

Complete machine description

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| 1 | 1 | Partly refurbished
vertical CNC-machining centre model FZ 08 KSM
Year of construction: 2007, weight: 3.400 kg | |
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Machine-No. 415-50

Scope of delivery:

Column moving machining centre with fixed table
 Guideways with long-term-grease lubrication

Digital main drive with spindle

with air purge and monitoring of the tool clamping

7,0 kW at 100 %

9,0 kW at 25 % - 11 Nm

Spindle speed range up to 30.000 rpm

Acceleration and deceleration 0 - 30.000 rpm ca. 1,9 sec. each

drilling capacity in St 60

Ø 12 mm

tapping

M 8

milling capacity in St 60

30 cm³/min

Travel:

X-axis 450 mm

Y-axis 270 mm

Z-axis 310 mm

Automatic tool changer

by robust, full encased Pick up Chain magazine,
 with mechanic drive protection and cone cleaning
 above blow out air

No. of tools 40

Tool shaft HSK-A 40 DIN 69893

Max. tool dia. max. 47 mm

Max. tool dia. max. 100 mm if adjacent places are free

Tool length max. 160 mm

Max. tool weight max. 1,2 kg (max. magazine loading 20 kg)

Tool change time appr. 0,8 s (depends on control)

Chip-to-chip-time appr. 1,9 s (depends on control)

Chip-to-chip-time at 90° appr. 2,3 s (depends on control)



Pos.	Qty.	Article Description	Price / €
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Fixed table with chip pan

for optimal chip drop at wet- and dry milling
clamping surface 770 mm x 290 mm
with thread and locating hole grids M16 x ø 15 H7 x 50 mm
table loading capacity max. 500 kg

Digital feed drives for X-, Y- and Z-axis

with digital direct drives and indirect absolut path measuring system
rapid traverse in X-, Y- and Z-axis 75 m/min,
acceleration: 1,0 g in X-axis
1,5 g in Y-axis
2,0 g in Z-axis

Remark:

With normal conditions the machine does not have to be anchored to the floor.
(For slippery floors we recommend anchoring.)

SIEMENS CNC-control 840D

(PCU 50 / NCU 573.5, 12 Messkreise, 1 Kanal)
incl. 10,4" TFT colour LCD screen / full keyboard OP010S
control panel logic Windows NT/XP
NC-memory 256 KB
(max.200 programmes storage capacity)
for ISO 66025 programming
hard disk with approx. 2 GB for free disposal
power meter in screen
screen switch off
look ahead function
Bellshape-acceleration ramp
software limit switch
access authorization over key switch
for tool correction, NC-program changes
and machine parameters
orientated spindle stop
rigid tapping
re-start into program
Subroutines, parameter programming
simultaneous programming
support through cycles

drilling cycles G81-G89
drilling and milling cycles
M- and T- functions
tool offsets for geometry, wear
4 zero offsets G54-G57



30 zero shifts programmable with G-functions
tool radius correction for
intersection computing
crossing radius
contour programming
dimension metric or inch
mirror function
polar coordinates
circular interpolation (360 degrees)
3D and helical interpolation

drip feed function through V24 interface
Universal interface RS 232C (2x V24) at control panel
Ethernet connection RJ45 in control panel

NC-diagnosis
machine-diagnosis

CHIRON Powersafe

Software package for selective shutdown of installed consumers like axis motors, drives, spindles, seal air, airsensing and ancillary equipment in production breaks or during programmable points in time using a shift calendar. Definable point in time at which the machine starts demand-oriented automatically with a variable warmup program to recovery the production readiness.

CHIRON Maintenance Management in the screen

display of the pending maintenance:
advance warning = "prepare maintenance",
warning = "carry out maintenance",
machine stop = "catch up on maintenance".
Abridged instructions for the pending maintenance with graphic illustration on CD-ROM.
Confirmation of the performed maintenance through the maintenance staff by password.

Thermocontrol

Thermodrive

Working hours and piece counter
in the screen

Socket 230 V
at control panel



Socket for portable mini-hand wheel

without emergency stop button,
at control panel

Machine enclosure with full enclosed workspace

with loading doors, electrically interlocked,
including replaceable safety windows,
workspace enclosure with stainless steel covers,
2070 mm high above floor, including machine lamp

Signal lamp on machine enclosure for 3 signals

Signal "red" = failure
Signal "white" = load machine
Signal "green" = machine is running

Cabinet cooler as a door mounting unit

Oil-free air service unit
with automatic condensate separator,
pressure control of the air supply
and micro filter 0,01 µm for air purge

Installation elements

Wash gun

Machine preparation

for through tool coolant system including

- Sealing system in the HSK collet
- coolant distributor installed at the main spindle drive
- Implemented mud flap in the high pressure piping and flow control switch
- Solenoid valve, controlled via machine program (retrofitting not possible)

