

501 - A

AUTOMATIC CUTTING-BREAKING-SEPARATING MACHINE FOR LAMINATED GLASS.

MAX. CUTTING LENGTH L=3400 mm

Machine to score, break and separate laminated glass.

The machine is formed by:

SCORING-BREAKING-SEPARATION MODULE

ABUTMENT AND WORKING TABLE

Structure made of electro-welded steel pipes, protected with two paint coats: anti-rust and coloured paint

The working tabletop is made of wood with flatness accuracy and covered with woollen felt, to assure the air cushion of maximum efficiency.

Table edges made of hard wood to allow the manual glass breaking.

Powerful system of forced air, produced with a fan to create the "air cushion" between the table and the glass surface.

This allows to reduce the friction consistently and make the glass movement operations easy.

The noise level of the air forced system is included into the established limits according to the standards.

CUTTING-BREAKING-SEPARATION MODULE :

HP resistance: infra-red rays emitter. The physical properties of the infra-red rays permit to heat the PVB without overheating the glass, avoiding so the glass cracking when performing the next score.

A couple of bridges with an automatic clamping system to permit the glass cutting, breaking and PVB separation, to produce a right-angle glass edge without splinters, PATENTED BY BOTTERO.

Cutting head carriages moved by a transmission system formed by motorreductor, pulleys and toothed belts.

Cutting, breaking and PVB separation system PATENTED BY BOTTERO, equipped with a heating element at disappearance, pneumatically controlled.

Cutting length determined by a double photocell according to the glass sheet dimension.

Lubrication system with the flow concentrated on the score.

Possibility of processing low-e glass. Thanks to the traction roller covered with a special rubber material, it is possible to treat low-e without scratching the coated surface.

Possibility of excluding the lower cutting head to score monolithic glass up to 19mm thickness.

Possibility of performing the monolithic glass breakout up to 10-mm thickness.

Possibility of excluding the lubrication flow during the score.

Possibility of working on automatic or manual mode. In the last case every single function must be performed step by step: clamping, cutting, breaking of the glass, heating and PVB separation.

Easy and intuitive dialogue between the operator and the machine thanks to a software interface developed by taking in consideration all the end user necessities. During the cutting data inputs and on every operative machine function the operator is guided step by step by the software that helps and highlights possible errors.

ABUTMENT AND WORKING TABLE:

Pneumatic tilting arms used to load or unload glass sheets, case sizes or sub-plates.

Retractable lateral squaring lug of reference.

Sheet abutment bridge placed underneath the table, which permits to let the working tabletop free.

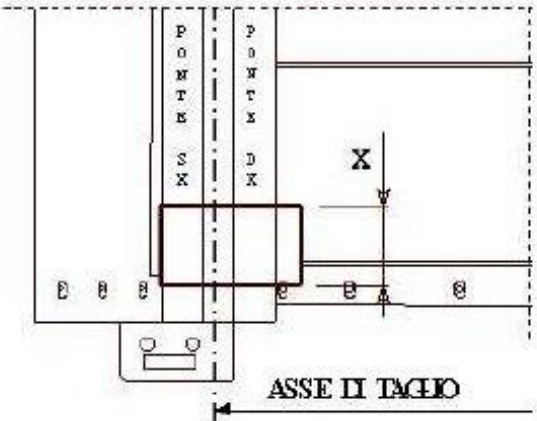
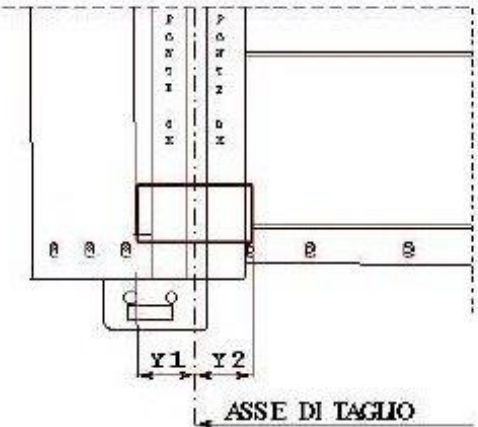
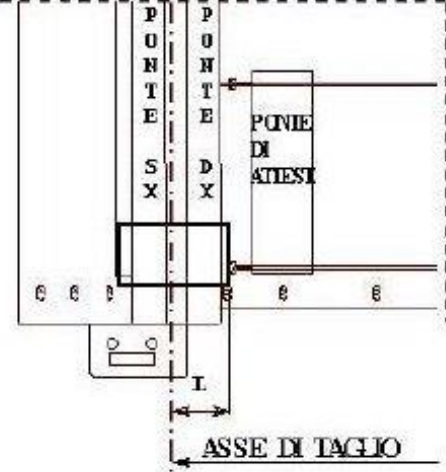
Retractable front abutment lugs of reference, pneumatically controlled.

Electronic bridge positioning with data inputs by the keyboard placed at the console on board the machine.

Machine control cabinet equipped with a PLC, electromechanical power circuits, drivers for the motors and electromechanical safety circuits.

