GE
NIUS COMBY-H

FLOAT GLASS AND LAMINATED GLASS CUTTING LINE WITH DELIVERY OF THE FINISHED PIECE TO THE LINE END

INTERMAC

ULTIMATE PRODUCTIVITY AND SPEED OF EXECUTION

THE MARKET DEMANDS

Automated solutions capable of dealing with large scale production and guaranteeing maximum productivity without sacrificing the quality of the output.
High standards and rapid execution are needed for sizeable volumes, limiting human intervention and thereby guaranteeing the safety of the production process.

INTERMAC RESPONDS

Combining technological solutions for cutting laminated and float glass. **The Genius Comby-H** is the answer to the industry's demand for ever higher levels of automation that can combine efficiency with elevated production standards.
With the option of offering the full automation of cutting processes, the Comby-H guarantees the possibility of executing multiple operations at the same time, limiting the need to expose the operator to hazards.
The innovative solution by Intermac places itself at the top of the range for the machining of volumes of float glass and laminated glass, benefiting from the synergy of experience and cutting-edge technology.

GENIUS COMBY-H

- ULTIMATE AUTOMATION OF THE PROCESS WITH DELIVERY OF THE FINISHED PIECE TO THE LINE END
- SIMULTANEOUS OPERATIONS (PROCESSES IN HIDDEN TIME)
- POSSIBILITY OF OPERATING WITH FINISHED PIECES OF DIFFERENT SIZE
- REDUCED CYCLE TIMES
- FULLY AUTOMATED GLASS HANDLING
- MINIMAL EXPOSURE FOR THE OPERATOR
- INTEGRATION WITH AUTOMATIC LOADING SYSTEMS BY MOVETRO

FUNCTIONALITY AND WORK CYCLES

BASE CYCLE

Delivery of the finished piece to line end by means of the indexing bridge

AUTOMATIC CYCLE*

Delivery of the finished piece to the end of the lami table by means of the indexing bridge + subsequent belt transport to the additional table at line end

FULLY AUTOMATIC CYCLE *

Delivery of the finished piece to the end of the lami table by means of the indexing bridge + subsequent belt transport to the additional table at line end + automatic lifting on tilting arms

* Optional

Automatic trimming		Trims removed manually	
Glass sheets per shift	Average time per finished piece in sec.	Glass sheets per shift	Average time per finished piece in sec.
19	75	22	63

Automatic trimming		Trims removed manually	
Glass sheets per shift	Average time per finished piece in sec.	Glass sheets per shift	Average time per finished piece in sec.
21	68	25	**57**

Automatic trimming		Trims removed manually
Glass sheets per shift	Average time per finished piece in sec.	Not included
18,5	77	

Automatic trimming		Trims removed manually	
Glass sheets per shift	Average time per finished piece in sec.	Glass sheets per shift	Average time per finished piece in sec.
13,5	107	15,5	90

Automatic trimming		Trims removed manually	
Glass sheets per shift	Average time per finished piece in sec.	Glass sheets per shift	Average time per finished piece in sec.
14,5	98	17,5	**81**

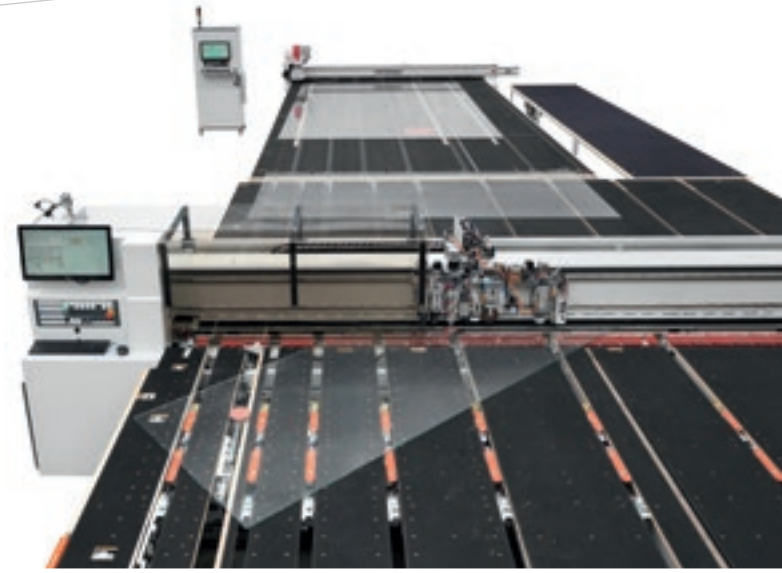
Automatic trimming		Trims removed manually
Glass sheets per shift	Average time per finished piece in sec.	Not included
13	110	

