



TKE **CL**

TKE **943**

TKE **944**

TKE **954**

TKE **954F**

TKE **984**

TKE **985**

TKE **743**

TKE **783**

PRECISION & SPEED

TKE 943

3-axes machining centre

3-axis CNC machining centre with moving gantry structure, designed for drilling, milling and threading on bars or workpieces of aluminium, PVC, light alloys in general and steel. The moving part of the machine consists of a gantry with precision rack and pinion drive. The 5,5 kW (8,5 kW on request) electrically-driven spindle with ISO 30 tool holder allows machining operations, including heavy-duty work, with optimum results in terms of speed and accuracy.

The machine can be used in double mode (7000 model) so as to minimize machine downtime, as it is possible to change the workpiece (load/unload) and the automatic setting of the vices in “concealed” time. It is also possible to load and consequently machine different workpieces between the two work areas.

The automatic tool magazine is available in a fixed solution on board the machine with 4+4 or 7 places, recommended for single place machining. Otherwise an 12-places automatic magazine on board the carriage, ideal to allow a faster tool change and useful for the double mode machining, is available.

The gantry is provided with a guard which, besides protecting the operator, also reduces the noise impact on the environment.



TKE 943

	unit of measurement	TKE 943-4	TKE 943-7
WORK AREA			
X AXIS (longitudinal) 1 side/5 sides- 1 side/5 sides (double mode)	mm	4050 / 3800	7000 / 6850 (2800 / 2650)
Y AXIS (transversal) 1 side / 5 sides	mm	450 / 360	450 / 360
Z-AXIS (vertical) 1 side/5 sides	mm	260	260
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	80	80
Y AXIS (transversal)	m/min	30	30
Z AXIS (vertical)	m/min	30	30
ELECTROSPINDLE FEATURES			
Maximum power in S1	kW	5,5 - 8,5 (*)	5,5 - 8,5 (*)
Maximum speed	1/min	18.000 - 24.000 (*)	18.000 - 24.000 (*)
Maximum torque	Nm	8,7 - 13,5 (*)	8,7 - 13,5 (*)
Tool connector cone		ISO 30	ISO 30
Air cooling with electric fan		•	•
TAPPING CAPACITY (with tap, on aluminium through hole)			
With compensator		M8	M8
TOOL MAGAZINE			
Automatic tool change		•	•
4-places tools magazine single or double		o	-
7-places tools magazine		o	-
12-place rotating tool magazine on board		o	•
Number of tools		(4 + 4) - 7 - 12	12
Maximum diameter of the tool that can be loaded into the magazine	mm	Ø = 180	Ø = 180
Maximum length of the tool that can be loaded into the magazine	mm	L = 200	L = 200
90° angular unit - 2 ways		o	o
POSITIONING AND LOCKING OF PROFILE			
Workpiece fixed reference stop		2	2
Workpiece manual reference stop		o	o
Workpiece pneumatic reference stop (*)		-	-
Standard number of pneumatic clamps (4,000 - 7,000)		4	8
Maximum number of pneumatic clamps (4,000 - 7,000)		12	16
Manual clamps positioning		•	•
Automatic clamps positioning through X axis (*)		-	-
FUNCTIONALITY			
Static double mode operation (only model TKE 943-7000)		-	•
Parallel machining of two profiles		o	o
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 3 axes with possibility of simultaneous interpolation		•	•
Micro-mist lubrication system with water and oil emulsion		•	•
Minimal oil diffusion lubrication system		o	o

• included o optional - not available (*) on request



- Electric head

- The 5,5 kW (8,5 kW on request) electrospindle in S1 is equipped with automatic tool change and air cooling with electric fan. With its high torque value, it can also perform heavy-duty machining that is typical of the industrial sector. It can be used both with some types of extruded steel and with aluminium profiles, thanks to the lubrication system with oil emulsion spray mist or, as an option, with minimal diffusion oil.

TKE
943



- Angular unit

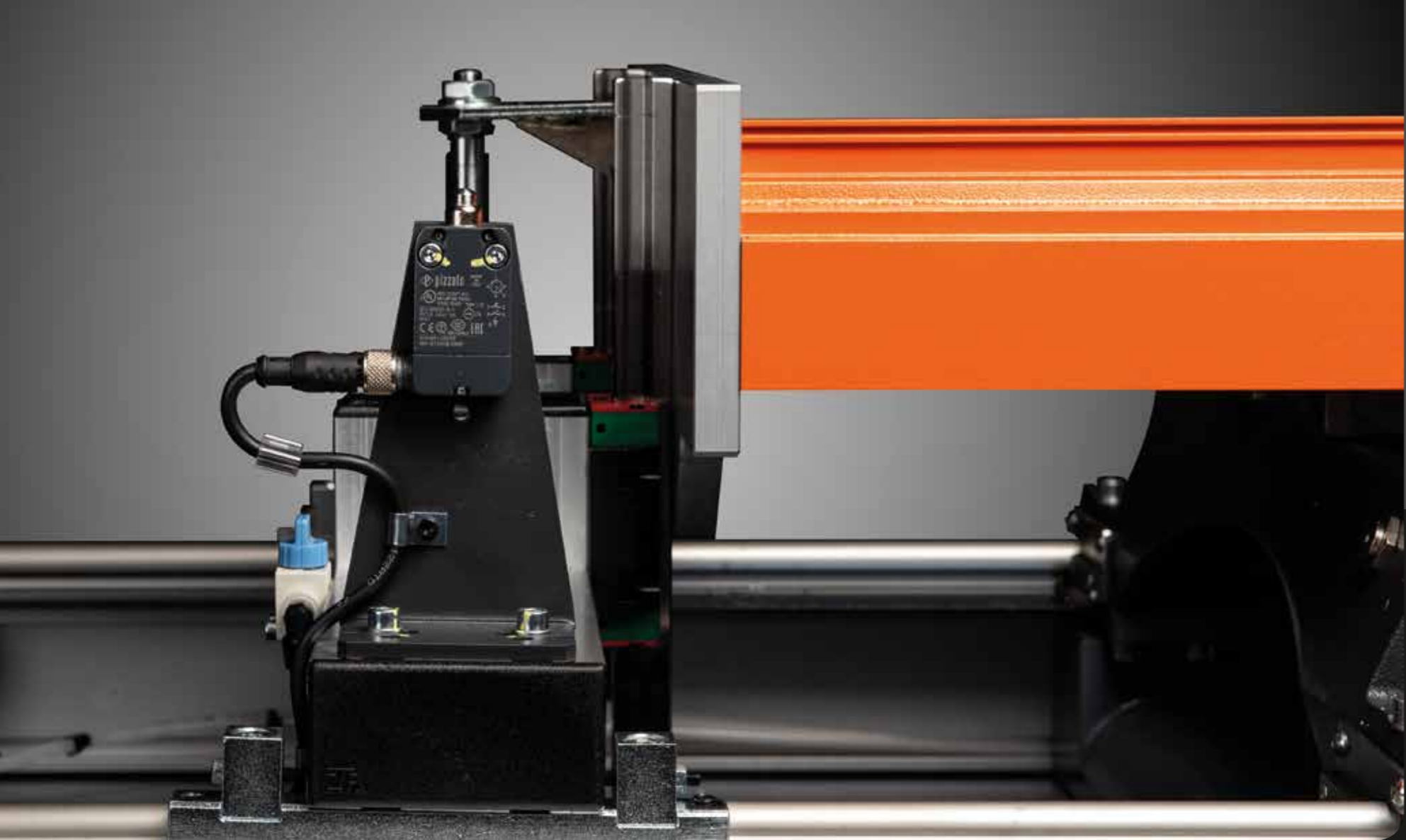
Angular transmission with possibility to house one or two tools and provided with a taper (ISO 30) toolholder that adapts to the electrospindle, allowing 5 faces of the profile to be machined.

- The angular head is used to carry out:

- 1) Machining on the 2 lateral faces of the profile
- 2) Machining using a circular blade or disc cutter perpendicular to the work surface
- 3) End machining.

With angular heads, the working dimensions (on both the X and Y axes) may vary according to the faces to be machined.





- Parallel mode machining

The clamps unit can also be equipped with an optional double presser that allows medium and small profiles to be loaded in parallel.
This system can double the machine's productivity.



