



HONSEL

The Art of Fastening

90
YEARS
1930-2020

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M10x1,5-BH

90°

90°

$\varnothing 10,8$



NEW Rivdom eVNG
Battery riveters for blind rivet nuts

Perfect service

WE ARE HONSEL
VVG Befestigungstechnik
Ein Unternehmen der HONSEL-Gruppe

Catalogue 2021/2022
Self-clinching elements

90 YEARS OF **HONSEL**



HONSEL 90 years of experience in the development, production and sales of high-quality fastener elements and setting solutions.



HONSEL 1930

Production of cookware with riveted handles.

HONSEL today

One of the oldest and leading full-line suppliers of riveting and fastener technology in Europe and worldwide.

HONSEL The products

From the simple standard rivet to complex automation with process monitoring.

HONSEL The success story of an owner-managed industrial company with a long-term, sustainable perspective and today more than 300 excellently trained employees at four sites.

HONSEL invests in the company, in machines and in its staff, and is synonymous with innovative products, the highest quality, the latest production facilities and partnership-based service always geared to the needs of our customers.



WE ARE JOINING **FORCES**



VVG Befestigungstechnik
Ein Unternehmen der HONSEL-Gruppe

Under a common brand name.
VVG is now **HONSEL**.

VVG and **HONSEL** were closely linked even in the past, and used many resources together. This cooperation will be documented in the future with a common brand image – under the motto

HONSEL. The art of fastening.

We are your strong partner when it comes to fastening technology. 90 years of development, production and sale of high-quality fasteners and processing solutions, combined with a high supply capability and the renowned fast and comprehensive service.

HONSEL. Everything from a single source.



HONSEL benefits.

Optimised processes

for even shorter order routes and reaction times.

Individual support

from specialist teams at your side.

Flexible and personal.

Direct access to the **manufacturer know-how** of the whole HONSEL Group.

Proven range – familiar faces.



THE **ART** OF FASTENING



90
YEARS
1930-2020

Information on other products, such as our industrial fasteners and automation solutions or coil threaded inserts can be found on our website, www.honsel.de, or send for the separate catalogues or data sheets.

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Clinching machines
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Blind rivets

Blind rivet nuts

Blind rivet studs

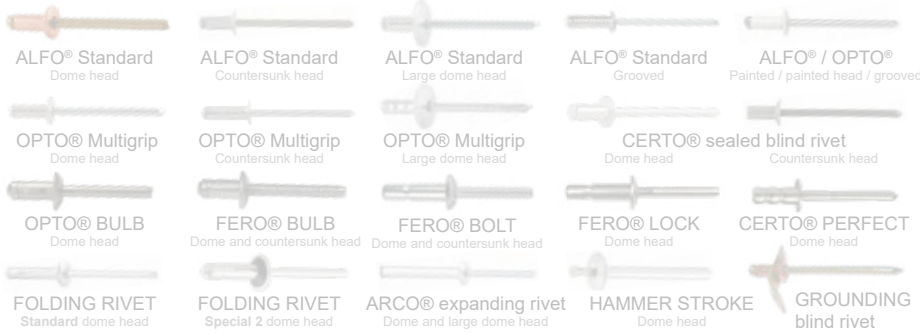
Manual riveting tools

Battery tools

Pneumatic-hydraulic tools

Self-clinching elements

Informations



BZ Series
for blind rivets



for blind rivet nuts/bolts



BZ 58

VNG 612N

VNG 152

MULTI 5

Rivdom eBZ Series
for blind rivets



RivSmart eBZs Series
for blind rivets



Rivdom eVNG Series
for blind rivet nuts/bolts



BZ Series
for blind rivets



VNG Series
for blind rivet nuts/bolts



Self-clinching nuts

Rivet bushes

Self-clinching stand-offs

Self-clinching bolts



Please note that we reserve the right to charge alloy surcharges based on the spot price at the time of ordering.

THE HONSEL GROUP

HONSEL. Individual.

We offer special solutions from special fasteners through to fully automated process-controlled riveting.

Our experts accompany you from the first idea through to the application in series production.

Our focus is always on long-term, full-line support with continuous exploitation of all optimisation possibilities.

Competent and proactive.

INDUSTRY



HONSEL. Standard.

We are the flexible point of contact for the trade and manufacturers in all branches of industry.

Professionals at our sites and a nationwide field service are available to provide advice on the spot – as a source of ideas and as problem solvers.

We supply our extensive standard product range from the well-equipped **HONSEL** logistics centres.

Quick and reliable.

TRADE + MANUFACTURING



SPECIALISTS

FROM A SINGLE SOURCE

DIVISIONS

AUTOMOTIVE

**HONSEL. Mobile.**

The decades of experience in the complex support for and supply to almost all major automotive manufacturers and their suppliers is one of our core competences.

We successfully face new challenges such as in the field of e-mobility and develop efficient concepts with and for our partners.

Pioneering and cost-effective.

TOOLS +
PROCESSING**HONSEL. Innovative.**

Perfect processing for every fastener and every application is our goal.

We develop and produce hand-held tools such as battery riveters as well as automation and component solutions or process monitoring systems.

We also support you with comprehensive service during operation.

Dependable and networked.



HONSEL SITES

HONSEL. Neumünster.

After being successful on the market for 25 years as VVG-Befestigungstechnik, **HONSEL Distribution** will continue to be responsible with the familiar team for the delivery of the catalogue range of standard and norm parts – in many cases adapted to the customer's requirements.

The new and further development of hand-held setting and riveting tools and their maintenance and repair are also carried out at the site.



HONSEL. China.

A large number of standard fasteners are manufactured to **HONSEL** specifications by **HONSEL Fasteners** and tested in their own quality assurance centre in Wuxi/China. The site is also home to the Group's logistics centre in Asia and delivers directly to the Chinese market.



WORLDWIDE

AVAILABILITY

HONSEL. Fröndenberg.

HONSEL Umformtechnik is the heart of the Group and its main manufacturing site.

The latest machinery and continuously expanded production capacities guarantee the reliable production of individual custom parts and automation solutions for large-scale industry and automotive customers. A sophisticated logistics concept with fully automated warehouse ensures fast and dependable availability.



HONSEL. France.

HONSEL France is responsible for the French-speaking market.

With a flexible local presence, well-stocked warehouse and comprehensive field service network, HONSEL France has been a competent partner for trade and industry for decades.



HONSEL is represented by a large number of trading partners on every continent, whether in the USA, Mexico, Brazil or India, and in practically every European country, Switzerland and Turkey.



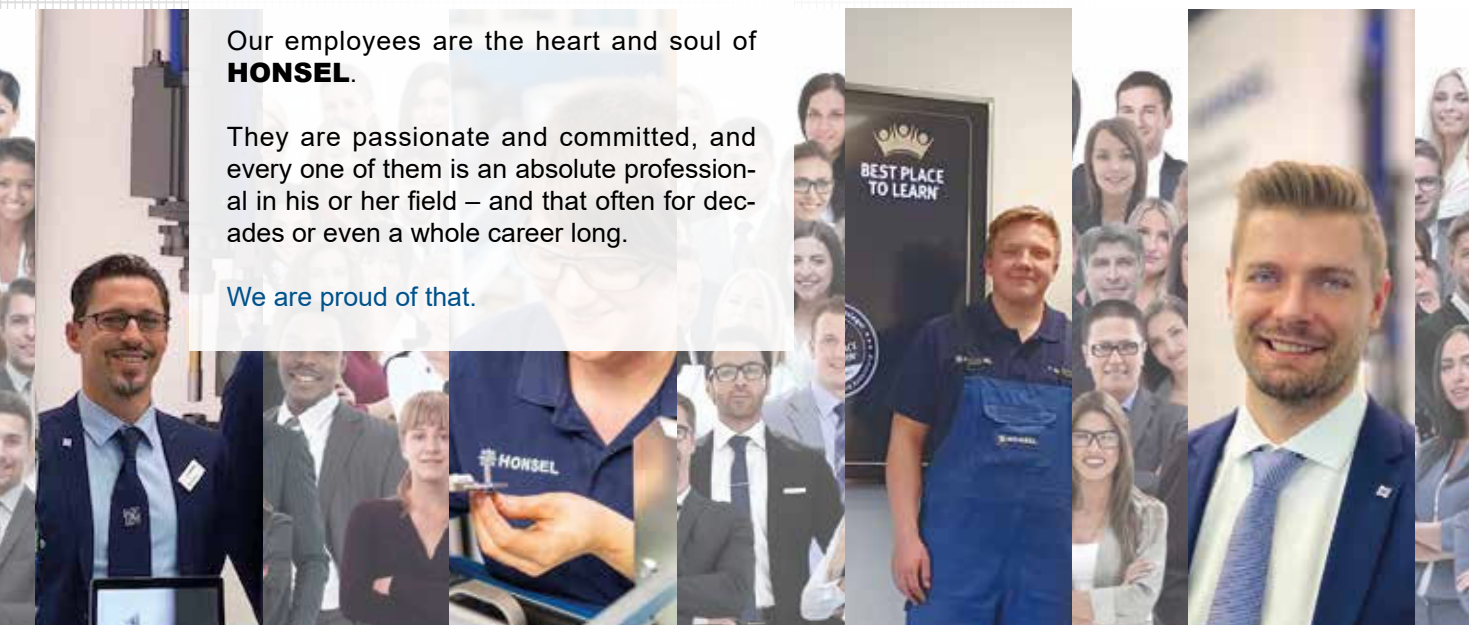
WE ARE HONSEL

HONSEL. The team.

Our employees are the heart and soul of **HONSEL**.

They are passionate and committed, and every one of them is an absolute professional in his or her field – and that often for decades or even a whole career long.

We are proud of that.



HONSEL. Career.

HONSEL is an employer with a tradition and a future.

The continuous integration of the latest technologies and the experience of our company history form the basis for challenging commercial, industrial and technical jobs.

We train our own apprentices and provide ongoing internal and external training for our staff.



PEOPLE

and VALUES

HONSEL. Guidelines.

We keep our promises. Dependability – both internally and externally – is a matter of course for us.

We work for our customers. Optimum technical support, the highest productivity and punctual deliveries are our top priority.

We are one team. Only together can we achieve our goals.

HONSEL. Environment.

For us, progress also means **sustainable management** in all areas.

For example, our production facilities are equipped with solar panels, and the plant in Fröndenberg – directly on the Ruhr river – meets the highest environmental standards. We have significantly reduced the use of printed media.

We demand an awareness in these issues also from our suppliers and partners, and evaluate the results on an ongoing basis.



HONSEL AT A GLANCE.

- Manufacturer for 90 years with more than 400 employees at four sites
- Over 10,000 m² of production area
- In the heart of Germany – in the heart of Europe – near you worldwide
- High manufacturing depth for solid and hollow parts with complex bores and close tolerances
- Wide range of customer-oriented services
- Ongoing further development of resources and investments throughout the Group

Our production facilities – 80 % new investments in recent years.

- More than thirty five and six-stage headers for cold forming up to 20 mm wire diameter and 60 mm length
- Optoelectric sorting machines for 100 % inspection of all custom products
- Screw conveyor washing facilities and belt conveyor furnace
- Turning and milling centres
- EDM machines, automatic grinders and thread formers

Development, logistics and service

- The latest CAD workstations for design engineering and product development
- Packaging machines of the latest generation for bags, disposable boxes and KLTs
- Automated high-bay warehouse
- New office building on four floors
- Repair and maintenance centres for setting tools
- Vast know-how in all areas – from development through production up to sales

In-house processes

- Finite elements simulations
- Induction hardening and annealing
- Recrystallisation annealing
- Crimping and laser welding
- Application of various seals
- Finishing operations such as barrel finishing, drilling, turning and milling, rolling and pointing
- Assembly of component elements
- 100 % inspection
- Length and roughness tests
- Metallurgical examinations
- Microscopy up to 1,000x magnification
- Profile projection
- Eddy current testing
- HV & HB hardness tests
- Universal testing machines up to 50 kN

- In-house toolmaking shop for fast prototype production
- Certification to ISO 14001 and ISO/TS 16949

FACTS and

REFERENCES

HONSEL CUSTOMERS

HONSEL has been working successfully and in close partnership with a large number of leading companies from the automotive industry and their suppliers, and with manufacturers from other branches of industry – and that for decades.

Sophisticated special solutions are developed together and brought to series production maturity.

Furthermore, we are supported by over 2,000 trading partners in the sale of our products worldwide – from A for Australia to Z for Zimbabwe.



The logos and trademarks illustrated are the property of the respective holders.

WIRE PRODUCTS



The art of **cold forming**



It all began with wire.

From the very beginning, we have manufactured our fastener elements from wire up to 20 mm in diameter and have vast know-how, a great manufacturing depth and the ability to achieve even the most complex deformation ratios with very close tolerances.

During cold forming, the wire is subjected to very large forces in several steps to bring it to the desired shape.

The task during production is to achieve very high deformation ratios using headers.

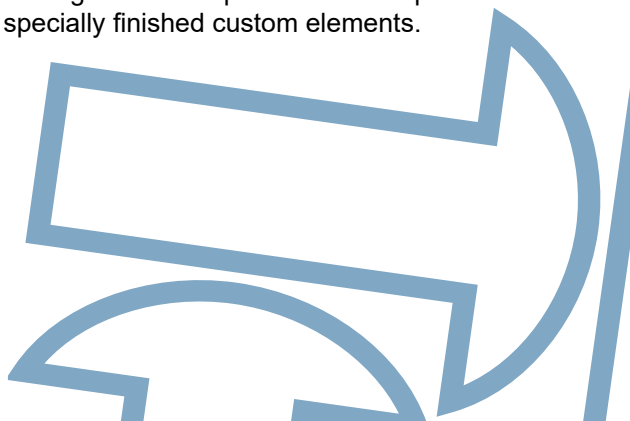
HONSEL has constantly refined this production principle over the 90 years of the company history and can today offer high-precision customised products made of a wide range of materials that meet all the demands of the latest quality standards.

Perfect and uncompromisingly individual with the highest precision

In some cases, the experience in the **HONSEL** team is passed down from generation to generation. A combination of the courage to explore new ideas and the latest technology results in new production concepts – always with the goal of creating the optimum product for every customer.

Today **HONSEL** is a sought-after supplier for sophisticated custom solutions or standard products that can be produced inexpensively in large series.

The portfolio ranges from simple cold formed parts through to specially finished custom elements.



DEVELOPMENT AND ENGINEERING

HONSEL and the eye for something new.

The basis for our success is the continuous search for new possibilities, always looking out for perfect solutions. We recognise the potentials for fastener and processing concepts, put these into practice and optimise them continuously.

