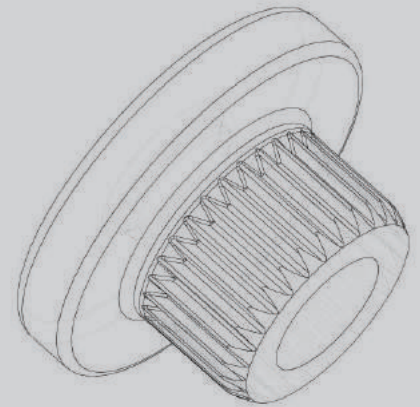




NET

COLD
FORMED
COMPONENTS





At its production plant and headquarters in Istanbul, Turkey; **NET Cold Formed Components®** has been producing special bolts and tailor-made fastening elements for the last 70 years.

NET CFC® has been established in **1949** and started screw production in 1953 and bolt production in 1962. **NET CFC®** is serving **100% to the automotive industry** with a capacity of **15.000 tonnes** production per annum.

The product range varies from **M5 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, South Korea, 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, Tier1 and Tier2** customers of the automotive industry with its proven quality and advanced machinery park. The production facility in Istanbul is close to the ports, 3 major airports, and to the European highways network.



Company Structure



www.plogsties.de



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



www.wiha.solutions



www.telmetal.com



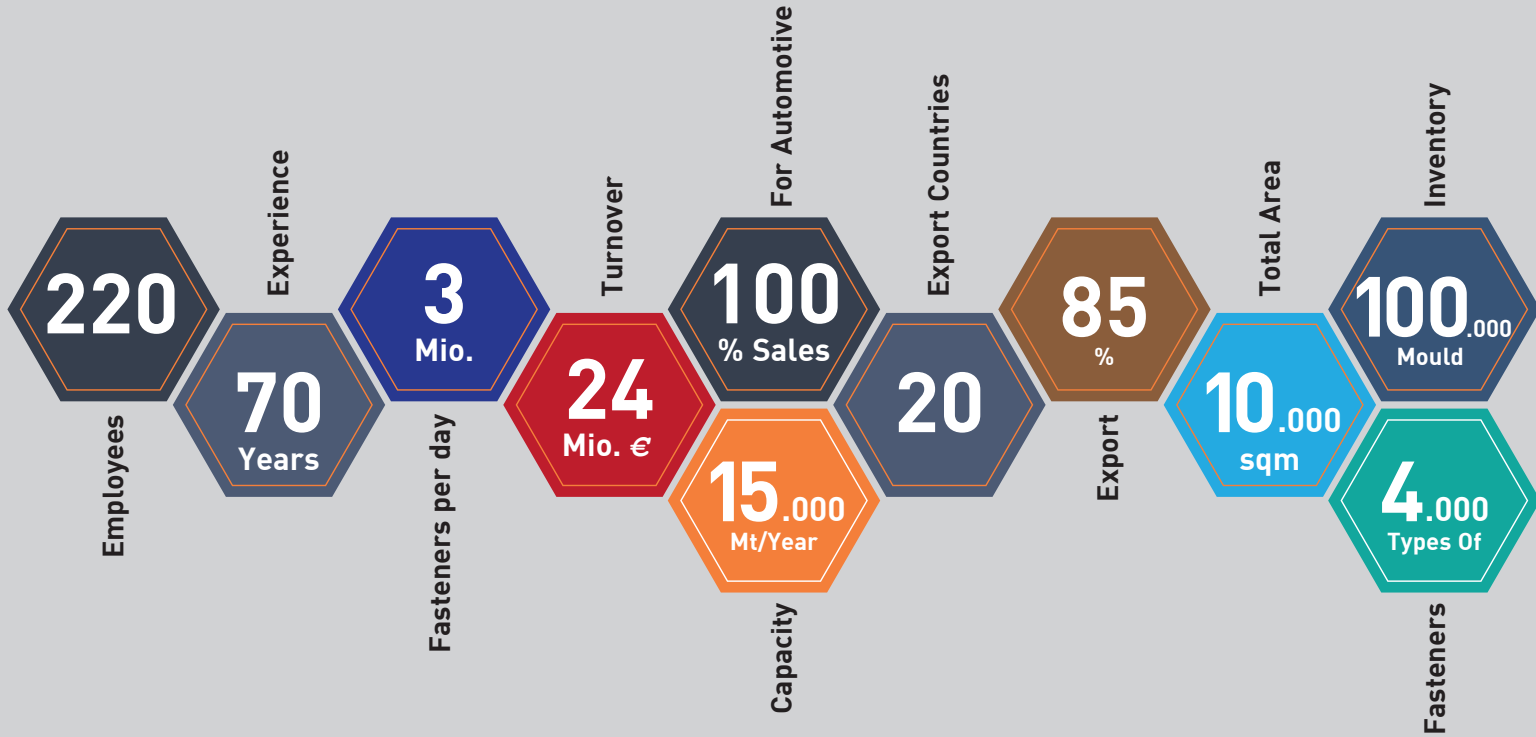
NET Cold Formed Components® is a joint venture of **Plogsties GmbH**, **Willi Hahn GmbH** and **Telmetal A.Ş.**

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.

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

Telmetal A.Ş. was established in 1989 to meet the steel needs of the fastener industry for cold forming. The company has always targetted providing the best service to its customers in the market conditions where there is intense competition by closely following technological developments.

