

Pos.	Qty.	Article Description	Price / €
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Complete machine description

- 1 1 **Completely refurbished
vertical CNC-machining centre model FZ 12 KS
Year of construction: 2007, weight: 7.000 kg**

Machine-No. 264-10

Scope of delivery:

Column moving machining centre with fixed table
and machine bed in mineral cast technique
Guideways with long-term-grease lubrication

Drilling capacity in steel	Ø 18 mm
Tapping capacity	M 16
Milling capacity in steel	80 cm ³ /min

Digital main drive with water-cooled motor spindle
with air purge and monitoring of the tool clamping
24 kW at 100 %
36 kW at 25 %
spindle speed range up to 24.000 rpm; 29 Nm
acceleration from 0 to 24.000 rpm
or deceleration in 0,7 seconds

NC swivel head
swivel range -10° / +100°
rapid traverse 52 rpm
lowest increment 0,001°
with direct measuring system ± 5"
VC01100085

Travel:

X-axis	550 mm
Y-axis	320 mm
Z-axis	360 mm

(+ distance spindle-taper to clamping surface acc. to data sheet)

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Automatic tool change

through robust, full enclosed pick up tool changer,
with mechanical impact protection and cleaning
of the tool taper through air blow

No. of tools	64
Tool taper	HSK-A 50 DIN 69893
Max. tool dia.	max. 60 mm
Max. tool dia. for adjacent place with max. dia 40 mm	max. 100 mm
Max. tool dia. for adjacent place with max. dia 20 mm	max. 125 mm
Tool length	max. 250 mm
Max. tool weight	max. 3 kg
Tool change time appr.	0,9 s (depends on CNC)
Chip-to-chip-time appr.	2,4 s (depends on CNC)

Fixed table with chip pan

clamping surface	820 mm x 440 mm
with 3 T-slots	2 x 18 H12, 1 x 18 H 8
table loading capacity	max. 500 kg

AC-servo-motors feed drives for X-, Y- and Z-axes

digital direct drives with direct absolute path measuring system
(glass scales)

overpressured in all axes
rapid traverse in X-, Y- and Z-axes 75 m/min,
acceleration X-axis 1 g, Y-axis 1,2 g, Z-axis 1,5 g

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 572.5, 6 measuring cycles, 1 channel)
incl. 10,4" TFT colour LCD screen / full keyboard OP010S
control panel logic Windows XP
2 x NC-memory 512 KB (extendible till max. 6 MB)
(max. 200 programmes storage capacity)
for ISO 66025 programming
hard disk with approx. 20 GB for free disposal
drilling cycles G81-G89
drilling and milling cycles
M- and T- functions
circular interpolation (360 degrees)
re-start into program
Subroutines, parameter programming
simultaneous programming
contour programming with cycle support

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support through cycles
 polar coordinates
 tool offsets for geometry, wear
 tool radius correction for intersection computing
 crossing radius
 4 zero offsets G54-G57
 30 zero shifts programmable with G-functions
 3D and helical interpolation
 screen switch off
 mirror function
 scaling function
 insert of chamfer and radius
 Universal interface RS 232C (1 x V24) at control panel
 USB-interface at the control panel
 Ethernet connection RJ45 in control panel
 orientated spindle stop
 drip feed function through V24 interface
 dimension metric or inch
 software limit switch
 NC-diagnosis
 machine-diagnosis
 absolute indirect path measurement systems
 power meter in screen
 rigid tapping
 look ahead function

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.

Remote diagnosis and tele service

For the optimization of the maintenance process and trouble shooting through shorter diagnosis times. Detailed information about the machine status is available to support both, internal and also optionally external experts, independent from time and location. This way a faster and more qualified support is possible. Possibility of remote control of the NC-control, analysis of operation sequences and support with programming problems. Access to PLC for diagnosis, trouble shooting and programming.

Notification service with SMS / E-mail e. g. at end of job or in the case of breakdown.
 Simple backup through use of the existing infrastructure of the internet.

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Safe access through defined user rights, access control and encryption of data.

Access through Ethernet connection RJ45 or telephone line (preferably ISDN RJ45 or analog RJ11) with router.

You need a contract with CHIRON for this option.

Precondition:

Internet connection through in-house net or telephone line including the wiring to the machine.

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.

5-axes-machining

for the machining of three-dimensional curved surfaces with 3 linear and 2 additional axes. (TRAORI & CYCLE 800) incl. compressor CompCAD

- 5-axes-transformation with tool orientation and tool center point management.

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

- 5-axes-tool-offset.

The length of the tool is automatically computed and compensated in the movements of the axes.

- Oriented tool withdrawal.

With the interruption of machining (e. g. tool breakage), the tool can be withdrawn orientated and defined.

Working hours and piece counter

in the screen

Socket 230 V

at control panel

Socket for portable mini-hand wheel

without emergency stop button,

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Cabinet cooler as a door mounting unit

Signal lamp on machine enclosure for 3 signals

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

Machine enclosure with full enclosed workspace

with loading doors, electrically interlocked,
 including replaceable safety windows,
 workspace enclosure with stainless steel covers.
 2140 mm high above floor, including machine lamp

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

For installation in an oil pan the installation directly
 on the sheet metal is not allowed. For out of it resulting
 problems there is no warranty. The machine documents for
 approval contain a proposal for the appropriate execution
 of the oil pan.

