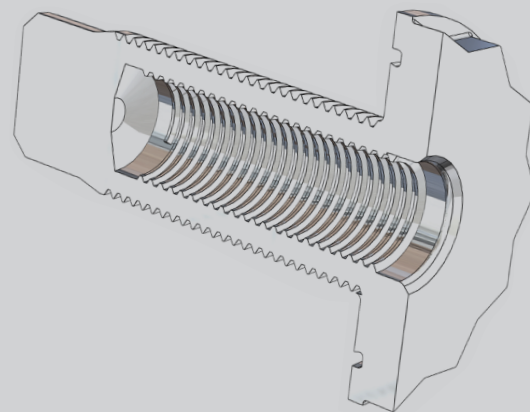


Est. 1949



NET

COLD
FORMED
COMPONENTS





At its production plants and headquarters in Istanbul, Turkey; **NET Cold Formed Components®** has been producing special fasteners and drawing parts **since 1949**.

NET CFC® has been established in **1949** and started screw production in 1953 and bolt production in 1962. **NET CFC®** is **100% serving the automotive industry** with a capacity of **20.000 tonnes** of production per annum.

The product range varies from **M3 up to M24** and lengths from **6,5 mm to 220 mm**. Export volume is 85% of the total production and delivered to Germany, France, Sweden, Spain, Italy, Belgium, USA, China, Romania, Slovakia, UK, Hungary, Holland, Canada, and the Czechia for industrial and automotive applications and safety-related components.

NET CFC® is a leading and experienced company in cold formed components' production for **OEM (Mercedes Benz, Ford Motor Company, FCA/Fiat) and Tier1** customers of the automotive industry with its proven quality and advanced machinery park. Three production facilities in Istanbul are close to the ports, 3 major airports, and to the European highways network.





Company Structure

NET Cold Formed Components® is a joint venture of **Plogsties GmbH**, **Willi Hahn GmbH** and **Telmetal A.Ş.**



www.plogsties.de



Wir haben den Dreh raus und halten dem größten Druck stand.

Plogsties GmbH® was founded in 1983 and located in Reinbek Germany. The production range includes all kinds of special and customized parts, such as screws, bushes, nuts, rivets, and washers for the requirements of the automotive industry.

The family-owned company stands for consistency and reliability at a time of steadily rising challenges. All the way from development through to implementation, the company provides short decision processes and flexibility and a comprehensive range of products that meet the highest quality standards needed to meet the demands of today's markets.



www.wiha.solutions



Willi Hahn GmbH® was founded in 1939 and has 2 sister companies in Sasbach and Wuppertal Germany in the cold extruded parts industry.

Reliable and flexible solutions, high level of market knowledge in Automotive for OEM & Tier1 service provider of technically demanding connection elements.

As a development supplier and international service leader; Wiha produces cold extruded parts, turned parts, and milled parts, which always correspond to the highest customer-specific requirements and the standards of the industry branches in the respective countries.

