 708.1
Clamping screws
with rubber pressure pad
Steel
Page 31

GN 708.1
Stainless Steel-Clamping screws
with rubber pressure pad
Page 31

GN 802
Clamping screws
with swivel steel thrust pad
Steel
Page 32

GN 903
Clamping screws
with swivel plastic thrust pad
Steel
Page 33

GN 903
Stainless Steel-Clamping screws
with swivel plastic thrust pad
Page 33

GN 801
Holders for clamping screws
for open clamping arm
Steel
Page 34

GN 809
Holders for clamping screws
for solid clamping arm
Steel
Page 35

Power clamps

GN 864
Power clamps
pneumatic
Steel
Page 38

GN 865
Power clamps
pneumatic
Steel
Page 40

GN 866
Power clamps
pneumatic
Steel
Page 42

Accessory

GN 867
Holders for clamping bolts
for power clamps
Steel
Page 44

GN 867.1
Static holders
for power clamps GN 864
Steel
Page 45

GN 868
Holders for clamping jaws
for power clamps
Steel
Page 46

Accessory

continued

GN 868.1
Holders
for clamping jaws
for power clamps GN 864
Steel
Page 47

GN 869.1
Static holders
for power clamps GN 865
Steel
Page 48

GN 869.2
Holders
for clamping jaws
for power clamps GN 865
Steel
Page 49

GN 872
Clamping jaws
for power clamps
Steel
Page 50

GN 871
Levelling shims
for clamping jaws
Steel
Page 51

GN 873
Collar clamps
for power clamps
Steel
Page 52

GN 870
Centering
guide bushings
for power clamps
Steel
Page 53

GN 893.1
Proximity switch
for power clamps, size 20
Page 54

GN 893.2
Proximity switch
for power clamps, size 32
Page 54

GN 893.3
Proximity switch
for power clamps, size 40
Page 54

GN 893.4
Proximity switch
for power clamps, size 50
Page 54

GN 864.1
Protective covers
for power clamps
GN 864
Page 55

Swing clamps

GN 875
Swing clamps
pneumatic,
in block version
Page 58

GN 876
Swing clamps
pneumatic,
with screw-in thread
Page 60

Accessory

GN 875.2
Clamping arms
with slotted hole,
for swing clamps
GN 875 / GN 876
Page 62

GN 875.3
Clamping arms
with threaded hole,
for swing clamps
GN 875 / GN 876
Page 63

GN 875.4
Adapter flanges
for swing clamps
GN 875 / GN 876
Page 64

GN 876.1
Threaded flanges
for swing clamps
GN 876
Page 65

GN 3380
Sensor
for pneumatic clamps /
pneumatic cylinders
Page 66

Pneumatic clamps have a variety of uses in machine and device construction. They are used for clamping, holding and positioning workpieces. The different pneumatic clamps can be categorized into the following types, based on their kinematic properties and design: Pneumatically operated toggle clamps, fastening clamps and swing clamps.

Toggle clamps

Pneumatically operated toggle clamps correspond to manually operated toggle clamps in terms of design and dimensions. They function according to the knee lever principle but they are operated pneumatically rather than purely by hand.

Due to the knee lever principle, the clamp remains closed even after a loss of compressed air.

Toggle clamps with a permanent magnet integrated into the piston (coding M) enable detection of the end position by means of sensors.

Power clamps

Power clamps achieve high clamping forces even with small clamp sizes, which results in lower air consumption and weight reduction.

The kinematic properties of the power clamps are designed so that the clamping force achieved in the clamped position is retained even after a loss of compressed air.

All power clamps come pre-equipped for end position detection via sensor.

On request, all power clamps and their accessories can be ordered with an anti-stick coating for protection against welding spray and corrosion.

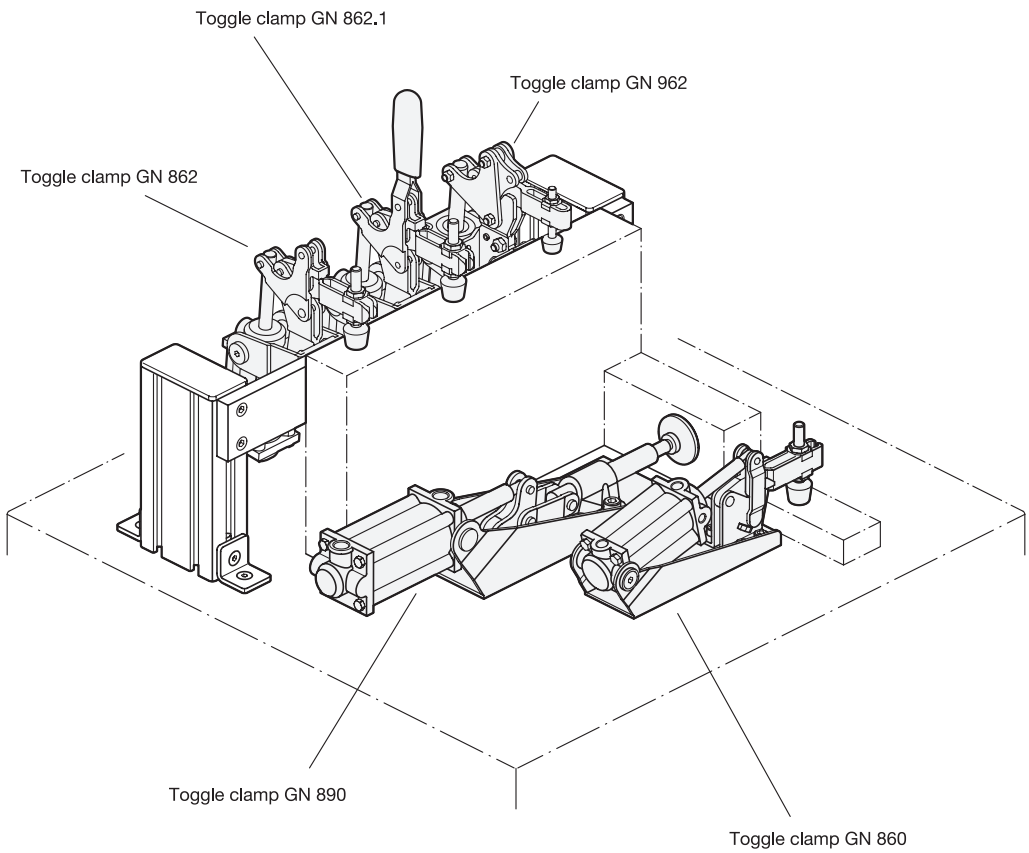
Swing clamps

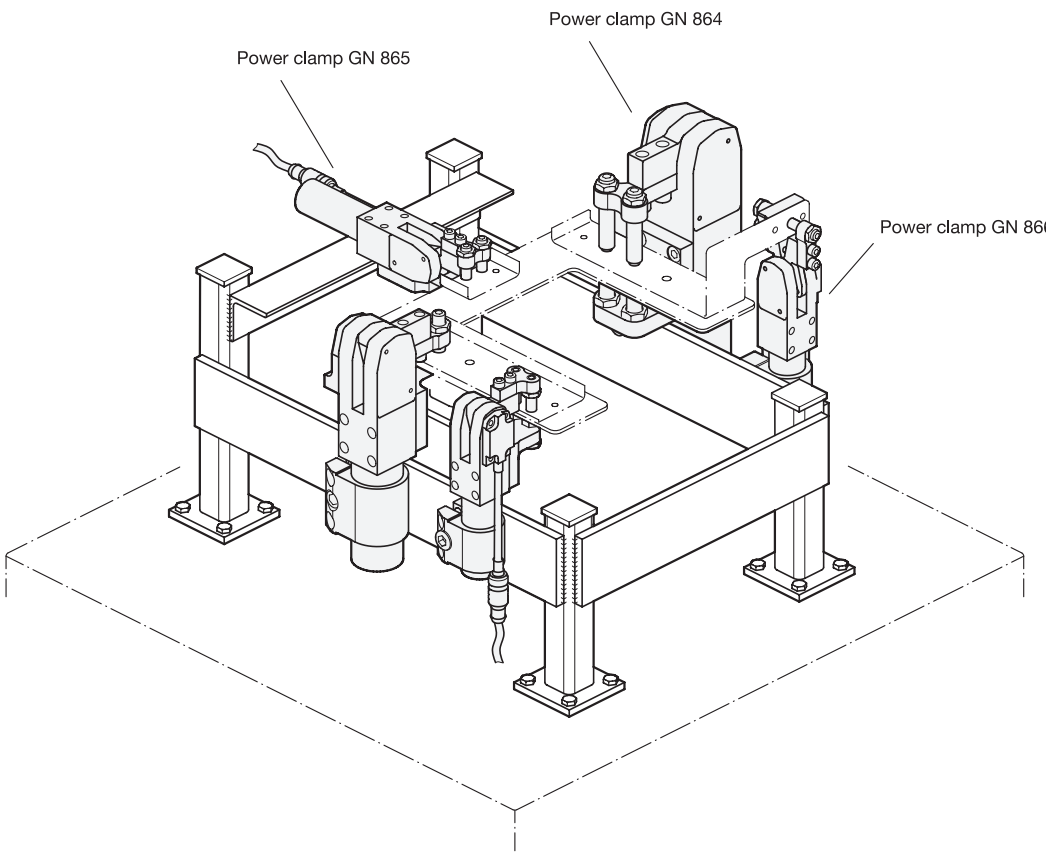
Swing clamps differ from other clamps in terms of their kinematic action. The clamping movements consist of an initial 90° pivot and linear motion downward, followed by the linear clamping motion for clamping of the workpiece.

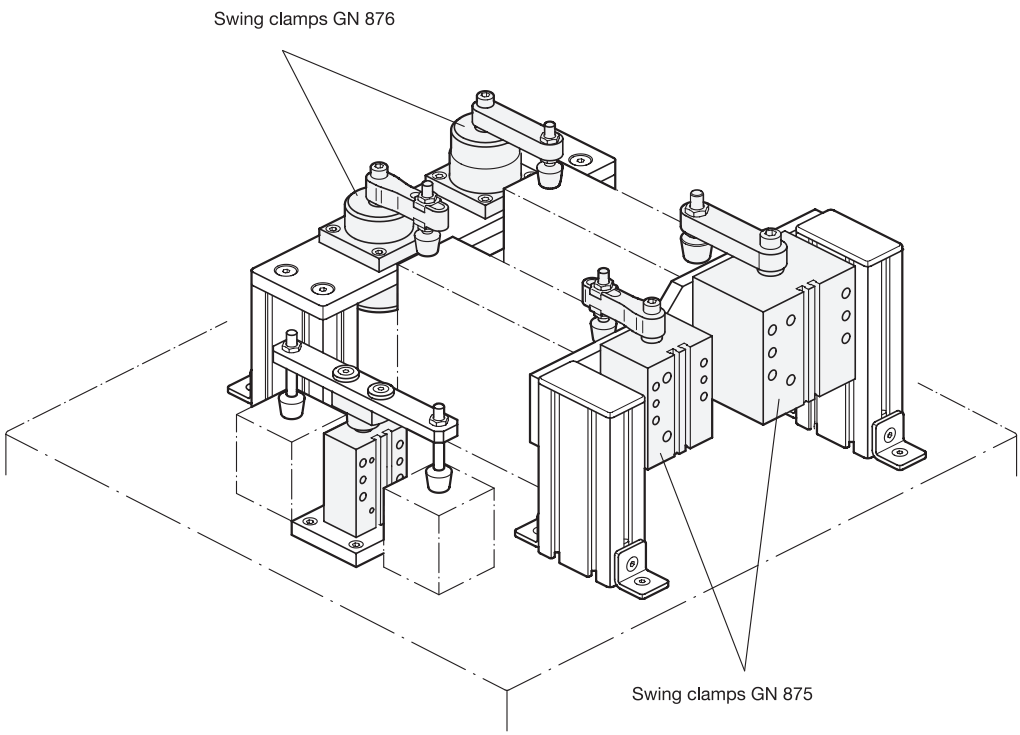
Swing clamps are generally used when the clamping point must be freely accessible from above for insertion and removal of the workpiece.

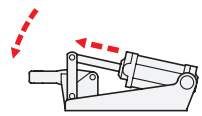
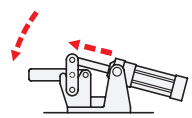
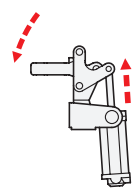
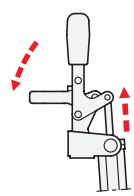
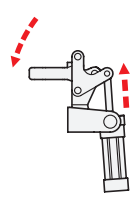
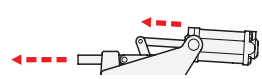
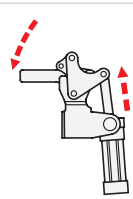
Typically, swing clamps are fitted with rectangular or cylindrical housings.

Swing clamps with rectangular housings (block version) are additionally fitted with a magnet ring piston, making them suitable for end position detection by means of a sensor.

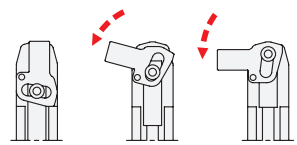
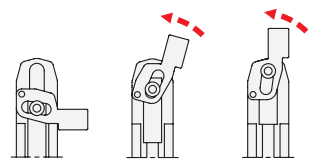
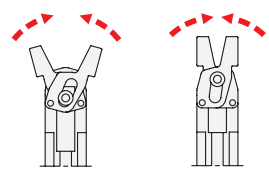

Toggle clamp GN 862.1
Toggle clamp GN 962
Toggle clamp GN 862
Toggle clamp GN 890
Toggle clamp GN 860


Power clamp GN 864
Power clamp GN 865
Power clamp GN 866

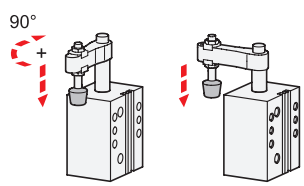
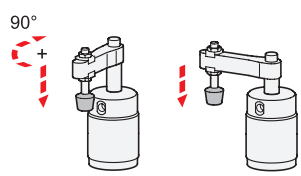

Swing clamps GN 876
Swing clamps GN 875

Toggle clamps				
Standard	**Properties**	**Kinematics**	**Clamping force F_S in N** at 4 / 6 bar	**Holding force F_H in N**
GN 860 Page 14	- Knee lever principle - The tensioning mechanism corresponds to the manually operated toggle clamps in terms of design - End position detection		480 - 1350	700 - 3000
GN 861 Page 16	- Knee lever principle - Heavy duty design with high clamping forces - End position detection		2500 - 3600	10000 - 20000
GN 862 Page 18	- Knee lever principle - Mounting via angled base - End position detection		970 - 1050	1600 - 2400
GN 862.1 Page 22	- Knee lever principle - Mounting via angled base - Design and dimensions as GN 862, however with additional manual operation - End position detection		970 - 1050	1600 - 2400
GN 863 Page 24	- Knee lever principle - Mounting via angled base - Heavy duty design with high clamping forces - End position detection		3250 - 5600	10000 - 20000
GN 890 Page 26	- Knee lever principle - The tensioning mechanism corresponds to the manually operated push-pull type toggle clamps in terms of design - for push clamping - End position detection		550 - 3000	1200 - 25000
GN 962 Page 20	- Knee lever principle - Mounting via angled base - Heavy duty design with high clamping forces - „Longlife“ - End position detection		870 - 2280	2200 - 8500

Power clamps

Standard	Properties	Kinematics	Clamping force F_S in N at 4 / 6 bar	Holding force F_H in N
GN 864 Page 38	- Dead point mechanism - Clamping arm horizontal, vertical, or centered - High clamping forces - Compact size - Low air consumption - Long service life - End position detection		2220 - 9000	4070 - 13300
GN 865 Page 40			1250 - 4900	2300 - 7200
GN 866 Page 42			1150 - 2000	1150 - 2000

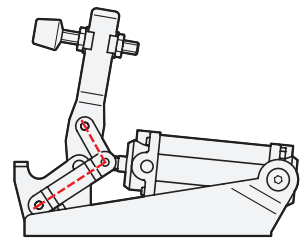
Swing clamps

Standard	Properties	Kinematics	Clamping force F_S in N at 4 / 6 bar	Holding force F_H in N
GN 875 Page 58	- Pivot and linear motion - in block version, universal mounting capability - Compact size - End position detection		170 - 1100	170 - 1100
GN 876 Page 60	- Pivot and linear motion - with screw-in thread, adjustable - Compact size		170 - 1100	170 - 1100

Pneumatic toggle clamps combine the advantages of clamping with the knee lever principle (clamp remains closed even after a loss of pressure) with the capabilities of pneumatic operation.

Movement phase 1

The clamping arm opens wide enough that the full surface of the workpiece is exposed, allowing it to be removed or placed into the mechanism without obstruction.

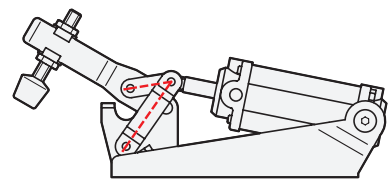


Movement phase 2

Even a slight turning of the clamping lever brings the clamping arm with the spindle assembly onto the workpiece.

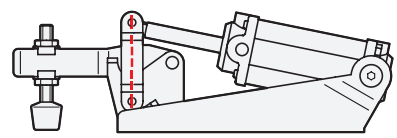
The arrangement of the three knee joints as shown makes clear that the clamping arm exerts many times the operating force on the lever.

However, the toggle clamp is not yet locked in this position; in other words, opposing forces on the clamping arm would open it again.



Movement phase 3

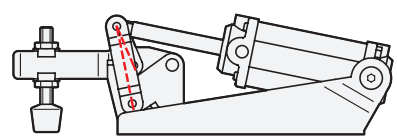
When all three joints of the knee lever are in alignment, the maximum **clamping force F_S** is achieved (lever dead point).



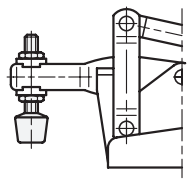
Movement phase 4

In this position, i.e. the clamping position, the lever dead point is exceeded by a specific amount and the clamping lever is fixed in place by an end stop. This ensures secure locking (self-blocking) of the toggle clamp.

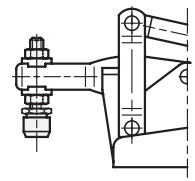
The force that can be absorbed by the clamping element in this closed state without lasting deformation is referred to as the retaining force **retaining force F_H**.



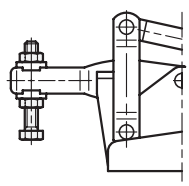
Just as with the manually operated toggle clamps, the pneumatic toggle clamps can be fitted with a wide range of clampin screws. It is also possible to attach a sensor for end position detection.



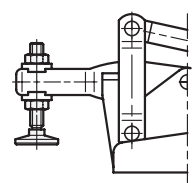
Clamping screws GN 708.1 *(→ Page 31)* can be adjusted for workpiece tolerances with the elastic pressure pad.



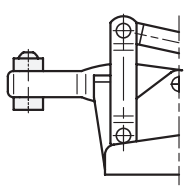
Clamping screws GN 804 *(→ Page 29)* with Belleville spring washers not only allow adjustment for workpiece tolerances, they also permit presetting of the respective clamping force.



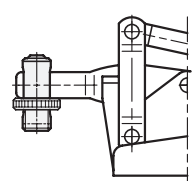
Clamping screws GN 807 *(→ Page 30)* are available with or without an elastic protective cap.



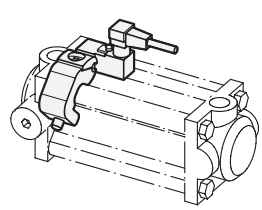
Clamping screws GN 903 *(→ Page 33)* can distribute the force more evenly on the workpiece thanks to the larger contact surface of the pressure pad.



Holders for clamping screws GN 801 *(→ Page 34)* are designed for toggle clamps with an open clamping arm and can be moved to any position on the clamping arm.



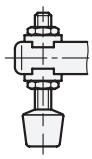
Holders for clamping screws GN 809 *(→ Page 35)* are designed for toggle clamps with a heavy duty clamping arm. The holders can be moved to any position along the clamping arm and can be adjusted in height.

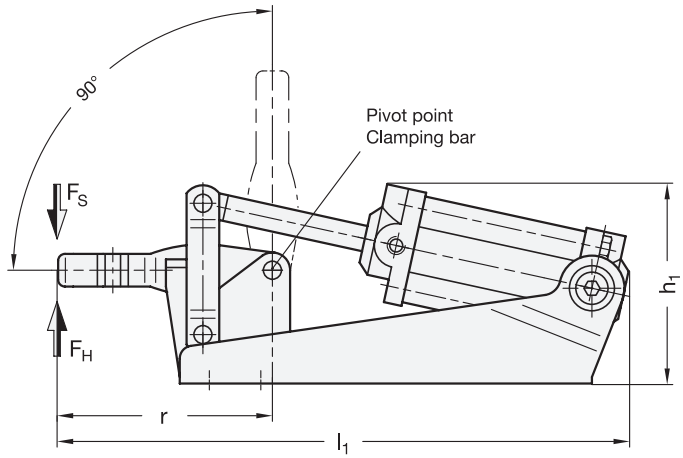


Toggle clamps that are equipped with a magnetic piston (coding M) allow for end position detection in connection with **proximity switches GN 896.1 / GN 896.2 / GN 896.3** *(→ Page 28)* for profile rod cylinders or **sensors GN 3380** *(→ Page 66)* for cylinders with T-slot.

