

BAVELLONI NRG 330 POWER-JET

System description and benefits

General

NRG 330 POWER-JET is a high-technology machine designed to carry out even complex and high-quality processing in reduced times, containing the necessary investment to the minimum.

The totally “digital” operation and control system of the machine enables a dynamic prompt response of the axes and a precise check of the speed: this means high performances always realized with the greatest accuracy and quality of the workings.



Especially fit for productions for home furnishing it is arranged for the following kinds of processing

- Drilling
- Milling
- Inside/outside edging
- Writing by candle tool in all styles of WINDOWS
- Geometric and artistic engraving by diamond candle tools
- Straight cuts by disc with any angle on 360°(upon request: “kit with head and cutting disc for straight cuts”)
- Shaped cuts with convex disc (upon request: “kit for head and convex disc for shaped cuts”)
- Straight and shaped engraving (upon request: “kit for engraving”)
- Shaped bevelling polished with cerium (upon request: “kit for shaped bevelling”)

Structure



The machine has an open-top structure, to facilitate loading and unloading operations, and mobile bridge on the Y axis, made of electro-welded and normalized steel. It consists of 3 linear axes X, Y e Z, and the transmission is by means of hardened and ground screws with re-circulating balls, and a rotating C-axis. The X, Y and Z axes run on prismatic guides with re-circulating balls.

The bridge is moved by two motors Y and Y' in “Gantry axis”: a motor, a screw and a prismatic guide both with ball screws are on each side. All moving organs are equipped with a centralized lubrication system.

The protection fence fully surrounding the machine is provided with a convenient entrance in the front side, to make easier loading/unloading operations.

POWER-JET



Power Jet is a patented device, rotating from 0° to 360 ° in a continuous way, allowing to direct and keep the water jets (used for the tools refrigeration) exactly on the contact point between the tool and the glass profile. This means a better tool refrigeration, thus enabling an optimum tool consumption, a better end quality of the product and high speed and performances too.

NRG330 PJ description-022017

Pictures in this document are indicative and they could display optional devices. This document contains confidential information that shall not be copied or disclosed to any third party.

Working plane and Tool store

The working plane, equipped with 2 working stations with air/vacuum controls, is in ground Duralumin. Thanks to the hollows of the working plane structure, the suction cups fixing can be mechanical or by vacuum. The centring devices have a PATENTED retractable system allowing using stack wheels, reducing the number of tool changes. Moreover, the control system of the centring device prevents from chipping the piece during its rise/descent.

NRG 330 POWER-JET is equipped with a 10 position - tool store placed on the left side of the machine: since on each cone you can put

two wheels or more (up to a 65 mm stack), this tool-store can contain more than 20 different wheels.

Moreover, the machine can be equipped with an automatic pre-setting device (optional), with very small dimensions, designed to operate both the vertical and the horizontal measuring.

On the right side of the machine you can add the following optional devices by choice:

- additional 10 positions tool store

- additional working table, to increase the workable dimensions (see technical details)



Important Note: these two options cannot be purchased together since one excludes the presence of the other.

Spindle

NRG 330 POWER-JET is equipped with a “new conception” electro-spindle with air cooling:

constant power of 11 kW

vector check of the revolution from 0 to 12000 revs

- fast release clamping device for ISO 40 tools with mechanical blocking system and by pneumatic

- piston internal automatic cleaning of spindle (cone housing) by compressed air

- pneumatic pressurisation circuit (avoid dust infiltration)

- double cooling system of tools:

- directly from the inside of the tool by clean water

- external by re-cycled self-filtered water through sprayers gathering the tool

Control console

The control console combines the might of a professional numerical control with the convenience of a PC working in Windows® (Microsoft) environment.

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



Totally digital control of axes

The digital technology in use on CNC working centres of Bavelloni enables the axes control through the CN without any “digital – analogic – digital” conversion of the signals. It means no electromagnetic interferences, higher transmission speed and more accurate control by the motors permitting a better and faster interpolation of the axes.

Easycnc software

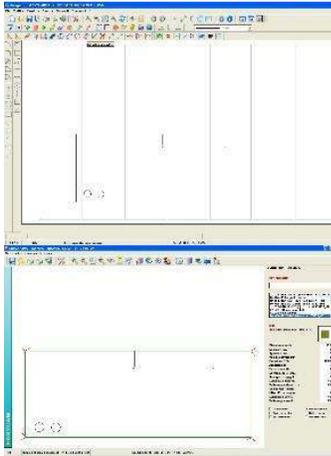
Created internally by our programmers Easycnc is the managing software of the working centre.