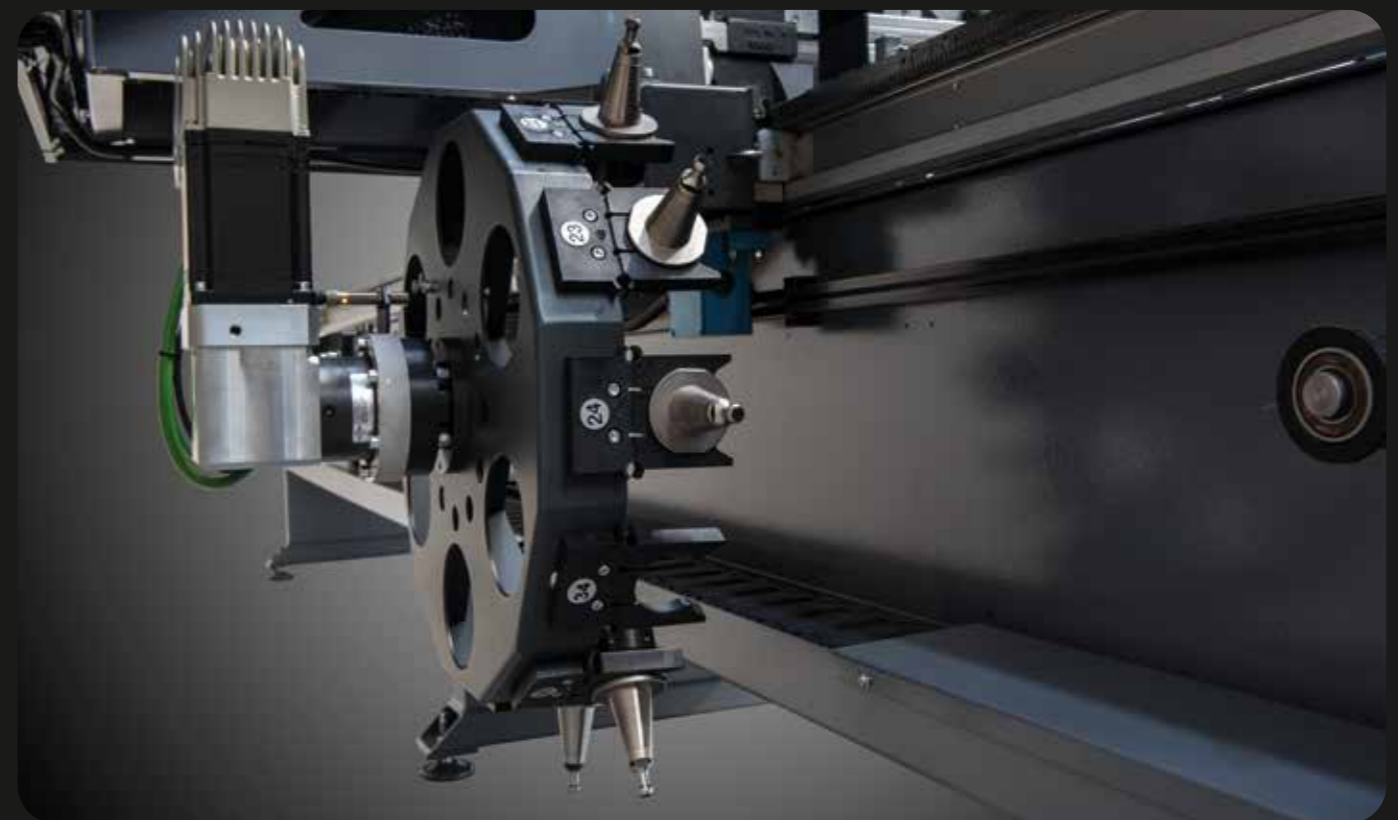
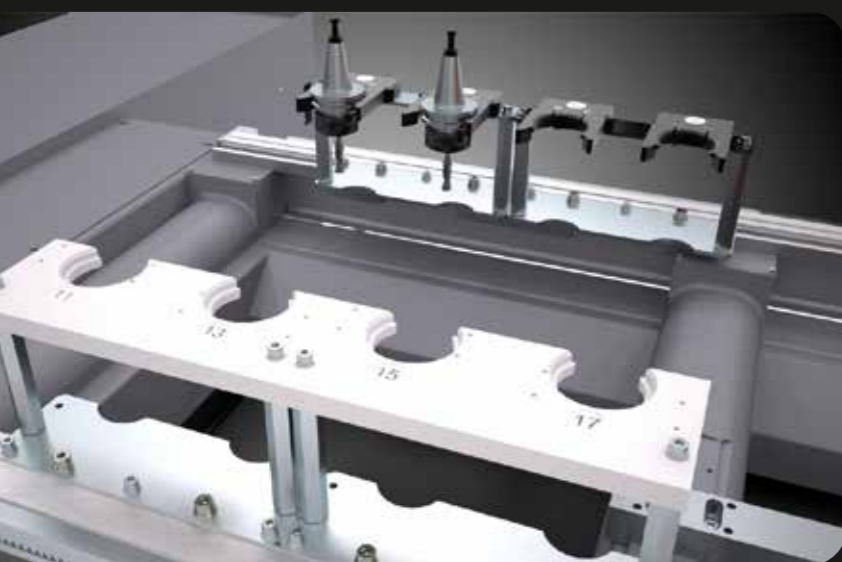
- Pneumatic stops

Correct position of the workpieces is guaranteed by retractable profile reference stops operated by pneumatic cylinders and selected automatically by the machine software in accordance with the work processes to be carried out.
(standard for TKE 944, on request for TKE 943)

TKE
943

- Tool magazine

The automatic tool magazine comes in two different configurations. The first has one or two fixed 4-place or one 7-place magazine installed on the left-hand side of the machine and is specific for operation on a single work area in single or multi-piece mode. The second configuration includes an 12-place automatic magazine installed on the gantry moving on the X axis. This solution, required for double mode machining (model 7000 mm only), considerably reduces the tool change times and consequently increases the machine productivity and efficiency.



MAXIMUM EFFICIENCY

TKE 944

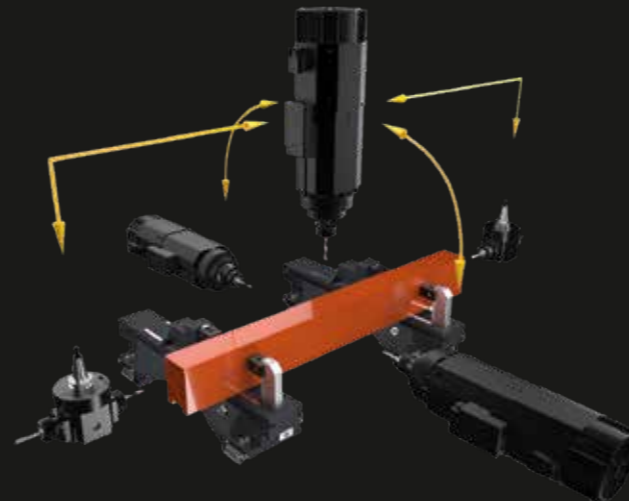
4-axes machining centre

4-axis CNC machining centre with moving gantry structure, designed for drilling, milling, thread cutting and cutting at angle any from -90° to +90° on bars or workpieces of aluminium, PVC, light alloys in general and steel. The moving part of the machine consists of a gantry with precision rack and pinion drive. The 8,5 kW electrically-driven spindle with ISO 30 tool holder allows machining operations, including heavy-duty work, with optimum results in terms of speed and accuracy.

The machine can be used in double mode (7000 model) so as to minimize machine downtime, as it is possible to change the workpiece (load/unload) and the automatic setting of the vices in “concealed” time. It is also possible to load and consequently machine different workpieces between the two work areas.

The automatic tool magazine is available in a fixed solution on board the machine with 4+4 or 7 places, recommended for single place machining. Otherwise an 12-places automatic magazine on board the carriage, ideal to allow a faster tool change and useful for the double mode machining, is available.

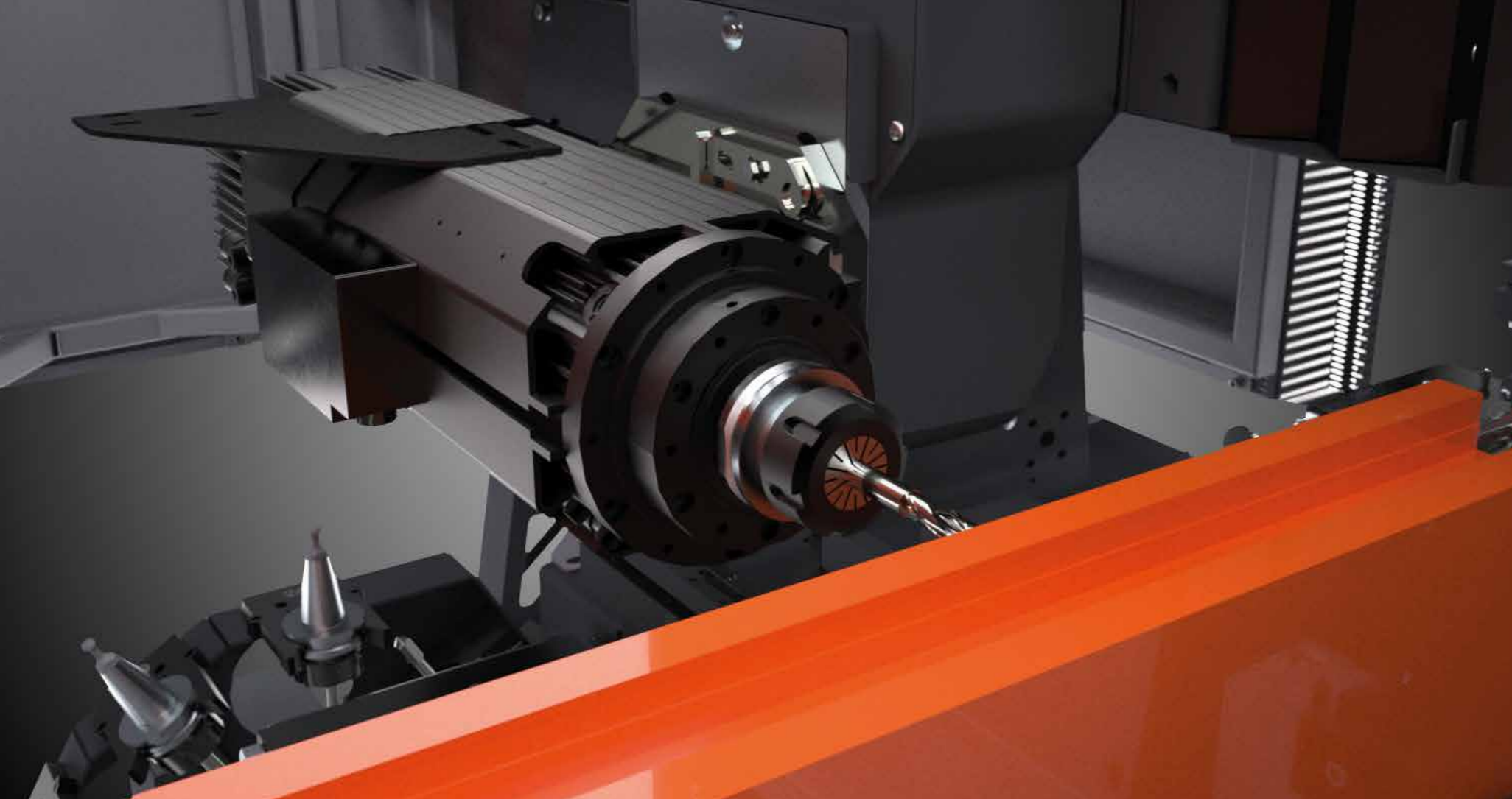
The gantry is provided with a guard which, besides protecting the operator, also reduces the noise impact on the environment.



