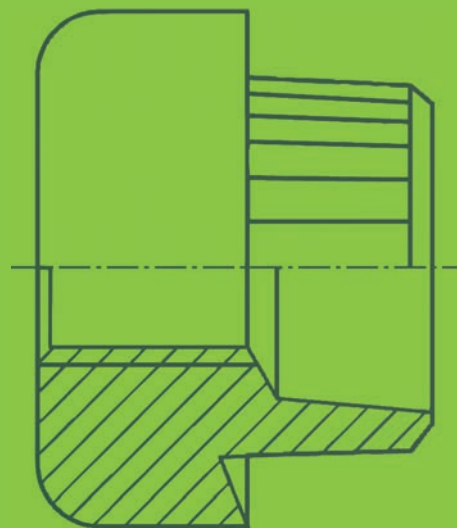


Fasteners for thin sheet metal

Anchor[®]
Clifa[®]



Technical publication

No.40



Fastening technology from KerbKonus are in successful applications in a wide variety of different industrial sectors around the world.

State-of-the-art production facilities provide our customers with the assurance of quality and reliable delivery, and sophisticated fastening solutions for every conceivable field of application are implemented by our own Research and Development Department.

Close cooperation and exchange of experience and expertise on an international level ensure that our company stays at the cutting edge of technological development.

With independent branches and agencies operating in a number of countries around the world we are a truly reliable partner when it comes to secure fastening technology.

... our products and services

Depending on the required anchoring method in the material, KerbKonus offers a variety of threaded insert options:

- self-tapping threaded inserts for metal, wood and plastics,
- Threaded inserts for cold embedding
- Threaded inserts for hot or sound embedding
- Threaded inserts for screwing into an internal thread
- Threaded inserts for riveting

Alongside its long-standing, proven spectrum of threaded for a wide variety of applications, KerbKonus also offers fastening technology-related products and services:

- Punched rivet system for thin mouldings
- Screw locking
- Thread sealing systems
- Insulating plastic coating

If you have a specific problem related to the field of fastening technology – with its rich fund of expertise and comprehensive product range, KerbKonus has the solution for you.

Technical details on KerbKonus products are also provided on our homepage: **www.kerbkonus.de**

To access design data, go to the download portal of our website. Here, you will be able to download product data in any required formats or as CAD files.

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Internet www.kerbkonus.de

Threaded inserts for thin sheet metal parts ...

Dimensions Product features Receiving hole Specifications Other details

Threaded inserts from KerbKonus ...

Tested quality; Test methods
Anchor® – Fields of application and product features

Page 2 and 3
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Anchor®-rivet bushing

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Clifa®-press-in nut and stud

Fields of application, product features and installation instructions

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Clifa®-AM

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M2 to M5	Standoff bushing for plastics	pre-punched drilled	503 6 to 525 6	Page 19
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Clifa®-AL belted

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Clifa®-SPS

Ø 5 mm	for pressing-in flush to the surface. quick-fastening thread	pre-punched drilled	510 3 to 534 3	Page 23
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M2,5 to M8 M2,5 to M6	for pressing-in flush to the surface. SP coarse toothing SPD thin metal	pre-punched drilled	506 0 to 534 0	Page 24 Page 25
			506 2 to 534 2	

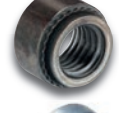
Clifa®-SA/-SAD

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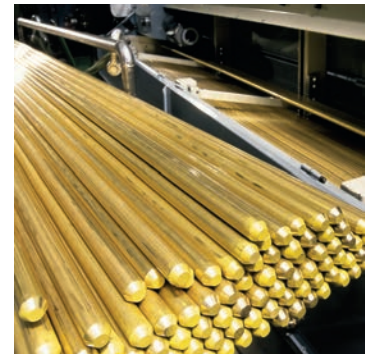
Clifa® press-in forces / threaded ends

Press-in forces for Clifa® press-in grub screws
Threaded ends for Clifa® press-in grub screws
Custom-made products for various fasteners

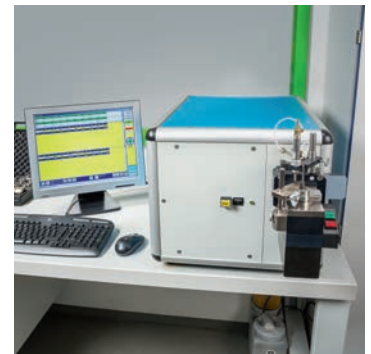
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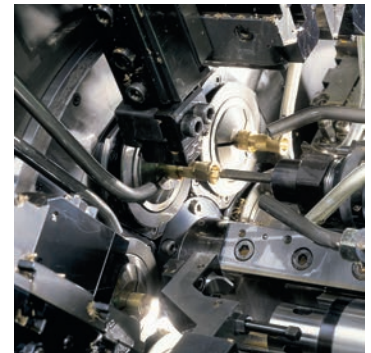
What really counts: tested quality.



At our parent plant in Amberg, we produce threaded inserts using efficient production methods. A team of qualified and highly motivated staff guarantees a consistent, high standard of production.

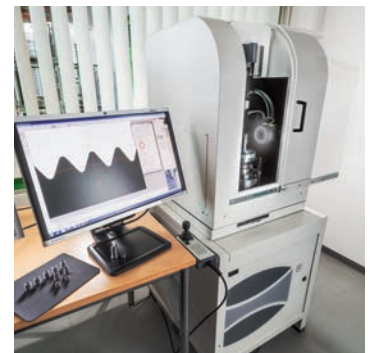


The number of products manufactured over the company's history reaches into the billions. State-of-the-art automation lines manufacture around the clock in a precise and high standard of quality. The efficient and low-cost production of large-scale product series is one of the strengths on which we have based our success.



But our high-volume production output in no way compromises flexibility. We are able to quickly and efficiently produce even small batches of nonstandard items.

Our state-of-the-art stock control system permits the reliable, prompt delivery of standard products, keeping your production running to schedule at all times and helping to minimize your warehousing costs.



We are particularly proud of a cost-to-performance ratio which ensures satisfied customers the world over. This has made KerbKonus a reputable and respected partner to industry in the global marketplace.

Quality and environment are top priority issues at KerbKonus. Quality consciousness is a continuous thread running through every aspect of the company's work and all its products and services. Quality is lived and breathed at KerbKonus.



As manufacturer in the metal processing industry we are aware of our responsibility for an environmentally compatible production. With this in mind we follow up a policy of sensible resource spending and environmental friendly production both in our process engineering and our product range.



Quality System
DEKRA Certificat in accordance with
ISO 9001:2015 Reg.No. 30507428
ISO 14001:2015 Reg.No. 170507049
ISO 50001:2011 Reg.No. 181115119

Applications on the test stand ...



Threaded inserts from KerbKonus are manufactured in large piece numbers. Human lives and safety can often depend upon these tiny components, for instance in the case of airbag receiving fasteners.

Because we bear this heavy responsibility, our products are tested and monitored in line with the most stringent directives. In the case of particularly critical applications, each and every part is exhaustively tested on state-of-the-art test equipment before it is delivered to you e.g. dimensional check, foreign particles. For Example:

- dimensional check
- foreign particles

Test methods

The loading capacity of a thread depends primarily on the surface shell of the component which is exposed to shearing stress.

By selecting just the right threaded insert for each application, maximum reliability can be achieved. Using tried and tested, practically oriented test methods (see the table below) set of reliable specifications to ensure safe, reliable compliance with any application requirement, however unusual. In most cases, this can even be achieved using standard threaded inserts.

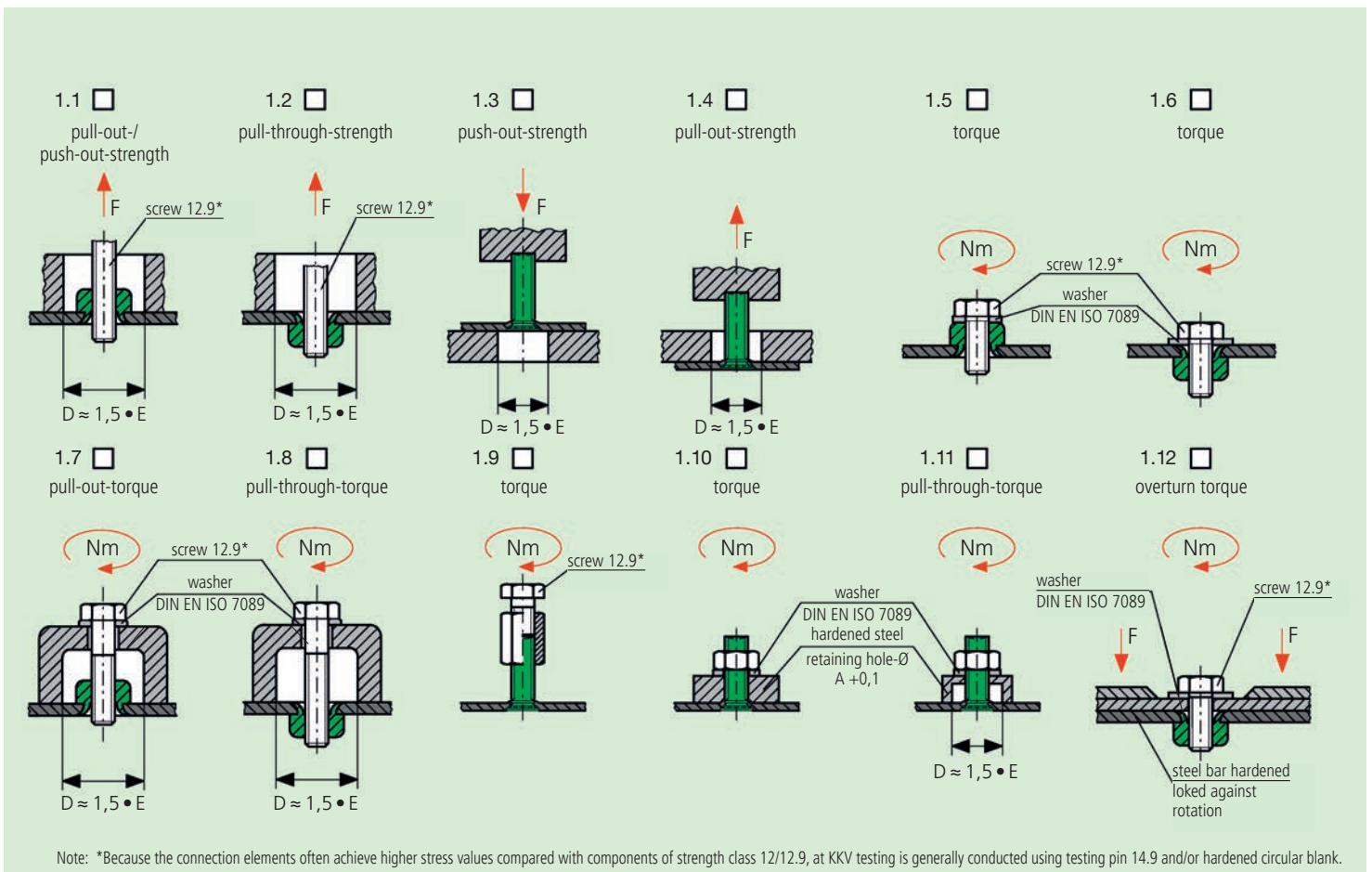
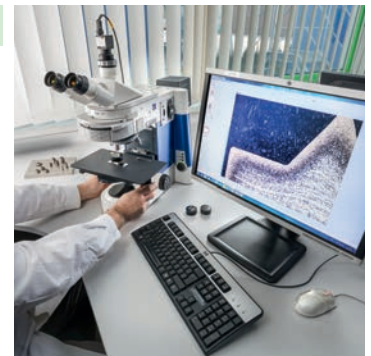
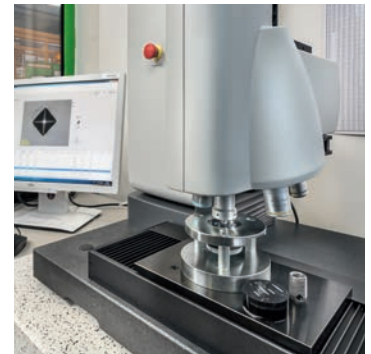


Fig. 1
40.1220

Anchor® – serrated rivet bushing ...