Net CFC at a Glance



NET has been established in Ayvansaray by Mustafa Ketenci



1949

First Bolt Production



1960

Investment of 12 sets of Cold Forming Machines from Germany



1969

Investment of New Technology Machinery from Holland



1984

First ERP System



1994

Laboratory and New Heat Treatment Furnace Investment



1995



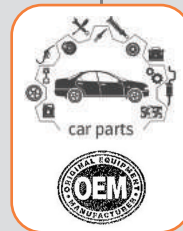
First Screw Production in Ayvansaray Workshop

1953



Construction of Halkalı Plant

1968



Heat Treatment Plant Investment and Supplying to OEM

1970



First ISO 9001 Certification



DIN ISO 9002 Certification

1996

...and Beyond

QS 9000 and Revised
ISO 9001
Standard Certification



2000

Renewal of Machinery
Park and Furnaces



2004

2004

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



2008

Wiha GmbH becomes a
Joint Venture Partner



2013

8 New Sorting
and Packaging
Machines



2017

IATF 16949
Recertification



2018

New HYODONG
Investment



2019

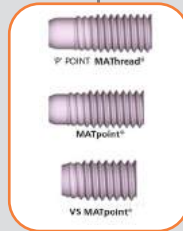
New Heat
Treatment Line



2020



First ISO / TS 16949
Certification



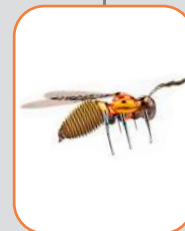
MATHread® and
MATPoint® Licences



Start of Joint Venture
Partnership with
Telmetal AŞ & Plogsties GmbH



ISO 14001
Certification



New Management
& New Mindset



Canias ERP
Installation

Efficiency We value the power of Efficiency to use our resources to maximum effect.

Simplicity We value Simplicity versus complexity in all levels of our company

Innovation We value Innovation and we are following the developments in the fastener industry and we constantly renew ourselves.

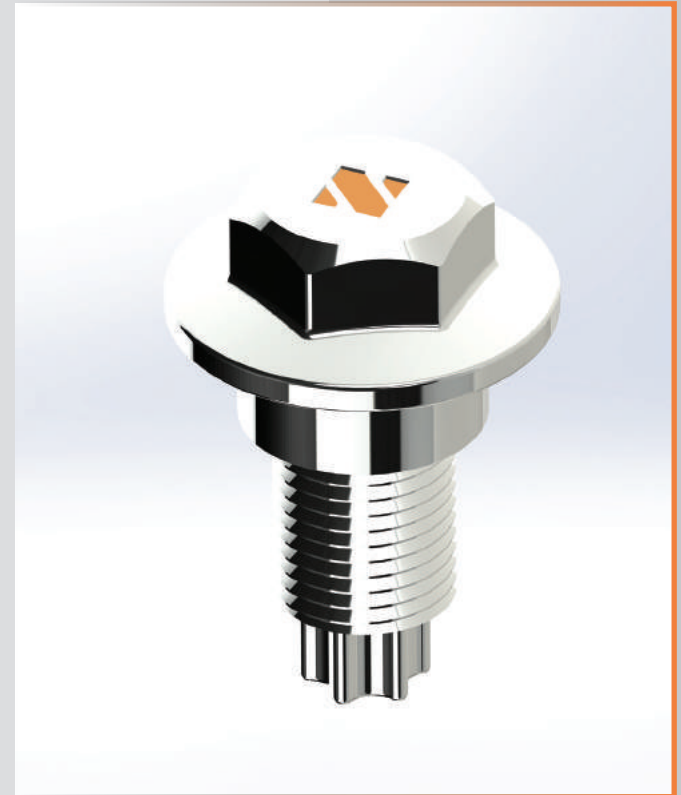
Consistency We value Consistency in our approach to decisions.

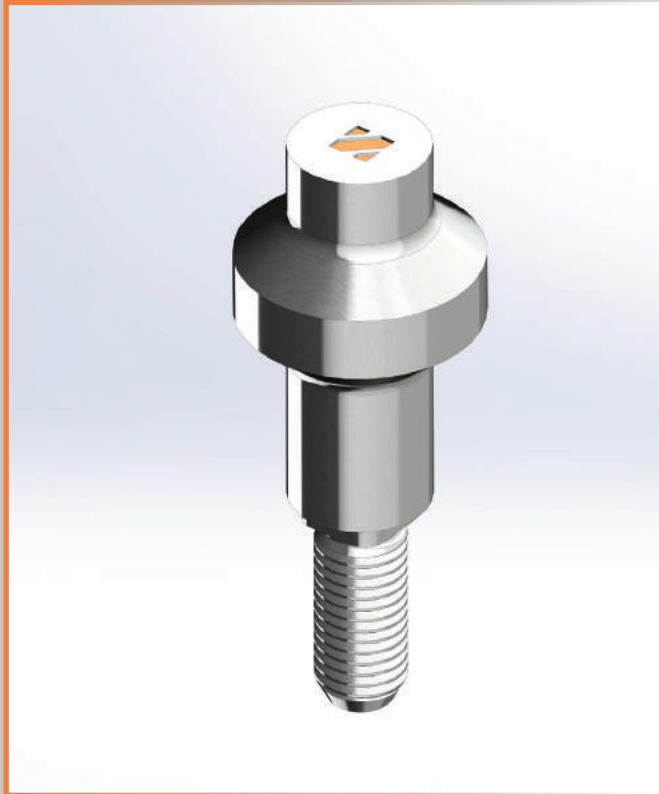
Commitment We value Commitment as we are proactive in finding solutions for our clients that best achieve their goals. Lasting relationships are the major motives of our business.

