

FCH-S™

## SOLAR FCH-S™

### Forced Convection Heater Flat Glass Tempering System

FCH-S offers the perfect combination of controlled, natural gas fired, forced convection heating along with superior tempering technology and reduced heating costs for producing flat solar panel glass. The system is ideal for heat treating active (coated) glass, high light transmission (low-iron) smooth or textured cover panels, rigid back panels and clear glass for PV panels.

One of the world's leading systems for efficient processing of all types of flat glass products, FCH provides reliable, repeatable results with high productivity for low cost and highly accurate perimeter and surface shape for efficient product performance.

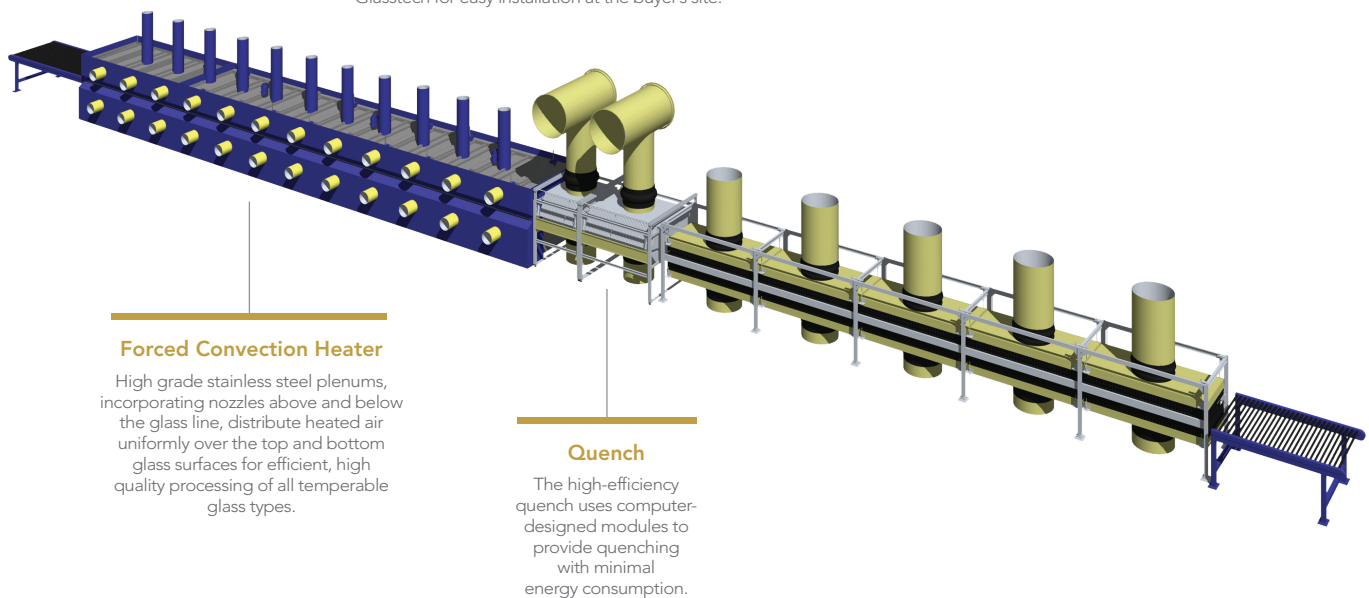
#### The Glasstech FCH-S System:

- Processes glass parts from 3.0mm – 6.0mm (.118" – 1/4") thickness
- Can heat high performance coated glass in 33-35 seconds per millimeter of thickness
- Is available in 1220mm (48") and 1520mm (60") widths
- Can process coated and low-iron glass without difficulty

FCH-S has the capability to heat clear glass at a rate of 30 seconds per millimeter of thickness, and high performance TCO/Low-E glass in 33-35 seconds per millimeter, depending on the specific composition of the coating. This heating rate for high performance TCO/Low-E glass is about one-half that of typical radiant systems.

#### Heat Control Panels

Heat control panels for the gas burners and hot fan drives are prewired and pretested at Glasstech for easy installation at the buyer's site.



#### Forced Convection Heater

High grade stainless steel plenums, incorporating nozzles above and below the glass line, distribute heated air uniformly over the top and bottom glass surfaces for efficient, high quality processing of all temperable glass types.

#### Quench

The high-efficiency quench uses computer-designed modules to provide quenching with minimal energy consumption.

#### PC Interface

An Allen-Bradley ControlLogix™ PLC controller using Windows® based software regulates furnace temperature and runs and synchronizes all conveyors.

## SOLAR FCH-S™ TECHNICAL FEATURES

Production Capability*													
Glass Thickness		Standard 90' Length						Extended 120' Length					
		Production at Line Speed											
		Meters/Minute			Feet/Minute			Meters/Minute			Feet/Minute		
(mm)	(in)	Most Glass Types	Low-Iron	TCO Coated**	Most Glass Types	Low-Iron	TCO Coated**	Most Glass Types	Low-Iron	TCO Coated**	Most Glass Types	Low-Iron	TCO Coated**
3.0	.118	18.3	15.7	15.7	60.0	51.4	51.4	24.4	20.9	20.9	80.0	68.6	68.6
4.0	5/32	13.7	11.8	11.8	45.0	38.6	38.6	18.3	15.7	15.7	60.0	51.4	51.4
5.0	3/16	11.0	9.4	9.4	36.0	30.9	30.9	14.6	12.5	12.5	48.0	41.1	41.1
6.0	1/4	9.1	7.8	7.8	30.0	25.7	25.7	12.2	10.5	10.5	40.0	34.3	34.3

\* 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.

\*\* TCO coating refers to Low-E type pyrolytic tin oxide coatings.

Systems available in 1220mm (48") and 1520mm (60") widths

Minimum Glass Size: 380mm (15") in direction of travel

Standard System Configurations					
Load Width		Heater Length		Max. Load Length	
				Standard System	
(mm)	(in)	(m)	(ft)	(mm)	(in)
1220	48	27.4	90	2440	96
		36.6	120	2440	96
1520	60	27.4	90	2440	96
		36.6	120	2440	96

Installed Power								
Heater Width		Electric Heating	Gas Heating	Quench <sup>†</sup>	Cooler	Drives	Total	Total
(mm)	(in)	(kW)	(mm Btu/hr)	(kW)	(kW)	(kW)	(kW)	(mm Btu/hr)
1220	48	360	30	270	300	22.5	952.5	30
		480	40	270	337.5	22.5	1110	40
1520	60	360	30	340	300	22.5	1022.5	30
		480	40	340	337.5	22.5	1180	40

† Quench power based on 4mm (5/32") minimum thickness to ANSI Z97 1-1984 and BS 6206 or compatible international standards.

Other system widths available based on customer specifications.

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