The Anchor® rivet bushing is a threaded insert made of steel or rustproof material, brass or light alloy with a counter-bored and serrated shank.

Anchor® is riveted into thin-walled moulded parts with pre-punched receiving holes. During this process, the riveted serrations of the shank cut into the side wall, creating an absolutely secure fastening.

The special shape of the shank and the countersinking at the bottom protect the thread from damage during installation. In almost all application cases, overload testing indicated that Anchor® remains firmly seated even if the thread is completely overtightened.



Fields of application

Anchor® rivet nuts can be applied universally. They provide a multitude of constructive solutions for robust screw fittings. Anchor® is used in almost all fields of the metal processing industry, for example in the automotive, railway and electrical fields.

Product features

- Anchor® is torque-resistant and capable of loads applied from both sides.
- Anchor® can be used in surface-treated, ready-plated parts, so eliminating the need for time-consuming cleaning of internal threads and reworking damage at the surface.
- When turning in the screw, it is impossible for the Anchor® to be forced out of the hole. This saves incalculable time losses.
- Anchor® sits with a precise centric fit without the use of templates or other positioning devices.
- Anchor® is also suitable for application in high-quality materials.

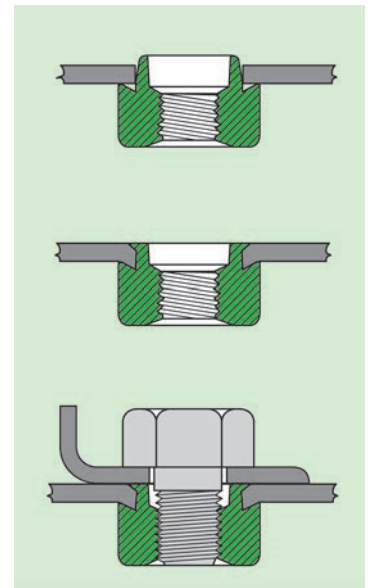


Fig. 2

Specifications

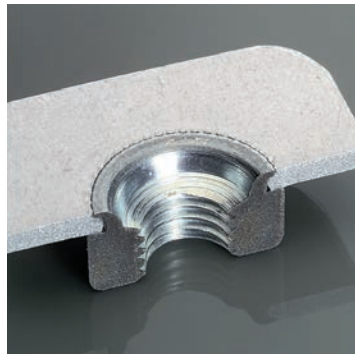
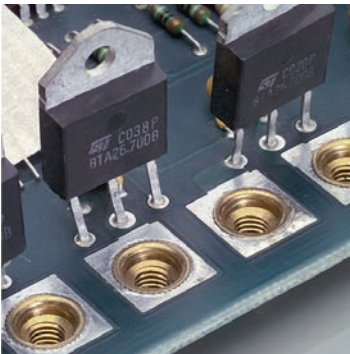
Works Standard sheets 701 to 758, page 9 to 11.

On request:

Anchor® with TufLok® screw lock in the female thread. The captive plastic coating serves as a security against the screw working loose.

Anchor® with sealing agent precote 5 on the support surface.





Special request

- Space and weight-saving design

- Thread closed on one side

- Distanced fixture

- Support or bearing function

- Flush finish to the surface of the metal

- Loading on both sides

- Can also be processed in FRP

We recommend

- Anchor®-Mini with small outer dimensions (Works Standard 721 to 738)

- Anchor®-Blind with blind thread (Works Standard 741 to 758)

- Anchor® in special lengths

- Anchor® without internal thread (special version)

- No bead required in the component material.

- Anchor® can be loaded from both sides, it is practically impossible for Anchor® to be levered out. Lower load values are achieved with screwing at the head side.

- Delamination is largely avoided in fibre-reinforced plastic (FRP).



Anchor[®] – installation ...

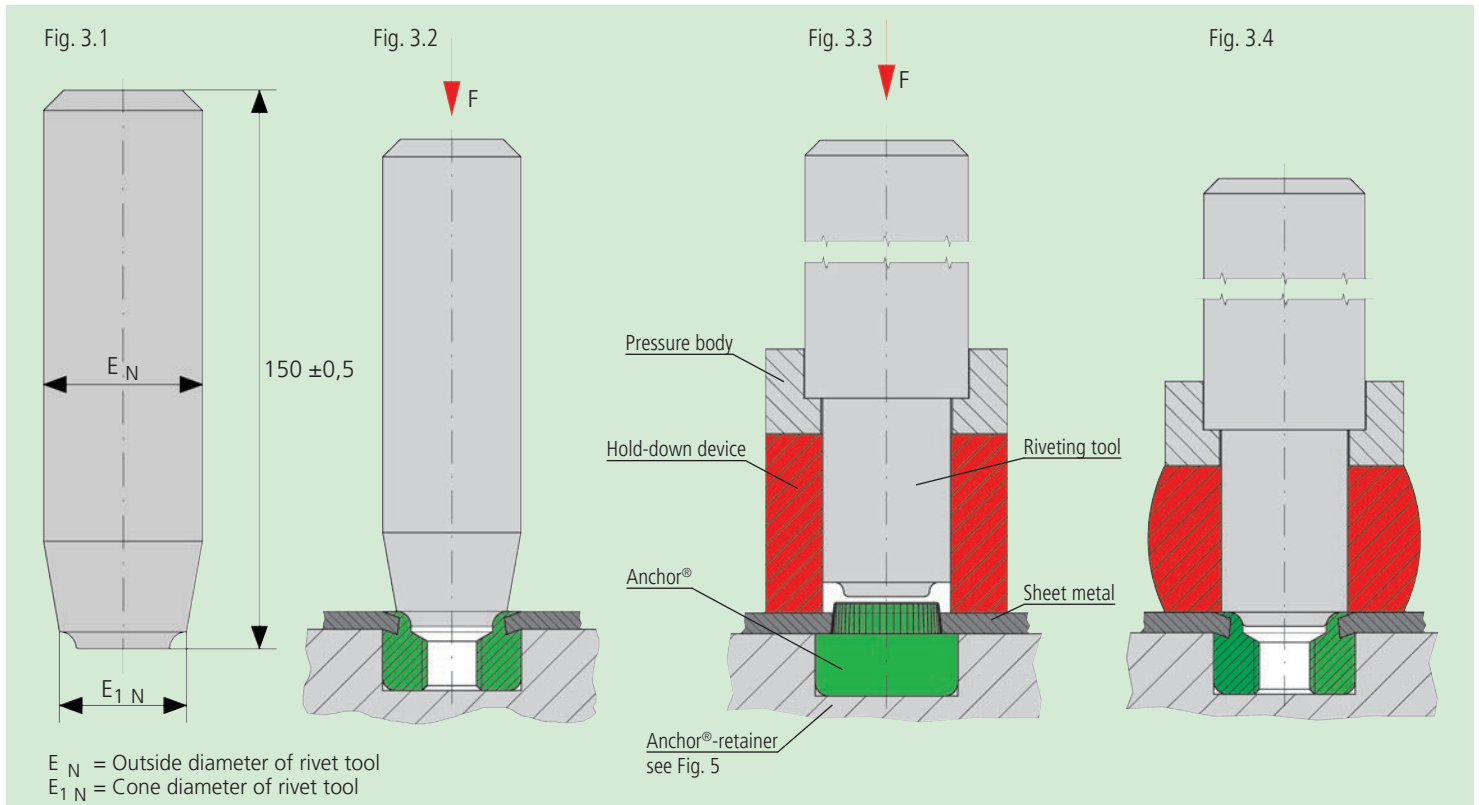


Fig. 3

Installation

Punch, lasing or drill hole, insert anchor and rivet the shank with a simple riveting tool (Fig. 3.2).

- using a simple press
- by inserting Anchor[®] and riveting using a tumble or radial riveting process
- automatic feed in follow-on tools
- to prevent deformation of thin mouldings, use a tool with holding-down device (Fig. 3.3 and 3.4).

Riveting force for application in sheet steel

M 2 to M 3	appr. 15 to 27 kN
M 3,5 to M 4	20 to 30 kN
M 5	22 to 42 kN
M 6	30 to 54 kN
M 8	45 to 81 kN
M 10	65 to 97 kN
M 12 to M 16	80 to 160 kN

Riveting force for application in stainless steel sheet

M 2 to M 3	appr. 15 to 33 kN
M 3,5 to M 4	20 to 40 kN
M 5	25 to 50 kN
M 6	40 to 75 kN
M 8	80 to 120 kN
M 10	120 to 150 kN
M 12 to M 16	140 to 230 kN

The required riveting force must be determined by trial and error. For different material qualities and surfaces, higher press-in force may be required. The firmest fit is achieved if the recommended hole diameters and tolerances are precisely adhered to.

Fig. 4

Dimensions of the Anchor[®] mounting

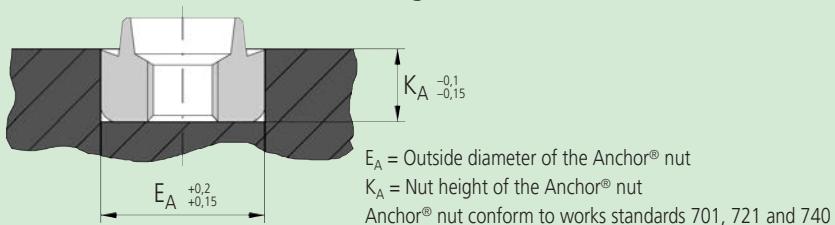


Fig. 5

Animation





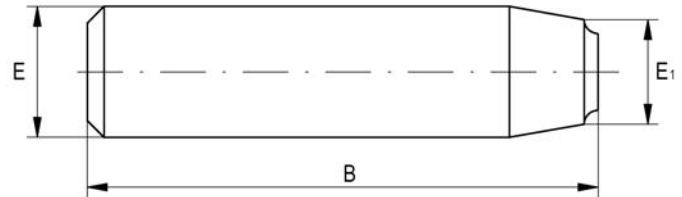
Riveting tool
Standard model

Anchor®
Anchor®-Tanktyp

Anchor® riveting tool

Riveting tool for processing of Anchor®.

The neck of the Anchor® is riveted with the help of the riveting tool such that optimal firm seating is achieved in a thin moulded part.



Dimensions in mm

Article number	Thread measurement A	External diameter E	Cone diameter E ₁	Length B ±0,5
401 000 020. 000	M 2 / M 2,5 / M 3	12	7,1	150
401 000 035. 000	M 3,5 / M 4	12	8,7	150
401 000 050. 000	M 5	16	10,3	150
401 000 060. 000	M 6	16	11,9	150
401 000 080. 000	M 8	20	15,5	150
401 000 100. 000	M 10	20	18,3	150
401 000 120. 000	M 12 / M 14 / M 16	25	22,2	150



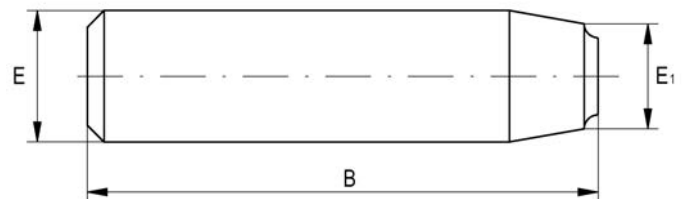
Riveting tool
Standard model

Anchor®-Mini

Anchor® riveting tool for Anchor®-Mini

Riveting tool for processing of Anchor®-Mini.

The neck of the Anchor®-Mini is riveted with the help of the riveting tool such that optimal firm seating is achieved in a thin moulded part.



