



## TKE 783 Machining centre

ex TK 429V

Electrospindle 01

Vacuum table 02

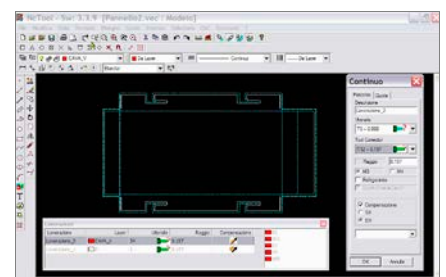


3-axis CNC machining centre with exceptional machining capacity in the Y axis (2000 mm), featuring a clamping system consisting of vacuum tables that anchor the panels and sheets by vacuum; this solution is particularly effective when machining light gauge components that are difficult to hold in position with conventional clamp systems. The machining centre is equipped with a set of valves that can automatically switch the different areas of the table on or off to concentrate the vacuum in a given area, and to optimise the clamping of smaller components. Facility for interpolated milling and drilling operations on composite boards, panels and sheets made of aluminium, steel, or titanium, and aluminium profiles. The standard version of the machining centre is available in two working lengths: 4140 and 6440 mm. To run the generation of machine programmes, Tekna supplies user-friendly software that can be used by both expert CNC programmers using the highest levels of sophistication and by operators with no experience; with just a few hours' training, customers can learn what they need to use the machining centre via graphic programming. The software solutions proposed by Tekna are the result of careful design and the analysis of the actual needs of customers, guaranteeing extremely simple use and the consequent reduction in management times and costs.

Tool magazine 03

Pneumatic clamps (optional) 04

Software 05



# TKE 783

## Machining centre

### 01 Electrospindle

The 10 kW electro spindle in S1 with high torque is suited for heavy duty machining. It can be used on aluminium panels and on some types of steel panel, thanks to a lubrication system with minimal dispersion of pressurized oil. The machine may also be equipped with an optional a fourth axis to control the rotation of an angle drive head with blade for V grooving panels or an drive head for profile milling. The 6440 mm model can operate in pendular mode to reduce to machine downtime for the loading and unloading of workpieces. The system divides the machine into two zones and allows both the loading and the consequent machining of the pieces with different lengths, codes and machining operations in the two work areas.

### 02 Vacuum table

The panels are clamped in position by a vacuum table. The plastic table is laid over and fixed to the aluminium cross members and provides efficient suction over the entire surface area, while providing protection against the ingress of lubricating liquid. The table is divided into sections by extruded aluminium beams that are automatically switched on/off individually by a valve system, activating the vacuum and clamping only the areas where the panels are positioned. The machining head is equipped with an extractor system connected to an industrial suction and blower system, which can be removed when the pneumatic clamping system is in use. This dual system effectively removes the machining dust, maintaining the extraction holes free and ensuring high-performance clamping. It also makes machine cleaning operations between one load and the next much easier, eliminating much of the swarf that would compromise the correct clamping of the panel to the surface.

### 03 Tool magazine

The revolver type tool magazine, integrated on the X axis, drastically reduces the time required for tool changeover. This function is particularly useful when working in pendular mode, as the spindle no longer has to travel to reach the magazine, as the magazine moves with the spindle to the various machining positions. The 10-place magazine can contain up to 10 tool holders with their respective tools, including 2 angle drive heads, that can be configured at the discretion of the operator. A mechanically moved mobile cover protects the tools from swarf and dust produced during machining.

### 04 Pneumatic clamps (optional)

The dimensions of the work area on the Z axis allows machining of profile sections and thicker materials. Up to 4 pneumatic clamps per zone can be installed on the vacuum table for the mechanical clamping of aluminium profiles and extrusions; thanks to the possibility to load two angle heads in the tool magazine, these profiles can be machined on 5 faces without the need for repositioning. This optional device allows the machining of both panels and profiles, thereby concentrating in a single machine the operational capabilities of two different work centres, giving it a level of versatility unparalleled in its field. Safety is ensured by a local safety cabinet over the machining head, that is fitted if the machine is to be equipped with pneumatic clamps and/or angle heads.

### 05 Software

The CN6 numeric control management software monitors all the machining centre functions from a graphic interface. It includes an ISO language editor, and displays the work pieces as completed by the machining settings. The functions can be extended with the NC Tool software, a CAD/CAM system that generates ISO programmes compatible with CN6, which can be combined with the Nesting software to optimise the figures to machine on the panels.

#### AXIS TRAVEL

X AXIS (longitudinal) (mm)	4,520 6,980
Y AXIS (transversal) (mm)	2,370
Z AXIS (vertical) (mm)	290
Axis Z (vertical) with air blast system (mm)	60
AXIS A (angle drive head rotation) (optional)	0 ÷ 360°

#### ELECTROSPINDLE

Maximum power in S1 (kW)	10
Maximum speed (1/min)	24,000
Maximum torque (Nm)	10.2
Tool connector cone	ISO 30
Air cooling with electric fan	•

#### AUTOMATIC TOOL MAGAZINE

Automatic 10-place tool magazine mounted on the trolley	•
Maximum dimension of the tools that can be loaded into the magazine (mm)	Ø = 140 L = 120
Number of angle units that can be loaded in the tool magazine	2

#### SAFETY DEVICES AND PROTECTIONS

Photoelectric barrier system to protect access to work zone	•
Metal fence protecting two sides	•
Tool magazine mechanically moved covering	•
Safety cabinet over machining head	○

#### WORKPIECE CLAMPING

Vacuum locking system with breather tables	•
Breather beam size (mm)	230 x 2,000
Number of cross bars with double vacuum chamber	7
Pneumatic reference stops for panel positioning along X axis	2
Pneumatic reference stops for panel positioning along Y axis (4140 – 6140)	3 – 6
Pneumatic clamps on work table for clamping profiles	○
Maximum number of clamps per area	4

#### WORK UNIT

Gantry structure	•
Electro spindle piloted on 3 axes with possibility of simultaneous interpolation	•
Swarf removal system	•
Tool minimal pressurized oil diffusion lubrication system	•

• included

○ available