



ENGINEERING. CASTING. MACHINING.

YOUR COMPONENTS IN PERFECTION





MASTERING THE PRESENT

WINNING THE FUTURE

The story of the Grohmann aluminium foundry began in 1930. Quality awareness, proximity to the market, and innovative spirit have since fuelled continuous growth.

A few milestones from the company's recent history stand as examples of its development into today's group of companies with its outstanding manufacturing capabilities:

- 2004 Purchase of the Elektror aluminium foundry, Mühlacker
- 2006 Expansion of the machining operation in a new production hall
- 2008 Gravity die casting relocated to a new production hall
- 2010 Purchase of the Gardner Denver aluminium foundry in Schopfheim and founding of Gusstechnik Schopfheim
- 2014 Purchase of MH Gusstec in Hirrlingen and founding of MGH GusTec Hirrlingen
- 2018 At the start of the year MGH GusTec takes a majority shareholding in PTC innoCast

Founded in 2005, the group's sales company, Grohmann Aluworks, is the central point of contact from the consultation stage, via project management all the way to full production.

DIVERSITY AS STRENGTH

Pooled expertise on five sites

Unparalleled in Germany: four high-capacity sand casting foundries with five moulding lines, two gravity die casting foundries and four CNC technology centres, plus a factory specialised in prototyping. The strengths of the five Grohmann sites all add up and complement each other. That makes the group a leading supplier for high-quality cast aluminium.



Johann Grohmann Bisingen plant 1, sand casting



Johann Grohmann Bisingen plant 2, gravity die casting



Johann Grohmann Bisingen plant 3, machining



Johann Grohmann administration



Johann Grohmann Mühlacker plant 4



Johann Grohmann Mühlacker plant 4



Gusstechnik Schopfheim, foundry



Gusstechnik Schopfheim, machining



Gusstechnik Schopfheim



MGH GussTec Hirrlingen



MGH GussTec Hirrlingen



PTC innoCast Ötisheim



PERFECTION

IN EVERY RESPECT

Q-room – MGH GussTec

For the Grohmann group quality means: reacting quickly to market requirements, flexibly implementing customer wishes and producing with precision, using the best production technology.

Quality planning is an elementary part of our quality management system. We meet the highest of standards – thanks not least to casting process simulation, APQP processes designed to avoid flaws and the production of FMEAs to identify any risks of flaws even during the product development process itself.

Our certifications are evidence of our high standards in matters of quality, epitomised by every one of our employees:

- IATF 16949
- VDA 6.1
- ISO 9001
- ISO 14001
- ISO 50001
- DGR Certificate
- SVTI Approval

Measure – Test – Document

Metal and moulding material

- Thermo-analysis
- Low-pressure density sampling
- Spectral analysis
- Sand laboratory
- Grinding and microscopy