Dimensions in mm

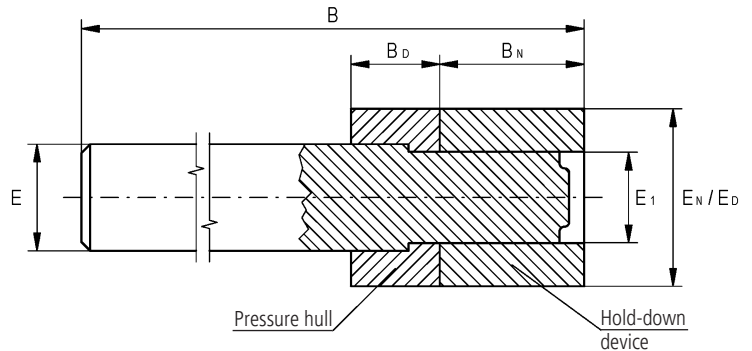
Article number	Thread measurement A	External diameter E	Cone diameter E ₁	Length B ±0,5
421 000 020. 000	M 2	12	4,8	150
421 000 025. 000	M 2,5 / M 3	12	5,5	150
421 000 035. 000	M 3,5 / M 4	12	7,1	150
421 000 050. 000	M 5	12	8,7	150
421 000 060. 000	M 6	12	10,3	150
421 000 080. 000	M 8	12	11,5	150

Anchor® Riveting tool with hold-down device

Riveting tool for processing of Anchor®.

The neck of the Anchor® is riveted with the help of the riveting tool such that optimal firm seating is achieved in a thin moulded part.

The hold-down device serves to prevent deformation of the moulded part.



Dimensions in mm

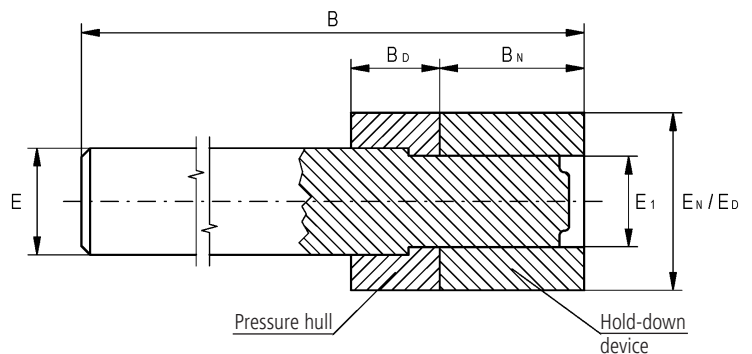
Article number	Thread measurement A	External diameter E	Shaft diameter E ₁	Hold-down device B _N	Pressure hull B _D	Hold-down device/ pressure hull E _N / E _D	Length B ±0,5
406 000 020. 000	M 2 / M 2,5 / M 3	12	7,1	16,5	10	20	150
406 000 035. 000	M 3,5 / M 4	12	8,7	16,5	10	20	150
406 000 050. 000	M 5	16	10,7	22,5	10	25	150
406 000 060. 000	M 6	16	12,5	22,5	10	25	150
406 000 080. 000	M 8	20	15,7	22,5	10	32	150
406 000 100. 000	M 10	20	18,5	25	10	32	150
406 000 120. 000	M 12 / M 14 / M 16	25	22,5	25	10	32	150

Anchor® Riveting tool with hold-down device for Anchor®-Mini

Riveting tool for processing of Anchor®-Mini.

The neck of the Anchor®-Mini is riveted with the help of the riveting tool such that optimal firm seating is achieved in a thin moulded part.

The hold-down device serves to prevent deformation of the moulded part.



Dimensions in mm

Article number	Thread measurement A	External diameter E	Shaft diameter E ₁	Hold-down device B _N	Pressure hull B _D	Hold-down device/ Pressure hull E _N / E _D	Length B ±0,5
426 000 020. 000	M 2	12	4,8	16,3	10	20	150
426 000 025. 000	M 2,5 / M 3	12	5,5	16,3	10	20	150
426 000 035. 000	M 3,5 / M 4	12	7,1	16,3	10	20	150
426 000 050. 000	M 5	12	8,7	16,3	10	20	150
426 000 060. 000	M 6	12	10,3	16,3	10	20	150
426 000 080. 000	M 8	12	11,5	22,3	10	25	150



Rivet Bushing serrated

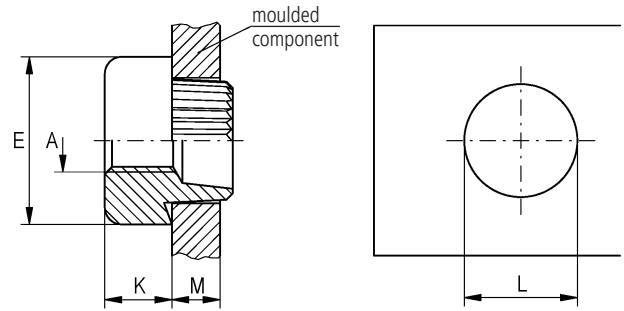
Anchor®
Works Standard
701 0 to 718 0

Application

Anchor® is a rivet bushing for captive, torque-resistant screw connections capable of withstanding loads from both sides in thin-walled workpieces (0,5 to 5 mm thickness).

The Anchor® is suitable for thin-walled moulded components made of

- steel,
- alloy,
- NF metals and
- plastic.



Dimensions in mm

Article no. of the first group of digits	for sheet metal thickness M	Article no. of the second and third group of digits	Internal thread A	External diameter E	Nut height K	Recommended hole diameter L +0,1
701	0,5 to 0,6 1)	... 000 020 ...	M 2	8,0	3,2	6,0
702	0,7 1)	... 000 025 ...	M 2,5	8,0	3,2	6,0
703	0,8 1)	... 000 030 ...	M 3	8,0	3,2	6,0
704	0,9 to 1,0 1)	... 000 035 ...	M 3,5	9,5	3,8	7,0
705	1,1 to 1,3 1)	... 000 040 ...	M 4	9,5	3,8	7,0
706	1,4 to 1,6 1)	... 000 050 ...	M 5	11,0	4,4	8,4
707	1,7 to 1,9 2)	... 000 060 ...	M 6	12,5	5,7	9,7
708	2,0 to 2,2 2)	... 000 080 ...	M 8	16,0	6,4	13,2
709	2,3 to 2,5 2)	... 000 100 ...	M 10	19,0	7,6	15,5
710	2,6 to 2,8 2)	... 000 120 ...	M 12	25,4	10,2	19,6
711	2,9 to 3,1 2)	... 000 140 ...	M 14	25,4	10,2	19,6
712	3,2 to 3,4 2)	... 000 160 ...	M 16	25,4	10,2	19,6
713	3,5 to 3,7 2)					
714	3,8 to 4,0 2)					
715	4,1 to 4,3 2)					
716	4,4 to 4,6 2)					
717	4,7 to 4,9 2)					
718	5,0 2)					

- 1) Shoulder 20° undercut
- 2) Surfaced shoulder

Example for finding the article number

Anchor® serrated rivet bushing with female thread M5; steel, zinc plated, transparent thick film passivated for sheet thickness 2 mm (sheet steel) Anchor® 708 000 050.112 *)

Materials

- Steel, oiled, unrefined
- Steel, zinc plated, blue passivated
- Steel, zinc plated, transparent thick film passivated
- Stahl, zinc-nickel plated, transparent passivated
- Stainless steel 1.4305
- Light alloy
- Brass

- Article no. (fourth group of digits) 100
- Article no. (fourth group of digits) 110
- Article no. (fourth group of digits) 112
- Article no. (fourth group of digits) 143
- Article no. (fourth group of digits) 500
- Article no. (fourth group of digits) 700
- Article no. (fourth group of digits) 800

Other materials and designs (e.g. nut height, shank lengths of deviating sheet metal thicknesses) on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

*) Remark

For applications in high-strength steel sheet or stainless steel sheet, or when using the stainless steel rivet nut, we recommend – for flush riveting – the rivet nut of the next smallest shank length. Example: 707 000 050.112 (sheet thickness: 2 mm stainless steel sheet or high-strength steel sheet).

Animation

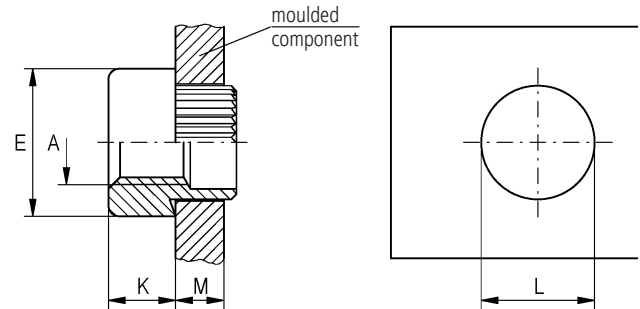


Application

Anchor®-Mini is a rivet bushing for captive, torque-resistant screw connections capable of withstanding loads from both sides in thin-walled workpieces (0,5 to 5 mm thickness) made of

- steel,
- light alloy,
- NF metals and,
- plastic.

The Anchor®-Mini is particularly weight and space-saving due to its minimal outside dimensions.



Dimensions in mm

Article no. of the first group of digits	for sheet metal thickness M	Article no. of the second and third group of digits	Internal thread A	External diameter E	Nut height K	Recommended hole diameter L +0,05
721	0,5 to 0,6 1)	... 000 020 ...	M 2	5,0	2,3	3,5
722	0,7 1)	... 000 025 ...	M 2,5	5,5	2,8	4,2
723	0,8 1)	... 000 030 ...	M 3	5,5	2,8	4,2
724	0,9 to 1,0 1)	... 000 035 ...	M 3,5	7,0	3,2	5,5
725	1,1 to 1,3 1)	... 000 040 ...	M 4	7,0	3,2	5,5
726	1,4 to 1,6 1)	... 000 050 ...	M 5	8,5	3,8	6,5
727	1,7 to 1,9 2)	... 000 060 ...	M 6	10,0	5,1	7,7
728	2,0 to 2,2 2)	... 000 080 ...	M 8	12,0	6,5	9,7
729	2,3 to 2,5 2)					
730	2,6 to 2,8 2)					
731	2,9 to 3,1 2)					
732	3,2 to 3,4 2)					
733	3,5 to 3,7 2)					
734	3,8 to 4,0 2)					
735	4,1 to 4,3 2)					
736	4,4 to 4,6 2)					
737	4,7 to 4,9 2)					
738	5,0 2)					

For optimum strength values, installation using the tumble or radial rivetting process is recommended.

- 1) Shoulder 20° undercut
- 2) Surfaced shoulder

Exemple for finding

Anchor®-Mini serrated rivet bushing with female thread M5; steel, zinc plated, transparent thick film passivated for sheet thickness 2 mm (sheet steel) Anchor®-Mini 728 000 050.112 *)

Materials

- Steel, oiled, unrefined
- Steel, zinc plated, blue passivated
- Steel, zinc plated, transparent thick film passivated
- Stahl, zinc-nickel plated, transparent passivated
- Stainless steel 1.4305
- Light alloy
- Brass

- Article no. (fourth group of digits) 100
- Article no. (fourth group of digits) 110
- Article no. (fourth group of digits) 112
- Article no. (fourth group of digits) 143
- Article no. (fourth group of digits) 500
- Article no. (fourth group of digits) 700
- Article no. (fourth group of digits) 800

Other materials and designs (e.g. nut height, shank lengths of deviating sheet metal thicknesses) on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

*) Remark

For applications in high-strength steel sheet or stainless steel sheet, or when using the stainless steel rivet nut, we recommend – for flush riveting – the rivet nut of the next smallest shank length. Example: 727 000 050.112 (sheet thickness: 2 mm stainless steel sheet or high-strength steel sheet).



