# Double Edgers
## Flat edge

EN

Flat Glass Technology



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 grind glass

BOTTERO

# The ideal choice for intensive applications

Bottero produces a complete range of solutions for flat edge two-sided grinding, which can satisfy the requirements of small, medium and large glass factories with fixed or flexible production, thanks to the vast possibilities of choice and configuration of the products.
Bottero machines are ideal for processing structural glass, partition walls, shower cubicles, shelves, balustrades, steps and furnishing elements, providing productivity, precision and reliability over time to operate on multiple shifts, up to 24/7 service.

The Bottero flat edge two-sided machines are designed to support the high production flows typically required by the industry. Thanks to the significant flexibility, however, these machines are effective and profitable even when applied in small and medium glass factories with flexible production.

# The Range

 

The Bottero range of double edgers for flat edge processing has been designed to meet all requirements of performance and quality.

## *Twin*Edge

The 4 configurations that make up the Twin-Edge range enable the processing of flat edge, of threads and possibly the removal of the edge.

| | |
|---|---|
| Type of processing | **Flat edge** |
| Special edge processing | - |
| Maximum sheet dimensions | **Up to Jumbo size** |
| Automation level | ★ ★ ★ • • |

## *Flex Edge*

The machine is particularly suited to process large sizes and thickness and double edger platform can be integrated with totally automatic lines for flexible productions, in small or large batches, with automatic dimension changes managed by the dedicated software.

| | |
|---|---|
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| Special edge processing | **Yes** |
| Maximum sheet dimensions | **Up to Jumbo size** |
| Automation level | ★ ★ ★ ★ ★ |

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

# Why Choose Them?

Why choose the Bottero double edger flat edge?

# Because of their high build quality

The Twin-Edge, Flex Edge edgers comprise of a sturdy electrowelded steel structure. Stainless steel and other anti-corrosion materials such as technical polymers are extensively used.

All components coming into contact with water are constructed from stainless steel. This in order that we are able to guarantee the durability of the components.

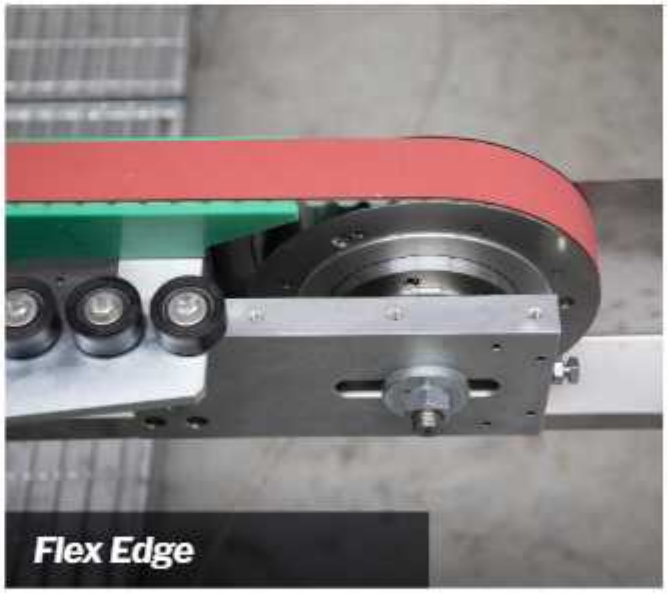
The automatic lubrication system guarantees perfect work conditions of the machine and eliminates many manual maintenance operations.

The choice of mechanical and electronic trade components by leading manufacturers ensures reliability and availability over time.

# Because they guarantee quality

The coaxial spindles guarantee vibration-free operation and as a result maximum grinding efficiency. The absence of belts and pulleys reduces the number of parts subject to wear and replacement.

The belts are made in polyurethane with stainless steel inner cables and ground on the back and sides to ensure high precision of glass advancement. The width of the belts is modular, depending on the type and weight of the glass to be conveyed.
The large-sized pulleys enable the specific load to be divided when working with heavy glass. This means longer lifespan for the belts.



The automatic squaring device guarantees the squareness and parallelism of the processed pieces.

