



# Hot end manufacturing takes pride of place in Sweden

Emhart Glass, one of the world's leading international suppliers of equipment, controls and parts to the glass container industry, operates two factories in Sweden – one in Sundsvall and one in Örebro. Both factories form Emhart Glass Sweden's principal manufacturing centre for hot end products.

Emhart Glass offers expertise in glass container forming, glass conditioning, gob forming, ware handling, cold end inspection, refractory parts and quality assurance, as well as training and maintenance services. Headquartered in Cham, Switzerland, Emhart Glass has 15 facilities in 11 countries around the world. The company's vision is a world with glass as a dominant and preferred ecological material, enabled by Emhart Glass as one of the leading technology providers. The Emhart Glass mission is to support customers in their quest for sustainable profitability, quality and increased market share in the packaging industry through automated solutions.

Emhart Glass has recently acquired a new hot end production facility in Malaysia which will serve clients in Asia and carry out the assembly of new IS machines and cross conveyors, as well as the fabrication of welded parts. Cold end (inspection) machines are produced at Emhart Glass' facility in Elmira in the USA.

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## Emhart Glass Sweden

Emhart Glass Sweden is the company's principal manufacturing centre for hot end products. It operates two factories situated in the medium-size towns of Sundsvall (400km north of Stockholm) and Örebro (200km west of Stockholm).

The Sundsvall plant, which covers an area of 24,000m<sup>2</sup> and employs 300 people, focuses on the assembly and distribution of hot end equipment from feeders to ware transfer. The Örebro plant covers 12,000m<sup>2</sup> and makes parts for assembly at Sundsvall; it employs 170 staff.

As well as a globally distributed sales organisation, Emhart Glass has established several training centres for both its hot end and cold end offerings. Recently the company has opened a new hot end training centre at the Sundsvall site, replacing the previous training facility. The new centre will offer hands-on training in the operation and maintenance of all the company's recently introduced products, including feeders, NIS machines, AIS machines and IS machines. Training is available in any of up to a dozen languages.



### First steps overseas

Emhart Glass was originally founded in the USA in 1902. In 1924 the company created the first individual section (IS) machine, following up with innovations in paste-mold and double gob equipment during the 1930s and 1940s. After World War Two, the company was eager to enter the European market and start production outside the US. It saw the ideal opportunity in the acquisition of Swedish company Sundsvalls Verkstäder, which became part of Emhart Glass in 1952.

Sundsvalls had a long manufacturing tradition dating back to 1756 when it started life as a foundry manufacturing church bells and chandeliers. In later years the company supplied sawmill equipment, ball bearings and equipment for the cellulose industry machines. Following acquisition, the newly renamed Emhart Glass Sweden focused on manufacturing IS machines and in due course the group's Swedish division became its main resource for IS machines.

### Plants and processes

Sundsvall is the main centre for the construction and testing of new IS, AIS and NIS machines, as well as the assembly, testing and delivery of section frames. Nowadays, complete sections are usually replaced rather than being repaired in situ, although the company does still carry out some repair work 'in the field'. Recently, Sundsvall introduced a new assembly line for section frames that is capable of producing four frames a day: the aim is to produce 1000 section frames during 2008.

Parts required at Sundsvall, as well as spare parts for existing machines, are either manufactured at the company's Örebro plant or sourced through qualified, carefully selected suppliers. Örebro is a modern machine shop with a wide range of state-of-the-art equipment arranged in cell layouts that allow all stages of manufacturing to be carried out in a single location. This setup ensures rapid throughput while also guaranteeing the highest levels of quality.

Quality has always had the highest priority at both Sundsvall and Örebro and production processes at both plants have been certified under ISO 9001 since 1993. In addition, both plants hold the ISO 14001 environmental certification.

### From Sweden to the world

Machines, accessories and parts are supplied from Sundsvall to customers all over the world. The plant is the site of Emhart Glass' global parts warehouse, with 18,000 items in stock; the most frequently required parts are always held at the warehouse ready for immediate despatch.

Emhart Glass aims to compete not only on quality and price, but on time too. The company puts significant effort into ensuring that parts are distributed to customers around the world whenever they are needed. Parts service is available 24 hours a day, seven days a week. Approximately two million spare parts are shipped each year.

### Lean philosophy

In 2006 Emhart Glass decided to introduce the new Emhart Production System which is based on the Lean manufacturing philosophy. Originated by Toyota, the

Japanese automotive manufacturer, to improve its own production methods, Lean is now used by forward-thinking companies around the world to reduce waste, improve efficiency and serve customers better. It focuses on areas including avoiding mistakes, preventive maintenance, just-in-time sourcing, effective delegation and working with suppliers. To achieve continuous improvement and reduce the incidence of defects, the company also uses the Six Sigma method.

For Emhart Glass Sweden, implementing Lean has involved a transition from batch-assembling section frames to making them one by one. This brings problems to light much more quickly, as well as introducing more variety into the working day and allowing new staff members to be trained more rapidly. Last but by no means least, Lean has resulted in a real improvement in terms of quality.

On the environmental side, the Sundsvall plant has reduced its annual district heating consumption by 1,500Mwh or 40% since January 2005. Emhart Glass invested €321,898 in energy saving measures such as replacing old aggregates and installing time controlled ventilation. The investment paid for itself in less than three years.

### Employee development

Emhart Glass' Swedish employees represent a high-performing mix of youth and experience. The company

draws on a wide range of specialised disciplines and professions to deliver its high quality products, ranging from engineering and manufacturing through to logistics, sales and quality control. Emhart Glass prides itself on offering the best knowledge of glass container machinery available anywhere in the industry.

Equipment for glass container forming is becoming ever more sophisticated and technically advanced. In order to continue to meet customer expectations, Emhart Glass offers a wide range of theoretical and practical training at its newly renovated facilities in Sundsvall.

Swedish people put a high priority on finding permanent employment and education plays a central role in society. Young people in Sweden aspire to find jobs that will be enjoyable, fulfilling and constantly evolving. To make that dream come true, they study English and other languages from an early age. Both Sundsvall and Örebro are university towns and students from both institutions frequently co-operate with Emhart Glass – in some cases they go on to work for the company too.

#### \* Emhart Glass Sweden

Website: [www.emhartglass.com](http://www.emhartglass.com)



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