

Morbidelli P200 – 5' X 12' Machining Center

(R5.20.02) Base Design and Construction

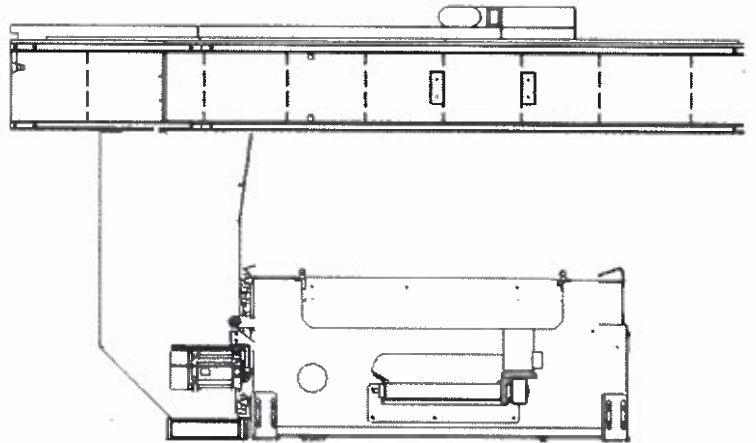
The bottom supporting structure has been designed to be assembled in a cage-like shape, with all the parts electrowelded one and strongly ribbed one to the other so the reach the best rigidity possible; the particular structure, with a very wide base, grants long lasting stability and precision under all working conditions.

The cage-shaped bottom structure provides also a solid support for the mobile unit on top of it: the operating units moving on the cantilever support take advantage of this balanced base thus granting the highest performances in quality and precision. The mobile unit, cage-shaped and ribbed, is anchored to the base through a pattern of sliding supports moving on recirculating balls circuits on prismatic guides: this solution grants the best durability along the entire operating life of the machine.

On the cantilever structure the working unit is equipped and moves along Y and Z axis through sliding supports on prismatic guides with recirculating balls circuits.

The movement of the mobile unit along the bottom frame (X axis) and the operating units along the mobile unit's beam (Y axis) is granted through a rack/pinion system designed with helical teeth so to allow tooth-to-tooth higher thrust thus allowing better acceleration and speed along both X and Y axis. Helical teeth, once properly designed are able to reduce also wear on mechanical organs and noise in operating conditions.

The vertical Z axis is driven through a recirculating balls screw which ensures perfect balance under dynamic loads and bears very high acceleration and deceleration values.



The routing unit is directly installed on the Z axis slide thus granting the highest finishing quality thanks to a complete absence of vibrations.

The displacements along X-Y-Z axes are managed through "brushless" motors driven by static inverters which grant:

- **Reduced cycle timing thanks to higher accelerations**
- **Better positioning precision through high resolution encoders**
- **No set-up operations once switching on the machine thanks to absolute encoders utilization**
- **No general maintenance operations thanks to the absence of brushes, "brushless" system**

The management of the axes displacement and generally the devices of the machine is assured by an industrial NC module with digital data transmission carried out through "CAN OPEN BUS" technology, able not only to reach the highest speed in communication intervals but also to be unaffected by external electromagnetic interferences.

These factors affect performances in reducing machining times at least by 20% and make possible performing complex operations with the maximum precision.

SOFTWARE:

MAESTRO EDGE SOFTWARE SUITE – USER INTERFACE AND PROGRAMMING (2 License)

Maestro Edge is the software platform equipping all SCM GROUP CNC edgebanding machines.

Maestro is a 3D graphical CAD/CAM suite, developed by SCM GROUP's software department, which grants an easy and quick programming, basing on the following main functionalities:



- Part machining programming
- Tool database management
- Machine configuration management: operating units, working table, tools store management
- Locking devices management (pods, rails, clamps)
- Operative control and machine diagnostic

The user interface shows up with an easy-to-use graphics which utilizes the most actual tools in objects representation and follows this layout:

- Functions menu, divided in groups, top screen positioned
- Geometries drawing, in the middle of the screen
- Geometries and machining operations properties, right side positioned, with drop down menu
- List of operations, left side positioned, tree structured

CAD functions cover a wide range of choices through a sketching environment which includes basic geometries:

- **Point**
- **Line**
- **Arch**
- **Circle**
- **Ellipse**
- **Polyline**
- **Polygon**
- **Slot**
- **Text**

On these basic geometries additional operations can be performed such as chamfers, fillets and joints. Aided drawing functions are also available, same than any CAD software:

- **Osnap**
- **Cut**
- **Copy**
- **Move**
- **Opposite**
- **Mirror**
- **Offset**
- **Rotate**
- **Reversed orientation on geometry**
- **Editable starting point on geometry**
- **Distance measuring**

Parametric programming is included: parameters can be assigned on main machining program and/or sub-programs and/or macros.

Tools management

A dedicated application inside Maestro, named "Tool Manager", takes care about it: this environment shows tools grouped in categories and graphically represented to grant an immediate and intuitive access to the operator.

Each tool has an identification tag so to be immediately recovered once the tool selection is required in programming mode.

