



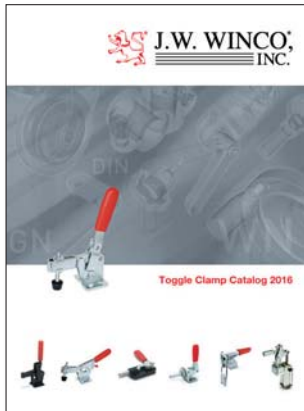
J.W. WINCO,[®]
INC.



Toggle Clamp Catalog 2016



Welcome to Our New Toggle Clamp Catalog!



We at J.W. Winco, Inc. are excited to offer our customers this tool for exploring many of our available toggle clamps and accessory items in inch and metric sizes.

Our company is committed to constantly expanding our product offering. Not only do we work to include new size ranges and material types for existing products, but we offer innovative new types of components you won't find anywhere else in the marketplace. We listen to our customers and develop the components you have requested to meet your application needs.

Particular examples of the great new products included in this new catalog are:

- Vertical acting toggle clamps in steel and stainless steel.
- Horizontal acting toggle clamps in steel and stainless steel, with and without safety locking mechanism.
- Push-pull and cam action toggle clamps in steel and stainless steel.
- Latch and hook type toggle clamps in steel and stainless steel, with and without safety locking mechanism.
- Heavy duty knee modules and accessories.
- Vertical and horizontal pneumatic toggle clamps.
- Toggle clamp spindle assemblies and spindle mounting accessories.

These examples only scratch the surface of the high quality, well designed products we have added to our product line. Please peruse the full selection, organized by type, in this comprehensive catalog. For additional styles, sizes, types and materials of toggle clamps, latches and accessories, please visit our website or call us today to discuss your application requirements.

J.W. Winco, Inc. is more than just a parts supplier – we are your #1 source for metric and inch standard parts for industry. We have many great ways (specifics on the back cover) by which we help our customers build better machines with quality parts, by offering overall cost reductions through cost saving solutions.

We look forward to being of service to you soon!

See our full product offering at www.jwwinco.com!

Our website offers these advantages to our customers to assist them in the component selection and purchase process in record time:

- Up-to-date, complete product detail on our entire line
- Simple product selection
- Free 2D and 3D CAD downloads in virtually every format
- 24/7 online storefront – check stock and pricing, order via credit card
- Shopping made easy – open an account, track past purchases, etc.

Table of Contents

About J. W. Winco	page 2
Quality – Technical Expertise – Free Shipping	page 4
• Vertical Acting Toggle Clamps, Universal Fit and Metric Size	page 14
• Horizontal Acting Toggle Clamps with and without Safety Locking Mechanism, Metric Size	page 32
• Push-Pull and Cam Action Toggle Clamps, Metric Size	page 52
• Latch Type and Hook Type Toggle Clamps with and without Safety Locking Mechanism, Metric Size	page 64
• Heavy Duty Knee Modules and Accessories, Metric Size	page 96
• Pneumatic Toggle Clamps, Metric Size	page 100
• Toggle Clamp Spindle Assemblies and Spindle Mounting Accessories, Metric Size	page 114
Terms and conditions	page 125

The information presented in this catalog is believed complete and accurate, but the purchaser of any product advertised herein has the ultimate responsibility to evaluate the accuracy, the completeness, utility and/or validity of any information herein before relying on it.

Products presented in this catalog may be out of stock, or may be discontinued without notice.

With this catalog, all prior catalogs will be non-valid. We reserve the right to make future design changes without notice.



J.W. Winco, Inc. was established in May of 1978 and is celebrating over 38 years of service. Our constant goal is to provide our customers with the most comprehensive selection of Quality Metal and Plastic, Metric and Inch Size Standard Machine Components and Assembly Hardware available in our marketplace.

Our current line of modernly designed, ergonomically shaped Standard Components and our most recently developed patented products will bring your equipment a 21st century look, function and feel.

We offer online shopping in our eStore, as well as 3D-CAD. We continue to provide design engineers, project engineers, purchasing agents and all other persons involved in the product selection process the largest variety of products and technical information available in our industry.

There is no longer any need to make it yourself! For your new equipment designs and redesigns of existing equipment, Standard Machine Components not only save time and reduce costs of the equipment, but they definitely improve the equipment design and function. Let us help you design it faster, build it better, and deliver it more quickly than your competition can.

With our in-house machining facility, we offer complete secondary machining of our Standard Machine Components and also special custom manufactured component parts. We have welcomed our customers' input and ideas for various components, because many of our Special Machine Components manufactured in the past have given us the opportunity to build standards for today.

We have an outstanding staff of qualified Technical Sales and Customer Service Associates who are available to assist you with any of your Standard Machine Components and Assembly Hardware technical questions and order requirements.



With over 25,000 items in stock, we have the ability to ship the majority of orders received within 24 hours. We also offer free UPS shipping within the USA, just another great service we provide for our customers.

“Quality insures our existence”: We are ISO 9001: 2008 registered, demonstrating our commitment to total quality and continuous improvement of customer satisfaction, throughout our entire organization.

We would like to thank all of our customers for their past and future support. We look forward to our mutual growth in the future.



Global Partnership

While In 2009, J.W. Winco, Inc. became a part of the Otto Ganter GmbH & Co., KG (Germany) group of companies.

Joining forces with such a prominent global manufacturer gives us the opportunity to continue our worldwide expansion and dominance within the standard machine components and assembly hardware industry.

The combined design engineering, manufacturing, stocking and distribution capabilities provide our customers with an enhanced speed of product delivery via an even larger inventory, greater flexibility of product modifications, complete custom manufactured product solutions, and a one-stop shopping experience.



Blickle
Räder+Rollen
GmbH & Co. KG



Elesa S.p.A.



Gamm Srl



Andreas Maier
GmbH & Co. KG



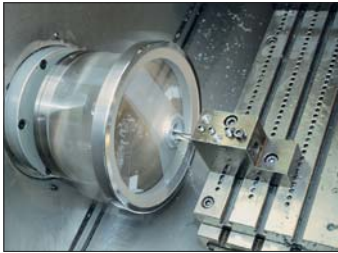
Speedy Block Srl



S&W Manufacturing
Company, Inc.



Quality – Technical Expertise – Free Shipping



Secondary Machining

Consolidate your workload by having us slightly modify our standard products specifically to fit your particular assembly applications. A finished product, made ready to assemble, reduces lead time to the production floor.



Custom-Made Standard Parts

Do you need a little different variation of our standard parts? Use our machining expertise to bring your ideas and drawings to life, helping you create the part that best fits your application requirements.



Special Kit Packaging and Labeling

From a handle packaged with two screws, to a complete subassembly consisting of our components parts, we can provide the kit. If you need a special bar code, UPC code, or customer part number label for your parts—whether individually, bulk or kit packaged—our team is ready to assist you.

One-Stop Source

A vast metal and plastic product range provides our customers with a one-stop shopping experience. From where the raw material enters the machine shop, to the final hand operating component being mounted on the equipment, there are products in our range suited for your application requirements. We offer jig and fixture components to hold the material, tools that help assemble the wide variety of fastening and assembly components available, and operating elements that provide tool-free clamping, adjustments and calibration.

Reliability

ISO 9001:2008 registered quality is synonymous with who we are and what we do. Buying from us you know you will receive quality products, technical expertise, and top rated service. We want to be your reliable source for all your standards parts needs.

„Helping customers build better machines with quality parts“



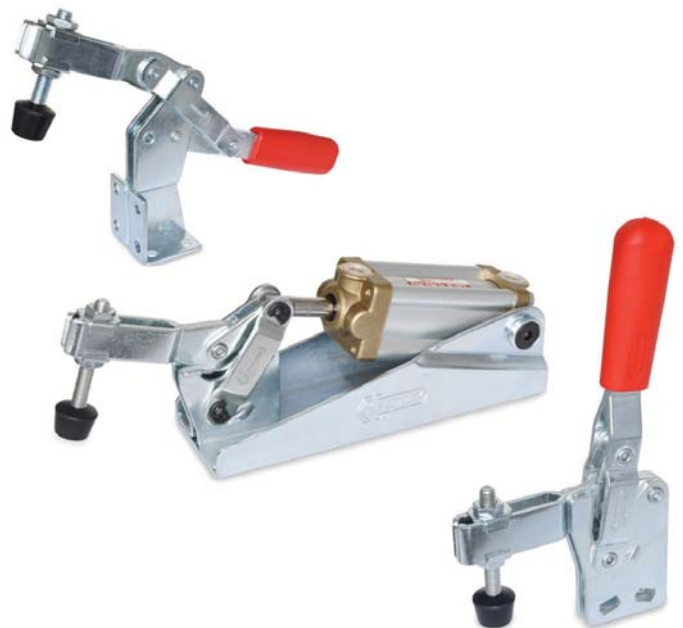
Innovative

Equipment designs and aesthetics change rapidly in today's markets. We say, why not have a standard parts source that constantly adapts to the rapid changes by offering new, improved and innovative machine components and assembly hardware? Designing in standard components saves time in every business process. Ask us about the advantages!



Free Shipping

Where else can you find a source that offers so much, and includes free shipping in the USA and Canada for orders \$50 and up? (For orders under \$50, please see our Terms and Conditions, inside back cover.)



Vertical Acting Toggle Clamps, Universal Fit and Metric Size



GN 810
Vertical Acting Toggle Clamps
Steel
page 14

SS



GN 810
Vertical Acting Toggle Clamps
Stainless Steel
page 16



GN 810.1
Vertical Acting Toggle Clamps
Steel
page 18



SS

GN 810.1
Vertical Acting Toggle Clamps
Stainless-Steel
page 20



GN 812
Vertical Acting Toggle Clamps
Steel
page 22



GN 812.1
Vertical Acting Toggle Clamps
Steel
page 24



GN 813
Vertical Acting Toggle Clamps
Heavy Duty Steel
page 26



GN 910
Vertical Acting Toggle Clamps
Heavy Duty Steel
page 28



GN 910.1
Vertical Acting Toggle Clamps
Heavy Duty Steel
page 30

Horizontal Acting Toggle Clamps with and without Safety Locking Mechanism, Metric Size



GN 820
Horizontal Acting Toggle Clamps
Steel
page 32

SS



GN 820
Horizontal Acting Toggle Clamps
Stainless Steel
page 34



GN 820.1
Horizontal Acting Toggle Clamps
Steel
page 36



SS

GN 820.1
Horizontal Acting Toggle Clamps
Stainless Steel
page 38



GN 820.2
Horizontal Acting Toggle Clamps
Steel
page 40

SS



GN 820.2
Horizontal Acting Toggle Clamps
Stainless Steel
page 42



GN 820.3
Horizontal Acting Toggle Clamps
with Safety Hook Latch
Steel
page 44

SS



GN 820.3
Horizontal Acting Toggle Clamps
with Safety Hook Latch
Stainless Steel
page 46



GN 820.4
Horizontal Acting Toggle Clamps
with Safety Hook Latch
Steel
page 48



SS
GN 820.4
Horizontal Acting Toggle Clamps
with Safety Hook Latch
Stainless Steel
page 50

Push-Pull and
Cam Action Toggle
Clamps, Metric Size



GN 840
Push-Pull Type Toggle Clamps
Steel
page 52



GN 844
Push-Pull Type Toggle Clamps
Heavy Duty Steel
page 54



GN 841
Push-Pull Type Toggle Clamps
Steel
page 56



GN 842
Push-Pull Type Toggle Clamps
Heavy Duty Steel
page 58



GN 843.1
Push-Pull Type Toggle Clamps
Steel
page 60

SS



GN 843.1
Push-Pull Type Toggle Clamps
Stainless Steel
page 62

Latch Type and Hook Type Toggle Clamps with and without Safety Locking Mechanism, Metric Size



GN 851
Latch Type Toggle Clamps
Steel
page 64

SS



GN 851
Latch Type Toggle Clamps
Stainless Steel
page 66



GN 858
Latch Type Toggle Clamps with Locking Mechanism
Steel
page 68



GN 853
Latch Type Toggle Clamps with Locking Mechanism
Steel
page 70

SS



GN 853
Latch Type Toggle Clamps with Locking Mechanism
Stainless Steel
page 72



GN 854
Latch Type Toggle Clamps with Trigger Function
Steel
page 74



GN 855
C-Clamps
Steel
page 76



GN 851.1
Vertical Hook Type Toggle Clamps
Steel
page 78

SS



GN 851.1
Vertical Hook Type Toggle Clamps
Stainless Steel
page 80



GN 851.2
Vertical Hook Type Toggle Clamps
Steel
page 82



GN 951.1
Square U-Bolts
for GN 851, GN 851.1 and GN 851.2
page 84



GN 951.2
Square U-Bolts
for GN 852
page 86



GN 852
Latch Type Toggle Clamps
Steel
page 88

SS



GN 852
Latch Type Toggle Clamps
Stainless Steel
page 90



GN 852.1
Vertical Hook-Type Toggle Clamps
Heavy Duty Steel
page 92



GN 850
Hook Type Toggle Clamps
Steel
page 94

Heavy Duty
Knee Modules
and Accessories,
Metric Size



GN 910.2
Heavy Duty Knee Lever Modules
Steel
page 96



GN 910.3
Heavy Duty Knee Lever Modules
Steel
page 98



GN 910.5
Handles for Knee Lever Modules
Plastic
page 99



GN 910.6
Arm Levers for Knee Lever Modules
Steel
page 99



GN 910.7
Clamping Arm Extenders for Knee Lever Modules
Steel
page 99



GN 910.8
Bushings for Knee Lever Modules
Steel
page 99



GN 910.9
Base Plates for Knee Lever Modules
Steel
page 99

Pneumatic Toggle
Clamps, Metric Size



GN 860
Pneumatic Toggle Clamps
Steel
page 100



GN 861
Pneumatic Toggle Clamps
Heavy Duty Steel
page 102



GN 862
Pneumatic Toggle Clamps
Steel
page 104



GN 862.1
Pneumatic Toggle Clamps
with Additional Manual Operation
Steel
page 106



GN 863
Pneumatic Lock-Down Toggle
Clamps
Heavy Duty Steel
page 108



GN 890
Pneumatic Push-Pull
Toggle Clamps
Steel
page 110



GN 896.1, 896.2, GN 896.3
Proximity Switches for
Pneumatic Toggle Clamps
page 112

Toggle Clamp Spindle Assemblies and Spindle Mounting Accessories, Metric Size

SS



GN 708.1
Toggle Clamp Spindle
Assemblies
Steel and Stainless Steel
page 114



GN 802
Toggle Clamp Spindle
Assemblies
Steel
page 116



GN 804
Toggle Clamp Spindle
Assemblies
Steel
page 117

SS



GN 903
Toggle Clamp Spindle
Assemblies
Steel and Stainless Steel
page 118



GN 807
Toggle Clamp Spindle
Assemblies
Steel
page 120

SS



GN 807
Toggle Clamp Spindle
Assemblies
Stainless Steel
page 121



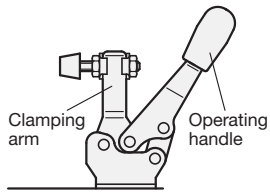
GN 801
Clamp Mounts for Toggle Clamps
Steel
page 122



GN 809
Clamp Mounts
Steel
page 123

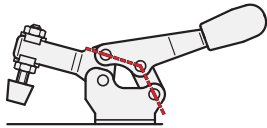
Toggle clamps

Operating principle



By using the **toggle link principle**, toggle clamps offer decisive advantages:

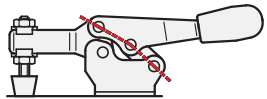
The clamping arm retracts so that the workpiece can be loaded and unloaded completely without obstruction.



Even the slightest forward movement of the operating handle brings the clamping arm with the contact pad over the workpiece.

As can be seen from the drawing, the position of the toggle linkages will lead to a multiple of the input force being applied to the operating handle.

In this position the toggle clamp is not yet fully engaged and any counter force will open it.



In this position all three pivot points are perfectly aligned yielding the maximum **clamping force F_s** (dead center point).

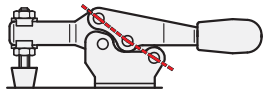
The clamping force F_s exerted on the workpiece is mainly dependent on the following criteria:

- the input force which is applied to the operating handle,
- the position of the clamping bolt on the clamping lever.

Since the applied force on the lever by the operator is not known, the clamping force F_s shown in the table is only specified for pneumatically operated clamps.

The clamping force F_s can be altered by re-adjusting the position of the clamping bolt. The clamping force increases if the entire contact area of the bolt arrives on the workpiece prior to the toggle linkage reaching dead center point.

This effect is illustrated clearly when using an elastic clamping pad.



In this position the toggle linkage has arrived in the over-center lock position. The operating lever has reached a firm stop and is thus prevented from opening until it is released by the operator.

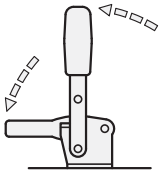
The force which the clamp is capable of withstanding in this over-center lock position without suffering permanent deformation is known as holding force F_H . The holding force has a characteristic value (co-efficient) for toggle clamps and this value is mainly dependent on:

- the size (dimensions, geometry) of the toggle clamp,
- the position of the clamping bolt on the clamping arm.

In the tables the **holding capacity F_H** of the toggle clamps is given in each case in relation to a particular position (distance r) of the clamping arm.

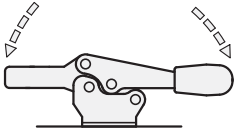
On the standards sheets all clamps are shown in their clamping position.

All references to force are given in N (Newton).



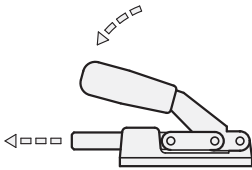
Vertical clamps

Operating handle and clamping lever move in the same direction.
In the clamping position the operating handle is in vertical position.
For applications where substantial forces and many tightening cycles occur, "Longlife" versions are available.



Horizontal clamps

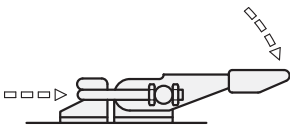
Operating handle and clamping arm move in opposite directions.
In the clamped position the operating handle is in horizontal position (flat version).



Push-pull clamps

On these clamps the swinging movement of the operating handle is converted into an axial movement to push or pull the plunger.

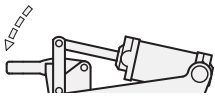
With the exception of two versions GN 841, they lock at the end of their stroke in both directions. For this reason they lend themselves to push or pull operations.



Latch clamps

On these clamps the swinging movement of the operating handle is converted into an axial movement to pull the hook.

Latch clamps are available with and without locking mechanism.



Pneumatically operated clamps

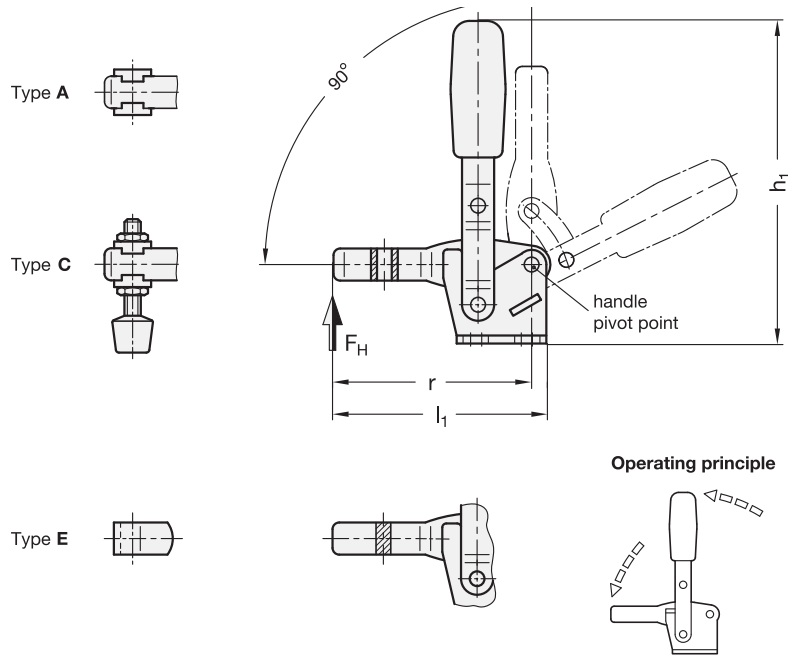
These toggle clamps combine the advantages of clamping by the toggle principle (clamp remains in the clamping position even in the event of air pressure loss!) with the advantages offered by pneumatics i.e.:

- constant clamping force F_s independent of the operator,
- several clamps can be operated simultaneously,

Pneumatically operated clamps can be coordinated from various operating points (remote control, co-ordinated and controlled by other machines),

some variants are available with an air cylinder which allows control via a proximity switch, to give an electrical impulse when the clamp has reached a specific position within its clamping cycle.

Pneumatically operated clamps are available as vertical and push rod versions.



2 Type

- A** U-bar version with two flanged washers
- C** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
- E** Solid bar version with clasp

Specification

- Toggle clamp
 - Case-hardened steel C10
 - zinc plated, blue passivated finish
 - Bearing pins tempered
 - Bearing rivets (for size 230 and up) case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type C)
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- Mounting holes accommodate inch or metric size screws
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type A) → page 122
- GN 809 Clamp Mounts for Toggle Clamps (for Type E) → page 123

Information

GN 810 vertical acting toggle clamps work according to the toggle principle: lever and clamping bar move in the same direction. In the clamped position the operating lever is in its vertical position.

Vertical acting toggle clamps in the U-bar version with two flanged washers (Type A) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type C.

Type E version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

see also...

- *General information for toggle clamps* → page 12
- *GN 810 Stainless Steel Vertical Acting Toggle Clamps with Horizontal Mounting Base* → page 16
- *GN 810.1 Vertical Acting Toggle Clamps with Vertical Mounting Base* → page 18
- *GN 910 Heavy Duty Vertical Acting Toggle Clamps with Horizontal Mounting Base* → page 28

How to order GN810-75-A	1	Size
	2	Type

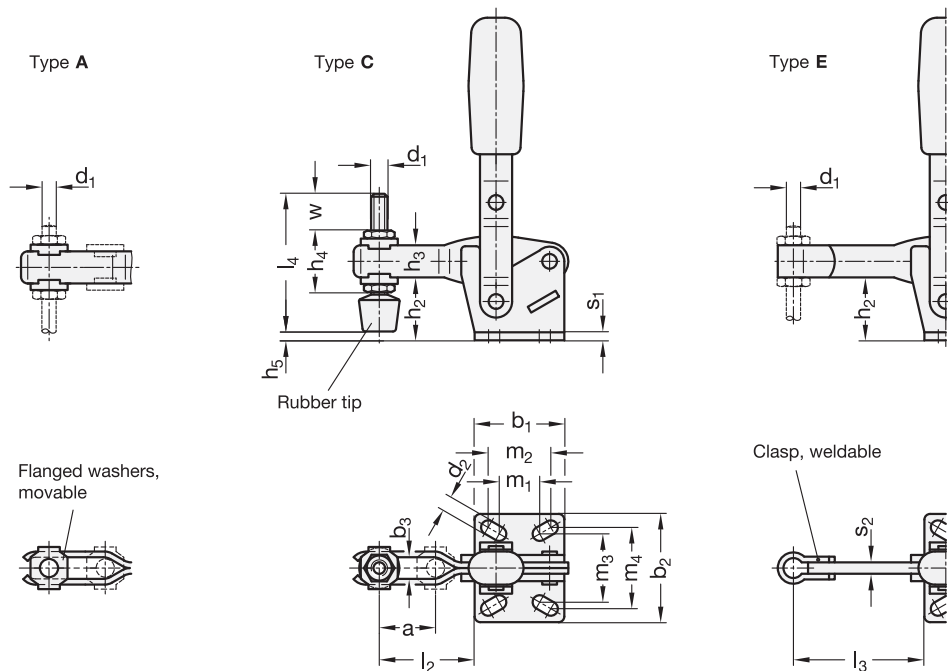
Metric table

Dimensions in: millimeters - inches



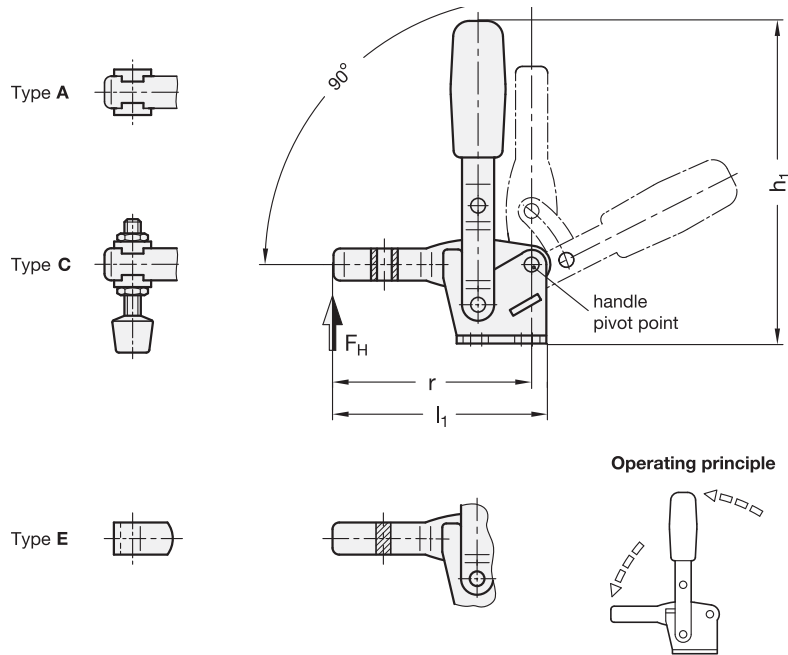
Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	d ₁ Thread	d ₂ ≈	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
75	750	20 .79	29 1.14	34 1.34	5.2 .20	M 5	4.5 .18	98 3.86	20.5 .81	11 .43	19 .75	5.5 .22
130	1050	28 1.10	35 1.38	42 1.65	6.2 .24	M 6	5.5 .22	142 5.59	28 1.10	16 .63	25.5 1.00	11.3 .44
230	2000	40 1.57	43 1.69	45 1.77	8.5 .33	M 8	6.5 .26	168 6.61	33.5 1.32	18 .71	30 1.18	9.5 .37
330	2400	43 1.69	50 1.97	65 2.56	10.5 .41	M 10	8.5 .33	195 7.68	43 1.69	22 .87	37 1.46	15 .59
430	2800	64 2.52	58 2.28	65 2.56	12.5 .49	M 12	8.5 .33	247 9.72	55.5 2.19	26 1.02	43 1.69	23 .91
530	4500	90 3.54	80 3.15	95 3.74	12.5 .49	M 12	12.5 .49	303 11.93	84.5 3.33	32 1.26	49 1.93	52 2.05

Size	l ₁ ≈		l ₂ ≈	l ₃ max.	l ₄	m ₁	m ₂	m ₃	m ₄	r ≈	s ₁	s ₂	w Adjustable Range
	Type A	Type E											
75	66.5 2.62	67 2.64	31.5 1.24	41 1.61	45 1.77	15 .59	16 .63	24 .94	24 .94	62.5 2.46	2 .08	4 .16	15 .59
130	85 3.35	86 3.39	42 1.65	54 2.13	55 2.17	12.5 .49	19 .75	27 1.06	29 1.14	79.5 3.13	2.5 .10	5 .20	17.5 .69
230	110.5 4.35	112 4.41	58 2.28	73 2.87	68 2.68	19 .75	20 .79	32 1.26	32 1.26	104 4.09	3 .12	6 .24	20 .79
330	129 5.08	130.5 5.14	66 2.60	86 3.39	77 3.03	29 1.14	32 1.26	46 1.81	45 1.77	122 4.80	3.5 .14	7 .28	19 .75
430	164 6.46	166 6.54	88 3.46	114 4.49	100 3.94	32 1.26	32 1.26	45 1.77	45 1.77	156 6.14	4 .16	10 .39	33 1.30
530	223 8.78	225 8.86	125 4.92	152 5.98	100 3.94	50 1.97	51 2.01	70 2.76	70 2.76	212 8.35	7 .28	10 .39	27 1.06



GN 810 Vertical Acting Toggle Clamps

Stainless Steel, with Horizontal Mounting Base



SS Stainless Steel

2 Type

- A** U-bar version with two flanged washers
- C** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
- E** Solid bar version with clasp

Specification

- Toggle clamp
Stainless steel
European Standard No. 1.4301 (AISI 304)
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- Neoprene spindle assembly (Type C)
 - Threaded stud
Stainless steel, European Standard No. 1.4301 (AISI 304)
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- Mounting holes accommodate inch or metric size screws
- **RoHS compliant**

Accessory

- Spindle assemblies → page 114 ff.

Information

GN 810 vertical acting toggle clamps work according to the toggle principle: lever and clamping bar move in the same direction. In the clamped position the operating lever is in its vertical position.

Vertical acting toggle clamps in the U-bar version with two flanged washers (Type A) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type C.

Type E version can be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component.

see also...

- *General information for toggle clamps* → page 12
- *GN 810 Steel Vertical Acting Toggle Clamps with Horizontal Mounting Base* → page 14
- *GN 810.1 Vertical Acting Toggle Clamps with Vertical Mounting Base* → page 20

How to order

GN 810-75-A-NI

- | | |
|----------|-----------------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

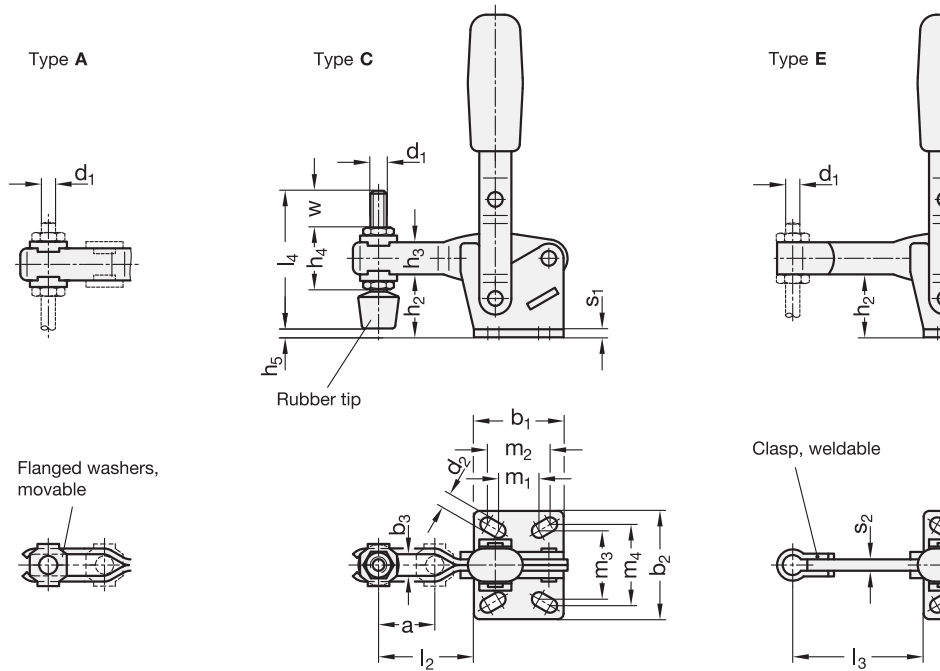
Metric table

Dimensions in: millimeters - inches



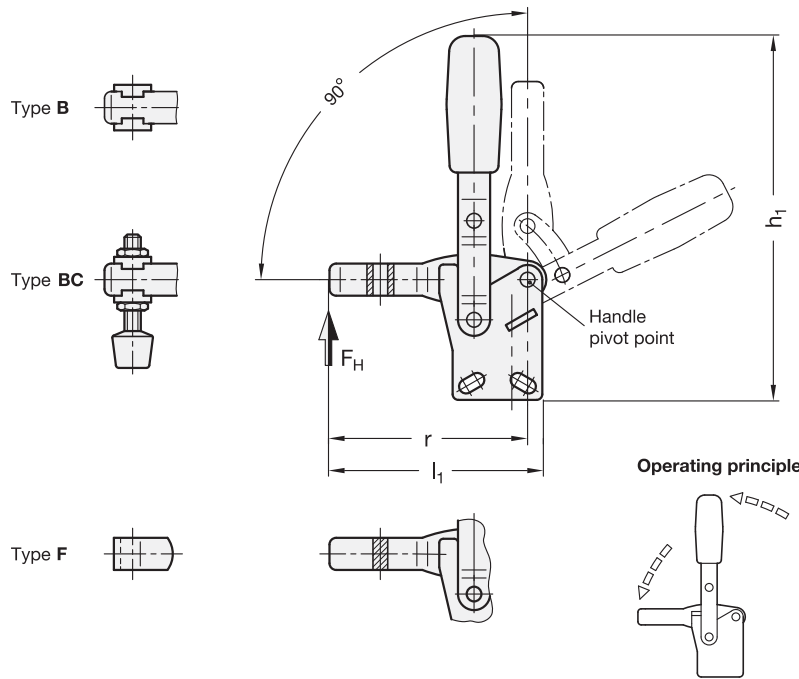
Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	d ₁ Thread	d ₂ ≈	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
75	750	20 .79	29 1.14	34 1.34	5.2 .20	M 5	4.5 .18	98 3.86	20.5 .81	11 .43	19 .75	5.5 .22
130	1050	28 1.10	35 1.38	42 1.65	6.2 .24	M 6	5.5 .22	142 5.59	28 1.10	16 .63	25.5 1.00	11.3 .44
230	2000	40 1.57	43 1.69	45 1.77	8.5 .33	M 8	6.5 .26	168 6.61	33.5 1.32	18 .71	30 1.18	9.5 .37

Size	l ₁ ≈		l ₂ ≈	l ₃ max.	l ₄	m ₁	m ₂	m ₃	m ₄	r ≈	s ₁	s ₂	w Adjustable Range
	Type A	Type E											
75	66.5 2.62	67 2.64	31.5 1.24	41 1.61	45 1.77	15 .59	16 .63	24 .94	24 .94	62.5 2.46	2 .08	4 .16	15 .59
130	85 3.35	86 3.39	42 1.65	54 2.13	55 2.17	12.5 .49	19 .75	27 1.06	29 1.14	79.5 3.13	2.5 .10	5 .20	17.5 .69
230	110.5 4.35	112 4.41	58 2.28	73 2.87	68 2.68	19 .75	20 .79	32 1.26	32 1.26	104 4.09	3 .12	6 .24	20 .79



GN 810.1 Vertical Acting Toggle Clamps

Steel, with Vertical Mounting Base



2 Type

- B** U-bar version with two flanged washers
- BC** U-bar version with two flanged washers and GN 708.1 Toggle Clamp Assembly (Type A)
- F** Solid bar version with clasp

Specification

- Toggle clamp
 - Case-hardened steel C10, zinc plated, blue passivated finish
 - Bearing pins tempered
 - for sizes 230 and up, zinc-plated steel rivets in case-hardened bushings have bearing spots greased
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type BC)
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- Mounting holes accommodate inch or metric size screws
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 809 Clamp Mounts for Toggle Clamps (for Type F) → page 123
- GN 801 Clamp Mounts for Toggle Clamps (for Type B) → page 122

Information

GN 810.1 vertical acting toggle clamps work according to the toggle principle: lever and clamping bar move in the same direction. In the clamped position the operating lever is in its vertical position.

Vertical acting toggle clamps in the U-bar version with two flanged washers (Type B) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type BC.

Type F version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

see also...

- General information for toggle clamps → page 12
- GN 810.1 Stainless Steel Vertical Acting Toggle Clamps with Vertical Mounting Base → page 20
- GN 810 Vertical Acting Toggle Clamps with Horizontal Mounting Base → page 14

How to order

GN810.1 - 130 - B

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

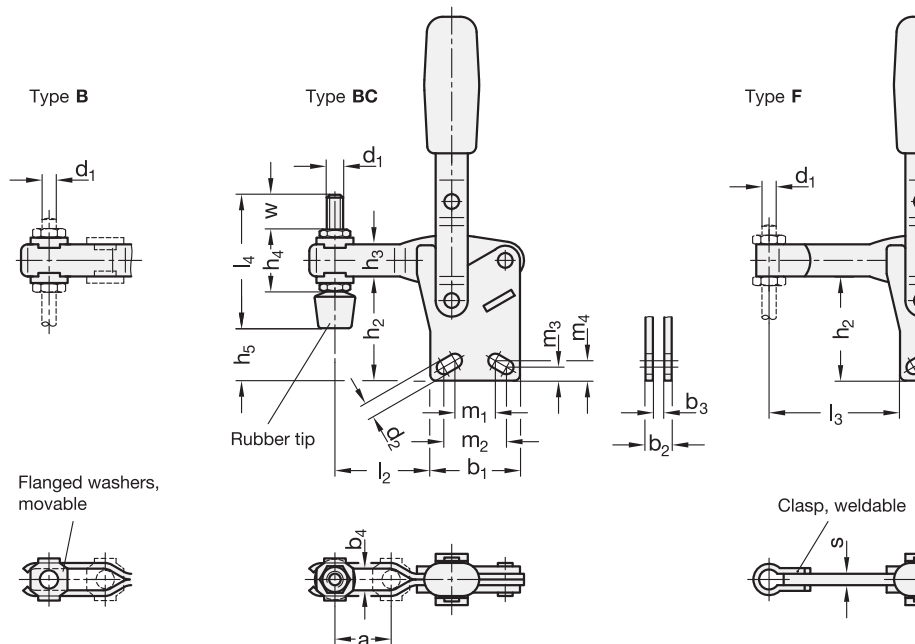
Metric table

Dimensions in: millimeters - inches

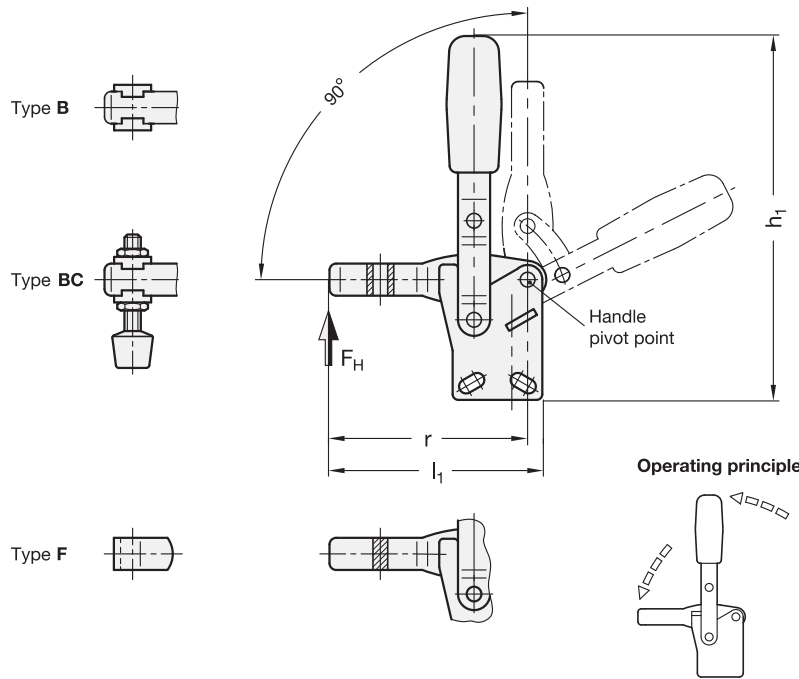


Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	b ₄	d ₁	d ₂ ≈	h ₁ ≈	h ₂	h ₃	h ₄	h ₅
75	750	20 .79	29 1.14	8 .31	4 .16	5.2 .20	M 5	4.5 .18	109 4.29	32 1.26	11 .43	19 .75	17 .67
130	1050	28 1.10	35 1.38	10 .39	5 .20	6.2 .24	M 6	5.5 .22	156 6.14	41.5 1.63	16 .63	25.5 1.00	25 .98
230	2000	40 1.57	43 1.69	12 .47	6 .24	8.5 .33	M 8	6.5 .26	183 7.20	48 1.89	18 .71	30 1.18	24 .94
330	2400	43 1.69	50 1.97	14 .55	7 .28	10.5 .41	M 10	8.5 .33	218 8.58	66 2.60	22 .87	37 1.46	39.5 1.56
430	2800	64 2.52	58 2.28	18 .71	10 .39	12.5 .49	M 12	8.5 .33	268 10.55	77.5 3.05	26 1.02	43 1.69	45 1.77
530	4500	90 3.54	77 3.03	18 .71	10 .39	12.5 .49	M 12	12.5 .49	337 13.27	117.5 4.63	32 1.26	49 1.93	85 3.35

Size	l ₁ ≈ Type B	Type F	l ₂ ≈	l ₃ max.	l ₄	m ₁	m ₂	m ₃	m ₄	r ≈	s	w Adjustable Range
75	66.5 2.62	67 2.64	31.5 1.24	41 1.61	45 1.77	15 .59	16 .63	5 .20	5 .20	62.5 2.46	4 .16	15 .59
130	85 3.35	86 3.39	42 1.65	54 2.13	55 2.17	12.5 .49	19 .75	6.5 .26	7.5 .30	79 3.11	5 .20	17.5 .69
230	110.5 4.35	112 4.41	58 2.28	73 2.87	68 2.68	19 .75	20 .79	6.5 .26	6.5 .26	104 4.09	6 .24	20 .79
330	129 5.08	130.5 5.14	66 2.60	86 3.39	77 3.03	28.7 1.13	32.3 1.27	10 .39	9.5 .37	122 4.80	7 .28	19 .75
430	164 6.46	166 6.54	88 3.46	114 4.49	100 3.94	32 1.26	32 1.26	10 .39	10 .39	156 6.14	10 .39	33 1.30
530	223 8.78	225 8.86	128 5.04	155 6.10	100 3.94	50 1.97	51 2.01	12.5 .49	12.5 .49	212 8.35	10 .39	27 1.06



GN 810.1 Vertical Acting Toggle Clamps
Stainless Steel, with Vertical Mounting Base



SS Stainless Steel

2 Type

- B** U-bar version with two flanged washers
- BC** U-bar version with two flanged washers and GN 708.1 Toggle Clamp Assembly (Type A)
- F** Solid bar version with clasp

Specification

- Toggle clamp
 - Stainless steel
 - European Standard No. 1.4301 (AISI 304)
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type BC)
 - Threaded stud
 - Stainless steel
 - European Standard No. 1.4301 (AISI 304)
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- Mounting holes accommodate inch or metric size screws
- RoHS compliant

Information

GN 810.1 vertical acting toggle clamps work according to the toggle principle: lever and clamping bar move in the same direction. In the clamped position the operating lever is in its vertical position.

