BAVELLONI VE500 V10

General description

General

Automatic vertical straight-line machine with 10 cup wheels to process flat edge with arrises and variable angle on glass sheets having a thickness from 3 to 51 mm.
VE500 V10, conceived and manufactured according to the most modern technologies, can polish edge and chamfer, granting high quality and productivity.

Structure

By using modern systems of three-dimensional modeling, Bavelloni optimized VE500's structure, composed of a strong electro-welded modular basement supporting the spindles and the glass sheets conveyor that is now more rigid for better quality of the final product, even in case of big thickness and large sizes.


Inlet and outlet arms

The inlet and outlet arms, for the loading/unloading of the glass sheets, have conveying chains in anti-friction material. The inlet arm is equipped with a device to change the glass removal without the necessity to operate on the position of the diamond wheels. Said removal can be read on the control panel monitor.
Besides, there is a special function to stop the movement of the inlet arm and reactivate it using a pedal to facilitate the loading of big sheets while the machine is working.
Inlet and outlet arms have independent motorizations from machine main conveyor one.
The machine can grind glass strips 70 mm height. Fitting the spindles in the tilting unit with the specially provided kit and thanks to the inlet and outlet arms that can be lifted up, it is possible to grind flat edge with arrises minimum 50 mm height.


Conveyor

The conveyor is composed of two parts: a fixed and a mobile one. The opening of the conveyor is operated by a motorized mechanical device, which is controlled by the PLC.
VE500 machines have a **patented** ***conveyor sliding on high precision steel guides without the aid of ball bearings.***


The new **patented** ***system with double drive direct motorization grants optimum synchronization of glass transport and increased mechanical performance. This function is possible thanks to the use of high torque motors even at low speeds. The speed variation is performer by drives.***

The machine is equipped with a centralized lubrication plant controller by the NC.

Spindles

The machine is equipped with the following spindles:

1. *diamond metal bonded cup wheel for flat edge/chamfer grinding*
2. *diamond metal bonded cup wheel for flat edge/chamfer grinding*
3. *diamond resin bonded cup wheel for flat edge/chamfer grinding*
4. *rubber polishing cup wheel for flat edge/chamfer polishing*
5. *rubber polishing cup wheel for flat edge/chamfer polishing*
6. *rubber polishing cup wheel with cerium oxide mix for flat edge / chamfer polishing*
7. *diamond cup wheel for rear arris*
8. *diamond cup wheel for front arris*
9. *polishing cup wheel for front arris*
10. *polishing cup wheel for rear arris*

All the wheels in use have a diameter of 150 mm.
In case a brilliant finishing is required, it is possible to have as an option a cerium polishing plant, composed of tank, pump, mixer, filter and connecting pipes, using one felt (for the flat edge and for the chamfer).

The spindles for flat edge / chamfer are separated from the electric motor and the transmission is by means of belt and pulley to eliminate any possible vibrations.

The spindles body is in iron casting and slides on high precision adjustable guides. The spindle shaft is in tempered and ground stainless steel, lubricated by for life special grease (free from periodical maintenance).

The wheels boxes are totally in stainless steel, in order to avoid any possible grinding water corrosion.

The machine is equipped with a tilting unit supportino the 6 spindles for the processing of the edge with variable angle. The motorized rotation of this unit is performed in a very accurate way by means of a worm screw. This mechanical solution (always used by Bavelloni) avoids the manual re-positioning of the wheels each time the angle or the width of the chamfer changes.

Polishing spindles are equipped with a pneumatic automatic adjustment system to compensate the wheel wear: this device raises the wheel position, while it is wearing, always ensuring, in this way, a perfect edge polishing. The polishing pressure is adjustable by means of a regulator according to the glass thickness and to the required finishing.
The manual adjustments of the wheels are carried out from the frontal side of the machine.

Control equipment

The control panel is integrated in the control equipment.
All the operations are managed by a HMI-PLC that executes both machine functions and user interface functions. It integrates a touch screen color monitor which represents the most complete and user-friendly equipment now existing in the market due to its innovative characteristics and its clear and immediate graphics.

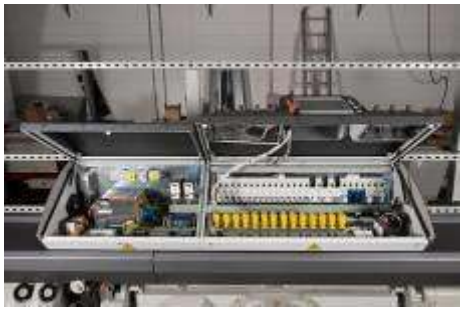
By means of the control equipment it is possible:

- ***Activating a program automatically setting the machine for the selected working.***
- ***Displaying the drawing of the working to be processed.***
- ***Storing 99 different working conditions.***
- ***Processing of simple and double chamfers automatically calculated and performed by the machine after setting the data in the HMI.***
- ***Displaying maintenance intervention according to the operation time of the machine.***
- ***Displaying partial and total working hours.***
- ***Displaying partial and total worked meters.***
- ***Graphically displaying motor absorption, helping the operator to adjust the tools in the optimal way, maximizing productivity, and product quality and tools life.***
- ***Importing and exporting working programs by*** **USB port.**
- ***Interfacing with the local network by*** **LAN port** ***activated on the control panel***
- ***Using the*** **Ecofriendly pack** ***for optimizing energy consumption. The Ecofriendly pack includes*** **GRIND&STOP** ***function to stand-by spindles feeding and close pneumatic and cooling circuits after a preset time from the last ground sheet; selection and and exclusion of the spindles that are not used during the selected working cycle.***

The panel also contains the pressure regulators and the ammeters for polishing spindles.

Thanks to a purposely developed application, the control panel view can be remoted via **wifi** ***on tablet or compatible devices (*****optional*****).***

Electrical plant



The* <u>new electrical cabinet fully integrated in the machine body,</u> *easy to service, carried out according to latest CE standard, contains all electrical components and it includes the control panel (HMI), the ammeters/regulators for a comfortable handling during working process.

Standard voltage 400V.- 50Hz, others upon request.

Hydraulic plant

The closed circuit hydraulic plant for the wheels cooling consists of two tanks (total capacity 720 liters), water distributing/return circuit and recycle pump.

HiWash washing machine (optional)

The new washing machine is integrated mechanically and electronically in the machine outlet arm and it does not need a separated electrical box. It is totally managed by VE500 touch-screen control. Max washable height 400 mm, minimum 150x100 mm. Glass thickness control and energy saving function (HiWash will start only when glass gets close) in the standard supply.

Technical specifications

Workable thicknesses	***3 ÷ 51 mm***
Min. workable height	***70 mm.***
Min. workable height on flat edge with arrises after installation of spacers (in standard scope)	***50 mm.***
Variable angle	***0° - 45°***
Installed power	***27,7 kW***
Min. pressure of compressed air	***8 bar***
Max. consumption of compressed air	***25 Nlt/min***
Lenght	***8829 mm***
Width	***1703 mm***
Height	***2350 mm***
Weight	***4500 Kg ca.***
Working speed	***0,5 ÷ 5 m/min***
Water tanks capacity	***720 litri***

VE500 V10 layout

This lay-out is indicative: a definitive lay-out will be delivered with the sales agreement.