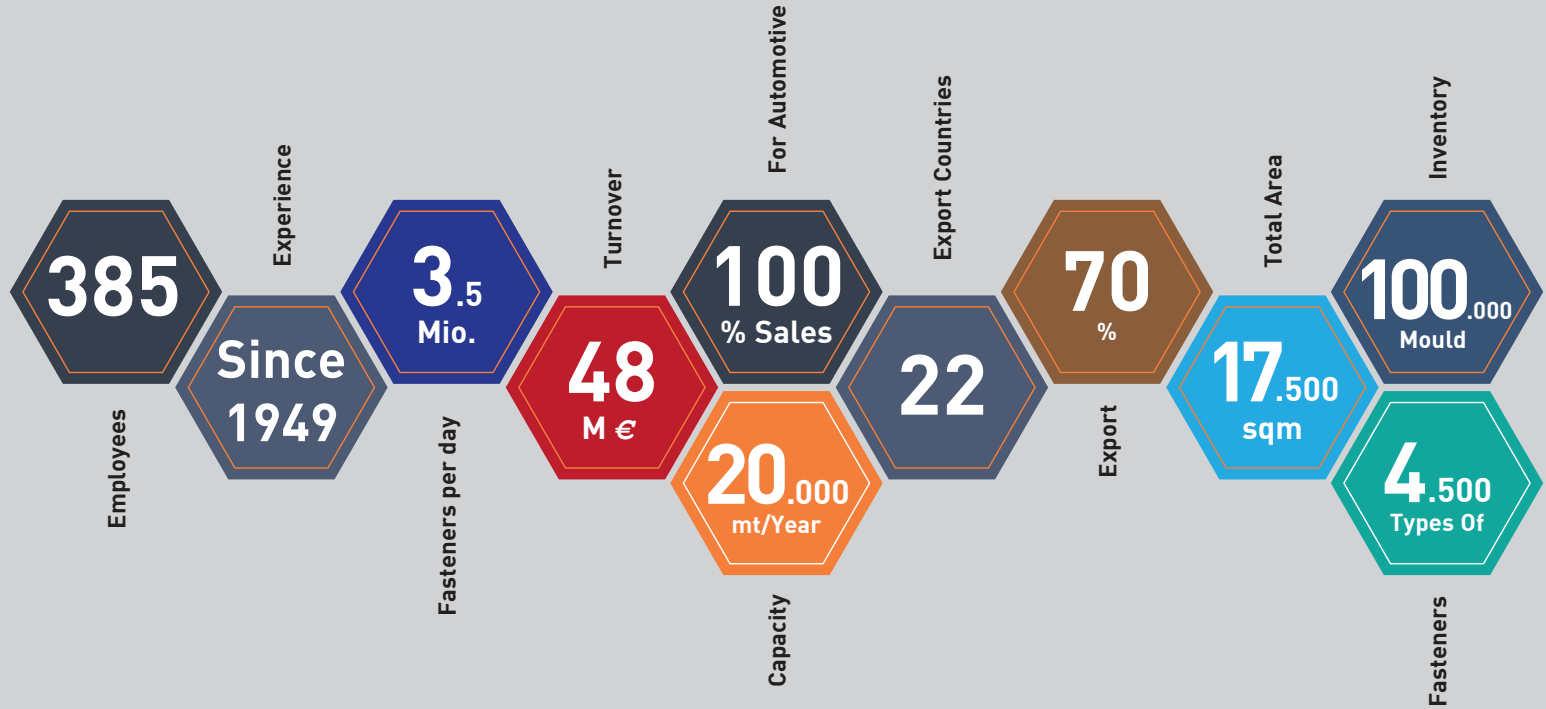


www.telmetal.com



Telmetal A.Ş.® which was established to meet the fastener industry's requirements of steel suitable for cold forging has always adopted the principle of giving the best service to its customers by closely following technological developments within market conditions with intense competition.

Telmetal, which was founded in 1989 by taking over an old wire workshop in Eyüp Demirkapı, started its new facilities in Gebze in 1994.



NET has been
established in Ayvansaray
by Mustafa Ketenci



1949

First Bolt Production



1953

Investment of 12 sets of
Cold Forming Machines
from Germany



1969

Investment of New
Technology Machinery
from Holland



1984

Laboratory and New Heat
Treatment Furnace
Investment



1995

QS 9000 and Revised
ISO 9001
Standard Certification



2000

Renewal of
Machinery
Park and Furnaces



2004

First Screw Production in
Ayvansaray Workshop



Construction of
Halkali Plant



Heat Treatment Plant
Investment and
Supplying to OEM



First ISO 9001 Certification

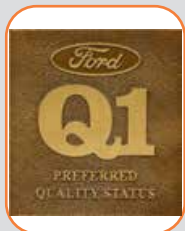


First ISO / TS 16949
Certification

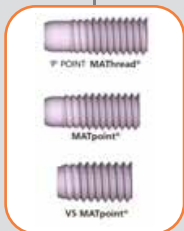


...and Beyond

TSE-ISO-EN9000, ISO 14001
and Ford Q1 Certification



2007



MATHread® and
MATPoint® Licences

2008



Start of Joint Venture
Partnership with
Telmetal AŞ & Plogsties GmbH

2010

Wiha GmbH
becomes a
Joint Venture Partner



2013

8 New Sorting
and Packaging
Machines



2017



ISO 14001:2015
Certification

IATF 16949
Recertification



2018

New HYODONG
Investment



2019

New Heat
Treatment Line



2021



TRILOBULAR®
& REMFORM®
Global Licenses

New GH
Induction Furnace



2021



10 New
Cold Forming
Machines

New Sorting
Machines



2021



New
Thread Rolling
Machines

A wide range of cold-formable steel grades are used as wire materials within a diameter range from **3 mm to 27 mm**.

Raw Material which is supplied according to **EN 10263-4** norms in various tonnages and dimensions by certified suppliers is stored according to relevant procedures and instructions.

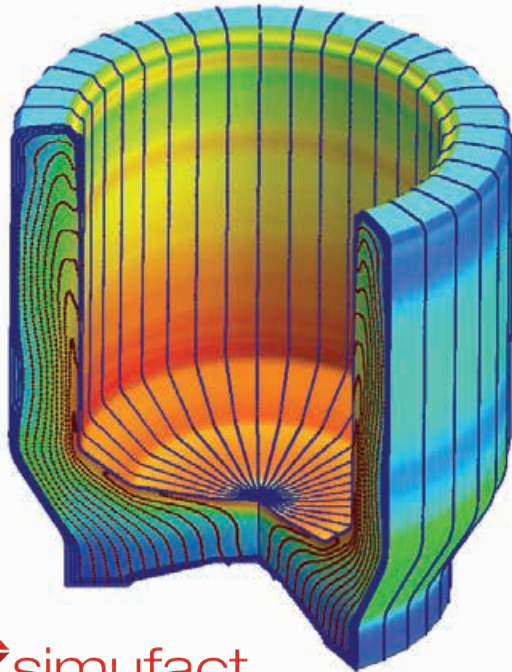
NET CFC® is a manufacturer & supplier of High Strength fasteners to the Global Industrial and Automotive market places.