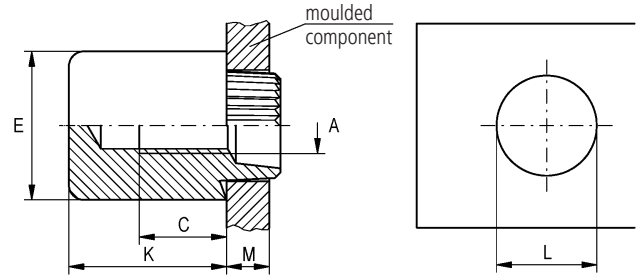
Rivet Bushing
serrated

Anchor®-Blind
Works Standard
741 0 to 758 0

Application

Anchor®-Blind is a rivet bushing with a threaded blind hole (sealed thread) for captive, torque-resistant screw connections in thin-walled workpieces. (0,5 to 5 mm thickness)

the Anchor® is suitable for thin-walled moulded parts made of
 – steel,
 – light alloy,
 – NF metal and
 – plastic.



Dimensions in mm

Article no. of the first group of digits	for sheet metal thickness M	Article no. of the second and third group of digits	Internal thread A	External diameter E	Nut height K	Recommended hole diameter L + 0,1	Thread depth min. C
741	0,5 to 0,6 1)	... 000 030 ...	M 3	8,0	8,5	6,0	3,0
742	0,7 1)	... 000 035 ...	M 3,5	9,5	9,0	7,0	4,0
743	0,8 1)	... 000 040 ...	M 4	9,5	9,0	7,0	4,0
744	0,9 to 1,0 1)	... 000 050 ...	M 5	11,0	10,0	8,4	5,0
745	1,1 to 1,3 1)	... 000 060 ...	M 6	12,5	10,5	9,7	5,5
746	1,4 to 1,6 1)	... 000 080 ...	M 8	16,0	12,0	13,2	5,5
747	1,7 to 1,9 2)	... 000 100 ...	M 10	19,0	13,5	15,5	6,0
748	2,0 to 2,2 2)	... 000 120 ...	M 12	25,4	19,0	19,6	7,0
749	2,3 to 2,5 2)						
750	2,6 to 2,8 2)						
751	2,9 to 3,1 2)						
752	3,2 to 3,4 2)						
753	3,5 to 3,7 2)						
754	3,8 to 4,0 2)						
755	4,1 to 4,3 2)						
756	4,4 to 4,6 2)						
757	4,7 to 4,9 2)						
758	5,0 2)						

- 1) Shoulder 20° undercut
- 2) Surfaced shoulder

Exemple for finding the article number

Anchor®-Blind serrated rivet bushing with female thread M5; steel, zinc plated, transparent thick film passivated for sheet thickness 2 mm (sheet steel) Anchor®-Blind 748 000 050.112 *)

Materials

- Steel, oiled, unrefined
- Steel, zinc plated, blue passivated
- Steel, zinc plated, transparent thick film passivated
- Stahl, zinc-nickel plated, transparent passivated
- Stainless steel 1.4305
- Light alloy
- Brass

- Article no. (fourth group of digits) 100
- Article no. (fourth group of digits) 110
- Article no. (fourth group of digits) 112
- Article no. (fourth group of digits) 143
- Article no. (fourth group of digits) 500
- Article no. (fourth group of digits) 700
- Article no. (fourth group of digits) 800

Other materials and designs (e.g. nut height, shank lengths of deviating sheet metal thicknesses) on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

***) Remark**

For applications in high-strength steel sheet or stainless steel sheet, or when using the stainless steel rivet nut, we recommend – for flush riveting – the rivet nut of the next smallest shank length. Example: 747 000 050.112 (sheet thickness: 2 mm stainless steel sheet or high-strength steel sheet).

Clifa® press-in nut/stud ...

Clifa®-press-in nuts and Clifa® studs are threaded inserts made of steel with a specially formed shank or head.

Clifa®-press-in nuts and Clifa® studs can also be supplied in rust-proof material, and the nuts additionally in light alloy.

Clifa®-threaded inserts are pressed into moulded components with prepunched receiving holes. During this process, the material flows out of the area of the hole wall into the gear ring / the annular grooves of the Clifa® threaded inserts. A permanent connection is formed.

Several Clifa® inserts can be installed in a single work process. The fastening screw is always screwed in from the opposite side.



Fields of application

Clifa® press-in elements serve as a screw point mainly on moulded parts of steel or light metal. They may also be used as spacers.

Product features

- Clifa® is torque-proof, capable of withstanding high loads.
- It has minimal outside dimensions for space and weight-saving
- The thread is wear-resistant, clean and true to gauge
- Mounting in drilled, punched or lasered receiving holes
- Do not countersink drill holes in the component
- Can be used in surface-treated, galvanized or unweldable materials
- Clifa® is not pressed out during the screwing process.
- The component material must be softer than the Clifa® element

Specifications

Works Standard sheets Clifa® Pages 14 to 27.

High-performance installation equipment for short cycle times in largescale production on request.

Fields of application for the Clifa® nut

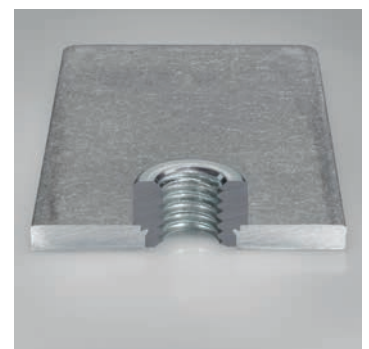
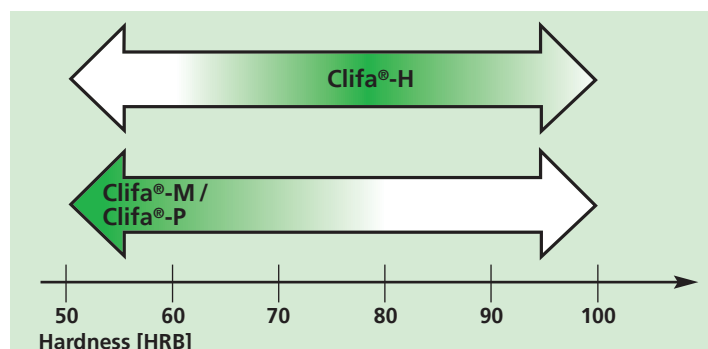


Fig. 6

Figure 6 shows in green which nut type can be used for which moulded part hardness. These are guide values which must be confirmed through practical tests.

Clifa® installation ...

Installation

The receiving hole is punched, lasered or drilled **but not deburred or countersunk**.

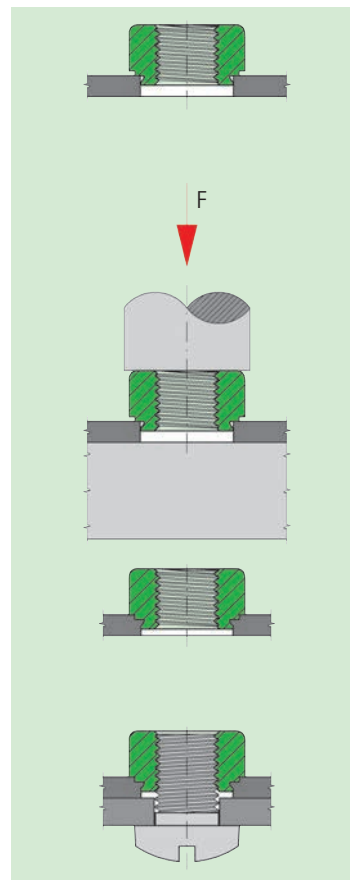
Care must be taken with punched holes, make sure that the hole diameter of the press-in side the specified one hole diameter corresponds. The press-in process takes place on a plane parallel basis using a customary press with adjustable pressure level, until the surface of the shoulder in the Clifa® pressin nut comes to rest flat against the surface of the sheet metal.

In the case of the Clifa®-SP/SPD and SPS stud, the head must be fully pressed in and come to rest flush with the surface of the sheet metal.

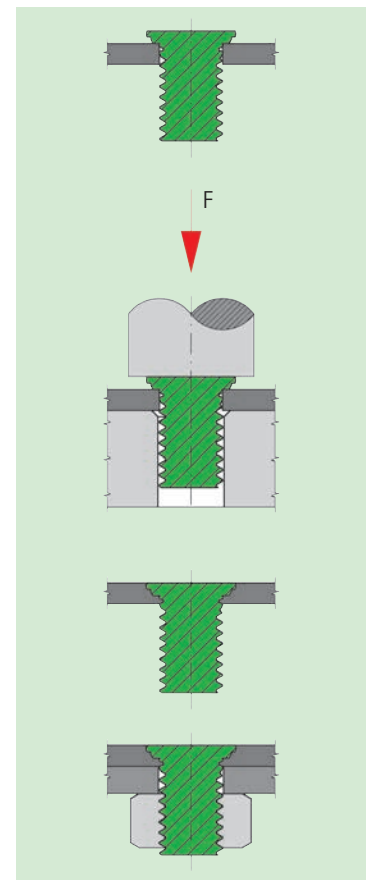
Pressure which is too high or applied only on one side as well as inclined support surfaces must be avoided wherever possible.



Examples for mounting



Press-in nut Clifa®



Press-in stud Clifa®-SP

Fig. 7

Fig. 8

Special request

Press-in nut, fastening on thin-walled moulded part

Such as Clifa-M, only for other feeding systems

Press-in nut, fastening on high-strength moulded part

Press-in nut, standoff bushings on thin-walled moulded part

Press-in nut, standoff bushings for FRP-Composites

Press-in nut, flush surface on the press-in side of the nut element

Press-in stud, flush with surface with quick-fastening thread

Press-in stud, flush with surface

Press-in stud, flush with surface for thin sheet thicknesses

Press-in stud, for high load values

Press-in stud, for high load values and thin sheet thicknesses

We recommend

Clifa®-M Page 14 and page 15

Clifa®-P Page 17

Clifa®-H Page 16

Clifa®-AM Page 18

Clifa®-AL Page 19 and page 20

Clifa®-ABO/-ABG Page 21 and page 22

Clifa®-SPS Page 23

Clifa®-SP Page 24

Clifa®-SPD Page 25

Clifa®-SA Page 26

Clifa®-SAD Page 27

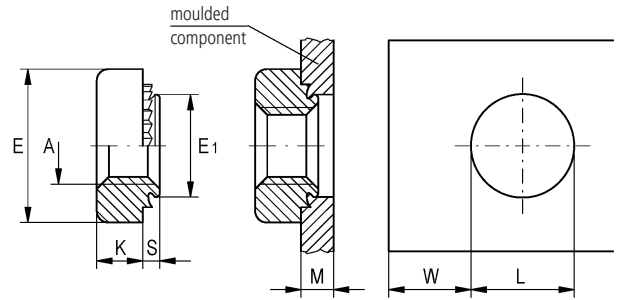
Application

Clifa®-press-in nuts are used to create wear-free screw connections capable of withstanding high loads in thin-walled moulded components from 0,8 mm in thickness made of

- steel,
- light alloy,
- NF metal.

The nut is anchored in the component as a result of the press-in process.

Fields of application, see page 12, fig. 6.



