... technologies for a reliable hold

Fasteners for thin sheet metal

Anchor®
Clifa®

Technical publication

No.40

Kerb Konus

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

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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.

Threaded inserts for thin sheet metal parts ...













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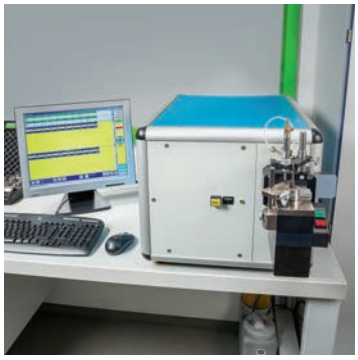
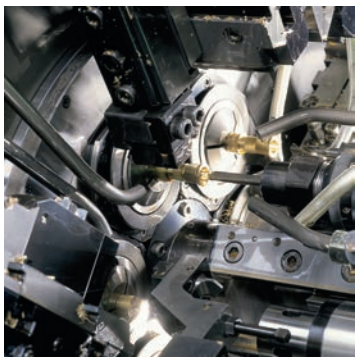
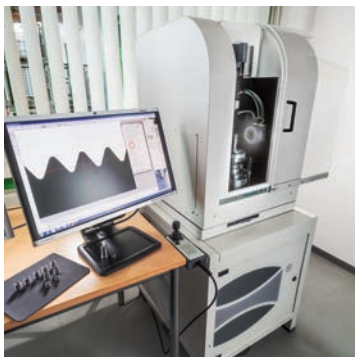
What really counts: tested quality.







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 strenghts 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.

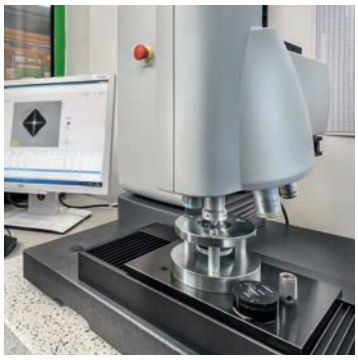
We are particularly proud of a cost-toperformance ratio which ensures satisfied customers the world over. This has made KerbKonus a reputable and respected partner to industry in the global marketplace.

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 9001:2008 Reg.No. 30507428/3
ISO/TS 16949:2009 Reg.No. 160507011/3
ISO 14001:2004 Reg.No. 170507049/3
ISO 50001:2011 Reg.No. 181115119

Applications on the test stand ...



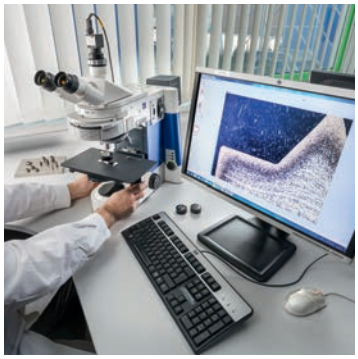
Threaded inserts from KerbKonus are manufactured in large piece numbers. Human lives and safety can often depend upon these tiny components, for instance in the case of airbag receiving fasteners.

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.



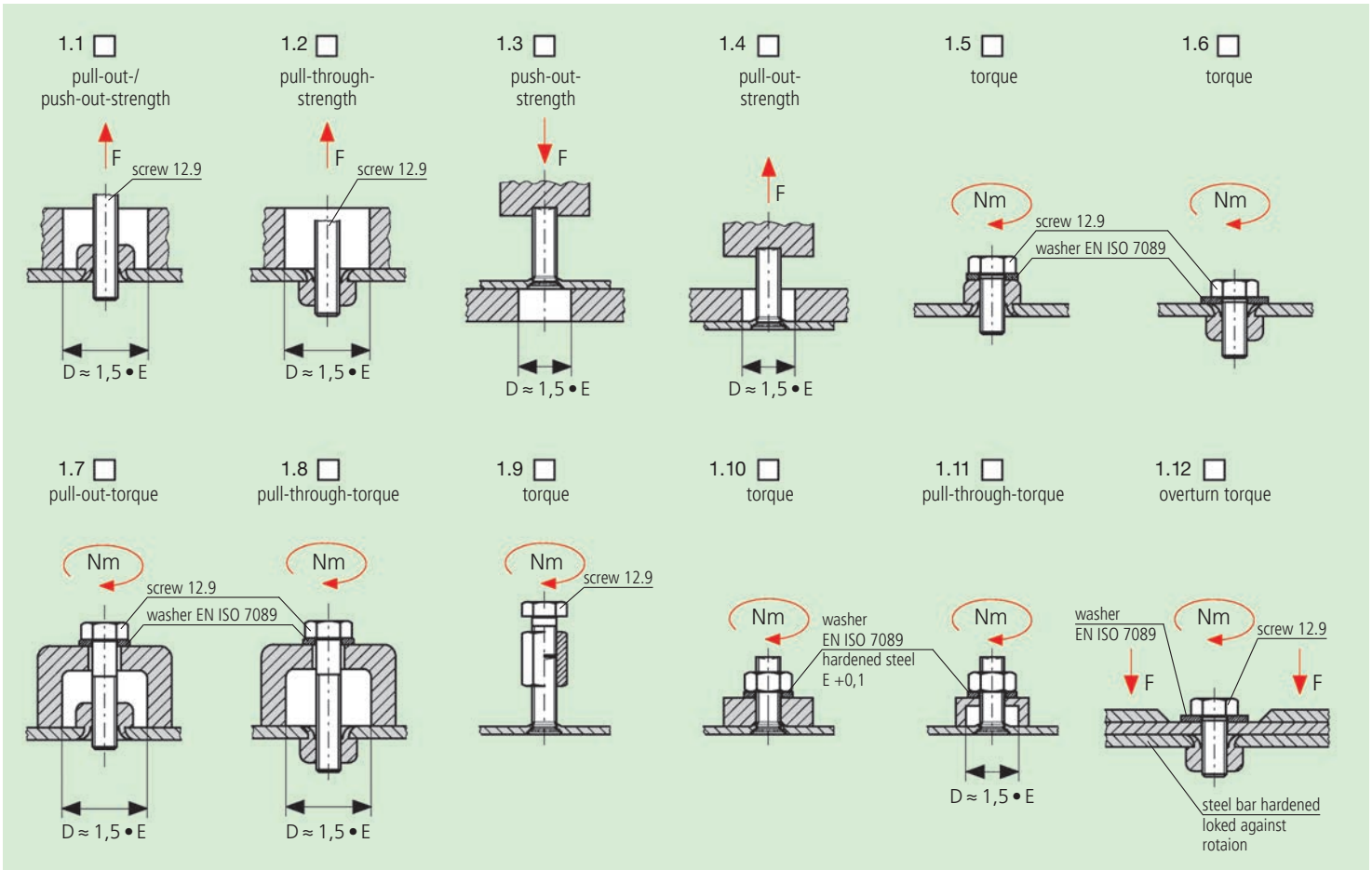


Fig. 1

Anchor®– serrated rivet bushing ...