Our capabilities include the cold heading of steels to produce high strength fasteners, and cold-formed specials and CNC machined components utilizing special-purpose steels including low carbon medium carbon boron and high carbon alloy steels carrying the suitable chemical compositions defined in **ISO 898-1**.

In-house spectral analysis and surface treatment of wires before forming, rolling, and preparation for cold forming.

NET CFC® brings the know-how since 1949 in the automotive industry into permanent technological and organizational progression.





 **simufact**
Simulating Manufacturing

NET CFC® employs the most advanced cold forming, die, and tool formation simulation software **SIMUFACT Forming**, analyzing the three-dimensional (3D) flow of complex metal forming processes.

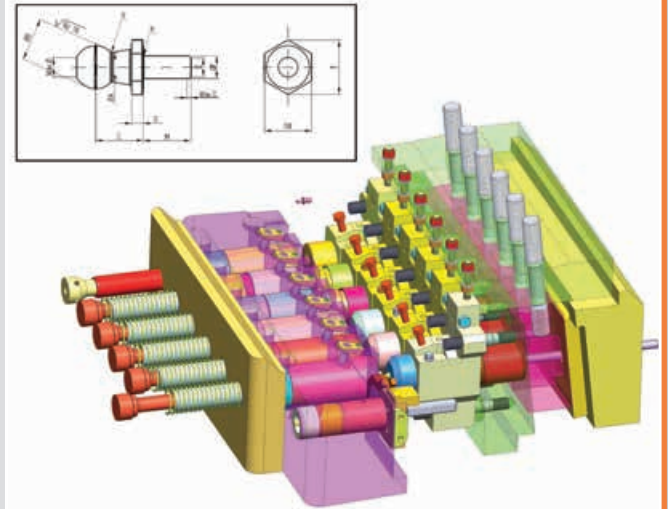
Latest Technology such as forming simulation, computer-based design of the sequence of operations, and **calculation of die loads**, ensuring us to make a correct calculation at the early stages of design and enabling our clients to exploit the full potential of **optimized process** steps.

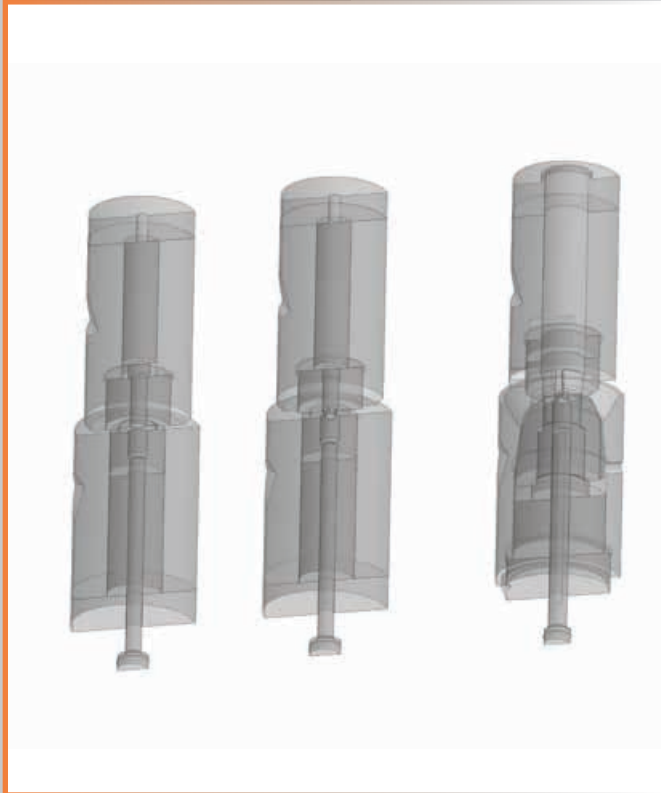
In accordance with customer requirements; achieving precision in production is our primary goal. Production and product development activities are monitored and continuously improved. **We target to increase product range and increase our expertise in mold and tool design.**

Reverse Engineering can be lifesaving in many cases. The Solutionix **C500 3D Optical scanning device** is used in reverse engineering at Net CFC® Design and R&D department.

NET CFC® has always prioritized high customer satisfaction and shapes its future targets in order to become a leading **special fastener manufacturer by producing drawing parts.**

NET CFC® employees know the value of lifetime learning, increasing manufacturing capabilities, and enlarging our industry know-how, by planning our operations on **long terms perspectives**.