TKE 944

	unit of measurement	TKE 944-4	TKE 944-7
WORK AREA			
X AXIS (longitudinal) 1 side/5 sides- 1 side/5 sides (double mode)	mm	3940 / 3800	7000 / 6850 (2800 / 2650)
Y AXIS (Transversal) 1 side/5 sides	mm	450 / 360	450 / 360
Z-AXIS (vertical) 1 side/5 sides	mm	260	260
C AXIS (vertical-horizontal rotation of the head)		-90° ÷ +90°	-90° ÷ +90°
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	80	80
Y AXIS (transversal)	m/min	30	30
Z AXIS (vertical)	m/min	30	30
C AXIS	(°/min)	6000	6000
ELECTROSPINDLE FEATURES			
Maximum power in S1	kW	8,5	8,5
Maximum speed	1/min	24.000	24.000
Maximum torque	Nm	13,5	13,5
Tool connector cone		ISO 30	ISO 30
Air cooling with electric fan		•	•
TAPPING CAPACITY (with tap, on aluminium through hole)			
With compensator		M8	M8
TOOL MAGAZINE			
Automatic tool change		•	•
4-places tools magazine single or double		o	-
7-places tools magazine		o	-
12-place rotating tool magazine on board		o	•
Number of tools		(4 + 4) - 7 - 12	12
Maximum diameter of the tool that can be loaded into the magazine	mm	Ø = 180	Ø = 180
Maximum length of the tool that can be loaded into the magazine	mm	L = 200	L = 200
anglar head 90° - 2 ways		o	o
POSITIONING AND LOCKING OF PROFILE			
Workpiece pneumatic reference stops		1	2
Standard number of pneumatic clamps (4,000 - 7,000)		4	8
Maximum number of pneumatic clamps (4,000 - 7,000)		12	16
Automatic clamps positioning through X axis		•	•
Laser profile position detection		o	o
FUNCTIONALITY			
Static double mode operation (only model TKE 944-7000)		-	•
Parallel machining of two profiles		o	o
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 4 axes with possibility of simultaneous interpolation		•	•
Minimal oil diffusion lubrication system		•	•

• included o optional - not available



Electric head

The machining centre is equipped with electrospindle, automatic tool change and electric fan cooling system. This fan is not fixed to the shaft of the electrospindle and rotates regardless of its rotation speed; this allows a constant operation (also with stopped spindle) in order to obtain a better cooling of the system. It has a maximum power of 8.5 kW in S1 operation and a max. rotational speed of 24000 rpm.

TKE
944

Tool magazine

Automatic magazine of revolver type that has the capacity to house 10 tools and 2 angle heads , or 12 tools.

It is positioned on the head in order to allow quick access and reduce the tool change times.

Profiles parallel clamping

The clamps allow to easily and quickly alternate the one-way operating system with the two-way one: exploiting the two-way system it is possible to machine simultaneously 2 profiles with dimensions and machining processes different from each other.



Clamps

The clamps group ensures the correct and safe locking of aluminium, PVC, steel and light alloy profiles. The clamps sizes, and the long Y travel of the electrospindle allows machining large profiles for all kinds of civil and industrial applications.

Each unit slides on linear guides along the machine. The positioning is managed by X axis. Counterblocks can be mounted quickly and accurately making the machine extremely versatile. The clamps group is available optionally in double presser version to machine two profiles in parallel.



LOOK TO THE FUTURE

TKE 954 TKE 954F

4-axes machining centre

4-axis CNC mobile gantry machining centre, designed for drilling, milling and threading at any angle from -90° to +90° on bars or pieces in aluminium, PVC, light alloys and steel up to 2 mm thickness. The sophisticated and innovative design makes TKE 954 a unique and unmistakable machine: lines, details and materials were studied and designed to offer top performance with a focus on functionality, safety and ergonomics.

The mobile part of the machine is composed of a gantry with double gantry motorisation on a high precision rack. Thanks to the broad working field in Y, TKE 954 allows working very large profiles or several profiles of different sections in parallel, a feature much appreciated in industrial applications. The machine has two operation modes: the first, in single area mode, for machining whole bars with a maximum length of 7 m in a single work area; the second, in double operation, for working multiple workpieces in the two distinct work areas. In the version with clamps handling system on H and P axes, it is possible to use the machine in dynamic double operation.

TKE 954 features a laser scanner for more precise and advanced access control to the machine front, raising safety and operator/machine interface standards.

TKE 954 F version, equipped with FANUC CNC Numerical Control, Motors and Encoders. Version designed for industrial applications.



TKE 954
TKE 954F Powered by FANUC

	unit of measurement	TKE 954	TKE 954F
WORKING AREA			
X AXIS (longitudinal) 1 side/5 sides- 1 side/5 sides (Symmetrical Double mode)	mm	7330 / 7140 (3195 / 3045)	7330 / 7140 (3195 / 3045)
Y AXIS (Transversal) 1 side/5 sides	mm	550	550
Z-AXIS (vertical) 1 side/5 sides	mm	300	300
B AXIS (vertical axis rotation of the head)		-90° ÷ +90°	-90° ÷ +90°
B axis positioning increments		0,01°	0,01°
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	125	125
Y AXIS (transversal)	m/min	60	60
Z AXIS (vertical)	m/min	60	60
C AXIS	°/min	7800	7800
ELECTROSPINDLE			
Maximum power in S1	kW	8,5 - 10	10
Maximum speed	rpm	24.000	24.000
Maximum torque	Nm	8 - 9,5	9,5
Tool connector cone		HSK - 63F	HSK - 63F
Water cooled with chiller unit		•	•
TAPPING CAPACITY			
With compensator		M8	-
Rigid tapping with electrospindle 10 kW		M10	M10
AUTOMATIC TOOL MAGAZINE			
Maximum number of tools in tool magazine		12	12
Angular machining heads that can be loaded in the automatic magazine		2	2
Maximum length of tools that can be loaded into the magazine	mm	200	200
Maximum size blade that can be inserted in magazine	mm	Ø = 250	Ø = 250
OPERATION			
Multi-piece operation		•	•
Double operation (Symmetrical and Asymmetrical)		•	•
Electronic touch probe system		o	o
Machining of two profiles in parallel		o	o
Multi-piece double operation machining		o	o
PROFILE POSITIONING			
Pneumatic workpiece reference stop		2	2
Additional pneumatic reference stops (up to max. 4 stops)		o	o
WORKPIECE CLAMPING			
Clamps, standard number		8	8
Clamps, maximum number		12	12
Automatic clamp positioning through X axis (Static Version)		•	•
Automatic clamp positioning through independent H and P axes (Dynamic Version)		•	-
Double horizontal presser on pneumatic clamps for machining two profiles in parallel		o	o
Maximum workpiece Y-axis clamping dimension with standard 45 mm terminals for three-face machining	mm	460	460
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 4 axes with possibility of simultaneous interpolation		•	•
CNC with RTCP (Rotation Tool Center Point)		•	•
Minimal oil diffusion lubrication system		•	•

• included o optional - not available (*) on request



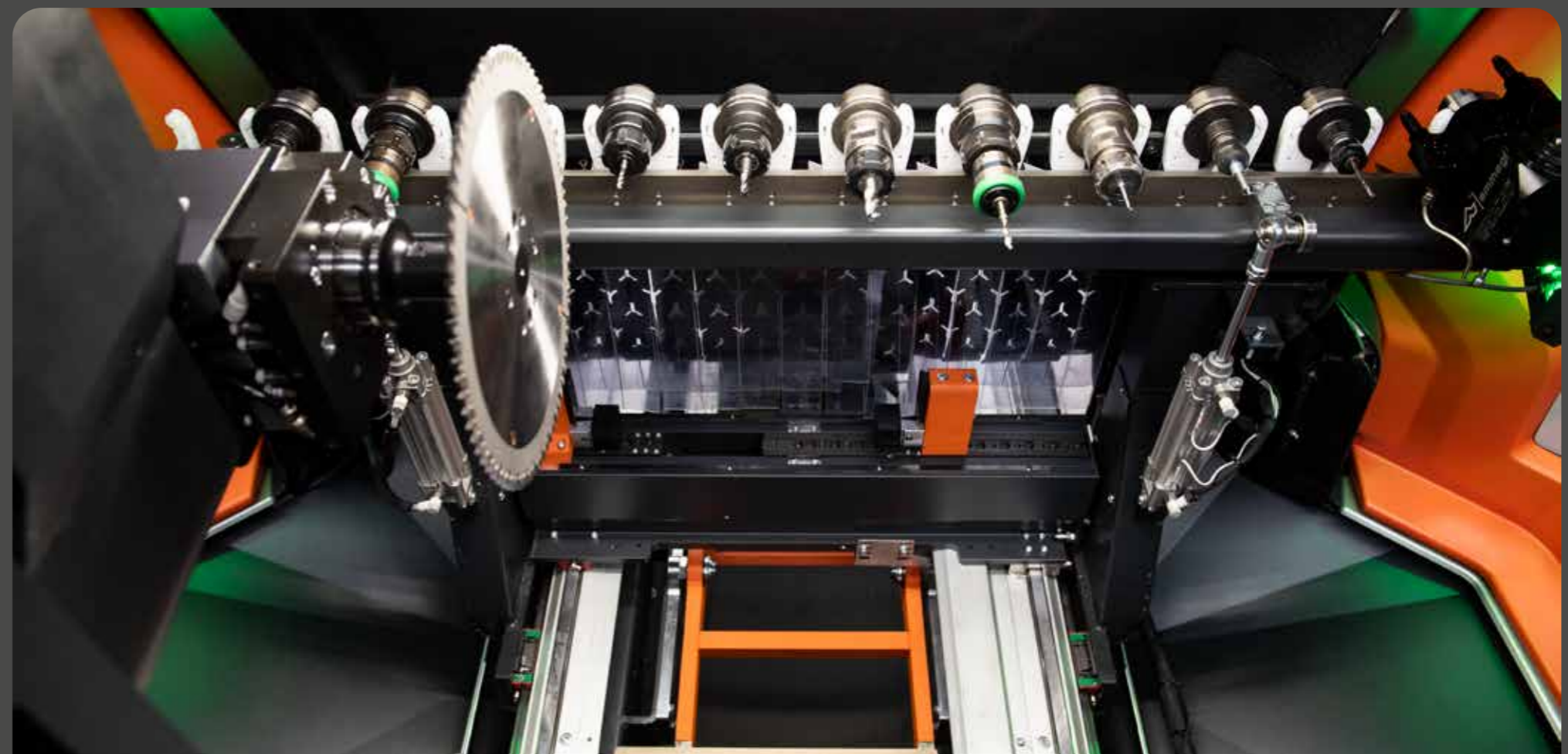
Full safety cabinet

The local safety cab, made in technopolymer and with a sophisticated and innovative design, was made to combine top functionality, accessibility, soundproofing and visibility with safety and ergonomic requirements. The operator has broad glazed surfaces to check machining execution and wide access to the internal parts for cleaning and maintenance. The internal structure optimises chip and swarf conveying to the lower part, simplifying maintenance and cleaning of all sensitive parts.