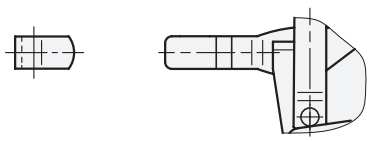
Type **AP3**

Type **CP3**

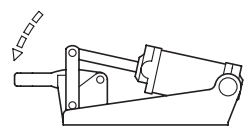


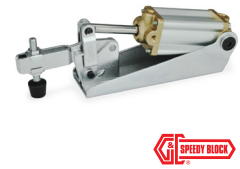


Type **EP3**



Operating principle





2 **Type**

AP3 U-bar version, with two flanged washers

CP3 U-bar version, with two flanged washers and GN 708.1 Spindle Assembly

EP3 Solid bar version, with clasp

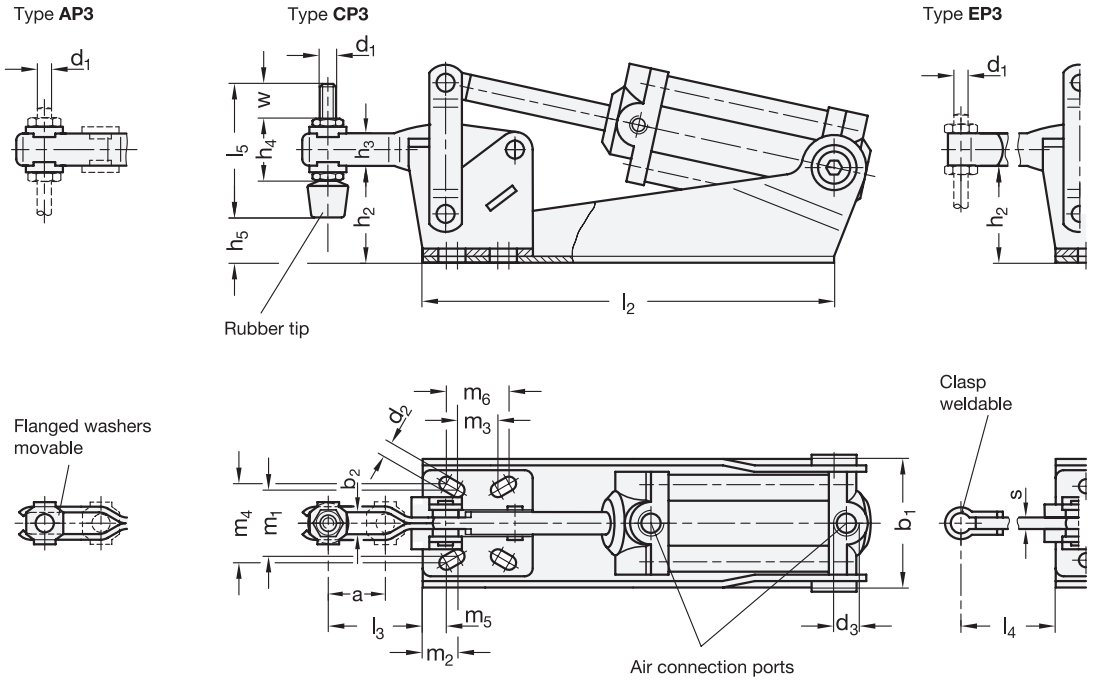
3 **Coding**

M Magnetic piston from size 200 and up

1

Size	F_H in N Holding capacity	F_S in N Clamping force at 4 bar ≈	a ≈	b_1	b_2	d_1	d_2	d_3	Inside Ø Connection tube	h_1 ≈	h_2	h_3	h_4	h_5
70	700	480	20	42	5,5	M 5	4,5	G ⅛	4	51	21	11	19	6,3
125	1600	600	28	47,5	6,5	M 6	5,5	G ⅛	4	70,5	30	14	23,5	13,5
200	2200	800	40	53	8,5	M 8	6,5	G ⅛	4	79	36	18	30	12,5
300	2700	1300	42	74	10,5	M 10	8,5	G ¼	6	98	48	20	35	20
400	3000	1350	66	74	12,5	M 12	8,5	G ¼	8	107,5	51	22	39	18,5

Size	l_1 ≈	l_2 ≈	l_3 ≈	l_4 ≈ max.	l_5	m_1	m_2	m_3	m_4	m_5	m_6	r ≈	s	w Adjustable range
70	163	92	33	41	45	24	7	15	24	6,5	16	62,5	4	15
125	200,5	150	40	54	55	27	11,25	12,5	29	8	19	79	5	19,5
200	247	160	59	75	68	32	12	19	32	11,5	20	104	6	20
300	305	195,5	66	85	77	45	10,5	29	46	8,5	32	122	8	21
400	361	216	94	120	100	45	10	32	45	10	32	156	10	37



Specification

- Parts in sheet metal
  Case-hardened steel C10
  zinc plated, blue passivated
- Bearing pins hardened
- Bearing rivets (for size 200 and up)
  case-hardened
- Air cylinder bearing pins
  case-hardened
- Double-action air cylinder
  max. pressure 6 bar
- All moving parts
  lubricated with special grease
- Spindle assembly GN 708.1, type A
  - Steel, zinc plated
  - Rubber tip 85 Shore A
- RoHS

Accessory

- Clamping screws → *Page 29 ff.*
- Holders for clamping screws
  (for type AP3) → *Page 34*
- Holders for clamping screws
  (for type EP3) → *Page 35*
- Proximity switches GN 896.1 / GN 896.2
  → *Page 28*

Information

The clamping principle of GN 860 toggle clamps is identical in construction and dimensions to the manually operated GN 810 vertical toggle clamps.

To ensure an extended life of the mechanical parts as well as the air cylinders the operating pressure should not exceed 6 bar.

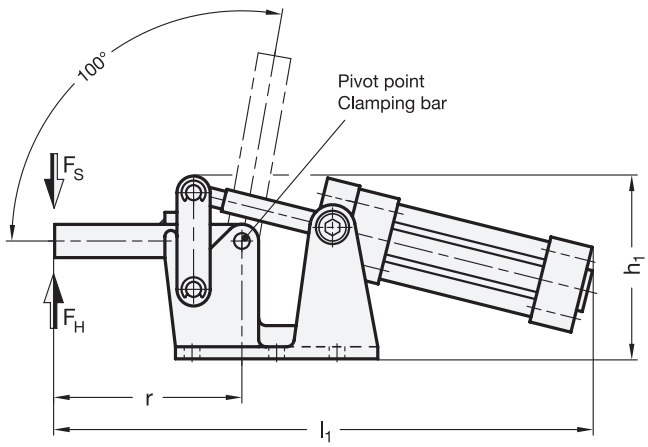
GN 860 Toggle clamps are also available in sizes 200 and up as a version M (magnetic piston). In conjunction with GN 896.1 / GN 896.2 proximity switches, the end position can be sensed and the generated impulse can be used to transmit an electrical signal.

see also...

- *More information for toggle clamps (pneumatic)* → *Page 12*

How to order (without magnetic piston)		
GN 860-200-AP3	1	Size
	2	Type

How to order (with magnetic piston)		
GN 860-300-AP3-M	1	Size
	2	Type
	3	Coding



2 Type
EP solid clamping arm

3 Coding
M Magnetic piston

1

Size	F_H in N Holding capacity	F_S in N Clamping force at 6 bar ≈	b_1	b_2	b_3	d_1	d_2	Inside Ø Connection tube	h_1 ≈	h_2
1000	10000	2500	102	90	20	10,5	G ¼	8	145	80
2000	20000	3600	112	100	20	10,5	G ⅜	10	171,5	90

Size	h_3	l_1 ≈	l_2 ≈	l_3 ≈	m_1	m_2	m_3	m_4	r ≈	s
1000	25	410	90	155	65	12,5	65	48	140	13
2000	35	487	113	176	70	15	70	56	172	13

Specification

- Base
  Cast steel
  black lacquered
- other parts
  Steel St 60
  zinc plated, blue passivated
- Bearing pins
  case hardened
- Double-action air cylinder
  with adjustable cushioning
  max. pressure 6 bar
- All moving parts
  lubricated with special grease
- RoHS

Accessory

- Proximity switch GN 896.3 → *Page 28*

Information

GN 861 Toggle clamps have been constructed in such a way as to make them easy to unmount. The bearing pins are axially fixed with circlips. This allows the clamping arm to be modified to suit any particular application.

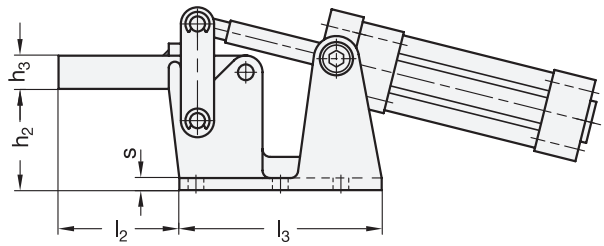
To ensure an extended life of the mechanical parts as well as the air cylinder the operating pressure should not exceed 6 bar. In addition a lubrication control unit should be fitted in the air line.

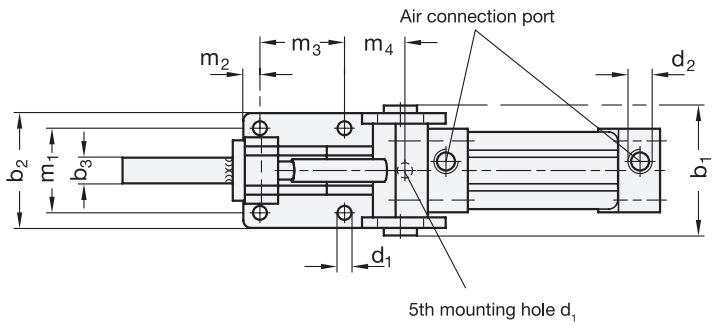
GN 861 Toggle clamps are available as version M (magnetic piston). In conjunction with a GN 896.3 proximity switch the end position is sensed and the generated signal can be used in sequence control systems.

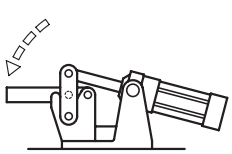
see also...
- *More information for toggle clamps (pneumatic)* → *Page 12*

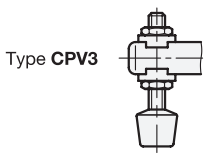
How to order
1 2 3
GN 861-1000-EP-M

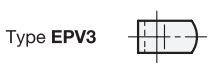
1	Size
2	Type
3	Coding

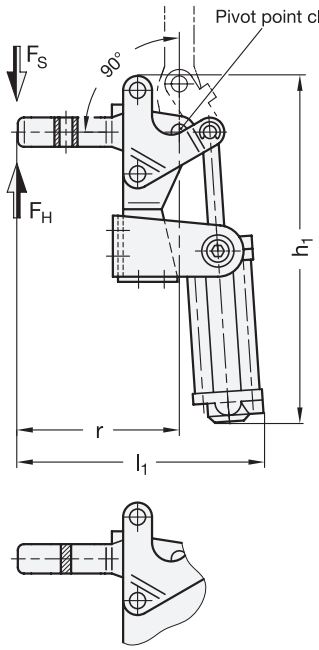

h3
h2
s
l2
l3


Air connection port
m2
m3
m4
d2
b2
m1
b3
b1
d1
5th mounting hole d1

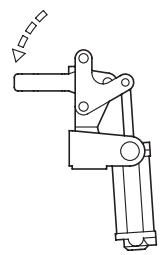








Operating principle



2 Type

APV3 U-bar version, with two flanged washers
CPV3 U-bar version, with two flanged washers and GN 708.1 Spindle Assembly
EPV3 Solid bar version, with clasp

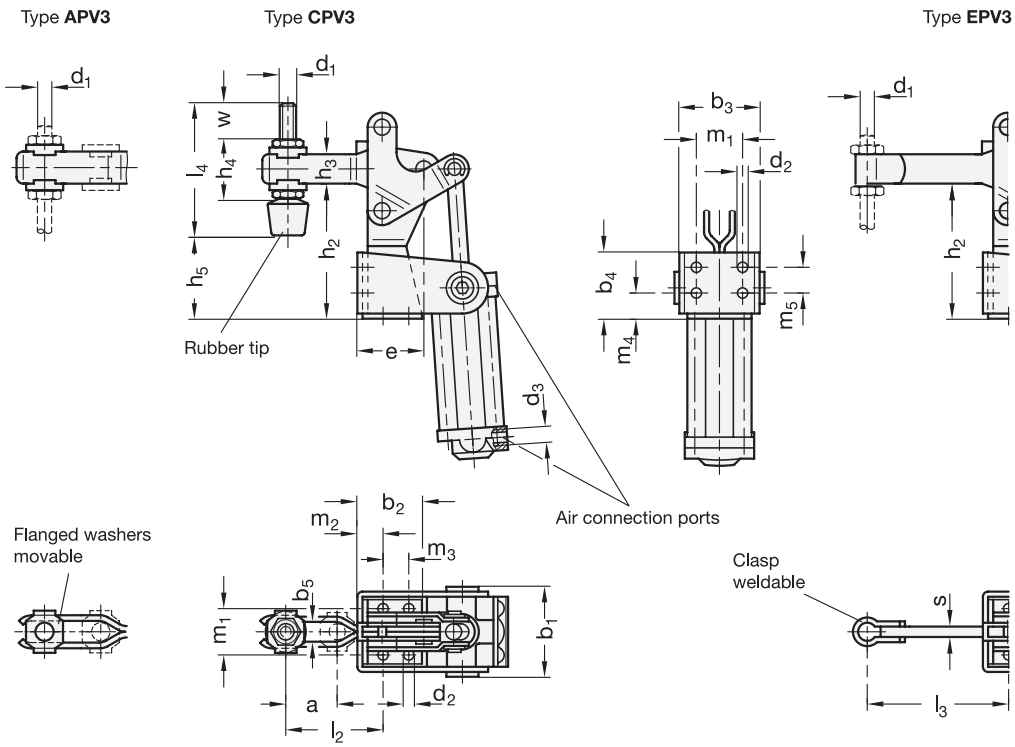
3 Coding

M Magnetic piston

1

Size	F_H in N Holding capacity	F_S in N Clamping force at 4 bar ≈	a≈	b_1	b_2	b_3	b_4	b_5	d_1	d_2	d_3	Inside Ø Connection tube	e
200	1600	970	34	59,5	38,5	51	35	8,5	M 8	6,5	G ⅛	4	39,5
300	2400	1050	42	68,5	53	60,5	50	10,3	M 10	8,5	G ¼	6	50,5

Size	h_1 ≈	h_2	h_3	h_4	h_5	l_1 ≈	l_2 ≈	l_3 max.	l_4	m_1	m_2	m_3	m_4	m_5	r ≈	s	w Adjustable range
200	210	78	17	29	54	150	59	80	68	26	14,5	16	11	16	98	6	21
300	258	108	20	35	79,5	187	74	104	77	30	16,5	28	12	30	122	8	21



Specification

- Parts in sheet metal
  Case-hardened steel C10
  zinc plated, blue passivated
- Bearing pins hardened
- Bearing rivets case-hardened
- Air cylinder bearing pins
  case-hardened
- Double-action air cylinder
  max. pressure 6 bar
- All moving parts
  lubricated with special grease
- Spindle assembly GN 708.1, type A
  - Steel, zinc plated
  - Rubber tip 85 Shore A
- RoHS

Information

The clamping principle of GN 862 toggle clamps is identical in construction and dimensions to the manually operated GN 812 vertical toggle clamps.

To ensure an extended life of the mechanical parts as well as the air cylinders the operating pressure should not exceed 6 bar.

GN 862 Toggle clamps are also available in sizes 200 and up as a version M (magnetic piston). In conjunction with a GN 896.2 proximity switch, the end position can be sensed and the generated impulse can be used to transmit an electrical signal.

see also...

- *More information for toggle clamps (pneumatic)* → *Page 12*

Accessory

- Spindle assemblies → *Page 29 ff.*
- Holders for clamping screws GN 801
  (for type APV3) → *Page 34*
- Holders for clamping screws GN 809
  (for type EPV3) → *Page 35*
- Proximity switch GN 896.2 → *Page 28*

How to order (without magnetic piston)

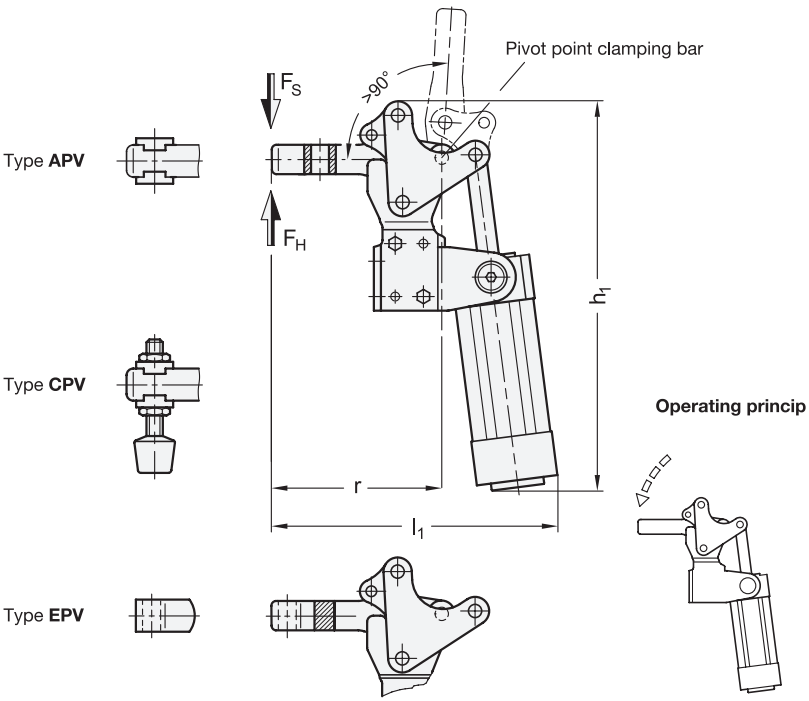
GN 862-300-EPV3

1	Size
2	Type

How to order (with magnetic piston)

GN 862-200-APV3-M

1	Size
2	Type
3	Coding



2 Type

APV Clamping arm with slotted hole, with two flanged washers

CPV Clamping arm with slotted hole, with two flanged washers, GN 708.1 Spindle assembly

EPV Clamping arm with bushing

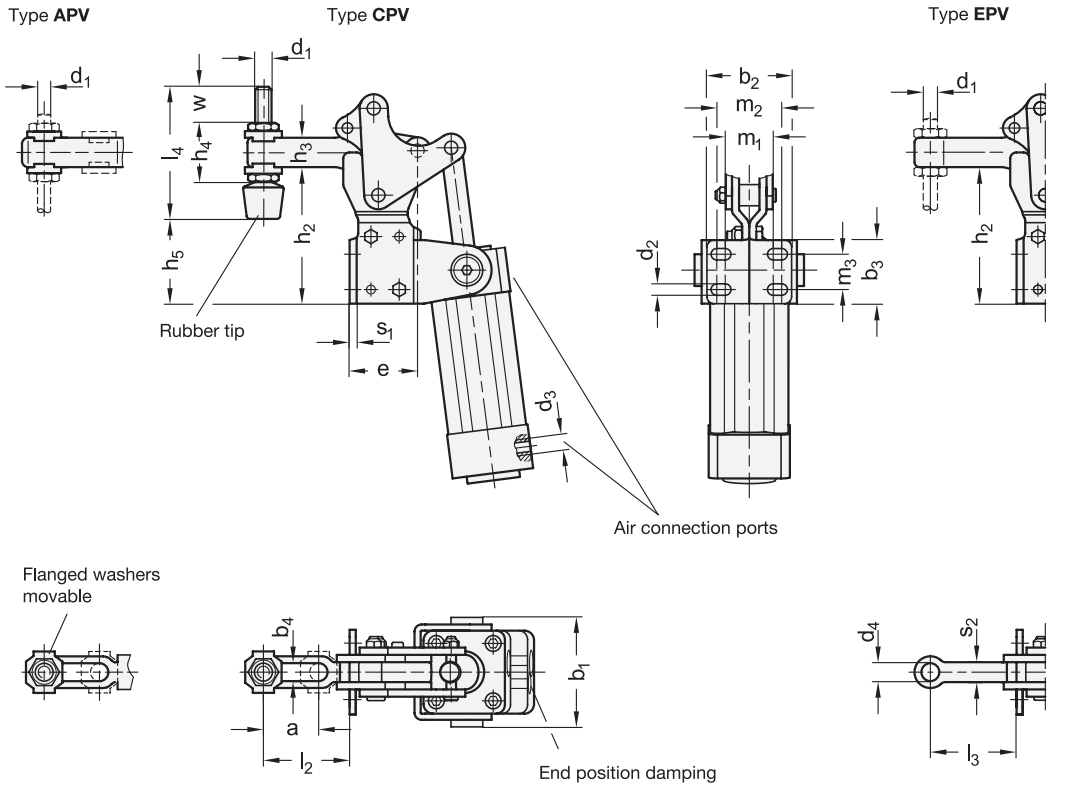
3 Coding

M Magnetic piston

1

Size Type APV / CPV	Type EPV	F_H in N Holding capacity	F_S in N Clamping force at 6 bar ≈	a ≈	b_1 ≈	b_2	b_3	b_4	d_1	d_2	d_3	d_4	Inside Ø Connection tube	e ≈	h_1 ≈
220	-	2200	870	35	62	48	36	6,3	M 6	6,5	G ⅛	-	4	38,3	221
440	-	4400	1220	35	74	65	54	10,3	M 10	8,5	G ¼	-	6	54,1	287
-	850	8500	2280	-	87,5	75	75	-	M 12	10,5	G ¼	12,5	8	70,7	355

Size Type APV / CPV	Type EPV	h_2	h_3	h_4 ≈	h_5	l_1 ≈	l_2 ≈	l_3 ≈	l_4	m_1	m_2	m_3	r	s_1	s_2	w Adjustable range
220	-	77	16,6	26	60,3	161	51	-	65	30	34	20	96	3,5	-	27
440	-	106	24	38	78	195	60	-	77	42,5	46,5	30	125	5	-	18
-	850	140	31	-	-	229	-	68	-	52	56	55	151	6	12	-



Specification

- Base
  Steel, phosphate-treated
- Bearing pins / bushings
  Steel
  hardened and ground
- Double-action air cylinder
  with adjustable end position damping
  max. pressure 6 bar
- All moving parts
  lubricated with special grease
- Spindle assembly GN 708.1, type A
  - Steel, zinc plated
  - Rubber tip 85 Shore A
- RoHS

Accessory

- Sensor GN 3380 → *Page 66*

Information

Toggle clamps „Longlife“ GN 962 are equipped with a reinforced body and hardened and ground bearing pins / bushings. This makes them suitable for applications in which substantial forces arise and a long service life is required.