PARAMETERS

- Room temperature 20° C
- Glass sheets 6000x3210x33.1 with automatic loading
- 60 mm trim cuts
- Inefficiency 5% per shift (7.5 net working hours)

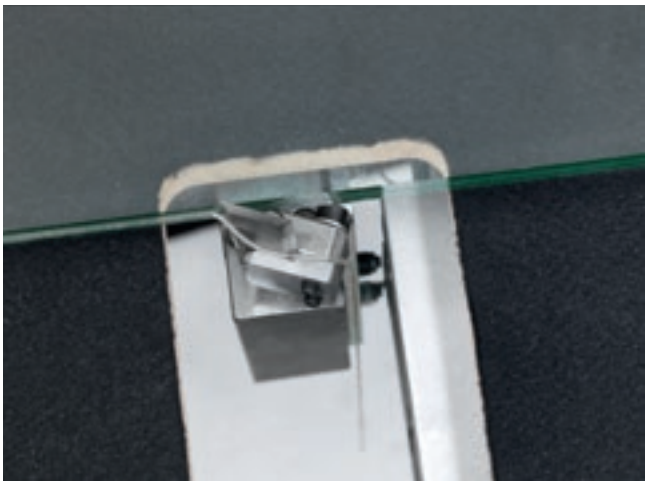
AUTOMATION OF LAMINATED CUTTING

AUTOMATIC SQUARING IN HIDDEN TIME (SIMULTANEOUS OPERATIONS)
A function that allows for the finished piece to be unloaded at line end while the cutting cycle is ongoing

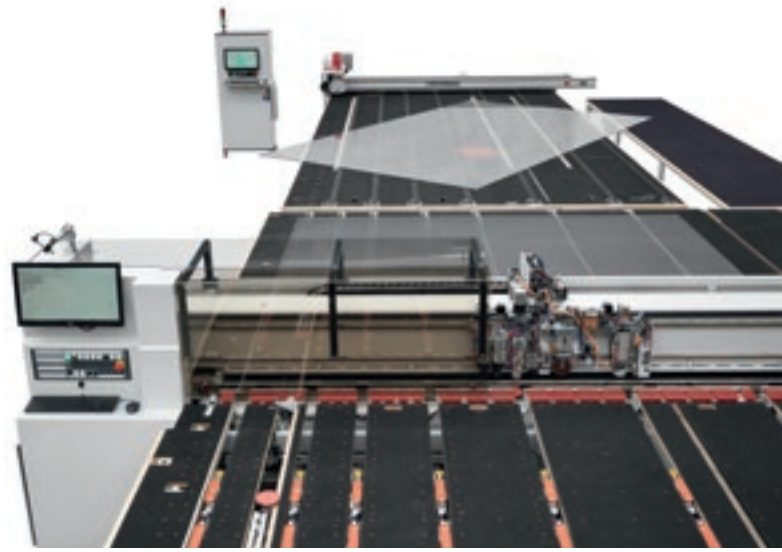


ROTATION OF SUBPLATES AND PRIMITIVES
The functionality of the interpolated rotator allows for the automatic rotation of subplates and primitives up to the Z and W cuts determined by the optimizer.

- Maximum rotation 4800 x 1800 x 88.12.



PVB TRIMMING
Possibility to activate the option for the automatic trimming of excess PVB protruding from the long sides of the Jumbo sheet and for the front side with automatic transport to line end for manual removal.

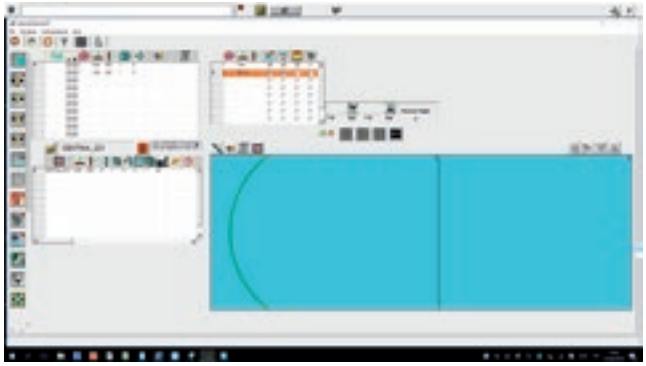


ROTATION UPSTREAM OF THE CUT
An optional feature that allows for the automatic rotation of residual portion of the original sheet that requires cuts greater than 3210 mm long.

- Maximum size for automatic rotation 4800 x 3210 x 88.12

ASSISTED DIAGONAL CUT

This function allows for the precise and flexible execution of diagonal cuts, eliminating the three manual operations of measuring the end points of the cut, their marking onto the glass surface and the manual positioning of the glass piece in correspondence of the laser tracer.
Diagonal cuts become simple straight cuts executed as part of the cutting cycle sequence.