Quality proven production machines are installed in our **in-house tool shop**. Our employees carry their vast experience into tool design and production which will then support the development and production of complicated cold forming parts.

CNC-milling machines, hole grinding, wire EDM as well as manual lathes, are the parts of our tool manufacturing program.

NET CFC®, which produces cold forming molds in-house to a great extent, has increased its **mold inventory by over 100.000 pieces** which enable us to produce over **4.500 different types of fasteners**.

NET CFC® range extends from the prototype phase to high-volume production runs.

Cold forming is a manufacturing process that plastically deforms metal using dies which allows manufacturer high-speed production, less material waste, and creates a high-strength end product due to work hardening of the material.

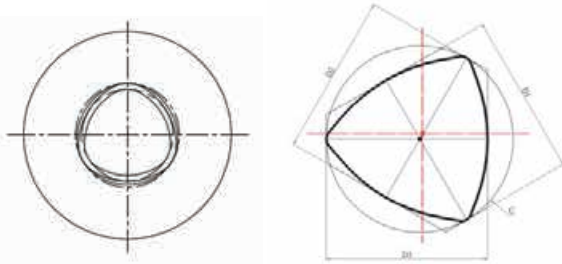
Following the recent investments, NET CFC® has **56 sets of cold forming machines** including various bolt makers. In addition, there are a total of **33 thread rolling machines** and **6 washer assembly machines**, **6 Pointer machines**, **10 secondary operation machines**, and **22 optical sorting machines** in the machinery park.

Our machining services include; **CNC machining, milling, pointing threading, grinding, drilling, and finishing**. Our custom machined parts are manufactured to the tightest precision tolerances according to customer-specific requirements. Tapping machines cut the thread on nuts of different sizes, including special fastener forms.

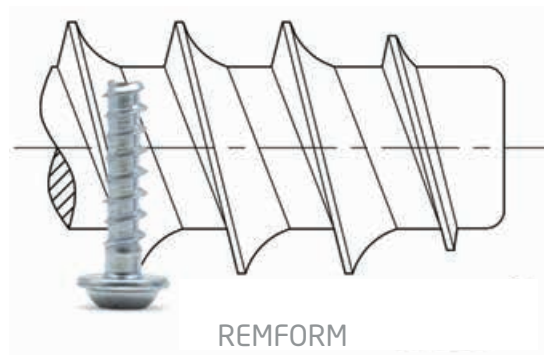
We keep our production under strict control by practicing real-time SPC.

Since 1994 the ERP system has been used in production planning for cost-effective material/machine usage and resource planning. In 2019 **New ERP system CANIAS** has been implemented instead of the old ERP module.





TRILOBULAR



REMFOM

TRILOBULAR® thread form design provides full relief for easy driving and effective resistance to vibrational loosening. This means that is great to assemble TRILOBULAR® Screws into electronics or mechanical areas and is part of an automotive application. TRILOBULAR® Screws are also best at resisting vibration over long periods of time and that is why self-locking.

LICENSOR	REGISTERED MARK	INCLUDING MARKS	PATENTED TERRITORY
CONTI FASTENERS AG	REMFOM®	REMFOM®, REMFORM F®, REMFORM II®, REMFORM II F® and REMFORM II HS®	GLOBAL
CONTI FASTENERS AG	TRILOBULAR®	TAPTITE®, POWERLOK®, FASTITE®, DUO-TAPTITE®, PLASTITE®, CORFLEX® and MAGTITE®.	GLOBAL
MATHREAD INC.	MATHread®	MATHread® and MATPoint®	GLOBAL

The REMFORM® screw is a thread-forming fastener with a unique thread form, specifically designed for today's wide range of plastics.

REMFOM® screws not only form well-developed threads in pliable material but are also competent for demanding applications utilizing the latest tough engineering grades of plastics.

MATHread® and MATpoint® are patented thread designs used at NET CFC® since 2007 which may be utilized on any externally threaded screw, bolt, or other threaded product.

Heat treatment of the products takes place in process-stable equipment which uses the latest heat treatment technologies and is tested according to **ISO 898-1**. Regular audits and continuous improvement studies enable us to comply with **CQI-9** conditions. **Dephosphating** is applied prior to the heat treatment to prevent the formation of the **Delta-Ferrite structure**, which is likely to occur in the bolts.

With the investment realized in the heat treatment unit in 1994, the capacity reached up to 1.000 kg/hour. In 2006, the modernization of the BBI furnace was carried out. In line with the **new investments**, the company's heat treatment capacity has reached **2.500 kg/hour**. NET CFC® will have a capacity of **induction hardening** up to 200.000 fasteners per day (100 million/year) with two identical induction hardening machines.

In 1993, in line with the increasing demand of the automotive industry, **Dacromet Coating** had been licensed by NET CFC for the first time in Turkey. Afterward, the company has decided to outsource the licensed coatings as a strategy.

