



Comet S4 I

CNC machining centres



4-axis CNC machining centre designed for working bars or parts in aluminium, PVC, light alloys in general and steel up to 4 m. The machine is equipped with independent motorized vices that allow positioning the vices in concurrent operation time. The 4th NC axis allows the electrospindle to rotate from -120° to $+120^{\circ}$ on the horizontal axis and position itself at any intermediate angle. The machine can therefore perform machining operations on the top and on all side faces of the profile at any angle within the range. It has a 12-place tool magazine, on the X axis gantry, that can host an angle machining head and a milling disc, to perform machining on the 5 sides of the workpiece. It also has a mobile work table that facilitates the workpiece loading/unloading operation and significantly increases the workable section.



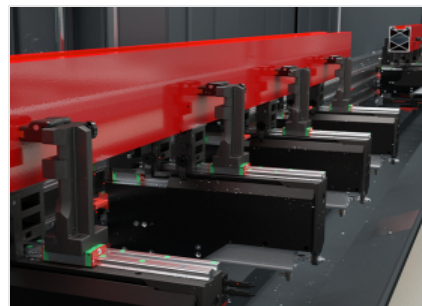
4 axes electric head -S-

The 8.5 kW electrospindle in S1 with high torque also enables performing the heavy machining typical of the industrial sector. A 10.5 kW electrospindle with encoder for rigid tapping is available as optional. Electrospindle rotation along A axis allows working on 3 sides of the profile, with no need of repositioning.



Operator interface

The possibility of rotating the monitor on its vertical axis allows the operator to view the screen from any position. The user interface has a 24" touchscreen display in 16:9 format, portrait mode, equipped with the necessary USB connections for PC and CNC remote interfaces. It also features an operator panel, mouse, and it is set up for connecting barcode reader and remote operator panel.



Motorized vices

The motorized vices, each equipped with its own motor, can be positioned independently in the work area. The CNC manages the movement of vices and that of electrospindle head simultaneously, in the two different work areas in double operation mode. This enables significant productivity gains. Using absolute reference axes allows reducing the initialisation time required every time the machine is restarted.



Pneumatic stops

The machine is equipped with strong stops allowing bar reference. One is positioned on the left side (standard) and the other on the right side (optional). Each stop is activated by a pneumatic cylinder, it is retractable type and is automatically selected by the machine software according to the machining to be performed.



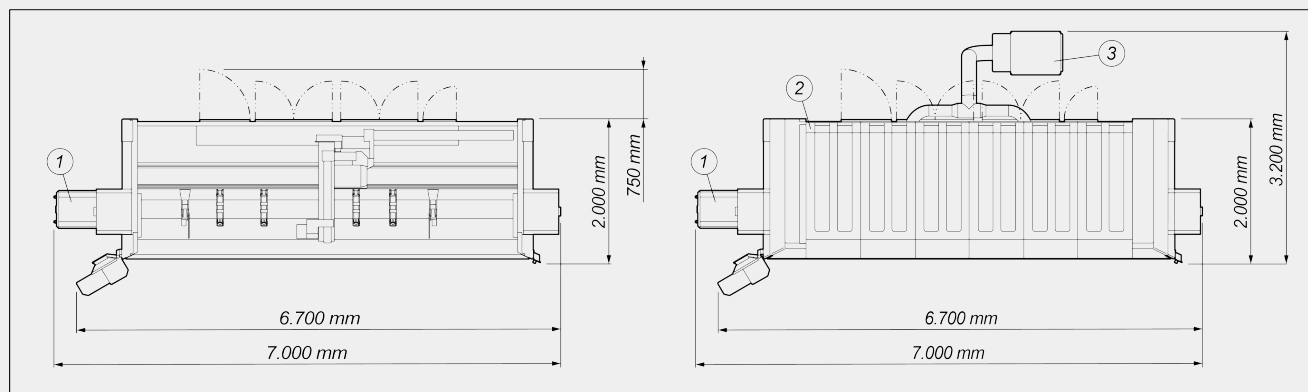
Tool magazine

The tool magazine is integrated on the X axis, in the lower part and behind the electrospindle. It allows great reduction of tool change times. This function is particularly useful in the extrusion head and tail machining, avoiding the stroke to get to the magazine, as it moves simultaneously with the electrospindle and its positions.



