

# BKM

Float Cut



EN

Flat Glass Technology

Copyright © 2019 BOTTERO S.p.A. All Rights Reserved

we • glass

# we • glass

As a global leader in flat glass and hollow glass processing technology, we have been helping to shape one of the most beautiful and useful materials in the world for over 60 years. Its unique qualities, combined with the passion for technology and innovation, guide us in seeking for newer and more effective solutions to improve and expand its use.

**We cut glass**

# BKM, the art of cutting glass

Designed for glassmakers who want to evolve their business by adopting automated and flexible cutting systems, BKM tables offer all the quality and simple use that is typical in Bottero products.

Thanks to the shared single development platform, common to all cutting systems, BKM tables use technological solutions and components that are also adopted on top of the range Bottero systems, thereby ensuring uncompromising performance and reliability.



BKM cutting systems can make linear cuts and shapes on sheets with a thickness of up to 19 mm, thereby offering the possibility of making small and medium productions in series and particular pieces.



# The Range

The BKM cutting systems are available both in the stand-alone version, for loading, cutting and breakout of the material on the panel, and in the fixed structure version for high productivity in-line integration. All models can be equipped with a wide range of accessories.

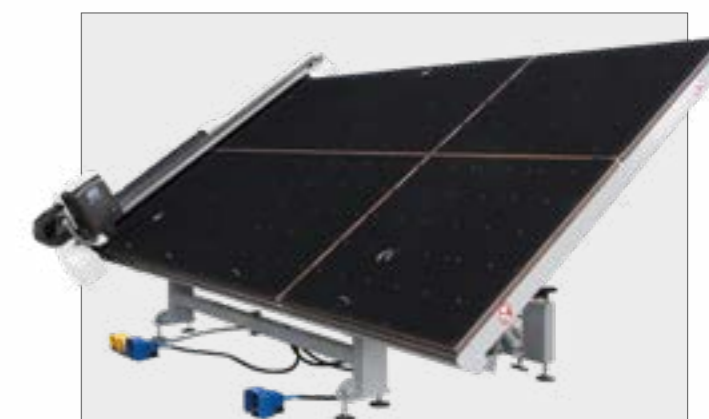


## 343 BKM

Loading, cutting, grinding, marking and breakout table intended for the wider range of applications.

The 343 BKM is a fixed cutting table with betls and it is available with air cushion with quick closing (option), automatic selection of cutting pressures, Shape Scanner + Scan Cad, optimiser on the machine and BCMS Windows.

Plank Type	<b>On-line Cut</b>
Processed glass	<b>Float</b>
Processing	<b>Cut Only</b>
Automation level	★★★★•



## 353 BKM

Loading, cutting, grinding, marking and breakout table intended for the wider range of applications.

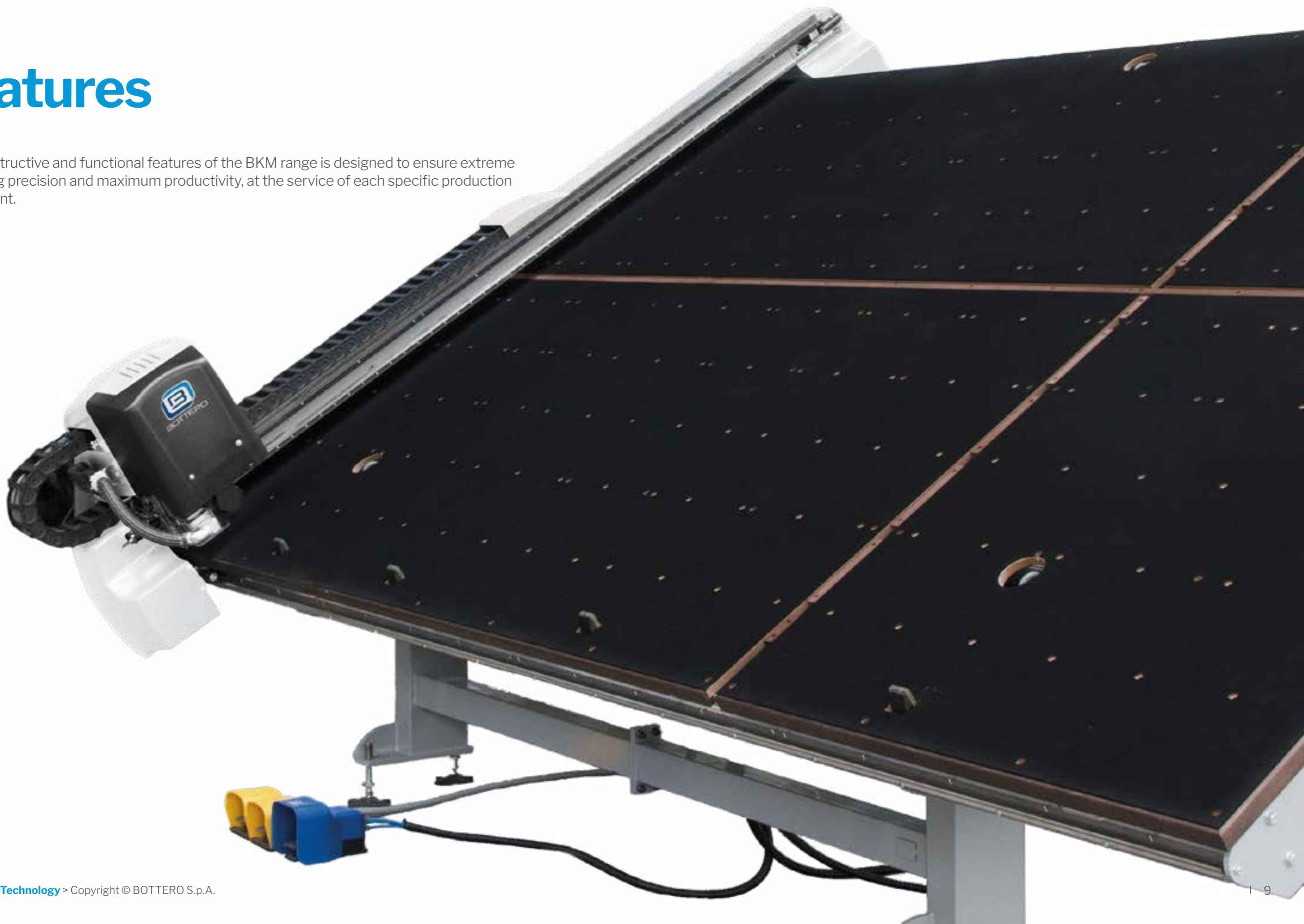
The 353 BKM cutting table is available in the two fixed and tilting versions and is complete with air cushion with quick closing, automatic selection of cutting pressures, Shape Scanner + Scan Cad, optimiser on the machine and BCMS Windows.

Plank Type	<b>Stand Alone</b>
Processed glass	<b>Float</b>
Processing	<b>Cut Only</b>
Automation level	★★★★•

Evaluation based on comparison with other Bottero products of the same category.

# Features

Each constructive and functional features of the BKM range is designed to ensure extreme processing precision and maximum productivity, at the service of each specific production requirement.



# Tilting Frame

- 1** Electric control cabinet that can be repositioned externally for cleaning and maintenance.

---

- 2** Double tank for use of differentiated oils in the processing of special glass.

