

IEKĀRTAS SPECIFIKĀCIJAS Nr.1

customer

SIA "KDW Werke Baltics"
Vecozoli, Ropazu novads
LV-2133 ZAKUMUIZA
LATVIA LV

Code 9080406

Multicenter WINLINE 2Y 1667

Machine composition:

NC Pieces manipulator with 3 clamps for automatic loading/unloading

This unit deals both with the loading/unloading of pieces, and with the handling of the panel on locking modules to perform the profile on both sides.

The positioning of the elements through a NC-controlled axis guarantees the maximum precision and the choice of the optimal locking surface in each occasion.

8 EPS X panel supports equipped with Finger Clamps fixed along Y

- 8 steel panel supports of high rigidity;
- panel supports equipped with Finger Clamps:
- locking of elements with thickness between 20 and 140 mm, without any operator's intervention;
- the "Safe Locker" sensor ensures the locking safety and the speed of cycles;
- the blowing unit on the top plate ensures the perfect cleaning of locking surface, removing the chips from previous processing.

Prearrangement for double Y carriage: allows to equip 2 electrospindles on 2 sides of the beam. Both electrospindles will change on the same tool changer with 22 positions, and can be changed in hidden time, while the other unit is working.

Chain tool changer with 22 positions and centerdistance 180 mm

- installed on the carriage, allows to perform the tool change in 8-10 seconds;
- 22 positions always available for tools of big dimension and weight.
- tool grippers centerdistance: 180 mm;
- max. tool weight on aluminium gripper: 10 kg;
- max. total weight: 140 kg.

Belt conveyor for chips and off-cuts removal

Positioned at the center of the basement, ensures the removal of chips and off-cuts from the machine.

Automatic lubrication system

A centralized system, programmable through NC, sends the lubricant to all machine components, with no operator's monitoring and maintenance.

EC safety cabin:

- maximum safety for the operator;
- maximum visibility of the working area;
- minimum level of dust and noise.
- Maximum Workpiece size with automatic loading and unloading: L=3.200 mm, H=140 mm, W=260 mm.
- Minimum panel size automatically loadable: L=300 mm, H=40 mm, W=40 mm.
- Maximum Workpiece size with manual loading and unloading: L=4.500 mm; H=140 mm; W=260 mm.

Electric cabinet

The machine can be powered at 380/400/415 V - 50/60 Hz.

The electrical cabinet and the internal components comply with the CEI EN 60204-1 and CEI EN 60439-1 norms.

The auxiliary transformer supplies the connection voltage for the personal computer, the air conditioner and the electrospindle cooling fan, avoiding the use of the middle neutral wire, not always available.

The electronic equipment is powered by a stabilized 24V DC power supply.

Air conditioner for electrical cabinet

It allows:

- the perfect working of all the electronic components inside the electric cabinet, even at very high temperatures, up to 40°C (104°F);
- a dust-free environment, since there are no aeration fans.

Numerical Control

PC-based control system BH660.

Thanks to the new Biesse technology WRT (Windows Real Time), which increases the performances of Windows 10 by making it work in real time, the machine is controlled directly by the PC, and any other hardware component becomes unnecessary.

Since the software that controls the machine runs directly on a personal computer and not on a dedicated hardware device, the system architecture is greatly simplified, grants greater performance and reliability.

Personal Computer Desktop

Main technical features:

- CPU Intel Core I5 or higher
- 8 GB RAM memory
- 128 (SSHD) GB Hard disk
- dedicated graphics card
- keyboard
- mouse
- USB ports
- Ethernet card for network connection to an office PC

These technical specifications may be subject to updates.

Since the personal computer controls the machine processes BIESSE does not allow the installation of additional non-authorized software, under penalty of losing warranty.

Teleservice

It allows an immediate and direct access to the machine numerical control via network. In this way it is possible to check machine data, user programs, input/output signals and system variables, and to install software updates, therefore granting:

- Real-time service intervention
- Quicker problem solving
- Consistent reduction of machine downtime
- Real-time software updates

The Teleservice support is free of charge for the whole warranty period.

Remote keyboard

Keyboard controlling the main functions available for work area set-up, operating unit tooling and tool changers tooling.