Edgebanding

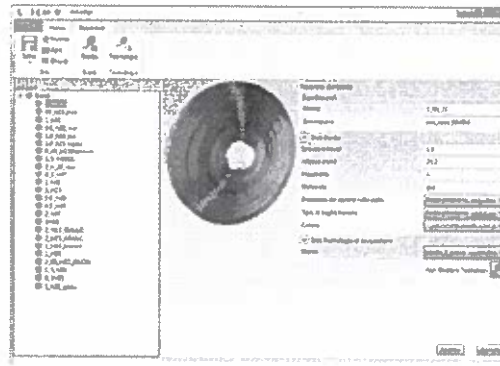
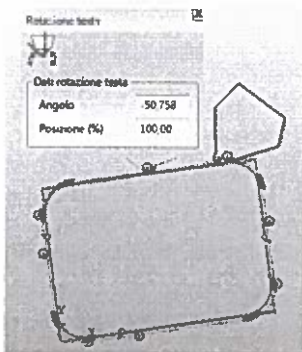
Edgebanding application and edge finishing.

Edgebanding parameters filling depending on the type of the edge.

Collisions control between working and the other part of the working table.

Automatic optimization or guided to minimize the tool change times, tool stroke, loading edge, glue.

Possibility to save auto-adaptive working technologies to the panel shape.

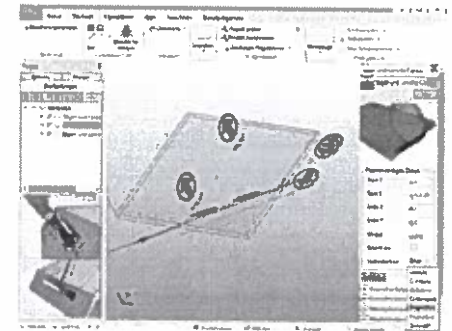
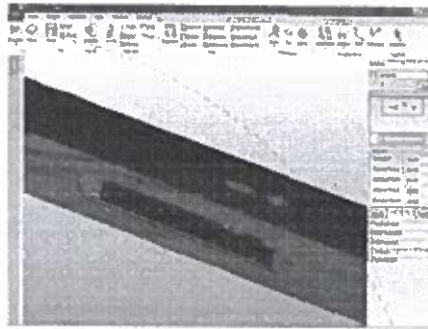


Maestro APPS

A library of programming functions fully available and easy to use, developed by Scm Group and specific to machine furniture elements, doors, stairs, windows etc.

A simple “click” allows the operator get full access to Scm Group's technological know-how.

Through Maestro APPS you have the ability to choose the type of machining required and drag it on the geometries you wish it to be applied on.



Working Table Management

Working table set-up definition is a totally graphic operation.

The operator has the ability to:

- Visualize the 3D model of the working table on his machine
- Through a “drag and drop” operation equip the working table with the necessary locking devices
- Drag rails/pods/clamps to the required position under the part to be machined
- Use parameters to define position on locking devices, a real effective function for those who produce in “batch 1” regime
- Insert a repositioning operation on rails/pods/clamps inside the same program
- Check eventual collisions between machining devices and locking ones
- Check aspect on finished parts
- Ask the software to define automatically the best positioning on locking devices (in case of Flexmatic table locking devices will set-up automatically on the working table)

Cycle Time Evaluation

Maestro is equipped with a preconfigured module which – according to the programmed operations, tool changes involved, tool paths defined etc. – is able to provide a numerical value of the timing required to execute a single program.

This function is strongly effective in:

- evaluating the productivity of your CNC machine before starting the production of a batch of parts
- comparing different versions of the same program so to optimize and reduce at the best the cycle time
- estimating the cost of a supply in terms of machining hours

Note - This software function provides only a simulation, the data obtained from a real processing cycle may vary in a value range by +/- 10%

Data Import

Xilog Maestro allows external files to be imported:

- DXF files import

Once a DXF file is imported, the operator may edit geometries through the drawing tools on Maestro and/or directly apply the required machining operations, exactly as they were being created through Maestro.

- PGM files import

PGM programs – created through previous programming suite (Xilog Plus) or external software sources – can be imported; Maestro reads and converts them into PGMX format (standard Maestro format) so to be then completed with working table set-up module, cycle time evaluation module etc.

MSL Connector

MSL Connector (Maestro Scripting Language) is the software module developed by Scm Group so to connect directly its own CNC machines with the main software on the market.

The data coming from external sources software are imported into the machine which – basing on the parts dimensions and the machining operations to be executed – manages the process strategies optimizing the position of the locking devices and the tool paths.

Machine Management Panel

PanelMac is the applicative software module which is used as Human-Machine Interface on any CNC machine by SCM Group.

Its basic feature is the ability to communicate with NC module and use this connection to manage the machine itself.

Main functionalities on PanelMac:

- Machine set-up
- Semi automatic commands management
- Manual positioning of mechanical organs
- Part program execution (PGMX)*
- Tools management

** The part program is not being entirely communicated to the NC module before execution; the so called “go-through mode” is used and it consists in splitting and sending single parts of the same program to the NC module.*

This type of communication allows a program to start immediately and it's pretty useful in case of very complex programs which involve hundreds or thousands of instruction lines.

While the machine is running a program in parallel and uninterruptedly the NC module is receiving data from PanelMac till the full completion of the program.