The Anchor® rivet bushing is a threaded insert made of steel or rustproof material, brass or light alloy with a counterbored 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 overtorqued.

Fields of application

Anchor® rivet bushings enjoy universal-application, offering a wide variety of design possibilities: for hardwearing screw connections in the automotive industry, for reliable fixture of highly sensitive electronic parts etc.

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

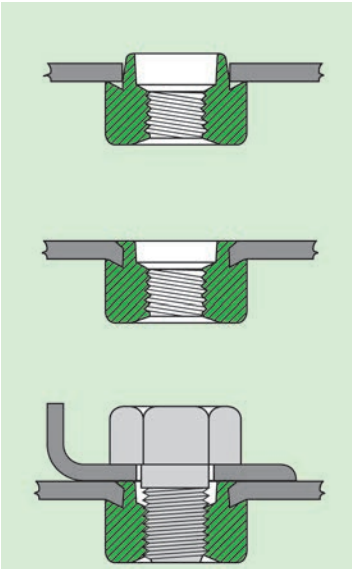


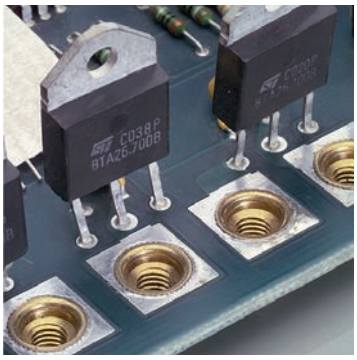
Fig. 2

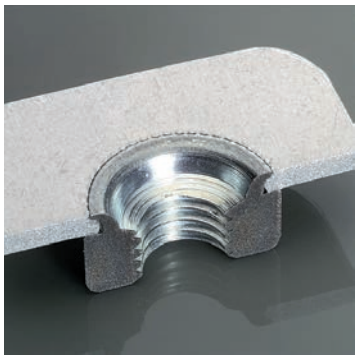
Specifications

Works Standard sheets 701 to 758, page 7 - 9

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	We recommend
Space and weight-saving design	Anchor®-Mini with small outer dimensions (Works Standard 721 to 738)
Thread closed on one side	Anchor®-Blind with blind thread (Works Standard 741 to 758)
Distanced fixture	Anchor® in special lengths
Support or bearing function	Anchor® without internal thread (special version))
Flush finish to the surface of the metale	No bead required in the component material.
Loading on both sides	Anchor® can be loaded from both sides, it is practically impossible for it to be levered out.
Can also be processed in FRP	Delamination is largely avoided in fibre-reinforced plastic (FRP).

Anchor®– installation ...

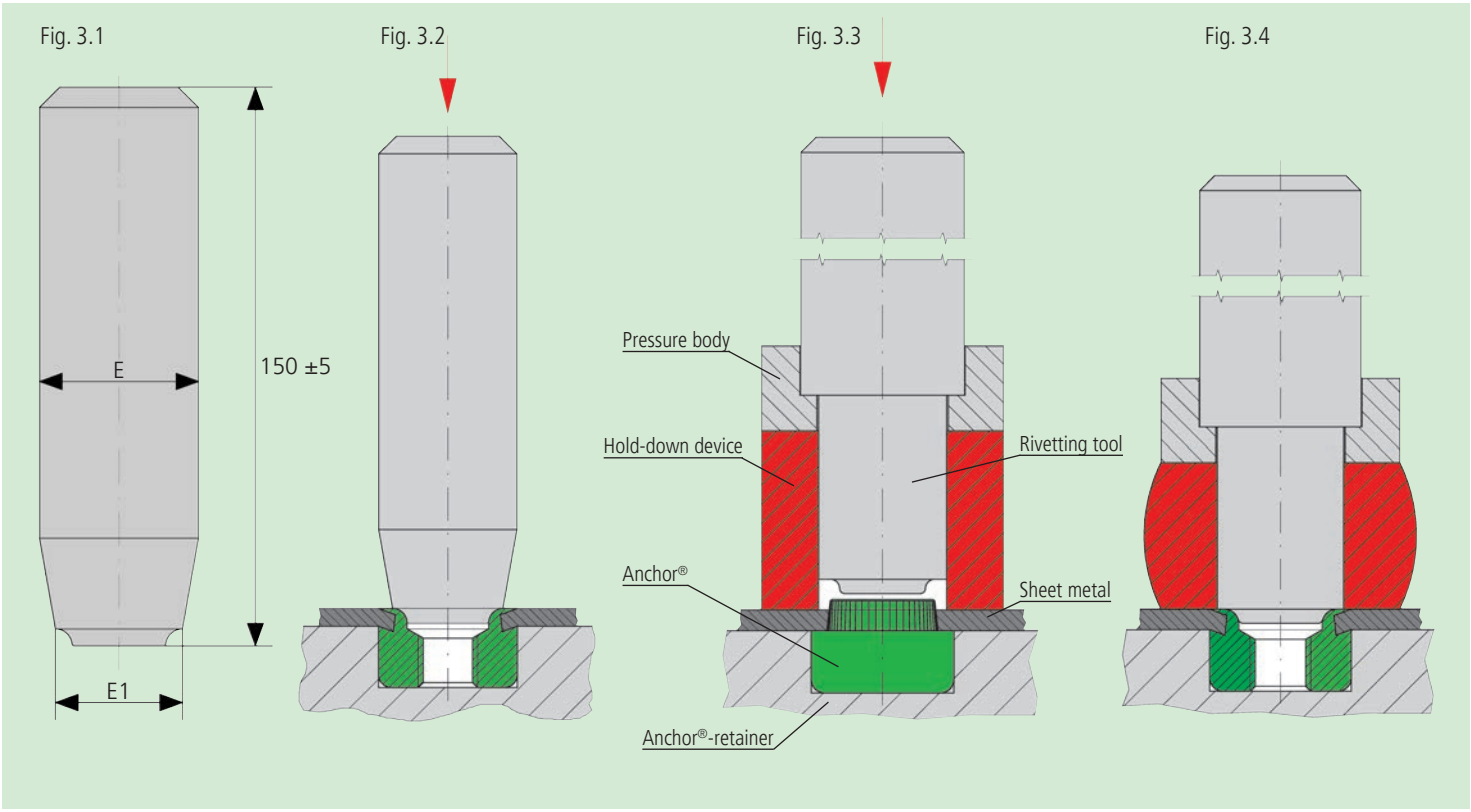


Fig. 3

Installation

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

- manually
- using a simple press
- by inserting Anchor® and rivetting 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).