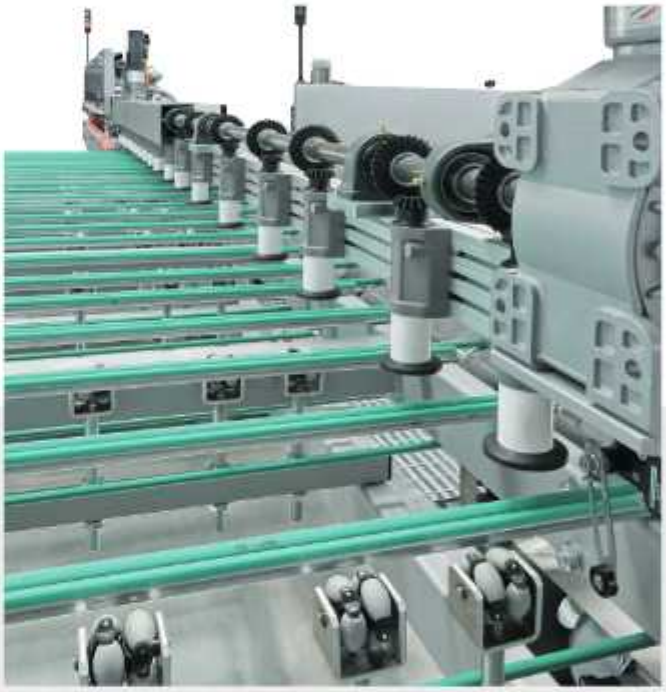
A large number of tools and automatic consumption control systems guarantee high quality polishing and finishing on any type of profile.


The diamond spindle slides are equipped with stepper motors to automatically recover the work position when the glass is approached. The wheels reset cycle is therefore rapid and does not require an operator.

The brushless motors to open the carriage are connected to an electric axis. The motors are controlled via a closed loop drive thus making high speed traversing, movement fluidity, and optimal positioning precision possible.

# Because they make sense

The air knives installed at machine exit, avoids contaminated water from the grinding process being transferred to the washing machine. This improves wash quality.



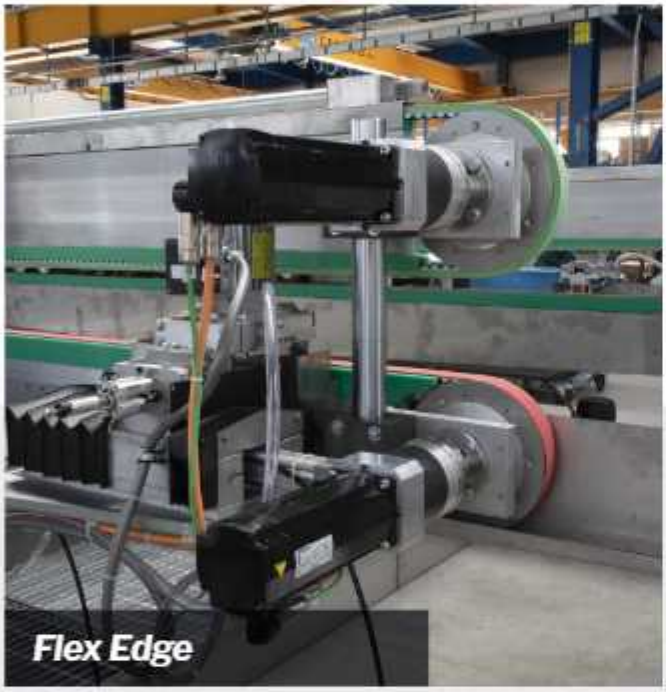
The passage from the upper surface to the belts is assisted by a pneumatic wheel system that avoids any type of damage to the glass.

The ammeters to detect the current absorbed by the processing motors have been placed next to the corresponding spindles in order to facilitate readings by the operator engaged in adjusting the wheels.

# Because they are easy to use

The user friendly software, allows the operator to configure the system in moments.


The barcode reading system allows the Operator machine setting is extremely user friendly.



**Flex Edge**

4x4 Traction
Utilization of an individual motor foreach gripping belt eliminates the need for transmission shafts. As a result access to the machine is improved and maintenance operations are also made easier.

Ample access is made available to the operator for maintenance operations, thanks to the ascent of the pressers and the simultaneous opening of the mobile carriage. Replacement of tools is extremely quick thanks to the use of only one screw to fasten the tools.

# Performance

***Flex Edge***

All machine axis are simultaneously executed, resulting in extremely efficient machine set-up times being achieved.

Coolant water is delivered to the wheels by copper tubing. As copper is not affected by the grinding residues. Greater longevity of the components are achieved.

**Flex Edge**

The diameter of the wheels, 175 mm, ensures powerful removal capacity, complete flatness of the ground edge, and longer tool life.

As an option, a tube washing sprayer can be installed, consisting of a bar with nozzles spraying clean water, which are automatically activated according to the width of the glass exiting the machine.

# Because they offer something extra

The automatic dubbing facility enables the finished pieces to be transferred immediately to the toughening process. The dubbed corners are also safer to handle.

In models Titan the edge spindle can be:

- **Pneumatic** (standard model): manual tracking speed adjustment and manual edge dimension adjustment (without changing the size of the wheel).
- **Electro-Pneumatic**: manual tracking speed adjustment and motorised edge dimension adjustment from control panel (without changing the size of the wheel).