Physical properties

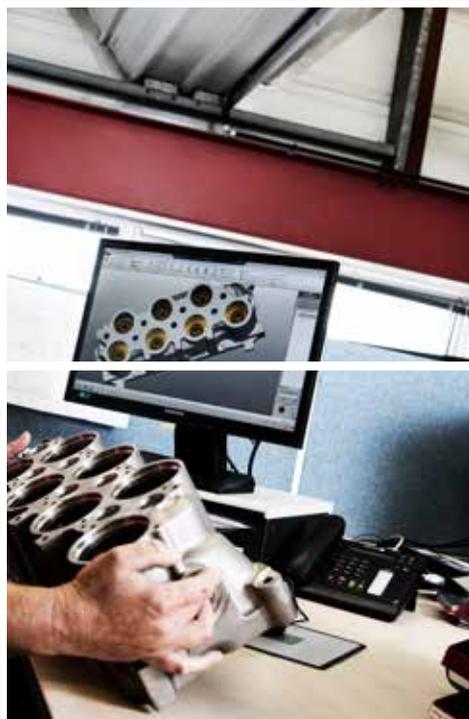
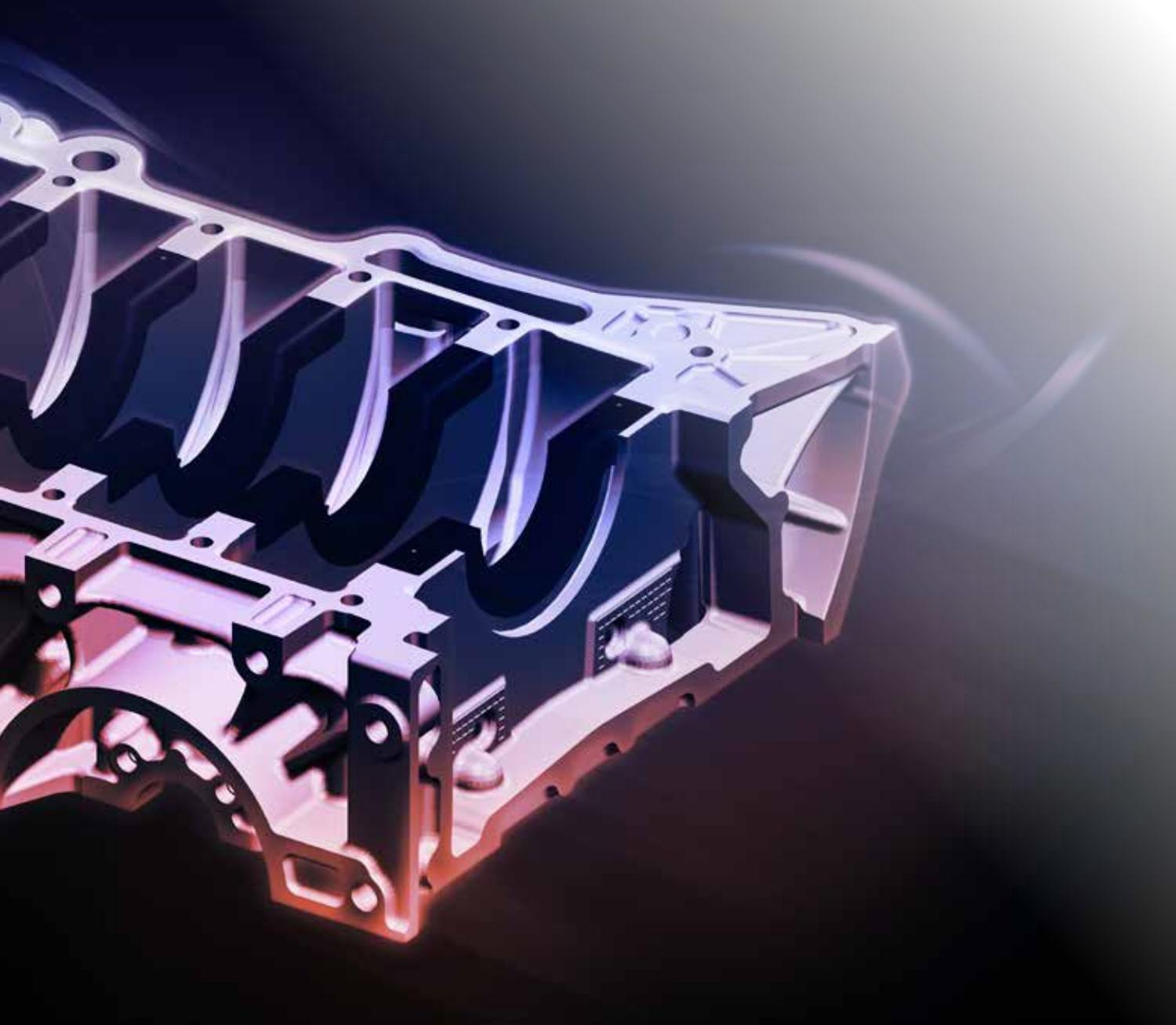
- Fluoroscopy / X-ray testing
- Fluorescent dye test
- Tensile tester / test bar
- Hardness testing
- Leak test
- Pressure change tests
- Residual contaminant analysis

Measuring

- 3D CNC measuring machine
- Faro® index arm
- Scanning



Measuring equipment – Gusstechnik Schopfheim: tactile measuring and



Project management and development

*Three-part carrier housing with internal cooling jacket core
- Module c. 110 kg*

The know-how of our employees is at the heart of every single project – from the sound advice at the outset all the way to the finished component.