To ensure an extended life of the mechanical parts as well as the pneumatic cylinder, the operating pressure should not exceed 6 bar. In addition, a compressed-air control unit should be mounted in the air intake line.

Toggle clamps GN 962 are equipped with a magnetic piston as standard. This makes end position detection possible in connection with sensors GN 3380.

see also...

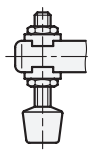
- *More information for toggle clamps (pneumatic)* → *Page 12*

How to order

GN 962-440-APV-M

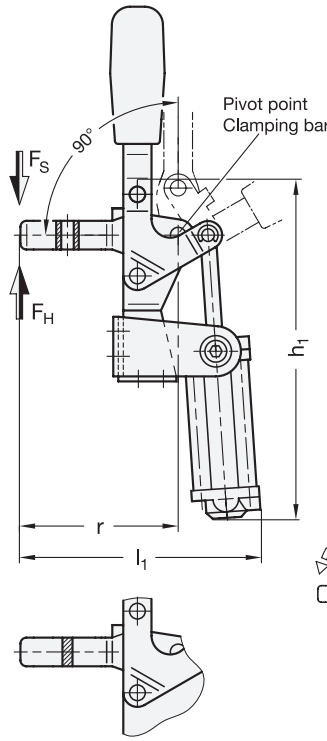
1	Size
2	Type
3	Coding

Type **CPV3S**

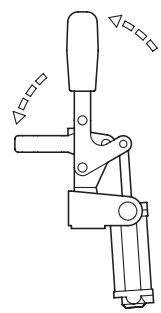


Type **APV3S**

Type **EPV3S**



Operating principle



2 **Type**

APV3S U-bar version, with two flanged washers

CPV3S U-bar version, with two flanged washers and GN 708.1 Spindle Assembly

EPV3S Solid bar version, with clasp

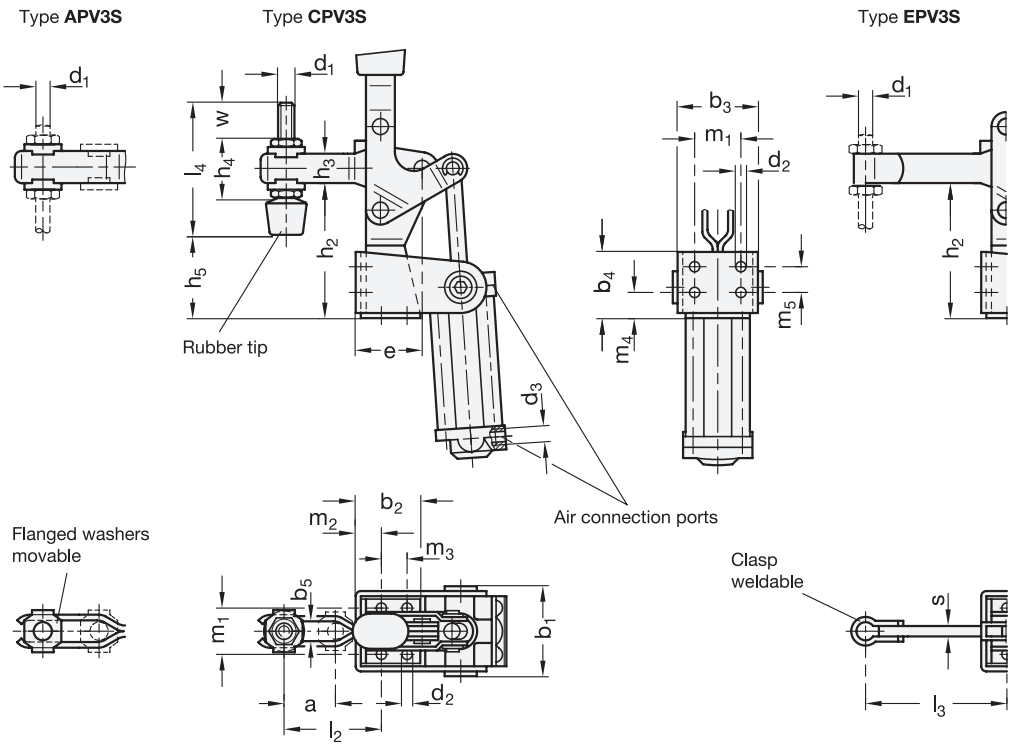
3 **Coding**

M Magnetic piston

1

Size	F_H in N Holding capacity	F_S in N Clamping force at 4 bar ≈	a	b_1	b_2	b_3	b_4	b_5	d_1	d_2	d_3	Inside Ø Connection tube	e
200	1600	970	34	59,5	38,5	51	35	8,5	M 8	6,5	G⅛	4	39,5
300	2400	1050	42	68,5	53	60,5	50	10,3	M 10	8,5	G¼	6	50,5

Size	h_1	h_2	h_3	h_4 ≈	h_5	l_1 ≈	l_2 ≈	l_3 ≈ max.	l_4	m_1	m_2	m_3	m_4	m_5	r ≈	s	w Adjustable range
200	296	78	17	29	54	150	59	80	68	26	14,5	16	11	16	98	6	21
300	360	108	20	35	79,5	187	74	104	77	30	16,5	28	12	30	122	8	21



Specification

- Parts in sheet metal
  Case-hardened steel C10
  zinc plated, blue passivated
- Bearing pins hardened
- Bearing rivets case-hardened
- Air cylinder bearing pins
  case-hardened
- Double-action air cylinder
  max. pressure 6 bar
- All moving parts
  lubricated with special grease
- Solid moulded plastic handle sleeve
  red, oil resistant
- Spindle assembly GN 708.1, type A
  - Steel, zinc plated
  - Rubber tip 85 Shore A
- RoHS

Accessory

- Clamping screws → *Page 29 ff.*
- Holders for clamping screws GN 801
  (for type APV3S) → *Page 34*
- Holders for clamping screws GN 809
  (for type EPV3S) → *Page 35*
- Proximity switches GN 896.2 → *Page 28*

Information

GN 862.1 Toggle clamps are built from the same construction as GN 862.

The special features of these clamps are that they can be mounted in two different planes, and they can also be operated manually via the grip handle. For example, they can individually be manually closed, and then all clamps can be opened at once via the pneumatic function.

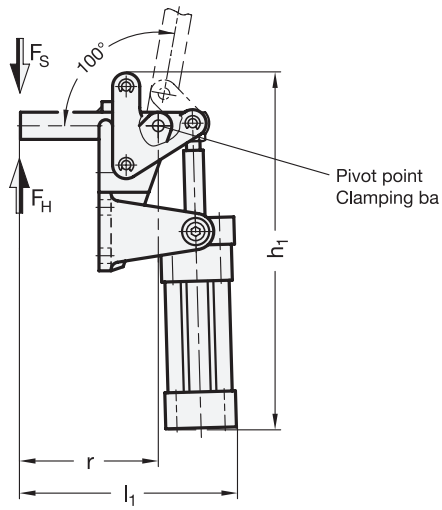
To ensure an extended life of the mechanical parts as well as the air cylinders the operating pressure should not exceed 6 bar.

GN 862.1 Toggle clamps are also available as a version M (magnetic piston). In conjunction with GN 896.2 proximity switches, the end position can be sensed and the generated impulse can be used to transmit an electrical signal.

see also...
- *More information for toggle clamps (pneumatic)* → *Page 12*

How to order (without magnetic piston)		
GN 862.1-300- EPV3S	1	Size
	2	Type

How to order (with magnetic piston)		
GN 862.1-200-APV3S-M	1	Size
	2	Type
	3	Coding



2 **Type**

EPV solid clamping arm

3 **Coding**

M Magnetic piston

1

Size	F_H in N Holding capacity	F_S in N Clamping force at 6 bar ≈	b_1 ≈	b_2	b_3	b_4	d_1	d_2	Inside Ø Connection tube	h_1 ≈
1000	10000	3250	102	90	80	20	10,5	G¼	8	355
2000	20000	5600	112	100	90	20	12,5	G⅜	10	425

Size	h_2	h_3	l_1 ≈	l_2 ≈	m_1	m_2	m_3	m_4	r	s
1000	132,5	25	217,5	80	50	12,5	50	-	144	13
2000	161	35	246,5	100	54	12,5	58	45	168,5	14

Specification

- Body
  cast steel
  black lacquered
- other parts
  Steel St 60
  zinc plated, blue passivated
- Bearing pins
  case-hardened
- Double-action air cylinder
  with adjustable cushioning
  max. pressure 6 bar
- all moving parts
  lubricated with special grease
- RoHS

Accessory

- Proximity switch GN 896.3 → *Page 28*

Information

GN 863 Toggle clamps have been constructed in such a way as to make them easy to unmount: The bearing pins are axially fixed with circlips. This allows the clamping arm to be modified once it is dismantled, to suit any particular application.

To ensure an extended life of the mechanical parts as well as the air cylinder the operating pressure should not exceed 6 bar. In addition a lubrication control unit should be mounted in the air in-feed line.

GN 863 Toggle clamps are available as version M (magnetic piston). In conjunction with a GN 896.3 proximity switch the end position is sensed and the generated signal can be used in sequence control systems.

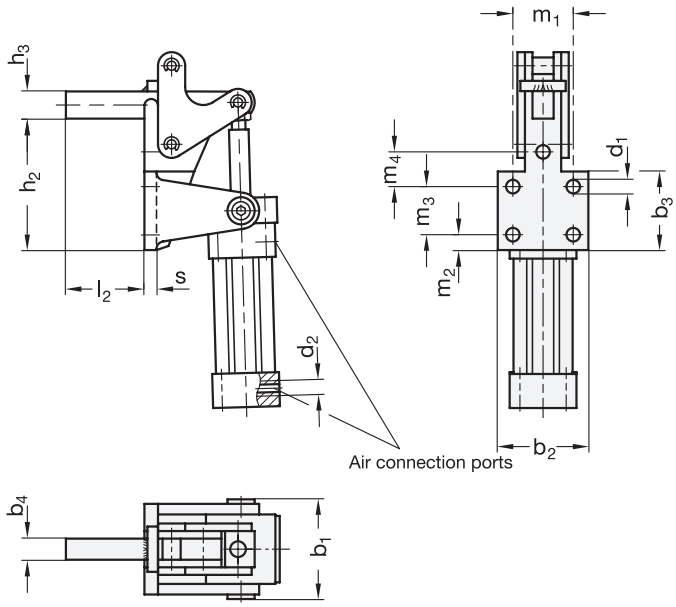
see also...

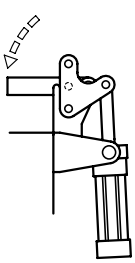
- *More information for toggle clamps (pneumatic)* → *Page 12*

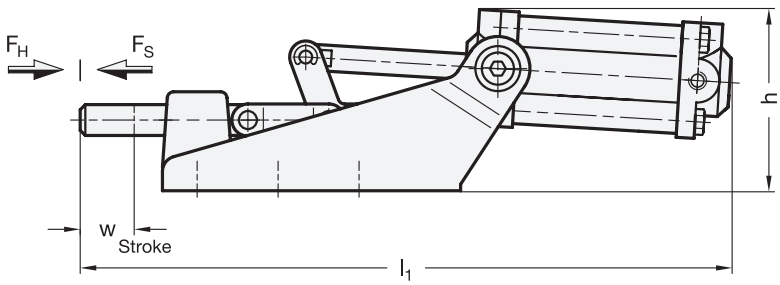
How to order

GN 863-1000-EPV-M

1	Size
2	Type
3	Coding


h3
h2
l2
s
d2
m1
m4
m3
m2
d1
b3
b2
Air connection ports
b4
b1





2 Type

SP3 Body
Steel forged

3 Coding

M Magnetic piston
from size 360 and up

1

Size	F_H in N Holding capacity	F_S in N Clamping force at 4 bar ≈	a	b_1	b_2	d_1	d_2	d_3	d_4	Inside Ø Connection tube	h
70	1200	550	14	42	64	8,5	M 6	4,3	G1⁄8	4	52
360	5600	1000	27,5	55	90	12	M 8	5,5	G1⁄8	4	70
1100	16000	1850	28	66	133	16	M 10	8,5	G1⁄4	6	88
2100	25000	3000	38,5	80	177	20	M 12	8,5	G1⁄4	8	100

Size	l_1	l_2	l_3	l_4	m_1	m_2	m_3	m_4	s ≈	t	w Stroke
70	171	78,5	20	64	26	13	26	-	8	12	12
360	260	113	32	116	33,5	30	36,5	-	9,5	16	21
1100	355	171	49	167	41	15	35	41	12	18	31
2100	469	222	61,5	231	50	35	50	50	13	22	45

Specification

- Body
  Steel
  - forged
  - chemically blackened
- Parts in sheet metal
  - case-hardened steel C10
  - zinc plated, blue passivated
- Tapped connecting rod
  Steel St 37
  zinc plated, blue passivated
- Bearing pins (Bearing rivets)
  case-hardened
- Double-action air cylinder
  max. pressure 6 bar
- All moving parts
  lubricated with special grease
- RoHS

Accessory

- Proximity switches GN 896.1 / GN 896.2
→ *Page 28*

Information

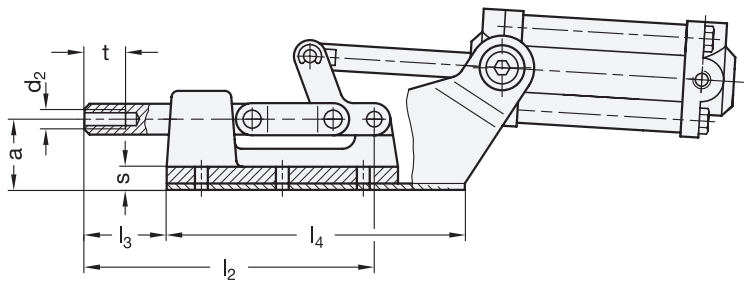
The working principle of the GN 890 toggle clamps is identical in construction and dimensions to the manual toggle clamps GN 842.

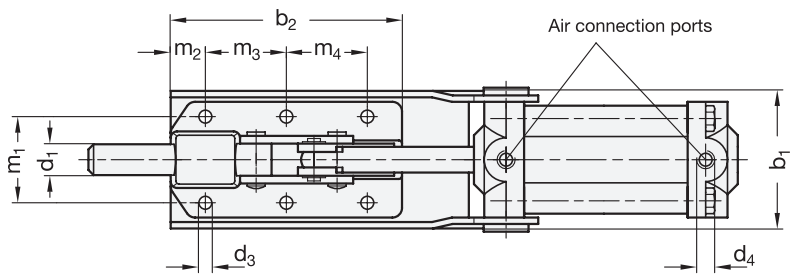
To ensure an extended life of the mechanical parts as well as the air cylinder, the operating pressure should not exceed 6 bar. In addition a lubrication control unit should be mounted in the air in-feed line. The sturdy mounting frame for the cylinder has been designed to avoid the trunions of the cylinder to protruding over the frame.

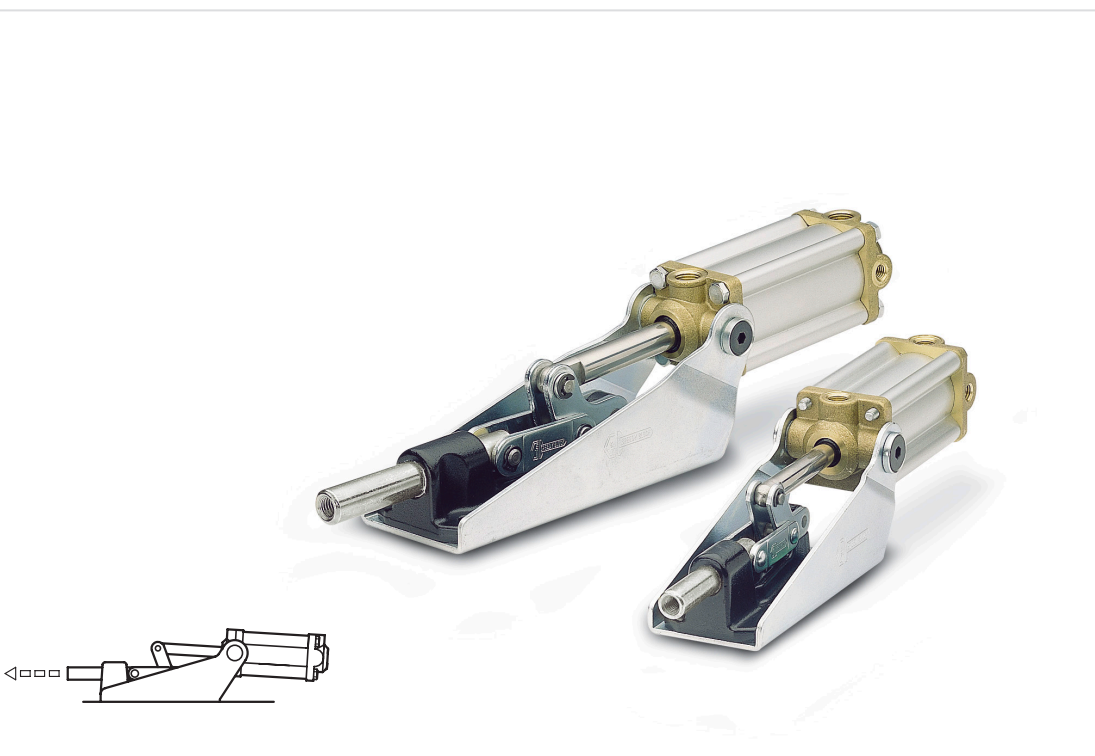
GN 890 Toggle clamps are also available as from size 360 as version M (with magnetic piston). In conjunction with a proximity switch (GN 896.1 / GN 896.2) the end position is sensed and the generated signal can be used in sequence control systems.