SHAPED CUTS

This optional feature allows for the precise and flexible automatic execution of curved cuts. The function is available for finished pieces that have rectangular construction shapes with a curved side.

- Maximum size 4.600 x 3210 x 66.4.

BREAKOUT OPERATION FOR SHAPES

This optional feature allows for the precise and flexible automatic execution of the breakout operation of shaped cuts on laminated glass. The function is available for finished pieces that have rectangular construction shapes with a curved side.

- Maximum size 4.000 x 3210 x 44.2.

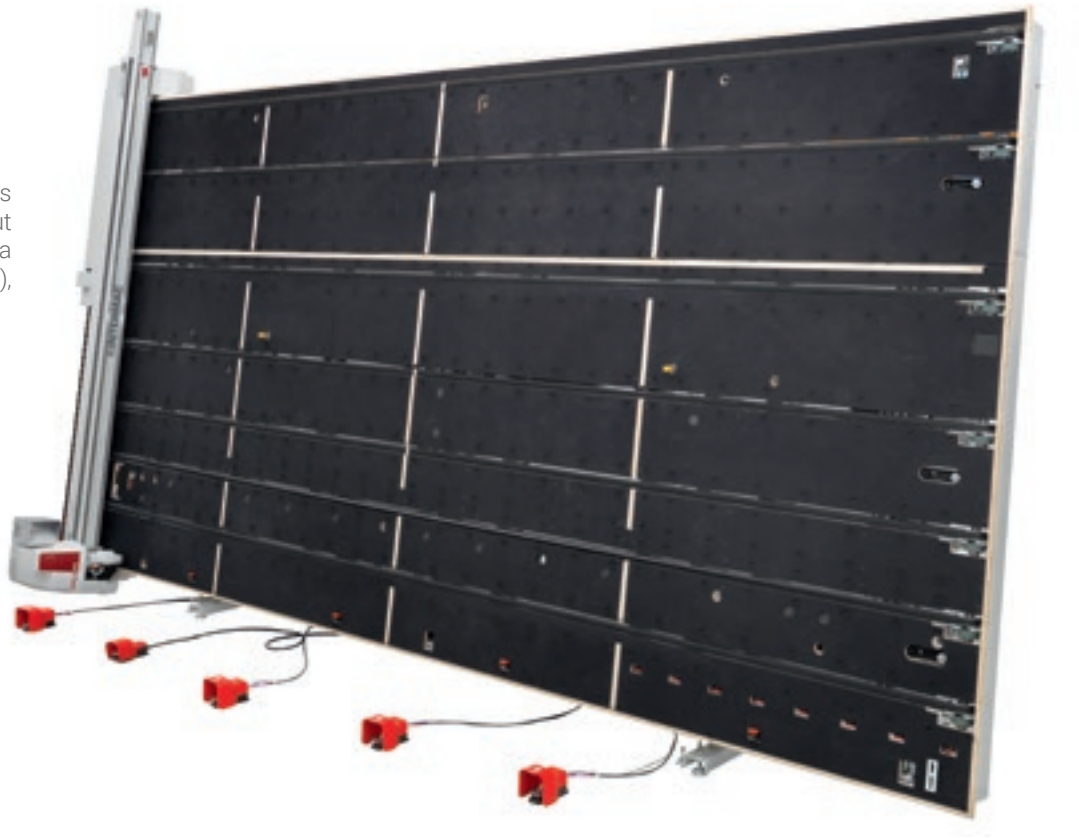
DISPOSING OF TRIMS IN THE SCRAP BOX

This function allows for the automatic disposal of trims in the scrap box.

- Minimum trim 20 mm on ≤ 44.2
- Maximum trim 230 mm on ≤ 88.12.

PERFORMANCE WHEN CUTTING FLOAT GLASS

TILTING TABLE
The PLUS C cutting table offers the integration of 3+1 breakout bars and transport belts as a standard (3+2 bas are optional), with optional tilting of the table.

