

## *The present and the future*

...Over the past few years we have been building up the company in preparation for our new management team to take over, so they begin their term of office with strong foundations. This requires more than just keeping up with current foundry technology. It required GEMCO to stay ahead of trends in foundry technology and foundry design.

Already for some years we have aimed at providing added value for our customers. It is our goal to provide our customers with the tools and facilities to make money with their operations. We concentrate on building and making foundries as efficient as possible. We are part of a changing world in which foundries not only face a challenge to survive but also face many challenges to pioneer new territories and new markets.



From left to right:  
Johan van Gerven, Bas van Gemert and Jan van den Brand

With the new management team we are ready to assist our customers reach their targets. Our contribution ranges from consulting services, to engineering, project management and general contracting solutions that deliver guarantees on overall performances....

**Jan van Gemert**  
President

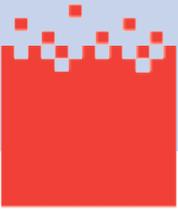
**Cast Metal Times**

### **In the Press**

Read all about Gemco's present and future:  
Only a few weeks ago we had the pleasure to receive Cast Metal Times in our headquarters in Eindhoven. The June/July 2004 issue of CMT features a personality profile on GEMCO

### **Also in this edition:**

New strategies  
Fighting the high costs of raw materials  
Going East  
Optimized performance  
Paderborn  
Pressure diecasting services  
Work in progress



# NEW STRATEGIES

## Georgsmarienhütte Holding GmbH

**Georgsmarienhütte Holding GmbH** is a network of more than thirty companies in Germany and Austria. The Georgsmarienhütte Group focuses on the main business areas:

- Raw materials recycling
- Steel
- Forging
- Casting
- Plant engineering and construction

With a workforce of about 8800 employees, the Holding has projected about 1.5 billion Euros for the fiscal year 2003. Within the castings group **Georgsmarienhütte Guss GmbH** (~2,200 employees, ~260 million Euro turnover) the automotive casting division operates three foundries with in total 1200 employees, a yearly production of about 110.000 t and a turnover of 160 million Euros. The product portfolio is wide and includes among others structural parts, gear and break parts as well as outlet manifolds, suspension components, hubs and axles for passenger cars, trucks and heavy machinery.

Walter Hundhausen GmbH operates two horizontal moulding lines. Main products are gear housings, axle and power train components and hubs.

Dieckerhoff Guss GmbH produces mainly exhaust manifolds, turbo



chargers and housings in grey-, SG-, CG-, SiMo- and Ni-Resist iron on a horizontal moulding line and a Disamatic line.

Harzguss Zorge GmbH operates a horizontal moulding line and produces among others cylinder heads, manifolds, gearboxes and structural components in the qualities Grey-Iron, SGI, CGI, SiMo and Ni-Resist.

**GEMCO/Knight Wendling** was asked to perform a potential analysis with different foci on each foundry. During the potential analysis, the strengths and weaknesses of the individual companies have been worked out, and on the basis of the existing equipment and installations, improvement proposals have been worked out, activities for the realization of the improvements have been described and the necessary investments have been defined and economically justified.

After accomplishment of the analysis, the realization will follow short-term probably also supported by Knight Wendling in specific areas.



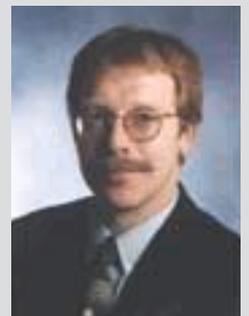
## DIESEL CYLINDER HEADS IMPROVEMENT

Earlier this year, **GEMCO/Knight Wendling** provided technical support for cylinder head casting production for Daimler Hyundai Truck Co., at the Daedong Foundry in South Korea. Both Daedong Foundry and DHTC work closely together and are determined to ensure that the castings reach European high quality standards.



Within the project, GEMCO /KW was asked to conduct a process analysis/audit, in which both strength and weaknesses were carefully observed and registered. The results were then complemented with measurements and recommendations in order to achieve the desired improved quality.

