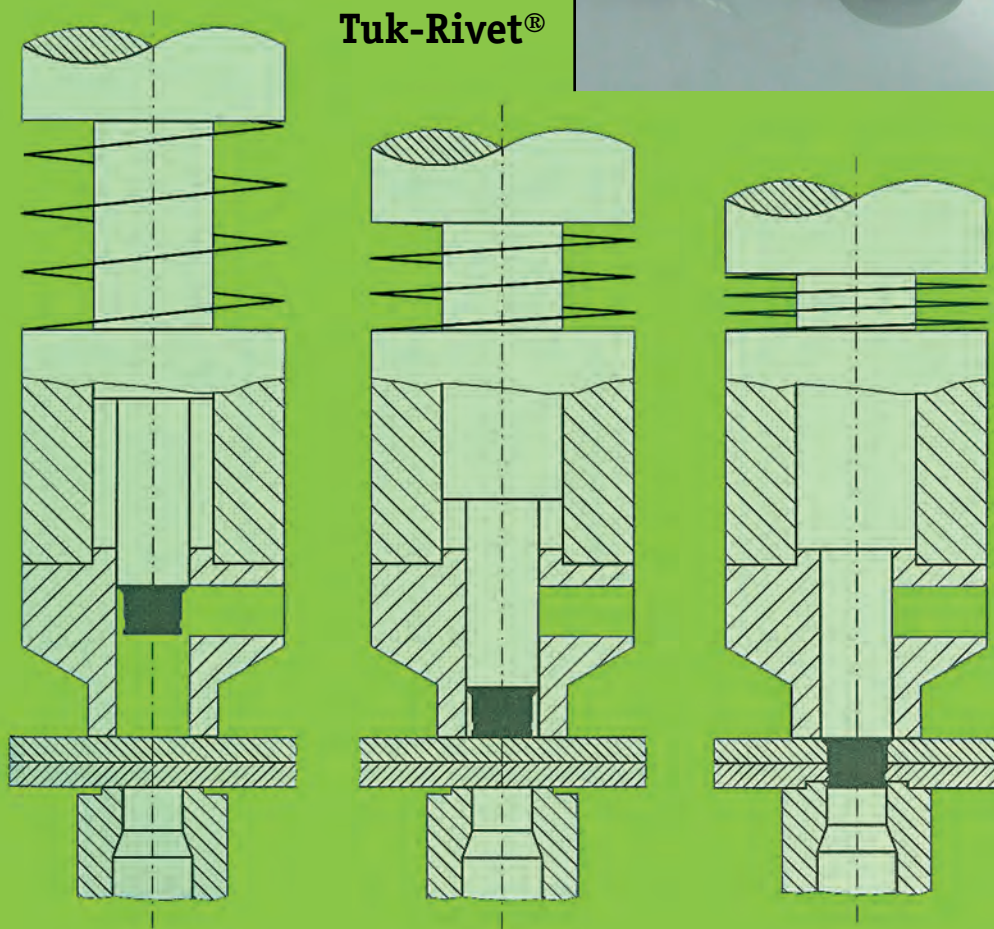


... technologies for a reliable hold

Punched Rivet System for thin metal components



Tuk-Rivet®



Technical publication

No.45





Fastening technology from KerbKonus is used today in wide-ranging sectors of industry around the world.

State-of-the art production facilities ensure optimum quality and supply availability. Our own research and development department works to implement demanding fastening solutions for widely differing applications.

Close international cooperation and exchange of experience guarantee an outstanding standard of engineering excellence.

With a widespread network of independent branches and representatives around the world, we are a sound, reliable partner when it comes to technologies for a reliable hold.