Wash gun

- 3 Tool place for max. tool dia. up to 125 mm**
 instead of max. tool dia 60 mm,
 for every large tool place the total number decreases at 1,
 tool dia. up to 100 for adjacent place with max. dia 40 mm
 tool dia. up to 125 for adjacent place with max. dia 25 mm
 in compliance with interference outline in the tool magazine.
 Max. tool weight max. 5 kg
 (for option of 48 and 64 tool places)

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

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Coolant equipment KF 150 / KFA 500

(for cast iron slurry, Al with Si \geq 12%)

tank capacity 500 l,

pump capacity from 80 l/min at 3,0 bar

up to 100 l/min at 1,8 bar

high pressure pump capacity 20 l/min at 30 bar

coolant filtration for high pressure and flood coolant

with compact paper bond filter KF 150,

filtration 50 μ m nominal.

twin filter in the high pressure circuit for the protection of the machine.

incl.

Fixture washing

with nozzles controlled with m-functions

for washing the working area

Machine preparation

for through tool coolant system including:

- Sealing system in the DIN 69893 HSK A50 collet
- coolant distributor installed at the main spindle drive
- Coolant leakage sensor
- Implemented mud flap in the high pressure piping
- Solenoid valve, controlled via machine program

We recommend for tool holders the use of our patented coolant tube with sieve.

Advantages:

- Decrease of the clogging in the internal coolant channel.
- Reduction of the wear at the O-ring seal in the collet.

(Subject: required high pressure equipment)

Automatic grease lubrication

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Probe for automatic measuring in the machine

Renishaw - probe - package OMP 40-2LS

- for part measuring and automatic machine compensation,
- probe with optical contact modul and tool taper suitable for machine spindle
 - tracing pin 58 mm with ruby ball dia. 4 mm
 - receiver OMI with integrated interface
 - bracket for receiver
 - process oriented measuring
 - software for measuring cycles and strategy program

Remark:

For the carrying out of machine compensations with probe a suitable reference surface at the machine or at the fixture or an optional gauge block (VCS12100800) are necessary.

Precondition for Fanuc:

- High speed skip and macro common variables
- programm storage 128 KB
(see options Fanuc control)

Suction point

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

Flow control switch

for internal cooling

Flow control switch

for external cooling

Flow control switch

in the suction unit

Machine options for bar machining

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Technology package for turning from bar Ø 65
1 collect chuck Hainbuch-Achsfix-65
1 tailstock mounted on the NC-slide

Lathe spindle

water-cooled motor spindle, installed horizontal,
 with hollow shaft as opening for bars up to ø 65 mm
 14,1 kW at 100 %, 42,5 kW at 5 %
 spindle speed range 15 - 4.500 rpm - 90 Nm
 with direct measuring system
 and hydraulic clamping 800 Nm
 collet chuck with integrated hydraulic actuation
 extension hydraulic unit for clamping collet chuck
 and clamping spindle incl. hydraulic connection
 incl. Dual Check Safety or Safety Integrated
 Warranty: 4.000 h

NC-feeding unit as bar feeder

rapid traverse 60 m/min,
 stroke max. 440 mm, depending on fixture

NC-rotary device with hydraulically actuated clamping vice HZS 110-Z,
Hub 2 x 4 mm

for the machining of the 6th side, installed on NC-slide
 incl. hydraulic supply controlled for clamping / unclamping of the vice
 Clamping- and hydraulic connection
 Technical description of NC-turning unit:
 repetition accuracy ±30", max. spindle speed 80 min⁻¹,
 with pneumatic clamping

Hydraulic unit

for permanent operations
 pressure: 210 bar

Machine table with 2 mounting surfaces

instead of fixed table

CHIRON Lasercontrol Single F500

min. tool Ø > 1 mm,
 for tool breakage control,
 incl. test mandrel with tool holder
 incl. transmitter and receiver, gland and shutter

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Bar feeding from left side

Remark:

After alignment the machine has to be anchored to the floor.
 At bar lengths > 800 mm a bar loader (option)
 with hydrodynamic bearing is necessary.

additionally necessary: fixture washing, removal of the finished part

Carrying-off-Channel with transport belt

On the left side from the machine, cabine opening on the left side.
 Carrying-off-channel consisting of plastic to avoid damage on the part.
 The transport belt is about ca. 250 mm wide and closes in front with the
 machine.
 Coolant return tube to the machine.
 From the front edge of the transport belt the customer is responsible for the
 parts.

Options of SIEMENS 840D

Tool lifetime control with:

- tool place organization
- sister tool organization

Cutting tools

The cutting tools have to be balanced
 according to DIN 69 888, class G 6, 3,
 in two levels, with max. operating speed

Documentation

Operating manuals, programming and operating manuals 1-fold
 on a USB-Stick.
 Please refer to the manufacturer´s instructions for each component.

Machine colour

Two-components-structure varnish - 2 colours
 light grey acc. to NCS S1502-B
 basalt grey acc. to RAL 7012

Main circuit

total power supply 400 / 230V ± 10 %, 50 cycles N/PE,
 neutral conductor, load possible, pressure supply
 6 bar, ± 1 bar at all procedures,
 room temperature max 40°