The production audit covered pattern shop, core shop, moulding and pouring, and the finishing area including the quality inspection.



*Wolfgang Wirth  
Dipl. Ing.  
Gemco/KW casting  
expert, delegation leader*

# FIGHTING THE HIGH COSTS OF RAW MATERIAL

When designing and engineering a foundry facility, GEMCO works with its clients on how to optimize productivity and make their facilities most profitable. One of the areas investigated is scrap processing and converting turnings into profit.

Casting manufacturers can be confronted with up to 50-60% of turnings or chips following the processing of a product. While the use of loose chips is not suitable for cupola furnaces, induction furnaces can generally introduce loose turnings or chips in quantities of up to 30% of the total charge. However, doing so usually involves higher slag levels and lower melting production, thus negatively affecting production efficiency.

It is possible to use more than 30% of loose turnings, but only when applying special charge technologies with low efficiencies, which is therefore not recommended. Excess loose chips generated from the machining process can either be sold as scrap or be compacted into briquettes externally. Another possibility is to install chip briquetters or a briquetting system - the latter already existing in some cupola furnace foundries.

**GEMCO** has researched how to optimize briquetting systems and the possibilities of chip melting and briquette melting, as well as the different processes for dry chip melting, dry briquette melting, wet chip melting, wet briquette melting, and combinations of these. Significant progress has been made in both foundry and briquette technology.

Although briquette melting is no longer restricted to cupola furnaces, its application is still relatively little used in combination with induction furnaces. In house briquetting can be especially interesting for foundry operations using induction melting and casting several alloys, some even in smaller series, where the products generate a high volume of turnings. The properties and quality of briquettes can approach those of solid scrap, thus allowing accurate dosing, increased melting production, improved quality, and overall optimized equipment utilization. At the same time, chip processing also enables recuperation of coolant and metal cutting fluids from chip compaction.

Chip processing systems for induction furnace equipped foundries may, therefore, be worth considering. For foundries that are in the planning stage it is certainly an added value. Additionally, implementation into existing foundries may only require a relatively small investment, which does not necessarily involve far reaching changes.



*In one of Gemco's current foundry projects a complete briquetting system will be integrated to function with the induction furnaces.*

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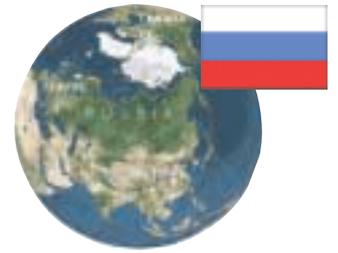
## **Gemco in the press**

Read the complete article with details on "loose chips vs briquetting" on pages 190-191 in the June 2004 issue of Foundry Trade Journal.



# GOING EAST

## Central and Eastern Europe of Growing Importance



On May 1<sup>st</sup>, ten new member countries joined the EU; together representing 60 million new citizens to the European Union. Eight of these new member states are in Central and Eastern Europe and will significantly contribute to Europe's economic and social development.

Already ahead of this memorable event, the activities of **GEMCO** in Central and Eastern Europe have been rapidly expanding. In the recent past, **GEMCO** carried out a variety of projects in Romania, Hungary, Czech Republic and Ukraine. Current assignments and project locations include Poland and the Russian Federation. The recent enlargement of the European Union creates new exciting opportunities. In addition to serving locally established foundries in realizing their investment, modernization or production/quality improvement intentions, **GEMCO** is also increasingly involved in the realization of turn-key foundry projects for foreign companies that want to make use of specific advantages such as a considerably lower production cost level in combination with a well-educated labour force.

A recent Dutch study on the production relocation intentions of the Dutch metal industry revealed that within the next five years more than 25% of all interviewed companies will seriously consider to invest in the set-up of production in Central and Eastern Europe or relocate at least a part of the production. More than half of the planned relocations shall lead to a replacement of capacity in the Netherlands; a quarter see the set-up of production in the emerging markets of Central and Eastern Europe as an extension of production capacity rather than a relocation. It shall however also be stressed that outsourcing to Central and Eastern Europe is not attractive or realistic for all companies.

