# **BOLLHOFF**

# 360° Joining Technology

Products and services













Michael W. Böllhoff and Wilhelm A. Böllhoff

## The Böllhoff Group

Böllhoff is your partner for  $360^\circ$  joining technology with assembly and logistics solutions – worldwide.

As a family-owned company we have been standing for long-term success through innovative capacity and local presence since 1877. We know the specific needs of our customers from all industries and support them in enabling successful connections.

Around 3,300 employees continuously shape the future of joining technology – both at our headquarters in Bielefeld, Germany, and in our subsidiaries around the world.

## **BÖLLHOFF**













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We provide our customers with comprehensive local support through a network of sales offices and logistics centres. These range from logistical services and customised advice, to customer-specific product developments.

Our customers are assured of speedy and economic solutions exactly where they are needed through local expertise and quick decisions. We aim to inspire our customers day after day with outstanding products and premium services.

#### The Böllhoff Group in Europe



## Manufacturer's expertise



We produce fasteners and assembly technology ourselves.

In Germany, France, Italy, Great Britain, Austria, Switzerland, the USA, Brazil, India and China we have 12 modern production facilities for the manufacture of high-quality products.

- Injection moulding
- Turning
- Cold forming
- Wire winding
- Machinery and plant engineering

## Partner to many industries





















We always work in close collaboration with our customers to develop and select our production range.

This mutual dialogue is a strong basis for our product competence and proximety to market. We also offer a clearly structured range of services, geared to the needs of our target market, which guarantees that users from all industries always have a competent advisor to turn to.

We deliver over 50,000 DIN and ISO fasteners made from steel, stainless steel, brass and plastic, direct from stock.

## **Hexagonal bolts**



Comprehensive range of screws with hexagonal and square head in all standard thread types.

#### Your benefits at a glance

- Steel strength classes from 3.6 to 12.9
- Various Cr(VI)-free surfaces
- Stainless steel in A1, A2, A4
- Certified Böllhoff quality
- All products are also available to order online

#### Our ranges

- Hexagon head bolts, self-locking screws
- Self-drilling screws, threaded self-tapping screws
- Tapping screws
- Locking screws
- Tolerance bolts
- and many more

# Cap screws with internal driving feature



Comprehensive range of screws with various internal driving features and different thread types.

#### Other screws



Exclusive range of screws for a wide range of special customer requirements.

#### Our ranges

- Cylinder screws, self-locking screws
- Self-drilling screws, thread-rolling screws
- Tapping screws, slotted set screws
- Pan head screws, flanged button head screws
- Countersunk bolts, locking screws
- and many more

#### **Our ranges**

- Mushroom head bolts, wing screws
- Ring bolts, eyebolts
- Countersunk bolts, studs
- Threaded self-tapping screws, knurled screws
- T-head bolts, stud bolts
- and many more

#### **Nuts**



Huge range of nuts for various applications.

#### **Washers**



Wide range of washers and sealing rings in numerous sizes and versions.

#### Our ranges

- Hexagon nuts, self-locking nuts
- Square nuts, wing nuts
- Hexagon weld nuts
- Insert nuts, knurled nuts
- Eye nuts, hexagon cap nuts
- and many more

#### **Our ranges**

- Washers, lock washers
- Spring washers, spring lock washers
- Shim rings, tooth lock washers
- Serrated lock washers
- Sealing rings
- and many more

## Pins, rivets and wedges



Extensive range of pins, rivets and wedges for many different applications.

## Other fasteners



Wide range of other C-parts – from threaded rods to hose clips.

#### Our ranges

- Blind rivets, expanding blind rivets
- Round head rivets, blind rivet nuts
- Mandrels, pins
- Mandrel holders
- Countersunk head rivets
- and many more

#### Our ranges

- Threaded rods, cylinder rods
- Lock rings, adjusting rings
- Turnbuckle nuts, spring pins
- Spring cotters, conical grease nipples
- Hose clips
- and many more

#### **HELICOIL®**

#### Thread inserts



Thread inserts for high load-bearing resilient joints in metal materials with low shear strength.

#### **KOBSERT®**

#### Thread bushes



Thread inserts for creating vibration-resistant and torsion-proof nut threads in metal materials with low shear strength.

#### Your benefits at a glance

- High thread loading
- Adds quality and value
- Wear-resistant, low and constant thread friction
- Highly resilient
- Corrosion temperature-resistant

#### Your benefits at a glance

- Highly resilient and wear-resistant
- Vibration-resistant and torsion-proof
- Suitable for thread repair
- Sealing (version with sealing ring)

# **HELICOIL®** Kits Thread repair



 $\ensuremath{\mathsf{HELICOIL^{@}}}$  Plus thread inserts are the fast way to repair damaged threads.

# **HELICOIL®**Self-locking nuts



Highly durable, reliable joining of steels, aluminium and plastics.

#### **Typical applications**

- Oil drain threads
- Spark plug threads
- Lambda probe threads
- Wheel bearing threads
- Injector screw threads

- Consistent clamping torque even when reused
- Consistent load and stress distribution
- High thermal stability
- Constant thread friction
- Reduced residual dirt

# **SEAL LOCK®**Sealing nuts



Sealing from gaseous and liquid media subject to high pressure.

#### **KAPTI NUT®**

Insert nuts



High-strength, captive joints for thin steel, aluminium and stainless steel sheets.

#### Your benefits at a glance

- One-piece element
- Double sealing action
- High preload force
- Up to 5 repeat fastenings
- Thermal stability from -40°C to 110°C

#### Your benefits at a glance

- Captive threaded element
- High mechanical strength
- Can be used on both sides
- Inserts in one action

# IMTEC® Moulded inserts



Moulded inserts especially for thermoset and thermoplastic materials as well as CFRP composites.

# **AMTEC®**Thread inserts



High-strength brass thread inserts for plastic parts.

#### Your benefits at a glance

- Maximises usable thread length
- Corrosion and acid resistance
- Greater technical cleanliness (minimises residual dirt)
- High pull-out force
- Weight reduction of the component

- Shorter injection cycles
- Lower manufacturing costs for plastic parts
- Secure, stress-free anchoring
- High pull-out and torsion values
- Infinitely repeatable screw fastening unlike self-forming screws

#### **RIVKLE®**

Blind rivet nuts and screws



Blind rivet nuts and screws for securing load-bearing nut and bolt threads to thin-walled components.

# RIVQUICK®

Blind rivets



Strong and high-strength, non-detachable joints for metal and plastic components.

#### Your benefits at a glance

- Load-bearing thread on thin-walled components
- Assembly with access from only one side (blind assembly)
- Flexible use in every stage of production
- No thermal stress to workpiece consequently no warping

#### Your benefits at a glance

- For joining thin-walled components
- No thermal stress to workpiece consequently no warping
- Also suitable for coated components
- Wide range of materials for the fastening element (aluminium, steel, stainless steel, etc.)
- Fast, low-emission

#### **RIVKLE®** Kit

Repair solution for thin-walled components

Example: Range with setting tool for manual riveting.

#### **Example: Contents of each kit**

- 50 blind rivet nuts M 6
- 25 blind rivet nuts M 8
- 25 blind rivet nuts M 10
- RIVKLE® M2007 setting tool
- 1 mandrel and 1 nozzle for each size



# **RIVSET®**Self-pierce rivets



Highly durable, reliable joining of steels, aluminium and plastics.

#### **RIVTAC®**

Tacks



High-speed tack for joining mixed, multilayer and hybrid joints.

#### Your benefits at a glance

- High-strength
- Suitable for visual inspection
- Reproducible
- No pre-drilling
- Watertight and airtight

#### Your benefits at a glance

- Join without pre-punching with access from one side only
- Joining and cycle times reduced to a minimum
- Perfect joining of high-strength materials
- Can be optimally combined with adhesion technology

#### **RIVQUICK®** Kit

Repair solution for thin-walled components

Example: Assortment with setting tool for manual riveting.

#### **Example: Contents of each kit**

- BRS 02 setting tool
- A variety of blind rivets made of aluminium with steel mandrel
- 4 nozzles
- 2 drills



#### **QUICKLOC®**

#### Quick-release fasteners



Clamping, turning and pressure fasteners for repeatedly releasable joints.

#### **FAST TURN**

Quick-release fasteners

Fastening elements for repeatedly releasable joints.

#### Your benefits at a glance

- Quick subassembly installation without tools
- Open clockwise and counter-clockwise
- Easy locking by turning or axial pressure
- Resistant to dirt

#### Your benefits at a glance

- Opens and closes quickly
- Easy installation
- Easy operation
- Perfect solution for large-scale production

## ONSERT®

#### Adhesive fasteners



Fast and reliable adhesive bonding of various functional elements using a base made of transparent plastic with light-curing adhesive.

- Full mechanical load capacity immediately after irradiation
- Short curing times (< 4 seconds)
- Fastening elements cannot be seen in plastics or thin-walled components (design)
- Adhere to a wide range of materials
- Flexible use, even after surface treatments (painting / cathodic lectrodeposition coating)

# RIVKLE® Elastic Blind rivet nuts



Blind rivet nuts for vibration and noise-decoupling.

#### SNAPLOC®

Decoupling plug-in connections



Fasteners and fastening systems for absorbing vibration and noise.

#### Your benefits at a glance

- Resilient thread body on thin-walled components
- Vibration and noise-decoupling
- Thermal and electrical isolation
- Easy installation

#### Your benefits at a glance

- Quick and easy assembly/disassembly
- Vibration and noise-decoupling
- Tolerance compensation in centre distances
- Wide range of fastening options
- Easy integration

#### **FLEXITOL®**

Tolerance compensation systems



A cost-effective technical solution for the stepless compensation of tolerances.