Dimensions in mm

	Article no. of the first group of digits	for sheet metal thickness		Shank height max.	Article no. of the second and third group of digits	Internal thread	External diameter	Nut height	Collar	Hole diameter	Minimum spacing
		M	S								
M3 to M5	500 0.. .. .	0,8 to 1,0	0,7	... 000 020 ...	M 2	6,0	1,6	4,15	4,2	2,9	
	501 0.. .. .	1,1 to 1,4	1,0	... 000 025 ...	M 2,5	6,0	1,6	4,15	4,2	2,9	
	502 0.. .. .	1,5 to 2,3	1,3	... 000 030 ...	M 3	7,0	1,6	4,7	4,75	3,6	
	503 0.. .. .	from 2,4	2,2	... 000 040 ...	M 4	8,0	2,4	5,35	5,4	3,8	
M6 to M8	500 0.. .. .	1,0 to 1,3	1,0	... 000 050 ...	M 5	9,0	2,4	6,3	6,35	3,8	
	501 0.. .. .	1,4 to 2,3	1,35	... 000 060 ...	M 6	11,0	4,4	8,7	8,75	4,6	
	502 0.. .. .	2,4 to 3,2	2,2	... 000 080 ...	M 8	12,5	6,0	10,45	10,5	4,8	
	503 0.. .. .	from 3,3	3,0	... 000 100 ...	M 10	15,0	6,7	12,6	12,7	4,8	
M10	501 0.. .. .	2,4 to 3,2	2,2								
	502 0.. .. .	3,3 to 6,3	3,0								
	503 0.. .. .	from 6,4	6,0								

Example for finding the article number

Press-in nut Clifa®-M with internal thread M3 made of hardened, zinc plated, transparent thick film passivated steel, for sheet metal thickness 1,8 mm: Clifa®-M 502 000 030.112

Materials

- Steel hardened, zinc plated, blue passivated
- Steel hardened, zinc plated, transparent thick film passivated
- Steel hardened, zinc-nickel plated, transparent passivated
- Stainless steel 1.4305
- Light alloy

- Article no. (**fourth** group of digits) 110
- Article no. (**fourth** group of digits) 112
- Article no. (**fourth** group of digits) 143
- Article no. (**fourth** group of digits) 500
- Article no. (**fourth** group of digits) 700

Other finishes or special shapes on request; standoff bushings see page 18.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Press-in force as a guideline value for selection of the press.

Clifa®-M, Clifa®-AM, Clifa®-P	For shaped parts made of:
	Steel
M 2 / M 2,5	5 to 15 kN
M 3	5 to 17 kN
M 4	7 to 20 kN
M 5	7 to 25 kN
M 6	15 to 37 kN
M 8	17 to 40 kN
M 10	20 to 50 kN

Animation



The required press-in force must be determined by trial and error. For different material qualities and surfaces, higher press-in force may be required. The firmest fit is achieved if the recommended hole diameters and tolerances are precisely adhered to.



Press-in nut
for metal
– cold-formed version –

Clifa®-M
Works Standard
500 3 to 502 3

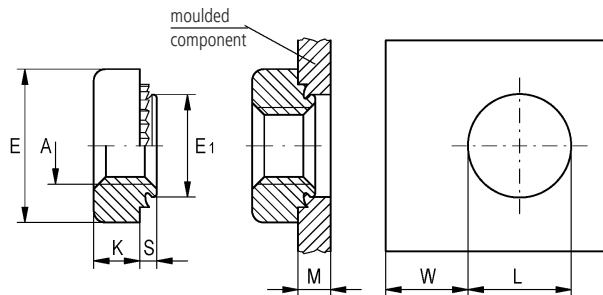
Application

Clifa®-press-in nuts are used to create wear-free screw connections capable of withstanding high loads in thin-walled moulded components from 0,8 mm in thickness made of

- steel,
- light alloy,
- NF metal.

The nut is anchored in the component as a result of the press-in process.

Fields of application, see page 12, fig. 6.



Dimensions in mm

	Article no. of the first group of digits	for sheet metal thickness ≥ M	Shank height S	Article no. of the second and third group of digits	Internal thread	External diameter	Nut height	Collar	Hole diameter	Minimum spacing
					A	E	K	$E_1 \pm 0,05$	$L + 0,05$	W
M 5	500 3.. .. .	0,8	0,7	... 300 050 ...	M 5	9,0	2,4	6,3	6,35	3,8
	501 3.. .. .	1,1	0,95	... 300 060 ...	M 6	11,0	4,4	8,7	8,75	4,6
	502 3.. .. .	1,5	1,3	... 300 080 ...	M 8	12,5	6,0	10,45	10,5	4,8
M 6	500 3.. .. .	1,0	0,95	... 300 100 ...	M 10	15,0	6,7	12,6	12,7	4,8
	501 3.. .. .	1,4	1,35							
	502 3.. .. .	2,4	2,1							
M 8	500 3.. .. .	1,0	0,95							
	501 3.. .. .	1,4	1,35							
	502 3.. .. .	2,4	2,2							
M 10	501 3.. .. .	2,4	2,2							

Example for finding the article number

Press-in nut Clifa®-M with internal thread M5 made of tempered FK10, zinc plated, transparent thick film passivated steel, for sheet metal thickness 1,5 mm: Clifa®-M 502 300 050.112

Materials

Steel tempered FK10, zinc plated, blue passivated Article no. (**fourth** group of digits) 110
 Steel tempered FK10, zinc plated, transparent thick film passivated Article no. (**fourth** group of digits) 112
 Steel tempered FK10, zinc-nickel plated, transparent passivated Article no. (**fourth** group of digits) 143

Other finishes or special shapes on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Press-in force as a guideline value for selection of the press.

Clifa®-M	For shaped parts made of:
	Steel
M 5	7 to 25 kN
M 6	15 to 37 kN
M 8	17 to 40 kN
M 10	20 to 50 kN

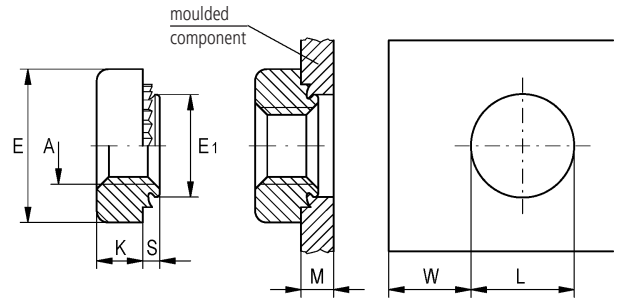
The required press-in force must be determined by trial and error. For different material qualities and surfaces, higher press-in force may be required. The firmest fit is achieved if the recommended hole diameters and tolerances are precisely adhered to.

Application

Clifa®-press-in nuts are used to create wear-free screw connections capable of withstanding high loads in thinwalled moulded components (sheet metal thickness see table).

The nut is anchored in the component as a result of the press-in process.

Fields of application, see page 12, fig. 6.



Dimensions in mm

Article number	Internal thread A	for sheet metal thickness ≥ M	Shank height S	External diameter E	Nut height K	Collar diameter E ₁ ±0,05	Hole diameter L +0,05	Minimum spacing W
501 200 060 ...	M 6	1,5	1,35	11,0	4,4	8,7	8,75	4,6
501 200 080 ...	M 8	1,5	1,35	12,5	6,0	10,45	10,5	4,8
501 200 100 ...	M 10	2,4	2,2	15,0	6,7	12,6	12,7	4,8

Example for finding the article number

Press-in nut Clifa®-H with internal thread M6 made of tempered steel, unrefined for sheet metal thickness 1,5 mm: Clifa®-H 501 200 060.231

Materials

Steel tempered, unrefined – oiled

Article no. (**fourth** group of digits) 231

Other finishes on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Trials at customer component are necessary.

Press-in force as a guideline value for selection of the press.

Clifa® H	Für Formteile aus Stahl
M 6	25 bis 45 kN
M 8	30 bis 50 kN
M 10	35 bis 60 kN

The required press-in force must be determined by trial and error. For different material qualities and surfaces, higher press-in force may be required. The firmest fit is achieved if the recommended hole diameters and tolerances are precisely adhered to.



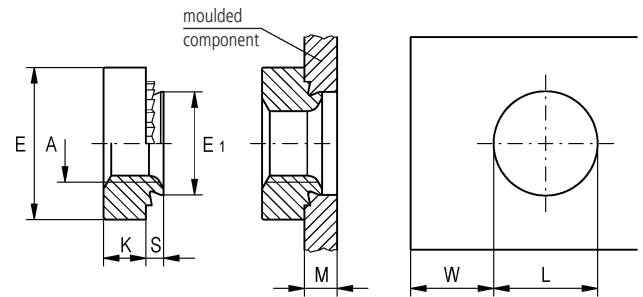
Press-in nut
for metal

Clifa®-P
Works Standard
500 5 to 502 5

Application

Clifa®-press-in nuts are used to create wear-free screw connections in thin-walled moulded components from 0,8 mm in thickness.

Fields of application, see page 12, fig. 6.



Dimensions in mm

	Article no. of the first group of digits	for sheet metal thickness	Shank height	Article no. of the second and third group of digits	Internal thread	External diameter	Nut height	Collar max.	Hole diameter	Minimum spacing
		≥ M	S		A	E	K	E ₁	L +0,08	W
M4 to M5	500 5.. .. .	0,8	0,71	... 500 040 ...	M 4	7,9	2,0	5,38	5,4	3,8
	501 5.. .. .	1,0	0,92	... 500 050 ...	M 5	8,7	2,0	6,38	6,4	3,9
	502 5.. .. .	1,4	1,32	... 500 060 ...	M 6	11,05	4,08	8,72	8,75	4,2
M6	500 5.. .. .	1,2	1,1	... 500 080 ...	M 8	12,65	5,47	10,47	10,5	4,4
	501 5.. .. .	1,4	1,32	... 500 100 ...	M 10	16,50	7,9	12,67	12,7	5,6
	502 5.. .. .	2,3	2,16							
M8	501 5.. .. .	1,4	1,28							
	502 5.. .. .	2,3	2,11							
M10	501 5.. .. .	1,5	1,38							
	502 5.. .. .	2,3	2,11							

Example for finding the article number

Press-in nut Clifa®-P with internal thread M4 made of tempered FK10, zinc plated, transparent thick film passivated steel, for sheet metal thickness 1,4 mm: Clifa®-P 502 500 040.112

Materials

Steel tempered FK10, zinc plated, blue passivated Article no. (**fourth** group of digits) 110
 Steel tempered FK10, zinc plated, transparent thick film passivated Article no. (**fourth** group of digits) 112
 Steel tempered FK10, zinc-nickel plated, transparent passivated Article no. (**fourth** group of digits) 143

Other finishes or special shapes on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Press-in force

Guideline values for press-in force, see page 14

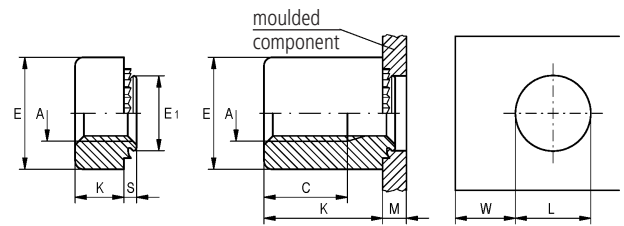
Application

Clifa®-press-in nuts/standoff bushings are used to create wearfree screw connections capable of withstanding high loads in thin-walled moulded components from 0,8 mm in thickness made of

- steel,
- light alloy,
- NF metal.

The nut is anchored in the component as a result of the press-in process.

Fields of application, see page 12, fig. 6 (as Clifa®-M).



Dimensions in mm

Article number	for sheet metal thickness M	Internal thread A	Internal thread E	Collar diameter E ₁ ±0,05	Hole diameter L +0,05	Minimum spacing W
5.. 800 0.. ...	0,8 to 1,0	M 3	7,0	4,7	4,75	3,6
5.. 800 1.. ...	1,1 to 1,4	M 4	8,0	5,35	5,40	3,8
5.. 800 2.. ...	1,5 to 2,3	M 5	9,0	6,3	6,35	3,8
5.. 800 3.. ...	from 2,4					

Example for finding the article number

Press-in nut Clifa®-AM with internal thread M3, nut height 8,0 mm, made of hardened, zinc plated, transparent thick film passivated steel, for sheet metal thickness 1,8 mm: Clifa®-AM 508 800 230.112

Nut height K available between 3,0 and 25 mm in 1,0 mm graduations

The **second** and **third** digit of the article number (503 800...; 504 800; 505 800...; ...; 525 800...) are used to identify the nut height K, the **seventh** digit to differentiate the sheet thickness (503 800 130...; 503 800 230...; 503 800 330...).