TKE 954
TKE 954F

Tool magazine

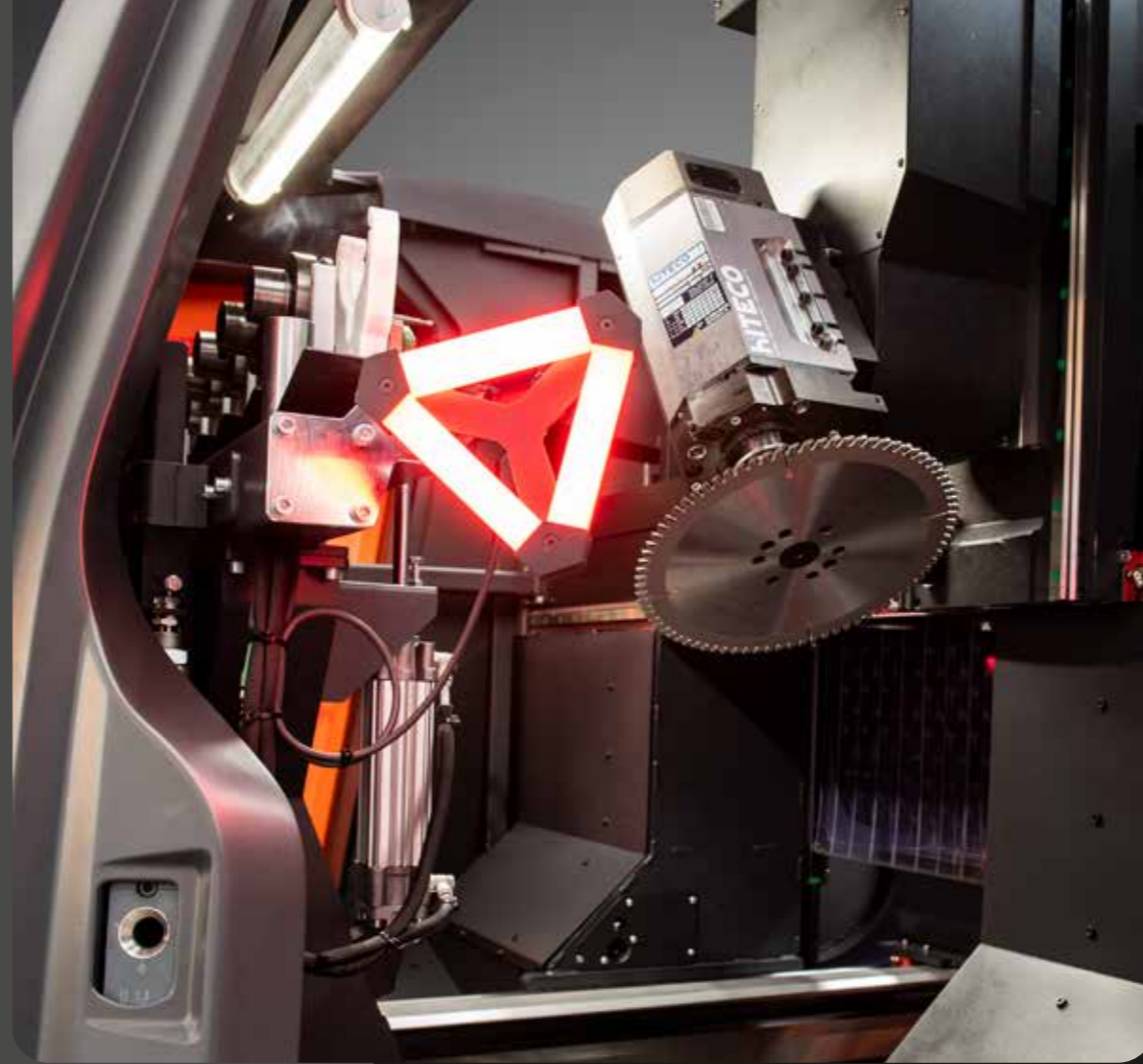
The tool magazine features 12 places, two of which are sized to hold angular units and side milling cutters with a maximum diameter of 250 mm. The position of the magazine, installed on the gantry, enables reducing tool change times to a minimum and optimise working cycles. A solution was designed to keep the tool holder cone housing separate from the working area for improved cleaning of the magazine.





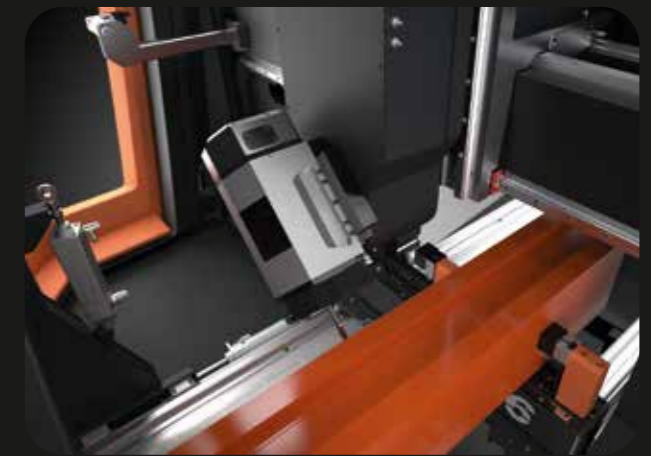
■ Laser Scanner

Operator protection is entrusted to a monitoring system in the working area through laser scanner. This smart control system, along with the absence of fixed references at the centre of the machine, is particularly useful in double operation, as it enables managing the two working areas in variable structure, even asymmetric, and can be programmed from time to time. The machine is safe, yet flexible and suited to the variety of working needs.



■ Electric head

The electrospindle - 8.5 kW in S1 - with HSK-63F tool connection and water cooling with chilling unit, can also perform the heavy-duty machining typical of the industrial sector. The electrospindle moves along the A axis allowing rotations from -90° to +90°, so the profile can be machined on 3 faces without having to be repositioned. A 10 kW electrospindle with encoder for heavy-duty machining and rigid tapping is available as optional for TKE 954 and standard for TKE 954 F.



■ Clamps and dynamic double operation

The clamp unit ensures the correct and safe locking of aluminium, PVC, steel and light alloy profiles. The structure of the clamps, particularly the wide travel in Y, allows for machining large profiles for all kinds of industrial and window/door applications. Each clamp unit can be configured with a double presser, to machine two profiles in parallel. In the HP version, the positioning of the clamps is handled by the additional CNC axes. In dynamic double operation, the CNC manages the handling of the clamps and mobile gantry in the two distinct working fields at the same time; this allows significant increases in productivity.



HUGE CAPACITY

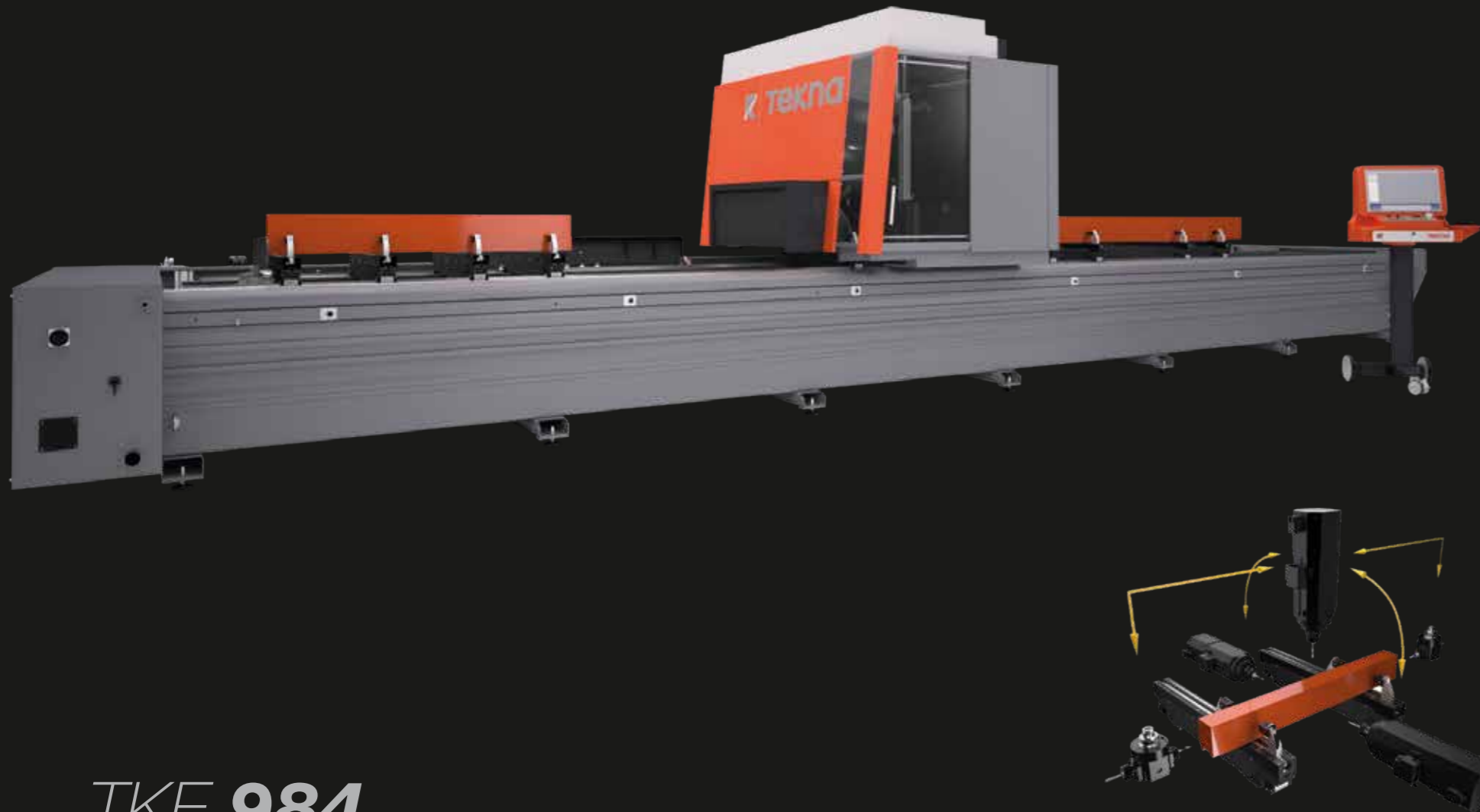
TKE 984

4-axes machining centre

4-axis CNC machining centre with moving gantry structure, designed for drilling, milling, thread cutting and cutting at angle any from -90° to +90° on bars or workpieces of aluminium, PVC, light alloys in general and steel. The moving part of the machine consists of a gantry with precision rack and pinion drive. The high power 9 kW electrically-driven spindle with HSK-63F tool holder allows machining operations, including heavy-duty work, with optimum results in terms of speed and accuracy. A fixed 14-place tool magazine is installed on the left side of the machine. It can be supported with a further fixed 14-place magazine on the other side of the machine, or replaced by a single 16-place motorised tool magazine that can move and approach the moving gantry structure in both the working areas thanks to its own CNC axis, reducing the tools and toolholders quantity requirement and optimising the software programming considerably.