As a full-service supplier we assist your Development and Design department with our special knowledge in matters of aluminium casting. Together with our clients, we thus arrive at the component design right for moulding and casting. Reproducible high quality and technically fully developed solutions - that is the key to cost-efficiency.

Our engineers utilise leading edge methods to simulate the filling of the mould and the solidification process. Your virtual cast part is created in this way for optimisation and the avoidance of any flaws.

Remote data transfer

- OFTP2

CAD Systems

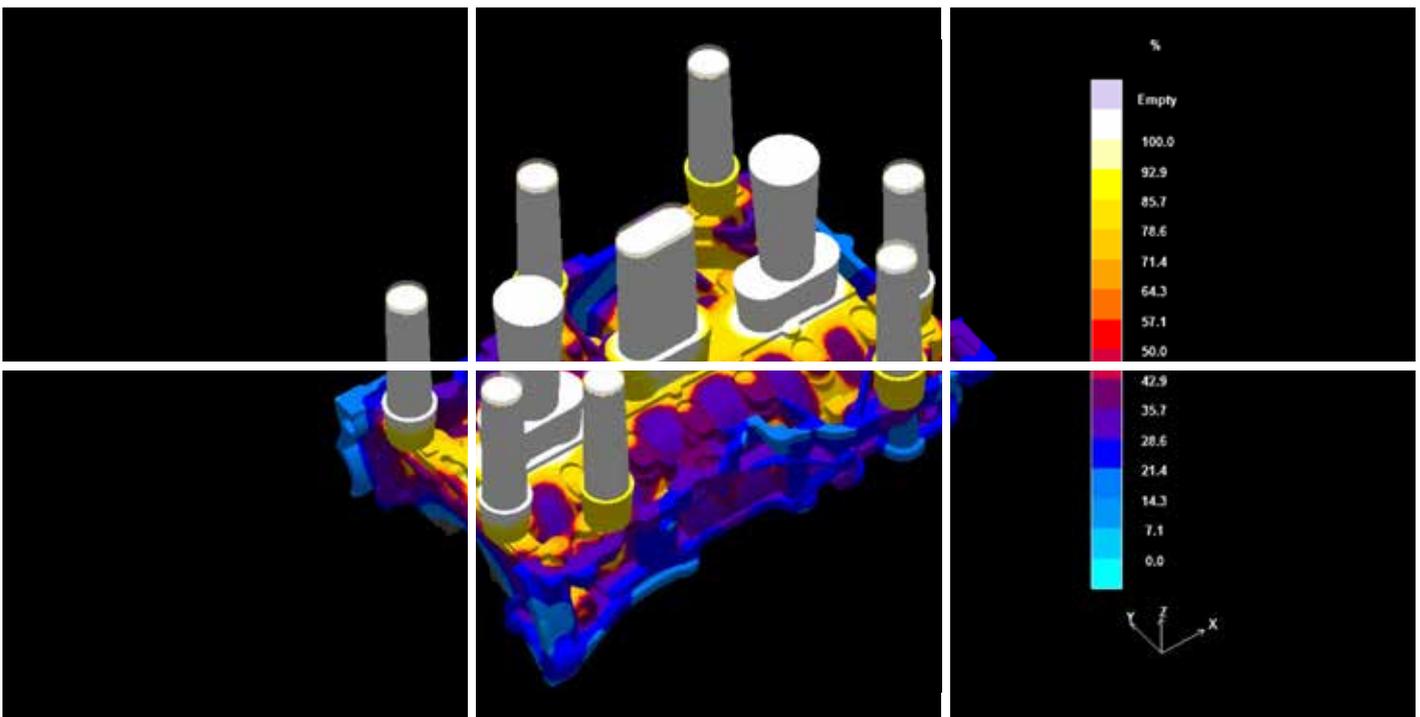
- Creo Elements 2.0
- Catia V5-6R2014

Data exchange formats

- STEP 3D
- IGES 3D
- VDA 3D
- DXF 2D
- DWG 2D

WORKING TOGETHER FROM THE START

QUALITY BEGINS WITH PLANNING



Casting process simulation



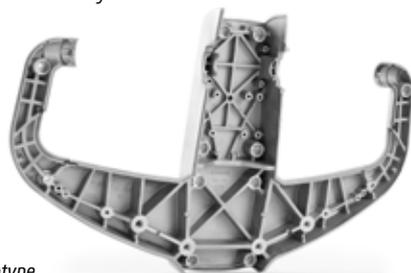
PROTOTYPING

YOUR COMPONENT ALWAYS ON HAND

PTC InnoCast: Prototype machining

By using a variety of prototyping methods, we are able to reduce the time required to produce prototypes considerably. Our close collaboration with our customers starts even at the stage of producing and optimising CAD data for casting suitability. In order to have components to hand even during the early stages of the development process, we have various methods of prototyping at our disposal:

- 3D printing in plastic
- Prototyping using diverse sand casting processes, including the core block method
- Machining, surface treatment, module assembly



Cast part prototype



ALL FROM A SINGLE SOURCE

FROM CONCEPT TO FINISHED PRODUCT