With nut heights > 8,0 mm, the usable thread length remains C 7,5 mm.

Materials

Steel hardened, zinc plated, blue passivated
 Steel hardened, zinc plated, transparent thick film passivated
 Steel hardened, zinc-nickel plated, transparent passivated
 Stainless steel 1.4305
 Light alloy

Article no. (**fourth** group of digits) 110
 Article no. (**fourth** group of digits) 112
 Article no. (**fourth** group of digits) 143
 Article no. (**fourth** group of digits) 500
 Article no. (**fourth** group of digits) 700

Other finishes or special shapes on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Press-in force

Guideline values for press-in force, see page 14



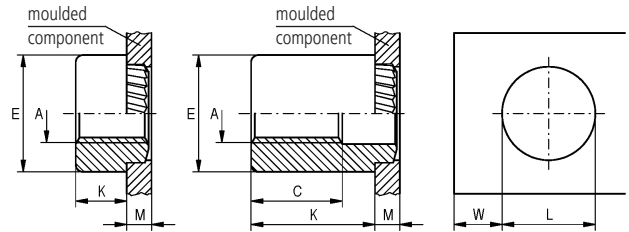
Press-in nut / standoff bushings
for plastics

Clifa®-AL
Works Standard
503 6 to 525 6

Application

These Clifa®-press-in nuts are particularly suited for creating torque-resistant screw connections capable of withstanding high loads in thin-walled moulded parts from 1,5 mm in thickness.

- Epoxy glass fibre
 - Phenolic resin,
 - Fibreglass (e.g. printing plates).
- Also suitable for non-ferrous metals.



Dimensions in mm

Article number	Internal thread A	External diameter E	Workpiece thickness min. M	Hole diameter L +0,1	Minimum spacing W
5.. 600 020...	M 2	6,0	1,5	3,7	2,2
5.. 600 025...	M 2,5	6,0	1,5	4,2	2,4
5.. 600 030...	M 3	7,0	1,5	4,2	2,4
5.. 600 040...	M 4	8,0	1,5	6,4	3,3
5.. 600 050...	M 5	9,0	1,5	6,8	4,1

Example for finding the article number

Diagonally serrated press-in nut Clifa®-AL with internal thread M3, nut height 8,0 mm, made of hardened, pre copper plated and tinned steel: Clifa®-AL 508 600 030.100

Nut height K available between 3,0 and 25 mm in 1,0 mm graduations

The second and third digit of the article number is used to identify the nut height K. With nut heights > 9,0 mm, the usable thread length remains C 9,0 mm.

Materials

Steel, hardened, pre copper plated and tinned
Stainless steel 1.4305

Article no. (**fourth** group of digits) 100
Article no. (**fourth** group of digits) 500

Other versions on request.

Tolerances

ISO 2768-m

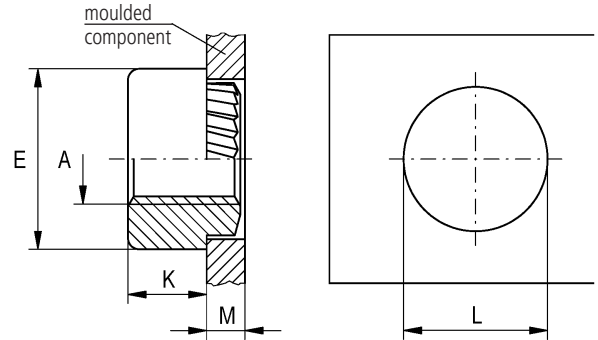
Thread

Internal thread A: as per ISO 6H

Application

These Clifa®-AL soldering nuts are particularly suited for the creation of torsion-proof screw unions with high boards. The nuts are fastened by soldering to the PCB. The nuts are supplied collated on a belt and can be used with customary automatic SMD assembly devices.

- Cost saving due to processing with automatic SMD assembly devices
- no damage to PCBs (press-in process is eliminated)
- Process reliable assembly



Dimensions in mm

Article no.	Thread	Workpiece thickness min.	External diameter	Nut height	Hole diameter
	A	M	E	K	L +0,1
535 000 020 ...	M 2	1,5	5,5	1,5	4,3
535 000 025 ...	M 2,5	1,5	5,5	1,5	4,8
536 100 030 ...	M 3	1,5	5,5	1,5	4,8
538 100 040 ...	M 4	1,5	8,75	2,0	7,0
537 000 050 ...	M 5	1,5	9,5	3,0	7,5

Example for finding the article number

Diagonally serrated press-in nut Clifa®-AL with internal thread M3, nut height 1,5 mm, made of hardened, pre copper plated and tinned steel, collated on a belt: Clifa®-AL 536 100 030.134B

Material

Steel hardened, pre copper plated and tinned Article no. (**fourth** group of digits) 134A
 Steel hardened, pre copper plated and tinned and gluing pad Article no. (**fourth** group of digits) 134B

Other finishes or special shapes (e.g. standoff bushings) on request.

Collation

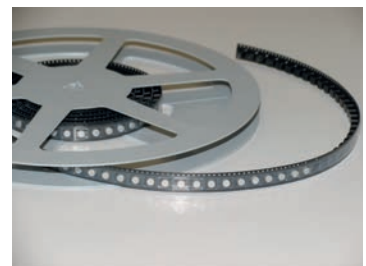
in accordance with DIN EN 60286-3 (type II blister belt)

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H





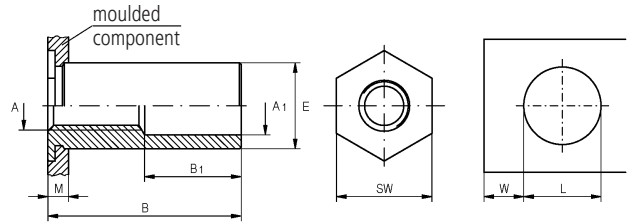
**Press-fit threaded standoff bushings
– thru-hole-thread –
for metal**

Clifa®-ABO
Works Standard
570 0 to 570 1

Application

Clifa®-ABO press-fit threaded bushings are intended for the production of wear-resistant screw-connections in thinwalled moulded parts from thickness 1,0 mm.

The hexagon is pressed flush into round mounting holes.



Dimensions in mm

Article number of the first group of digits	Internal thread	Hexagon	for sheet metal thickness	External diameter	Counter bore diameter	Hole diameter	Minimum spacing
	A	SW	M	$E - 0,13$	$A_1 \pm 0,13$	$L + 0,08$	W
570 0... ..	M 3	4,8	from 1,0	4,19	3,2	4,2	3,9
570 1... ..	M 3	6,4	from 1,0	5,38	3,2	5,4	4,1
570 0... ..	M 4	7,9	from 1,3	7,11	4,8	7,2	4,4
570 0... ..	M 5	7,9	from 1,3	7,11	5,35	7,2	4,4

Article number of the first group of digits	Internal thread	Bushing length			
		$B + 0,05/-0,13$			
... .. 030 ...	M 3	3 – 8	9 – 12	16 – 21	22 – 25
... 1.. 030 ...	M 3				
... .. 040 ...	M 4	3 – 8	9 – 15	16 – 21	22 – 25
... .. 050 ...	M 5	3 – 8	9 – 15	16 – 21	22 – 25
Bore depth B ₁		none	4	8	11

Example for finding the article number

Press-fit threaded bushing Clifa®-ABO with internal thread M4, bushing length 10, made of hardened, zinc plated, blue passivated steel for metal sheet thicknesses from 1,3 mm: Clifa®-ABO 570 010 040.110

Bushing length B in intervals of 1,0 mm available.

The **fourth** digit of the article number is used to differentiate the across-flats SW measurement for the thread dimension M3, the **fifth** and **sixth** digit to identify the bushing length B (570 003...; 570 004...; 570 005...; 570 ...).

Materials

Steel hardened, zinc plated, blue passivated

Article no. (**fourth** group of digits) 110

Other finishes or special shapes on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Press-in force as a guideline value for selection of the press

Clifa® ABO	Press-in force
M 3	20 to 25 kN
M 4	30 to 40 kN
M 5	40 to 50 kN

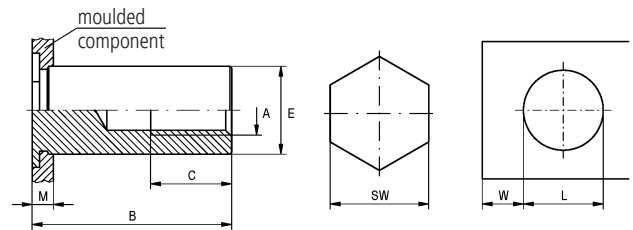
The required press-in force must be determined by trial and error. For different material qualities and surfaces, higher press-in force may be required. The firmest fit is achieved if the recommended hole diameters and tolerances are precisely adhered to.



Application

Clifa®-ABG is a press-fit threaded bushing with blind tapped hole (sealed thread) for the production of wearresistant, heavyduty screwconnections in thinwalled moulded parts from thickness 1,0 mm.

The hexagon is pressed flush into round mounting holes.



Dimensions in mm

Article number of the first group of digits	Internal thread A	Hexagon SW	for sheet metal thickness M	External diameter E - 0,13	Hole diameter L + 0,08	Minimum spacing W
571 0... ..	M 3	4,8	from 1,0	4,19	4,2	3,9
571 1... ..	M 3	6,4	from 1,0	5,38	5,4	4,1
571 0... ..	M 4	7,9	from 1,3	7,11	7,2	4,4
571 0... ..	M 5	7,9	from 1,3	7,11	7,2	4,4

Article number of the first group of digits	Internal thread A	Bushing length B + 0,05/- 0,13			
... .. 030 ...	M 3	8 – 11	12 – 13	14 – 17	18 – 25
... 1.. 030 ...	M 3				
... .. 040 ...	M 4	8 – 11	12 – 13	14 – 17	18 – 25
... .. 050 ...	M 5				
Thread length C		4	5	6,5	9,5

Example for finding the article number

Press-fit threaded bushing Clifa®-ABG with internal thread M4, bushing length 10, made of hardened, zinc plated, blue passivated steel for metal sheet thicknesses from 1,3 mm: Clifa®-ABG 571 010 040.110

Bushing length B in intervals of 1,0 mm available.

The **fourth** digit of the article number is used to differentiate the across-flats SW measurement for the thread dimension M3, the **fifth** and **sixth** digit to identify the bushing length B (571 003...; 571 004...; 571 005...; 571 ...).

Materials

Steel hardened, zinc plated, blue passivated

Article no. (**fourth** group of digits) 110

Other finishes or special shapes on request.

Tolerances

ISO 2768-m

Thread

Internal thread A: as per ISO 6H

Press-in force as a guideline value for selection of the press

Clifa® ABG	Press-in force
M 3	20 to 25 kN
M 4	30 to 40 kN
M 5	40 to 50 kN

The required press-in force must be determined by trial and error. For different material qualities and surfaces, higher press-in force may be required. The firmest fit is achieved if the recommended hole diameters and tolerances are precisely adhered to.



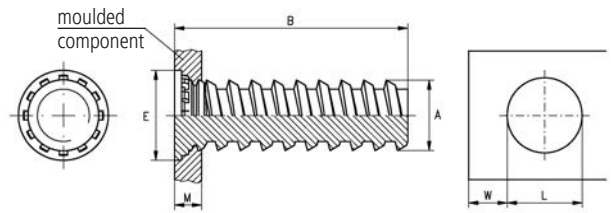
Press-in stud
with quick-fastening thread

Clifa®-SPS
Works Standard
510 3 to 534 3

Application

Clifa®-press-in stud with quick-fastening thread is used to produce wear-proof screw connections. The coarse thread allows fixing elements such as clips, quick

fasteners or assembly nuts to be simply pushed or turned on, eliminating the need for laborious screwing. Further benefit: Higher coating thicknesses do not impair the thread function.