- High functional reliability
- Access required from one side only
- Easily integrated into a wide range of applications
- High end product quality
- Quick and easy assembly
- Prevents warping during assembly

### NORD-LOCK®

Screw locking



NORD-LOCK® wedge-locking washers are locking elements that comply with DIN 25 201 and which lock the threaded connection by preload force instead of friction.

# Your benefits at a glance

- Optimal locking solution under strong vibrations and dynamic loads
- Locking effect even under low preload
- Suitable for applications up to screw strength class 12.9
- Suitable for multiple reuse without losing effectiveness
- Reliable locking element for rail and construction

## **Chemical thread locking**



Chemical thread retention is an alternative to anaerobic adhesives. The coatings can be adhesive, locking and sealing.

#### Your benefits at a glance

- Good, reliable locking and clamping effect
- Simple, safe assembly
- Effective seal
- No change in component geometry
- Removable

## RIPP LOCK®

Screw locking



During assembly of the fastener, the radial ribs of the RIPP LOCK® fasteners press into the respective mating surface. The resulting form fit reliably prevents self-loosening of the joint.

- Reliable anti-rotation lock
- Suitable for applications up to screw strength class 12.9
- Also suitable for sensitive surfaces
- Suitable for multiple reuse
- High corrosion and heat resistance

#### **HELICOIL®** Screwlock

Thread inserts with screw locking function



These thread inserts also have an additional screw-locking section. The clamping torques are comparable with those specified in ISO 2320.

## HELICOIL®

#### Locknuts



Highly durable, reliable joining of steels, aluminium and plastics.

#### Your benefits at a glance

- High thread loading
- Integrated screw locking function
- Corrosion-resistant and temperature-resistant
- Different versions for varying requirements
- Highly resilient and wear-resistant

#### Your benefits at a glance

- Consistent clamping torque even when reused
- Uniform load and stress distribution
- High thermal stability
- Constant thread friction
- Reduced residual dirt

# **U-Nut**Locknuts



U-Nut nuts secure bolted connections effectively and efficiently, even under high vibration and dynamic loads and under low preload.

# Fine U-Nut Locknuts



Fine U-Nuts reliably secure shaft bearings, gears and other machine parts against loosening. This is achieved by a plate spring integrated in the nut.

#### Your benefits at a glance

- High security against loosening of the connection
- No additional safety element necessary
- Good re-screwability
- High material and variant width
- Ready standard assortment

- High security against loosening of the connection
- Easy mounting
- Constant assembly parameters
- No additional safety element necessary
- No keyway milling necessary

#### **EJOT DELTA PT®**

Self-tapping fasteners for plastics



These are thread-forming/thread-rolling screws for easy and secure self-tapping fastening in thermoplastic materials.

#### Your benefits at a glance

- Highly resilient self-tapping fastening in plastics
- High fatigue strength
- Reliable thanks to high tensile, torsional and vibration resistance
- Minimal radial stress
- Wide range of tightening speeds available

#### **EJOT ALtracs® Plus**

Self tapping fastener for lite alloys



Direct screwing without additional thread cutting process and securely and durably connect components. This is the principle of the EJOT ALtracs® Plus. The elimination of the previous insertion of a standard thread saves additional tool costs and time.

#### Your benefits at a glance

- Low loss of preload under high dynamic and thermal pollution
- Very good vibration resistance without additional safety elements
- High mounting safety due to low grooving torques
- Multiple repeat screwing possible

#### **AMTEC®**

Self-tapping fasteners for plastics



AMTEC® screws are thread-forming fasteners which are suitable for the direct screw fastening of thermoplastic components.

#### **QUICK FLOW®**

Self-tapping fasteners for thin sheets



QUICK FLOW® screws are ideal for joining particularly thin sheets and components.

#### Your benefits at a glance

- Highly resilient self-tapping fastening in plastics
- High pull-out forces
- Reliable screw fastening
- Releasable and reusable
- Special solutions available on request

- No predrilling or punching of material required
- No guide thread required
- Elevated overtorque values ensure good process reliability during assembly
- Repeated loosening and tightening possible
- Secure, long-lasting fastening

#### **SEALING PLUG**

Plug seals



The plug seals are made of two all-metal components. They are used to permanently seal holes in pneumatic and hydraulic components.

#### Your benefits at a glance

- Easy installation
- Reliable and efficient
- Operating pressures up to 500 bar
- Complies with RoHs
- Wide range of items

#### **PARRYPLUG®**

Tamper-resistant elements





PARRYPLUG® is a locking element for internal drives to prevent tampering with thread connections by unauthorised staff.

- Easy and convenient to install
- Perfectly tight fit provides maximum protection against tampering
- Can be removed with appropriate tool
- Wide temperature range (-50°C to +200°C)
- Customised colouring available

# Custom-made parts made of metal and special materials

We offer you the best solution for your application from both a technical and economic point of view while taking into account requirements regarding material, manufacturing processes and surface finishes. For us at Böllhoff, providing advice is as important as meeting customer requirements quickly and reliably. We offer support right from the design stage, through the creation of prototypes, to serial production.



- Fasteners in all dimensions, lengths and diameters
- In all batch sizes from 1 to over 1,000,000 units
- Individually assembled, labelled and packaged on request
- Including inspection certificates
- Maximum quality













## TEPRO® and ELASTEC®

Custom-made engineering parts and assemblies made of plastics, silicones and elastomers

Solutions for virtually any application.

We are the perfect partner for customised solutions to meet high demands. We develop and manufacture these products for the automotive, aerospace and many other industries.

- Focus on individual customer benefits
- Customised products
- In-house development, design and prototype manufacture
- State-of-the-art tool making











#### Your benefits at a glance

- Automatic reversal when insertion depth is reached
- Infinitely variable: Speed/torque
- Compatible with existing tool systems (exchange unit)
- Ease of use
- Ergonomic design and compact size
- Quiet operation



#### Your benefits at a glance

- Increased concentricity
- Infinitely variable stop clutch
- Ease of use
- Low maintenance
- ★ QUICKSERT® is part of the AMTEC® product group.



- Ergonomic two-component housing: secure grip and non-slip
- Tailored lamp geometry ensures optimal curing
- USB connection for process monitoring
- 3-position pushbutton for fast and reliable positioning



# RIVKLE® P2007 pneumatic setting tool

For the fast, force-monitored processing of blind rivet nuts and studs.

#### Your benefits at a glance

- Just one force setting for different component thicknesses
- Long service life due to optimal force setting
- Multiple riveting possible
- Extra light (2 kg)
- Pressure setting method
- Flexible and versatile

# RIVQUICK® P2000 hydraulic-pneumatic setting tool

For quick processing of blind rivets.

- Reliable
- Lightweight and ergonomic
- Long service life
- Compact design





RIVTAC® Fully automated system with RIVTAC® Automation P process monitoring

For innovative tack-setting at high speed.

#### Your benefits at a glance

- Maximum flexibility in production planning
- Modular design allows flexible positioning
- Quick and easy maintenance
- Compact setting tool for optimum access to application point
- Quick response times





PASS series with RIVCLINCH® 4006 P50 PASS hydraulic drive and compressed air booster

For surface-friendly joining without a fastener.

- Powerful all-purpose clinch machine
- Joins the most common material combinations up to a total thickness of 4 mm
- "Passive Approach Stroke System" for secure and lightweight
- High process speed for series of high quality clinch joints
- Quick and easy maintenance
- Highly reliable









Electric-hydraulic RIVSET® Automation EH self-pierce technology

For efficient processing of semi-tubular self-pierce rivets.

#### Your benefits at a glance

- Long service life with maximum availability
- Minimal maintenance costs
- Modular and extensive machine models
- Machine configuration via Plug&Play
- Remote access to control software
- Fast and powerful CPU



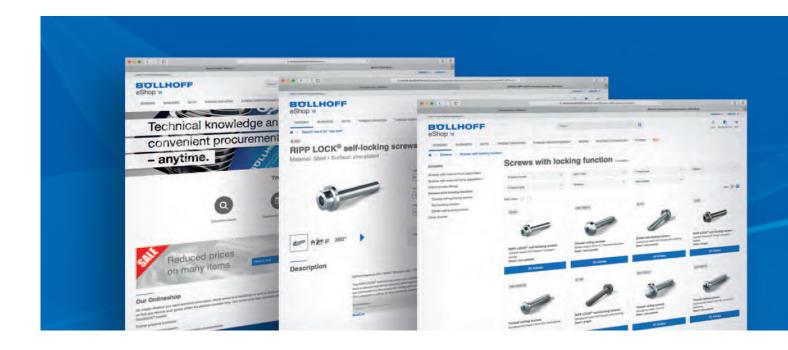
## RIVKLE® **S**



Pressure-regulated, path-monitored tool with integrated RIVKLE® EPK C quality control

For process-monitored setting of RIVKLE® blind rivet nuts and studs.

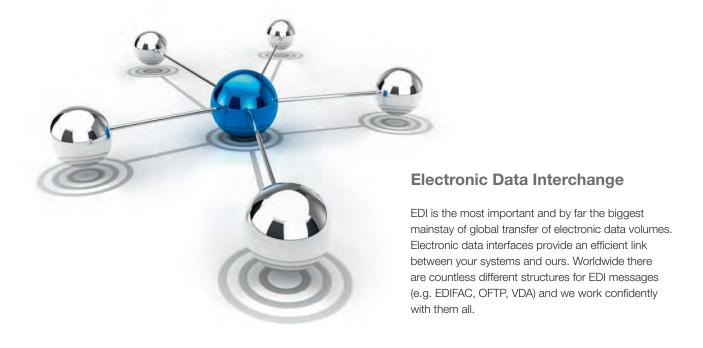
- 100% process control
- Pressure-regulated tool
- Suitable for large production series
- Multilingual touchscreen
- Adjustable alarm and safety devices



# eShop – Technical knowledge and convenient procurement – for every time.

Our eShop offers over 40,000 DIN and standard fasteners, as well as HELICOIL® thread inserts and RIVKLE® blind rivet nuts. The eShop features all the functionalities of a modern shop system. It also offers everything you would expect of a web-based technical manual for fasteners. There are a variety of options for the technically-minded user – product illustrations, technical specifications, interactive 3D visualisations and CAD downloads.

