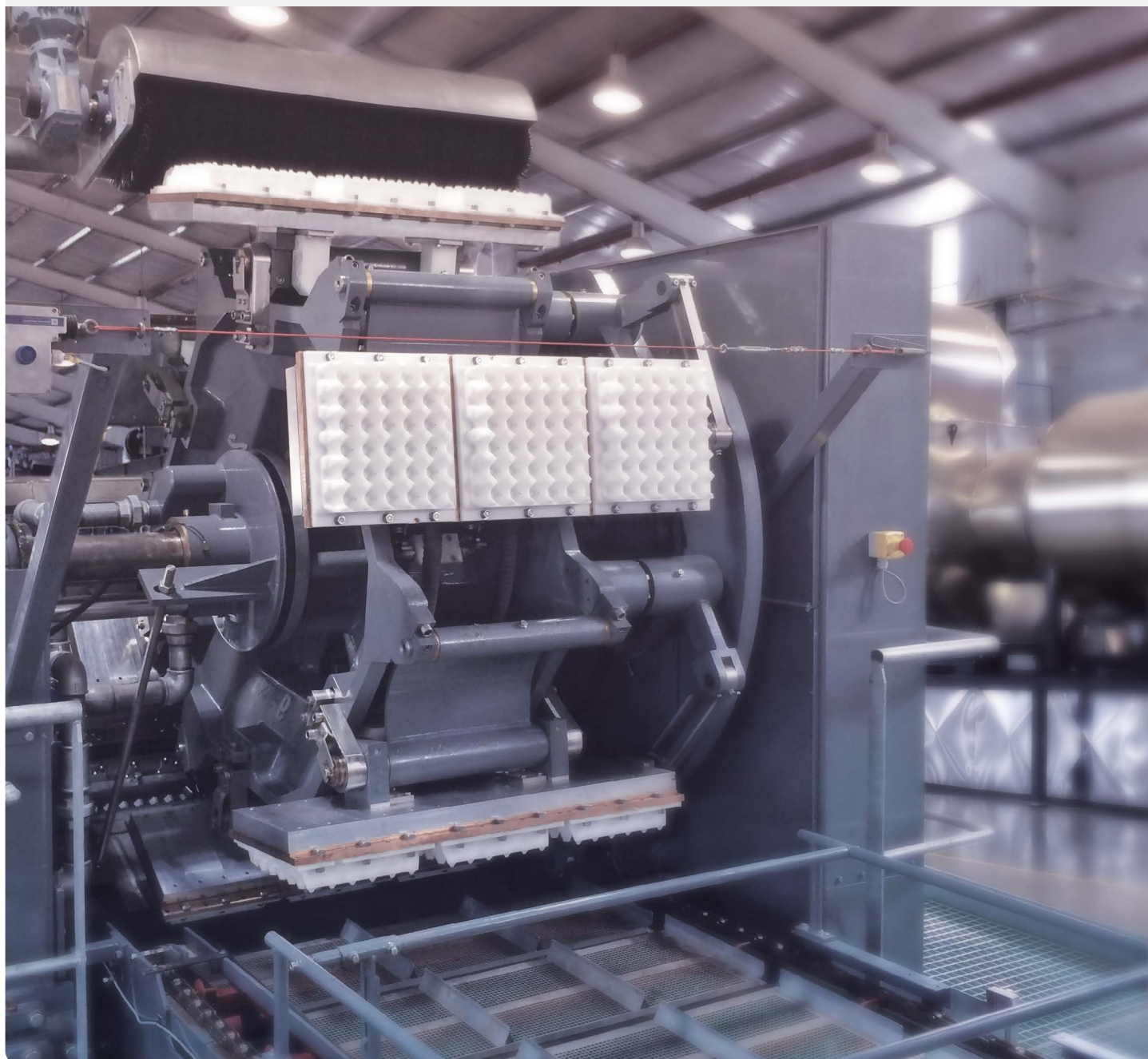


# Think Hartmann Technology

Complete solutions for production  
of moulded fibre packaging



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100 years at a glance

Hartmann is the world's leading manufacturer of moulded fibre egg packaging, a market leading manufacturer of fruit packaging in South America and one of the world's largest manufacturers of machinery for the production of moulded fibre packaging. Founded in 1917, Hartmann's market position builds on its strong technology know-how and extensive experience of moulded fibre production dating back to 1936.