Vertical acting toggle clamps in the U-bar version with two flanged washers (Type B) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type BC.

Type F version can be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component.

see also...

- *General information for toggle clamps* → page 12
- *GN 810.1 Steel Vertical Acting Toggle Clamps with Vertical Mounting Base* → page 18
- *GN 810 Stainless Steel-Vertical Acting Toggle Clamps with Horizontal Mounting Base* → page 16

Accessory

- Spindle assemblies → page 114 ff.

How to order

GN810.1-130-F-NI

- 1** Size
- 2** Type
- 3** Material

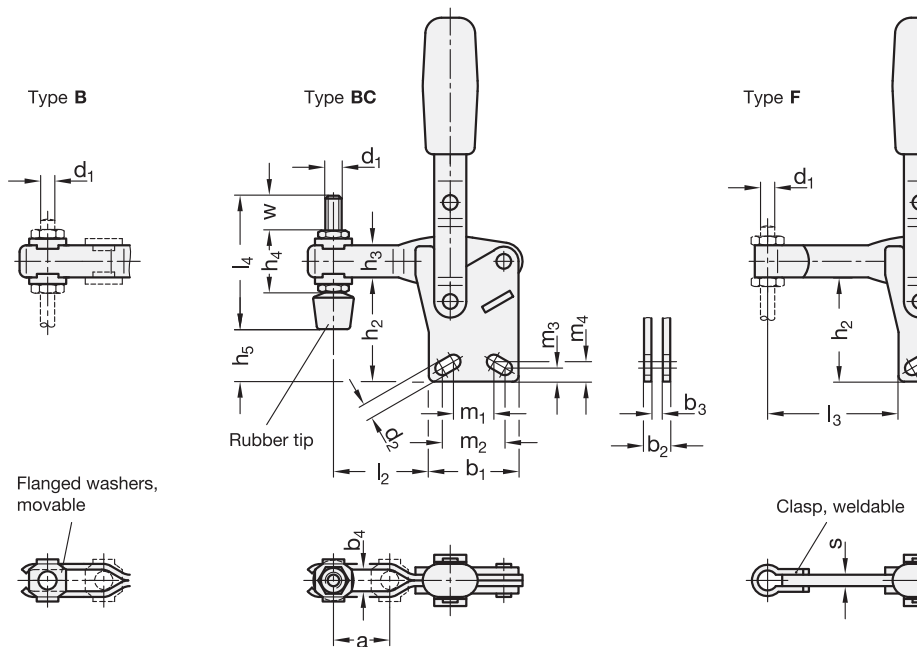
Metric table

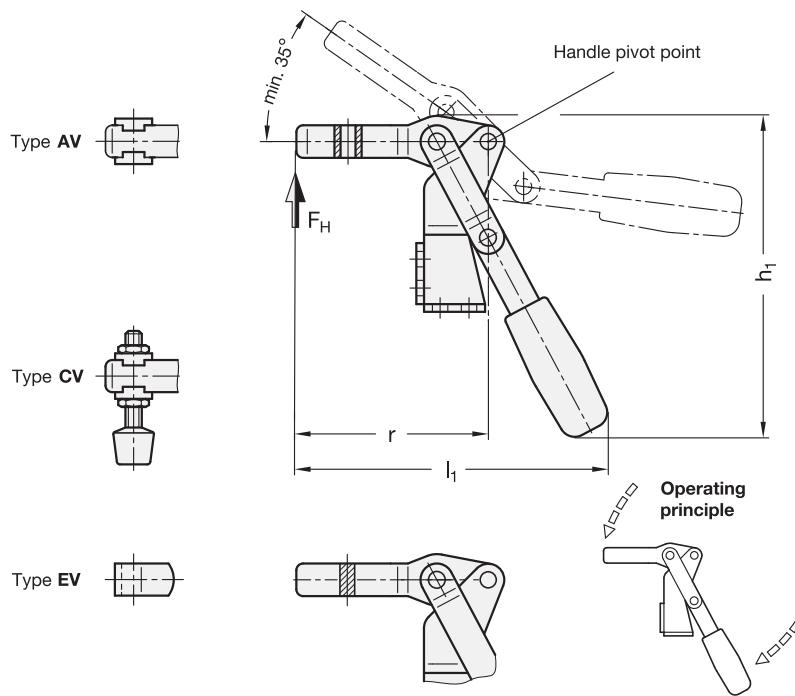
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	b ₄	d ₁	d ₂ ≈	h ₁ ~	h ₂	h ₃	h ₄	h ₅
75	750	20 .79	29 1.14	8 .31	4 .16	5.2 .20	M 5	4.5 .18	109 4.29	32 1.26	11 .43	19 .75	17 .67
130	1050	28 1.10	35 1.38	10 .39	5 .20	6.2 .24	M 6	5.5 .22	156 6.14	41.5 1.63	16 .63	25.5 1.00	25 .98
230	2000	40 1.57	43 1.69	12 .47	6 .24	8.5 .33	M 8	6.5 .26	183 7.20	48 1.89	18 .71	30 1.18	24 .94

Size	l ₁ ≈ Type B	Type F	l ₂ ≈	l ₃ max.	l ₄	m ₁	m ₂	m ₃	m ₄	r ≈	s	w Adjustable Range
75	66.5 2.62	67 2.64	31.5 1.24	41 1.61	45 1.77	15 .59	16 .63	5 .20	5 .20	62.5 2.46	4 .16	15 .59
130	85 3.35	86 3.39	42 1.65	54 2.13	55 2.17	12.5 .49	19 .75	6.5 .26	7.5 .30	79 3.11	5 .20	17.5 .69
230	110.5 4.35	112 4.41	58 2.28	73 2.87	68 2.68	19 .75	20 .79	6.5 .26	6.5 .26	104 4.09	6 .24	20 .79





2 Type

- AV** U-bar version with two flanged washers
- CV** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
- EV** Solid bar version with clasp

Specification

- Toggle clamp
 - Case-hardened sheet metal (C10 steel), zinc plated, blue passivated
 - Bearing pins tempered
 - Bearing rivets case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type CV):
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type AV) → page XYZ
- GN 809 Clamp Mounts for Toggle Clamps (for Type EV) → page XYZ

Information

GN 812 vertical acting toggle clamps work according to the toggle principle: lever and clamping bar move in the same direction. They can be mounted in two planes via the dual flanged mounting base and require less space for the clamping action because the clamping arm and the operating lever move in opposite directions.

Vertical acting toggle clamps in the U-bar version with two flanged washers (Type AV) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type CV.

Additionally, the clamping arm is stamped from sheet metal and reinforced for heavy duty applications.

Type EV version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

How to order

GN 812-300-EV

- 1 Size
- 2 Type

Metric table

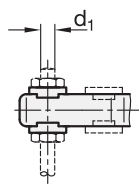
Dimensions in: millimeters - inches



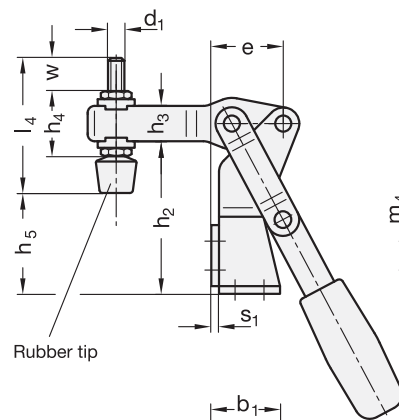
Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	b ₄	d ₁	d ₂	e	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
200	1200	34 1.34	35 1.38	38 1.50	35 1.38	8.5 .33	M 8	6.5 .26	37 1.46	154 6.06	76 2.99	17 .67	29 1.14	52 2.05
300	1900	42 1.65	48 1.89	48 1.89	51 2.01	10.4 .41	M 10	8.5 .33	46 1.81	198 7.80	108 4.25	20 .79	35 1.38	79.5 3.13

Size	l ₁ ≈	l ₂ ≈	l ₃ max.	l ₄	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈	s ₁	s ₂	w Adjustable Range
200	158 6.22	59 2.32	76 2.99	68 2.68	16 .63	26 1.02	11 .43	16 .63	11 .43	96 3.78	3 .12	6 .24	21 .83
300	194 7.64	74 2.91	95 3.74	77 3.03	28 1.10	30 1.18	11.5 .45	30 1.18	12 .47	122 4.80	3 .12	8 .31	21 .83

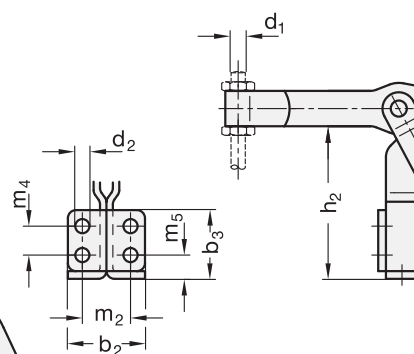
Type AV



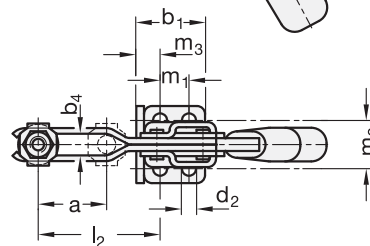
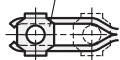
Type CV



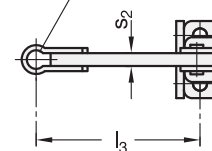
Type EV



Flanged washers, movable

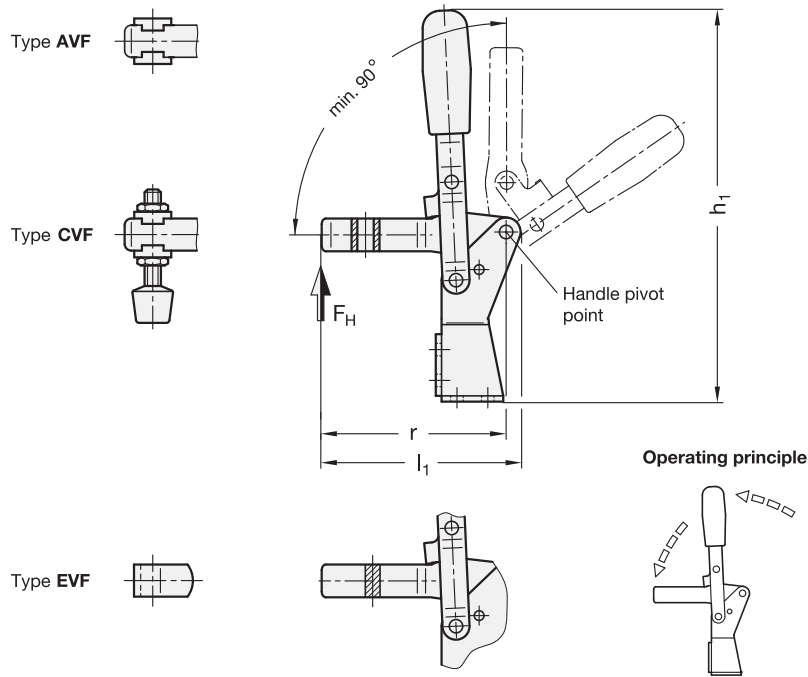


Clasp, weldable



GN 812.1 Vertical Acting Toggle Clamps

Steel, with Dual Flanged Mounting Base



- 2** Type
- AVF** U-bar version with two flanged washers
 - CVF** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
 - EVF** Solid bar version with clasp

Specification

- Toggle clamp
 - Case-hardened sheet metal (C10 steel), zinc plated, blue passivated finish
 - Bearing pins tempered
 - Bearing rivets case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Spindle assembly GN 708.1 Type A
 - Steel, zinc plated
 - Rubber tip 85 Shore A
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 809 Clamp Mounts for Toggle Clamps (for Type EVF) → page 123
- GN 801 Clamp Mounts for Toggle Clamps (for Type AVF) → page 122

Information

GN 812.1 vertical acting toggle clamps work according to the toggle principle: lever and clamping bar move in the same direction. In the clamped position the operating lever is in its vertical position.

They can be mounted in two planes via the dual flanged mounting base and require less space for the clamping action.

Vertical acting toggle clamps in the U-bar version with two flanged washers (Type AVF) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type CVF.

Type EVF version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

see also...

- General information for toggle clamps → page 12

How to order

GN 812.1-200-EVF

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

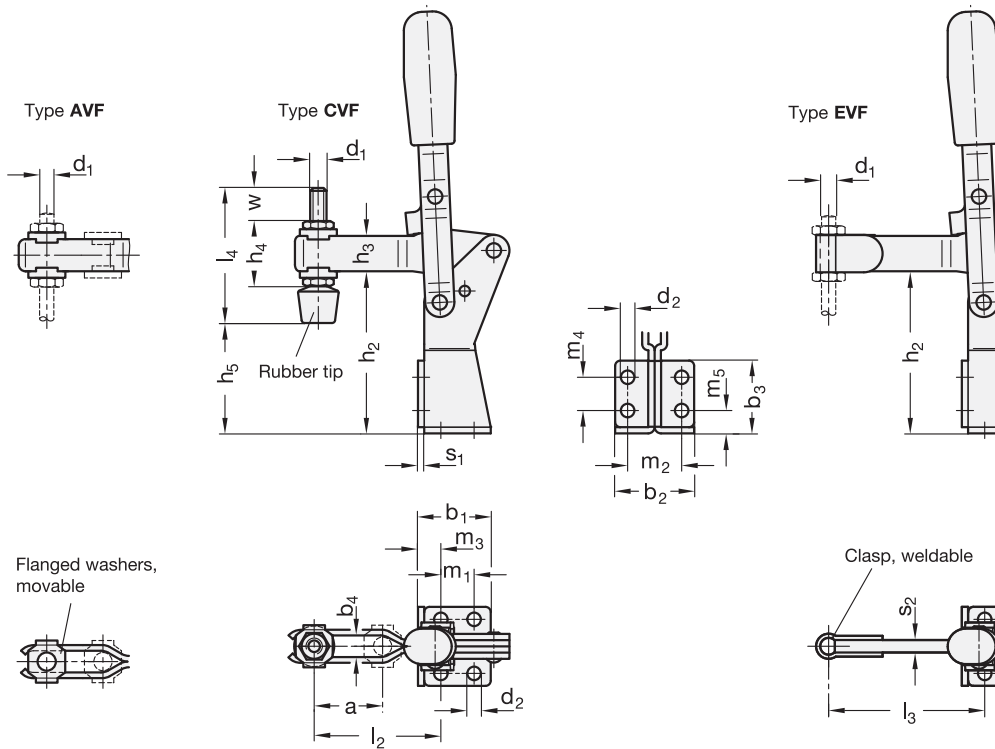
Metric table

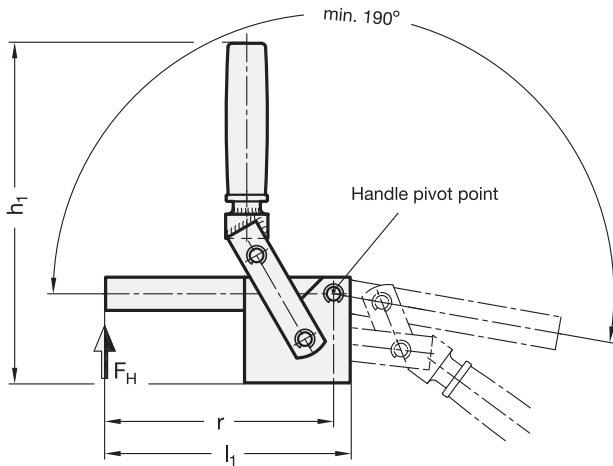
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	b ₄	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃	h ₄ ≈	h ₅
200	1600	36 1.42	35 1.38	38 1.50	35 1.38	8.5 .33	M 8	6.5 .26	203 7.99	77 3.03	17 .67	29 1.14	53 2.09
300	2400	50 1.97	48 1.89	48 1.89	51 2.01	10.2 .40	M 10	8.5 .33	258 10.16	105 4.13	20 .79	35 1.38	76.5 3.01

Size	l ₁ ≈ Type AVF	Type EVF	l ₂	l ₃ max.	l ₄	m ₁	m ₂	m ₃	m ₄	m ₅	r Type AVF	Type EVF	s ₁	s ₂	w Adj. Range
200	103 4.06	105 4.13	61 2.40	85 3.35	68 2.68	16 .63	26 1.02	11 .43	16 .63	11 .43	95.5 3.76	97.5 3.84	3 .12	6 .24	21 .83
300	130 5.12	132 5.20	75 2.95	100 3.94	77 3.03	28 1.10	30 1.18	11.5 .45	30 1.18	12 .47	121.5 4.78	123 4.84	3 .12	8 .31	21 .83





2 Type
F Solid bar version

Specification

- Bearing pins and clamping lever
Steel St 60
blackened finish
- Other parts
Steel St 37
- weldable
- blackened finish
- Bearing pins and rivets
case-hardened
- All moving parts lubricated with a special grease
- Hand grip
High quality, oil resistant red plastic
- RoHS compliant

Information

GN 813 vertical acting toggle clamps are used for applications where a very high holding force is required, such as closing of foam molds.

These clamps have been designed for easy dismantling: i.e. the bearing pins are locked with circlips. After dismantling the individual parts, they can be modified to suit individual applications. Because GN 813 heavy duty toggle clamps have the ability to be welded, they provide the fixture designer the flexibility of using a standard clamp, and creating his own clamping arm design.

see also...

- General information for toggle clamps → page 12

How to order GN 813 -3000-¹F²	1 Size
	2 Type

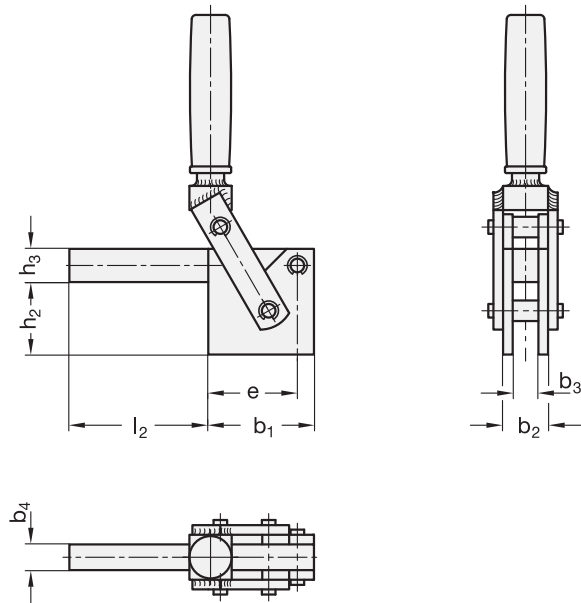
Metric table

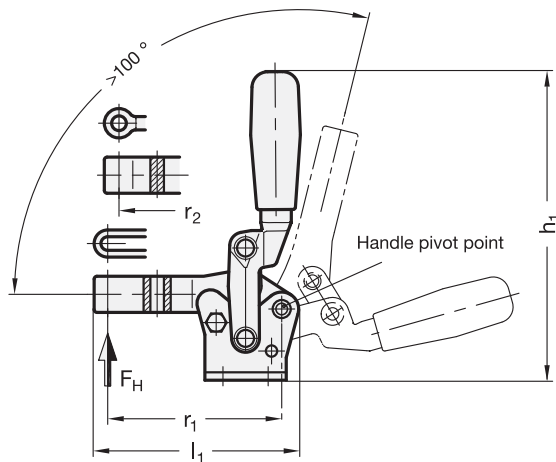
Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	b ₁	b ₂	b ₃	b ₄	e
1000	10000	80 <i>3.15</i>	36 <i>1.42</i>	20 <i>.79</i>	20 <i>.79</i>	67 <i>2.64</i>
2000	20000	100 <i>3.94</i>	36 <i>1.42</i>	20 <i>.79</i>	20 <i>.79</i>	82 <i>3.23</i>
3000	30000	110 <i>4.33</i>	45 <i>1.77</i>	25 <i>.98</i>	25 <i>.98</i>	90 <i>3.54</i>

Size	h ₁	h ₂	h ₃	l ₁	l ₂	r
1000	265 <i>10.43</i>	55 <i>2.17</i>	25 <i>.98</i>	190 <i>7.48</i>	110 <i>4.33</i>	177 <i>6.97</i>
2000	297 <i>11.69</i>	65 <i>2.56</i>	35 <i>1.38</i>	220 <i>8.66</i>	120 <i>4.72</i>	202 <i>7.95</i>
3000	320 <i>12.60</i>	80 <i>3.15</i>	40 <i>1.57</i>	250 <i>9.84</i>	140 <i>5.51</i>	230 <i>9.06</i>





2 Type

- A** Clamping arm with slotted hole, with 2 flanged washers
- E** Clamping arm with bushing

Specification

- Toggle clamp Steel
 - Precision casting
 - blackened finish
- Lever arm Steel
 - forged
 - blackened finish
- Parts in sheet metal
 - case-hardened Steel
 - blackened finish
- Bearing pins and rivets
 - Steel, hardened and ground
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- **RoHS compliant**

Information

GN 910 heavy duty vertical acting toggle clamps can accommodate an application-specific screw.

The steel sheet metal design of the clamp and lever arms is replaced by precision casting or die-forged components. The remaining steel sheet parts have been reinforced, and bearing pins and rivets are hardened and ground.

Therefore these clamps are suitable for applications in which substantial forces occur and a long service life is required.

During extensive testing, with trouble free function and under load, the clamp has withstood over one million opening and closing cycles.

Toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps* → page 12

Accessory

- Spindle assemblies → page 114 ff.

How to order		1 Size
GN 910-220-A	2 Type	

Metric table

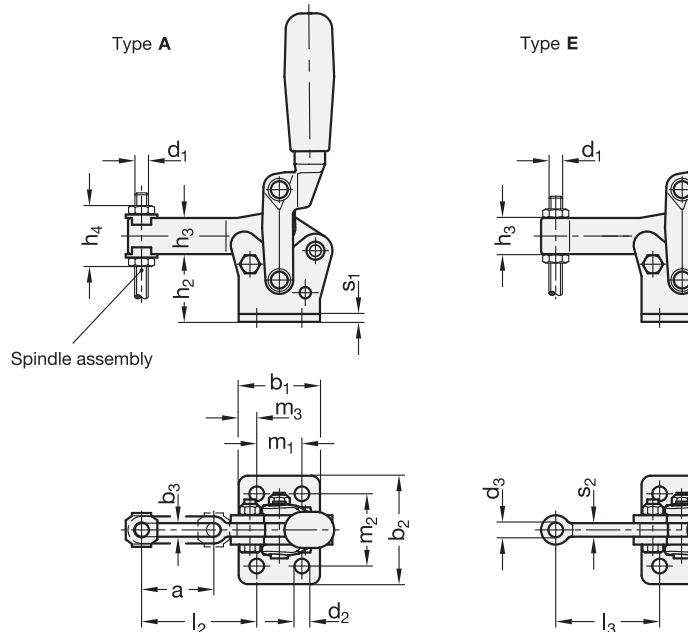
Dimensions in: millimeters - inches



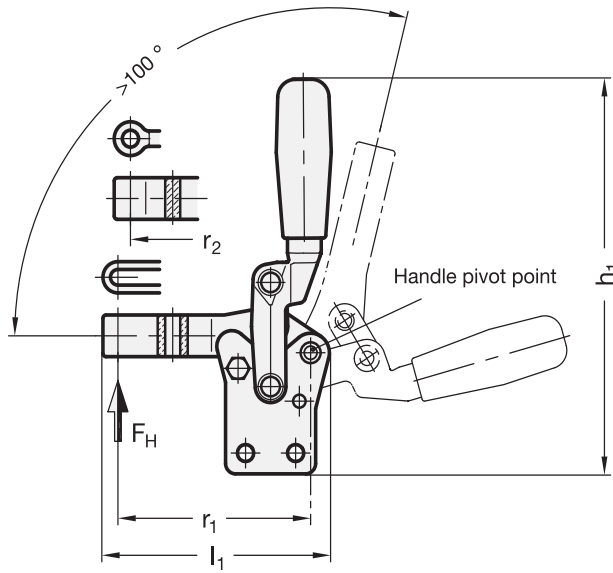
Size	F _H in N Holding Capacity	a	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	d ₃	h ₁	h ₂	h ₃	h ₄ ≈
220	2200	32 <i>1.26</i>	36 <i>1.42</i>	48 <i>1.89</i>	6 <i>.24</i>	M 6	6.5 <i>.26</i>	6.5 <i>.26</i>	136.5 <i>5.37</i>	30 <i>1.18</i>	16 <i>.63</i>	27 <i>1.06</i>
440	4400	34 <i>1.34</i>	54 <i>2.13</i>	65 <i>2.56</i>	10 <i>.39</i>	M 10	8.5 <i>.33</i>	10.5 <i>.41</i>	215 <i>8.46</i>	50 <i>1.97</i>	24 <i>.94</i>	45 <i>1.77</i>
850 *	8500	-	75 <i>2.95</i>	75 <i>2.95</i>	-	M 12	10.5 <i>.41</i>	12.5 <i>.49</i>	280 <i>11.02</i>	67 <i>2.64</i>	30 <i>1.18</i>	-
1540 *	15400	-	90 <i>3.54</i>	100 <i>3.94</i>	-	M 16	12.5 <i>.49</i>	16.5 <i>.65</i>	330 <i>12.99</i>	76.5 <i>3.01</i>	35 <i>1.38</i>	-

Size	l ₁ Type A	Type E	l ₂	l ₃	m ₁	m ₂	m ₃	r ₁	r ₂	s ₁	s ₂
220	91 <i>3.58</i>	86 <i>3.39</i>	51 <i>2.01</i>	46 <i>1.81</i>	20 <i>.79</i>	32 <i>1.26</i>	8 <i>.31</i>	77 <i>3.03</i>	72 <i>2.83</i>	3.5 <i>.14</i>	6 <i>.24</i>
440	129.5 <i>5.10</i>	129.5 <i>5.10</i>	66 <i>2.60</i>	66 <i>2.60</i>	30 <i>1.18</i>	45 <i>1.77</i>	12 <i>.47</i>	107 <i>4.21</i>	107 <i>4.21</i>	5 <i>.20</i>	10 <i>.39</i>
850 *	-	161 <i>6.34</i>	-	72 <i>2.83</i>	55 <i>2.17</i>	55 <i>2.17</i>	10 <i>.39</i>	-	133 <i>5.24</i>	6 <i>.24</i>	12 <i>.47</i>
1540 *	-	203 <i>7.99</i>	-	92.5 <i>3.64</i>	65 <i>2.56</i>	65 <i>2.56</i>	12.5 <i>.49</i>	-	167 <i>6.57</i>	8 <i>.31</i>	16 <i>.63</i>

* This size is fitted with a round handle at the lever arm and available only in Type E.



GN 910.1 Heavy Duty Vertical Acting Toggle Clamps
Steel, with Vertical Mounting Base



2 Type

- B** Clamping arm with slotted hole, with 2 flanged washers (only size 220 and 440)
- F** Clamping arm with bushing

Specification

- Toggle clamp steel
 - precision casting
 - blackened finish
- Lever arm steel
 - forged
 - blackened finish
- Parts in sheet metal
 - case-hardened Steel
 - blackened finish
- Bearing pins and rivets
 - Steel, hardened and ground
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.

Information

GN 910.1 heavy duty vertical acting toggle clamps can accommodate an application-specific screw.

The steel sheet metal design of the clamp and lever arms is replaced by precision casting or die-forged components. The remaining steel sheet metal parts have been reinforced, and bearing pins and rivets are hardened and ground.

Therefore these clamps are suitable for applications in which substantial forces occur and a long service life is required.

During extensive testing, with trouble free function and under load, the clamp has withstood over one million opening and closing cycles.

Flanged washers are included, toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps* → page 12
- *GN 810.1 Vertical Acting Toggle Clamps* → page 18

How to order GN910.1-440-F	1	Size
	2	Type

Metric table

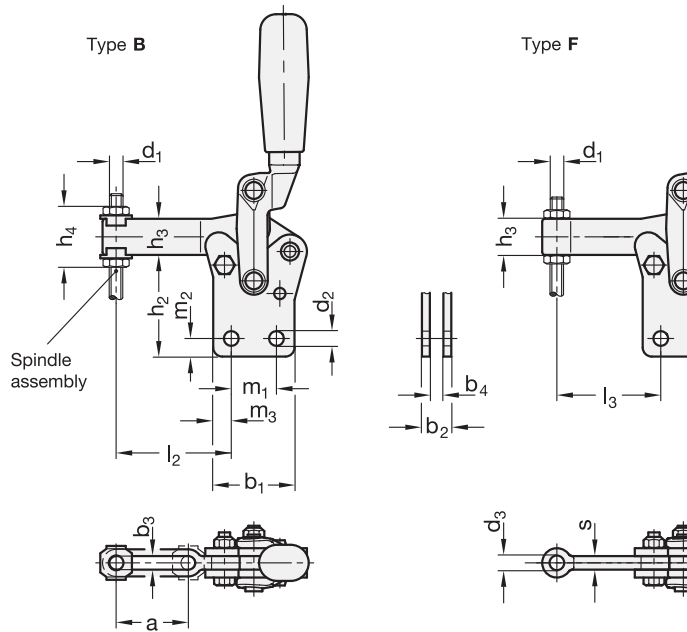
Dimensions in: millimeters - inches

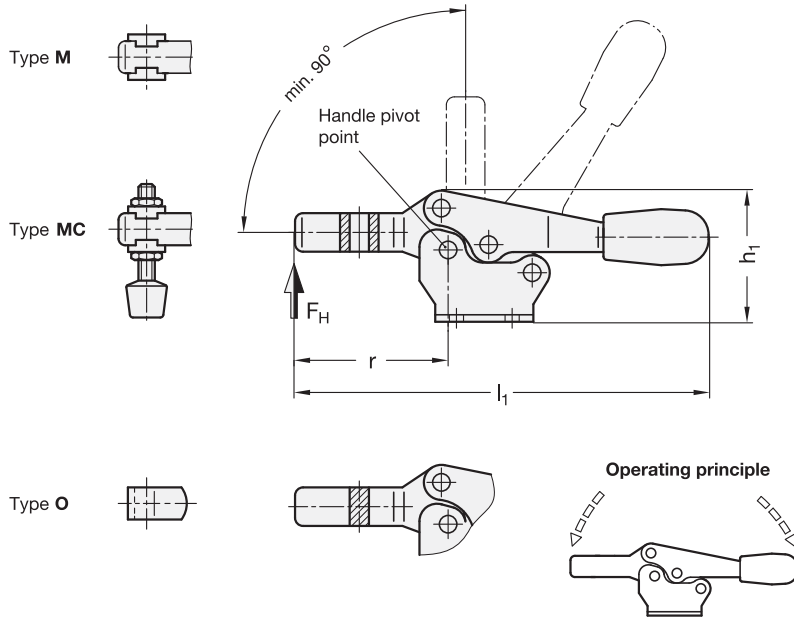


Size	F _H in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	d ₁ Thread	d ₂	d ₃	h ₁	h ₂	h ₃	h ₄ ≈
220	2200	32 <i>1.26</i>	36 <i>1.42</i>	13 <i>.51</i>	6 <i>.24</i>	6 <i>.24</i>	M 6	6.5 <i>.26</i>	6.5 <i>.26</i>	152 <i>5.98</i>	45.5 <i>1.79</i>	16 <i>.63</i>	27 <i>1.06</i>
440	4400	34 <i>1.34</i>	54 <i>2.13</i>	20 <i>.79</i>	10 <i>.39</i>	10 <i>.39</i>	M 10	8.5 <i>.33</i>	10.5 <i>.41</i>	235 <i>9.25</i>	69.5 <i>2.74</i>	24 <i>.94</i>	45 <i>1.77</i>
850 *	8500	-	75 <i>2.95</i>	24 <i>.94</i>	-	12 <i>.47</i>	M 12	10.5 <i>.41</i>	12.5 <i>.49</i>	301 <i>11.85</i>	88 <i>3.46</i>	30 <i>1.18</i>	-
1540 *	15400	-	90 <i>3.54</i>	32 <i>1.26</i>	-	16 <i>.63</i>	M 16	12.5 <i>.49</i>	16.5 <i>.65</i>	344 <i>13.54</i>	106 <i>4.17</i>	35 <i>1.38</i>	-

Size	l ₁		l ₂	l ₃	m ₁	m ₂	m ₃	r ₁	r ₂	s
	Type B	Type F								
220	91 <i>3.58</i>	86 <i>3.39</i>	51 <i>2.01</i>	46 <i>1.81</i>	20 <i>.79</i>	8 <i>.31</i>	8 <i>.31</i>	77 <i>3.03</i>	72 <i>2.83</i>	6 <i>.24</i>
440	129.5 <i>5.10</i>	129.5 <i>5.10</i>	66 <i>2.60</i>	66 <i>2.60</i>	30 <i>1.18</i>	10 <i>.39</i>	12 <i>.47</i>	107 <i>4.21</i>	107 <i>4.21</i>	10 <i>.39</i>
850 *	-	161 <i>6.34</i>	-	72 <i>2.83</i>	55 <i>2.17</i>	10 <i>.39</i>	10 <i>.39</i>	-	133 <i>5.24</i>	12 <i>.47</i>
1540 *	-	203 <i>7.99</i>	-	92.5 <i>3.64</i>	65 <i>2.56</i>	17.5 <i>.69</i>	12.5 <i>.49</i>	-	167 <i>6.57</i>	16 <i>.63</i>

* This size is fitted with a round handle at the lever arm and available only in Type F.





- 2** **Type**
- M** U-bar version with two flanged washers
 - MC** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
 - O** Solid bar version with clasp

Specification

- Steel
 - Case-hardened steel C10 zinc plated, blue passivated
 - Bearing pins tempered
 - Bearing rivets (for size 355 and up) case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type MC)
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 809 Clamp Mounts for Toggle Clamps
 - (for Type O) → page 123
- GN 801 Clamp Mounts for Toggle Clamps
 - (for Type M) → page 122

Information

GN 820 horizontal acting toggle clamps work according to the toggle principle: lever and clamping bar move in the opposite direction. They require less space for the clamping action. In the clamped position the operating lever is in its horizontal position.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type M) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type MC.

Type O version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

see also...