Dependability We value Dependability and we monitor our products for quality at every stage of production from their design to their delivery to end consumers and It is of utmost priority for us to offer products that we can proudly stand behind.

Communication We value sharing our knowledge and continuing education. We value open communications.

Environmentalism We strive to minimize our negative impact on the environment.





How We Describe Ourselves

We are specialized in special fastener production 100% for Automotive Industry.

Vision

Our Vision is becoming a leading dependable, consistent and efficient partner company in special fastener production.

Mission Statement

We are the producer of beautifully crafted fasteners. Our Mission is to provide our customers with **“Confidence and Competency”**.

Environment

We are committed to protecting our environment, public health, human communities, and animal welfare. We promote environmental awareness and comply with laws concerning, Clean and wastewater management, Energy Management and Air pollution control, Waste management, Environmental risk management, Efficient use of all resources.

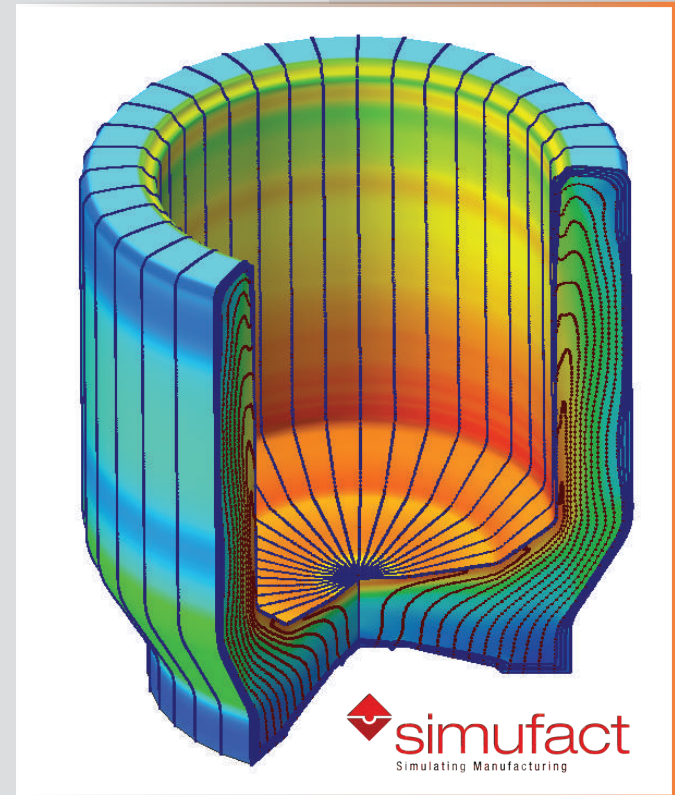
NET CFC employs the most advanced cold forming, die, and tool formation simulation software **SIMUFACT Forming**, analyzing the three-dimensional (3D) flow of complex metal forming processes.

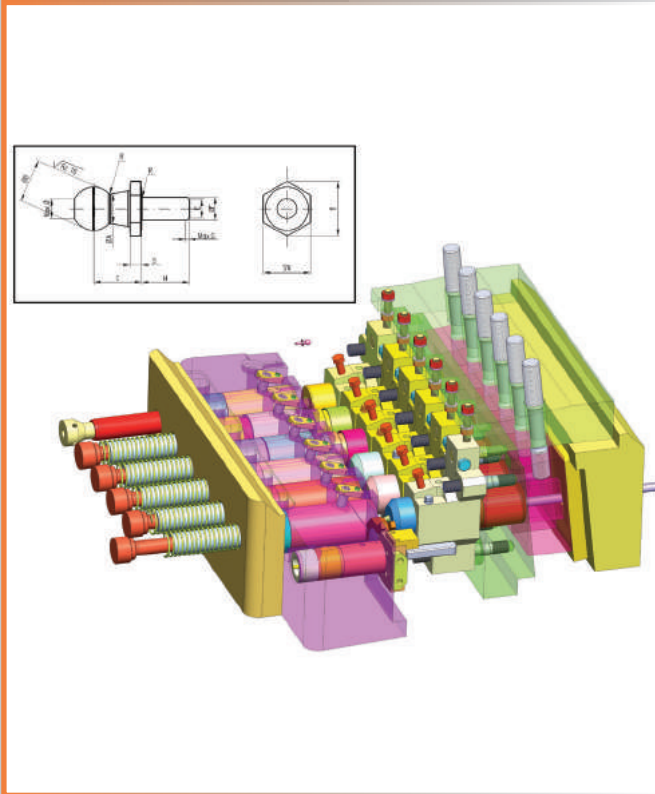
Latest Technology such as forming simulation, computer-based design of the sequence of operations and **calculation of die loads**, ensuring us to make a correct calculation at the early stages of design and enabling our clients to exploit the full potential of **optimized process** steps.

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 diversity, 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 **tailor-made fastener manufacturer** by producing **customer-focused solutions**.





NET CFC® conducts projects with CAD, CAM, Solidworks® and SIMUFACT® simulations for product design and development while using CAD/CAM and CNC technologies for multi-stage mold design and production.

Our Engineering and Design departments are closely following technological developments in the industry.

