Partnering for perfect packaging solutions

The following contribution profiles Emhart Glass, a genuine 'end to end' supplier of equipment, controls and parts to the international glass container industry, with an ongoing commitment to research and development.

The origins of Emhart Glass date back to 1912 when three entrepreneurs in the USA formed the Hartford-Fairmont Co, developing the first glass gob shearing and feeding device, the first plunger feeder, the first IS machines and the first double gob equipment. Becoming Emhart Glass in the 1950s, the organisation made its first overseas move with the acquisition of Aktiebolaget Sundsvalls Verkstader in Sweden. The following decades saw groundbreaking innovations in electronic controls, Total Inspection Machines (TIM) and the Vertiflow mould cooling system, culminating with the Next Generation IS (NIS) machine in 2000 and the acquisition of ICS Inex in 2007.

Today, the group is led by Martin Jetter, President, assisted by William Grüninger (VP Technical Services), Jeffrey D Hartung (VP Inspection) and Matthias Kümmerle (VP Technology) for the main business functions. With 14 offices in 10 countries, Emhart Glass is a genuine 'end to end' supplier of equipment, controls and parts to the glass container industry, with expertise in glass container forming, glass conditioning, gob forming, ware handling, cold end inspection, refractory parts and quality assurance. Turnover in 2009 was €202 million.

AUTOMATION SOLUTIONS

Emhart Glass is driven by a deeply held belief in glass as a packaging material of the present and the future. Its mission is to support customers in the quest for sustainable profitability, quality and increased market share in the packaging industry through its automation solutions.

The company's vision is a world with glass as a dominant and preferred ecological material, enabled by Emhart Glass as the leading technology provider. The slogan 'partnering for perfect packaging solutions' sums up organisation's approach perfectly.

MANUFACTURE ON THREE CONTINENTS

Manufacturing plants at Elmira and Owensville (both USA), Sundsvall and Örebro (both Sweden) and Johor Bahru (Malaysia) have all achieved ISO 9001:2000 quality certification, while Sundsvall, Örebro and Johor Bahru also hold ISO 14000 environmental certification.

The Elmira plant employs a total of 126 people, including 76 in manufacturing roles and boasts 6011m^2 of production space. Its focus is the manufacture of pioneering vision inspection machines and automated online testing laboratories, as well as spare parts, accessories and upgrade kits. The facility produces its own component parts and has its own production machine shop. It was here that Emhart Glass set up the manufacturing of its innovative FleXinspect system. FleXinspect offers a range of inspection functions in a single machine, with a future proofed, modular design that allows for simple expansion.

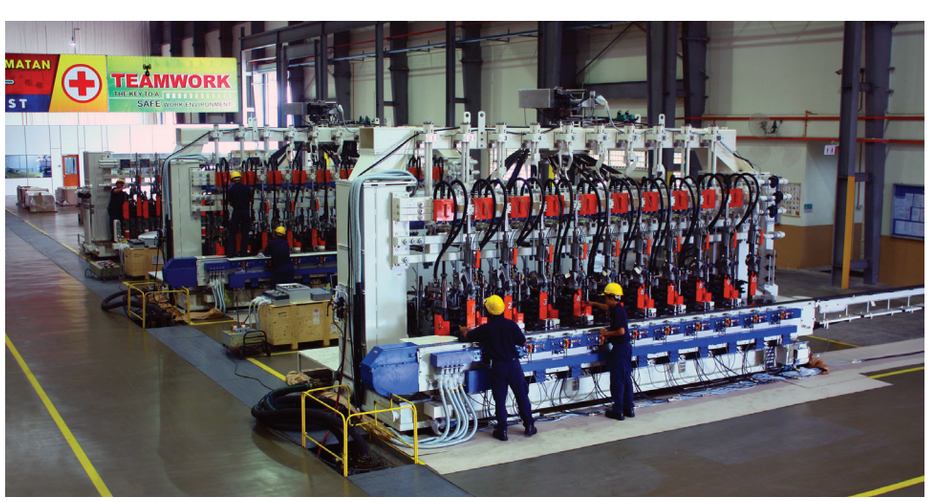
The Owensville, MO facility in the USA has been making high quality refractories since its acquisition in 1980 from the Laclede Christy Refractory Co. Together with its associated R&D laboratory, the plant employs 49 people, 33 of whom are directly associated with manufacturing.