---

- 3** Small and immediately accessible hydraulic tilting control unit.

---

- 4** Fan for air cushion with quick closing system, installed directly on the tilting frame.

---

- 5** Air distribution circuit integrated within the structural frame.

---

- 6** Fully machined, electro-welded steel frame.

---

- 7** Longitudinal and transversal wood breakout bars, activated by dedicated pneumatic cylinders.

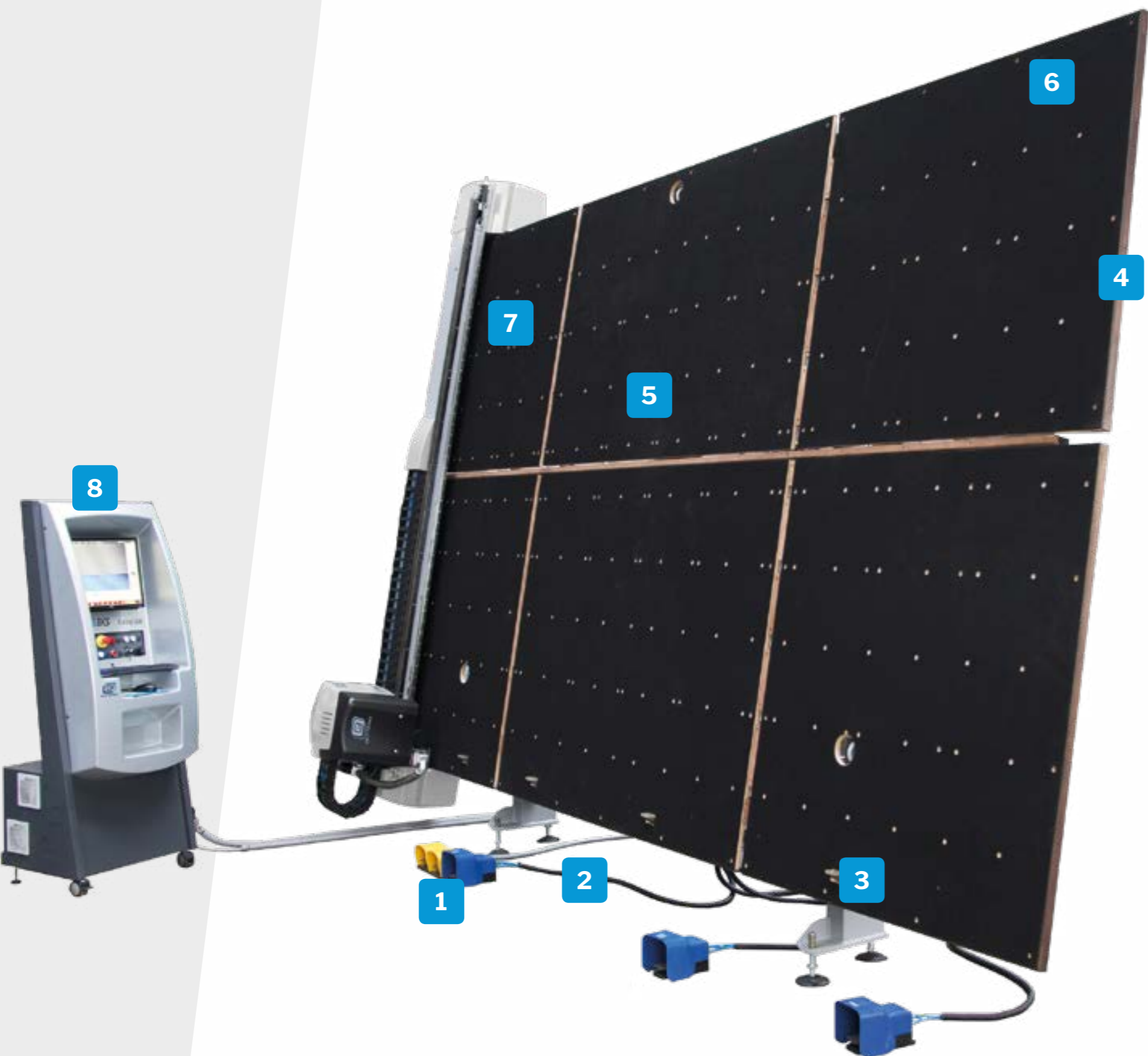
---

- 8** Tilting system with two hydraulic cylinders, balancing valves and controlled acceleration and deceleration ramps.

---

- 9** Mobile floor pedals for controlling the breakout bars, air cushion and loading and squaring lugs.





## Tilting Panel

- 1 Mobile floor pedals for controlling the breakout bars, air cushion and loading and squaring lugs.
- 2 Armoured cable sheaths for maximum protection.
- 3 Retractable loading lugs driven by one dedicated pneumatic cylinder and guaranteed outlet system.
- 4 Rectified and fully replaceable wooden panels with felt, mounted on a machined surface.
- 5 Sheet pusher for sheet loading with glass take out.
- 6 Highly homogenous and resistant 3 mm synthetic felt.
- 7 Additional air cushion for handling 25 mm thick sheets.
- 8 Ergonomic and mobile control pulpit, complete with high-definition colour monitor and intuitive optimisation and CAD software.

# Belt breaker

- 1 Direct motoreducer on torque shaft without returns.

---

- 2 Electro-welded steel frame with high stiffness and solidity.

---

- 3 Inverter-controlled polyurethane belts for handling the sheet in both directions.

---

- 4 Rectified and fully replaceable wooden panels with felt, mounted on a machined surface.

---

- 5 Highly homogenous and resistant 3 mm felt.