Lightweight, high quality, and dimensionally stable under load: aluminium components have become indispensable to industrial products. Yet the shapes are becoming increasingly complex, varied and intricate.

By combining many years of experience with cutting edge technologies, we produce high-quality cast aluminium parts, achieving maximum precision through a high level of automation. Using comprehensive test facilities, we ensure that every component has the required characteristics.





**THE CASTING
IN TOP FORM**



*Automatic HWS GTS moulding line
Box size 1660 x 860 x 350/350*

Our production technologies for cast aluminium in overview

Gravity die casting

For piece weights of 0.1 kg to 50 kg

- Horizontal casters
- Vertical casters
- Tipping casters
- Casting robots

Sand casting

For piece weights of 0.2 kg to 100 kg

Core making

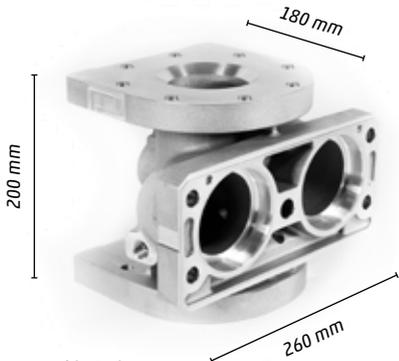
Core shooters (Resol CO₂) + Cold Box
2.5 - 100 litres

Moulding plants

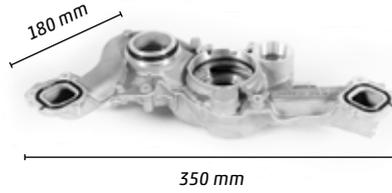
- Automatic moulding plant with box size 1660x860x350/350
- Automatic HWS moulding plant with box size 900x800x250/250
- Automatic HWS moulding plant with box size 900x700x250/250
- Automatic Künkel Wagner moulding plant with box size 700 x 500 x 250/250
- Automatic moulding plant with box size 650x500x250/250

Moulding machines

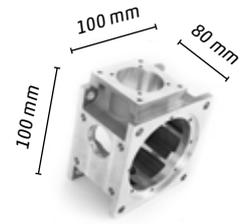
- Moulding machines for box sizes 1000 x 700 and 1200 x 1050
- Pin lift moulding machine with box size 650 x 400 to 1050 x 620 and box height up to 400



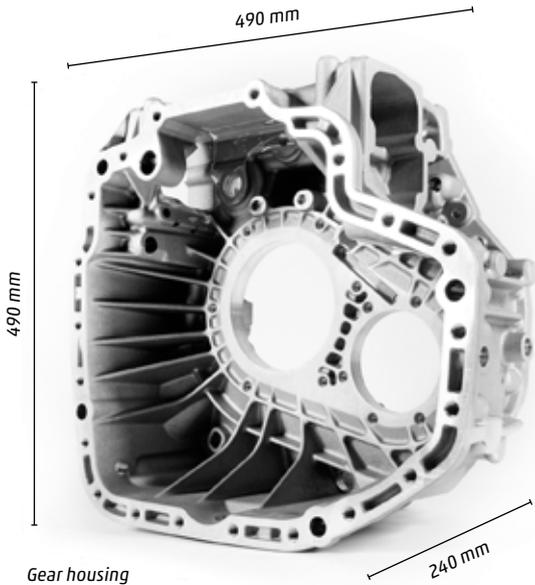
Cartridge adapter
(Measurement and control technology)