... our products and services

Alongside its renowned threaded inserts, the name KerbKonus also stands for wide-ranging services and products relating to the field of fastening technology. KerbKonus offers a reliable contract coating service for the refinement of threads to address wide-ranging different requirements:

- Thread locking
- Thread sealing
- Insulating plastic coating

Threaded inserts from KerbKonus look back on many years of versatile and successful application, and are used today to ensure a reliable hold for an ever greater number and variety of different connections. Depending on the method of anchorage in the material, KerbKonus offers wide-ranging different threaded insert versions and finishes.

- Self-tapping threaded inserts for metals, wood and plastics
- Threaded inserts for cold embedding
- Threaded inserts for hot or ultrasound embedding
- Threaded inserts for screwing into a nut thread
- Threaded inserts for riveting

For reliable, cost-effective fastening of thin mouldings and parts made of aluminium and magnesium, KerbKonus offers:

- Tuk-Rivet, the complete punched rivet system for thin-walled mouldings

Are you faced with a special problem relating to the topic of fastening technology? With its KerbKonus know-how and wide range of products, KerbKonus can supply the solution you are looking for.

Punched rivet ...



Description

Application range

Materials

Technical data

Detailed description

Punched rivet from KerbKonus ...

Tested quality
Safety

Page 3
Page 4



Tuk-Rivet®

Punched rivet self-riveting
*)

High loading capacity rivet connections

Rustproof, acid-proof steel,
Free cutting steel, hardened

Aluminium, heat-treated

Works Standard 492/493

Page 5 to 7



Tuk-Rivet®

Punched rivet/multi-zone rivet self-riveting
*)

High loading capacity rivet connections

Rustproof, acid-proof steel, Aluminium, heat-treated

Works Standard 492 1 493 1

Page 5 to 7



Processing devices

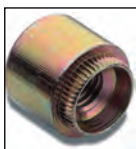
Punched rivet and composite material
Hand riveting tongs

Page 8

Checklist

Data sheet for Fax enquiries

Page 9



Other products for thin-walled mouldings

Other products for connection and fastening of thin-walled mouldings

Page 11

*) protected by numerous national and international patents.

Technical details of KerbKonus products are provided on our website: www.kerbkonus.com

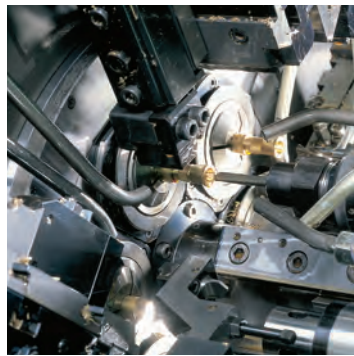
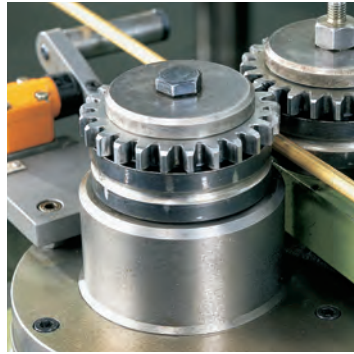
To access design data, go to the download portal of our website. Here, you will be able to download product data in any required formats or as CAD files.

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GERMANY

Phone +49 9621 679-0
Telefax +49 9621 679-444
e-mail KKV-Amberg@kerbkonus.de

internet www.kerbkonus.com



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.

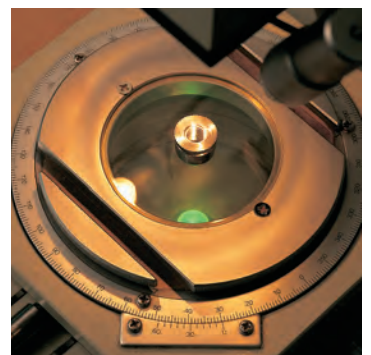
But our high-volume production output in no way compromises flexibility. We are able to quickly and efficiently produce even small batches of non-standard items.

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.