Our continuous improvement and development teams consist of experienced employees who are able to bring technological developments into practice in **fastener production, mold design and design of special fasteners.**

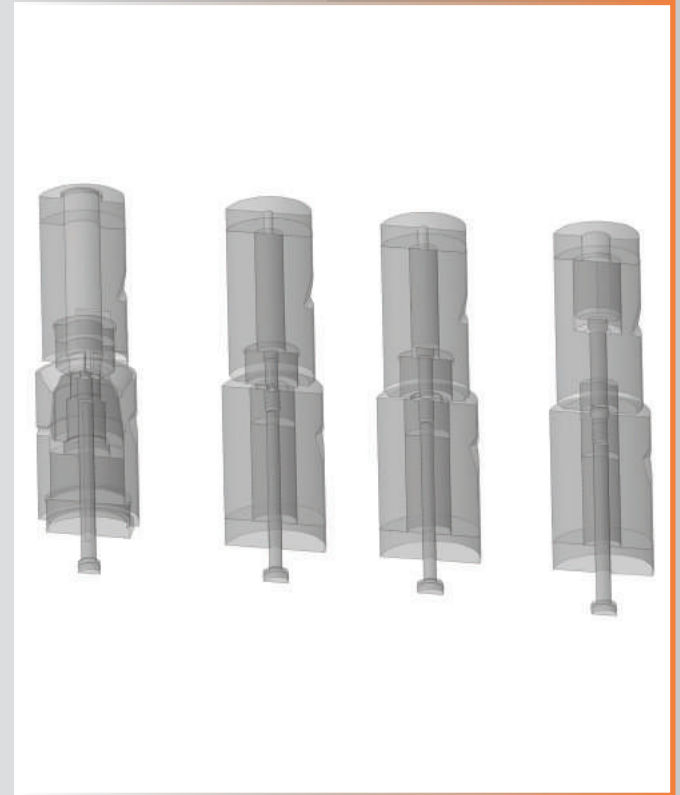
Targeting the minimized input of raw material Net CFC® uses up-to-date multistage heading machines with up to **six forming stations.**

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** and our employees carry their vast experience into tool design and production which will then support the development and manufacture possibilities complicated cold forming parts.

5-axis CNC-milling machines, as well as automatic lathes, are the master builders of our tool manufacturing program. NET CFC®, which produces cold forming molds in-house to a great extent, has increased its **mold inventory over 100.000 pieces** which enable us to produce **over 4.000 different types of fasteners**.

In addition to the in-house design of the multi-stage wolds and tooling using Simufact® finite element analysis tools, NET CFC® performs reverse engineering methods and secondary operations such as **trimming, drilling, thread rolling & washer assembly, machining and nut thread rolling according to custom requirements of customers**.





A wide range of cold-formable steel grades and aluminum alloys are used as wire materials within a diameter range from **4,35 mm to 24 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**.

NET CFC® brings the know-how of 70 years in the automotive industry into permanent technological and organizational progression.

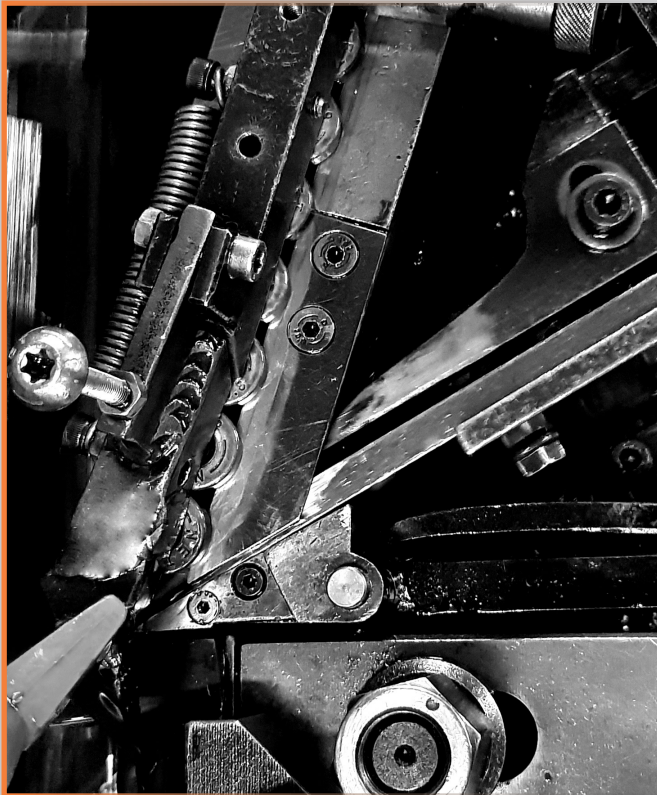
Cold forming is a manufacturing process that plastically deforms metal using dies which allows manufacturer high-speed production, less material waste and creates a high-strength end product due to work hardening of the material.

Recently NET CFC® has **27 sets of cold forming machines** including various bolt makers. In addition, there are a total of **14 thread rolling** machines and washer assembly machines, **10 secondary operation** machines and **10 optical sorting** machines in the machinery park.

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

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





Thread Rolling & Washer Assembly

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.

14 thread rolling machines and **4 automatic washer assembly** machines are serving at NET CFC®

Machining

A wide range of precision-machinery dedicated to fastener production is used at NET CFC®.

Our machining services include; CNC machining, milling, threading, grinding, drilling and finishing. Our custom machined parts are manufactured to the tightest precision tolerances according to customer specific requirements.

Nut Thread Rolling

Nut Thread Rolling machine cuts the thread on nuts of different sizes, including special fastener forms.