More and more companies also consider the prospective economic developments in several Central and Eastern European countries as sufficient reason to move production facilities closer to these new markets with increased spending power. The automotive sector is a clear example of this trend.

**Gemco in the press** **ВЕДОМОСТИ**  
 on June 2nd. Russian daily business papers **KOMMERSANT** and **VEDOMOSTI** dedicated editorial space to Gemco's activities in the Russian Federation.





**GEMCO** is regularly asked by Central and Eastern European foundry companies to define the export potential for their specific castings production and advise appropriate market entrance strategies, as well as search for strategic foreign partners.

From concept to casting is the idea behind the activities of **GEMCO** in Central and Eastern Europe. An idea that is sustained by the comprehensive range of foundry consultancy, engineering and general contracting services and solutions **GEMCO** offers to the cast metals industry. Services range from finding suitable casting production capacity, facilities and partners in Central and Eastern Europe, acquisition recommendations, the formulation of sound and complete concept engineering reports with feasibility analysis, operating efficiency and casting quality improvement analyses, interim management in newly acquired foundries up to the relocation of existing foundry facilities to Central and Eastern Europe or the complete realization of greenfield foundry projects. The obvious benefits of this approach and ability to guide its clients through often complex investment, modernization and production improvement processes are clearly recognized by the a growing number of satisfied clients both in the countries in Central and Eastern Europe and Western Europe.



**Metallurgy-Litmesh, 24-27 May 2004:**

The increasing numbers and quality of both exhibitors and visitors of Russia's International Trade Fair for Metallurgy, Machinery, Plant Technology & Products, confirms Gemco's vision on how the Russian foundry industry and market will develop and will lead to a further concentration of activities in the Russian Federation, Ukraine and neighbouring countries.



*Alphons Wijnen at Metallurgy-Litmesh, 2004*

*For complete and detailed information on East European Business Opportunities and our Services, contact Alphons Wijnen, Area Director Central and Eastern Europe at: [A.Wijnen@gemco.nl](mailto:A.Wijnen@gemco.nl)*

# OPTIMIZED PERFORMANCES



**GRUPO QUIMMCO** is an industrial consortium based in Monterrey, N.L., Mexico with businesses in 3 main industry sectors:

- The Automotive Division produces front and rear axles and brakes for medium and heavy trucks, forged i-beams and crankshafts, precision-machined crankshafts, gray & ductile iron castings, aluminum castings, tractors and agricultural implements, and also the design and manufacture of foundry moulds and forging dies.
- The Chemical Division produces resins and other materials for the polyurethane industry.
- The Construction Division produces and sells pre-manufactured materials for the construction of industrial buildings. It builds and sells social interest habitation homes and recently it started with the manufacture of office furniture.



For its subsidiary **FORJA de Monterrey**, a heavy forging plant located in Escobedo, N.L., Mexico, **GEMCO** was asked to conduct a Performance Improvement Study.

**FORJA de Monterrey** is dedicated to the production of large forged automotive components, specifically front axle i-beams for heavy-duty trucks (Class 5-8) and crankshafts for large diesel engines, but is capable of producing other heavy forgings. The plant has an effective capacity of 24,300 metric tons of forged products per year. **Forja de Monterrey** presently employs around 160 persons. Its customers are ArvinMeritor, Axle Alliance, Sistemas Automotrices de Mexico, Mack Trucks, Volvo, RVI (Renault), International, and John Deere, among others.

In close cooperation with the group's management, current operations have been carefully evaluated, followed by an improvement potential assessment. In order to achieve optimized efficiency, accurate recommendations have been established.



*Presentation/meeting at QUIMMCO offices, Monterrey*

## Paderborn, Lost Foam Symposium & Designers day 2004



Participation in the event, allowed **GEMCO** to demonstrate its Lost Foam know-how and exchange experiences.