# *Twin*Edge

The Bottero double edgers range enable the processing of flat edge, of threads and possibly the removal of the edge.

## 220 N

The 220 N is the classic double edger designed for who needs to produce large quantities of glass with precise orthogonality, which vertical machines are not able to offer. Its configuration has, on each side, 3 diamond wheels and 3 polishing wheels for flat edge and 2 diamond wheels and 2 polishing wheels for threads.

## 222 D

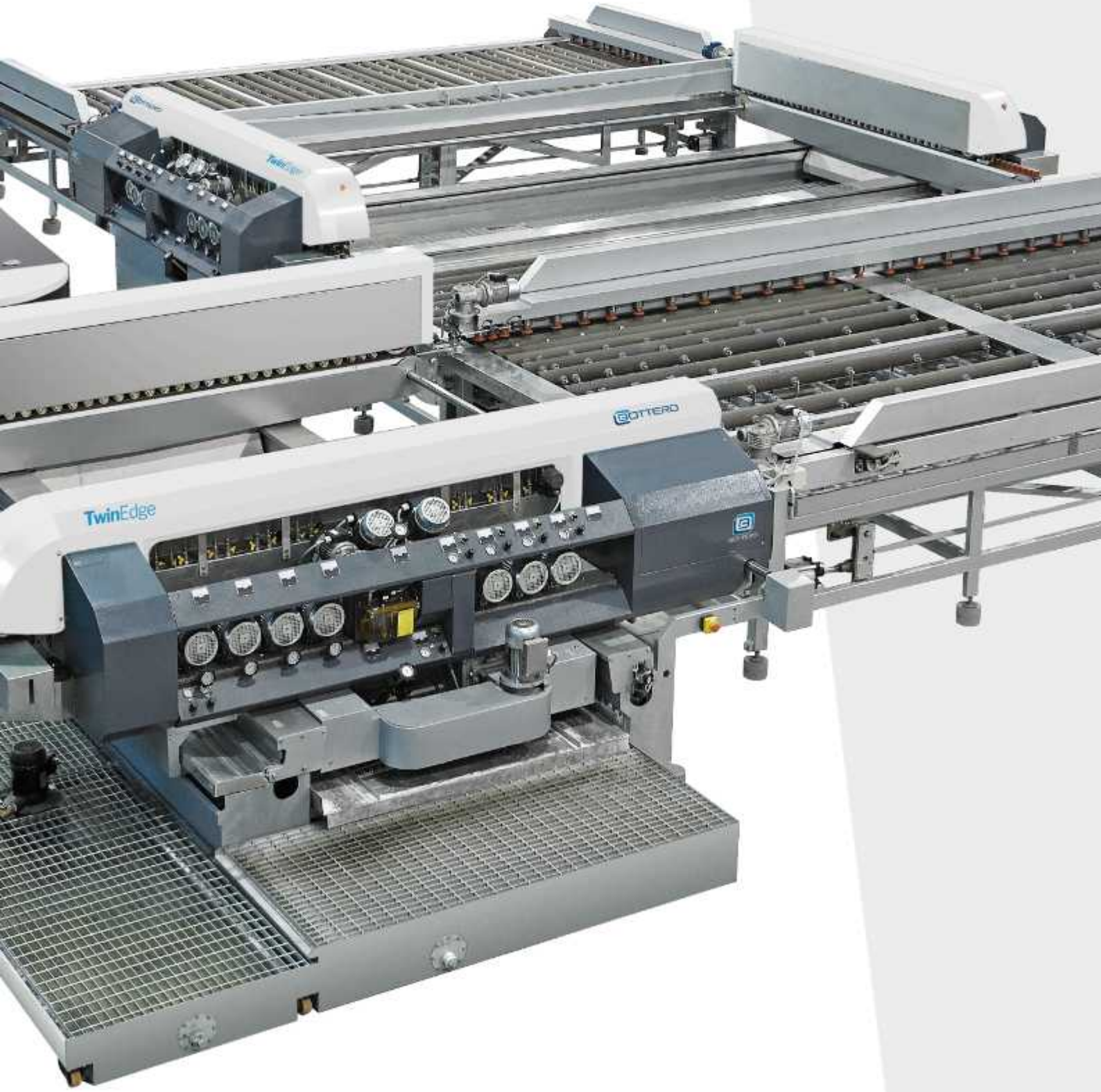
The 222 D is ideal for customers who need to grind with large removal of material. Its configuration has, on each side, 4 diamond wheels and 3 polishing wheels for flat edge and 2 diamond wheels and 2 polishing wheels for threads.