NEW DEVELOPMENT

HONSEL sees itself as a development partner for its customers who not seldom provide the stimulus for innovative and cost-efficient results. On this basis, our engineers together with the product management team constantly come up with **sophisticated ideas for new products**.

In doing so, we also divert from familiar paths in order to meet even the most individual demands. After evaluation of the feasibility, implementation is carried out by experienced design engineers at modern CAD workstations, in prototype production and in-house 24/7 endurance tests. The latest processes, such as finite element simulations, are also available for validation.

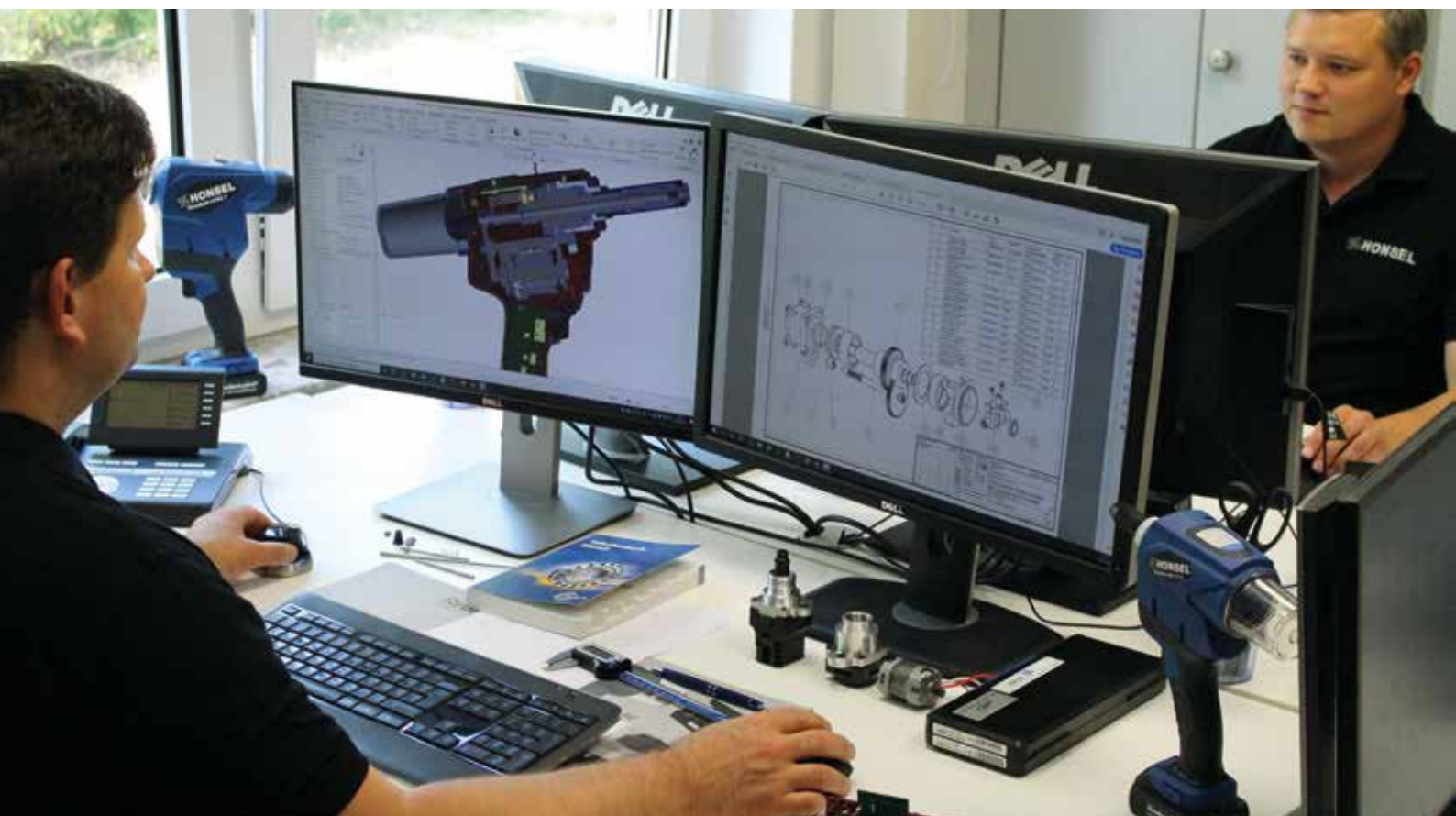
FURTHER DEVELOPMENT

One the other hand, our application technicians are permanently engaged in the **optimisation of the existing product range**.

This is where tests and analyses are carried out, customer feedback is evaluated and the know-how from the sales and service team is taken into consideration, reviewed and verified.

The results then go directly into the production at the various production sites.

Pioneers in blind riveting technology.



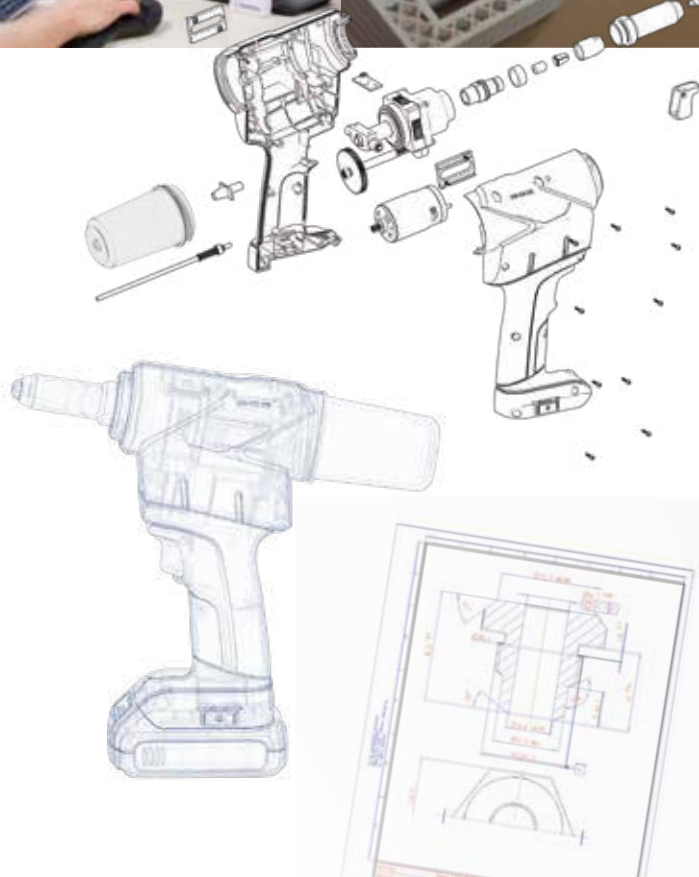


FASTENERS and FASTENING

A wide range of fasteners for the extensive standard product range with over 1000 sizes or customised fastener elements for large-scale series production?

Hand-held tools, such as the successful **Rivdom®** and **RivSmart®** battery riveters with a vast array of accessory options or complex, fully automated systems and components with process monitoring for industry?

HONSEL will work with you and the experts in our central and local offices to develop the most individual, efficient and cost-effective – in short ... **the perfect solution for your application.**



CAD DATA SERVICE

We offer design engineers and product developers the possibility of downloading each of our standard sizes from the latest catalogue range for direct integration into their applications – in **over 100 different formats** as native 3D CAD models for all common CAD systems.

Simple, quick and free of charge.



The right models for every **CAD system.**

You can thus eliminate the need for time-consuming product searches or for requesting necessary data material and can concentrate fully on your own development work.

Just find the required fastener as normal in the product section of our Internet website under **www.honsel.de/produkte/standardverbinder** and then click on the CAD symbol behind the required size.

Log in directly to the **CADENAS PARTcommunity** or quickly and easily create an account once only. In the portal you then have the possibility of adapting the product to your needs again before the download and of selecting, for example, between delivery condition and finished rivet product.

 **PARTcommunity**

CAD
DATEN
ONLINE

CAD
ONLINE

PRODUCTION

HONSEL fastens.

For decades now, our core business has been and still is our manufacturing competence for the **complex cold forming of wire** in all common materials such as steel, aluminium, stainless steel, copper and brass – and many others.

HONSEL production sites are among the most modern production facilities for fasteners. Short routes and a large number of in-house further processing and finishing options are your **guarantee for maximum flexibility**.

On more than thirty ultra-modern 5 or 6-stage headers, we bring wire of up to 20 mm in diameter into shape.

All the multi-stage headers at **HONSEL** have full process control and are designed with redundancy. This gives us sufficient freedom to be able to react to production demands even at short notice.

The production capacities are all designed for 3-shift operation. Transport and material supply routes are optimised and just as (partly) automated as the in-house transportation and delivery to the customer.

Another elementary factor for smooth production is access to a well-filled starting material and wire stock at the site at all times.





The most important component, however, is highly motivated employees who are able to intuitively control the enormous forces involved in forming on the press with the highest precision.

Regular training combined with know-how passed down from generation to generation form **the DNA of our production.**



SECONDARY PROCESSING

HONSEL goes FURTHER.

Pressing is often followed by a large number of further work steps. Most these can be carried out in-house thanks to the continuous expansion of our possibilities. Together with the in-house toolmaking shop for production equipment, this contributes significantly to shortening the processes, both in reaching production maturity for custom parts and for the expanding of the standard product range.



Pressed, washed, annealed

– that is the sequence in the cold forming process for our products. For most of the **HONSEL** parts, however, the production route is still far from over at this point.

Proactive, regular investments in **future-oriented new technologies** are directly integrated into existing routines and thus become a common part of the wide variety of in-house processes.

Tolerance practically zero.

In many branches of industry, very close tolerances are demanded that the supplier has to constantly ensure. For custom parts, **HONSEL** achieves a concentricity tolerance of less than 0.07 mm and deviations e.g. in the coil length of +/- 0.05 mm. Absolute top values!

HONSEL possibilities.

- **Barrel finishing** to reduce friction and prolong service lives.
- **Drilling, turning and milling.** Machining operation to modify shank forms and contours.
- **Rolling and pointing** for production of different bolt versions.
- **Thread forming** (inside or outside)
- **Laser welding** of blind rivet bolts in our own laser chamber.
- **Crimping** of blind rivet bolts to create an inseparable captive sleeve/bolt system with perfect corrosion protection.
- **Application of certified sealants.** Mechanical or hybrid components with plastic sheathing of metal parts.
- **Application of partial scratch protection.**
- **Assembly of component elements**, e.g. bolt/sleeve combinations.
- **Heat treatment.** Partial annealing and hardening of component areas to increase strength.
- **Surface coating** in a local partner network for the highest demands on corrosion protection.





Particular attention has been paid for many years to our [in-house toolmaking shop](#).

The independent production of the necessary production tools guarantees shorter delivery times even during prototype production and vast possibilities for meeting even the most unusual wishes of our customers.

The complex tool kits often comprising several hundred parts are stored in a perfectly organised and fully automated system, and are therefore quickly available for use on the machines at any time.

It is therefore not unusual even with completely new custom parts for **HONSEL** to be able to deliver a series production part to the customer, including production of the prototype, within just a few weeks of receiving the concrete enquiry.





HONSEL From the first part to the last: consistently flawless and good!

The highest quality in every form has the greatest importance in our day-to-day business activities. Uncompromising in every area.

The HONSEL Group has developed exemplary **quality assurance processes** at all its sites. This is underlined by our certification to ISO 9001:2008, ISO 14001 and ISO/TS 16949.

In addition to standard test methods for checking shear and tensile forces, the riveting mandrel breaking forces and push-out forces and the locking of the mandrel inside the head, the latest measuring instruments and testing facilities ensure the highest level of production even with very large quantities.

Here we use **process monitoring systems** and **optoelectronic testing machines** for the **100 % inspection** of individual customised parts. This and **0 ppm strategies** are criteria that companies have to meet today when it comes to defining targets in quality assurance.



By **already testing every individual batch at all phases of the running production process** and its documentation by means of a CAQ software integrated into our modern IT system, continuous tracking of all shipped products is assured back to the starting material used.

Measuring equipment is also available for length and roughness tests, metallurgical tests, microscopy, profile projection, eddy current and hardness tests.



APPROVALS AND CERTIFICATES

National technical approvals

General national technical approvals are required for many types of construction and construction products where no defined rules and standards exist, or where extreme deviations from these exist.

These serve as proof of their safe use in the intended applications and describe the necessary technical requirements for a construction.

In the field of blind rivet technology, for example, these are:

- General fasteners for steel and aluminium substructures
- Aluminium substructures for solar energy installations
- Longitudinal butt joints of corrugated sheets
- Longitudinal butt joints of metal and corrugated plastic sheets
- Production of sliding points on aluminium substructures

The blind rivets currently approved or undergoing approval from the product groups **ALFO®**, **OPTO®**, **CERTO®** and for **folding blind rivets with neoprene seal** are marked with the symbol opposite.



For necessary documents and further information, please contact the specialists from our technical sales team directly.



Certificates



From January 1st, 2021 **HONSEL Distribution GmbH & Co.**

You can rely on us. **Guaranteed.**

Please ask for possible updated versions of the certificates issued during the life of the catalogue.

LOGISTICS

HONSEL Securely packed – quickly dispatched.

Even the best goods are only worth half as much if they are not available in sufficient quantities at the right time. That is why we attach the greatest importance to the reliable delivery of the ordered products – whether straight from production or from the constantly well-filled warehouses at all the sites of the **HONSEL** Group!

15,000 m²

warehousing and logistics area

70,000

Parcel shipments per year

10,000

Pallet transports per year

In recent years, **HONSEL** has invested in a broad packaging and logistics infrastructure.

The most recent example is the newly built Works III with a further 2500 m² of space at the Fröndenberg site. A new warehouse management system with synchronised communication between stock management and ERP system was introduced there, together with the “goods-to-person” principle in order picking.

Backed up by a narrow-aisle stacker system designed for semi-automatic positioning, the finished products are buffer-stored there and prepared for dispatch according to the order requirements. In addition to greatly improved inventory and process reliability in day-to-day operation, a high order picking performance was achieved with reduced labour.

Thanks to modern packaging capacities at all the sites, **HONSEL** is able to provide practically any packaging required – from the simple standard packaging up to **customised special packaging**.

Even for very high volumes in the shortest of time!

- **Cardboard packagings** in any form.
Small packagings with Euro hole, various standard sizes, large packagings for loose bulk goods.
- **Customer packagings**
We also fill cardboard boxes with the customer's design.
- **Small load carriers (KLTs)**
Standardised plastic transport and storage boxes specified or supplied by the customer.
- **Small load carriers (KLTs)**
Standardised plastic transport and storage boxes specified or supplied by the customer.
- **Bag packaging**
e.g. as product enclosures or service kits
- **Kanban systems**
Together with our trading partners, we deliver to a wide range of different Kanban systems in industry





Logistics means more to us.