Surface coating for protection, against corrosion, and provide locking such as; **Zn-Fe, Zn-Ni, Zinc, Zintek®, Magni®, DeltaProtekt®, Geomet®, Micro Capsulated Thread Locking and Plastic Patch Locking** are applied for NET CFC® by approved and strictly monitored coating suppliers who are specialized in their fields.

NET CFC® is one of the officially approved 10.9 and 12.9 High Tensile Strength Bolt OEM Suppliers for Volkswagen AG®.





NET CFC® has different kinds of sorting and optical inspection equipment with special features such as **Eddy-Current®**, crack control, coating control & with/without HT control. Our optical sorting machines can be applied to various kinds of fasteners which can meet the different needs of our customers.

Camera optical sorting machines are used for sorting fasteners **from M6 to M16 and lengths from 14 to 150**. The Optical Sorting machine inspects fasteners with one or more cameras looking at the external as well as internal features of each bolt. A typical inspection could include dimension, thread, thread quality, surface defects, cracks, and characteristics as a result of free forging.

NET CFC® has **22 optical sorting machines** equipped with Dimensional Control with **Camera Crack Control with Eddy-Current®** systems.

Critical dimensions are monitored and strictly controlled.

Eddy-Current® systems are mainly used for hardness inspection and controlling the material mix-up or with/without heat-treatment.

We are able to offer 100% sorting to ensure the quality that our customers request.

All products moved are contained in packages and for this reason, the analysis of the physical logistics flows and the role of packaging is a very important issue. Modern packaging lines allow us to prepare storage and transport of fasteners with maximum efficiency and requested traceability.

The packaging process is made according to **customer-specific requirements (such as EMB, KLT, and CHEP)**, and labeling is done by barcode printers to identify the whole specification of the part.

After sorting the parts by **22 sorting machines**, the packaging is made automatically. In addition; **1 manual packaging line** is used for different purposes.

Then, the packages are put on heat-treated **Euro Pallets**, stretch wrapped, and made ready for storage and transport.





We provide logistics services according to our customer's requirements and deliver **with our vehicles or with our trusted forwarders**.

In our warehouse, we carry out the storage, inventory management, and shipment processes required by IATF 16949 standards. Our warehouse is **5.500 sqm** and has **850 tons** of storage capacity.

The storage processes are planned in accordance with **FIFO Guidelines** using **CANIAS®** with barcode labels to guarantee efficient material handling which provides the traceability of the production batch.

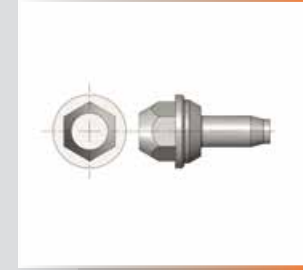
Our warehouse & logistics processes are compatible with **OEM Milk-Run** logistics.

Air, land, and sea logistics services are available according to customer requests. Besides normal deliveries, there is a **special network for urgent deliveries** with the speedy and express vehicles (**minivan**), which enables the shipment to European countries in about **2-3 days** whenever necessary.

Bolts with Assembled Washers and Flange Bolts

Bolts with Assembled Washers and Flange Bolts penetrate slightly into the supporting surface. More efficient loosening protection. Flange bolts have a circular flange under the head that acts as a washer to distribute the load. Flange bolts that are non-serrated are sometimes called frame bolts.

We are able to assemble two kinds of washers (flat-conical) at the same machine with the thread rolling process.



Head shapes	All head shapes are possible
Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	From 4.6 to 12.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available

Features / Advantages

Features / Advantages
Increases the seating surface, making the fastening more stable to meet requirements. Conical, spring-loaded washer-mounted and flanged knurled products prevent the connection in vibrating working environments.

Bolts with Assembled Washers and Flange Bolts Kombi- und Flanschschrauben



Cold Formed Male Parts

Cold Formed Male Parts are used to move the shear force on the shaft for centering purposes.

The friction coefficient range is determined with special top coatings according to the areas of use.

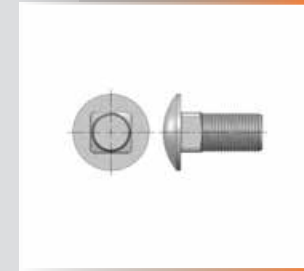


Head shapes	All head shapes are possible
Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	From 4.6 to 12.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available

Features / Advantages

Features / Advantages

It provides high resistance and easy bolting. Narrower tolerances than hot forging; the better product is obtained in terms of mechanical production compared to machining. The production cost is lower.