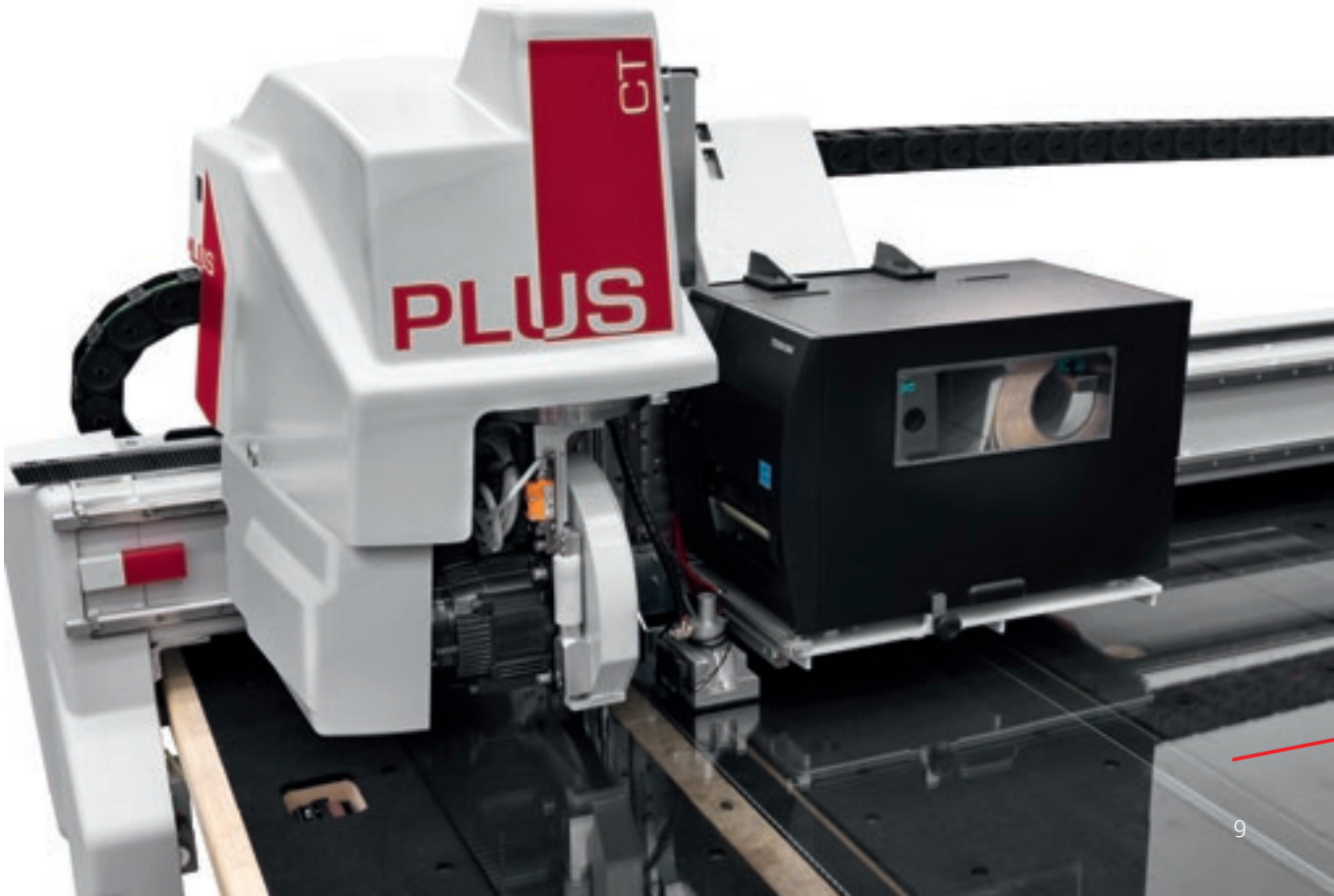


AUTOMATIC TOOL CHANGE
The automatic tool magazine is Intermac technology that allows for different cuts to be executed on the same sheet always using the most suitable tool. Standard function on the Comby-H.

TANGENTIAL COATING REMOVER (TCR) DEVICE
The low-e TCR removal device option can remove the coating from float glass both with a symmetrical (to the cut) pass and with multiple passes, and also remove the four outer edges from laminated glass sheets.

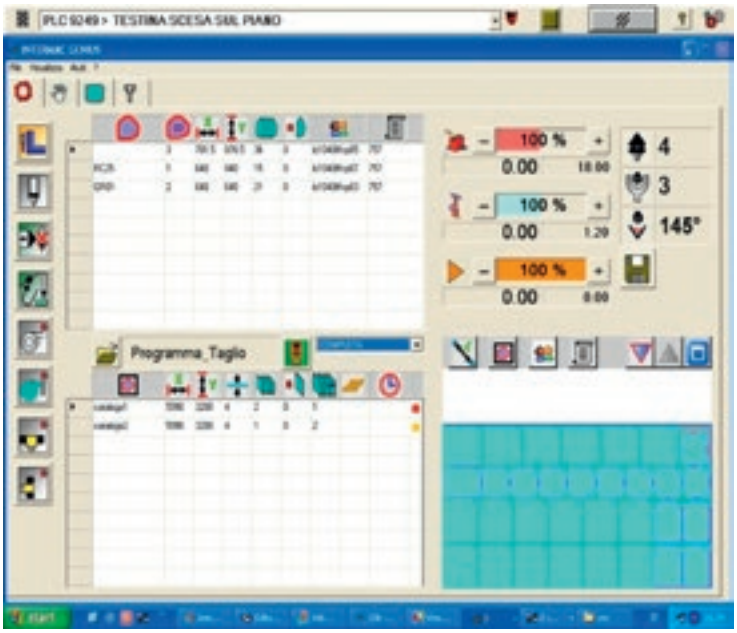
CONSTANT, MAXIMUM QUALITY REMOVAL thanks to:
- Hood positioning at 1 mm from the glass surface, with automatic grinding wheel wear compensation;
- Suction device with a residue collection tank on the cutting carriage.
- Enhanced suction available for treating special protective materials.