- Long contact hours every day, late last dispatch and short organisational and travel distance guarantee short reaction times.
- Long-standing logistics partners for parcel and pallet goods for punctual and smooth handling during transport of the shipments – of course with delivery next day, if necessary.
- Clear identification.
- High delivery availability thanks to perfectly planned warehouse stocks and supply chain organisation.
- EDI and other data interfaces for smooth communication with customers and service providers.
- Just-in-time. Long-term delivery schedules with automatic delivery.



SPECIALIST TRADE

HONSEL

Partner of the specialist trade

We support the specialist trade and associations in the successful distribution of **HONSEL** products. In Germany. In Europe. Worldwide.

- Long contact hours, highest availability of the catalogue product range and fast delivery guarantee high flexibility
- - We have a local presence and provide support in all questions concerning riveting and fastener technology and give valuable tips for sales
- We carry out special projects for the trade partner's customers together and on a basis of trust, as well as providing technical support
- Printed and digital sales support
- We train the dealer's staff and thus provide security for the resale
- We present the **HONSEL** products in an attractive and informative manner at in-house exhibitions or individual customer events
- Individual and attractive solutions for successful presentation in the retail business



ONLINE SUPPORT



On our new website, www.honsel.de, you will find not only information about the **HONSEL** Group, but also a number of useful tips to simplify your day-to-day work in rivet and fastener technology

- Product search. Overview of all HONSEL products – in many cases backed up with illustrations, drawings, film or animation, data sheets and CAD data for the design engineering.
- Download centre with a wide range of material, such as flyers or pictures for sales activities
- ProductViewer for finding tool spare parts
- Live-Chat for direct, quick contact with our team

We have a large number of videos available on YouTube, many of which can be called up via the QR codes in this catalogue.

You can receive up-to-date information on our social media channels or with the regular **HONSEL** newsletter.



Service, Service, Service. More than just good products.

We have an open ear for your needs and wish to make cooperation with our companies as **smooth and uncomplicated** as possible.

Product know-how and application experience are part of our DNA.

Thanks to our continuous internal and external further training, outstandingly qualified staff are at your disposal with **friendly and competent** information, a passion for our products and always a pragmatic, quick solution to the big and small problems of your day-to-day business.

We accompany major projects from the first idea through to the regular supply with experts from all the necessary departments who work closely together to **guarantee optimum support**.



We are **HONSEL**.



REPAIRS AND MAINTENANCE

Tool downtimes have to be kept **as short as possible**.

To ensure that the repair of your tool can be carried out **even faster**, we have further **optimised and simplified** the processes for users and our trade partners.

In future, on receipt of the tools, a **direct repair** will be carried out **without cost estimate** but within a maximum cost framework by the **experienced experts** in our service team.

And to ensure that you can continue to work during the repair, we have an adequate number of **hire tools** in stock.

Regular maintenance is also playing an increasingly important role. Talk to our sales team about the possibilities of **extended guarantees, maintenance plans and service packages**.

You can also use our **ONLINE SERVICE CHECK-IN** tried-and-tested for years in order to **expedite the handling of your repair** by registering with all the necessary data.



Information and explanation of symbols

Article numbers / allocation to tools:

Distinction between standard (10) and custom part (20), tools (311/320) and spare parts (311/321)

Rivet diameter / indication of thread size (blind rivet nuts)
 (distinction between dome and countersunk head)

10708048100 / xxx

- Variants / packaging data

Blind rivet length or max. clamping range with blind rivet nut

Article group designation

Figures

with product photo, drawings and material details

Tabs

for better orientation when the catalogue is closed

Table – basic data

diameter / length / clamping range /
article no. / packaging size / price

Table – additional information

head + shank diameter, head height,
bore diameter, various force data

Colour coding system

An unambiguous colour is assigned to each material that can be found also in both the navigation bar and the production designations and drawings as an aid to orientation. Furthermore, the colours are also integrated into the representation of the processing possibilities of all the tools. In addition, you will find the colour coding on a large proportion of our labels.



M3	M4	M5	M6	M8	M10	M12
Aluminium						
Steel						
Stainless steel						



SONO



General product information

Useful information on further dimensions, variants or special features and cross-references



Page references



HONSEL Serial No.



CAD data available online



DIN EN ISO



QR code with content information



Grip range



Shear Strength



Tensile strength



Tightening torque



Axial tensile force



Drill hole diameter

Necessary information

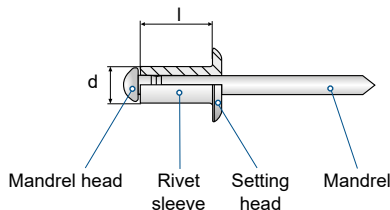
Please note

that a very large number of individual factors have an influence on a riveted joint. For this reason, riveting tests should always be performed (we can provide samples for these on request).

The standard range presented in this catalogue shows only a small proportion of all the products available. Should you not find an article or size – we'll find an alternative!

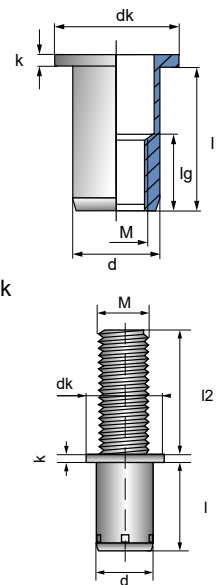
Blind rivets

- Material combination (sleeve / mandrel)
- Shank / bore diameter (d)
- Shank length / clamping range (l)
- Head form (dome, countersunk, large dome head)



Blind rivet nuts / bolts

- Material
- Thread size (M)
- Shank / bore diameter (d)
- Shank length / clamping range (l)
- Shank form (open / closed)
- Head form (dome, countersunk, small countersunk head)
- Twist lock (knurling / (partial) hexagonal shank)
- Bolt length in set condition (l2)



Tools

- **How often is the tool used?**
No. of rivets
- **Where is the tool used?**
Production / workshop / construction site, etc.
- **What max. dimensions / materials are processed?**
- **Are special rivet types to be processed?** e.g. high-strength blind rivets



Special nosepiece required



Hexagonal product



Closed shank



Knurled



Imperial dimensions



Stainless steel A4 grade



Pivoting tool head



Weight in kg



Tensile force at 7 bar



Pressure in bar



Stroke in mm



Maximum stud diameter



Sound emissions in dB(A)



Air consumption in litres



Connection possibilities



Scope of supply



Type of packaging



Packaging with hole for hanging

Self-clinching elements



Self-clinching elements with inside and outside thread are particularly suitable for **use in thin sheet metal** above 0.5 mm.

The thickness of the parts as a whole can thus be reduced, with the benefits of lower weight and material saving. After processing, they are **permanently connected to the base material**, such that any screw connections can subsequently be removed without risking displacement of the fastener. **This enables more streamlined and reliable production processes.**

Mechanical insertion **prevents surface damage**, enabling the products to be used even in prefabricated materials. Typical applications currently include the production of modern communication devices (such as smartphones, computers and laptops) as well as in the automotive industry.

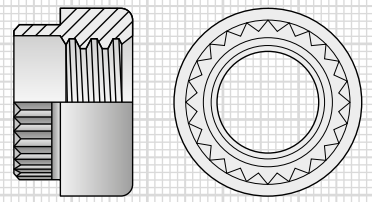
HONSEL can supply a wide range of high-quality self-clinching and rivet fasteners for sheet metal as a **perfect complement to the proven blind rivet products** from stock.

A range of thousands of options, along with the usual **HONSEL** fast delivery service, guarantees excellent, reliable support – even for customised adaptations.

The articles shown in this catalogue represent just a small selection of all available products. For further information, please contact our sales team.

Rivet bushes

Rivet bushes from the **10.455** and **10.456** series are riveted into the component. The shank is thereby inserted through a prepunched hole in the part and riveted over on the opposite side. The base material is not deformed. These threaded fasteners feature serrated shanks that cut into the metal sheet surface, ensuring a **high twist resistance and torque loading capacity**.

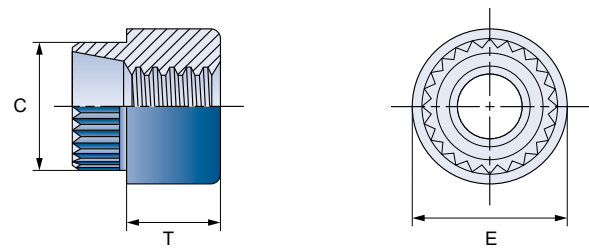


Series
455



CAD
DATA
ONLINE

Rivet Bushes V-A

Steel galvanized 



M	min. 	E	T	C	 + 0,10	No.
M3	0,90 - 1,10	7,90	3,20	5,80	5,90	10455030006
	1,40 - 1,60					10455030008
	1,70 - 1,90					10455030010
	2,00 - 2,20					10455030012
	2,90 - 3,10					10455030016
M4	0,90 - 1,00	9,50	3,80	6,90	6,95	10455040004
	1,10 - 1,30					10455040006
	1,40 - 1,60					10455040008
	1,70 - 1,90					10455040010
	2,00 - 2,20					10455040012
	2,90 - 3,10					10455040016

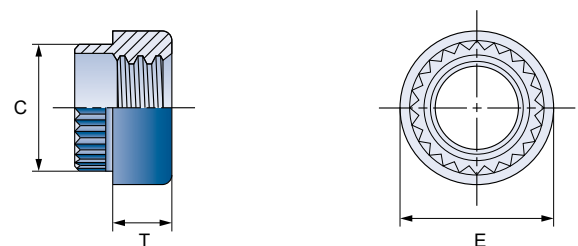
M	min. 	E	T	C	 + 0,10	No.
M5	1,40 - 1,60	11,10	4,40	8,30	8,35	10455050008
	1,70 - 1,90					10455050010
	2,00 - 2,20					10455050012
	2,90 - 3,10					10455050016
M6	1,10 - 1,30	12,70	5,70	9,50	9,65	10455060006
	2,00 - 2,20					10455060012



Series
456



CAD
DATA
ONLINE

Miniatur Rivet Bushes V-MA

Steel galvanized 

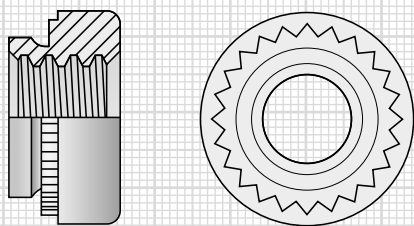


M	min. 	E	T	C	 + 0,10	No.
M3	0,90 - 1,00	5,50	2,80	4,20	4,30	10456030004
	1,10 - 1,30					10456030006
	1,40 - 1,60					10456030008
	1,70 - 1,90					10456030010
	2,00 - 2,20					10456030012

M	min. 	E	T	C	 + 0,10	No.
M4	0,90 - 1,00	7,00	3,20	5,40	5,50	10456040004
	1,10 - 1,30					10456040006
	1,40 - 1,60					10456040008
	1,70 - 1,90					10456040010
M5	0,90 - 1,00	8,50	3,80	6,40	6,50	10456050004
	2,30 - 2,50					10456050013

In addition to insertion with the aid of a press, these models can also be inserted using hand tools.


Self-clinching nuts



The self-clinching nut is a threaded fastener with knurl and groove. The knurl ensures that the displaced material is distributed evenly in the groove of the nut when it is embedded into the metal sheet so that a particularly secure hold is achieved.

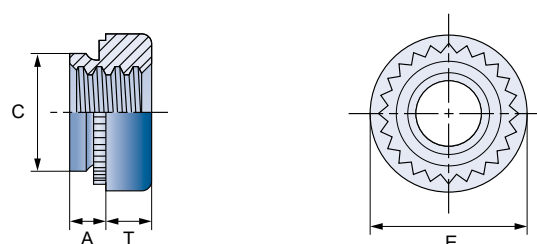
- Benefits:**
- High resistance to torque loads
 - Absolutely flush sheet metal back sides
 - Compact and clean – ideal for use in, for example, electronics and precision engineering

Nut V-S / V-SS



 Steel galvanized



CAD
DATA
ONLINE


Series
430

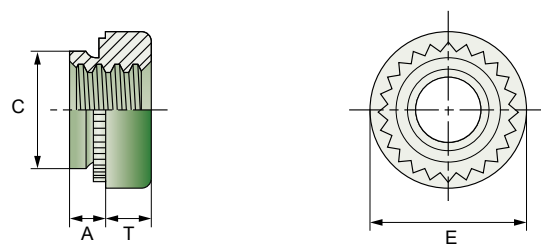


Self-clinching nuts made of hardened steel, suitable for use in metal sheets with hardnesses **up to HRB 80**.

M	min. 	E	T	C	 + 0,08	No.
M2	0,80 - xxx	6,30	1,50	4,22	4,22	10430020000
	1,00 - xxx					10430020001
	1,40 - xxx					10430020002
M2,5	0,80 - xxx	6,30	1,50	4,22	4,22	10430025000
	1,00 - xxx					10430025001
	1,40 - xxx					10430025002
M3	0,80 - xxx	6,30	1,50	4,22	4,22	10430030000
	1,00 - xxx					10430030001
	1,40 - xxx					10430030002
M4	0,80 - xxx	7,90	2,00	5,38	5,41	10430040000
	1,00 - xxx					10430040001
	1,40 - xxx					10430040002

M	min. 	E	T	C	 + 0,08	No.
M5	0,80 - xxx	8,70	2,00	6,38	6,40	10430050000
	1,00 - xxx					10430050001
	1,40 - xxx					10430050002
M6	1,20 - xxx	11,05	4,08	8,72	8,75	10430060000
	1,40 - xxx					10430060001
	2,30 - xxx					10430060002
M8	1,40 - xxx	12,65	5,47	10,47	10,50	10430080001
	2,30 - xxx					10430080002
M10	2,31 - xxx	17,35	7,48	13,97	14,00	10430100001
	3,18 - xxx					10430100002
M12	3,18 - xxx	20,55	8,50	16,95	17,00	10430120001

 Details of strengths and torques on [Seite 55](#).