The main functions are:

- Visual check of polishing wheels
- use Visual check of spindle speed
- Display of spindle absorption
- Display of partial and total working times
- Graphic display of tool path
- Storage of 254 tools and respective operations
- Display of diagnostics with language messages
- Inputs/outputs diagnostics with language comments and utility
- CAD/CAM programs execution in concealed time while the machine is working
- Access to the machine production statistics
- System for the tool wear compensation (fixed value or by constant pressure)
- Guided and easy access to the machine parameters



Software CAD-CAM



The standard CAD package is developed in WINDOWS, it is easy to learn and to use. It is equipped with innumerable functions allowing drawing and preparing work programs in few minutes.

Shapes can be both drawn in the CAD or detected on the machine trough self-learning probe or imported from other CAD systems (such as Autocad with .DXF format).

Some of its main features are:

- TOOLTIP function (display of key function by hovering over the mouse cursor)

- Library of parametric shapes

- Library of doors and metallic fittings

- Possibility of customization by the operator

- Automatic check of working feasibility

- Estimated calculation of production time

and costs, considering costs in linear meters, amortization and other fixed company costs.

Software for suction cups positioning on the working

plane Software for drawing archives management

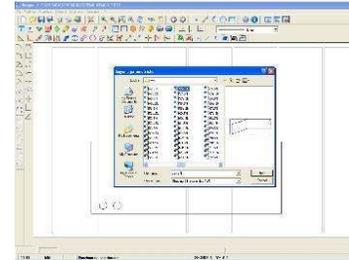
Software for tool path optimization

Software for self-learning of shapes

Software for management mill oscillating movement (triangular –step-linear)

Software for multi-function tool management (drilling - counter-sinking - grinding)

Software for automatic working speed reduction and pressure increase on radiuses



Electrical plant

Electric installation is carried out in accordance with CE rules with power panel included in the structure of the machine and provided with fan cooling system. All axes motors are brushless

Standard voltage 400/50 Hz, other available upon request.

Hydraulic plant

As options there is the availability of a stainless steel tank with relevant pump or of a centralized plant management kit for the recirculation of the cooling water.

N.B. since tool cooling is by water, one of the above possibilities must always be present,

In case you want to realize and use your own tank, you have to require the constructional drawings.

Technical specifications

Total machine overall dimensions	see lay-out		
Working plane height without suction cups	670 mm		
Weight	6500 kg		
X axis stroke	3420 mm		
Y axis stroke	1820 mm		
Z axis stroke	300 mm		
C axis stroke	0° ÷ 360° continuous		
Axes speed	50 m/min		
Spindle speed	12.000 RPM		
Spindle power	11 kW		
Max. workable dimensions	3300x1700 mm		
Workable dimensions with optional additional table	3700x1700 mm		
Workable thickness	3 ÷ 100 mm		
Total installed power	37 kW		
Absorbed power	22.5 kW		
Tool diameter	Ø8÷Ø150 mm		
Standard store positions	10		
Optional additional tool store positions	10		
Compressed air pressure	4 bar		
Min. pressure of clean water system	2.5 bar		
Storage ambient conditions (temperature/humidity)	from -20°C to +60°C	- max 80%	without condensate
Operational ambient conditions (temperature/humidity)	from +5°C to +45°C	- max 80%	without condensate

Standard supply

8,00 Cone ISO-40 for stacked wheels length 50 mm - external water
 2,00 Cone ISO-40 for core-drill with water regulation
 1,00 Cone ISO-40 for tools with 1/2" connection 8,00
 Suction cup diameter 90 mm vacuum blocking 6,00
 Suction cup diameter 160 mm double - vacuum 2,00
 Device to work strips min.50 mm
 3,00 Centering device diameter 40 mm vacuum blocking
 6,00 Centering device diameter 90 / H.125 vacuum system on two sides
 1,00 Centering cone kit
 1,00 Diamond core-drill diameter 30 mm
 1,00 Cutting diamond mill
 1,00 Maintenance tool and wrenches kit