

VERTICAL MACHINING CENTERS

ZPS MCV1060i / 1260i



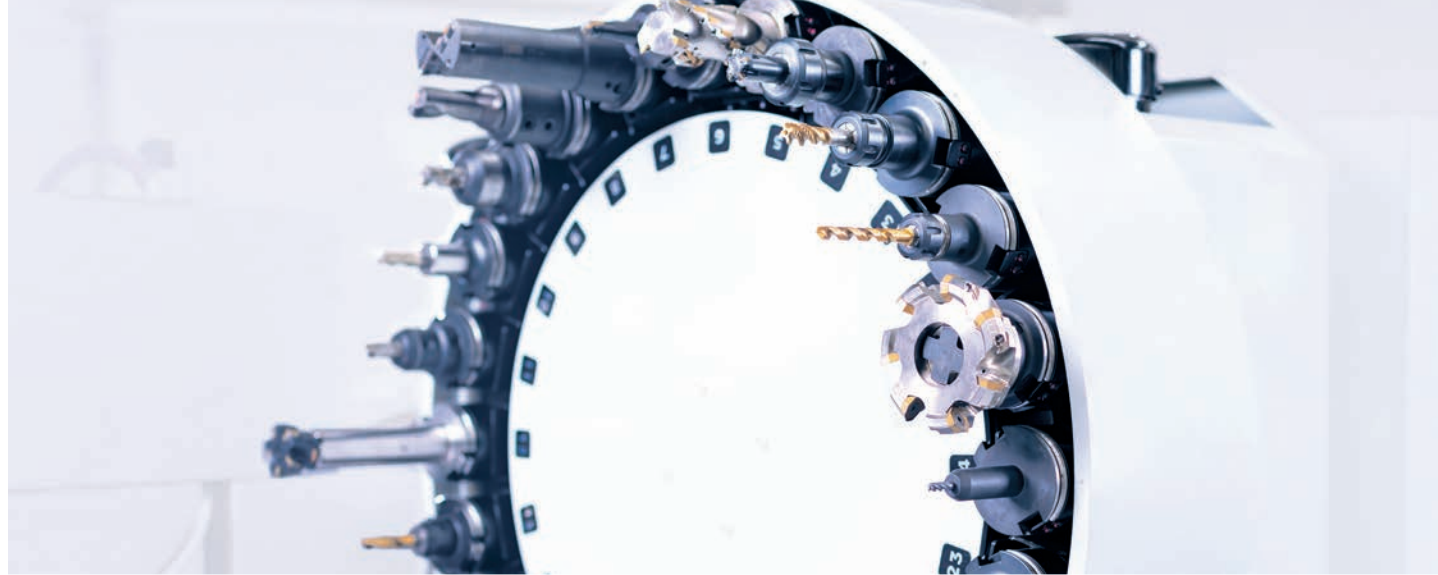
VERTICAL MACHINING CENTERS

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The machine centre presents an innovated type of a vertical milling centre with a modern, efficient and stable enclosure. The machine is composed of two stationary castings - the base and the column. The column is provided with guideways along which the spindle head travels. The work table travels in the longitudinal direction (X-axis) along the cross saddle. The cross saddle moves in the transverse direction (Y-axis) along the base. All guideways are formed by linear rails with rollers. The size and placing of the linear rails not only enable high loads while maintaining high accuracy of dimensions and surface quality of the workpiece but also guarantee higher service life of the machine. Compared with the up to now manufactured model, the innovated machine has, among others, a spindle with a higher power output, increased travel range of axes, larger working table and quicker tool change. The work table clamping surface is provided with T-slots with a calibrated central slot. The machine can be equipped with an automatic pallet changer. Measuring of positions of all axes is of a direct type, comprising of linear optoelectronic absolute measuring units. In its basic version, the machine is equipped with chip buckets. In the case of a higher chip volume, it is suitable to equip the machine with a steelbelt chip container with the possibility of orientation of the chip discharge to the right or left of the machine.

TECHNOLOGICAL POSSIBILITIES OF THE MACHINE

The machine centre is provided with three mutually perpendicular and continuously controlled axes which enable milling, drilling, boring, reaming and threading operations on workpieces made of steel, cast iron and light-metal as well as nonferrous metal alloys.