Dimensions in mm

Article number	Thread	for sheet metal thickness $\geq M$	Length	Head diameter	Hole diameter	Hole for anvil	Minimum spacing
5.. 300 500 ...	A $\emptyset 5,0 \times 1,6$	$\geq M$ 1,0	B* 10,0 to 34,0	$E \pm 0,2$ 6,4	$L + 0,05$ 5,2	$L_1 + 0,1$ 5,2	$\geq W$ 4,7

Example for finding the article number

Press-in stud Clifa®-SPS, $\emptyset 5,0$, 10 mm long, tempered, zinc plated, transparent thick film passivated, with serrations at the head for sheet metal thickness 1,2 mm: Clifa®-SPS 510 300 030.112

Stud length available from 10,0 mm to 34,0 mm in 1,0 mm graduations.

The second and third digit of the article number used for identification of the length B.

Materials

Steel tempered, zinc plated, blue passivated **

Steel tempered, zinc plated, transparent thick film passivated **

Steel tempered, zinc-nickel plated, transparent passivated **

Article no. (**fourth** group of digits) ... 110

Article no. (**fourth** group of digits) ... 112

Article no. (**fourth** group of digits) ... 143

Further dimensions on request.

Tolerances

ISO 2768-m

Press-in force

Guideline values for press-in force, see page 28.

***) Length B**

available up to 60 mm

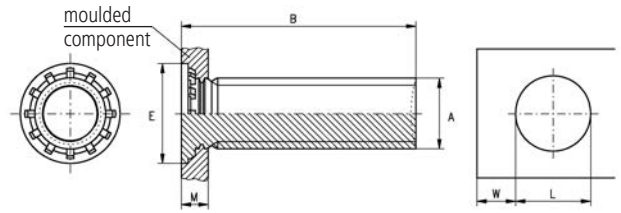
****)**

Press-in stud in tempered steel, available in customary strength classes.

Application

Clifa®-SP press-in grub screws are processed flush with the surface – see diagram –, and are used to manufacture wear-resistant, highly resilient screw connections in thin-walled moulded parts made of:

- Steel
- Stainless steel
- Brass
- Copper
- Light metal, etc.



Dimensions in mm

Article number	Internal thread A	for sheet metal thickness ≥ M	External diameter E	Hole diameter L +0,05	Minimum spacing ≥ W	Tightening torque of the nut (guideline values for sheet metal) ≤ Nm
5.. 000 025 ...	M 2,5	1,0	4,0	2,5	3,5	0,7
5.. 000 030 ...	M 3	1,0	4,6	3,0	4,0	1,5
5.. 000 040 ...	M 4	1,0	5,9	4,0	5,0	2,9
5.. 000 050 ...	M 5	1,0	6,5	5,0	5,0	6,0
5.. 000 060 ...	M 6	1,3	8,5	6,0	5,0	10,0
5.. 000 080 ...	M 8	1,5	10,0	8,0	6,0	20,0

Article number first group of digits (selection series)	Length B*) ±0,2	Available					
		M 2,5	M 3	M 4	M 5	M 6	M 8
506 000	6,0	X	X	X	X		
508 000	8,0	X	X	X	X	X	
510 000	10,0	X	X	X	X	X	X
515 000	15,0	X	X	X	X	X	X
520 000	20,0	X	X	X	X	X	X
525 000	25,0	X	X	X	X	X	X
530 000	30,0			X	X	X	X
534 000	34,0			X	X	X	X

Example for finding the article number

Press-in stud Clifa®-SP, M3, 10 mm long, tempered, zinc plated, transparent thick film passivated, with serrations at the head for sheet metal thickness 1,2 mm: Clifa®-SP 510 000 030.112

Materials

Steel tempered, zinc plated, blue passivated ** Article no. (fourth group of digits) ... 110
 Steel tempered, zinc plated, transparent thick film passivated ** Article no. (fourth group of digits) ... 112
 Steel tempered, zinc-nickel plated, transparent passivated ** Article no. (fourth group of digits) ... 143
 Stainless steel Article no. (fourth group of digits) ... 500

Further dimensions on request.

Threaded ends

Press-in grub screws with differing threaded ends on request, see data sheet, page 29.

Tolerances

ISO 2768-m

Thread

Stud thread A: as per ISO 6g, imperial thread available in all customary sizes.

Press-in force

Guideline values for press-in force, see page 28.

***) Length B**

available up to 60 mm

****)**

Press-in stud in tempered steel, available in customary strength classes.



Press-in stud
Press-fit geometrie flush fit processed

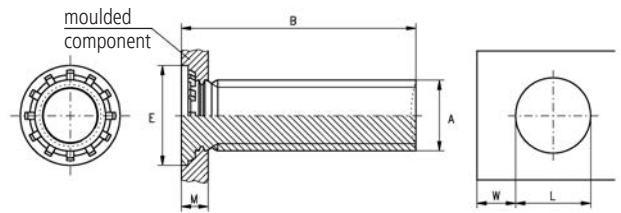
Clifa®-SPD
Works Standard
506 2 to 534 2

Application

Clifa®-SPD press-in grub screws are processed flush with the surface – see diagram –, and are used to manufacture wear-resistant, highly resilient screw connections in thin-walled moulded parts made of:

- Steel
- Stainless steel
- Brass
- Copper
- Light metal, etc.

Due to the low height of the serrations, Clifa®-SPD is suitable for use in lower moulding strengths than necessary with Clifa®-SP.



Dimensions in mm

Article number	Internal thread	for sheet metal thickness	External diameter	Hole diameter	Minimum spacing	Tightening torque of the nut (guideline values for sheet metal) ≤ Nm
	A	≥ M	E	L +0,05	≥ W	
5.. 200 025 ...	M 2,5	0,8	4,0	2,5	3,5	0,7
5.. 200 030 ...	M 3	0,8	4,6	3,0	4,0	1,5
5.. 200 040 ...	M 4	0,8	5,9	4,0	5,0	2,9
5.. 200 050 ...	M 5	0,8	6,5	5,0	5,0	6,0
5.. 200 060 ...	M 6	0,8	8,5	6,0	5,0	10,0

Article number first group of digits (selection series)	Length B* ±0,2	Available				
		M 2,5	M 3	M 4	M 5	M 6
506 200	6,0	X	X	X	X	
508 200	8,0	X	X	X	X	X
510 200	10,0	X	X	X	X	X
515 200	15,0	X	X	X	X	X
520 200	20,0	X	X	X	X	X
525 200	25,0	X	X	X	X	X
530 200	30,0			X	X	X
534 200	34,0			X	X	X

Example for finding the article number

Press-in stud Clifa®-SPD, M3, 10 mm long, tempered, zinc plated, transparent thick film passivated, with serrations at the head for sheet metal thickness 0,8 mm: Clifa®-SPD 510 200 030.112

Materials

Steel tempered, zinc plated, blue passivated ** Article no. (fourth group of digits) 110
 Steel tempered, zinc plated, transparent thick film passivated ** Article no. (fourth group of digits) 112
 Steel tempered, zinc-nickel plated, transparent passivated ** Article no. (fourth group of digits) 143
 Stainless steel Article no. (fourth group of digits) 500

Further dimensions on request.

Threaded ends

Press-in grub screws with differing threaded ends on request, see data sheet, page 29.

Tolerances

ISO 2768-m

Thread

Stud thread A: as per ISO 6g, imperial thread available in all customary sizes.

Press-in force

Guideline values for press-in force, see page 28.

***) Length B**

available up to 60 mm

****)**

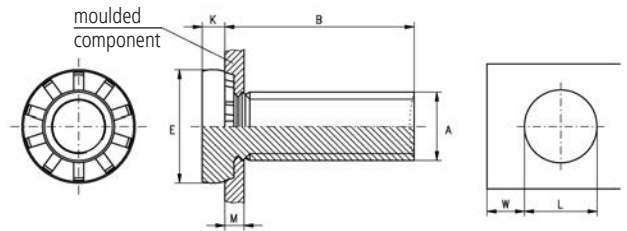
Press-in stud in tempered steel, available in customary strength classes.

Application

Clifa®-SA press-in grub screws are processed protruding at the head – see diagram –, and are used to manufacture wear-resistant, highly resilient screw connections in thin-walled moulded parts made of:

- Steel
- Stainless steel
- Brass
- Copper
- Light metal, etc.

Clifa®-SA has a strengthened head shape, making it more resilient to threading than Clifa®-SP.



Dimensions in mm

Article number	Internal thread	for sheet metal thickness	External diameter	Head height	Hole diameter	Minimum spacing	Tightening torque of the nut (guideline values for sheet metal) ≤ Nm
	A	≥ M	E	K ±0,1	L +0,1	≥ W	
5.. 400 030 ...	M 3	1,0	6,0	0,8	3	8,5	1,3
5.. 400 040 ...	M 4	1,0	7,5	1,2	4	9,5	2,9
5.. 400 050 ...	M 5	1,2	8,5	1,5	5	10,5	6,0
5.. 400 060 ...	M 6	1,2	10,0	1,5	6	11,5	10,0
5.. 400 080 ...	M 8	1,5	12,5	1,75	8	12,5	25,0
5.. 400 100 ...	M 10	2,0	15,7	2,2	10	13,5	36,0

Article number first group of digits (selection series)	Length B*) ±0,2	Available					
		M 3	M 4	M 5	M 6	M 8	M 10
510 400	10,0	X	X	X	X		
512 400	12,0	X	X	X	X	X	
515 400	15,0	X	X	X	X	X	X
520 400	20,0	X	X	X	X	X	X
525 400	25,0	X	X	X	X	X	X
530 400	30,0	X	X	X	X	X	X
534 400	34,0	X	X	X	X	X	X

Example for finding the article number

Press-in stud Clifa®-SA, M5, 20 mm long, tempered, zinc plated, transparent thick film passivated, for sheet metal thickness 1,2 mm: Clifa®-SA 520 400 050.112

Materials

Steel tempered, zinc plated, blue passivated **
 Steel tempered, zinc plated, transparent thick film passivated **
 Steel tempered, zinc/nickel plated, transparent passivated **
 Stainless steel

Article no. (fourth group of digits) 110
 Article no. (fourth group of digits) 112
 Article no. (fourth group of digits) 143
 Article no. (fourth group of digits) 500

Other dimensions on request

Threaded ends

Press-in stud with several dog points on request. See data sheet on page 29.

Tolerances

ISO 2768-m

Thread

Stud thread A: as per ISO 6g

Press-in force

Guideline values for press-in force, see page 28.

*) Length B

available up to 60 mm

**)

Press-in stud in tempered steel, available in customary strength classes.

Animation





Press-in stud
Press-fit geometrie processed protruding at the head

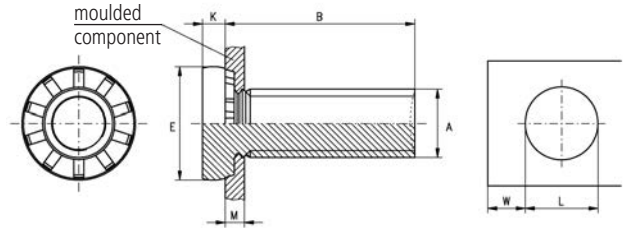
Clifa®-SAD
Works Standard
506 9 to 534 9

Application

Clifa®-SAD press-in grub screws are processed protruding at the head – see diagram –, and are used to manufacture wear-resistant, highly resilient screw connections in thin-walled moulded parts made of:

- Steel
- Stainless steel
- Brass
- Copper
- Light metal, etc.

Due to the low height of the serrations, Clifa®-SAD is suitable for use in lower moulding strengths than necessary with Clifa®-SA.



Clifa®-SAD has a strengthened head shape, making it more resilient to threading than Clifa®-SPD.