Rivetting pressure P

with mechanical rivetting
(Anchor® made of steel)

M 2 / M 3	appr. 15	to	27 kN
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

Fig. 4

Dimensions of the rivetting tools (Fig. 3.1):

	Article no. 401 ... ... for Anchor® and Tanktyp		Article no. 421 ... ... fot Anchor®-Mini	
	E	E_1	E	E_1
M 2	12	7,1	12	4,8
M 2,5 / M 3	12	7,1	12	5,5
M 3,5 / M 4	12	8,7	12	7,1
M 5	16	10,3	12	8,7
M 6	16	11,9	12	10,3
M 8	20	15,5	12	11,5
M 10	20	18,3	–	–
M 12 to M16	25	22,2	–	–

Fig. 5

Animation:

Kerb Konus

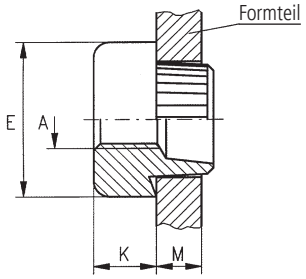
Rivet Bushing
serrated

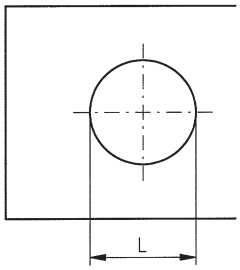
Anchor®
Works Standard
701 0 to 718 0

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			
701	0,5	to	0,6	1)
702	0,7			1)
703	0,8			1)
704	0,9	to	1,0	1)
705	1,1	to	1,3	1)
706	1,4	to	1,6	1)
707	1,7	to	1,9	2)
708	2,0	to	2,2	2)
709	2,3	to	2,5	2)
710	2,6	to	2,8	2)
711	2,9	to	3,1	2)
712	3,2	to	3,4	2)
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)

Article no. of the second and third group of digits	Internal thread A	External diameter E	Nut heigth K	Recommended hole diameter L +0,1
... 000 020 ...	M 2	8,0	3,2	6,0
... 000 025 ...	M 2,5	8,0	3,2	6,0
... 000 030 ...	M 3	8,0	3,2	6,0
... 000 035 ...	M 3,5	9,5	3,8	7,0
... 000 040 ...	M 4	9,5	3,8	7,0
... 000 050 ...	M 5	11,0	4,4	8,4
... 000 060 ...	M 6	12,5	5,7	9,7
... 000 080 ...	M 8	16,0	6,4	13,2
... 000 100 ...	M 10	19,0	7,6	15,5
... 000 120 ...	M 12	25,4	10,2	19,6
... 000 140 ...	M 14	25,4	10,2	19,6
... 000 160 ...	M 16	25,4	10,2	19,6

1) Shoulder 20° undercut
2)Surfaced shoulder

Exemple for finding the article number

Anchor® serrated rivet bushing with female thread M5; steel, galvanized, blue passivated for sheet thickness 2 mm (sheet steel) Anchor® 708 000 050. 110 *)

Materials

Steel, unrefined	Article no. (**fourth** group of digits) 100
Steel, zinc plated, blue passivated	Article no. (**fourth** group of digits) 110
Stahl, zinc-nickel plated, transparent passivated	Article no. (**fourth** group of digits) 143
Stainless steel	Article no. (**fourth** group of digits) 500
Light alloy	Article no. (**fourth** group of digits) 700
Brass	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 rivet bushings in stainless steel, for a flush riveting result, we recommend using the rivet bushing with the next smallest shank length: 707 000 050. 110 (sheet thickness: 2 mm stainless steel of high-strength steel sheet).

Animation:

Kerb Konus

Rivet Bushing
serrated

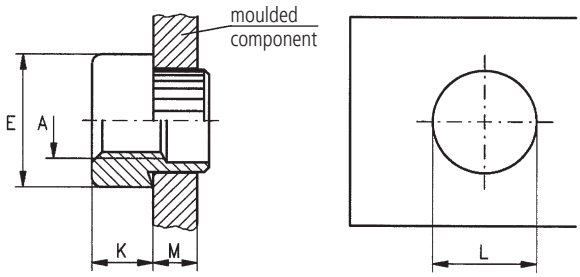
Anchor®-Mini
Works Standard
721 0 to 738 0

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	
721	0,5 to 0,6	1)
722	0,7	1)
723	0,8	1)
724	0,9 to 1,0	1)
725	1,1 to 1,3	1)
726	1,4 to 1,6	1)
727	1,7 to 1,9	2)
728	2,0 to 2,2	2)
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)

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
... 000 020 ...	M 2	5,0	2,3	3,5
... 000 025 ...	M 2,5	5,5	2,8	4,2
... 000 030 ...	M 3	5,5	2,8	4,2
... 000 035 ...	M 3,5	7,0	3,2	5,5
... 000 040 ...	M 4	7,0	3,2	5,5
... 000 050 ...	M 5	8,5	3,8	6,5
... 000 060 ...	M 6	10,0	5,1	7,7
... 000 080 ...	M 8	12,0	6,5	9,7

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

1) Shoulder 20° undercut
2) Surfaced shoulder

Exemple for finding the article number

Anchor®-Mini serrated rivet bushing with female thread M5; steel, galvanized, blue passivated for sheet thickness 2 mm (sheet steel) Anchor®-Mini 728 000 050. 110 *)

Materials

Steel, unrefined	Article no. (**fourth** group of digits) 100
Steel, zinc plated, blue passivated	Article no. (**fourth** group of digits) 110
Stahl, zinc-nickel plated, transparent passivated	Article no. (**fourth** group of digits) 143
Stainless steel	Article no. (**fourth** group of digits) 500
Light alloy	Article no. (**fourth** group of digits) 700
Brass	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 rivet bushings in stainless steel, for a flush riveting result, we recommend using the rivet bushing with the next smallest shank length: 727 000 050. 110 (sheet thickness: 2 mm stainless steel of high-strength steel sheet).