DIGITAL PRINTER FOR LABELS
A useful function for guaranteeing the ultimate traceability of glass within the production process.



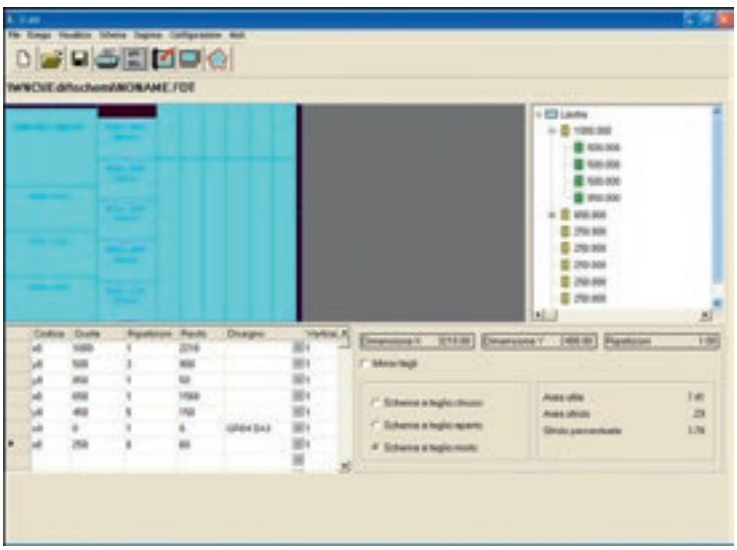
EXTREMELY USER-FRIENDLY

The operator interface is simple and intuitive, and enables cutting programmes generated by a range of the optimisers present on the market to be imported, courtesy of the integrated OTD (Optimiser Transferring Data) universal interface that automatically defines cutting parameters and generates the programme for the cutting table.



PC IWNC-BASED NUMERICAL CONTROL SYSTEM (IWNC - INTERMAC WINDOWS NUMERICAL CONTROL)

