



## MECAPRO NL

High performance cutting and milling

Efficient, versatile & adaptable  
cutting equipment

# MECAPRO NL

Designed for  
intensive industrial use

## VERSATILE AND CUSTOMIZABLE EQUIPMENT

Main function: High speed machining

### Secondary pre-installed functions (heads non included):

- Knife-cutting with tangential control:
  - Vertical non-vibrating blade
  - Vertical vibrating blade
  - Orientable blade (30° / 45° / 60°), vibrating or not
- Creasing by shaped wheels
- Cutting by disc blade
- Rigid tapping

### Secondary optional functions:

- Angle sawing
- Angle sawing horizontal milling by angle head
- Camera registration
- Tool cooling
- Chip suction
- Increased protection on X axes
- Industry 4.0 connectivity

## MAXIMAL VERSATILITY

- Machine working area adapted to new plate dimensions (working width 1600 mm or 2100 mm)
- Machining of a wide range of plate materials:
  - Polymers : PMMA, PEHD, PS, PET, PETG, PU, PC, ABS, PVC... in solid or honeycomb panels
  - Wood and its by-products: MDF, TRESPA and others phenolic derivatives, natural wood...
  - Lights alloys : Aluminium, Brass, Copper, Zinc...
  - Composites : Alucobond®, Dibond® and similar, Glass/Epoxy, Carbon/Epoxy...
  - Honeycomb panels: Nida®, Nomex®...
  - Machinable plates for molds and models
  - Hard materials only under conditions: Steel, Stainless Steel, Titanium
  - Mineral base panels for ITE

## NUMERICAL CONTROL LATEST GENERATION

- New generation MECANUMERIC CN2140-ET
- 21 inches vertical touch screen on mobile control panel
- Connectivity via USB serial port and ETHERNET port in RJ45
- Modern, simple and user-friendly HMI with online operator guidance (to avoid oversights and errors)

- Machining of a wide range of soft materials, in plates or unrolled on the table:
  - Rubber and derivatives
  - Foams with all densities
  - Paper, cardboard and derivatives
  - Plastics with small thickness (PVC, PS, PET, PETG, ABS, PC...)

## POWERFUL ELECTROSPINDLE WITH HIGH ROTATIVE SPEED,

For high productivity and optimized work whatever the material.

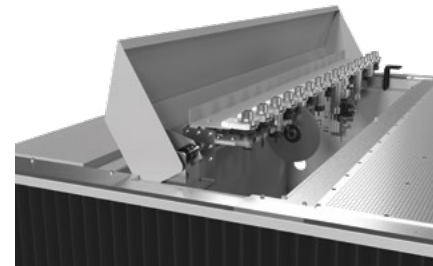
- 4 x ceramic bearings
- Shock, vibration and temperature sensors with digital control alerts
- Predisposition for Industry 4.0 connectivity



	HSD951-SM-A8	HSD951-SM-W12
Maximum power S1 - S6 in kW	8 - 9,6	12 - 14,4
Max torque S1/S6	6,4 / 7,7 Nm to 12 000 rpm	9,5 / 11,4 Nm to 12 000 rpm
Rotation speed rpm	0 to 28 000 rpm	0 to 28 000 rpm
Coolant	AIR	WATER
Cooling	Fan	Regulated cooling unit
Tool changing	Automatic, HSK-F63	Automatic, HSK-F63

## PRE-SET TOOL SHOP FOR ALL TYPES OF TOOLS AND HEADS

- 9 to 15 locations for HSK-F63 cones
- Including 4 to 6 combined locations for:
  - cones for vertical tools
  - cones for tangential control heads
  - cones for angle heads
- Laser sensor for contactless measurement of tool length and diameter or the geometry and location of blades



## OPTIMIZED PERFORMANCES

- Speed: 500 mm / sec per axis X and Y (707 mm / sec in diagonal)
- Position-controlled chip suction nose for perfect suction whatever the thickness of the material and the depth of the cut
- Vacuum table with variable power from 60 to 100% to always have the correct plate holding level with no electrical overconsumption, for environment concern. Automatic selection of zones by electro valves with visualization on the HMI

## PRECISION & POWER

- Monobloc chassis and mobile gantry in mechanical welded high inertia steel, machined to 1/100th of a mm in CNC ensuring rigidity, stability and precision
- Preloaded ball screw transmissions on all axes (no backlash) and powerful servomotors with very high resolution absolute encoders, for high positioning accuracy.
- Dual drive on each side of the mobile gantry