- *General information for toggle clamps* → page 12
- *GN 820 Stainless Steel Horizontal Acting Toggle Clamps* → page 34
- *GN 820.1 Horizontal Acting Toggle Clamps with Vertical Mounting Base* → page 36
- *GN 820.2 Horizontal Acting Toggle Clamps for Side Mounting* → page 40

How to order

GN 820-75-O

- 1** Size
- 2** Type

Metric table

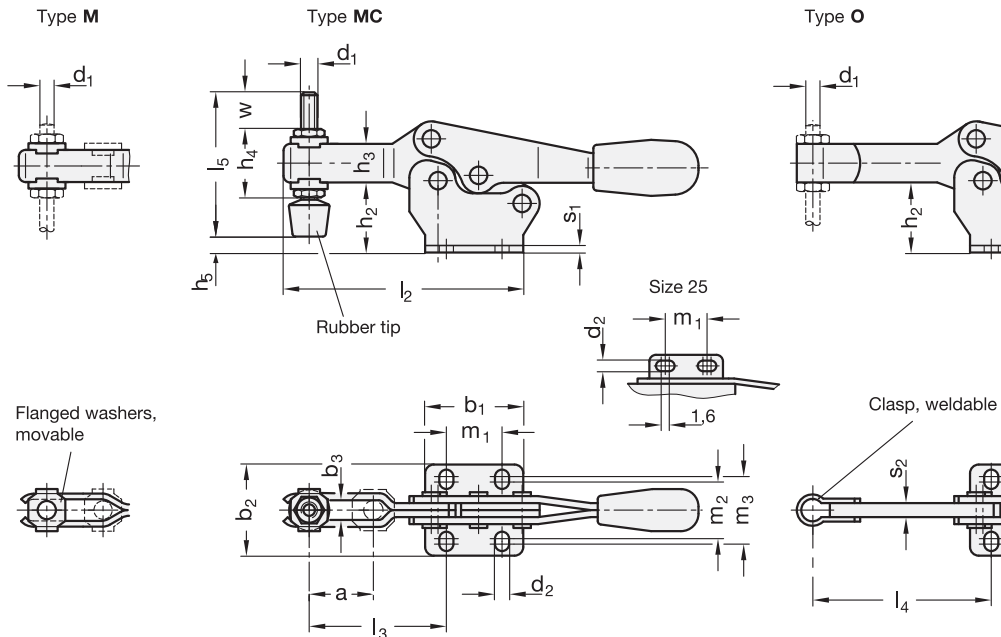
Dimensions in: millimeters - *inches*



Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
25 *	400	10 .39	24 .94	24.5 .96	4.3 .17	M 4	4.3 .17	23 .91	12 .47	7 .28	13.5 .53	-
75	900	20 .79	28 1.10	26 1.02	5.5 .22	M 5	4.5 .18	37 1.46	20 .79	11 .43	19 .75	5 .20
130	1000	32 1.26	36 1.42	40 1.57	6.5 .26	M 6	5.5 .22	51 2.01	30.5 1.20	16 .63	25.5 1.00	14 .55
230	1700	37 1.46	44 1.73	42 1.65	8.5 .33	M 8	6.5 .26	61.5 2.42	36.5 1.44	18 .71	30 1.18	12.5 .49
355	1800	58 2.28	60 2.36	56 2.20	10.4 .41	M 10	8.5 .33	83 3.27	50 1.97	22 .87	37 1.46	23.5 .93
455	3200	65 2.56	70 2.76	65 2.56	12.4 .49	M 12	8.5 .33	98.5 3.88	60 2.36	26 1.02	43 1.69	27.5 1.08

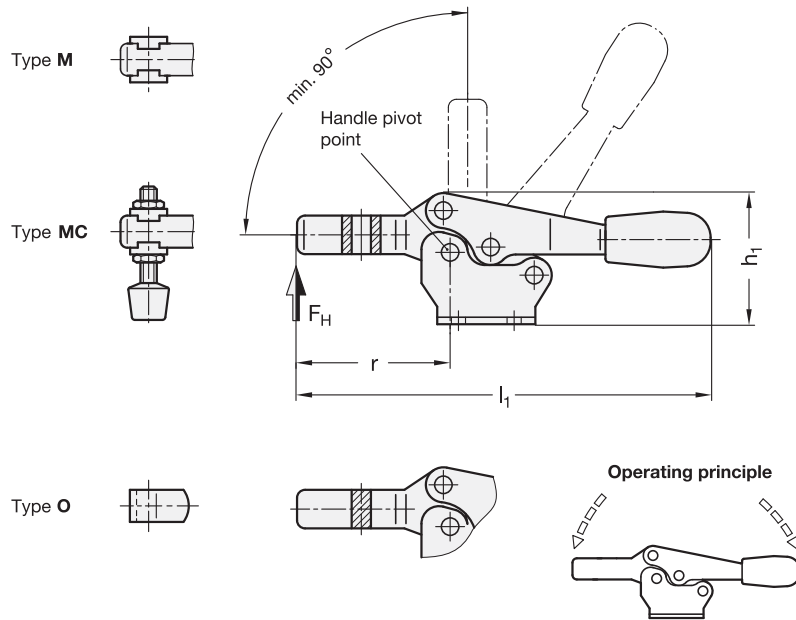
Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r	s ₁	s ₂	w Adj. Range
25 *	69 2.72	43 1.69	20 .79	-	-	15 .59	16 .63	16 .63	24.5 .96	1.2 .05	-	-
75	118 4.65	67 2.64	40 1.57	49.5 1.95	45 1.77	13.5 .53	16 .63	19 .75	43 1.69	2 .08	4 .16	15 .59
130	168 6.61	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	22.4 .88	28.4 1.12	62 2.44	2.5 .10	5 .20	17.5 .69
230	196 7.72	110 4.33	63.5 2.50	78 3.07	68 2.68	26 1.02	26 1.02	31.5 1.24	72 2.83	3 .12	6 .24	20 .79
355	270 10.63	161 6.34	96 3.78	115 4.53	77 3.03	41 1.61	38.8 1.53	43 1.69	108.5 4.27	3.5 .14	7 .28	19 .75
455	309 12.17	186 7.32	116 4.57	135 5.31	100 3.94	41.5 1.63	40 1.57	43 1.69	126 4.96	4 .16	10 .39	33 1.30

* Size 25 only available as Type M



GN 820 Horizontal Acting Toggle Clamps

Stainless Steel, with Horizontal Mounting Base



SS Stainless Steel

2 Type

- M** U-bar version with two flanged washers
- MC** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
- O** Solid bar version with clasp

Specification

- Toggle clamp
Stainless Steel
AISI 304, European Standard No. 1.4301
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- Neoprene spindle assembly (Type MC):
 - Threaded stud
Stainless steel AISI 304,
European Standard No. 1.4301
 - Spindle tip
Black neoprene rubber (CR), 85° shore A,
vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.

3

Information

GN 820 horizontal acting toggle clamps work according to the toggle principle: lever and clamping bar move in the opposite direction.

They require less space for the clamping action. In the clamped position the operating lever is in its horizontal position.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type M) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type MC.

Type O version can be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component.

see also...

- *General information for toggle clamps* → page 12
- *GN 820 Steel Horizontal Acting Toggle Clamps* → page 32
- *GN 820.1 Horizontal Acting Toggle Clamps with Vertical Mounting Base* → page 36
- *GN 820.2 Horizontal Acting Toggle Clamps for Side Mounting* → page 40

How to order

GN 820-75-M-NI

- | | |
|----------|-----------------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

Metric table

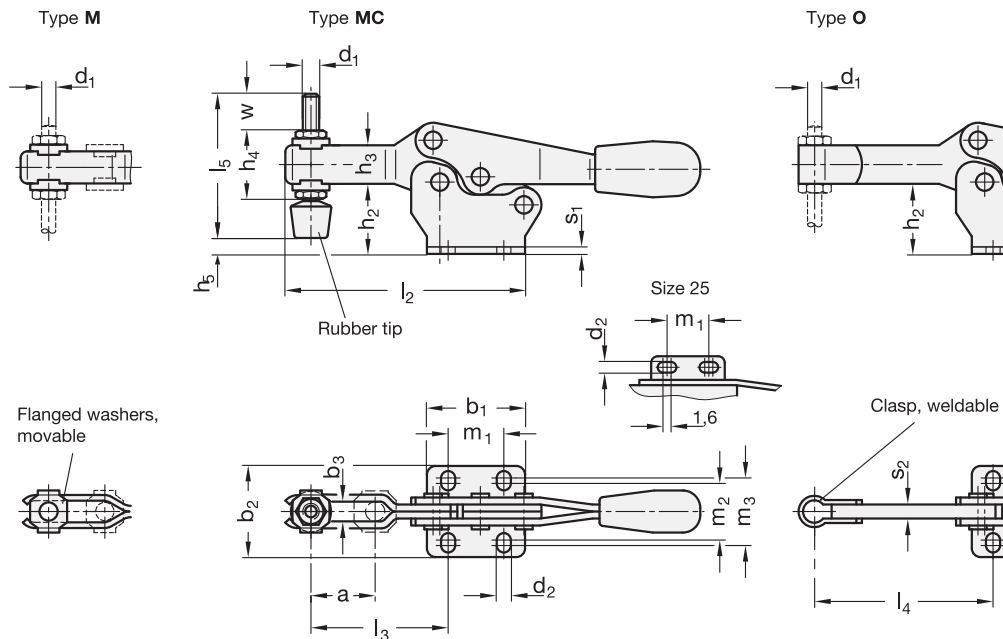
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
25 *	400	10 .39	24 .94	24.5 .96	4.3 .17	M 4	4.3 .17	23 .91	12 .47	7 .28	13.5 .53	-
75	900	20 .79	28 1.10	26 1.02	5.5 .22	M 5	4.5 .18	37 1.46	20 .79	11 .43	19 .75	5 .20
130	1000	32 1.26	36 1.42	40 1.57	6.5 .26	M 6	5.5 .22	51 2.01	30.5 1.20	16 .63	25.5 1.00	14 .55
230	1700	37 1.46	44 1.73	42 1.65	8.5 .33	M 8	6.5 .26	61.5 2.42	36.5 1.44	18 .71	30 1.18	12.5 .49

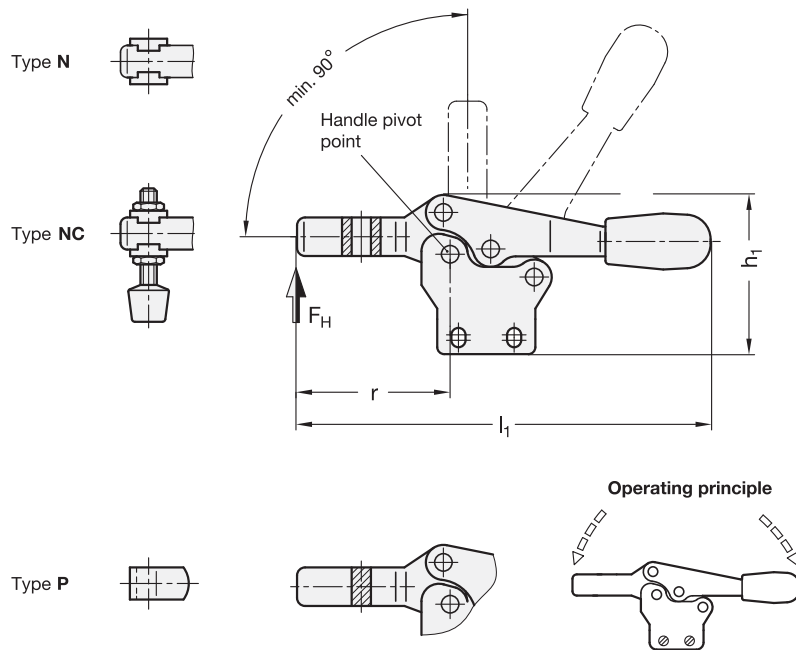
Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r ≈	s ₁	s ₂	w Adj. Range
25 *	69 2.72	43 1.69	20 .79	-	-	15 .59	16 .63	16 .63	24.5 .96	1.2 .05	-	-
75	118 4.65	67 2.64	40 1.57	49.5 1.95	45 1.77	13.5 .53	16 .63	19 .75	43 1.69	2 .08	4 .16	15 .59
130	168 6.61	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	22.4 .88	28.4 1.12	62 2.44	2.5 .10	5 .20	17.5 .69
230	196 7.72	110 4.33	63.5 2.50	78 3.07	68 2.68	26 1.02	26 1.02	31.5 1.24	72 2.83	3 .12	6 .24	20 .79

* Size 25 only available as Type M



GN 820.1 Horizontal Acting Toggle Clamps

Steel, with Vertical Mounting Base



2 Type

- N** U-bar version with two flanged washers
- NC** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
- P** Solid bar version with clasp

Specification

- Toggle clamp
 - Case-hardened steel C10 zinc plated, blue passivated
 - Bearing pins tempered
 - Bearing rivets (for size 355 and up) case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type NC):
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 809 Clamp Mounts for toggle clamps (for Type P) → page 123
- GN 801 Clamp Mounts for toggle clamps (for Type N) → page 122

Information

GN 820.1 horizontal acting toggle clamps work according to the toggle principle: lever and clamping bar move in the opposite direction.

They require less space for the clamping action. In the clamped position the operating lever is in its horizontal position.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type N) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type NC.

Type P version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

see also...

- General information for toggle clamps → page 12
- GN 820.1 Stainless Steel-Horizontal Acting Toggle Clamps → page 38
- GN 820 Horizontal Acting Toggle Clamps with horizontal base → page 32
- GN 820.2 Horizontal Acting Toggle Clamps for side mounting → page 40

How to order

GN 820.1-355-N

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

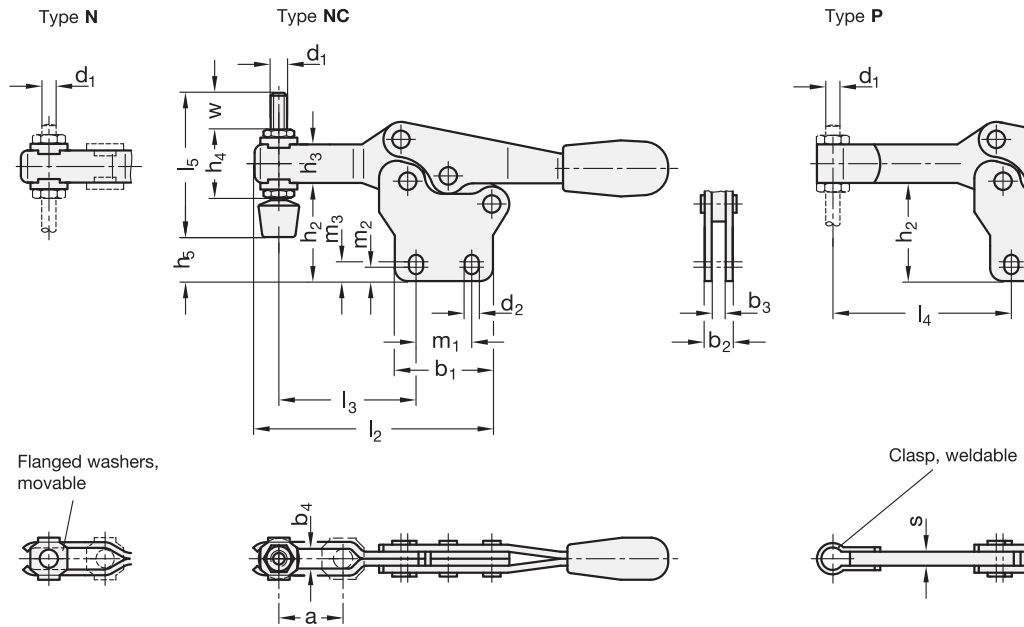
Metric table

Dimensions in: millimeters - inches



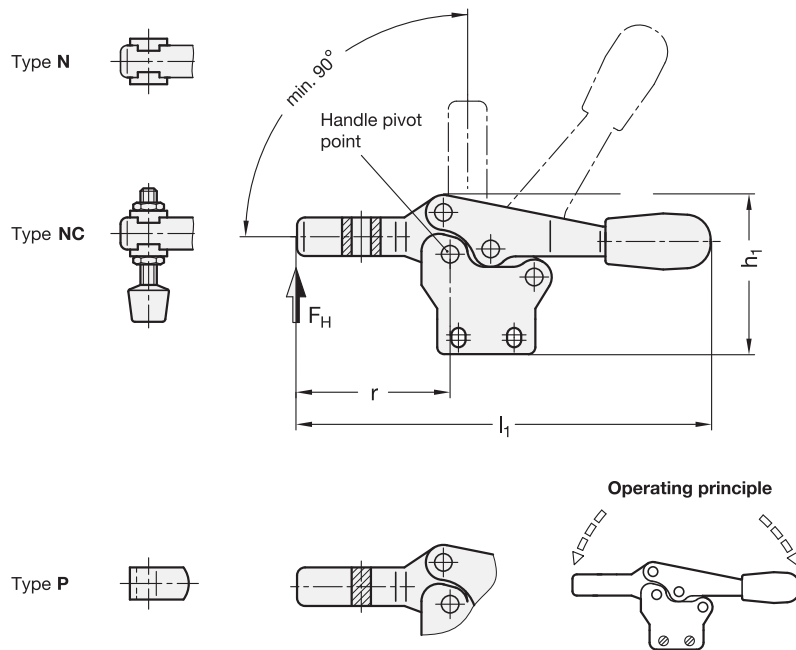
Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	b ₄	d ₁	d ₂	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
75	900	20 .79	28 1.10	8 .31	4 .16	5.5 .22	M 5	4.5 .18	45.5 1.79	27.5 1.08	11 .43	19 .75	12.5 .49
130	1000	32 1.26	36 1.42	10 .39	5 .20	6.5 .26	M 6	5.5 .22	64 2.52	44 1.73	16 .63	25.5 1.00	27.5 1.08
230	1700	37 1.46	44 1.73	12 .47	6 .24	8.5 .33	M 8	6.5 .26	75 2.95	50 1.97	18 .71	30 1.18	26 1.02
355	1800	58 2.28	60 2.36	14 .55	7 .28	10.4 .41	M 10	8.5 .33	102 4.02	69 2.72	22 .87	37 1.46	42.5 1.67
455	3200	65 2.56	70 2.76	18 .71	10 .39	12.4 .49	M 12	8.5 .33	119 4.69	80.5 3.17	26 1.02	43 1.69	48 1.89

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r ≈	s	w Adj. Range
75	118 4.65	68 2.68	40 1.57	49.5 1.95	45 1.77	13.5 .53	3.5 .14	5 .20	43 1.69	4 .16	15 .59
130	170 6.69	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	5.8 .23	8.8 .35	62 2.44	5 .20	17.5 .69
230	196 7.72	109 4.29	63.5 2.50	78 3.07	68 2.68	26 1.02	6.5 .26	9 .35	73 2.87	6 .24	20 .79
355	270 10.63	161 6.34	96 3.78	115 4.53	77 3.03	41 1.61	7.5 .30	9.6 .38	110 4.33	7 .28	19 .75
455	309 12.17	186 7.32	116 4.57	135 5.31	100 3.94	41.5 1.63	11 .43	12.5 .49	128 5.04	10 .39	33 1.30



GN 820.1 Horizontal Acting Toggle Clamps

Stainless Steel, with Vertical Mounting Base



SS Stainless Steel

2 Type

- N** U-bar version with two flanged washers
- NC** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)
- P** Solid bar version with clasp

Specification

- Toggle clamp
Stainless Steel
European Standard No. 1.4301, AISI 304
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- Neoprene spindle assembly (Type NC):
 - Threaded stud
Stainless steel,
European Standard No. 1.4301, AISI 304
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.

3 Information

GN 820.1 horizontal acting toggle clamps work according to the toggle principle: lever and clamping bar move in the opposite direction.

They require less space for the clamping action. In the clamped position the operating lever is in its horizontal position.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type N) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type NC.

Type P version can be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component.

see also...

- *General information for toggle clamps* → page 12
- *GN 820.1 Steel-Horizontal Acting Toggle Clamps* → page 36
- *GN 820 Horizontal Acting Toggle Clamps with horizontal base* → page 32
- *GN 820.2 Horizontal Acting Toggle Clamps for side mounting* → page 40

How to order

GN 820.1 - 75 - P - NI

- | | |
|---|----------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

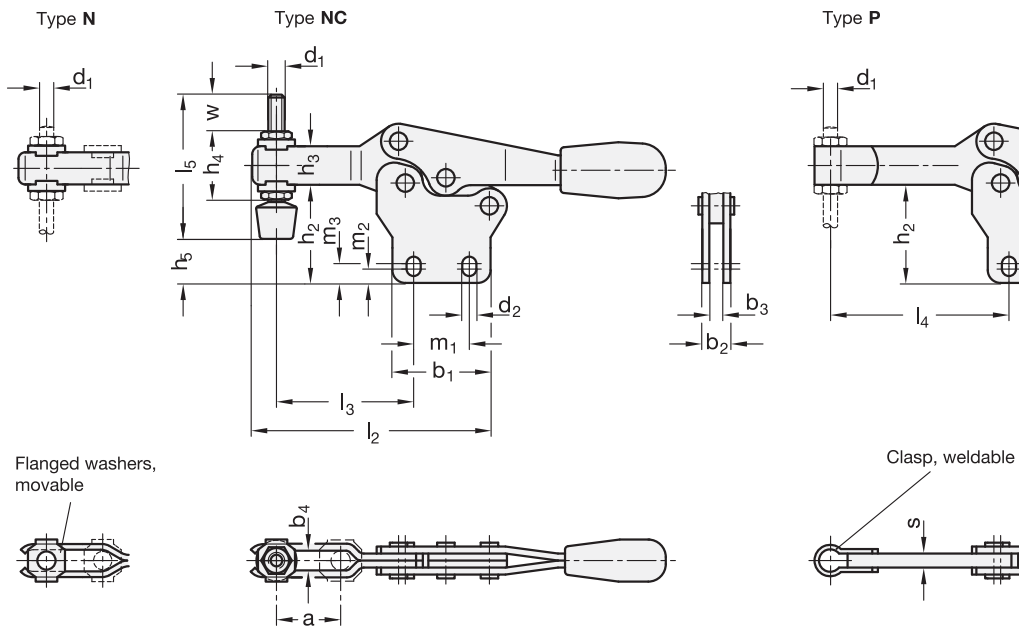
Metric table

Dimensions in: millimeters - inches



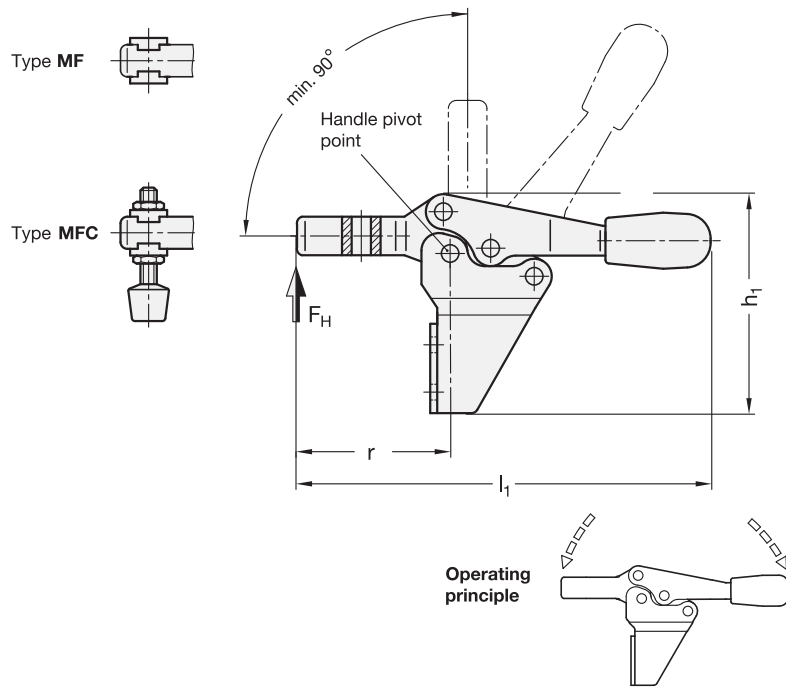
Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	b ₄	d ₁ Thread	d ₂	h ₁	h ₂	h ₃	h ₄	h ₅ max.
75	900	20 .79	28 1.10	8 .31	4 .16	5.5 .22	M 5	4.5 .18	45.5 1.79	27.5 1.08	11 .43	19 .75	12.5 .49
130	1000	32 1.26	36 1.42	10 .39	5 .20	6.5 .26	M 6	5.5 .22	64 2.52	44 1.73	16 .63	25.5 1.00	27.5 1.08
230	1700	37 1.46	44 1.73	12 .47	6 .24	8.5 .33	M 8	6.5 .26	75 2.95	50 1.97	18 .71	30 1.18	26 1.02

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r ≈	s	w Adj. Range
75	118 4.65	68 2.68	40 1.57	49.5 1.95	45 1.77	13.5 .53	3.5 .14	5 .20	43 1.69	4 .16	15 .59
130	170 6.69	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	5.8 .23	8.8 .35	62 2.44	5 .20	17.5 .69
230	196 7.72	109 4.29	63.5 2.50	78 3.07	68 2.68	26 1.02	6.5 .26	9 .35	73 2.87	6 .24	20 .79



GN 820.2 Horizontal Acting Toggle Clamps

Steel, with Vertical Mounting Base



- 2 Form**
- MF** U-bar version with two flanged washers
 - MFC** U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)

Specification

- Toggle clamp
 - Case-hardened Steel C10, zinc plated, blue passivated finish
 - Bearing pins tempered
 - Bearing rivets (for size 355 and up) case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type MFC)
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type MF) → page 122

Information

GN 820.2 horizontal acting toggle clamps work according to the toggle principle: lever and clamping bar move in the opposite direction.

They require less space for the clamping action. In the clamped position the operating lever is in its horizontal position. The 90° rotated mounting surface allows a space-saving installation in addition to the clamping point.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type MF) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type MFC.

see also...

- *General information for toggle clamps* → page 12
- *GN 820.2 Stainless Steel-Horizontal Acting Toggle Clamps GN 820.2* → page 40

How to order

GN 820.2-130-MF

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

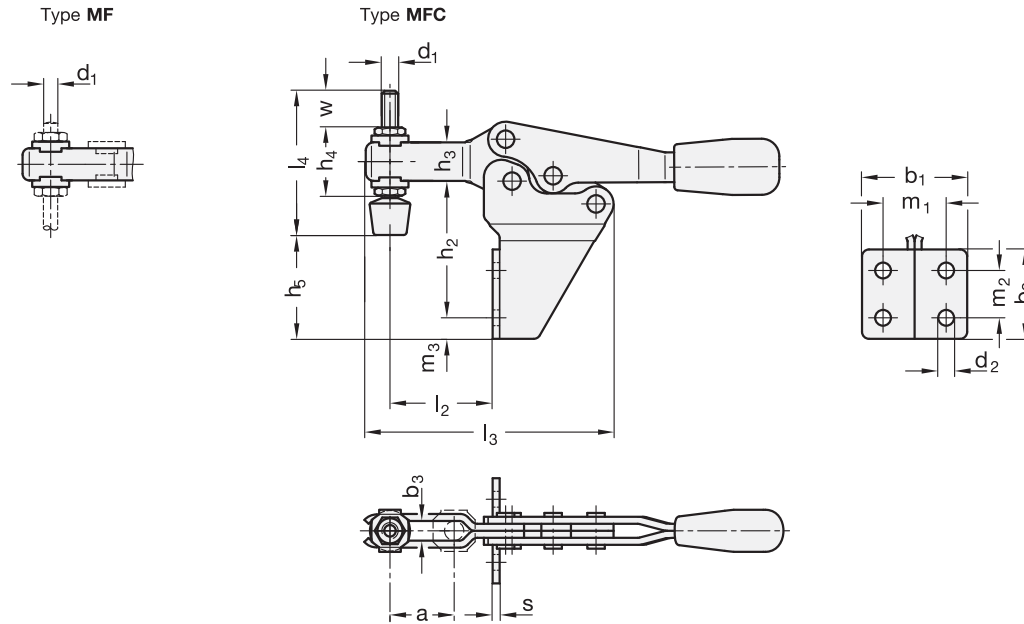
Metric table

Dimensions in: millimeters - inches



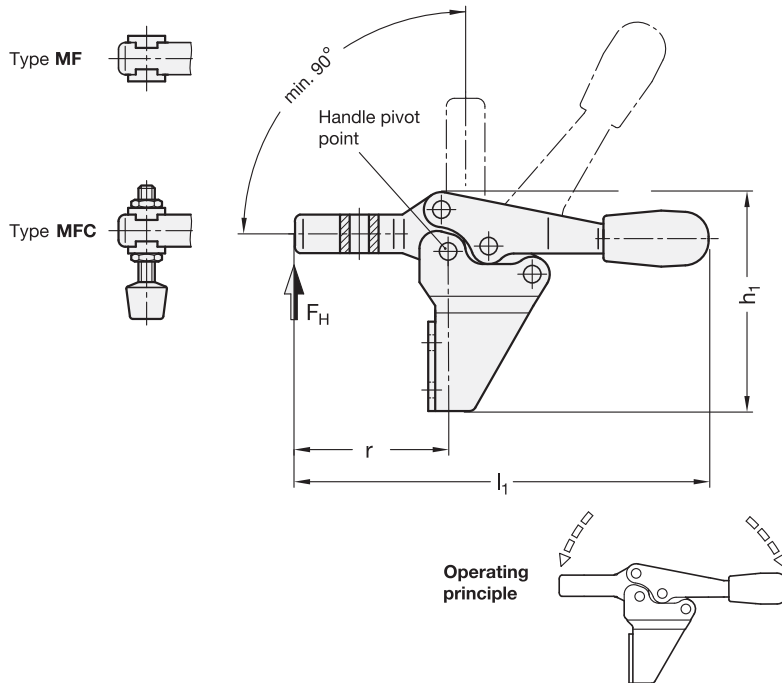
Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	h ₁	h ₂	h ₃	h ₄	h ₅ max.
75	900	20 .79	30 1.18	25.5 1.00	5.5 .22	M 5	4.5 .18	62 2.44	39 1.54	11 .43	19 .75	30 1.18
130	1000	32 1.26	39 1.54	35 1.38	6.5 .26	M 6	5.5 .22	85 3.35	58.5 2.30	16 .63	25.5 1.00	48.5 1.91
230	1700	37 1.46	43 1.69	40 1.57	8.5 .33	M 8	6.5 .26	102 4.02	69 2.72	18 .71	30 1.18	53 2.09
355	1800	58 2.28	52 2.05	52 2.05	10.5 .41	M 10	8.5 .33	135 5.31	92 3.62	22 .87	37 1.46	75.5 2.97

Size	l ₁	l ₂	l ₃	l ₄	m ₁	m ₂	m ₃	r	s	w Adj. Range
75	118 4.65	30 1.18	72 2.83	45 1.77	18 .71	13.5 .53	6 .24	42.5 1.67	2 .08	15 .59
130	170 6.69	45 1.77	95 3.74	55 2.17	26 1.02	22 .87	6.5 .26	61 2.40	2.5 .10	17.5 .69
230	195 7.68	52 2.05	113 4.45	68 2.68	28.5 1.12	24 .94	8 .31	70 2.76	3 .12	20 .79
355	270 10.63	85 3.35	166 6.54	77 3.03	32 1.26	32 1.26	10 .39	108.5 4.27	3.5 .14	19 .75



GN 820.2 Horizontal Acting Toggle Clamps

Stainless Steel, with Vertical Mounting Base



SS Stainless Steel

2 Form

MF U-bar version with two flanged washers

MFC U-bar version with two flanged washers and GN 708.1 Spindle Assembly (Type A)

Specification

- Toggle clamp
Stainless Steel
European Standard No. 1.4301, AISI 304
 - All moving parts lubricated with special grease
 - Hand grip
High quality, oil resistant red plastic
 - Neoprene spindle assembly (Type MFC)
 - Threaded stud
Stainless steel,
European Standard No. 1.4301 (AISI 304)
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant



Information

GN 820.2 horizontal acting toggle clamps work according to the toggle principle: lever and clamping bar move in the opposite direction.

They require less space for the clamping action. In the clamped position the operating lever is in its horizontal position. The 90° rotated mounting surface allows a space-saving installation in addition to the clamping point.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type MF) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type MFC.

see also...

- *General information for toggle clamps* → page 12
- *GN 820.2 Steel-Horizontal Acting Toggle Clamps* → page 40

Accessory

- Spindle assemblies → page 114 ff.

How to order

GN 820.2-230-MF-NI

- | | |
|----------|-----------------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

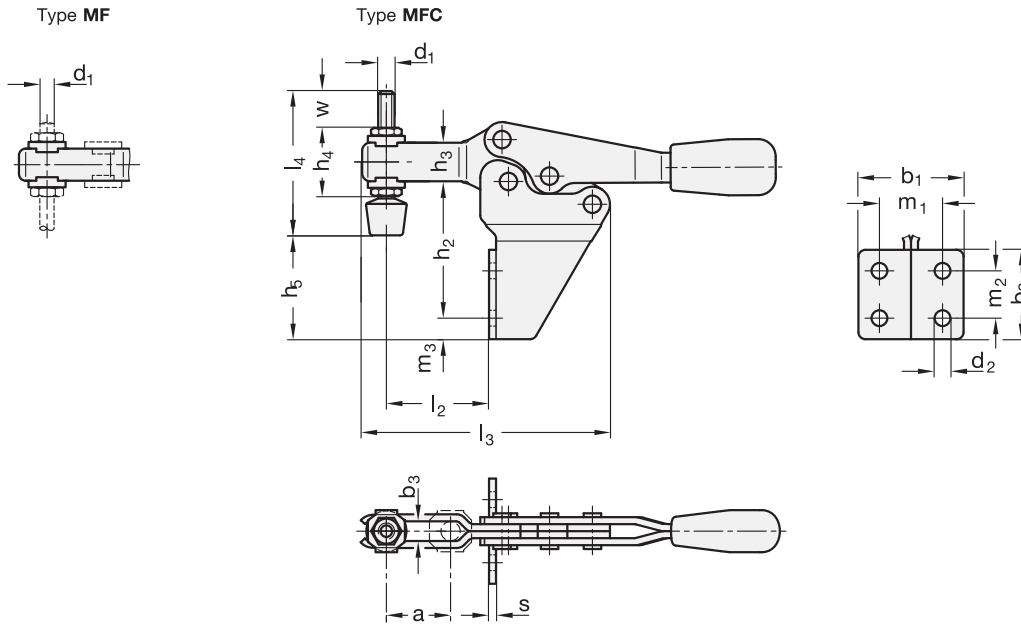
Metric table

Dimensions in: millimeters - inches

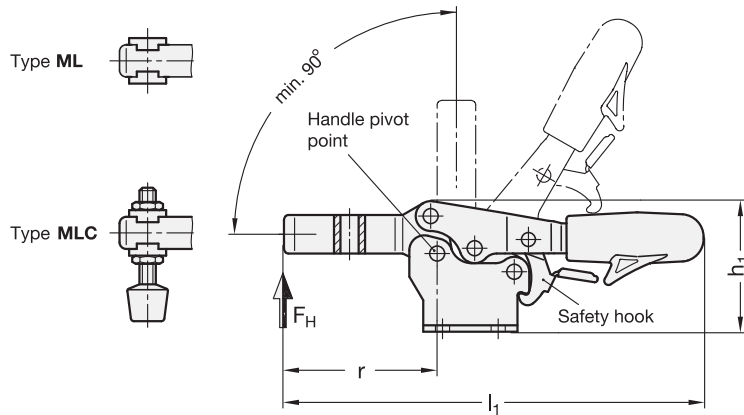


Size	F _H in N Holding Capacity	a ≈	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	h ₁	h ₂	h ₃	h ₄	h ₅ max.
75	900	20 .79	30 1.18	25.5 1.00	5.5 .22	M 5	4.5 .18	62 2.44	39 1.54	11 .43	19 .75	30 1.18
130	1000	32 1.26	39 1.54	35 1.38	6.5 .26	M 6	5.5 .22	85 3.35	58.5 2.30	16 .63	25.5 1.00	48.5 1.91
230	1700	37 1.46	43 1.69	40 1.57	8.5 .33	M 8	6.5 .26	102 4.02	69 2.72	18 .71	30 1.18	53 2.09

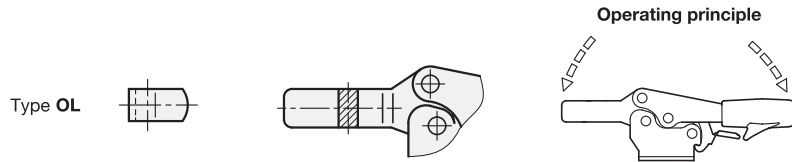
Size	l ₁	l ₂	l ₃	l ₄	m ₁	m ₂	m ₃	r	s	w	Adj. Range
75	118 4.65	30 1.18	72 2.83	45 1.77	18 .71	13.5 .53	6 .24	42.5 1.67	2 .08	15	.59
130	170 6.69	45 1.77	95 3.74	55 2.17	26 1.02	22 .87	6.5 .26	61 2.40	2.5 .10	17.5	.69
230	195 7.68	52 2.05	113 4.45	68 2.68	28.5 1.12	24 .94	8 .31	70 2.76	3 .12	20	.79



GN 820.3 Horizontal Acting Toggle Clamps
Steel, with Safety Hook Latch, with Horizontal Mounting Base



- 2 Type**
- ML** U-bar version with two flanged washers
 - MLC** U-bar version with two flanged washers and GN 708.1 Type A spindle
 - OL** Solid bar version with clasp



Specification

- Toggle clamp and safety hook latch
 - Case-hardened steel C10 zinc plated, blue passivated
 - Bearing pins tempered
 - Bearing rivets (for size 355 and up) case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Spindle assemblies (Type MLC):
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type ML) → page 122
- GN 809 Clamp Mounts for Toggle Clamps (for Type OL) → page 123

Information

GN 820.3 horizontal acting toggle clamps have a safety function whereby, during closing, a spring loaded safety hook latch ensures a secure locking connection. It prevents the inadvertent unlocking of the clamp due to vibrations or an accidental attempt of loosening / opening of the clamp. To open and release the clamp, pull up on the finger grip to disengage the safety hook latch mechanism (one hand operation).

They work according to the toggle principle: lever and clamping bar move in the opposite direction. They require less space for the clamping action.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type ML) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type MLC.

Type OL version can be utilized by welding the clasp, which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with GN 809 Clamp Mounts to hold the work piece in place.

see also...

- General information for toggle clamps → page 12
- GN 820.3 Stainless Steel-Horizontal Acting Toggle Clamps → page 46

How to order

GN 820.3-355-ML

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

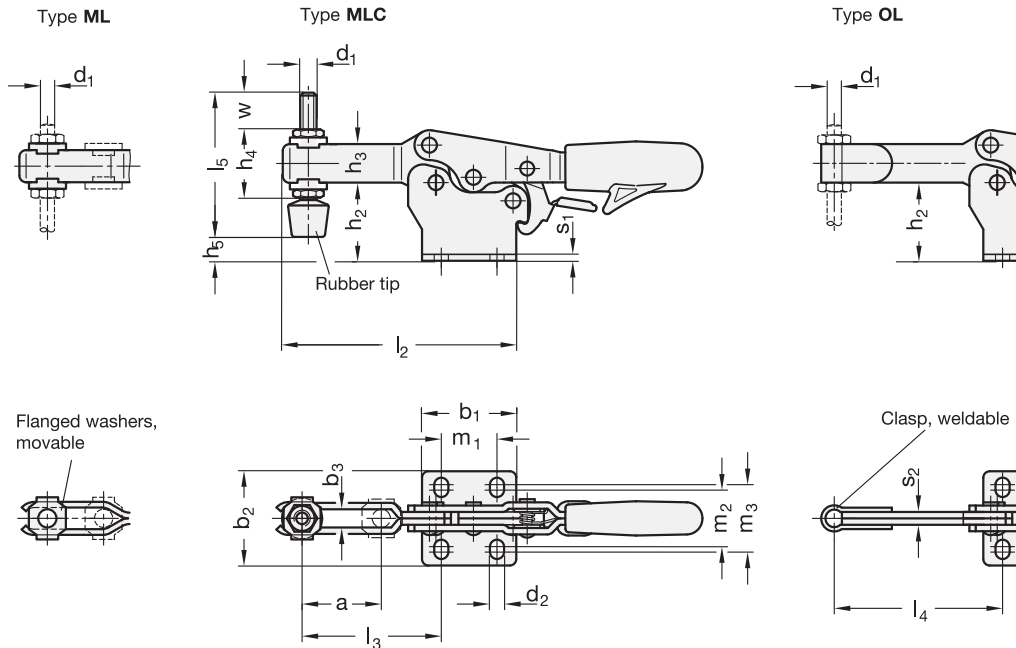
Metric table

Dimensions in: millimeters - *inches*

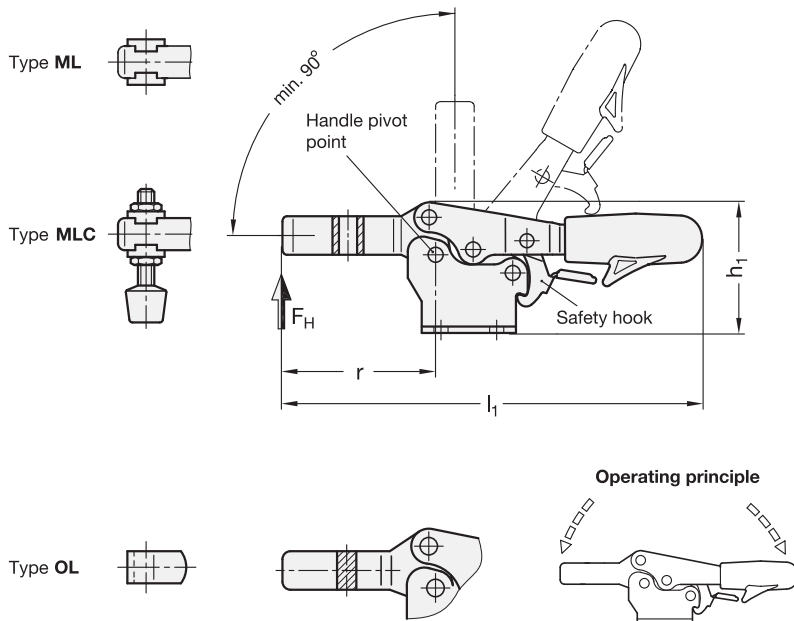


Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
75	900	20 .79	28 1.10	26 1.02	5.3 .21	M 5	4.5 .18	37 1.46	20 .79	11 .43	19 .75	5 .20
130	2000	32 1.26	36 1.42	40 1.57	6.3 .25	M 6	5.6 .22	51 2.01	30.5 1.20	16 .63	25.5 1.00	14 .55
230	1700	37 1.46	44 1.73	44 1.73	8.5 .33	M 8	6.6 .26	61.5 2.42	36.5 1.44	18 .71	30 1.18	12.5 .49
355	1800	58 2.28	60 2.36	58 2.28	10.5 .41	M 10	8.6 .34	83 3.27	50 1.97	22 .87	37 1.46	23.5 .93
455	3200	65 2.56	70 2.76	65 2.56	12.5 .49	M 12	8.7 .34	99 3.90	60 2.36	26 1.02	43 1.69	27.5 1.08

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r	s ₁	s ₂	w Adj. Range
75	118 4.65	67 2.64	40 1.57	49.5 1.95	45 1.77	13.5 .53	16 .63	19 .75	43 1.69	2 .08	4 .16	15 .59
130	172 6.77	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	22.4 .88	28.4 1.12	62 2.44	2.5 .10	5 .20	17.5 .69
230	196 7.72	109 4.29	63.5 2.50	78 3.07	68 2.68	26 1.02	26 1.02	31.5 1.24	72 2.83	3 .12	6 .24	20 .79
355	270 10.63	160 6.30	96 3.78	115 4.53	77 3.03	41 1.61	38.8 1.53	43 1.69	108.5 4.27	3.5 .14	7 .28	19 .75
455	306 12.05	184 7.24	116 4.57	135 5.31	100 3.94	41.5 1.63	40 1.57	43 1.69	126 4.96	4 .16	10 .39	33 1.30



GN 820.3 Horizontal Acting Toggle Clamps
Stainless Steel, with Safety Hook Latch, with Horizontal Mounting Base



SS Stainless Steel

2 Type

ML U-bar version with two flanged washers

MLC U-bar version with two flanged washers and GN 708.1 Type A spindle

OL Solid bar version with clasp

Specification

- Toggle clamp and safety hook latch
Stainless Steel
European Standard No. 1.4301, AISI 304
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- Neoprene spindle assembly (Type MLC):
 - Threaded stud
Stainless steel,
European Standard No. 1.4301, AISI 304
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant



Information

GN 820.3 horizontal acting toggle clamps have a safety function whereby, during closing, a spring loaded safety hook latch ensures a secure locking connection. It prevents the inadvertent unlocking of the clamp due to vibrations or an accidental attempt of loosening / opening of the clamp. To open and release the clamp, pull up on the finger grip to disengage the safety hook latch mechanism (one hand operation).