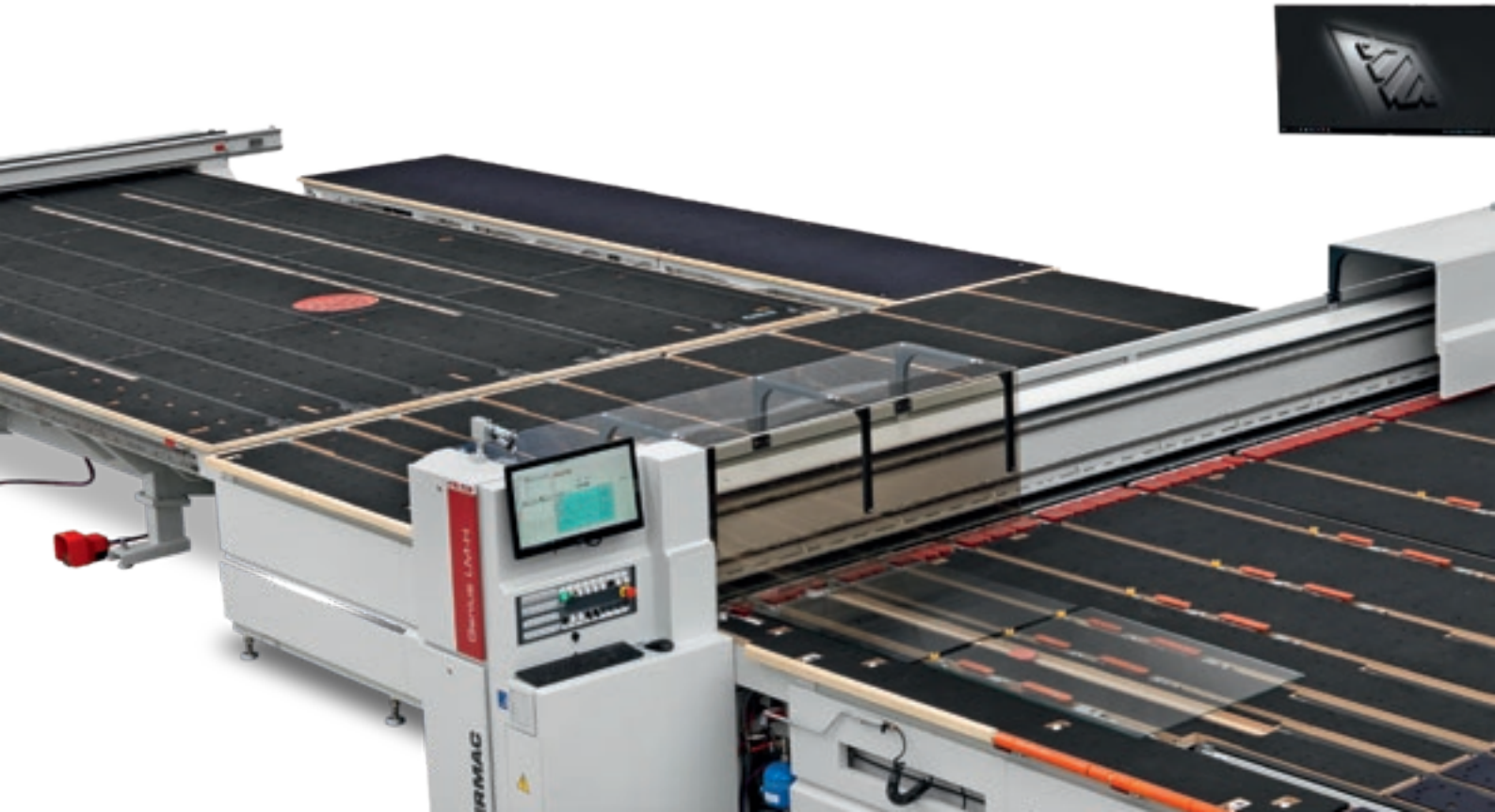
- Ideal both for those using CNC machines for the first time and those who already have programming experience.
- Management of the working parameters of the machine.
- Creation and modification of the cutting patterns and/or the geometric or non-geometric shapes.
- Modules for quick estimate calculation and production reports.



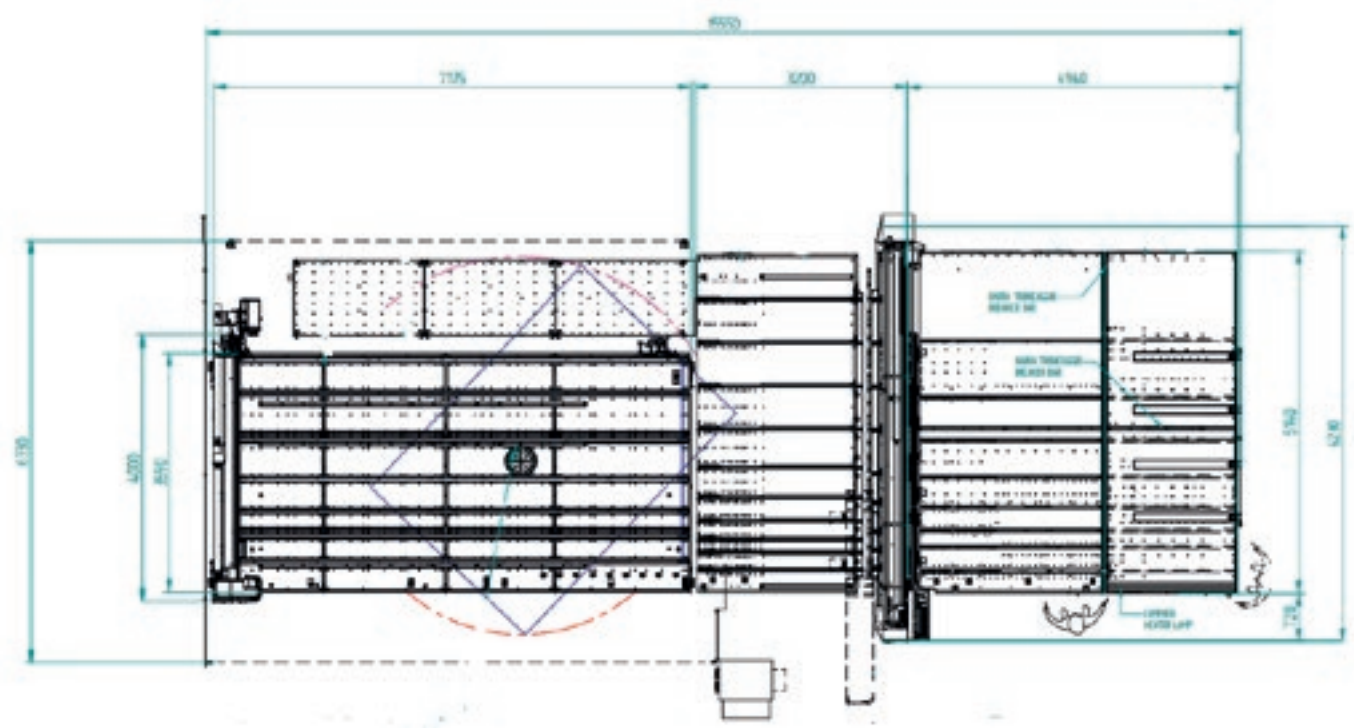
Cutting editor in the Windows environment, with a user-friendly graphic interface, for making straight cuts on sheets without employing the optimisation program. Particularly recommended for quick, immediate cuts, it can manage an endless number of nesting levels and also offers a function for inserting shapes in the glass sheets before cutting.