AUTOMATIC TOOL CHANGER ISO 50 / CAT 50 / BT 50 / HSK-A80

Number of tools (option)	24 (48)
Tool maximal diameter	110 mm
Tool maximal diameter without adjacent tools	210 mm
Tool maximal length	350 mm
Tool maximal weight	20 kg
Maximal weight of all tools	240 kg
Tool change time - left tool changer	3,5 s
Tool change time - right tool changer	3,9 s

AUTOMATIC TOOL CHANGER ISO 40 / CAT 40 / BT 40 / HSK-A63

Number of tools (option)	30 (60)
Tool maximal diameter	80 mm
Tool maximal diameter without adjacent tools	160 mm
Tool maximal length	350 mm
Tool maximal weight	8 kg
Maximal weight of all tools	150 kg
Tool change time - left tool changer	2,9 s
Tool change time - right tool changer	3,9 s

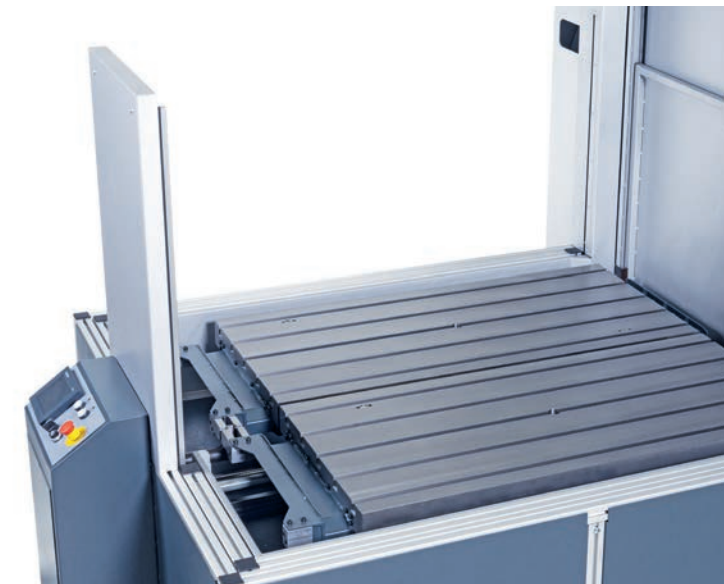
AUTOMATIC PALLET CHANGER

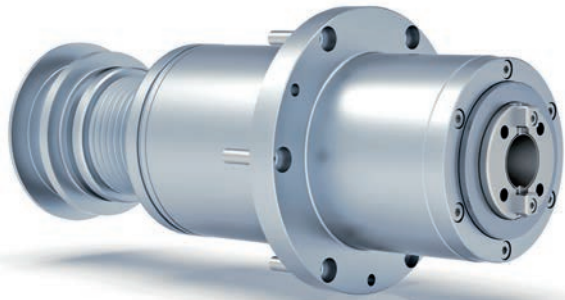
Pallet exchange time (*acc. to technological application)	15 s*
Spindle nose to pallet	50 - 825 mm
Travel in Z-axis	775 mm

PALLET

Working area	1 320 × 620 mm
No. of T-slots x width	5 × 18 mm
Central T-slot dimension	18 H6 mm
Diameter of central hole	30 H6 mm
Pitch of T-slots	125 mm
Maximal load	900 kg

Possibility of connection of the 4th axis (a rotary table) into automatic pallet change (option).





SPINDLE UNITS

PLANETARY GEARBOX

ISO 40, HSK-A80	10 000 rpm	22,5 / 31,5 kW	244 / 342 Nm
ISO 50	6 000 rpm	19,5 / 29,3 kW	519 / 779 Nm
ISO 50	8 000 rpm	22,5 / 33,8 kW	306 / 458 Nm