The remote keyboard has an ergonomic shape, an easy-to-read display and is equipped with a magnetic device for its positioning on the panel support handles or the control cabinet.

It includes an emergency push-button, 2 potentiometers and membrane keys to access the menus available on the display; 3 programmable keys allow the immediate access to the most used functions.

It allows the operator to:

- Reset the axes
- Move the axes in manual mode
- Adjust the axes speed by means of a potentiometer
- Control the vertical movement of the spindles of the boring unit for tooling purposes
- Control the vertical movement of the dust extraction hood during the work phases, for the visual control of all the operations being performed on the test panel
- Check the state of input and output signals
- Activate the belt for the removal of chips
- Perform tool change operations.

Code 7200320 – q.ty 1

2 levels loading/unloading transfer for pieces up to 3.200 mm

Includes:

- one transfer for loading, for max. 13 pieces 80 mm width
- one transfer for unloading, for max. 13 pieces 80 mm width

* Maximum weight on the loading table: 240 Kg

Code 7300653 – q.ty 1

Additional cost for 2 EPS X panel supports equipped with Finger Clamps fixed along Y.

Code 7510179 – Q.ty 1

Uninterruptible Power Supply unit (UPS) for the machine PC.

In case of a power outage the unit allows to operate the PC for 7 to 10 minutes based on working conditions in order to save data.

Code 7510163 – q.ty 1

bTouch - Touch screen monitor

bTouch, in synergy with the interface bSuite 3.0 (or later), optimized for touch use, guarantees to fully exploit the functions of BIESSE software.

This solution provides a simple and intuitive use of the software installed in the machine. The touch screen replaces the functions of the mouse and keyboard, guaranteeing direct interactivity between user and device.

In particular, it is possible to:

- Create any CAD program (also parametric) including geometry and machining;

- Zoom, move and rotate objects (piece, CNC, tools, etc.) present in the CAD/CAM area;
- Equip the magazines simply by dragging the tools in the slot assigned;
- Prepare the machine for the correct positioning of the workpiece (machine set-up) by shifting panel supports and sliding bases to the desired position;
- Send a work list, change the parameters and send it to the NC for further processing;
- Manage all the commands in soft-console.

Technical specifications of the touch screen:

- Display: 21.5" 16: 9;
- Maximum resolution: 1920 x 1080 (Full HD) to 60 Hz;

* Requires bSuite 3.0 or later

Code 7510182 – Q.ty 1

Additional cost for replacement of the standard Personal Computer with a high performing one.

Main technical specifications:

- 32 GB RAM memory
- 500 SSD GB hard disk or superior
- 500 SSD GB RAID1 hard disk or superior
- 21.5" LCD
- Dedicated graphics card
- Keyboard
- Mouse
- USB ports
- Ethernet card for network connection to an office PC

These technical specifications may be subject to updates.

Since the personal computer controls the machine processes BIESSE does not allow the installation of additional non-authorized software, under penalty of losing warranty.

Code 7212233 – q.ty 1

30 kW (40,2 HP) Peak Power electrospindle, HSK F63 adaptor, with liquid cooling, equipped with 360° rotation interpolating unit (Torque C-Axis) and prearrangement for chip deflector.

High torque electrospindle, specific for hard machinings with low rotation speed.

Main specifications:

- 25 kW (33,5 Hp) from 10.000 to 14.000 rpm in S1 duty
- 30 kW (40,2 Hp) from 10.000 to 14.000 rpm in S6 duty
- Ceramic bearings
- Rh and Lh rotation
- Rotation speed from 1.000 to 18.000 rpm programmable by NC

360° rotation interpolating unit - Torque C-Axis

The unit with Direct Drive Technology (MK259) is installed on the electrospindle and is equipped with:

- 1 conical slot for aggregate reference and use
- 3 compressed air ducts for aggregate or specific used blower (authorized by Biesse) supplying

Allows continuous aggregates rotation on the X-Y plane and is capable to interpolate simultaneously with the main axes with a maximum rotation speed in interpolation of 60 rpm.