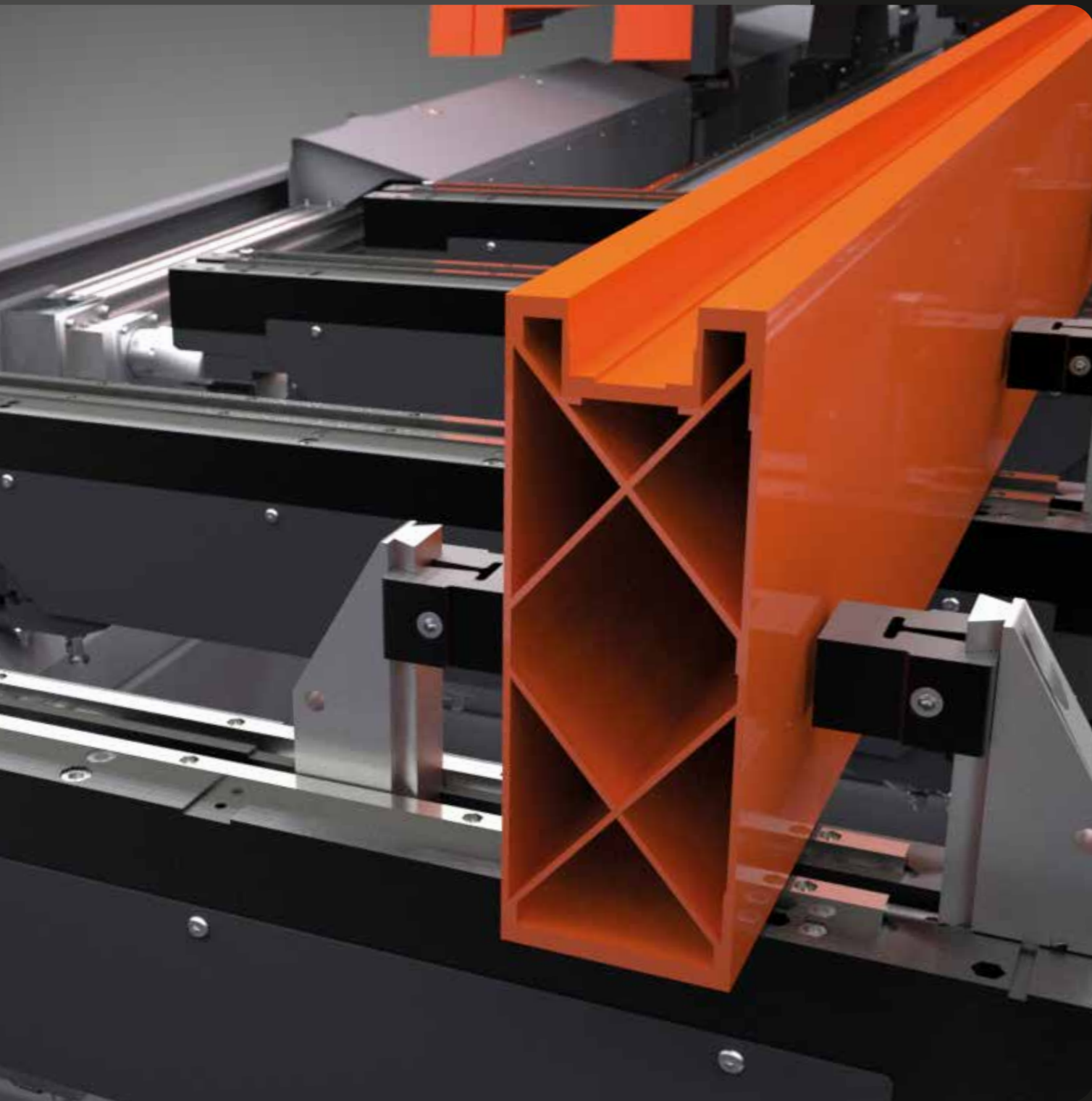
The machine can be used in double mode so as to minimize machine downtime, as it is possible to change the workpiece (load/unload) and the automatic setting of the vices in "concealed" time. It is also possible to load and consequently machine different workpieces and to perform different machining operations between the two work areas.

The gantry is provided with a guard which, besides protecting the operator, also reduces the noise impact on the environment.



TKE 984

	unit of measurement	TKE 984-6	TKE 984-8
WORK AREA			
X AXIS (longitudinal) 1 side/5 sides- 1 side/5 sides (double mode)	mm	6700 / 6400 (2850 / 2550)	8400 / 8100 (3700 / 3400)
Y AXIS (Transversal) 1 side/5 sides	mm	720 / 640	720 / 640
Z-AXIS (vertical) 1 side/5 sides	mm	300	300
C AXIS (vertical-horizontal rotation of the head)		-90° ÷ +90°	-90° ÷ +90°
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	80	80
Y AXIS (transversal)	m/min	60	60
Z AXIS (vertical)	m/min	40	40
C AXIS	(°/min)	7000	7000
ELECTROSPINDLE FEATURES			
Maximum power in S1	kW	9	9
Maximum speed	1/min	24.000	24.000
Maximum torque	Nm	14,3	14,3
Tool connector cone		HSK - 63F	HSK - 63F
Water cooled with chiller unit		•	•
TAPPING CAPACITY (with tap, on aluminium through hole)			
Tapping on solid aluminium AL99	mm	M12	M12
Tapping on solid steel FE370 D FF	mm	M8	M8
TOOL MAGAZINE			
Automatic tool change		•	•
14-place fixed tool magazine single or double		o	o
16-place motorised tool magazine		o	o
Number of tools		(14 +14) /16	(14 +14) /16
Maximum diameter of the tool that can be loaded into the magazine	mm	Ø = 160	Ø = 160
Maximum length of the tool that can be loaded into the magazine	mm	L = 200	L = 200
angular head 90° - 2 ways		o	o
POSITIONING AND LOCKING OF PROFILE			
Workpiece pneumatic reference stop		2	2
Standard number of pneumatic clamps (6,600 - 8,200)		6	8
Maximum number of pneumatic clamps (6,600 - 8,200)		12	16
Maximum number of clamps per area		6	8
Automatic clamps positioning through X axis		•	•
Laser profile position detection		o	o
FUNCTIONALITY			
Static double mode operation		•	•
Parallel machining of two profiles		•	•
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 4 axes with possibility of simultaneous interpolation		•	•
Tool minimal pressurized oil diffusion lubrication system		•	•
Additional automatic filling system of the minimal lubrication system - capacity 15 litres		o	o



Clamp Group

The pneumatically operated clamps are mounted on linear recirculating ball guides fastened to the base, which guarantee an optimum flow for positioning along the X axis of the machine. The automatic movement is allowed thanks to a system which manages, through the CNC, the positioning of each clamp according to the profile length and the machining to perform. The displacement along the axis X takes place by means of pistons mounted on the milling head and handholds located on both ends of the clamps. The clamps can be used both with one-way and two-way systems: using the two-way system it is possible to simultaneously machine 2 profiles with different dimensions and machining from each other. (also for TKE 985)

TKE
984

Electric head

Electrospindle with automatic tool change equipped with a liquid cooling system that allows keeping its temperature constant and prevents overheating. This system includes a cooling unit which dissipates the heat of the liquid in circulation and thus ensures optimum operation of the electrospindle. It has a maximum power of 9 kW in S1 operation and a max. rotational speed of 24000 rpm. Minimal lubrication system with micro-drop technology that optimizes the cooling liquid consumption during machining; in addition to guaranteeing an adequate cooling of the tool it allows to considerably reduce the amount of product used.



Sliding magazine

Positioned in the central zone of the machine it moves electrically on both sides of the TWIN zone to limit the tool change times. The motorized magazine is equipped with a chip protection cover and has the capacity to accommodate 16 tools (or alternatively 2 fixed magazines with 14 tools and 2 corner heads); the maximum diameter of the tool is 160 mm. (also for TKE 985)



Rigid locking of the clamps on the basement

Pneumatically operated clamp system for clamping any type of profile section. The longitudinal and vertical positioning of the Jaws is achieved through easy and fast adjustments. The high rigidity of the Tekna clamps is ensured by a special mechanical system which lock each clamp directly on the basement. (also for TKE 985)