INTEGRATION WITH SOFTWARE OF OPTIMISATION.

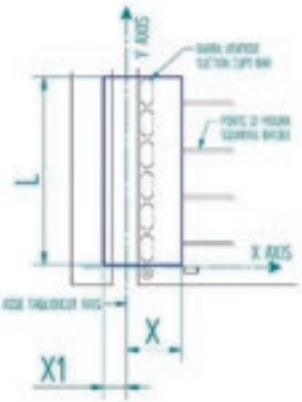
- WASTE REDUCED TO A MINIMUM
- MACHINE PERFORMANCE INCREASED, REDUCING THE CUTTING TIME
- EQUIPPED WITH IMPORT MODULE FOR INTEGRATION WITH COMPANY SYSTEMS (ERP)
- CAD MODULE INCLUDED FOR MANAGING SHAPES
- LABEL MODULE INCLUDED FOR MANAGING LABELS (INCLUDING OFFLINE)
- PREPARED TO MANAGE OPTIONALS FOR THE VISUALISATION OF CUTTING SCHEMES AT THE END OF THE LINE
- COMPATIBLE WITH THE ISO OUTPUT FILES OF THE MAIN MANUFACTURERS.



TECHNICAL DATA



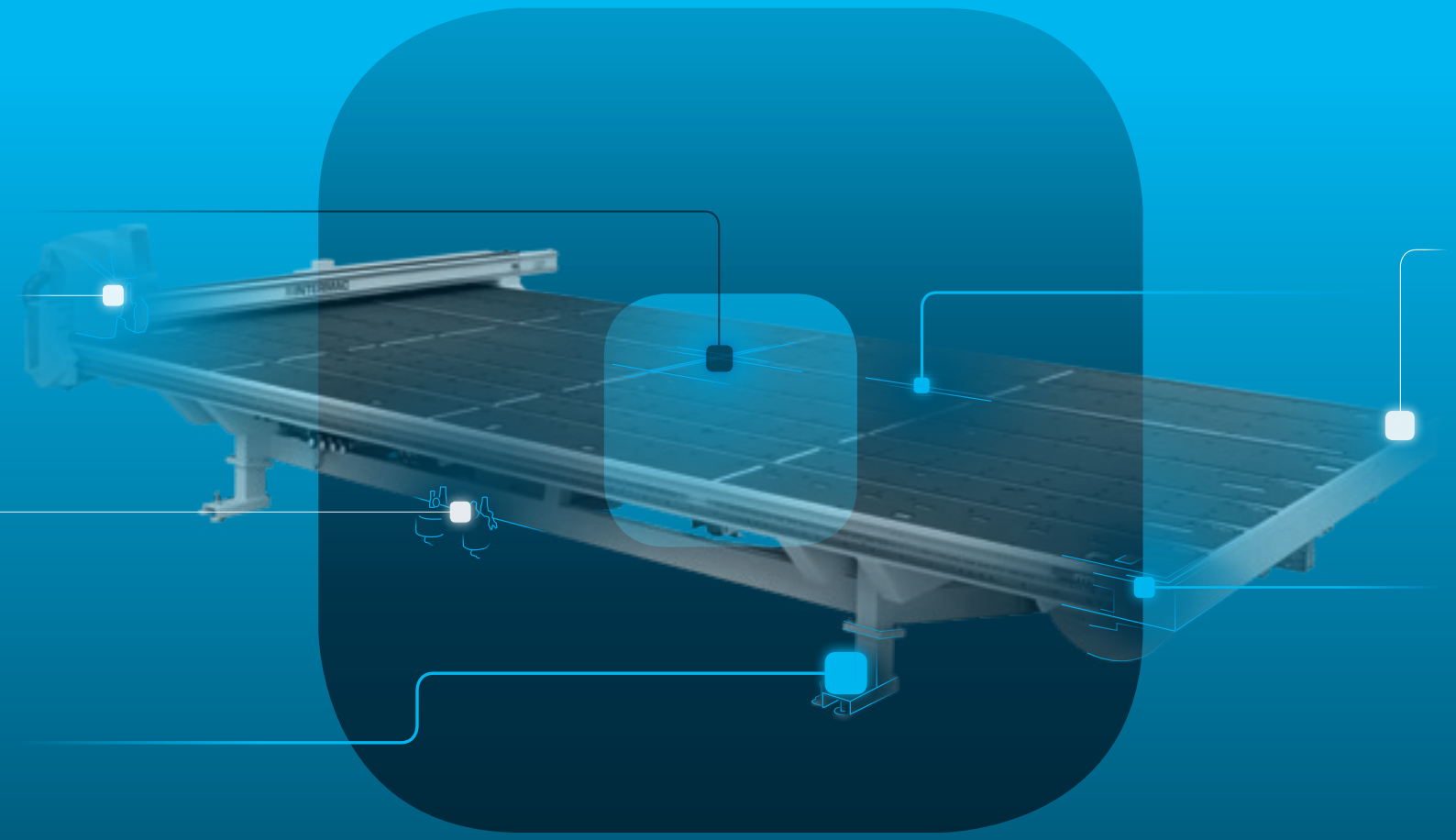
COMBY PLUS J-H49



GENERAL SPECIFICATIONS		
Work table height	mm	900 (-15 ÷ 45)
Maximum loadable glass sheet size	mm	6100 x 3300
Max unloadable finished piece size at line end	mm	see specifications
FLOAT GLASS		
Processable float glass thickness range	mm	2 ÷ 19 (25 opz)
X static breakout thickness range	mm	4 ÷ 10
Laminated glass		
Processable laminated glass thickness range	mm	22.1 ÷ 88.12
Fully automatic cycle glass thickness range	mm	22.1 ÷ 88.12
Maximum cutting speed	m/min	150
Cutting accuracy	mm	see specifications
Maximum cutting length L	mm	4860
Minimum automatic indexing X	mm	0 (zero, glass 22.1 ÷ 88.12)
Maximum automatic indexing X	mm	4800 (glass 22.1 ÷ 88.12)
Minimum automatic indexing L	mm	400 (glass 22.1 ÷ 88.12)
Maximum automatic indexing L	mm	4800 (glass 22.1 ÷ 88.12)
Minimum finished piece size L x X at line end	mm	400 x 250 (glass 22.1 ÷ 88.12)
Minimum breakout width X1	mm	20 (glass 22.1 ÷ 44.2)
Minimum separation width X1	mm	20 (glass 22.1 ÷ 44.2)

SOPHIA

GREATER VALUE FROM MACHINES



The Intermac IoT platform which enables customers to access an extensive range of services to streamline and rationalise their work management processes.

- SERVICES
- PROACTIVITY
