

Letter From The President

Visitors to Glasstech's stand at Glasstec 2010 will find that business activity and innovation at Glasstech are accelerating. Glasstech looks forward to assisting its customers in the expansion of their product offerings and in the improvement of their competitive position.

The past two years have been challenging with a very severe worldwide economic downturn. Glasstech has taken the necessary steps to weather this downturn. Our employees have made extraordinary efforts to better position the Company for future growth.

Glasstech has seen a substantial increase in both quoting and order



"We expect 2010 and 2011 to be years of expanding investment in the solar, automotive and architectural markets."

Mark Christman, Glasstech President and CEO

activity in all of its core markets. We expect 2010 and 2011 to be years of expanding investment in the solar, automotive and architectural markets. Geographically we see expansion and demand for Glasstech products in the U.S. market; Asia/Pacific market including China, India, Japan, Korea and Taiwan; and the East European market.

This increasing demand for Glasstech products is being led primarily by the following:

- Worldwide expansion in solar energy applications is driving the sale of our CRB-S bending and tempering systems for the production of parabolic CSP reflectors and our FCH and ERH flat-tempering systems for the production of PV glasses.
- Worldwide demand for automotive windshields, sidelites and backlites is driving the sale of our EPB-L system for the production of press-formed windshield glass, including monoliths for

lamination and our EPB-T and DB4 systems for the production of press-formed sidelites and backlites.

- Increasing worldwide demand for high efficiency, low-emissivity glass and low-iron glass for architectural, automotive and solar glass applications is driving the sale of our FCH forced convection heating systems.

We appreciate the continuing support of our customers, and we remain committed to serving your present and future needs. Glasstech looks forward to meeting you at Glasstec 2010 in Dusseldorf, September 28-October 1 at our stand in Hall 13, stand C55.

SOLAR

Solar A Hot Seller

With solar energy collecting systems continuing to expand at an accelerated pace worldwide, Glasstech designed and produced equipment makes it possible for glass processors to meet this exploding demand with quality, production-proven and efficient systems.

Glasstech's systems for the solar energy market can provide the millions of mirror blanks needed for concentrated solar power and concentrated photovoltaic applications as well as the ultra-flat substrates and panels used in photovoltaic cells.

Nearly 40 years ago, Glasstech's founders ... Harold A. McMaster and Norman C. Nitschke ... helped found the solar power industry

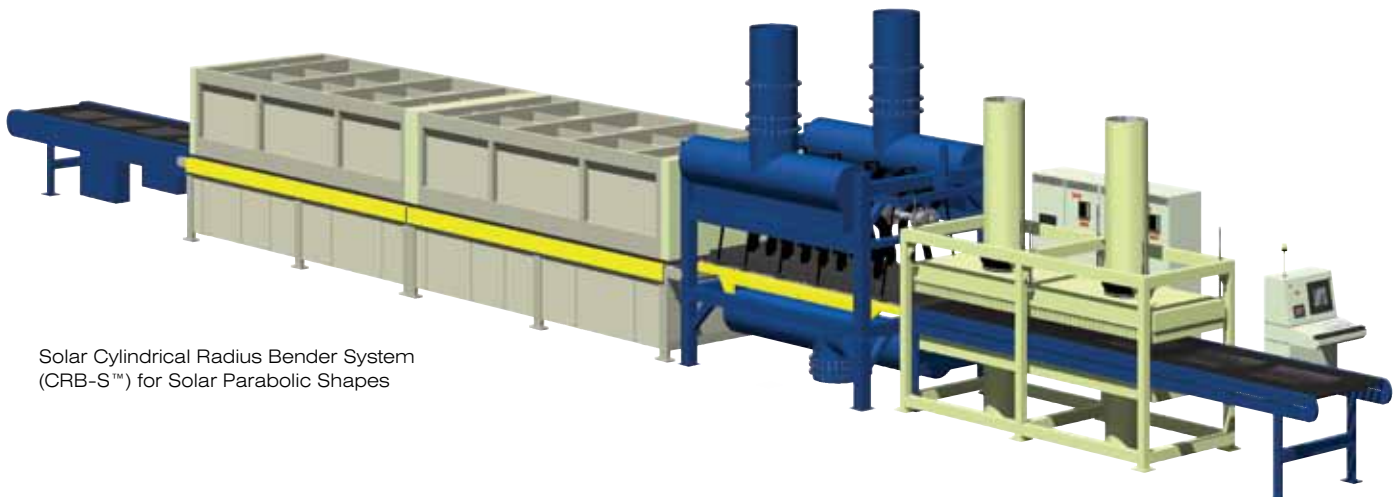
through backing, both financially and technically, early photovoltaic development. Through this involvement, Glasstech gained an insider's understanding and one-of-a-kind experience which has direct bearing on the development of its new and existing glass bending and tempering systems for solar applications.