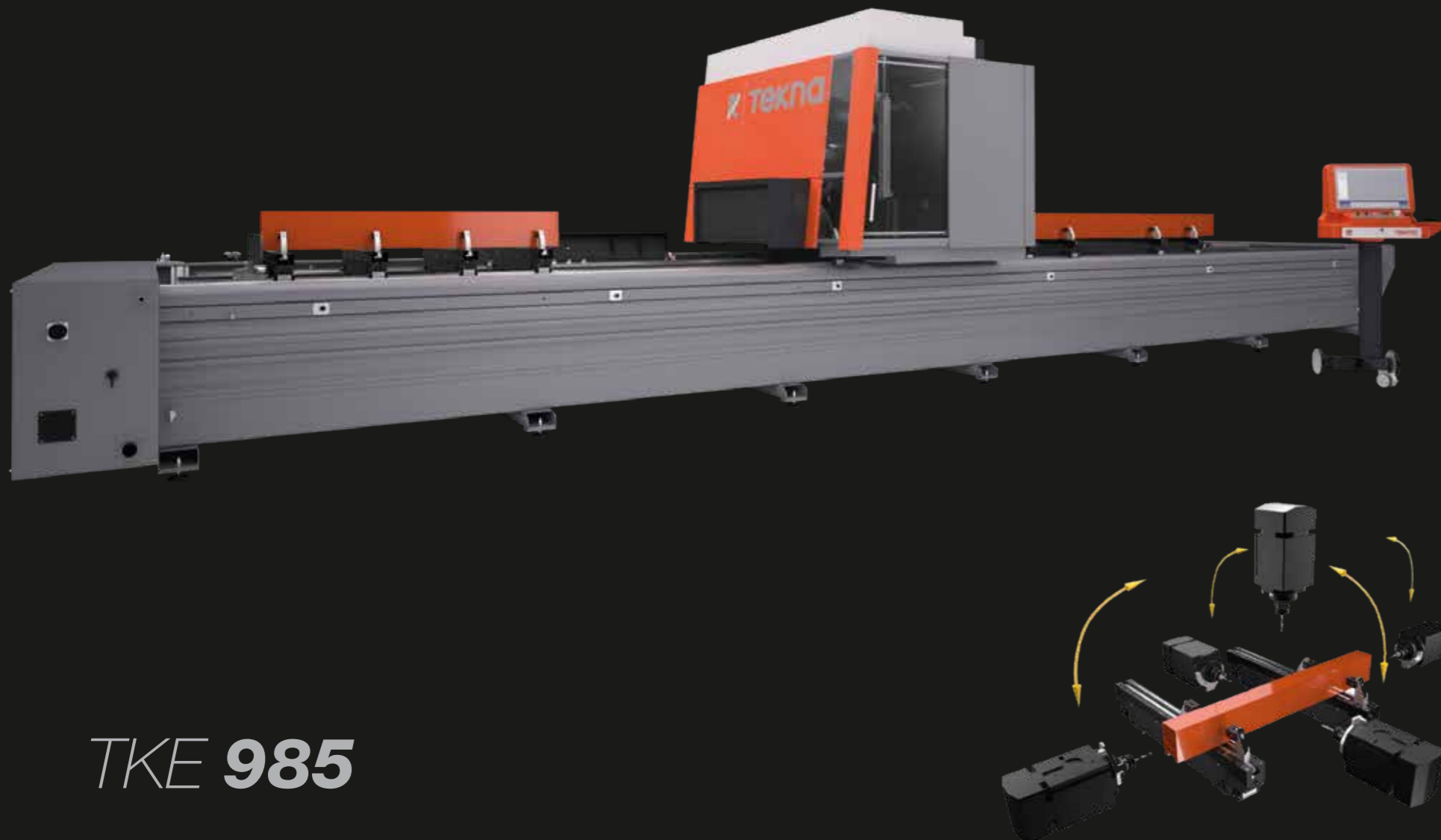


HIGH POWER

TKE 985

5-axes machining centre

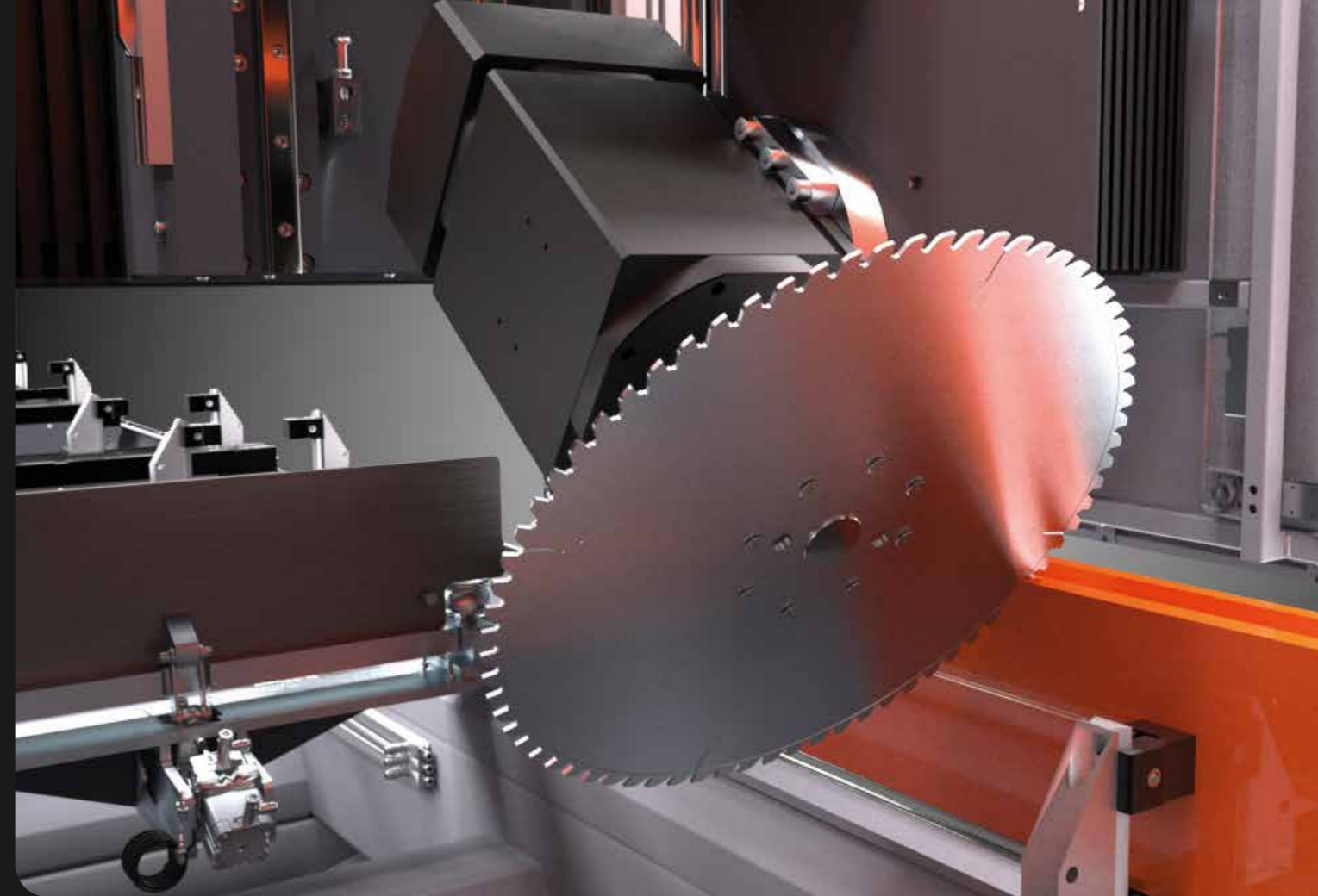
5-axis CNC machining centre with moving gantry structure. Designed for milling, drilling, thread cutting and cutting on bars or large workpieces of aluminium, PVC, light alloys in general and steel. The moving part of the machine consists of a gantry with precision rack and pinion drive. The high power (10 kW in S1) electrically-driven spindle with HSK-63F tool holder allows machining operations, including heavy-duty work, with optimum results in terms of speed and accuracy. A fixed 14-place tool magazine is installed on the left side of the machine. It can be supported with a further fixed 14-place magazine on the other side of the machine, or replaced by a single 16-place motorised tool magazine that can move and approach the moving gantry structure in both the working areas thanks to its own CNC axis, reducing the tools and toolholders quantity requirement and optimising the software programming considerably. The machine can be used in double mode so as to minimize machine downtime, as it is possible to change the workpiece (load/unload) in "concealed" time. It is also possible to machine different workpieces between the two work areas. The gantry is provided with a guard which, besides protecting the operator, also reduces the noise impact on the environment.



TKE 985

	unit of measurement	TKE 985-8	TKE 985-10
WORK AREA			
X AXIS (longitudinal) 1 side/5 sides- 1 side/5 sides (double mode)	mm	8200 / 7900 (3700 / 3200)	10200 / 9900 (4600 / 4300)
Y AXIS (transversal) 1 side/5 sides	mm	725	725
Z-AXIS (vertical) 1 side/5 sides	mm	300	300
B AXIS (vertical axis rotation of the head)		0° ÷ 360°	0° ÷ 360°
C AXIS (vertical-horizontal rotation of the head)		-90° ÷ +90°	-90° ÷ +90°
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	80	80
Y AXIS (transversal)	m/min	60	60
Z AXIS (vertical)	m/min	40	40
B AXIS	(°/min)	5000	5000
C AXIS	(°/min)	5000	5000
ELECTROSPINDLE FEATURES			
Maximum power in S1	kW	10	10
Maximum speed	1/min	22.000	22.000
Maximum torque	Nm	12,7	12,7
Tool connector cone		HSK - 63F	HSK - 63F
Water cooled with chiller unit		•	•
TAPPING CAPACITY (with tap, on aluminium through hole)			
Tapping on solid aluminium AL99	mm	M12	M12
Tapping on solid steel FE370 D FF	mm	M8	M8
TOOL MAGAZINE			
Automatic tool change		•	•
14-place fixed tool magazine single or double		o	o
16-place motorised tool magazine		o	o
Number of tools		(14 +14) / 16	(14 +14) / 16
Maximum diameter of the tool that can be loaded into the magazine	mm	Ø = 160	Ø = 160
Maximum length of the tool that can be loaded into the magazine	mm	L = 200	L = 200
Magazine with cutting blade Ø 350 mm		•	•
Cutting blade Ø 450 mm		o	o
POSITIONING AND LOCKING OF PROFILE			
Workpiece pneumatic reference stop		2	2
Standard number of pneumatic clamps (8200 - 10200)		8	8
Maximum number of pneumatic clamps (8200 - 10200)		16	16
Maximum number of clamps per area		8	8
Automatic clamps positioning through X axis		•	•
FUNCTIONALITY			
Static double mode operation		•	•
Parallel machining of two profiles		•	•
Cuts and separates the bar		o	o
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 5 axes with possibility of simultaneous interpolation		•	•
Tool minimal pressurized oil diffusion lubrication system		•	•
Additional automatic filling system of the minimal lubrication system - capacity 15 litres		o	o

• included o optional - not available



Double mode machining

The double mode operation allows dividing the machine in two distinct work areas: in this way it is possible to access one of the two zones for the workpiece replacement while in the other the machine works allowing also to perform different operations between a zone and the other. An intermediate protected zone ensures operator safety when the machine is used in this mode. This system allows increasing and optimising productivity by eliminating downtime due to machine stops and the possibility to perform different machining processes in a area rather than in another. The double mode system is available for machines with 8200 and 10200 mm working length.