How to order (without magnetic piston)		
GN 890-1100-SP3 (1 2)	1	Size
	2	Type

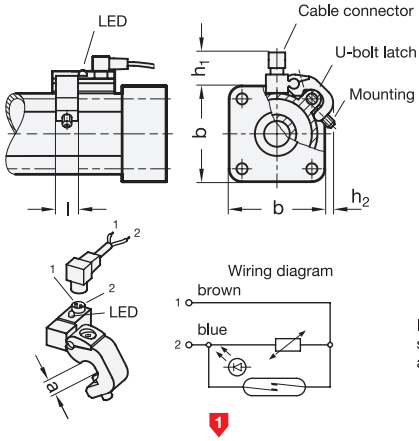
How to order (with magnetic piston)		
GN 890-360-SP3-M (1 2 3)	1	Size
	2	Type
	3	Coding


t
d2
a
s
l3
l4
l2

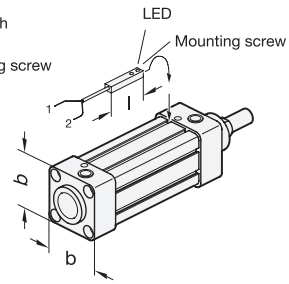

b2
m2
m3
m4
Air connection ports
m1
d1
b1
d3
d4



GN 896.1 / GN 896.2



GN 896.3



Insert the thinner part of the proximity switch into the provited slot, turn 90° and affix inside the slot via the mounting screw.

Toggle clamps	Proximity switches	b	h_1 ≈	h_2 ≈	Length l
GN 860-200-AP3-M	GN 896.2	44	24	10	14
GN 860-200-EP3-M	GN 896.2	44	24	10	14
GN 860-300-AP3-M	GN 896.2	50	27	11	14
GN 860-300-EP3-M	GN 896.2	50	27	11	14
GN 860-400-AP3-M	GN 896.1	62	24	10	14
GN 860-400-EP3-M	GN 896.1	62	24	10	14
GN 861-1000-EP-M	GN 896.3	65	-	-	30
GN 861-2000-EP-M	GN 896.3	75	-	-	30
GN 862-200-APV3-M	GN 896.2	44	24	10	14
GN 862-200-EPV3-M	GN 896.2	44	24	10	14
GN 862-300-APV3-M	GN 896.2	50	27	11	14
GN 862-300-EPV3-M	GN 896.2	50	27	11	14
GN 862.1-200-APV3S-M	GN 896.2	44	24	10	14
GN 862.1-200-EPV3S-M	GN 896.2	44	24	10	14
GN 862.1-300-APV3S-M	GN 896.2	50	27	11	14
GN 862.1-300-EPV3S-M	GN 896.2	50	27	11	14
GN 863-1000-EPV-M	GN 896.3	65	-	-	30
GN 863-2000-EPV-M	GN 896.3	75	-	-	30
GN 890-360-SP3-M	GN 896.2	44	24	10	14
GN 890-1100-SP3-M	GN 896.2	50	27	11	14
GN 890-2100-SP3-M	GN 896.1	62	26	10	14

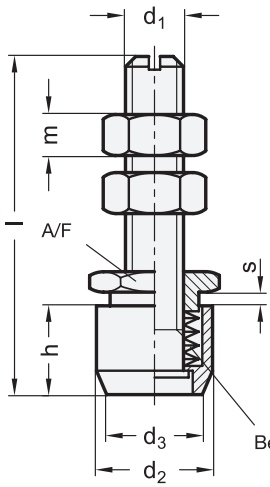
Information

With proximity switches GN 896.1 to GN 896.3 the toggle clamps can emit control signals. To do this the clamps must be assembled with a special cylinder with magnetic piston which will cause the electric contacts in the REED switch to close. The proximity switches with their mounting brackets can be set anywhere along the full stroke length of the cylinder.

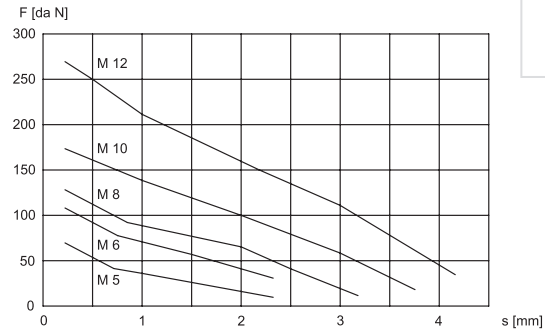
Specification	GN 896.1	GN 896.2	GN 896.3
Voltage range:	3 to 110 V AC/DC	3 to 110 V AC/DC	3 to 110 V AC/DC
Switch load:	0,3 A	0,3 A	0,2 A
Switch capacity (ind.):	10 VA	10 VA	6 VA
Voltage drop LED:	3 V	3 V	3 V
Temp. range:	- 20 °C to + 85 °C	- 20 °C to + 85 °C	- 20 °C to + 85 °C
Slew rate:	0,6 ms	0,6 ms	0,5 ms
Life expectancy:	10^7 operations	10^7 operations	10^7 operations
Protection class:	IP 67	IP 67	IP 67

Electric cable PVC
2 wires, 2,5 m.
If used on DC brown wire to be connected to +, for the diode to work.

How to order	1	Code
GN 896.1		



Belleville spring washers



1 d_1	2 Length l ±1	d_2	d_3	h	m	A/F
M 5	45	13	11	13	4	14
M 6	50	16	13	15	4	16
M 8	70	18	15	17	5	18
M 10	85	24	18	20	6	24
M 12	106	28	21	24	7	27

Specification

- Screw
  Steel
  - Tensile strength class 5.8
  - zinc plated, blue passivated
- Hexagon nuts
  Steel
  zinc plated, blue passivated
- Thrust pad
  Steel
  nitrided, blackened
- *Strength values of screws*
  → Main Catalogue Page 1481
- RoHS

Information

In order to pass the dead centre point and / or compensate for work piece tolerances when using hand operated toggle clamps, an elastic thrust pad such as GN 708.1 can be used.

Clamping screws GN 804 fitted with Belleville spring washers do not only help to overcome workpiece tolerances but they also allow presetting of the required clamping force.

This adjustment can be made with the hexagon nut (A/F). The setting nut stroke is the distance by which the Belleville spring washers can be pre-loaded as shown on the above graph to give the required clamping force.

The thrust pad is movable.

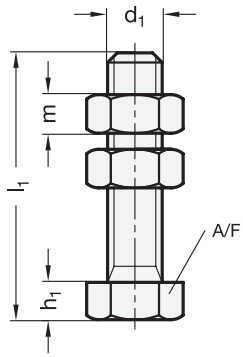
The two hexagon nuts are included parts of the order.

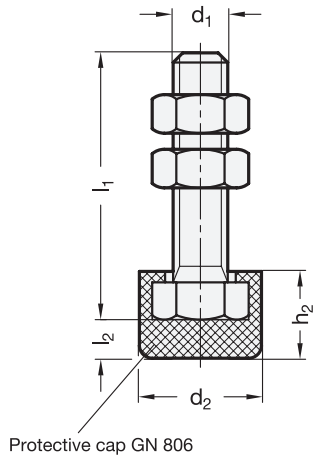
see also...
- *Holders for clamping screws GN 809*
  (for toggle clamps with solid clamping arm) → Page 34
- *Holders for clamping screws GN 801*
  (for toggle clamps with forked clamping arm) → Page 35

How to order		
GN 804-M10-85 (1 2)	1	d_1
	2	Length l

Clamping screws

with / without protective cap





Protective cap GN 806

Inox
Stainless
Steel

3 Type

A without protective cap
B with protective cap

1		2								
d_1 Steel	Stainless Steel	**l_1**			**d_2**	**h_1**	**h_2**	**l_2**	**m**	**A/F**
M 4	M 4	23	-	-	11	3	6,5	2,5	3,2	7
M 5	M 5	38	-	-	12,5	3,5	8	2,5	4,7	8
M 6	M 6	29	49	-	15	4	10	4	5,2	10
M 8	M 8	36	56	96	19	5,5	13	5,5	6,8	13
M 10	-	43	77	127	24	6,5	16	7	8,4	16
M 12	-	53	88	128	26	7,5	19	8,5	10,8	18
M 14*	-	54	-	-	-	9	-	-	12,8	21

* Toggle clamp spindle assemblies M14 is not available as type B (with protective cap)

Specification

4

- Steel —
  - Hexagon head screw ISO 4017 / DIN 933
    Tensile strength class 8.8
    zinc plated, blue passivated
  - Hexagon nuts ISO 4032
    zinc plated, blue passivated
- Stainless Steel AISI 304 **NI**
  - Hexagon head screw ISO 4017 / DIN 933
  - Hexagon nuts ISO 4032
- Protective caps GN 806
  → *Main Catalogue Page 1089*
- *Stainless Steel characteristics*
  → *Main Catalogue Page 1489*
- RoHS

Information

The two hexagon nuts are included parts of the order.

see also...

- *Holders for clamping screws GN 809*
  (for toggle clamps with solid clamping arm) → *Page 34*
- *Holders for clamping screws GN 801*
  (for toggle clamps with forked clamping arm) → *Page 35*

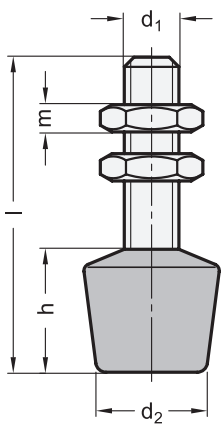
How to order (Steel)		
1 2 3 GN 807-M8-56-B	1	d_1
	2	l_1
	3	Type

How to order (Stainless Steel)		
1 2 3 4 GN 807-M6-29-A-NI	1	d_1
	2	l_1
	3	Type
	4	Material

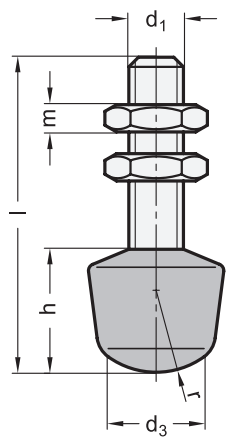
Clamping screws

with rubber pressure pad

Type **A**



Type **B**



Inox Stainless Steel

3 Type

A Flat spindle tip
B Rounded spindle tip

1 d_1	2 Length l			d_2	d_3	h	m	r
M 4	33	43	-	8	8	10	2,2	6
M 5	45	55	-	10	9	11	2,7	8
M 6	35	55	65	13	12	12	3,2	10
M 8	43	68	-	16	14	18	4	12
M 10	50	77	97	20	18	21	5	15
M 12	100	130	-	25	23	24	6	18

Specification

4

- Spindle
  - Steel **ST**
    zinc plated, blue passivated
  - Stainless Steel AISI 304 **NI**
- Hexagon nuts ISO 4035
  - Steel
    zinc plated, blue passivated
  - Stainless Steel AISI 304
- Pressure pad
  Rubber, Neoprene (CR)
  - 85 Shore A ≈
  - vulcanized
  - black
- *Elastomer characteristics*
  → *Main Catalogue Page 1483*
- *Stainless Steel characteristics*
  → *Main Catalogue Page 1489*
- RoHS

Information

The two hexagon nuts are included parts of the order.

see also...

- *Holders for clamping screws GN 801*
  (for toggle clamps with forked clamping arm) → *Page 34*
- *Holders for clamping screws GN 809*
  (for toggle clamps with solid clamping arm) → *Page 35*

How to order (Steel)

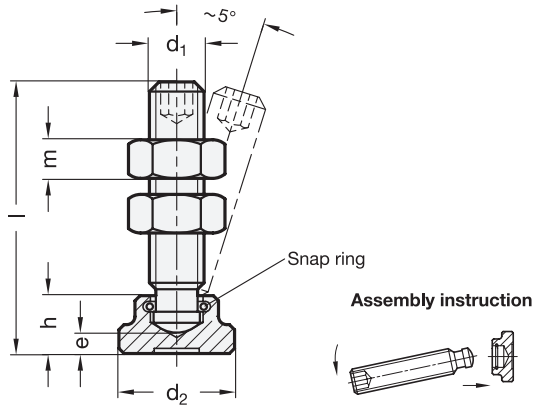
1 2 3 4
GN 708.1-M8-43-B-ST

1	d_1
2	Length l
3	Type
4	Material

How to order (Stainless Steel)

1 2 3 4
GN 708.1-M5-45-A-NI

1	d_1
2	Length l
3	Type
4	Material



1	2							
d_1	Length **l**				**d_2**	**e**	**h**	**m**
M 5*	37	-	-	-	14	-	10	4,7
M 6	32	42	52	-	12	2,2	7	5,2
M 8	38	48	63	83	16	3	9	6,8
M 10	44	54	64	84	20	3,6	11	8,4
M 12	55	65	85	105	25	4,5	13	10,8

* Clamping bolt M5: bolt end and thrust pad are not hardened and not removable.

Specification

- Screw DIN 6332
  Steel
  - Thrust point hardened (type SK)
  - blackened
- Thrust pad DIN 6311
  Steel
  case hardened
- Hexagon nuts ISO 4032 / DIN 934
  Steel
  zinc plated, blue passivated
- RoHS

Information

By means of the retaining ring in the thrust pad a simple and toggle link between screw and thrust pad is created.

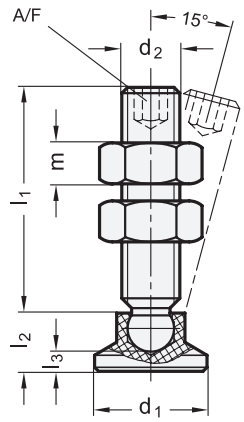
The two hexagon nuts are included parts of the order.

see also...
- *Holders for clamping screws GN 809 (for toggle clamps with solid clamping arm)* → *Page 34*
- *Holders for clamping screws GN 801 (for toggle clamps with forked clamping arm)* → *Page 35*

How to order		
GN 802-M8-48 (1 2)	1	d_1
	2	Length l

Clamping screws

with swivel plastic thrust pad



Inox Stainless Steel

1 d_1	2 d_2	3 l_1				l_2	l_3 ≈	m	A/F
15	M 6	26	36	46	-	7,6	3,6	5,2	3
15	M 8	20	35	45	58	7,6	2,5	6,8	4
18	M 8	20	35	45	58	9,2	4,2	6,8	4
18	M 10	34	44	57	74	9,2	3,4	8,4	5
21	M 8	20	35	45	58	10	5	6,8	4
21	M 10	34	44	57	74	10	4,3	8,4	5
21	M 12	34	57	74	94	10	3,4	10,8	6
25	M 8	20	35	45	58	10,5	5,5	6,8	4
25	M 10	34	44	57	74	10,5	4,6	8,4	5
25	M 12	34	57	74	94	10,5	3,6	10,8	6
32	M 8	20	35	45	58	11	6	6,8	4
32	M 10	34	44	57	74	11	5	8,4	5
32	M 12	34	57	74	94	11	4,2	10,8	6
40	M 8	20	35	45	58	13	8	6,8	4
40	M 10	34	44	57	74	13	7	8,4	5
40	M 12	34	57	74	94	13	6,2	10,8	6

Specification

4

- Screw
  - Steel **ST**
    Tensile strength class 5.8
    blackened
  - Stainless Steel AISI 303 **NI**
- Hexagon nuts ISO 4032
  - Steel
    zinc plated, blue passivated
  - Stainless Steel AISI 303
- Thrust pad
  Plastic (Polyacetal POM)
  - temperature resistant up to 80 °C
  - matte black
- *Strength values of screws*
  → Main Catalogue Page 1481
- *Stainless Steel characteristics*
  → Main Catalogue Page 1489
- RoHS

Information

The ball end of the grub srew can be hit easily into the thrust pad and removed.

The two hexagon nuts are included parts of the order.

see also...

- *Holders for clamping screws GN 809*
  (for toggle clamps with solid clamping arm) → *Page 34*
- *Holders for clamping screws GN 801*
  (for toggle clamps with forked clamping arm) → *Page 35*

How to order (Steel)

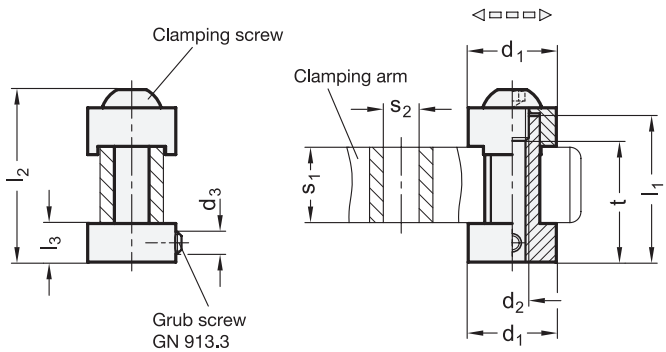
1 2 3 4
GN 903-18-M8-35-ST

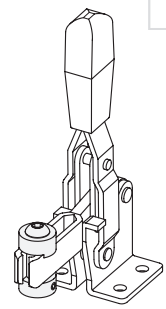
1	d_1
2	d_2
3	l_1
4	Material

How to order (Stainless Steel)

1 2 3 4
GN 903-21-M12-57-NI

1	d_1
2	d_2
3	l_1
4	Material





1 d_1	2 d_2	l_1	l_2	l_3	d_3	s_1 Height Clamping arm	s_2	t useable thread depth of the clamping arm	for toggle clamps GN 810 GN 810.1	GN 812 GN 812.1	GN 820 GN 820.1 GN 820.2 GN 820.3 GN 820.4	GN 860 GN 862 GN 862.1
16	M 6	26,5	33 (31)*	7	M 4	16 (14)*	6,5	24 (22)*	130	-	130	125
18	M 8	31	38 (37)**	8	M 5	18 (17)**	8,5	26 (25)**	230	200	230	200
22	M 10	37	47 (45)***	8	M 5	22 (20)***	10,5	30 (28)***	330	300	355	300
24	M 10	41	49	8	M 5	24	10	32	-	-	-	-
26	M 10	39	48	8	M 5	22	12,5	30	430	-	-	400

* Dimension in parentheses applies to GN 860
** Dimension in parentheses applies to GN 812, GN 812.1, GN 862 and GN 862.1
*** Dimension in parentheses applies to GN 812, GN 812.1, GN 860, GN 862 and GN 862.1

Specification

- Steel
  zinc plated, blue passivated
- RoHS

Information

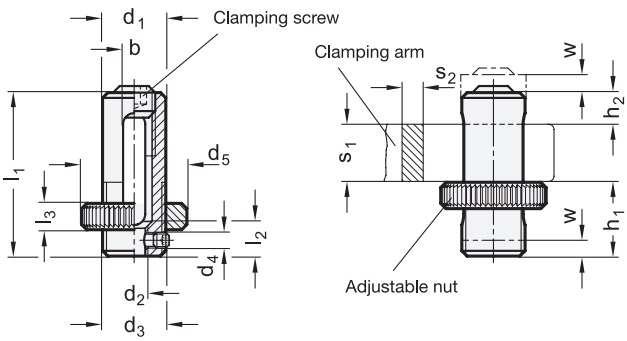
GN 801 holders for clamping screws have been developed for use with toggle clamps that are designed with a forked clamping arm.

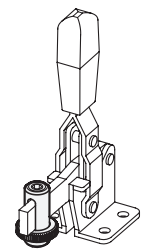
The holder can be moved along the clamping arm. Once the desired position is reached, you can secure the mount in place with the clamping screw.

The thread d_2 serves to hold the wide variety of clamping screws, spring elements and similar devices.

The ideal clamping height can be adjusted without loosening the holder for clamping screws on the forked clamping arm.

How to order		
GN 801-16-M6 (1 2)	1	d_1
	2	d_2





1 d_1	2 d_2	b	d_3	d_4	d_5	h_1 max.	h_1 min.	h_2 max.	h_2 min.
12	M 5	4,2	M 12 x 1,5	M 3	20	14	8	12	6
16	M 6	5,3	M 16 x 1,5	M 4	22	16 (18)*	10	16	8
18	M 8	6,3	M 18 x 1,5	M 4	24	23 (24)**	13	20	10
20	M 8	7,3	M 20 x 1,5	M 5	27	25	15	20	10
22	M 10	8,3	M 22 x 1,5	M 5	30	28	16	24	12

d_1	l_1	l_2 max. thread depth	l_3	s_1	s_2	w Adjustable range axial	for toggle clamps GN 860 GN 862 GN 862.1	GN 810 GN 810.1	GN 820 GN 820.1 GN 820.3 GN 820.4	GN 812 GN 812.1
12	31	6	5	11	4	3	70	75	75	-
16	40	10	5,5	16 (14)*	5	4	125	130	130	-
18	51	13	6	18 (17)**	6	5	200	230	230	200
20	57	15	7	22	7	5	-	330	355	-
22	60	16	8	20	8	5	300	-	-	300

* Dimension in parentheses applies only to GN 860 ** Dimension in parentheses applies only to GN 812, GN 812.1, GN 862 and GN 862.1

Specification

- Steel
  zinc plated, blue passivated
- RoHS

Information

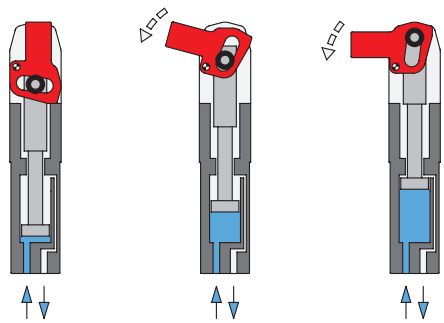
GN 809 holders for clamping screws have been developed for various toggle clamps in the design version „solid clamping arm“.