BELT TRANSMISSION

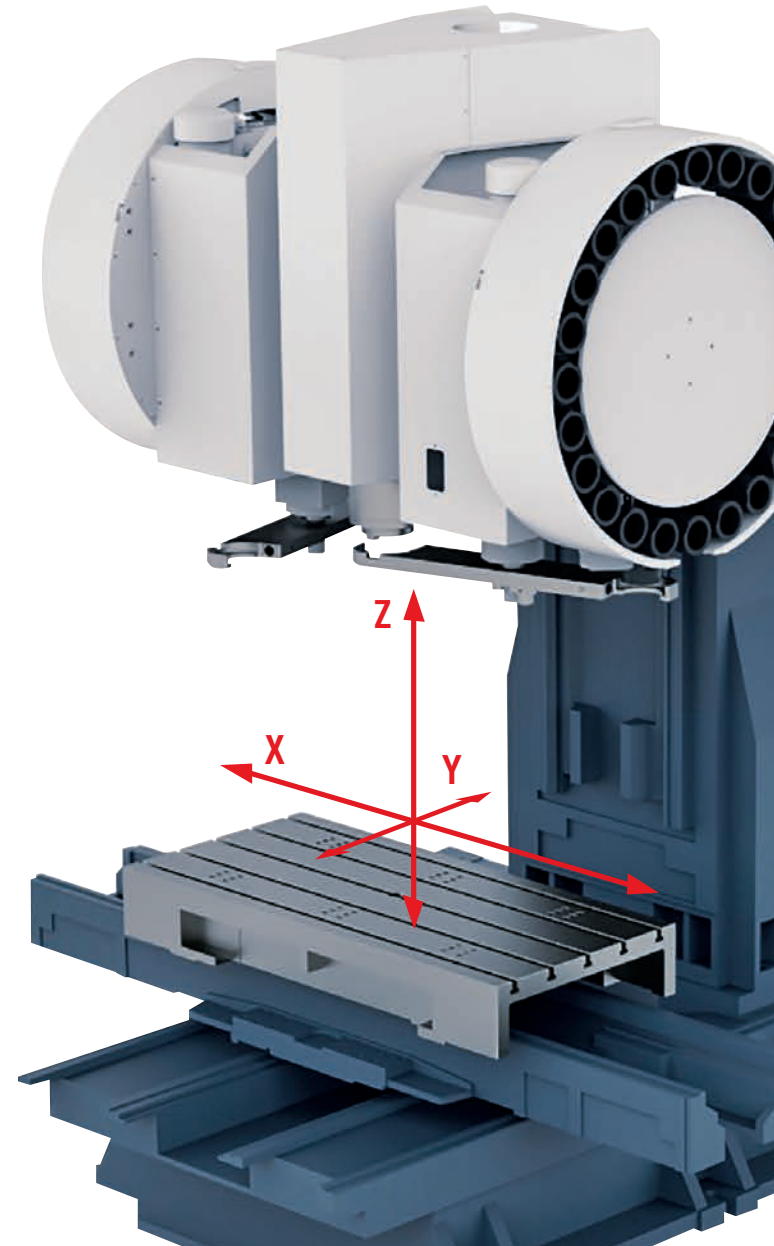
ISO 40	12 000 rpm	19,5 / 29,3 kW	95 / 143 Nm
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ELECTROSPINDLE

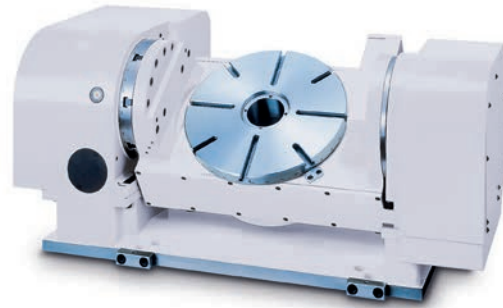
ISO 40	15 000 rpm	25 / 31 kW	160 / 200 Nm
HSK-A63	18 000 rpm	25 / 31 kW	160 / 200 Nm

MACHINE KINEMATICS

The operational movements of the spindle head, cross saddle and the work table (longitudinal saddle) are performed by digitally controlled AC motors via ball screws with preloaded ball nuts.



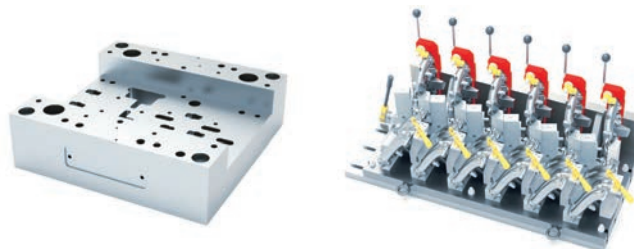
More variants upon inquiry.



The machine can be equipped with one or two-axial CNC rotary table.

