



KOKILLENGUß MIT SICHERHEIT

FerroTec GmbH
Eyßelheideweg 12
D-38518 Gifhorn
Germany

Company History

- ▶ 1952 first cast at the location by ATE
- ▶ 1996 foundation of FerroTec GmbH
- ▶ 30.000 m² of premises
- ▶ 2006 shift from cupola furnaces to medium-frequency crucible furnaces
- ▶ Production capacity („good-quality cast“) of 8.000 tons ~ 13.000 tons Of molten iron
- ▶ 50 employees
- ▶ 5.000 K EURO of revenue
- ▶ 100 % Private ownership

Overview – Ferrotec GBMH

Company structure &
Overview:

FerroTec GmbH

Owners:

Thomas Stefani

Mission /Business Model:

Production & Sales of grey iron castings through chill casting, for model making and prototype building

Markets & Customers:

Producer of breaking systems, pump manufacturer

Product Range:

Model making, mould making, casting, post-production

Employees:

50

Location(s):

Germany/ Lower Saxony/ Gifhorn

Infrastructure:

Spacious production hall (Owned) additional office spaces rented out

Process 1

Preparation

- CAD communication with customers
- Simulation of the cooling process
- In-house tool making
- In-house model construction
- In-house core production



Melting

- 2 medium-frequency crucible furnaces (year of manufacture 2006)
- 3 tons melting capacity per furnace
- Integrated load shedding control
- State-of-the-art process management



Chill Casting

- 4 Carousel centrifugal casting machines
- Fed by ladles (200 kg)
- Crane system
- Automated casting and fill level detection



Process 2

Heat Treatment

- 2 Continuous annealing Lines (Gas)
- Flexible heat treatment possible



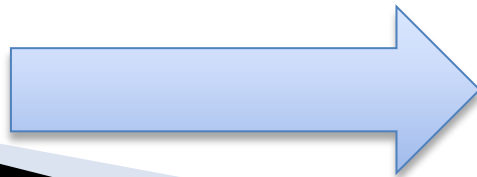
Post Production Inspection

- Fettling shop with various milling and grinding machines
- 2 CNC machining and milling centre per line
- Checking for freedom of cracks/ mechanical characteristics



Logistics/ Services

- Spacious logistics area
- In-house maintenance



Machinery park is in good condition
Redundant core systems available
No investment delay – even if revenue is doubled

Mixture

- Compiling the batches of raw iron, steel and additives.



- Accurate weighing on the crane scale.



Melting

- 2 medium-frequency crucible furnaces



- 3000 KG melting capacity per furnace.