Markets



Hartmann's egg packaging is sold globally. Our key markets are Europe, South America and North America, where Hartmann has strong market positions. Hartmann is a market leader in Europe and South America, where our product portfolio also includes fruit packaging. Hartmann has a small, but growing share of the North American market. Hartmann's technology, including machinery and services, is also sold globally.

Sustainability



Sustainability and protection of the environment are integral components of Hartmann's business model and strategy. All Hartmann products are based on recycled paper, which is a renewable and biodegradable resource. Working closely with our customers to accommodate demand for sustainable products in the retail industry, Hartmann was the first manufacturer to offer both FSC-certified and CO<sub>2</sub>-neutral retail packaging.

Products and customers



Hartmann sells egg and fruit packaging to manufacturers, distributors and retail chains, which are increasingly demanding specialised marketing expertise. Our comprehensive product portfolio is customised to accommodate customer and consumer needs in each individual market.

Hartmann's technology and related services are sold to manufacturers of moulded fibre packaging.

Production



Hartmann's production platform consists of 12 factories in Europe, Israel and North and South America. Our deep technology knowhow and extensive experience in manufacturing moulded fibre packaging form the basis of the establishment, development and maintenance of our production platform.

Each year, the Group's 2,000 employees manufacture billions of moulded fibre packaging units.



# Moulded fibre technology

Hartmann is a world market leader in the design, engineering and implementation of moulded fibre production technology.

The machinery of Hartmann Technology responds to the needs of today and anticipates those of tomorrow!

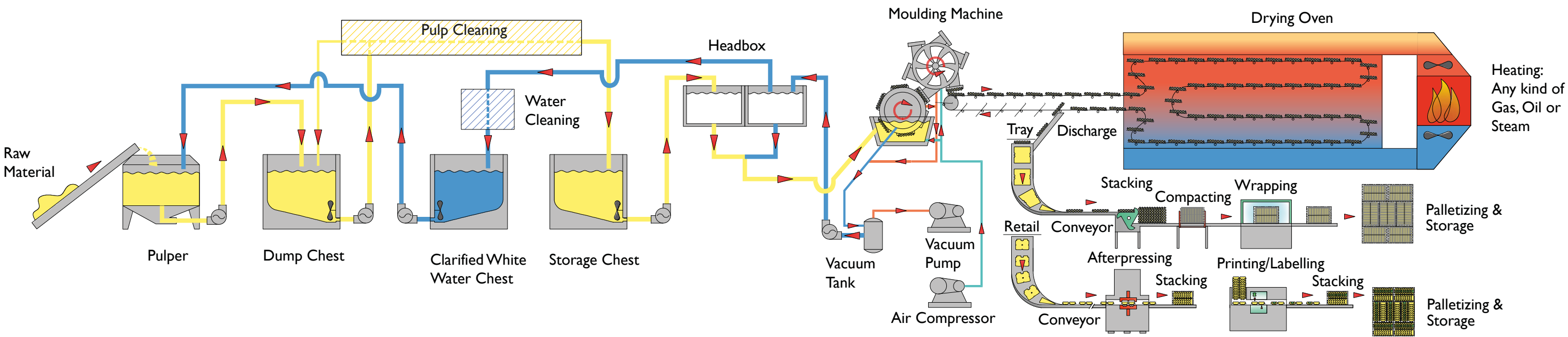
For more than 70 years, Hartmann Technology has designed and built moulded fibre production lines

and equipment for the Group's own companies and for packaging producers around the world. Over the years, we have manufactured more than 150 production lines, and most of them are still in operation in more than 40 countries worldwide.

As a customer, you will benefit from a state-of-the-art moulded fibre technology platform comprising complete production lines, moulds, tooling and spare parts, as well as a comprehensive service concept and technology support.



## Production process





# Moulded fibre production

Hartmann's supply range starts with the raw material processing (pulping and pulp treatment), and spreads throughout moulding and drying to aftertreatment and product packing.



### Complete pulp preparation system

- low, medium and high-consistency pulping
- full range of pulp and water cleaning facilities
- all chests with agitation
- pumps, incl. consistency control
- complete vacuum and compressed air system

### Moulding machine

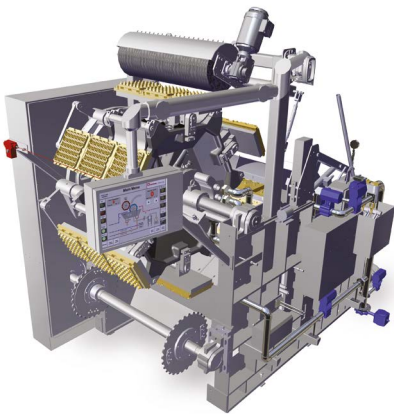
Hartmann double-rotor moulding machines ensure maximum mould utilisation and high production efficiency.