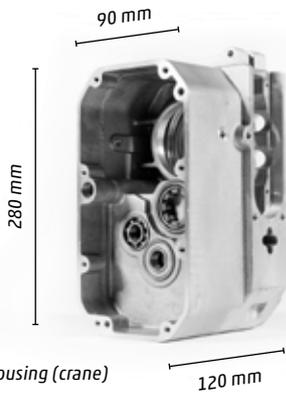
Water distributor
(Automotive)



Gear housing
(Mechanical engineering)



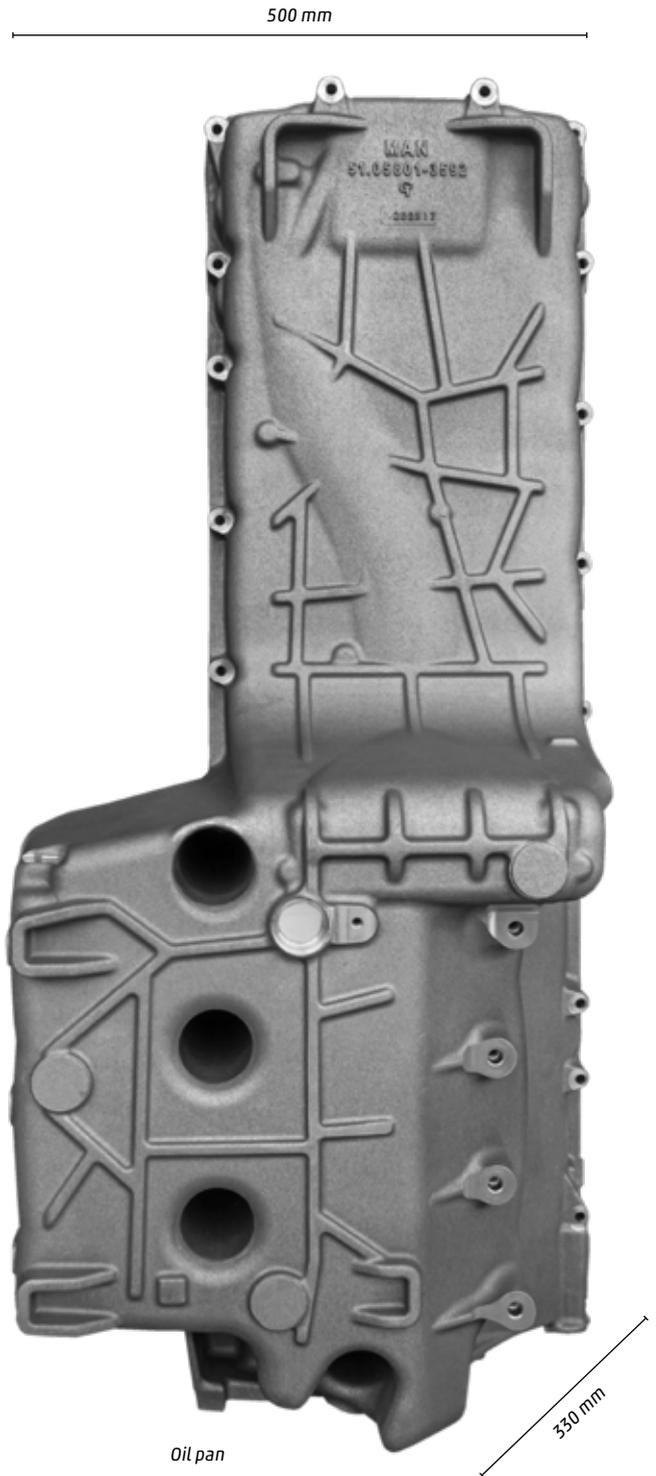
Gear housing
(Commercial vehicle)



Gear housing (crane)



Water-cooled engine housing
(e-mobility)



Oil pan



FOR BRILLIANT RESULTS
THE FINISHED PART'S FINAL STEP

Machining - Johann Grohmann Bisingen

All from a single source: the quality of our products is based on a well thought-out concept across every step of the production process. Cast finishing, machining and component assembly are key parts of our service portfolio. In conjunction with our customers we work up logistics concepts for optimum component supply. From the very start, we look at the whole process sequence and in this way guarantee the best possible overall performance.