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Kerb Konus

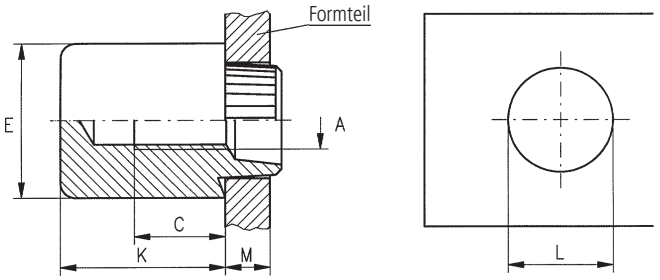
Rivet Bushing
serrated

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, torqueresistant 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	
741	0,5 to 0,6	1)
742	0,7	1)
743	0,8	1)
744	0,9 to 1,0	1)
745	1,1 to 1,3	1)
746	1,4 to 1,6	1)
747	1,7 to 1,9	2)
748	2,0 to 2,2	2)
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)

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
... 000 030 ...	M 3	8,0	8,5	3,2	3,0
... 000 035 ...	M 3,5	9,5	9,0	7,0	4,0
... 000 040 ...	M 4	9,5	9,0	7,0	4,0
... 000 050 ...	M 5	11,0	10,0	8,4	5,0
... 000 060 ...	M 6	12,5	10,5	9,7	5,5
... 000 080 ...	M 8	16,0	12,0	13,2	5,5
... 000 100 ...	M 10	19,0	13,5	15,5	6,0
... 000 120 ...	M 12	25,4	19,0	19,6	7,0

1) Shoulder 20° undercut
2) Surfaced shoulder

Exemple for finding the article number

Anchor®-Blind serrated rivet bushing with female thread M5; steel, galvanized, blue passivated for sheet thickness 2 mm (sheet steel) Anchor®-Blind 748 000 050. 110 *)

Materials

Steel, unrefined	Article no. (**fourth** group of digits) 100
Steel, zinc plated, blue passivated	Article no. (**fourth** group of digits) 110
Stahl, zinc-nickel plated, transparent passivated	Article no. (**fourth** group of digits) 143
Stainless steel	Article no. (**fourth** group of digits) 500
Light alloy	Article no. (**fourth** group of digits) 700
Brass	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 rivet bushings in stainless steel, for a flush riveting result, we recommend using the rivet bushing with the next smallest shank length: 747 000 050. 110 (sheet thickness: 2 mm stainless steel of 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.

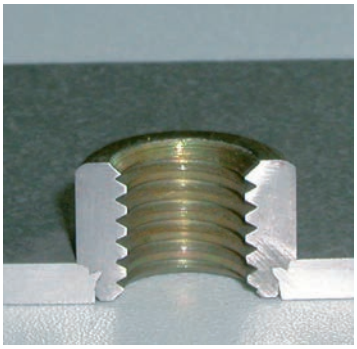
Several Clifa® inserts can be installed in a single work process. The fastening screw is always screwed in from the opposite side.

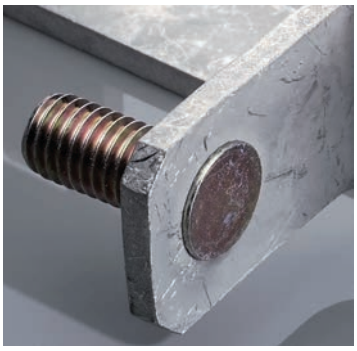
Fields of application

Clifa® press-in nuts and Clifa® studs are used to fasten all different types of appliance components, as spacers pins and bushings for plastics, e.g. circuit boards etc.

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 11 to 20

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

Clifa® installation ...

Installation

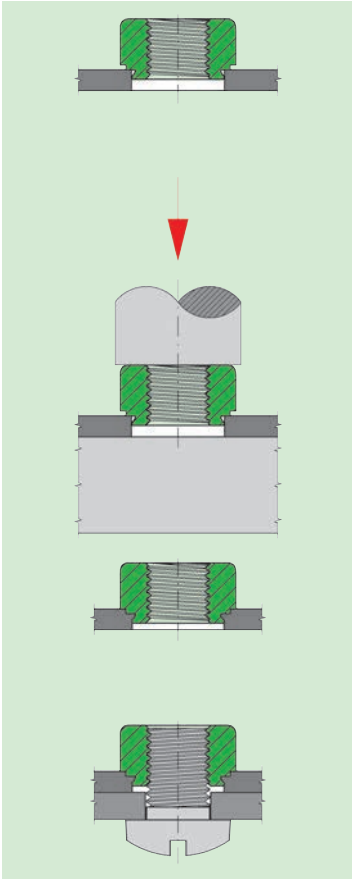
The receiving hole is punched, lasered or drilled **but not deburred or countersunk.**

With punched holes, Clifa® is pressed in from the punching burr side. 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.

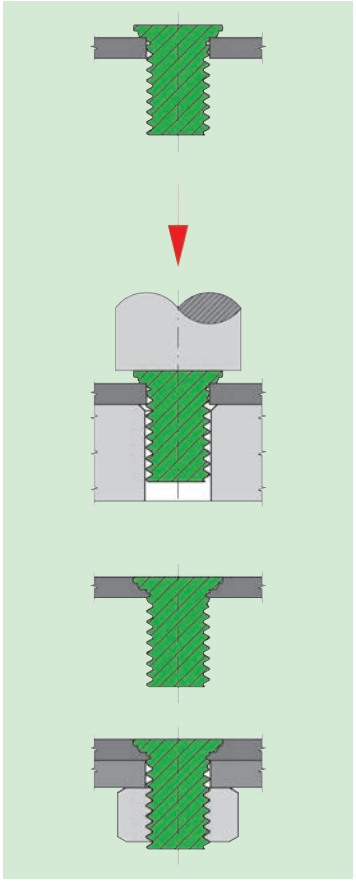
In the case of the Clifa®-SP/SPD/SPS and SR stud, the head must be fully pressed in and come to rest flush with the surface of the sheet metal.

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® Fig. 6



Press-in stud Clifa®-SP Fig. 7

Special request

short length
standoff bushings for metals
standoff bushings for plastics threaded press-in stud
Flush surface on the press-in side of the nut element (/- thread closed on one side)
for thin sheet metals 1,0 mm
threaded press-in stud for high force
threaded press-in stud for epoxy resin moulding materials
threaded press-in stud for lower press-in force

We recommend

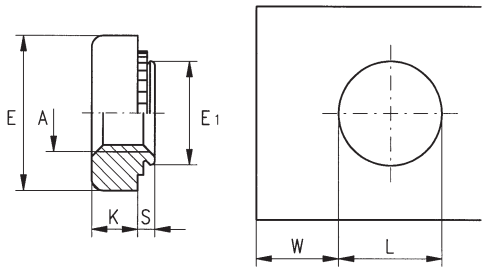
Clifa®-M	(Works Standard 500 0 to 503 0)
Clifa®-AM	(Works Standard 503 8 to 525 8)
Clifa®-AL	(Works Standard 503 6 to 525 6)
Clifa®-ABO/-ABG	(Works Standard 570 0 to 571 0)
Clifa®-SPD	(Works Standard 5.. 2)
Clifa®-SA	(Works Standard 515 4 to 534 4)
Clifa®-SL	(Works Standard 506 7 to 518 7)
Clifa®-SAD	(Works Standard 515 9 to 534 9)

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 (up to hardness HRB 80).