---

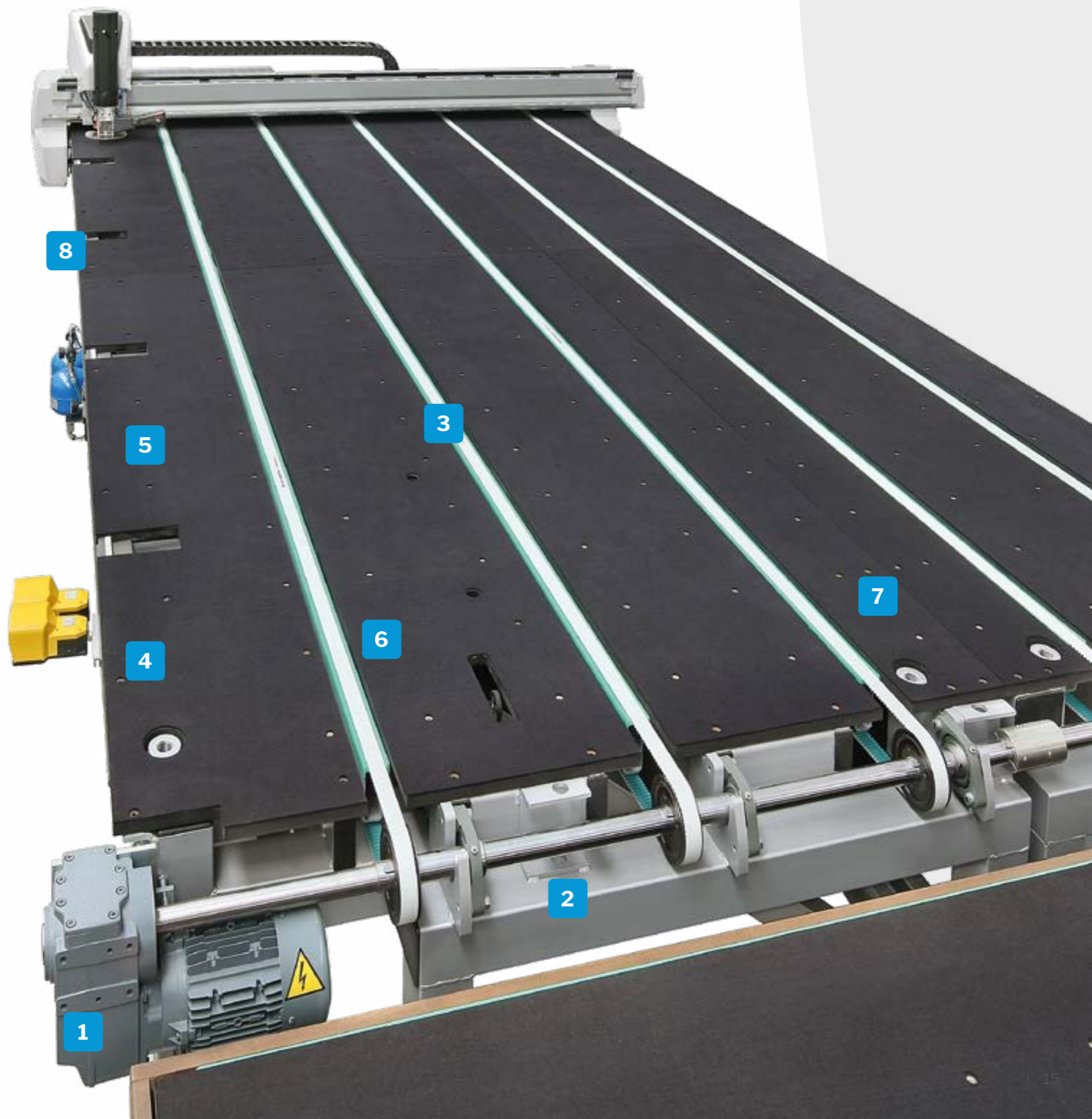
- 6 Sheet position detection sensors and independent safety device for belt locking.

---

- 7 Additional air cushion for handling 25 mm thick sheets.

---

- 8 Retractable squaring lugs driven by one dedicated pneumatic cylinder.





## Cutting bridge

### Structure

Steel cutting bridge placed crosswise to the machine for maximum solidity and resistance to torsion.

### Drive

Double brushless motor with gantry transmission.

### Carriage handling

High precision and low noise carriage linear sliding guides, ground and installed on machined surface.



## Bridge Handling

### Guides

High precision and low noise bridge sliding guides, ground and installed on machined bed, ensuring a perfectly straight cut without the need for adjustment.

### Racks

Ground racks, ensuring maximum positioning and cutting precision, and facing down to prevent the accumulation of dirt.

### Materials

Components made of highly durable and minimal wear materials, ensuring optimal performance over time.

Easily accessible components, ensuring immediate and fast maintenance.

## Carriage and cutting head

### Cut

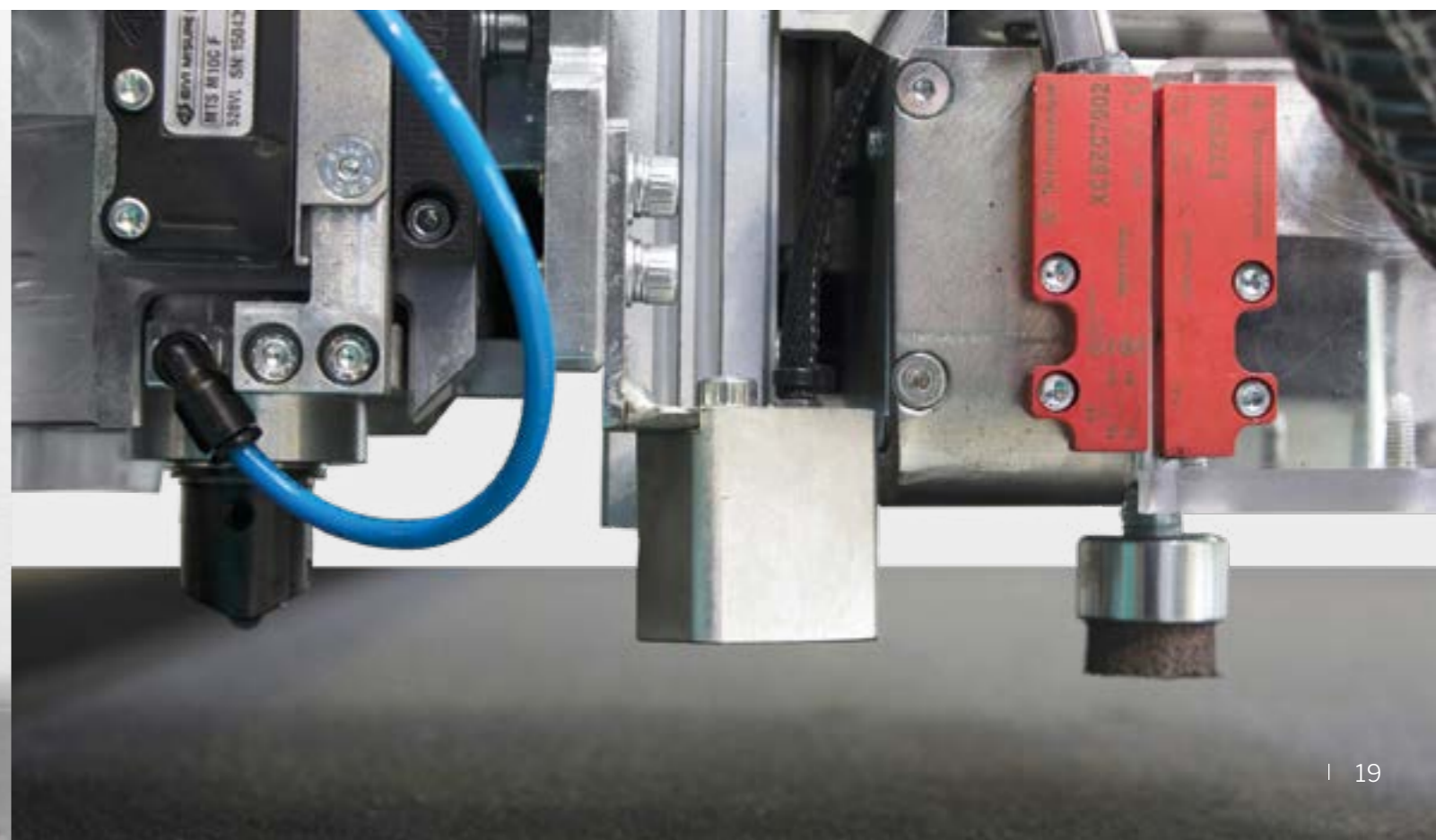
Motorised cutting head, formed by an aluminium alloy body and rod with cutting tool or plastic cut. Automatic glass thickness measurement by linear encoder and consequent automatic loading of the cutting parameters preset in the software. Cutting pressure adjusted by means of proportional solenoid valve and glass surface compensation system.