1



M10x1.5x17.30

2



M5x0.8x24.75

3



M16x2x48

4



ø7.90x88.5

5



M20x1.5x40

6



M8x1.25x17.70

7



M8x1.25x35
M6x1x17

8



M8x1.25x36

9



M10x1.5x35

10



M10x1.5x29

3 Cold Formed Parts According to Customer Drawings with Second Operation Sonderteile nach Kundenzeichnung mit Weiterbearbeitung

Cold Formed Parts according to Customer Drawings with Second Operation

Cold Formed Parts according to Customer Drawings with Second Operation are produced according to customers' special requests. Provides ease of installation. They are designed according to the required bolting.

These characteristics are strengthened with special characteristics on the drawings and are kept under control during the process.

For instance; SPC, Poka-Yoke systems.

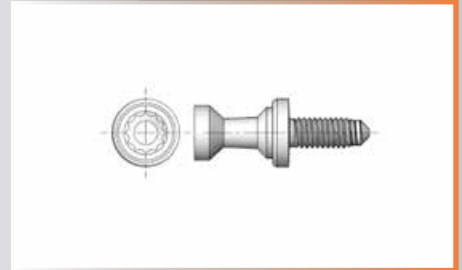
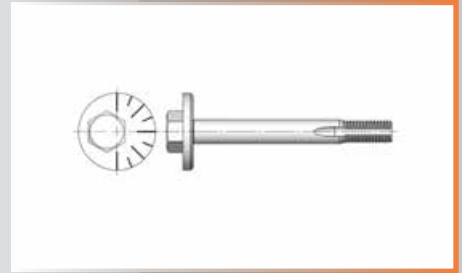


Head shapes	All head shapes are possible
Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	From 4.6 to 12.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available

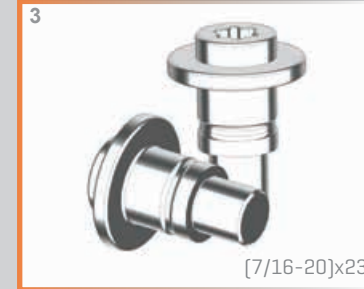
Features / Advantages

Features / Advantages

The production of parts which are difficult to produce with cold forging can be realized and their suitability for use and assembly is ensured.



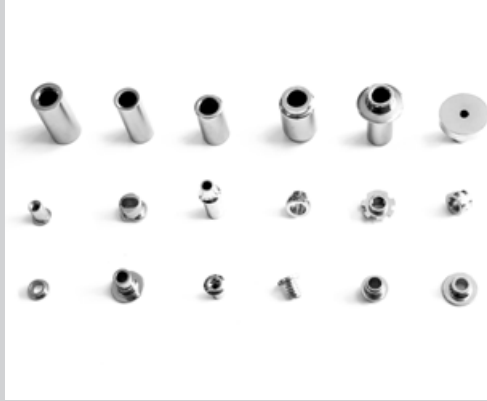
3 Cold Formed Parts According to Customer Drawings with Second Operation Sonder Teile nach Kundenzeichnung mit Weiterbearbeitung



Female Parts

Female Parts are load-bearing parts which are used in centering and for suspension in engine mounts. It allows the male bolt to be connected with.

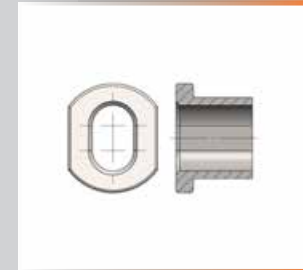
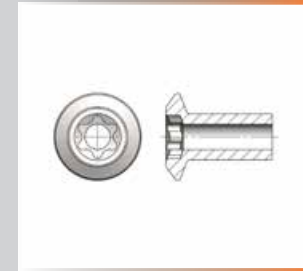
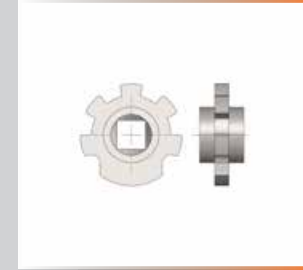
We have a very powerfully built tool design department along with simulation programs for producing special drawing parts.

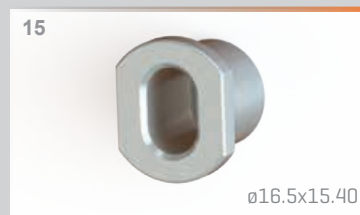
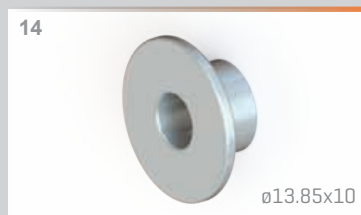


Head shapes	Various shapes are possible
Driving features	All driving features are possible
Nominal diameter	Ø8 - Ø30 mm
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	Typically press hardened or heat treated, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available

Features / Advantages

Features / Advantages
Provides ease of centering and installation. They are complementary parts of the connection.



