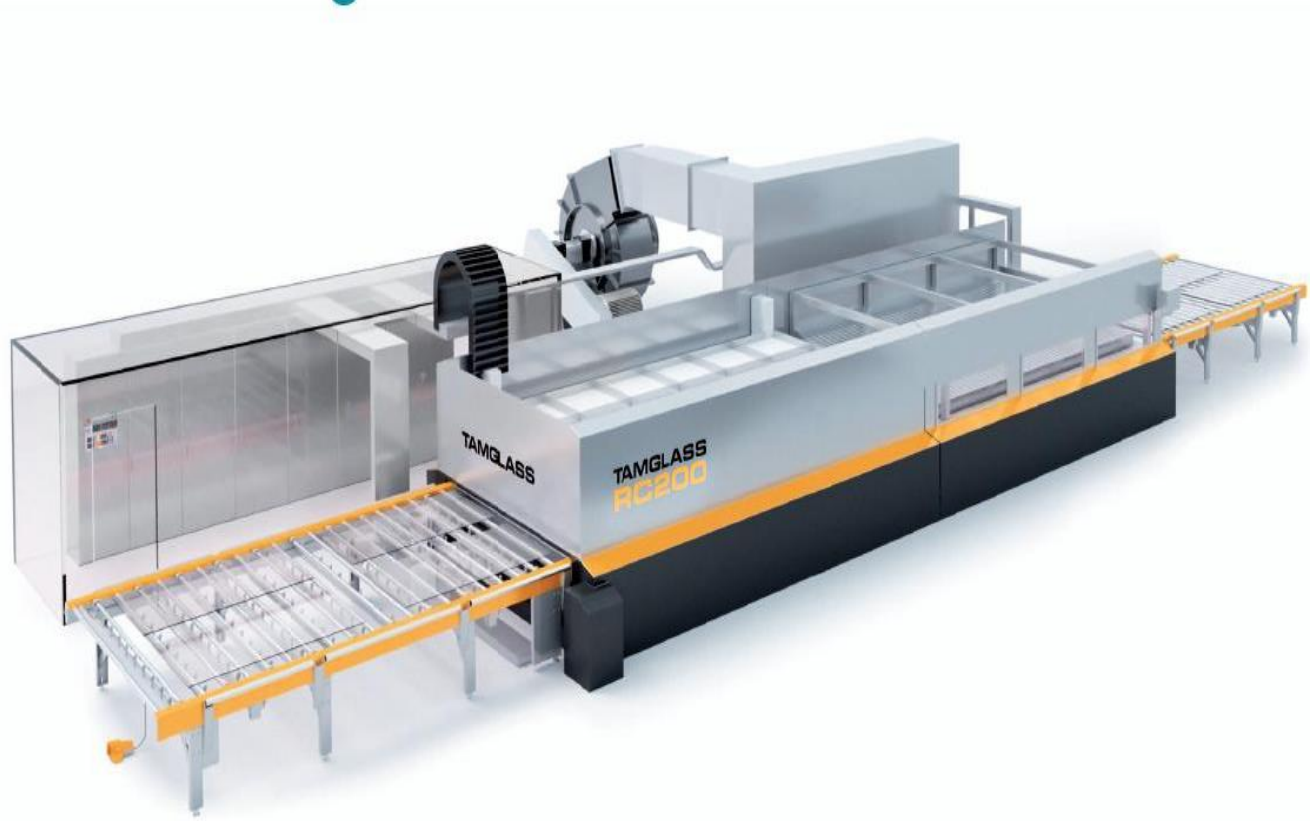
Glaston Solution for You

RC200™ – Decreasing costs with intelligent technical solutions



1. Glaston

1.1. General

Glaston is a global company developing glass processing technology for architectural, solar, appliance and automotive applications. Our portfolio ranges from pre-processing and safety glass machines to software solutions and services. We are dedicated to our customers' continued success and provide services for all glass processing needs with a lifecycle-long commitment in mind. For more information, please visit www.glaston.net.

Through vision, innovation and cooperation — we are changing the way the world sees glass.

1.2. Pre-Processing

Glaston's Pre Processing business area is specialised in serving glass processing customers' needs for grinding, cutting, drilling, seaming technologies as well as for CNC working centers and diamond and polishing tools. Providing the glass industry with high quality and cost effective solutions through its wide range of products and services, Bavelloni brand is able to guarantee higher productivity and good profitability level to glass operators.

1.3. Heat Treatment

Glaston's Heat Treatment business specialises in serving our glass-processing customers' needs under the trademark of Tamglass and Uniglass with regard to glass tempering, bending and laminating. Our wide product range and long experience of the heat treatment process is an advantage unrivalled in the industry.

For over 40 years, Glaston has led the development of glass tempering technology. Our experience in new innovations and solutions represents the state-of-art in the field, and has resulted in more than 200 international patents.

- Glaston has supplied over 2,300 flat tempering lines to customers worldwide, including all leading glass manufacturing companies.
- The extensive customer service network of Glaston units provides local and quick assistance to our clients.
- All technical solutions are tested in actual production conditions at our safety glass production facility. Our customers can see the benefit of trouble-free, reliable operation right from the beginning.