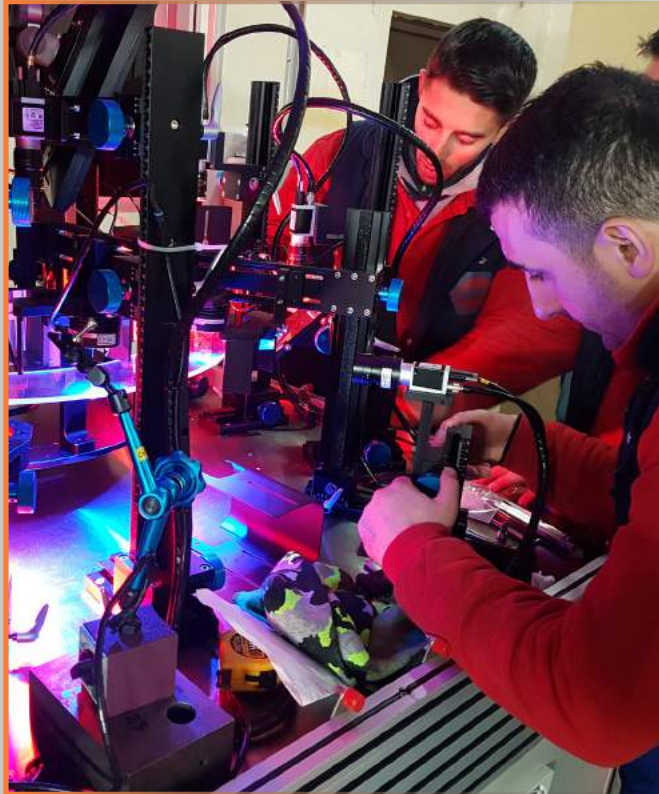
Heat treatment of the products takes place in process-stable equipment which uses the latest heat treatment technologies and tested according to **ISO 898-1**. Regular audits and continuous improvement studies enable us to comply with **CQI-9** conditions. **Dephosphating** is applied prior to the heat 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 1000 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 to **2,000-2500 kg/hour**.

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. Afterwards, the company has decided to outsource the licensed coatings as a strategy.

Surface coating for protection, against corrosion and provide locking such as **Zn-Ph (in-house), Zn-Fe, Zn-Ni, Zinc, Zintek®, Magni®, Hot-Dip Galvanizing, 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.





Camera optical sorting machines are used for sorting of fasteners.

NET CFC® has **10 optical sorting machines** equipped with Dimensional Control with **Camera Crack Control with Eddy-Current®** systems.

Our optical sourcing equipment and systems are applicable to all kind of fasteners.

Critical dimensions are monitored and strictly controlled.

Eddy-Current® systems are mainly used for hardness inspection and controlling the lack of heat treatment.

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

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 with **10 sorting machines**, the packaging is made simultaneously. In parallel; **2 manual packaging machines** are used for different purposes.

Then, packages are put into heat-treated **Euro Pallets** and made ready for storage and transport.





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

In our warehouse, we carry out the storage 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.

Air, land and sea logistics services are provided according to customer requests. Beside normal deliveries, there is a **special network for urgent deliveries** with the speedy and express vehicles, which enables the shipment to European countries **in about 3 days** whenever requested.

Testing Capabilities

The measuring instruments, test sets, and apparatuses used in NET CFC® are sufficient to determine the measuring ranges and tolerances specified in customer-specific requirements.

Calibration and verification are carried out regularly and the test devices comply with the international norms specified in the standards. Our laboratories are accredited 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, Salt spray test, Contour measuring device, 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 Measuring Systems, Profile projection, Coefficient of friction measurement, Coating thickness, Surface roughness measurements are done at NET CFC® laboratories.



Certifications



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.



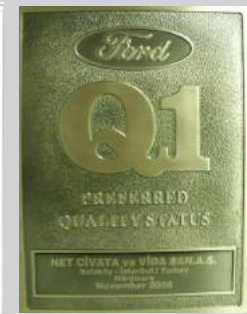
IATF 16949:2016



ISO 9001:2015



ISO 14001:2015



FORD Q1

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

The compliance of market demands as a fundamental requirement in the manufacture of our products.

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

The use of manufacturing equipment and perfectly controlled inspections, in order to prevent errors in our products.

Quality control of raw materials and finished products through inspection and testing.

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

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.

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.





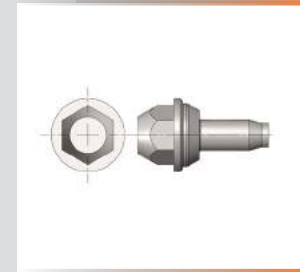
In line with the main principles of 16949, we value the 7 principles at NET CFC®

1. Customer focus
2. Leadership
3. Engagement of people
4. Process approach
5. Improvement
6. Evidence-based decision making
7. Relationship management

1 Bolts with Assembled Washers and Flange Bolts Kombi- und Flanschschrauben

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.



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

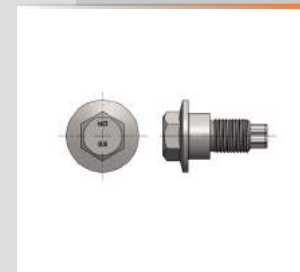
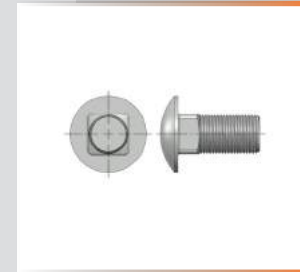
Features/advantages	Increases the seating surface, making the fastening more stable to meet requirements. Conical, spring-loaded washer-mounted and flanged knurled products prevent the connection in vibrating working environments.
---------------------	--

1 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.