The plant's experienced refractory craftsmen, supported by R&D and engineering professionals continuously strive to develop and provide the industry's widest range of refractory glass contact expendables. In-house expertise is further enhanced with expert technical support from the nearby Missouri Science & Technology University.

Emhart Glass' Swedish presence is the heart of the company's hot end logistics and manufacturing. The Sundsvall plant was originally founded in 1756 as a church bell foundry by Carl Jacob Linderberg, whose firm later diversified into motors and machinery, before becoming part of Emhart Glass in 1952.

Sundsvall covers an area of 24,000m^2 and employs 300 people. It focuses on the assembly and distribution of hot end equipment, from feeders through to ware transfer; up to 1000 IS, AIS and NIS sections are produced here each year.

Optimised drying technologies at the Owensville plant.



Machine assembly of Swedish sections in Johor Bahru.

High quality inspection machine production at Elmira.

Sundsvall is the site of the group's global parts warehouse and logistics centre, where an impressive 18,000 accessories and spares are stocked, ready for rapid despatch to clients around the world. It is also home to the group's hot end training facility, where clients can access hands-on training in any of 12 languages.

The second Emhart Glass facility in Sweden, at Örebro, meets the challenge of making the 20,000 high quality components that go into every Emhart Glass machine. This fully automated plant includes 40 CNC machines, running around the clock and is designed using a cell layout that brings together all stages of manufacturing in one location, ensuring rapid throughput and maximum quality. In November 2010, the company announced a €2.1 million investment in machining centres for Örebro, marking the beginning of a five year investment programme

In addition, Emhart Glass offers machine repairs, which are handled in Sundsvall and from a specialised workshop in Italy. Johor Bahru is the most recent addition to the company's manufacturing setup, having been completed in 2009 to replace an existing Malaysian facility. This plant covers a total area of 6073m^2 and focuses on the assembly of new IS machines and cross conveyors, plus the fabrication of welded parts; 34 IS machine have been assembled in Malaysia since 2007. However, machine sections and mechanisms are still produced at Sundsvall for assembly in Johor Bahru. The plant employs 67 people in total, 25 of whom are in manufacturing.

R&D FOCUS

Emhart Glass' most significant R&D investment of recent years is its Research Center at Windsor, USA, built for an investment of around €18 million and opened in 2007. Via this facility, the company has taken its hot and cold end R&D to another level, focusing particularly on improving the strength of glass containers, as well as helping to develop knowledge across the glass industry as a whole.

The Research Center includes a complete production line for the manufacture of glass bottles, meaning that developments can be tested in a true industrial environment. Researchers can see how real world challenges such as furnace variations, glass property changes and cooling wind fluctuations will affect their innovations. The facility makes it much quicker for the company to create, test and market innovative solutions, while also functioning as an important venue for trials, benchmarking and training (in-house and also for clients).


Örebro's automated production cell.

Currently, an important area of innovation at Windsor is Closed Loop Control. Although many measurement and monitoring devices are available to glass container manufacturers, high speed production still depends on key process conditions (such as cooling wind timing) being adjusted manually by highly experienced operators. Emhart Glass now offers systems that encompass manufacture, control and monitoring, opening up the possibility for a completely integrated, automatic or 'closed loop' system. A prototype has been developed that integrates the FlexIS Control System and TCS Temperature Control System on an Emhart Glass NIS machine, automatically adjusting blank mould cooling to maintain a preset temperature. Initial tests show promising results in terms of product quality and reduced numbers of rejects and a commercial version is under development. ■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ABOUT THE AUTHOR:
Marlen Debrot is Marketing Communications Manager at Emhart Glass

FURTHER INFORMATION:
Emhart Glass, Cham, Switzerland
tel: +41 41 749 4200
email: webmaster@emhartglass.com
web: www.emhartglass.com