### Safety

Rilevatore di presenza vetro ed elemento terminale dello stelo a rottura controllata, facilmente sostituibile, per evitare sollecitazioni meccaniche sul carrello e sul ponte in caso di urto.

### Trolley

Carrello in alluminio con elettronica di controllo e gestione della testina a bordo, completo di sensore ottico in grado di effettuare la squadratura elettronica della lastra e di acquisire automaticamente una sagoma grazie al sistema Shape Scanner.





## Control cabinet

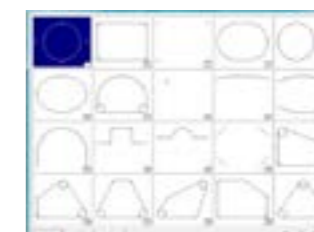
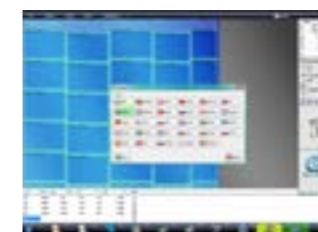
### Pulpit

Ergonomic and mobile control pulpit on independent wheels, for easy access to the interface and safety controls, complete with high-definition colour monitor and intuitive optimisation and CAD software developed on Windows operating system.

### Software

Original software able to realise any cutting, grinding or labelling scheme with optimisation of the tool path to minimise the machine cycle time.

Constant electronic control of all cutting parameters, ensuring an excellent and constant engraving quality for an easy and fast breakout. High level CAD and optimisation software can also be installed.



#### Interface

Simple and intuitive operator interface developed on Windows operating system, bearing in mind the various needs. The operator is guided by the interface during the entering of cutting data and in all machine operative functions. All software indications and commands are available in multiple languages.

#### Editor

Editor for the manual composition of the cutting schemes, or for editing imported cutting optimisations. Particularly suitable for fast and immediate cuts, it allows entering different nested cutting levels, as well as diagonal and shape cuts.

#### Shapes Catalogue

Library of parametric shapes, allows entering the most common shapes in the cutting scheme, customising them by entering the relevant parameters. The Scan Cad program allows modifying and optimising the shapes in simplified CAD environment.

#### Optimiser

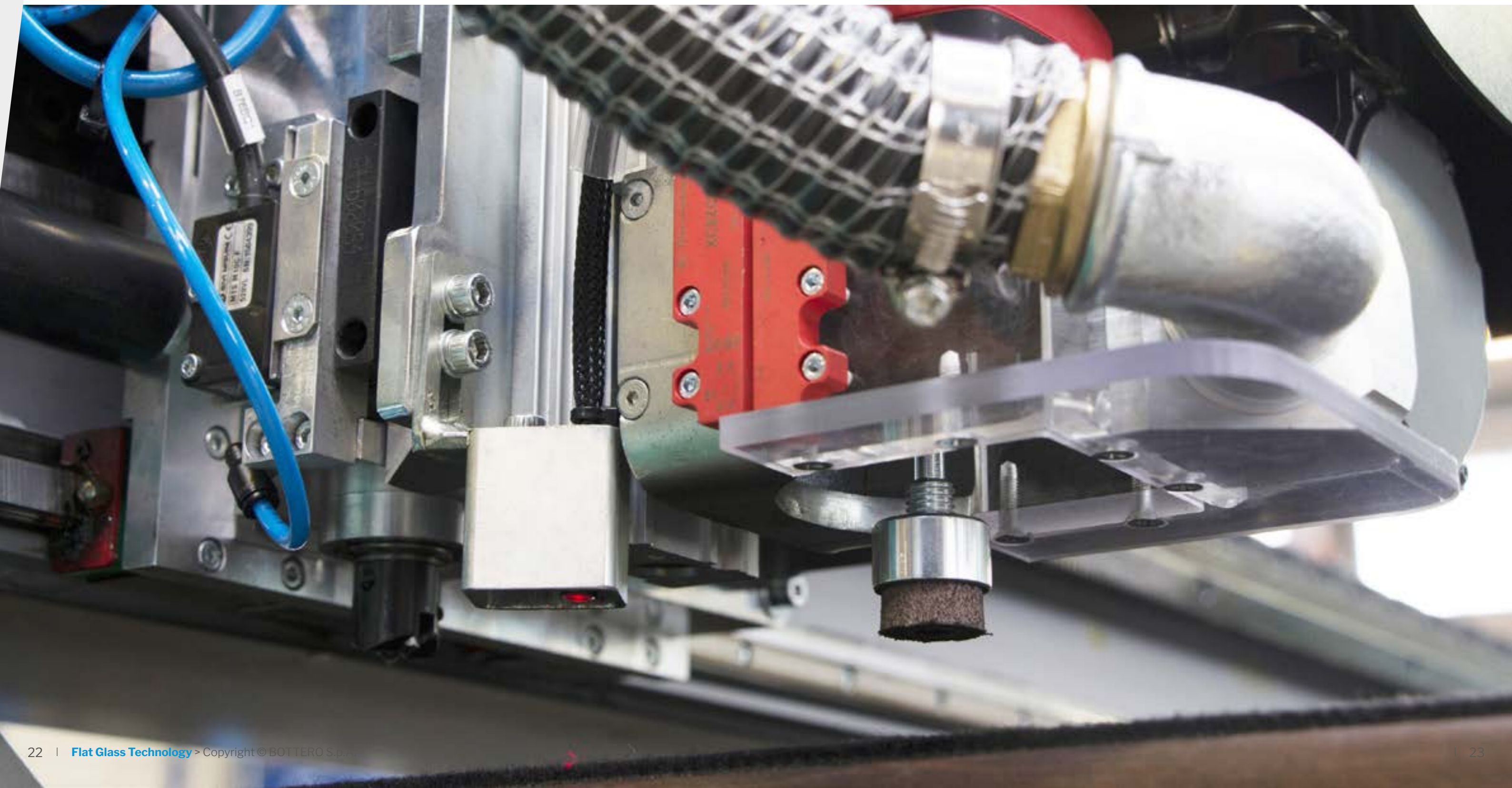
Simple and efficient optimiser with reduced set of parameters for greater ease of use, it processes the data while the machine is operating, without stopping or delaying the main sheet cutting function.

### Remote assistance

Remote assistance and diagnostic service through Internet connection, which ensures rapid and effective intervention of a qualified technician directly on the control panel.

# Details

The high quality standard of the BKM range is particularly noticeable in the care for details: each component is carefully studied and designed to offer performance measuring up to the most demanding requirements, making the machine even safer and more performing.