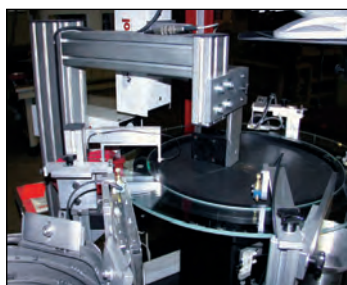
What really counts: tested quality.



Quality System
DEKRA Certificat in accordance with
ISO 9001:2008 Reg.No. 30507428/1
ISO/TS 16949:2009 Reg.No. 160507011/1
ISO 14001:2004 Reg.No. 170507049/1

Safety For our customers...

Punched rivets from KerbKonus are produced in large piece numbers. Despite their small size, these components can often be vital to safeguarding personal safety.



This is why the tests and checks we perform on our products comply to the most stringent guidelines and directives. In the case of particularly critical applications, we check every individual part using state-of-the-art testing facilities. Only once they have passed these rigorous tests are products sent out to our customers.

Our flexibility is reflected particularly in our rapid response to customer requirements. We take responsibility for logistical organization. And when the need arises, even in the event of supply bottlenecks we are able to respond quickly and reliably to ensure delivery capability for our customers.

Our many years of experience as a supplier to the automobile industry have clearly illustrated the need for an interdisciplinary approach to finding solutions to fastening problems.

With its know-how and its comprehensive range of products and services, KerbKonus is a sound, dependable partner when it comes to "technologies for a reliable hold".



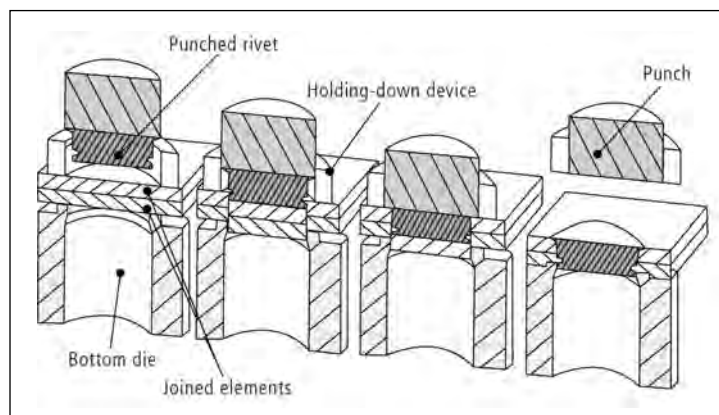
Tuk-Rivet® Punched rivet system



The process

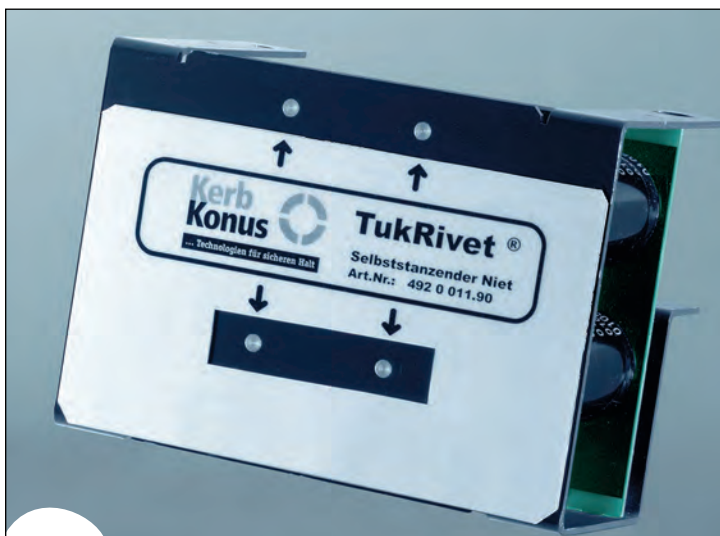
The punched rivet system using solid rivets allows two or more components to be joined. The components can be made of steel, high-strength steel, sheet or sectional aluminium as well as cast iron. Fibre-reinforced plastics (FRP) can also be joined to metal.