Program Restore once Interrupted (PRI)

PRI procedure allows a program to restart from the point of interruption due to the occurrence of an “emergency” state.

This procedure foresees these actions:

- A part program being executed in AUTOMATIC MODE gets interrupted due to an “emergency” fault
- The operator intervenes manually to solve the problem causing the “emergency” state
- Once the fault is solved, the operator activates PRI procedure through PanelMac (pushbutton) and commands again the part program execution
- PanelMac, being in PRI mode, checks the interruption point and recovers the program starting from the beginning of the operation the machine was running at the moment of the interruption (not exactly from the point of interruption) ; therefore part of the operation will be executed again and then the program will run till the very end.

NOTE - This procedure works only if the AUTOMATIC EXECUTION MODE of the part program won't be deactivated once PRI is required.

Software Protection

Xilog Maestro is protected against unauthorized copy through hardware USB key.

Any CNC machine comes standardly equipped with no.2 USB keys so to allow the software suite be used both on the machine's PC console and any other external PC (minimum hardware requirements to be granted for a proper use) at the same time.

The additional hardware key is not associated to a single user or PC so the customer can install Maestro Suite on different PC consoles and use the one more suitable in any moment simply carrying the hardware key.

Xilog Maestro Training Course prior to Install (2 Trainees)

This training seat(s) can be used in our Classroom setting or Self-paced online course. These courses are intended for designers, programmers or other individuals who are responsible for the programming of parts on a CNC Router or Machining Center utilizing the Xilog User Interface with Maestro CAD CAM software. It is designed specifically to teach the basic information necessary to design and produce programs for a SCM Group CNC Router.

Classroom Option

- This course is a classroom-based in Carson, CA or Duluth, GA, interactive workshop that includes theory, practice and hands-on application. Attendees will learn about basic G-Code commands and how to utilize G-Codes within the Xilog User Interface. They will also gain a good conceptual understanding of Maestro Software and the ability to create and modify 2D drawings. Exercises focus on drawing, tool definition and machining methods such as Rough/Finish. Additional subjects include pocketing, engraving, drilling and nesting. Course is good for one year from installation. The length of this course is 3 days, typically from Tuesday thru Thursday.

Self-paced Online

- This is a self-guided, self-paced online class. The course consists of several chapters containing tutorials in the form of documents or videos covering the basic functions of Maestro like: Tool definition, Cad tools, Machining, work planes and nesting. This option is intended for individuals with CAD experience that like to research and feel comfortable installing software and managing files.

CONFIGURATION

“Eye-M” PRO Mobile Console,

Device connected to the CNC machine which allows the usage of the supplied softwares.

The integrated LED light bar allows the operator to check in real time the state of the machine (emergency, operative, etc.) without the need to be on the console itself.

It is equipped with an iPC with "fanless" construction and IP53 grade protection (IP65 on the front side). This robust solution grants the highest durability even in the worst environmental conditions which an industrial site may present.

The 21,5" LCD color display through a 16/9 sized touch screen grants an unbeatable easiness and efficiency in controlling the main functions of the machine, also through:

- Full HD display resolution 1920x1080
- LED lighting
- Cmulti-touch screen – 10 points of contact
- Wide visual angle 176° Horizontal / 160° Vertical
- "Zero Pixel Defect" quality

The processor in a boosted version and the considerable availability of RAM memory enable also the use of programs requiring a great quantity of calculations, without reducing the machine control performances.

And furthermore:

- Intel ; 2,80-3,60GHz
- RAM 8GB – DDR4
- Hard disk: 500GB – 7200rpm
- O.S. Windows Embedded Standard 7 - 64bit
- QWERTY keyboard with English layout
- Wired mouse – 3 functions
- Ethernet port RJ45
- USB port 3.0 protocol supported
- Nominal operating temperature: +5°C / +35°C



(52.41.42) Electric cabinet with Air Conditioning Device

It keeps a constant temperature inside the electrical cabinet, granting electrical/electronic devices work properly.

(63.03.73) "TECPAD" Remote Control with 7" Touch-Screen Color Display

Mobile control panel able to fulfill multiple operations on the machine.

It is equipped with:

- No.2 override potentiometers to manage speed on operative devices (i.e. drilling bits rotation, main axes speed etc.)
- No.19 buttons on keypad: 6 keys are command keys, useful for a direct machine control while the remaining 13 keys are function keys, useful for navigating and operating through the panels of the software application (i.e. managing the positioning of pods and rails during set-up phase). The letter or the symbol printed on the keys reminds the function.
- No.1 red push-button to activate emergency state
- A rubber protection against accidental damages
- A left side handle to give the operator the ability to act easily on commands with the right hand free.
- Back side magnets to allow the operator an easy and immediate placement on the metallic parts of the machine so to have both hands free.



WIRED REMOTE CONTROL, practical device for the operator to carry out with him the main commands of the machine without being necessary manage them through the main console. Thanks to this device it is possible approaching the machine and command main axes X-Y-Z in a semi-automatic modality, enable/disable drilling spindles, set feeding speed etc.

It's also very effective once checking machining operations while being held or simply simulated so to double check programming before launching an automatic production cycle.