Chip conveyor (scratch band)

instead of standard coolant equipment
discharge height 490 mm
tank capacity 100 l,
pump capacity 110 l/min at 1,3 bar
coolant cleaning through slot filter box

Fixture washing incl. coolant connection



Pos.	Qty.	Article Description	Price / €
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Automatic loading door of total enclosure
opening and closing, actuating via push button
at control panel

Walk Switch

Automatic central grease lubrication

2-axes NC rotary table with direct drive

completely installed, consisting of:

- NC 2-axes rotary table, type ZASD 160
with digital direct drives through water-cooled torque-motor
- 4th and 5th NC-axis, complete
4th axis lowest increment 0,001°
5th axis lowest increment 0,001°
- base plate to mount on machine table
- pneumatic supply, without control

4th NC-axis +/- 180°, indexing accuracy ± 12"
with direct absolut path measuring system,
spindle speed 250 rpm,
5th NC-axis 360°, indexing accuracy ± 12",
with direct absolut path measuring system,
spindle speed 250 rpm,
center height 220 mm, face plate dia 100 mm,
with center bore dia 30+0,012,
location pin dia 10h7, 4 bolt holes M8
with air purge
with water cooling unit

Preparation for zero point clamping system System R

Glass scales

overpressured in all axes
X, Y, Z = 450 x 270 x 310 mm
(Thermodrive in Basic machine is cancelled)

Mechanical loader interface

breach in the right sidewall
with pneumatic lifting door, electric interlocked



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Direct Switch

for automatic loading doors,
in position 'door open'
(for automatic loading)

Electric interface for loader with "Profibus" - Siemens

on S- machines for loading through side wall of machine
(mechanical feasibility must be checked for respective machine series)
for automatic loading system,
with DP/DP-coupler (slave) in the electrical cabinet,
according to documentation of CHIRON loader interface,
consisting of: circuit diagram, signal description and
functional diagram,
interface tested according to Chiron-description V03.02,
incl. key-operated switch and indicator lamp in the control panel "with loader",

Deviation from the standard interface and set up will be
charged according to effort.
Waiting periods during set up will also be charged.

Recommended options:

- Modification of side wall
- signal lamp, if not already in the basic machine
- tool life control
- tool breakage control
- fixture washing
- chip conveyor, if not included in basic machine
- air sensing
- automatic central lubrication

Note:

The machine has to be anchored with robot loading or
linkage. Anchoring the machine to the ground can be made
by Chiron if wanted. This outlay will be charged according
to effort.

Chiron Lasercontrol Single F500

for tool breakage control,
min. tool $\varnothing > 1\text{mm}$,
incl. test mandrel with tool holder,
transmitter and receiver,
gland and shutter



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Stationary 3D Probe System

type TS 27 R, maker RENISHAW,
with adapter plate and
air blow for the measuring stylus,
for tool breakage control (in one working area),
for automatic tool length measurement,
for automatic temperature compensation,
including process-orientated measuring,
software for measuring cycles,
strategy program and tool holder with ball dia. 12 mm.

Parts location air sensing

with 1 switch, completely installed,
including energy-efficient shutdown during machining.
Remark: Maximum 3 nozzles per switch.

Precondition:

Processed faces or aluminium die casting (not on partition
or ejector flags), no grey cast iron.

At rotary table and standard fixture for rotary table
are additional turning supplies necessary.

Suction point

for customer specific installation
Ø 200 mm on top of the machine enclosure
and electrical preparation in cabinet

Pneumatic connection (A+B)

for pneumatic clamping device
electrically controlled pneumatic connection,
for double acting; pressure control;
pressure control switch with automatic pressure regulation.
(in case of pressure change automatic pressure sensing)

Pneumatic connection controlled

single acting for pneum. clamping device

Clamping power monitoring

2-6 bar, adjustable.



Extension levels of the Sinumerik 840D

Machining of tilted working planes (CYCLE 800)

with 3 linear and 2 additional axes.

- 5-axis-transformation

The machining task is programmed completely in Cartesian coordinates with Cartesian position. The movements of all 5 axes resultant from that are computed internally.

(for Siemens 840 D)

SINDNC

Option to send and receive NC-programs in a network.

The program transfer will be done via operator action group on the Sinumerik.

The client-software (e. g. UNIX, Novell, Windows NT) and the wiring to the network is not included.

CHIRON Tool lifetime control with:

- tool place organization

- sister tool organization

- work field organization by 4-digit program-no. in the screen (just for machines with many work fields)

- tool data check for geometric values

Cutting tools

The cutting tools have to be balanced according to DIN 1940, class G 2,5, in two levels, with max. operating speed

Machine colour

Two-components-structure varnish - 3 colours

window grey acc. to RAL 7040

grey white acc. to RAL 9002

basalt grey acc. to RAL 7012

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 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, according placing the product on the first time onto the market.

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.