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

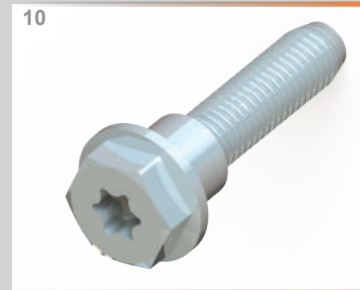
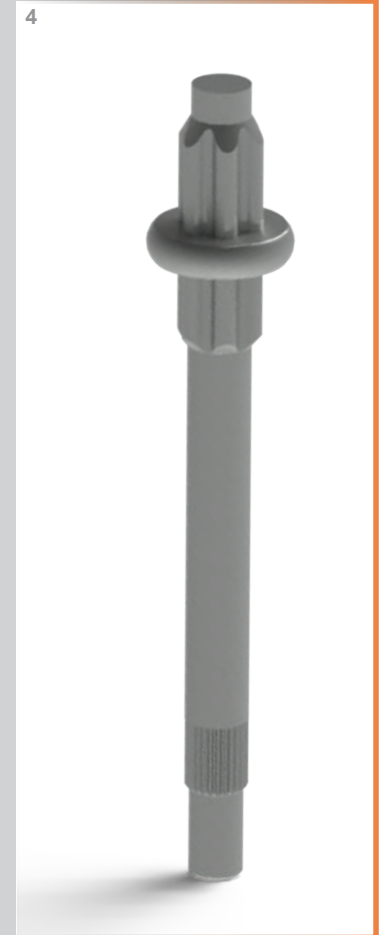
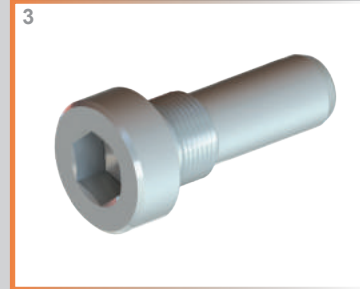
Features/advantages

<p>Features/advantages</p> <p>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.</p>



2

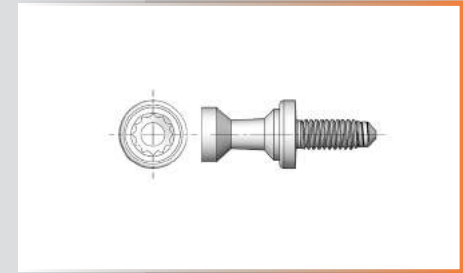
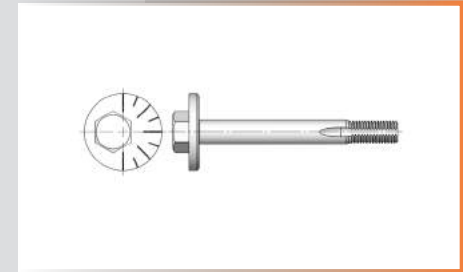
Cold Formed Male Parts Kaltumgeformte Teile mit Schaft



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.

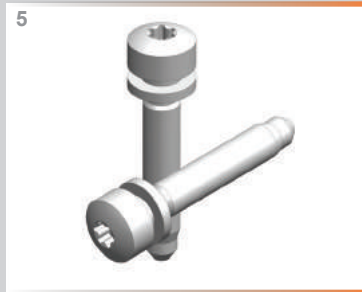


Head shapes	All head shapes are possible
Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	From 4.6 to 12.9, special property classes are also available
Surface treatment	All common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

Features/advantages

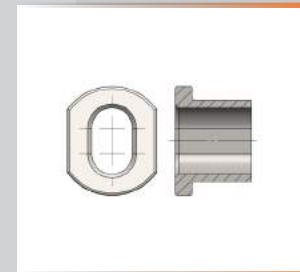
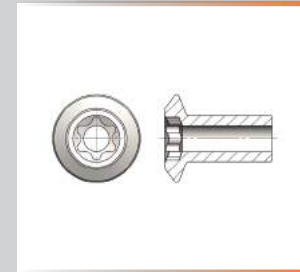
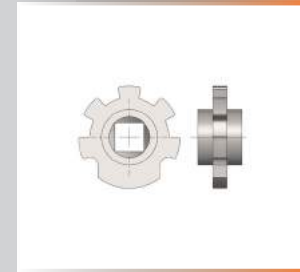
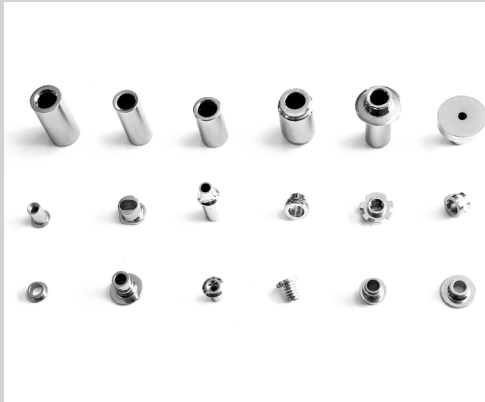
Features/advantages	The production of parts which are difficult to produce with cold forging can be realized and their suitability for use and assembly is ensured.
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3 Cold Formed Parts According to Customer Drawings with Second Operation Sonderteile nach Kundenzzeichnung 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.