(52.42.28) 20.5 HP 4-axes Powertech Electrospindle, 15kW S6 24000 rpm C axis

Vertical routing unit mounted on a sliding support with linear guides and recirculating balls linings. NC managed through recirculating balls screw, with C axis with continuous rotation and attachment for edge finishing heads

Technical Data:

- HSK 63F attachment with double referencing surface to ensure a rigid connection between the tool-holder and the electrospindle itself
- Electronic rotation control on speed, from 1.500 to 24.000 rpm through static inverter, quick-stop function on rotation standardly equipped
- Constant power rate (S1/S6) 13/15 kW (18/20,5 hp) from 12.000 to 18.000 rpm
- Programmable left and right rotation
- Inner air blowing system to guarantee a proper fitting with tool-holder
- Cooling system through liquid circulation and heat exchanger outside the machine
- Ceramic bearings as support on the main shaft
- Compressed air circuit inside the router cage as prevention against dust pollution
- Perimetric dust extraction hood with 3-positions autoamtic selection
- C axis continuous rotation with brushless motor
- Compressed air to manage edge finishing heads

(63.03.03) Air Tool Blower

Cleanliness on the panel and the tool while machining thanks to this device equipped with a nozzle manually adjustable and NC managed able to blow compressed air.



(63.03.54) Tool Length Detection Device

Electromechanical device able to detect the tool length through a dedicated software cycle.

The length just evaluated will be sent to the Numerical Control which update automatically the tool database in sight of any successive machining program (it is strongly suggested involving parametric programming to take full advantage from this practical function).



R12 Automatic Tool Changer

The R12 tool-changer also with a reduced overall dimension can house a high number of tools ensuring a very high flexibility.

Circular tool-holder on the operating units rear side and equipped on the mobile upright. It can house tools and/or angular driven heads.

Steel structure to grant the best rigidity in case of heavy tools. The tool-holders housing positions are plastic-coated on aluminium support in order to create a perfect combination between rigidity and flexibility on the too-holder clamp during tool loading/unloading

Technical data

- Max tools allowed: 12 (6 Heads + 6 Vertical)
- Max tool diameter: 300mm (4 axes)
- Distance between positions: 135 mm
- Max tool weight: 8kg
- Max total weight: 75kg

(52.42.98) TRB14 Linear Tool Changer

Linear tool changer located on the right side of the bottom frame of the machine and able to host tools and/or angular heads (please refer to admitted dimensional limits reported on layout chapter).

Its steel frame construction grants the best rigidity possible in case the heaviest tools would be equipped on it. The tool-holders housings are covered in plastics and built in aluminium providing an ideal connection between rigidity and flexibility during tools loading/unloading operations.

Switching tools function between this tool changer and the others equipped on the machine is also available to reduce cycle time during machining operations and avoid idle times to equip tools on the on-board tool changers.

Technical data

- Max tools allowed: 14
- Max tool diameter: 300mm (4 axis)
- Distance between positions: 115mm / 4 1/2"
- Max tool weight: 8kg
- Max total weight: N.D.

(52.42.25) Drilling unit F29LTC

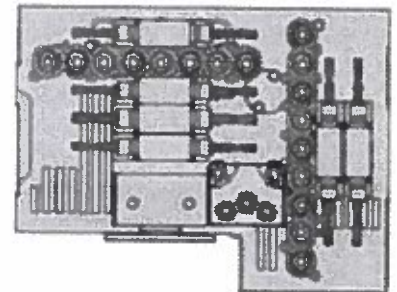
The drilling unit is equipped with **new roto-axial technology Ro.Ax.**

Entirely developed by Scm Group, this project grants:

- Improving cutting quality, thanks to the increased rigidity of the spindle (enlarged diameter of the rotating shaft and direct connection, no mechanical interfaces involved, between drilling bit and the shaft itself thanks to Weldon attachment type)
- Increasing production rate thanks to a maximum rotation regime up to 8.000 rpm (with optional inverter) which allows a higher penetration speed into the material
- Reducing maintenance interventions, up to 1.000 hours with lubricating mechanical organs on the unit

F23LTC drilling unit:

- Bits attachment on vertical and horizontal spindles Ø 10mm, WELDON type (max. length of the bits 70mm)
- 32 mm step between adjacent spindles
- N°17 vertical spindles with independent pneumatical selection
- N°6 horizontal drilling units with double outlet (one bit each side), 4 along X direction and 2 along Y direction
- Rotation regime on drilling bits 4.500 (2.500 to 8.000 rpm with optional inverter)
- N°1 integrated blade along X direction (max. diameter 125mm, thickness 2,2 to 6mm)
- Rotation regime on integrated blade 5.500 (3.500 to 10.000 rpm with optional inverter)
- Preset for hinges unit (unit not supplied)
- Driving motor power rate up to 3,9 kW (5,3 hp) – [2,2 kW (3 hp) with 50 hz frequency]
- 60mm on-off pneumatical stroke on vertical spindles and blade
- 75 mm on-off pneumatical stroke on horizontal spindles
- Locking system on drilling bit “quarterlock” type which allows assembling/dissassembling tools through the use of single M8 screw and 90° rotation on the wrench
- Compressed air circuit with high pressure to grant more than 64 kgf thrust on each drilling spindle so to perform operations on the most resistant materials

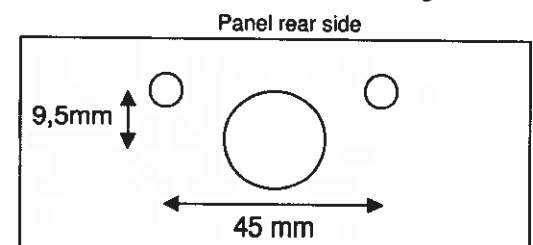


(52.41.09) Drilling unit for hinges housing 45/9,5 offset – rear side

Dedicated device to be equipped on F29LTC and F31LTC units, integrated on them aside the grooving blade.