Larger CRB-S™ for CSP applications

Glasstech's newest solar glass processing system is the CRB-S 1900 for Solar Parabolic Shapes as used by the Concentrating Solar Power market. The first of these larger-sized systems is expected to ship by the end of the year and be in commercial production early in 2011.

The CRB-S 1900 is 1,900mm (74.8 inches) wide and is the largest CRB-S system offered by Glasstech. The initial CRB-S system has a width of 1,700mm (67 inches). The CRB-S technology has been production proven with millions of parabolic shapes provided to date.

Ideal for the high-speed production of parabolic shaped trough reflectors, the CRB system is the only commercially available system that will temper or heat-strengthen glass. Fully tempered glass is up to five times stronger than annealed glass and provides increased impact and wind-load resistance. If broken, the resulting glass pieces are small and are safer for workers and other nearby components.



Solar Cylindrical Radius Bender System (CRB-S™) for Solar Parabolic Shapes

SOLAR

Solar A Hot Seller (Continued)

The CRB-S 1900 is capable of processing glass parts in the industry standard RP-2, RP-3 and RP-4 sizes. The system can process up to 189 loads per hour, depending on glass thickness, load size and heater length.

Both the CRB-S 1700 and the CRB-S 1900 systems meet customer requirements for high-output, ease of operation and high repeatability. Additionally, the systems share these characteristics:

- Much less energy usage than traditional sag forming process since only the glass is heated with the CRB-S
- Can change shape set-ups in 60 minutes or less within part groups
- No tooling cost since glass is formed without dedicated tooling

CRB-S systems can be ordered with Glasstech's electric radiant heater or with a Glasstech convection heater, either radiant or gas-fired. A combination bending/quenching station with upper and lower flexible beds shapes the piece. It then passes through a high-efficiency quenching system, which tempers or heat-strengthens the piece. Thinner

parts can be heat-strengthened for lamination.

Production is controlled by an Allen-Bradley ControlLogix™ PLC controller.

Forced convection systems most energy efficient

The photovoltaic solar industry also is burgeoning and, once again, Glasstech is in the forefront supplying the equipment glass processors need to provide this industry segment with the ultra-flat panels it uses at remarkably low costs.

The key is Glasstech's highly energy-efficient Solar Forced Convection Heater Flat Glass Tempering System (Solar FCH-S™). This system features a combination of natural gas fired, forced convection heating, reduced heating costs, along with superior tempering technology.

The FCH-S processes high volumes of glass very precisely, yielding extremely flat glass. The system will efficiently process all types of flat glass products for active (coated substrate) glass, high light transmission (low iron) smooth or textured cover panels or rigid back panels and clear glass panels.

The FCH-S will heat TCO/Low-E glass in about half the time of

typical radiant systems, 33 to 35 seconds per millimeter of thickness, depending on the specific coating. The system will heat clear glass at the rate of 30 seconds per millimeter.

In addition to the two CRB-S systems and the FCH-S system, Glasstech's comprehensive line of solar processing systems includes the following:

- Solar External Press Bender System (EPB-S™) for tempering and heat-strengthening smaller, high-volume spherical and parabolic shapes.
- Solar Advanced Deep Bend and Tempering System (DB 4-S™) for complex and deep bend shaped parts for dish segments and parabolic collectors.
- Solar Electric Radiant Heater Flat Glass Tempering System (ERH-S™) is a continuous, electrically powered flat-glass tempering system for photovoltaic panels.

ARCHITECTURAL

ABTS Increases Creativity, Reduces Costs

A seemingly endless list of requirements – curved, flat, big, small, clear or coated, short run or long – are the daily customer requests faced by architectural glass processors.