* Any use of aggregates not supplied with Biesse pricelist and without evaluation of usability required to Biesse, will compromise the recognition of the guarantee of electrospindles and devices connected

Code 7250248 – q.ty 1

RH Chip deflector with pneumatic sensor for 4 or 5-axes electrospindle

For tools with clockwise rotation (Rh)

Max. tool diameter: 180 mm

It requires:

- bSolid or BiesseWorks Advanced or a software capable of controlling the deflector path
- Prearrangement for chip deflectors with pneumatic sensor on operating unit
- Iron gripper for the storage of the deflector in the tool changers

* It requires at least one shield for Rh deflector

* It requires the C-axis on a 4-axes machine

* It requires the flange for the assembly of aggregates on a 5-axes unit

* It requires the prearrangement for chip deflectors with pneumatic sensor on an operating unit

Code 7250269 – q.ty 1

Additional cost for deflector with forced flow

Through the blowing of compressed air inside the shield of the deflector it facilitates the removal of chips.

* requires the deflector

Code 7250244 – q.ty 1

Shield L = 244 mm for Rh pneumatic deflector

For tools with clockwise rotation (Rh).

Max. tool diameter: 180 mm.

Shield length from the collet edge: 244 mm.

For standard electrospindle and for 5 axes unit.

It requires the Rh deflector.

Code 7212159 – q.ty 1

Additional Z carriage for front operating units, controlled by an independent Z axis.

This carriage can fit the multifunctional units in addition to the electrospindle equipped on the base machine.

Code 7212192 – Q.ty 1

Multifunction Unit FlexyWood PLUS.

This device includes:

2 exits tilting motor with A-axis:

- Maximum power: 5kW (6.8HP) at 12,000 rpm in S1 duty
- Maximum power: 6kW (8.2HP) at 12,000 rpm in S6 duty
- liquid cooling
- A-Torque system
- Maximum rotation speed: 18.000 rpm

Outlets technical specifications :

- Outlet 1: ERC32 collet coupling (supplied with a 15-16 mm collet) - RH rotation
- Max tool length
- Total length: 150 mm
- Out of the collet: 120 mm
- Max diameter: 20 mm
- Outlet 2: ERC25 collet coupling (supplied with a 15-16 mm collet) - LH rotation
- Max tool length
- Total length: 150 mm
- Out of the collet: 120 mm
- Max diameter: 16 mm
- * Seeger ring mandatory

Aggregate with 3 vertical independent spindles for boring operations

- Max. tool rotation speed: 6.000 rpm
- Tool connection: shaft diam. 10 mm and locking by means of dowel
- Tool rotation direction: Lh - Rh - Lh
- Max. bit length:
- Total length: 82 mm
- out of the collet: 65 mm

Code 7212233

30 kW (40,2 HP) Peak Power electrospindle, HSK F63 adaptor, with liquid cooling, equipped with 360° rotation interpolating unit (Torque C-Axis) and prearrangement for chip deflector.

High torque electrospindle, specific for hard machinings with low rotation speed.

Main specifications:

- 25 kW (33,5 Hp) from 10.000 to 14.000 rpm in S1 duty
- 30 kW (40,2 Hp) from 10.000 to 14.000 rpm in S6 duty
- Ceramic bearings
- Rh and Lh rotation
- Rotation speed from 1.000 to 18.000 rpm programmable by NC

360° rotation interpolating unit - Torque C-Axis

The unit with Direct Drive Technology (MK259) is installed on the electrospindle and is equipped with:

- 1 conical slot for aggregate reference and use
- 3 compressed air ducts for aggregate or specific used blower (authorized by Biesse) supplying

Allows continuous aggregates rotation on the X-Y plane and is capable to interpolate simultaneously with the main axes with a maximum rotation speed in interpolation of 60 rpm.