- A good overview of our extensive Product range
- detailed technical information, incl. product videos and data sheets
- Product illustrations and technical drawings
- Up-to-date information on prices and availabilities
- A comfortable ordering process all around the clock





# **ECOPACK** – Economic packaging









#### One-stop shop for products and packaging

In addition to provision of fastenings to meet your needs, we are also an expert partner for bagging solutions. We will discuss your packaging requirements face to face to discover the perfect technical and most economical solution.

#### Our range of services

Our range of services includes automatic packing by computer-controlled packaging machines and customer-specific packaging solutions.

#### Bag packaging labelling

- Printing with
  - logos
  - barcodes
  - information
  - by thermal transfer
- Labelling of bags and cardboard boxes
- Package slip dispenser up to DIN A4

#### **Continuous quality control**

- Inspection by light barrier
- Final weight checking using check weighers
- Random sampling
- Inspection by camera





#### **ECOSIT®** (ECOnomic Supply In Time)

With our ECOSIT® service package we take over the complete supply chain of our customers: from disposition, procurement, quality control and warehousing until the goods are distributed to the assembly line. The ECOSIT® product family in overview:

#### **RFID Box**

All the relevant data is stored on RFID labels. As soon as stocks start getting low, the label is simply thrown into the RFID Box. The order is triggered and the procurement process begins. The 15" touchscreen also allows access to the central database, the control of electronic shelf displays and quick help via the video hotline.

#### **ECOBin**

The small load carriers of the ECOBin container series can be placed freely on the shelf thanks to the multi-sided access possibilities. The all-round rounded inner edges of the containers additionally facilitate the removal of the articles. Thanks to the special waffle base, the containers can also be stacked safely and stably in a composite stack.

#### **ECOLABEL**

ECOLABEL allows flexible marking of all articles in the ECOSIT® system and accelerates the processes on site via pick-by-signal. If an article is to be picked, an optical signal on the ECOLABEL guides the worker directly to the respective container – for faster location of the articles and fewer mistakes.

#### **ECOPORTAL**

In ECOPORTAL you always have an overview of the most important data concerning your delivery system. Whether you want to call up master data, view the shelf occupancy plan or download further documents: ECOPORTAL is your fast and flexible access to all relevant information. Comprehensive reporting provides you with numerous approaches to increase the efficiency of the system - for more transparency and independence.

#### **ECOFREIGHT**

Mobile pallets with integrated load securing allow a comfortable transport of the loaded ECOBin containers.

Due to the combination of pallet, handle and trailer coupling, no lift truck is necessary. The absence of wood, paper and cardboard also protects the environment – for more sustainability in logistics.

- Easy and fast shelving and technology installation
- Systematic, clear storage
- Reduction of warehouse and contingency stocks
- High security of supply
- Express deliveries during demand peaks
- Online order process control
- Video hotline



#### **Potential savings**

The cost efficiency of joints does not depend as much on the price of the fastener as it does on the costs for preparation and assembly of the parts to be joined. The main cost drivers in the process are: design, procurement, quality control, logistics, storage, assembly and commitment of capital.



Compared to this, the unit price of the fastener, at 20%, is relatively low.

The future manufacturing costs of a product are, to a large extent, determined at the design stage of a new development. The general rule is: the earlier the fastening technology specialists are brought in, the better.

#### Our range of services

Our priority is always to improve customer products while cutting the costs of production.

We offer the following services:

- Design and engineering of fasteners
- Design and supply of customised special articles
- Application engineering tests in a certified laboratory
- In-house prototyping
- Standardisation of fasteners
- Optimisation of product lines
- Specialist publications about fastening technology
- Customer seminars



#### **Technical analyses**

With our accredited laboratory we offer comprehensive support for the customer's design departments:

- Preload force measurements
- Material analysis
- Insertion tests
- Tensile tests

- Friction steel measurements
- Compression behaviour
- Corrosion protection tests
- Dynamic strength testing

We also produce our own prototypes for custom-made fasteners as part of our range of application technology services.







#### Cr6+-free fasteners

We have chosen a range (VZD) in the field of galvanised zinc surfaces which ensures corrosion protection equivalent to a sophisticated surface in accordance with DIN ISO 4042 = A3C. The corrosion resistance in the salt spray test is greater than 72 hours at zinc corrosion resistance and a minimum of 144 hours until the base metal corrodes. The appearance is iridescent silver. We have many DIN and standard fasteners from the VZD range available from stock.

#### **Antiseize coating**

Screwed joints in which both the screw and nut, as well as the clamping parts, are made of stainless steel materials are prone to so-called galling or seizing. The antiseize coating effectively prevents cold welding. Currently DIN 934 nuts and DIN 985 self-locking nuts in A2 are available as standard with the antiseize coating. Other nuts, as well as screws, can be supplied at any time on request.



#### Core business

Continuous improve



#### **Quality guaranteed**

Fulfilling the quality specifications of our customers – high as they may be – has always been particularly important to us.

Böllhoff has always been among those companies which see customer-specific requirements as a challenge and have always been certified to the latest specifications in quality and environmental management. Our customers benefit directly from the resulting continuous improvements.

#### **Accredited laboratory and certification**

Böllhoff was among the first companies to be successfully certified to to DIN EN ISOIE ISO/TS 16949 – the world's highest standard for the automotive industry. Böllhoff has its own accredited test laboratory certified to DIN EN ISO / mager Error prevention IEC 17025 and the company is certified to DIN EN ISO 14001, further proof of our strong commitment to quality and the environment. These certifications attest to the highly competent testing of our products and our environmentally conscious actions that protect resources.



#### **Specialist publications**

In our daily dealings with a wide range of fasteners we frequently encounter "out-of-the-ordinary" questions from customers and interested parties. The answers can be found in the seventh edition of "The Manual of Fastening Technology",

grouped as follows:

- Selecting and calculating a screwed joint
- Standards
- Materials
- Manufacture
- Threads
- Assembly
- Self-tapping fasteners
- Fastener retention
- Corrosion protection

Products and markets develop at great speed. Increasing competition and new laws present manufacturers with the challenge of developing alternative technical solutions. We regularly inform our customers about the latest technical developments – in the field of fastener technology, corrosion protection or screw locking, for example. Our specialist publications "The Manual of Fastening Technology", Böllhoff Bulletin and Böllhoff News are longestablished and valued reference works in the market.





#### **Böllhoff Academy**

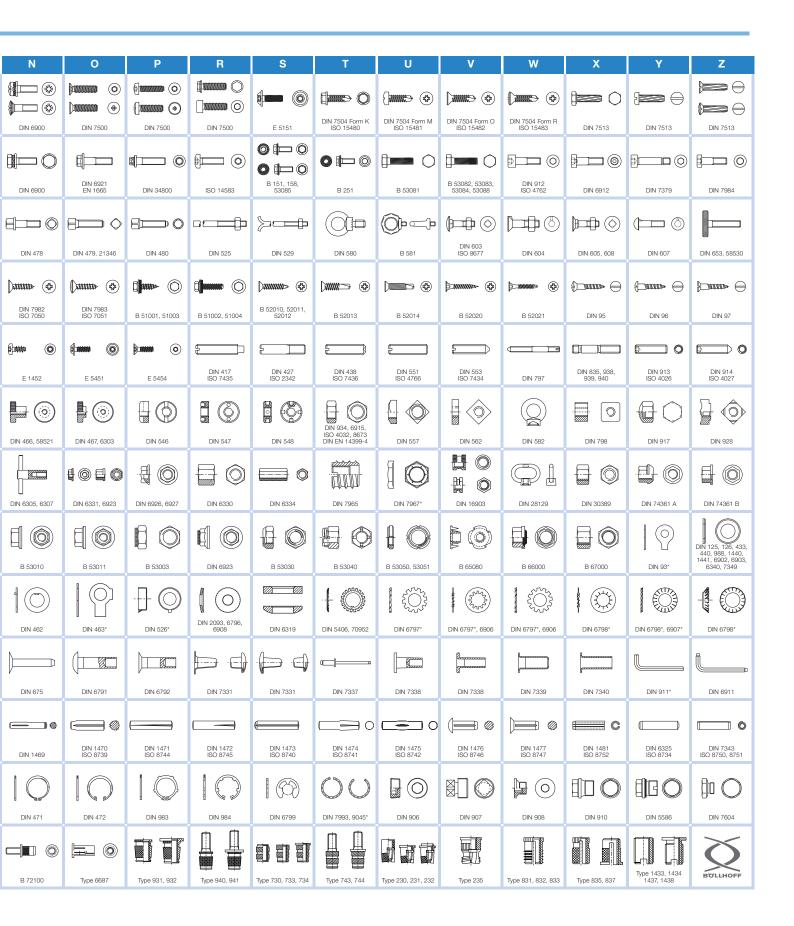
The aim of our Academy programme is to help our customers make their fastening and assembly technology as efficient as possible and to constantly produce reliable joints. The courses we offer are geared towards people in both technical and business roles and include technical seminars on fastening and assembly technology, hardness tests in our accredited laboratory, joining technology for plant operators and all aspects of screwing technology for sales staff.