## 222 L

The 222 L is the ideal machine for customers who need to obtain a product with a better degree of polishing. Its configuration has, on each side, 3 diamond wheels and 4 polishing wheels for flat edge and 2 diamond wheels and 2 polishing wheels for threads.

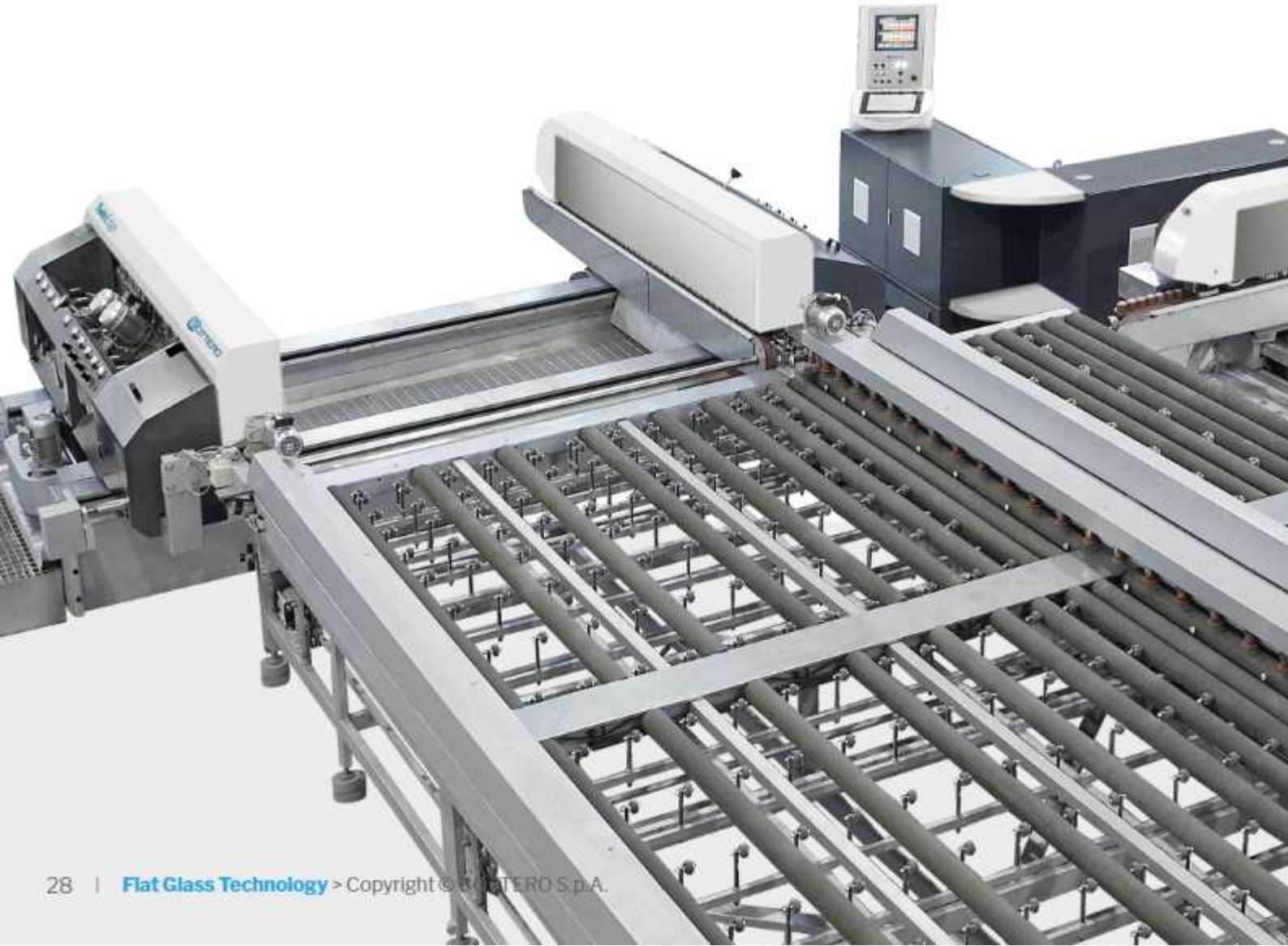
## 224 N

The 224 N is the highest performing machine of the Twin Edge range. Its configuration has, on each side, 4 diamond wheels and 4 polishing wheels for flat edge and 2 diamond wheels and 2 polishing wheels for threads.