Low-E Glass type	Version prepared with the traction roller covered with a special rubber that allows to process Low-E glass.
------------------	---

PERFORMANCES

<p>Maximum cutting length X=3400 mm</p> <p>Minimum cutting length X=250 mm</p>	
<p>Minimum breaking in automatic mode</p> <p>Y1= 175 mm</p> <p>Y2= 175 mm</p>	
<p>Minimum abutment for cutting L=175 mm</p> <p>Maximum abutment for cutting L=3210 mm</p>	

Air cushion power	Minimum 200 mm water column.	
Thickness range to process	Monolithic: 3 - 10 mm Laminated: 3 + 0,38 + 3 (33-1) minimum 8 + 4,56 + 8 (88-12) maximum	
Maximum sheet to process (single machine)	Sheet 3200 x 2400 mm	
Maximum sheet to process with a Jumbo-tilting table combined.	Sheet 6100 x 3300 mm	
Maximum carriages speed	40 m/min	
Arms tilting time (rising + lowering)	30 s	
Cycle times for L=3400 mm (cutting, breaking, separation)	Times in seconds (environmental temperature equal to 18° Centigrade)	
GLASS	P.V.B.	TIMES
3+3	0,38	39
4+4 / 3+5	0,38	41
5+5	0,38	43
6+6	0,38	45
3+3	0,76	45
4+4	0,76	47
5+5	0,76	49
6+6	0,76	51
3+3	1,52	51
4+4	1,52	55
5+5 / 4+6	1,52	59
6+6	1,52	63
8+8	4,56	160

CUTTING PRECISION

Max.cutting tolerance	+/- 0,5 mm
Max. straightness tolerance	0,5 mm
Max. parallelism tolerance	1 mm
Maximum length difference between two diagonals. (Area rectangle < 2 sqm)	2 mm

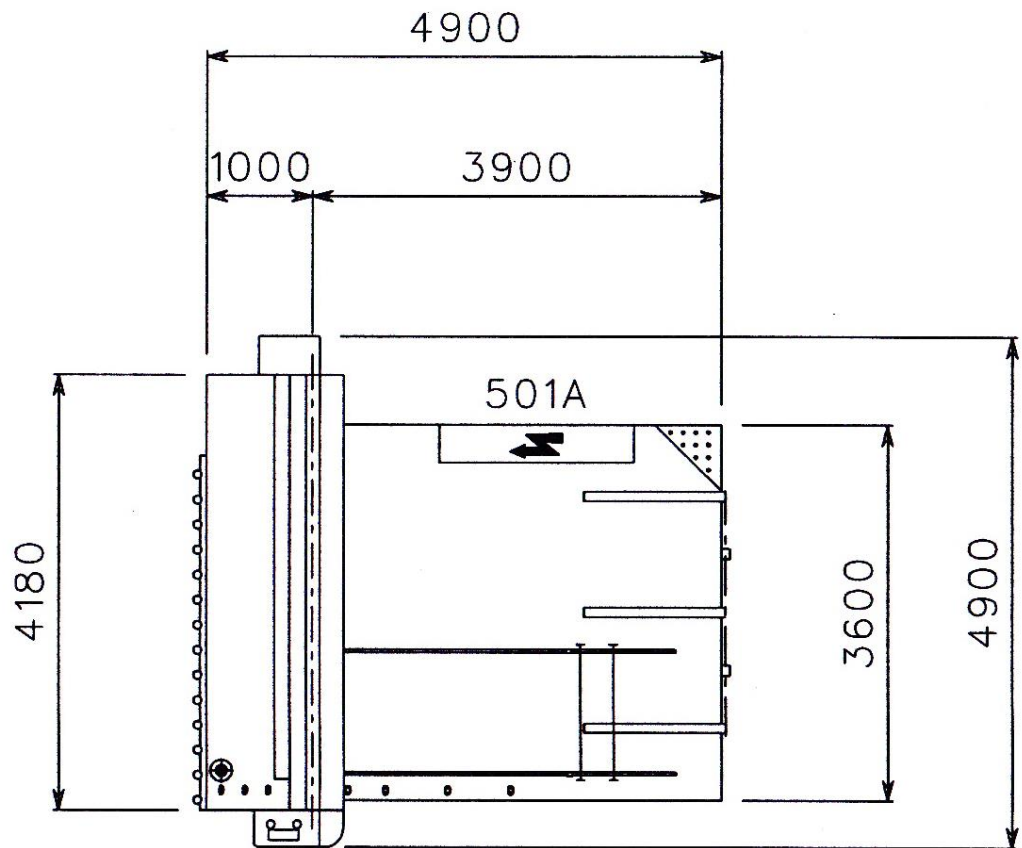
It is understood that the tolerance has been checked on 3 mm thick glass.




SAFETY EQUIPMENT

Electromechanical safety	Hardware circuits done by means of using special safety modules.
Control of the moving units.	Electromechanical hardware locking brake (guaranteed by a mechanical limit switch intervention).

INSTALLATION AND USE CONDITIONS

Overall dimensions	4900 x 4900 mm
Weight	3500 Kg
Working table height	Adjustable from 900 up to 940 mm
Installed Power	14 KVA
Compressed air max. consumption	500 NL/Mn.
Storage, temperature and humidity tolerances	From - 25 °C up to + 75 °C, reference pressure 1 Bar 90% relative humidity at 20 °C (without condensation) 50% relative humidity at 40 °C (without condensation)
Working, temperature and humidity	From 5 °C up to 40 °C, reference pressure 1 Bar 90% relative humidity at 20 °C (without condensation) 50% relative humidity at 40 °C (without condensation)
Powers Supplied	Voltage: 400 V (+/- 10%), Frequency 50 Hz Compressed air: Minimum pressure 7 Bar Dew point < 5°



	POSIZIONE ATTACCO ARIA COMPRESSA (MINIMO 6 BAR). CONSUMO <i>COMPRESSED AIR INLET CONNECTION (6 BAR MINIMUM). CONSUMPTION</i>	500 NL/min
	ARMADIO ELETTRICO. POTENZA INSTALLATA PARI A <i>ELECTRICAL CABINET. INSTALLED POWER</i>	14 KVA
H	ALTEZZA PIANO DI LAVORO <i>WORKTABLE HEIGHT</i>	920 (+ - 20) mm
	PESO <i>WEIGHT</i>	3500 KG