They work according to the toggle principle: lever and clamping bar move in the opposite direction. They require less space for the clamping action.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type ML) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type MLC.

Type OL version can be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component.

see also...

- General information for toggle clamps → page 12
- GN 820.3 Steel-Horizontal Acting Toggle Clamps → page 44

Accessory

- Spindle assemblies → page 114 ff.

How to order

GN 820.3 -75-OL-NI

- 1** Size
- 2** Type
- 3** Material

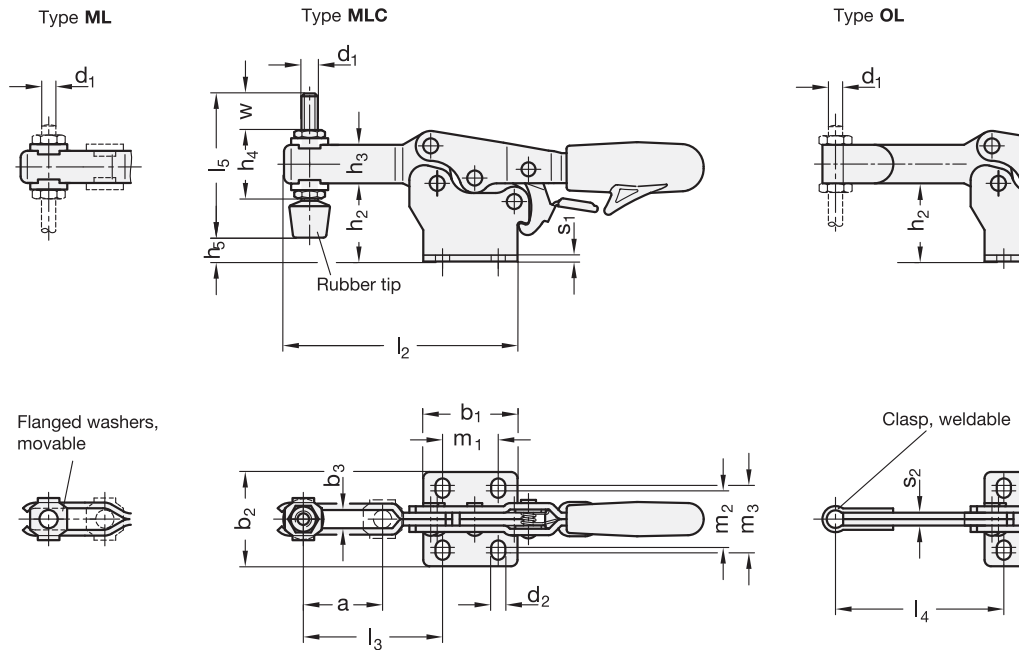
Metric table

Dimensions in: millimeters - inches



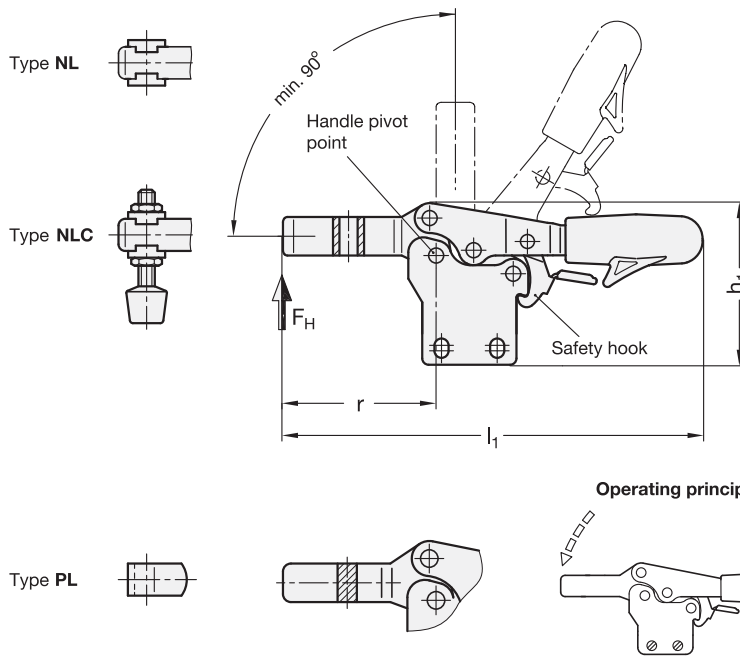
Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃	h ₄	h ₅ max.
75	900	20 .79	28 1.10	26 1.02	5.3 .21	M 5	4.5 .18	37 1.46	20 .79	11 .43	19 .75	5 .20
130	2000	32 1.26	36 1.42	40 1.57	6.3 .25	M 6	5.6 .22	51 2.01	30.5 1.20	16 .63	25.5 1.00	14 .55
230	1700	37 1.46	44 1.73	44 1.73	8.5 .33	M 8	6.6 .26	61.5 2.42	36.5 1.44	18 .71	30 1.18	12.5 .49

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r	s ₁	s ₂	w Adj. Range
75	118 4.65	67 2.64	40 1.57	49.5 1.95	45 1.77	13.5 .53	16 .63	19 .75	43 1.69	2 .08	4 .16	15 .59
130	172 6.77	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	22.4 .88	28.4 1.12	62 2.44	2.5 .10	5 .20	17.5 .69
230	196 7.72	109 4.29	63.5 2.50	78 3.07	68 2.68	26 1.02	26 1.02	31.5 1.24	72 2.83	3 .12	6 .24	20 .79



GN 820.4 Horizontal Acting Toggle Clamps

Steel, with Safety Hook Latch, with Vertical Mounting Base



- 2** Type
- NL** U-bar version with two flanged washers
 - NLC** U-bar version with two flanged washers and GN 708.1 Type A spindle
 - PL** Solid bar version with clasp

Specification

- Toggle clamp and safety hook latch
 - Case-hardened steel C10
 - zinc plated, blue passivated finish
 - Bearing pins tempered
 - Bearing rivets (for size 355 and up) case-hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- Neoprene spindle assembly (Type NLC):
 - Threaded stud
 - Steel, zinc plated, blue passivated finish
 - Spindle tip
 - Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Information

GN 820.4 horizontal acting toggle clamps have a safety function whereby, during closing, a spring loaded safety hook latch ensures a secure locking connection. It prevents the inadvertent unlocking of the clamp due to vibrations or an accidental attempt of loosening / opening of the clamp. To open and release the clamp, pull up on the finger grip to disengage the safety hook latch mechanism (one hand operation).

They work according to the toggle principle: lever and clamping bar move in the opposite direction. They require less space for the clamping action.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type NL) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type NLC.

Type PL version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

see also...

- *General information for toggle clamps* → page 12

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type NL) → page 122
- GN 809 Clamp Mounts for Toggle Clamps (for Type PL) → page 123

How to order

GN 820.4-455-NL ¹ ²

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

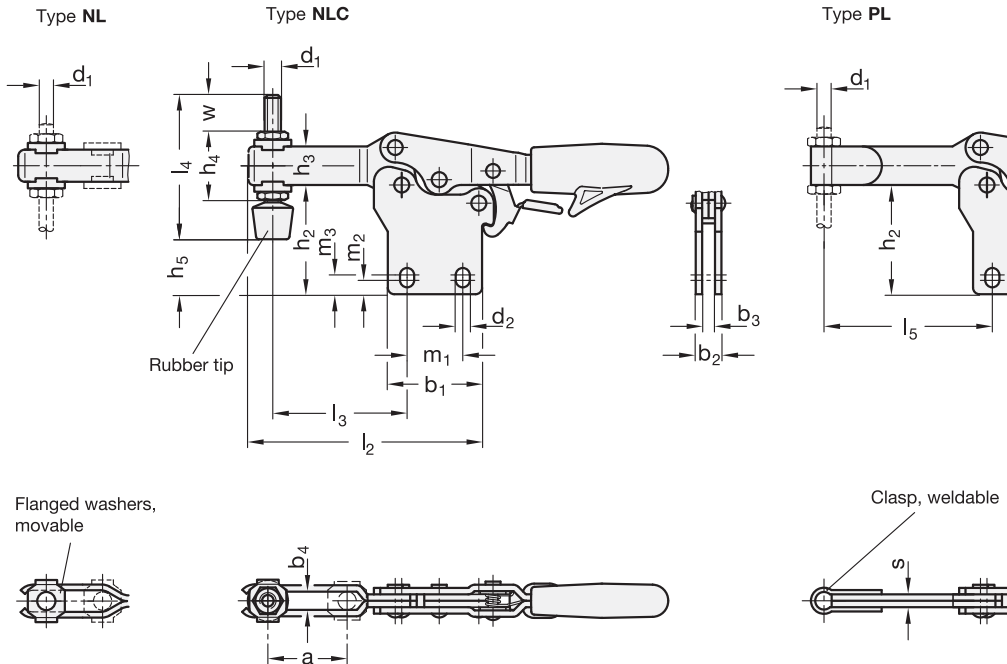
Metric table

Dimensions in: millimeters - inches



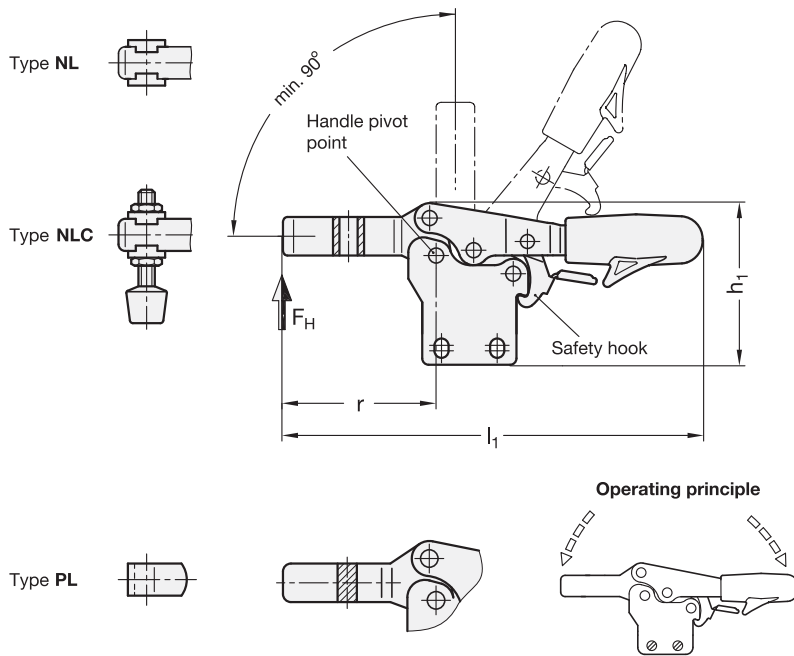
Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	b ₄	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃
75	900	20 .79	28 1.10	8 .31	4 .16	5.3 .21	M 5	4.5 .18	45.5 1.79	29 1.14	11 .43
130	1000	32 1.26	36 1.42	10 .39	5 .20	6.3 .25	M 6	5.6 .22	64.5 2.54	44 1.73	16 .63
230	1700	37 1.46	44 1.73	12 .47	6 .24	8.5 .33	M 8	6.6 .26	75.5 2.97	51 2.01	18 .71
355	1800	58 2.28	60 2.36	14 .55	7 .28	10.5 .41	M 10	8.6 .34	102 4.02	69.5 2.74	22 .87
455	3200	65 2.56	70 2.76	18 .71	10 .39	12.5 .49	M 12	8.7 .34	120 4.72	80.5 3.17	26 1.02

Size	h ₄	h ₅ max.	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r ≈	s	w Adj. Range
75	19 .75	14 .55	118 4.65	68 2.68	40 1.57	49.5 1.95	45 1.77	13.5 .53	3.5 .14	5 .20	43 1.69	4 .16	15 .59
130	25.5 1.00	27.5 1.08	172 6.77	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	5.8 .23	8.8 .35	62 2.44	5 .20	17.5 .69
230	30 1.18	27 1.06	196 7.72	109 4.29	63.5 2.50	78 3.07	68 2.68	26 1.02	6.5 .26	9 .35	73 2.87	6 .24	20 .79
355	37 1.46	43 1.69	270 10.63	161 6.34	96 3.78	115 4.53	77 3.03	41 1.61	7.5 .30	9.6 .38	110 4.33	7 .28	19 .75
455	43 1.69	48 1.89	306 12.05	186 7.32	116 4.57	135 5.31	100 3.94	41.5 1.63	11 .43	12.5 .49	128 5.04	10 .39	33 1.30



GN 820.4 Horizontal Acting Toggle Clamps

Stainless Steel, with Safety Hook Latch, with Vertical Mounting Base



SS Stainless Steel

2 Type

NL U-bar version with two flanged washers

NLC U-bar version with two flanged washers and GN 708.1 Type A spindle

PL Solid bar version with clasp

Specification

- Toggle clamp and safety hook latch
Stainless steel
European Standard No. 1.4301, AISI 304
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- Neoprene spindle assembly (Type NLC):
 - Threaded stud
Stainless steel, European Standard No. 1.4301, AISI 304
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized

• RoHS compliant

3

Information

GN 820.4 horizontal acting toggle clamps have a safety function whereby, during closing, a spring loaded safety hook latch ensures a secure locking connection. It prevents the inadvertent unlocking of the clamp due to vibrations or an accidental attempt of loosening / opening of the clamp. To open and release the clamp, pull up on the finger grip to disengage the safety hook latch mechanism (one hand operation).

They work according to the toggle principle: lever and clamping bar move in the opposite direction. They require less space for the clamping action.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type NL) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type NLC.

Type PL version can be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component.

see also...

- General information for toggle clamps → page 12

Accessory

- Spindle assemblies → page 114 ff.

How to order

GN 820.4-130-PL-NI

- | | |
|---|----------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

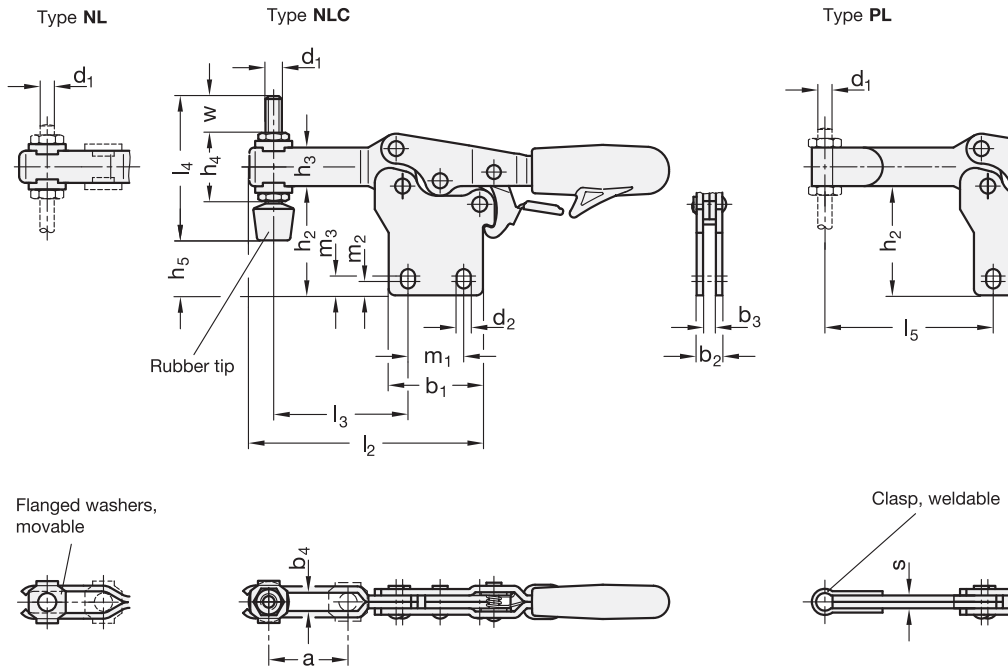
Metric table

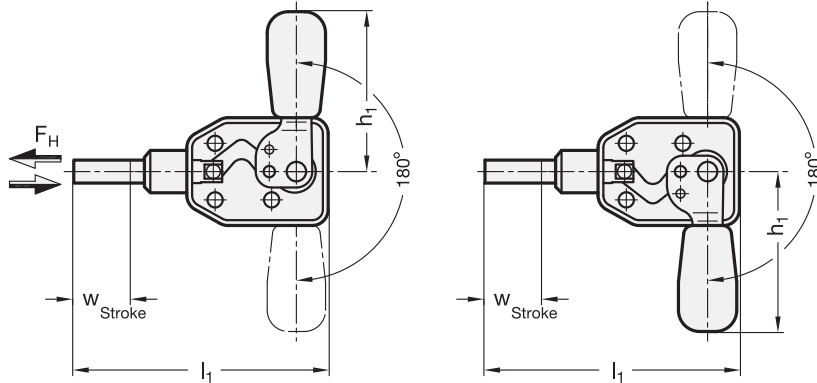
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	a~	b ₁	b ₂	b ₃	b ₄	d ₁ Thread	d ₂	h ₁ ≈	h ₂	h ₃
75	900	20 .79	28 1.10	8 .31	4 .16	5.3 .21	M 5	4.5 .18	45.5 1.79	29 1.14	11 .43
130	1000	32 1.26	36 1.42	10 .39	5 .20	6.3 .25	M 6	5.6 .22	64.5 2.54	44 1.73	16 .63
230	1700	37 1.46	44 1.73	12 .47	6 .24	8.5 .33	M 8	6.6 .26	75.5 2.97	51 2.01	18 .71

Size	h ₄	h ₅ max.	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ max.	l ₅	m ₁	m ₂	m ₃	r ≈	s	w Adj. Range
75	19 .75	14 .55	118 4.65	68 2.68	40 1.57	49.5 1.95	45 1.77	13.5 .53	3.5 .14	5 .20	43 1.69	4 .16	15 .59
130	25.5 1.00	27.5 1.08	172 6.77	92 3.62	53 2.09	64 2.52	55 2.17	26 1.02	5.8 .23	8.8 .35	62 2.44	5 .20	17.5 .69
230	30 1.18	27 1.06	196 7.72	109 4.29	63.5 2.50	78 3.07	68 2.68	26 1.02	6.5 .26	9 .35	73 2.87	6 .24	20 .79





2 Type

ASD Clamping by turning handle counter-clockwise

ASS Clamping by turning handle clockwise

Specification

- Body and lever arm
 - case-hardened Steel C10
 - zinc plated, blue passivated finish
- Plunger Steel St 37
 - zinc plated, blue passivated finish
- Plunger guide bushing Steel St 37
 - zinc plated, blue passivated finish
- All mobile sections lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- **RoHS compliant**

Accessory

- Spindle assemblies → page 114 ff.

Information

GN 840 push-pull type toggle clamps are known for their extremely low height regardless of the position of the operating handle.

In these devices the circular movement of the handle is transformed into a straight-line action of the clamp along its axis.

Toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps → page 12*

How to order GN 840-50-ASD	1	Size
	2	Type

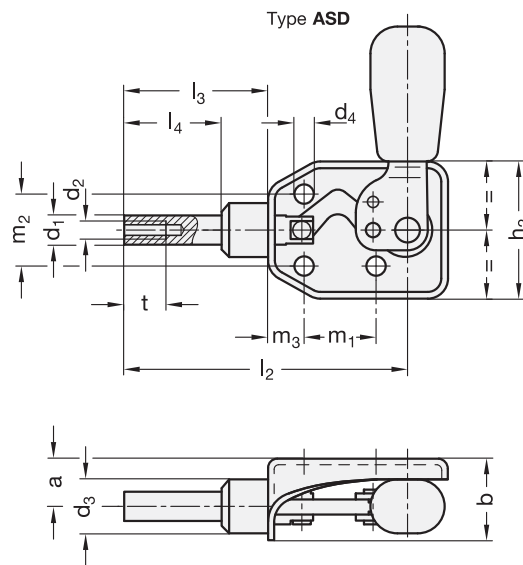
Metric table

Dimensions in: millimeters - *inches*

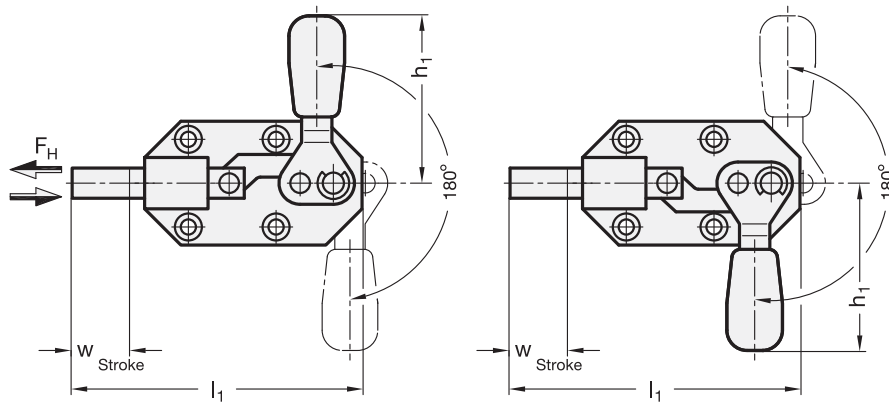


Size	F _H in N Holding Capacity	a	b	d ₁	d ₂ Thread	d ₃	d ₄	h ₁ ≈	h ₂
50	800	10 .39	17.5 .69	6.5 .26	M 4	12 .47	4.3 .17	45.2 1.78	30.5 1.20

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ ≈	m ₁	m ₂	m ₃	t min.	w Stroke
50	73 2.87	64.5 2.54	33 1.30	21 .83	16 .63	16 .63	8 .31	9 .35	16 .63



Type **ASS** is mirror image of type ASD



- 2 Type**
- ASD** Clamping by turning handle counter-clockwise
 - ASS** Clamping by turning handle clockwise

Specification

- Body
 - Brass: Size 70
 - Steel: Sizes 160 and 550
 - forged
 - black lacquered finish
- Lever arm
 - case-hardened Steel C10
 - zinc plated, blue passivated finish
- Plunger Steel St 37 steel
 - zinc plated, blue passivated finish
- All mobile sections lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- **RoHS compliant**

Accessory

- Spindle assemblies → page 114 ff.

Information

GN 844 push-pull type toggle clamps are known for their low height in all clamping positions. They can be used to achieve very high holding forces thanks to their massive and sturdy body.

In these devices the circular movement of the handle is transformed into a straight-line action of the clamp along its axis.

Toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps → page 12*

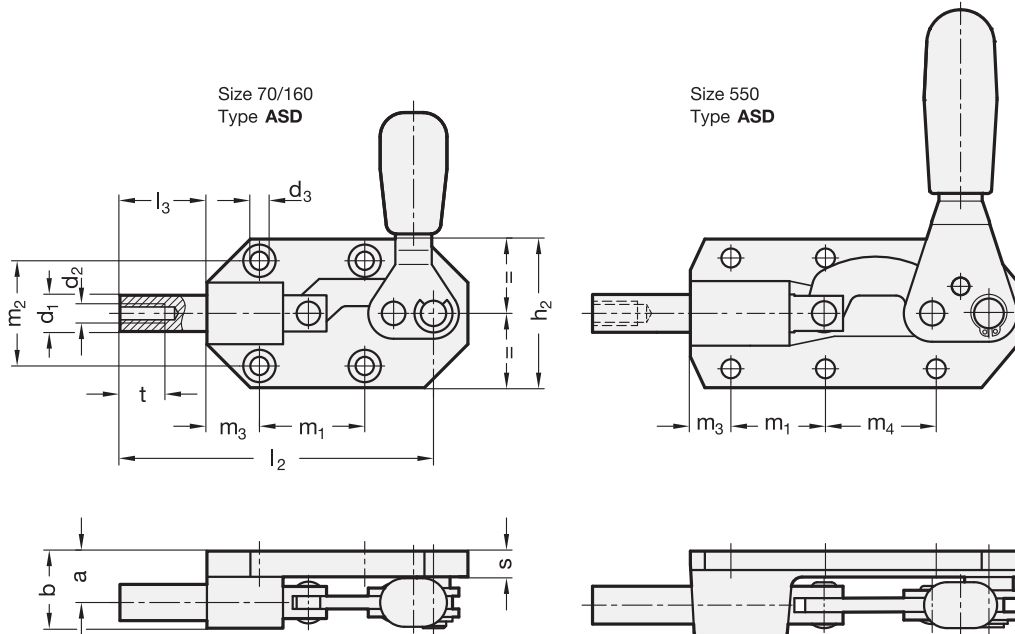
How to order GN 844 -550- ASS	1 Size
	2 Type

Metric table

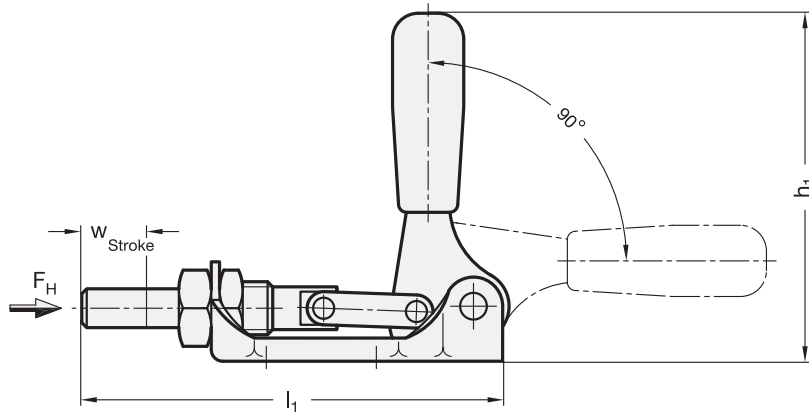
Dimensions in: millimeters - inches

Size	FH in N Holding Capacity	a	b	d ₁	d ₂ Thread	d ₃	h ₁ ≈	h ₂	l ₁ ≈
70	900	12 .47	19.5 .77	8.5 .33	M 6	4.3 .17	49 1.93	36 1.42	86 3.39
160	1300	15 .59	25 .98	11 .43	M 6	5.5 .22	79 3.11	46 1.81	117 4.61
550	4500	20 .79	32 1.26	14 .55	M 8	7 .28	113 4.45	55 2.17	165 6.50

Size	l ₂ ≈	l ₃ ≈	m ₁	m ₂	m ₃	m ₄	s	t	w Stroke
70	77 3.03	22 .87	26 1.02	26 1.02	13 .51	-	6 .24	12 .47	20 .79
160	107 4.21	32 1.26	36.5 1.44	33.5 1.32	11.5 .45	-	7 .28	12 .47	30 1.18
550	153 6.02	42 1.65	35 1.38	41 1.61	15 .59	41 1.61	7 .28	16 .63	42 1.65



Type ASS is mirror image of type ASD



2 Type
AS Sheet metal body

Specification

- Body
 - Case-hardened sheet metal (Steel C10)
 - zinc plated, blue passivated finish
- Plunger Steel St 37
zinc plated, blue passivated finish
- Plunger guide bushing
Brass, zinc plated, blue passivated finish
- All mobile sections lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.

Information

In these devices the circular movement of the handle is transformed into a straight-line action of the clamp along its axis.
Toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps → page 12*

How to order

GN 841 -300-AS

1 Size

2 Type

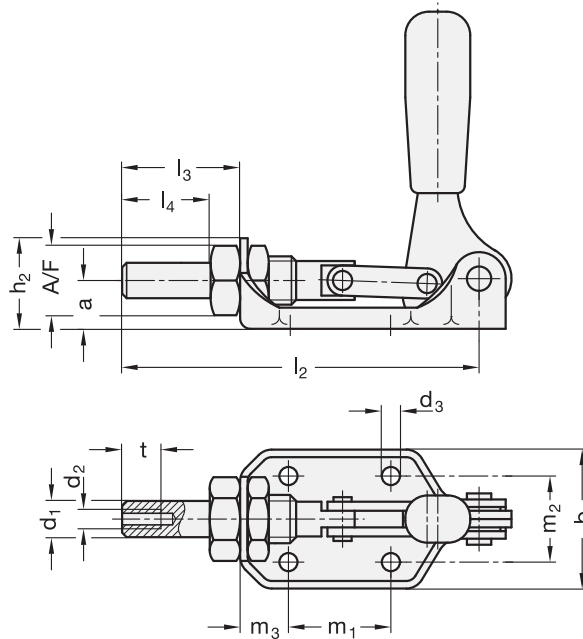
Metric table

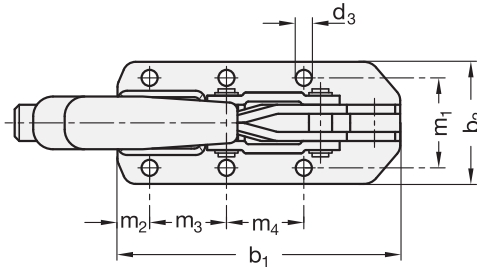
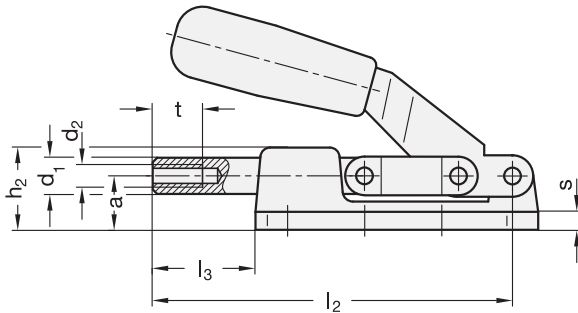
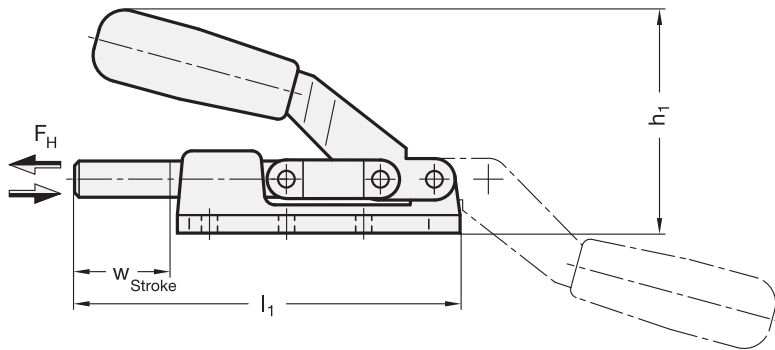
Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	a	b	d ₁	d ₂ Thread	d ₃	h ₁ ≈	h ₂	l ₁ ≈
120	3600	17 .67	48 1.89	12 .47	M 6	5.5 .22	111 4.37	31 1.22	130 5.12
300	7200	20 .79	58 2.28	14 .55	M 8	6.5 .26	140 5.51	36 1.42	167 6.57

Size	l ₂ ≈	l ₃ ≈	l ₄ ≈	m ₁	m ₂	m ₃	A/F	t	w Stroke
120	121 4.76	40 1.57	30 1.18	34 1.34	30 1.18	17 .67	24 .94	12 .47	20 .79
300	155 6.10	57 2.24	45 1.77	50 1.97	34 1.34	18 .71	27 1.06	16 .63	33 1.30





2 Type

AS Steel or brass base, forged

Specification

- Base, size 70: nickel plated brass
Base, sizes 160-3100: black
- forged
- black lacquered finish
- Parts in sheet metal
Case-hardened Steel C10
- zinc plated, blue passivated finish
- Plunger Steel St 37
zinc plated, blue passivated finish
- Bearing pins (rivets)
case-hardened
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.

Information

In these devices the circular movement of the handle is transformed into a straight-line action of the clamp along its axis.

GN 842 Heavy Duty Push-Pull Type Toggle Clamps can be used for very high holding capacities thanks to their massive and sturdy body.

On the size 70 the mounting holes are countersunk to accept DIN 912-M4 countersunk bolts with internal hexagon.

Toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps* → page 12

How to order

GN 842 - 1100 - AS

- 1 Size
- 2 Type

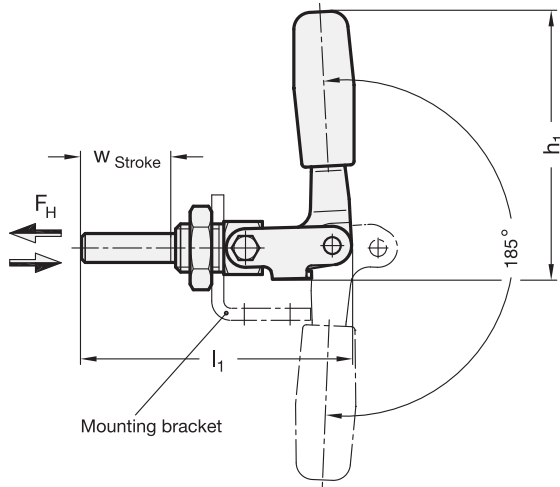
Metric tableDimensions in: millimeters - *inches*

Size	F _h in N Holding Capacity	a	b ₁	b ₂	d ₁	d ₂ Thread	d ₃	h ₁ ≈	h ₂ ≈	l ₁
70	1200	12 .47	64 2.52	36 1.42	8.5 .33	M 6	4.3 .17	42.5 1.67	19.5 .77	86 3.39
160	2800	15 .59	85 3.35	46 1.81	11 .43	M 6	5.3 .21	59 2.32	25 .98	116 4.57
360	5600	25 .98	90 3.54	45.5 1.79	12 .47	M 8	5.5 .22	75 2.95	34.5 1.36	122 4.80
550	8000	18 .71	122.5 4.82	55 2.17	14 .55	M 8	7 .28	82.5 3.25	29.5 1.16	164.5 6.48
1100	16000	25 .98	133 5.24	57 2.24	16 .63	M 10	8.5 .33	95 3.74	38 1.50	182 7.17
2100	25000	35 1.38	177 6.97	70 2.76	20 .79	M 12	8.5 .33	118.5 4.67	50 1.97	238 9.37
3100	45000	40 1.57	216 8.50	76 2.99	22 .87	M 14	11 .43	137 5.39	56 2.20	316 12.44

Size	l ₂ ≈	l ₃	m ₁	m ₂	m ₃	m ₄	s	t	w Stroke
70	79 3.11	22 .87	26 1.02	13 .51	26 1.02	-	6 .24	12 .47	20 .79
160	107 4.21	31 1.22	33.5 1.32	11.5 .45	36.5 1.44	-	7 .28	12 .47	30 1.18
360	114 4.49	32 1.26	33.5 1.32	30 1.18	36.5 1.44	-	7 .28	15 .59	32 1.26
550	154.5 6.08	42 1.65	41 1.61	15 .59	35 1.38	41 1.61	6 .24	16 .63	42 1.65
1100	170.5 6.71	49 1.93	41 1.61	15 .59	35 1.38	41 1.61	8 .31	18 .71	50 1.97
2100	222 8.74	61 2.40	50 1.97	35 1.38	50 1.97	50 1.97	10 .39	22 .87	60 2.36
3100	300 11.81	100 3.94	54 2.13	40 1.57	70 2.76	70 2.76	10 .39	25 .98	100 3.94

GN 843.1 Push-Pull Type Toggle Clamps

Steel



2 Type

- AS without mounting bracket
- ASW with mounting bracket

Specification

- Steel
 - Parts in sheet metal
 - Case-hardened Steel C10
 - zinc plated, blue passivated finish
- Bearing pins and rivets
 - Steel, hardened
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.

Information

GN 843.1 push-pull type toggle clamps can be mounted on a mounting bracket (Type ASW) or directly on the jig via the threaded body with hex nut.

The center bushing securing method allows the operating handle to be turned to the most favorable position.

GN 843.1 toggle clamps replace series GN 843.

Toggle clamp spindle assemblies are not included.

see also...