Foldaway tunnel

Integrated with the machine's aesthetics and design, thanks to the perforated sheet metal for transparency and lightness, the tunnel opens and closes as needed. As its length can be reduced when not in use, it helps save space at the workshop. The outlet for the chip conveyor belt and its engine are built into the lower section, in view of an aesthetic and functional design.


COMET S4 I / CNC MACHINING CENTRES
LAYOUT


Machine height (maximum Z-axis extension) (mm) 2.590

1. Chip conveyor and swarf drawer (optional)
2. Cabin enclosure (optional)
3. Fume extraction system (optional)

The overall dimensions may vary depending on the product configuration.

Machine height with top cover (mm) 2.710

AXIS STROKES

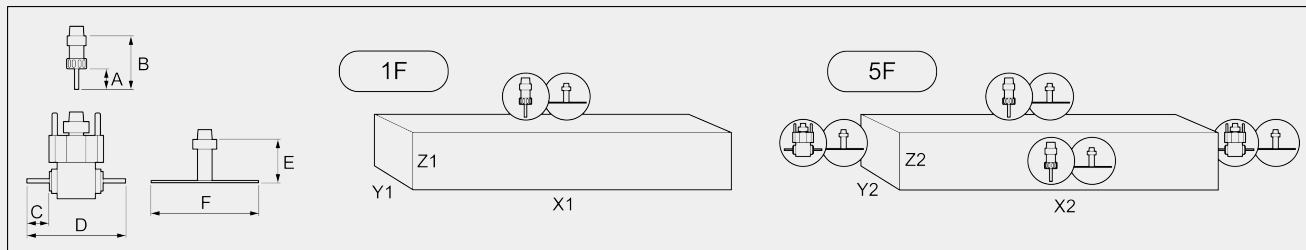
| | |
|---|---------------|
| X AXIS (longitudinal) (mm) | 3.950 |
| Y AXIS (transversal) (mm) | 1.000 |
| Z AXIS (vertical) (mm) | 450 |
| A AXIS (rotation on electrospindle horizontal axis) | -120° ÷ +120° |

ELECTROSPINDLE

| | |
|--|-----------|
| Maximum power in S1 (kW) | 8,5 |
| Maximum power in S6 (60%) (kW) | 10 |
| Cooling with heat exchanger | ● |
| Electrospindle controlled on 4 axes with the possibility of simultaneous interpolation | ● |
| Maximum speed (rpm) | 24.000 |
| Toolholder cone | HSK - 63F |
| Automatic tool holder coupling | ● |


WORKABLE SIDES

| | |
|--|-----------|
| With direct tool (upper face and side faces) | 3 |
| With angle machining head (side faces and heads) | 2 + 2 |
| With blade tool (upper face, side faces and heads) | 1 + 2 + 2 |

WORK AREA
1F = 1 face machining
5F = 5 faces machining


| | A | B | C | D | E | F | X1 | Y1 | Z1 | X2 | Y2 | Z2 |
|-------------------|----|-----|----|-----|-----|-----|-------|-----|-----|-------|-----|-----|
| COMET S4 I | 60 | 130 | 50 | 245 | 100 | 250 | 3.285 | 300 | 210 | 3.285 | 250 | 215 |

Dimensions in mm

The application of an angular unit reduces the working capacity in Z to 190 mm

TAPPING CAPACITY (with Tap On Aluminium And Through Hole)

| | |
|------------------|-----|
| With compensator | M8 |
| Stiff (optional) | M10 |

WORKPIECE LOCKING

| | |
|------------------------------------|---|
| Maximum number of pneumatic vices | 6 |
| Standard number of pneumatic vices | 4 |
| Independent motorised vices | ● |

AUTOMATIC TOOL MAGAZINE ON BOARD THE GANTRY

| | |
|--|-----|
| Maximum length of the tool that can be loaded into the magazine (mm) | 190 |
| Maximum number of magazine tools | 12 |

**SAFETY DEVICES AND PROTECTIONS**

| | |
|-------------------------------------|---|
| Machine integral protection booth | ● |
| Laminated protection glass | ● |
| Retractable side protection tunnels | ● |

FUNCTIONS

| | |
|---|---|
| Multi-piece operation | ○ |
| Extended machining, up to twice the maximum nominal length in X | ○ |
| Workpiece rotation for machining on 4 sides | ○ |
| Multi-piece mode machining in Y | ○ |
| Basic multi-step machining - up to 5 steps | ● |

Included ● Available ○