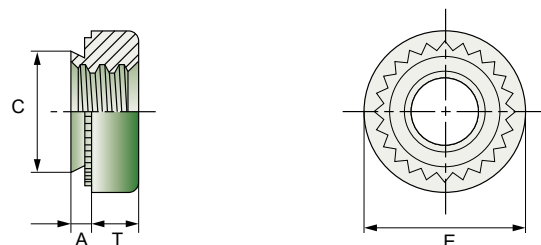


Self-clinching nuts of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M	min. 	E ± 0,25	T ± 0,25	A max.	C max.	+ 0,08	minimum distance hole center / steel sheet edge	No.
M2	0,80	6,30	1,50	0,77	4,20	4,22	4,80	10431020000
	1,00			0,97				10431020001
	1,40			1,38				10431020002
M2,5	0,80	6,30	1,50	0,77	4,20	4,22	4,80	10431025000
	1,00			0,97				10431025001
	1,40			1,38				10431025002
M3	0,80	6,30	1,50	0,77	4,20	4,22	4,80	10431030000
	1,00			0,97				10431030001
	1,40			1,38				10431030002

M	min. 	E ± 0,25	T ± 0,25	A max.	C max.	+ 0,08	minimum distance hole center / steel sheet edge	No.
M4	0,80	7,90	2,00	0,77	5,38	5,41	6,90	10431040000
	1,00			0,97				10431040001
	1,40			1,38				10431040002
M5	0,80	8,70	2,00	0,77	6,38	6,40	7,10	10431050000
	1,00			0,97				10431050001
	1,40			1,38				10431050002
M6	1,20	11,05	4,08	1,15	8,72	8,75	8,60	10431060000
	1,40			1,38				10431060001
	2,30			2,21				10431060002
M8	1,40	12,65	5,47	1,38	10,47	10,50	9,70	10431080001
	2,30			2,21				10431080002

Details of strengths and torques on [Seite 55](#).



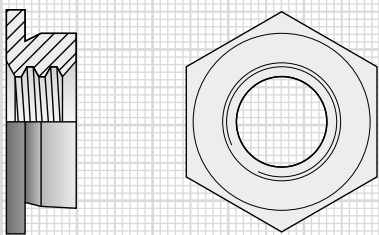
Self-clinching nuts of stainless steel (AISI 400 series), suitable for use in metal sheets with hardnesses **above HRB 80 (up to HRB 90)**.

M	min. 	E ± 0,25	T ± 0,25	A max.	C max.	+ 0,08	minimum distance hole center / steel sheet edge	No.
M2,5	0,80	6,30	1,50	0,77	4,20	4,22	4,80	10435025000
	1,00			0,97				10435025001
	1,40			1,38				10435025002
M3	0,80	6,30	1,50	0,77	4,20	4,22	4,80	10435030000
	1,00			0,97				10435030001
	1,40			1,38				10435030002

M	min. 	E ± 0,25	T ± 0,25	A max.	C max.	+ 0,08	minimum distance hole center / steel sheet edge	No.
M4	0,80	7,90	2,00	0,77	5,38	5,41	6,90	10435040000
	1,00			0,97				10435040001
	1,40			1,38				10435040002
M5	0,80	8,70	2,00	0,77	6,33	6,40	7,10	10435050000
	1,00			0,97				10435050001
	1,40			1,38				10435050002
M6	1,40	11,05	4,08	1,38	8,73	8,75	8,60	10435060001

Details of strengths and torques on [Seite 55](#).

Self-clinching nuts



Self-clinching nuts from the 10.440 series form a **thread within the sheet thickness** with a **flush finish on both sides**.

The hexagonal head is simply pressed into the metal sheet in such a way that the metal places itself evenly around the conical shaft of the element and secures it reliably in place.

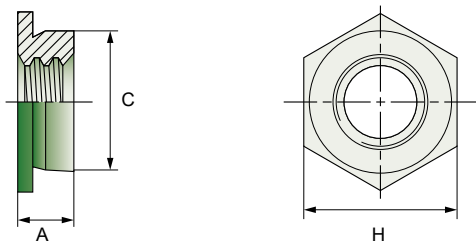
- Benefits:**
- Enables the use of captive nuts even in metal sheets, for which conventional fasteners cannot be used due to spatial limitations
 - Easy installation in **round holes**
 - **High resistance to extraction forces**
 - **High torque loading capacity**

Flush Nut V-F flush on both sides



 **Stainless steel 300 series**



CAD
DATA
ONLINE


Series
440



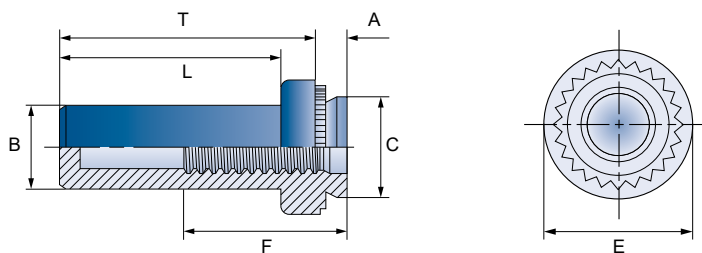
Self-clinching nuts of stainless steel (AISI 300 series) especially for use in thin aluminium sheets with hardnesses **up to HRB 70**.

M	 min.	H	A max.	C max.	 + 0,08	minimum distance hole center / steel sheet edge	No.
M2	1,53	4,80	1,53	4,35	4,37	6,00	10440020001
	2,32		2,30				10440020002
M2,5	1,53	4,80	1,53	4,35	4,37	6,00	10440025001
	2,32		2,30				10440025002
M3	1,53	4,80	1,53	4,35	4,37	6,00	10440030001
	2,32		2,30				10440030002

M	 min.	H	A max.	C max.	 + 0,08	minimum distance hole center / steel sheet edge	No.
M4	1,53	7,90	1,53	7,35	7,37	7,20	10440040001
	2,32		2,30				10440040002
M5	1,53	8,70	1,53	7,90	7,92	8,00	10440050001
	2,32		2,30				10440050002
M6	3,18	9,50	3,05	8,72	8,74	8,80	10440060003
	3,96		3,84				10440060004
	4,75		4,63				10440060005


 Details of strengths and torques on [Seite 55](#).

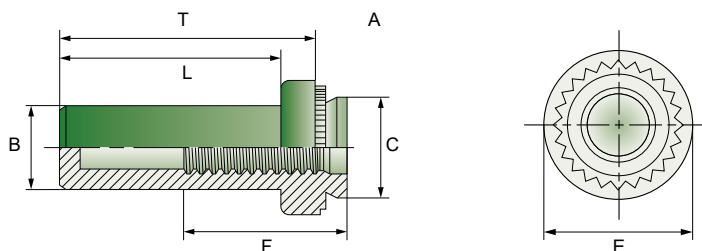




Self-clinching nuts made of hardened steel, suitable for use in metal sheets with hardnesses **up to HRB 80**.


M		E ± 0,25	F min.	A max.	C max.	B max.	 + 0,08	L max.	T ± 0,25	minimum distance hole center / steel sheet edge	No.
M3	1,00	6,35	5,30	1,00	4,22	3,84	4,25	8,50	9,60	4,80	10450030001
	1,40			1,40							10450030002
M4	1,00	7,95	7,10	1,00	5,38	5,20	5,40	9,80	11,20	6,90	10450040001
	1,40			1,40							10450040002
M5	1,00	8,75	7,10	1,00	6,38	6,02	6,40	9,80	11,20	7,10	10450050001
	1,40			1,40							10450050002
M6	1,40	11,10	7,80	1,40	8,72	7,80	8,75	12,70	14,30	8,60	10450060001
	2,30			2,30							10450060002

 Details of strengths and torques on [Seite 55](#).

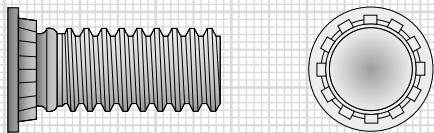


Self-clinching nuts of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M		E ± 0,25	F min.	A max.	C max.	B max.	 + 0,08	L max.	T ± 0,25	minimum distance hole center / steel sheet edge	No.
M3	1,00	6,35	5,30	1,00	4,22	3,84	4,25	8,50	9,60	4,80	10451030001
	1,40			1,40							10451030002
M4	1,00	7,95	7,10	1,00	5,38	5,20	5,40	9,80	11,20	6,90	10451040001
	1,40			1,40							10451040002
M5	1,00	8,75	7,10	1,00	6,38	6,02	6,40	9,80	11,20	7,10	10451050001
	1,40			1,40							10451050002
M6	1,40	11,10	7,80	1,40	8,72	7,80	8,75	12,70	14,30	8,60	10451060001
	2,30			2,30							10451060002

 Details of strengths and torques on [Seite 55](#).

Self-clinching studs



Self-clinching studs are fasteners that have a knurling under the head which ensures that the material is pressed into the rivet ring on insertion into the sheet metal and thus secures the fastening element.

Benefits:

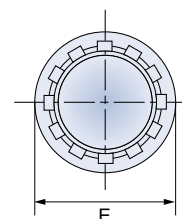
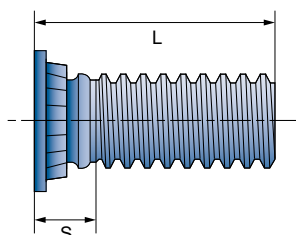
- **High resistance to torque loads**
- **No damage to coated surfaces**
- Always **perpendicular to the sheet**
- **Head flush with sheet after installation**

Flush Head Stud V-FH

Steel galvanized

CAD
DATA
ONLINE

Series
460

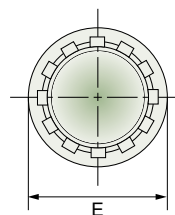
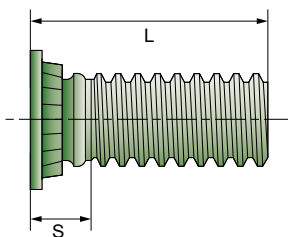


Self-clinching studs made of hardened steel, suitable for use in metal sheets with hardnesses **up to HRB 80**.

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / steel sheet edge	No.
M2,5	1,00	6,00	4,10	2,50	1,95	5,40	10460025006
		8,00					10460025008
		10,00					10460025010
		12,00					10460025012
		15,00					10460025015
		18,00					10460025018
M3	1,00	6,00	4,60	3,00	2,10	5,60	10460030006
		8,00					10460030008
		10,00					10460030010
		12,00					10460030012
		15,00					10460030015
		18,00					10460030018
		20,00					10460030020
		22,00					10460030022
		25,00					10460030025
		28,00					10460030028
M4	1,00	30,00	5,90	4,00	2,40	7,20	10460030030
		6,00					10460040006
		8,00					10460040008
		10,00					10460040010
		12,00					10460040012
		15,00					10460040015
		18,00					10460040018
		20,00					10460040020
		22,00					10460040022
		25,00					10460040025
M5	1,00	28,00	6,50	5,00	2,70	7,20	10460040028
		30,00					10460040030
		35,00					10460040035
		38,00					10460040038
		8,00					10460050008
		10,00					10460050010
		12,00					10460050012
		15,00					10460050015
		18,00					10460050018
		20,00					10460050020
M6	1,60	22,00	8,20	6,00	3,00	7,90	10460050022
		25,00					10460050025
		28,00					10460050028
		30,00					10460050030
		35,00					10460050035
		38,00					10460050038
		10,00					10460060010
		12,00					10460060012
		15,00					10460060015
		18,00					10460060018
M8	2,40	20,00	9,60	8,00	3,70	9,60	10460060020
		22,00					10460060022
		25,00					10460060025
		28,00					10460060028
		30,00					10460060030
		35,00					10460060035
		38,00					10460060038
		12,00					10460080012
		15,00					10460080015
		18,00					10460080018

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / steel sheet edge	No.
M5	1,00	8,00	6,50	5,00	2,70	7,20	10460050008
		10,00					10460050010
		12,00					10460050012
		15,00					10460050015
		18,00					10460050018
		20,00					10460050020
		22,00					10460050022
		25,00					10460050025
		28,00					10460050028
		30,00					10460050030
M6	1,60	35,00	8,20	6,00	3,00	7,90	10460050035
		38,00					10460050038
		10,00					10460060010
		12,00					10460060012
		15,00					10460060015
		18,00					10460060018
		20,00					10460060020
		22,00					10460060022
		25,00					10460060025
		28,00					10460060028
M8	2,40	30,00	9,60	8,00	3,70	9,60	10460060030
		35,00					10460060035
		38,00					10460060038
		12,00					10460080012
		15,00					10460080015
		18,00					10460080018
		20,00					10460080020
		22,00					10460080022
		25,00					10460080025
		28,00					10460080028

Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.



Self-clinching studs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses up to HRB 70.

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / sheet edge	No.
M2,5	1,00	6,00	4,10	2,50	1,95	5,40	10461025006
		8,00					10461025008
		10,00					10461025010
		12,00					10461025012
		15,00					10461025015
		18,00					10461025018
M3	1,00	6,00	4,60	3,00	2,10	5,60	10461030006
		8,00					10461030008
		10,00					10461030010
		12,00					10461030012
		15,00					10461030015
		18,00					10461030018
		20,00					10461030020
		22,00					10461030022
		25,00					10461030025
		28,00					10461030028
M4	1,00	6,00	5,90	4,00	2,40	7,20	10461040006
		8,00					10461040008
		10,00					10461040010
		12,00					10461040012
		15,00					10461040015
		18,00					10461040018
		20,00					10461040020
		22,00					10461040022
		25,00					10461040025
		28,00					10461040028
		30,00					10461040030
		35,00					10461040035
		38,00					10461040038

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / sheet edge	No.
M5	1,00	8,00	6,50	5,00	2,70	7,20	10461050008
		10,00					10461050010
		12,00					10461050012
		15,00					10461050015
		18,00					10461050018
		20,00					10461050020
		22,00					10461050022
		25,00					10461050025
		28,00					10461050028
		30,00					10461050030
M6	1,60	10,00	8,20	6,00	3,00	7,90	10461060010
		12,00					10461060012
		15,00					10461060015
		18,00					10461060018
		20,00					10461060020
		22,00					10461060022
		25,00					10461060025
		28,00					10461060028
		30,00					10461060030
		35,00					10461060035
M8	2,40	12,00	9,60	8,00	3,70	9,60	10461080012
		15,00					10461080015
		18,00					10461080018
		20,00					10461080020
		22,00					10461080022
		25,00					10461080025
		28,00					10461080028
		30,00					10461080030
		35,00					10461080035
		38,00					10461080038

Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

Details of strengths and torques on [page 56](#).



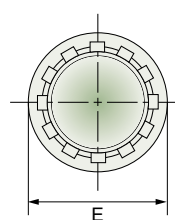
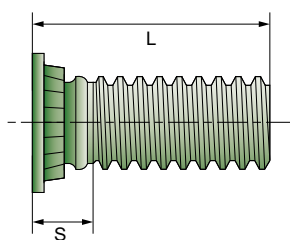
Flush Head Stud V-FH4



Stainless steel 400 series

CAD
DATA
ONLINE

Series
462



Self-clinching studs of stainless steel (AISI 400 series), suitable for use in metal sheets with hardness **up to HRB 92**.