## Overview of our product range

	Α	В	С	D	E	F	G	н	1.0	K	L	M
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ľ	DIN 84 ISO 1207	DIN 85 ISO 1580	DIN 404	DIN 920	DIN 921	DIN 922	DIN 923	DIN 924, 925	DIN 963 ISO 2009	DIN 964 ISO 2010	DIN 965 ISO 7046	DIN 966 ISO 7047
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2	DIN 7516	DIN 7516	DIN 7516	DIN 7985 ISO 7045	DIN 558, 933, 961 ISO 4017, 4018, 8676	DIN 561	DIN 564		DIN 601, 931, 960, 6914, DIN EN 14399-4, ISO 4014, 4016, 8765	DIN 7990	DIN 7964	DIN 6900
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3	DIN 7991	D 50400		(FO 7280 2		D 50500	DIN 186, 261,		DINI 246		O	DIN 464 50521
	ISO 10642	B 52100	ISO 7380-1	ISO 7380-2	ISO 7380-2 (TX)	B 50500	7992, 25192	DIN 188	DIN 316	B 316	DIN 444	DIN 464, 58531
4		₽							DIN 6901	DIN 7976	DIN 7981	
	DIN 6304, 6306	DIN 6367	DIN 6378	DIN 7969	DIN 11014, 25195	DIN 15237	DIN 25193	DIN 6901	ISO 10510	ISO 1479	ISO 7049	ISO 14585
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	DIN 915 ISO 4028	DIN 916 ISO 4029	DIN 926	DIN 927	DIN 976	DIN 2509	DIN 2510	DIN 2510	DIN 315	B 315	DIN 431, 80705	DIN 439, 936* ISO 4035, 8675
7					10							
	DIN 929	DIN 935	DIN 979	DIN 980, 982, 985, 6924, 6925	DIN 981, 1804, 70851, 70852	DIN 986	DIN 1478	DIN 1479	DIN 1480	DIN 1587	DIN 1816	DIN 2510, 30387
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	DIN 80701	DIN 80704	B 193, 196, 53012	B 317, 318	B 466	B 467	B 50400	B 51010	B 51011	B 51012	B 53001	B 53002
9							40		16			
9	ISO 7089, 7091, 7092, 7094, 8738, 10669, 10673	DIN 7989, 9021 ISO 7093 B 1052, 9022	DIN EN 14399-6 DIN 125, 6916 ISO 7090	DIN 7603	DIN 127*, 7980*	DIN 128*, 6905*	DIN 74361 C	DIN 137*, 6904*	DIN 432	DIN 434, 435, 6917, 6918	DIN 436	DIN 440 ISO 7094
40	4										<b></b>	<u> </u>
10	DIN 6913*	B 53060	B 53061	B 53062	B 53065	B 53070	B 53072	B 53077	DIN 124, 660	DIN 302, 661	DIN 662	DIN 674
	f	<b>₩</b> •										
11	B 50502	B 51020, 51021	B 51022	DIN 1 ISO 2339	DIN 7 ISO 2338	DIN 94 ISO 1234	DIN 11024	DIN 258, 7977 ISO 8737	DIN 1433, 1443 ISO 2340	DIN 1434, 1435 ISO 2341	DIN 1436, 1444 ISO 2341	DIN 1445
					150 2556	.50 1204	S.W 11024	.50 0/0/	.50 2040	550 2541	15U 2541	<b>AN</b> 1773
12	DIN 7344	DIN 7346	DIN 7978	DIN 7979	DIN COLO	DIN ORGEN TO STATE	DIV. 005 :					
	ISO 8748	ISO 13337	ISO 8736	ISO 8733, 8735	DIN 6881	DIN 6883, 6886	DIN 6884, 6887	DIN 6885	DIN 6886	DIN 6888	DIN 6889	DIN 705*
13												
	DIN 442	DIN 443	DIN 470	DIN 3017	DIN 71412	DIN 8140, B 610004, 620004	B 610005, 620005	B 70100, 70101, 70102, 70300	B 70200, 70201, 70202, 70400	B 70500	B 71100, 71101	B 71200, 71300, 71301

\*Note: Norm is withdrawn

#### **BOLLHOFF**



A list of keywords, with the corresponding assignment via the coordinate system, can be found on the following pages.