The holder can be moved along the clamping arm and be adjusted in height. Once the desired position is reached, fix the mounting in place with the clamping screw.

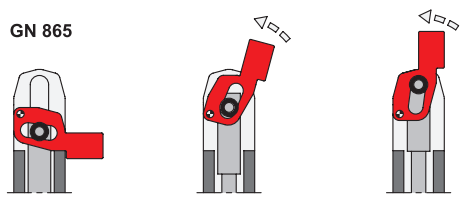
The thread d_2 serves to hold the wide variety of clamping screws, spring elements and similar devices.

How to order		
GN 809-12-M5 (1 = 12, 2 = M5)	1	d_1
	2	d_2

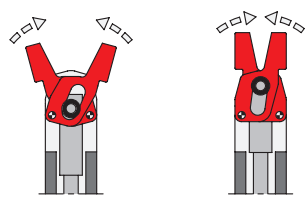
GN 864

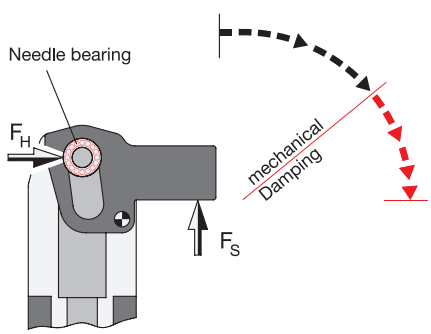


GN 865



GN 866





These pneumatically operated power clamps (Patent) are used for clamping, holding, gripping and positioning of work pieces in jigs and handling systems.

The salient points of these power clamps are:

- the high clamping force
- the small dimensions
- the reduced air consumption
- the light weight

The drawings shown here explain the functional principle of the dead point mechanism as well as the three available types.

Pistons with diameters of 20, 32, 40 and 50 mm yield a clamping force of 60 Nm up to 475 Nm, which leads to clamping forces being much above those of competitors' power clamps.

The power clamps have been designed and configured to achieve an extended life. Functional tests have proved that even after 20 million cycles they were still serviceable.

Further salient design points are:

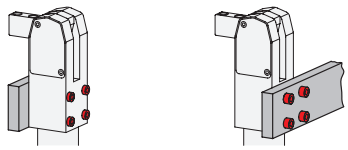
- The clamp is kinematically designed such that self-retention (holding force F_H) is achieved in the clamped position (clamping force F_S) after passing the dead point due to irreversibility.

- The forward stroke sequence of the clamping arm is rapid but the ultimate clamping action is slow and as a result pneumatic damping is normally not required. Upon request, however, it can be supplied when big masses are moved.

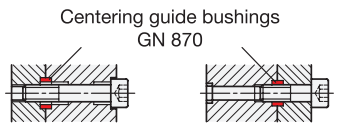
- The clamping mechanism is fitted with needle bearings which give optimum clamping forces and reduced wear.

- The steel cylinder with the integrated clamping mechanism are in one unit. This leads to high stability for these small units with an extended range of applications. The placement of the air connection at the bottom end leads also to many other advantages.

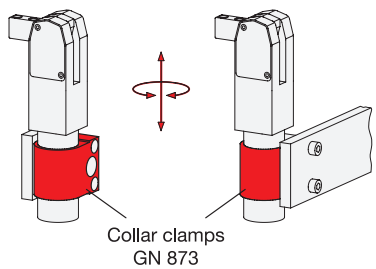
- The clamping mechanism of GN 864 is also shrouded to avoid the ingress of dirt and other objects which could interfere with the proper functioning of the clamps (such as welding operations!)



The mounting holes on the main body of the power clamps have been designed to allow installation direct on the female threaded holes or alternatively with through bolts.

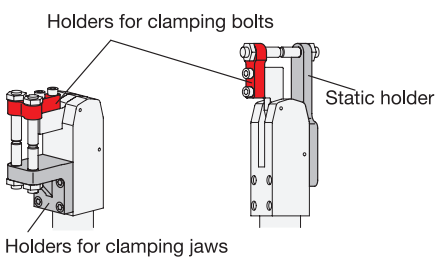


Centering guide bushings present an important function when mounting the power clamps: they absorb lateral thrust and they ensure a precise alignment.



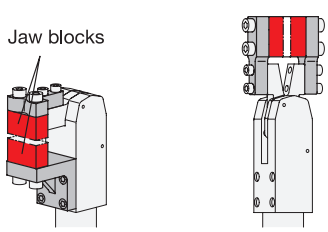
Mounting of the cylinder by a collar clamp increases the numerous ways they can be installed.

Even collar clamps use centering guide bushings for precise positioning.

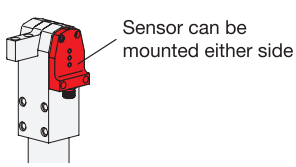


There is an extensive range of accessories available for power clamps, such as tool holders (for clamping arms) thrust bolts and clamping jaws. The sketches shown on the right give some idea.

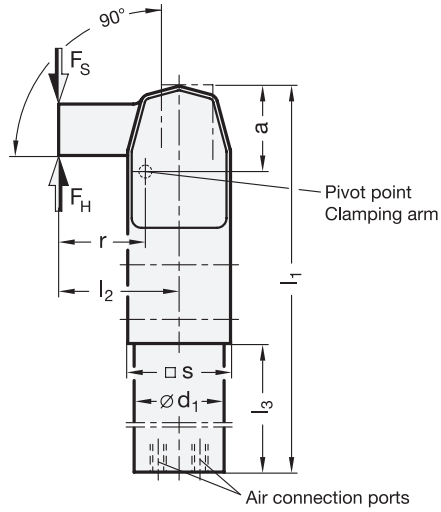
The combination of clamping tools on the clamping arm and static holders represent together a tool set.



For the fixing and precise positioning of clamping arms and jaw blocks, centering guide bushings GN 870 are also used. The individual data sheets give further information.



All power clamps can be fitted with proximity switches (inductive sensors) to monitor the end position of the stroke.



2 **Type**

BL Clamping arm horizontal

1

Size (Piston-Ø)	max. clamping moment in Nm at 6 bar	F_S in N Clamping force at r at 6 bar	F_H in N Holding capacity at r at 6 bar	a	b –0,2	d_1 h8	d_2	d_3 H8	d_4	d_5	h_1	h_2
20	60	2220	4070	27	10	28	M 5	7	4,2	M 5	16	51
32	150	4110	5620	36,5	12	40	M 6	9	5	G 1/8	21	75,5
40	300	6740	7530	44,5	16	50	M 8	11	6,8	G 1/8	26	91,5
50	475	9000	13300	52,5	18	60	M 10	13	8,5	G 1/8	31	114

Size (Piston-Ø)	l_1 –0,5	l_2	l_3	l_4	l_5	m_1 ±0,01	m_2	m_3 ±0,01	m_4 ±0,01	m_5	r	s	t
20	150	37,5	70	21,5	4,5	12	7,5	17	22	13	27	32	13
32	206	52	91	31	6	18	10	25	30	22	36,5	42	15
40	244	63	104	37	7,5	22	13	30	37	25	44,5	52	18
50	279	72,5	110,5	41,5	8	27	12	47	44	35	52,5	62	21

Specification

3

- Steel C45
  - blackened —
  - anti-stick coating fluoropolymer (PTFE), green **FG**
- max. pressure 10 bar
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

The maximum clamping moment of the power clamps GN 864 is reached once the clamping arm is at the end of its stroke. For this reason the working stroke should be completed as closely as possible to the stroke end.

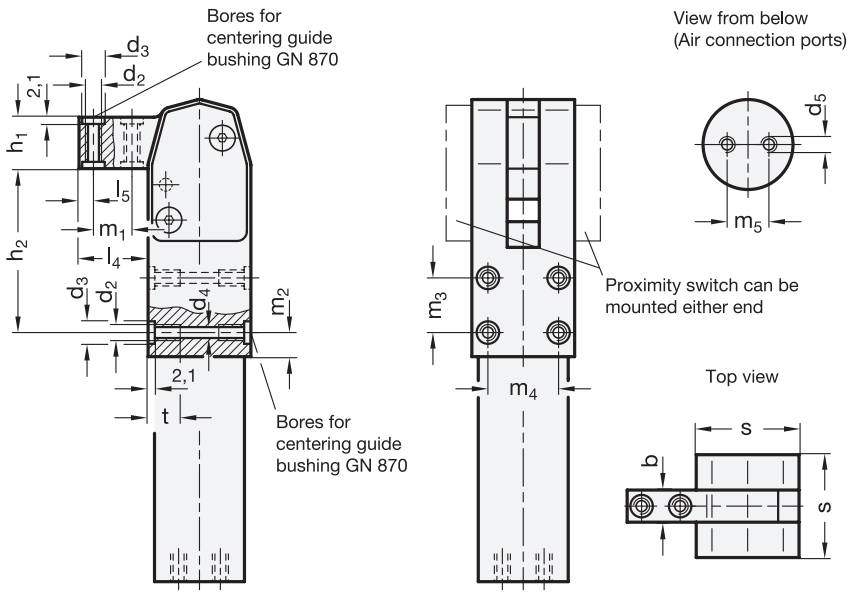
The type FG is equipped with an anti-stick coating of fluoropolymer (PTFE) for protection against welding spray and corrosion. With protective covers GN 864.1, the tensioning mechanism can be additionally protected against penetrating dirt.

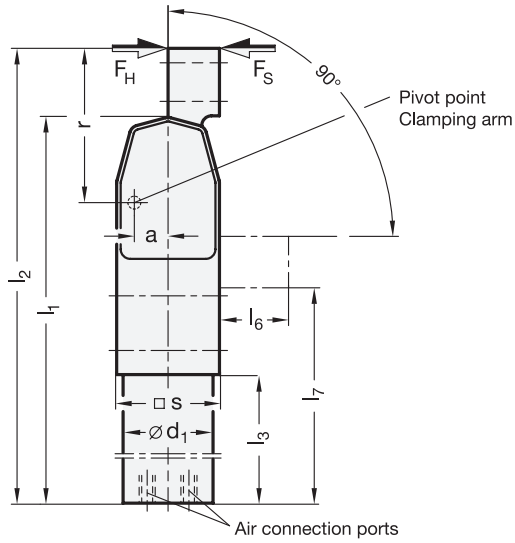
see also...

- *Operating principle, mounting methods → Page 36 ff.*
- *Protective covers GN 864.1 → Page 55*
- *other accessories → Page 44 ff.*

How to order (blackened)		
GN 864 - 20 - BL	1	**Size**
1 2	2	**Type**

How to order (anti-stick coating)		
GN 864-40-BL-FG	1	**Size**
1 2 3	2	**Type**
	3	**Finish**


Bores for centering guide bushing GN 870
View from below (Air connection ports)
Proximity switch can be mounted either end
Top view
Bores for centering guide bushing GN 870



2 Type

BI Clamping arm vertical

1

Size (Piston-Ø)	max. clamping moment in Nm at 6 bar	**F_S in N** Clamping force at r at 6 bar	**F_H in N** Holding capacity at r at 6 bar	**a**	**b** −0,2	**d_1** h8	**d_2**	**d_3** H8	**d_4**	**d_5**	**h_1**	**h_2**	**l_1** −0,5
20	60	1250	2300	10,5	10	28	M 5	7	4,2	M 5	16	16	150
32	150	2220	3040	15,5	12	40	M 6	9	5	G ⅛	21	21	206
40	300	3640	4060	18,5	16	50	M 8	11	6,8	G ⅛	26	26	244
50	475	4900	7200	21,5	18	60	M 10	13	8,5	G ⅛	31	31	279

Size (Piston-Ø)	**l_2** −0,5	**l_3**	**l_4**	**l_5**	**l_6**	**l_7** −0,5	**m_1** ±0,01	**m_2**	**m_3** ±0,01	**m_4** ±0,01	**m_5** ±0,01	**m_6**	**r**	**s**	**t**
20	171	70	21	4,5	21	97	12	7,5	17	34	22	13	47,5	32	13
32	237	91	31	6	31	133	18	10	25	51	30	22	67,5	42	15
40	282	104	38	7,5	38	155	22	13	30	62	37	25	82,5	52	18
50	323	110,5	44	8	44	174	27	12	47	71,5	44	35	96,5	62	21

Specification

- Steel C45
  blackened
- max. pressure 10 bar
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

On request

- with anti-stick coating for protection against welding spray and corrosion

Information

The maximum clamping moment of the GN 865 power clamps is reached once the clamping arm is at the end of its stroke. For this reason the working stroke should be completed as closely as possible to the stroke end.

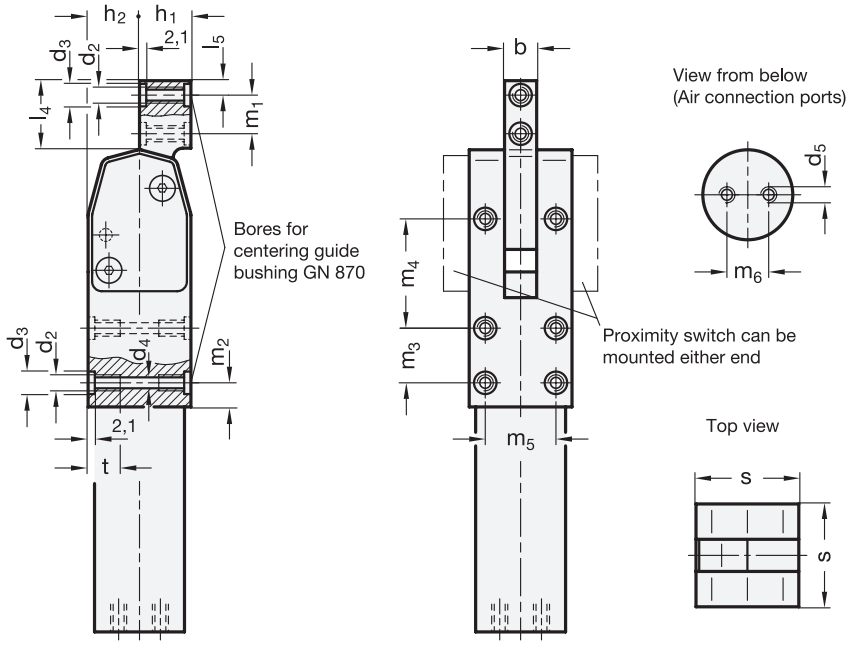
see also...
- *Operating principle, mounting methods → Page 36 ff.*
- *Centering guide bushings GN 870 → Page 53*
- *Proximity switches for end position detection → Page 54*
- *other accessories → Page 44 ff.*

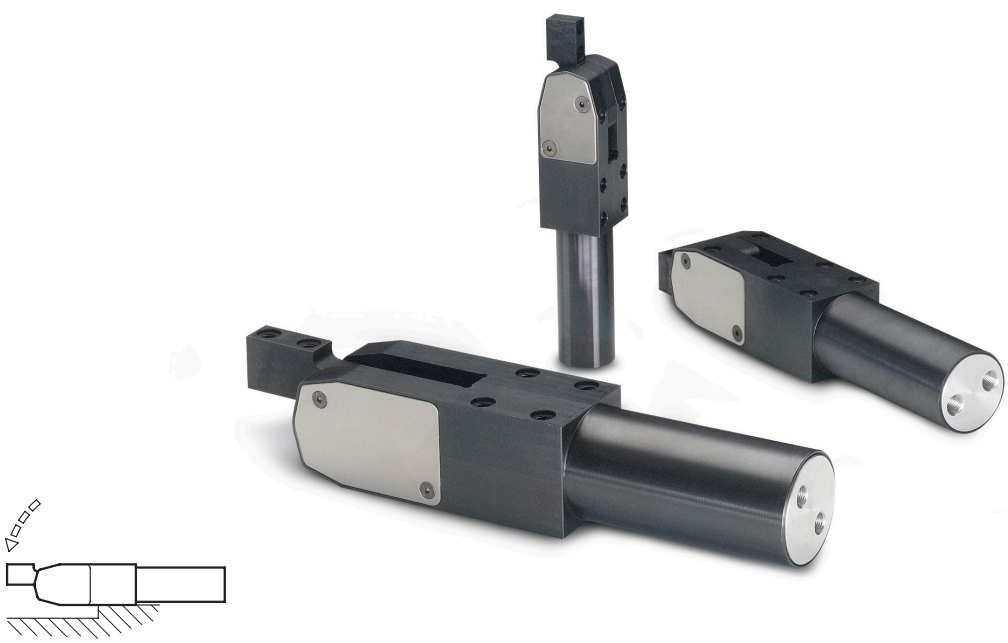
How to order

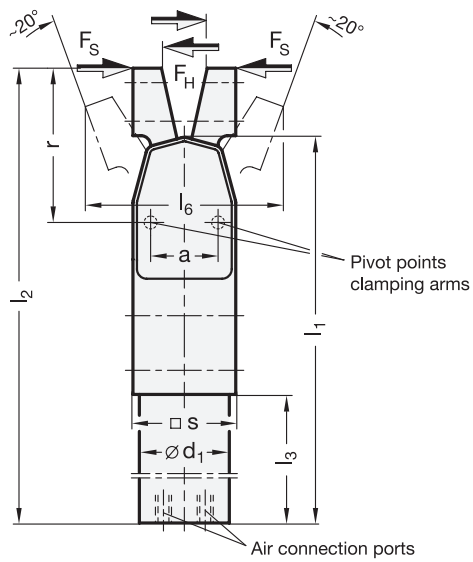
1 **2**

GN 865-40-BI

1	**Size**
2	**Type**


h2
h1
2,1
l5
d3
d2
l4
m1
Bores for
centering guide
bushing GN 870
d3
d2
d4
m2
2,1
t
b
m4
m3
m5
Proximity switch can be
mounted either end
View from below
(Air connection ports)
d5
m6
Top view
s
s





2 Type

BC 2 clamping arms vertical for centred clamping

1

Size (Piston-Ø)	max. clamping moment in Nm at 6 bar	F_S in N Clamping force at r at 6 bar	F_H in N Holding capacity at r at 6 bar	a	b –0,2	d_1 h8	d_2	d_3 H8	d_4	d_5	l_1 –0,5	l_2 –0,5
20	60	630	1150	21	10	28	M 5	7	4,2	M 5	150	171
32	150	1110	1520	31	12	40	M 6	9	5	G ⅛	206	237
40	300	1800	2000	37	16	50	M 8	11	6,8	G ⅛	244	282

Size (Piston-Ø)	l_3	l_4	l_5	l_6 ≈	m_1 ±0,01	m_2	m_3 ±0,01	m_4 ±0,01	m_5	r	s	t
20	70	21	4,5	45	12	7,5	17	22	13	48	32	13
32	91	31	6	72,5	18	10	25	30	22	67,5	42	15
40	104	38	7,5	89,5	22	13	30	37	25	82,5	52	18

Specification

- Steel C45 blackened
- max. pressure 10 bar
- *ISO-Fundamental tolerances* → *Main Catalogue Page 1480*
- RoHS

On request

- with anti-stick coating for protection against welding spray and corrosion

Information

The clamping forces F_S in GN 866 power clamps are directed inwards at the clamping arms.

The maximum clamping moment of the GN 866 power clamps is reached once the clamping arm is at the end of its stroke.

For this reason the working stroke should be completed as closely as possible to the stroke end.

see also...

