

GLASS TEMPERING AND FABRICATION EQUIPMENT



**THE
DIFFERENCE
IS CLEAR.**

A division of Salem Fabrication Technologies Group, Inc.

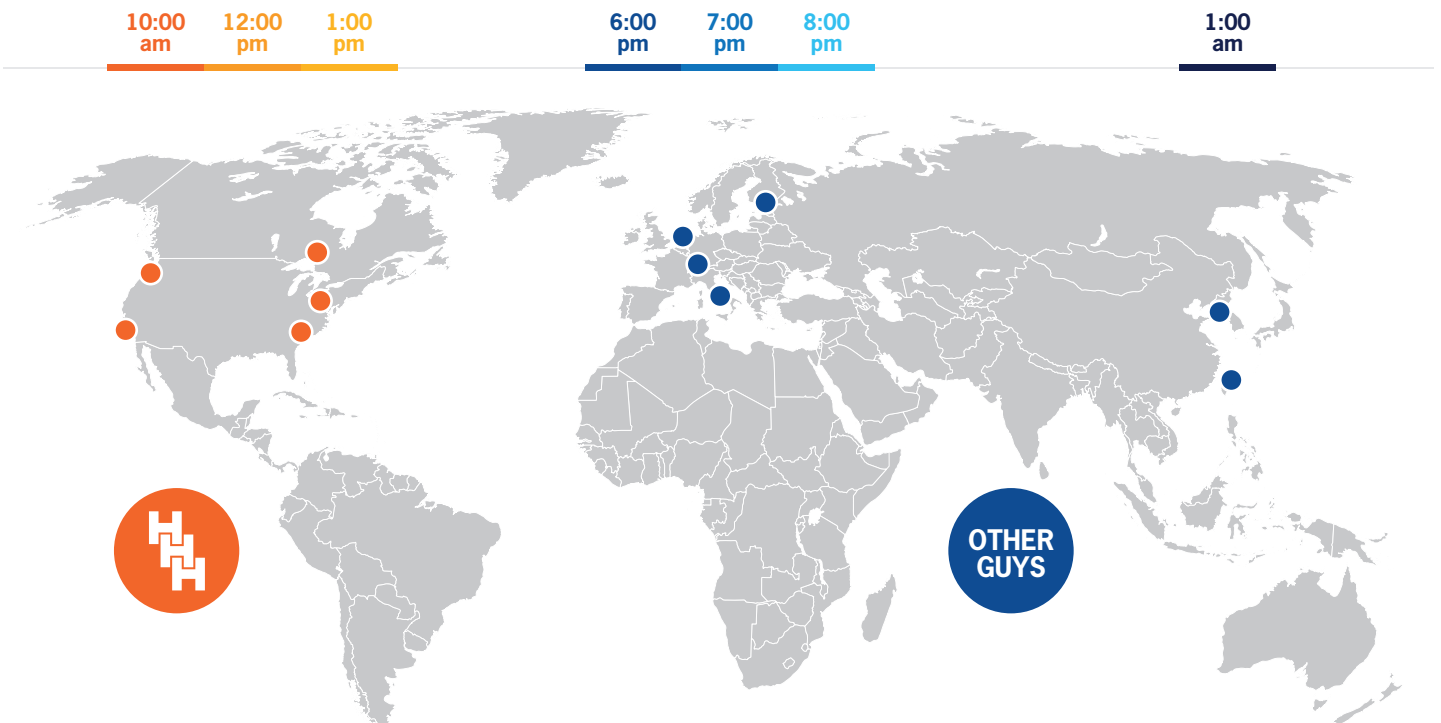
HHHGlassEquipment.com

THE DIFFERENCE IS CLEAR.

HHH Equipment Resources, the machinery division of Salem Fabrication Technologies Group, Inc. is a leading distributor of glass tempering furnaces and fabrication equipment with nearly 100 years of experience in the industry. In addition to equipment, our technical team provides layout consulting, installation, training, maintenance agreements and on-going support to satisfy all fabricators' needs. With HHH, the difference is clear. All of our equipment is backed by industry-leading technical service that includes:

- A technical team of 20+ highly trained technicians
- U.S.-based technical support
- 5 service centers across the East and West Coasts
- Full parts stocking
- On-demand maintenance using VPN
- 24/7 service

HHH Support Response Time vs. Competitors



GLASS EQUIPMENT MAINTENANCE AGREEMENTS

One-size-fits-all doesn't work for glass fabricators. Your business goals, facility size, machinery and workforce determine your maintenance needs. With an equipment maintenance agreement from HHH Equipment Resources, you can schedule maintenance based on production and keep your facility in peak productivity.

HHH Equipment Resources also offers master service agreements for edgers, bevelers, CNC machines and more with a 19-point inspection.

- ✓ Reduce downtime costs
- ✓ Increase productivity
- ✓ Avoid order backlogs

Preventative Maintenance Plan Features

	 TIER 1: The "Tune Up"	 TIER 2: Stand-by Support	 TIER 3: Peak Performance
Remote support service	✓	✓	✓
Discount on parts and labor	5%	10%	15%
Number of maintenance visits	Annually	Bi-annually	Quarterly
Number of in-person maintenance days	2	4	8
Inspection scope	67-point furnace inspection	93-point furnace inspection	115-point furnace inspection

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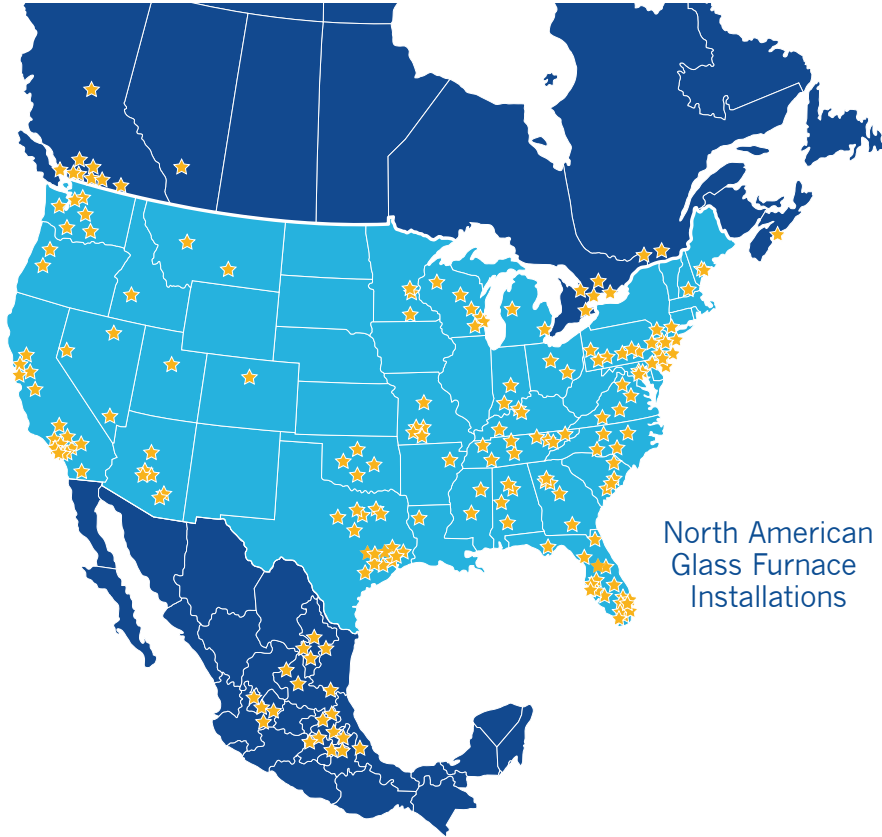
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North American
Glass Furnace
Installations

A-SERIES TEMPERING FURNACE

Produce quality glass in an efficient and stable environment while reducing energy consumption.

Glass Width Range 49 – 130 in

Minimum Glass Size 4 x 6 in

Glass Thickness 3 – 19 mm



TEMPERING FURNACES

A3-SERIES CONVECTION FURNACE

Provides efficient and consistent tempering for a variety of glass types. Ideal for small- to mid-sized glass fabrication operations.

