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Other files available for additional information regarding this machine

Spindle Hsk40 Spindle Hsk50 Probe for Hks32 Probe Software by HEXAGON Metrology Control Desk Z32 NC Software Peace

Fields of Application

It is a machining center with three axes, characterized by a working range of small / medium size and realized in two versions of the spindle that are employed in applications quite different from each other but have in common the need to have a degree finishing, precision and thermal stability (absence of drifts due to heating of the spindle) particularly high.

Head Spindle type S

Allow to have a number of spindle revolutions important (24,000 rev per min) joined to a significant power that allows to carry out removal of material having a certain importance. The field of use is the classic in making molds of aluminum or steel (also hardened) but which do not require a removal capacity particularly important. Of course, the general mechanical engineering remains an important area for this type of configuration.

Head Spindle type H

Unlike the S version that uses a motor-spindle is equipped with a electric spindle. The installed power is considerably lower, but it has the advantage of having a number of revolutions particularly important (32,000 rev per min) and a "roundness" of rotation (lack of vibrations and thus noise), particularly important. Typical applications are all classic workmanship of high quality engraving where the technical characteristics of our integrated software on the machine Peace are exalted in a special way. It can also find advantageous use in a whole series of processes of micro machining (tool \emptyset widely used less than 1 mm). Another interesting field of application is the realization of graphite electrodes which can be provided (on request) a suction plant particularly effective. It has a slightly lower purchase cost with respect to the spindle head version S.

Fields of Application

Overview of the machine with several optional accessories installed



Structure

The construction form is the classical portal with two axes on the spindle (X and Z) and one on the working plane (Y). This is a construction form we introduced in the machine tool market in 1983 and then taken over from a very large amount of other machine tool builders.

Very interesting is the possibility to have, as an option, the pallet changer with two positions.

Ball bearing screw characteristics and translation axes guides

- X Y and Z axis ball bearing screw diameter: 32 mm
- Screw pitch X Y Z: 12 mm per revolution
- Material: hardened and ground steel with ceramic material nut balls
- Dimensions ball block size X Y Z axis: size 25

Position transducer axes

Standard: absolute encoders on the screws. On option: absolute optical scales.

Structure

For over 30 Years we have Followed the Following Logic of Construction Portal structure, high-speed spindle, preset tool length embedded



Structure

Machine vision without encasing. The pallet changer and tool changer with 60 positions are optional accessories.



(PEAR)

MACHINING CENTER M64

Structure

Front view from the opposite side of the machine operator



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MACHINING CENTER M64

Structure

View top of the control cabinet



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MACHINING CENTER M64

Structure

View bottom of the control cabinet



Tool Changer

Tool changer for head spindle type S

It is a drum having a diameter not too large in which the head of the machine picks/deposits directly, using the movements of the X and Z axes, the toolholder. On this drum are two rings of different slots for tool holders. In the outer ring (18 positions) the loading/unloading tool is made by a breakout movement, so you can mount the tool holder with up to a maximum diameter of 80 mm, while the inner ring (19 positions) will be available to mount the tool holder until a maximum diameter of 44 mm with a movement of "pull-out" from the top.

As an option, we can provide a tool changer whith 60 positions with a movement of "pull-out" from the top

Tool changer for head spindle type H

Also in this case the drum tool holder has a diameter not too big having a single ring of 27 positions. The operation of loading/unloading of the tool is made by a breakout movement, so you can mount the tool holder with up to a maximum diameter of 63 mm.

As an option, we can provide a tool changer whith 48 positions with a movement of "pull-out" from the top

Preset length of tools

In all of our tool changers, in a private area located within the tool magazine is mounted the preset tool length of our mechanical construction. This is a particularly fine construction which benefits from the experience gained in over 30 years of building this type of measuring instruments. On request we can assemble, always in a protected area, also preset laser measuring tools made not by us but by specialized manufacturers.