Our machine portfolio is continuously being developed and improved based on many years' of experience and feedback from our own production sites as well as from our worldwide customers.

Quality and reliability have always been given pride of place together with low energy consumption, high efficiency, and low production costs.

### Models available

MMI 434	5 t / 24 hrs
MMI 144	7 t / 24 hrs
MMI 396	10 t / 24 hrs
MM0420	15 t / 24 hrs
MM0580	27 t / 24 hrs



### Drying system

The Hartmann multilayer dryers have a high airflow, energy efficient operation and provide an excellent product quality.

The dryer can be designed for all fuel types.

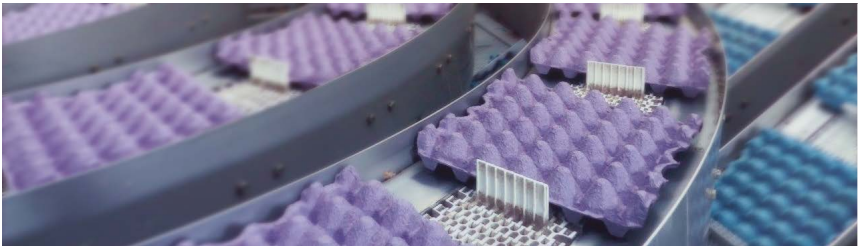
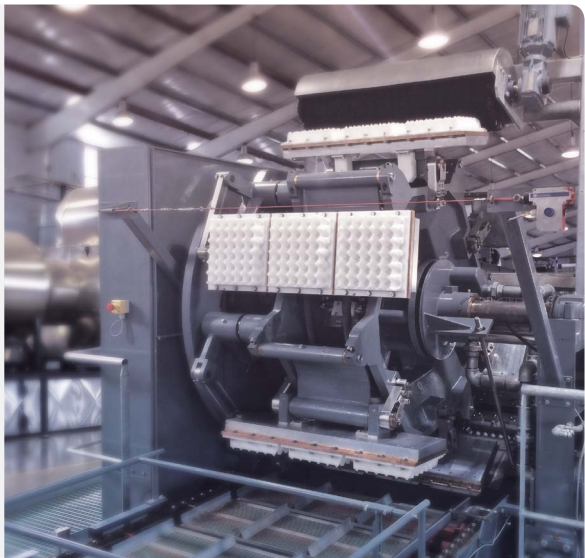


# Egg tray production

Hartmann's double rotary, fully automatic production lines are designed for continuous operation and medium/high volume, trouble-free production of egg and fruit trays. Optimised production processes are ensuring smooth operation, optimal consumption and reduced manning, which are key drivers to keep the operation costs at a minimum.

### Capacities available

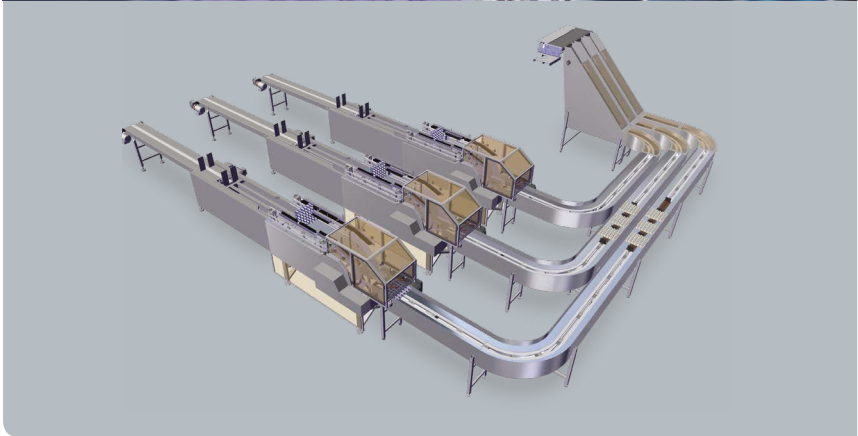
MM Types	Capacity/hour	Capacity/annum
MMI 434	3,600 eggs trays	27 million pcs
MMI 144	4,800 eggs trays	36 million pcs
MMI 396	7,200 eggs trays	54 million pcs
MM0420	11,700 eggs trays	87 million pcs
MM0580	19,500 eggs trays	146 million pcs



### Stacking and packing

Hartmann's new high speed, high efficiency stacking system has been designed for handling of egg trays and fruit trays.