Tempering flat glass is not a problem, but the same system usually does not bend glass, especially large glass parts into a variety of shapes.

That was the case until Glasstech developed the Architectural Advanced Bending and Tempering System™ (ABTS), the most productive architectural bending and tempering system available today.

The system can be ordered in two widths, 2140mm (84 inches) and

2440mm (96 inches). Both systems can flat temper large glass lites as well as bending and tempering glass in a range of bends including ...

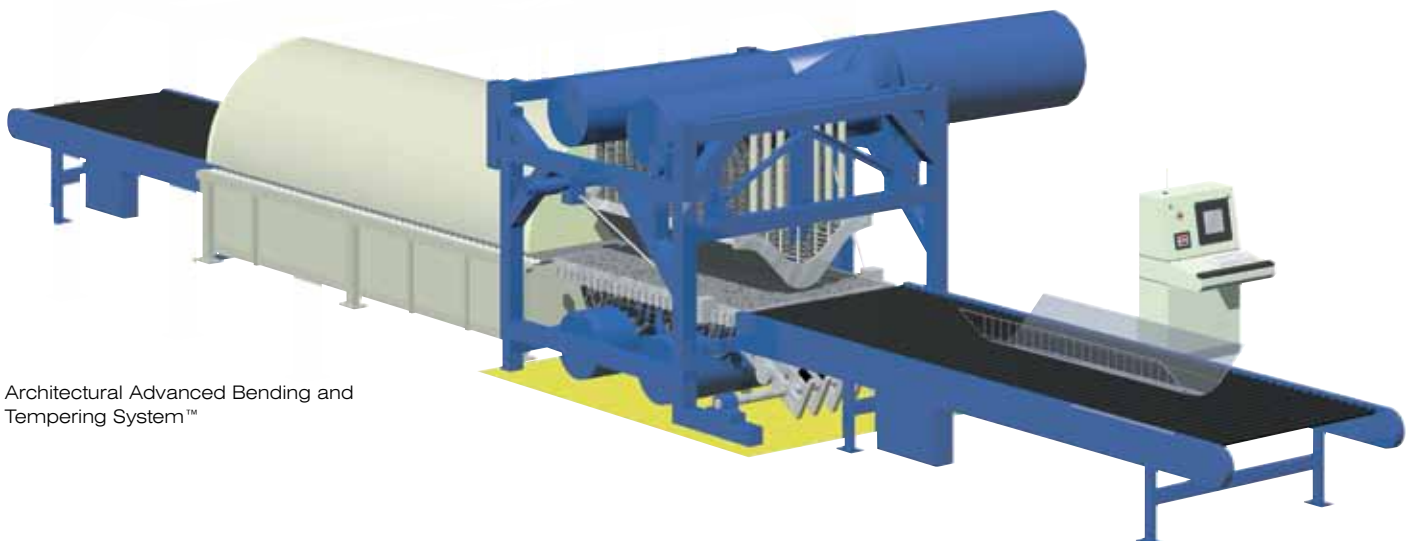
- Cylindrical bends
- Asymmetrical bends
- S bends
- J bends
- V bends

The ABTS reduces tooling costs by using a combined bending and quenching section, in which computer-controlled, articulated platens form the glass without the need for part-dedicated tooling. This approach also permits quick shape changeovers, since the computer records shape parameters and stores the data for future reference.

Glasstech's ABTS allows architects and designers the freedom to create curved glass elements for buildings, display cases, shower stalls and furniture from clear, tinted or coated glass.

Glass from 4mm (5/32 inch) to 12mm (.50 inch) in thickness and as large as 2,440mm (96 inches) by 3,660mm (144 inches) can be flat tempered or bent on the ABTS into graceful, custom-specified curves.

The ABTS is available with Glasstech's Electric Radiant Heater, which features outstanding uniformity for heating, or Glasstech's Forced Convection Heater, the most effective heating system available for all glass types.



Architectural Advanced Bending and Tempering System™

AUTOMOTIVE

Glasstech Meets Automotive Demand With Advanced Technology

It seems with each passing tick of the clock, automotive designers devise new applications for laminated glass.

New windshields consistently are larger with more compound and complex curves and support additional features, such as advanced windshield wiper technology and heads-up displays.

