

Rolled, forged or casted:
The portfolio of GMH Gruppe at a glance





# The best solution from one single source

Products and applications made of GMH Gruppe steel secure valuable competitive advantages for our customers. The combined expertise of our in-company specialists, short distances as well as efficient processes enable us to produce precise results to fulfil the highest requirements, along the entire value chain – from our materials through to ready-to-assemble components.

#### Raw material cycle: 100% scrap as foundation

At GMH Gruppe scrap is the basis for our steel production: Our steel is melted down from 100% scrap. This makes our raw material recycling the central hub of our sustainable circular economy - not only at the individual site, but across all sites within the GMH Gruppe.

#### Steer bar, rolled

Short routes, highly efficient processes: we supply our steel bar quickly, flexibly and reliably – produced with high accuracy and tailored individually to our customers' requirements. GMH Gruppe steel bar is also notable for its good surface quality, tight dimensional tolerances, optimum chemical composition and hardenability, and good micro- and macro-cleanness.

#### **Bright steel**

Around the world, peeled bright steel supplied by GMH Gruppe forms the basis for high-tech components. At all our locations, our specialists work together on meeting our customers' requirements precisely – from high-quality feed material up to and including ready-to-use components.

### **Special profiles**

Our special profiles are tailor-made products, the geometry and chemical composition of which precisely match the customer's specifications. They are individually produced to assure outstanding materials properties, from straightness and flatness, via bar or item length, up to and including outstanding surface quality.

### **CNC** components

CNC components are distinguished by the ultra-high accuracy of their production. High-precision control technology enables us, particularly in the case of complex geometries, to produce work exactly to the customer's requirements – and with absolute accuracy of repetition.

#### **Steering-system components**

We develop and manufacture forged i-Variable as well as i-Constant steering racks, blanks, semi-finished parts, in small and large production volumes, plus valuable prototypes. In addition, we support our customers in after sales market. One of MVO's special strengths are ready-to-install steering racks with a variable toothing geometry for optimal gain curve and with the most diverse range of rack cross-sections.



# A wide range of products for individual requirements

We are a reliable full-range supplier and at the same time one of the top-5-forging-groups for large and heavy components in Europe. Products and applications of GMH Gruppe are as diverse as their possible uses. Whether series or individual production. GMH Gruppe offers versatile forging and casting expertise.

#### Closed- and Open-die forgings

Closed- and Open-die forgings supplied by GMH Gruppe meet the most exacting customer requirements in terms of material properties, precision and dimensional accuracy. These parts are used, in particular, in machines and equipment for the energy sector, in high-output engines, as components of storage and transport casks, and in numerous other sectors, including general mechanical and plant engineering, mobility and power generation.

#### Seamless rolled rings

We produce seamless rolled rings, flanges and rail-vehicle tyres to the very highest standards. This expertise has made us the world-leading manufacturer of ring blanks for the animal feeds industry, wheel tyres for the rail industry and drill-pipe connectors for specialized underground engineering.

#### **Crankshafts**

Our Crankshafts are supplied finish-machined from non-machined items weighing up to 50 tonnes – manufactured precisely to customer specifications, thoroughly quality-checked and ready to install. Our crankshafts are used as components in high-output engines, general mechanical and plant engineering, and in numerous other sectors, including energy, pumps & compressors.

#### **Rotor retaining rings**

Rotor retaining rings are the most heavily loaded components in turbo-generators. High-quality steel is remelted in highly efficient electroslag remelting (ESR) furnaces and shaped in our open-die forging facilities. Rough-turned, heat treated, cold expanded, stress-relieved, finish turned, ultrasonically and/or dye penetrant inspected, tested and then packed, our rotor retaining rings assure our customers of safety where safety is critical.

#### Tool steel

From more than 300 material grades in over 2,000 variants, we produce customized tool steels of excellent cleanness, in specially developed variants, with extremely homogeneous and fine-grained microstructures, and with high-quality surfaces and sharp edges.

#### Iron - and Steel castings

We bring the right experts together for excellent results from iron- and steel-castings. Close cooperation with the customer, comprehensive development and materials expertise as well as the flexibility and proficiency to meet complex requirements are what sets us apart. We fulfil customer requests with precision, including where quality and supply logistics are concerned

# **Products of GMH Gruppe**

## **Business Unit Mobility**





**CAST INGOTS** 

Formats

Ø 710 mm to 760 mm, square, octagonal, 16-gonal, polygonal

Weight

3,500 kg to 44,000 kg



**BLOOMS AND BILLETS** 

Formats

165 mm x 165 mm, 200 mm x 200 mm, 245 mm x 245 mm

Length

3,500 mm to 7,000 mm and 2 700 mm to 13 000 mm



ROLLED STEEL BAR

Dimensions

Ø 20 mm to 126 mm

Length

■ 6,000 mm to 10,000 mm



BRIGHT STEEL

Dimensions Ø 18 mm to 125 mm

Length

Up to 12,000 mm



#### SHORT LENGTHS INCL. PREMACHINING

Dimensions

Ø 18 mm to 125 mm

Length

50 mm to 3,000 mm



CNC COMPONENTS

**Dimensions** 

 Based on component drawing Length

Based on component drawing





Dimensions

 Ø 10 mm to 120 mm Length

Up to 6 500 mm.



