



GLASS PROCESS SYSTEMS

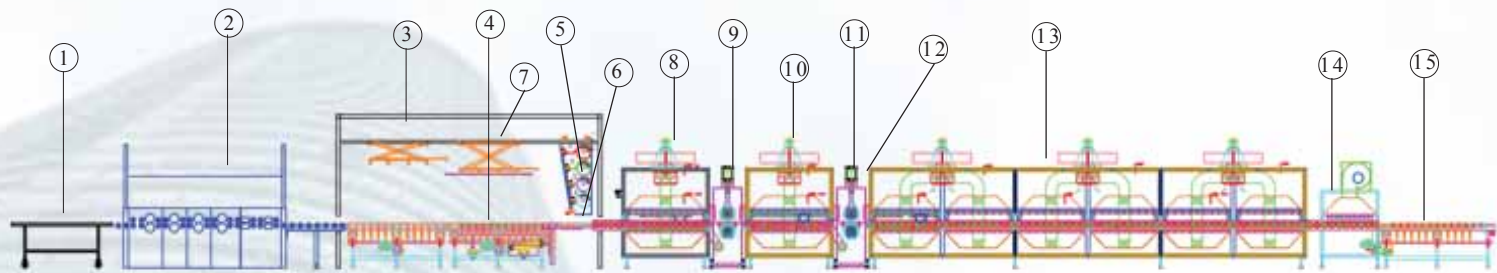
- ◆ Spandrel Systems G101
 - Spandrel Glass
 - Screen Printed Glass
 - Decorative Glass
- ◆ Glass Bending Systems
 - Single Station Bender G102
 - Shuttle Bender G102
 - (4) Cart Bender G102
 - Serial Bender G103
 - Auto Windshields
 - Aircraft/Train/Bus
 - Ballistic Glass
- ◆ Flat Glass Laminating Systems w/Autoclave G104
- ◆ Vacuum Ring Ovens G105
 - Automotive Windshields
 - Automotive Side Lites
 - Bent Safety Glass
- ◆ Decorative Dryers G106
 - Appliance Glass
 - Furniture Glass
- ◆ Automotive Ink Drying and Cooling G107
 - Windshields
 - Back Lites
 - Side Lites
- ◆ Specialty G108
 - UV Ban Coatings
 - Touch Screens
 - Scratch Resistant Coatings
 - Anti-Glare Coatings
 - Mirror Backing Coatings

TYPICAL APPLICATIONS:

- ◆ Standard Laminated Window Glass
- ◆ Hurricane Rated Window Glass
- ◆ Structural Laminated Glass
- ◆ Decorative Laminated Glass
- ◆ Cut Size Sheets

LAMINATE MATERIALS:

- ◆ Glass - 2mm - 6mm, Standard and Coated
- ◆ PVB - .030" - .090"
- ◆ Solutia's SAFLEX® Continuous Lamination Technology (CLT) Autoclaveless Polyvinyl Butyral



ADVANTAGES:

- ◆ **No Autoclave Required**
- ◆ **Solutia's SAFLEX® CLT Proprietary Technology Process**
- ◆ USA Spare Parts and Technical Support
- ◆ Customers Plant Electrical/Mechanical Specifications Incorporated
- ◆ Lowest Power Usage
- ◆ Minimum Maintenance
- ◆ Casso-Solar has over Four Decades of Experience in the Glass Industry

SYSTEM DESCRIPTIONS:

1	Glass Loading Area
2	Glass Washer
3	Humidity/Temperature Controlled Assembly Room
4	Layup/Trim Conveyors
5	PVB Storage/Unwind/Dispensing
6	Bridge
7	Overhead Vacuum Lift
8	Combination Infrared/Convection Preheat Oven
9	Preheat Press
10	Combination Infrared/Convection Tacking Oven
11	Tacking Press
12	Optical Pyrometer
13	Combination Infrared/Convection Soak/Cure Oven
14	Cooling Station
15	Unload
16	Control System - not shown
17	Touch Screen Operator's Station - not shown



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SEE REVERSE SIDE FOR DETAILED SPECIFICATIONS

G104NA - 10/12/06



- BASE MODELS:**
- ◆ All Base Models Utilize Casso-Solar Tubular Quartz Unitube™ Heaters with Internal Reflector
 - ◆ All Units Available at 200/220/240; 380/400/415; 440/460/480; 575/600 volts, 50 or 60 Hertz
 - ◆ Base Laminate: 3 mm Glass + .030" PVB + 3 mm Glass