# Overview of our product range

Description	DIN/ISO/B/Type Coord	ıınates	Description	DIN/ISO/B/Type Coor	ainates	Description	DIN/ISO/B/Type Co	
Α			Countersunk head wood screws with cross	DIN 7007		Hexagon couplings	DIN 6334	S
Adjusting screws for drawing instruments	DIN 58530	Z 3	recess H	DIN 7997	D 5	Hexagon domed cap nuts, high type	DIN 1587	K
AMTEC® screws for plastic materials			Cross recessed raised countersunk head			Hexagon domed cap nuts, low type	DIN 917	Υ
countersunk head, cross recess Z	B 52005	H 5	wood screws	DIN 7995	B 5	Hexagon domed cap nuts, self locking	DIN 986	F
AMTEC® screws for plastic materials raised	D 50004	0.5	Cup head nib bolts	DIN 607	Y 3	Hexagon fitted bolts for steel constructions	DIN 7968	H 2
countersunk head, cross recess Z	B 52004	G 5	Cutter retaining screws	DIN 6367 DIN 7 / ISO 2338	B 4 E 11	Hexagon fitted bolts with short and long thread	DIN 6921 / EN 1665	H:
AMTEC® screws for plastic materials raised	B 52006	15	Cylindrical pins	DIN / / ISO 2330	E 11	Hexagon flange bolts Hexagon flange nuts	DIN 6923	0
countersunk head, with washer, cross recess Z AMTEC® screws, cross recess Z,	B 32000	10	D			Hexagon head pipe plugs	DIN 7604	Z 1:
countersunk head	B 52005	H 5	Disc springs	DIN 2093	R 9	Hexagon head screws for steel constructions		K
AMTEC® screws, cross recess Z,	D 02000	110	Double end studs with full shank	DIN 2509	F 6	Hexagon head screws with partial fine thread		12
raised countersunk head	B 52004	G 5	Double end studs with reduced shank,			Hexagon head screws with partial thread	DIN 601, 931/ISO 4	014,
AMTEC® screws, cross recess Z,			type KU and ZU	DIN 2510	H 6		4016	12
raised countersunk head with washer	B 52006	15	Double end studs with reduced shank,			Hexagon head screws, fully threaded	DIN 558, 933/ISO 4	
AMTEC® thread inserts, EXPANSIONSERT 1	Type 230, 231, 232	U 13	type L, K, and Z	DIN 2510	G 6		4018	E:
AMTEC® thread inserts, EXPANSIONSERT 2	Type 235	V 13	Dowel pins with internal thread	DIN 7979/ISO 8733,		Hexagon head screws, fully threaded,	DIN 004 / 100 0070	_
AMTEC® thread inserts, HITSERT®,	T 000	D 40	D	8735	D 12	metric fine thread	DIN 961 / ISO 8676	E 2 9 K 4
through hole	Type 932	P 13	Dry wall screws Self-drilling tapping	D E0001	W.A	Hexagon head tapping screws Hexagon head wood screws	DIN 7976 / ISO 1479 DIN 571	9 K
AMTEC® thread inserts, HITSERT®,	Type 940, 941	R 13	screws thread, cross recess H	B 52021 B 52020	W 4 V 4	Hexagon locking screws with flange	DIN 37 I	A
with bolt and flange AMTEC® thread inserts, HITSERT®,	туре 940, 941	n Io	Dry wall screws, cross recess H	D 02020	V 4	and toothing	B 53085	S
with flange, through hole	Type 931	P 13	E			Hexagon nuts	DIN 934/ISO 4032,	
AMTEC® thread inserts, QUICKSERT® Hex, wi		1 13	EJOT® ALtracs® Plus-screw, TORX,			notago: nato	8673	T
flange and hexagon shape, reverse locking	Type 1437, 1438	Y 13	with pressed washer	E 5151	S 1	Hexagon nuts for high strength constructions	DIN 6915,	
AMTEC® thread inserts, SONICSERT®,	7, ,		EJOT® ALtracs® Plus-screw	20101	0.		DIN EN 14399-4	T
through hole	Type 730, 733	S 13	for light metal materials	E 5151	S 1	Hexagon nuts for high strength constructions	DIN 6915 /	
AMTEC® thread inserts, SONICSERT®,			EJOT®-Delta PT-screws, TORX,				DIN EN 14399-4	T (
with bolt and flange	Type 743, 744	T 13	countersunk head	E 5454	P 5	Hexagon nuts with flange and clamp	DIN 6926, 6927	P
AMTEC® thread inserts, SONICSERT®,			EJOT®-Delta PT-screws, TORX,			Hexagon nuts with flange and toothing	B 53012	C
with flange, through hole	Type 734	S 13	with pressed washer	E 5451	0 5	Hexagon nuts with flange, self-locking,	D 50004	
AMTEC® thread inserts, SPREDSERT® 1	Type 831, 832, 833	W 13	EJOT®-PT-screws, cross recess H,			all-metal	B 53021	R
AMTEC® thread inserts, SPREDSERT®,	Time 025 027	V 10	countersunk head	E 1413	M 5	Hexagon set screws with full dog point	B 51010 DIN 561	H 8
with retaining flange	Type 835, 837	X 13	EJOT®-PT-screws, cross recess H, pan head	E 1412	L 5	Hexagon set screws with full dog point  Hexagon set screws with half dog point,	ו טכ אווע	F 7
В			EJOT®-PT-screws, cross recess H,	E 1 111	И.Б	cone end	DIN 564	G
Blind rivet nuts RIVKLE®, countersunk head			raised countersunk head with washer EJOT®-PT-screws, cross recess H.	E 1411	K 5	Hexagon socket head cap screws	DIN 912 / ISO 4762	
round body, linear knurls in grip range,			with pressed washer	E 1411	K 5	Hexagon socket head cap screws low head	DIN 0127100 1702	
open and closed end, steel, stainless steel,	B 70200, 70201,		EJOT®-PT-screws, TORX, countersunk head	E 5454	P 5	with pilot recess	DIN 6912	X 2
aluminium	70202, 70400	113	EJOT®-PT-screws, TORX, pan head	E 1452	N 5	Hexagon socket head cap screws with		
Blind rivet nuts RIVKLE®, extra-small	10202, 10400	110	EJOT®-PT-screws, TORX, raised countersunk	L 1-102		low head	DIN 7984	Z
countersunk head hexagonal body, open end,	B 71200, 71300,		head with washer	E 5451	0 5	Hexagon socket head shoulder screws	ISO 7379	Υ :
stainless steel, steel	71301	M 13	Elevator Bolts	DIN 15237	F 4	Hexagon socket screw plugs conical thread	DIN 906	U 12
Blind rivet nuts RIVKLE®, extra-small			Eye bolts	DIN 444	L 3	Hexagon socket screw plugs with collar and		
countersunk head, countersinking round body,						ventilation	DIN 5586	Y 12
open end, stainless steel, steel	B 71100, 71101	L 13	F			Hexagon socket screw plugs with collar	DINIONO	W.4
Blind rivet nuts RIVKLE®, flat head, full			Fine U-Nut self-locking nuts material nuts			cylindrical pipe thread	DIN 910	X 12
hexagonal body,open and closed end,	D 70500	V 40	(1.0503), material insert: stainless steal			Hexagon socket screw plugs with collar cylindrical thread	DIN 908	W 12
stainless steel, steel	B 70500	K 13	metric fine thread	B 53050, 53051	U 8	Hexagon socket set screws with cone point	DIN 914/ISO 4027	VV 12
Blind rivet nuts RIVKLE®, flat head, round body, linear knurls in grip range, opened and	R 70100 70101		Fixing washers, spring steel	B 53062	D 10	Hexagon socket set screws with cup point	DIN 916/ISO 4029	B (
closed end, steel, stainless steel, aluminium	70102, 70300	H 13	Flange button head socket screws with hexalobular drive	LFS (TX)	E 3	Hexagon socket set screws with dog point	DIN 915/ISO 4028	A
Blind rivet nuts RIVKLE®, slotted round body,	70102,70000	11 10	Flange button hexagon head socket screws	LFS	D 3	Hexagon socket set screws with flat point	DIN 913/ISO 4026	Υ :
open end, steel	Type 6687	0 13	Flat countersunk head bolts with two nibs	DIN 11014	E 4	Hexagon thin nuts	DIN 439, 936/	
Blind rivet studs RIVKLE®, flat head knurled	7,		Flat countersunk rivets	DIN 675	N 10		ISO 4035, 8675	M 6
round body, steel	B 72100	N 13	Flat countersunk square neck bolts,			Hexagon weld nuts	DIN 929	A
Blind rivets head shape A and B	DIN 7337	T 10	long square	DIN 605, 608	Х3	Hexalobular external driving head screws	DIN 34800	P 2
Bow nuts for Shipbuilding	DIN 80704	B 8	Foundation bolts	DIN 797	W 5	Hollow keys, one-piece	DIN 7339	W 10
Butterfly nuts for shipbuilding	DIN 80701	8 A	Foundation nuts	DIN 798	X 6	Hollow keys, two-parts, type A	DIN 7331	R 10
Buttonhead wood screws with cross recess	DIN 7996	C 5	Fujilok self-locking nuts material nuts	B 53030	S 8	Hollow keys, two-parts, type B	DIN 7331	S 10
_						Hook bolt	DIN 6378	C 4
C		***	G			Hose clamps	DIN 3017	U
Cage nuts	B 51012	K 8	Gib-head keys	DIN 6887	G 12	1		
Cap nuts Castle nuts	DIN 2510 DIN 935	G 6 B 7	Gib-head saddle keys	DIN 6889	L 12	Insert nuts for plastic moulding	DIN 16903	V
Castle nuts hexagon, slotted thin type	DIN 935 DIN 979	C 7	Grooved pins Grooved pins countersunk head	DIN 1474 / ISO 8741 DIN 1477 / ISO 8747	T 11 W 11	Internal tab washers	DIN 462	N S
Chipboard screws countersunk head	5/11 01 0	07	Grooved pins countersunk nead Grooved pins with gorge	DIN 1477 / ISO 8747 DIN 1469	N 11		- <del>-</del>	
cross recess Z	B 7505	E 5	Grooved pins with round head	DIN 1476 / ISO 8746	V 11	K		
Chipboard screws, countersunk head,			Grooved pins, centre grooved	DIN 1475 / ISO 8742	U 11	Knurled nuts	DIN 6303	0 (
cross recess Z	B 7505, 7510	E 5	Grooved pins, full length parallel grooved			Knurled nuts for drawing instruments	DIN 58521	N (
Chipboard screws, pan head, cross recess Z	B 7505, 7510	F 5	with chamfer	DIN 1473 / ISO 8740	S 11	Knurled thumb nuts, high type	DIN 466	N (
Chipboard screws, raised countersunk head,			Grooved pins, full length parallel grooved			Knurled thumb nuts, high type, type F,		
cross recess Z	B 7505, 7510	F 5	with chamfer and pilot	DIN 1470 / ISO 8739	0 11	polyamide	B 466	E
Clamping screws for drawing instruments	DIN 58531	M 3	Grooved pins, half-length taper grooved	DIN 1472 / ISO 8745	R 11	Knurled thumb nuts, thin type	DIN 467	0 (
Clevis pins with head and threaded portion	DIN 1445	M 11	Grooved tapper pins	DIN 1471 / ISO 8744	P 11	Knurled thumb nuts, thin type, type F,	D 467	-
Clevis pins with large head	DIN 1436,	1.44				polyamide  Knurled thumb scrows, high type	B 467 DIN 464	F 8
Clovie nine with small hood, horself and MO	1444/ISO 2341	L 11	H	DIN 0005 /100 000	16.40	Knurled thumb screws, high type Knurled thumb screws, thin type	DIN 464 DIN 653	M S
Clevis pins with small head, type M and MG Clevis pins without head	DIN 1434, 1435 DIN 1433,	K 11	Hardened dowel pins	DIN 6325 / ISO 8734	Y 11	. alanoa alamo sorows, aliif type	5.11 000	2.
GIOVIO PINO WILLIOUL NEAU	1443/ISO 2340	111	Heaxagon socket screws security-screws with dog point similar ISO 7380	B 50500	F3	L		
Coating 3M, Scotch Grip 2353	B 53084	V 2	HELICOIL® Plus, thread inserts for metals	DIN 8140	F 13	Lifting eye bolts	DIN 580	T 3
Coating Plas-Bolt	B 53081	U 2	HELICOIL® Plus, type free running,	5111 01 10	. 13	Lifting eye bolts, high quality tempered,		
Coating Precote 30 / 80	B 53082, 53083	V 2	thread inserts for metals	B 610004	F 13	octagonal	B 581	U :
Coating Precote 85	B 53088	V 2	HELICOIL® Plus, type screwlock,			Lifting eye nuts	DIN 582	W
Conical spring washers for screw joints	DIN 6796, 6908	R 9	thread inserts for metals	B 620004/10	F 13	Lifting nuts	DIN 28129	W
Core plugs	DIN 907	V 12	HELICOIL® Tangfree, type free running,			Locking washers polyamide	B 53061	C 10
Countersunk flat head screws with			thread inserts for metals	B 610005	G 13	Locking washers type S	B 53070	F 10
cross recess H	DIN 965 / ISO 7046	L1	HELICOIL® Tangfree, type screwlock,			Locknuts	B 53001, 53002,	L 8
Countersunk flat head screws with nib	DIN 604	W 3	thread inserts for metals	B 620005	G 13		53030 / DIN 980,	M 8
Countersunk head rivets	DIN 302, 661	K 10	HELICOIL® lock nuts	B 67000	X 8	Laster de baste Dill 2004 III	982, 985	S 8/D
Countersunk head screws with forged slot	DIN 7000	D. 6	Hex head bolts with reduced shank	DIN 7964	L 2	Locknuts basis DIN 934 all metal	B 53001	Li
for steel structures Countersunk head screws with hexagon drive	DIN 7969	D 4	Hexagon and castle nuts with knuckle thread		X 7	Locknuts basis DIN 934 all metal,	R 52002	M 8
	10042 טפו וופנו אווע	A 3	Hexagon bolts for high-tensile	DIN 6914/	1.0	provided with thread on both sides Locknuts, all metal	B 53002 B 53020	P 8
COUNTERSUITK HEAD SCIEWS WITH			structural bolting	DIN EN 14399-4	12			
Countersunk head screws with hexalobular drive	B 52100	B 3	Hexagon bolts with large across flats	DIN 6914,		Lubricating nipples	DIN 71412	E 13