Glass Width Range	49 - 130 in
Minimum Glass Size	4 x 6 in
Glass Thickness	3 – 19 mm



AD1-GD DUAL CHAMBER TEMPERING FURNACE

Increase production with two heating chambers, top and bottom radiation and gapless convection, plus two quenching and cooling stations.

Glass Width Range	63 – 138 in
Minimum Glass Size	4 x 6 in
Glass Thickness	3 – 19 mm



AG1 TEMPERING FURNACE

Innovative matrix radiation and forced convection heating technologies team up in this tempering furnace model.

Glass Width Range	63 – 138 in
Minimum Glass Size	300 x 500 in
Glass Thickness	4 – 19 mm



AU TEMPERING FURNACE

Reliable, easy-to-use convection furnace for cost-effective tempering.

Glass Width Range	48 – 120 in
Glass Thickness	3 – 19 mm
Minimum Glass Size	7.87 x 13.77 in



TEMPERING FURNACES

B-SERIES TEMPERING FURNACE

Economic convection and maximum uptime are delivered thanks to external compressed air and reliable construction.

Glass Width Range	63 – 138 in
Glass Thickness	3 – 25 mm
Minimum Glass Size	3.14 x 3.14 in



AX1 CONTINUOUS FURNACE

Master thin glass output with high production capacity and glass thickness flexibility.

Minimum Glass Size	7.87 x 11.81 in
Glass Thickness	3 – 10 mm
Production Capacity	3821 – 11,302 ft ² /hour



AX2 CONTINUOUS FURNACE

Produce thin glass at high production volumes for solar panels, architectural glass, furniture, household appliances and more.

Glass Thickness	3.2 – 6 mm
Production Capacity	2777 – 6351 ft ² /hour



A7 GLASS BENDING FURNACE

Designed to create J- and R-shaped tempered glass, this furnace is ideal for bus windows, shower stalls, architectural applications, furniture, appliances and more.

Glass Width Range	24 – 78 in
Minimum Glass Size	23.62 x 15.74 in
Glass Thickness	5 – 8 mm
Production Capacity	15 batches/hour
Minimum Arc Radius	350 mm



GLASS WASHING MACHINES

HORIZONTAL GLASS WASHING MACHINE

Get flawless glass with our efficient and customizable horizontal glass washers.

Glass Width Range	48 – 112 in
Glass Thickness	3 – 19 mm
Speed	0 – 6 m/min
Voltage/Power Supply	480V, 3-phase



GLASS WASHING AND DRYING MACHINE

This space-saving machine washes and dries low-E glass, ordinary coated glass and solar glass with no scratching.

Glass Width Range	48 – 120 in
Glass Thickness	3 – 19 mm
Speed	0 – 10 m/min
Power Supply	480V, 3-phase



HHH VERTICAL WASHING MACHINE

The HHH Vertical Washer is built for high quality production washing and designed to save energy in your facility. The machine's structure is made of an aluminum alloy, coated with top-grade machine paint and powder, with the panels that come in contact with water made of stainless steel. This washer features three pairs of brushes, with Low-E brushes available, and all rollers are made of vulcanized rubber. The machine also has a powerful air knife for drying, as well as an air heating system, and is available in 60", 70", 84" and 96" width capacities.

Power Supply	480 V
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ZAFFERANI VERTICAL GLASS WASHING MACHINE

Perfect for large glass sheets, this open-top, vertical washing machine is a staple for most facilities.

Minimum Glass Size	250 x 50 mm
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Glass Thickness	3 – 19 mm
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Speed	3 m/min
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Power Supply	7 kW
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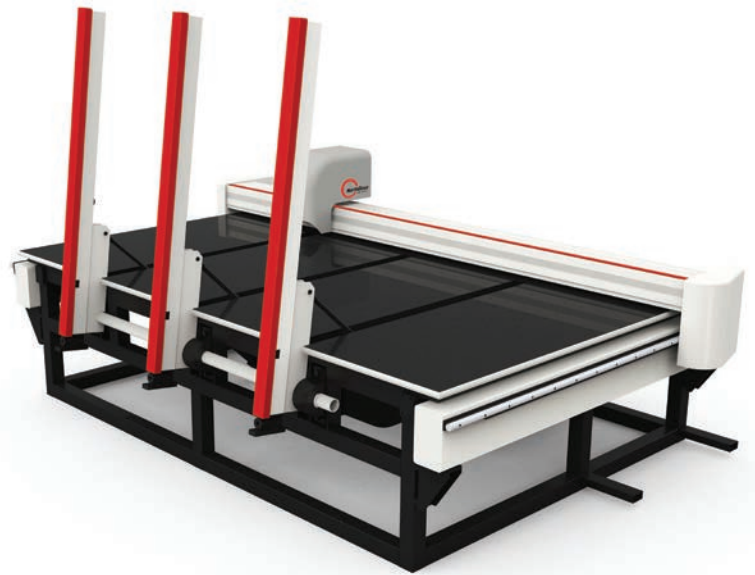


GLASS CUTTING SYSTEMS

GLAS.C GLASS CUTTING TABLE - LOADING BAR (BQT)

Offering a loading system, cutting and breaking-out zone, this cutting table is ideal for operations with limited space.

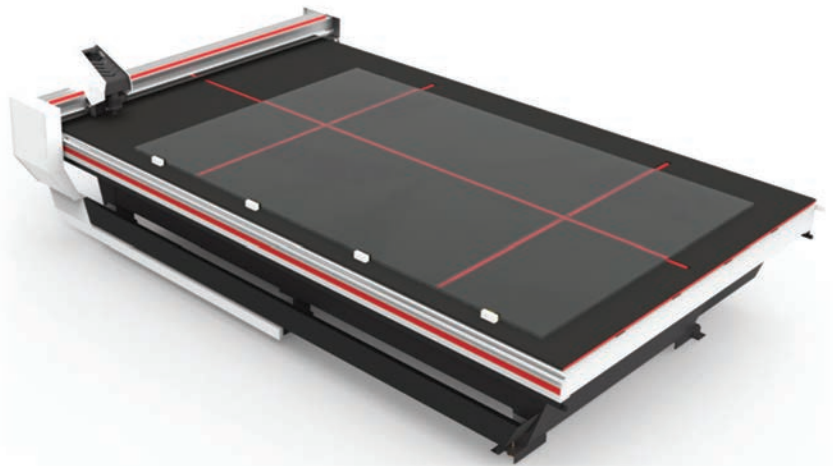
Minimum Glass Size	39.4 x 59 in
Glass Thickness	3 –19 mm
Dimension/Working Size	98.4 x 78.7 – 165.4 x 110.2 in
Cutting Speed	590.6 ft/min max
Acceleration	14.8 ft/sec
Straight Accuracy	± 0.15/2,000
Shape Accuracy	± 0.1
Maximum Cutting Size	110.2 x 165.4 in
Minimum Cutting Size	39.4 x 59 in



GLAS.C GLASS CUTTING TABLE (BQ)

Offering a tilting loading system, cutting and breakout area, this cutting table requires limited space and features easy transportation and installation.