TKE
985

Cutting unit

A \varnothing 350 mm blade (\varnothing 450 mm optional), included in the supply, is housed in a dedicated magazine system and is provided with an independent lubrication system. It is equipped with a HSK-63F toolholder and can work using the 5 interpolated axes of the electric head to isolate the workpiece. This versatile tool allows, with the utmost speed, safety and precision, to execute compound cuts, straight cuts, splicing and trimming.

Electric head

The 985 is equipped with an electrospindle with automatic tool change equipped with a liquid cooling system keeps its temperature constant and prevents overheating. This system includes a cooling unit which dissipates the heat of the liquid in circulation and thus ensures optimum operation of the electrospindle. It has a maximum power of 10 kW in S1 operation and a max. rotational speed of 22000 rpm.



Profiles parallel clamping

The clamps allow to easily and quickly alternate the one-way operating system with the two-way one: exploiting the two-way system it is possible to machine simultaneously 2 profiles with dimensions and machining processes different from each other. (also for TKE 984)



AIR FLOW

3-axes machining centre

3-axis CNC vertical machining center featured with a clamping system made up of vacuum tables that allow panels and plates to be held by vacuum; this solution is useful to obtain an extremely efficient machining of thin components that could hardly be fixed by means of a traditional clamping system.

The machining center is equipped with a series of valves that turn on/off different areas of the machining table, thus concentrating the suction on one area and optimizing the clamping of components with limited dimensions. It is designed for drilling and interpolated milling operations on composite panels, panels and plates in aluminum and steel. To create programs that control the machines, Tekna provides user-friendly software tools that can be used both by professional CNC programmers, who can implement the most complex solutions, and by completely inexperienced users; after a few training hours the customer will be able to operate the machining center using a graphical programming. Software solutions offered by Tekna result from an accurate design and from the actual customer needs analysis. The simplicity of usage of these solutions reduces the management time and costs. The machine is equipped with Fanuc CNC Numerical Control, motors and encoders.



TKE 743 Powered by **FANUC**

TKE 743

	unit of measurement	TKE 743-4	TKE 743-5
WORK AREA			
X AXIS (longitudinal)	mm	4000	5000
Y AXIS (transversal)	mm	1600	1600
Z AXIS (vertical)	mm	40	40
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	60	60
Y AXIS (transversal)	m/min	60	60
Z AXIS (vertical)	m/min	20	20
ELECTROSPINDLE FEATURES			
Maximum power in S1	kW	10	10
Maximum speed	1/min	24.000	24.000
Maximum torque	Nm	10,2	10,2
Tool connector cone		ISO 30	ISO 30
Air cooling with electric fan		•	•
TAPPING CAPACITY (with tap, on aluminium through hole)			
With compensator		M8	M8
TOOL MAGAZINE			
Automatic tool change		•	•
12-place tool magazine on board the machine		•	•
Number of tools		12	12
Maximum diameter of the tool that can be loaded into the magazine	mm	Ø = 80	Ø = 80
Maximum length of the tool that can be loaded into the magazine	mm	L = 165	L = 165
WORKPIECE LOCKING			
Workpiece pneumatic reference stop		o	o
Locking system with vacuum tables		•	•
Vacuum transom size	mm	230 X 1.600	230 X 1.600
Vacuum pumps		1	2
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 3 axes with possibility of simultaneous interpolation		•	•
Tool minimal pressurized oil diffusion lubrication system		•	•
Exhauster for swarf removal		o	o

• included o optional - not available



TKE
743

- Electerspindle

The 10 kW high-torque electrospindle in S1 is suited for heavy duty machining. It can be used both with some types of steel and aluminium panels, thanks to the lubrication system with oil emulsion spray mist or, as an option, with minimal diffusion oil.

- Swarf extraction system

The machining unit has a built-in suction system connected to an industrial extractor. This system effectively removes the machining dust, maintaining the extraction holes free and ensuring high-performance locking. It also facilitates the cleaning operations between a workpiece loading and the following one, removing many of the swarfs which may prevent the correct clamping of the panels on the table.



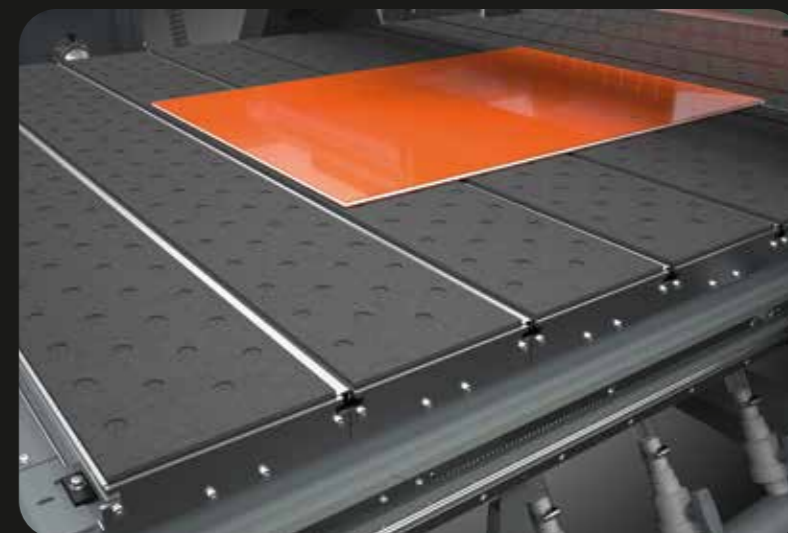
- Tool magazine

Fixed 12-place tool magazine on board the machine. It is provided with a mechanically moved covering that protects the tools from swarf and dust creating during the machining.



- Vacuum table

The panels are clamped to a vacuum breather table: the Forex panels mounted on the cross-beams ensure efficient suction along the whole surface, at the same time ensuring strength, resistance to knocks, absorption of the vibrations produced during machining and impermeability to any lubricant residues. The table is divided into extruded aluminium beams that are switched on/off individually by a valve system, activating the vacuum and locking only the areas where the panels are positioned.



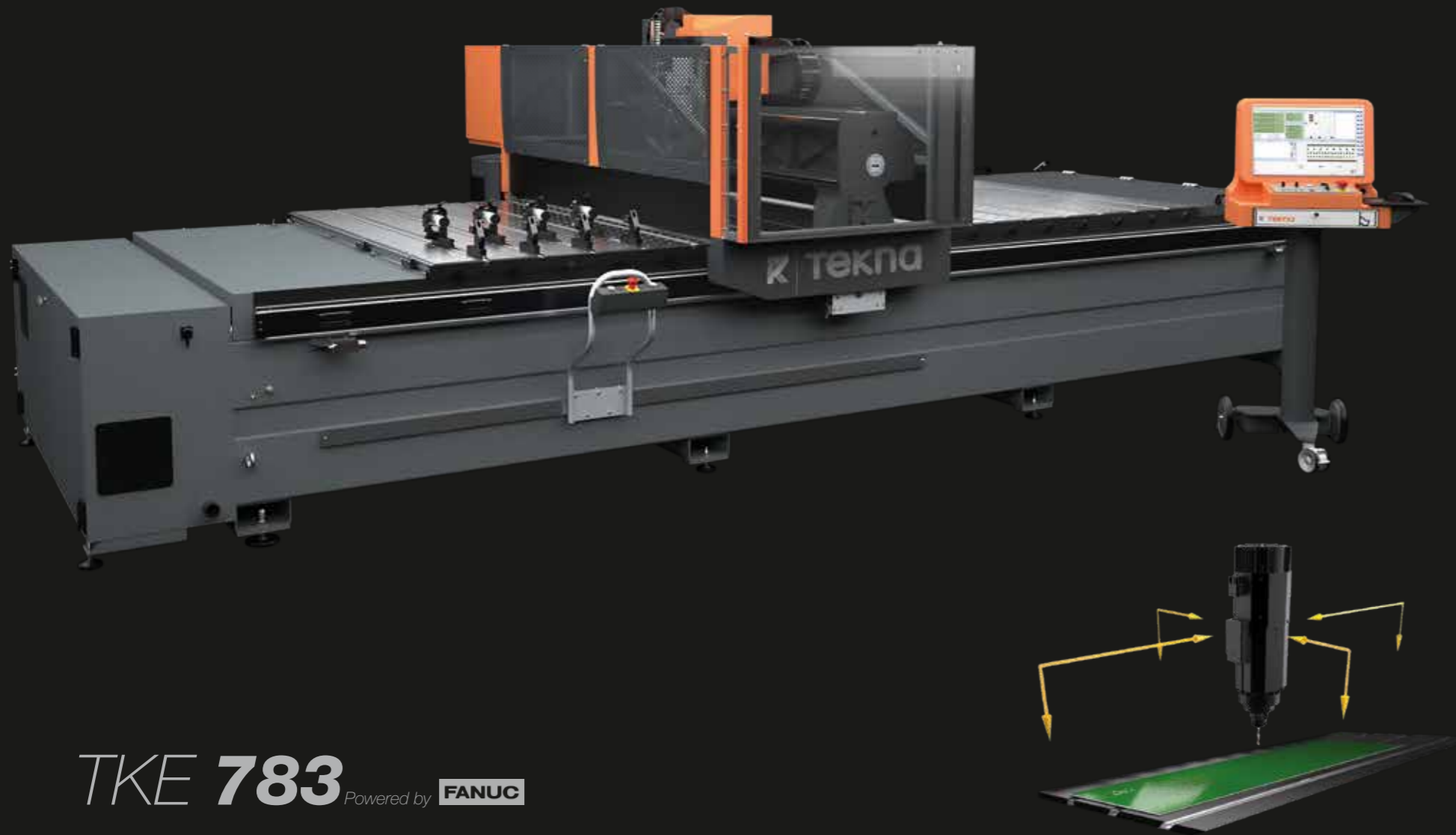
WORK GREAT

TKE 783

3-axes machining centre

3-axis CNC vertical machining center with Y-axis stroke of 2000 mm, featured with a clamping system made up of vacuum tables that allow panels and plates to be held by vacuum; this solution is useful to obtain an extremely efficient machining of thin components that could hardly be fixed by means of a traditional clamping system.