Provided with independent pneumatical enabling it allows to carry out the three holes for the housing of the hinge in a single shot, saving 66% in time once machining front doors typically.

- Maximum tool length = 57,5mm
- Horizontal and vertical bit attachment Ø 10mm, WELDON type
- Offset between external bits = 45mm
- Offset between the external bits and the internal one = 9,5mm



The device is oriented so to allow the drilling of hinge housing having it referred to the rear side of the panel.

(52.41.14) Drilling unit managed by inverter

The inverter managing the tools speed rotation on the router is connected also the driving motor on the drilling unit so to allow adjusting the speed rotation on bits up to 8.000 rpm and up to 10.000 rpm on the integrated saw blade.

NOTE - While executing a machining program, switching from routing to drilling operation, as well as the contrary, requires waiting for the router (or driving motor) stop before enabling driving motor (or router).

H80C "Compact" Edgebanding Unit

Edge banding unit for shaped panels by means of glue on tape and suitable to apply plastic, melaminic wood fiber edges equipped with:

- C axis with brushless motor (+/- 720° rotation)
- Easy opening for maintenance operations
- Integrated blower for the panel profile
- Automatic adjustment of edge thickness
- 0-360° joints function with the "Sbrindle" detection device for joints on stretches having a minimum length of 80 mm
- End cutting unit with vertical cut
- Integrated feed rollers with brushless motor
- Quick change of the glue tank with gluing roller featuring a built-in heating element
- Short-wave lamps (600W power) for the edgebanding with position and power programming on the profile from 0% to 100%
- Pressure roller diameter: 50mm
- Z axes with pneumatic inclusion
- Ideal to use polyurethane glue in grains
- Application temperature: from 120 to 220°C

Edging panel thickness	mm	min 12 - max 80
Edge thickness	mm	min 0,4 - max 3,0
Min. plastic edge thickness	mm	0,8
Max. wood edge thickness	mm	2,0
Edge height	mm	min 16 - max 85
Min. external radius for 90° angle	mm	8*
Min. internal radius for 90° angle	mm	30*
Internal edging hole diameter	mm	400

* According to the edge features

Edge crib and automatic feeder - 2 edges on the mobile upright, for coils (max. 850mm diameter) with:

- Automatic loading edge system with brushless motor
- Edge end sensor device
- Edge end cutting device with variable motor power according to the edge rigidity
- Automatic edge switch between the two coils
- Edge guide limiters with manual adjustment
- Dedicated conveyor for pre-cut strips manual loading

(52.42.34) Automatic 2 positions stationary edges storage

(52.43.28) Coil-holding support with 6 positions

(52.36.52) Thick Material pressure device: D105mm H=80

(52.42.33) Pressure roller with rapid manual change

(52.42.32) Fast Granules Glue Feeder

The new glue feed system has been designed to optimize its consumption and to improve its quality. The tank, located in an ergonomic position for easy filling, can hold up to 2,5 kg of glue in granules (3.5 liters) and allows significant autonomy. The tank is fitted with a sensor which detects the amount of glue inside the pot and sends the NC the instruction to fill it. This solution allows savings in terms of the amount of glue used, since only the amount needed is melted and the tank always contains "fresh glue", which provides a better grip than glue which has been laying in the tank or the pre-melting unit for a long time.

(52.36.38) Automatic edge height adjustment on H=80 edge banding unit and edge storage cutter

It allows to load in sequence edges with different heights, without manual intervention.

(52.36.45) NC "Z" axis on edge banding unit

It allows the adjustment of the edge lower projection relatively to the worktable, for example in case of dust seal edging.



(52.36.47) Perimetric hot air blower unit for panel cleaning, edge brightening

It cleans the panel profile before the edge banding process, increasing the panel adherence. The hot air generator allows to brighten up the edge in the case this is "whitened" due to deformations.

(52.42.36) Multifunction head for trimming and RAS, thickness up to 60mm with HSK63F-P Qty 2

The unit can host at the same time the trimming tools and the superfinishing or glue scraping cutters. It is ideal for panels with thickness up to 60 mm depending on the installed tool. It works on the no.3 sides of the panel: frontal, upper and lower.