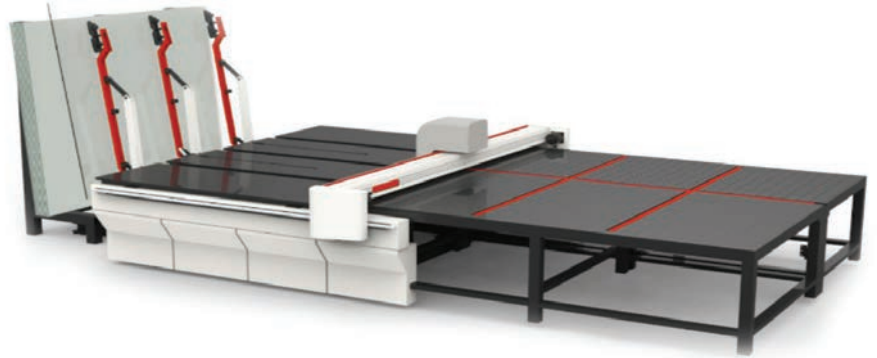
Minimum Glass Size	39.4 in. x 59 in
Glass Thickness	3 –19 mm
Dimension/Working Size	98.4 x 78.7 – 240.2 x 131.9 in
Cutting Speed	590.6 ft/min max
Acceleration	14.8 ft/sec
Straight Accuracy	± 0.15/2,000
Shape Accuracy	± 0.1 – 0.2
Maximum Cutting Size	110.2 x 165.4 in
Minimum Cutting Size	39.4 x 59 in



GLAS.C GLASS CUTTING TABLE (C4, C5, C6)

Equipped with all the standard glass cutting system features, plus a double servo motor and independent side beam, glass cutting is easy with this table.

Minimum Glass Size	39.4 x 59 in
Glass Thickness	3 –19 mm
Dimension/Working Size	165.4 x 110.2 in – 240.2 x 131.9 in
Cutting Speed	590.6 ft/min maximum
Acceleration	14.8 ft/sec
Straight Accuracy	± 0.15/2,000
Shape Accuracy	± 0.1 – 0.2
Maximum Cutting Size	110.2 x 165.4 in
Minimum Cutting Size	39.4 x 59 in



GLAS.C GLASS CUTTING TABLE WITH LOADING SYSTEM (C4-A, C5-A, C6-A)

This cutting table comes in two different drive systems: a high-speed, low-overload capacity mechanical system and a heavy-loading, high-overload capacity hydraulic drive system designed for oversized glass.

Minimum Glass Size	39.4 x 59 in
Glass Thickness	3 –19 mm
Dimension/Working Size	165.4 x 7110.2 in – 252 x 131.9 in
Cutting Speed	131.2 – 180.4 ft/min max
Glass Weight	990 – 2,205 lbs
Maximum Cutting Size	110.2 x 165.4 in
Minimum Cutting Size	39.4 x 59 in



WATERJET CUTTER/GLASS SEAMER

INDUSTRIAL WATERJET CUTTER

For increased precision, efficiency and power, use the waterjet designed specifically for the glass industry.

Speed	0 – 32.81 ft/min
Cutting Accuracy	± 0.0039 in
Control Accuracy	± 0.0001 in
Maximum Pressure	60,000 psi
Maximum Flow Rate of UHP Water	1.004 gal/min
Control System	AC Servo



SM2500-4 AUTOMATIC 4-EDGE HORIZONTAL GLASS SEAMER

The SM2500-4 Automatic 4-Edge Horizontal Glass Seamer crafts precision chamfers while providing time-saving automation.

Speed	0 - 40 m/min
Glass Thickness	4 - 12 mm
Max Glass Size	2500 x 3600 mm
Min Glass Size	280 x 550 mm
Control System	Servo Motor System



SFTG-1200 HORIZONTAL GLASS DRILLING MACHINE

Maximize productivity and improve lead times with this automatic glass drilling machine.

Glass Thickness	3 - 20 mm
Speed	0 - 3600 RPM
Roller Table	98 x 60 in
Drill Hole Size Range	0.15 - 6 in



KODIAK® 3025V DRILL MILL

The KODIAK® 3025V Drill Mill is specifically designed for milling and counter-sinking to create notches for door hinges and fittings. It has two processing modes for glass milling and double sided drilling.

Maximum Glass Size	3,000 x 2,500 mm
Minimum Glass Size	800 x 400 mm
Processing Height	2,200 mm (up from infeed conveyor)
Milling Range	200 x 2,200 mm
Drilling Diameter	4 - 50 mm
Glass Thickness	5 - 12 mm
Power	12 kW
Water Consumption	50 L/min
Front Spindle Motor	10,000 RPM (built in spindle motor)
Rear Spindle Motor	3,600 RPM (industrial fan motor)
Front Tool Length	110 mm combo tool 85 mm drill bit
Rear Tool Length	85 mm drill bit

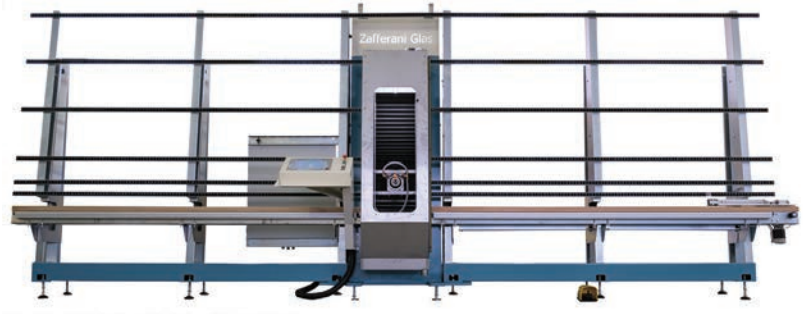


GLASS DRILLING MACHINES

ZAFFERANI AZV 1000 VERTICAL DRILLING/MILLING MACHINE

Specifically designed for milling and counter-sinking to create notches for door hinges and fittings, this machine also offers numerical control.

Glass Thickness	4 - 25 mm
Working Area	200 x 1,000(h) mm
Minimum Glass Size	500 x 300 mm
Maximum Glass Size	3,400 x 3,210 mm
Minimum Hole	13 mm
Weight	1,500 kg
Power	8 kW
Maximum Spindle Speed	9,000 RPM
Milling Tool Length	75 - 100 mm



ZAFFERANI AZV 100XL GLASS DRILLING MACHINE

This double-head, manual vertical drilling machine with open top allows for large-dimensional glass lites.

Glass Thickness	3 - 20 mm
Hole Diameter	3 - 100 mm
Number of Heads	2 (front and rear)
Spindle Rotation Speed	up to 4,000 RPM
Power	2 kW
Weight	1,000 kg
Drill Bit Dimensions	H = 75 mm x 1/2 gas



ZAFFERANI AZV 160CN VERTICAL GLASS DRILLING MACHINE

Designed for drilling glass up to 1.60 meters high, this vertical glass drilling machine outperforms others.

Minimum Glass Size	250 X 100 mm (9.84 - 3.94 in)
Glass Thickness	3 - 40 mm
Weight	1,650 kg
Power	9 kW
Drill Hole Size Range	4 - 100 mm (0.157 - 3.94 in)



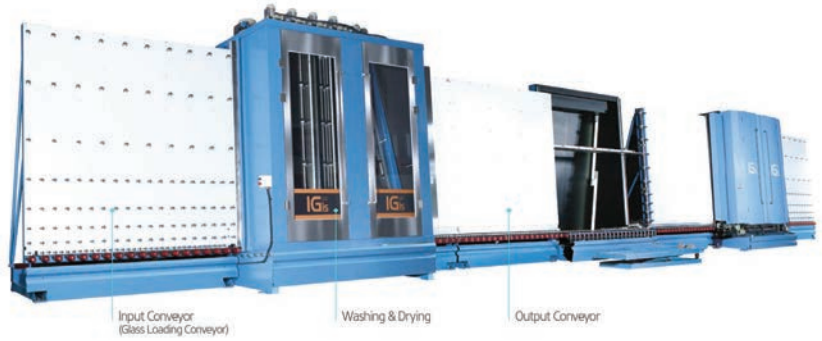
AUTOMATIC INSULATING GLASS PRODUCTION LINE

Insulated glass automation in four steps using either a single or dual press settings.

Maximum Glass Size	126 x 238 in
Minimum Glass Size	8 x 16 in
Glass Thickness	3 - 12 mm (standard) / 3 - 30 mm (optional)
I.G. Unit Thickness	.5 - 2 in (standard) / over 2 in (optional)
Spacer Width	.25 - 1 in (standard) / over 1 in (optional)

Included Equipment

- Inspector & Spacer Alignment Station
- Transport Cover
- Washing & Drying Part
- Spacer Frame Positioning Part
- Gas Filling & Press
- Super Spacer® (Foam) Applicator
- Automatic Sealing Robot
- Edge Deleting Machine
- Rotating Conveyor
- Automatic Cork Pad Applicator



VERTICAL WASHER

This 3-in-1 washer loads, washes and dries insulated glass. It automatically detects glass thickness and adjusts accordingly. Three pairs of brushes and air-knives work with the high-pressure blower to remove all contaminants for impeccable glass.