Our production technologies for machining, assembly and surface treatment in overview

Machining

- 4- and 5-axis CNC machining centres
- Diverse lathes and milling machines for precise machining of the cast parts
- Cleaning and machining robots for drilling, thread cutting, and milling for precision levels of up to 0.1 mm

Production islands for machining parts

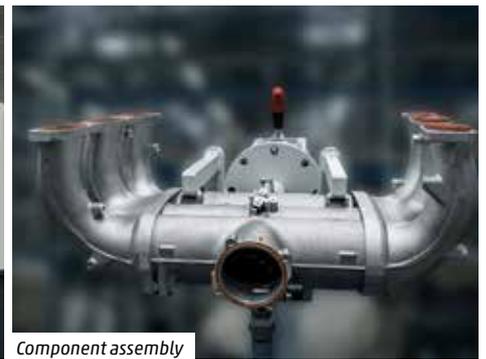
- Machining equipment
- Assembly
- Testing for leaks and differential pressure
- Logistics concepts

Surface treatment

- Powder coating
- Electroplating
- Anodising
- Wet painting
- Others on request



Cleaning facility - MGH GussTec



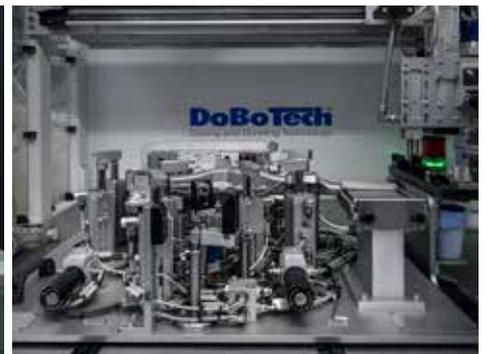
Component assembly



Cleaning robot - Johann Grohmann Bisingen



Machining centre for large parts - Gusstechnik Schopfheim



Metering system for seals - Gusstechnik Schopfheim



Grohmann Aluworks GmbH & Co. KG
The Grohmann Group's sales company
Heidelbergstraße 54 · 72406 Bisingen
Phone +49 (0) 7476 94 13-0
Fax +49 (0) 7476 94 13-50
info@grohmann-aluworks.de
www.welcome-to-grohmann.de

- Consulting
- Customer support
- Sales
- Marketing



Johann Grohmann GmbH & Co. KG
Heidelbergstraße 54 · 72406 Bisingen
Phone +49 (0) 7476 94 13-0
Fax +49 (0) 7476 94 13-50
info@grohmann-guss.de

- Sand casting
- Gravity die casting
- Model and mould construction
- Machining
- Component assembly



Johann Grohmann GmbH & Co. KG
Lugwaldstraße 14 · 75417 Mühlacker
Phone +49 (0) 7041 95 60-0
Fax +49 (0) 7041 95 60-34
info@grohmann-guss.de

- Sand casting
- Model and mould construction
- Machining
- Component assembly



Gusstechnik Schopfheim GmbH & Co. KG
Grienmatt 1 · 79650 Schopfheim
Phone +49 (0) 7622 6 97 40-0
Fax +49 (0) 7622 6 97 40-400
info@gusstechnik-schopfheim.de

- Sand casting
- Model and mould construction
- Machining
- Component assembly



MGH GussTec GmbH & Co. KG
Wilhelmstraße 83 · 72145 Hirrlingen
Phone +49 (0) 7478 93 04-0
Fax +49 (0) 7478 93 04-40
info@mgh-gusstec.de

- Sand casting
- Gravity die casting
- Prototyping
- Machining
- Component assembly