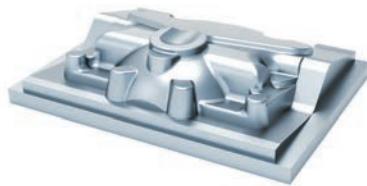
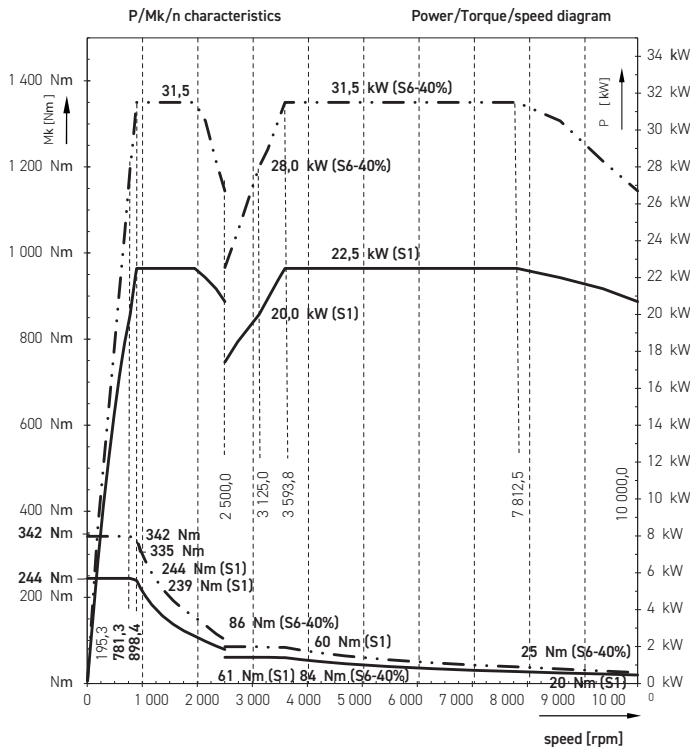
ECO FRIENDLY

The machine enclosure prevents from discharge of coolant, lubricants and machining fumes outside the workzone, thus minimizing its negative impacts on the environment. The machine design conforms to the requirements of the 2006/42/EC machinery directive, and fulfils all requirements of safety standards for the CE marking. The lubrication of movable and rotary parts of the machine (the linear axes, electrospindle) is ensured by the application of an automatic grease lubrication system which prevents from contamination of the coolant and machine parts.



SPINDLE POWER AND TORQUE DIAGRAM

ISO 40 Planetary gearbox



TECHNICAL DATA

MACHINE TYPE MCV1060i MCV1260i

Travels without APC	Travels	Travels
X-axis (work table)	1 050 mm	1 300 mm
Y-axis (cross saddle)	640 mm	640 mm
Z-axis (spindle head)	800 mm	800 mm
Spindle nose to table	125 - 925 mm	125 - 925 mm
Maximal working feed	40 m/min	40 m/min
Rapid traverse	40 m/min	40 m/min
Acceleration	5 m/s ²	5 m/s ²

Table		
Working area	1 320 × 620 mm	1 500 × 620 mm
Number of T-slots × width × pitch	5 × 18 mm × 125 mm	5 × 18 mm × 125 mm
Maximal load	1 350 kg	1 350 kg

Working accuracy (According to ISO 230-2)		
Bidirectional positioning error (A) in X, Y, Z axis	0,008 mm	0,008 mm
Bidirectional repeatability of R pos. setting in X, Y, Z axis	0,0034 mm	0,0034 mm
Measuring system in X, Y, Z axis	direct (linear absolute rulers)	

Energy supply		
Nominal voltage	3 × 400 V/50 Hz	3 × 400 V/50 Hz
Operational power input - acc. to motor	33 kVA	33 kVA
Compressed air	0,6 - 0,8 MPa	0,6 - 0,8 MPa

Pump	(coolant delivery / max. pressure)	
Tool outer cooling pump	50 L.min ⁻¹	
Telescopic covers wash-out pump	100 L.min ⁻¹	
Workzone wash-out pump	50 L.min ⁻¹	
Tool cooling through spindle axis pump with through-flow filter	25 L.min ⁻¹	2,5 MPa
Tool cooling through spindle axis pump on filtering unit	30 L.min ⁻¹	7 MPa
Tool cooling through spindle axis pump on filtering unit / optional pressures	40 L.min ⁻¹	7 MPa