Description	DIN/ISO/B/Type Coor	dinate
M Masanny halta	DIN EQC	
Masonry bolts	DIN 529	S
Mushroom head anchor bolts	DIN 25193	G 4
Mushroom head screws, with square neck Mushroom head square neck bolts	DIN 603 / ISO 8677 DIN 603 / ISO 8677	V :
	DIIV 003 / 100 007 /	•
NORD-LOCK® – Locking washers	B 53074	H 10
Nuts with captive washer with undetachable,		11 10
loose washer	B 53010	N 8
Nuts with flat collar, type B	DIN 74361	Z
Nuts with spherical collar, type A	DIN 74361	Y
P		
Pan head screws with hexalobular drive Parallel kevs	ISO 14583 DIN 6883	R 2
Parallel keys, type A	DIN 6886	112
Parallel keys, type B	DIN 6886	F 12
Pipe nuts	DIN 431	L
Pipe nuts with flat head, type A	DIN 7340	X 1
Plain washers medium finish for clevis pins	DIN 1440, 1441	Z
Plain washers tolerance according to		
DIN ISO 4759.3 class C	B 9022	В 9
Plain washers, class 140 HV	DIN 125, 126	Z 8
Plain washers, class 200 HV	ISO 7093	В 9
Plain washers, class 200 HV and 300 HV	ISO 7089	Α 9
Plastic caps, black, only for DIN 571	B 571	A !
Prevailing torque type hexagon locknuts Prevailing torque type hexagon locknuts,	DIN 6924, 6925	D
all metal Prevailling torque type hexagon nuts with	DIN 980	D
nylon insert, high and low type	DIN 982, 985	D
R		
Raised cheese head screws, cross recess H Raised countersunk flat head screws.	DIN 7985 / ISO 7045	D
cross recess H	DIN 966 / ISO 7047	М -
Raised countersunk head rivets	DIN 662	L 10
Raised countersunk head screws with		
hexagon socket head Reinforcement window screw, countersunk	ISO 7380	C
head, cross recess H Reinforcement window screw, special point,	B 52010	S
countersunk head, cross recess H Reinforcement window screw, countersunk h	B 52011	S
drilling bit, metric thread, cross recess H	B 52014	U
Reinforcement window screw, countersunk	D 02014	0 -
head, drilling bit, tapping screw thread,		
cross recess H	B 52013	T-
Reinforcement window screw, countersunk		
head, Hi-lo-thread, cross recess H	B 52012	S
Retaining rings for bores	DIN 984	R 1
Retaining rings for shafts	DIN 983	P 1
Retaining rings for shafts type A	DIN 471	N 1
Retaining rings for shafts type I Retaining washers for shafts spring steel	DIN 472 DIN 6799	0 1: S 1:
RIPP LOCK® hexagon locking screws	B 158	Si
RIPP LOCK® lock washers	B 53065	E 10
RIPP LOCK® locking screws with internal	D 33000	L 1
hexagon socket	B 251	T
RIPP LOCK® locking washers ripped on both sides	B 53065	E 10
RIPP LOCK® lock nuts	B 193	C
Rivets for brake and clutch lining		0 / V 1
Round coupplings	B 50400	G
Round head rivets	DIN 124, 660	11
Round nead rivels	DIN 70851, 70852	E:
	DIN 70001, 70002	R
Round nuts slotted for hook spanners Round nuts with drilled holes in one face	DIN 547	
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes	DIN 547 DIN 1816	
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side	DIN 547	
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for	DIN 547 DIN 1816 DIN 548	S
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction	DIN 547 DIN 1816	S
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for	DIN 547 DIN 1816 DIN 548	S (
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions	DIN 547 DIN 1816 DIN 548	Z i
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094	Z i
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885 DIN 526	X ( Z ( M ( ) H 12 ( ) P ( )
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900	L7 S ( Z 8 M 9 H 12
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021,	Z 8 M 9 H 12 P 9 N 1 B 11
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885 DIN 526 DIN 6900 B 51020, 51021, 51022	Z 8 M 9 H 12 P 9 N T B 11 C 11
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51022	P 9 N 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885 DIN 526 DIN 6900 B 51020, 51021, 51022	P 9 N B 11 C 11 C 11 B 11
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes in one face Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwed inserts	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51022, B 51022, B 51020, 51021	P! N B 11 C 1 C 1 B 1 T T
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwed inserts Sealing nuts SEAL LOCK®	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51020, 51021 DIN 7965	Z 8 M 9 H 12 P 9 N 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwed inserts Sealing nuts SEAL LOCK® Sealing push-on caps for pressing	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51022, 51021 B 51020, 51021 DIN 7965 B 66000	Z 8 M 9 H 12 P 9 N 1 C 1 C 1 T T T W 8 B 13
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwded inserts Sealing nuts SEAL LOCK® Sealing push-on caps for pressing Sealing washers	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51020, 51021 DIN 7965 B 66000 DIN 443 DIN 442 DIN 470	P9 N 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwded inserts Sealing push-on caps for pressing Sealing push-on caps for pressing Sealing push-on caps for rolling Sealing spanners Self-drilling tapping screws countersunk	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51022 B 51020, 51021 DIN 7965 B 66000 DIN 443 DIN 442 DIN 442 DIN 470 DIN 7504	P? N. B111 C11 C11 T T T W & B111 C 11 C 11 C 11 C 11 C 11 C 11 C
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwed inserts Sealing nuts SEAL LOCK® Sealing push-on caps for pressing Sealing push-on caps for rolling Sealing tapping screws countersunk head, cross recess H	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51022 B 51020, 51021 DIN 7965 B 66000 DIN 443 DIN 442 DIN 470 DIN 7504 ISO 15482	P9 N 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwed inserts Sealing nuts SEAL LOCK® Sealing push-on caps for pressing Sealing washers Self-drilling tapping screws countersunk head, cross recess H Self-drilling tapping screws screw and washe	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51020, 51021 DIN 7965 B 66000 DIN 443 DIN 442 DIN 470 DIN 7504 ISO 15482	P 9 N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Round nuts slotted for hook spanners Round nuts with drilled holes in one face Round nuts with set pin holes Round nuts with set pin holes in side Round washers type R = round hole for wood construction Round washers type V = square hole for wood constructions Round-ended feather keys  S Safety cup Screw and washer assemblies Screwdriver bits Screwdriver bits with hexalobular drive Screwdriver bits, cross recess H and Z Screwed inserts Sealing nuts SEAL LOCK® Sealing push-on caps for pressing Sealing push-on caps for rolling Sealing tapping screws countersunk head, cross recess H	DIN 547 DIN 1816 DIN 548 DIN 440 DIN 440/ISO 7094 DIN 6885  DIN 526 DIN 6900 B 51020, 51021, 51022 B 51022 B 51020, 51021 DIN 7965 B 66000 DIN 443 DIN 442 DIN 470 DIN 7504 ISO 15482	P? N. B111 C11 C11 T T T W & B111 C 11 C 11 C 11 C 11 C 11 C 11 C

