

Complete machine description

- 1 1 **Vertical CNC- machining centre model – MC 726**
Partly refurbished pre-owned machine
Year of construction 2005, weight: 5.300 kg

Maschinen-Nr. 1530



Scope of delivery:

Traverse Ranges:

X-Axis 500 mm
Y-Axis 380 mm
Z-Axis 360 mm

Feed Thrust

X-Y-Axis 4000 N

Z-Axis 8000 N

Incl. safety package with kevlar expansion bellow

Traverse Rates

Rapid traverse X-Y- and Z-axis 60 m/min.

Feed rate in X-Y- and Z-axis 1-10000 mm/min

Axis dynamics: (m/sek²) max. X=5; Y=8; Z=12

Machine Base Frame

The welded base frame has an incorporated rotating and swivelling device which has been designed for the machining of components from bars up to a length of 800 mm in both the horizontal and vertical planes.

Mounting area with hole patterns for additional fitting of tailstock or 6th side equipment

Tilting table for main turn. spind.

Tilting table for main turning spindle.

For turning and random machining of parts with highly sophisticated shapes and angles in 1 set up.

With integrated spring clamped, hydraulically opened collet chuck. Hainbuch size 65.

(collets and changing device for collet are not incl.)

Inclusive required NC-axes in the control and direct measuring systems for the tilting and turning axes.

Technical data:

tilting equipment / rotary table

tilting angle 120 degree / 360 degree

accuracy tilting $\pm 8''$, rotary $\pm 15''$

torque (tables locked) 2380 / 1400 Nm

Length of bar max. 800 mm.



Main turning spindle 120Nm

Speed range 1 - 4000 rpm.

Torque constant up to 4000 rpm:

At 100% continuous duty 48Nm; at 20% cont. duty 120Nm

Driving power at 4000 rpm:

At 100% cont. duty 20KW; at 20% cont. duty 50KW

Automatic Loading Magazine

For automatically loading of bright round- and profile material in quality 11,

straightness 0,4mm for 800mm length, clearance guide tube: 1mm on diameter.

Stock of material on incline plane at dia. 20mm

32 bars, at dia. 65mm 9 bars.

Unit is installed outside the machine.

Consisting of: - welded base frame

- loading device at adjustable incline plane, with control and decollate device.

- central adjusting of bar-diameter.

Workpiece Data/Workpiece Carrying-off

Workpiece dia. max. 65 mm

Workpiece dia. min. 15 mm

Workpiece length max. 120 mm

Residue length max. 120 mm

Workpiece carrying-off of work area with integrated belt conveyor.

A cover is protecting the belt conveyor against swarf and emulsion.

Take over of the workpiece at the end of the belt conveyor through the customer.

Hydraulic Basic Equipment

Including:

Hydraulic unit (100 bar) including hydraulic hardware for controlled actuation of component clamping in the rotating-/swivelling device and axes clamping.

Electrical software and equipment including pressure control.



Spindle Unit

Tool register HSK A63 DIN 69893
Retention force 20.000 N
Spindle diameter 65 mm
Spindle speed:
Standard 15000 rpm
Incl. safety window brand SEGE

Mainspindle Drive 37 KW - SIEMENS

Driving power over 2500 rpm:
At 100% cont. duty 17 KW; at 20% cont. duty 37 KW
Torque constant up to 2500 rpm:
At 100% cont. duty 65 Nm; at 20% cont. duty 142Nm

Tool Magazine

Tool places 42
Tool diameter maximum:
all places used \varnothing 88 mm
with empty adjacent tool place \varnothing 125 mm (length 100 mm)
Tool length max. 250 mm
Tool register DIN 69893 HSK A63
Tool weight max. 5 kg
Chip-to-chip time approx. 2,4 sec.

Inserting Station and Input Panel – OP10

Menu guided tool data management for loading of
the magazine with turning and milling tools.
To each tool are assigned direct:
32-digit tool ident. no.
in numerical or alphanumerical format.
Length and radius offsets, cutting edge directions
Data input :
At inserting station with guided control menue
identical to the nc-control menue.

Direct Measuring System X-Y-Z-Axis

For all linear axes
Measurement to VDI/DGQ 3441



Installation Data

Space required for machine/equipment approx. 12 m²

Weight approx. 6800 kg

Control voltage 24 V DC

Valve voltage 24 V DC

Installation conditions:

Working voltage 3x400 V \pm 10%; 50Hz; N/PE.