Maximum Glass Size	126 x 238 in
Minimum Glass Size	8 x 16 in
Thickness of glass plates	3-12 mm 3-30 mm
Thickness of IG Unit	12-60 mm (over 60 mm is optional)
Type of IG units	Rectangular units Double units Triple units
Electronic tension & frequency	3P 415V, 50Hz, 55kw
General conveying speed	141 ft/min
Speed of washing machine	6.5-39 ft min
Air supply pressure	100 PSI



AUTOMATIC SPACER BENDING ROBOT

This robot supports various types of spacers and can bend shapes into 16 patterns.

Maximum Frame Size	98 x 98 in (1 piece) 122 x 157 in (2 pieces) Spacer
Width	.2 - 1 in
Magazine	3 slots (standard) More upon request
Type of Spacer	Aluminum Spacer Warm Edge Spacer



HORIZONTAL GLASS GRINDER

Four-edge, glass grinder featuring four grinding heads and simultaneous upper/lower glass side grinding.

Maximum Glass Size	120 in
Minimum Glass Size	12 x 20 in
Glass Thickness	3 - 20 mm
Working Level	35 (.2±) in
Grinding Speed	20 - 42 m/min
Production Speed (39 x 39 in.)	300 sets / hr

Features

- Independent processing system with a grinding head on all sides
- Faster speeds thanks to four-grinding head design
- Automatic glass thickness and size detection
- Precision glass transfer via vacuum conveyor belt



DESICCANT FILLING STATION

The filling station offers a fully automated drilling, filling and butyl sealing process. Plus, the operation panel enables you to adjust height and select from two head types.

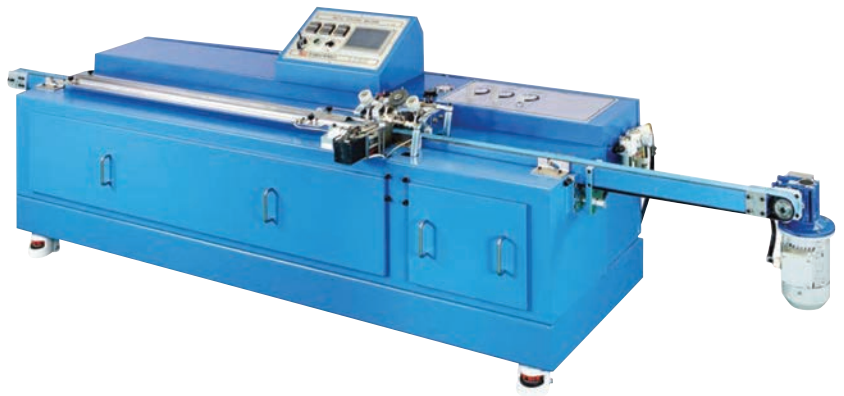
Maximum Spacer Bar Size	141 in (1 piece)
Spacer Bar Thickness	.2 - 1 in
Desiccant Tank / Drum	200 Liter Drum
Type of Spacer	Warm Edge Spacer



BUTYL EXTRUDER

Precision temperature control reduces pre-heat and discharge time while also saving on power consumption. Glass is kept clean with circular, coated rollers.

Maximum Spacer Width	Automatic Adjustments .2 - 1 in Manual Adjustments up to 1.2 in
Height Adjustment	26 in
Working Speed	82 - 115 ft/min



INSULATED GLASS EQUIPMENT

2-PART PUMP

Featuring separate resin and agent pumps, high-pressure discharge, a hydraulic pump system and automatic return valve.

Mixing ratio	8:1 - 12:1
Maximum Pressure	250Kg / CM2 = 3555 PSI
Drum Capacity	Part A drum 55 GAL Part B drum 5 GAL



SEALING TABLE

With four center suction cups, the sealing table stabilizes glass and rotates it while insulated glass edges are sealed.

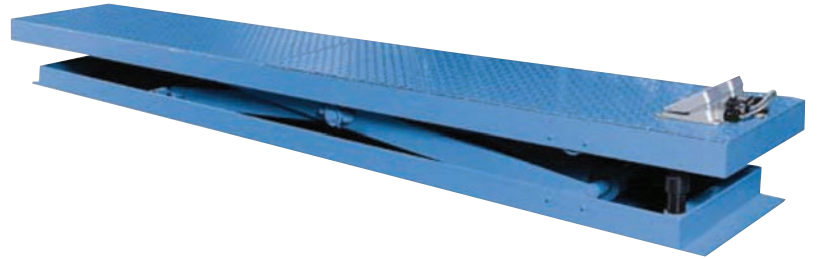
Maximum Glass Size	70 x 70 in
Minimum Glass Size	8 x 8 in
Arm Adjustment	23 - 59 in
Working Level	35 in



HYDRAULIC LIFT

Elevate or lower glass and equipment weighing up to 440 lbs. with this sturdy hydraulic lift. Very compact, it folds for simple transportation and installation.

Maximum Adjustable Height	42 in
Length x Width x Height	118 x 19 x 12 in
Allowable Weight	440 lbs



SPACER BAR FEEDING MACHINE

Load standard and oversized glass panels faster using the spacer bar feeding machine.

Length	98 in
Width	130 in
Height	138 in



INSULATED GLASS EQUIPMENT

AUTOMATIC HORIZONTAL HOT-MELT SEALING MACHINE

Ensure gap-free sealing on all IG unit sizes.

Maximum Glass Size	39 x 63 in
Minimum Glass Size	6 x 10 in
Temperature	190° C
Hopper	200 Liters



MAXI LIFTER KSNB-01

This maxi lifter was designed for indoor processing lines and features a two-button release and dual-vacuum system.

Pad Size	250mm (10 in)
Lifting Capacity	353 lbs
Pad Quantity	2 ea



MAXI LIFTER KSNM-05

This maxi lifter has a lift capacity of 875 lbs. and is the ideal glass lifter for use with light rail system.

Lifting Capacity	1,000 lbs
Minimum Glass Size	33 x 31 in
Pad Size	KSPD-241 (Construction)
Pad Quantity	6 ea
Vacuum Filter	1 ea
Release Time	2 sec
Electric Power Consumption	1Kw
Control Board	KSAF-V1.1
Lifter Size	63 x 39 x 12 in
Net Weight	115 lbs
Power Supply	AP 220V 1P 50/60Hz





KODIAK®

EDGING AND POLISHING EQUIPMENT FROM HHH EQUIPMENT RESOURCES

HHH Equipment Resources is proud to offer an innovative, exclusive line of glass edging and polishing equipment fully serviced in the United States.

With more than 100 years of combined service to the glass industry, HHH Equipment Resources and Salem Fabrication Technologies Group, Inc. have come together to launch a line of edging equipment that meets U.S. fabricators' needs and measures up to leading competitor brands. The KODIAK® line of edging equipment from HHH produces high-quality glass with speed, precision and flexibility.

With competitive production speeds, exceptional edge quality and proven track design, KODIAK® is suitable for all facility sizes and types for glass edging, polishing, beveling, mitering and more. All KODIAK® edging equipment from HHH Equipment Resources was designed for the North American market with:

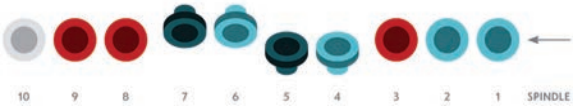
- Long-lasting track elements
- Intuitive displays
- Automatic lubrication
- UL-certified components
- Heavy-duty spindles and frame construction
- Industry-leading warranty

Learn more about
KODIAK® edging equipment at
HHHGlassEquipment.com/KODIAK.

