

CNC UNIVERSAL BORING AND GROOVING CENTRE

startech cn plus





EFFECTIVE: THE DRILLING HEAD ABOVE THE PANEL GRANS PRECISE AND VERSATILE WORKINGS



TOTALLY AUTOMATIC WITH THE SIDE ALIGNMENT DEVICE WITH PNEUMATIC POSITIONING CONTROLLED BY NC.



SCM MAESTRO CNC: ALLOWS TO CREATE PROJECTS AND GEOMETRICAL DRAWINGS TO BE AUTOMATICALLY CONVERTED IN DRILLING-ROUTING PROGRAMS FOR THE MACHINE.

TECHNICAL DATA

| | | |
|--|---------|------------------------------|
| AXES | | |
| Max. panel length | mm | 3.050 |
| Min. panel length | mm | 200 |
| Max. panel width | mm | 900 |
| Min. panel width | mm | 80 |
| Max. panel thickness | mm | 60 |
| Min. panel thickness | mm | 10 |
| Max. X axis speed | m/min | 40 |
| Max. Y axis speed | m/min | 40 |
| DRILLING HEAD | | |
| Vertical spindles | no. | 8 (5X-3Y) |
| Horizontal spindles | no. | 6 (2+2X-2Y) |
| Rotating spindles motor power | kW (Hp) | 2,2 (3) |
| Spindle speed | rpm | 4.200 |
| Fixed integrated disc cutter (direction) | | X |
| Max. diameter of disc cutter | mm | 125 |
| Disc cutter rotating speed | rpm | 5.500 |
| ELECTROSPINDLE | | |
| Motor power | KW (Hp) | 5,5 |
| Min./Max. speed | rpm | 1.000/18.000 |
| Tool changer | | manual |
| Max tool diameter | mm | 20 |
| INSTALLATION | | |
| Compressed air consumption | Nl/min | 50 |
| Extraction air consumption | m3/h | 1900+540+1200 (+540 vers. R) |
| Exhaust air speed | m/sec | 30 |
| Installed motor power | kVA | 15,2 (20,7 vers. R) |
| Exhaust outlet diameter | mm | 150+120+80 (+80 vers R) |

GENERAL FEATURES

CNC drilling and grooving centre with fixed work table and mobile workpiece.

It is capable to carry out the following operations:

- vertical drilling on the panel surface
- horizontal drilling on all 4 sides
- grooving with integrated disc cutter along “X” axis
- standard vertical routing

Base and working table

structure made of welded steel plates to create a large support surface, on which the work tables are fixed. Electrical cabinet integrated in the base.

Work table made of phenolic material with grooves to allow the through boring

Mobile upright:

The gantry structure is made of welded steel plates which supports the main operating group.

Operating group

Consisting of boring head with 8 vertical/6 horizontal spindles and integrated blade, plus vertical electrospindle (vers. R) with manual tool changer.

Movement of workpiece and operating group

An intelligent clamp directly controlled from the NC locks the panel to be processed and positions it in sequence under the operating head to execute the requested machining

Sliding along "X", "Y" and "Z" axes of prismatic linear guides and preloaded recirculating ball bearings.

Group positioning and machine motion is carried out by means of digital brushless motors.

CNC CONTROL UNIT

Control Unit designed for Drilling and Routing Centres installed on PC

Pc-Office with Hicam machine interface software

General features of the Hicam software

Programming

- parametric programming (excepting the programs which foressee the rear panel balancing) with graphic display
- import of the DXF and ASCII files (2D) (“Maestro cnc”);
- automatic optimisation of boring cycles

Included accessories

- on-line calculator of computed data (“Maestro cnc”);
- use of bar codes with already integrated software;
- selfdiagnosis and signalling of possible errors or damages in the user's language;
- single step operation for manual control of individual program steps (excepting routing);

Configuration

- operator interface in user's language;
- machining head graphic configuration;
- override which allows to adjust the operating unit positioning speed;

OTHER STANDARD FEATURES

OPERATING GROUP

F14L drilling unit. includes:

- no. 8 independent vertical spindles (4 right and 4 left)
- for bits 10mm diameter
- centre-to-centre distance between spindles: 32 mm
- no. 6 horizontal drilling heads, 2 + 2 along X (10mm attachment for bits), 1 + 1 in Y (10mm attachment for bits)
- bits rotation speed: 4.200 rpm
- no.1 integrated blade along X axis (125 mm max. diameter)
- blade rotation speed: 5.500 rpm
- ,2 kW motor power
- mm on-off pneumatical stroke on vertical spindles
- 75 mm on-off pneumatical stroke on horizontal spindles

"TP" detecting system for calibrating of opposite panel side reference capable to read the panel dimension along X direction and automatically compensate errors on eventual panel size. This device grants a perfect joint between the panels even if the same are out of tolerance. Panel width measurement device. Automatic measurement device for Y panel dimension. This system checks that the entered panel dimension is the same of the programmed one by the machine, stopping the machine in case of error. It is also used to check possible collisions due to a wrong machine programming.