Automatic egg tray counter, adjustable bundle separator and compacting units are built into each lane, securing minimum manual handling.





## Retail egg carton production - afterpressing

Hartmann provides fully automatic, in-line afterpressing systems and high speed printing and/or labelling lines for the production of retail egg cartons (closed boxes with lid).

Retail egg cartons are used for selling smaller quantities of eggs in supermarkets.

Bright and colorful products with attractive decorations ensure consumer attention.

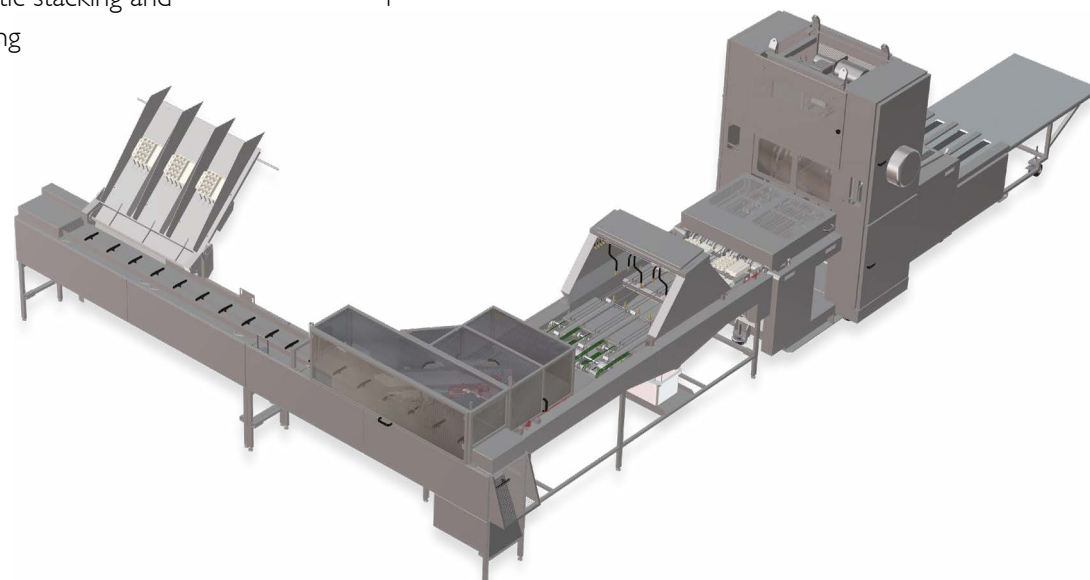


### Afterpressing

The afterpress line gives the egg carton:

- an attractive appearance
  - a smooth surface needed for printing/labelling
  - high product stability and uniform shape needed for automatic stacking and denesting
- The afterpress line is a complete system, handling the egg cartons as they are tipped off from the drying oven carriers after the drying process, until they are stacked after the afterpress.

Hartmann afterpress systems are designed to operate both in-line or off-line with Hartmann moulding machine/drying oven and fully synchronized.



## Retail egg carton production - printing / labelling

### Printing / labelling

Hartmann printing / labelling lines are used for the final decoration of the retail egg cartons, always customised according to local requirements:

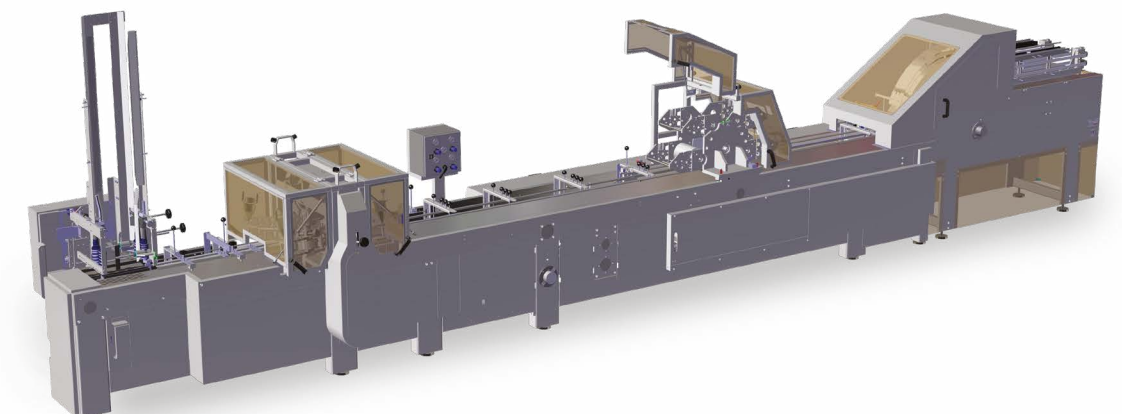
- printing only
- labelling only
- both printing and labelling