- ANALYSIS

INTERMAC

in collaboration with accenture

SERVICE & PARTS

Direct, immediate coordination of service requests between Service and Parts. Support for key customers from specific Intermac personnel, in-house and/or at the customer's site.

INTERMAC SERVICE

- Machine and line installation and start-up.
- Training centre for Intermac field technicians and subsidiary/dealer personnel; customer training directly at the customer's site.
- Overhaul, upgrade, repairs and maintenance.
- Remote diagnostics and troubleshooting.
- Software upgrade.

85
Intermac field technicians in Italy and worldwide.

20
Intermac technicians working in Teleservice Centre.

35
certified dealer technicians.

50
training courses in a variety of languages every year.

The Biesse Group promotes, cares and develops direct and constructive relationships with the customers to meet their needs, improve after-sales products and services through two dedicated areas: Intermac Service and Intermac Parts. With its global network and highly specialised team, the company offers on-site and on-line assistance and spare parts for machines and components anywhere in the world, 24/7.

INTERMAC PARTS

- Original Intermac spare parts and spare parts kits customised to suit the machine model.
- Spare part identification support.
- Offices of DHL, UPS and GLS couriers located within the Intermac spare parts warehouse, with multiple daily pick-ups.
- Optimised order dispatch time, thanks to a global distribution network with de-localised, automated warehouses.

95%
of machine downtime orders dispatched within 24 hours.

95%
of orders dispatched on time.

30
spare parts staff in Italy and worldwide.

150
orders processed every day.

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