Device to increase the drilling pressure along Z axis

WORKING TABLE

Bakelite work table with low friction

Automatic central side-alignment device with pneumatic positioning

Centralised lubrication. The lubrication nozzles of the moving parts are grouped in a single position, allowing the operator the simple manual daily maintenance in very reduced time

DISPOSITIVI HARDWARE E PROGRAMMI SOFTWARE

Pc-Office

- Windows 10 operating system
- 19" LCD colour display
- Qwerty keyboard
- Hicam interface machine software

TELESOLVE teleservice via internet.

Teleservice system to connect the machine pc with the service centre via Internet.

Software equipment: connecting program which allows:

- operator's interface visualisation
- signals diagnosis
- on-line verification and modification of the status of configurations, parameters and machine programs
- data back-up and files transfer operations
- upgrade operations for machine logics and operator's interface

N.B.- Internet connection at customer's charge is necessary

-Network cable not included

CAD/CAM programs import

machine can import drilling programs carried out with external softwares.

Hardware key with "Maestro cnc" programming software

SAFETY REGULATIONS

Machine in conformity with the standard safety regulations according to the countries of machine destination.

NOTE

It is forbidden to work panels with features that are not included in the indicated dimensions.

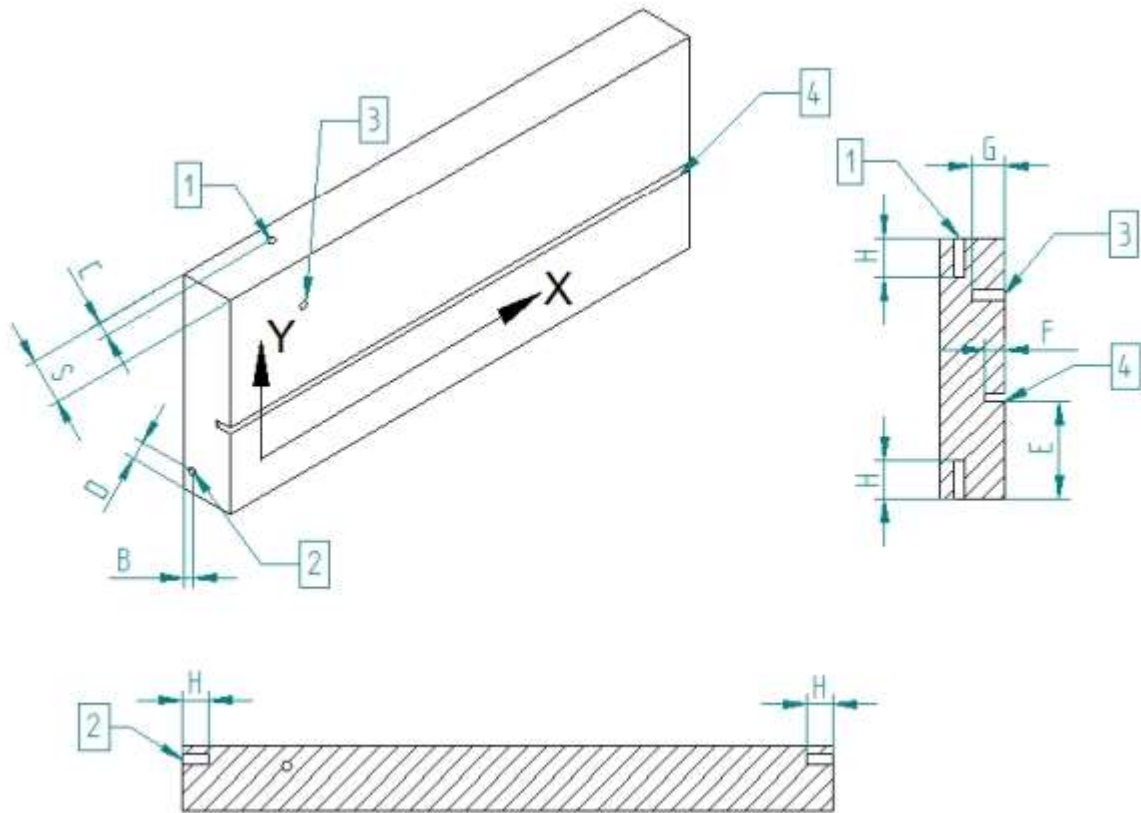
The machine can work only rectangular panels, whose long side has to be positioned in the "X" direction of the working coordinates.

For horizontal machining on workpieces with length lower than 121mm with no. 62 or no. 63 tool, it is not possible to grant the bore precision as the same is constrained to the workpiece precision.

Working on pieces with particular profiles have to be evaluated during the **contract** stipulation.