The process entails fixing the workpieces to be joined on the bottom die using a hold-down device. The parts being joined are then perforated by the solid rivet, which at the same time acts as a blanking die. When a stop point is reached, the now flush surface of the rivet punch and holding down device holds the workpiece against the bottom die.



Schematic sequence diagram

The contour of the bottom die and the compressive force applied by the rivet punch and hold-down device cause the material of the lower sheet to flow into the peripheral shank groove in the rivet. As a result, the material flows in the opposite direction to the movement of the punch and hold-down device.



Field of application

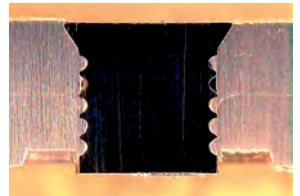
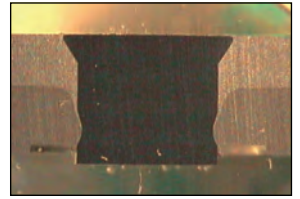
Tuk-Rivet provides an optimum fastening element wherever connections with a high load capacity have to be produced quickly between thin mouldings made of metal or FRP.

- For joining workpieces made of aluminium to steel as well as rustproof and acid proof sheet steels.
- For joining thin-walled components made of aluminium to sheet steels.
- For joining thick and thin sheets, whereby the lower sheet should have a minimum thickness of 0.9 mm.

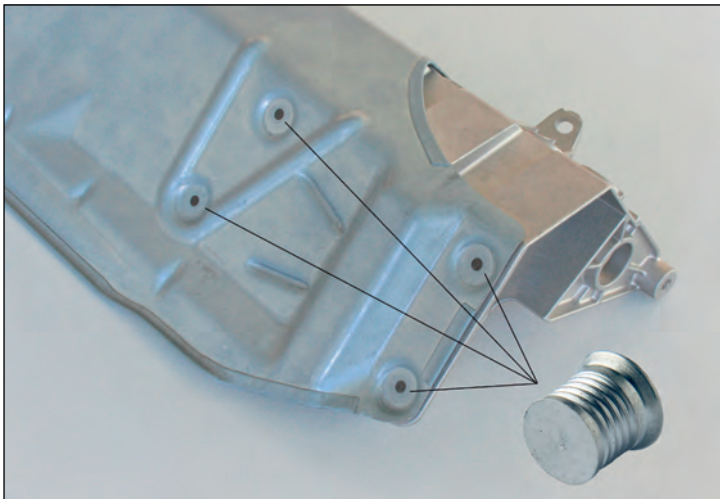
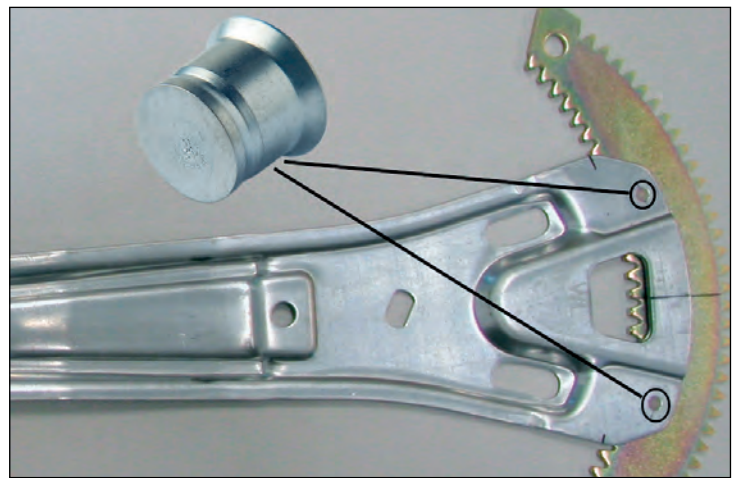
Product characteristics

- Accurate turning quality
- Largely flush finish on both sides
- Self-punching, no hole punching problems, reduced installation costs
- High-strength connection
- Ideal for plastic-coated or surface-treated parts
- Suitable for steel, stainless steel and light alloy sheet
- Replaces spot welding, no environmental pollution
- Integration possible in production lines, no separate workplace required
- The rivet head is covered by painting, no additional work stage required
- Hybrid construction possible
- Greater material thickness difference can be processed with multi-zone rivet

Punched rivets in application ...