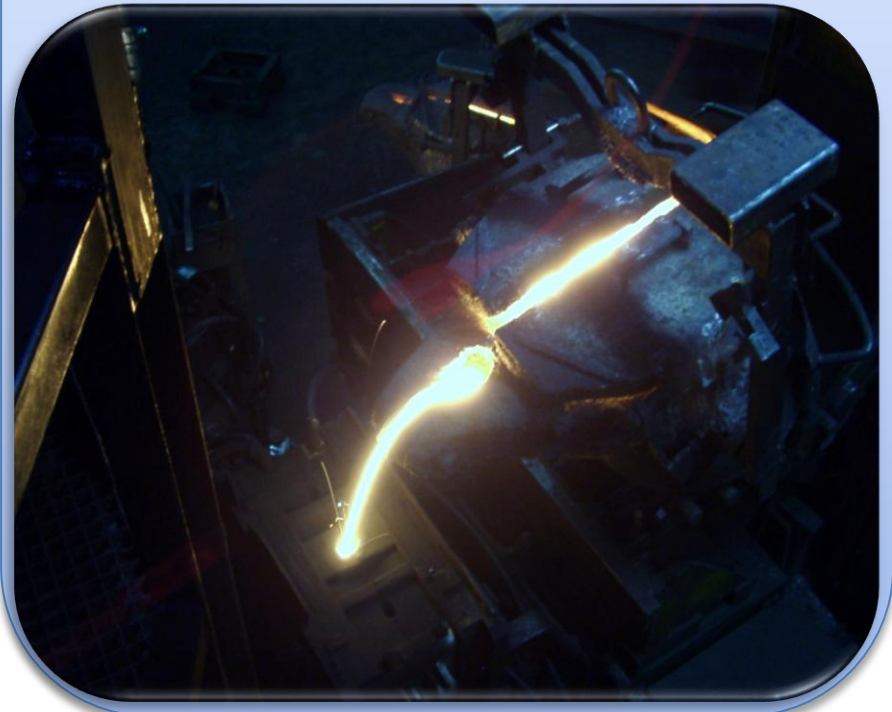


Casting

- Fully automated casting machine



- Up to 12 different components per casting carousel.



Core Production

- Fully automated core production machine



- production of different cores for easy and complex inner structure in castings



Sorting

- Sorting of the casting part number.



- Component weight between 100g and 10kg.



Annealing

- Heat treatment in the continuous annealing furnace to improve workability.

- After the disintegration of the perlite, a fast processing without cooling lubricants is possible with the material keeping its firmness.



Manual Cleaning

- Trimming and polishing of the components.



- Removing the mould partition planes, sprues and rises that were necessary in the manufacturing process.



Automatic Cleaning

- Two automatic grinding machines (Numerical Control).

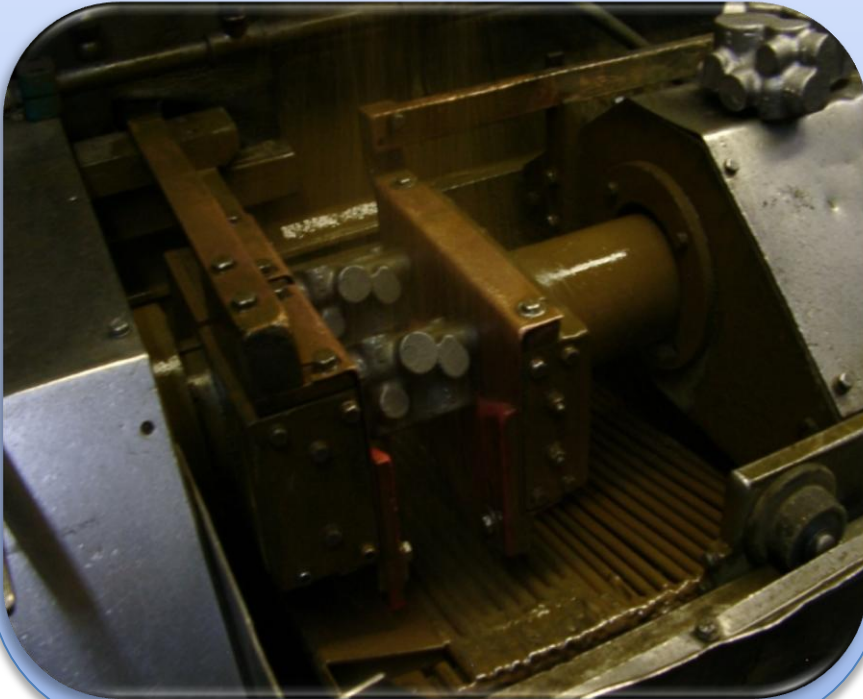


- Automatic grinding from the gates and the parting line.