Laminated backlites and, increasingly, laminated sidelites require tighter tolerances, thinner glass and more shape as these glass parts become more important design elements.

Designing a glass processing system to meet these increased demands and also save energy was a challenge Glasstech accepted eagerly.

Glasstech's answer to the challenge was the development of the External Press Bending System (EPB-L™) for annealing automotive safety glass. This system ...

- Offers users significant energy savings compared to traditional systems as the EPB-L heats only the glass versus the traditional method of heating and cooling multiple tools as well as the glass

- Meets the stringent requirements for ever-tighter tolerances to accommodate features such as new windshield wiper technology and heads-up displays
- Produces monoliths for bent and annealed glass parts suitable for lamination in compound- and complex-shapes, as more and more vehicles utilize laminated glass in sidelites and backlites to provide safety, security, acoustics and ultraviolet protection

The EPB-L is an innovative, highly versatile glass bending system that satisfies the automotive OEM demand for tighter surface tolerances with superior optical quality, while also meeting the glass processor's need for greater productivity, economical tooling and energy conservation.

Using only a single tool set ensures the EPB-L provides high statistical repeatability as well as significantly lower energy consumption, when compared to gravity-sag systems.

Designed as an expandable system, the EPB-L easily meets specific

production needs. In the highest throughput configuration, the EPB-L achieves a cycle time of 8 seconds per glass part. This enables the two parts required for lamination to be produced every 16 seconds.

EPB-L can be supplied initially as a lower-capacity system. Thus, as production requirements grow, the system can be upgraded and expanded for greater throughput.

Among forward-looking features, the EPB-L system's final heating section is equipped with a patented FanRoll system that pre-forms glass before it arrives in the pressing station. This provides an increase in forming capability.

The EPB-L is part of a family of systems, including the EPB-T-SS™ that forms and tempers a single-stream of sidelites and the EPB-T-DS™ that forms and tempers a single backlite or a dual-stream of sidelites. All EPB systems process to stringent optical requirements with tight tolerances and produce parts with reflective and transmitted optics.

Aftermarket Services Mean A Better Return On Your Investment

Do you want to maximize production on your Glasstech system and keep it running for decades?

Glasstech systems are famous for their rugged construction and smooth, efficient operation over the long-haul. But, to get the most out of your system, you have to take care of it.

Just as Glasstech constantly strives to develop the equipment the glass processing industry needs, Glasstech's concern with its systems does not end with a successful commissioning.

The company has developed a wide-ranging program of Aftermarket services that meet and exceed the owners' needs, present and projected. Elements of this program include the following:

- Retrofits
- Tooling
- Shape Modeler® proprietary software
- Replacement parts
- Technical services (contract services)

Retrofits: Expansion of an existing system's capability, flexibility

and productivity by adding new modifications, computer updates or new heater sections, etc., to handle low-e glass coatings, achieve the tighter tolerances required by auto manufacturers, reduce energy usage and a number of other improvements.

Tooling: Glasstech's new, modular tooling option can significantly lower tooling costs for many parts. Glasstech also offers assistance in design, manufacturing and testing of the complex tooling sets required primarily by the automotive industry, including expert installation and assistance with initial production.

Shape Modeler® proprietary software: Mathematically reviews and evaluates new automotive glass designs and predicts the design's optical quality. Shape Modeler also can calculate modifications to minimize a design's optical distortion, without the cost of producing design samples.

Replacement parts: Glasstech is the reliable source for genuine replacement parts for your system including the unique ceramic furnace rollers Glasstech systems use.

Technical services (contract services): Design a package of contract services that meets your needs and your budget. Services include training, furnace/equipment audits, technical support and emergency assistance. Contract service customers receive priority from Glasstech's technicians and can specify the number of days of on-site service at the customer's facility.

For the continuing service that keeps your Glasstech system up-to-date and operating efficiently over the long haul, interested parties should contact their Glasstech representative or the Glasstech Aftermarket Sales Department (Aftermarket@glasstech.com).



Shape Modeler® proprietary software mathematically reviews and evaluates new automotive glass designs and predicts the design's optical quality.

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Glasstech is committed to continuously improve and provide its products and services so that they meet or exceed its own and its customers' quality, cost and schedule requirements.

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