

Solar CRB-S™

Cylindrical Radius Bender System for Solar Parabolic Shapes

The CRB-S system has been specifically designed to meet customer requirements for high-output, ease of operation and high repeatability for forming flat glass into parabolic or cylindrical shapes. Glass parts produced on this system are used primarily in the parabolic trough solar thermal industry; however, the system is flexible enough for automotive and architectural applications as well.

The Glasstech CRB-S System

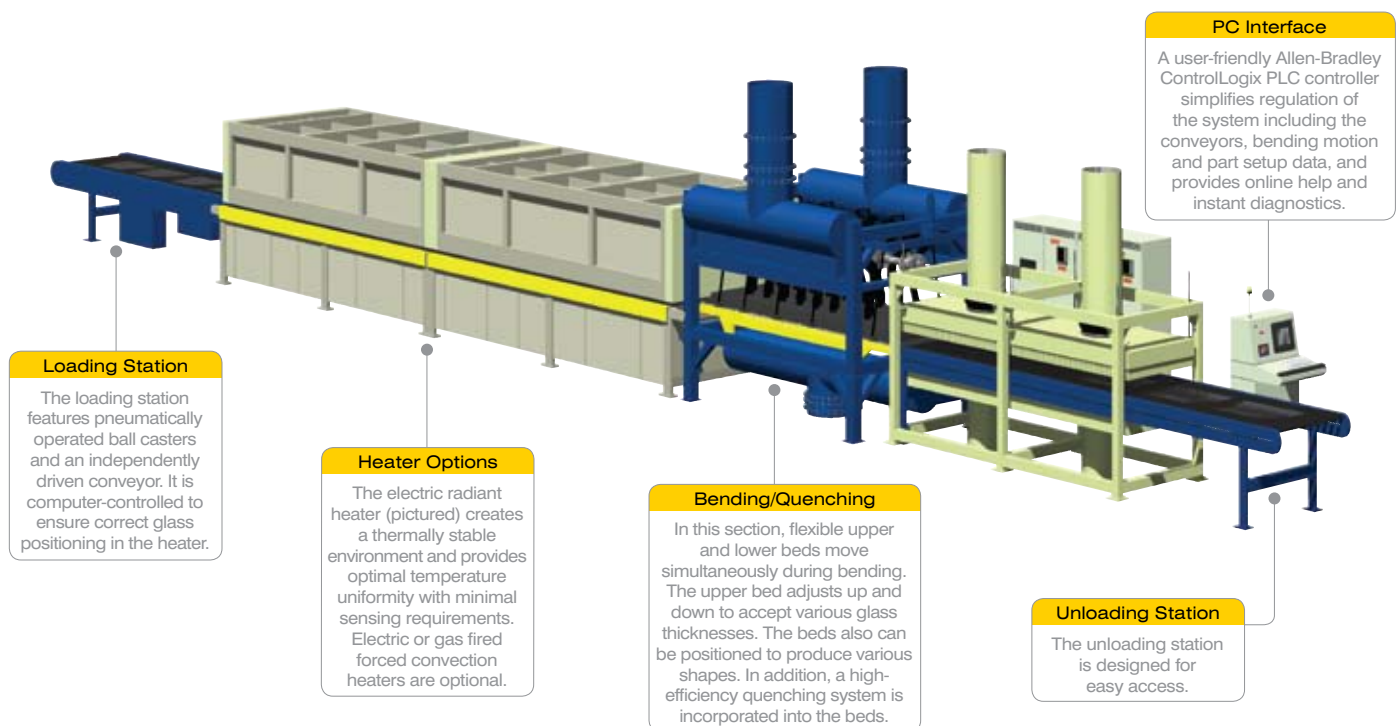
- Processes 1.6mm – 5mm (.063" – 3/16") glass parts
- Produces 150 loads per hour, depending on glass thickness and load size
- Can change shapes in less than 60 minutes
- Forms glass without tooling
- Achieves superior repeatability and shape control
- Can produce high quality flat tempered glass

The CRB-S system is available in 1700mm (67") width and features a combination bending/quenching station with upper and lower flexible beds, which allow the system to bend glass to a minimum radius of 1500mm (59"). When bending is complete, the glass can be quenched by a high-efficiency quenching system to provide fully tempered or heat-strengthened glass or it can be cooled slowly to provide low-stress glass suitable for lamination.

Production is controlled by a user-friendly Allen-Bradley ControlLogix™ PLC controller. Setups can be stored and recalled, permitting changeover times in a range of a few minutes to 60 minutes, dependent on glass thickness, shape and dimensions. No part-dedicated tooling is required.

The glass produced on CRB-S meets the tight tolerances required for solar parabolic trough glass, as well as automotive and architectural standards.

Glasstech's modular design combines high productivity, flexibility and economy of operation.



Solar CRB-S™ Technical Features

Available Glass Sizes

System Width		Max. Widths		Max. Length		Min. Width		Min. Length	
(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)
1700	67	1651	65	1700	67	380	15	380	15

Production Capability*

Glass Thickness**		48' Oscillator Loads/Hr	72' Continuous Loads/Hr
(mm)	(in)	Part Length 1700mm	Part Length 1700mm
1.6	.063	109	150
2.2	.087	109	150
3.0	.118	109	150
4.0	5/32	81	150
5.0	3/16	65	120

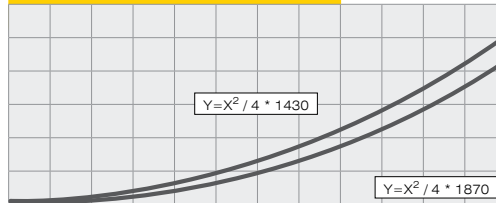
* Production rates for coated panels or different glass compositions will vary depending on part size, thickness and specific type of coating used, and the consistency of the coating.
Low stress is defined as < 3,500psi.
Full temper is defined as > 10,000psi.

** 1.6mm (.063") and 2.2mm (.087") are low stress.
3mm (.118") is heat strengthened only for that size.
4mm (5/32") and 5mm (3/16") can be heat-strengthened or fully tempered.

Floor Space Requirements

Heater System	Total Length		Total Width		Total Height		Blower Room	
	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)
48' Oscillator	33	108	12	39.4	7	23	15 x 12 x 5	49.2 x 39.4 x 16.4
72' Continuous	44.5	146	12	39.4	7	23	15 x 12 x 5	49.2 x 39.4 x 16.4

Parabolic Shape Range



Shape†

Parameter	Min.		Max.	
	(mm)	(in)	(mm)	(in)
Parabolic Shape Focal Length	1430	56	1870	73.6
Based on Arc Length	1324	52	1651	65

† Blank shape – rectangular.
Based on 1700mm (67") wide system.

Parabolic Form Tolerance

Perimeter Off Form

- Full contact perimeter land gauge with 8mm ledge:
Normal design +2.0mm, -0.0mm
- Full perimeter gauge with 3mm stand-off pins:
Normal design ±1.0mm

Installed Power

Heater System	Heating	Quench Fan	Cooler Fan	Drives	Total
	(kW)	(kW)	(kW)	(kW)	(kW)
48' Oscillator	1870	400	150	40	2460
72' Continuous	2600	400	300	40	3340

Base System Shapes



Parabolic Shape

- From $Y = X^2 / 4 * 1430$ mm
- To $Y = X^2 / 4 * 1870$ mm



Constant Radius Shape

- 1500mm min. radius for 1700mm wide system

Optional Shape



Dual Radius ("J" Bend) Cylindrical Contour

- 1500mm min. radius for 1700mm wide system

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