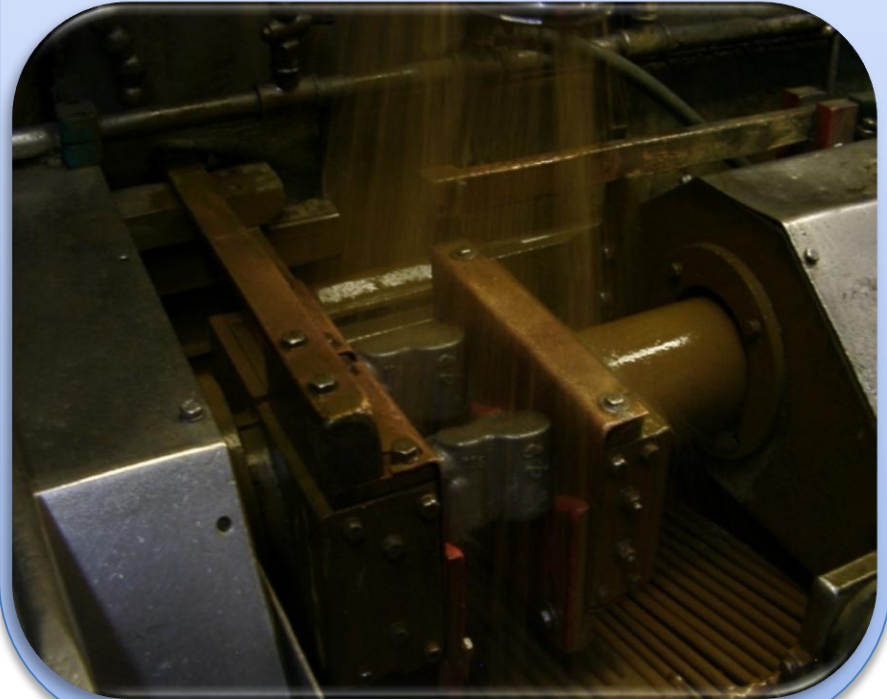


Crack Testing

- Magnetic particle inspection to ensure freedom from cracks.



- Showering the components with test liquid while magnetizing them, followed by a visual inspection under UV light



Control and Packaging

- Visual inspection of all components for casting or polishing defects

- Visual defect testing with use of control gauges.



Model and mould making

- Traditional mould making, using a wooden model, pattern modification and CO₂ sand core.



- Downstream processing of the blank moulds that were produced in-house.



State-of-the-Art Tool Making

- State-of-the-Art mould making with a CNC machine.



- Desired dimensions are achieved from the start.



