



# HEICO-FORM

COLD FORGED PARTS





## HEICO ON YOUR SIDE

The HEICO group, based in the town of Ense in Westphalia, Germany, is a dynamic family business with a long tradition. The company has been working passionately in the field of fastener technology since 1900.

The HEICO group operates internationally with multiple sites, employing over 400 people, located throughout the world. The group offers the highest degree of technical support and individual testing options.

### SOLUTION-ORIENTED

The HEICO group's diverse product portfolio offers its customers individual solutions for a wide array of applications. Cold-formed components are manufactured precisely to the customer's requirements.





## PRODUCT EXAMPLES

solid and semi-solid parts



threaded parts



step pins



ball pins



sleeves and hollow parts



metal plastic parts



special parts





## HIGHEST STANDARDS



All procedures and processes undergo strict quality control. The HEICO group's professional approach ensures fast, flexible and seamless handling of customer orders – from on-site customer advisory services and feasibility analyses to development of tools via the production process and the individual packaging of goods.

### QUALITY

The quality and continued compliance of process guidelines are a top priority for HEICO. In addition to their highly-qualified employees, a comprehensive range of the latest testing devices and data monitoring systems ensures optimum quality of cold-formed components.



Through the use of optoelectronic and magnetic induction test facilities, the HEICO group can meet the customers' most demanding requirements. The HEICO group works in full compliance with IATF 16949, the internationally recognised quality standard.



## YOU CAN COUNT ON HEICO

### EFFICIENCY

Optimised process procedures, modern facilities, lower material input and a higher cyclic output offer an attractive service package which generates cost benefits for customers.



HEICO's in house tool design facility supplies the necessary expertise for dealing with complex part geometries. Through the use of segment tools and warm forming processes, cold-formed components are produced on modern multi-stage presses. Drilling, threading and rolling processes as well as turning and milling operations are also possible.

The durability of the customer's product can be optimised by increasing its wear resistance through an internal partial induction hardening process. In this way, process efficiency becomes perceivable for customers in monetary terms.

Various materials are used to produce cold-formed components:

- Case-hardening and heat-treatable steel
- Stainless steel
- Brass
- Aluminium
- Copper
- Special materials and alloys