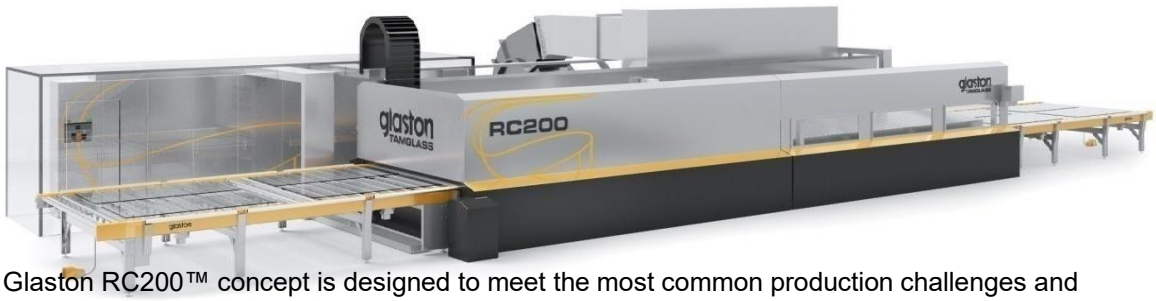
Glaston is a sound and growth-oriented technology company, listed on the Helsinki Stock Exchange's (OMX) Small Cap List. For more information about Glaston, please visit www.glaston.net.

2. Glaston Flat Tempering Furnace RC200™

2.1. System description and benefits

The most important prerequisites for a good final product from a horizontal tempering furnace are uniform heating of the glass sheets in the heating oven, uniform quenching and cooling of the glass, and a reliable transport system.

The above requirements must be met for all glass sizes, glass thickness and glass types. This can only be fulfilled with an exact combination of technical concepts, materials, control systems and process knowledge.



The Glaston RC200™ concept is designed to meet the most common production challenges and bottlenecks in companies that are expanding their glass processing into tempering. The RC200™ is an advantageous result of our elaborate studies in the field combined with Glaston renowned knowhow and decades of experience.

The RC200™ provides an economically efficient, yet high quality and user-friendly alternative for flexible glass processing. Its three most valued properties are:

- Low operating costs in continuous production
- Ease of use with highly automated features
- Spotless glass quality and uniform iridescence pattern with the new Glaston Vortex™ convection system

All these features, together with Glaston renowned process know-how and global service network are now incorporated into an affordable package with a quick payback time.

AFFORDABLE RELIABILITY - Low operating costs with constant production
The Glaston RC200™ process reliability with minimized down-time and high yield is a result of Glaston's process knowledge, furnace design, local service and preventative maintenance program, CARE.

- Low operating costs together with continuous line throughput
- Intelligent quench solution to decrease energy consumption
- Constant capacity, no additional delays!
- Guaranteed worldwide customer network and spare part availability for entire life-time of the equipment

SPOTLESS QUALITY - The new Glaston Vortex™ convection system
Most typically, flat tempering end product quality challenges are caused by an inefficient heating system where heating and convection control is limited. Ineffective control of convection causes glass bending in the heating stage which, in turn, causes an optical defect in the center of the glass. The Glaston Vortex™ convection system provides the best heating control in its class.

- The new Glaston Vortex™ convection system with evenly distributed convection blow and advanced pressure level control during heating cycle
- Minimized temperature differences and iridescence effect
- Advanced heating control with individual heater firing percentage
- Longitudinal heater control enables efficient heating profile

EASE OF USE - Includes cutting edge automation system, iControL Dynamics™
A well-designed automation system and easy-to-use user interface are top priorities in today's flat tempering production. Top-of-the-line iControL Dynamics™ automation system includes the latest developments in the machine automation.

- The Glaston RC200™ includes the next-generation automation system, iControL Dynamics™
- Developed in cooperation with glass producers
- Ease of use with simple, yet great looking graphical appearance
- Enhanced user friendliness with a touch screen (22 inch) and multilingual user interface

2.2. Standard features

The RC200™ includes the following performance enhancements as standard:

Vortex	**Glaston Vortex™ convection system** The RC200™ includes Glaston Vortex™ convection system with efficient nozzle distribution for better end product quality. It also enables incremental adjustment of convection pressure during heating cycle for energy efficiency.
iControL Dyn	**iControL Dynamics - cutting edge automation system** iControL Dynamics™ is a cutting edge automation system that incorporates the latest development in machine automation together. It includes the best usability features in the industry in order to make the furnace operation easier than ever.
Remote	**System for remote control** Remote system enables swift support and reaction time in problem situations. Remote support with Glaston CARE system guarantees the availability of the furnace.
BMON	Blower vibration monitoring system with preset vibration limits to enable predictive maintenance of blowers.
S1	**Inverter controlled blower motor** Energy efficient tempering system up to 19 mm tempering with frequency converter
L	**Lifting table for loading and unloading conveyors** Lifting table in loading and unloading area for easier handling of big glass sheets.
Drive	**Independent drive system** Glaston RC200™ advanced belt drive system and its loading/unloading, furnace, and quenching/cooling sections are individually controlled to provide fewer marks, optimized oscillation speed and minimized cycle time.
SO2i	**SO2 interface system.**
SV	**Installation supervision and training**

2.3. Options

The optional property enhancements for the **RC200-2136** can include the following:

Product	Product Description
380	Blower system for tempering down to 3.8mm acc. to EN 12150 and ANSI Z97.1
BB	Battery back-up system to empty the hot glass from the furnace in case of power failure
CARE	Service Agreement for one year
HS10	Heat strengthening system for clear glass up to 10 mm acc. to EN 1863
MGS	Minimum glass size option, enables sizes down to 100 x 250
R	Integrated pyrometer (measurement on top)
Spares 1	Spare part package 5 500 €
VC	Cullet conveyor under quenching section
Vortex Plus	Convection control option for convection profile. Enable tempering of lowE glass down