- General information for toggle clamps → page 12
- GN 843.1 Stainless Steel-Push-Pull Type Toggle Clamps → page 62

How to order

GN 843.1 - ¹340 - ²AS

- | | |
|---|------|
| 1 | Size |
| 2 | Type |

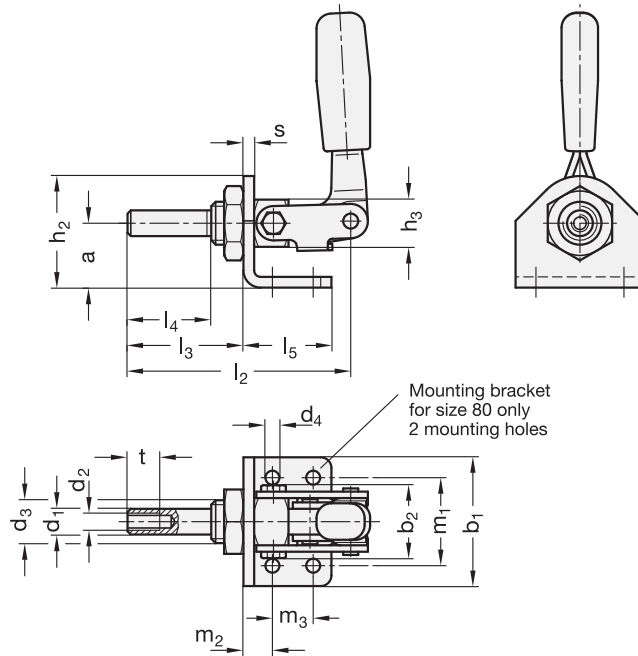
Metric table

Dimensions in: millimeters - inches

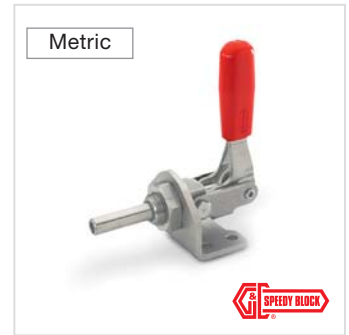
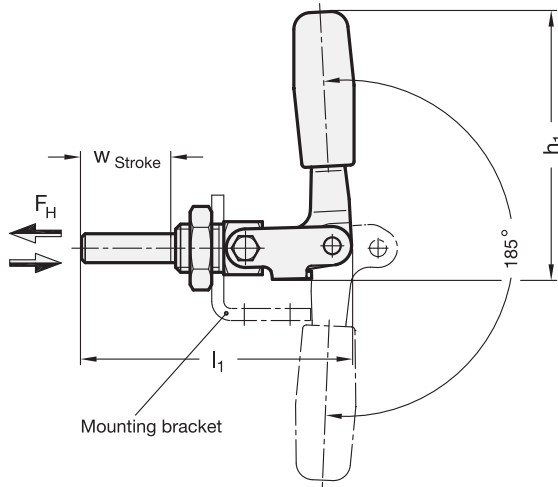


Size	FH in N Holding Capacity	a	b ₁	b ₂	d ₁	d ₂ Thread	d ₃ Thread	d ₄	h ₁ ≈	h ₂	h ₃
80	3000	24 .94	35 1.38	30 1.18	10 .39	M 6	M 16 x 1,5	5.5 .22	70 2.76	38.5 1.52	19 .75
165	5400	32 1.26	60 2.36	35 1.38	12 .47	M 8	M 20 x 1,5	6.5 .26	110 4.33	50 1.97	22 .87
340	7000	48 1.89	75 2.95	47.6 1.87	16 .63	M 10	M 24 x 2	8.5 .33	145 5.71	70 2.76	30 1.18

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ ≈	l ₅	m ₁	m ₂	m ₃	s	t	w Stroke
80	71 2.80	65 2.56	34 1.34	22 .87	22 .87	20 .79	12 .47	-	4 .16	12 .47	21 .83
165	113 4.45	105 4.13	54 2.13	39 1.54	41 1.61	41 1.61	13.5 .53	19	5 .20	15 .59	38 1.50
340	173 6.81	162 6.38	85 3.35	68 2.68	59 2.32	55 2.17	19 .75	25	5 .20	18 .71	66 2.60



GN 843.1 Push-Pull Type Toggle Clamps
Stainless Steel



SS Stainless Steel

2 Type

AS without mounting bracket
ASW with mounting bracket

Specification

- Toggle clamp body
Stainless Steel **NI**
European Standard No. 1.4301 AISI 304
- Bearing pins and rivets
Stainless steel, European Standard No. 1.4305, AISI 303
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- **RoHS compliant**

Accessory

- Spindle assemblies → page 114 ff.

Information

GN 843.1 push-pull type toggle clamps can be mounted on a mounting bracket (Type ASW) or directly on the jig via the threaded body with hex nut.

The center bushing securing method allows the operating handle to be turned to the most favorable position.

Toggle clamp spindle assemblies are not included.

see also...

- *General information for toggle clamps* → page 12
- *GN 843.1 Push-Pull Type Toggle Clamps (Steel, zinc plated)* → page 60

How to order

GN 843.1-340-ASW-NI

- | | |
|----------|-----------------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

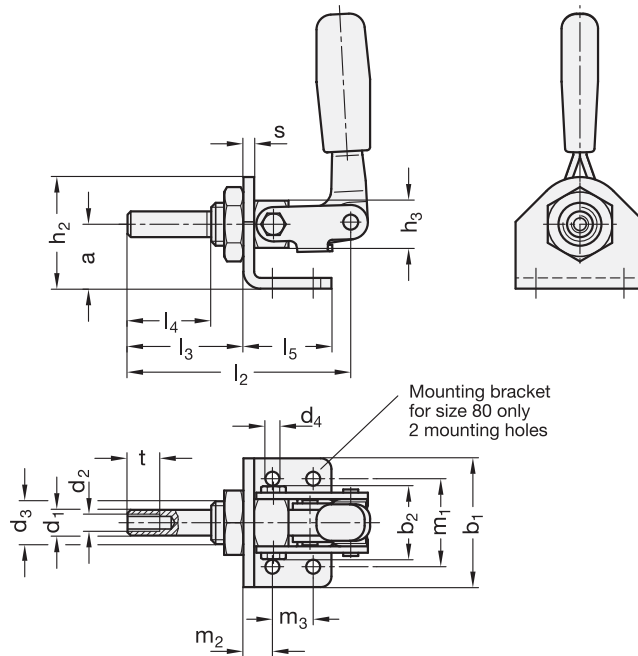
Metric table

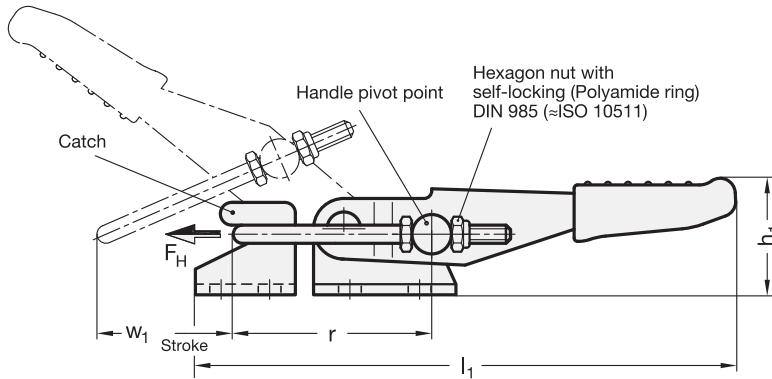
Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	a	b ₁	b ₂	d ₁	d ₂ Thread	d ₃ Thread	d ₄	h ₁ ≈	h ₂	h ₃
80	3000	24 .94	35 1.38	29 1.14	10 .39	M 6	M 16 x 1,5	5.5 .22	70.5 2.78	38.5 1.52	19 .75
165	5400	32 1.26	60 2.36	35 1.38	12 .47	M 8	M 20 x 1,5	6.5 .26	110 4.33	54 2.13	22 .87
340	7000	48 1.89	75 2.95	47.6 1.87	16 .63	M 10	M 24 x 2	8.5 .33	146 5.75	70 2.76	30 1.18

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	l ₄ ≈	l ₅	m ₁	m ₂	m ₃	s	t	w Stroke
80	71 2.80	65 2.56	34 1.34	22 .87	22 .87	20 .79	12 .47	-	4 .16	12 .47	21 .83
165	112 4.41	104 4.09	54 2.13	39 1.54	41 1.61	41 1.61	13.5 .53	19	5 .20	15 .59	38 1.50
340	173 6.81	162 6.38	85 3.35	68 2.68	59 2.32	55 2.17	19 .75	25	5 .20	18 .71	66 2.60





2 Type

- T2 with U-bolt latch, with catch
- T without U-bolt latch, with catch

Specification

- Toggle clamp
 - case-hardened Steel C10
 - zinc plated, blue passivated finish
- U-bolt latch Steel St. 37
 - zinc plated, blue passivated finish
- All mobile sections lubricated with special grease
- Handle grip
 - High quality, oil resistant red plastic sleeve
- RoHS compliant

Information

The stroke of the U-bolt latch of GN 851 latch type toggle clamps can be adjusted within its range. The circular movement of the handle is transformed into linear action of the latch. These clamps are mostly used to fasten hinged lids on containers.

In the clamped position the U-bolt latch with clamping arm is parallel to the plane of the operating handle.

In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.1 series.

see also...

- *General information for toggle clamps* → page 12
- *GN 851 Stainless Steel Horizontal Latch-Type Toggle Clamps* → page 64
- *GN 951.1 U-bolt latch* → page 84

<p>How to order</p> <p>GN 851-320-T2</p>	1	Size
	2	Type

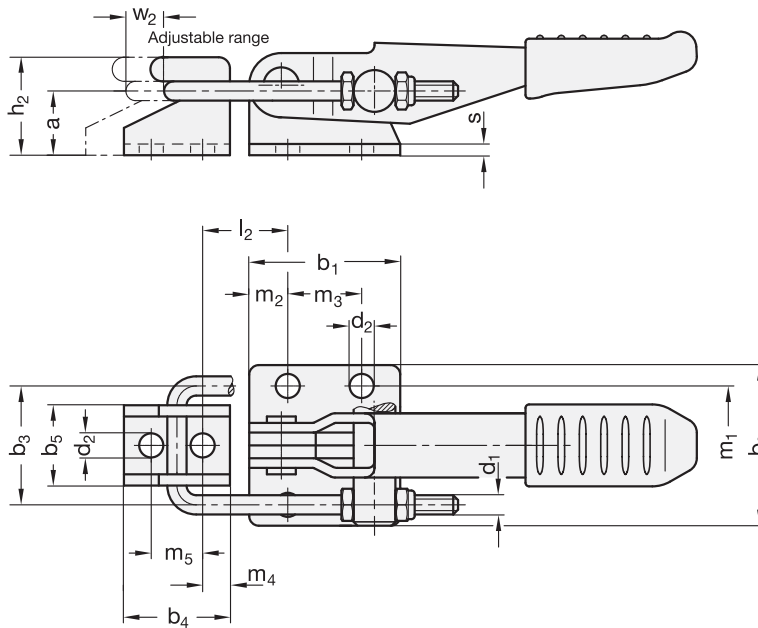
Metric table

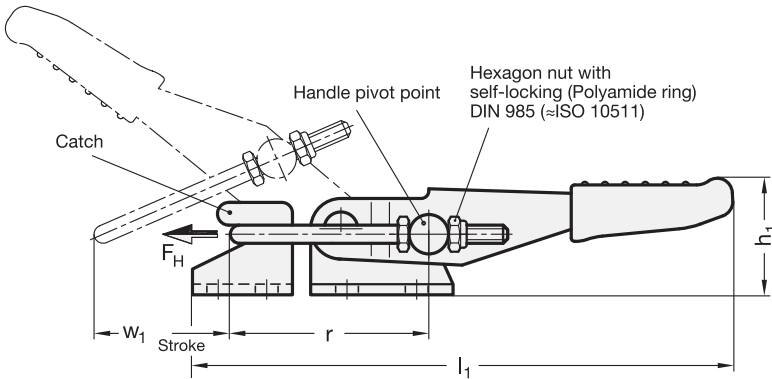
Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	d ₁ Thread	d ₂	h ₁ ≈	h ₂
160	1600	12 .47	26 1.02	28 1.10	21 .83	20 .79	14 .55	M 4	4.3 .17	26 1.02	18 .71
320	3200	16 .63	40 1.57	44 1.73	32 1.26	28 1.10	22 .87	M 6	6.5 .26	30 1.18	25 .98
700	7500	24 .94	60 2.36	54 2.13	38 1.50	38 1.50	26 1.02	M 8	8.5 .33	42 1.65	36 1.42

Size	l ₁ ≈	l ₂ min.	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s	w ₁ Stroke	w ₂ ≈ Adjustable range
160	98 3.86	11 .43	19 .75	5 .20	16 .63	5 .20	10 .39	35 1.38	2 .08	25 .98	11 .43
320	152 5.98	19 .75	32 1.26	10.5 .41	19 .75	7 .28	14.3 .56	57 2.24	3 .12	48 1.89	10 .39
700	220 8.66	21 .83	38 1.50	9.5 .37	41.5 1.63	9.5 .37	19 .75	74 2.91	3.5 .14	58 2.28	22 .87





SS Stainless Steel

2 Type

- T2 with U-bolt latch, with catch
- T without U-bolt latch, with catch

Specification

- Sheet metal parts / U-bolt latch
Stainless Steel
European Standard No. 1.4301, AISI 304
- Pin
Stainless steel
European Standard No.1.4305, AISI 303
- All moving parts lubricated with special grease
- Handle grip
High quality, oil resistant red plastic sleeve
- **RoHS compliant**

3

NI

Information

The stroke of the U-bolt latch of GN 851 latch type toggle clamps can be adjusted within its range. The circular movement of the handle is transformed into linear action of the latch. These clamps are mostly used to fasten hinged lids on containers.

In the clamped position the U-bolt latch with clamping arm is parallel to the plane of the operating handle.

In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.1 series.

see also...

- *General information for toggle clamps* → page 12
- *GN 851 Latch Type Toggle Clamps (Steel, zinc plated)* → page 64
- *GN 951.1 U-bolt latch* → page 84

How to order

GN 851 -320-T-NI

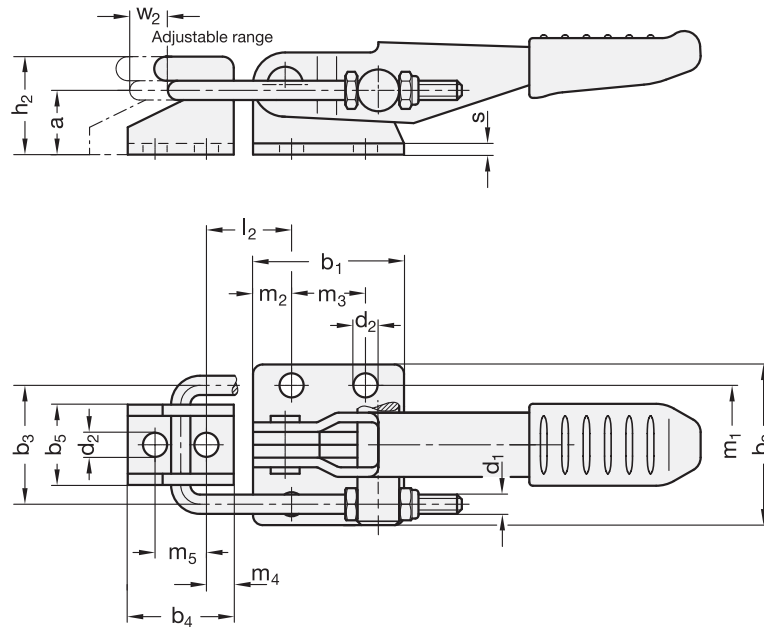
- 1 **Size**
- 2 **Type**
- 3 **Material**

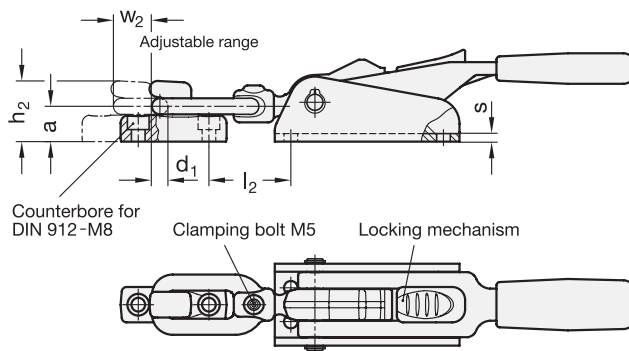
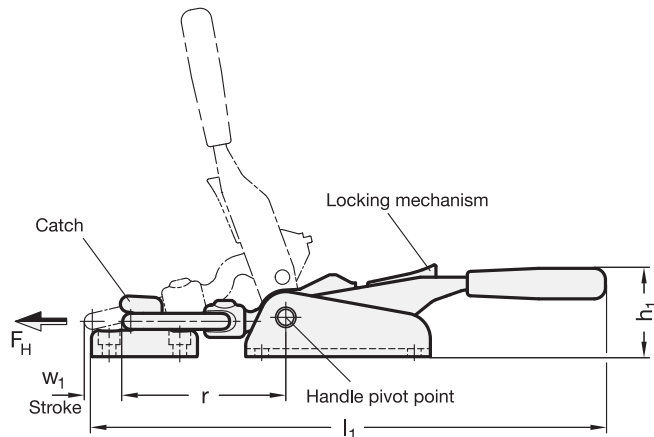
Metric table

Dimensions in: millimeters - inches

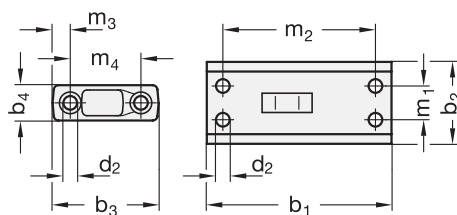
Size	F _H in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	d ₁ Thread	d ₂	h ₁ ≈	h ₂
160	1600	12 .47	26 1.02	28 1.10	21 .83	20 .79	14 .55	M 4	4.3 .17	26 1.02	18 .71
320	3200	16 .63	40 1.57	44 1.73	32 1.26	28 1.10	22 .87	M 6	6.5 .26	30 1.18	25 .98
700	7000	24 .94	60 2.36	54 2.13	38 1.50	38 1.50	26 1.02	M 8	8.5 .33	42 1.65	37 1.46

Size	l ₁ ≈	l ₂ min.	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s	w ₁ Stroke	w ₂ ≈ Adjustable range
160	98 3.86	11 .43	19 .75	5 .20	16 .63	5 .20	10 .39	37 1.46	2 .08	25 .98	6 .24
320	152 5.98	19 .75	32 1.26	10.5 .41	19 .75	7 .28	14 .55	54 2.13	3 .12	48 1.89	8.5 .33
700	220 8.66	23 .91	38 1.50	9.5 .37	41.5 1.63	9.5 .37	19 .75	74 2.91	3.5 .14	58 2.28	19 .75





Dimensions of installation (Top view)



2 Type

T5 catch with 2 mounting holes (d2)

Specification

- Base, clamping arm and catch
Steel forged/precision die casting
Chemically blackened
- Bearing pins Steel
hardened and ground
- All moving parts lubricated with special grease
- Handle grip
High quality, oil resistant red plastic
- RoHS compliant

Information

GN 858 latch-type toggle clamps are used when very high retaining forces are required. The latch-type clamp also features a locking mechanism which prevents the inadvertent or vibration-induced opening of the clamp. Another benefit of this clamp is the ability to operate it with one hand. Catch is included.

see also...

- *General information for toggle clamps* → page 12
- *GN 852 Latch-Type Toggle Clamps (Steel, zinc plated)* → page 88

<p>How to order</p> <p>GN 858-1400-T5</p>	1	Size
	2	Form

Metric table

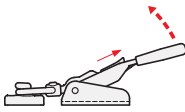
Dimensions in: millimeters - *inches*



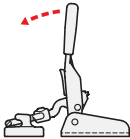
Size	F _H in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	d ₁	d ₂	h ₁	h ₂
1400	15000	22 .87	115 4.53	51.5 2.03	66 2.60	22 .87	10 .39	8.5 .33	57 2.24	38 1.50

Size	l ₁ ≈	l ₂ ≈ min.	m ₁	m ₂	m ₃	m ₄	r ≈ at w ₂ =0	s	w ₁ Stroke	w ₂ Adjustable range
1400	318 12.52	47 1.85	21 .83	95 3.74	11 .43	44 1.73	97.5 3.84	5 .20	24 .94	22 .87

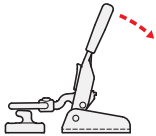
Description of function (for one-hand operation)



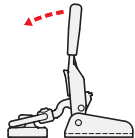
To **release**, move the locking mechanism in the direction of the arrow.



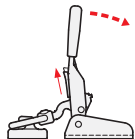
Lift the lever arm until the U-bolt latch is disengaged from the catch.



Moving the lever arm back will lift the U-bolt latch and release the catch (one-hand operation).

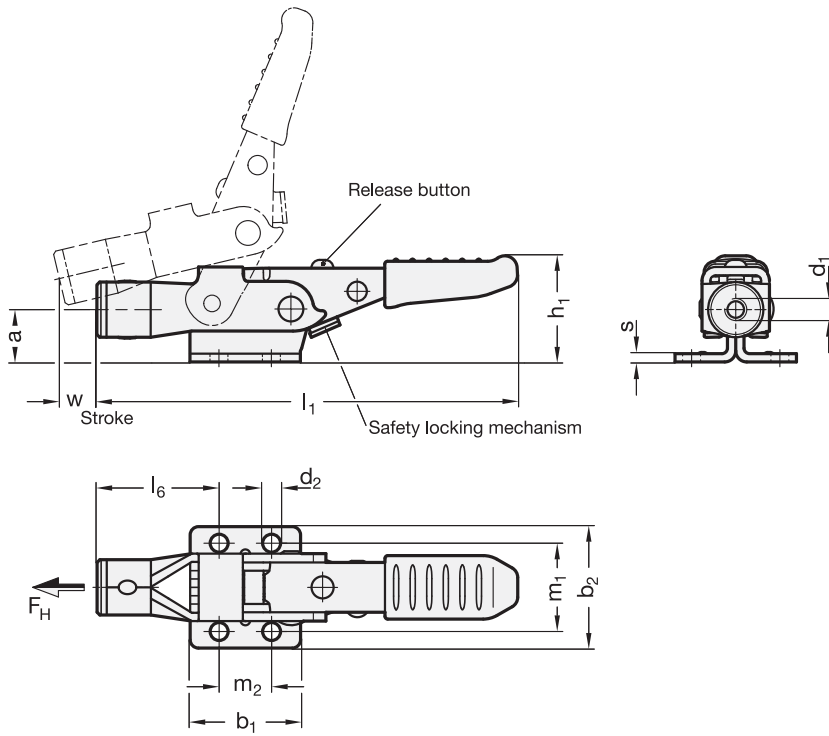


For **clamping**, lift the lever arm until the U-bolt latch rests against the catch.



The oval U-bolt latch engages with the catch if the locking mechanism is moved upward during clamping.

When clamping in the end position, the mechanism locks automatically through spring tension.



2 Type

- T5 without latch bolt, without catch
- TG with oval head latch bolt, with catch
- TT with T-head latch bolt, with catch
- TU with J-hook latch bolt, with catch

Specification

- Base, clamping lever and catch
Case-hardened steel C10
blackened finish
- Latch bolts
Steel St 32
blackened finish
- All moving parts lubricated with special grease
- Handle grip
High quality, oil resistant red plastic
- RoHS compliant

Information

Latch clamps GN 853 feature a locking mechanism which prevents an inadvertent or vibration-induced opening of the clamp.

Another benefit is the ability to operate the clamp with one hand.

The latch bolt can be adjusted within the range of dimension w_2 .

The design of Type T5 (thread bore $d_1 = M8$) allows the easy and individual configuration of the locking mechanism.

see also...

- GN 853 Stainless Steel Latch-Type Toggle Clamps → page 72

How to order

GN 853- ¹320 - ²TT

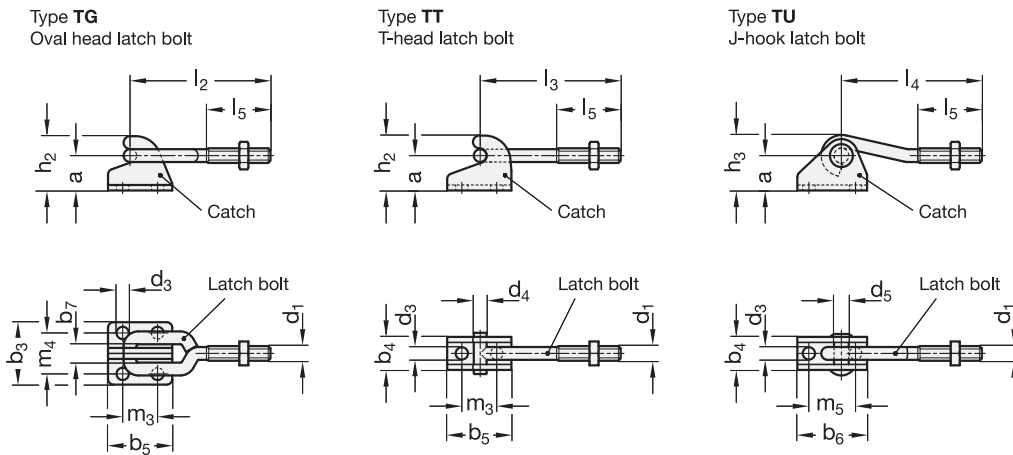
- 1 Size
- 2 Type

Metric table

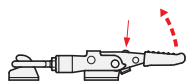
Dimensions in: millimeters - inches

Size	FH in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	d ₁ Thread	d ₂	d ₃	d ₄	d ₅	h ₁ ≈
160	1750	13 .51	26 1.02	28 1.10	23 .91	14 .55	26 1.02	35 1.38	6.8 .27	M 6	4.5 .18	4.5 .18	5.2 .20	6 .24	27 1.06
320	4000	19 .75	40 1.57	44 1.73	34 1.34	18 .71	35 1.38	38 1.50	10 .39	M 8	6.7 .26	6.7 .26	7 .28	8 .31	38.5 1.52
700	7500	28 1.10	60 2.36	54 2.13	41 1.61	26 1.02	50 1.97	50 1.97	11 .43	M 10	8.5 .33	8.5 .33	9 .35	10 .39	53 2.09

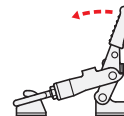
Size	h ₂	h ₃	l ₁ ≈	l ₂ ≈ Type TG	l ₃ ≈ Type TT	l ₄ ≈ Type TU	l ₅	l ₆	m ₁	m ₂	m ₃	m ₄	m ₅	s	w Stroke
160	20 .79	20.5 .81	103 4.06	55 2.17	55 2.17	54 2.13	28 1.10	30 1.18	19 .75	16 .63	16 .63	14.3 .56	25.4 1.00	2 .08	8 .31
320	30 1.18	28 1.10	153 6.02	76.5 3.01	76.5 3.01	76.5 3.01	34 1.34	44.5 1.75	32 1.26	19 .75	19 .75	22.3 .88	25.4 1.00	3 .12	13 .51
700	40.5 1.59	39 1.54	222 8.74	95.5 3.76	93 3.66	92 3.62	42 1.65	51 2.01	38 1.50	41.5 1.63	31 1.22	25.4 1.00	31 1.22	3.5 .14	19 .75



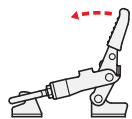
Description of function (for one-hand operation)



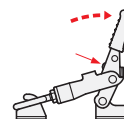
Press the release button for **releasing**.



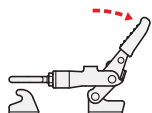
For **clamping operation**, lift the clamping arm until it rests on the catch.



Lift the clamping arm until the latch bolt disengages from the catch.



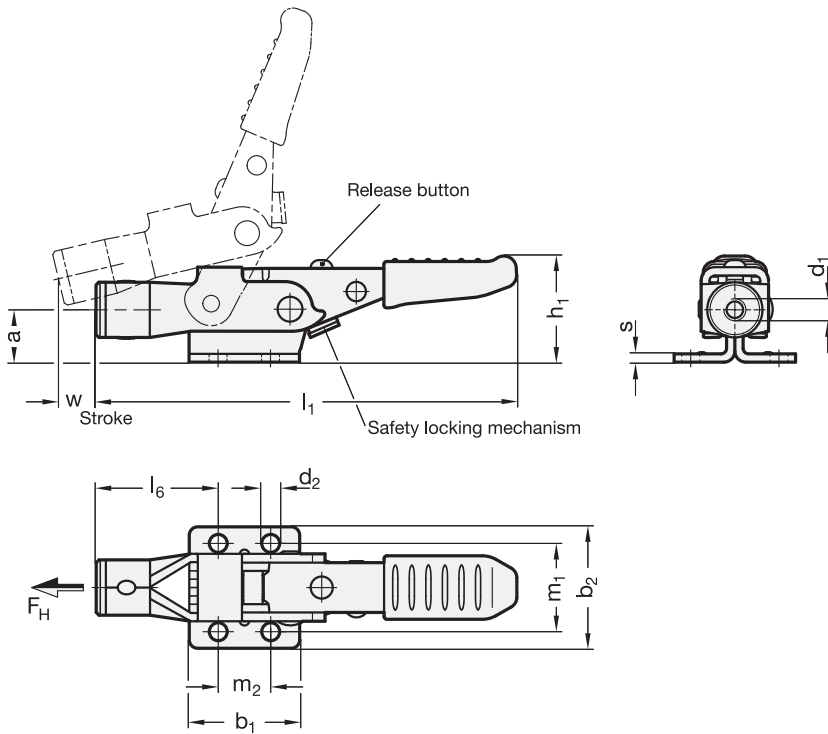
The clamping arm engages in the catch if the release button is pressed for the clamping operation. When clamping in the end position, the system locks automatically by spring force.



Retracting the clamping arm will lift the catch and release the catch (one-hand operation).

GN 853 Latch-Type Toggle Clamps

Stainless Steel, with locking mechanism



2 Type

- T5 without latch bolt, without catch
- TG with oval head latch bolt, with catch
- TT with T-head latch bolt, with catch
- TU with J-hook latch bolt, with catch

Specification

- Base, clamping lever and catch
Sheet metal, Stainless Steel
European Standard No. 1.4301 AISI 304
- Latch bolt
Stainless Steel
European Standard No. 1.4301, AISI 304
- All moving parts lubricated with special grease
- Handle sleeve
Red solid molded plastic, oil resistant
- RoHS compliant

Information

The Stainless Steel-Latch clamp GN 853 also features a locking mechanism which prevents the inadvertent or vibration-induced opening of the clamp.

Another benefit is the option of operating the clamp with one hand.

The latch bolt can be adjusted within the range of dimension w_2 .

The design of Type T5 (thread bore $d_1 = M8$) allows the easy and individual configuration of the locking mechanism.

see also...

- GN 853 Latch-Type Toggle Clamps (Steel, blackened finish) → page 70

How to order

1 2 3
GN 853-320-T5-NI

- | | |
|---|----------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

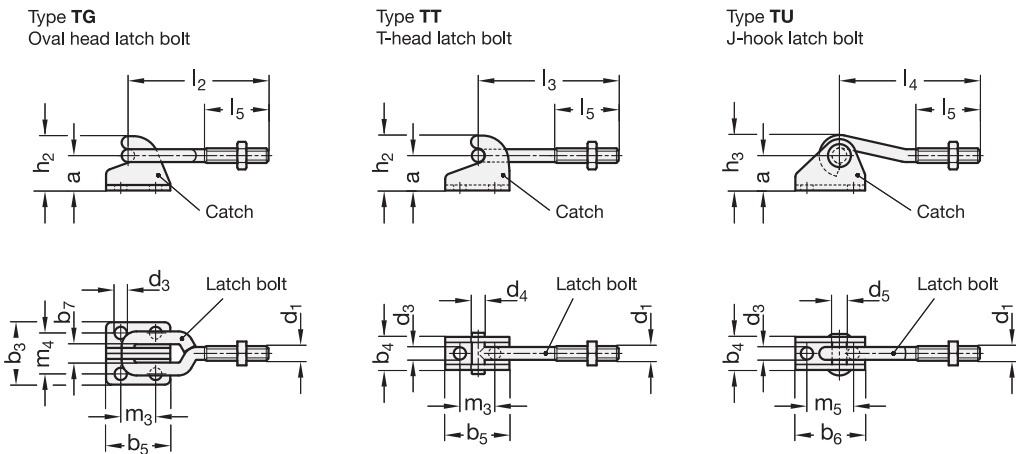
Metric table

Dimensions in: millimeters - inches

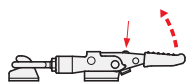


Size	FH in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	d ₁ Thread	d ₂	d ₃	d ₄	d ₅	h ₁ ≈
160	1750	13 .51	26 1.02	28 1.10	23 .91	14 .55	26 1.02	35 1.38	6.8 .27	M 6	4.5 .18	4.5 .18	5.2 .20	6 .24	27 1.06
320	4000	19 .75	40 1.57	44 1.73	34 1.34	18 .71	35 1.38	38 1.50	10 .39	M 8	6.7 .26	6.7 .26	7 .28	8 .31	38.5 1.52
700	7500	28 1.10	60 2.36	54 2.13	41 1.61	26 1.02	50 1.97	50 1.97	11 .43	M 10	8.5 .33	8.5 .33	9 .35	10 .39	53 2.09

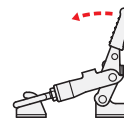
Size	h ₂	h ₃	l ₁ ≈	l ₂ ≈ Type TG	l ₃ ≈ Type TT	l ₄ ≈ Type TU	l ₅	l ₆	m ₁	m ₂	m ₃	m ₄	m ₅	s	w Stroke
160	20 .79	20.5 .81	103 4.06	55 2.17	55 2.17	54 2.13	28 1.10	30 1.18	19 .75	16 .63	16 .63	14.3 .56	25.4 1.00	2 .08	8 .31
320	30 1.18	28 1.10	153 6.02	76.5 3.01	76.5 3.01	76.5 3.01	34 1.34	44.5 1.75	32 1.26	19 .75	19 .75	22.3 .88	25.4 1.00	3 .12	13 .51
700	40.5 1.59	39 1.54	222 8.74	95.5 3.76	93 3.66	92 3.62	42 1.65	51 2.01	38 1.50	41.5 1.63	31 1.22	25.4 1.00	31 1.22	3.5 .14	19 .75



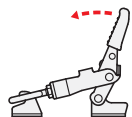
Description of function (for one-hand operation)



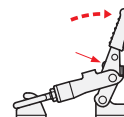
Press the release button for **releasing**.



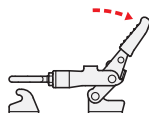
For **clamping operation**, lift the clamping arm until it rests on the catch.



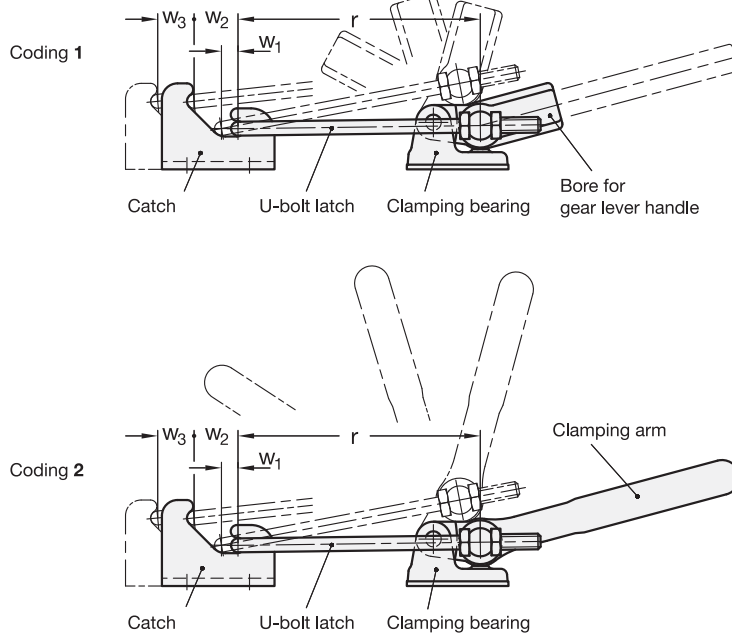
Lift the clamping arm until the latch bolt disengages from the catch.



The clamping arm engages in the catch if the release button is pressed for the clamping operation. When clamping in the end position, the system locks automatically by spring force.



Retracting the clamping arm will lift the latch bolt and release the catch (one-hand operation).



- 2 Coding**
- 1 with bore for gear lever handle
 - 2 with clamping arm
- 3 Type**
- T2S for welding

Specification

- Clamping bearing / Clamping arm
Steel
- forged
- weldable
- blank
- U-bolt latch / Bearing pin
Steel St 37
blank
- Catch
Sheet metal steel
blank
- RoHS compliant

Information

The outstanding feature of GN 854 latch-type toggle clamps is their highly robust, sturdy and compact design, allowing their use under demanding conditions, e.g. exposure to high temperatures, dust, spray mist, etc.

The specially designed catch allows the forced loosening of the clamping by the clamping arm moving the U-bolt latch forward, e.g. for separating mold halves.

Catch with bore (coding 1) are operated with a gear lever handle which is placed into the bored out socket and removed after operation. This saves space and has the added advantage that the gear lever handle is not exposed to adverse ambient conditions, e.g. becoming too hot to operate. The gear lever handle is not included with the clamp.

The catch can also be mounted using either screws or bolts.

If required, clamps and catches are also available as separate parts; for replacement, the bearing pin is easily dismantled.

How to order	
1 2 3	1 Size
GN 854-1500-1-T2S	2 Coding
	3 Type

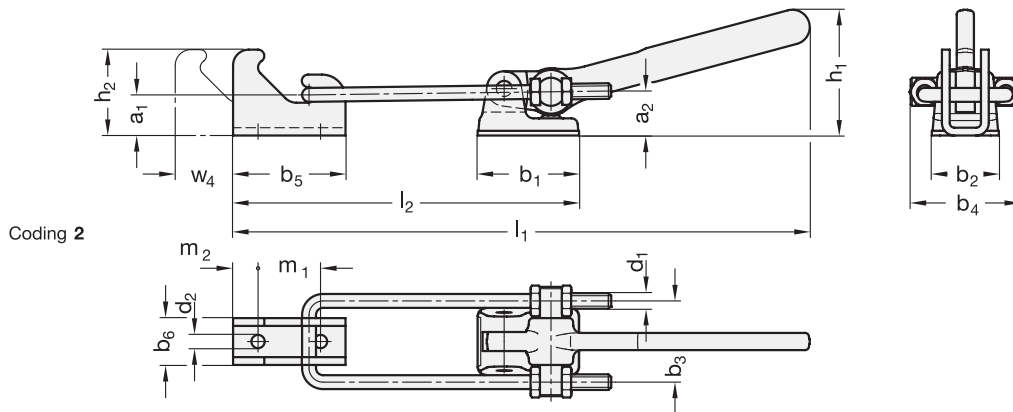
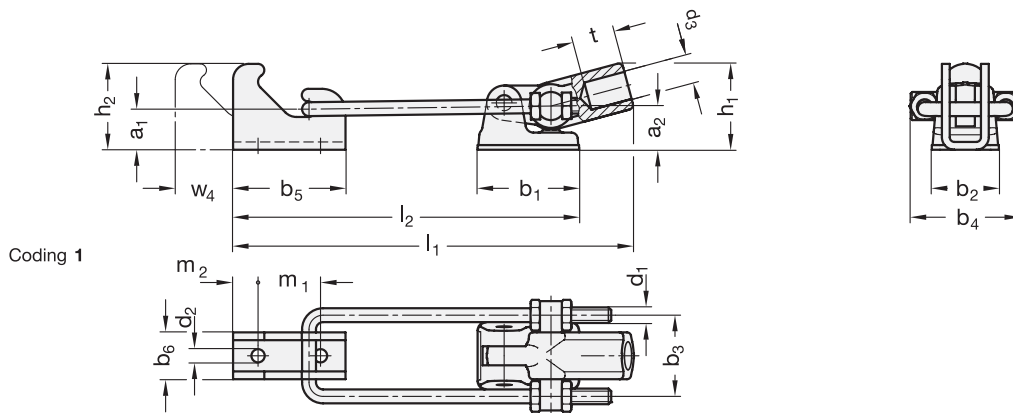
Metric table

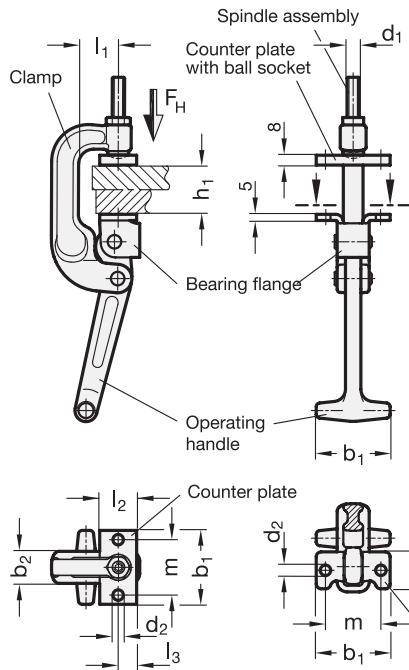
Dimensions in: millimeters - inches



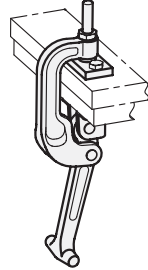
Size	F _H in N Holding Capacity	a ₁	a ₂	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	d ₁ Thread	d ₂	d ₃	h ₁ ≈ Coding 1	Coding 2
1500	15000	26 1.02	28 1.10	65 2.56	43 1.69	52 2.05	70 2.76	72 2.83	30 1.18	M 10	8.5 .33	18 .71	55 2.17	81 3.19

Size	h ₂	l ₁ ≈ Coding 1	Coding 2	l ₂ min.	m ₁	m ₂	r	t	w ₁	w ₂	w ₃ ≈ Stroke	w ₄ ≈ Adjustable range
1500	55 2.17	220 8.66	334 13.15	186 7.32	40 1.57	16 .63	120 4.72	30 1.18	10.5 .41	28 1.10	25 .98	40 1.57





Examples of application



Spindle assembly GN 802



3 Type
C2 for screwing

Metric table

Dimensions in: millimeters - inches

1 h ₁ max.	2 l ₁	F _H in N Holding Capacity	b ₁	b ₂	d ₁ Thread	d ₂	h ₂	h ₃	h ₄	l ₂	l ₃	l ₄	l ₅	l ₆	m	w ₁ Stroke	w ₂ Adjusta- ble range
40 1.57	32 1.26	15000	60 2.36	26 1.02	M 10	8.5 .33	111 4.37	168 6.61	129 5.08	30 1.18	18 .71	72 2.83	168 6.61	173 6.81	45 1.77	19 .75	32 1.26
75 2.95	32 1.26	15000	60 2.36	26 1.02	M 10	8.5 .33	146 5.75	168 6.61	164 6.46	30 1.18	18 .71	72 2.83	168 6.61	207 8.15	45 1.77	19 .75	32 1.26

Specification

- Clamp / Operating handle
Steel
- forged
- blackened finish
- Bearing flange
Sheet steel, blackened finish
- Spindle assembly
Steel, blackened finish
- Counter plate / Bearing pin
Steel, blackened finish
- RoHS compliant

Information

GN 855 C-Clamps feature an especially robust, sturdy and compact design, allowing them to be used under severe and demanding conditions, e.g. higher temperatures, dust, mist, etc.

