Tailless Intelligent Continuous VIG Line

From raw-glass storage, laser coding, cutting, edging and tempering to frit, pillars, robot pairing, the continuous vacuum line and automatic packing, all in one connected line with ERP / MES.





≈ 300,000 m²	300 × 450	2000 × 3000	6000 kW
Annual output	Min. size, mm	Max. size, mm Finished thickness 6–16 mm	Total line power

Glass processing means many products, mixed sizes, high quality demands, fragile material and real safety risks, and many plants are still managed by hand. The result is low efficiency, high cost, unstable quality and poor traceability. This line connects everything from raw-glass storage to packed finished units into one intelligent line, linked to ERP / MES, for efficient, transparent and flexible production.

PROCESS FLOW

Process flow

Gantry storage › Laser coding + cutting › Breaking table › 9-level sorter › Double edger × 2 › Washer › 35-level sorter › Twin-chamber tempering › Vertical sorter › Washer › Frit edging › Drying line › 9-level sorter › Pillar placing › 9-level sorter › Getter strip › Robot pairing › Clipping › 20-level sorter › Continuous vacuum line › Unclipping › Cage sorter › Automatic packing

Post-tempering line only is also available: automatic loading › sorter › washer › frit edging › drying › sorter › pillar placing › sorter › getter strip › robot pairing › clipping › vacuum line › unclipping › sorter.

SITE REQUIREMENTS

Building requirements

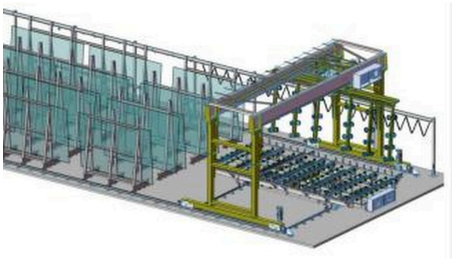
≥ 20,000 m²	≥ 300 m	≥ 30 m	≥ 11.5 m
Floor area	Building length	Span of each bay	Eave height

SCOPE OF SUPPLY

Equipment list

No.	Equipment	Qty
1	Gantry raw-glass storage	1 set
2	Laser coding	1
3	Glass cutting machine	1
4	Breaking table	1
5	9-level sorter	1
6	Double edger	2
7	Washer	2
8	35-level sorter	1
9	Twin-chamber tempering furnace	1
10	Vertical sorter	1
11	Washer	1
12	Frit edging machine	3

No.	Equipment	Qty
13	Drying line	1
14	9-level sorter	1
15	Pillar placement machine	5
16	9-level sorter	1
17	Getter strip machine	3
18	Pairing robot	3
19	Clipping machine	3
20	20-level sorter	1
21	Continuous vacuum line	1
22	Unclipping machine	3
23	Cage sorter	1
24	Gantry packing machine	1



Gantry raw-glass storage 01

- Stores raw glass by type and size and feeds sheets one by one to cutting. Mixed cutting of several glass types saves time, labour and material.
- Rack management and glass recognition, shared work and raw-glass stock, central scheduling, ERP link. Reads cutting files and loads sheet by sheet.
- Siemens motion control and drives; fast, precise gantry; smart path planning and task scheduling.



Laser coding 02

- Laser coding added to the cutting table, so every sheet can be traced.
- Imported 18 W laser for fast, high-grade codes.
- Dual-drive coding bridge, diagonal accuracy ≤ 0.5 mm, easy to adjust.
- Own software, seamless link to storage and ERP; standard international-brand parts keep repairs cheap.

MAIN EQUIPMENT

Main equipment



Cutting machine + breaking table 03

- German-standard hardware and German industrial PC control. Clean breaks reduce grinding-wheel wear.
- Dual-drive bridge: diagonal error < 0.25 mm for glass ≤ 1 m².
- Patented 3 mm head-lift control shortens head up/down time, over 20 % more output than standard cutters.



Horizontal sorters (9 / 20 / 35 levels) 04

- 35 levels pre-arrange loads before tempering; 20 levels pre-arrange loads before the vacuum line, raising load rates.
- Servo rubber-roller conveying and servo lifting. Offline with the edger or online via MES; alarms, emergency stop, touch screen.