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



Dimensions in mm

	Article no. of the first group of digits	for sheet metal thickness M	Shank height max. S
M3 to M5	500 0..	0,8 to 1,0	0,7
	501 0..	1,1 to 1,4	1,0
	502 0..	1,5 to 2,3	1,3
	503 0..	from 2,4	2,2
M6 to M8	500 0..	1,0 to 1,3	1,0
	501 0..	1,4 to 2,3	1,35
	502 0..	2,4 to 3,2	2,2
	503 0..	from 3,3	3,0
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

Article no. of the second and third group of digits	Internal thread A	External diameter E	Nut height K	Collar ±0,05 E_1	Hole diameter +0,05 L	Minimum spacing W
... 000 020 ...	M 2	6,0	1,6	4,15	4,2	2,9
... 000 025 ...	M 2,5	6,0	1,6	4,15	4,2	2,9
... 000 030 ...	M 3	7,0	1,6	4,7	4,75	3,6
... 000 040 ...	M 4	8,0	2,4	5,35	5,4	3,8
... 000 050 ...	M 5	9,0	2,4	6,3	6,35	3,8
... 000 060 ...	M 6	11,0	4,4	8,7	8,75	4,6
... 000 080 ...	M 8	12,5	6,0	10,45	10,5	4,8
... 000 100 ...	M 10	15,0	6,7	12,6	12,7	4,8

Example for finding the article number

Self-clinching press-in nut Clifa®-M with internal thread M3 made of hardened, zinc plated and blue passivated steel for sheet metal thickness 1,8 mm: Clifa®-M 502 000 030.110

Materials

Steel hardened, zinc plated, blue passivated * — Article no. (**fourth** group of digits) 110
Steel hardened, zinc-nickel plated, transparent passivated * — Article no. (**fourth** group of digits) 143
Stainless steel — Article no. (**fourth** group of digits) 500
Light alloy — Article no. (**fourth** group of digits) 700

Other finishes or special shapes on request; standoff bushings see page 14.

* Also available as a cold-forming part (steel, tempered FK10).

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.

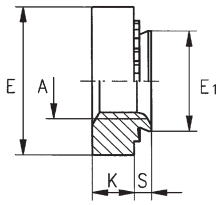
Kerb Konus

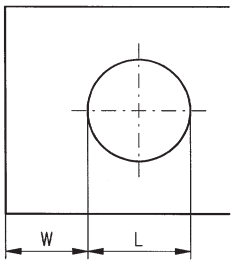
Press-in nut
self-clinching

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.





Dimensions in mm

	Article no. of the first group of digits	für Blechdicke min. M	Schafthöhe maximal S
M4 to M5	500 5..	0,8	0,76
	501 5..	1,0	0,97
	502 5..	1,4	1,37
M6	500 5..	1,2	1,15
	501 5..	1,4	1,37
M8	501 5..	1,4	1,38
	502 5..	2,3	2,21
M10	501 5..	1,5	1,48
	502 5..	2,3	2,21

Article no. of the second and third group of digits	Internal thread A	External diameter E	Nut height K	Collar max. E_1	Hole diameter +0,08 L	Minimum spacing W
... 500 040 ...	M 4	7,9	2,0	5,38	5,4	4,2
... 500 050 ...	M 5	8,7	2,0	6,38	6,4	3,9
... 500 060 ...	M 6	11,05	4,08	8,72	8,75	4,23
... 500 080 ...	M 8	12,65	5,47	10,47	10,5	4,47
... 500 100 ...	M 10	16,50	7,9	12,67	12,7	5,65

Example for finding the article number
Self-clinching press-in nut Clifa®-P with internal thread M3 made of tempered FK10, zinc plated and blue passivated steel for sheet metal thickness 1,4 mm: Clifa®-P 502 500 030.110

Materials
Steel tempered FK10, zinc plated, blue passivated — Article no. (**fourth** group of digits) 110
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

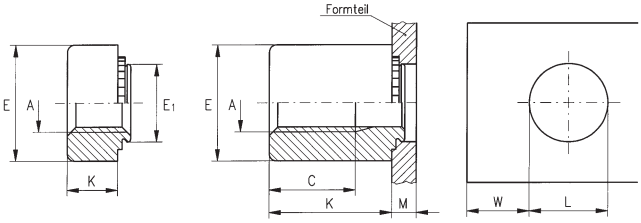
Press-in force
Guideline values for press-in force, see page 12

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 (up to hardness HRB 80).

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



Dimensions in mm

Article number	for sheet metal thickness	Internal thread	Internal thread	Collar diameter	Hole diameter	Minimum spacing
	M	A	E	E_1	L +0,05	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

Self-clinching press-in nut Clifa®-AM with internal thread M3, nut height 8,0 mm, made of hardened, zinc plated and blue passivated steel for sheet metal thickness 1,8 mm: Clifa®-AM 508 800 230.110

Mutternhöhe K von 3,0 bis 25 mm in Abständen von 1,0 mm lieferbar.

The **second** and **third** digit of the article number (5**03** 800…; 5**04** 800; 5**05** 800…; …; 5**25** 800…) are used to identify the nut height K, the **seventh** digit to differentiate the sheet thickness (503 800 **1**30…; 503 800 **2**30…; 503 800 **3**30…).

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

Materials

Stahl gehärtet, verzinkt, blau passiviert	Artikel-Nr. (**vierte** Zifferngruppe) … … … 110
Stahl gehärtet, Zink-Nickel, transparent passiviert	Artikel-Nr. (**vierte** Zifferngruppe) … … … 143
Edelstahl	Artikel-Nr. (**vierte** Zifferngruppe) … … … 500
Leichtmetall	Artikel-Nr. (**vierte** Zifferngruppe) … … … 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 12

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Kerb Konus

Press-in nut / standoff bushings
for plastics

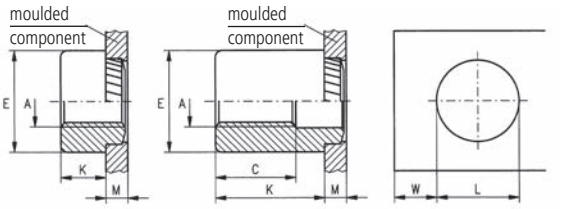
Clifa®-AL
Works Standard
503 6 to 525 6

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 aluminium and magnesium.