Window lift of galvanized steel
(zinc coated).



Heat protection shield
connection of sheet metal
with aluminium diecast.



Guide rails in aluminium for electric
windows.



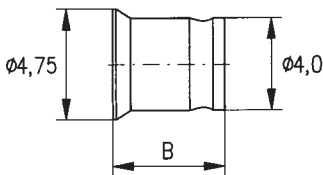
**Punched rivet
Multi-zone punched rivet
Self-riveting**

Tuk-Rivet®
Works Standard
492 / 492 1 / 493 / 493 1

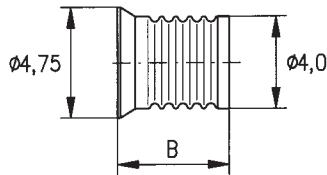
Application

Tuk-Rivet is a punched rivet made of rust and acid proof material or steel for the manufacture of highly load resistant riveted joints in thin section components.

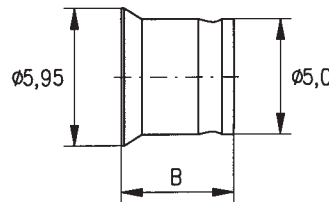
Works Standard 492 0



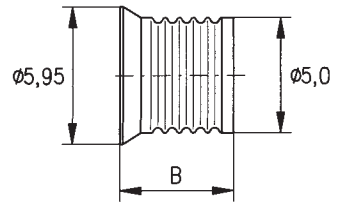
Works Standard 492 1



Works Standard 493 0



Works Standard 493 1



Articlenumber	for total sheet-thickness		Length B
	Works Standard 492 0 / 493 0	Works Standard 492 1 / 493 1	
49. .00 003 ...	2,5 mm – 2,7 mm	2,1 mm – 2,7 mm	2,7
49. .00 004 ...	2,8 mm – 3,0 mm	1,8 mm – 3,0 mm	3,0
49. .00 005 ...	3,1 mm – 3,3 mm	2,1 mm – 3,3 mm	3,3
49. .00 006 ...	3,4 mm – 3,6 mm	1,8 mm – 3,6 mm	3,6
49. .00 007 ...	3,7 mm – 3,9 mm	2,1 mm – 3,9 mm	3,9
49. .00 008 ...	4,0 mm – 4,2 mm	1,8 mm – 4,2 mm	4,2
49. .00 009 ...	4,3 mm – 4,5 mm	2,1 mm – 4,5 mm	4,5
49. .00 010 ...	4,6 mm – 4,8 mm	2,4 mm – 4,8 mm	4,8
49. .00 011 ...	4,9 mm – 5,1 mm	2,7 mm – 5,1 mm	5,1
49. .00 012 ...	5,2 mm – 5,4 mm	3,0 mm – 5,4 mm	5,4
49. .00 013 ...	5,5 mm – 5,7 mm	3,3 mm – 5,7 mm	5,7
49. .00 014 ...	5,8 mm – 6,0 mm	3,6 mm – 6,0 mm	6,0
49. .00 015 ...	6,1 mm – 6,3 mm	3,9 mm – 6,3 mm	6,3
49. .00 016 ...	6,4 mm – 6,6 mm	4,2 mm – 6,6 mm	6,6
49. .00 017 ...	6,7 mm – 6,9 mm	4,5 mm – 6,9 mm	6,9
49. .00 018 ...	7,1 mm – 7,2 mm	4,8 mm – 7,2 mm	7,2
49. .00 019 ...	7,3 mm – 7,5 mm	5,1 mm – 7,5 mm	7,5