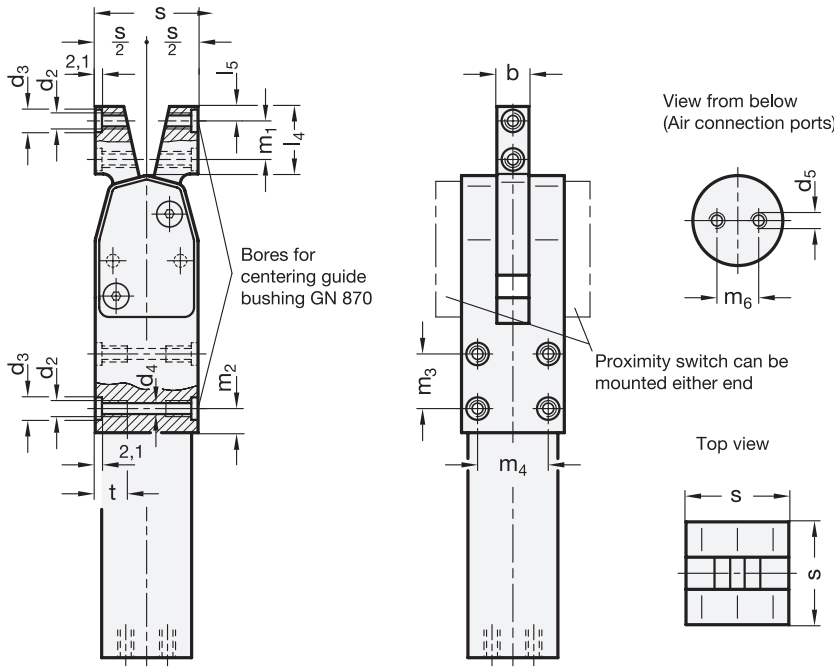
- *Operating principle, mounting methods* → *Page 36 ff.*
- *Centering guide bushings GN 870* → *Page 53*
- *Proximity switches for end position detection* → *Page 54*
- *other accessories* → *Page 44 ff.*

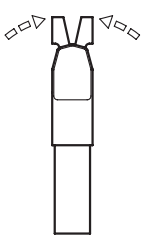
How to order

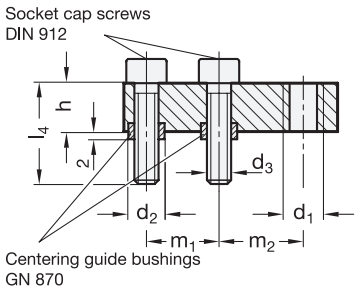
1 **2**

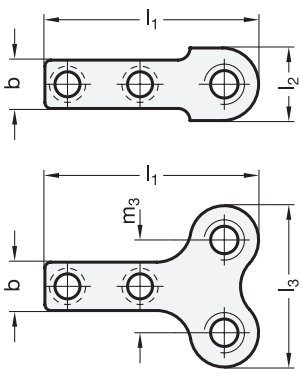
GN 866-20-BC

1	Size
2	Type

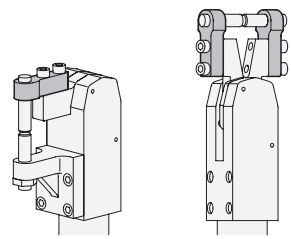

s
s/2
s/2
2,1
d3
d2
l5
m1
l4
Bores for
centering guide
bushing GN 870
d3
d2
d4
m2
2,1
t
b
m3
m4
View from below
(Air connection ports)
d5
m6
Proximity switch can be
mounted either end
Top view
s
s



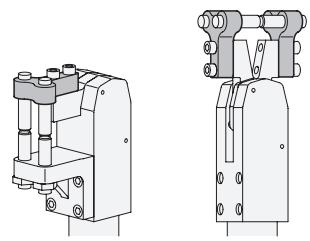




Mounting examples



Type **E**



Type **Z**

3 Type

E for one clamping bolt
Z for two clamping bolts

1 b −0,2	2 d_1	d_2 H8/h6	d_3	h	l_1	l_2	l_3	l_4	m_1	m_2	m_3
10	M 8	7	M 5	10	37	13	30	19,5	12	14,5	17
12	M 10	9	M 6	12	53	17	40	29,5	18	20,9	23
16	M 12	11	M 8	14	63	20	50	34	22	23,5	30
18	M 12	13	M 10	16	73	20	60	34	27	28,5	40

Specification

- Steel C45
  blackened
- Socket cap screws DIN 912,
  centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → *Main Catalogue Page 1480*
- RoHS

Information

Holders for clamping bolts GN 867 are suitable for use on clamping arms of the power clamps GN 864 / GN 865 / GN 866.

Holders for two clamping bolts (Type Z) are preferably used in such applications where absolutely rigid clamping of a sheet metal component is essential. For the same purpose ball point screws GN 605 with serrated ball pads are ideally suited.

Socket cap screws and centering guide bushings are included.

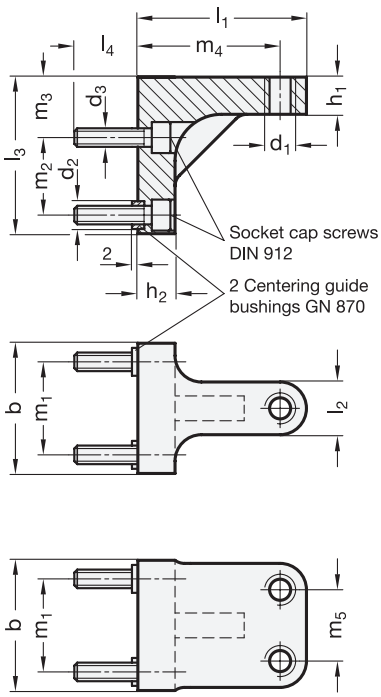
see also...

- *Ball point screws GN 605 → Main Catalogue Page 782*

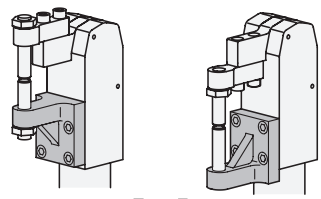
How to order

GN 867-12-M10-E

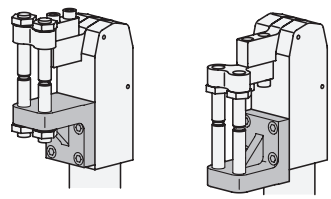
1	b
2	d_1
3	Type



Mounting examples



Type **E**



Type **Z**

3 Type

E for one clamping bolt
Z for two clamping bolts

1 b −0,2	2 d_1	d_2 H8/h6	d_3	h_1	h_2	l_1	l_2	l_3	l_4	m_1	m_2	m_3	m_4	m_5
32	M 8	7	M 5	10	10	38	17	37	7,5	22	17	15	31,5	17
42	M 10	9	M 6	12	12	54,5	17	50,5	10	30	25	19,5	45,9	23
52	M 12	11	M 8	14	14	63	17	61	13,5	37	30	23,5	53	30
62	M 12	13	M 10	16	16	73,5	20	83	13,5	44	47	27	63,5	40

Specification

- Steel C45
  blackened
- Socket cap screws DIN 912,
  centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

Static holders GN 867.1 have been designed for use with power clamps GN 864.

Static holders with two clamping bolts (Type Z) are preferably used for rigid clamping of sheet metal components. For the same purpose ball point screws GN 605 with serrated ball pads are ideally suited.

Socket cap screws and centering guide bushings are included.

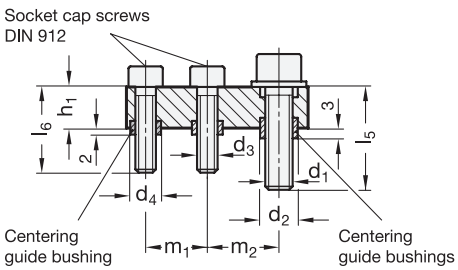
see also...

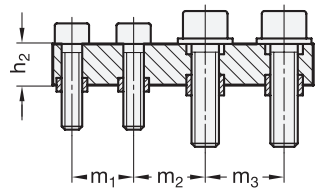
- *Power clamps GN 864 → Page 38*
- *Ball point screws GN 605 → Main Catalogue Page 782*

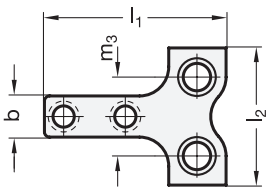
How to order

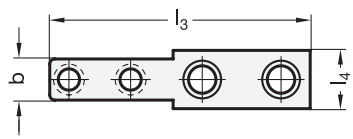
GN 867.1-42-M10-Z (1 2 3)

1	b
2	d_1
3	Type







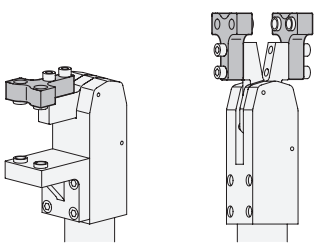


2 Type

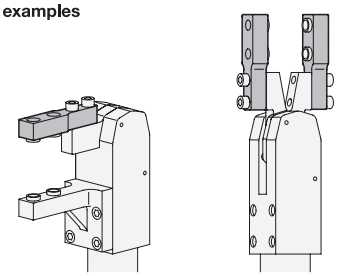
R Clamping jaws at right angle to clamping arm

P Clamping jaws parallel to clamping arm

Mounting examples



Type **R**



Type **P**

1

b −0,2	d_1	d_2 H8 h6	d_3	d_4 H8 h6	h_1	h_2	l_1	l_2	l_3	l_4	l_5	l_6	m_1	m_2	m_3
10	M 6	9	M 5	7	10	10	37	30	54	13	18,5	19,5	12	14,5	17
12	M 8	11	M 6	9	12	14	53	40	76	17	23,5	29,5	18	20,9	23
16	M 10	13	M 8	11	14	16	63	50	93	20	28	34	22	23,5	30
18	M 10	13	M 10	13	16	18	73	60	113	20	28	34	27	28,5	40

Specification

- Steel C45
  blackened
- Socket cap screws DIN 912,
  centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

Holders for clamping jaws GN 868 are suitable for the clamping arms of the power clamps GN 864 / GN 865 / GN 866.

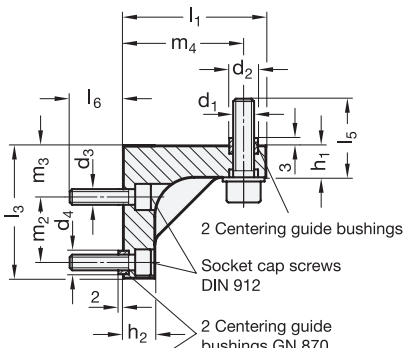
Holders for clamping jaws are equally precisely positioned on the clamping arm as are the clamping jaws GN 872 on the holders themselves.

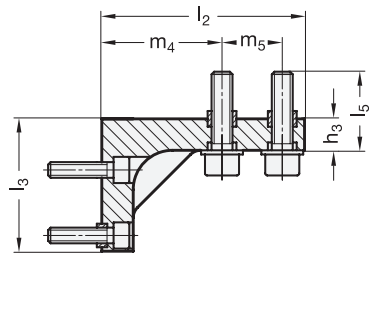
Socket cap screws and centering guide bushings are included.

see also...

- *Clamping jaws GN 872 → Page 50*

How to order		
GN 868-16-R	1	b
	2	Type

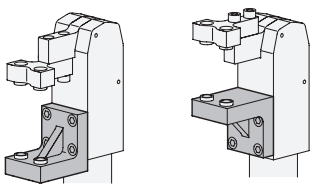




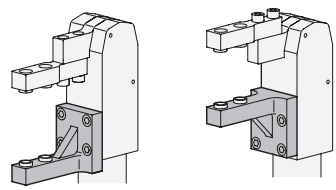
2 Type

R Clamping jaws at right angle to clamping arm
P Clamping jaws parallel to clamping arm

Mounting examples



Type **R**



Type **P**

1

b –0,2	d_1	d_2 H8 h6	d_3	d_4 H8 h6	h_1	h_2	h_3	l_1	l_2	l_3 Type R	l_3 Type P	l_4	l_5 Type R	l_5 Type P	l_6	m_1	m_2	m_3	m_4	m_5
32	M 6	9	M 5	7	10	10	10	38	55	37	37	13	18,5	18,5	7,5	22	17	15	31,5	17
42	M 8	11	M 6	9	12	12	14	54,5	77,5	50,5	50,5	17	23,5	23,5	10	30	25	19,5	45,9	23
52	M 10	13	M 8	11	14	14	16	63	93	61	61	20	28	28	13,5	37	30	23,5	53	30
62	M 10	13	M 10	13	16	16	18	73,5	113,5	83,5	85,5	20	27	29	13,5	44	47	27	62,5	40

Specification

- Steel C45
  blackened
- Socket cap screws DIN 912,
  centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

Holders for clamping jaws GN 868.1 have been designed for use with power clamps GN 864.

Holders for clamping jaws are equally precisely positioned on the clamping arm as are the clamping jaws GN 872 on the holders themselves.

Socket cap screws and centering guide bushings are included.

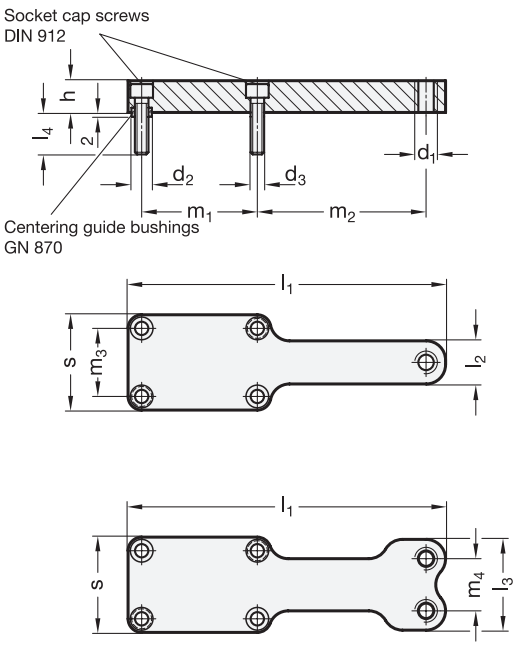
see also...

- *Power clamps GN 865 → Page 40*
- *Clamping jaws GN 872 → Page 50*

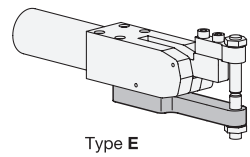
How to order

GN 868.1-42-P (1 2)

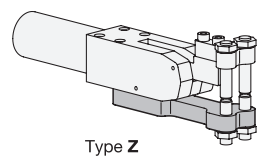
1	b
2	Type



Mounting examples



Type **E**



Type **Z**

2 Type

E for one clamping bolt
Z for two clamping bolts

1

s	d_1	d_2 H8 h6	d_3	h	l_1	l_2	l_3	l_4	m_1	m_2	m_3	m_4
32	M 8	7	M 5	10	98,5	15	30	8	34	53	22	17
42	M 10	9	M 6	14	140	19	40	8,5	51	74,4	30	23
52	M 12	11	M 8	16	168	22	50	12,5	62	88,5	37	30
62	M 12	13	M 10	18	192,5	22	60	12,5	71,5	102	44	40

Specification

- Steel C45
  blackened
- Socket cap screws DIN 912,
  centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

Static holders GN 869.1 have been designed for use with power clamps GN 865.

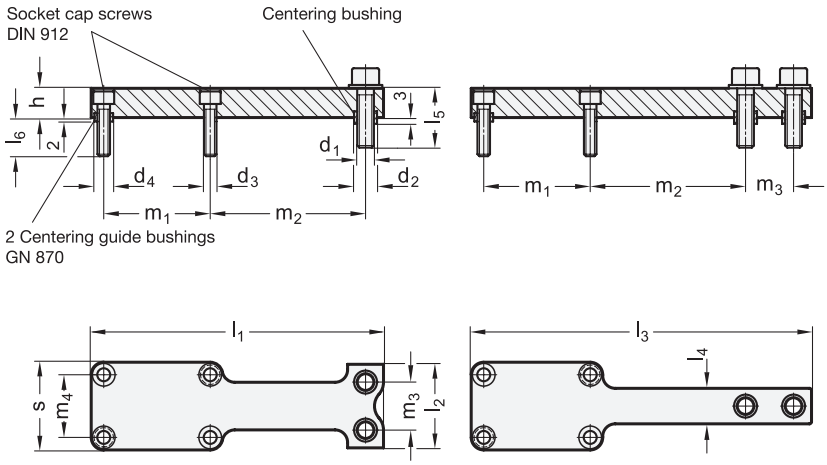
Static holders for two clamping bolts (Type Z) are preferably used in such applications where absolutely rigid clamping of a sheet metal component is essential. For the same purpose ball point screws GN 605 with serrated ball pads are ideally suited.

Socket cap screws and centering guide bushings are included.

see also...

- *Ball point screws GN 605 → Main Catalogue Page 782*

How to order		
GN 869.1-52-E (1 2)	1	s
	2	Type

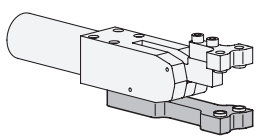


2 Type

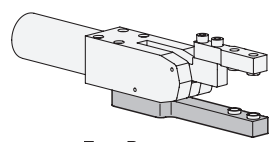
R Clamping jaws at right angle to clamping arm

P Clamping jaws parallel to clamping arm

Mounting examples



Type **R**



Type **P**

1

s –0,2	d_1	d_2 H8 h6	d_3	d_4 H8 h6	h	l_1	l_2	l_3	l_4	l_5	l_6	m_1	m_2	m_3	m_4
32	M 6	9	M 5	7	10	98,5	30	115,5	13	18,5	8	34	53	17	22
42	M 8	11	M 6	9	14	140	40	163	17	23,5	8,5	51	74,4	23	30
52	M 10	13	M 8	11	16	168	50	198	20	28	12,5	62	88,5	30	37
62	M 10	13	M 10	13	18	192,5	60	232,5	20	28	12,5	71,5	102	40	44

Specification

- Steel C45
  blackened
- Socket cap screws DIN 912,
  centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

Holders for clamping jaws GN 869.2 have been designed for use with power clamps GN 865.

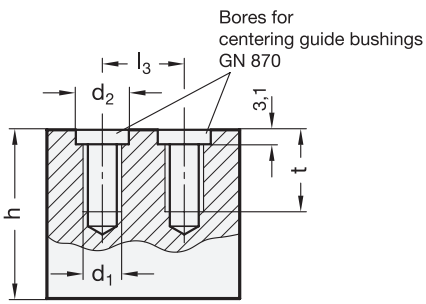
Holders for clamping jaws are equally precisely positioned on the clamping arm as are the clamping jaws GN 872 on the holders themselves.

Socket cap screws and centering guide bushings are included.

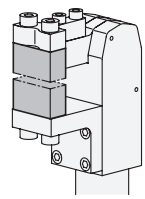
see also...

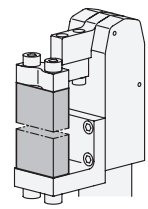
- *Power clamps GN 865 → Page 40*
- *Clamping jaws GN 872 → Page 50*

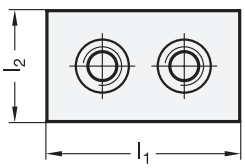
How to order		
GN 869.2-32-R (1 2)	1	s
	2	Type

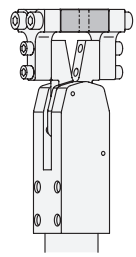


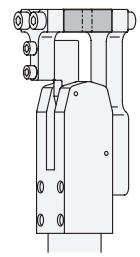
Mounting examples











1	2						
l_1	h		d_1	d_2 H8 h6	l_2	l_3 ±0,01	t
30	25	50	M 6	9	13	17	8
40	35	70	M 8	11	17	23	12
50	45	80	M 10	13	20	30	15
60	50	85	M 10	13	20	40	15

Specification

- Steel C45
  blackened
- *ISO-Fundamental tolerances*
  → *Main Catalogue Page 1480*
- RoHS

Accessory

- Centering guide bushings GN 870 → *Page 53*

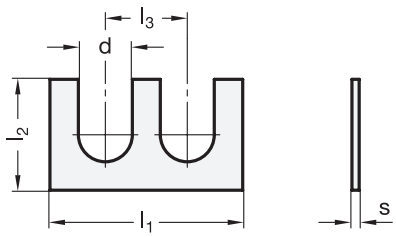
Information

Clamping jaws GN 872 are designed to be modified by the user into individual clamping designs, such as prisms and radii. They are also suitable for welding.

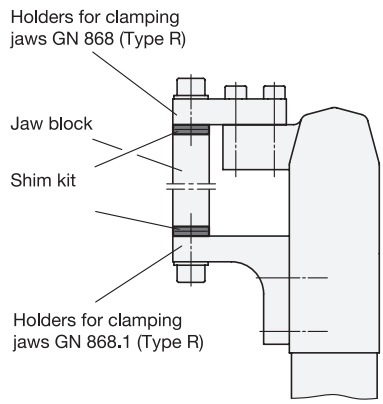
The fastening thread and centering bores are adapted to the dimensions of the clamping arms and static holders to enable quick and easy assembly.

Centering guide bushings GN 870 are **not** included.

How to order		
GN 872-50-80	1	l_1
	2	h



Application example



[1]

l_1	s					d	l_2	l_3
30	0,1	0,2	0,3	0,5	1	9,2	13	17
40	0,1	0,2	0,3	0,5	1	11,2	17	23
50	0,1	0,2	0,3	0,5	1	13,2	20	30
60	0,1	0,2	0,3	0,5	1	13,2	20	40

Specification

- Steel
  blackened
- RoHS

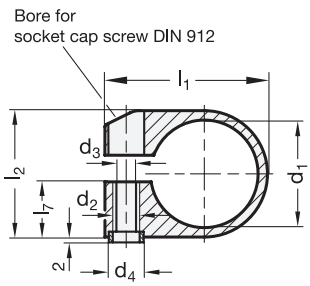
Information

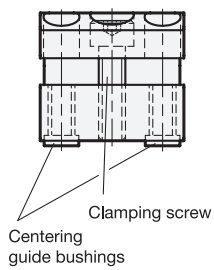
Levelling shims GN 871 are used to correct any discrepancy in the alignment of the two clamping jaw levels.

This facilitates in a simple way the optimum clamping position of the jaws, i. e. also the optimal clamping force.