BOTTERO
TwinEdge

# Technical features

| Metric | 220 N | 222 D | 222 L | 224 N |
|---|---|---|---|---|
| **Minimum glass dim** | 160 x 160 mm | 160 x 160 mm | 160 x 160 mm | 160 x 160 mm |
| **Glass thickness** | 3 ÷ 30 mm | 3 ÷ 30 mm | 3 ÷ 30 mm | 3 ÷ 30 mm |
| **Speed** | 0,6 ÷ 6 m/min (1 ÷ 10 m/min opt.) | 0,6 ÷ 6 m/min (1 ÷ 10 m/min opt.) | 0,6 ÷ 6 m/min (1 ÷ 10 m/min opt.) | 0,6 ÷ 6 m/min (1 ÷ 10 m/min opt.) |
| **Installed power** | 55 KVA (45 KW) | 61 KVA (45 KW) | 61 KVA (45 KW) | 66 KVA (45 KW) |
| **Weight** | 6090 Kg | 6170 Kg | 6170 Kg | 6250 Kg |



| Imperial | 220 N | 222 D | 222 L | 224 N |
|---|---|---|---|---|
| Minimum glass dim | 6"19/64 x 6"19/64 | 6"19/64 x 6"19/64 | 6"19/64 x 6"19/64 | 6"19/64 x 6"19/64 |
| Glass thickness | 8/64" - 1"12/64 | 8/64" - 1"12/64 | 8/64" - 1"12/64 | 8/64" - 1"12/64 |
| Speed | 24 ÷ 240 ipm<br>(39 ÷ 394 ipm opt.) | 24 ÷ 240 ipm<br>(39 ÷ 394 ipm opt.) | 24 ÷ 240 ipm<br>(39 ÷ 394 ipm opt.) | 24 ÷ 240 ipm<br>(39 ÷ 394 ipm opt.) |
| Installed power | 65 A@480V | 72 A@480V | 72 A@480V | 78 A@480V |
| Weight | 13426 lbs | 13602 lbs | 13602 lbs | 13779 lbs |

# Wheel configuration


**Key**

- Diamond
- Resinoid
- Polishing
- Felt
- Cerium impregnated wheel
- Stone
- Beveling wheel
- Corner dubbing
- Front arris wheel
- Rear arris wheel