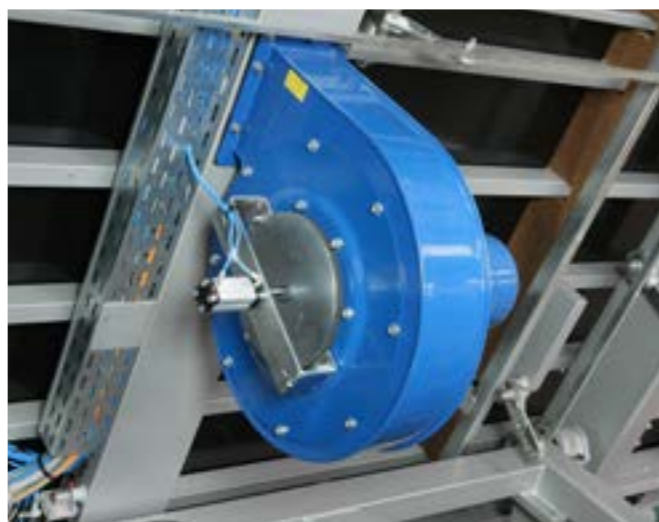


### Electric control cabinet and sheaths

Electric control cabinet that can be repositioned externally for easier cleaning and maintenance.  
Armoured cable sheaths for maximum protection against accidental cuts. contro tagli accidentali.

### Tilting

Tilting system with two hydraulic cylinders fitted with independent fall protection safety valves, balancing valves and controlled acceleration and deceleration ramps.  
Down tilting managed by non-self-maintained push-buttons, further guarantee of operator safety.



### Fan with quick closing

Fan for air cushion with quick closing system, installed directly on the tilting frame to ensure the absence of leaks.  
Air distribution circuit integrated within the structural frame, for a perfect efficiency and power of the air cushion.

### Pedal commands

Mobile floor pedals for managing the breakout bars, air cushion and loading and squaring lugs, fully repositionable as required.



### Structural frame

Highly stiff solid electro-welded steel frame to eliminate any vibration, fully machined to ensure a perfect planarity of the work table.

### Double oil tank

Double tank for use of differentiated oils in the processing of special glass, especially Low-E glass, for maximum production flexibility.  
The type of lubricant is selected by the operator or directly by the software according to the machined glass.  
Tanks with visual indicators for the immediate control of the amount of residual oil.





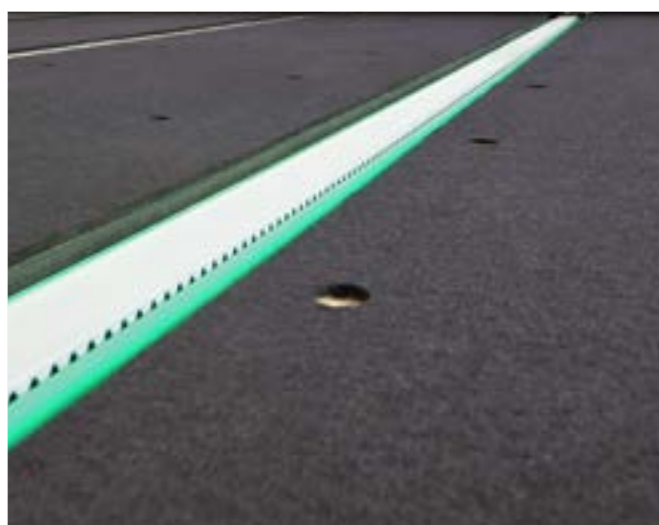
### Tilting control unit

Small and immediately accessible hydraulic tilting control unit for easy maintenance.



### Breakout bars

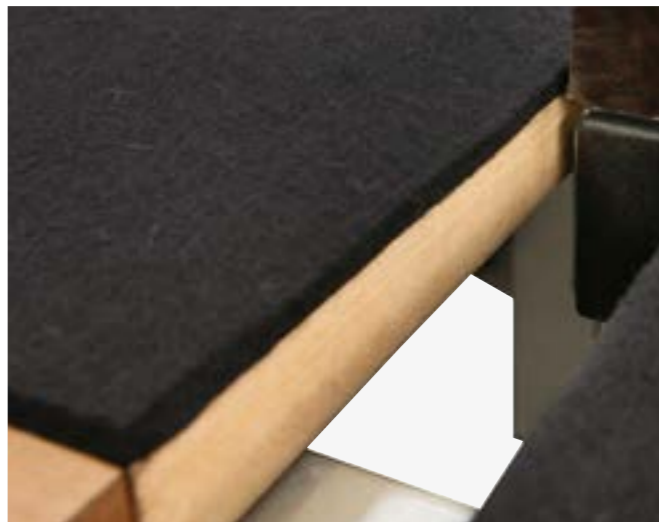
Longitudinal and transversal wood bars, activated by dedicated pneumatic cylinders, for an immediate and effective breakout of the glass.



### Conveyor belts

Inverter-controlled polyurethane belts for the safe and fast handling of the sheet in both directions.



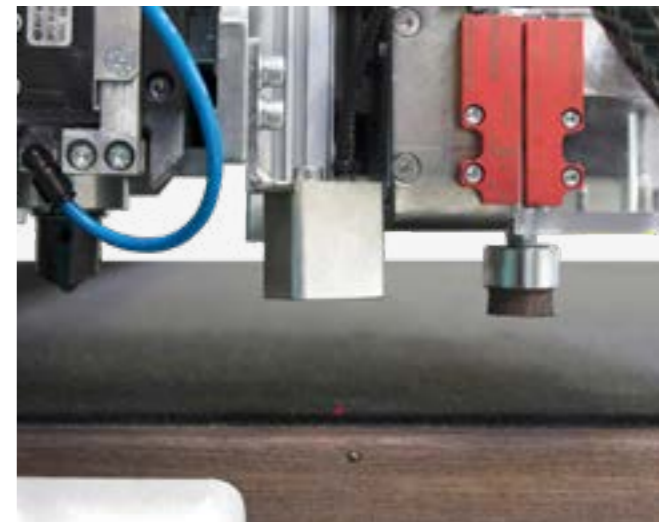


### Panels

Rectified and fully replaceable wooden panels with felt, mounted on a machined surface for a perfect planarity of the work table. Highly homogenous and resistant 3 mm felt, ensuring high performance and minimal wear.

### Cut lubrication

Cut lubrication control by means of special manual valve, also suitable for use with high evaporating oils, to ensure an excellent and constant engraving quality. The BKM control software controls the opening and closing of the lubrication valve so as not to have excess oil at beginning and end of cut.

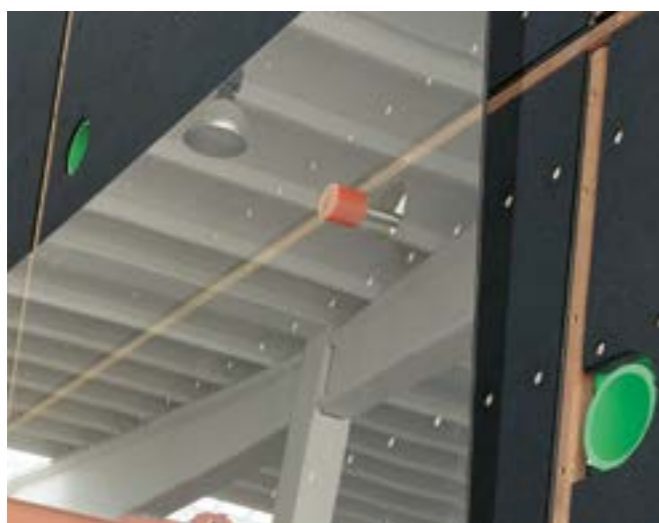
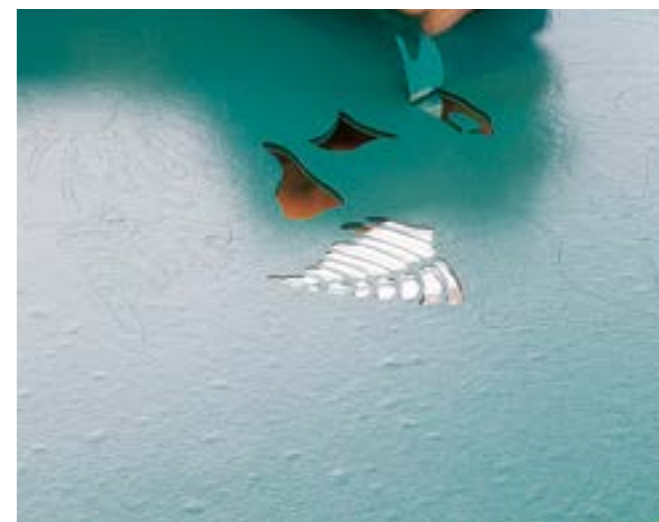


