VDM 1636 CN

System description and benefits

VDM 1636 CN is an NC vertical drilling and milling machine fitted for the automatic performing of even complex drilling and/or milling cycles. Equipped with one double drilling head (1+1 opposing spindles), each of them equipped by a rotating tools' storage (8 positions each). The machine, characterised by a great user-friendliness, has been designed according to the most advanced technical solutions to ensure an extremely high working accuracy.
Because of its features and its functionality, it is the ideal choice for the production of doors, and in general for architectural (internal and external) applications.

Structure

VDM 1636 CN has a vertical structure enabling to gain the following advantages:

- Room saving.
- Automation of the working cycle: easier glass handling thanks to the vertical arrangement.
- Optimised water collection: the water for the cooling of the drilling heads and of the milling tool (owing to the gravity force) falls down and consequently does not flood the surface of the processed glass, as it happens on the contrary on the horizontal machines.

The machine is composed of a strong electro-welded basement supporting the inlet element, the operating unit and the outlet element.

Inlet/Outlet and glass movement element

It consists of a series of motorized and clutched rollers which support and move the glass and of a rear rack, equipped with idle wheels.

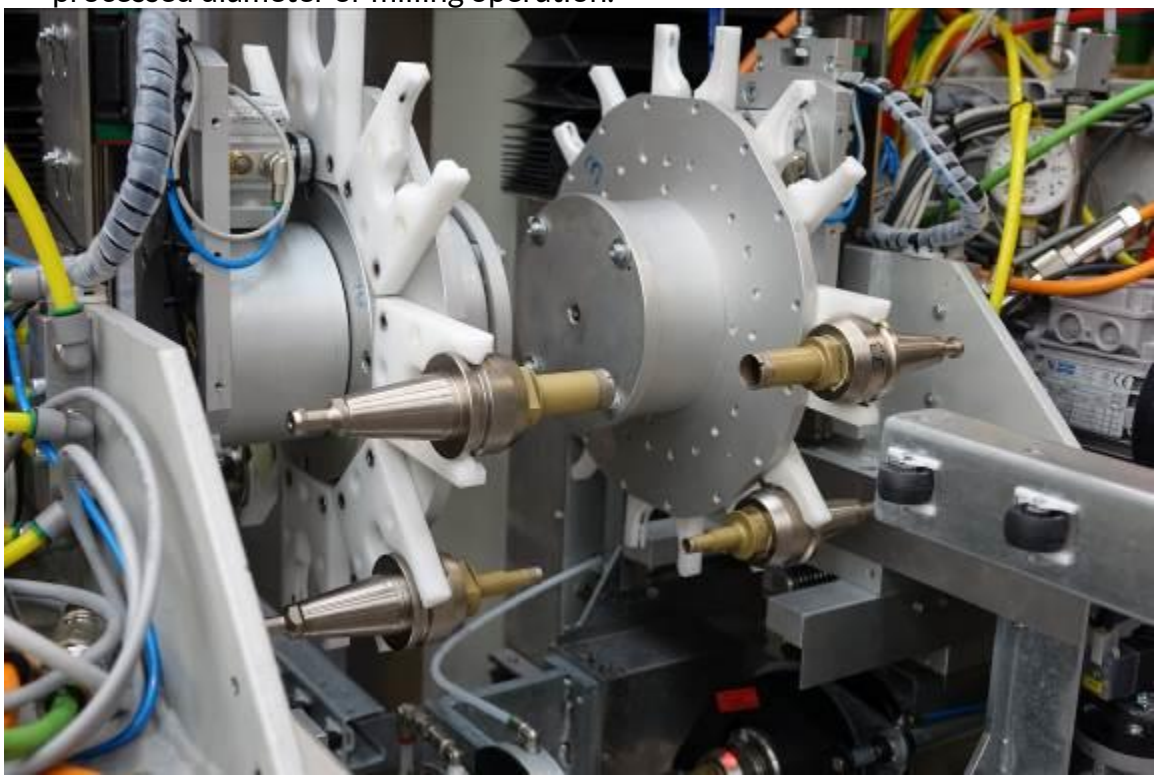
Drilling/milling unit

It is made up of two electro-welded steel vertical rods, supporting the spindles (Y-axis) sliding on ball guides and pads. The movement of the heads is by means of two ball screws with a brushless motor. The horizontal translation of the glass constitutes the X-axis: the sheet is moved by the motorized rollers.

The correct positioning is guaranteed by a reference pad, sliding on ball guides and motorized by a high precision pinion/rack system, and brushless motor controlled by the NC. Above technical solutions, allow very high precision positioning.

Drilling/ milling heads

They consist of ISO 30 electro spindle. The motors of the heads are governed by CN for the automatic setting of the ideal rotation speed according to the processed diameter or milling operation.