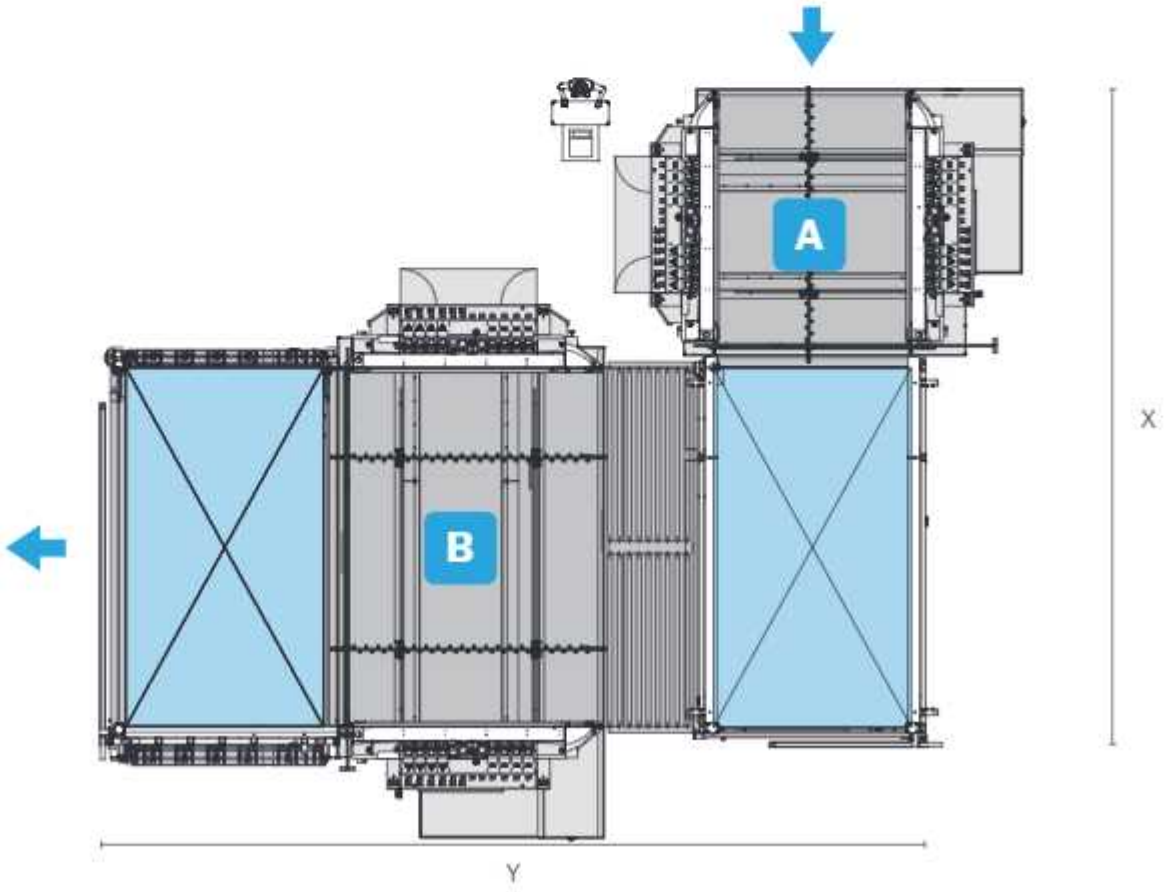
## Machine overall dimensions

### Metric

| | | | | |
|---|---|---|---|---|
| **Dim. max. A** | 1000 mm \| 2600 mm | 2000 mm \| 3600 mm | 2600 mm \| 4000 mm | 2600 mm \| 5000 mm |
| **Dim. max. B** | 2000 mm \| 4000 mm | 3000 mm \| 2600 mm | 2600 mm | 3600 mm \| 2600 mm |
| **Y** | 7664 mm \| 10309 mm | 9284 mm \| 9295 mm | 9284 mm \| 9669 mm | 10284 mm \| 9669 mm |
| **X** | 7375 mm \| 10366 mm | 8995 mm \| 11005 mm | 9995 mm \| 12146 mm | 10612 mm \| 13146 mm |