Inside printing is always optional.



The printing units are based on dry offset technology and print the products at a speed of up to 300 units/min.

The label unit is based on wet glue labelling principles, and labels the products at a speed of up to 150 units/min.





## Mould programme

Hartmann moulds and tools ensure efficient production of moulded fibre packaging of the highest quality.

### World-class precision and performance

Hartmann Technology offers you a large variety of moulds for production of traditional moulded fibre packaging.

Hartmann's design and product

functionality meet the requirements throughout the supply chain, from beginning to end.

Full-scale production tests together with full-scale logistics performance tests ensure the world-class Hartmann standard for

our customers.

### Unique patented design

Hartmann moulds and tools are unique and patented in relation to both design and performance, giving you excellent production advantages.



### Egg trays

You can choose from a large variety of traditional and innovative egg tray moulds, designed for maximum egg protection, high stability and easy handling.

All tray types are designed, manufactured and tested at our own production facilities, and they can run in all packing and grading machines.

### Retail egg cartons

You can choose from a selection of egg carton moulds for 10, 12, 15, 18, 2 x 4 and 2 x 6 eggs.

You can choose between nine sizes of flat-top carton moulds for labelling with compelling POS messaging, or between seven different sizes for direct printing on the carton.



### Other products

In addition to egg trays and egg cartons, we can offer you a wide range of moulds for other products including apple trays, berry trays, melon trays, hospital bowls, etc.



## Customer support and services

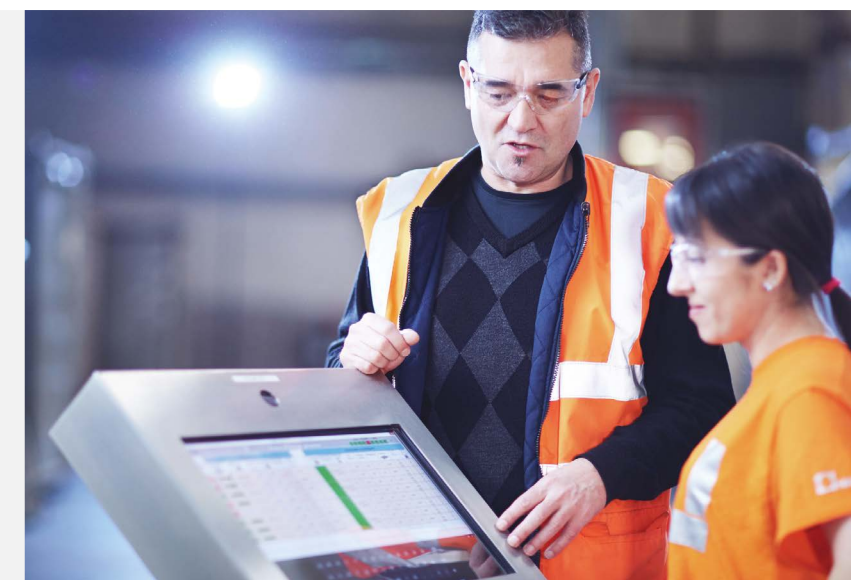
You can depend on Hartmann as a partner who finds the best solutions for your particular needs.

### Customer support

Hartmann Technology provides all-round support to customers through long-term relationships and agreements.

Hartmann Technology attaches great importance to a close dialogue with our customers.

Hartmann Technology aims at obtaining highest performance and efficiency at our customers' sites.



### Customer services

Hartmann Technology offers a wide range of services related to:

- process, operation and R&M
- technical reviews and updates
- trouble-shooting: on-line and on-site
- spare parts supply
- benchmarking & knowledge sharing
- customer service programmes/ agreements



## Contact

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