KODIAK® 10 FLAT POLISHING MACHINE

The KODIAK® 10 Flat Polishing Machine polishes glass with speed and precision. Featuring 10 spindles, this glass polishing machine works well on oversized glass.

Minimum Glass Size	60 x 60 mm
Glass Thickness	3 - 30 mm (60 mm opt.)
Speed	0 - 5 m/min
Weight	5,800 kg
Power	24 kW



KODIAK® 10-45 FLAT POLISHING AND MITERING MACHINE

The KODIAK® 10-45 Glass Polishing and Mitering Machine produces polished and mitered edges with competitive production speeds. It features 10 spindles with an adjustable miter angle up to 45 degrees.

Minimum Glass Size	80 x 80 mm Edging (150 x 150 mm Mtr.)
Glass Thickness	3 - 30 mm
Miter Angle	0 - 45°
Speed	0 - 5 m/min
Weight	5,800 kg
Power	28 kW

**Other options available*



GLASS EDGING MACHINES

KODIAK® 12HS HIGH-SPEED FLAT POLISHING MACHINE

The KODIAK® 12 HS is a high-speed flat polishing machine. With 12 heavy-duty spindles, this machine finishes glass edges quickly without sacrificing quality for ultimate production capacity.

Minimum Glass Size	60 x 60 mm
Glass Thickness	3 - 30 mm (60 mm opt)
Speed	0 - 5 m/min (0 - 10 m/min opt.)
Weight	5,850 kg
Power	31 kW

*Other options available



KODIAK® 14-45 GLASS POLISHING AND MITERING MACHINE

The KODIAK® 14-45 Glass Polishing and Mitering Machine polishes and miters glass edges with 14 spindles and a variable mitering angle up to 45°.

Minimum Glass Size	85 x 85 mm Edging (150 x 150 mm Mtr.)
Glass Thickness	3 - 30 mm (60 mm opt.)
Miter Angle	0 - 45°
Speed	0 - 5 m/min
Weight	7,450 kg
Power	32 kW

*Other options available



KODIAK® 371 GLASS BEVELING MACHINE

The KODIAK® 371 Glass Beveling Machine is an 11-spindle beveling machine featuring 3 felt wheels, 7 grinding/smoothing wheels and 1 peripheral edging wheel for any glass application.

Minimum Glass Size	60 x 80 mm
Glass Thickness	3 - 20 mm
Bevel Angle	3 - 45°
Speed	0 - 5 m/min
Weight	6,050 kg
Power	23 kW

*Other options available



KODIAK® 4PE PENCIL EDGER

The KODIAK® 4PE is an automatic straight line pencil edge machine used for the edge grinding and polishing of flat glass.

Minimum Glass Size	150 x 150 mm
Glass Thickness	3 - 20 mm
Machine Speed	0.5 - 2.5 m/min
Working Height	800 mm
Machine Weight	2000 kg
Machine Dimensions	6200 x 1400 x 2250 mm
Power	3 Phase, 480 V, 50/60 Hz, 9 kW



KODIAK® SHAPE EDGER BEVELER

The KODIAK® Shape Edger Beveler is a semiautomatic machine for edging, beveling and polishing shaped glass.

Glass Thickness	6 - 10 mm
Glass Working Size	150 - 1,828 mm
Max Bevel Size	35 mm
Bevel Angel	0 - 25°
Machine Size (L x W x H)	2,400 x 1,800 x 1,880 mm
Machine Weight	920 kg
Voltage	480 V / 60 Hz / 3-phase (can be customized)



GLASS EDGING MACHINES

ZAFFERANI FLAT GLASS POLISHING MACHINE

Producing flat edges with seams requires perfect precision. Our Zafferani Flat Glass Polishing Machines easily give you the edges you need. As an 8-spindle glass polisher equipped with 8-cup type wheels, every edge you cut is exact.

Minimum Glass Size	40 - 80 x 80 mm
Glass Thickness	3 - 22 mm
Speed	0.5 - 4 m/min
Weight	1,300 - 2,300 kg
Power	5.8 - 12 kW



ZAFFERANI MASTER GLASS EDGING MACHINE

When you need a peripheral edger to produce pencil edges or flat edges with seams, the Zafferani Master Glass Edging Machine is the perfect solution.

Minimum Glass Size	50 x 50 mm - 80 x 80 mm
Glass Thickness	3 - 22 mm
Speed	0.5 - 4 m/min
Weight	1,900 - 2,300 kg
Power	8 - 12 kW



ZAFFERANI SENIOR GLASS EDGING MACHINE

The Zafferani Senior Glass Edging Machine is the perfect solution for producing pencil edges or flat edges with seams.

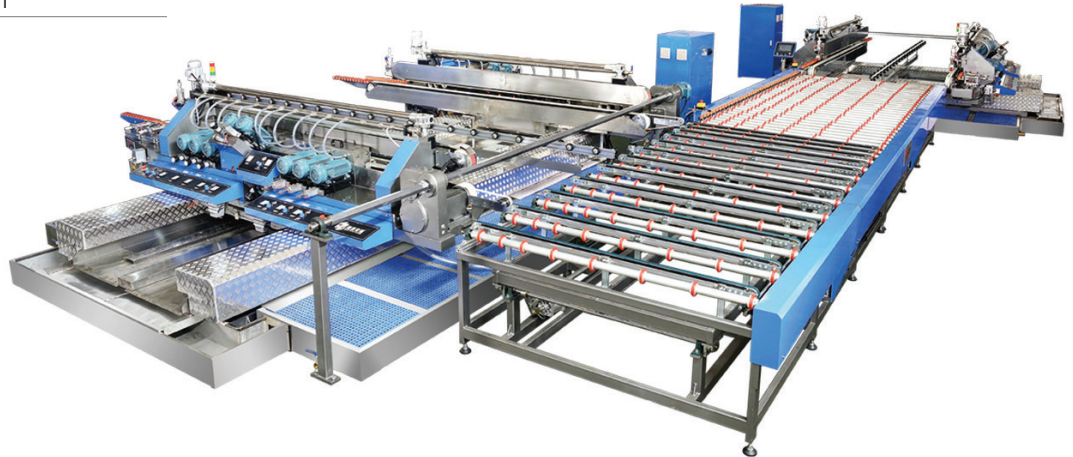
Minimum Glass Size	80 x 80 mm
Glass Thickness	3 - 22 mm
Speed	0.5 - 4 m/min
Weight	1,100 kg
Power	4.5 kW



HISENG HSD GLASS STRAIGHT LINE DOUBLE EDGER LINE

Two integrated computers and machines simultaneously manage the entire polishing line and glass movement.

Speed	20 - 315 in/min
Width	
Adjustment Speed	78 in/min
Transfer Table Speed	20 - 1180 in/min



HISENG HSD GLASS STRAIGHT LINE DOUBLE EDGING MACHINE

Increase edging efficiency with automatic glass size detection and simultaneous dual-edge polishing.

Glass Thickness	3 - 25 mm
Maximum Flat Edge Polishing	5 mm
Polishing Width	1 - 3 mm

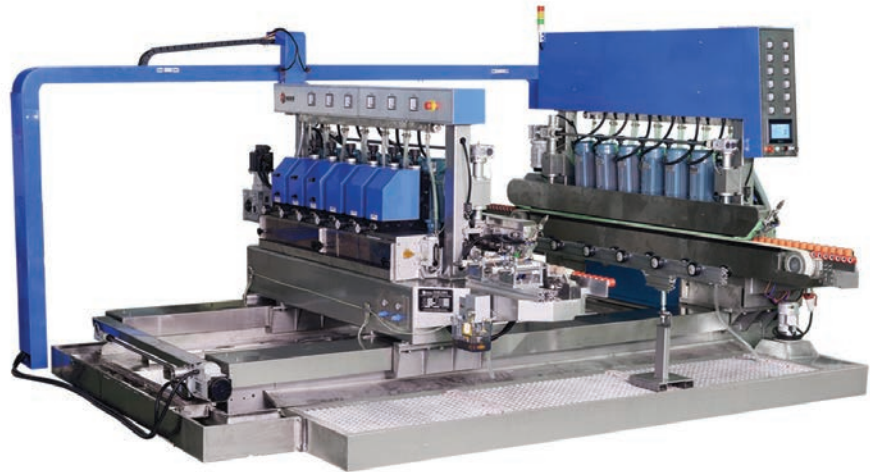


GLASS EDGING MACHINES

HISENG SYM GLASS STRAIGHT LINE DOUBLE PERIPHERAL EDGING MACHINE

Equipped for high-volume production and built for solar, furniture, electrical appliance and automotive glass applications.