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 — Article no. (**fourth** group of digits) … … … 100
Stainless steel — Article no. (**fourth** group of digits) … … … 500

Other versions on request.

Tolerances ISO 2768-m

Thread Internal thread A: as per ISO 6H

Kerb Konus

Press-in stud
for plastics

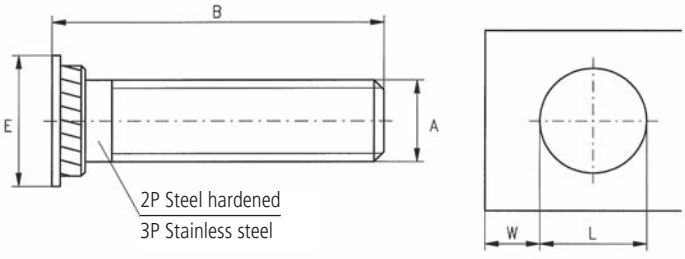
Clifa®-SL
Works Standard
506 7 to 518 7

Application

These Clifa®-SL press-in studs 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 aluminium and magnesium



Dimensions in mm

Article number	Internal thread A	Length B	Head diameter E	Hole diameter L +0,1	Minimum spacing W
5.. 700 030…	M 3	6,0 to 16,0	7,0	4,2	2,4
5.. 700 040…	M 4	6,0 to 16,0	8,0	6,4	3,3
5.. 700 050…	M 5	10,0 to 18,0	9,0	6,8	3,3

Example for finding the article number

Diagonally serrated press-in stud Clifa® SL, M3, length B = 10,0 mm, made of hardened, pre copper plated and tinned steel: Clifa®-SL 510 700 030.100

Stud length from 6,0 mm to 18,0 mm available in graduations of 1,0 mm.
The second and third digit of the article number is used to identify the length B.

Materials see Works Standard 503 6 Clifa®-AL
Tolerances ISO 2768-m
Thread Stud thread A: as per ISO 6g.
Imperial thread available in customary sizes

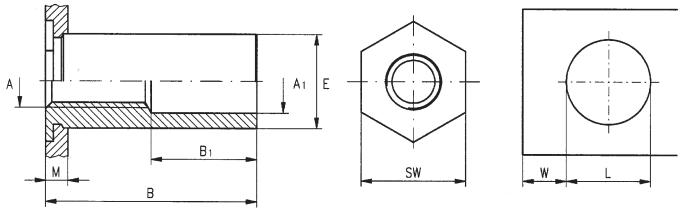
Press-fit threaded standoff bushings – thru-hole-thread –
for metal

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 A	Hexagon SW	for sheet metal thickness M	External diameter –0,13 E	Counter bore diameter ±0,13 A_1	Hole diameter +0,08 L	Minimum spacing 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 A	Bushing length +0,05/ –0,13 B			
... ... 030 ...	M 3	3 – 8	9 – 12		
... 1.. 030 ...	M 3				
... ... 040 ...	M 4	3 – 8	9 – 15	16 – 21	22 – 25
... ... 050 ...	M 5				
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 available from 3,0 to 25 mm in intervals of 1,0 mm.

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 0**03**…; 570 0**04**…; 570 0**05**…; 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.

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Kerb Konus

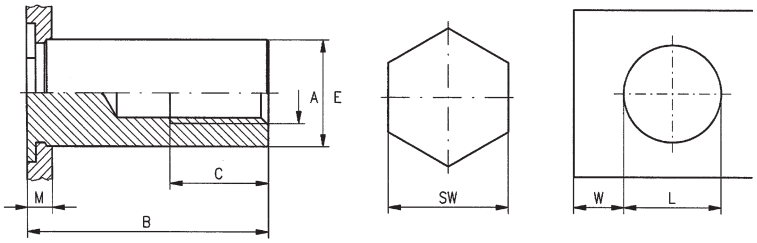
Press-fit threaded standoff bushings – blind thread –
for metal

Clifa®-ABG
Works Standard
571 0 to 571 1

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	Hexagon	for sheet metal thickness	External diameter –0,13	Hole diameter +0,08	Minimum spacing
	A	SW	M	E	L	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	Bushing length +0,05/ –0,13			
	A	B			
... ... 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 available from 8,0 to 25 mm in intervals of 1,0 mm.

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 0**03**…; 571 0**04**…; 571 0**05**…; 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.

Application

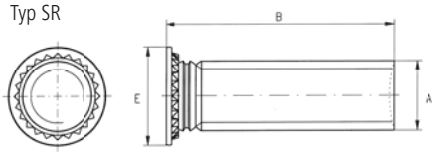
These Clifa®-press-in studs are particularly suited for creating torque-resistant screw connections capable of withstanding high loads in thin-walled moulded parts made of

- Steel
- Stainless steel
- Brass
- Copper
- Light alloy etc.

The stud is anchored in the component by the serrations as a result of the press-in process.

Typ SP/SPD

Typ SR



Dimensions in mm

Article number first group of digits (selection series)	Length ±0,2 B*)	Available M2,5	M3	M4	M5	M6	M8
506	6,0	X	X	X	X		
508	8,0	X	X	X	X	X	
510	10,0	X	X	X	X	X	X
512	12,0	X	X	X	X	X	X
515	15,0	X	X	X	X	X	X
518	18,0	X	X	X	X	X	X
520	20,0	X	X	X	X	X	X
525	25,0	X	X	X	X	X	X
. . .	. . .			. . .	. . .	. . .	. . .
534	34,0			X	X	X	X

Article no. second and third group of digits	Thread A	for sheet metal thickness ≥	Head diameter E SP/SPD	Head diameter E SR	Hole diameter +0,05 L	Minimum spacing ≥ W	Tightening torque of the nut ≤ Nm
... .00 025 ...	M 2,5	1,0	4,0	–	2,5	3,5	0,7
... .00 030 ...	M 3	1,0	4,6	4,3	3,0	4,0	1,5
... .00 040 ...	M 4	1,0	5,9	5,7	4,0	5,0	2,9
... .00 050 ...	M 5	1,0	6,5	6,5	5,0	5,0	6,0
... .00 060 ...	M 6	1,5	8,5	8,5	6,0	5,0	10,0
... .00 080 ...	M 8	1,5	10,0	11,0	8,0	6,0	20,0

Other materials, types and finishes on request.