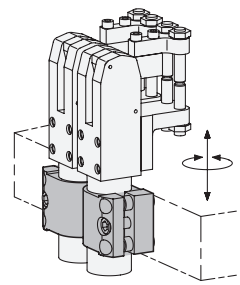
The levelling shims are only available as a complete set of five of different thicknesses for each size.

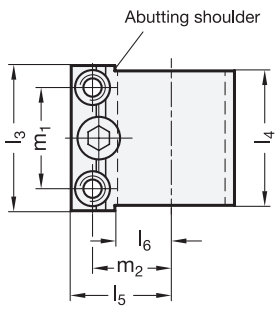
How to order [1]		
GN 871-40	1	l_1

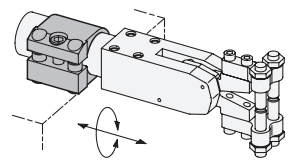




Mounting examples







[1]

d_1	d_2	d_3	d_4 H8 h6	l_1	l_2	l_3	l_4	l_5	l_6	l_7	m_1	m_2
28	M 8	6,5	11	51,35	38	39	36	35	16	16	26	25,85
40	M 10	8,5	13	61,35	48	54	51	39	21	21	38	29,35
50	M 12	10,5	16	72,35	58	64	61	47	26	26	45	33,85

Specification

- Aluminium
  black anodized
- Centering guide bushings
  Steel, blackened
- *ISO-Fundamental tolerances*
  → *Main Catalogue Page 1480*
- RoHS

Information

Collar clamps GN 873 greatly increases the mounting possibilities and, with that, the field of applications for power clamps is vastly increased.

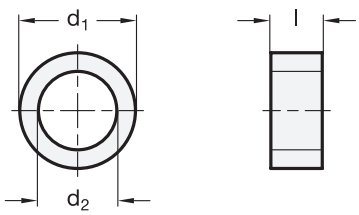
The abutting shoulder can be used for precise positioning of the power clamps thus allowing a problem free exchange of the latter.

The use of the two centering guide bushings ensures an exact and stable installation of the collar clamp as well as the power clamp.

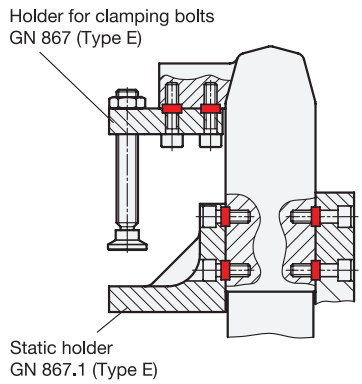
Other collar clamps for the sizes d_1 = 40 (piston Ø 20) and d_1 = 50 (piston Ø 40) are shown under the tube clamp connector range.

Centering guide bushings are included.

How to order [1]	1	d_1
GN 873-40		



Application example



1

d_1 h6	d_2	Length **l**
7	5,1	4
9	6,1	4
11	8,1	4
13	10,1	4

Specification

- Steel
  blackened
- *ISO-Fundamental tolerances*
  → *Main Catalogue Page 1480*
- RoHS

Information

Centering guide bushings GN 870 ensure accurate location of the clamping jaws and static holders, as well as the power clamps.

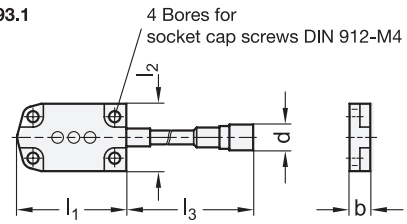
At the same time they absorb side thrust and eliminate excessive load on the mounting screws.

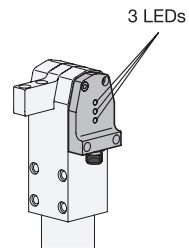
How to order		
1 **GN 870-11**	1	d_1

Proximity switches

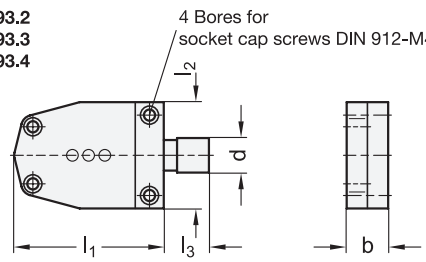
for power clamps, inductive sensor

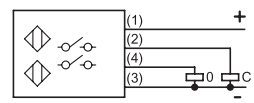
GN 893.1





GN 893.2
GN 893.3
GN 893.4





Power clamps	Proximity switch [1]	b	d Connector 4-pole	l_1 –0,2	l_2	l_3
GN 864-20-BL	GN 893.1	8	M12x1	42	26	110 (PVC cable)
GN 864-32-BL	GN 893.2	16	M12x1	57,5	41	10
GN 864-40-BL	GN 893.3	16	M12x1	73	48	10
GN 864-50-BL	GN 893.4	16	M12x1	73	48	10
GN 865-20-BI	GN 893.1	8	M12x1	42	26	110 (PVC cable)
GN 865-32-BI	GN 893.2	16	M12x1	57,5	41	10
GN 865-40-BI	GN 893.3	16	M12x1	73	48	10
GN 865-50-BI	GN 893.4	16	M12x1	73	48	10
GN 866-20-BC	GN 893.1	8	M12x1	42	26	110 (PVC cable)
GN 866-32-BC	GN 893.2	16	M12x1	57,5	41	10
GN 866-40-BC	GN 893.3	16	M12x1	73	48	10

Specification

- Voltage range: 10 to 30 VDC
- Switch load: 0 to 100 mA
- Voltage drop: ≤ 2 V
- Temperature range: 0 °C to 50 °C
- Protection class: IP 65
- LED-Indication
  - green: operating voltage
  - red: switch position closed
  - yellow: switch position open
- RoHS

Accessory

- Cable with connector
  4-pole, 5 or 10 meters long:
  - GN 330-M12x1-4-G-5
  - GN 330-M12x1-4-G-10

Information

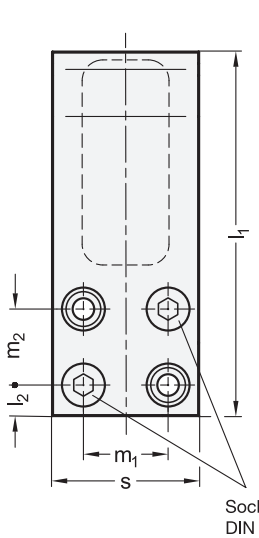
With the proximity switches GN 893.1 to GN 893.4 power clamps can induce controlled signals. The LEDs indicate the operating and switch positions.

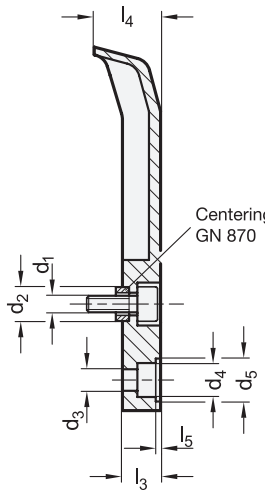
The proximity switches can be screwed directly on to the power clamps. The position of the switches can be on either side.

A plastic intermediate plate and two socket cap screws M4 are included.

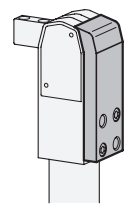
see also...
- *IP-Protection classes → Main Catalogue Page 1482*

How to order [1] GN 893.2	1	Code





Mounting example



for power clamps GN 864 Size	s [1]	d_1	d_2 H8/h6	d_3	d_4	d_5	l_1	l_2	l_3	l_4	l_5	m_1	m_2
20	32	M 5	7	5,5	7	9	78,5	5	10	15,5	2,1	22	17
32	42	M 6	9	6,5	9	11	109	6,5	12	20	2,1	30	25
40	52	M 8	11	8,5	11	13	131	7,5	14	23	2,1	37	30
50	62	M 10	13	10,5	13	16	166	9	16	11	3,1	44	47

Specification [2]

- Aluminum
  - black anodized **ES**
  - anti-stick coating fluoropolymer (PTFE), green **FG**
- Socket cap screws DIN 912, washers, centering guide bushings Steel, blackened
- *ISO-Fundamental tolerances*
  → Main Catalogue Page 1480
- RoHS

Information

Protective covers GN 864.1 are designed for power clamps GN 864 and protect the tensioning mechanism from penetrating dirt by covering the back side of the power clamp.

The type FG is equipped with an anti-stick coating of fluoropolymer (PTFE) for protection against welding spray and corrosion.

Socket cap screws, washers and centering guide bushings are included.

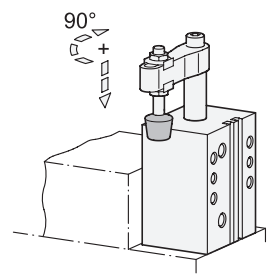
see also...
- *Power clamps GN 864 → Page 38*

How to order		
GN 864.1-52-FG [1] [2]	1	s
	2	Finish

Due to their kinematic properties, swing clamps are used when the clamping point must be freely accessible from above for insertion and removal of the workpiece.

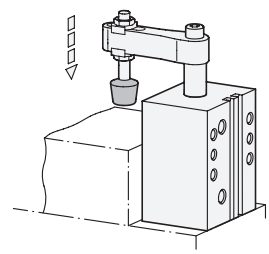
Movement phase 1

With the curve-controlled pivot and linear motion, the clamping action consists of an initial 90° motion with simultaneous downward linear motion.



Movement phase 2

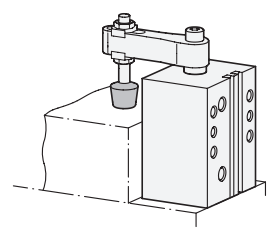
This is followed by a downward linear clamping motion. The clamping of the workpiece may only take place during the final linear clamping motion.



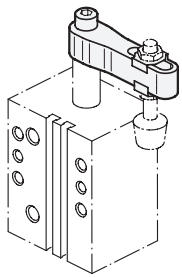
Movement phase 3

The swing clamp is then in the clamped position and exerts a **clamping force F_S** on the workpiece.

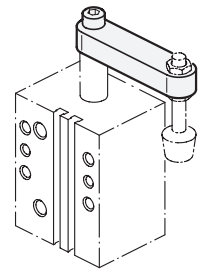
The amount of the clamping force F_S is indicated in the respective standard sheets of the swing clamps.



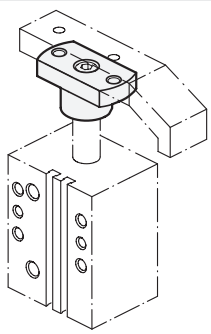
Swing clamps can be specially equipped with a wide range of specially designed accessories.



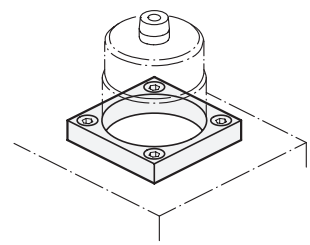
Clamping arms GN 875.2 *(→ Page 60)* with slotted hole allow arbitrary positioning of application-specific pressure elements in connection with the two flanged washers.



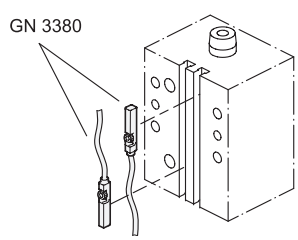
Clamping arms GN 875.3 *(→ Page 61)* with threaded hole allow the mounting of application-specific pressure elements.



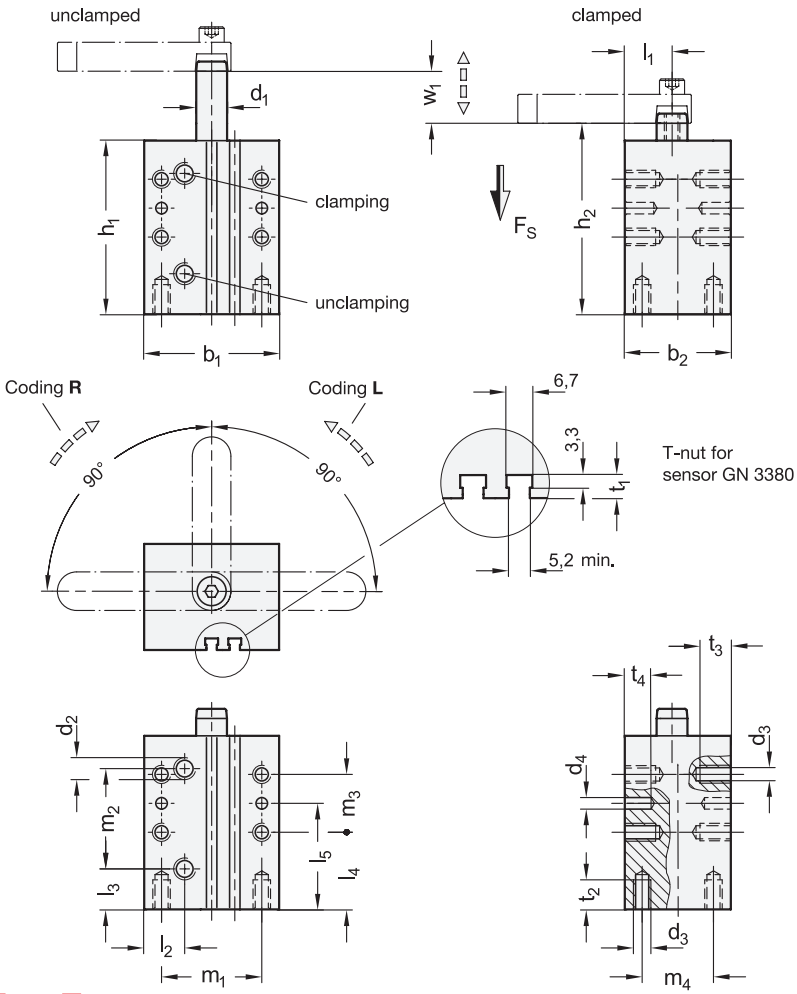
Adapter flanges GN 875.4 *(→ Page 62)* are used to mount individual clamping arms.



Threaded flanges GN 876.1 *(→ Page 65)* are designed for swing clamps GN 876 with threading. These eliminate the need to tap the mounting hole of the part.



Swing clamps GN 875 in block design are equipped with a magnetic ring piston as standard and allow end position detection in connection with **sensors GN 3380** *(→ Page 66)*.



3 Coding

L	swiveling left
R	swiveling right

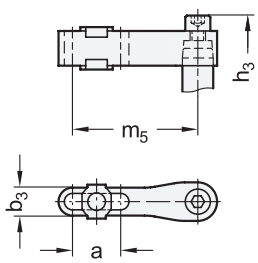
4 Type

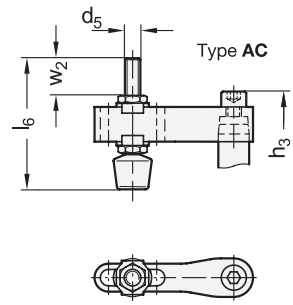
A	Clamping arm with slotted hole and 2 flanged washers
AC	Clamping arm with slotted hole, 2 flanged washers and GN 708.1 spindle assembly
B	Clamping arm with threaded hole
F	Adapter flange
N	without clamping arm

1 Size (Piston-Ø)	2 d_1	F_s in N Clamping force at 6 bar	a	b_1	b_2	b_3	b_4	b_5	d_2 Supply port	d_3	d_4 H7	d_5	d_6	d_7	h_1	$h_2 \approx$ clamped	$h_3 \approx$ unclamped		
																	Type A, AC	Type B	Type F
25	14	170	20	55	35	11,3	18	25	M 5	M 8	6	M 6	M 6	M 8	78	82	135	129	134
32	16	270	25	60	45	14,5	20	30	G ⅛	M 8	6	M 8	M 8	M 8	90	95	153	147	154
40	16	450	25	70	55	14,5	20	30	G ⅛	M 8	6	M 8	M 8	M 8	90	95	153	150	154
50	20	700	30	85	65	17,5	25	32	G ⅛	M 10	8	M 10	M 8	M 10	100	105	172	165	167
63	20	1100	30	100	80	17,5	25	32	G ⅛	M 10	8	M 10	M 8	M 10	100	105	170	165	165

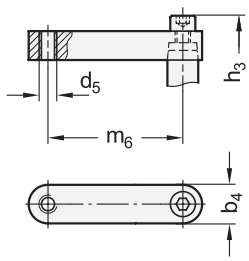
Size (Piston-Ø)	d_1	l_1	l_2	l_3	l_4	l_5	l_6	m_1	m_2	m_3	m_4	m_5	m_6	m_7	$t_1 \approx$	t_2	t_3	t_4	t_5	w_1		w_2	max. tightening torque in Nm
																				Clamping stroke	Stroke		
25	14	15,5	17	17	33	48	55	40	44,5	30	20	50	50	38	4,5	15	10	10	14	14	27	18	9
32	16	20	18	20,5	40	55	68	45	51	30	30	65	60	45	6	20	15	15	16	14	30	21	18
40	16	24,5	21	21	40	55	68	52	52	30	37	65	70	45	7,5	20	15	15	16	15	30	21	18
50	20	31	26	26	40	60	77	66	53	40	46	85	80	48	6	20	20	15	16	15	32	19	35
63	20	38	30	27,5	40	60	77	80	53	40	60	85	90	48	7,5	20	20	15	16	15	30	19	35

Type **A**

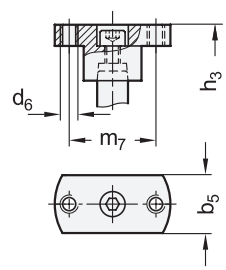




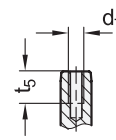
Type **B**



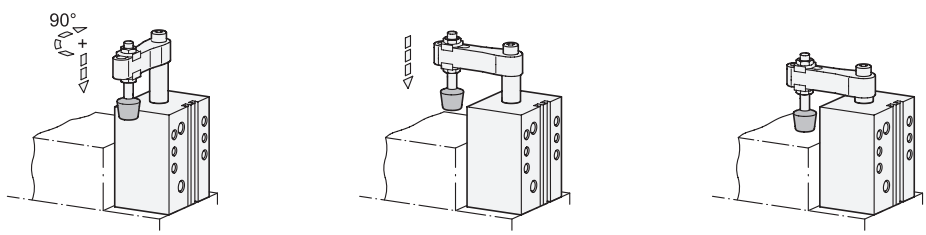
Type **F**



Type **N**



Operating principle



Specification

- Aluminum
  hard anodized
  wear-resistant surface
- Double-action air cylinder
  max. pressure 6 bar
- Socket cap screw DIN 912
  Steel, zinc plated, blue passivated
- Washer ISO 7092
  Steel, zinc plated, blue passivated
- Spindle assembly GN 708.1, type A
  - Steel, zinc plated
  - Rubber tip 85 Shore A
- RoHS

Accessory

- Clamping arms GN 875.2 → *Page 62*
- Clamping arms GN 875.3 → *Page 63*
- Adapter flanges GN 875.4 → *Page 64*
- Sensor GN 3380 → *Page 66*
- Clamping screws GN 708.1 → *Page 31*

Information

Swing clamps GN 875 are used when the clamping point for inserting and removing the workpiece must be freely accessible on top.

During the clamping action, the arm is first swiveled by 90° and lowered, followed by the linear tensioning motion. The workpiece clamping must take place within the clamping stroke.

The angle orientation of the tensioning arm can be set arbitrarily during mounting on the swing clamp. When tightening the screw, the piston rod must not experience any torque. The clamping arm must therefore be held to prevent twisting.

The swing clamps are equipped with a magnet ring piston and are therefore pre-fitted for end stop detection via sensor.

see also...