The machining center is equipped with a series of valves that turn on/off different areas of the machining table, thus concentrating the suction on one area and optimizing the clamping of components with limited dimensions. It is designed for drilling and interpolated milling operations on composite panels, panels and plates in aluminum and steel. To create programs that control the machines, Tekna provides user-friendly software tools that can be used both by professional CNC programmers, who can implement the most complex solutions, and by completely inexperienced users; after a few training hours the customer will be able to operate the machining center using a graphical programming. Software solutions offered by Tekna result from an accurate design and from the actual customer needs analysis. The simplicity of usage of these solutions reduces the management time and costs. The machine is equipped with Fanuc CNC Numerical Control, motors and encoders.



TKE 783 Powered by **FANUC**

	unit of measurement	TKE 783-4	TKE 783-6
WORK AREA			
X AXIS (longitudinal) 1 side/5 sides- 1 side/5 sides (double mode)	mm	4140 / 3840	6440 / 6140 (2760 / 2460)
Y AXIS (trasversal) 1 side / 5 sides	mm	2000 / 1740	2000 / 1740
Z-AXIS (vertical) 1 side/5 sides	mm	60* / 145	60* / 145
POSITIONING SPEED			
X AXIS (longitudinal)	m/min	70	70
Y AXIS (transversal)	m/min	60	60
Z AXIS (vertical)	m/min	30	30
ELECTROSPINDLE FEATURES			
Maximum power in S1	kW	10	10
Maximum speed	1/min	24.000	24.000
Maximum torque	Nm	10,2	10,2
Tool connector cone		ISO 30	ISO 30
Air cooling with electric fan		•	•
TAPPING CAPACITY (with tap, on aluminium through hole)			
With compensator		M8	M8
TOOL MAGAZINE			
Automatic tool change		•	•
12-place rotating tool magazine on board		•	•
Number of tools		10	10
Maximum diameter of the tool that can be loaded into the magazine	mm	Ø = 140	Ø = 140
Maximum length of the tool that can be loaded into the magazine	mm	L = 120	L = 120
WORKPIECE LOCKING			
Workpiece pneumatic reference stop		•	•
Pneumatic clamps kit for locking the profiles		o	o
Locking system with vacuum tables		•	•
Vacuum transom size	mm	230 X 2.000	230 X 2.000
Vacuum pumps		2	2
FUNCTIONALITY			
Static double mode operation (only model TKE 783-6)		-	•
A Axis - angular head rotation on vertical Axis		o	o
Angular head with blade Ø 120 mm		o	o
Angular head for milling/drilling -90° - 2 ways		o	o
WORK UNIT			
Gantry structure		•	•
Electrospindle driven on 3 axes with possibility of simultaneous interpolation		•	•
Local Cabin Protection		o	o
Tool minimal pressurized oil diffusion lubrication system		•	•
Exhauster for swarf removal		o	o



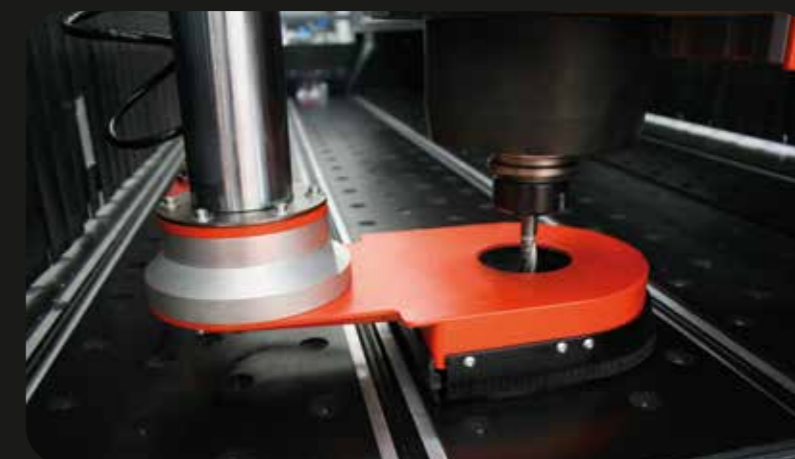
- Angular head with blade Ø 120 mm

The machine can be equipped with an additional A axis for angular heads rotation 360° on vertical axis in combination of an angular head with blade Ø 120 mm for V grooving, milling or cutting operations on aluminium or steel solid panels.



- Swarf extraction system

The machining unit has a built-in suction system connected to an industrial extractor. This system effectively removes the machining dust, maintaining the extraction holes free and ensuring high-performance locking. It also facilitates the cleaning operations between a workpiece loading and the following one, removing many of the swarfs which may prevent the correct clamping of the panels on the table.



- Electrospindle

The 10 kW high-torque electrospindle in S1 is suited for heavy duty machining. It can be used both with some types of steel or aluminium panels and profiles, thanks to the lubrication system with oil emulsion spray mist or, as an option, with minimal diffusion oil.

TKE
783

- Tool magazine

10-place revolver tool magazine on the board of the gantry. It is provided with a mechanically moved covering that protects the tools from swarf and dust creating during the machining.



- Pneumatic clamping

The machine can be equipped with an optional pneumatic clamping system installed on the vacuum table, thereby making it possible to machine aluminium profiles on 3 sides using an angular head.



- Vacuum table

The panels are clamped to a vacuum breather table: the Forex panels mounted on the cross-beams ensure efficient suction along the whole surface, at the same time ensuring strength, resistance to knocks, absorption of the vibrations produced during machining and impermeability to any lubricant residues. The table is divided into extruded aluminium beams that are switched on/off individually by a valve system, activating the vacuum and locking only the areas where the panels are positioned.



TEKNA SOFTWARE

■ CN6 – Numerical Control (1) for TKE 943 - 944 - 984 - 985

The Numerical Control basic software, which controls all the functions of the Working Centre through a window-based interface, includes: The operator graphic interface (HMI, Human Machine Interface) that displays all the variables of the Centre, related both to programming and user. ISO language editor: the internationally renowned ISO language is used for programming CNC machines. It allows creating programs for the execution of any machining, with linear or interpolated paths, variable speeds, tapping, use of parametric data, etc. and handle all the machine functions. Project file: simple, easy-to-use and extraordinary useful function of the CN6, used as interface between any management program and the machine. Within a company it guarantees a bond, i.e. a unique language, between the management function and the machine operators. Scheduler function that operates in several modes aimed both to serial production and to a more flexible production in small quantities. Integrated Formulas Software: it allows defining formulas based on default variables (i.e. profile length) and then use them as macro parameters or in "if" functions.

FANUC – Numerical Control (2) for TKE 954 F - 743 - 783

FANUC is the leading global manufacturer of factory automation, with more than 60 years of experience in the development of computer numerical control equipment. FANUC CNC systems in the industry is the best value controls with powerful functionality and high-performance control systems for complex machines – all with fast programming and ease of use, guaranteeing the highest quality and short processing times. FANUC iHMI has been designed to be extremely easy to use. Intuitive menu icons, high-visibility design and animated features take the head-scratching out of complex machining operations, making accessing even the most sophisticated programs and functionalities straightforward. Despite its more intuitive layout, users will nevertheless find that it provides a familiar FANUC user experience.

SLW Self-Learning (3) for TKE 943 - 944 - 984 - 985

SLW (Self Learning for Windows) software license, complete with additional macro libraries, for creating machining programs from the office. This standard software is included on all Tekna CNC machining centers. The SLW Self-learning software allows operators to easily create machining programs, selecting from a graphic menu a default number of functions (macros).

■ The macro library created by Tekna includes a wide range of machining processes and the development of functions that additionally simplify the man-machine interface, so that even an inexperienced user can easily create several machining programs.

■ CAMPLUS: (4) for TKE 943 - 944 - 954 - 984 - 985

■ For Machining Centres management, we have a broad range of software: CAMPLUS, SHAPE and DRIVER CAD which are complementary and integrate each other. They allow you to define all machining that needs to be carried out on the piece quickly and graphically and move onto the production phase in just a number of minutes. The tasks of the machine operator are simplified, thanks to the guided and extremely simple interface. CAMPLUS allows you to programme machining graphically in 3D, visualising the profile and the tool. The software includes the most recurrent figures (holes, slots, rectangles, etc) that can be broadened with SHAPE, which is used to freely define figures of any shape. MACHINE SUPERVISOR is the module used to control and check the duration of the various machine phases (turn on/off, cycles, alarms) as well as the list of machined pieces.

TK Cam (5) for TKE 943 - 944 - 954 - 954 F - 984 - 985

Optional 3D CAD / CAM software package that allows the creation of ISO programs through a three-dimensional graphics programming. With TK Cam it is possible to assign machining tasks regardless of the type of machine and tool set used and see the three-dimensional representation of the current program execution as in a simulation. TK Cam provides optimisation tools, optimisation of clamps, an anti-collision function and the automatic generation of ISO codes for the program execution. TK Cam makes it possible to import specific .dxf or .dwg drawings and assign the corresponding machining tasks. In addition it allows interaction with the most common door and window frame management programs.

TK CadX (6) for TKE 943 - 944 - 954 - 954 F - 984 - 985

TK CadX is an optional TK Cam software module used to import 3D models and to identify the machining types which can be carried out by a CNC machine. By importing files in STEP, TK CadX independently scans all the surfaces, analyses and processes the data necessary for the workpiece machining; these data are then exported in NCX file (format read by TK Cam) for the automatic generation of ISO machining programs of the single machines.

Alphacam (7) for TKE 743 - 783 - 954 F

Alphacam is a 2D/3D CAD/CAM optional software that, starting from a CAD drawing, allows generating machining programs in ISO language compatible with the CN Fanuc by inserting information on the desired machining processes. The geometrical scale and dimensional changes of an existing drawing are automatically converted into a new updated program. Alphacam can import files of various formats including .dxf and .dwg and allows the processing of texts and the consequent generation of ISO codes. Alphacam also includes the NESTING function: two-dimension optimisation program, it is used to calculate, starting from the initial dimensions of the panel, the optimal distribution of the figures to be machined so as to obtain the highest possible number of pieces. It is an easy-to-use application that allows the operator to exploit the materials as most as possible while minimising waste.