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

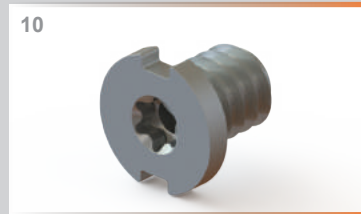
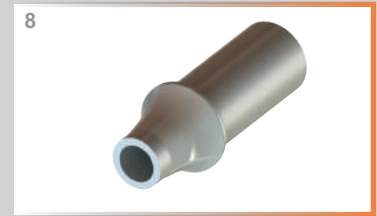
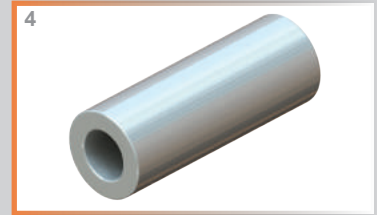
Features/advantages

Features/advantages	Provides ease of centering and installation. They are complementary parts of the connection.
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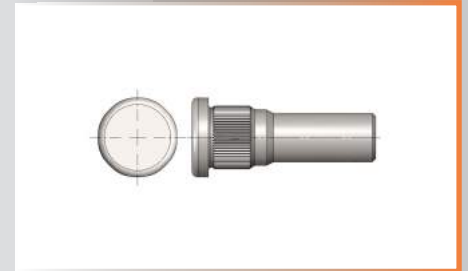
4

Female Parts Teile mit Innengeometrie



Cold Formed Fasteners
 above $\varnothing 20$ mm

Cold Formed Fasteners up to 220 mm in length are generally used for heavy vehicles (LKW) and large body connections.

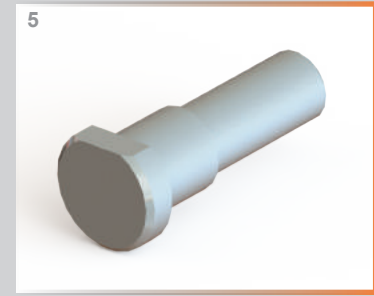


Head shapes	All head shapes are possible
Nominal thread diameter / lengths	All driving features are possible
Nominal diameter	M8 - M24 / (up to 220 mm)
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	Mainly 8.8 and 10.9, special property classes are also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

Features/advantages

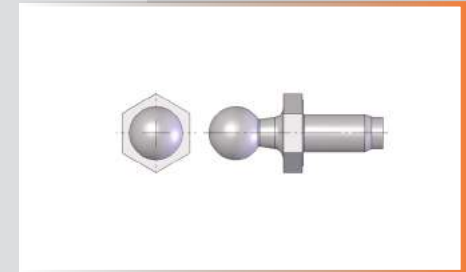
Features/advantages
Compared to hot forming, narrower tolerances can be achieved. Reduces production costs.

“
5 Cold Formed Fasteners up to l : 220 mm
Kaltumgeformte Schrauben bis zu l : 220 mm”



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.



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

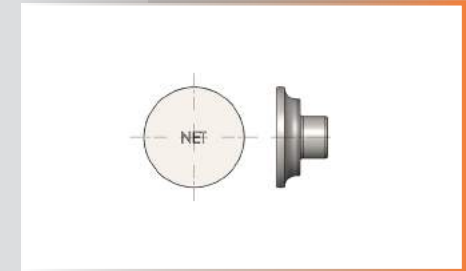
Features/advantages

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

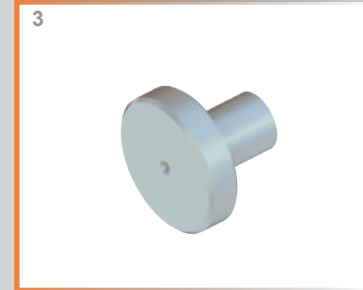
Rivets are used to connect two pieces of material in a quick efficient manner with a hand riveter or pneumatic rivet gun. They are applied by pressing and for single use.



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.

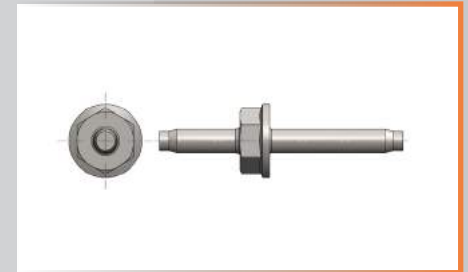


Studs

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

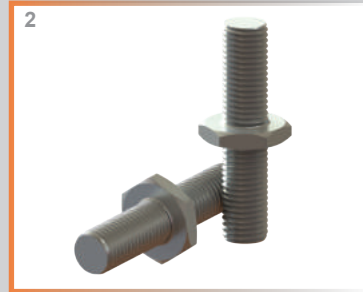


Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property Class	Mainly 8.8 and 10.9, special property classes are also available
Surface treatment	All common surface treatment and corrosion protection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



Features/advantages

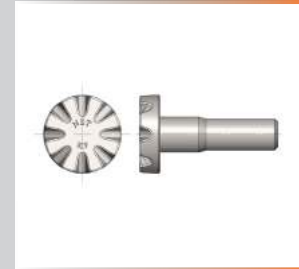
Features/advantages
In places where installation difficulties are experienced; provides easy installation.



9 Cold Formed Components for Miscellaneous Uses Kaltumgeformte Teile für diverse Anwendungsgebiete

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.

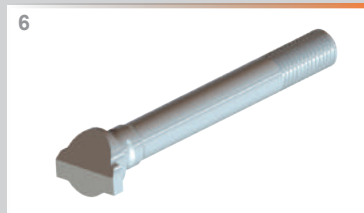


Head shapes	All head shapes are possible
Driving features	All driving features are possible
Nominal diameter	M5 - M24
Thread	Metric / Special threads are also available
Material	Cold forming steel
Property class	From 4.6 to 12.9, special property classes are also available
Surface treatment	All common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

9 Cold Formed Components for Miscellaneous Uses Kaltumgeformte Teile für diverse Anwendungsgebiete



Our policy is to provide and maintain safe and healthy working conditions, equipment and systems of work for all our employees, and to provide such information, training and supervision as they need for this purpose. All employees have the responsibility to cooperate with supervisors and managers to achieve a healthy and safe workplace.