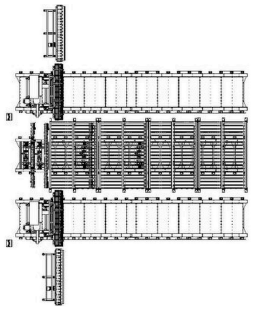
Double edger × 2 05

- Two machines in line: the first grinds both short edges (470–3000 mm), a turning table passes the glass to the second for both long edges (320–2500 mm), with automatic speed matching.
- 22 + 2 heads: 3 bottom-edge roughing, 1 each for top and bottom 45° arris roughing and polishing, #8 resin wheel, 3 bottom-edge polishing + Low-E removal.
- Full servo feed, one-touch start; any head can be switched off. Centre support stops sagging; stock detection adjusts speed to avoid chipping.
- Glass size 400 × 400 to 2500 × 3000 mm, thickness 3–19 mm.



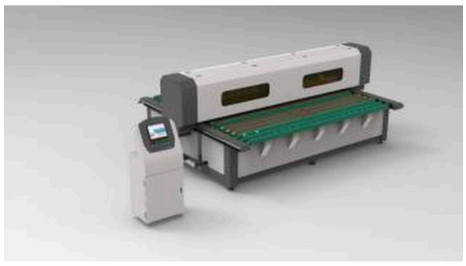
Forced-convection twin-chamber tempering furnace 06

- Forced convection heating tempers double, triple and quadruple silver Low-E glass.
- Mirror-grade tempering: hardly any visible distortion at 30 m; 6 stacked 6 mm clear sheets show no obvious anisotropy in daylight.
- Edge wave ≤ 0.1 mm / 300 mm (double-silver Low-E), key for pillars staying in place and VIG yield.
- Even stress: ≤ 9 MPa difference across 5 points on one sheet, for a much lower breakage rate.
- Matrix zone heating, Siemens control, S7-1500 PLC; 10 mm heat-strengthening for laminates; 20+ loads on E ≥ 0.03 double-silver glass.



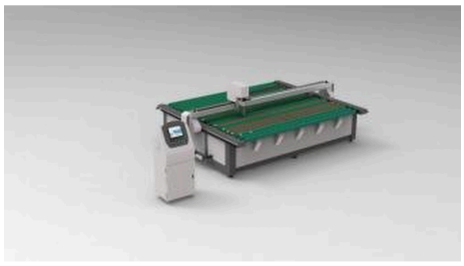
Vertical shuttle sorter 07

- Two matching racks are brought to the machine. Sheets are scanned or measured, paired in the sorting cage and sent out one by one. Replaces manual pairing and labelling.
- Loading transfer, infeed check, in / out shuttle grids and outfeed; order scanning and ERP data matching.
- Three modes: pass-through, sorting (before tempering or edging, fewer edger resets) and pairing (before IG or laminating lines).
- Siemens PLC and HMI, Inovance servo and inverters, Schneider low-voltage parts; fibre-optic or barcode detection.
- Installed power 60 kW, AC 380 V; positioning ±1 mm; glass 3–12 mm; ambient −10 to 40 °C.



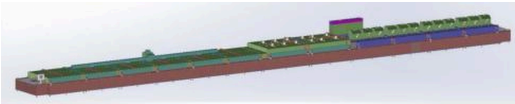
Pillar placement machine 08

- Built for VIG support pillars; multi-axis controller for automatic transfer, positioning and placement.
- Welded frame with aluminium profiles; precise rubber-roller and belt conveying.
- High-power servo motors with rack-and-pinion drive.
- Vacuum pick-and-place applies glue at the same time, so pillars sit 100 % on the glue dots and do not move. Multiple heads, any pattern.



Frit edging machine 09

- Built for applying VIG edge-sealing frit; multi-axis motion controller.
- Automatic frit stirring and feeding.
- Aluminium-profile frame, servo motors with rack-and-pinion drive.
- Precise feed pump with high torque and accurate dosing; frit never sets in the tank. Proven in trials and at customers.