Tool Changer

Tool changer for head spindle type S



Tool Changer

Tool Change for the Spindle Head Type S with a Movement of "pull-out" The wheel tool holder, having 60 positions, is positioned with torque motor



Tool Changer

Door Access to the Tool Changer with a Movement of "pull-out" It allows to inspect the tools in work in a very simple way by positioning the wheel manually



Tool Changer

Laser Preset Tool Length (on Option) It allows to measure the tool length and in diameter possibly also with the rotating tool



Specifications

Overall dimensions	2,400×3,100×2,600 mm
Net working travels	X=600 mm Y=420 mm Z=375 mm
Maximum workpiece thickness under the bridge	300 mm
Maximum workpiece thickness under the bridge with raised	bridge 400 mm
Frame in cast iron	
Standard coolant system	
Rigid tapping standard	
Preset tool length standard accessory	
Total weight	3,700 Kg

AXES

Working speed	from 0 to 20.000 mm per min
Rapid traverse rate	20 meters per min
Maximum thrust on each axis	2,000 N
Acceleration on three axes	4 m/s ²
Positioning precision (VDI 3441)	± 0.015 mm
Repeatability accuracy (VDI 3441)	± 0.005 mm
Positioning precision with optical scales (VDI 3441)	± 0.008 mm
Repeatability accuracy with optical scales (VDI 3441)	± 0.001 mm

WORKING TABLE (if there is not the pallet changer)

Dimensions	700×500 mm
Threaded holes clamping pieces	M12x24
Total number of holes	140
Distance between holes	50×50 mm

WORKING TABLE (if there is the pallet changer)

Dimensions	600×400 mm
Threaded holes clamping pieces	M12x24
Total number of holes	96
Distance between holes	50×50 mm

Specifications

HEAD SPINDLE TYPE S

Maximum distance from maximum thickness piece to attack tool holder	184.5 mm
Minimum distance between the work plan and attack tool holder	109.5 mm
Minimum distance between the work plan and the standard tool nut	9.5 mm
Tool holder DIN 69893 HSK-50 constructive form A	
Maximum RPM	24,000
Spindle power continuous duty (S1)	15 Kw
Max torque spindle	30.0 Nm

TOOL CHANGER FOR THE HEAD SPINDLE TYPE S

Max Ø of the tool holder (for 18 positions)	80 mm
Max Ø of the tool holder (for 19 positions)	44 mm
Maximum tool lenght	250 mm
Maximum weight of the tool holder	4 kg
Maximum total weight of all tools	80 kg
Tool change time chip to chip average	10 sec
Time to swap tools	3 sec

HEAD SPINDLE TYPE H

Maximum distance from maximum thickness piece to attack tool holder	175.5 mm
Minimum distance between the work plan and attack tool holder	100.5 mm
Minimum distance between the work plan and the standard tool nut	20.5 mm
Tool holder DIN 69893 HSK-40 constructive form E	
Maximum RPM	32,000
Spindle power continuous duty (S1)	12 Kw
Max torque spindle	9.3 Nm

TOOL CHANGER FOR THE HEAD SPINDLE TYPE H

Number of positions available in the tool changer	27
Max \varnothing of the tool holder	63 mm
Maximum tool lenght	250 mm
Maximum weight of the tool holder	3 kg
Maximum total weight of all tools	40 kg
Tool change time chip to chip average	10 sec
Time to swap tools	3 sec

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MACHINING CENTER M64

Specifications

MAIN OPTIONS

- Pallet changer with two positions
- Bridge for the XY axes raised of 100 mm
- Absolute encoder position made with optical scales
- Upper closure encasing
- Tracing head DIGIT2
- Software Peace integrated on the machine to simplify programming to the maximum
- Vacuum Pump
- Minimal quantity lubrication of the tool
- Chip conveyor eventually complete with rotary filter

Specifications

M64S

Plan view







M64S Lateral view



Specifications

M64 Front view





Specifications

M645 - with Pallet Changer

Plan view







M64S - with Pallet Changer

Lateral view





Specifications

M645 - with Pallet Changer

Front view



Specifications

Head Spindle Type S (Hsk50)



Specifications

Head Spindle Type S (Hsk50) with Raised Bridge of 100 mm



Specifications

Head Spindle Type H (Hsk40)



Specifications

Head Spindle Type H (Hsk40) with Raised Bridge of 100 mm





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