Milling will be performed while the glass is in a fixed position in order to achieve better grinding quality and higher grinding speed.

Possible workings

In a single automatic cycle VDM 1636 CN is able to process the following operations:

- Drilling
- Countersinking
- Milling
- Arrising (of notches)

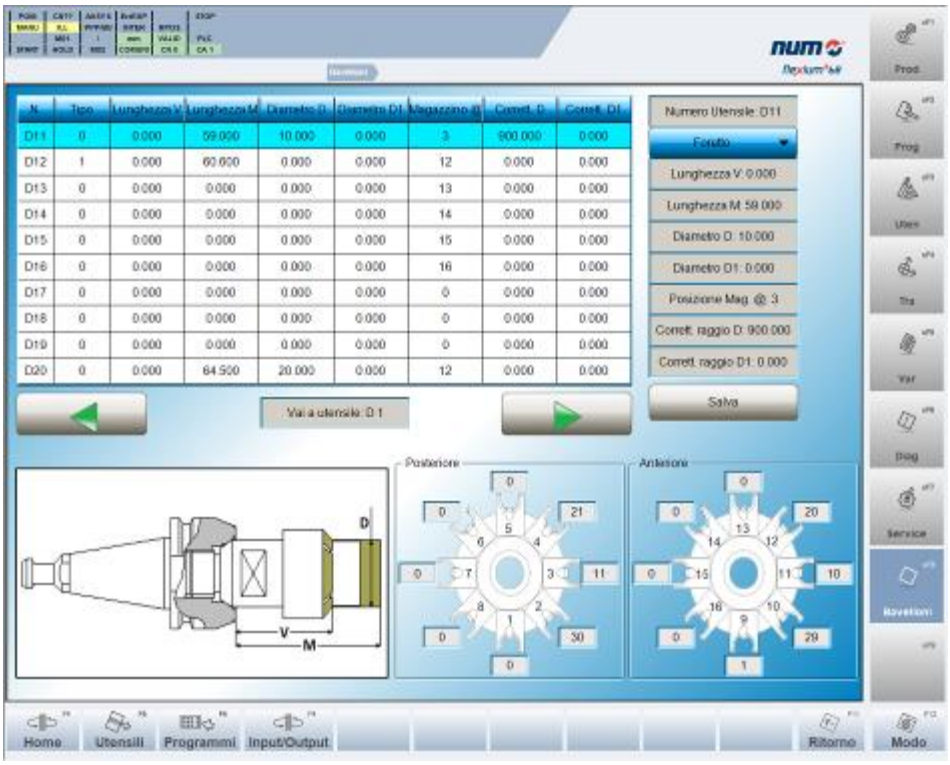
The holes can be processed in any point of the glass surface indifferently.

Control equipment

The control device combines a professional numerical control with the convenience of a PC working in Windows® (Microsoft) environment.
The machine is equipped with the latest NUM control, named Flexium Plus.
The main features of the system are:

- Programming on board the machine (while the control is managing the movements of the machine, the operator can easily work on the PC)
- Simple and direct graphic interface
- Total connectivity and data transfer through the technological support tools existing on the market
- Free positioning of the console

Software



VD 1636 CN is equipped with one of the most advanced software system (CAD/CAM) specifically designed for glass processing by numerically controlled machining centres.

The software has the following functions:

- Free design of geometrical entities (arcs, bi-arcs, lines, rectangles, squares, ellipses, circles, regular polygons, fillets, chamfer, etc.);
- Design from predefined parametric models;
- Dimensioning;
- Import and export from and for other CAD/CAM systems by the current standard formats (DXF, ISO, etc.);
- Pockets, notches, countersinking;
- Modification and elaboration of designs (cut, extend, split, join, interpolate, copy, move, mirror, rotate, delete, etc...);
- Automatic check of the interferences between the machining and the sub-pieces;
- Definition, modification and saving of the machining kits (tools sequences);
- Graphic 2D simulation of the machining process, with the check of the eventual mistakes;
- The programs can be transferred to the machine by Ethernet.

Electrical plant
Electric installation carried out according to CE rules with from the machine separated power panel and with waterproof connectors.
Standard voltage 400/50 Hz, other upon request.

Technical specifications

Workable thicknesses	3 –19 mm
Holes diameter	4 – 60 mm
Maximum length of notches	260 mm
Maximum length of notches on the up side of glass	230 mm
Minimum workable dimensions (LxH) drilling	420 x 300 mm
Minimum workable dimensions (LxH) milling	900 x 420 mm
Maximum workable dimensions (LxH) drilling	3600 x 1600 mm
Maximum workable dimensions (LxH) milling	3600 x 1450 mm
Maximum glass size (LxH), transit only	3600 x 2200 mm
Spindles maximum rotation speed	12.000 rpm
Min. pressure of compressed air	6 bar