Drying line 10

- Max. 400 °C; heats to 350 °C in 20–25 min, holds 3–5 min, then cools to a glass surface of 50–60 °C.
- Glass 3–12 mm, 0.3 × 0.3 to 3 × 2 m, up to 30 kg/m²; clear width ≥ 2 m; conveyor height 920 ± 30 mm.
- About 40 m long, about 1 m/min, matched to line speed; central exhaust in the cooling zone; controlled from the infeed.



Continuous vacuum glass line 11

- Produces vacuum glass in one continuous pass; max. substrate 2000 × 3000 × 20 mm.
- Horizontal chamber design; footprint about 131,000 × 6,000 × 2,000 mm including vacuum pumps and load / unload tables.
- 11 vacuum gate locks divide the vacuum stages; the infeed is a clean room.
- Magnetic-fluid seals; ceramic rollers, chain driven.
- Network control: PLC master with a host computer that controls the line and collects all status data.



Cage sorter 12

- Units from the vacuum line are scanned or measured and fed into the sorting cage.
- Grouped and sequenced by customer order, then sent to the outfeed.
- Each unit gets a finished-product label before going to the packing machine.



Gantry packing machine 13

- Glass 800 × 600 to 3000 × 2000 mm, 12–80 mm thick; max. load 500 kg. A jib crane is advised for smaller glass.
- Full servo lifting, travel and rotation, closed-loop control; 40 s per unit (excluding manual check).

Gantry packing machine · details

- Vacuum: direct-drive rotary-vane pump, 40 m^3/h, ultimate vacuum < 1 mbar.
- Compressed air 0.5–0.7 MPa, 30 L/min.
- 6–8 suction cups (final design by engineering); glass size via Profinet or Modbus TCP switches cups automatically and centres the glass.
- Vertical conveyor height 500 mm, backrest 2000 mm; set-down depth 800 mm.
- Pauses after picking for a manual check, then unloads automatically.
- Protection against pushing the rack; no stacking on a full rack (racks must have the same depth).
- Includes a vacuum lifter and swing arm for small glass.
- Welded and bolted steel tube frame; TE electrics, Siemens PLC and touch screen; bright aluminium finish, built to European IEC standards.

SERVICE

Service

- **Patent licence.** Free licence to use the patents related to the line.
- **Consumables.** Reliable supply of vacuum glass consumables.
- **Technical support.** Six months of technical support, plus help with ongoing improvements on request.
- **Warranty.** 1 year from signing the acceptance report, or 18 months from start of use, whichever comes first. Wear parts and consumables excluded.

INSTALLATION

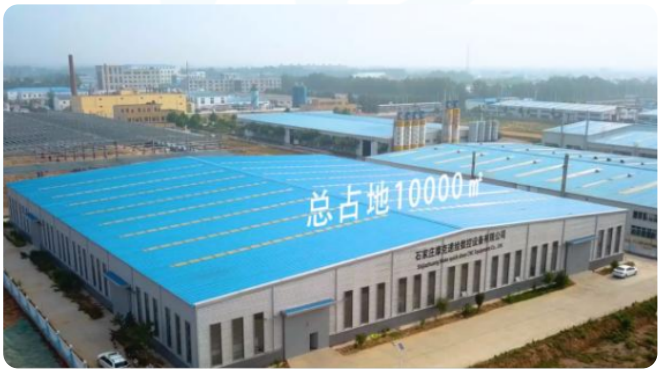
Installation and training

- After the buyer confirms installation, we apply for visas. Engineers arrive within 15 working days of visa issue to install and train the buyer's staff (the buyer arranges an interpreter).
- The buyer covers the engineers' travel, accommodation and meals during installation.
- The buyer provides unloading, rails, unpacking and in-plant handling tools, test instruments, water, power, compressed air and test glass, plus at least 5 operators for training and installation support.

ABOUT US

About us

Create is the export sales team for MOKE glass machinery. The MOKE factory in Zhao County Economic Development Zone, Hebei, covers 10,000 m² and has served the glass industry for over 20 years. Products include glass engraving, laser sandblasting and laser marking machines, and vacuum glass production lines.



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