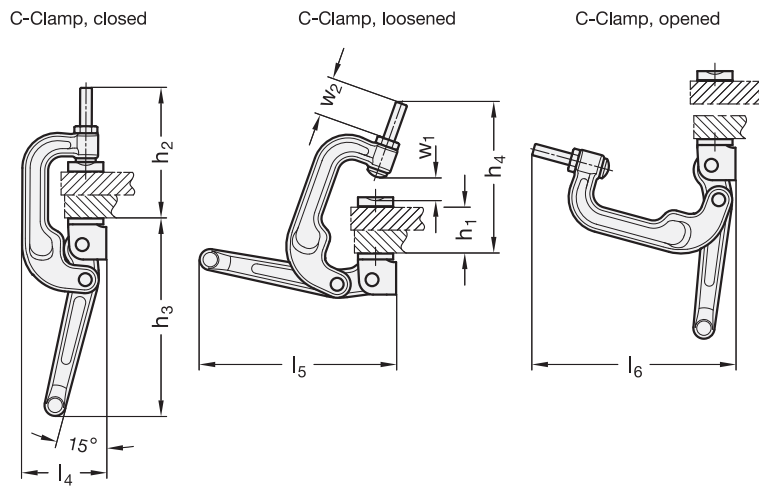
The C-Clamps are normally installed and mounted at the clamping point. The counter plate (supplied loose) has a ball socket and is designed for attaching to the counter piece to be clamped. In connection with the ball-type bolt, this configuration ensures the precise positioning of the latch clamp.

If the counter plate is not to remain at the counter piece to be clamped, the clamping bracket may alternatively also be used to hold GN 802 toggle clamp spindle assemblies which have a pendulum-type bearing surface.

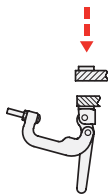
see also...
• GN 802 Toggle Clamp Spindle Assemblies GN 802 → page 116

How to order	
1	Clamp width
2	Clamping height
3	Type

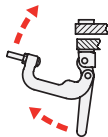
GN 855-40-32-C2



Description of function



Place the pieces to be clamped into the clamping position, e.g. close the lid or place the piece to be clamped on top.



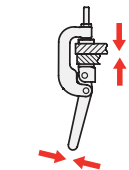
Then move the clamping bracket and the operating handle of the C-Clamp upwards.



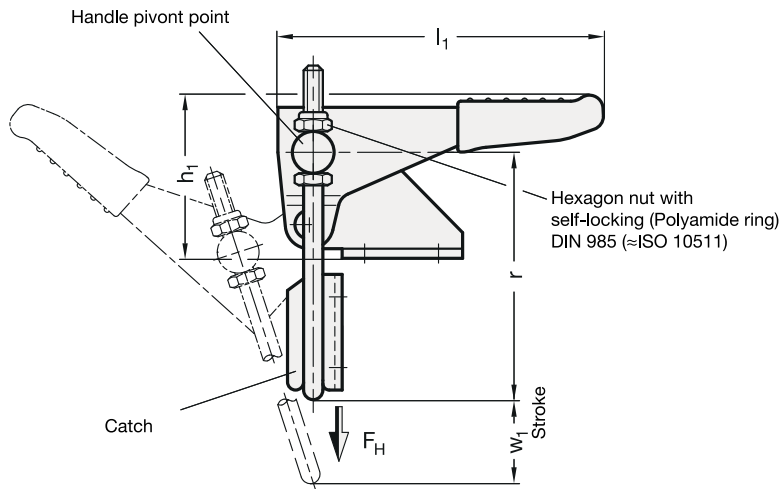
Now move the clamping bracket forward such that the clamping bolt is located in the ball socket of the counter plate.



Move the operating handle downwards until the clamping force has exceeded the dead point.



When closed, the C-Clamp now holds its position on its own.



2 Type

- T3 with U-bolt latch, with catch
- T without U-bolt latch, with catch

Specification

- Toggle clamp
 - Parts in sheet metal
 - Case-hardened Steel C10
 - zinc plated, blue passivated finish
- U-bolt latch
 - Steel St 37
 - zinc plated, blue passivated finish
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- RoHS compliant

Information

The stroke of the U-bolt latch of GN 851.1 hook-type clamps can be adjusted within its range. In the clamped position the U-bolt latch is perpendicular to the clamping arm. In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.1 series.

see also...

- *General information for toggle clamps* → page 12
- *GN 951.1 U-bolt latch (special latch)* → page 84
- *GN 851.1 Stainless-Steel Vertical Hook-Type Toggle Clamps* → page 80

How to order GN851.1 - 700 - T3	1	Size
	2	Type

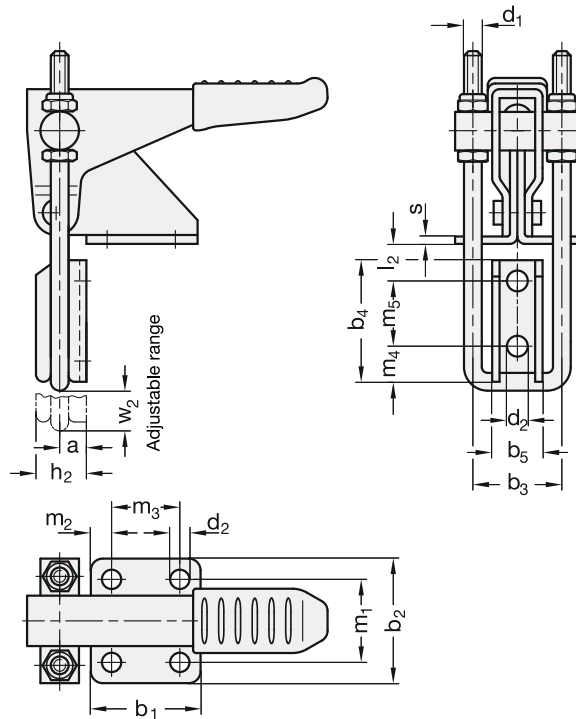
Metric table

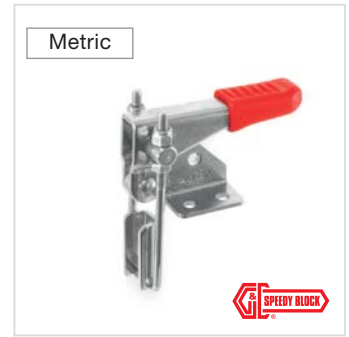
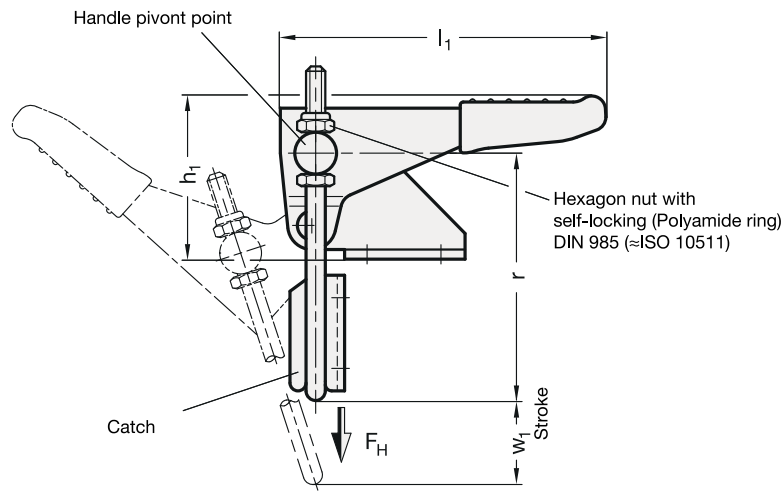
Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	d ₁ Thread	d ₂	h ₁	h ₂
160	1600	5 .20	26 1.02	35 1.38	21 .83	25.5 1.00	14 .55	M 4	4.3 .17	37 1.46	10 .39
320	3200	8 .31	36 1.42	44 1.73	32 1.26	37 1.46	22 .87	M 6	6.5 .26	54 2.13	15 .59
700	7000	13 .51	52 2.05	54 2.13	38 1.50	48.5 1.91	26 1.02	M 8	8.5 .33	67 2.64	23 .91

Size	l ₁ ≈	l ₂ min.	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s	w ₁ Stroke	w ₂ ≈ Adjustable range
160	68 2.68	4.5 .18	22 .87	6.5 .26	13 .51	6.7 .26	14.3 .56	50 1.97	2 .08	34.5 1.36	12 .47
320	106 4.17	6 .24	25.5 1.00	8.5 .33	19 .75	10.5 .41	20.5 .81	78 3.07	3 .12	53 2.09	21 .83
700	147 5.79	8 .31	36.5 1.44	10 .39	32 1.26	13.5 .53	27 1.06	98 3.86	3.5 .14	68 2.68	30 1.18





SS Stainless Steel

2 Type

T3 with U-bolt latch, with catch
T without U-bolt latch, with catch

Specification

3

- **Stainless Steel** **NI**
 - Sheet metal parts / U-bolt latch
European Standard No. 1.4301, AISI 304
 - Pin
European Standard No. 1.4305, AISI 303
- All moving parts lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- **RoHS compliant**

Information

The stroke of the U-bolt latch of GN 851.1 hook-type clamps can be adjusted within its range. In the clamped position the U-bolt latch is perpendicular to the clamping arm. In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.1 series.

see also...

- *General information for toggle clamps* → page 12
- *GN 851.1 Vertical Hook-Type Toggle Clamps (Steel, zinc plated)* → page 78
- *GN 951.1 U-bolt latch (Stainless Steel, Special latch)* → page 84

How to order

GN851.1 - 160 - T3 - NI

- | | |
|----------|-----------------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

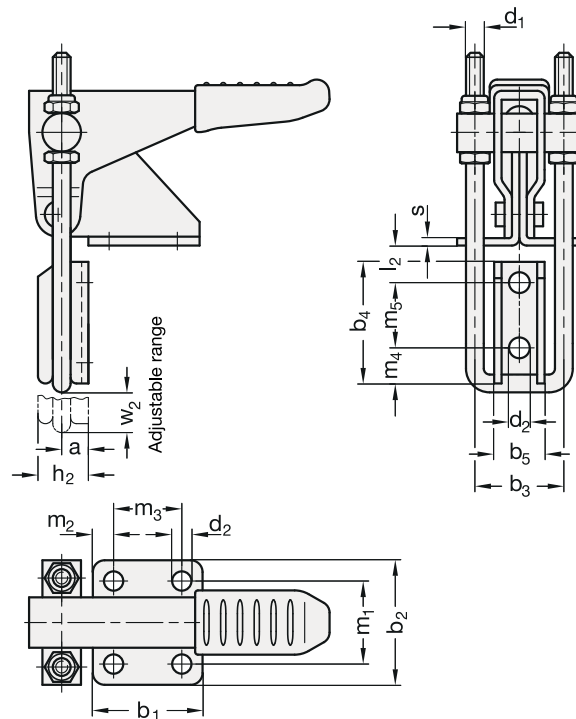
Metric table

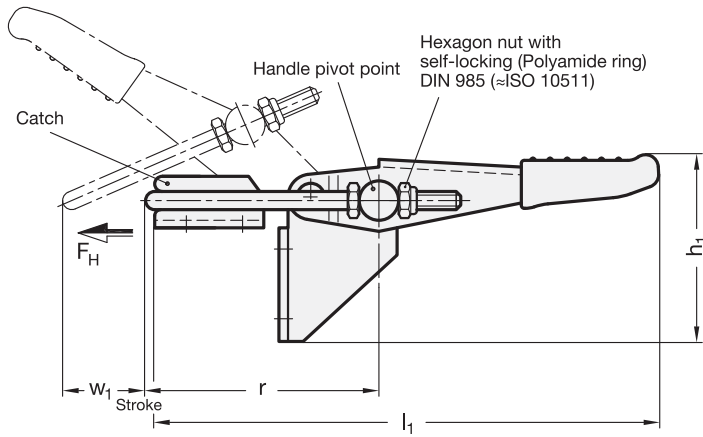
Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	d ₁ Thread	d ₂	h ₁ ≈	h ₂
160	1600	5 .20	26 1.02	35 1.38	21 .83	25.5 1.00	14 .55	M 4	4.3 .17	37 1.46	10 .39
320	3200	8 .31	36 1.42	44 1.73	32 1.26	37 1.46	22 .87	M 6	6.5 .26	54 2.13	15 .59
700	7500	13 .51	52 2.05	54 2.13	38 1.50	48.5 1.91	26 1.02	M 8	8.5 .33	67 2.64	23 .91

Size	l ₁ ≈	l ₂ min.	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s	w ₁ Stroke	w ₂ ≈ Adjustable Length
160	68 2.68	4.5 .18	22 .87	6.5 .26	13 .51	6.5 .26	14.3 .56	50 1.97	2 .08	34.5 1.36	11 .43
320	106 4.17	6 .24	25.5 1.00	8.5 .33	19 .75	10.5 .41	20.5 .81	78 3.07	3 .12	53 2.09	21 .83
700	147 5.79	8 .31	36.5 1.44	10 .39	32 1.26	13.5 .53	27 1.06	98 3.86	3.5 .14	68 2.68	30 1.18





2 Type

- T4 with U-bolt latch, with catch
- T without U-bolt latch, with catch

Specification

- Toggle clamp
 - Case-hardened Steel C10
 - zinc plated, blue passivated finish
- U-bolt latch
 - Steel St. 37
 - zinc plated, blue passivated finish
- All moving parts lubricated with special grease
- Hand grip
 - High quality, oil resistant red plastic
- RoHS compliant

Information

The stroke of GN 851.2 latch type toggle clamps can be adjusted within its range. In the clamped position the U-bolt latch and the clamping arm are horizontal to the vertical fixing plane. In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.1 series.

see also...

- General information for toggle clamps → page 12
- GN 951.1 U-bolt latch → page 84

How to order GN 851.2-160-T4	1 Size
	2 Type

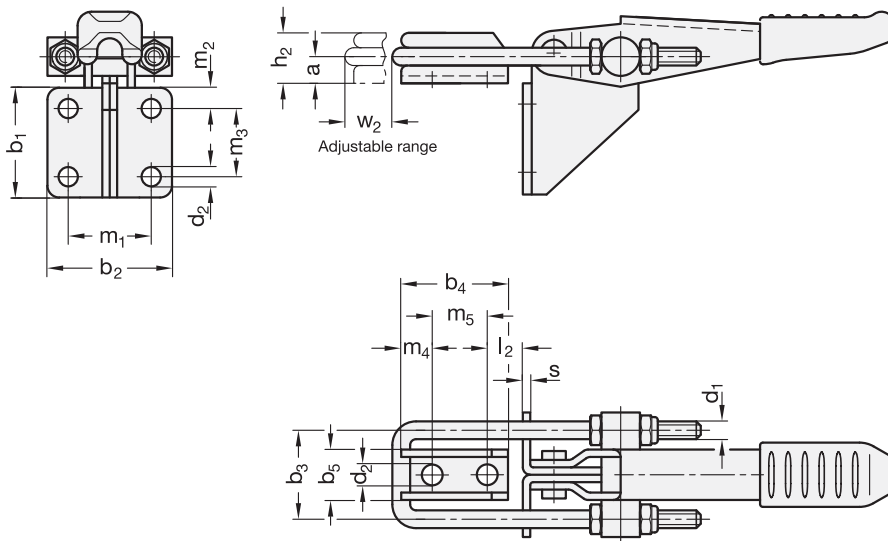
Metric table

Dimensions in: millimeters - inches



Size	FH in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	d ₁ Thread	d ₂	h ₁ ≈	h ₂
160	1600	5 .20	26 1.02	35 1.38	21 .83	25.5 1.00	14 .55	M 4	4.3 .17	40 1.57	10 .39
320	3200	8 .31	36 1.42	44 1.73	32 1.26	37 1.46	22 .87	M 6	6.5 .26	57.5 2.26	15 .59
700	7500	13 .51	52 2.05	54 2.13	38 1.50	48.5 1.91	26 1.02	M 8	8.5 .33	82 3.23	23 .91

Size	l ₁ ≈	l ₂ min.	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s	w ₁ Stroke	w ₂ Adjustable Length
160	104 4.09	4.5 .18	22 .87	6.5 .26	13 .51	6.5 .26	14.3 .56	50 1.97	2 .08	32 1.26	12 .47
320	159 6.26	6 .24	25.5 1.00	8.5 .33	19 .75	10.5 .41	20.5 .81	78 3.07	3 .12	53 2.09	21 .83
700	225 8.86	8 .31	36.5 1.44	10 .39	32 1.26	13.5 .53	27 1.06	98 3.86	3.5 .14	64 2.52	30 1.18



GN 951.1

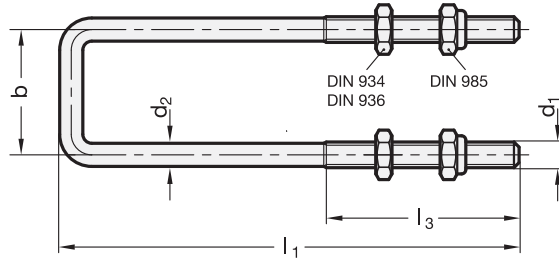
Steel / Stainless Steel

Square U-Bolts

for GN 851 / GN 851.1 / GN 851.2 latch type toggle clamps



J.W. WINCO
INC.



SS Stainless Steel

Specification

- U-bolt
Steel
zinc plated, blue passivated finish **ST**
- U-bolt
Stainless steel
European Standard No. 1.430, AISI 304 **NI**
- Hex jam nuts
(with Polyamide insert)
M4: DIN 934 / DIN 985
M6 / M8: DIN 936 / DIN 985
Steel, zinc plated /
Stainless steel,
- European Standard No. 1.4301, AISI 304
- RoHS compliant

Information

GN 951.1 square U-bolts are offered in a variety of length options for use with GN 851, GN 851.1, and GN 851.2 latch type toggle clamps.

see also...

- [GN 851 Horizontal Latch Type Toggle Clamps](#) → page 64
- [GN 851.1 Vertical Hook Type Toggle Clamps](#) → page 78
- [GN 851.2 Latch Type Toggle Clamps](#) → page 82

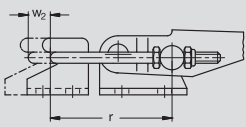
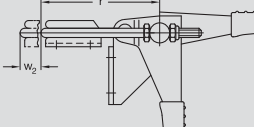
How to order

GN 951.1 - M6 - 32 - 130 - NI

- | | |
|---|-----------------------|
| 1 | Thread diameter d_1 |
| 2 | b |
| 3 | l_1 |
| 4 | Material |

Metric table

Dimensions in: millimeters - inches

d ₁ Thread	b	l ₁	d ₂	l ₃						
					Size	GN 851 r at w ₂ =0	w ₂	Size	GN 851.1 / GN 851.2 r at w ₂ =0	w ₂
M 4	21 .83	56 * 2.20*	3.4 .13	27.5 1.08	160	35 1.38	11 .43	-	-	-
M 4	21 .83	70 ** 2.76**	3.4 .13	28.5 1.12	160	48 1.89	12 .47	160	50 1.97	12 .47
M 4	21 .83	103	3.4 .13	30 1.18	160	80 3.15	14 .55	160	82 3.23	14 .55
M 4	21 .83	153	3.4 .13	35 1.38	160	125 4.92	19 .75	160	127 5.00	19 .75
M 4	21 .83	203	3.4 .13	35 1.38	160	175 6.89	19 .75	160	177 6.97	19 .75
M 6	32 1.26	78 * 3.07*	5.2 .20	33 1.30	320	57 2.24	10 .39	-	-	-
M 6	32 1.26	110 ** 4.33**	5.2 .20	44 1.73	320	75 2.95	24 .94	320	78 3.07	21 .83
M 6	32 1.26	130	5.2 .20	45 1.77	320	94 3.70	25 .98	320	94 3.70	25 .98
M 6	32 1.26	155	5.2 .20	45 1.77	320	119 4.69	25 .98	320	119 4.69	25 .98
M 6	32 1.26	205	5.2 .20	45 1.77	320	169 6.65	25 .98	320	169 6.65	25 .98
M 8	38 1.50	111 * 4.37*	7.2 .28	52 2.05	700	74 2.91	22 .87	-	-	-
M 8	38 1.50	127	7.2 .28	60 2.36	700	78 3.07	34 1.34	-	-	-
M 8	38 1.50	143 ** 5.63**	7.2 .28	56 2.20	700	98 3.86	30 1.18	700	98 3.86	30 1.18
M 8	38 1.50	157	7.2 .28	60 2.36	700	108 4.25	34 1.34	700	108 4.25	34 1.34
M 8	38 1.50	207	7.2 .28	60 2.36	700	158 6.22	34 1.34	700	158 6.22	34 1.34

* These U-bolt latch lengths are included in the delivery of standard orders for GN 851.

** These U-bolt latch lengths are included in the delivery of standard orders for GN 851.1 / GN 851.2.

GN 951.2

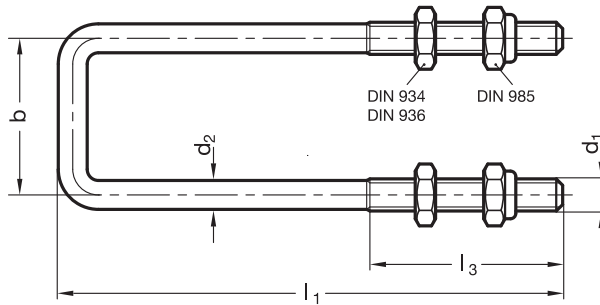
Steel / Stainless Steel

Square U-Bolts

for GN 852 / GN 852.1 latch type toggle clamps



J.W. WINCO
INC.



SS Stainless Steel

Specification

- U-bolt
Steel
zinc plated, blue passivated **ST**
- U-bolt
Stainless Steel
European Standard No. 1.4301, AISI 304 **NI**
- Hex jam nuts
(with Polyamide insert)
DIN 936 / DIN 985
Steel, zinc plated /
Stainless Steel
- RoHS compliant

Information

GN 951.2 these square U-bolts are offered in a variety of length options for use with GN 852 / GN 852.1 latch type toggle clamps.

see also...

- [GN 852 Latch-Type Toggle Clamps](#) → page 88
- [GN 852.1 Latch clamps](#) → page 92

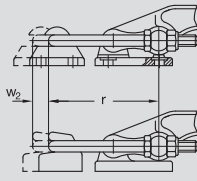
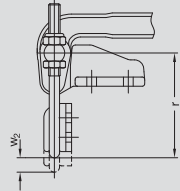
How to order

GN951.2-M10-46-259-ST

1	d ₁
2	b
3	l ₁
4	Material

Metric table

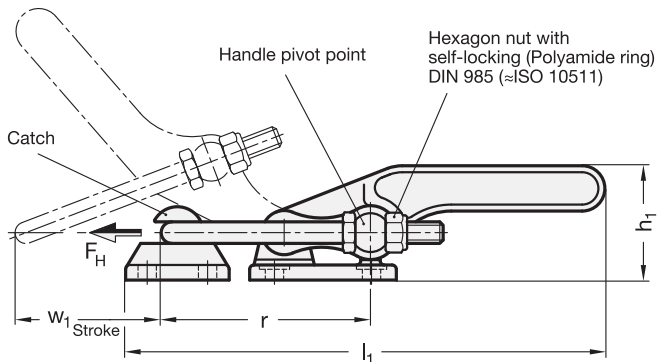
Dimensions in: millimeters - inches

										
d₁	b	l₁	d₂	l₃	Size	GN 852 r for w ₂ =0	w₂	Size	GN 852.1 r for w ₂ =0	w₂
M 10	46 <i>1.81</i>	129 * <i>5.08*</i>	9 <i>.35</i>	45 <i>1.77</i>	1400	96 <i>3.78</i>	15 <i>.59</i>	1400	96 <i>3.78</i>	15 <i>.59</i>
M 10	46 <i>1.81</i>	149 ** <i>5.87**</i>	9 <i>.35</i>	52 <i>2.05</i>	1400	106 <i>4.17</i>	22 <i>.87</i>	1400	106 <i>4.17</i>	22 <i>.87</i>
M 10	46 <i>1.81</i>	179 <i>7.05</i>	9 <i>.35</i>	45 <i>1.77</i>	1400	146 <i>5.75</i>	15 <i>.59</i>	1400	146 <i>5.75</i>	15 <i>.59</i>
M 10	46 <i>1.81</i>	209 <i>8.23</i>	9 <i>.35</i>	45 <i>1.77</i>	1400	176 <i>6.93</i>	15 <i>.59</i>	1400	176 <i>6.93</i>	15 <i>.59</i>
M 10	46 <i>1.81</i>	259 <i>10.20</i>	9 <i>.35</i>	45 <i>1.77</i>	1400	226 <i>8.90</i>	15 <i>.59</i>	1400	226 <i>8.90</i>	15 <i>.59</i>
M 12	55 <i>2.17</i>	151 * <i>5.94*</i>	10.8 <i>.43</i>	70 <i>2.76</i>	2800	107 <i>4.21</i>	25 <i>.98</i>	-	-	-
M 12	55 <i>2.17</i>	211 <i>8.31</i>	10.8 <i>.43</i>	70 <i>2.76</i>	2800	156 <i>6.14</i>	36 <i>1.42</i>	-	-	-
M 12	55 <i>2.17</i>	361 <i>14.21</i>	10.8 <i>.43</i>	70 <i>2.76</i>	2800	306 <i>12.05</i>	36 <i>1.42</i>	-	-	-
M 12	55 <i>2.17</i>	421 <i>16.57</i>	10.8 <i>.43</i>	70 <i>2.76</i>	2800	366 <i>14.41</i>	36 <i>1.42</i>	-	-	-

* These U-bolt latch lengths are included in the delivery of standard orders for GN 852.
 ** These U-bolt latch length is included in the delivery of standard orders for GN 852.1.

GN 852 Latch-Type Toggle Clamps

Steel, heavy duty type



2 Type

- T2** with mounting holes, with U-bolt latch, with catch
- T** with mounting holes, without U-bolt latch, with catch
- T2S** for welding, with U-bolt latch, with catch
- TS** for welding, without U-bolt latch, with catch

Specification

- Base and fixed catch
Steel C22
- forged
- black lacquered (Type T2 / T)
- chemically blackened (Type T2S / TS)
- Clamping lever
- C 40, forged steel
- Black powder coat paint finish
- U-bolt latch and bearing bolt
Steel St.37
zinc plated, blue passivated
- All mobile sections lubricated with special grease
- **RoHS compliant**

On request

- Latch-type toggle clamps with safety pawl

Information

GN 852 heavy duty latch-type toggle clamps are used for very high holding forces, as may be required in plastic high pressure mold forming.

The stroke of the U-bolt latch can be adjusted within its range.

In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.2 series.

see also...

- *General information for toggle clamps* → page 12
- *Stainless Steel-Latch-Type Toggle Clamps GN 852* → page 90
- *Latch clamps GN 852.1* → page 92
- *Square U-Bolts GN 951.2* → page 86

How to order

GN 852-2800-T2

1 Size

2 Type

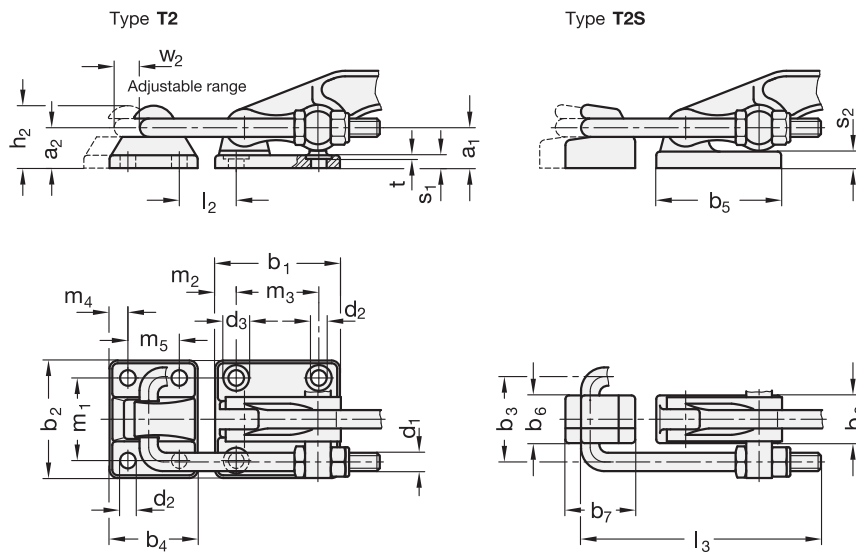
Metric table

Dimensions in: millimeters - inches



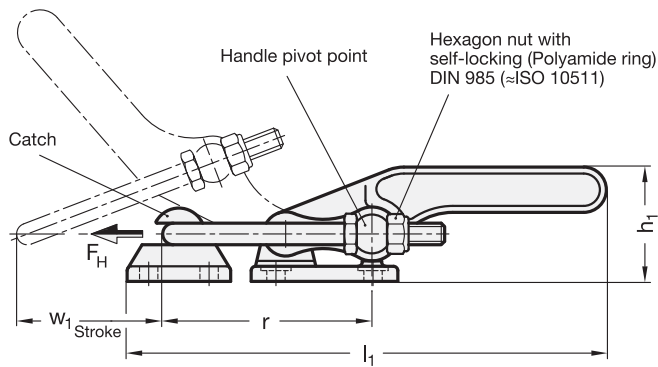
Size	F _H in N Holding Capacity	a ₁	a ₂	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	d ₁ Thread	d ₂	d ₃	h ₁ ≈	h ₂
1400	17000	22 .87	21 .83	68 2.68	64 2.52	46 1.81	48 1.89	68 2.68	26.5 1.04	38 1.50	M 10	8.5 .33	14 .55	52 2.05	34.5 1.36
2800	40000	28 1.10	27 1.06	85 3.35	80 3.15	55 2.17	60 2.36	80 3.15	32 1.26	50 1.97	M 12	10.5 .41	16 .63	65 2.56	42.5 1.67

Size	l ₁ ≈	l ₂ min.	l ₃ ≈	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s ₁	s ₂	t	w ₁ Stroke	w ₂ ≈ Adjustment Length
1400	218 8.58	29.5 1.16	129 5.08	45 1.77	11.5 .45	45 1.77	10 .39	28 1.10	96 3.78	7 .28	9.2 .36	2 .08	63 2.48	15 .59
2800	265 10.43	32.1 1.26	151 5.94	57 2.24	14 .55	57 2.24	12.5 .49	35 1.38	117 4.61	9 .35	12.7 .50	2 .08	78 3.07	15 .59



GN 852 Latch-Type Toggle Clamps

Stainless Steel, heavy duty type



SS Stainless Steel

2 Type

- T2** with mounting holes, with U-bolt latch, with catch
- T** with mounting holes, without U-bolt latch, with catch
- T2S** for welding, with U-bolt latch, with catch
- TS** for welding, without U-bolt latch, with catch

Specification

- Base, clamping lever, and fixed catch
Stainless Steel **NI**
AISI 304, European Standard No. 1.4301
- U-bolt latch and bearing bolt
Stainless Steel
AISI 303, European Standard No. 1.4305
- All mobile sections lubricated with special grease
- **RoHS compliant**

On request

- Latch-Type Toggle Clamps with safety pawl

Information

The GN 852 heavy duty latch-type toggle clamps are used for very high holding forces, as may be required in plastic high pressure mold forming.

The stroke of the U-bolt latch can be adjusted within its range.

In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.2 series.

see also...

- *General information for toggle clamps* → page 12
- *Latch-Type Toggle Clamps GN 852 (Steel, zinc plated)* → page 88
- *Square U-Bolts GN 951.2* → page 86

How to order

GN 852-2800-T2-NI

- | | |
|---|----------|
| 1 | Size |
| 2 | Type |
| 3 | Material |

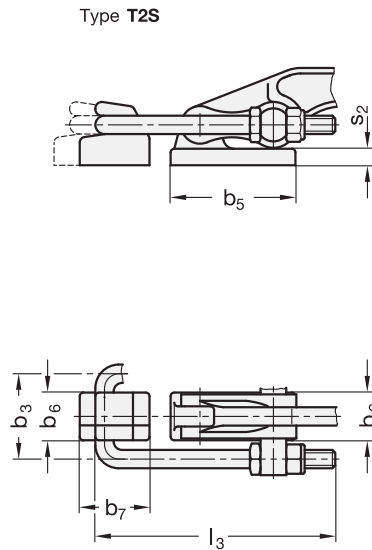
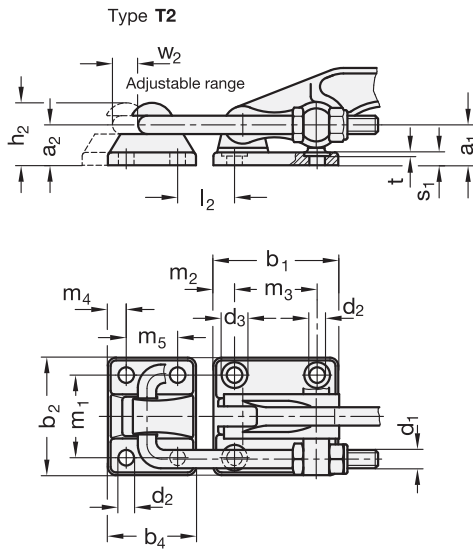
Metric table

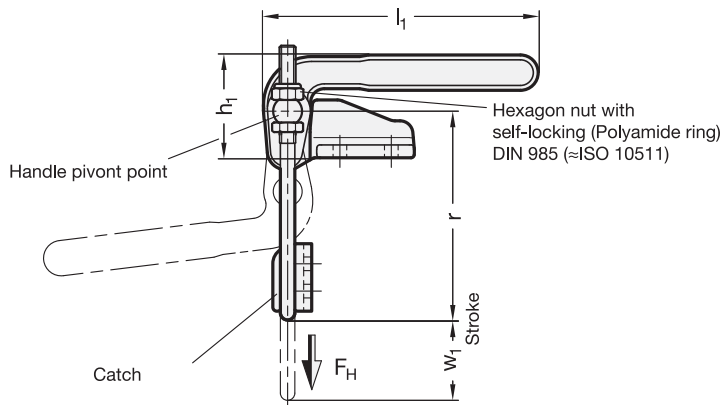
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	a ₁	a ₂	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	d ₁	d ₂	d ₃	h ₁	h ₂
1400	14000	22 .87	21 .83	68 2.68	64 2.52	46 1.81	48 1.89	68 2.68	26.5 1.04	38 1.50	M 10	8.5 .33	14 .55	52 2.05	34.5 1.36
2800	30000	28 1.10	27 1.06	85 3.35	80 3.15	55 2.17	60 2.36	80 3.15	32 1.26	50 1.97	M 12	10.5 .41	16 .63	65 2.56	42.5 1.67

Size	l ₁ ≈	l ₂ min.	l ₃ ≈	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s ₁	s ₂	t	w ₁ Stroke	w ₂ ≈ Adjustable Length
1400	218 8.58	29.5 1.16	129 5.08	45 1.77	11.5 .45	45 1.77	10 .39	28 1.10	96 3.78	7 .28	9.2 .36	2 .08	63 2.48	15 .59
2800	265 10.43	32.1 1.26	151 5.94	57 2.24	14 .55	57 2.24	12.5 .49	35 1.38	117 4.61	9 .35	12.7 .50	2 .08	78 3.07	15 .59





- 2 Type**
- T** with mounting holes, without U-bolt latch, with catch
 - T3** with mounting holes, with U-bolt latch, with catch
 - TS** for welding, without U-bolt latch, with catch
 - T3S** for welding, with U-bolt latch, with catch

Specification

- Base and operating handle
Steel C22
- forged
- chemically blackened
- Fixed catch
Steel
blackened
- U-bolt latch and bearing pins
Steel St.37
zinc plated, blue passivated finish
- All moving parts lubricated with special grease
- **RoHS compliant**


Information

The U-bolt latch of the GN 852.1 vertical hook-type toggle clamps is adjustable within the adjusting range. Once in the clamping position, the latch bolt is perpendicular to the clamping arm and to the mounting base of the toggle clamp.

In addition to the standard lengths of the U-bolt latches shown in the table, a variety of other lengths are also available under the GN 951.2 series.

see also...