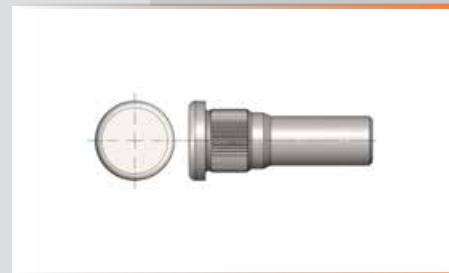


Cold Formed Fasteners
above Ø20 mm

Cold Formed Fasteners up to 220 mm in length are generally used for heavy vehicles (LKW) and large body connections. In such parts, run out is kept under the control within the limits permitted by the standards with machine capability tests. (Cm, Cmk)



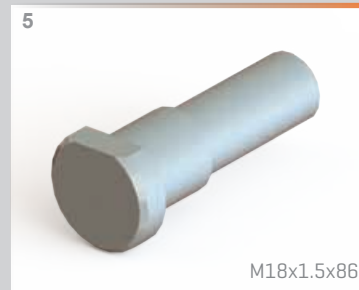
Head shapes	All head shapes are possible
Nominal thread diameter / lengths	All driving features are possible
Nominal diameter	M8 - M24 / (up to 220 mm)
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	Mainly 8.8 and 10.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available



Features / Advantages

Features / Advantages

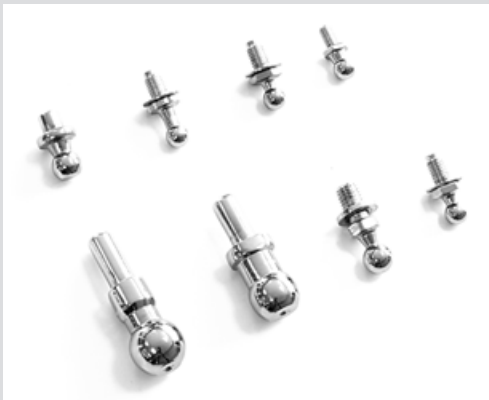
Compared to hot forming, narrower tolerances can be achieved. Reduces production costs.



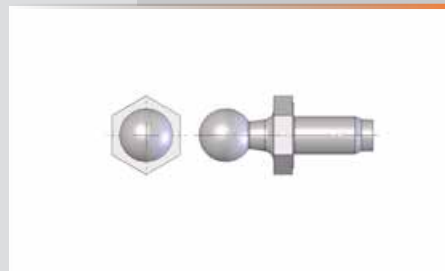
Ball Studs

Ball Studs allow the connecting part to move on itself in the articulated parts. It is manufactured in a way to be completed completely by cold forming method or by machining.

Fatigue Tests are carried out in accredited laboratories according to customer Special Requirements.



Driving features	All formable driving features which are finished by machining can be provided in the ball end and shaft end
Ball diameter	Up to Ø45 mm
Nominal diameter	Ø6 - Ø24 mm
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	Mainly 8.8 and 10.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available



Features / Advantages

Features / Advantages

It is used in parts connections that require movement. The ball side acts as a spherical joint.

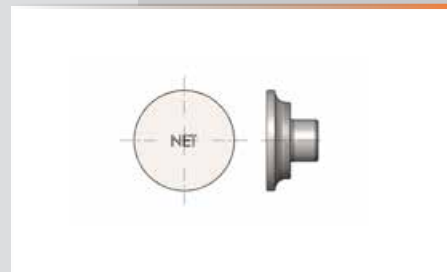


Rivets

Rivets are used to connect two pieces of material in a quick efficient manner with a hand riveter or pneumatic rivet gun. They are applied by pressing and for single use.



Head shapes	All head shapes are possible
Nominal diameter	Ø5 - Ø27 mm
Material	Cold forming steel
Property class	Typically press hardened or heat treated, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available



Features / Advantages

Features / Advantages

Provides ease of installation. Used in parts that will not be disassembled. The advantage over bolts and nuts is that you can complete the joining process without reaching the back of the materials to be joined; for this reason, it is often referred to as a "blind rivet".

1



ø7.5x5.5

2



ø7.90x30.8

3



ø15.50x29.30

4



ø7.5x4.9

5



ø15.50x40

6



ø10x14

7



ø7.50x14

8



ø5x16

9



ø7.5x8.5

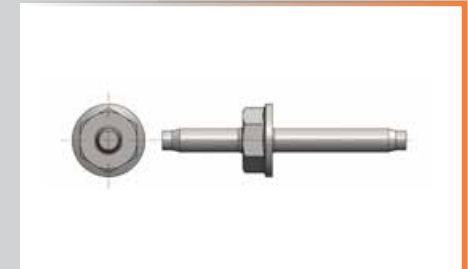
Studs

Studs provide two-way connection. It provides ease of installation by moving the weight of parts during assembly.

Free forging characteristics are kept within narrow tolerances with high technological cold forging machines.



Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property Class	Mainly 8.8 and 10.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available



Features / Advantages

Features / Advantages
In places where installation difficulties are experienced; provides easy installation.