TRIMMING TOOLS FOR PANEL

(52.91.29) Trimming tools for multifunction unit angle 15° (12-50mm) R30mm

(52.94.98) Trimming tools kit for multifunction unit R=3 (S=12-50)

SCRAPING TOOLS FOR PANEL WITH 16-60 THICKNESS

(52.95.04) RAS scraping tools kit for multifunction unit R=3 (S=12-50)

GLUE SCRAPING TOOLS

(52.91.34) Kit of glue scraping tools for multifunction unit

END TRIMMING TOOLS

(52.42.41) Vertical tool blade. for the edge cutting D=160 mm with HSK63F-P attachment

The unit is equipped with blade, 160mm diameter

Technical features:

Rotating speed: 9000 rpm;

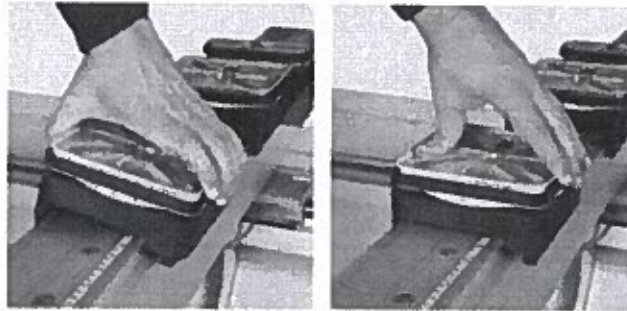
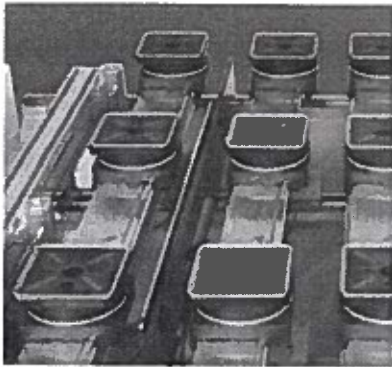
Attachment: HSK 63 F-P

WORKING TABLE

The working table has been designed for a practical and safe use of any device equipping it and, most of all, for a quick and easy configuration during daily operations.

Vacuum pods fully excludable from the table, each pod is rigidly locked to the rail through a pair of safety locking systems: mechanical one, thanks to bottom profile of the pod which gets stuck onto the top surface of the rail and pneumatical one, thanks to a mobile profile on the side of the rail which runs along its length and enlarges thus getting stuck inside the base of the pod

During parts loading/unloading operations the pods stay locked thus preventing any accidental movements.



This technology turns into a working table free from vacuum tubes, plugs or connectors and provides the ability to lock even small sized parts simply pairing pods and/or rails to the minimum distance possible.

The vacuum pods, properly designed in different layouts available on price list, allow them to be positioned back-to-back so to create the right set-up according to the most various shapes to be machined.

The supporting rails, rectified and extruded aluminum made with wide support base, slide along the X axis on hardened round guides and are equipped with a rigid and safe locking/unlocking system consisting in two pneumatical brakes (one on the front side of the rail, the other on the rear side).

The use of this technology grants the security of an easy and ergonomic handling and precise positioning..

The vacuum circuit which holds the parts to be machined is canalized inside and through the rail itself, providing negative pressure to the pods through a row of steel spheres along the rail which are activated through mechanical pressure.

Each rail is equipped with two referencing pins, pneumatically managed and integrated inside the aluminium structure:

- The first pin is located on the rear side of the rail to allow the locking and machining on big sized parts
- The second pin is located in an intermediate position on the rail to allow locking and positioning on middle and small sized parts

On the left and right sides of the working table are located four other pins (two each side) to allow side referencing be possible thus granting the machining of "left" and "right" parts as well as pendulum working with an increase in productivity.

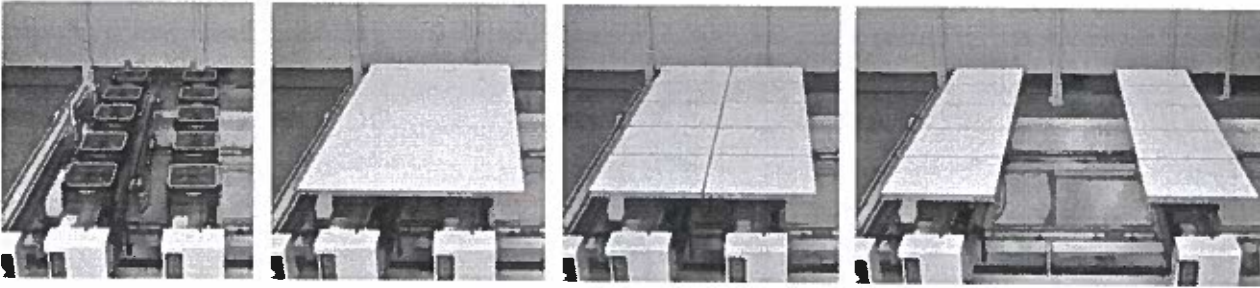
All the pins are managed automatically according to the machining program.

The enabling of vacuum circuit for parts holding down takes place through a pedal switch: in this way the operator is free to load/unload parts with both hands in a really ergonomical way.

As an option, the rails can be equipped with side supports able to raise up and down pneumatically on which the operator can place the part to be machined and push it easily against referencing pins.

These supports work also to detach parts from vacuum pods once the process has been completed.

The internal area of the bottom frame is properly shaped as a "fall-in" geometry so to convey scraps and dust falling from the working table towards the central area where a motorized belt conveyor (optional) carries them outside the frame itself (conveyor orientation right-to-left).