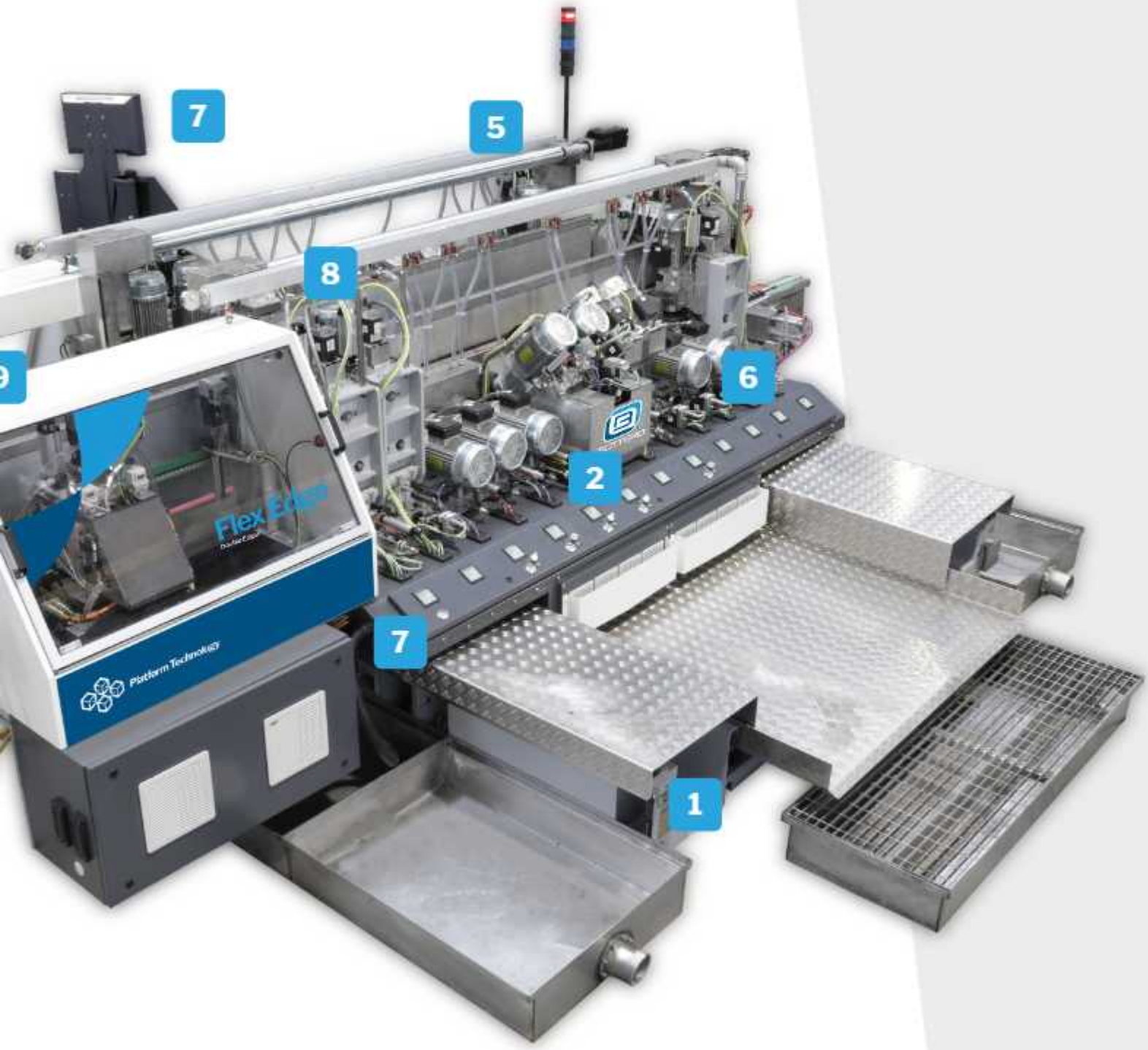
### Imperial

| | | | | |
|---|---|---|---|---|
| **Dim. max. A** | 39" 24/64<br>102" 23/64 | 78"47/64<br>141" 47/64 | 102" 23/64<br>157" 31/64 | 102" 23/64<br>196" 54/64 |
| **Dim. max. B** | 78" 47/64<br>157" 31/64 | 118" 7/64<br>102" 23/64 | 102" 23/64 | 141" 47/64<br>102" 23/64 |
| **Y** | 301" 47/64<br>405" 55/64 | 365" 33/64<br>365" 60/64 | 365" 33/64<br>380" 43/64 | 404" 56/64<br>478" 12/64 |
| **X** | 290" 23/64<br>196" 54/64 | 354" 9/64<br>102" 23/64 | 393" 32/64<br>380"43/64 | 417" 51/64<br>517" 36/64 |



# Flex Edge

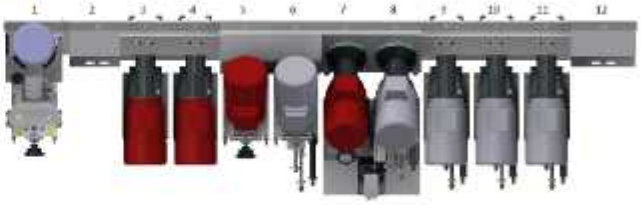
| | |
|---|---|
| 1 | Platform Technology for machine opening and spindle configuration. |
| 2 | Coaxial spindles guarantee vibration-free. |
| 3 | Endless polyurethane belts with stainless steel cords. |
| 4 | 4x4 Motion. |
| 5 | A large number of tools with automatic wearing recovery control systems. |
| 6 | Digital ammeters. |
| 7 | Easy to use and user friendly operator interface. |
| 8 | Servo motors for automatic diamond tool wear recovery. |
| 9 | New fully servo finishing unit with radius corner capabilities. |


7
5
8
9
6
2
7
1

# Wheel configuration

**220 BUS**

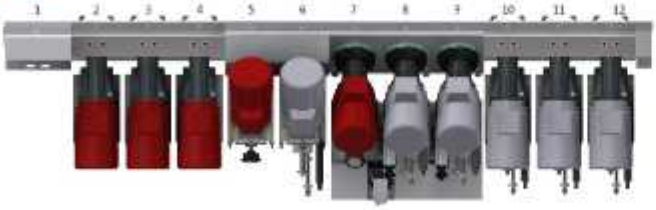
**220 LAM**



**220 SHIFT**

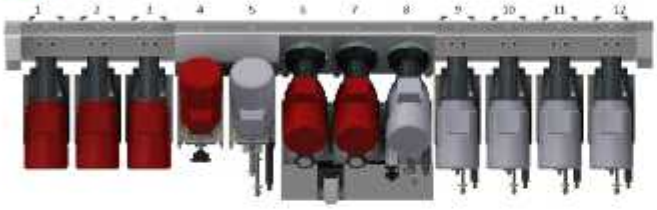
**220 STD**

**222 BEV**

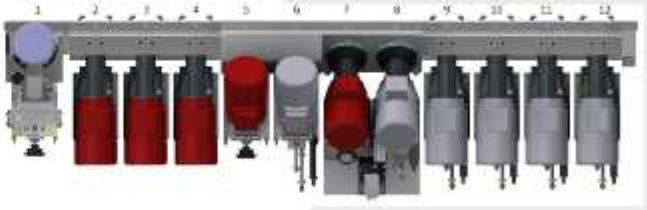


**222 HQ**

**224 BEVHQ**



**224 LAMHQ**



**224 LAMR**

**224 R**

**224 SBEV**

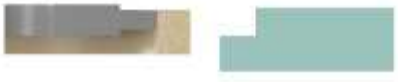
**228 BEVR**

# Technical features

| | |
|---|---|
| **Minimum glass dim*** | 115 x 115 mm |
| **Glass thickness** | 3 ÷ 40 mm |
| **Speed** | up to 12 m/min |
| **Max glass weight** | 1000 Kg |
| **Worktable height** | 970 ± 50 mm |
| **Max opening speed** | 30 m/min |