### Loading lugs

Retractable loading lugs driven by one dedicated pneumatic cylinder, complete with mechanical safety system for forced lowering after sheet loading. Easy and immediately replaceable rubber lug coverage.

### Plastic cut

Engraving system of the plastic layer on the glass before the subsequent sandblasting process. Automatic management of the plastic engraving pressure and lubrication cancellation..

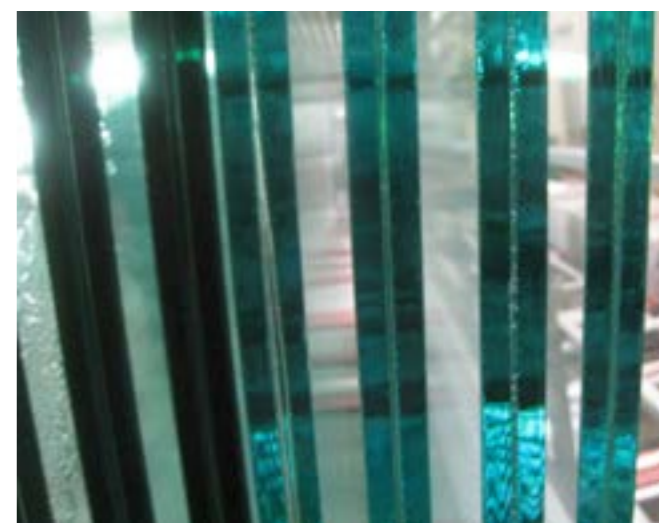


### Sheet pusher lugs

Sheet pusher lugs for easier take out extraction in case of sheet loading with glass take out.

### Specular Cycle

Thanks to this function, you can also cut a scheme on both sides of a laminated glass. The cycle can also be performed with schemes containing very complex shapes.





### Easy deletion

Surface removal system on Low-E glass with 20 mm baffle grinding wheel and maximum working speed of 80 m/min, is the ideal solution for occasional productions of low-emissivity glass.

The approach stroke of the grinding wheel is managed via proportional valve and its path is also optimised for cut to shape, thus allowing to speed up the machine cycle time.

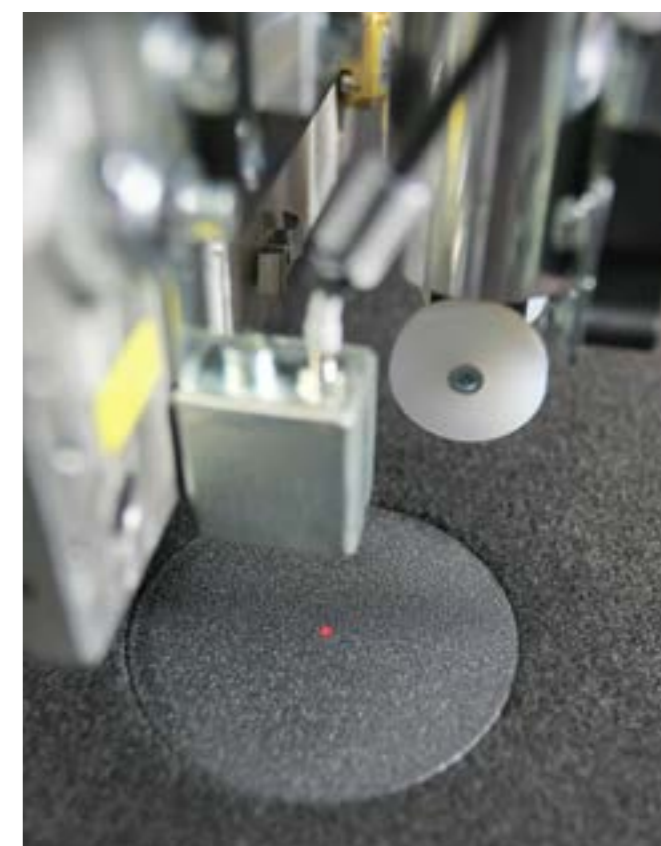
The total coverage of the area being processed and the presence of the vacuum cleaner cancel the dispersion of dust in the environment, thus ensuring maximum safety for the operators.



### Electronic squaring and Shape scanner

Squaring of electronic search sheet as well as significantly speed-up the machine cycle time allows the operator to position the glass without having to square it on mechanical references. The system also allows measuring with decimal precision the glass to be cut and it can be used on the automatic lines to check the integrity of the sheet.

The shape scanner or the electronic detection and digitisation system of the templates allows maximum flexibility of production. It can detect various materials, from glass to paper, and it can detect up to 20 templates simultaneously. The software integrated with the option allows modifying the acquired profiles in a few steps and correct any template imperfections.





# Performance

A complete, modular and versatile range, fully configurable according to each specific production requirement.  
 The Bottero tables guarantee top performances at 360°, intended as cycle execution speed, accuracy and reliability over time.

## Working speed

Maximum bridge speed	150 m/min
Maximum carriage speed	150 m/min
Maximum grinding speed with Easy deletion	80 m/min

## Additional powers

	343	353
Tilting Panel	-	2,75 KVA
Air cushion	3 KVA (R) - 6 KVA (J)	3 KVA (R) - 6 KVA (J)
Easy Deletion	1 KVA	1 KVA