* Any use of aggregates not supplied with Biesse pricelist and without evaluation of usability required to Biesse, will compromise the recognition of the guarantee of electrospindles and devices connected
Code 7250248 – q.ty 1

RH Chip deflector with pneumatic sensor for 4 or 5-axes electrospindle

For tools with clockwise rotation (Rh)

Max. tool diameter: 180 mm

It requires:

- bSolid or BiesseWorks Advanced or a software capable of controlling the deflector path
- Prearrangement for chip deflectors with pneumatic sensor on operating unit
- Iron gripper for the storage of the deflector in the tool changers

- * It requires at least one shield for Rh deflector
- * It requires the C-axis on a 4-axes machine
- * It requires the flange for the assembly of aggregates on a 5-axes unit
- * It requires the prearrangement for chip deflectors with pneumatic sensor on an operating unit

Code 7250269 – q.ty 1

Additional cost for deflector with forced flow

Through the blowing of compressed air inside the shield of the deflector it facilitates the removal of chips.

- * requires the deflector

Code 7250244 – q.ty 1

Shield L = 244 mm for Rh pneumatic deflector

For tools with clockwise rotation (Rh).

Max. tool diameter: 180 mm.

Shield length from the collet edge: 244 mm.

For standard electrospindle and for 5 axes unit.

It requires the Rh deflector.

Code 7210083 – q.ty 2

Iron gripper for the storage of a chip deflector on a standard electrospindle or 5-axes unit.

It can also store tool-holders, but not aggregates.

Code 7291193 – q.ty 1

Tool changer with 44 places at 180 mm centerdistance in replacement of the tool changer with 22 places in the base machine.

Installed on the X carriage it allows to have up to 44 tools (divided in 2 overlapping chains with 22 positions each) always available where required on the machine and to perform tool change operations in a very short time.

Main specifications:

- tool grippers centerdistance: 180 mm;
- tools which can be stored: 44;
- aggregates: see tool-changer layout;
- max. tool diameter: see tool-changer layout;
- max. tool length: see tool-changer layout;
- max. weight of tool or aggregate + tool: 10 kg;
- max. total weight: 140 kg.

- * When combined with the Flexstore toolchanger, only the upper chain remains active

Code 7530392 – q.ty 1

BSolid

3D CAD-CAM program to design, simulate and manage the machining processes of the Biesse machining centers and boring machines. The use of additional optional modules allows to expand and specialize the performance of the bSolid base module whether it is installed in the machine or in the office.

The software package running in Windows environment allows designing the final product, defining its machining, defining working table set-up, simulating the part machining on the 3D machine model and generating the machine needed programs.

CAD/CAM environment with the following functionalities:

CAD design and project:

- Commands for defining and editing parametric objects such as geometries, surfaces and texts.
- Commands for generating and modifying vertical, inclined and curved custom parametric faces.
- Non- parametric commands dedicated to the modification of geometries, surfaces and texts, such as: displacement, wheel, scale, symmetrical copy, trim, automatic fillet, union, etc.
- Manual dimensioning tools.
- Environment for inserting and modifying variables, using geometries, surfaces and all processes.
- Design visualization tools such as: zoom, view rotation, orthogonal view on customized faces.
- DXF (Technologic DXF), CIX, BPP, PNT, DAT, ICP file import. Importing files of large dimensions or containing many elements (e.g. points, lines, etc.) is not guaranteed.

CAD/CAM design and project:

- Fast and immediate 3D simulation of workpiece processing with visualization of material removal; useful for quickly and visually checking whether the programmed working sequence actually corresponds to the desired one until observing the machining results on the finished piece.
- Commands for routing, boring and cuts design on horizontal, vertical, inclined and curved faces with the capability to work on these faces in a 2D simplified way (therefore the 4 axis machining).
- Commands for 2D simple pockets design on standard faces and custom faces; the function automatically considers the characteristics of the geometry and the tool, with the possibility of choosing different types of path (eg: concentric, single direction, etc.).
- Independent management of multiple machines.
- Management of 5 axis machining only in positioning.
- Environment for creating and modifying of macros (also parametric).
- Custom tool design (routers, drill-bits, saw blades and their 3D shape). Graphic environment for simplified creation of 3D custom tools. The tool thus created, together with the 3D graphic environment with chip removal, allows to obtain immediate views of the finished piece. It allows to import drawings in dxf format provided by external suppliers or created with other CAD systems. It also allows to assign control points for simplified programming.
- Management of aggregates supplied on the price list.
- Creation of simplified personalized aggregates. The use of this category of objects does not provide for collision control.
- Management of the deflectors supplied on the price list.
- Possibility to search and clone tools, aggregates and deflectors.
- Definition of machining sequences.
- 3D graphic environment to simplify the tooling of tools, aggregates and deflectors on the various magazines on the machine, with the possibility of perceiving even the overall dimensions.