TECHNICAL FEATURES	MECAPRO NL - 3116	MECAPRO NL - 3121	MECAPRO NL - 4121
X axis travel in mm	3 100	3 100	4 100
Y axis travel in mm	1 600	2 100	2 100
Z axis travel in mm	325	325	325
Passage between uprights (reference points not used): over the first 100 mm / the entire height above the table	1700 / 1600	2200 / 2100	2200 / 2100
Passage under gantry or under spindle nose in mm	380	380	380
Maximum speed in mm/sec on X and Y axes	500	500	500
Resolution* of the measuring system in mm	0,000010	0,000010	0,000010
Repeatability in mm at 20°C +/- 2° better than	+/-0,025	+/-0,025	+/-0,025
STANDARD EQUIPMENT			
Vacuum table			
- Vacuum box table with two-stage side channel turbine 7.5 kW, 520 m³/h	2	2	2
- Selection of suction zones by digitally	6	8	8
- Automatic power regulation of the vacuum table	60 to 100%	60 to 100%	60 to 100%
Adaptive suction nozzle, diameter 80 mm	✓	✓	✓
Static automatic tool shop for tools maximum length: 220 mm (from the indexing VE axis of the cone to the tool end):			
- Number of locations	9	15	15
- Including fixtures for special heads with tool orientation	4	6	6
Optical sensor for measuring tool length (max. 220 mm) and diameter (max. 40 mm)	✓	✓	✓
Protective tool shop cover driven by CNC	✓	✓	✓
Retractable indexing stops diameter 20 mm x stroke 15 mm	2 Y + 3 X	2 Y + 3 X	2 Y + 3 X
NUMERICAL CONTROL			
MECANUMERIC CN2140-ET numerical control			
Base IPC Fanless - SSD - Windows 10 IoT Enterprise 1 Ethernet RJ45 port - 1 USB serial port - Ethercat	✓	✓	✓
Moving control panel with 21 inches touch screen	✓	✓	✓
Movable electronic handwheel	Option	Option	Option
OPTIONS AND ACCESSORIES			
Vacuum table with vacuum pump(s) 4.5 kW, 250 m³/h	2	2	2
Low flow micro-lubrication tool cooling system with 2.2 liter tank			
Large flow micro-lubrication tool cooling system with 30			
Cooling tool system by frozen air (AIRGEL)			
OPTISCOUT software (registration/compensation system by camera)			
Cutting head with non-vibrating knife			
Cutting head with pneumatic vibrating knife, maximum blade length 105 mm			
Cutting head with pneumatic vibrating knife orientable at 0°-30°-45°-60°, max blade length 105 mm			
Cutting head with non-vibrating disc			
Creasing head with interchangeable rollers			
Angle head for saw blade of 120 mm maximum diameter (subject to addition of a C axis)			
Angle head for horizontal milling tool clamping by ER25 collet (subject to addition of a C axis)			
Bellows on X axes			
Consumable cover for vacuum tables (PVC, MDF, felt, porous paper...)			
OVERALL DIMENSIONS			
Length in mm (pumps not included)	4 600	4 600	5 600
Width in mm	2 600	3 100	3 100
Height in mm	2 700	2 700	2 700
Average weight in kg	4 000	4 500	5 000
SUPPLIES			
Air supply	Pressure : 6 bars / Flow 6 to 40 m³/h		
Power supply	400 VAC three-phases 50 Hz + ground - 40 to 100 A		

## Structure

Monobloc chassis and mobile gantry in mechanical welded high inertia steel

## Table

Aluminium fixed table with consumable top cover in option

## Guidance

Grinded prismatic rails and preloaded ball bearings.

## Transmission

Ball screw with preloaded nuts on all axes (two ball screws on X axis)

## Motorisation

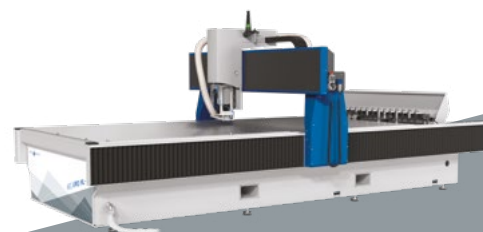
Brushless motors with absolute encoders on all axes (two motors on X axis)

\*the smallest distance that the position coding system can read



**Leader in the manufacturing of multi-technology cutting machines**

for the Industry, Education and Dental sectors



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