Specs	Model #	NALGM - 48	NALGM - 60	NALGM - 72	NALGM - 84	NALGM - 96
Glass Size		48"W x 84"L	60"W x 96"L	72"W x 144"L	84"W x 144"L	96"W x 144"L
Conveyor Speed		0.5 - 3 FPM	0.5 - 3 FPM	0.5 - 3 FPM	0.5 - 3 FPM	0.5 - 3 FPM
5 FPM High Production System		Optional	Optional	Optional	Optional	Optional
Load Table		Optional	Optional	Optional	Optional	Optional
Washer		Optional	Optional	Optional	Optional	Optional
Layup Sections		1	1	1	1	1
Layup Section Dimensions		48"W x 108"L	48"W x 120"L	60"W x 168"L	60"W x 168"L	72"W x 168"L
Trim Sections		1	1	1	1	1
Trim Section Dimensions		48"W x 108"L	48"W x 120"L	60"W x 168"L	60"W x 168"L	72"W x 168"L
Layup & Trim Lanes		1	1	1	1	1
Popup Table In Trim		Yes	Yes	Yes	Yes	Yes
Overhead Lift Assist		Optional	Optional	Optional	Optional	Optional
Registration Equipment		Optional	Optional	Optional	Optional	Optional
PVB Storage/Unwind/Dispenser		Optional	Optional	Optional	Optional	Optional
Tacking Optical Pyrometer		1	1	1	1	1
Unload Conveyor		108"L	108"L	156"L	156"L	156"L
PLC Control		Optional	Optional	Optional	Included	Included
Machine Prewire		Optional	Optional	Optional	Included	Included
All Other Options		Available	Available	Available	Available	Available

SYSTEM FEATURES AND OPTIONS - Casso-Solar will custom configure a system to meet your exact process requirements:

Load Section Options:

- ◆ Free Fall Table
- ◆ Tilt Load
- ◆ Overhead Loader Lift to Fixed Table
- ◆ Side Loader to Fixed Table

Washer Options:

- ◆ Standard Washer
- ◆ Coated Glass Washer

Assembly Area Options:

- ◆ Layup & Trim Conveyors with Drop Down Sides for Access to Center of Conveyor
- ◆ Cut Resistant Conveyor Donuts
- ◆ Bridge Conveyors for Access to Both Sides of the Line
- ◆ Compact Drive System
- ◆ Overhead Lift System for Heavy Glass
- ◆ Manual or Automatic Alignment and Registration System
- ◆ Automatic Pairing System
- ◆ PVB Storage/Unwind/Dispensing System
- ◆ Dual Line Operation for Window Glass
- ◆ AC Inverter Conveyor Motor Controls
- ◆ Automatic Conveyor Synchronization
- ◆ Glass & laminate thickness sensor

Oven Options:

- ◆ Fast Response, Medium Wavelength, Maintenance-Free Electric Heaters with Internal Reflectors
- ◆ Independent Top and Bottom Control
- ◆ Cut-Off Zones to Maximize Efficiency
- ◆ Laminate Thickness Sensor for Automatic Setup
- ◆ Chamber Venting to Eliminate Premature Edge Sealing
- ◆ Kevlar Wrap Conveyor Rolls
- ◆ No-Maintenance Graphite Conveyor Roll Bearings
- ◆ Fully Insulated Oven
- ◆ Convection Heat for Coated Glass Fabrication
- ◆ Optical Pyrometers after Preheat and Tack Ovens to Measure Laminate Temperature

Laminating Press Options:

- ◆ Oversized 17" - 20" Diameter Press Rolls
- ◆ EPDM Roll Covering with Traction Pattern
- ◆ Powered Press Gap Adjustment
- ◆ Automatic Press Gap Adjustment with laminate thickness sensor

Unload Options:

- ◆ Cooling System
- ◆ Unload Conveyor with Unload Assist Rolls
- ◆ Tilt Unload Conveyor
- ◆ Overhead Vacuum Lift Unload System
- ◆ Automatic Stacker and Robotic Unload
- ◆ Multi-Directional Rolls

Controls:

- ◆ Full SCR Solid State Power Control
- ◆ Optical Pyrometer Monitors Part Temperature
- ◆ PLC Control with Recipe Storage/Recall/Automatic Setup
- ◆ Operator's Interface in Assembly Room or on Main Control Panel
- ◆ Data Logging and Process Reporting/Documentation
- ◆ NEMA 12 Enclosures
- ◆ Meets Underwriters Laboratories, CSA, CE, NFPA and NEC Codes
- ◆ ISO 9001:2000 Certified Company
- ◆ Complete Prewiring of Entire Machine