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / sheet edge	No.
M3	1,00	6,00	4,60	3,00	2,10	5,60	10462030006
		8,00					10462030008
		10,00					10462030010
		12,00					10462030012
		15,00					10462030015
		18,00					10462030018
		20,00					10462030020
		25,00					10462030025
M4	1,00	6,00	5,90	4,00	2,40	7,20	10462040006
		8,00					10462040008
		10,00					10462040010
		12,00					10462040012
		15,00					10462040015
		18,00					10462040018
		20,00					10462040020
		25,00					10462040025
		30,00					10462040030
		35,00					10462040035

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / sheet edge	No.
M5	1,00	8,00	6,50	5,00	2,70	7,20	10462050008
		10,00					10462050010
		12,00					10462050012
		15,00					10462050015
		18,00					10462050018
		20,00					10462050020
		25,00					10462050025
		30,00					10462050030
M6	1,60	35,00	8,20	6,00	3,00	7,90	10462050035
		12,00					10462060012
		15,00					10462060015
		20,00					10462060020
		25,00					10462060025

Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

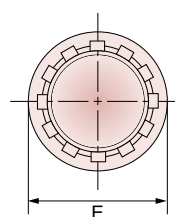
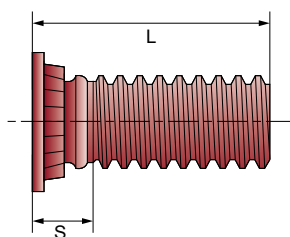
Details of strengths and torques on [page 56](#).

Einpressgewindebolzen V-FHA

Aluminium

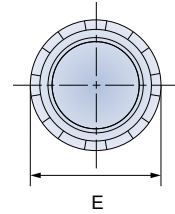
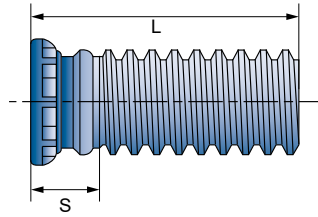
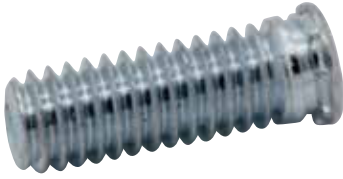
CAD
DATA
ONLINE

Series
463







Article V-FHA is available with the same dimensions as series 10.461 / V-FHS on the previous page.



Ask us!



Self-clinching studs made of hardened steel, suitable for use in metal sheets with hardnesses **up to HRB 80**.

M		L ± 0,40	E ± 0,40		S max.	minimum distance hole center / steel sheet edge	No.
M2,5	1,00	6,00	3,15	2,50	2,10	2,80	10465025006
		8,00					10465025008
		10,00					10465025010
		12,00					10465025012
		15,00					10465025015
		18,00					10465025018
M3	1,00	6,00	3,65	3,00	2,10	3,30	10465030006
		8,00					10465030008
		10,00					10465030010
		12,00					10465030012
		15,00					10465030015
		18,00					10465030018
		20,00					10465030020
		25,00					10465030025

M		L ± 0,40	E ± 0,40		S max.	minimum distance hole center / steel sheet edge	No.
M4	1,00	6,00	4,65	4,00	2,40	4,30	10465040006
		8,00					10465040008
		10,00					10465040010
		12,00					10465040012
		15,00					10465040015
		18,00					10465040018
		20,00					10465040020
		25,00					10465040025
M5	1,00	30,00	5,90	5,00	2,70	5,60	10465040030
		35,00					10465040035
		8,00					10465050008
		10,00					10465050010
		12,00					10465050012
		15,00					10465050015
		18,00					10465050018
		20,00					10465050020
		25,00					10465050025
		30,00					10465050030
		35,00					10465050035

-  Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.
-  Details of strengths and torques on [page 56](#).



Self-clinching studs

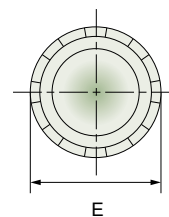
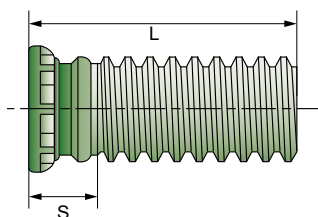
Flush Head Studs V-FHLS Low Displacement

Stainless steel 300 series



CAD
DATA
ONLINE

Series
466



Self-clinching studs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / sheet sheet edge	No.
M2,5	1,00	6,00	3,15	2,50	2,10	2,80	10466025006
		8,00					10466025008
		10,00					10466025010
		12,00					10466025012
		15,00					10466025015
		18,00					10466025018
M3	1,00	6,00	3,65	3,00	2,10	3,30	10466030006
		8,00					10466030008
		10,00					10466030010
		12,00					10466030012
		15,00					10466030015
		18,00					10466030018
		20,00					10466030020
		25,00					10466030025

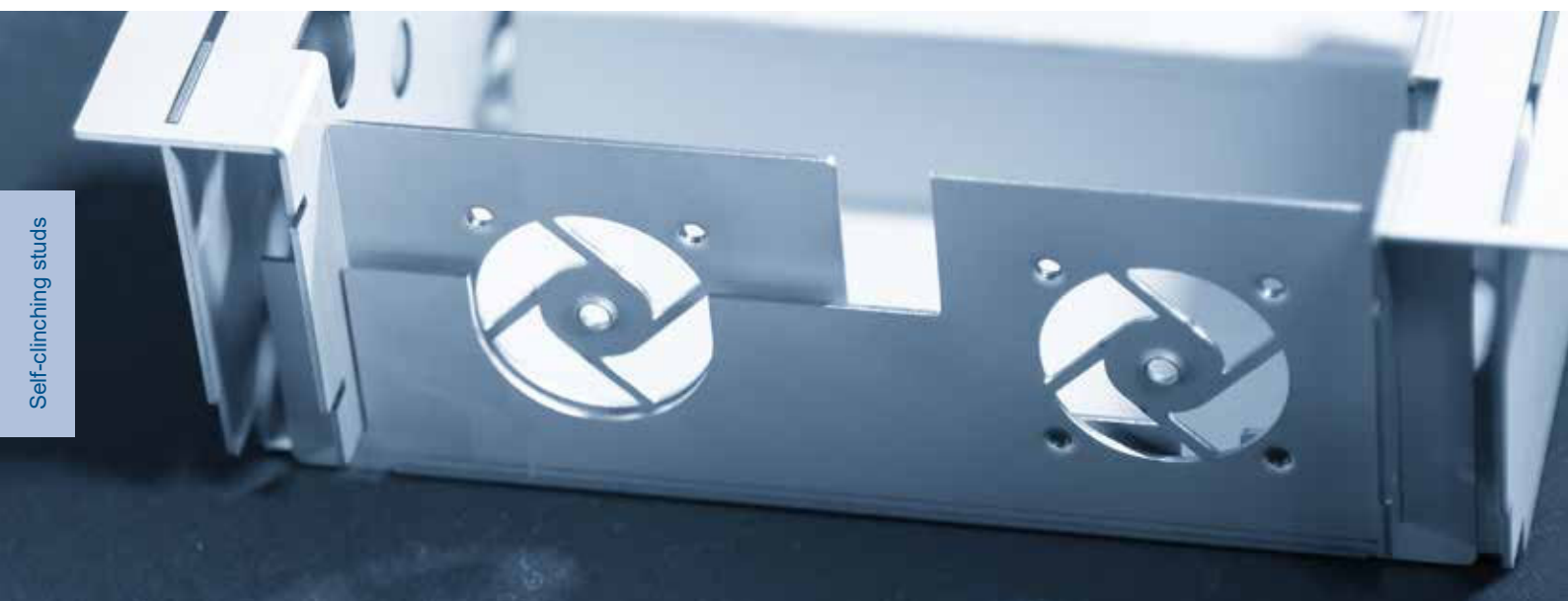
M	min. 	L ± 0,40	E ± 0,40	 + 0,08	S max.	minimum distance hole center / sheet sheet edge	No.
M4	1,00	6,00	4,65	4,00	2,40	4,30	10466040006
		8,00					10466040008
		10,00					10466040010
		12,00					10466040012
		15,00					10466040015
		18,00					10466040018
		20,00					10466040020
		25,00					10466040025
M5	1,00	30,00	5,90	5,00	2,70	5,60	10466040030
		35,00					10466040035
		8,00					10466050008
		10,00					10466050010
		12,00					10466050012
		15,00					10466050015
		18,00					10466050018
		20,00					10466050020
		25,00					10466050025
		30,00					10466050030
		35,00					10466050035

i Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

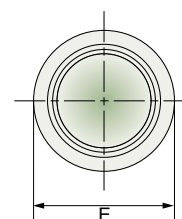
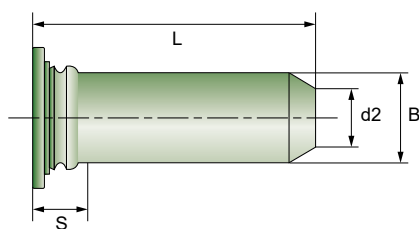
▶ Details of strengths and torques on [page 56](#).

Article V-FHLSA is available in **aluminium** with the same dimensions as series 10.466 / V-FHLS.

Ask us!



Self-clinching studs



Self-clinching pins of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M	min.	L	E		S max.	B	d2	minimum distance hole center / steel sheet edge	No.
M3	1,00	8,00	5,20	+ 0,08	2,29	3,00	2,05	6,40	10470030008
		10,00							10470030010
		12,00							10470030012
		16,00							10470030016
M4	1,00	8,00	6,12	+ 0,08	2,29	4,00	2,82	7,10	10470040008
		10,00							10470040010
		12,00							10470040012
		16,00							10470040016

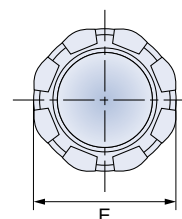
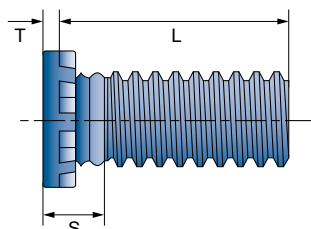
M	min.	L	E		S max.	B	d2	minimum distance hole center / steel sheet edge	No.
M5	1,00	10,00	7,19	+ 0,08	2,29	5,00	3,53	7,60	10470050010
		12,00							10470050012
		16,00							10470050016
		20,00							10470050020
M6	1,00	12,00	8,13	+ 0,08	2,29	6,00	4,24	7,90	10470060012
		16,00							10470060016
		20,00							10470060020

Details of strengths and torques on [page 56](#).

Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

High Strength Stud V-HFH for higher load capacity

Steel galvanized



Self-clinching studs made of hardened steel, suitable for use in metal sheets with hardnesses **up to HRB 85**.

M	min.	L	E		S max.	minimum distance hole center / steel sheet edge	No.
M5	1,30	15,00	7,80	+ 0,13	2,70	10,70	10475050015
		20,00					10475050020
		25,00					10475050025
		30,00					10475050030
		35,00					10475050035
		40,00					10475050040
		50,00					10475050050
M6	1,50	15,00	9,40	+ 0,13	2,80	11,50	10475060015
		20,00					10475060020
		25,00					10475060025
		30,00					10475060030
		35,00					10475060035
		40,00					10475060040
		50,00					10475060050

M	min.	L	E		S max.	minimum distance hole center / steel sheet edge	No.
M8	2,00	15,00	12,50	+ 0,13	3,50	12,70	10475080015
		20,00					10475080020
		25,00					10475080025
		30,00					10475080030
		35,00					10475080035
		40,00					10475080040
		50,00					10475080050
M10	2,30	15,00	15,70	+ 0,13	4,10	13,70	10475100015
		20,00					10475100020
		25,00					10475100025
		30,00					10475100030
		35,00					10475100035
		40,00					10475100040
		50,00					10475100050

Details of strengths and torques on [page 56](#).

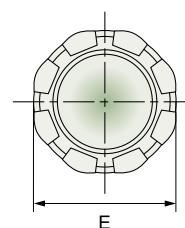
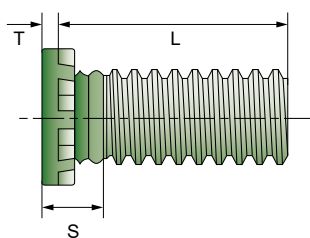
Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

High Strength Stud V-HFHS for higher load capacity


 Stainless steel 300 series


CAD
DATA
ONLINE



Series
476



Self-clinching studs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M		L ± 0,40	E ± 0,25	T max.		S max.	minimum distance hole center / sheet edge	No.
M5	1,30	15,00	7,80	1,14	5,00	2,70	10,70	10476050015
		20,00						10476050020
		25,00						10476050025
		30,00						10476050030
		35,00						10476050035
		40,00						10476050040
		50,00						10476050050
M6	1,50	15,00	9,40	1,27	6,00	2,80	11,50	10476060015
		20,00						10476060020
		25,00						10476060025
		30,00						10476060030
		35,00						10476060035
		40,00						10476060040
		50,00						10476060050

M		L ± 0,40	E ± 0,25	T max.		S max.	minimum distance hole center / sheet edge	No.
M8	2,00	15,00	12,50	1,78	8,00	3,50	12,70	10476080015
		20,00						10476080020
		25,00						10476080025
		30,00						10476080030
		35,00						10476080035
		40,00						10476080040
		50,00						10476080050
M10	2,30	15,00	15,70	2,29	10,00	4,10	13,70	10476100015
		20,00						10476100020
		25,00						10476100025
		30,00						10476100030
		35,00						10476100035
		40,00						10476100040
		50,00						10476100050

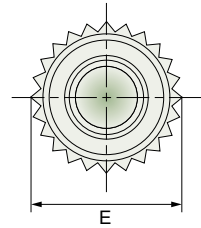
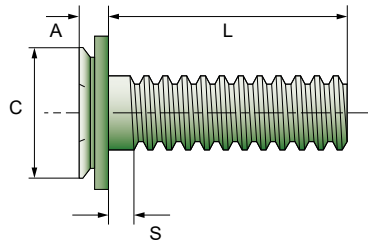
-  Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.
-  Details of strengths and torques on [page 56](#).





Self-clinching studs


Automatic tool for studs and standoffs from above.