tool construction and  
manufacturing



metal forming up to  
6 stages with preheated  
materials

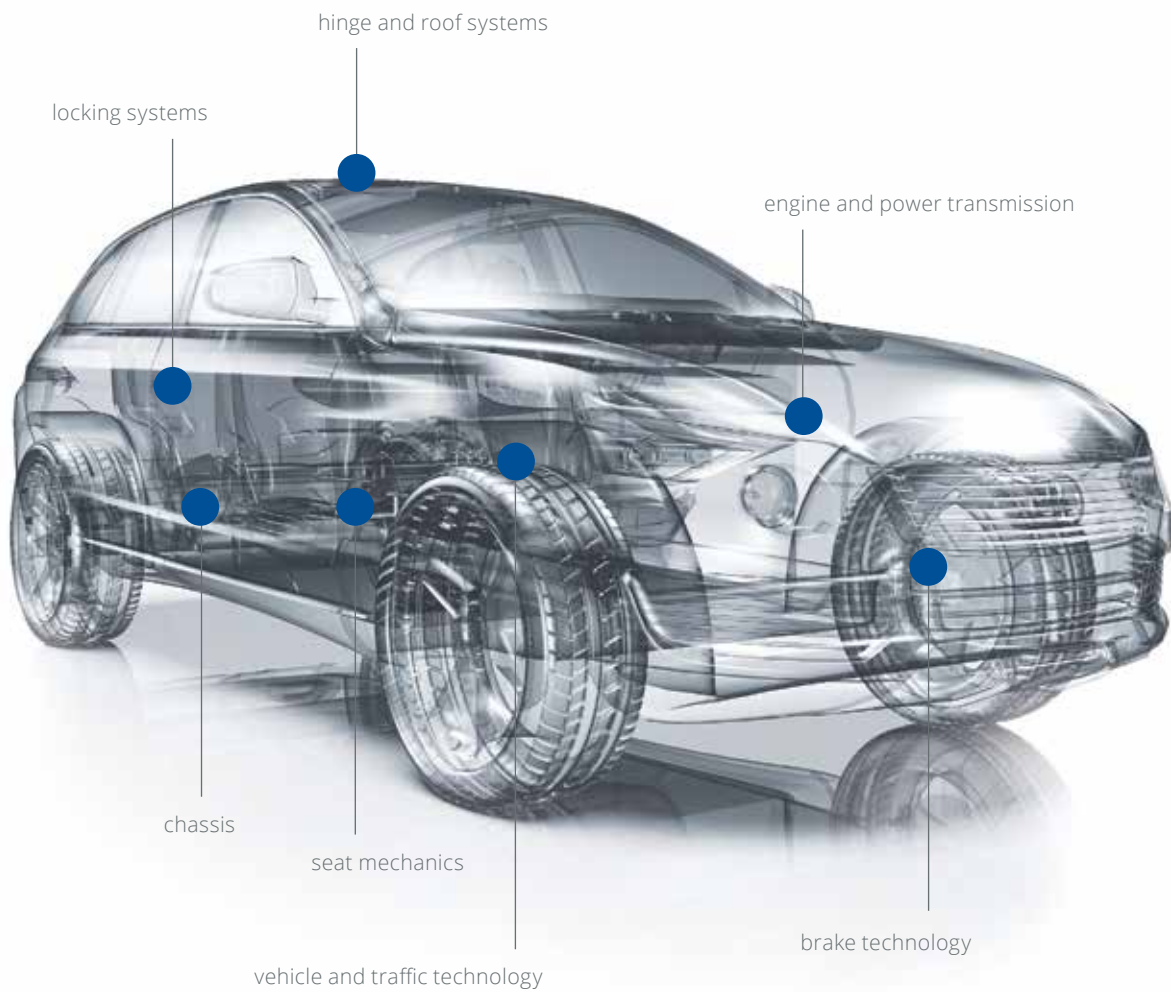


modern machining  
technologies

## AUTOMOTIVE

Customers in the automotive industry appreciate the quality, service and flexibility offered by the HEICO group.

HEICO manufactures special cold-formed parts for the most diverse fields of automotive engineering: engines and brakes, drive technology and chassis, locking and roof systems, hinge mechanisms and control systems.







## PROVIDING SOLUTIONS TO YOUR CHALLENGES

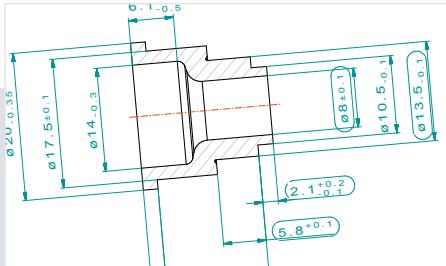
In close collaboration with the customer, solution-oriented process stages are developed and optimally adapted to the customer's individual requirements.

By this process, the HEICO group is able to replace castings and turned parts with cold-formed components despite close tolerances. This offers advantages by optimising material properties through cold working and reducing material usage.

### THAT'S HEICO

The targeted expansion of their machine fleet and the willingness to invest in innovative tooling and production processes ensure the HEICO group's strong growth and forms the basis for a market-oriented value chain.





CONSTRUCTION



PRODUCTION



PROCESSING

# PRODUCTION PROCESS

## Process

- Producibility Assessment
- Finite Elements
- Project Management
- FMEA
- Process-controlled production

## Tool development and construction

- In-house development, construction and manufacturing of individual tool sets
- Usage of segmental tools

## Engineering

- In-house engineering capabilities for the development, construction and manufacturing of special purpose machinery.

## Manufactured materials

- Steel
- Quenched and tempered steel
- Stainless steel
- Aluminium
- Copper
- Brass
- Special alloys and coatings

## Machine plant

- Modern multi stage presses (up to 6 stages)
- Wire diameters of Ø 2 - 16 mm
- Semi-hot forging machine
- Drilling machines
- Thread rolling machines up to M 14
- Thread moulding machines up to M 16
- NC-lathes
- Milling machines
- Rotary table-transfer-machines (drilling and thread moulding in one working step)

## Heat treatments

- Internal:
  - Annealing
  - Inductive hardening
- External:
  - Case hardening
  - Hardening / Tempering
  - Carbonitriding

## Surface finishing

- Nickel plating
- Zinc coating
- Brass coating
- Copper plating
- Zinc flake coating
- Zinc nickel coating
- Phosphating
- Special coatings
- Thread locking
- plastic overmoulding



## CONTROLLING



## LOGISTICS



### Process controlling

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- Böhme & Weihs CAQ system
- Factory Data Capture (BDE)
- Quality Data Recording (QDE)

### Quality Testing

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- CNC-measuring-projector
- Shape-control-system
- Hardness tester
- Concentricity gauges
- Metallographic analysis
- SPC
- Mitutoyo Video Measuring System

### Camera sorting

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- Optoelectrical
- Eddy current testing

### Logistics

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- Automatic processing of customer orders (EDI according to VDA 4905)
- Production-oriented and detailed planning by the use of ERP system
- Just-in-time delivery (E-Kanban; VMI), to achieve a optimum customer stock levels
- Supplier management
- ERP system, controlled raw material resource scheduling

### Packaging

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- KLT or cardboard packaging
- Individual customer boxes
- VCI bag packaging for protection against corrosion



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