Minimum thickness for lower sheet: $\geq 0,9$ mm

Example for locating the article number

Stainless steel Tuk-Rivet for 3.0 mm total sheet thickness, Works Standard 492 0:
Tuk-Rivet 492 000 004.900

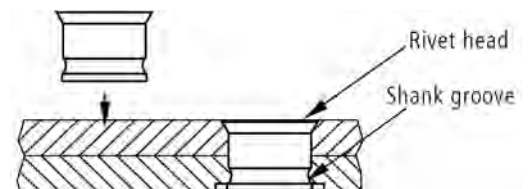
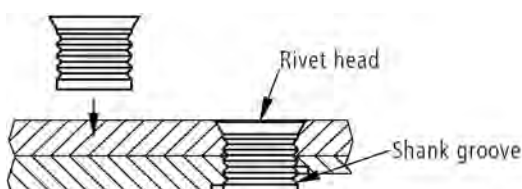
Material

Steel, hardened, zink/nickel-plated, transparent passivated
Steel, tempered, zink/nickel-plated, transparent passivated
Light-alloy, heat-treated
Stainless steel, hardened
Other finishes upon request

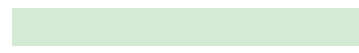
Article no. (**fourth** group of digits)... .. 143
Article no. (**fourth** group of digits)... .. 243
Article no. (**fourth** group of digits)... .. 700
Article no. (**fourth** group of digits)... .. 900

Tolerances

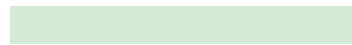
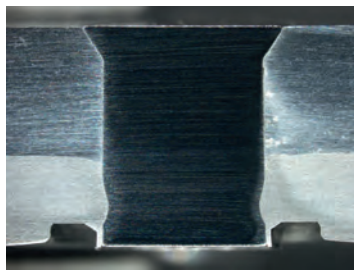
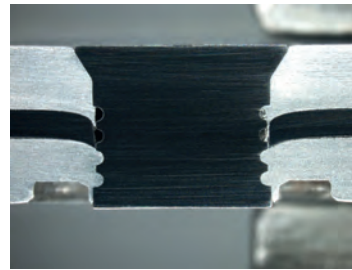
mean as per ISO 2768 m



Punching Rivet and Composites ...



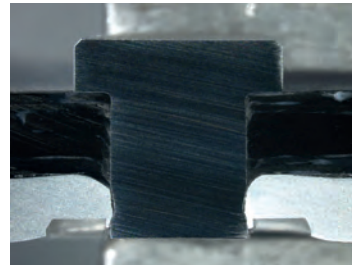
Multigrade Rivet according to Works Standard 492 1
 Light-alloy t = 1,7 mm +
 22MnB5 t = 0,8 mm +
 Light-alloy t = 1,7 mm



Punching Rivet according to Works Standard 492 0
 Magnesium t = 3,0 mm +
 Light-alloy t = 2,0 mm



Special Rivet according to Works Standard 492 0
 FRP t = 2,3 mm +
 Light-alloy t = 1,7 mm



Repair with Hand Riveter ...

For small piece numbers or repair jobs, a rechargeable battery-operated manual riveter can be used together with suitable solid punched rivets. One battery charge is sufficient for around 300 riveting operations.

A full charge takes around 60 minutes. The riveter can also be operated directly from a 230V mains connection.

The riveting operation requires access on both sides.