Tools available for studs and standoffs M2 to M6 (M8 on request)



Self-clinching studs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M		L ± 0,40	E ± 0,25	C max.	A	S max.	 + 0,08	minimum distance hole center / steel sheet edge	drilling depth	No.
M3	1,60	6,00	5,21	4,35	1,04	1,60	4,37	4,00	1,1	10480030006
		8,00								10480030008
		10,00								10480030010
		12,00								10480030012
		16,00								10480030016
		20,00								10480030020
M4	1,60	6,00	8,33	7,35	1,04	1,60	7,37	5,60	1,1	10480040006
		8,00								10480040008
		10,00								10480040010
		12,00								10480040012
		16,00								10480040016
		20,00								10480040020
		25,00								10480040025
M5	1,60	10,00	8,89	7,90	1,04	1,60	7,93	6,40	1,1	10480050010
		12,00								10480050012
		16,00								10480050016
		20,00								10480050020
		25,00								10480050025

 Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

 Details of strengths and torques on [page 56](#).



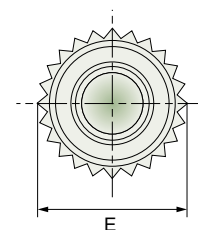
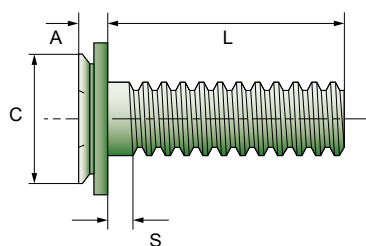
Concealed Head Stud V-CFHC for blind hole mounting

 Stainless steel 300 series



short shaft


CAD
DATA
ONLINE


Series
481



Self-clinching studs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses **up to HRB 70**.

M		L ± 0,40	E ± 0,25	C max.	A	S max.	 + 0,08	minimum distance hole center / steel sheet edge	drilling depth	No.
M3	2,40	6,00	5,21	4,35	1,80	2,40	4,37	4,00	1,91	10481030006
		8,00								10481030008
		10,00								10481030010
		12,00								10481030012
		16,00								10481030016
		20,00								10481030020
M4	2,40	6,00	8,33	7,35	1,80	2,40	7,37	5,60	1,91	10481040006
		8,00								10481040008
		10,00								10481040010
		12,00								10481040012
		16,00								10481040016
		20,00								10481040020
		25,00								10481040025
M5	2,40	10,00	8,89	7,90	1,80	2,40	7,93	6,40	1,91	10481050010
		12,00								10481050012
		16,00								10481050016
		20,00								10481050020
		25,00								10481050025

 Max. size of part to be mounted in a hole is equal to the size of the hole in the sheet metal + 0.6 mm.

 Details of strengths and torques on [page 56](#).

TIS turntable clinching system with four colour-coded containers each assigned to one of the four anvils.

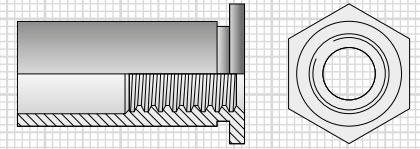


Self-clinching standoff

Self-clinching standoffs can serve as **spacers**.

The hexagonal head is simply pressed into the sheet metal so that the material is upset in the groove. It is pressed in on the head side completely flush.

A wide selection of **open and closed versions** is available. **For applications with higher loads, versions with larger heads and higher pulling forces can be produced.**

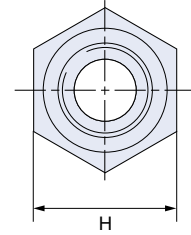
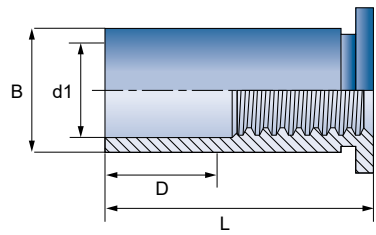


Series
485



CAD
DATA
ONLINE



Through Standoff open V-SO


Steel galvanized 




Self-clinching standoffs of hardened steel, suitable for use in metal sheets with hardnesses **up to HRB 80**.

M	min. 	L + 0,05 - 0,13	D ± 0,25	d1 ± 0,13	B - 0,13	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M2	1,02	4,00	0,00	2,50	4,20	4,80	4,20	6,00	10485020004
		6,00							10485020006
		8,00							10485020008
		10,00							10485020010
		12,00							10485020012
M2,5	1,02	4,00	0,00	3,20	4,20	4,80	4,20	6,00	10485025004
		6,00							10485025006
		8,00							10485025008
		10,00							10485025010
		12,00							10485025012
M3	1,02	3,00	0,00	3,20	4,20	4,80	4,22	6,00	10485030003
		4,00							10485030004
		5,00							10485030005
		6,00							10485030006
		7,00							10485030007
		8,00							10485030008
		10,00							10485030010
		12,00							10485030012
		14,00							10485030014
		16,00							10485030016
3,5M3	1,02	3,00	0,00	3,20	5,39	6,40	5,41	6,80	10485035003
		4,00							10485035004
		5,00							10485035005
		6,00							10485035006
		7,00							10485035007
		8,00							10485035008
		10,00							10485035010
		12,00							10485035012
		14,00							10485035014
		16,00							10485035016
		18,00							10485035018

M	min. 	L + 0,05 - 0,13	D ± 0,25	d1 ± 0,13	B - 0,13	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M4	1,27	3,00	0,00	4,80	7,12	7,90	7,14	8,00	10485040003
		4,00							10485040004
		6,00							10485040006
		8,00							10485040008
		10,00							10485040010
		12,00							10485040012
		14,00							10485040014
		16,00							10485040016
		18,00							10485040018
		20,00							10485040020
M5	1,27	22,00	0,00	5,35	7,12	7,90	7,14	8,00	10485050004
		25,00							10485050006
		3,00							10485050008
		4,00							10485050010
		6,00							10485050012
		8,00							10485050014
		10,00							10485050016
		12,00							10485050018
		14,00							10485050020
		16,00							10485050022
		18,00							10485050024
		20,00							10485050026
		22,00							10485050028
		25,00							10485050030

 Standoffs with 3.5 M3 threads offer a greater wall thickness for thread size M3.

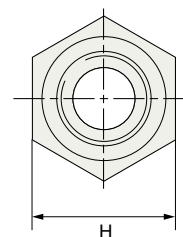
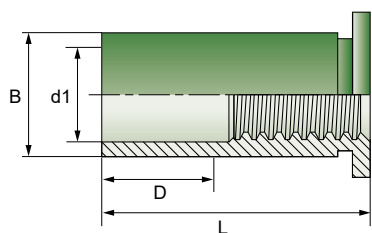
 Details of strengths and torques on [page 57](#).

Through Standoff open V-SOS



 Stainless steel 300 series



CAD
DATA
ONLINE


Series
486




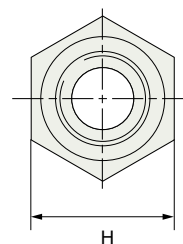
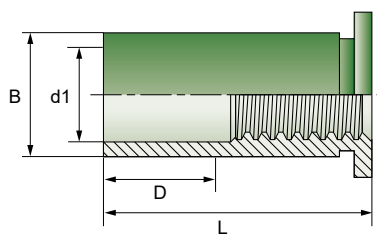
Self-clinching standoffs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses up to HRB 70.

M		L + 0,05 - 0,15	D ± 0,25	d1 ± 0,13	B - 0,13	H		minimum distance hole center / steel sheet edge	No.
M2,5	1,02	4,00	0,00	3,20	4,20	4,80	4,20	6,00	10486025004
		6,00							10486025006
		8,00							10486025008
		10,00	4,00						10486025010
		12,00							10486025012
M3	1,02	3,00	0,00	3,20	4,20	4,80	4,22	6,00	10486030003
		4,00							10486030004
		5,00							10486030005
		6,00							10486030006
		7,00							10486030007
		8,00	4,00						10486030008
		10,00							10486030010
		12,00							10486030012
		14,00							10486030014
		16,00	8,00						10486030016
		18,00							10486030018
3,5M3	1,02	3,00	0,00	3,20	5,39	6,40	5,41	6,80	10486035003
		4,00							10486035004
		5,00							10486035005
		6,00							10486035006
		7,00							10486035007
		8,00	4,00						10486035008
		10,00							10486035010
		12,00							10486035012
		14,00							10486035014
		16,00	8,00						10486035016
		18,00							10486035018

M		min. L + 0,05 - 0,15	D ± 0,25	d1 ± 0,13	B - 0,13	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M4	1,27	3,00	0,00	4,80	7,12	7,90	7,14	8,00	10486040003
		4,00							10486040004
		6,00							10486040006
		8,00							10486040008
		10,00	4,00						10486040010
		12,00							10486040012
		14,00							10486040014
		16,00	8,00						10486040016
		18,00							10486040018
		20,00							10486040020
		22,00	11,00						10486040022
		25,00							10486040025
		M5	1,27						4,00
6,00	10486050006								
8,00	10486050008								
10,00	10486050010								
12,00	4,00			10486050012					
14,00				10486050014					
16,00				10486050016					
18,00	8,00			10486050018					
20,00				10486050020					
22,00				11,00	10486050022				
25,00	10486050025								



 Standoffs with 3.5 M3 threads offer a greater wall thickness for thread size M3.


 Details of strengths and torques on [page 57](#).




Self-clinching standoffs of stainless steel (AISI 400 series), suitable for use in metal sheets with hardnesses **above HRB 80 (up to HRB 88)**.

M	min. 	L + 0,05 - 0,13	D ± 0,25	d1 ± 0,13	B - 0,13	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M3	1,02	3,00	0,00	3,20	4,20	4,80	4,22	6,00	10487030003
		4,00							10487030004
		6,00							10487030006
		8,00							10487030008
		10,00	4,00						10487030010
		12,00							10487030012
		14,00	8,00						10487030014
		16,00							10487030016
18,00	10487030018								
3,5M3	1,02	3,00	0,00	3,20	5,39	6,40	5,41	7,10	10487035003
		4,00							10487035004
		6,00							10487035006
		8,00							10487035008
		10,00	4,00						10487035010
		12,00							10487035012
		14,00	8,00						10487035014
		16,00							10487035016
		18,00							10487035018

M		min. + 0,05 - 0,13	D ± 0,25	d1 ± 0,13	B - 0,13	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M4	1,27	4,00	0,00	4,80	7,12	7,90	7,14	8,40	10487040004
		6,00							10487040006
		8,00							10487040008
		10,00							10487040010
		12,00	4,00						10487040012
		14,00							10487040014
		16,00	8,00						10487040016
		18,00							10487040018
		20,00							10487040020
		22,00							10487040022
25,00	11,00	10487040025							
M5	1,27	4,00	0,00	5,35	7,12	7,90	7,14	8,40	10487050004
		6,00							10487050006
		8,00							10487050008
		10,00							10487050010
		12,00	4,00						10487050012
		14,00							10487050014
		16,00	8,00						10487050016
		18,00							10487050018
		20,00							10487050020
		22,00							10487050022
		25,00	11,00						10487050025

 Standoffs with 3.5 M3 threads offer a greater wall thickness for thread size M3.

 Details of strengths and torques on [page 57](#).

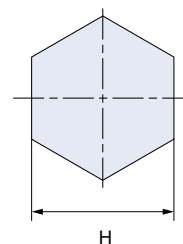
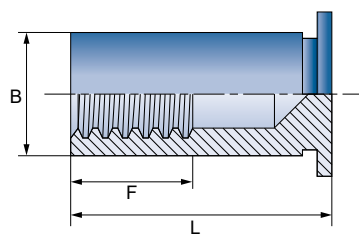


Blind Standoff closed V-BSO

Steel galvanized

CAD
DATA
ONLINE

Series
490



Self-clinching standoffs of hardened steel, suitable for use in metal sheets with hardnesses up to HRB 80.

M	min. L	L + 0,05 - 0,13	B	minimum length thread F	H	minimum distance hole center / steel sheet edge + 0,08	No.
M3	1,02	6,00	4,19	3,20	4,80	4,22	10490030006
		8,00		4,00			10490030008
		10,00					10490030010
		12,00		5,00			10490030012
		14,00					10490030014
		16,00		6,50			10490030016
		18,00					10490030018
		20,00		9,50			10490030020
		22,00					10490030022
		25,00					10490030025
3,5M3	1,02	6,00	5,38	3,20	6,40	5,41	10490035006
		8,00		4,00			10490035008
		10,00					10490035010
		12,00		5,00			10490035012
		14,00					10490035014
		16,00		6,50			10490035016
		18,00					10490035018
		20,00		9,50			10490035020
		22,00					10490035022
		25,00					10490035025

M	min. L	L + 0,05 - 0,13	B	minimum length thread F	H	minimum distance hole center / steel sheet edge + 0,08	No.
M4	1,27	8,00	7,10	4,00	7,90	7,14	10490040008
		10,00					10490040010
		12,00		5,00			10490040012
		14,00					10490040014
		16,00		6,50			10490040016
		18,00					10490040018
		20,00		9,50			10490040020
		22,00					10490040022
		25,00					10490040025
M5	1,27	8,00	7,10	4,00	7,90	7,14	10490050008
		10,00					10490050010
		12,00		5,00			10490050012
		14,00					10490050014
		16,00		6,50			10490050016
		18,00					10490050018
		20,00		9,50			10490050020
		22,00					10490050022
		25,00					10490050025

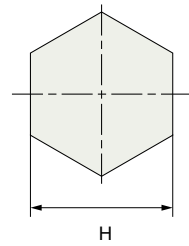
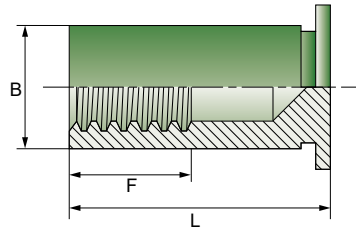
i Standoffs with 3.5 M3 threads offer a greater wall thickness for thread size M3.

▶ Details of strengths and torques on [page 57](#).



Self-clinching standoffs





33-piece manual tool set.
Punch and die.



Self-clinching standoffs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses up to HRB 70.