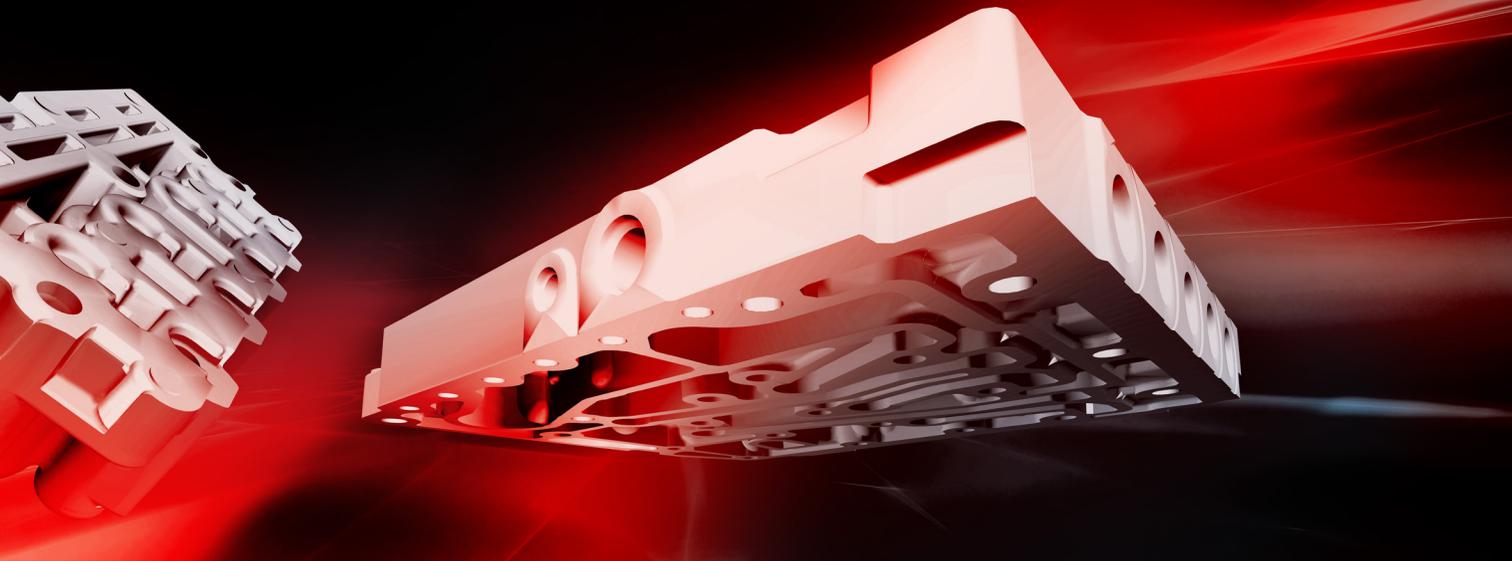


PTC innoCast GmbH
Schlattstr. 61-63 · 75443 Ötisheim
Phone +49 (0) 7041 80 89-100
info@ptc-innocast.de

- Prototyping
- Machining
- Component assembly



CAST-FORGING a unique combination



PROCESS

100%
non-porous and airtight



Cast-forging is a very special casting process. It is based on a low-turbulence filling of the mould. The molten metal gets carefully fed into an open, tempered mould and then cast under very high pressure.

By means of a top stamp, also tempered, the mould gets closed and the necessary pressure applied onto the molten material. Where the filling of the mould is done on a laminar basis, all the air is able to escape.

The degree of pressure, which is dependent on the component, and correct management of the mould and liquid metal temperatures ensure a state of compressive stress within the mould through to consolidation of the molten material and where applicable beyond.



On 1 January 2023, Johann Grohmann GmbH & Co. KG based in Bisingen took a shareholding in Uhlmann GmbH from Uttenweiler near Biberach in Upper Swabia. Uhlmann has been manufacturing cast aluminium parts using this special process since 1999.