Example for finding the article number
Self-clinching press-in stud Clifa®-SP, M3 tempered, zinc plated and blue passivated steel, 10 mm long, with serrations at the head for sheet metal thickness 1,2 mm: Clifa®-SP 510 000 030.110

Standard	**Coarse serration at the head Clifa®-SP**	**Article no. 5.. 000 ... ...**
For lower press in force	**Fine serration at the head Clifa®-SR**	**Article no. 5.. 100 ... ...**
For sheet metal ≤ 1,0 mm	**Thin-metal press-in stud Clifa®-SPD**	**Article no. 5.. 200 ... ...**

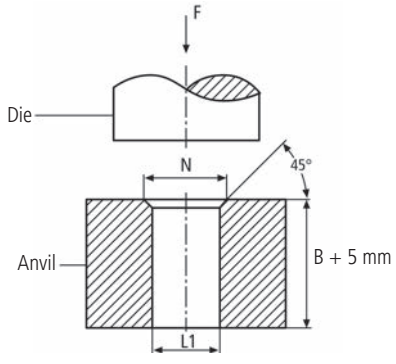
Materials

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

Tolerances
ISO 2768-m

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

***) Length B** **available up to 60 mm**
****) Material** **Press-in stud in tempered steel, available in customary strength classes.**



Dimensions in mm

Anvil for Clifa®	Hole +0,1 L1	Countersink for serrations N+0,1	Press-in force SP/SR/SPD/SPS 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 / Ø 5,0	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. The hole diameter of the part to be screwed on ≈ A+0,6 mm.

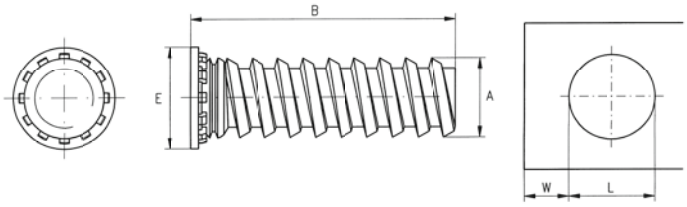
Kerb Konus

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 A	Length B	Head diameter E ± 0,2	Hole diameter L +0,05	Hole for anvil L_1	Minimum spacing W
5.. 300 500 ...	Ø 5,0 x 1,6	10,0 to 34,0	6,4	5,2	5,2	4,7

Example for finding the article number

Self-clinching press-in stud Clifa®-SPS, Ø5,0, made from zinc plated, blue passivated steel, 10 mm long with serrations at the head for sheet metal thickness 1,2 mm: Clifa®-SPS 510 300 500. 110

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 indentification of the length B.

Materials

Steel tempered, zinc plated, blue passivated * — Article no. (**fourth** group of digits) … … … 110
Steel tempered, zinc-nickel plated, transparent passivated * — Article no. (**fourth** group of digits) … … … 143

Tolerances

ISO 2768-m

Press-in force

Guideline values for press-in force, see page 18

***) Material**

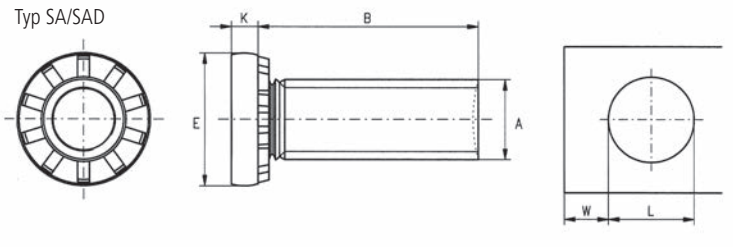
Press-in stud in tempered steel, available in customary strength classes.

Application

Clifa®-press-in studs are used to create wear-free screw connections capable of withstanding high loads in thin-walled moulded components.

The reinforced head shape permits higher loading capacity to be achieved.

Typ SA/SAD



Dimensions in mm

Article number first group of digits (selection series)	Length ± 0,2 B*)	Available M3	M4	M5	M6	M8	M10
510	10,0	X	X	X	X		
512	12,0	X	X	X	X	X	
515	15,0	X	X	X	X	X	X
520	20,0	X	X	X	X	X	X
525	25,0	X	X	X	X	X	X
530	30,0	X	X	X	X	X	X
534	34,0	X	X	X	X	X	X

Article no. second and third group of digits	Thread A	for sheet metal thickness ≥	Head diameter E	Head heigth ± 0,1 K	Hole diameter L +0,1	Minimum spacing ≥ W	Tightening torque of the nut (steel sheet) ≤ Nm
... .00 030 ...	M 3	1,0	6,0	0,8	3	8,5	1,3
... .00 040 ...	M 4	1,0	7,5	1,2	4	9,5	2,9
... .00 050 ...	M 5	1,2	8,5	1,5	5	10,5	6,0
... .00 060 ...	M 6	1,2	10,0	1,5	6	11,5	10,0
... .00 080 ...	M 8	1,5	12,5	1,75	8	12,5	25,0
... .00 100 ...	M 10	2,0	15,7	2,2	10	13,5	36,0

Example for finding the article number
Press-in stud Clifa®-SA, M5 made of tempered, zinc plated and blue passivated steel, 20 mm long: Clifa®-SA 520 400 050.110

Materials
Steel tempered, zinc plated, blue passivated ** — Article no. (**fourth** group of digits) 110
Steel tempered, zinc/nickel plated, transparent passivated ** — Article no. (**fourth** group of digits) 143
Stainless steel — Article no. (**fourth** group of digits) 500

Standard design — **Coarse serration at the head Clifa®-SA** — **Article no. 5.. 400 ... ...**
For sheet metal ≥ 0,8 mm — **Thin metal press-in stud Clifa®-SAD** — **Article no. 5.. 900 ... ...**

Tolerances
ISO 2768-m

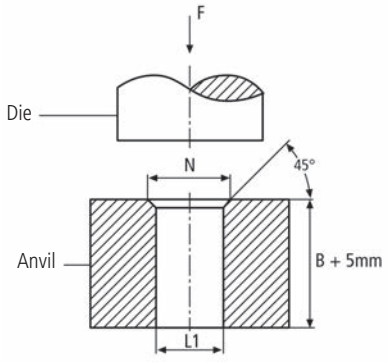
Thread
Stud thread A: as per ISO 6g
Other dimensions on request.

***) Length B**
available up to 60 mm

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

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

Animation:



Dimensions in mm

Anvil for: Clifa®	Hole +0,1 L1	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. The hole diameter of the part to be screwed on ≈ A+0,6 mm.