3D Graphic simulation

- 3D graphic environment to help you manage the working surface, with the possibility of adding and removing the various types of vacuum modules available for machine configuration; it is also possible to graphically configure the panel supports and sliding bases present. Possibility of using the semi-automatic positioning command, which allows you to provide, when feasible, a proposal to configure the entire working surface, which can then be refined manually.
- Possibility to simulate the movements generated by the numerical control without the need to start the machine, with the removal of the material removed from the tools, ensuring the collision check with the volume of the piece not machined, excluding programs that require the repositioning of the piece.
- Ability to graphically verify or from the worklist the main causes of collision between the elements of the machine as represented in the graphic simulation environment. The graphic representation includes tools, electrospindles, aggregates, panel supports, sliding bases, locking systems provided in the price list and the volume of the workpiece as shown. Excluded are controls of machine components handled manually if not equipped with automatic control systems or customized that are not represented consistently in the 3D graphic environment. The supporting structures, the external protections and the mechanical organs equipped with copying systems are not included from the machine control. Collision checking is more accurate if performed at 1x simulation speed or from the

worklist by activating the appropriate function. It is advisable to check the technical documentation on the best modes to obtain more accurate simulations of the machine, equipment and tools. The simulation and automatic collision detection systems do not exclude the need to perform simulation in the machine.

- Easy programming for Multi-Piece machining. By activating this mode, in the graphic environment it is possible to display and modify the position of several pieces at the same time in the same working area. The pieces can easily be referred to the various origins or rotated according to the processing needs.
- bSolid allows to manage multiple Biesse machines with a single platform. A single software version installed in a computer allows to generate programs for different compatible Biesse machines with a simple selection of the same in the programming environment; for these uses the machines that must be managed by a single software version must have also installed a homogeneous version. The Biesse Service can be consulted to verify the possibility of making different Biesse machines homogeneous; this service could involve costs.

Calculation of processing time

- Graphic simulation allows a calculation of the program execution time on the machine. The calculation is representative of reality because the movements of the machine are simulated using Numeric Control of the same. Keeping the production machines in line with the data present with the systems present in the office, it is possible to obtain data necessary for calculating estimates, as well as analyzing the actual feasibility with the tools and the technical characteristics of the machine itself. The calculation of the cycle times cannot consider the manual interventions of the operator.

Work list

- Environment in which to collect and manage the list of programs to be executed with the possibility of importing it from external files in csv format, calculating the processing times of the entire program list, activating the preventive collision check and having the view of the workpiece for a fast recognition of the program. It allows to modify the data of the parametric programs in the same environment. Multiple lists can be created.

Use with machine optional items

- Barcode reader. The presence of a barcode reading tool, through the bSolid program, allows an easy use of the working process. bSolid allows to start programs directly by reading the data of individual programs or upload them to the work list.
- External loading and unloading systems. bSolid provides for the presence of automatic loading and unloading systems and their use through specific macros. The specific services are requested to be checked with the Biesse qualified staff.

* The use of the bSolid application can require optional modules to complete the specific performance of some Biesse working centers technologies; contact the qualified Biesse staff to get the correct information.

* Recommended minimum requirements of the PC for installation in office:

- Processor: PC Intel Core I5 or I7
- RAM: At least 8 GB RAM
- Windows 10 64-bit Operating System
- nVidia Graphic Card compatible with OpenGL 4.4 with at least 2 GB RAM
- Resolution 1440x900 with 16M colors
- SSD Hard Disk
- At least 20 GB of free space on the Hard Disk

* bSolid is available in the following languages: Bulgarian, Czech, Traditional Chinese, Croatian, Danish, Hebrew (supplied manuals in English), Estonian, Finnish, French, Japanese, English, Italian, Norwegian, Dutch, Polish, Portuguese, Romanian, Russian, Slovenian, Spanish, Swedish, German, Turkish, Hungarian

Code 7530213 – q.ty 1

Additional license for bSolid

It allows the installation and the use of bSolid on 1 additional PC station.