Most Common Products

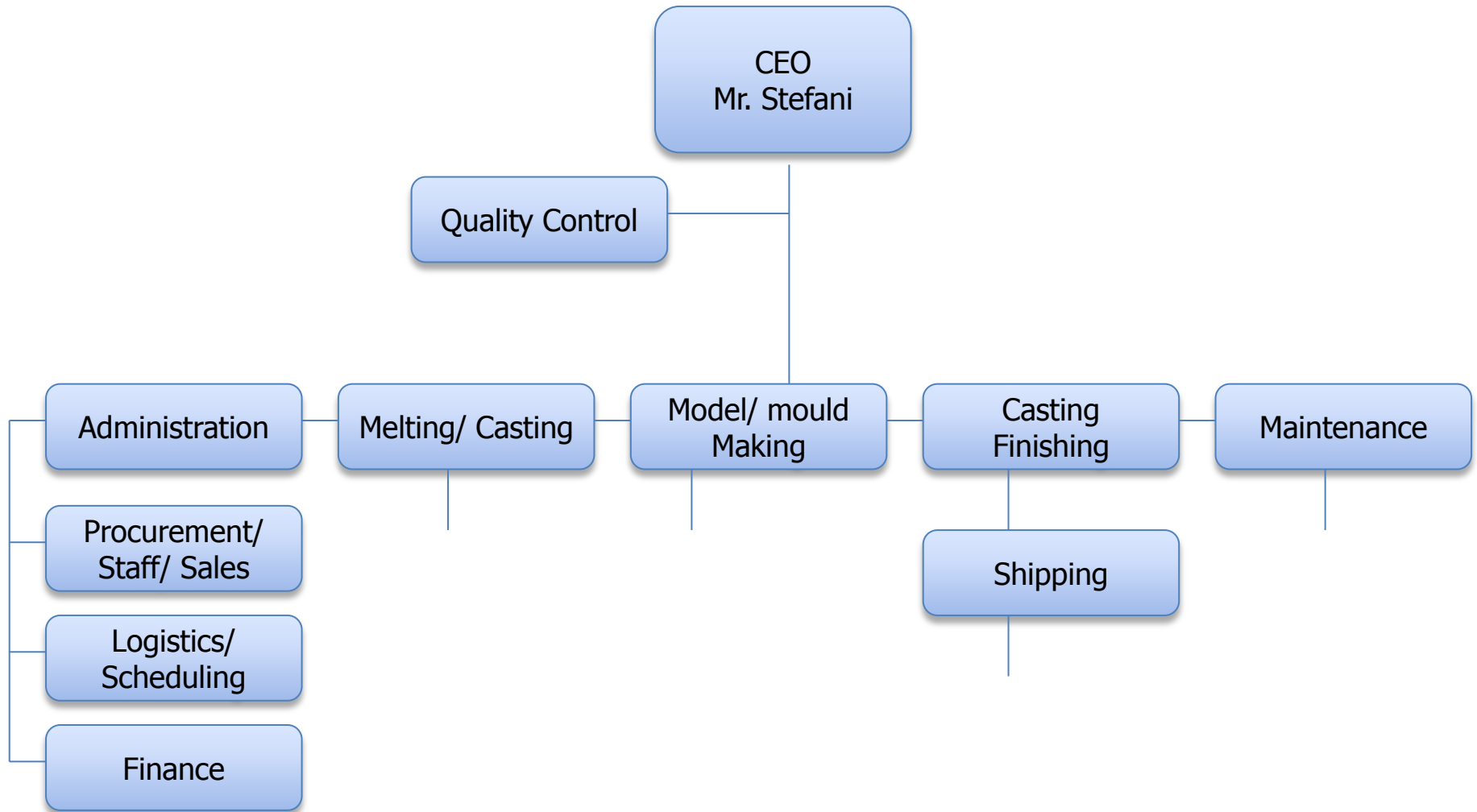
- THZ, wheel cylinders, pump housing, manifolds and brake pistons.



- Brake callipers and brake pistons.



Organization – Structure



Technology and Know-how

FerroTec has an extensive expertise in the following fields:

- Model Making
- Process planning to optimize mould making
- Melting and optimization of metal melting
- Heat treatment

IT Systems in the Company

- ▶ ERP: Planning and order management is done via the industry-specific program Timeline
- ▶ Logistic: Barcode-system, linked to the ERP system
- ▶ Accounting: The accounting was outsourced to DATEV
- ▶ Payroll administration: Manual entry and external settlement
- ▶ CAD: Customer drawings are processed with SOLIDWORKS
- ▶ Simulation: Integrated casting simulation
- ▶ CNC: Online interface for tools from CAD
- ▶ Measurement data: Online interface for tools from CAD
- ▶ Energy: Load monitoring with load shedding
- ▶ Office: Usual office toolset

GREY CAST IRON IN PERMANENT MOLD CASTING

Advantages:

- ▶ high machinability and cutting speeds because high structural density
- ▶ cooling from the milling tool not always necessary
- ▶ good wear resistance as well as good vibration damping
- ▶ good emergency running properties
- ▶ withstand greater load

GREY CAST IRON IN PERMANENT MOLD CASTING

Advantages:

- ▶ oil pressure and vacuum-tight
- ▶ Tensile strength 180–250 MPI (N/mm²)
- ▶ good degree of resistance against corrosion
- ▶ best polishability in annealed condition
- ▶ optimum uniform fine graphite formation

Customers

- ▶ Bosch
- ▶ Concentric
- ▶ Continental
- ▶ Carlisle
- ▶ Frenos Iruna Brake
- ▶ FTE
- ▶ LPR
- ▶ Samko
- ▶ Technodelta
- ▶ Wabco