Kerb Konus

Enquiry data sheet Press-in stud Clifa®-SA – select type of part end –

Fax to KerbKonus +49 9621 679444

Enquiry from: _____
Project: _____

Contact:
Company: _____
Mr. / Mrs.: _____
Phone: _____
Fax: _____
Mail: _____
Piece no.: _____

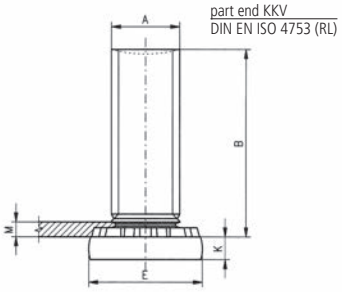
We require
- a quotation ☐
- amples ☐
- technichal advice ☐

Enquiry no.: _____
Project no.: _____

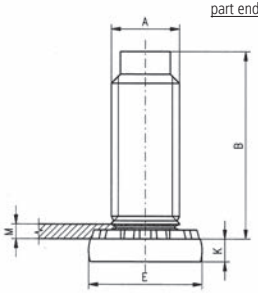
Contact:
KerbKonus: _____
Mr. / Mrs.: _____
Phone: _____
Fax: _____
Mail: _____

Quotation submitted on: _____
Initial sample on: _____
Pilot series on: _____
Series start on: _____

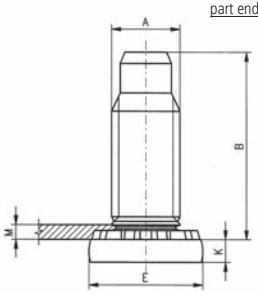
part end KKV
DIN EN ISO 4753 (RL)



part end KK



part end PN



Please enter your requirements here:

Dimensions in mm					End of thread			Refinement			Sheet metal / moulded compound	
A	E	K	B	M	KKV	KK	PN	bright	blue	Layer thickness µm	Material	Material

Other thread endings on request.

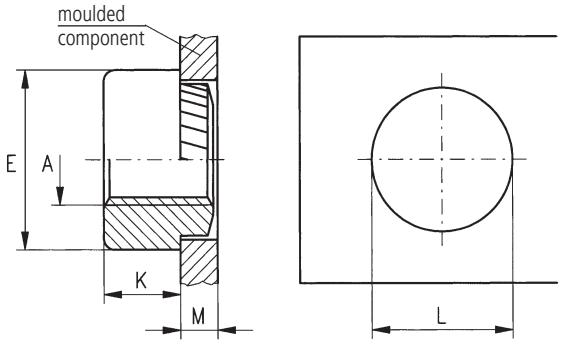
Date / Signature

Please separate at the perforated line and fax or mail to KerbKonus

Anwendung

These Clifa®-AL soldering nuts Are particulary suited for the Creation of torsion-proof screw unions with high bords.
The nuts are fastened by soldering to the pcb. The nuts are supplied collated on a belt and can be using 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 A	Workpiece thickness min. M	External diameter E	Nut heigth K	Hole diameter + 0,1 L
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

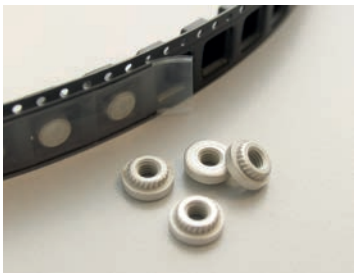
Material
Steel hardened, pre copper plated and tinned — Article no. … … … 134A
Steel hardened, pre copper plated and tinned and gluing pad — Article no. … … … 134B

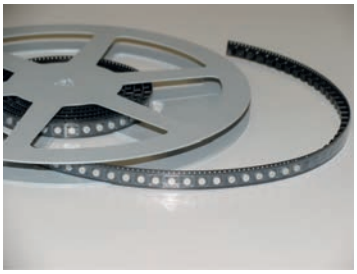
Other finishes or special shapes (e.g. standoff bushings) on request.

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

Tolerances
ISO 2768-m

Thread
Internal thread A: as per ISO 6H





Kerb Konus

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

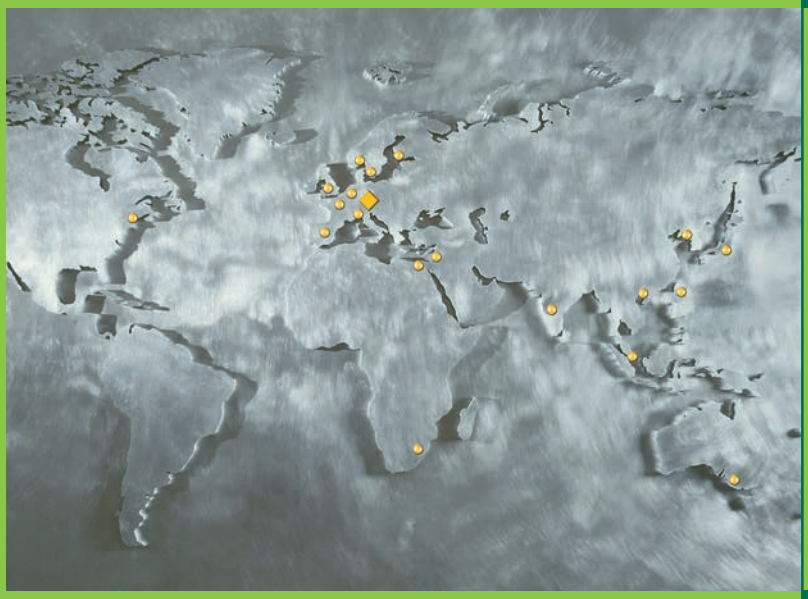
Rivet bushing with fine thread on outer diameter

Rivet bushing with special sealing contour

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

Press-in nut with hexagonal head

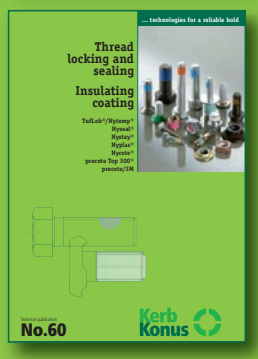
Press-in nut with three knurls on outer diameter



KerbKonus – Close to its customers. Around the world. Across every sector of industry.

First and foremost, for you customer proximity means a rapid response to your requirements and the fast, efficient realisation of the right fastening solution for you.

Detailed informations
for further products and applications
get in our technical publications.



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92224 Amberg

Production plant Hadamar

... and around the world.

Kerb-Konus Fasteners Pvt. Ltd.
Kolhapur/India

K.K.V. Corporation Japan
Osaka/Japan

KKV AG
Sattel/Switzerland

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