

## **Aluminum cast iron displaces conventional grey cast iron and cast steel**

G.W.P. Manufacturing Services AG, Berlin February 3 2009

**Aluminum cast iron is increasingly replacing components made of grey cast iron, sintered cast iron or cast steel in many industrial areas. The Berlin manufacturing services provider, G.W.P Manufacturing Services AG, has been observing this trend for a considerable time, particularly in the area of mechanical engineering.**

G.W.P has been successfully producing mechanical metal and plastic components for many years for the mechanical engineering industry in accordance with the CAD data of the constructing industrial customers.

The benefits of cast aluminum become particularly important for lightweight structures. Using new aluminum alloys and the new optimized design possibilities (topology optimization, bionics, flow simulations), significant costs can often be saved as well as functional improvements. The lightweight design with bionically designed parts is particularly beneficial for cast parts as the extra time only occurs for the mould construction and not for the cast individual item. Thereby, aluminum cast parts combine high dimensional accuracy and strength characteristics with outstanding machining ability. The good electrical conductivity for EMC shielding for electronic components and the very high thermal conductivity for cooling fins etc. make aluminum the material in demand for mechanical engineering. The good resistance to weathering predestines aluminum cast parts for all parts in the outdoor area. However, the most important argument for producing grey cast iron components in aluminum is the weight saving of up to two thirds. Weight always causes costs, especially for moving parts. The substitution of cast iron or cast aluminum has proceeded a long way in the fastest industries such as vehicle and aircraft manufacturing. In the more conservative industries such as mechanical and apparatus engineering, costs saving potentials are often unused.

The benefits of cast aluminum:

- High dimensional accuracy
- Good strength characteristics
- Outstanding machining ability and different surface treatments are possible
- Short production times
- Weight saving of up to two thirds in comparison with parts made of cast iron
- Very high thermal conductivity
- Good electrical conductivity
- Resistant to corrosion and weathering
- Very cost-effective production, particularly in die-casting

G.W.P. manufactures cast aluminum parts using the die-casting, chill casting and low pressure die casting processes. Other processes for the production of aluminum parts are extrusion presses (extruded aluminum profiles), aluminum milled and turned parts and sheet aluminum machining.

PRESS RELEASE 03-Feb-09

The manufacturing services provider connects technological competence with sector experience in selected industries of his customers and provides technology consultancy before the production. G.W.P. operates a production facility for parts according to drawing in Zhongshan, China and due to the low-cost production of cast aluminum parts in the low-wage country, China, it can even provide competitive prices for small series. Particularly for special machine construction with small to medium batch sizes, the decision for an investment often only becomes possible in this way.

More information at: [www.gwp-ag.com/565](http://www.gwp-ag.com/565)

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## Brief profile of the G.W.P. Group

The G.W.P. Group comprises G.W.P. Manufacturing Services AG headquartered in Berlin (central office and sales), Fuwei Hardware Company Ltd. (production) in Zhongshan (China), and G.W.P. Manufacturing Services Ltd. in Hong Kong (Legal Representative).

As a manufacturing services provider for several different manufacturing processes, G.W.P. AG provides mechanical components according to the drawing made of metal and plastic. With its very broad production palette, G.W.P. offers industrial companies a wide range of components and assemblies from a single source. It focuses on tool-intensive production processes such as the die casting and injection molding of small and medium-sized series.

With an extensive line of engineering and development services such as technological consultation, CAD construction, industrial design, reverse engineering, feasibility tests, method adaptations, 3-D measurements and materials analysis, we accompany customers from the idea to the finished series.