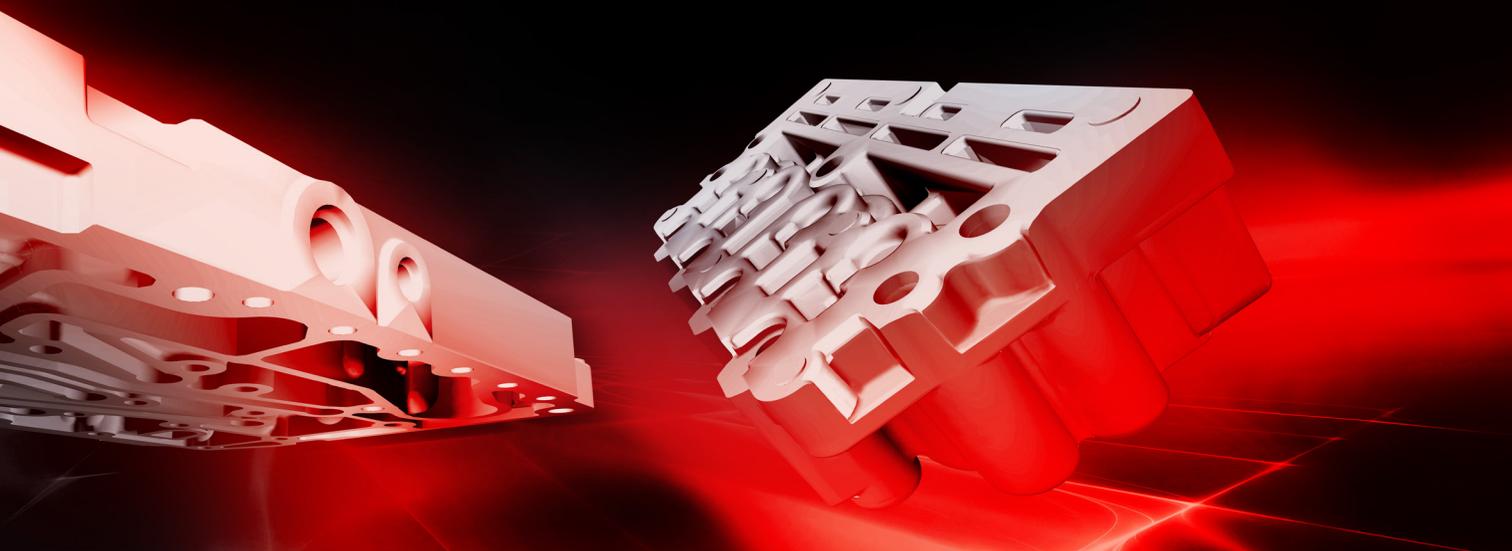
Cast-forging is an attractive addition and alternative to conventional casting processes such as pressure, sand and die casting. It combines tightness under pressure and outstanding mechanical and physical properties with high surface quality and dimensional precision, while simultaneously achieving high levels of productivity.

The process is also ideal for the manufacture of composite materials through infiltration of porous fibrous or particulate bodies or through the moulding of steel or brass parts.



Grohmann Aluworks GmbH & Co. KG
Heidelbergstraße 54 · 72406 Bisingen
Phone +49 (0) 7476 94 13-0
info@grohmann-aluworks.de
www.welcome-to-grohmann.de

CAST-FORGING a unique combination



ADVANTAGES

Thanks to the wide possibilities in terms of material selection, the potential that is fundamentally offered to us by the alloy diversity in the area of aluminium can be utilised in an optimum, component-specific way without having to take into consideration to any great degree casting concerns such as flow or feed behaviour.

As a result of fast consolidation under high pressure, unproblematic mould venting and the compacting of the matrix, it is possible to create dense, fine-grained structures with extremely few pores. No refining of the grain or molten material is needed, while downstream heat treatment, varying by material, can be done without any problem.

As a consequence of the process, it is possible to deliver physical, mechanical, technological and chemical characteristics in a targeted, optimum way. Tightness of components under pressure, high suitability for welding, great surface quality, high rigidity and tensile strength qualities both statically and dynamically, and good thermal and electrical conductivity are just a few examples of the areas of technical potential offered by the process.

The low process energy levels in combination with a high level of productivity, the possibility of continual electrical smelting and an almost complete absence of material flow facilitate a high level of energy efficiency. In comparison with conventional casting methods, it is thus possible to significantly reduce not just costs, but also harmful CO₂ emissions.

- **high cost-efficiency in production**
- **pressure-tight cast parts**
- **structures free of cavities and pores**
- **high dimensional accuracy and surface quality**
- **great variety of alloys**
- **high level of strength and fine-grain structure**
- **heat treatment possible**
- **well able to be welded**



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