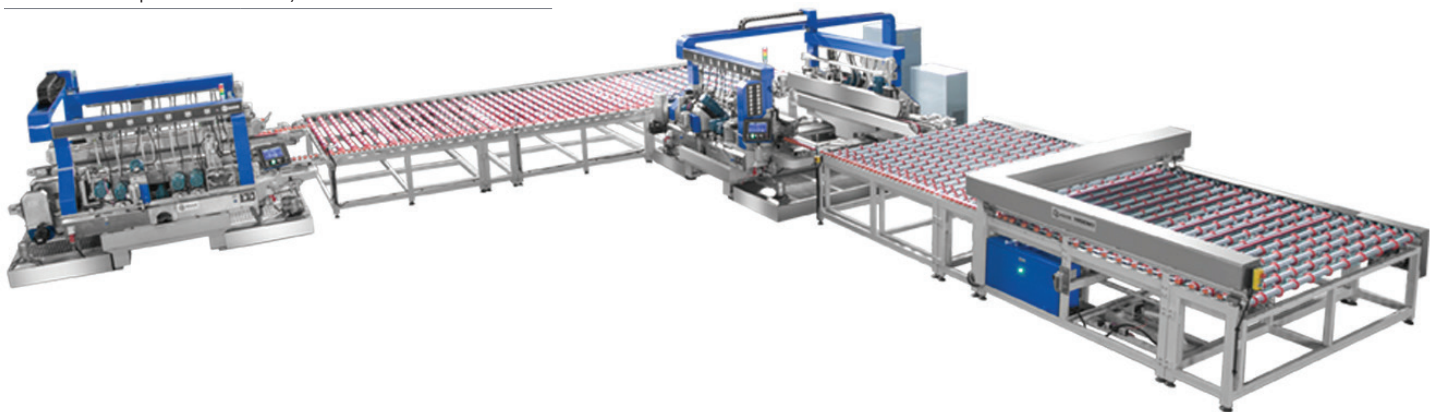
Glass Thickness	3 - 19 mm
Speed	0.5-8 m/min



HISENG SZM AUTOMATIC SUPER SPEED DOUBLE EDGER LINE

Fast automated glass edging made easy! The double edging line is ideal for Low-E and insulated glass units.

Glass Thickness	1/8 - 1 in
Maximum Flat Edge	3/16 in
Polishing	3/16 in
Glass Size Detection	131 ft/min
Maximum Edging Speed	49 ft/min
Width Adjustment Speed	65 ft/min
Transfer Table Speed	164 ft/min



SKILL E-D 101 VERTICAL MACHINING CENTER

This high quality vertical CNC drilling, milling and polishing machine is expertly designed for creating holes, notches, chamfering, and both polished and rough openings.

Machine Dimensions	8470 - 11300 x 3000 x 3275 - 3920 mm
Min Glass Size	600 x 300 mm
Max Glass Size	3000 - 4500 x 2000 - 2600 mm
Glass Thickness	4 - 20 mm
Working Height	600 mm
Forward Work Speed	0 - 20 m/min
Electrical Power Supply	400 V 50 Hz
Total Installed Power	30 kW
Rated Spindle Power	10 kW (13.6 HP)
Spindle Speed	0 - 12000 rpm (w/ internal tool cooling)
Numeric Control	8 AXES
N. of Tool Slots	10 + 10 (automatic change)

**Additional options available*



SKILL E-D VERTICAL MACHINING CENTER

This vertical CNC drilling, milling and polishing machine allows multiple machining processes to be combined into a single system capable of performing all processes with extreme speed and precision.

Machine Dimensions	8450 - 14450 x 3000 x 3300 - 4550 mm
Min Glass Size	600 x 300 mm
Max Glass Size	3000 - 6000 x 2000 - 3300 mm
Glass Thickness	4 - 20 mm
Working Height	600 mm
Forward Work Speed	0 - 40 m/min
Electrical Power Supply	400 V 50 Hz
Total Installed Power	30 kW
Rated Spindle Power	10 kW (13.6 HP)
Spindle Speed	0 - 12000 rpm (w/ internal tool cooling)
Numeric Control	8 AXES
N. of Tool Slots	12 + 12 (automatic change)

**Additional options available*



SKILL DRILL 101FF VERTICAL DRILLING AND MILLING MACHINE

This six-axis vertical CNC drilling and milling machine is designed to produce holes, inserts and countersinks on flat glass sheets. It features two electro-spindles positioned opposite one another to create a dead-center system that drills perfect holes.

Machine Dimensions	8540 - 14400 x 2800 x 3300 - 4550 mm
Min Glass Size	600 x 300 mm
Max Glass Size	3000 - 6000 x 2000 - 3300 mm
Glass Thickness	3 - 20 mm
Working Height	600 mm
Forward Work Speed	0 - 20 m/min
Electrical Power Supply	400 V 50 Hz
Total Installed Power	20 kW
Rated Spindle Power	4 kW (5.3 HP)
Spindle Speed	0 - 10000 rpm (w/ internal tool cooling)
Numeric Control	6 AXES
N. of Tool Slots	12 + 12 (automatic change)

**Additional options available*



SKILL DRILL 1600FF VERTICAL DRILLING AND MILLING MACHINE

This five-axis vertical CNC drilling and milling machine is designed for producing holes, inserts and countersinks on rectangular, flat sheet glass. It is a vibration-free machining center –providing maximum precision and speed.

Machine Dimensions	8810 - 11330 x 2400 x 2570 mm
Min Glass Size	500 x 150 mm
Max Glass Size	3200 - 4500 x 1600 mm
Glass Thickness	3 - 20 mm
Working Height	500 mm
Forward Work Speed	0 - 20 m/min
Electrical Power Supply	400 V 50 Hz
Total Installed Power	12 kW
Rated Spindle Power	4 + 3 kW (5.3 + 4 HP)
Spindle Speed	0 - 6000/10000 rpm (w/ internal tool cooling)
Numeric Control	5 AXES
N. of Tool Slots	12 + 12 (automatic change)

**Additional options available*



SKILL SFILL VERTICAL ARRISING AND GRINDING MACHINE

This nine-axis vertical CNC grinding and arrising machine is designed for automatically arrising, grinding and polishing straight and shaped sheet glass.

Machine Dimensions	8450 - 14450 x 2630 x 3750 - 5050 mm
Min Glass Size	600 x 300 mm
Max Glass Size	3000 - 6000 x 2000 - 3300 mm
Glass Thickness	4 - 20 mm
Working Height	600 mm
Forward Work Speed	0 - 40 m/min
Electrical Power Supply	400 V 50 Hz
Total Installed Power	30 kW
Rated Spindle Power	10 kW (13.6 HP)
Spindle Speed	0 - 12000 rpm (w/ internal tool cooling)
Numeric Control	9 AXES
N. of Tool Slots	10 + 10 (automatic change)

**Additional options available*



CHEMWEST PARTICLE REMOVAL SYSTEM

ChemWest Particle Removal Systems are manufactured in four sizes ranging from 50 gpm to 400 gpm and are designed to remove glass fines from cutting fluids. Removing up to 99.9% of suspended solids from cutting fluid used for cutting and grinding glass panels, this system is considered to be a green alternative in the manufacturing process. In addition to an increased feed rate of coolant, you will find an improved edge quality, reduced downtime, and an overall lower cost of ownership.



ZAFFERANI DRUM CENTRIFUGE

Centrifugal sludge-water separator with physical removal of glass fines from process water waste.