TOOL FEATURES

- horizontal drilling in X, up to 11mm minimum quota in Y
- grooving up to 120mm minimum quota in "Y" to the max. pass depth; from 60 mm to 120 mm: 4 mm max. depth
- 30 mm maximum vertical drilling depth
- 30 mm maximum horizontal drilling quota with respect to the panel surface (face 1)
- through drilling on panels with thickness up to 22mm with 8mm bits and 20mm with 10mm bits
- integrated blade unit with:
 - * Rotating speed: 5500 rpm
 - * Tool attachment: 20mm bore
 - * Blade = 125mm maximum diameter; 6mm maximum thickness



S = panel thickness

$B \geq 2 + (\text{Bit diameter} / 2)$ (per $S < 32$ mm)

$B \geq S - 30$ mm (per $S \geq 32$ mm)

$C \geq 2 + (\text{Bit diameter} / 2)$ (per $S < 32$ mm)

$C \geq S - 30$ mm (per $S \geq 32$ mm)

$D \geq 11$ mm

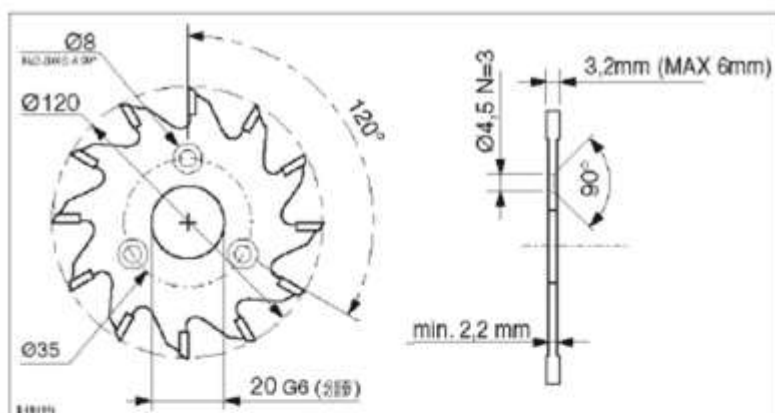
$E \geq 120$ mm

$F \leq 20$ mm

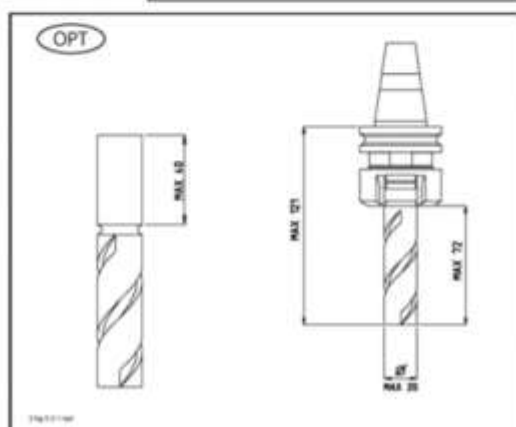
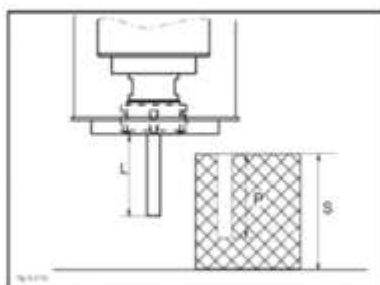
$G \leq \text{Bit length} - 25$ mm

$H \leq \text{Bit length} - 20$ mm

Dimensioni lama incisore



$L_{\text{max}} = 72 \text{ mm}$
 $P_{\text{max}} = 60 \text{ mm}$



Production code: STARTECH CN P

| | | |
|-----------------|--|-------------|
| R0.04.01 | startech cn plus R CE version <u>Equipment for drilling and routing applications</u> Version complete with 5,5kW electrospindle Electrospindle, vertically positioned with respect to the worktable, able to carry out generic routings in any direction. Technical features: <ul style="list-style-type: none"> – 5,5kW (7,5Hp) motor power – 18.000rpm max – connection ER32 collet for cylindrical shank tool – locking nut – 2 ÷ 20 mm tool diameter – 80mm exhaust outlet diameter – 540m³/h exhaust air speed – 30m/sec exhaust air speed 30mt/sec – electrospindle cooling by coaxial airflow <i>N.B.</i> <ul style="list-style-type: none"> – <i>it is not possible to route the external side of the panel, where the mobile clamp is positioned</i> – <i>35mm minimum distance between the tool and the external panel side (clamp side)</i> <i>it is not possible to remove some panel parts, but it is necessary to leave temporary joints or grind the parts to be removed</i> – <i>it is possible to use only tools that can rotate at 18.000 rpm speed</i> | N. 1 |
| 93.07.31 | Volt 400 EU | N. 1 |
| 93.12.01 | Frequency 50 Hz | N. 1 |
| 58.04.97 | Electric cabinet with air conditioning device It maintains temperature of approx. 18°C inside the electric cabinet. <u><i>This option is advisable in environment with temperatures over 35°C.</i></u> | N. 1 |
| 58.05.95 | Additional hardware key for "Maestro cnc" | N. 1 |
| 08.07.06 | Pallet | N. 1 |