M		min. L + 0,05 - 0,13	B	minimum length thread F	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M3	1,02	6,00	4,19	3,20	4,80	4,22	6,00	10491030006
		8,00		4,00				10491030008
		10,00						10491030010
		12,00		5,00				10491030012
		14,00						10491030014
		16,00		6,50				10491030016
		18,00						10491030018
		20,00		9,50				10491030020
		22,00						10491030022
		25,00						10491030025
3,5M3	1,02	6,00	5,38	3,20	6,40	5,41	6,80	10491035006
		8,00		4,00				10491035008
		10,00						10491035010
		12,00		5,00				10491035012
		14,00						10491035014
		16,00		6,50				10491035016
		18,00						10491035018
		20,00		9,50				10491035020
		22,00						10491035022
		25,00						10491035025

M		L + 0,05 - 0,13	B	minimum length thread F	H	 + 0,08	minimum distance hole center / steel sheet edge	No.
M4	1,27	8,00	7,10	4,00	7,90	7,14	8,00	10491040008
		10,00		10491040010				
		12,00		5,00				10491040012
		14,00		10491040014				
		16,00		6,50				10491040016
		18,00		9,50				10491040018
		20,00						10491040020
		22,00						10491040022
		25,00						10491040025
M5	1,27	8,00	7,10	4,00	7,90	7,14	8,00	10491050008
		10,00		10491050010				
		12,00		5,00				10491050012
		14,00		10491050014				
		16,00		6,50				10491050016
		18,00		9,50				10491050018
		20,00						10491050020
		22,00						10491050022
		25,00						10491050025

i Standoffs with 3.5 M3 threads offer a greater wall thickness for thread size M3.

▶ Details of strengths and torques on [page 57](#).



Automated tool for mounting nuts from below.

Tools available for nuts M2 to M6 (M8 on request).

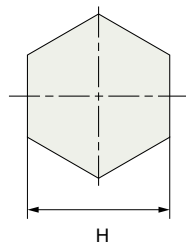
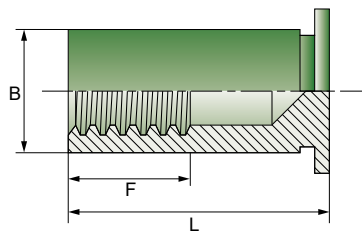
Self-clinching standoffs

Blind Standoff closed V-BSO4

Stainless steel 400 series

CAD
DATA
ONLINE

Series
492



Self-clinching standoffs of stainless steel (AISI 400 series), suitable for use in metal sheets with hardnesses **above HRB 80 (up to HRB 88)**.

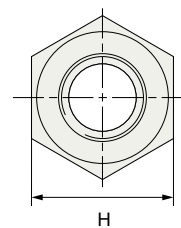
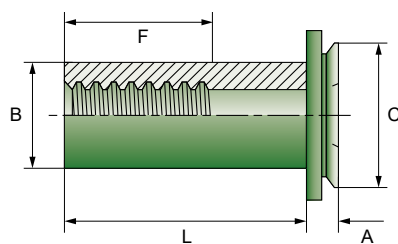
M	min. 	L + 0,05 - 0,13	B	minimum length thread F	H	+ 0,08 	minimum distance hole center / steel sheet edge	No.
M3	1,02	6,00	4,20	3,20	4,80	4,22	6,00	10492030006
		8,00		4,00				10492030008
		10,00						10492030010
		12,00		5,00				10492030012
		14,00						10492030014
		16,00						10492030016
		18,00						10492030018
		20,00						10492030020
		22,00		9,50				10492030022
		25,00						10492030025
3,5M3	1,02	6,00	5,39	3,20	6,40	5,41	7,10	10492035006
		8,00		4,00				10492035008
		10,00						10492035010
		12,00		5,00				10492035012
		14,00						10492035014
		16,00						10492035016
		18,00						10492035018
		20,00						10492035020
		22,00		9,50				10492035022
		25,00						10492035025

M	min. 	L + 0,05 - 0,13	B	minimum length thread F	H	+ 0,08 	minimum distance hole center / steel sheet edge	No.
M4	1,27	6,00	7,12	3,20	7,90	7,14	8,40	10492040006
		8,00		4,00				10492040008
		10,00						10492040010
		12,00		5,00				10492040012
		14,00						10492040014
		16,00						10492040016
		18,00						10492040018
		20,00						10492040020
		22,00		9,50				10492040022
		25,00						10492040025
M5	1,27	6,00	7,12	3,20	7,90	7,14	8,40	10492050006
		8,00		4,00				10492050008
		10,00						10492050010
		12,00		5,00				10492050012
		14,00						10492050014
		16,00						10492050016
		18,00						10492050018
		20,00						10492050020
		22,00		9,50				10492050022
		25,00						10492050025



- Standoffs with 3.5 M3 threads offer a greater wall thickness for thread size M3.
- Details of strengths and torques on [page 57](#).




Self-clinching standoffs



Self-clinching standoffs of stainless steel (AISI 300 series), suitable for use in sheet metal with hardnesses up to HRB 70.

M	min. 	L + 0,05 - 0,13	 + 0,08	drilling depth	A	B	C	F	H	minimum distance hole center / steel sheet edge	No.
M3	2,40	4,00	5,41	1,91	1,83	4,20	5,39	5,00	6,35	4,80	10496030004
		6,00									10496030006
		8,00									10496030008
		10,00									10496030010
		12,00									10496030012
M4	2,40	4,00	7,92	1,91	1,83	6,23	7,90	6,50	8,74	6,40	10496040004
		6,00									10496040006
		8,00									10496040008
		10,00									10496040010
		12,00									10496040012
		16,00									10496040016
		20,00									10496040020

 Details of strengths and torques on [page 57](#).



Processing machines

for self-clinching elements

In addition to the extensive range of self-clinching elements, we are at your disposal also as **partners for perfect processing**.

The machines offered by **HONSEL** simplify and optimise work processes and boost quality and productivity with the reliability and energy efficiency of a hydraulic machine.

Sophisticated in design, simple in handling and maintenance, up to 72 kN thrust is available for the application, impressing with simple operation and an outstanding price/performance ratio.



Generously equipped in the standard version, all the machines can be adapted individually to your needs with various options, such as

- fixed stop,
- automatic feeder system,
- automatic rivet tools,
- batch counter,
- lasers.

Further advantages:

- Strong frame structure, less vibrations
- Simple handling
- Short retooling times
- Ergonomic design
- Extensive tool package and simple control panel allows the majority of the complex clinching operations to be performed by a single operator
- Double safety system for conductive and non-conductive materials
- Noise reduced to 35 dB
- High-quality hydraulic components for long-term stability even under difficult working conditions
- CE certificate

For detailed information, please send for the separate "Processing of self-clinching parts" catalogue or use the corresponding download at www.honsel.de



S618 Plus – our standard machine

Insertion force	54 kN
Neck height	380 mm
Overhang	450 mm
Stroke length	220 mm
Insertion capacity per hour	1500
Repeat accuracy	± 1%
Footprint, dimensions	800 x 810 x 2100 mm
Weight	610 kg
Output	2.2 kW
Power supply	380 V / 3-phase / 50 Hz
Automatic feeder system	optional

S618 Plus



S416 Plus – the low-end model

Insertion force	44 kN
Neck height	340 mm
Overhang	406 mm
Stroke length	220 mm
Insertion capacity per hour	1500
Repeat accuracy	± 1%
Footprint, dimensions	740 x 840 x 1650 mm
Weight	335 kg
Output	1.5 kW
Power supply	380 V / 3-phase / 50 Hz

S416 Plus



S824 Plus – the heavy-duty answer

Insertion force	72 kN
Neck height	420 mm
Overhang	610 mm
Stroke length	220 mm
Insertion capacity per hour	1500
Repeat accuracy	± 1%
Footprint, dimensions	1025 x 960 x 2500 mm
Weight	950 kg
Output	3.75 kW
Power supply	380 V / 3-phase / 50 Hz
Automatic feeder system	optional

S824 Plus





Technical explanations – self-clinching elements

The insertion process

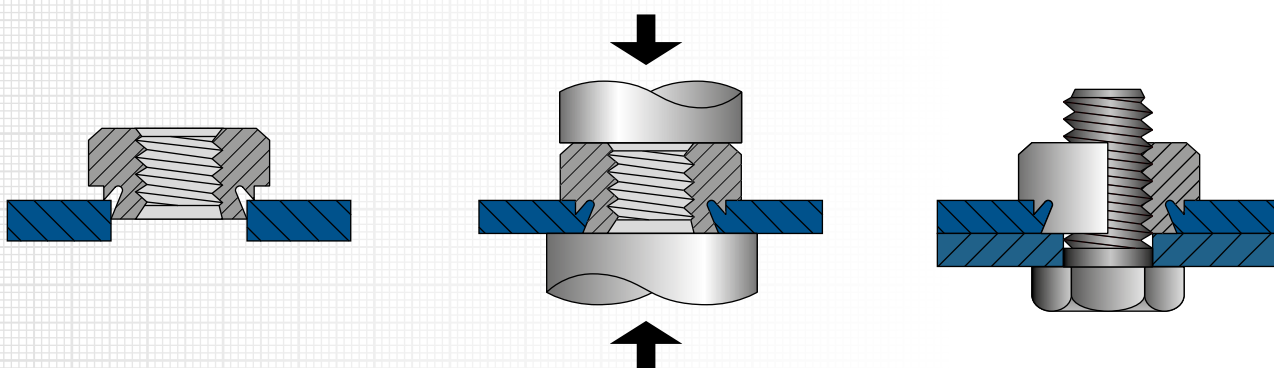
During insertion, the base material is pressed into a corresponding groove by a knurling or hexagonal platform.

Knurling and groove of the fastener are matched to one another in such a way that the deformation is limited to the immediate vicinity of the fastening element.

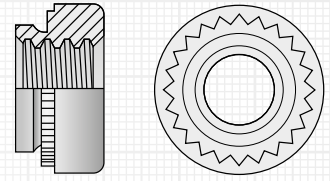
A completely flush finish is obtained on the one side and **high thread stability** is achieved by special heat treatment over a compact area.

The element can be inserted with maximum precision – there is no damage to the surfaces on the two sides of the part.

Insertion should only be performed with a **press** using a continuous pressure, never by impact loading!



Reference values Self-clinching nuts

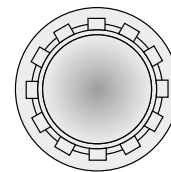
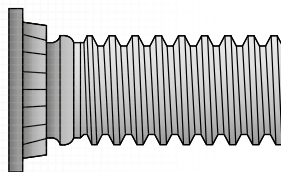


Article designation / Article number				Tested in steel (cold-rolled)			Tested in aluminium 5052-H34			
				Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)	Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)	
M2 M2.5 M3	V-S / V-SS	10.430.020.000 / 025.000 / 030.000	V-CLS / V-CLSS	10.431.020.000 / 025.000 / 030.000	11.2-15.6	470	1.47	6.7-8.9	280	0.9
		10.430.020.001 / 025.001 / 030.001		10.431.020.001 / 025.001 / 030.001	11.2-15.6	550	1.7	6.7-8.9	400	1.1
		10.430.020.002 / 025.002 / 030.002		10.431.020.002 / 025.002 / 030.002	11.2-15.6	1010	2.03	6.7-8.9	750	1.5
10.430.040.000		10.431.040.000		18-27	490	2.95	11.2-13.4	300	2.4	
10.430.040.001		10.431.040.001		18-27	645	4	11.2-13.4	470	2.6	
10.430.040.002		10.431.040.002		18-27	1250	5.1	11.2-13.4	970	4.0	
10.430.050.000		10.431.050.000		18-38	530	3.6	11.2-15.6	300	3.0	
10.430.050.001		10.431.050.001		18-38	800	4.5	11.2-15.6	480	3.6	
10.430.050.002		10.431.050.002		18-38	1112	6.8	11.2-15.6	845	5.7	
10.430.060.000		10.431.060.000		27-36	1380	13	18-32	970	7.9	
10.430.060.001		10.431.060.001		27-36	1760	17	18-32	1580	10.2	
10.430.060.002		10.431.060.002		27-36	1760	17	18-32	1580	14.1	
10.430.080.001		10.431.080.001		27-36	1870	18.7	18-32	1570	13.6	
10.430.080.002		10.431.080.002		27-36	1870	20.3	18-32	1570	18.1	
10.430.100.001		10.431.100.001		32-50	2020	36.2	22-36	1760	32.7	
10.430.100.002		10.431.100.002		32-50	2020	36.2	22-36	1760	32.7	
M12		10.430.120.001		10.431.120.001	33-49	3065	73.9	23-30	1390	35.2
M2	V-F	10.440.020.001 / 020.002		13.3	890	0.16	8.9	890	0.16	
M2.5		10.440.025.001 / 025.002		13.3	890	0.23	8.9	890	0.23	
M3		10.440.030.001 / 030.002		13.3	890	0.36	8.9	890	0.36	
M4		10.440.040.001 / 040.002		17.8	1068	0.58	8.9	1068	0.58	
M5		10.440.050.001 / 050.002		17.8	1068	0.88	11.1	1068	0.88	
M6		10.440.060.003 / 060.004 / 060.005		20.0	3736	3.7	15.6	2847	3.7	
M3	V-B	10.450.030.001	V-BS	10.451.030.001	11.1	550	1.5	7.1	400	1.15
		10.450.030.002		10.451.030.002	14	1010	2.05	9.0	750	1.47
10.450.040.001		10.451.040.001		15.6	600	3.4	8.9	470	2.6	
10.450.040.002		10.451.040.002		20	1250	5.1	12.5	970	4.0	
10.450.050.001		10.451.050.001		17.8	620	4.0	9.3	480	3.6	
10.450.050.002		10.451.050.002		25	1112	6.8	14.0	845	5.7	
10.450.060.001		10.451.060.001		25.7	1760	11.9	17.8	1400	10.2	
M6		10.450.060.002		10.451.060.002	25.7	1760	11.9	17.8	1400	10.2
Article designation / Article number				Tested in stainless steel						
				Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)				
M2.5	V-SP	10.435.025.000		35.6	575	1.58				
		10.435.025.001		40.0	725	1.92				
		10.435.025.002		44.5	1290	2.03				
10.435.030.000			40.0	645	3.38					
10.435.030.001			44.5	800	4.18					
10.435.030.002			49.0	1600	5.08					
10.435.040.000			42.3	800	3.95					
10.435.040.001			46.7	1025	5.08					
10.435.040.002			51.2	1775	6.77					
10.435.050.000			60.0	2000	17					
10.435.050.001			27-36	1760	17					
10.435.050.002			27-36	1760	17					
M6		10.435.060.001		27-36	1870	18.7				

Further details regarding the determination of the reference values provided here are available upon request. Please note that appropriate tests must be carried out with original parts prior to use in your application. **We can also provide you with samples for this purpose.**