Machine Size	19.7 x 38.2 x 35.4 in
Weight	150 kg
Power	2 kW
Maximum Flow Rate	100 L/min
Rotor Volume	16 L
Sludge Maximum Capacity	8 kg
Removed Glass Sludge	6 kg/hr
Particle Maximum Acceleration	1,250 g
Minimum Particle Size	5 micron



AUTOMATIC LAMINATED GLASS PRODUCTION LINE FOR ARCHITECTURE GLASS

From washing and drying the glass to moving it to the autoclave to be laminated, this automatic laminated glass machinery manages your entire laminated glass production process. Offers production of architecture laminated glass automatically or manually.



LAMINATED GLASS PRODUCTION LINE

Easy to operate and maintain, this machinery series offers a cost-effective investment in laminated glass automation. Product line-up includes glass loading machine, glass unloading machine, flat glass washing and drying machine, pre-heating and pre-pressing machine and bent glass pre-heating and pre-pressing machine (optional).



GLASS LAMINATING SYSTEMS

GLASS AUTOCLAVE

The glass autoclave from HHH Equipment Resources laminates flat and bent glass. It is ideal for architecture, anti-bullet and anti-bombing glass.

Minimum Glass Size	1,700 x 5,000 mm
Maximum Glass Size	3,600 x 18,500 mm
Electric Power Consumption:	85 - 1100 kW
Air Pressure	1.3 MPa
Temperature	275°F
Working Medium	Compressed Air



TORNATI VB GLASS LAMINATING OVEN

The Tornati VB Glass Laminating Oven is suitable for glass in an annealed or tempered state, for sensitive laminating products, and for those with decorative or functional inserts. These non-autoclave laminating ovens can be built for custom-sized glass, including any thickness variation. The VB is an efficient-style glass laminating system ideal for high volume, smaller-sized glass.

Power	43 - 67 kW
Maximum Glass Size	1,800 - 2,300 x 3,000 mm
Number of Levels	4



TORNATI VN GLASS LAMINATING OVEN

The Tornati VN Glass Laminating Oven laminates: clear, coated, mirrored or colored glass in an annealed or tempered state, products sensitive to pressure and temperature, and products with decorative and functional inserts. The VN is a non-autoclave glass laminating oven that can be built to your custom glass specifications, and is the perfect solution for producing high-volume laminated glass.

Power	44 - 84.1 kW
Maximum Glass Size	1,800 - 2,300 x 3,000 - 4,500 mm
Number of Levels	4



TORNATI VM2 GLASS LAMINATING OVEN

The Tornati VM2 Glass Laminating Oven laminates multiple different product types, from tempered to pressure-sensitive to decorative glass. From small to high production yield applications, you get continuous production of safety, hurricane, ballistic, fire rated and architectural glass. The VM2 is a smaller, more portable glass laminating machine.

Power	31 - 50 kW
Maximum Glass Size	1,500 - 2,000 x 3,000 mm
Number of Levels	2



The logo for Salem Fabrication Supplies features the word "SALEM" in a bold, sans-serif font. The letter "A" is stylized with a red and blue triangle above it. Below "SALEM" is the text "FABRICATION SUPPLIES" in a smaller, all-caps, sans-serif font.

SALEM

FABRICATION SUPPLIES



Glass Fabrication Equipment, Tooling & Supplies that **GO BEYOND THE EDGE**

Salem Fabrication Technologies Group is dedicated to providing top-of-the-line tooling and supplies to the flat glass industry.

Our **Salem Fabrication Supplies** division provides expertise in all industry tooling, material handling and supplies and our premium offerings cover every aspect of production. You can count on **Salem** for high-quality tooling, service and support to keep you running smoothly.

Salem Fabrication Supplies focuses on the glass manufacturing processes to lend scientific and repeatable techniques to glass processing. We are the **industry leader in glass polishing and processing** and stand out from the rest by our methods of selecting, inspecting, testing and developing only the best products and by having the knowledge to apply the optimal processes for these products. Our resident glass industry experts continually look for new products and processes to help our customers run efficiently and sustainably. This is our charge as an employee owned company that is driven to support our industries and our customers. You can trust **Salem Fabrication Supplies** to provide you with answers and solutions to even your most difficult challenges.

DIAMOND PRODUCTS

- Core Drills
- Countersinks
- Cup Wheels
- Peripheral Wheels
- Routers

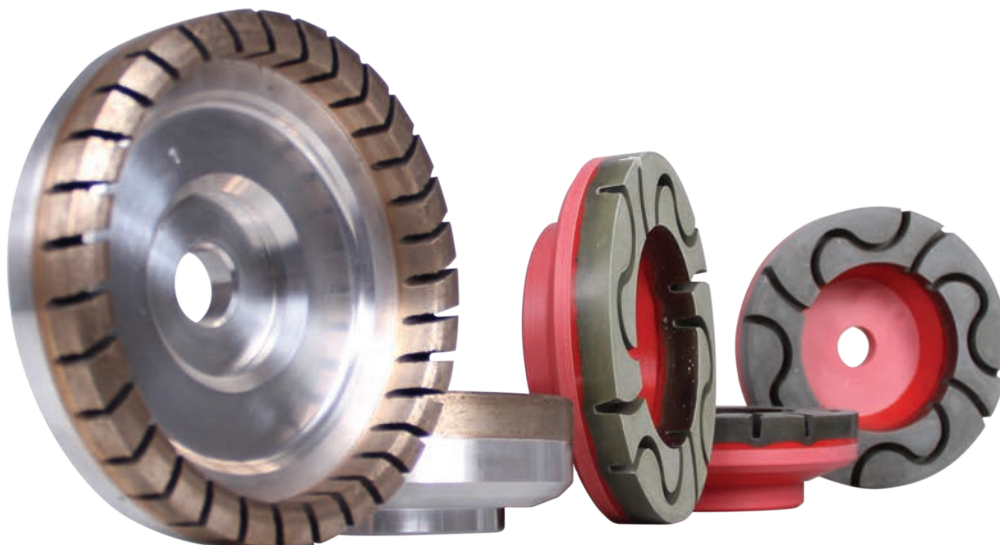
See our full line of tooling and supplies at www.SalemFTG.com



COOLANTS AND ADDITIVES

- Biocide
- Coolants
- Cutting Fluids
- Defoamer
- Flocculant

See our full line of tooling and supplies at www.SalemFTG.com



ASK ABOUT TOOLING SETUPS

Salem Fabrication Supplies offers tooling for all machines – any make or model! We have suggested tooling setups for most industry machines and can help you build a **custom tooling setup** specific to your needs.

Contact us today for more information.

GLASS FABRICATION TOOLING AND SUPPLIES

POLISHING PRODUCTS

- Cerium Impregnated Cup Wheels
- Cerium Oxide
- Cup Polishing Wheels
- Edge Deletion Wheels
- Felt Wheels
- Peripheral Polishing Wheels
- Scratch Polisher

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ABRASIVES

- Loose Abrasives
- Sanding Belts
- Sanding Discs
- Wheel Dressing

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WINDOW GLASS PRODUCTS

- Approved Cutting Fluids (Guardian and Vitro)
- Cutting Wheels
- Dual-Belt Seamers
- Edge Deletion Wheels
- Material Handling
- Sanding Belts and Discs

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MATERIAL HANDLING

- Carry Vises
- Reinforcement Systems
- Carts, Racks and Tables
- Seamers
- Cranes
- Vacuum Hand Cups
- Dollies
- Vacuum Lifters, Rotators and Tilters
- Glass Manipulators