Description			
countersunk head, cross necess H         ISO 15482         0/V1           Self-drilling tapping screws screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15483         R/W1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15483         R/W1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15483         R/W1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15483         R/W1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws screws         ISO 15480         M/U1           Self-drilling tapping screws screws         ISO 15481         M/U1           Self-drillin			ordinates
Self-drilling tapping screws screws,   DN 7504   Self-drilling tapping screws screws,   DN 7504   Self-drilling tapping screws screws,   DN 7504   Solf-drilling tapping screws screws,   DN 7504   Solf-drilling tapping screws screws,   DN 7504   Solf-drilling tapping screws, parabad, cross recess H   SO 15483   R/W1   Solf-drilling tapping screws, parabad,   DN 7504   Solf-drilling tapping screws, parabad,   DN 7504   Cross recess H   SO 15481   M/U1   Solf-drilling tapping screws, parabad,   DN 7504   Solf-drilling tapping screws, parabad,   DN 7504   Solf-drilling tapping screws, parabad,   DN 7504   Solf-drilling tapping screws, raised   DN 7505   U7   Solf-drilling tapping screws, raised   DN 7505   U7   Solf-drilling tapping screws, scaled   DN 7507   U7   Solf-drilling tapping screws, scaled   DN 7509   U7   Solf-drilling tapping screws   DN 7609   U7   Solf-drilling tapping screws, scaled   DN 7609   U7   Solf-drilling tapping screws   DN 7609   U7   U7   Solf-drilling tapping screws   DN 7609   U7   Solf-drilling tapping screws   DN 7009   U7   Solf-drillin			0./// 1
Decagon head with collar   SO 15480   M/U1			U/V I
Dan head, cross recess H			K/T1
Self-drilling tapping screws, hexagon head with lange   Sol 15480   K/T1			
Dan head, cross recess H			M/U1
Self-drilling tapping screws, hexagon head with flange         ISO 15480         K/T1           Self-drilling tapping screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws, raised countersunk pand, cross recess H         ISO 15483         R/W1           Self-locking counter nuts (PAL-nuts)         DIN 7967         U.7           Self-locking nuts with capitive washer         B 53011         0.8           Semi-tubular rivets with countersunk head DIN 6792         P 10           Semi-tubular rivets with countersunk head DIN 6791         10           Semi-tubular rivets with truss shead DIN 6798         DIN 6798         X 9           Semi-tubular rivets with truss shead DIN 6798         DIN 6798         X 9           Serrated lock washers, bype J         DIN 6798         X 9           Serrated lock washers, bype J         DIN 6798         X 9           Shim rings and supporting rings         DIN 6798         X 9           Shim rings and supporting rings         DIN 6798         X 9           Shim rings and supporting rings         DIN 867 80         X 9           Slotted countersunk head screws         DIN 840 120 120         A 1           Slotted countersunk head screws         DIN 840 120 120         A 1           Slotted pan head screws, with shoulder	0 11 0		R/W 1
Self-drilling tapping screws, pan head, cross recess H         ISO 15481         M/U1           Self-drilling tapping screws, raised countersunk head, cross recess H         ISO 15483         R/W1           Self-locking nuts with captive washer         BSO 15483         R/W1           Semi-tubular rivets with countersunk head         DIN 6792         P1 00           Semi-tubular rivets with countersunk head         DIN 6799         010           Serrated lock washers for screw assemblies, type A         DIN 6798         X9           Serrated lock washers, type J         DIN 6798         X9           Set collars         DIN 705         M12           Shart collect countersunk from the active of trapezoidal thread         DIN 705         M12           Shart collect countersunk head screws         DIN 803 / ISO 1207         A1           Slotted countersunk head screws with Culd op point         DIN 925         H1           Slotted pan head screws, with small head countersunk head screws         DIN 867 / ISO 2342         S5           S			
Science   Scie			K/T1
Self-drilling tapping screws, raised			M/II.1
Southersunk head, cross recess H			IVI/U I
Self-locking nuts with captive washer		ISO 15483	R/W 1
Semi-tubular rivets with countersunk head   Din 6791   O10			
Semi-tubular rivets with truss head         DIN 6791         0 10           Serrated lock washers, type J         DIN 6798         X 9           Serrated lock washers, type V         DIN 6798         X 9           Serrated lock washers, type V         DIN 6798         X 9           Set collars         DIN 705         M 12           Shaft lock-down devices         B 53060         B 10           Shim rings and supporting rings         DIN 888         Z 8           Shoulder nut with metric fine screw thread or trapezoidal thread         DIN 30387         M 7           Slotted countersunk flat head screws         DIN 868 / ISO 2009         11           Slotted countersunk flat head screws         DIN 926 / ISO 2009         11           Slotted countersunk head screws with full dog point         DIN 925         H 1           Slotted pan flead screws with camfered end         DIN 925         H 1           Slotted pan head screws, with small head         DIN 920         D 1           Slotted pan head screws, with small head         DIN 920         E 1           Slotted pan head screws, with small head         DIN 920         F 1           Slotted raised countersunk head screws         DIN 964 / ISO 2010         K 1           Slotted raised countersunk head screws         DIN 964 / ISO 2010			
Serrated lock washers for screw assemblies, type A			
Serrated lock washers, type V		5	0.10
Serrated lock washers, type V         DIN 705         M 12           Set collars         DIN 705         M 12           Shaft lock-down devices         B 53060         B 10           Shoulder nut with metric fine screw thread or trapezoidal thread         DIN 988         Z 8           Shoulder nut with metric fine screw thread or trapezoidal thread         DIN 30387         M 7           Slotted countersunk flat head screws         DIN 404         C 1           Slotted countersunk head screws with full dog point         DIN 963 / ISO 2009         I 1           Slotted countersunk head wood screws         DIN 963 / ISO 2009         I 1           Slotted countersunk head wood screws         DIN 97         Z 4           Slotted pan head screws with chamfered end pan head screws, with shoulder         DIN 927         S 5           Slotted pan head screws, with small head bill pan head screws, with small head and dog point         DIN 922         B 1           Slotted pan head screws, with small head bill pan head screws with full dog point         DIN 922         F 1           Slotted raised countersunk head wood screws         DIN 964 / ISO 2010         K 1           Slotted raised countersunk head wood screws         DIN 964 / ISO 2010         K 1           Slotted raised co	71		
Set collars			
Shaft lock-down devices			
Shoulder nut with metric fine screw thread or trapezoidal thread			
or trapezoidal thread         DIN 30387         M 7           Slotted capstan screws         DIN 40/4         C 1           Slotted chapstan screws         DIN 84 / ISO 1207         A 1           Slotted countersunk flat head screws         DIN 963 / ISO 2009         J 1           Slotted countersunk head screws with full dop point         DIN 925         H 1           Slotted countersunk head wood screws         DIN 925         H 1           Slotted pan head screws, with arge head         DIN 927 / ISO 2342         S 5           Slotted pan head screws, with small head sold pan head screws, with small head and dog point         DIN 923         G 1           Slotted pan head screws, with small head and dog point         DIN 924         F 1           Slotted pan head screws, with small head and dog point         DIN 924         H 1           Slotted raised countersunk head screws         DIN 964 / ISO 2010         K 1           Slotted raised countersunk head wood screws         DIN 964 / ISO 2010         K 1           Slotted raised countersunk head wood screws         DIN 964 / ISO 2010         K 1           Slotted raised countersunk head wood screws         DIN 964 / ISO 2010         K 1           Slotted raised countersunk head wood screws         DIN 96 / ISO 2010         K 1           Slotted raised countersunk head wood screws		DIN 988	Z 8
Stotted capstan screws			
Solted cheese head screws			
Solted countersunk flat head screws with full dop point			
Solted countersunk head screws with full dog point   DIN 925			
Solted countersunk head wood screws			
Solted headless screws with chamfered end   Solted pan head screws, with large head   DiN 921   E1   Solted pan head screws, with small head   DiN 923   G1   Solted pan head screws, with small head   DiN 920   D1   Solted pan head screws, with small head   DiN 920   D1   Solted pan head screws, with small head   DiN 920   D1   Solted pan head screws, with small head   DiN 920   D1   Solted raised countersunk head screws   DiN 964 / ISO 2010   K1   Solted raised countersunk head screws   DiN 964 / ISO 2010   K1   Solted raised countersunk head screws   DiN 964 / ISO 2010   K1   Solted raised countersunk head screws   DiN 964 / ISO 2010   K1   Solted raised countersunk head screws   DiN 96   Y4   Solted round nuts   DiN 981, 1804   E7   Solted round nuts   DiN 981, 1804   E7   Solted round nuts   DIN 981, 1804   E7   Solted set screws with cone point   DIN 553 / ISO 7434   V5   Solted set screws with cone point   DIN 981, 1804   E7   Solted set screws with flat point   DIN 553 / ISO 7436   T5   Solted set screws with flat point   DIN 981, 1804   E7   Solted set screws with flat point   DIN 981 / ISO 7436   T5   Solted set screws with full dog point   DIN 981 / ISO 7436   C6   Solted set screws with full dog point   DIN 987 / ISO 7436   C6   Solted set screws with full dog point   DIN 987 / ISO 7436   T5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   R5   Solted set screws with full dog point   DIN 987 / ISO 7435   T5   Solted set screws with full dog point   DIN 987 / ISO 7435	0.1		
Solted pan head screws with shoulder			
Slotted pan head screws, with shoulder   DIN 923   D1			
Solotted pan head screws, with small head   DIN 920   D1			E1
Solted pan head screws, with small head and dog point			
And dog point		DIN 920	D 1
Slotted raised countersunk head screws   DIN 964 / ISO 2010   K1		DIN 922	F1
with full dog point         DIN 924         H 1           Slotted raised countersunk head wood screws         DIN 96         X 4           Slotted round nuts         DIN 96         Y 4           Slotted round nuts for hook-spanner         DIN 981, 1804         E 7           Slotted set screws with cone point         DIN 533 / ISO 7434         V 5           Slotted set screws with cup point         DIN 438 / ISO 7436         T 5           Slotted set screws with full dop point         DIN 551 / ISO 4766         U 5           Slotted set screws with full dop point         DIN 927         R 6           Slotted set screws with full dop point         DIN 927         R 6           Slotted set screws with full dop point         DIN 926         C 6           Slotted set screws with full dop point         DIN 926         C 6           Slotted set screws with full dop point         DIN 927         B 6           Slotted set screws with full dop point         DIN 926         C 6           Slotted set screws with full dop point         DIN 674         M 10           Snap nead rivet         DIN 674         M 10           Snap nead rivet         DIN 926         C 5           Snap nead rivet         DIN 926         T 12           Snap rings for shafts and bores			
Solotted raised countersunk head wood screws   DIN 95	Slotted raised countersunk head screws		
Solted round head wood screws   DIN 96   Y4			
Solotted round nuts   Solotted round nuts for hook-spanner			
Slotted round nuts for hook-spanner			
Solotted set screws with cup point   DIN 438 / ISO 7436   T5	Slotted round nuts for hook-spanner	DIN 981, 1804	E 7
Solotted set screws with flat point   DIN 551 / ISO 4766   U.5			
Solotted set screws with full dog point   DIN 417 / ISO 7435   R.5			
Solotted set screws with full dog point   DIN 926   C 6			
Snap head rivet			
Snap nuts for tapping screws			
Snap rings			
Snap rings for shafts and bores   DIN 7993   T 12			
Socket wrenches for B 50500		DIN 7993	T 12
Socket wrenches for DIN 6912   DIN 6911   Z 10			
Spherical springwashers, centering rings         DIN 74361         G 9           Spherical washers, type C         DIN 6319         S 9           Spiral type pins rule type spring steel         DIN 7343 / ISO 8750, 8751         Z 11           Spiral type pins, heavy type         DIN 7344 / ISO 8748         A 12           Spiral type pins, heavy type         DIN 94 / ISO 1234         F 11           Spring type straight pins heavy type spring steel         DIN 11024         G 11           Spring type straight pins light type spring steel         DIN 7346 / ISO 13337         B 12           Spring washers         DIN 137         H 9           Spring washers for screw assemblies         DIN 6905         F 9           Spring washers for screw assemblies         DIN 6904         H 9           Spring washers for screw assemblies         DIN 7980         E 9           Spring washers for screw with         DIN 7980         E 9           Spring washers, bent up or flat         DIN 127         E 9           Spring washers, bent up or flat         DIN 127         E 9           Square head bolts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square taper washers for high-strength         DIN 6917, 6918         K 9 <t< td=""><td></td><td></td><td></td></t<>			
Spherical washers, type C         DIN 6319         \$ 9           Spiral type pins rule type spring steel         DIN 7343 / ISO 8750, 8751         Z 11           Spiral type pins, heavy type         DIN 7344 / ISO 8748         A 12           Split pins         DIN 94 / ISO 1234         F 11           Spring cotter         DIN 1024         G 11           Spring type straight pins heavy type spring steel         DIN 1481/ISO 8752         X 11           Spring type straight pins light type spring steel         DIN 7346 / ISO 13337         B 12           Spring washers         DIN 137         H 9           Spring washers for screw assemblies         DIN 6905         F 9           Spring washers for screw assemblies         DIN 6904         H 9           Spring washers for screw assemblies         DIN 6904         H 9           Spring washers for screw assemblies         DIN 7980         E 9           Spring washers for screw assemblies         DIN 6913         A 10           Spring washers with safety ring         DIN 6913         A 10           Spring washers, bent up or flat         DIN 127         E 9           Spring washers, convex or curved         DIN 128         F 9           Square head bolts for shaft guides         DIN 21346         0 3           S			
Spiral type pins, heavy type			
Spiral type pins, heavy type	Spiral type pins rule type spring steel		
Split pins	Cairel tune pine heave tune		
Spring cotter			
Spring type straight pins heavy type			
Spring type straight pins light type   Spring steel   DIN 7346 / ISO 13337   B 12   Spring steel   DIN 7346 / ISO 13337   B 12   Spring washers   DIN 137   H 9   Spring washers for screw assemblies   DIN 6905   F 9   Spring washers for screw assemblies   DIN 6904   H 9   Spring washers for screws with cylindrical heads   DIN 7980   E 9   Spring washers for screws with cylindrical heads   DIN 7980   E 9   Spring washers with safety ring   DIN 6913   A 10   Spring washers, bent up or flat   DIN 127   E 9   Spring washers, convex or curved   DIN 128   F 9   Square head bolts for shaft guides   DIN 21346   0 3   Square nuts   DIN 557   U 6   Square nuts   DIN 557   U 6   Square taper washers for high-strength constructions   DIN 6917, 6918   K 9   Square taper washers for U-section   DIN 436   L 9   Square washers for wood construction   DIN 436   L 9   Square washers for wood construction   DIN 478   N 3   Square-head screws with collar   DIN 479   O 3   Square-head screws with half dog point   DIN 479   O 3   Studs, metal end = 1d, 1,25 d, 2,5 d   DIN 938, 939, 940,	Spring type straight pins heavy type		
spring steel         DIN 7346 / ISO 13337         B 12           Spring washers         DIN 137         H 9           Spring washers for screw assemblies         DIN 6905         F 9           Spring washers for screw assemblies         DIN 6904         H 9           Spring washers for screw assemblies         DIN 7980         E 9           Spring washers with safety ring         DIN 6913         A 10           Spring washers, bent up or flat         DIN 127         E 9           Spring washers, convex or curved         DIN 21346         0 3           Square head bolts for shaft guides         DIN 21346         0 3           Square nuts, thin type         DIN 557         U 6           Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 479         D 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 93		DIN 1481/ISO 8752	X 11
Spring washers         DIN 137         H 9           Spring washers for screw assemblies         DIN 6905         F 9           Spring washers for screw assemblies         DIN 6904         H 9           Spring washers for screw assemblies         DIN 6904         H 9           Spring washers for screws with         UN 7980         E 9           Spring washers with safety ring         DIN 6913         A 10           Spring washers, bent up or flat         DIN 127         E 9           Spring washers, convex or curved         DIN 128         F 9           Square head bolts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479		DIN 7346 / ISO 133	37 <b>B 12</b>
Spring washers for screw assemblies         DIN 6905         F9           Spring washers for screw assemblies         DIN 6904         H9           Spring washers for screws with cylindrical heads         DIN 7980         E9           Spring washers with safety ring         DIN 6913         A 10           Spring washers, bent up or flat         DIN 127         E9           Spring washers, convex or curved         DIN 128         F9           Square head bolts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square washers for wood construction         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
Spring washers for screws with cylindrical heads	Spring washers for screw assemblies		
cylindrical heads         DIN 7980         E 9           Spring washers with safety ring         DIN 6913         A 10           Spring washers, bent up or flat         DIN 127         E 9           Spring washers, convex or curved         DIN 128         F 9           Square head bolts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square a nuts, thin type         DIN 562         V 6           Square taper washers for high-strength         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square washers for wood construction         DIN 436         L 9           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,		DIN 6904	H 9
Spring washers with safety ring         DIN 6913         A 10           Spring washers, bent up or flat         DIN 127         E9           Spring washers, convex or curved         DIN 128         F9           Square head botts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square washers for wood construction         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,		DIN 7980	FO
Spring washers, bent up or flat         DIN 127         E 9           Spring washers, convex or curved         DIN 128         F 9           Square head bolts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square washers for wood construction         DIN 436         L 9           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
Square head bolts for shaft guides         DIN 21346         0 3           Square nuts         DIN 557         U 6           Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
Square nuts         DIN 557         U 6           Square puts, thin type         DIN 562         V 6           Square taper washers for high-strength constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dop opint cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
Square nuts, thin type         DIN 562         V 6           Square taper washers for high-strength constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square baper washers for wood construction         DIN 436         L 9           Square washers for wood construction         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
Square taper washers for high-strength constructions         DIN 6917, 6918         K9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K9           Square washers for wood construction         DIN 436         L9           Square weld nuts         DIN 928         Z6           Square-head screws with collar         DIN 478         N3           Square-head screws with collar and dog point cap         DIN 480         P3           Square-head screws with half dog point         DIN 479         03           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
constructions         DIN 6917, 6918         K 9           Square taper washers for U-section         DIN 434, 435, 6917, 6918         K 9           Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,		<u>.</u>	
Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         O 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
Square washers for wood construction         DIN 436         L 9           Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,	Square taper washers for U-section		
Square weld nuts         DIN 928         Z 6           Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,	Square washers for wood construction		
Square-head screws with collar         DIN 478         N 3           Square-head screws with collar and dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,			
dog point cap         DIN 480         P 3           Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,	Square-head screws with collar		
Square-head screws with half dog point         DIN 479         0 3           Studs, metal end = 1d, 1,25 d, 2,5 d         DIN 938, 939, 940,		DIN 480	n o
Studs, metal end = 1d, 1,25 d, 2,5 d DIN 938, 939, 940,			
835 X <b>5</b>			
		835	X 5