Connected rating machine 46 KVA

Fuse before master switch 3 x 80 A

Connected cross section 4 x 25 mm²

Required air pressure min. 6 bar

Clean air conditions acc. to ISO 8573-1 class 4

Supply pipe inside dia. min. 13 mm.

Guarding Equipment

Enclosure of working area

Full Enclosure of Working Area

As protection against swarf and fumes

A suction is recommended.

Axis movement with open safety door

If the safety door is open, axis movement and spindle rotation are just possible during setting mode.

Speed of axis max. 2 m/min. Spindle RPM max. 800 1/min.

Actuated by press-button and confirmation key.

Lamp in Working Area

Permanent Lubrication low-Maintenance

All linear guides and ball screws are equipped with long-time lubrication systems.

3 years but max. 5000 working hours maintenance-free.

After 5000 working hours the linear guides and ball screws must be lubricated.

2 Air-Conditioning of the Electrical-Cabinet



Swarf Conveyor and Paperband Filtration

Link conveyor suitable for all kinds of material and swarf shapes.

Ejection height 1200 mm on right side of MC.

Tank for 200 l.

External coolant supply integrated in spindle head with adjustable nozzles.

Inner rack filter, build on additional coolant tank 600 l, compact design. filter paper, width 390 mm

Filter performance 200 l/min - emulsion.

Middle filter mesh nominal < 50 microns.

With feed-back facility in the event of paper shortage.

Suitable for all current materials.

Rinsing Pistol

for manual cleaning of the working area.

Machine Supports without Coolant Tray

for levelling and fixing the machine on the ground without coolant tray.

Including all mounting elements.

Labeling of the Machine

The labels on the machine are in German.

Operating Menues of Control

The display of the menus as well as the error and operating messages are in German.

The operating panel of the magazine loading station is in German.

Control Siemens 840D (POWER LINE)

> NCU 572.5 (at 2-C, NCU 573.5) NCK user memory 3MB

> (1 MB free available; depending on the used options)

> PCU 50.3, Operating system windows

> Harddisk, free memory for programs, 10GB

> USB 2.0 - interface and USB-Stick 1GB

> Analysis tools for Service, Ethernet-card is included

> USB 2.0 - connection for: mouse, keyboard

> MPI

> Additional free slots: 2x PCI, 1x CF-Card

Screen size:

Colour display 10,4" - System x26, x31, 332, x33, x34, x36



Pos.	Menge	Artikel Beschreibung	Preis / €
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Colour display 12" - System MT 726 2-C
 Colour display 15" - System x32 (exclude 332), 533, x37, x38 ,
 and MT 724 2C

Max. 24-digit alphanumeric programme names
 Forming of sub-routines according to DIN or standard
 Language and parameter max. nesting 7 times
 3D-lin. interpolation G1 (max. 4 axes simultaneously)
 Machines with tilting and swivel tables
 max. 5 axis simultaneously.
 Circular interpolation G2/G3, helical interpolation
 Polar or Cartesian coordinates measuring system
 49 zero point shifts direct by G-function
 Inclusive of additive zero point shift
 Turning of coordinates; Mirror; Scaling factor
 Insertion of chamfer or radius
 Siemens standard drilling and milling cycles
 (additional G81 - G86 same as Siemens 840C)
 Rigid tapping
 32-digit alphanumeric tool identification
 Tool data input by programme or direct with input panel
 at inserting station
 Tool life monitoring wear or number of parts
 Cutter radius compensation G41/G42 by calculation of
 intersection points or transition radius
 Restart of programme
 Prompt facility
 Editing and programming during machining
 Conversational programming according to DIN 66025
 including graphical generating of contour
 up to 3 axis.
 Diagnostic displ. and operating feed back in clear text
 Oriented spindle stop
 Measuring system: digital absolut incremental encoders
 Screen saver

STAMA warm-up

Definable point in time at which the machine starts demand-oriented
 automatically with a variable warmup programm to recovery the production
 readiness.



External Set-Up Magazine

ESUM for 90 tools in taper ISO 40, hollow taper shank A63 at 2 levels. Tool length 300mm.
Tool dia. 70 mm - in case of free places 155mm. Tool weight 12 kg. Tool change set up magazine to machine magazine. Level 1 approx. 15sec, level 2 approx. 17sec. The magazine is a rotary magazine with 2 plates (each 45tool places). The loading resp. tool change is made by a linear gripper with Z-stroke. The MC is getting a fixed position and is taking the tools from the additional magazine into the tool magazine of the MC during the workpart change over is happening in the working area. For storage in the external magazine in there must be empty place. Z-/Y-Axis incl. easy lub. Remark: Tool-diam & -length must be considered in the Basic-MC. Includes in combination with NC-Control 840D, 210 tools can be save in the tool list.