Additional data		
Machine floor plan W/O chip conveyor	2 750 × 2 120 mm	3 200 × 2 120 mm
Machine maximal working height	3 065 mm	3 065 mm
Machine weight	7 700 kg	8 300 kg
Height with tool changer for 30 tools	2 783 mm	
Height with tool changer for 24 tools	2 933 mm	

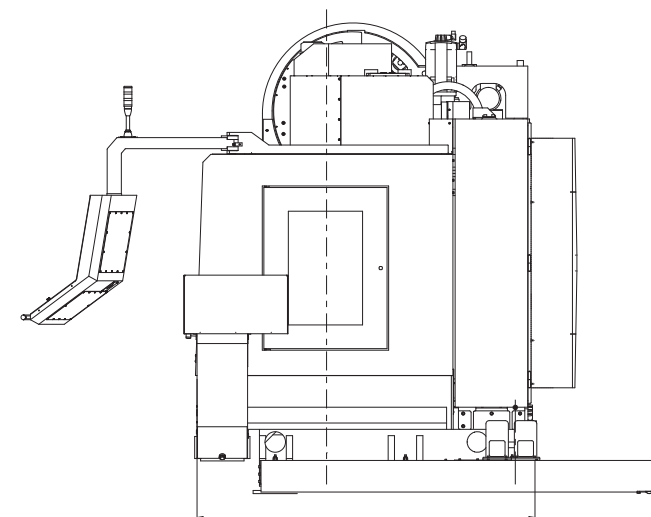
Control system	Heidenhain, Sinumerik, Fanuc
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STANDARD ACCESSORIES

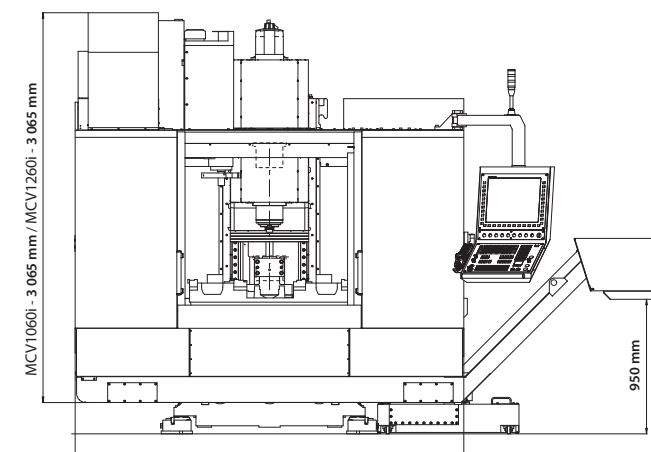
- Digital drives
- Linear optoelectrical absolute rulers
- Automatic central lubrication system
- Tool changer with change arm
- Tool holder automatic air-blasting
- Cooling unit with tool cooling system
- Telescopic covers wash-out
- Electronic compensation of thermal dilatations
- Three-color tower lights for machine working status

OPTIONAL EQUIPMENT

- Tool clamping - ISO 40, ISO 50 (Big-Plus), HSK-A63, HSK-A80, HSK-A100, CAT 40, BT 40, CAT 50, BT 50
- Second magazine tool changer with capacity of 24 tools (ISO 50, HSK-A100) or 30 tools (ISO 40, HSK-A63)
- Tool axial cooling by coolant including cooling unit with filtering unit
- Tool axial cooling by air
- Oil-mist tool cooling
- Rotary table - 4th and 5th controlled axis
- Workpiece measuring probe
- Tool dimensions measuring probe
- Automatic pallet changer, with pallet dimensions identical with the working area
- Work zone wash-out
- Manual wash-out
- Emulsion-mist centrifugal separator from workzone
- Oil from coolant collecting device
- Window rotary cleaner
- Auxiliary spindle with speed up to 50 000 min⁻¹
- Supply of hydraulics or pneumatic to the machine work table
- Remote diagnostics
- Vibro-diagnostics
- Machine hibernation



MCV1060i - 2 120 mm / MCV1260i - 2 120 mm



MCV1060i - 2 750 mm / MCV1260i - 3 200 mm

The herein stated description and specification may not correspond with the latest model of the machine 8/2024

CONTACT

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