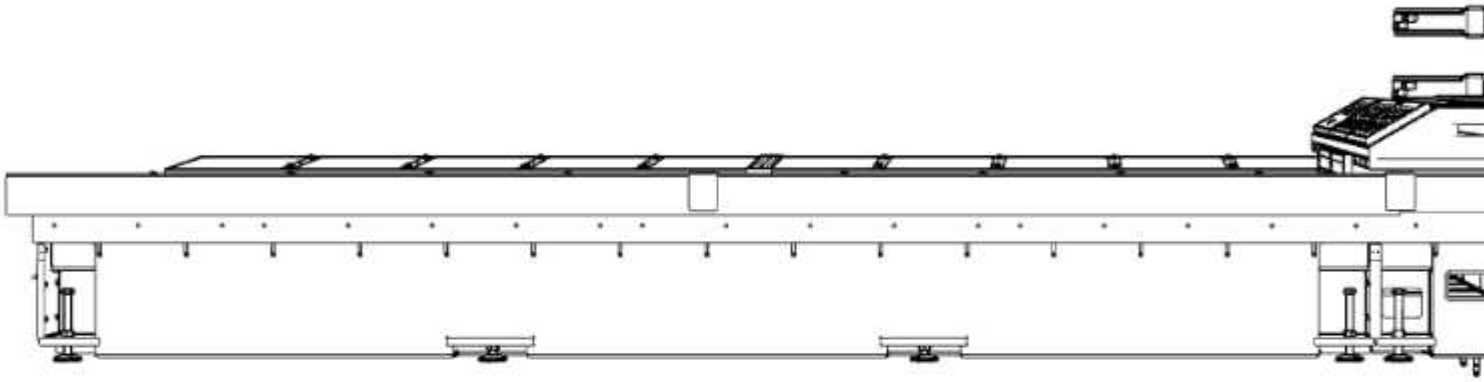
* the minimum glass dimension can change depending on options included

## Peripheral wheel profiles

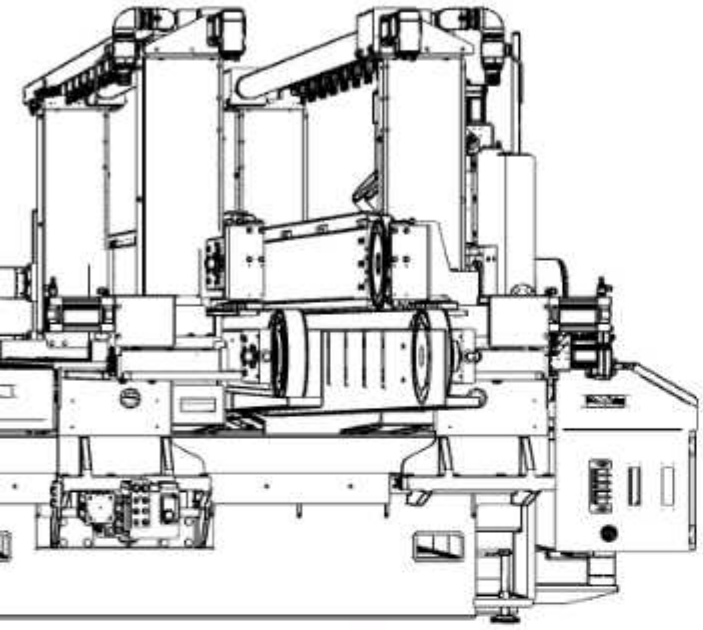
| | |
|---|---|
| **Engraving wheels** |  |
| **Wheels for engraving on arrises** |  |
| **Peripheral wheels for step and edge** |  |
| **Pencil edge peripheral wheels** |  |
| **Wheels for over 45°** |  |
| **Wheels for under 45°** |  |
| **Edge grinding cup wheels** |  |

# Platform Technology

## In machine width and spindle configuration



**B**



A

| Machine Opening | Machine Dimension |
|---|---|
| Nominal [A] | Total Base [B] |
| 2000 | 3355 |
| 2600 | 3955 |
| 3000 | 4435 |
| 4000 | 5515 |
| 5000 | 6355 |
| 6000 | 7435 |
| >6000* | Pitch of 1.100 |

*Up to 9000 mm (with centralized water system)

**Flex Edge grinding line with orthogonal transfers and loading and unloading tables**

Code: 6 (09/22)
Rev.: 10



# Discover the Bottero technology for Flat Glass

- Float Cutting
- Glass Stock Management
- Straight Line Edgers & Bevellers
- Double Edgers
- CNC
- Laminated Lines
- Coating Lines
- Float Lines
- Laminated Lines
- Mirror Lines
- Off line Cutting
- Packing Lines
- Solar Lines

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