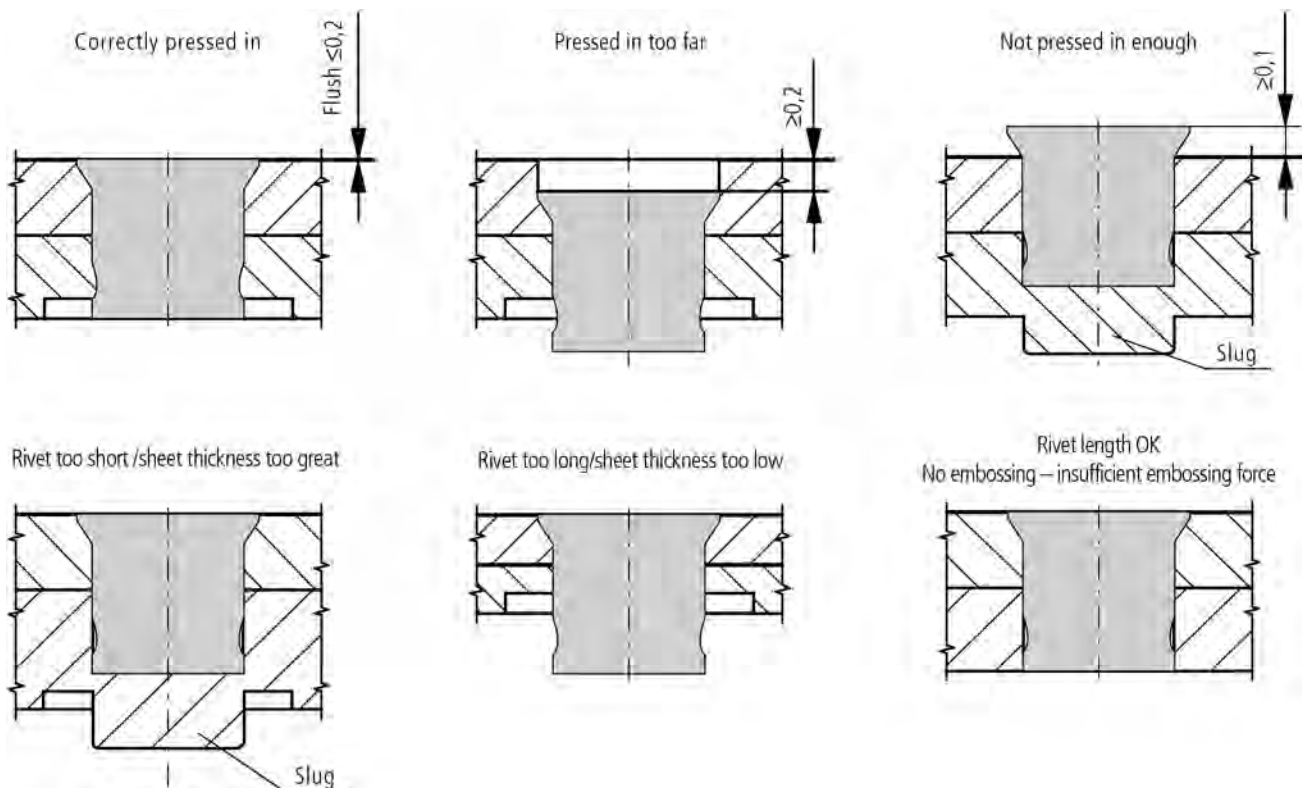
Battery Hand Riveter

... Strength values for Data sheet enquiry

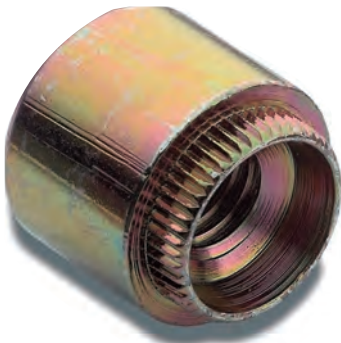
Strength values

Material	Thickness above [mm]	Thickness below [mm]	Shear tension [kN]	Cross tension [kN]	Peel tension [kN]
1,4016	1,5	1,5	5,4	2,5	1,3
1,4301	1,5	1,5	6,0	2,8	1,5
1,4003	2,0	2,0	6,8	3,7	2,2
1,4301	2,0	2,0	7,0	3,2	2,0
H260	1,5	1,5	3,5		1,2
H420	1,5	1,5	4,8		1,7
H340	2,0	2,0	5,8		2,1
H420	2,5	2,5	7,5		2,8
AlMg 3 / Al - DG	2,0	2,2	2,7		
Al Mg 3	2,0	2,0	2,6		
Bondal 1.4301	1,5	2,5	5,0	2,4	
H300	1,5	1,5	4,6	1,6	1,4
DC 04	1,5	1,5	3,5	1,4	1,1
AlMg5Mn	1,5	1,5	2,7	1,2	0,8
AC 120	1,5	1,5	2,6	1,2	0,8

... Instantly recognisable setting guide for optimum Tuk-Rivet connections



... Other products for joining and fastening thin section components



Anchor® - serrated rivet bushing

Alongside the punched rivet system Tuk Rivet, KerbKonus also offers a number of other matured solutions for fastening thin moulded components.

The Anchor product family is a rivet bushing made of steel or rustproof materials, brass or light alloy. The shank is countersunk and serrated.

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.

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.



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 pre-punched 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.

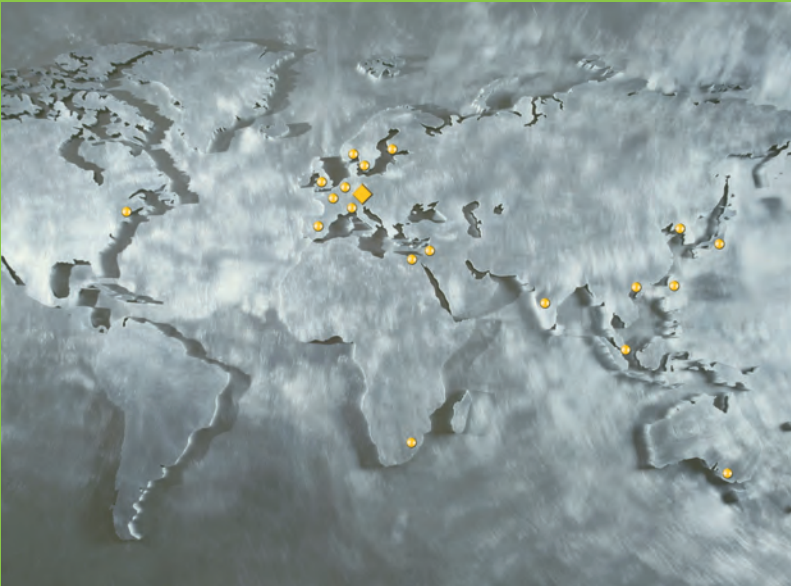
Several Clifa inserts can be installed in a single work process. The fastening screw is always screwed in from the opposite side.

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.

For detailed information on Anchor and Clifa, refer to our publication 40.

Order your copy by phoning +49 9621 679-0 or by email: kkv-amberg@kerbkonus.de

... technologies for a reliable hold



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.

For us, customer proximity is far more than just another watchword – it is an important strategic instrument. Our technical sales consultants are available locally to talk to you around the world, ready to offer sound advice when it comes to the reliable, economical application of modern fastening technology. Advisory activities are coordinated through the headquarters in Amberg.

Why not simply call us to arrange an appointment?

Kerb-Konus-Vertriebs-GmbH

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Rugeley/Staffordshire
UK

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Osaka/Japan

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Navalcarnero/Madrid
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KKV AG
Sattel/Switzerland

KKV Belgium
Gooik/Belgium

Precision Fasteners Inc.
Somerset, New Jersey/USA

KKV Sofrafix
Villeneuve D'Ascq
France

Kerb-Konus Italia s.r.l.
Mulazzano/Italy

Other foreign agents in a wide number of countries.
Addresses on request or under www.kerbkonus.com

**Kerb
Konus**