**BRIGHT STEEL** 

Dimensions

Ø 10 mm to 120 mm

Length Up to 6,500 mm



**BRIGHT STEEL IN SHORT LENGTHS** 

Dimensions

■ Ø 18 mm to 125 mm

Length

Up to 3,000 mm



#### **PISTON RODS & CNC COMPONENTS**

Dimensions Ø 10 mm to 120 mm

Length

■ Up to 6,500 mm

## **Business Unit Industrials**





CAST INGOTS

**Formats** 

Weight

BLOOMS AND BILLETS

430 mm, 500 mm

430 mm x 320 mm

Delivered lengths

Round: Ø 310 mm, 370 mm, 406 mm,

Square: 320 mm x 280 mm and

■ 3 t to 62 t

Dimensions





#### CAST INGOTS

Dimensions Round, square, polygonal

Conventional or ESR

Weight ■ 1 t to 78 t



#### FORGED STEEL BAR Dimensions

Flat: W 500 mm to 2,000 mm,

H 100 mm to 1,200 mm Square: from 300 mm to 1,300 mm

Round: Ø 250 mm to 1.400 mm

Weight 1 t to 56 t



#### **OPEN-DIE FORGINGS**

Dimensions

■ Shafts: Ø up to 2,000 mm ■ Discs: Ø up to 4,000 mm



500 kg to 45 t



#### SEAMLESS ROLLED RINGS

Dimensions

Outside diameter: < 4,000 mm Height: < 600 mm</li>

Weight

Up to 4,000 kg





ROTOR RETAINING RINGS

Dimensions

 Ø 430 mm to 2,200 mm Weight

■ 15 kg to 4,300 kg



HIGH NITROGEN STEEL (HNS) Dimensions

■ Steel bar: Ø from 2 mm to 350 mm

Sheet: thickness from 3 mm to 20 mm ■ Wire rod: Ø from 5.5 mm to 21 mm

Minimum order quantity 700 kg to 1,400 kg per size lot







#### AS-ROLLED PRODUCTS

Dimensions ■ Ø 22 mm to 35 mm

#### Length

■ 500 mm to 1,100 mm



#### SEMI-FINISHED PRODUCTS

#### **Dimensions**

Ø 22 mm to 35 mm

#### Length

■ 500 mm up to 1,100 mm



#### READY-TO-INSTALL STEERING RACKS

#### Dimensions

Ø 22 mm to 35 mm

#### Length

500 mm up to 1,100 mm





#### BRIGHT STEEL

Dimensions
■ Ø 20 mm to 220 mm

#### Length

3,200 mm to 11,000 mm and 3,500 mm to 26,000 mm



#### MANDREL BARS

**Dimensions** 

Ø 80 mm to 250 mm

#### Length

■ 3,500 mm to 26,000 mm



#### INDUCTIVELY HARDENED SHAFTS

#### Dimensions

■ Ø 20 mm to 140 mm

#### Length

500 mm to 11,000 mm or 18,000 mm



#### STOCKHOLDING TRADER

#### Dimensions

Ø 5 mm to 220 mm

Length

3,000 mm to 6,500 mm





#### SPECIAL PROFILES - LIGHT SECTIONS

- Dimensions
  Width up to 180 mm Thickness from 2 mm
- Lengths up to 18,000 mm

#### Weight

2 kg to 35 kg/m



#### SPECIAL PROFILES - HEAVY SECTIONS

#### Dimensions

Width up to 400 mm
Thickness from 6 mm
Length up to 24,000 mm

#### Weight

15 to 180 kg/m





- Steel scrap
- Special-grade scrap
   NF-metals scrap

  - Foundry scrapAlloyed steel scrap
- Grinding sludges





#### CLOSED-DIE FORGINGS

#### **Dimensions**

Outside diameter up to 1,250 mm
 Length: up to 4,500 mm

#### Weight

70 kg to 3,500 kg



#### CRANKSHAFTS

#### Dimensions

Max. swing diameter: 2,000 mm; length: up to 13,000 mm

#### Weight

Up to 50 t



#### MACHINING

#### Dimensions

 Max. swing diameter: 2,000 mm; length: up to 13,000 mm

#### Weight

Up to 50 t





#### CLOSED-DIE FORGINGS

- Dimensions
- Outside diameter up to 750 mm
   Length: 150 mm to 1,500 mm
- Weight
  - 5 kg to 450 kg



#### MACHINING

#### Dimensions

Outside diameter up to 750 mm
 Lengths up to 1,500 mm

Weight

kg to 450 kg





#### IRON CASTING

Dimensions

To customer specifications
(max. 700 x 550 x 450 mm) in EN-GJL,
EN-GJS, EN GJV, EN-GJS-XSIMO,
EN-GJS-XNiResist (D5S)

## Weight

■ 3 kg to 130 kg





STEEL CASTING

**Dimensions** Max. mould size: 4,500 mm x 4,500 mm

Weight

25 kg up to 10,000 kg







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