- * It includes 1 USB key for software activation
- * It requires the bSolid software

Code 7010948 – q.ty 1

WinLine installation in Europe.

Inclusive of 5 days for machine installation and 10 days for machine use and software training.

- * Machine acceptance not included

Code 7000518 – q.ty 1

Machine acceptance test for door and window frame machining operations, carried out at the BIESSE manufacturing plant in Pesaro.

Biesse will carry out some tests according to the demands of the customer. The tests required are carried out on the customer's machine, prior to delivery, to verify operation.

The test involves the creation of 1 (one) door / window project, with a maximum of 12 elements in all in door and frame, defined in the Acceptance Test Data Acquisition Form:

The machining operations to be carried out, the materials to be used and the methods used to run the programs must be set out in detail in the Acceptance Test Data Acquisition Form. Some of these machining operations may only be possible if the relevant optional equipment is present in the order for the machine itself.

BIESSE will only accept performance of the test subject to receipt of the Acceptance Test Data Acquisition Form, at the time the purchase order for the machine is placed; programming of the machine production data and execution of the Test shall only take place if the Form is present.

The information, programs, data and drawings of the tools and materials and descriptions of any equipment necessary to carry out the machine acceptance test must be received by BIESSE not later than 3 months before the planned date of the test, which will be notified to the customer with the Order Confirmation; failure to comply with this requirement will mean that the machine production date and Test date are rescheduled.

The materials, tools and any equipment necessary to carry out the machine acceptance test must be received by BIESSE not later than 1 month before the planned date of preparation of the test, which will be notified to the customer with the Order Confirmation; failure to comply with this requirement will result in rescheduling of the type of Test with demonstrations normally carried out in the Tech Center at Biesse Pesaro, if necessary using Biesse materials and tools in place of the ones not received from the customer.

The test will be performed in the presence of the customer, or its deputy.

The positive result of the test will represent the permission to the shipment of the machine, which is ratified by the signature of the Machine Acceptance Report (M-SQ/AQ-114).

Biesse will be in charge of all which concerns the preparation and performance of the acceptance test, including:

- Configuration of the tools in the machine

- Dimensional controls on the customer's tools, machine tooling, identification of the correct technological parameters
- Creation and fine tuning of the programs
- Checking proper operation of all the special devices that may be envisaged in the order confirmation
- The presence of the Biesse technician to carry out the test.

The customer will be responsible for:

- Sending the tools
- Sending the technical drawings for said tools
- Management of third-party partners other than Biesse (e.g.: Software Houses, etc.)
- Sending the technical drawings for the customer's product, in PDF format with full and complete positions and description of the expected machining operations and a version of the latter in files in one of the following formats: DXF / DWG / IGES / STL / STEP / DWG solid / Parasolid (x_t) / ACIS (.sat)
- Delivery of the material required for the preparation and execution of the test, in the quantities specified in the Acceptance Test Data Acquisition Form
- Shipping expenses for the delivery to BIESSE of the required material, tools and all the equipment, according to the instructions specified within the Forms M-SQ/AQ-115 (Sending of material from Extra-EU countries) and M-SQ/AQ-116 (Sending of material from EU countries)
- Any customs charges relating to tools and materials sent to BIESSE
- Travel expenses to and from Pesaro

Any remaining materials sent by the Customer Company to carry out the machine acceptance test, will not be returned to the Customer Company.

The test requires the customer to be present at BIESSE for 2 (two) days or a number of days proportionate to the number of Tests purchased.

The cost is inclusive of lunch and lodging for 2 people for the duration of the test.

* Requires the purchase of data preparation for a project

Code 7550042 – q.ty 1

Sophia IoT Connection

Code ASU17311 – q.ty 1

13 Pieces loading/unloading table, 80 mm section, maximum length 4500 mm.

Additional cost to load on the standard loading/unloading table with 2 levels pieces with length up to 4.500 mm.

* Requires the standard loading/unloading table with 2 levels