Description	DIN/ISO/B/Type Co	ordinat
Tab washers for slotted round nuts	DIN 5406, 70952	Т
Tab washers with long tab	DIN 93	Y
Tab washers with long tab and wing	DIN 463	0
Taper keys with gip head	DIN 6884	G :
Taper pin with thread and constant		
threaded part	DIN 7977	H 1
Taper pins with internal thread	DIN 7978 / ISO 8736	
Taper pins with threaded end	DIN 258 / ISO 8737	H 1
Faper pins, type B Fapper keys	DIN 1 / ISO 2339 DIN 6881	D :
Tapping screws for facing, type A and BZ	B 51001, 51002,	
tapping scrows for labing, type Walla DE	51003, 51004	P 4 / R
Tapping screws, countersunk head with	DIN 7982 / ISO 7050	
cross recess H Fapping screws, pan head with cross recess H		
Tapping screws, pan head with	DIN 7501 / 150 704	
nexalobular drive	ISO 14585	M
Tapping screws, raised countersunk head	DIN 7000 (100 705	
vith cross recess H Fee nuts with pronge	DIN 7983 / ISO 705 <sup>-1</sup> B 65080	1 0 V
F-head bolts	DIN 261	G
F-head bolts for railed vehicles	DIN 25192	G
F-head bolts with large head	DIN 7992	G
F-head bolts with nib	DIN 188	Н
F-head bolts with square neck, type B	DIN 186	G
Thick hexagon nuts 1,5 d	DIN 6330	R
Thick hexagon nuts with collar 1,5 d	DIN 6331	0
Thin nut for shipbuilding	DIN 80705	L
Thread cutting screws, type A Thread cutting screws, type A, cross recess H	DIN 7513 DIN 7516	A
Thread cutting screws, type A, cross recess n Thread cutting screws, type B	DIN 7516	Y
Thread cutting screws, type D, cross recess H		В
Thread cutting screws, type E, cross recess H		C
Thread cutting screws, type F and G	DIN 7513	Z
Thread forming screws for metric ISO-thread	DIN 7500	0 1/ P
Thread inserts, self cutting with		R
lange QUICKSERT®	Type 1433, 1434	γ.
Threaded rods	DIN 976	E
Tommy nuts with fixed Tommy	DIN 6305	N
Tommy nuts with not fixed Tommy	DIN 6307	N
Tommy screws with fixed Tommy	DIN 6304	A
Tommy screws with not fixed Tommy	DIN 6306	A
Toothed lock washers, type A Toothed lock washers, type I	DIN 6797 DIN 6797	U
Foothed lock washers, type V	DIN 6797	W
Foothed washer for screw assemblies, type A		v
Toothed washer for screw assemblies, type V		W
Turnbuckle nuts made from hexagon bar	DIN 1479	Н
Turnbuckle nuts made from steel tube	DIN 1478	G
Furnbuckles with two weld stud ends left and right-hand thread)	DIN 1480	
ien and right-hand thread)	DIN 1400	
<i>I</i>		
Vargal nuts self-locking nuts clip material: phosphated spring steel	B 53040	Т
mosphated spring steel	D 00040	'
N		
Nashers	DIN 125 / ISO 7089,	
Nashers for bolts with heavy spring pins	7090 DIN 7349	C Z
Washers for cheese head screws	DIN 7349	Z
Washers for clamping devices	DIN 433	Z
Washers for hex and machine screws	B 53072	G
Nashers for hex and machine screws		
orm B (wide)	B 53072	G
Nashers for high-strength constructions	DIN 6916 /	
Manhara for high tanaila atrust in Li-lii-	DIN EN 14399-6	В
Nashers for high-tensile structural bolting Nashers for steel constructions	DIN EN 14399-6 DIN 7989	C
Washers for tapping screw assemblies	DIN 6902, 6903	Z
Washers for wood constructions	B 1052	В
Nashers outside diameter ≈ 3 d	DIN 9021	В
Washers with external tab	DIN 432	
Welding studs, with hexagon nut	DIN 525	R
Ving nuts	DIN 315	I
Ving nuts, American type	DIN 315	K
Ving nuts, polyamide	B 317, 318	D
Ving screws Ving screws, American type	DIN 316 DIN 316	I K
Noodruff keys	DIN 6888	K
7.010011:	D 151	
	B 151	S
ZAHN locking screws ZAHN Locknuts	B 196	C

(Technical specifications are subject to change without notice)

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