Dimensions in mm

Article number	Internal thread	for sheet metal thickness	External diameter	Head height	Hole diameter	Minimum spacing	Tightening torque of the nut (guideline values for sheet metal) ≤ Nm
	A	≥ M	E	K ±0,1	L +0,1	≥ W	
5.. 900 050 ...	M 5	1,0	8,5	1,5	5	10,5	6,0
5.. 900 060 ...	M 6	1,0	10,0	1,5	6	11,5	10,0
5.. 900 080 ...	M 8	1,2	12,5	1,75	8	12,5	25,0
5.. 900 100 ...	M 10	1,2	15,7	2,2	10	13,5	36,0

Article number first group of digits (selection series)	Length B*) ±0,2	Available			
		M 5	M 6	M 8	M 10
510 900	10,0	X	X		
512 900	12,0	X	X	X	
515 900	15,0	X	X	X	X
520 900	20,0	X	X	X	X
525 900	25,0	X	X	X	X
530 900	30,0	X	X	X	X
534 900	34,0	X	X	X	X

Example for finding the article number

Press-in stud Clifa®-SAD, M5, 20 mm long, tempered, zinc plated, transparent thick film passivated, for sheet metal thickness 1,2 mm: Clifa®-SAD 520 400 050.112

Materials

- Steel tempered, zinc plated, blue passivated **
- Steel tempered, zinc plated, transparent thick film passivated **
- Steel tempered, zinc/nickel plated, transparent passivated **
- Stainless steel

- Article no. (fourth group of digits) 110
- Article no. (fourth group of digits) 112
- Article no. (fourth group of digits) 143
- Article no. (fourth group of digits) 500

Other dimensions on request

Threaded ends

Press-in stud with several dog points on request. See data sheet on page 29.

Tolerances

ISO 2768-m

Thread

Stud thread A: as per ISO 6g

Press-in force

Guideline values for press-in force, see page 28.

***) Length B**

available up to 60 mm

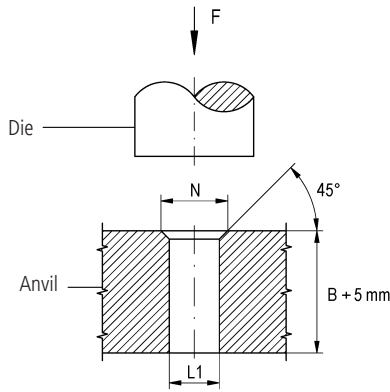
****)**

Press-in stud in tempered steel, available in customary strength classes.

Animation



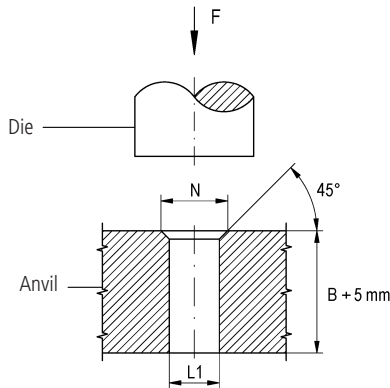
Dimensions in mm



Anvil for: Clifa®	Hole L1 +0,1	Countersink for serrations N +0,1	Press-in force kN
M 2,5	2,6	3,4	8,9 to 12
M 3	3,1	4,0	10,5 to 19
M 4	4,1	5,2	16 to 25
M 5	5,1	6,4	29 to 35
M 6	6,1	7,6	30 to 50
M 8	8,1	10,2	30 to 60

The press-in force F is dependent on the Clifa® dimension, the material and the thickness of the shaped component and also the type of serration at the head. The Clifa® head must be fully embedded and must come to rest flush with the surface of the sheet metal. Excessive force must be avoided.

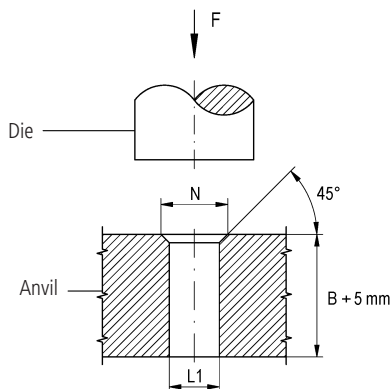
Dimensions in mm



Anvil for: Clifa®	Hole L1 +0,1	Countersink for serrations N +0,1	Press-in force kN
Ø 5,0	5,1	6,4	29 to 35

The press-in force F is dependent on the Clifa® dimension, the material and the thickness of the shaped component and also the type of serration at the head. The Clifa® head must be fully embedded and must come to rest flush with the surface of the sheet metal. Excessive force must be avoided.

Dimensions in mm



Anvil for: Clifa®	Hole L1 +0,1	Countersink for serrations N +0,1	Press-in force kN
M 3	3,1	4,0	9,0 to 15,0
M 4	4,1	5,2	14,5 to 38
M 5	5,1	6,4	21 to 42
M 6	6,1	7,6	21 to 50
M 8	8,1	10,2	21 to 60
M 10	10,1	12,2	32 to 84

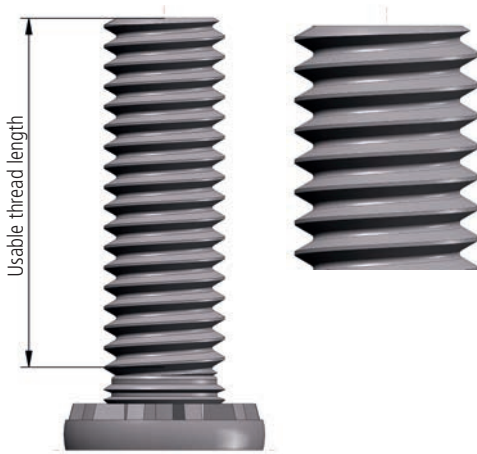
The press-in force F is dependent on the Clifa® dimension, the material and the thickness of the shaped component and also the type of serration at the head. Excessive force must be avoided.

Application

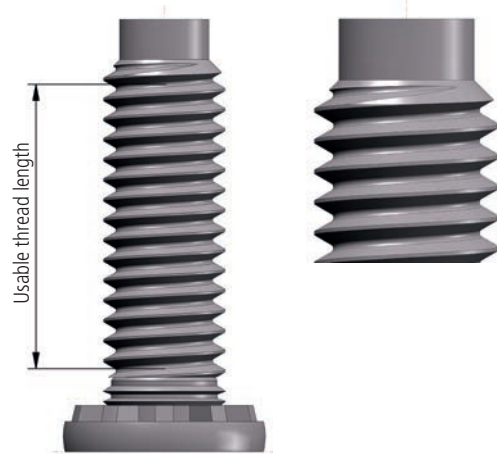
Depending on the demands placed on the Clifa® press-in grub screws, we offer a variety of threaded ends. Further threaded ends on request.

Sub-function	Type of threaded end			
	KKV	KK	PN	KK-MAG
Protection of start of thread	↘	↗	↗	↗
Larger displacement when fastening	↘	→	↗	↗
Prevention of tilting when fastening	↘	→	→	↗
Usable thread length (Version for components of the same length)	↗	→	→	↘

Type of threaded end: **KKV**
DIN EN ISO 4753 (RL)



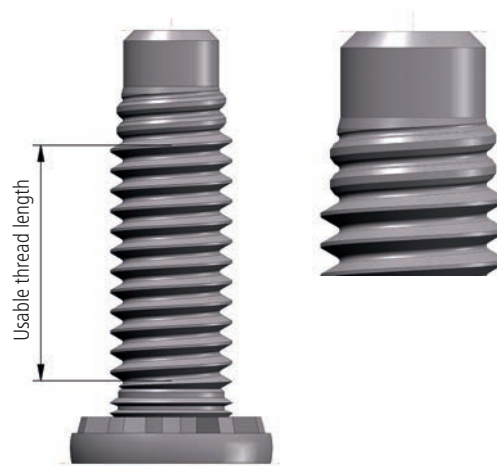
Type of threaded end: **KK**



Type of threaded end: **PN**



Type of threaded end: **KK-MAG**



Fasteners for special applications ...

Press-in stud with special part-end



Rivet bushing with Double riveting contour



Press-in nut with Three cross-holes



Press-in stud with segmented head



Rivet bushing with fine thread on outer diameter



Rivet bushing with special sealing contour



Bolt with t-groove for fixing/locking of screw-in elements



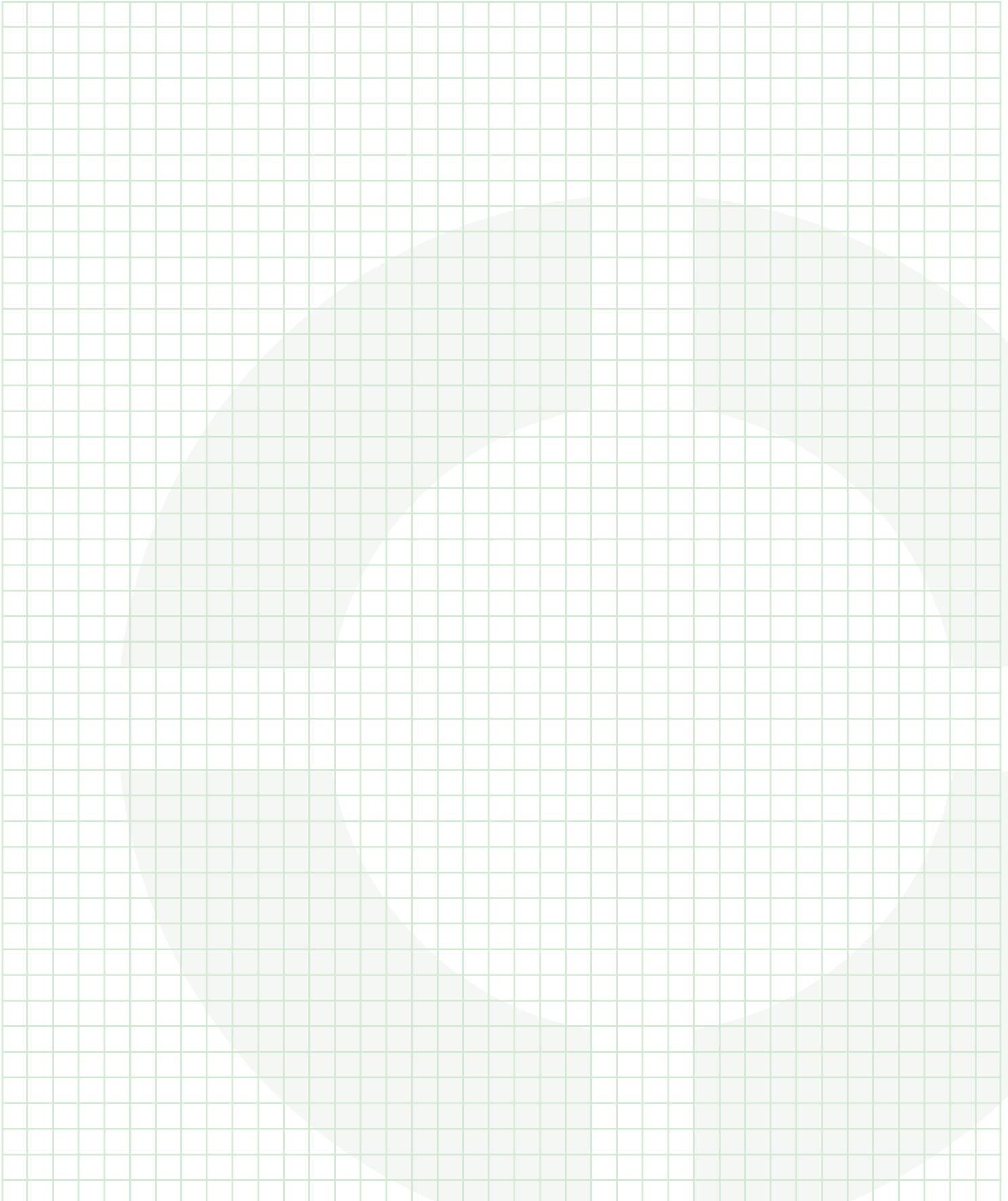
Press-in nut with hexagonal head



Press-in nut with three knurls on outer diameter



Notes





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