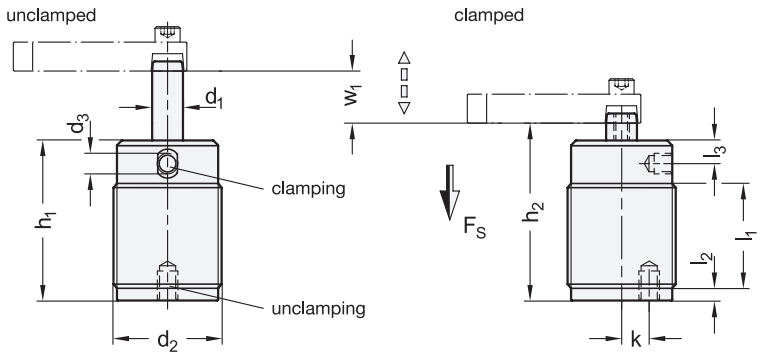
- *Swing clamps GN 876 (pneumatic, with screw-in thread)* → *Page 60*

How to order

1 2 3 4

GN 875-50-20-R-B

1	**Size**
2	**d_1**
3	**Coding**
4	**Type**

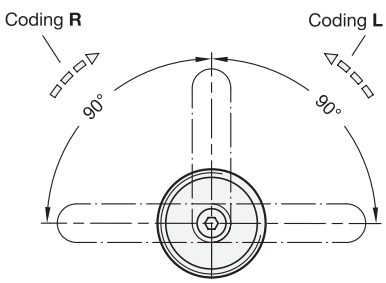


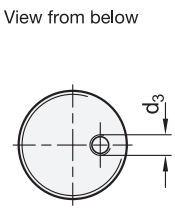
3 Coding

L	swiveling left
R	swiveling right

4 Type

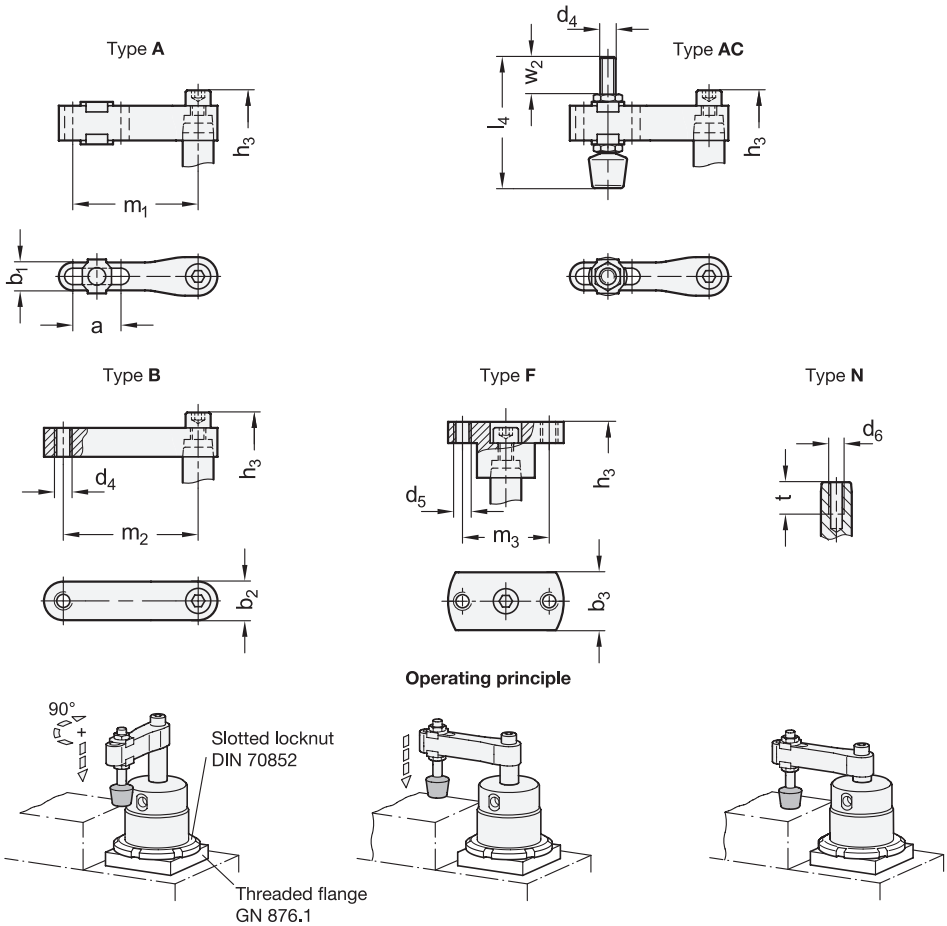
A	Clamping arm with slotted hole and 2 flanged washers
AC	Clamping arm with slotted hole, 2 flanged washers and GN 708.1 spindle assembly
B	Clamping arm with threaded hole
F	Adapter flange
N	without clamping arm





1 Size (Piston-Ø)	d_1	2 F_s in N Clamping force at 6 bar	a	b_1	b_2	b_3	d_2	d_3 Supply port	d_4	d_5	d_6	h_1	$h_2 \approx$ clamped	$h_3 \approx$ unclamped		
														Type A, AC	Type B	Type F
25	14	170	20	11,3	18	25	M 40x1,5	M 5	M 6	M 6	M 8	70	74	128	122	127
32	16	270	25	14,5	20	30	M 50x1,5	G ⅛	M 8	M 8	M 8	79	83	141	135	142
40	16	450	25	14,5	20	30	M 55x1,5	G ⅛	M 8	M 8	M 8	83	87	144	141	145
50	20	700	30	17,5	25	32	M 65x1,5	G ⅛	M 10	M 8	M 10	87	92	156	149	151
63	20	1100	30	17,5	25	32	M 80x1,5	G ⅛	M 10	M 8	M 10	92	97	162	157	157

Size (Piston-Ø)	d_1	k	l_1	l_2	l_3	l_4	m_1	m_2	m_3	t	w_1		w_2	max. tightening torque in Nm
											Clamping stroke	Stroke		
25	14	8,9	43	3	16	55	50	50	38	14	14	28	18	9
32	16	12,7	54	3	12	68	65	60	45	16	14	30	21	18
40	16	14,3	58	3	12	68	65	70	45	16	14	29	21	18
50	20	17,8	61	3	12	77	85	80	48	16	14	29	19	35
63	20	20,3	64	3	13	77	85	90	48	16	15	30	19	35



Specification

- Aluminum
  hard anodized
  wear-resistant surface
- Double-action air cylinder
  max. pressure 6 bar
- Socket cap screw DIN 912
  Steel, zinc plated, blue passivated
- Washer ISO 7092
  Steel, zinc plated, blue passivated
- Spindle assembly GN 708.1, type A
  - Steel, zinc plated
  - Rubber tip 85 Shore A
- RoHS

Accessory

- Clamping arms GN 875.2 → *Page 62*
- Clamping arms GN 875.3 →*Page 63*
- Adapter flanges GN 875.4 → *Page 64*
- Threaded flanges GN 876.1 → *Page 65*
- Clamping screws GN 708.1 → *Page 31*

Information

Swing clamps GN 876 are used when the clamping point for inserting and removing the workpiece must be freely accessible on top.

The design allows especially space-saving mounting. The height of the swing clamp can be adjusted via the screw-in thread.

During the clamping action, the arm is first swiveled by 90° and lowered, followed by the linear tensioning motion. The workpiece clamping must take place within the clamping stroke.

The angle orientation of the clamping arm can be set arbitrarily during mounting on the swing clamp. When tightening the screw, the piston rod must not experience any torque. The clamping arm must therefore be held to prevent twisting.

see also...

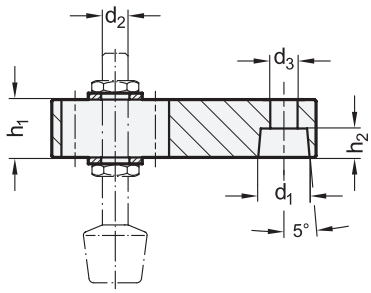
- *Swing clamps GN 875 (pneumatic, in block version)* → *Page 58*

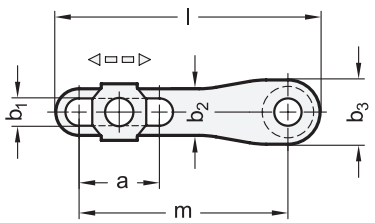
How to order

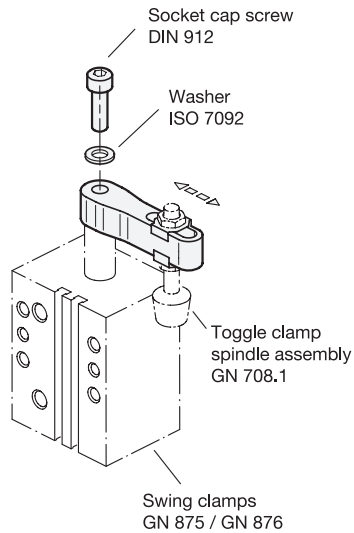
1 2 3 4

GN 876-32-16-L-A

1	**Size**
2	**d_1**
3	**Identification no.**
4	**Type**







for swing clamps Size	d1 [2]	m [3]	a	b1	b2	b3	d2	d3	h1	h2	Length l
25	14	50	20	6,5	11,3	18	M 6	8,5	16	6,5	64,6
32 / 40	16	65	25	8,5	14,5	20	M 8	8,5	18	9	82,2
50 / 63	20	85	30	10,5	17,5	25	M 10	10,5	23	10	106,2

Specification

	[1]	[4]
• Aluminum hard anodized wear-resistant surface	AL	HE
• Flanged washers Steel, zinc plated, blue passivated		
• Socket cap screw DIN 912 Steel, zinc plated, blue passivated		
• Washer ISO 7092 Steel, zinc plated, blue passivated		
• RoHS		

Accessory

- Clamping screws GN 708.1 → *Page 31*

Information

Clamping arms GN 875.2 with slotted hole designed as accessories to swing clamps GN 875 / GN 876. The slotted hole allows arbitrary positioning of application-specific pressing elements in connection with the two flanged washers.

The angle orientation of the clamping arm can be set arbitrarily during mounting on the swing clamp. When tightening the screw, the piston rod must not experience any torque. The clamping arm must therefore be held to prevent twisting.

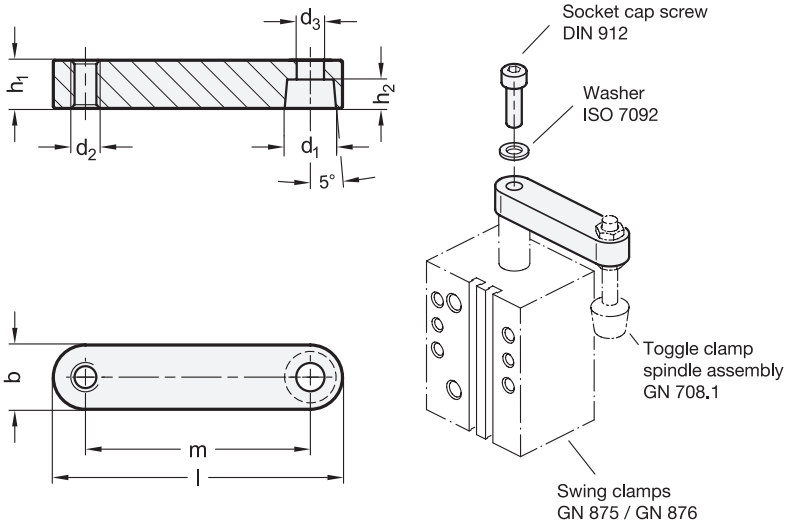
Included are a socket cap screw DIN 912 and a washer ISO 7092 for fastening to the swing clamp as well as two flanged washers for fastening the clamping bolts.

see also...
- *Swing clamps GN 875 (pneumatic, in block version)* → *Page 58*
- *Swing clamps GN 876 (pneumatic, with screw-in thread)* → *Page 60*

How to order

[1] [2] [3] [4]
GN 875.2-AL-16-65-HE

1	Material
2	d_1
3	m
4	Finish



for swing clamps Size	2 d_1	3 m	b	d_2	d_3	h_1	h_2	Length l
25	14	50	18	M 6	8,5	10	6,5	68
32	16	60	20	M 8	8,5	12	9	80
40	16	70	20	M 8	8,5	15	9	90
50	20	80	25	M 10	10,5	16	10	105
63	20	90	25	M 10	10,5	18	10	115

Specification

	1	4
• Aluminum hard anodized wear-resistant surface	AL	HE
• Socket cap screw DIN 912 Steel, zinc plated, blue passivated		
• Washer ISO 7092 Steel, zinc plated, blue passivated		
• RoHS		

Accessory

- Clamping screws GN 708.1 → *Page 31*

Information

Clamping arms GN 875.3 with threaded hole designed as accessories to swing clamp GN 875 / GN 876. The thread can receive an application-specific clamping bolt.

The angle orientation of the clamping arm can be set arbitrarily during mounting on the swing clamp. When tightening the screw, the piston rod must not experience any torque. The clamping arm must therefore be held to prevent twisting.

Included are a socket cap screw DIN 912 and a washer ISO 7092 for fastening to the swing clamp.

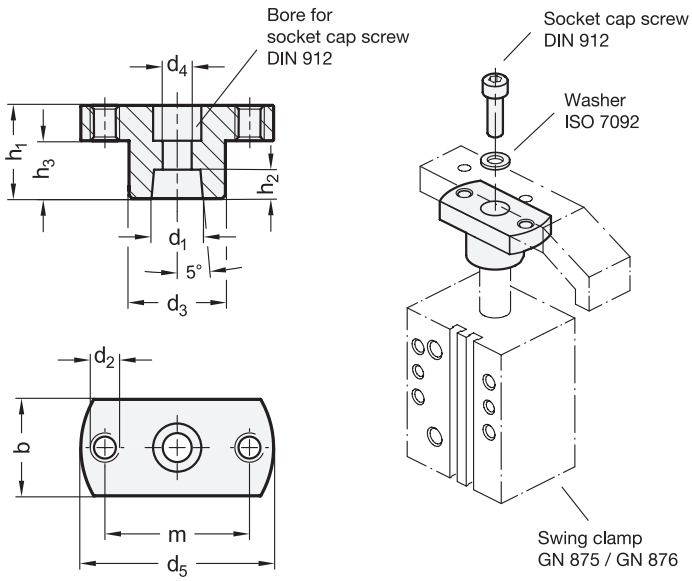
see also...

- *Swing clamps GN 875 (pneumatic, in block version)* → *Page 58*
- *Swing clamps GN 876 (pneumatic, with screw-in thread)* → *Page 60*

How to order

1 2 3 4
GN 875.3-AL-16-60-HE

1	**Material**
2	**d_1**
3	**m**
4	**Finish**



for swing clamps Size	d1 [2]	m [3]	b	d2	d3	d4	d5	h1	h2	h3
25	14	38	25	M 6	25	8,5	50	24,5	8	12
32 / 40	16	45	30	M 8	30	9	60	29	9	18
50 / 63	20	48	32	M 8	32	10,5	65	30	10	18

Specification

	[1]	[4]
• Aluminum hard anodized wear-resistant surface	AL	HE
• Socket cap screw DIN 912 Steel, zinc plated, blue passivated		
• Washer ISO 7092 Steel, zinc plated, blue passivated		
• RoHS		

Information

Adapter flanges GN 875.4 are designed as accessories to swing clamps GN 875 / GN 876 and serve as adapter for mounting custom clamping arms.

The angle orientation of the clamping arm can be set arbitrarily during mounting on the swing clamp. When tightening the screw, the piston rod must not experience any torque. The clamping arm must therefore be held to prevent twisting.

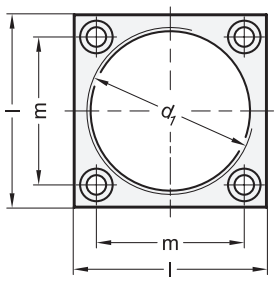
Included are a socket cap screw DIN 912 and a washer ISO 7092 for fastening to the swing clamp.

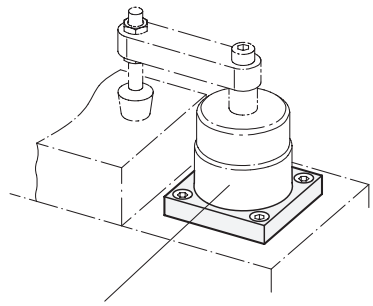
see also...
• *Swing clamps GN 875 (pneumatic, in block version)* → *Page 58*
• *Swing clamps GN 876 (pneumatic, with screw-in thread)* → *Page 60*

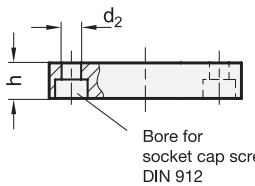
How to order

[1] [2] [3] [4]
GN 875.4-AL-16-45-HE

1	**Material**
2	**d_1**
3	**m**
4	**Finish**







for swing clamps Size	[2] d_1	[3] m	d_2	h	Length l
25	M 40x1,5	37	5,4	9	50
32	M 50x1,5	45	6,6	12	60
40	M 55x1,5	50	6,6	12	65
50	M 65x1,5	58	9	15	75
63	M 80x1,5	70	9	15	88

Specification

[1]

- Steel zinc plated, blue passivated — **ST**
- RoHS

Information

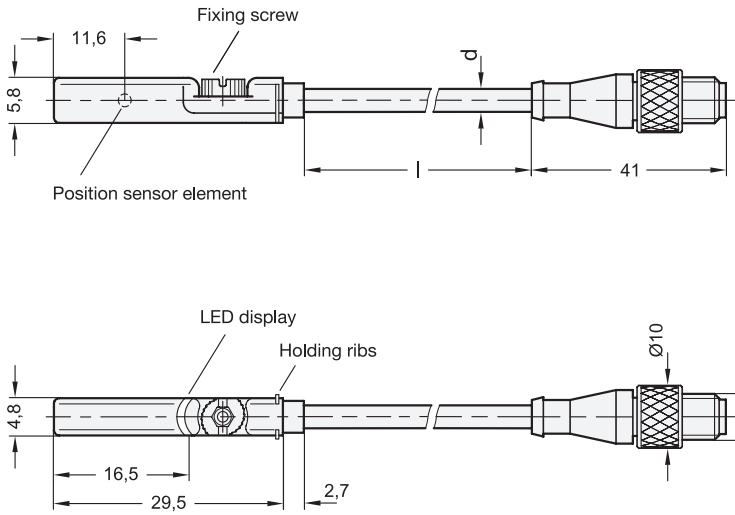
Threaded flanges GN 876.1 designed as accessories to swing clamps GN 876.

This makes it unnecessary to tap the mounting hole of the part.

see also...

- *Swing clamps GN 876 (pneumatic, with screw-in thread)* → *Page 60*

How to order		
GN 876.1-ST-M55x1,5-50 ([1] [2] [3])	1	**Material**
	2	**d_1**
	3	**m**



1 Type
T for T-groove cylinder

2 Connection type
S Plug

3

Cable length **l** in meter	**d**
0,3	3

Specification

- Housing
  Plastic
- Cable (Outer sheath)
  Polyurethan PUR
  black
- Plug
  Plastic, 3-pole
- Knurled screw connection
  - Brass, nickel plated
  - freely rotating
- Temperature range: -30 °C to +80 °C
- Protection class IP 65, IP 67
- *IP-Protection classes*
  → Main Catalogue Page 1482
- *Elastomer characteristics*
  → Main Catalogue Page 1483
- RoHS

Information

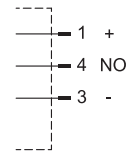
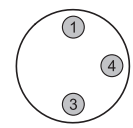
The sensor GN 3380 detects the piston position of pneumatic cylinders with magnetic pistons. Cylinders installed in pneumatic clamps enable the position detection of the clamp itself by means of this sensor. Upon reaching the switch point, the sensor electronics deliver a high signal, for instance to a machine controller, and also indicate this switch state via the integrated LED.

For installation, the sensor is inserted into the cylinder groove from above. The side retaining ribs prevent it from falling out. A quarter turn of the fastening screw quickly and reliably locks the sensor into place in the groove.

see also...
- *Toggle clamps GN 861 (pneumatic, heavy duty) → Page 16*
- *Toggle clamps GN 863 (pneumatic, heavy duty) → Page 24*
- *Toggle clamps GN 962 (pneumatic, heavy duty) → Page 20*
- *Swing clamps GN 875 (pneumatic) → Page 58*

How to order
1 2 3
GN 3380-T-S-0,3

1	**Type**
2	**Connection type**
3	**Cable length l**

Electrical properties		
Output function	Normally open (NO)	
Output type	PNP	
Supply voltage	10 V DC - 30 V DC	
Continuous current I_a	≤ 100 mA	
Connection type Plug (S)	3-pole plug M8x1, with knurled screw connection, with PUR cable 0,3 m	
Switching frequency	1000 Hz	
Power consumption	≤ 8 mA	
Voltage drop	≤ 2 V	
Protection class	III	
Response sensitivity	3 mT	
Overrun distance	10 mm	
Hysteresis	< 0,8 mT	
Repeatability	≤ 0,1 mT	
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
EMC	According to EN 60947-5-2	
Switch state LED	Yes	
Reverse polarity protection	Yes	
Short-circuit protection	Yes	
Approvals, conformity declarations CE marking UL		

Numerical product index

700	→ Page
GN 708.1	31

800	→ Page
GN 801	34
GN 802	32
GN 804	29
GN 807	30
GN 809	35
GN 860	14
GN 861	16
GN 862	18
GN 862.1	22
GN 863	24
GN 864	38
GN 864.1	55
GN 865	40
GN 866	42
GN 867	44
GN 867.1	45
GN 868	46
GN 868.1	47
GN 869.1	48
GN 869.2	49
GN 870	53
GN 871	51
GN 872	50
GN 873	52
GN 875	58
GN 875.2	62
GN 875.3	63
GN 875.4	64
GN 876	60
GN 876.1	65
GN 890	26
GN 893.1	54
GN 893.2	54
GN 893.3	54
GN 893.4	54
GN 896.1	28
GN 896.2	28
GN 896.3	28

900	→ Page
GN 903	33
GN 962	20

3000	→ Page
GN 3380	66

SP-GA-ENG-09.19-PNEU Pneumatic clamps

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