Technical explanations – self-clinching elements

Reference values Self-clinching bolts

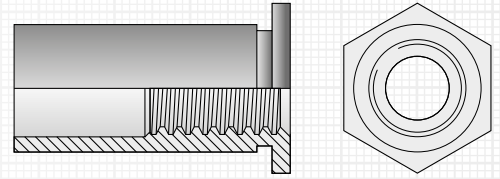


Article designation / Article number				Tested in steel (cold-rolled)				Tested in aluminium 5052-H34					
				Plate hardness HRB	Insertion pressure (kN)	Push-out forces (N)	Max. tightening torque /twisting resistance (Nm)	Plate hardness HRB	Insertion pressure (kN)	Push-out forces (N)	Max. tightening torque /twisting resistance (Nm)		
M2.5	V-FH	10.460.025.006 / 008 / 010 / 012 / 015 / 018		59	11.1	740	0.41 / 1,0	29.0	8.9	465	0.41 / 1.0		
M3		10.460.030.006 / 008 / 010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030		59	14.7	820	0.74 / 1.7	29.0	12.9	600	0.74 / 1.7		
M4		10.460.040.006 / 008 / 010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		59	28.9	1780	1.7 / 4.2	29.0	20.0	975	1.7 / 2.9		
M5		10.460.050.008 / 010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		59	33.4	2000	3.5 / 6.5	29.0	24.5	1070	3.5 / 3.5		
M6		10.460.060.010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		46	44.5	2560	5.9 / 11.3	28.0	28.9	1660	5.9 / 7.3		
M8		10.460.080.012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		46	44.5	2890	14.2 / 19.2	28.0	29.8	1910	14.2 / 11.3		
M2.5	V-FHS	10.461.025.006 / 008 / 010 / 012 / 015 / 018		59	13.8	740	0.41 / 0.8	29.0	11.6	465	0.41 / 0.8		
M3		10.461.030.006 / 008 / 010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030		59	14.7	820	0.74 / 1.3	29.0	12.9	600	0.74 / 1.3		
M4		10.461.040.006 / 008 / 010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		59	26.7	1780	1.7 / 2.9	29.0	22.3	975	1.7 / 2.9		
M5		10.461.050.008 / 010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		59	32.5	2000	3.5 / 6.3	29.0	24.5	1070	3.5 / 3.5		
M6		10.461.060.010 / 012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		46	44.5	2560	5.9 / 10.1	28.0	28.9	1660	5.9 / 7.3		
M8		10.461.080.012 / 015 / 018 / 020 / 022 / 025 / 028 / 030 / 035 / 038		46	49.8	2890	14.2 / 17.5	28.0	29.8	1910	14.2 / 11.3		
M2.5	V-FHL	10.465.025.006 / 008 / 010 / 012 / 015 / 018	V-FHLS	10.466.025.006 / 008 / 010 / 012 / 015 / 018	54	5.3	450	0.41 / 1.1	33	3.1	285	0.41 / 0.55	
M3		10.465.030.006 / 008 / 010 / 012 / 015 / 018 / 020 / 025		10.466.030.006 / 008 / 010 / 012 / 015 / 018 / 020 / 025	54	5.3	475	0.74 / 1.25	33	4.4	285	0.46 / 0.65	
M4		10.465.040.006 / 008 / 010 / 012 / 015 / 018 / 020 / 025 / 030 / 035		10.466.040.006 / 008 / 010 / 012 / 015 / 018 / 020 / 025 / 030 / 035	54	6.6	550	1.7 / 2.1	33	5.3	365	0.75 / 1.1	
M5		10.465.050.008 / 010 / 012 / 015 / 018 / 020 / 025 / 030 / 035		10.466.050.008 / 010 / 012 / 015 / 018 / 020 / 025 / 030 / 035	54	20.0	1000	2.25 / 4.4	33	11.1	530	1.11 / 2.2	
M3	V-TPS	10.470.030.008 / 010 / 012 / 016		65	22	980		22	12.0	560			
M4		10.470.040.008 / 010 / 012 / 016		66	26.4	1540		19	22.0	890			
M5		10.470.050.010 / 012 / 016 / 020		60	35.2	1760		18	28.6	1010			
M6		10.470.060.012 / 016 / 020		62	39.6	2100		18	30.8	1100			
M5	V-HFH	10.475.050.015 / 020 / 025 / 030 / 035 / 040 / 050		V-HFHS	10.476.050.015 / 020 / 025 / 030 / 035 / 040 / 050	65	26.0	1500	4.4 / 7.6	15	13.0	800	4.4 / 5.4
M6		10.475.060.015 / 020 / 025 / 030 / 035 / 040 / 050			10.476.060.015 / 020 / 025 / 030 / 035 / 040 / 050	59	33.0	1750	10.0 / 14.0	43	29.0	1270	10.0 / 14.0
M8		10.475.080.015 / 020 / 025 / 030 / 035 / 040 / 050			10.476.080.015 / 020 / 025 / 030 / 035 / 040 / 050	58	44.5	2200	21.7 / 30.0	39	35.6	1700	21.7 / 30.0
M10		10.475.100.015 / 020 / 025 / 030 / 035 / 040 / 050			10.476.100.015 / 020 / 025 / 030 / 035 / 040 / 050	58	54.0	3470	36.6 / 49.0	39	40.0	2445	36.6 / 36.0
					Insertion pressure (kN)	Push-out forces (N)	Max. tightening torque (Nm)		Insertion pressure (kN)	Push-out forces (N)	Max. tightening torque (Nm)		
M3	V-CHC	10.480.030.006 / 008 / 010 / 012 / 016 / 020			8.0	1065	0.5		6.2	575	0.5		
M4		10.480.040.006 / 008 / 010 / 012 / 016 / 020 / 025			17.8	1200	2.0		12.5	800	2.0		
M5		10.480.050.010 / 012 / 016 / 020 / 025			22.2	1290	3.6		17.8	930	3.6		
M3	V-CFHC	10.481.030.006 / 008 / 010 / 012 / 016 / 020			8.9	1065	0.5		6.7	890	0.5		
M4		10.481.040.006 / 008 / 010 / 012 / 016 / 020 / 025			14.7	1955	2.0		13.3	1375	2.0		
M5		10.481.050.010 / 012 / 016 / 020 / 025			17.8	3020	3.6		15.6	1600	3.6		

Article designation / Article number			tested in stainless steel			
			Plate hardness HRB	Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)
M3	V-FH4	10.462.030.006 / 008 / 010 / 012 / 015 / 018 / 020 / 025	92.0	40.0	2220	1.8
M4		10.462.040.006 / 008 / 010 / 012 / 015 / 018 / 020 / 025 / 030 / 035	92.0	50.0	3210	6.5
M5		10.462.050.008 / 010 / 012 / 015 / 018 / 020 / 025 / 030 / 035	92.0	53.0	3575	10.7
M6		10.462.060.012 / 015 / 020 / 025	92.0	71.0	4200	15.9

Technical explanations – self-clinching elements

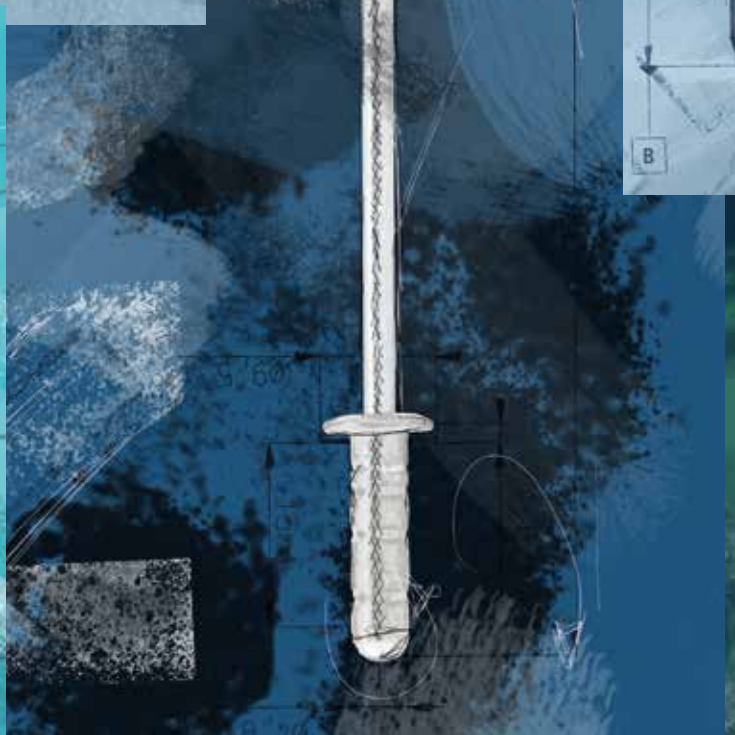
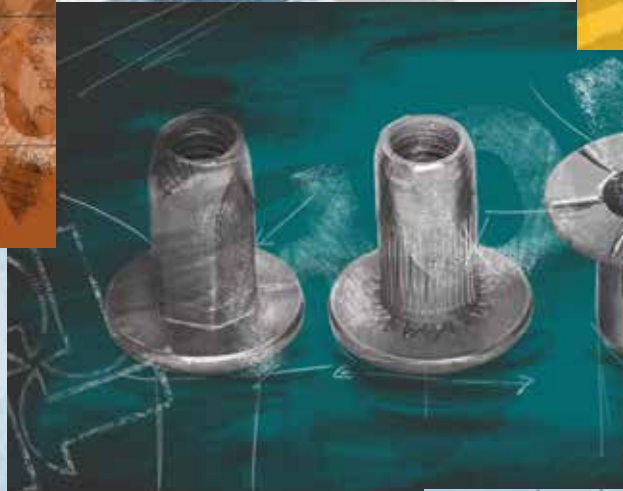
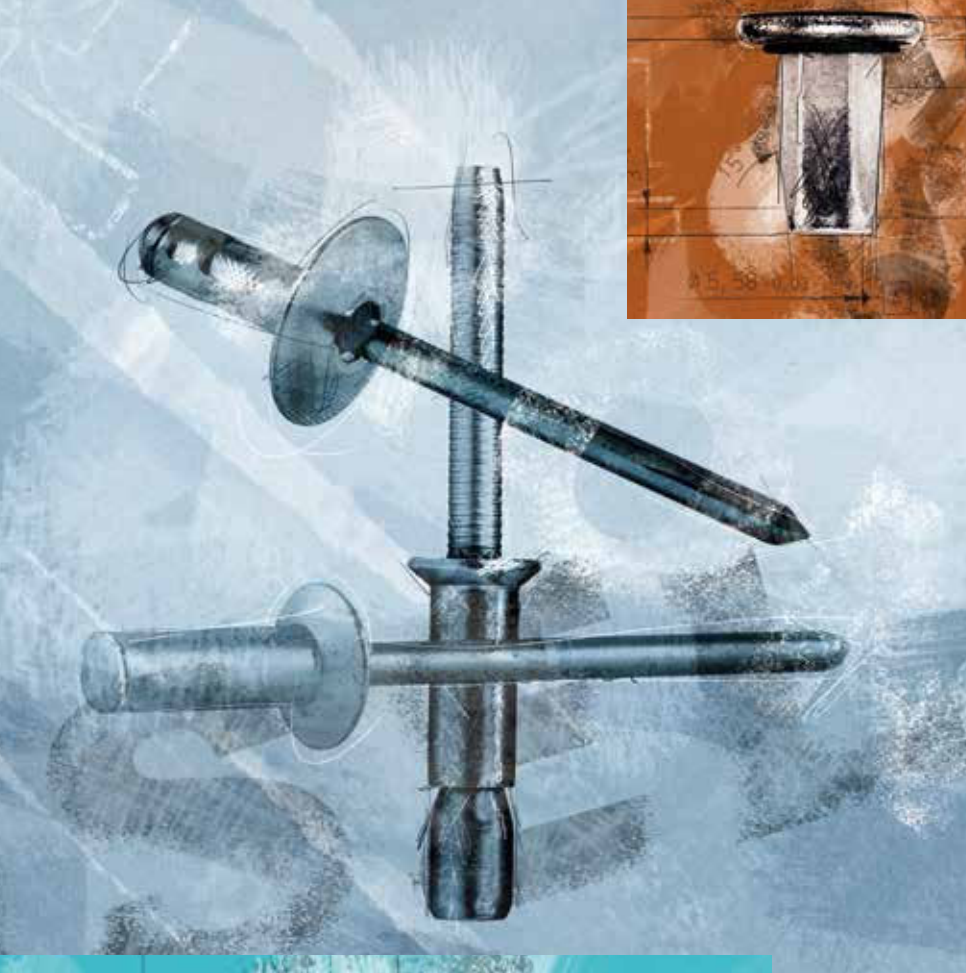
Reference values Self-clinching stand-offs



Article designation / Article number				Tested in steel (cold-rolled)			Tested in aluminium 5052-H34		
				Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)	Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)
M2	V-SO	10.485.020.004 / 006 / 008 / 010 / 012	V-SOS	9.8	1000	2.15	4.9	710	1.24
M2.5		10.485.025.004 / 006 / 008 / 010 / 012							
M3		10.485.030.003 / 004 / 005 / 006 / 007 / 008 / 010 / 012 / 014 / 016 / 018							
M3.5		10.485.035.003 / 004 / 005 / 006 / 007 / 008 / 010 / 012 / 014 / 016 / 018							
M4		10.485.040.003 / 004 / 005 / 006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025							
M5		10.485.050.004 / 006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025							
M3	V-BSO	10.490.030.006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	V-BSOS	9.8	1000	2.15	4.9	710	1.24
M3.5		10.490.035.006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025		14.7	1860	2.15	7.6	1330	1.24
M4		10.490.040.008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025		17.8	2490	8.47	10.7	1780	5.08
M5		10.490.050.008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025		17.8	2490	8.47	10.7	1780	5.08
M3	V-CSOS	10.496.030.004 / 006 / 008 / 010 / 012		19.2	1465		12.9	975	
M4		10.496.040.004 / 006 / 008 / 010 / 012 / 016 / 020		23.6	1955		17.8	1335	

Article designation / Article number			tested in stainless steel		
			Insertion pressure (kN)	Push-out forces (N)	Twisting resistance (Nm)
M3	V-SO4	10.487.030.003 / 004 / 006 / 008 / 010 / 012 / 014 / 016 / 018	24.5	1493	2.36
M3.5		10.487.035.003 / 004 / 006 / 008 / 010 / 012 / 014 / 016 / 018	42.3	2877	2.36
M4		10.487.040.004 / 006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	46.7	4003	6.34
M5		10.487.050.004 / 006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	46.7	4003	8.89
M3	V-BSO4	10.492.030.006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	24.5	1493	2.36
M3.5		10.492.035.006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	42,3	2877	2.36
M4		10.492.040.006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	46.7	4003	6.34
M5		10.492.050.006 / 008 / 010 / 012 / 014 / 016 / 018 / 020 / 022 / 025	46.7	4003	8.89









Blind rivets



Blind rivet nuts



Blind rivet studs



Coil threaded inserts*



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Pneumatic riveters



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