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OTHER EQUIPMENT

- Ball Caster Tables
- Sand Jet Markers
- Dual-Belt Seamers

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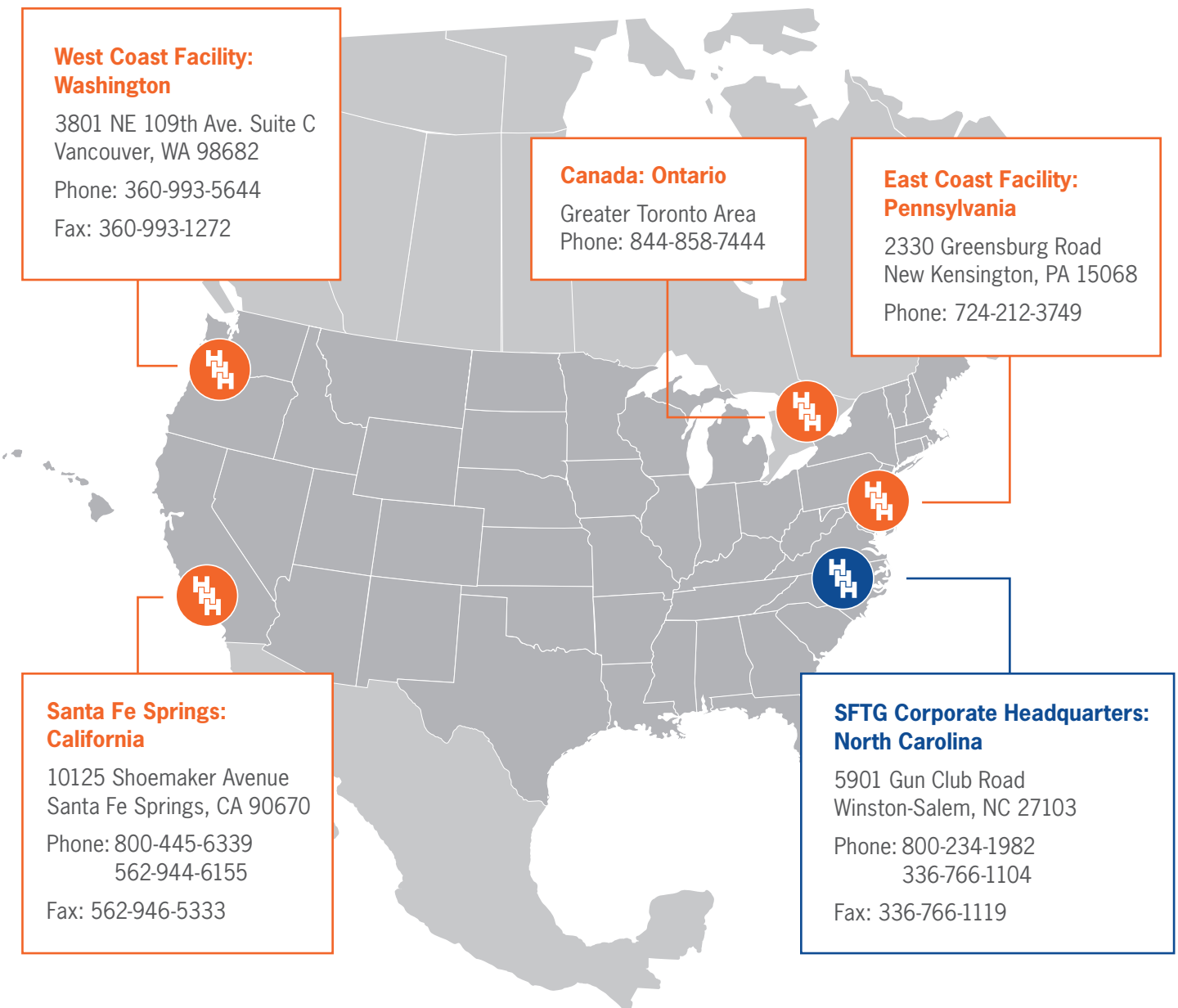
GLAZING SUPPLIES AND MORE

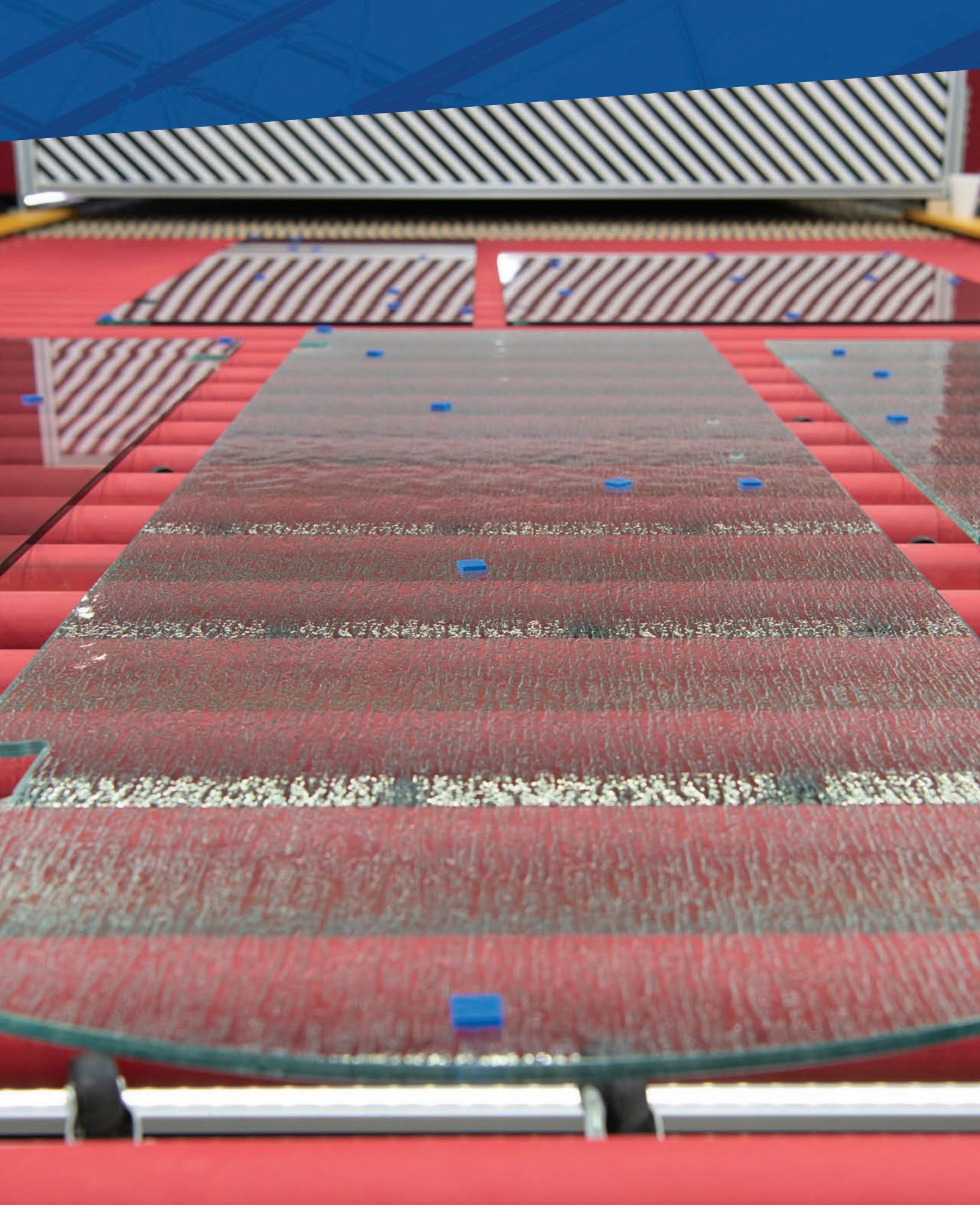
- Adhesives
- Hand Cutters
- Cleaners
- Protective Coatings
- Cork and Felt Tabs
- Razor Blades
- Corner Protectors
- Sealants
- EVA Laminating Film
- Tape
- Gloves
- **And More**

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OUR SALES AND TECHNICAL TEAMS SPAN ACROSS THE USA, CANADA AND MEXICO.







Corporate Headquarters

5901 Gun Club Road,
Winston-Salem, NC 27103

Phone: 800-234-1982
336-766-1104

Fax: 336-766-1119

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HHHGlassEquipment.com

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DIFFERENCE
IS CLEAR.**