Working table with pods (optional to be added) and rails automatically positioned, which grants the maximum grade of usage easiness and set-up free of mistakes.

The FLEXMATIC version grants an automatic set-up done, as an average, in 15 to 25 seconds maximizing the effectiveness also on "Batch 1" production regimes when set-up cycle is an important percentage of the machining process on the panel.

The ability to configure pods with no constraints both on the position along the rail and the quantity on the single rail (maximum 6 pods managed) make the set-up always possible with the best configuration independently from the the machining program.

The working table is equipped with:

- 8 rails with ANODIZED extruded aluminium structure, automatically mobile along X axis through rack-pinion driving system (max. speed 15 m/min), sliding through preloaded recirculating balls supports round tempered and grinded guides, located at the ends of the rails to grant full stability in any working condition; each rail is equipped with an automatic side shuttle to move pods on it, one by one, to the correct position (max. speed 15 m/min)
- automatic locking/unlocking system on each rail: it works through pneumatical cylinders on the round guides through a push-button in ergonomical position to grant maximum easiness once moving the rails
- 8 referencing pins with exclusion sensors and 100mm stroke, aluminium made, automatically and pneumatically managed, integrated inside the rail (one pin per rail) and rear positioned to align panels along Y direction
- 8 referencing pins with exclusion sensors and 100mm stroke, aluminium made, automatically and pneumatically managed, integrated inside the rail (one pin per rail) in intermediate position to align smaller sized panels along Y direction
- 4 side referencing pins aluminium made with exclusion sensors, automatically and pneumatically managed, positioned 2 on the left and 2 on the right side of the working table on dedicated fixed supports, to align panels along X direction; all the pins are automatically managed according to the machining program
- row of steel spheres along each rail; the spheres have the ability to float on helicoidal springs to allow the automatic enabling/disabling of the integrated vacuum circuit
- mechanical locking on the pods through a movable edge able to lock in a single step all the pods equipped on the rails
- automatic cleaning system, Scm Group patent, to grant dust, chips, small offcuts won't interfere with pods positioning.

FLEXMATIC working table is equipped with a series of software functions which highlight furtherly its operative performances:

- RECOVERY function, once switching on the machine or after unlocking pods the side shuttle detects quickly and automatically the pods position for a successive set-up sending the updated data to the Numerical Control
- SPLIT function, the panel can be split into two parts with the rails moving aside along X axis to create enough room between the parts and allow the completion of machining process.
- UNLOAD function, to facilitate the operator once removing/replacing pods the side shuttle moves them, one by one, to the front end of the rail

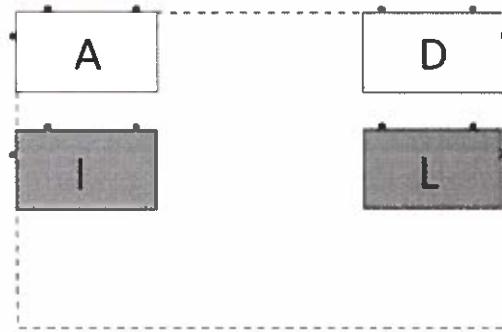
Each referencing pin is equipped with a female thread on top of it to allow the equipment of optional devices (i.e. references for projecting edges, narrow parts clamps, extension devices etc.)

All the rails have the ability to travel along the entire length of the working table in order to grant best flexibility in case of single field machining program.

Working Areas: A (I offset) and D (L offset)

The working table is equipped with a pneumatically circuit, referencing pins and software to allow locking and machining on maximum two panels on four available working areas:

- I Area offset 650 mm respect to A area
- L Area offset 650 mm respect to D area



(52.42.60) 8 lifting devices H=75 – 1600 with exclusion sensor

(52.41.50) Fixed Vacuum Cup 145x145 H=75 mm

Qty 16

(52.43.15) Fixed Vacuum Cup 145x55 H=75 mm

Qty 16

(52.42.80) He-Pod vacuum cup with integrated lifting device

Qty 16

Locking device with vertical movement which allows the machining of the workpieces at two different positions. The pod is also equipped with an automatic integrated lifting device that doesn't increase the overall dimensions. 90 mm vertical stroke.

The working table equipped with these pods can host multiple pieces obtained from a main panel making possible also side machining, normally not doable.

The single piece once being machined is moved vertically respect the other elements. In this way it is possible, for example, edge banding adjacent panels up to 30 mm thick and carry out horizontal routing or drilling operations.

It also allows to optimize the number of tool changes while machining multiple parts. It is advisable to disassemble the lifting devices from the rails' sides in order to grant pods be positioned at minimum distance

(52.42.89) No.4 He-Pod vacuum cups preset on 8 rails

Electrical and pneumatic system to equip He-Pod cups on the rails. Maximum no.4 He-Pod cups on the same rail are allowed.

(52.41.31) Shaving expulsion mat for X=3710mm

Belt conveyor positioned on the bottom frame, underneath the working table and dedicated to convey chips, scraps, dust etc. outside the working area.

The optimized width of the belt allows an efficient evacuation of waste materials thus granting an incomparable cleanliness on working table.