- *General information for toggle clamps* → page 12
- *Square U-bolts GN 951.2* → page 86

  GN 852.1 - 1400 - T3	1 Size
	2 Type

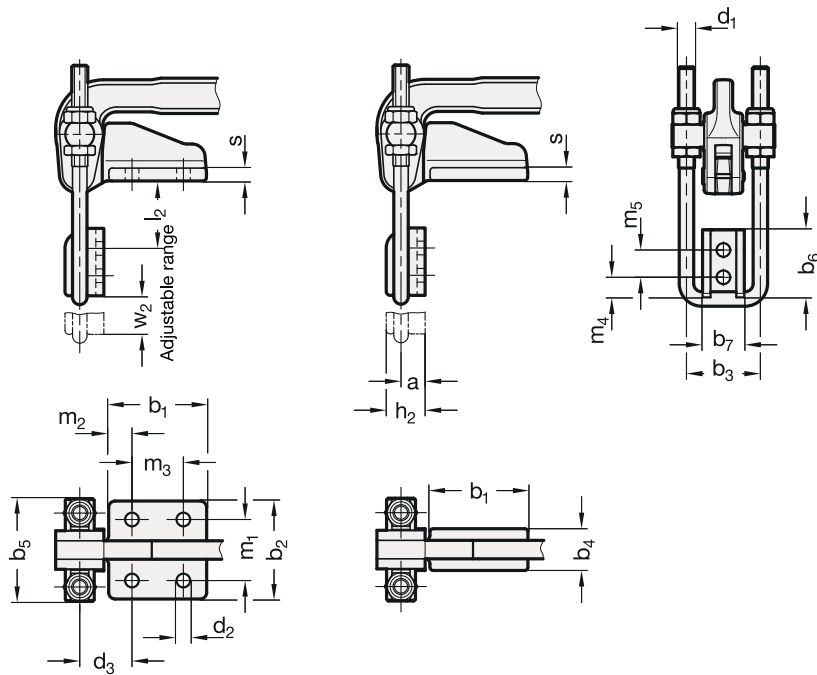
Metric table

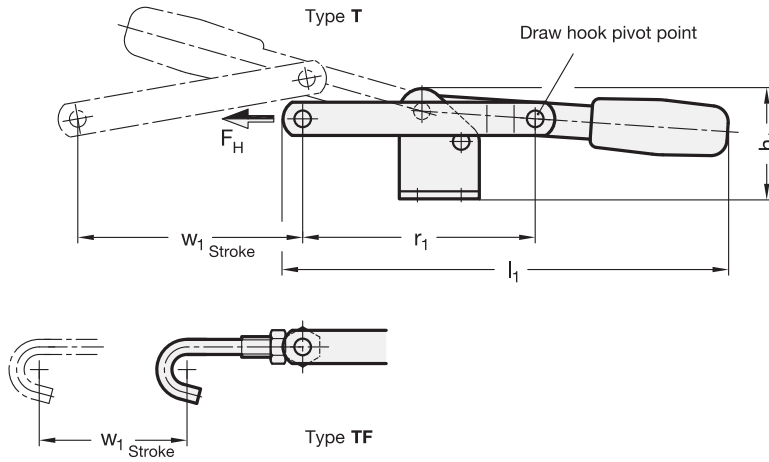
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	a	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	d ₁ Thread	d ₂	d ₃
1400	12000	15 .59	61 2.40	61 2.40	46 1.81	26 1.02	64 2.52	42 1.65	26 1.02	M 10	8.5 .33	32.5 1.28

Size	h ₁ ≈	h ₂	l ₁ ≈	l ₂ min.	m ₁	m ₂	m ₃	m ₄	m ₅	r ≈ at w ₂ = 0	s	w ₁ Stroke	w ₂ ≈ Adjustable range
1400	64 2.52	24 .94	171 6.73	42 1.65	38 1.50	14.5 .57	32 1.26	12.5 .49	17 .67	106 4.17	8 .31	50 1.97	22 .87





- 2 Type**
- T with draw axle
 - TF with draw hook

Specification

- Toggle clamp
Parts in sheet metal
Case-hardened steel C10
zinc plated, blue passivated finish
- Draw hook
Steel St 37
zinc plated, blue passivated finish
- All mobile sections lubricated with special grease
- Hand grip
High quality, oil resistant red plastic
- RoHS compliant

Information

- The draw hook of GN 850 hook-type toggle clamps can be adjusted within the stroke.
- The circular movement of the handle is transformed into linear action of the latch. These clamps are mostly used to fasten hinged lids on containers.
- see also...
- *General information for toggle clamps → page 12*

How to order GN 850-300-TF	1	Size
	2	Type

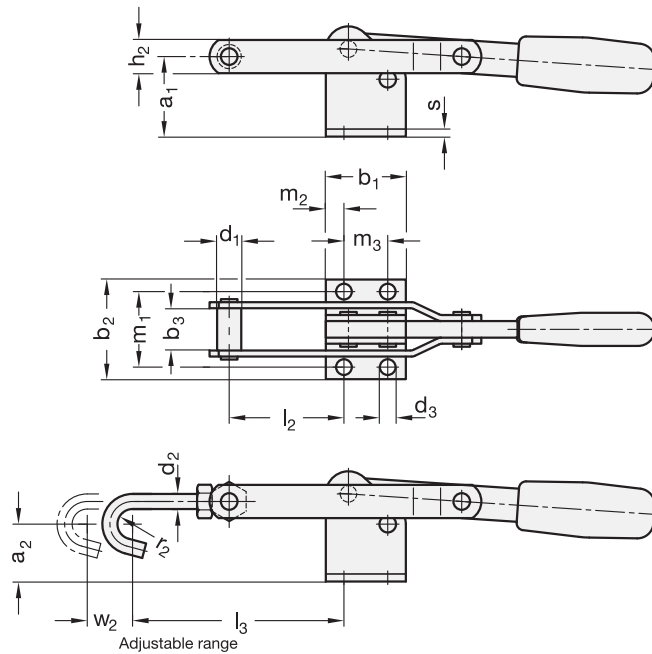
Metric table

Dimensions in: millimeters - inches



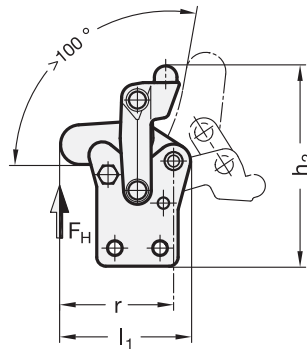
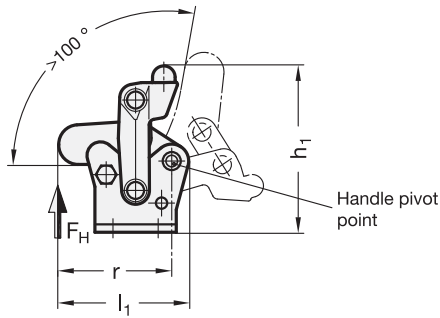
Size	F _H in N Holding Capacity	a ₁	a ₂	b ₁	b ₂	b ₃	d ₁	d ₂	d ₃	h ₁ ≈	h ₂
200	2000	37 1.46	29 1.14	35 1.38	45 1.77	18 .71	10 .39	8 .31	6.5 .26	49 1.93	16 .63
300	3000	35 1.38	25 .98	48 1.89	60 2.36	21 .83	10 .39	10 .39	8.5 .33	49 1.93	18 .71
400	4000	43 1.69	30 1.18	54 2.13	84 3.31	26 1.02	14 .55	12 .47	10.5 .41	60.5 2.38	25 .98

Size	l ₁ ≈	l ₂ ≈	l ₃ ≈	m ₁	m ₂	m ₃	r ₁ ≈	r ₂	s	w ₁ Stroke	w ₂ ≈ Adjustable Length
200	202 7.95	51 2.01	93 3.66	32 1.26	8 .31	19 .75	102 4.02	5 .20	3 .12	100 3.94	20 .79
300	225 8.86	51 2.01	98 3.86	45 1.77	8 .31	32 1.26	105 4.13	6 .24	3 .12	104 4.09	20 .79
400	278 10.94	58 2.28	117.5 4.63	60 2.36	12.5 .49	28.5 1.12	138 5.43	7 .28	5 .20	160 6.30	20 .79



GN 910.2 Heavy Duty Knee Lever Modules

Steel, with horizontal or vertical mounting base



2 Type

- C** Mounting holes vertical to the handle pivot point
- G** Mounting holes parallel to the handle pivot point

Specification

- Lever arm steel
 - forged
 - blackened finish
- Parts in sheet metal
 - case-hardened Steel C10
 - blackened finish
- Bearing pins and rivets
 - Steel, hardened and ground
- All moving parts lubricated with special grease
- **RoHS compliant**

Accessory

- handles, levers, bushings, clamping arm
- extenders, base plates → page 99

Information

GN 910.2 heavy duty knee lever modules have the same properties and attributes as the „longlife“ GN 910 and GN 910.1 heavy duty vertical acting toggle clamps. The clamping arms are die-forged, the remaining steel sheet parts have been reinforced, and bearing pins and rivets are hardened and ground.

These vertical clamps are therefore suitable for applications in which substantial forces occur and in which a long service life is required.

During extensive testing, with trouble free function and under load, the clamp has withstood over one million opening and closing cycles.

These heavy duty knee lever modules permit the size and position of the lever and clamping arms to be adjusted to match the specific application.

see also...

- GN 910 Heavy Duty Vertical Acting Toggle Clamps (“Longlife”) → page 28
- GN 910.1 Heavy Duty Vertical Acting Toggle Clamps (“Longlife”) → page 30
- GN 910.3 Heavy Duty Knee Lever Modules → page 98

How to order

GN910.2-440-G

- 1** Size
- 2** Type

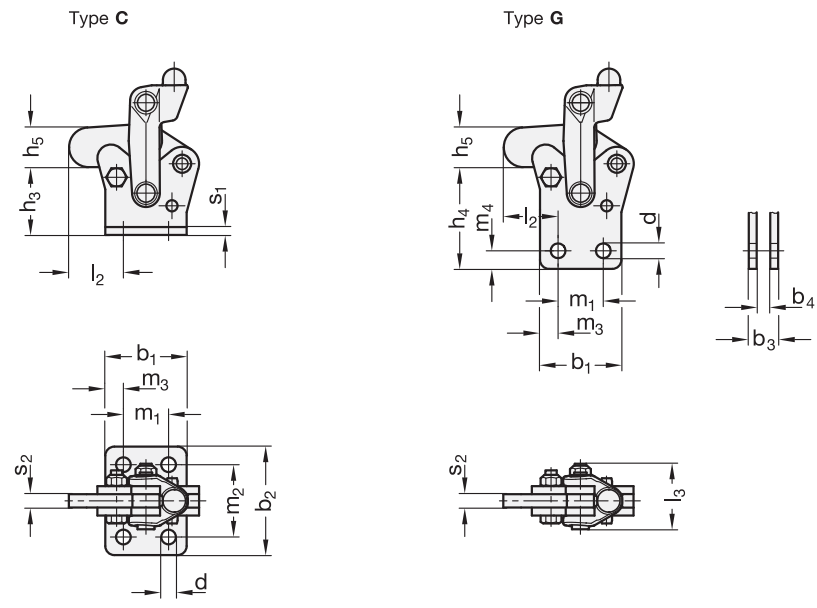
Metric table

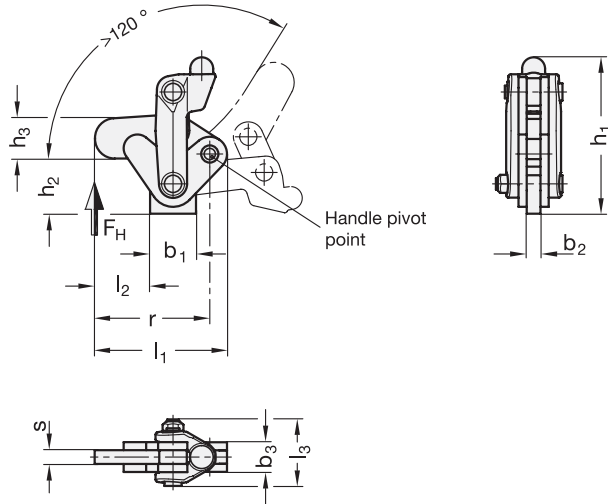
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	b ₁	b ₂	b ₃	b ₄	d	h ₁	h ₂	h ₃	h ₄	h ₅
220	2200	36 <i>1.42</i>	48 <i>1.89</i>	13 <i>.51</i>	6 <i>.24</i>	6.5 <i>.26</i>	74 <i>2.91</i>	89 <i>3.50</i>	30 <i>1.18</i>	45.5 <i>1.79</i>	17.5 <i>.69</i>
440	4400	54 <i>2.13</i>	65 <i>2.56</i>	20 <i>.79</i>	10 <i>.39</i>	8.5 <i>.33</i>	121 <i>4.76</i>	140.5 <i>5.53</i>	50 <i>1.97</i>	69.5 <i>2.74</i>	28 <i>1.10</i>
850	8500	75 <i>2.95</i>	75 <i>2.95</i>	24 <i>.94</i>	12 <i>.47</i>	10.5 <i>.41</i>	158 <i>6.22</i>	180 <i>7.09</i>	67 <i>2.64</i>	88 <i>3.46</i>	35 <i>1.38</i>
1540	15400	90 <i>3.54</i>	100 <i>3.94</i>	34 <i>1.34</i>	16 <i>.63</i>	12.5 <i>.49</i>	193 <i>7.60</i>	222 <i>8.74</i>	76.5 <i>3.01</i>	106 <i>4.17</i>	40 <i>1.57</i>

Size	l ₁	l ₂	l ₃	m ₁	m ₂	m ₃	m ₄	r	s ₁	s ₂
220	57.5 <i>2.26</i>	24 <i>.94</i>	29 <i>1.14</i>	20 <i>.79</i>	32 <i>1.26</i>	8 <i>.31</i>	8 <i>.31</i>	50 <i>1.97</i>	3.5 <i>.14</i>	6 <i>.24</i>
440	85.5 <i>3.37</i>	32 <i>1.26</i>	42.5 <i>1.67</i>	30 <i>1.18</i>	45 <i>1.77</i>	12 <i>.47</i>	10 <i>.39</i>	73 <i>2.87</i>	5 <i>.20</i>	10 <i>.39</i>
850	115 <i>4.53</i>	38 <i>1.50</i>	52 <i>2.05</i>	55 <i>2.17</i>	55 <i>2.17</i>	10 <i>.39</i>	10 <i>.39</i>	99 <i>3.90</i>	6 <i>.24</i>	12 <i>.47</i>
1540	147.5 <i>5.81</i>	53 <i>2.09</i>	68 <i>2.68</i>	65 <i>2.56</i>	75 <i>2.95</i>	12.5 <i>.49</i>	17.5 <i>.69</i>	127.5 <i>5.02</i>	8 <i>.31</i>	16 <i>.63</i>





Metric table

Dimensions in: millimeters - inches

Size	FH in N Holding Capacity	b ₁	b ₂	b ₃	h ₁	h ₂	h ₃	l ₁	l ₂	l ₃	r	s
220	2200	20 .79	6 .24	13 .51	68 2.68	24 .94	17.5 .69	57.5 2.26	24 .94	29 1.14	50 1.97	6 .24
440	4400	30 1.18	10 .39	20 .79	113 4.45	42 1.65	28 1.10	85.5 3.37	32 1.26	42.5 1.67	73 2.87	10 .39
850	8500	50 1.97	12 .47	24 .94	148 5.83	57 2.24	35 1.38	115 4.53	40.5 1.59	52 2.05	99 3.90	12 .47
1540	15400	60 2.36	16 .63	32 1.26	183 7.20	66.5 2.62	40.5 1.59	147.5 5.81	55.5 2.19	68 2.68	127.5 5.02	16 .63

Specification

- Lever arm steel
 - forged
 - blackened finish
- Parts in sheet metal
 - case-hardened steel C10
 - blackened finish
- Bearing pins and rivets
 - Steel, hardened and ground
- All moving parts lubricated with special grease
- RoHS compliant

Accessory

- handles, levers, bushings, clamping arm
- extenders, base plates

Information

GN 910.3 heavy duty knee lever modules have the same properties and attributes as the „longlife“ GN 910 and GN 910.1 heavy duty vertical acting toggle clamps. The clamping arms are die-forged, the remaining steel sheet parts have been reinforced, and bearing bolts and bushings are hardened and ground.

Therefore these clamps are suitable for applications in which substantial forces occur and a long service life is required.

During extensive testing, with trouble free function and under load, the clamp has withstood over one million opening and closing cycles.

These heavy duty knee lever modules permit the size and position of the lever and clamping arms to be adjusted to match the specific application. The actual module is welded on.

see also...

- GN 910 Heavy Duty Vertical Acting Toggle Clamps (“Longlife”) → page 28
- GN 910.1 Heavy Duty Vertical Acting Toggle Clamps (“Longlife”) → page 30
- GN 910.2 Heavy Duty Knee Lever Modules (to screw-on) → page 96

How to order

GN910.3-220

1 Size

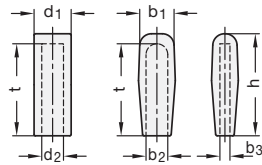
Accessory for knee lever modules

GN 910.2 and GN 910.3

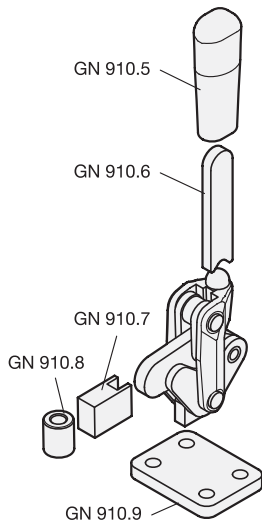
Metric table

Dimensions in: millimeters - inches

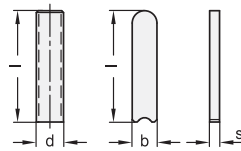
Handles



Module Size	b ₁	d ₁	b ₂	d ₂	b ₃	h	t	Part No.
220	22 .87	-	13 .51	-	5 .20	60 2.36	55 2.17	GN 910.5-220
440	31 1.22	-	20 .79	-	5 .20	86 3.39	77 3.03	GN 910.5-440
850	-	30 1.18	-	22 .87	-	119 4.69	112 4.41	GN 910.5-850
1540	-	34 1.34	-	25 .98	-	119 4.69	112 4.41	GN 910.5-1540

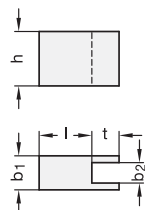


Lever arms



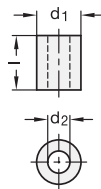
Module Size	b	d	Length l	s	Part No.
220	13 .51	-	60 2.36	5 .20	GN 910.6-220
440	20 .79	-	90 3.54	8 .31	GN 910.6-440
850	-	22 .87	122 4.80	-	GN 910.6-850
1540	-	25 .98	138 5.43	-	GN 910.6-1540

Clamping arm extenders



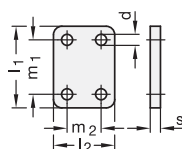
Module Size	b ₁	b ₂	h	Length l	t	Part No.
220	10 .39	6 .24	16 .63	15.5 .61	6.5 .26	GN 910.7-220
440	15 .59	10 .39	24 .94	16 .63	8 .31	GN 910.7-440
850	20 .79	12 .47	30 1.18	22.1 .87	15 .59	GN 910.7-850
1540	25 .98	16.2 .64	35 1.38	23.5 .93	-	GN 910.7-1540

Bushings

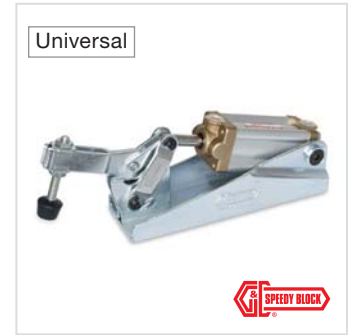
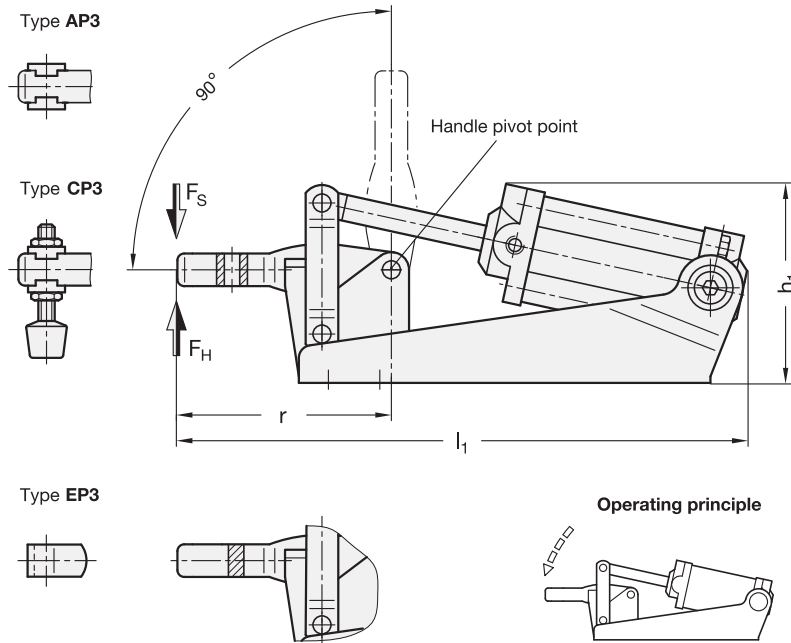


Module Size	d ₁	d ₂	Length l	Part No.
220	13 .51	6.5 .26	16 .63	GN 910.8-220
440	20 .79	10.5 .41	24 .94	GN 910.8-440
850	24 .94	12.5 .49	30 1.18	GN 910.8-850
1540	32 1.26	16.5 .65	35 1.38	GN 910.8-1540

Base plates



Module Size	d	l ₁	l ₂	m ₁	m ₂	s	Part No.
220	6.5 .26	48 1.89	36 1.42	32 1.26	20 .79	6 .24	GN 910.9-220
440	8.5 .33	65 2.56	54 2.13	45 1.77	30 1.18	8 .31	GN 910.9-440
850	10.5 .41	75 2.95	75 2.95	55 2.17	55 2.17	10 .39	GN 910.9-850
1540	12.5 .49	100 3.94	90 3.54	65 2.56	65 2.56	10 .39	GN 910.9-1540



- 2 Type**
- AP3** U-bar version with two flanged washers
- CP3** U-bar version with two flanged washers and GN 708.1 Type A spindle
- EP3** Solid bar version with clasp

- 3 Coding**
- M** Magnetic piston from size 200

Specification

- Base
Parts in sheet metal case-hardened steel C10, zinc plated, blue passivated finish
- Bearing pins hardened
- Bearing rivets (for size 200 and up) case-hardened
- Air cylinder bearing pins case-hardened
- Double-action air cylinder, maximum pressure 6 bar
- All moving parts lubricated with special grease
- Neoprene spindle assembly (Type CP3):
 - Threaded stud
Steel, zinc plated, blue passivated finish
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- Mounting holes accommodate inch or metric size screws
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type AP3) → page 122
- GN 809 Clamp Mounts for Toggle Clamps (for Type EP3) → page 123
- GN 896.1/GN 896.2 Proximity Switches → page 112

Information

The clamping principle of GN 860 pneumatic 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.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type AP3) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type CP3.

Type EP3 version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

GN 860 pneumatic 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 piston position can be sensed and the generated impulse can be used to transmit an electrical signal.

see also...

- General information for toggle clamps → page 12

How to order (without magnetic piston)	1	Size
GN 860-200-CP3	2	Type

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

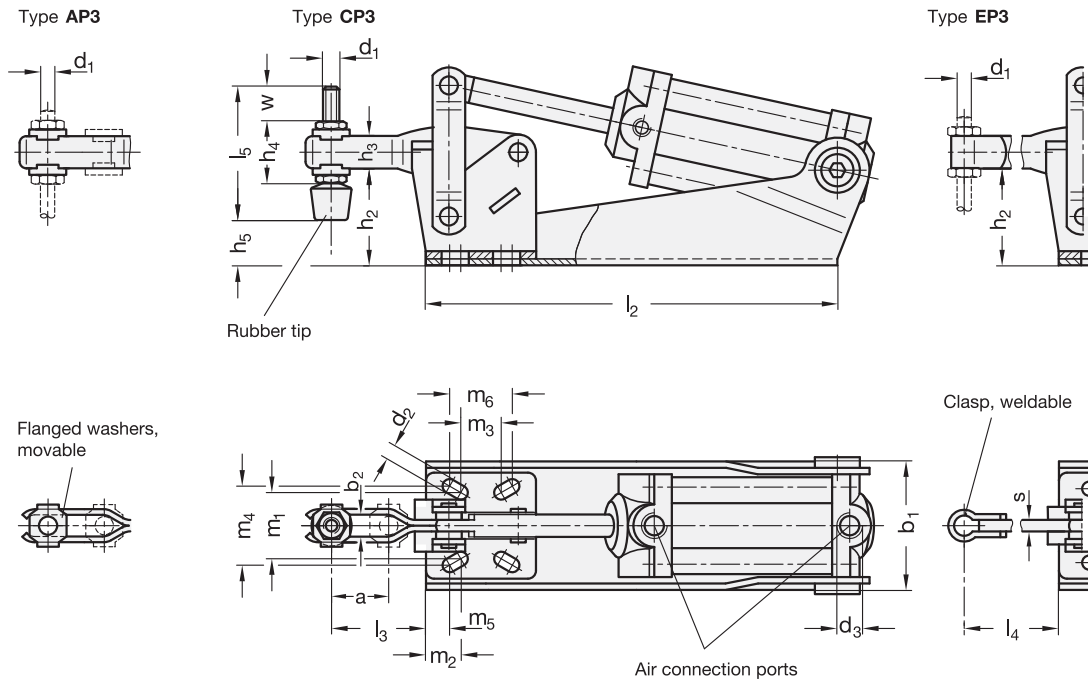
Metric table

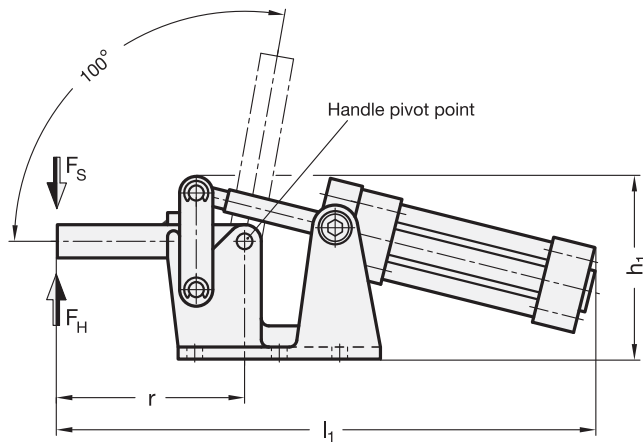
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	F _S in N Piston Force at 4 bar ≈	a ≈	b ₁	b ₂	d ₁ Thread	d ₂	d ₃ Thread	Inside Ø Connection Tube	h ₁	h ₂	h ₃	h ₄	h ₅
70	700	480	20 .79	42 1.65	5.5 .22	M 5	4.5 .18	G 1/8	4 .16	51 2.01	21 .83	11 .43	19 .75	6.3 .25
125	1600	600	28 1.10	47.5 1.87	6.5 .26	M 6	5.5 .22	G 1/8	4 .16	70.5 2.78	30 1.18	14 .55	23.5 .93	13.5 .53
200	2200	800	40 1.57	53 2.09	8.5 .33	M 8	6.5 .26	G 1/8	4 .16	79 3.11	36 1.42	18 .71	30 1.18	12.5 .49
300	2700	1300	42 1.65	74 2.91	10.5 .41	M 10	8.5 .33	G 1/4	6 .24	98 3.86	48 1.89	20 .79	35 1.38	20 .79
400	3000	1350	66 2.60	74 2.91	12.5 .49	M 12	8.5 .33	G 1/4	8 .31	107.5 4.23	51 2.01	22 .87	39 1.54	18.5 .73

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 Adj. Range
70	163 6.42	92 3.62	33 1.30	41 1.61	45 1.77	24 .94	7 .28	15 .59	24 .94	6.5 .26	16 .63	62.5 2.46	4	15 .59
125	200.5 7.89	150 5.91	40 1.57	54 2.13	55 2.17	27 1.06	11.25 .44	12.5 .49	29 1.14	8 .31	19 .75	79 3.11	5	19.5 .77
200	247 9.72	160 6.30	59 2.32	75 2.95	68 2.68	32 1.26	12 .47	19 .75	32 1.26	11.5 .45	20 .79	104 4.09	6	20 .79
300	305 12.01	195.5 7.70	66 2.60	85 3.35	77 3.03	45 1.77	10.5 .41	29 1.14	46 1.81	8.5 .33	32 1.26	122 4.80	8	21 .83
400	361 14.21	216 8.50	94 3.70	120 4.72	100 3.94	45 1.77	10 .39	32 1.26	45 1.77	10 .39	32 1.26	156 6.14	10	37 1.46





2 Type

EP Solid clamping arm, weldable

3 Coding

M Magnetic piston

Specification

- Base
Cast steel
black lacquered finish
- Other parts
Steel St 60
zinc plated, blue passivated finish
- Bearing bolts
case hardened
- Double-action air cylinder,
maximum pressure 6 bar
- All mobile sections lubricated with special
grease
- RoHS compliant

Accessory

- Proximity Switches for Pneumatic Toggle
Clamps GN 896.3 → page 112

Information

GN 861 Heavy-duty pneumatic toggle clamps have been constructed in such a way as to make them easy to unmount. The bearing bolts 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 Heavy-duty pneumatic toggle clamps are also available as version M (magnetic piston). In conjunction with a GN 896.3 proximity switch the piston position is sensed and the generated signal can be used in sequence control systems.

see also...

- General information for toggle clamps → page 12
- Pneumatic Toggle Clamps GN 860 → page 100

How to order (without magnetic piston)	1	Size
	2	Type
GN 861-2000-EP		

How to order (with magnetic piston)	1	Size
	2	Type
	3	Coding
GN 861-1000-EP-M		

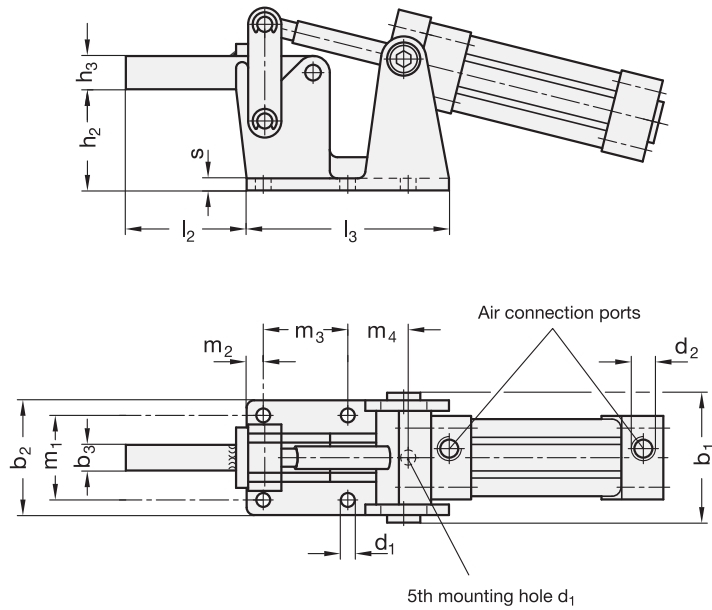
Metric table

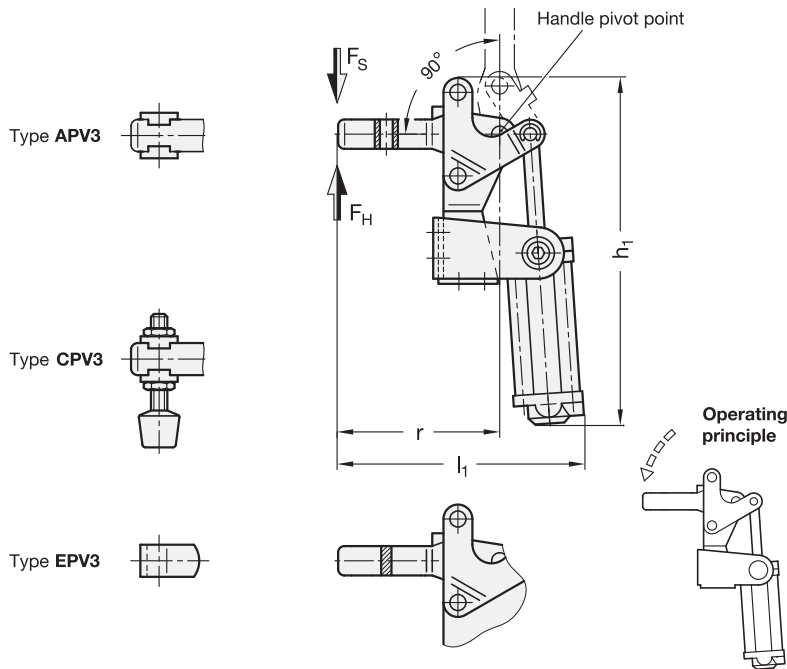
Dimensions in: millimeters - inches



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 Thread	Inside Ø Connection Tube	h ₁ ≈	h ₂
1000	10000	2500	102 4.02	90 3.54	20 .79	10.5 .41	G 1/4 G 1/4	8 .31	145 5.71	80 3.15
2000	20000	3600	112 4.41	100 3.94	20 .79	10.5 .41	G 3/8 G 3/8	10 .39	170 6.69	90 3.54

Size	h ₃	l ₁ ≈	l ₂ ≈	l ₃ ≈	m ₁	m ₂	m ₃	m ₄	r ≈	s
1000	25 .98	410 16.14	90 3.54	155 6.10	65 2.56	12.5 .49	65 2.56	48 1.89	140 5.51	13 .51
2000	35 1.38	487 19.17	113 4.45	176 6.93	70 2.76	15 .59	70 2.76	56 2.20	172 6.77	13 .51





- 2 Type**
- APV3** U-bar version with two flanged washers
 - CPV3** U-bar version with two flanged washers and GN 708.1 Type A spindle
 - EPV3** Solid bar version with clasp

- 3 Coding**
- M** Magnetic piston from size 200

Specification

- Base
Case-hardened steel C10, zinc plated, blue passivated finish
- Bearing pins hardened
- Bearing rivets case-hardened
- Air cylinder bearing pins case-hardened
- Double-action air cylinder, maximum pressure 6 bar
- All moving parts lubricated with special grease
- Neoprene spindle assembly (Type CPV3)
 - Threaded stud
Steel, zinc plated, blue passivated finish
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type APV3) → page 122
- GN 809 Clamp Mounts for Toggle Clamps (for Type EPV3) → page 123
- GN 896.2 Proximity Switches → page 112

Information

The clamping principle of GN 862 pneumatic 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.

Horizontal acting toggle clamps in the U-bar version with two flanged washers (Type AP3) can accommodate an application specific clamping screw. A spindle assembly with neoprene rubber tip is also included for Type CP3.

Type EP3 version can either be utilized by welding the clasp which can then accommodate an application specific hold-down fastener component, or by utilizing the bar in conjunction with the GN 809 Clamp Mounts to hold the work piece in place.

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

see also...

- *General information for toggle clamps* → page 12

How to order (without magnetic piston)	1	Size
	2	Type
GN 862-300-CPV3		

How to order (with magnetic piston)	1	Size
	2	Type
	3	Coding
GN 862-200-APV3-M		

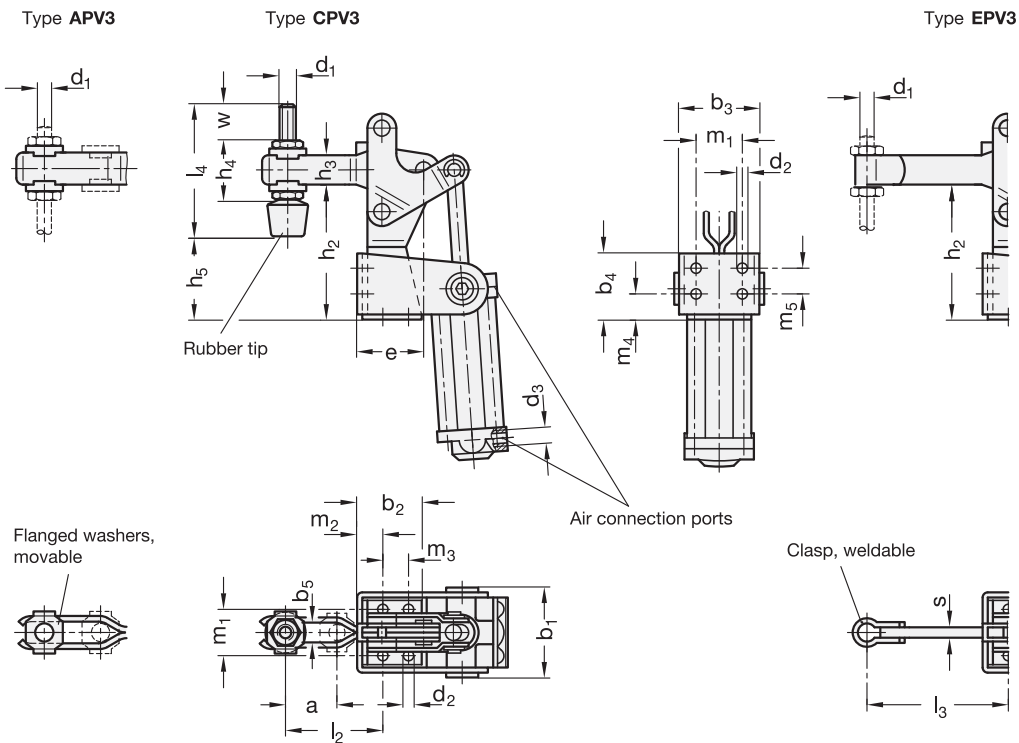
Metric table

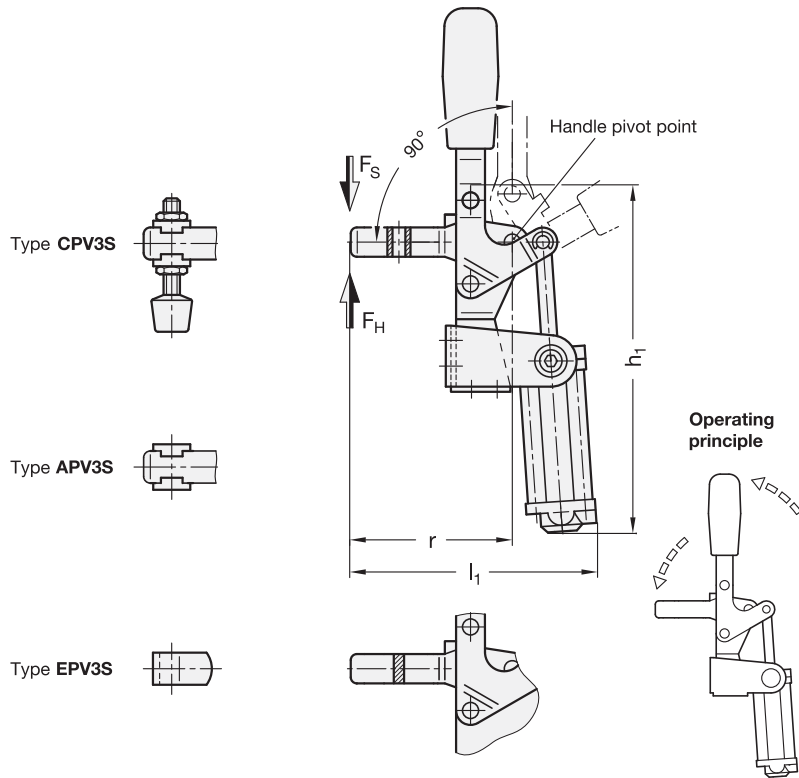
Dimensions in: millimeters - inches



Size	F _H in N Holding Capacity	F _S in N Piston Force at 4 bar ≈	a ≈	b ₁	b ₂	b ₃	b ₄	b ₅	d ₁ Thread	d ₂	d ₃ Thread	Inside Ø Connection Tube	e
200	1600	970	34 1.34	59.5 2.34	38.5 1.52	51 2.01	35 1.38	8.5 .33	M 8	6.5 .26	G 1/8	4 .16	39.5 1.56
300	2400	1050	42 1.65	68.5 2.70	53 2.09	60.5 2.38	50 1.97	10.3 .41	M 10	8.5 .33	G 1/4	6 .24	50.5 1.99

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 Adj. Range
200	210 8.27	78 3.07	17 .67	29 1.14	54 2.13	150 5.91	59 2.32	80 3.15	68 2.68	26 1.02	14.5 .57	16 .63	11 .43	16 .63	98 3.86	6 .24	21 .83
300	258 10.16	108 4.25	20 .79	35 1.38	79.5 3.13	187 7.36	74 2.91	104 4.09	77 3.03	30 1.18	16.5 .65	28 1.10	12 .47	30 1.18	122 4.80	8 .31	21 .83





- 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

Specification

- Base
Case-hardened steel C10, zinc plated, blue passivated finish
- Bearing pins hardened
- Bearing rivets case-hardened
- Air cylinder bearing pins case-hardened
- Double-action air cylinder, maximum pressure 6 bar
- All moving parts lubricated with special grease
- Neoprene spindle assembly (Type CPV3)
 - Threaded stud
Steel, zinc plated, blue passivated finish
 - Spindle tip
Black neoprene rubber (CR), 85° shore A, vulcanized
- RoHS compliant

Accessory

- Spindle assemblies → page 114 ff.
- GN 801 Clamp Mounts for Toggle Clamps (for Type APV3) → page 122
- GN 809 Clamp Mounts for Toggle Clamps (for Type EPV3) → page 123
- GN 896.2 Proximity Switches → page 112

Information

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

see also...
• General information for toggle clamps → page 12

How to order (without magnetic piston)	1	Size
	2	Type
GN 862.1 - 300 - CPV3S		
How to order (with magnetic piston)	1	Size
	2	Type
	3	Coding
GN 862.1 - 200 - APV3S-M		

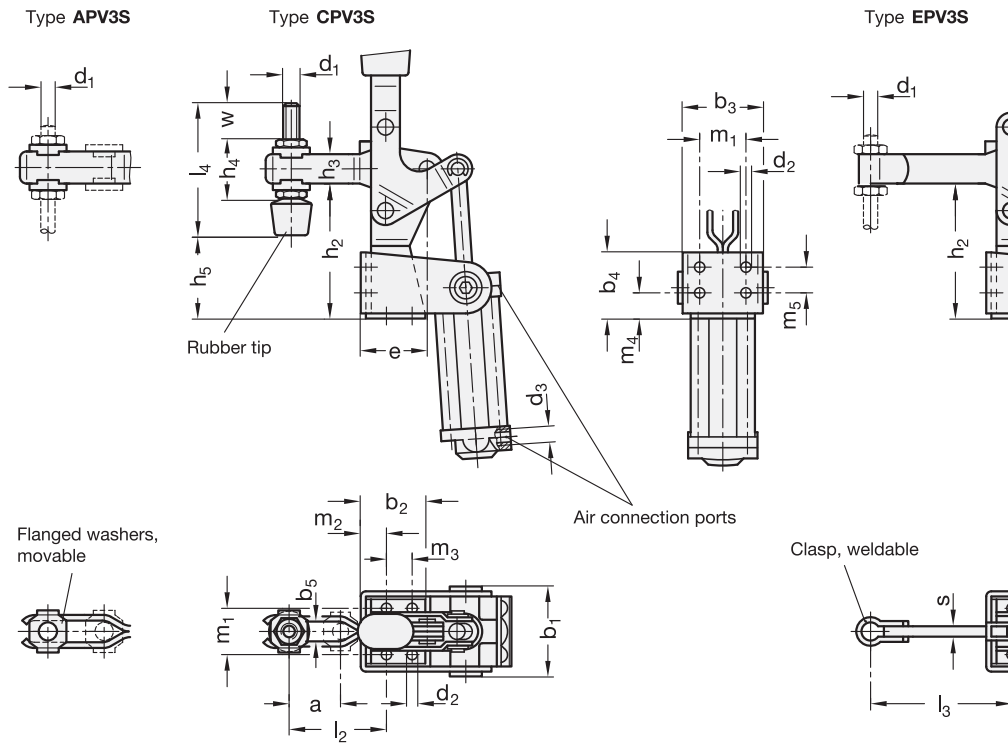
Metric table

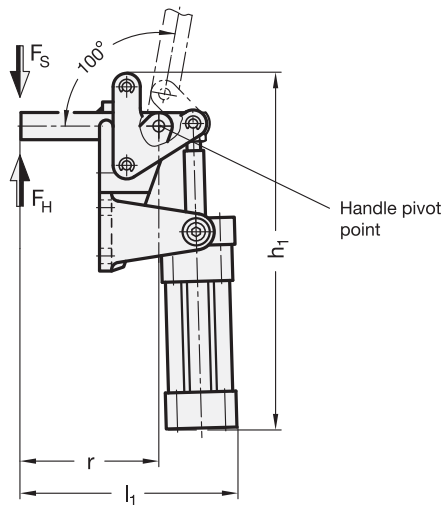
Dimensions in: millimeters - inches



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 Thread	d ₂	d ₃ Thread	Inside Ø Connection Tube.	e
200	1600	970	34 1.34	59.5 2.34	38.5 1.52	51 2.01	35 1.38	8.5 .33	M 8	6.5 .26	G 1/8	4 .16	39.5 1.56
300	2400	1050	42 1.65	68.5 2.70	53 2.09	60.5 2.38	50 1.97	10.3 .41	M 10	8.5 .33	G 1/4	6 .24	50.5 1.99

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 Adj. Range
200	296 11.65	78 3.07	17 .67	29 1.14	54 2.13	150 5.91	59 2.32	80 3.15	68 2.68	26 1.02	14.5 .57	16 .63	11 .43	16 .63	98 3.86	6 .24	21 .83
300	360 14.17	108 4.25	20 .79	35 1.38	79.5 3.13	187 7.36	74 2.91	104 4.09	77 3.03	30 1.18	16.5 .65	28 1.10	12 .47	30 1.18	122 4.80	8 .31	21 .83





- 2** Type
EPV Solid clamping arm
- 3** Coding
M Magnetic piston

Specification

- Base
cast steel
black powder coat paint finish
- Other parts
Steel St 60
zinc plated, blue passivated finish
- Bearing bolts
case hardened
- Double action air cylinder
max. operating pressure 6 bar
- All mobile sections lubricated with special grease
- **RoHS compliant**

Accessory

- Proximity switches with mounting bracket
GN 896.3 → page 112

Information

GN 863 heavy duty pneumatic lock-down toggle clamps have been constructed in such a way as to make them easily 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.