The event also provided the opportunity to introduce some of the company's latest developments in LF-equipment. Experience and intensive practice in LF's white side underlie the modular design of Gemco's new glue/assembly machine. The unique positioning system promotes accurate assembly of complex foam parts while significantly reducing manual transport.

Gemco's expertise in foundry design and product development can help customers avoid possible pitfalls.

More info: [Ir. Bart.Bruers@gemco.nl](mailto:Ir.Bart.Bruers@gemco.nl)



The combination of management, engineering and process know-how allows us to offer a comprehensive range of services to the cast metal industry, extending to complete foundry solutions. In the field of High Pressure Die casting, **GEMCO/KW's** scope of consultancy covers the complete added value chain including supporting areas:

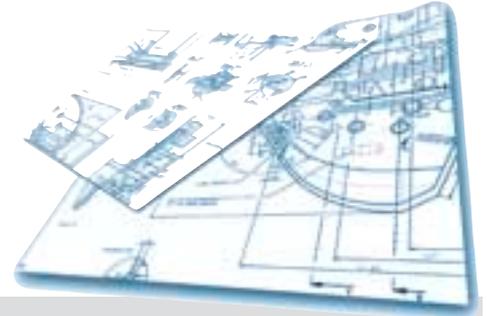
- ❑ **Design / Construction**
  - Maintenance
- ❑ **Raw materials**
  - Quality Assurance
- ❑ **Casting**
  - HPDC-dies
- ❑ **Mechanical Machining**
  - Clamping/Fixtures
- ❑ **Testing/Assembly**

Together with the clients a working approach and methodology will be defined and established:

- Analysis
- Optimization
- Concept and Implementation plan
- Implementation

### Example of Project tasks - High Pressure Die Casting foundries:

- Optimization of high pressure die casting-dies, punching, trimming and deburring tools, measuring and machining devices and fixtures, layout, procurement and implementing.
- Determination of technology required and support with machinery and equipment procurement - avoidance of bad investment., achieving planned return on investment
- Analysis and optimization of production parameters and cycles of conventional and automatic high pressure die casting cells - conception of tailor made robot-programs.
- Execution of projects targeting at reduction of die change time taking into account the die change preparation and other influencing areas. Establishing of planned timetables, planning and performing of education and training lessons.
- Application of REFA time and work-flow studies for determination of allowances and generation of planned time tables and calculation schedules.
- Workplace layout and system improvement projects for individual and group work places and also implementation of multi-workplace organizations.
  
- Optimization of production documents - parts lists, work schedules,...
- Market surveys, market entry strategies, and diversification strategies.
- Planning and realization of Greenfield and Brownfield projects.
- Training, coaching, interim management - target conversion



### IN THE PRESS:

*METALL*, specialized magazine for metallurgy, dedicated an article to Willi Pflitsch Metalldruckgusswerk GmbH new pressure die casting facilities in Whiel. It also refers to Knight Wendling's cooperation in the realization of this project. The article appeared in the June 2003 issue.





*Installation ladle*

## “work in progress”



Despite unexpected bad weather conditions GEMCO and CAMISA accomplished the realization of the building and facilities for liquid metal production and transport in the new production plant in Saltillo, Mexico.

The erection of the new building and equipment up to the first pour was completed within 5 months, allowing the customer to startup his first production of cylinder liners. Currently in progress is completion of commissioning and ramp-up the production.

A full report on the project in our following newsletter,



*First melt*



*Visit on site, from left to right:*  
 Eduardo Duclaud; Sinergia.  
 Pedro Ruiz; Conduxex.  
 Guillermo Gudiño; Camisa Foundry.  
 Daan van Heereveld; Gemco.  
 Mike Laisure; Dana Corporation.  
 Humberto Gutierrez; Grupo Carso and Grupo Conduxex.  
 Francisco Lopez; Camisa.  
 Ruben Rodriguez; Grupo Conduxex.  
 Jeroen Kanters; Conduxex Inc (USA).  
 Martin Cortez; Gemco Mexico.  
 Tim Sefrin; Dana Corporation.  
 Tom Neuslis; Dana Corporation.  
 Manuel Cavazos; Camisa.

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