Cold Formed Components for Miscellaneous Uses

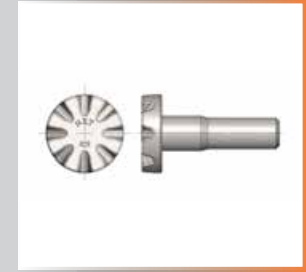
Cold Formed Components for Miscellaneous Uses are produced by special mold design, cold forming and/or machining according to customer's special requirements.

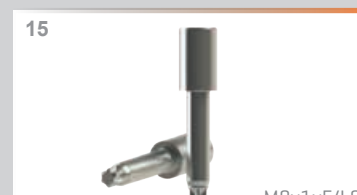
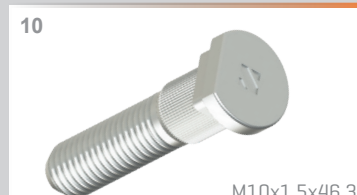


Head shapes	All head shapes are possible
Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	From 4.6 to 12.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection systems are available

Features / Advantages

Features / Advantages
Meets customers' specific fastening requests; Products are fully designed according to customer's requirement





The testing instruments, test sets, devices, and apparatuses used in NET CFC® are sufficient to determine the efficiency, technical sufficiency, and tolerance limits of production processes and secondary operations in the fastener industry.

Calibration and verification are carried out regularly and the test devices comply with the international norms specified in the standards. Our laboratories are approved by OEM companies.

Inspection of pitch diameters is performed with both full form and single element indicating type gauges that are set with thread masters. Standard outside diameter micrometers are used for inspecting major diameters, and optical comparators are used to check minor diameters and root radii.

Spectral analysis for material, Phosphate line bath analysis, Salt spray test, Contour measurement, Extensometer device used to measure the changes in the length of an object, Metallographic structure analysis, Microhardness measurement, HRC hardness measurement, Tensile strength measurement, Vici Vision Optical Dimensional measurement according to VW norms which enables SPC results in 20 seconds, Profile projection, Coefficient of friction measurement, Coating thickness, Surface roughness measurements, Fischerscope XDL 230 X-Ray measurement & Ultrasonic measurement tests are done at NET CFC® laboratories.





Our policy on quality is understood by all staff members and they are fully committed to implementing all the requirements of our documented quality management system procedures.

The participation of all departments of the company in analyzing the existing problems, defining corrective and preventive actions that allow us to continuous improvement.

All staff is aware of the importance of giving the customer complete satisfaction, listening to the customer, enabling us to meet their needs by addressing the customers' special requirements.

We value the 7 quality principles at NET CFC®; **Understanding the customer request, information sharing, engagement of people, quality improvement, evidence-based decision making, repeatable quality, and controlled inspections.**

The fast and efficient attention for our customers, maintaining close collaboration with them, technically advising and fulfilling all specifications when providing them our products.

Compliance with market demands is a fundamental requirement in the manufacture of our products.

Conducting internal audits to ensure the maintenance of the quality system and identify opportunities for improvement.

IATF 16949:2016 (replaces ISO/TS 16949:2009) is a standard that establishes the requirements for a Quality Management System (**QMS**), specifically for the automotive sector.

The primary focus of the **IATF 16949** standard is the development of a Quality Management System that provides for continual improvement, emphasizing defect prevention and the reduction of variation and waste in the supply chain.

IATF 16949:2016 is an independent QMS standard that is fully aligned with the structure and requirements of **ISO 9001:2015**. Therefore, the IATF 16949 cannot be implemented alone as a stand-alone document but must be implemented as a supplement and in conjunction with ISO 9001:2015.



IATF 16949:2016



ISO 9001:2015



ISO 14001:2015



FORD Q1





How We Describe Ourselves

We are specialized in fastener production according to customer drawings 100% for Automotive Industry since 1949.

Vision

Our vision is to be a pioneer in technology, innovative in production processes, and a leader in the fastener market, providing the essential elements of special fastener production, such as quality, continuity, and reliability required by the automotive industry.

Mission

Our mission is to produce fasteners that meet the quality expectations of the automotive industry while producing competitive and reliable products. By investing in the technological machines and licenses of which our customers are looking for in the market, we enable our customers to meet with high quality and competitive prices without looking for another source, and we add our experience in the production processes.

Turkish Metal Union (Türk Metal Sendikası)

Turkish Employers' Association of Metal Industries (MESS)

German-Turkish Chamber of Commerce and Industry (AHK Turkey)

The Istanbul Chamber of Commerce (İTO)

Istanbul Mineral and Metals Exporters' Association (IMMIB)

UCTEA Chamber of Mechanical Engineers (MMO)

Türkisch-Deutsche Universität (TAU)



Est. **1949**



Plant A

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Söğütlüçeşme Mah. Halkalı Cd.
No:233-235 34295 Küçükçekmece
İstanbul / TR



Plant B

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