## Accuracy

Cutting accuracy on straight processes	± 0,15 mm
--	-----------

## Thicknesses which can be cut

Glass thickness	2 ÷ 19 mm
-----------------	-----------

## Work table

Worktable height	930 ± 40 mm
------------------	-------------

## Installed power

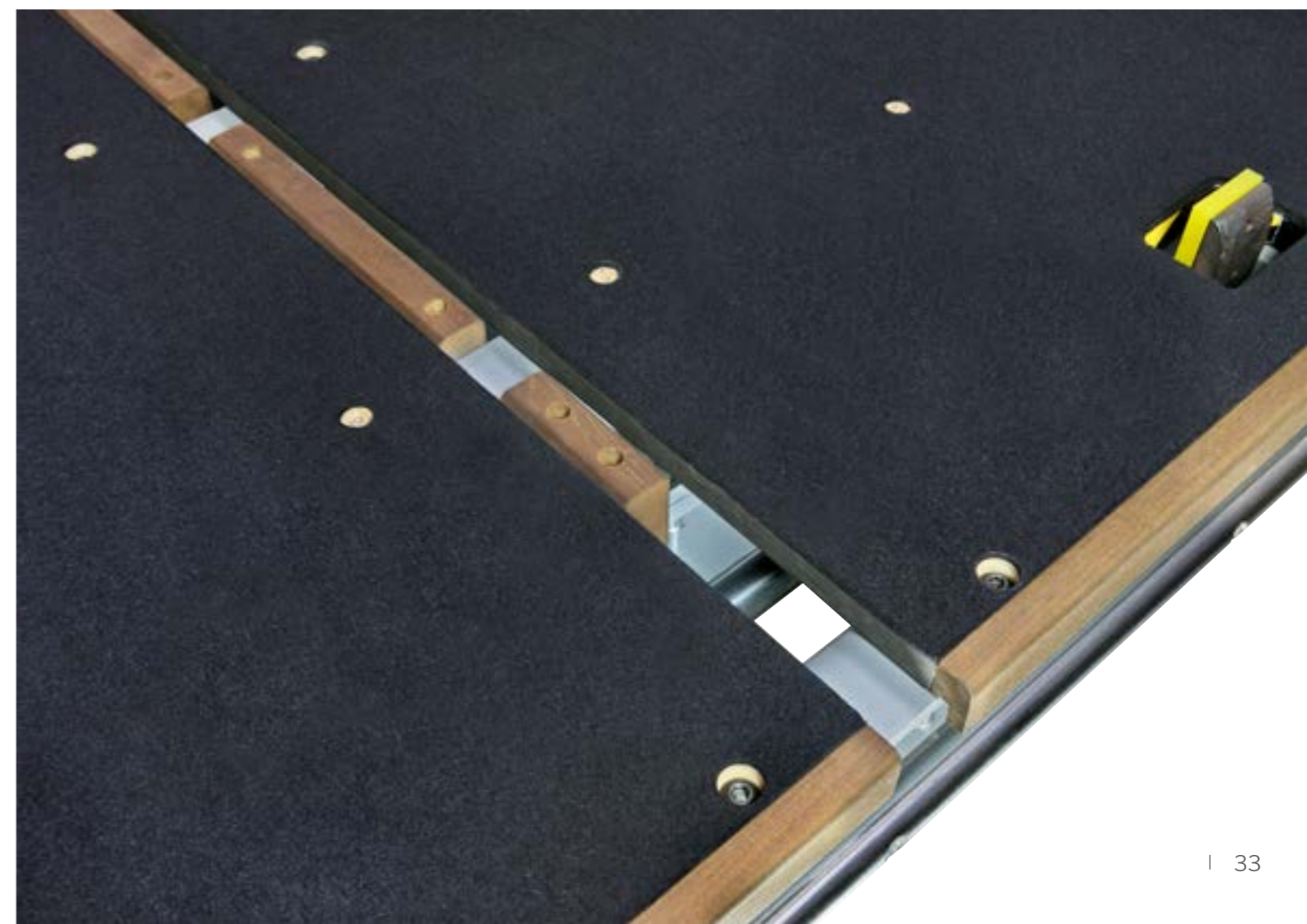
Jumbo	16 KVA
Regular	16 KVA

## Compressed air consumption

Compressed air consumption	70 NL/min
----------------------------	-----------

## Air consumption with Easy Deletion

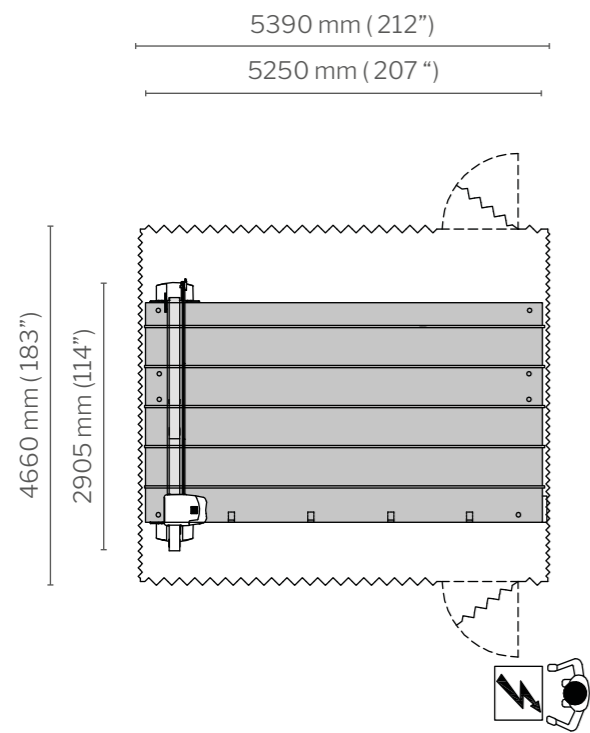
Air consumption with Easy Deletion	500 NL/min
------------------------------------	------------