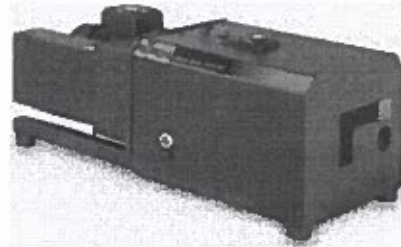
NOTE: With PRO-SPEED safety system installed, an additional sliding box is added at the end of the belt conveyor to grant an easy evacuation of chips and scraps outside of the safety fences.

(52.41.68) 360 Cubic Meter/Hour Busch Mink Vacuum Pump

Low consumption and no maintenance dry vacuum pump which guarantees a high head even with high extraction air volumes.

Technical features:

- Nominal pumping speed: 300m³/h a 50Hz – 360m³/h a 60Hz
- Ultimate pressure: 150mbar
- Motor rating 5,5kW 50Hz – 6,5kW 60



Centralized optimized exhaust hood

The dust outlets, one each operating unit, are conveyed to a single main hood to which connect the general aspiration system. Inside the hood a system of on-off valves, pneumatically managed, opens only the dust extraction circuit relative to the unit currently working so to maximize the cleaning action on the part and reduce air consumption and noise.

Automatic Central Lube System

An NC managed grease pump grants mechanical organs on displacement axes (sliding supports, racks, pinions, recirculating ball screw etc.) be properly lubricated following a given interval of time. Standard maintenance operations granted with this device.

An alarm signal will be also provided once the pump runs out of lubricant so to intervene for a full refill.

NOTE - Drilling equipment, if configured, respects a different maintenance program due to:

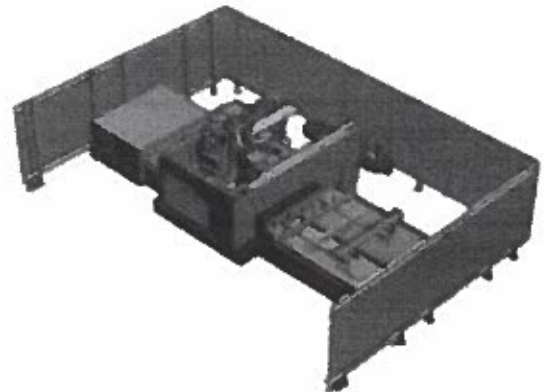
- *Very long intervals in time required (up to 1000 hrs between adjacent interventions)*
- *Different grease type*
- *Very small lubricant quantities required (see user manual for further details)*

(63.03.43) Autotransformer

Autotransformer allows the choice of 208 / 230 or 460 volt, 3-phase, 60 cycle

(52.41.00) PRO-SPEED Safety System

The machine is equipped with side and back metallic safety fences and a photocell to protect the front access area: in this way once programs are running and light beam on photocell is not interrupted, X axis can run faster (see technical data) and production rate is increased.



Once the operator enters the operative area while running programs (i.e. loading/unloading parts), the interruption of light beam on photocell will

cause an automatic reduction of the maximum speed on X axis to 25 m/min, granting the operator work in safe conditions.

To restore high-speed regime the re-activation of the light barrier is required, through an ergonomic manual command.

BUMPERS PROTECTION (compliance with CE 2006/42 norm),

Surrounds the operating units with a protective cage made up of a metal sheets construction.

The front side of the cage is provided with a wide visibility window in ejection-proof material with can be opened during maintenance operations.

Sensible soft cushions equip the left and right side of the cage: in case of contact with an obstacle the sensors on the cushions stop immediately any operation on the machine which enters the "emergency" state.

The absence of safety devices on the ground floor grants the highest grade of freedom to the operator making him take advantage on the full size of the working table in case of pendulum working.

General Technical Data

Working area	S.M.I.	U.I.
Working area along X axis	3710 mm	146"
Working area along Y axis	1600 mm	63¾"
Panel clearance Y	1900 mm **	74¾" **
Panel clearance Z	180 mm	7"
Panel length (with alternated work process)	1700 + 1700 mm ***	67" + 67" ***
Vectorial speed X-Y axis "pro-space"	56 m/min	184 ft/min
Vectorial speed X-Y axis "pro-speed"	78 m/min	256 ft/min

** maximum width of the panel to be loaded

*** with horizontal drilling doable, router vertically oriented and no central stops

Positioning accuracy (repeatability)			
X axis		± 0,03 mm	± 0,0012"
Y axis		± 0,03 mm	± 0,0012"
Z axis		± 0,03 mm	± 0,0012"

Installation data	I.M.S.		I.U.	
Installed power	KVA	23 to 28,5	---	---
Electrics	Voltage	400		
	Hz	50		
	Phases	3		
Air consumption	NI/min	450	----	---
Compressed air consumption	m3/h	4500	CFM	2650
Air speed on aspiration	m/sec	30	---	---
Aspiration hood diameter	mm	250	Inches	9,8
Noise emission values	VSA*	LAV*		
Drilling	72,2 db	74,6 db		
Routing	74,3 db	80,7 db		
Reference norm	EN ISO 11202:1995			

* VSA = Idle working phase without aspiration system

LAV = Operating phase with aspiration system