These clamps have a magnetic piston. In conjunction with a GN 896.3 proximity switch, the piston position is sensed and the generated signal can be used in sequence control systems.

see also...

- *General information for toggle clamps → page 12*
- *GN 896.3 Proximity switches with mounting bracket → page 112*

<p>How to order</p> <p style="text-align: center;"> 1 2 3 </p> <p>GN 863-1000-EPV-M</p>	<table border="1"> <tr> <td style="width: 20px; text-align: center;">1</td> <td>Size</td> </tr> <tr> <td style="width: 20px; text-align: center;">2</td> <td>Type</td> </tr> <tr> <td style="width: 20px; text-align: center;">3</td> <td>Magnetic piston</td> </tr> </table>	1	Size	2	Type	3	Magnetic piston
1	Size						
2	Type						
3	Magnetic piston						

Metric table

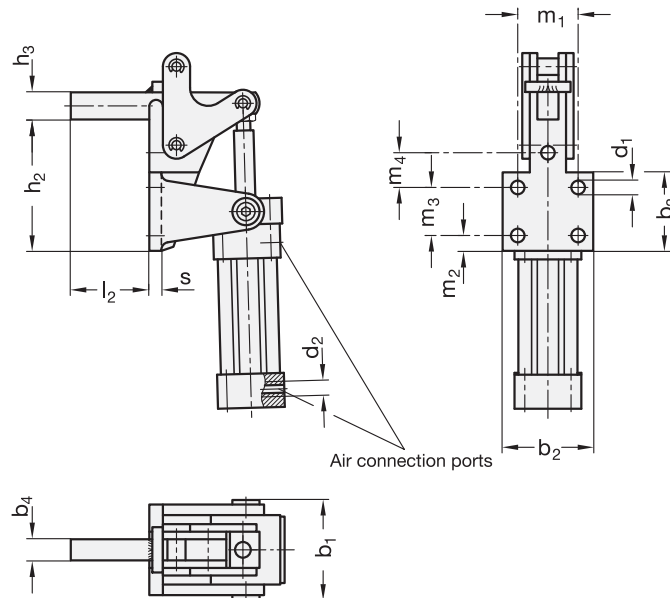
Dimensions in: millimeters - inches

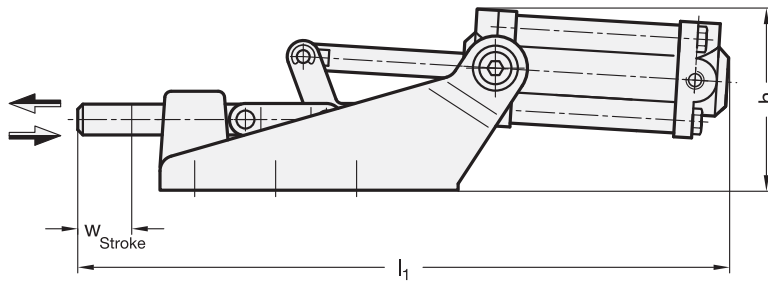


Size	F _H in N Holding Capacity	F _S in N Piston Force at 6 bar ≈ N	b ₁ ≈	b ₂	b ₃	b ₄	d ₁	d ₂ Thread	Inside Ø Connection Tube	h ₁ ≈
1000	10000	3250	102 4.02	90 3.54	80 3.15	20 .79	10.5 .41	G 1/4	8 .31	355 13.98
2000	20000	5600	112 4.41	100 3.94	90 3.54	20 .79	12.5 .49	G 3/8	10 .39	425 16.73



Size	Size	h ₂	h ₃	l ₁ ≈	l ₂ ≈	m ₁	m ₂	m ₃	m ₄	r	s
1000	1000 39.37	132.5 5.22	25 .98	217.5 8.56	80 3.15	50 1.97	12.5 .49	50 1.97	-	144 5.67	13 .51
2000	2000 78.74	161 6.34	35 1.38	246.5 9.70	100 3.94	54 2.13	12.5 .49	58 2.28	45 1.77	168.5 6.63	14 .55





- 2 Type**
SP3 Body in forged steel
- 3 Coding**
M Magnetic piston (from size 360)

Specification

- Base
Steel
- forged
- black powder coat paint finish
- Parts in sheet metal
- Case-hardened steel C10
- zinc plated, blue passivated finish
- Tapped connecting rod
Steel St 37
zinc plated, blue passivated finish
- Bearing bolts (Bearing rivets)
case hardened
- Double action air cylinder
max. pressure 6 bar
- All moving parts lubricated with special grease
- RoHS compliant

Accessory

- Proximity switch with mounting bracket
GN 896.1/ GN 896.2 → page 112
- Spindle assemblies → page 114 ff.

Information

The working principle of GN 890 pneumatic push-pull toggle clamps is identical in construction and dimensions to the GN 842 manual plunger clamp. To ensure an ex-tended 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 Pneumatic Push-Pull Toggle Clamps are also available from size 360 up as version M (with magnetic piston). In conjunction with a proximity switch (GN 896.1 / GN 896.2) the position of the piston is sensed and the generated signal can be used in sequence control systems.

Toggle clamp spindle assemblies are not included.

see also...

- General information for toggle clamps → page 12

How to order (without magnetic piston)	
1 Size	GN 890-360-SP3
2 Type	

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

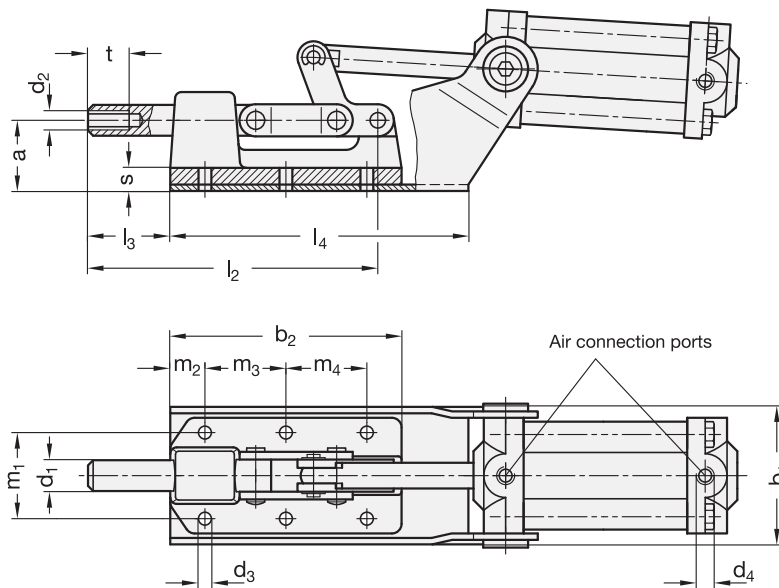
Metric table

Dimensions in: millimeters - inches

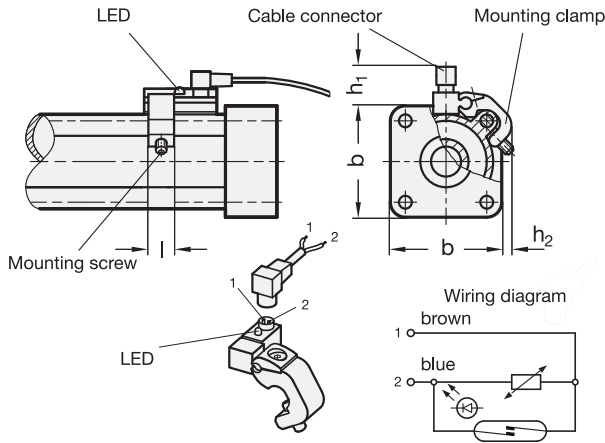


Size	F _H in N Holding Capacity	F _S in N Clamping Force at 4 bar ≈	a	b ₁	b ₂	d ₁	d ₂ Thread	d ₃	d ₄ Thread	Inside Ø Con- nection Tube	h
70	1200	550	14 .55	42 1.65	64 2.52	8.5 .33	M 6	4.3 .17	G 1/8	4 .16	52 2.05
360	5600	1000	27.5 1.08	55 2.17	90 3.54	12 .47	M 8	5.5 .22	G 1/8	4 .16	70 2.76
1100	16000	1850	28 1.10	66 2.60	133 5.24	16 .63	M 10	8.5 .33	G 1/4	6 .24	88 3.46
2100	25000	3000	38.5 1.52	80 3.15	177 6.97	20 .79	M 12	8.5 .33	G 1/4	8 .31	100 3.94

Size	l ₁	l ₂	l ₃	l ₄	m ₁	m ₂	m ₃	m ₄	s ≈	t	w Stroke
70	171 6.73	78.5 3.09	20 .79	64 2.52	26 1.02	13.5 .53	26 1.02	-	8 .31	12 .47	12 .47
360	260 10.24	113 4.45	32 1.26	116 4.57	33.5 1.32	30 1.18	36.5 1.44	-	8.5 .33	16 .63	21 .83
1100	355 13.98	171 6.73	49 1.93	167 6.57	41 1.61	15 .59	35 1.38	41 1.61	12 .47	18 .71	31 1.22
2100	461 18.15	222 8.74	61.5 2.42	231 9.09	50 1.97	35 1.38	50 1.97	50 1.97	13 .51	22 .87	45 1.77

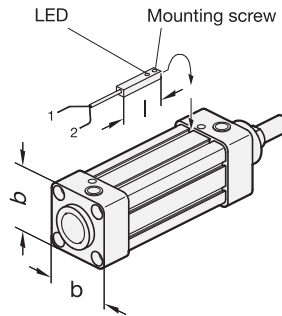


Mounting GN 896.1 / GN 896.2



Mounting GN 896.3

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



Information

Proximity switches are sensitive devices able to point out a magnetic field by means of electric pulses. In this pneumatic, magnetic series, the clamps are supplied with magnetic cylinders: these cylinders, provided with proximity switches, emit electric monitoring or control pulses when operating.

Since the switch incorporates an LED indicator, a voltage drop of 8 volts is produced. This fact should be known before using switches in series with low voltage supply. Long cable lengths introduce a capacitive affect which can damage the switch, therefore a lead as short as possible is recommended. For instance, with a wire longer than 10 meters, serial connection to a switch is advised to eliminate the capacity effects of the wire.

Avoid close proximity to external magnetic fields such as electric engines or large iron masses.

Maximum linear piston speed is 1 meter/second.

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	Electric cable PVC 2 wires, 2.5m. If used on DC brown wire to be connected to +, for the diode to work.
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	

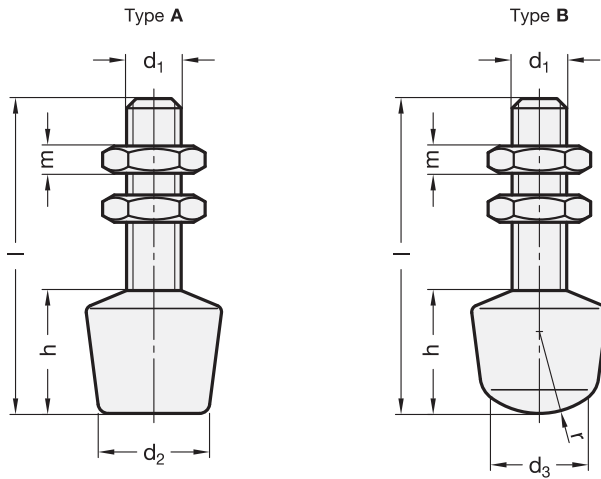
How to order

1
GN 896.1

1 Type

Metric tableDimensions in: millimeters - *inches*

Pneumatic clamp	Proximity switch Type	b	h₁ ≈	h₂ ≈	Length l
GN 860-200-AP3-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 860-200-EP3-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 860-300-AP3-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 860-300-EP3-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 860-400-AP3-M	GN 896.1	62 2.44	24 .94	10 .39	14 .55
GN 860-400-EP3-M	GN 896.1	62 2.44	24 .94	10 .39	14 .55
GN 861-1000-EP-M	GN 896.3	65 2.56	-	-	30 1.18
GN 861-2000-EP-M	GN 896.3	75 2.95	-	-	30 1.18
GN 862-200-APV3-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 862-200-EPV3-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 862-300-APV3-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 862-300-EPV3-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 862.1-200-APV3S-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 862.1-200-EPV3S-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 862.1-300-APV3S-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 862.1-300-EPV3S-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 863-1000-EPV-M	GN 896.3	65 2.56	-	-	30 1.18
GN 863-2000-EPV-M	GN 896.3	75 2.95	-	-	30 1.18
GN 890-360-SP3-M	GN 896.2	44 1.73	24 .94	10 .39	14 .55
GN 890-1100-SP3-M	GN 896.2	50 1.97	27 1.06	11 .43	14 .55
GN 890-2100-SP3-M	GN 896.1	62 2.44	26 1.02	10 .39	14 .55



SS Stainless Steel

3 Type

- A** Flat spindle tip
- B** Rounded spindle tip

Specification



- Spindle
 - Steel **ST**
 - zinc plated, blue passivated finish
 - Stainless Steel **NI**
 - AISI 304, European Standard No. 1.4301
- Hex jam nut ISO 4035
 - Steel
 - zinc plated, blue passivated finish
 - Stainless Steel AISI 304, European Standard No. 1.4301
- Spindle tip
 - Rubber, Neoprene (CR)
 - 85 shore A ≈
 - vulcanized
 - black

• RoHS compliant

Information

GN 708.1 toggle clamp spindle assemblies are primarily used with toggle clamps. They provide non-marking, yet secure clamping or holding of the work piece via the toggle clamp.

The hexagon nuts are included.

see also...

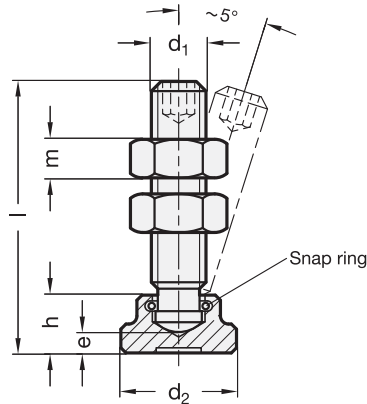
- *GN 801 Clamp Mounts* → page 122
- *GN 809 Clamp Mounts* → page 123

How to order (Steel)	1 Thread diameter d_1
1 2 3 GN 708.1 - M8 - 43 - B	2 Length l
	3 Type

How to order (Stainless Steel)	1 Thread diameter d_1
1 2 3 4 GN 708.1 - M8 - 43 - B - NI	2 Length l
	3 Type
	4 Material

Metric tableDimensions in: millimeters - *inches*

d₁ Thread	Length l			d₂	d₃	h	m	r
M 4	33 1.30	43 1.69	-	8 .31	8 .31	10 .39	2.2 .09	6 .24
M 5	45 1.77	55 2.17	-	10 .39	9 .35	11 .43	2.7 .11	8 .31
M 6	35 1.38	55 2.17	65 2.56	13 .51	12 .47	12 .47	3.2 .13	10 .39
M 8	43 1.69	68 2.68	-	16 .63	14 .55	18 .71	4 .16	12 .47
M 10	50 1.97	77 3.03	97 3.82	20 .79	18 .71	21 .83	5 .20	15 .59
M 12	100 3.94	130 5.12	-	25 .98	23 .91	24 .94	6 .24	18 .71



Metric table

Dimensions in: millimeters - inches

d ₁ Thread	Length l				d ₂	e	h	m
	1	2						
M 5*	37 1.46	-	-	-	14 .55	-	10 .39	4.7 .19
M 6	32 1.26	42 1.65	52 2.05	-	12 .47	2.2 .09	7 .28	5.2 .20
M 8	38 1.50	48 1.89	63 2.48	83 3.27	16 .63	3 .12	9 .35	6.8 .27
M 10	44 1.73	54 2.13	64 2.52	84 3.31	20 .79	3.6 .14	11 .43	8.4 .33
M 12	55 2.17	65 2.56	85 3.35	105 4.13	25 .98	4.5 .18	13 .51	10.8 .43

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

Specification

- Grub screw
DIN 6332
Steel, black oxide finish
- Thrust pad
DIN 6311
Steel, black oxide finish
- Hex jam nuts ISO 4032 / DIN 934
Steel
zinc plated, blue passivated finish
- RoHS compliant

Information

A snap ring between the screw and thrust pad provides a fast and simple connection. Thrust pad can be disassembled from screw.

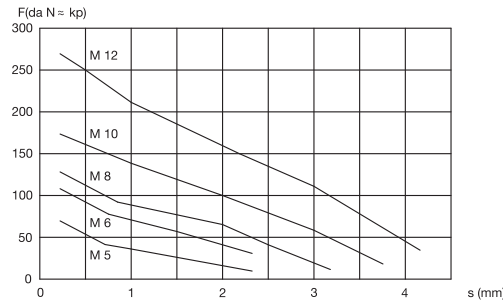
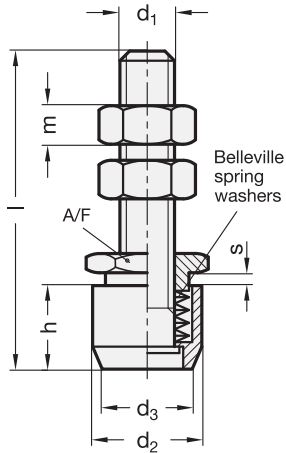
see also...

- GN 801 Clamp Mounts → page 122
- GN 809 Clamp Mounts → page 123

<p>How to order</p> <p>GN802-M8-48</p>	1	Thread diameter d ₁
	2	Length l

GN 804 Toggle Clamp Spindle Assemblies

Steel, with adjustable spring loaded thrust pad



Metric table

Dimensions in: millimeters - inches

¹ d ₁ Thread	² Length l ±1	d ₂	d ₃	h	m	A/F
M 5	45 1.77	13 .51	11 .43	13 .51	4.7 .19	14 .55
M 6	50 1.97	16 .63	13 .51	15 .59	5.2 .20	16 .63
M 8	70 2.76	18 .71	15 .59	17 .67	6.8 .27	19 .75
M 10	85 3.35	24 .94	18 .71	20 .79	8.4 .33	24 .94
M 12	106 4.17	28 1.10	21 .83	24 .94	10.8 .43	27 1.06

Specification

- Threaded spindle
Steel
- Tensile strength class 5.8 (500 N/mm²)
- zinc plated, blue passivated finish
- Hex jam nuts ISO 4032
Steel
zinc plated, blue passivated finish
- Thrust pad
Steel
nitrided, black oxide finish
- RoHS compliant

Information

In order to pass the dead center 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.

GN 804 toggle clamp spindle assemblies, which include Belleville spring washers, not only help to overcome workpiece tolerances, but also allow presetting of the required clamping force.

This adjustment can be made via the hex nut (A/F). The setting nut stroke is the distance by which the Belleville washers can be preloaded as shown on the above graph to give the required clamping force.

Hex jam nuts are included.

see also...

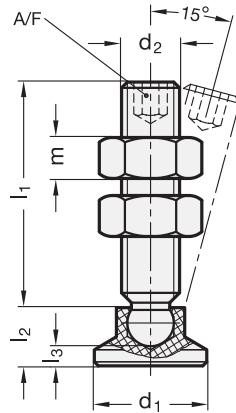
- GN 801 Clamp Mounts → page 122
- GN 809 Clamp Mounts → page 123

How to order

GN804-M10-85

¹ Thread diameter d₁

² Length l



SS Stainless Steel

Specification



- Thrust pad
Plastic (Polyacetal POM)
- temperature resistant up to 176° F (80° C)
- matte black
- Grub screw
- Steel **ST**
black oxide finish,
tensile strength 500 N/mm²
- Stainless steel **NI**
European Standard No. 1.4305, AISI 303
- Hex jam nuts ISO 4032
- Steel
zinc plated, blue passivated
- Stainless steel
European Standard No. 1.4305, AISI 303
- RoHS compliant

Information

GN 903 toggle clamp spindle assemblies are an economical choice for use with various toggle clamps that require manual clamping height adjustments on even or uneven surfaces. Toggle screw swivels up to 15° in any direction.

Thrust pad can be easily detached from and reassembled to screw.

see also...

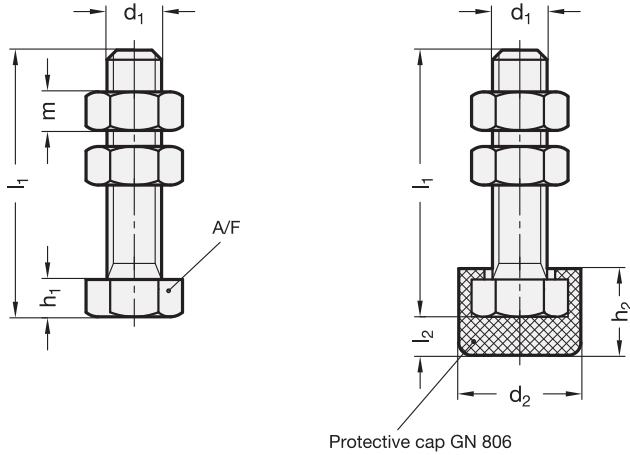
- GN 801 Clamp Mounts → page 122
- GN 809 Clamp Mounts → page 123

How to order	
1	Diameter d_1
2	Thread diameter d_2
3	Length l_1
4	Material

GN 903-21-M12-57-NI

Metric tableDimensions in: millimeters - *inches*

1 d₁	2 d₂ Thread	3 l₁ Length				l₂	l₃	m	A/F
15 .59	M 6	26 1.02	36 1.42	46 1.81	-	7.6 .30	3.6 .14	5.2 .20	3 .12
15 .59	M 8	20 .79	35 1.38	45 1.77	58 2.28	7.6 .30	2.5 .10	6.8 .27	4 .16
18 .71	M 8	20 .79	35 1.38	45 1.77	58 2.28	9.2 .36	4.2 .17	6.8 .27	4 .16
18 .71	M 10	34 1.34	44 1.73	57 2.24	74 2.91	9.2 .36	3.4 .13	8.4 .33	5 .20
21 .83	M 8	20 .79	35 1.38	45 1.77	58 2.28	10 .39	5 .20	6.8 .27	4 .16
21 .83	M 10	34 1.34	44 1.73	57 2.24	74 2.91	10 .39	4.3 .17	8.4 .33	5 .20
21 .83	M 12	34 1.34	57 2.24	74 2.91	94 3.70	10 .39	3.4 .13	10.8 .43	6 .24
25 .98	M 8	20 .79	35 1.38	45 1.77	58 2.28	10.5 .41	5.5 .22	6.8 .27	4 .16
25 .98	M 10	34 1.34	44 1.73	57 2.24	74 2.91	10.5 .41	4.6 .18	8.4 .33	5 .20
25 .98	M 12	34 1.34	57 2.24	74 2.91	94 3.70	10.5 .41	3.6 .14	10.8 .43	6 .24
32 1.26	M 8	20 .79	35 1.38	45 1.77	58 2.28	11 .43	6 .24	6.8 .27	4 .16
32 1.26	M 10	34 1.34	44 1.73	57 2.24	74 2.91	11 .43	5 .20	8.4 .33	5 .20
32 1.26	M 12	34 1.34	57 2.24	74 2.91	94 3.70	11 .43	4.2 .17	10.8 .43	6 .24
40 1.57	M 8	20 .79	35 1.38	45 1.77	58 2.28	13 .51	8 .31	6.8 .27	4 .16
40 1.57	M 10	34 1.34	44 1.73	57 2.24	74 2.91	13 .51	7 .28	8.4 .33	5 .20
40 1.57	M 12	34 1.34	57 2.24	74 2.91	94 3.70	13 .51	6.2 .24	10.8 .43	6 .24



3 Type
A without protective cap
B with protective cap

Metric table

Dimensions in: millimeters - inches

1 d ₁ Thread	2 l ₁ Length			d ₂	h ₁	h ₂	l ₂	m	A/F
M 4	23 .91	-	-	11 .43	3 .12	6.5 .26	2.5 .10	3.2 .13	7 .28
M 5	38 1.50	-	-	12.5 .49	3.5 .14	8 .31	2.5 .10	4.7 .19	8 .31
M 6	29 1.14	49 1.93	-	15 .59	4 .16	10 .39	4 .16	5.2 .20	10 .39
M 8	36 1.42	56 2.20	96 3.78	19 .75	5.5 .22	13 .51	5.5 .22	6.8 .27	13 .51
M 10	43 1.69	77 3.03	127 5.00	24 .94	6.5 .26	16 .63	7 .28	8.4 .33	16 .63
M 12	53 2.09	88 3.46	128 5.04	26 1.02	7.5 .30	19 .75	8.5 .33	10.8 .43	18 .71
M 14*	54 2.13	-	-	-	9 .35	-	-	12.8 .50	21 .83

* Spindle Assembly M 14 is not available as type B (with protective cap)

Specification

- Hex head screw ISO 4017 / DIN 933
Steel
Tensile strength class 8.8 (800 N/mm²)
zinc plated, blue passivated finish
- Hex jam nuts ISO 4032
Steel, zinc plated, blue passivated finish
- Protective Cap
Neoprene, 85 shore A hardness, black
- RoHS compliant

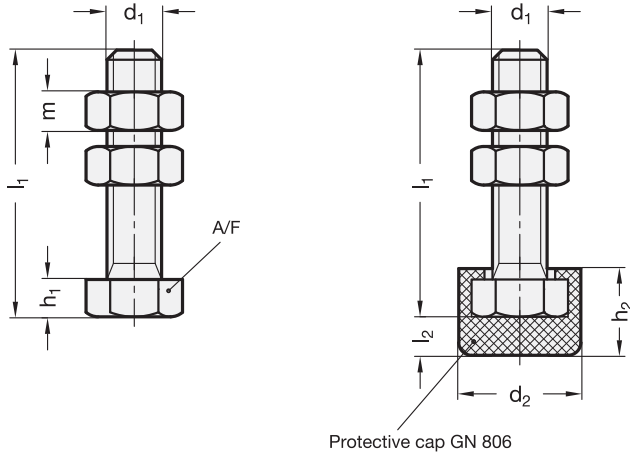
Information

GN 807 steel toggle clamp spindle assemblies are primarily used with toggle clamps. The flexible protective cap can be inserted easily over the hex screw head.

see also...

- GN 801 Clamp Mounts → page 122
- GN 809 Clamp Mounts → page 123

<p>How to order</p> <p>GN807-M6-29-A</p>	1	Thread diameter d ₁
	2	Length l ₁
	3	Type



SS Stainless Steel

3 Type

- A** without protective cap
- B** with protective cap

Metric table

Dimensions in: millimeters - inches

1 d_1	2 l_1			d_2	h_1	h_2	l_2	m	A/F
M 4	23 .91	-	-	11 .43	3 .12	6.5 .26	2.5 .10	3.2 .13	7 .28
M 5	38 1.50	-	-	12.5 .49	3.5 .14	8 .31	2.5 .10	4.7 .19	8 .31
M 6	29 1.14	49 1.93	-	15 .59	4 .16	10 .39	4 .16	5.2 .20	10 .39
M 8	36 1.42	56 2.20	96 3.78	19 .75	5.5 .22	13 .51	5.5 .22	6.8 .27	13 .51

Specification

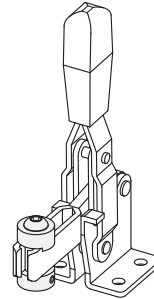
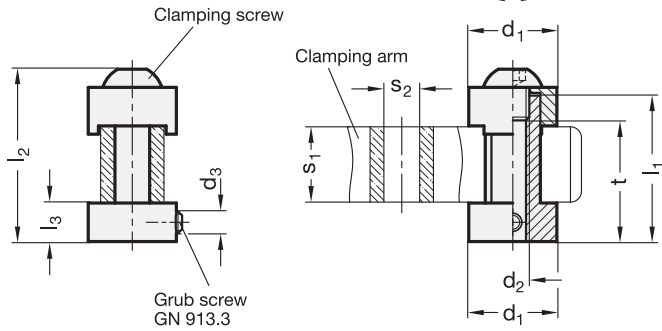
- Hex head screw ISO 4017 / DIN 933
Stainless Steel **NI**
AISI 304, European Standard No. 1.4301
- Hex jam nuts ISO 4032
Stainless Steel
AISI 304, European Standard No. 1.4301
- Protective Cap
Neoprene, 85 shore A hardness, black
- RoHS compliant

Information

GN 807 stainless steel toggle clamp spindle assemblies are primarily used with toggle clamps. The flexible protective cap can be inserted easily over the hex screw head.

How to order	1 d_1
	2 l_1
	3 Type
	4 Material

GN807-M6-29-A-NI



Metric table

Dimensions in: millimeters - inches

d ₁	d ₂ Thread	l ₁	l ₂	l ₃	d ₃ Thread	s ₁ Height Clamping arm	s ₂	t useable thread depth of the clamping arm	for toggle clamps			
									GN 810 GN 860 GN 862 GN 862.1	GN 820 GN 820.1	GN 910 GN 910.1	GN 812 GN 812.1
16 .63	M 6	26.5 1.04	33 (31)* 1.30	7 .28	M 4	16 (14)* .63	6.5 .26	24 (22)* .94	125 4.92	130 5.12	220 8.66	-
18 .71	M 8	31 1.22	38 (37)** 1.50	8 .31	M 5	18 (17)** .71	8.5 .33	26 (25)** 1.02	200 7.87	230 9.06	-	200 7.87
22 .87	M 10	37 1.46	47 (45)*** 1.85	8 .31	M 5	22 (20)*** .87	10.5 .41	30 (28)*** 1.18	300 11.81	355 13.98	-	300 11.81
24 .94	M 10	41 1.61	49 1.93	8 .31	M 5	24 .94	10 .39	32 1.26	-	-	440 17.32	-
26 1.02	M 10	39 1.54	48 1.89	8 .31	M 5	22 .87	12.5 .49	30 1.18	400 15.75	-	-	-

* 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 finish
- RoHS compliant

Information

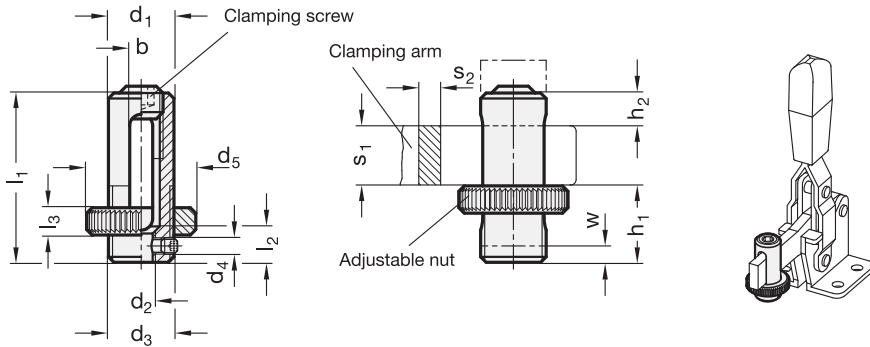
GN 801 clamp mounts have been developed for use with toggle clamps that are designed with a forked clamping arm.

The clamp mount 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 d₂ thread functions to hold pressure screws, pressure dies and similar devices.

The ideal clamping height can be adjusted without loosening the clamp mount on the forked clamping arm.

How to order GN 801 - 16 - M6	1	Diameter d ₁
	2	Thread diameter d ₂



Metric table

Dimensions in: millimeters - inches

d ₁	d ₂ Thread	b	d ₃ Thread	d ₄ ≈ Thread	d ₅	h ₁ max.	min.	h ₂ max.	min.
12 .47	M 5	4.2 .17	M 12 x 1,5	M 3	20 .79	14 .55	8 .31	12 .47	6 .24
16 .63	M 6	5.3 .21	M 16 x 1,5	M 4	22 .87	16 (18)* .63	10 .39	16 .63	8 .31
18 .71	M 8	6.3 .25	M 18 x 1,5	M 4	24 .94	23 (24)** .91	13 .51	20 .79	10 .39
20 .79	M 8	7.3 .29	M 20 x 1,5	M 5	27 1.06	25 .98	15 .59	20 .79	10 .39
22 .87	M 10	8.3 .33	M 22 x 1,5	M 5	30 1.18	28 1.10	16 .63	24 .94	12 .47

d ₁	l ₁	l ₂ max. thread depth	l ₃	s ₁	s ₂	w Adjustable range axial	for toggle clamps GN 810 GN 810.1	GN 812 GN 812.1	GN 820 GN 820.1	GN 860 GN 862 GN 862.1
12 .47	31 1.22	6 .24	5 .20	11 .43	4 .16	3 .12	75 2.95	-	75 2.95	70 2.76
16 .63	40 1.57	10 .39	5.5 .22	16 (14)* .63	5 .20	4 .16	130 5.12	-	130 5.12	125 4.92
18 .71	51 2.01	13 .51	6 .24	18 (17)** .71	6 .24	5 .20	230 9.06	200 7.87	230 9.06	200 7.87
20 .79	57 2.24	15 .59	7 .28	22 .87	7 .28	5 .20	330 12.99	-	355 13.98	-
22 .87	60 2.36	16 .63	8 .31	20 .79	8 .31	5 .20	-	300 11.81	-	300 11.81

* 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 finish
- RoHS compliant

Information

GN 809 clamp mounts have been developed for use with toggle clamps that are designed with a solid clamping arm.

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

The d₂ thread functions to hold pressure screws, pressure dies, and similar devices.

<p>How to order</p> <p>GN 809-12-M5</p>	1 Size
	2 Thread diameter d ₂



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Minimum purchase: No minimum purchase for U.S., U.S. territories, and Canada. A \$9 processing fee will be added to orders below \$50.

Payment terms: Visa, MasterCard and American Express accepted. For businesses with approved credit ratings -1%/10 net 30 days. All other U.S. businesses - C.O.D. until proper credit has been established. A \$35 fee will be charged for checks returned unpaid for insufficient or uncollected funds. Individuals are welcome to order from J.W. Winco; however, payment must be made by Visa, MasterCard, American Express or C.O.D. All past due accounts will be subject to a 1.5% per month service charge or 18% per annum. Foreign Buyers may pay with Visa, MasterCard, American Express, wire transfer of funds, U.S. Cashier's Check or Letter of Credit. Any bank fees under a wire transfer are the sole responsibility of the Buyer.

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Special order items: Special order items of non-stock or modified parts are subject to a +/- 10% quantity shipping variance unless quoted otherwise. All special order items of non-stock or modified parts cannot be cancelled or returned.

Specifications: All specifications are subject to change without notice.

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