# Dimensions

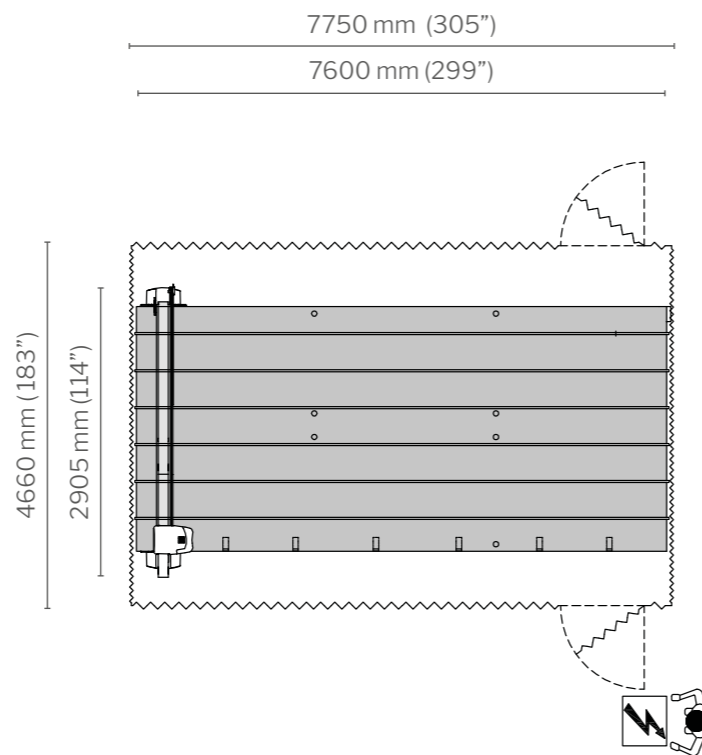
## 343 BKM Regular

	mm	in
Maximum dimension of processable sheet	3810 x 2750	150 x 108



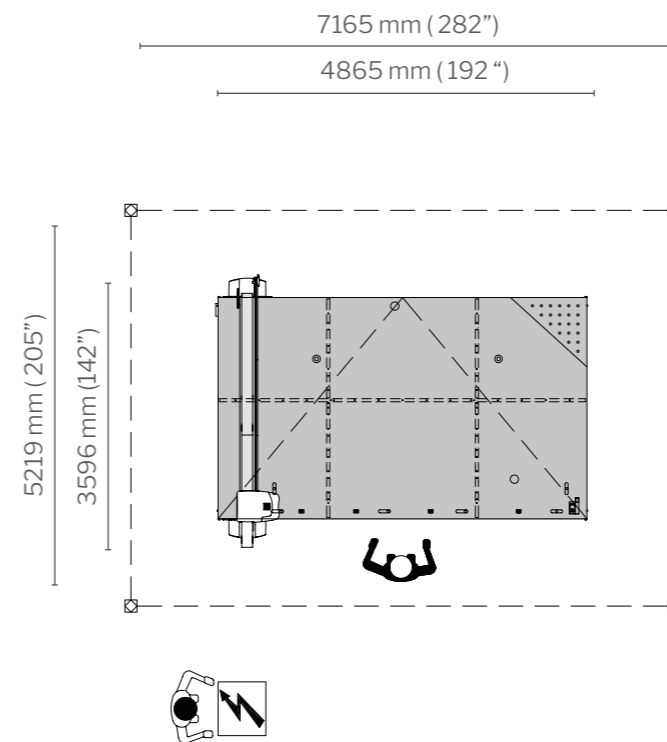
## 343 BKM Jumbo

	mm	in
Maximum dimension of processable sheet	6100 x 3355	240 x 132



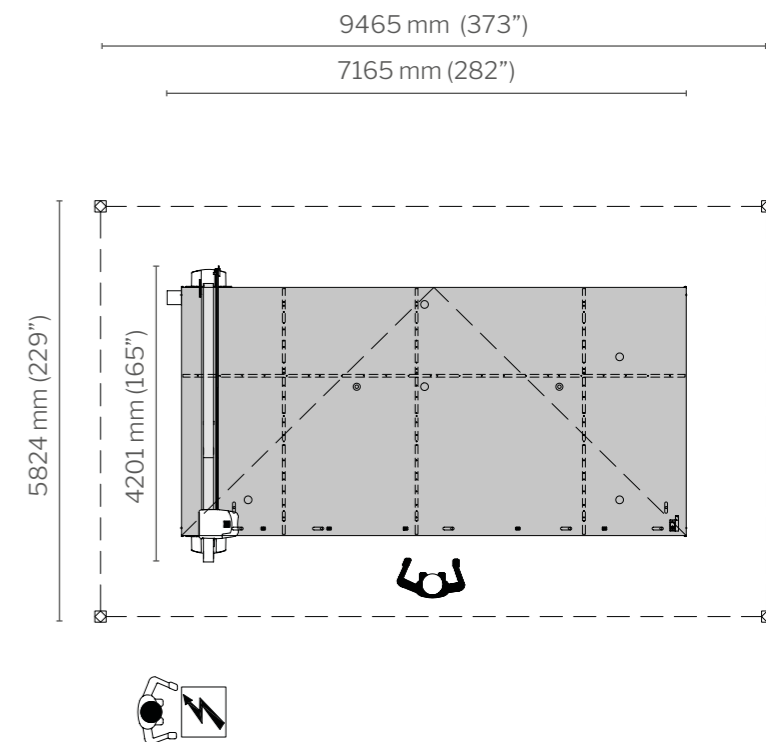
## 353 BKM Regular

	mm	in
Maximum dimension of processable sheet	3810 x 2750	150 x 108



## 353 BKM Jumbo

	mm	in
Maximum dimension of processable sheet	6100 x 3355	240 x 132



# Options and Set-Ups

	code	343 R	343J	353R	353J
Set-up for the removal of low-E coating with cup wheel	MDE138	•	•	•	•
Transformer G - for voltage other than 380/400/415 VOLT	ATR107	•	•	•	•
Optimiser + labels + shape catalogue + CAD (on the machine)	MDE130	•	•	•	•
Tilting unit	MDE167			•	•
Loading lugs (optional for non-tilting machines)	MDA150			•	•
Breakout bars unit (1+1)	MDB137			•	
Breakout bars unit (2+1)	MDA137				•
Additional breakout bar for 353 Regular with breakout bars unit	MDB138			•	
Additional breakout bar for 353 Jumbo with breakout bars unit	MDA138				•
Wood kit to close the cuts on the work table for table without breakout bars	MDA153			•	•
Lean-to device	MDA104			•	•
Lugs for glass transport on air cushion (max glass thickness = 19 mm)	MDA107			•	•
Double control (foot pedal) for 1 breakout bar	MDA 108			•	•
Air cushion on breakers	MDB109	•			

	code	343 R	343J	353R	353J
Air cushion on breakers	MDA109		•		
Backward conveyor on 343 - from breakout to cut	MDA110	•	•		
Backward conveyor on 343-363 - from cut to loader	MDA120	•	•		
Plastic cutting for sandblasting	MDA114	•	•	•	•
Connection to an existing loader	MDA117	•	•		
Pedal for slow conveyor	MDA122	•	•		
Machine-pulpit connection with 12 m long sheaths	MDA128	•	•	•	•
Double cutting oil tank*	MDA129	•	•	•	•
Air conditioner for electric cabinet	MDA133	•	•	•	•
Reference lug for coupling with Lamilinea	MDE153	•	•	•	•
Air cushion table for coupling for Float-Laminated lines	MDE159			•	•
Roller conveyor L=380 mm (TC300) for coupling for Float lines	MDE160			•	•
Transport with truck equipped with crane	MDA999	•	•	•	•

• **Optional available**

\* already included with Easy deletion set-up

# Bottero, the choice of the greatest

## With us, you have all the experience and technology that we use to serve the largest industries

With Bottero, you don't simply buy products but the entire experience, the technology and the organisational skills of a company that can provide very high productivity glass processing plants, and the selected supplier of some of the most important companies in the world.

more than  
**50.000** installations  
all over the world



With thousands of installations spread all over the world, Bottero guarantees first-class technical and commercial assistance.

**Bottero S.p.A. - Headquarters**  
via Genova 82 - 12100 Cuneo - Italy

**Bottero S.p.A. - Trana**  
Trana - Italy

**Bottero S.p.A. - Pesaro**  
Pesaro - Italy

**Revimac S.r.l.**  
Vicenza - Italy

**Bottero GmbH**  
Grevenbroich - Germany

**Bottero UK Limited**  
Rochdale - Great Britain

**Bottero France SA**  
Nice - France

**Bottero do Brasil**  
S.Paolo - Brasil

**Bottero Flat Glass Inc.**  
Kernersville - North Carolina - USA

**Bottero Glass Industry Co. Ltd**  
Shangai - China



Above and to the side: some high-productivity lines manufactured by Bottero.

Code: C2100200007283  
Rev.: 00  
Printed in Bottero

The images and data in this catalogue are only indicative and never override the contract engagement of Bottero S.p.A.  
For photographic reasons the products is often shown complete with accessories that are not part of the standard equipment of the machine.

## Discover the Bottero technology for **Flat Glass**



- Float Cutting
- Glass Stock Management
- Straight Line Edgers & Bevellers
- Double Edgers
- Drilling
- CNC
- Laminated Lines

- Coating Lines
- Float Lines
- Laminated Lines
- Mirror Lines
- Off line Cutting
- Packing Lines
- Solar Lines

**BOTTERO S.p.A.**  
via Genova 82  
12100 Cuneo Italy  
Tel.: +39 0171 310611  
Fax: +39 0171 401611  
[www.bottero.com](http://www.bottero.com)