Harmful acts to our business and to the lives and health of people on our premises is a major concern to **NET Management**. Any observations of faulty work practices or unsafe working conditions will be taken seriously and immediately rectified.

We are signing protocols with various universities, chambers, institutes, high schools and offer students work opportunities for work-experience or dissertation projects.

We are in close relation with **Turkish-German University (TAÜ)** and we accept trainees and projects.

We provide technical education to the students of vocational high schools and offer them jobs after an apprenticeship period. We donate **Turkish Red Crescent** in their activities to provide support to disabled or elderly citizens.





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



Turkish Employers' Association of Metal Industries (MESS)



Turkish Metal Union (Türk Metal)



The Istanbul Chamber of Commerce (İTO)



Istanbul Mineral and Metals Exporters' Association (IMMIB)



Fastener Industrialists and Business People Association of Turkey (BESİAD)



UCTEA Chamber of Mechanical Engineers (MMO)



Türkisch-Deutsche Universität (TAU)

We are building the **succeeding together culture**, which is based on our values and where interaction is open and constructive and supports continuous renewal.

In the **NET CFC®** each employee has equal possibilities to succeed and develop in his/her own work. The age, sex, religion or ethnic background of an individual may never, at any stage of the employment relationship, be considered a discriminating factor.

220 employees with a high loyalty ratio at our production facility in Istanbul, continuously improves efficient and competent solutions in production and **customer satisfaction for 70 years in the fastener industry.**

Every employee is responsible in his/her own operations for aiming at observing equal treatment of all persons both in daily operations and in decision-making.

Our basic pillars of our business consist of ; **Appreciate each other, Strive for excellence, Build the future...**



**NET CFC®
to the Global Industrial
and
Automotive market places.**



We are committed to providing our customers with the highest level of customer service and to assist them in every aspect of their participation in NET Cold Formed Components.®

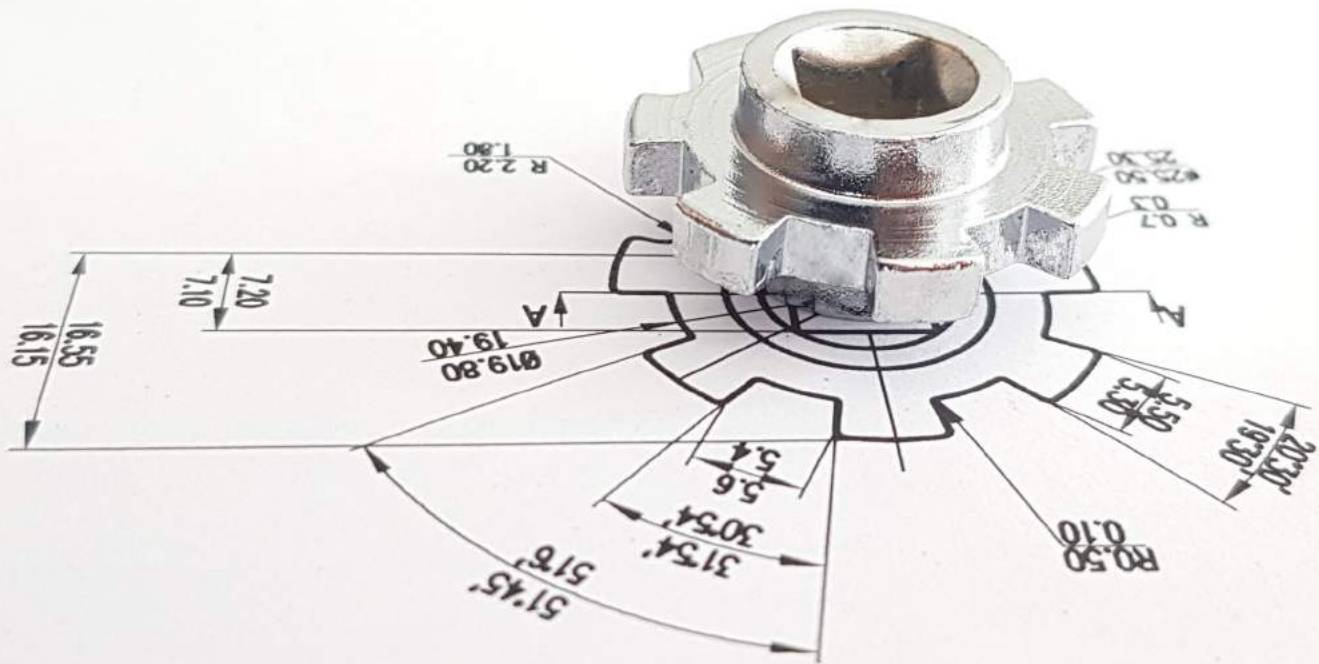
Our goal is to make our customers feel welcome, served and cared for, in every interaction with our staff.

...and our customers will be experiencing the quality of beautifully crafted fasteners.

Thank you...

NET CFC® Management









NET COLD FORMED COMPONENTS®
NET UMFORMTECHNIK®

Plant A

Net Civata ve Vida San. A.Ş
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Plant B

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