Pressure Air at Spindle 6 bar

Optional pressure air 6 bar or through internal coolant line/s of spindle head.

Programmable by M- function.

For the external coolant line (ball nozzles)

Immersible recooling system

Compressor-recooling system for coolant emulsion or cutting oil.

Air-cooled. Cooling power 34 MJ (8200 Kcal, 9.5 KW*h).

Refrigerant FCKW-free.

Installed in 900 l. coolant tank.

Incl. control system.

Internal Coolant through Spindle 70 bar

Internal coolant supply through work spindle for tool adaptors to DIN 69871 (SK), Form AD or Form B, for tool adaptors to DIN 69893 (hollow taper shank) form A.

Consisting of:

> 70 bar Bosch-high-pressure pump for coolant (17 l/min)

> Incl. Vario valve, pressure is programmable in 7 steps by M-functions.

(Applicable only in combination with coolant filtration system filter mesh 50 microns).



Counter-Spindle for 6th side 100 Nm

3 NC axis, turning spindle
 Linear and swivel unit 120 degrees NC-controlled
 for machining in the angle range minus 30 up to plus
 90. Swivel axis. for inclusion by means of a stretched spring and
 hydraulic solved special clamping system through centring mount
 - similar to DIN 6353 ZA140.
 For clamping / workpiece transfer after the 5th side machining.
 Stroke linear device = 190 mm.
 Workpiece specified clamping equipment's are not incl.
 Integrated NC controlled turning spindle
 Spindle data: 4500 RPM; max 37,5 KW; max. 100 Nm.
 Draw bar pull: min. 10,4 kN (12 Bar); max. 40 kN (50 bar)

2-Jaw Chuck for turning spindle 100Nm

Chuck diameter 165 mm
 Power chucks operated by tow bar of the turning spindle 100 Nm
 6th side clamping system adjustable.
 Mounting diameter of the turning spindle 140h5.
 Tow bar: connection thread M54x1,5. Stroke per jaw 3,7mm
 Thread adapter tow bar incl.

Measuring device TS27R for MT-Series

Probesystem Renishaw TS27R with adaptor
 plate, mounted in the working room without cover hood.
 Build on the machining range of the spindle.
 Measuring cycles for breakage control as well as for measuring
 of tool length and radius,
 incl. turning tools at the MT-series.
 Not possible is to measure diverent lenght-offsets
 at stepped tools or special cutting tools.

Software Thermal Compensation 3-D Probe

For linear axis X-Y-Z a correction value is determined
 by the stat.3D probe. After measurement the zero point
 offsets corrected by this value. Measurement is
 realized at machine start and after longer standstill
 (adjustable). During production measuring will be
 executed by intervalls, which are adjustable.
 Precondition is the Probesystem VS_2700.0040
 or VS_3000.0523.



Rotating Window

Permits viewing into the working area during machining with coolant.

Signal lamp 3-colour

mounted on the machine cover

red = Stopped

yellow = Warning

green = Automatic cycle

green blinking = automatic mode, program doesn't run

Documentation

Operating manuals, programming and operating manuals 1-fold on a USB-Stick.

Please refer to the manufacturer's instructions for each component.

Standard painting:

3-coloured light grey/basalt grey

RAL 7035/7012/4010 with pink stripes

Main circuit

total power supply 400 / 230V \pm 10 %, 50 cycles N/PE,

neutral conductor, load possible, pressure supply

6 bar, \pm 1 bar at all procedures,

room temperature max 40°

Information Export

We point out that the CHIRON CNC-machining centres are subject to controls. For the export from the European Union an export license is necessary.

Information Machine safety

The machine is designed and built in accordance with the European machine guideline.

Other safety features due to special company rules and specifications can be considered. The actual cost will be invoiced.



Information Coolant lubrication

The machine is designed for standard water soluble coolant and fully enclosed at the standard version. The machine must be equipped with fume extraction.

The machine contents different plastics, varnish, resin and glue, which are selected carefully for using coolant and cutting oil. The use of aggressive coolant and additive could cause major damages and machine stops. Contact in any case your coolant supplier before machine set-up and installation.

