

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

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|---|---|--|
| 1 | 1 | Vertical CNC-machining centre model FZ 15 KS FX
Completely refurbished pre-owned machine
Year of construction: 2001, weight: 8.700 kg |
|---|---|--|

Machine-No. 129-38

Scope of delivery:

Column moving machining centre in steel- concrete- composite design
 with swing setup
 Suitable for dry-machining with optimized chip drop
 Guideways with long-term-grease lubrication

Drilling capacity in steel Ø	36 mm (with insert drill)
Tapping capacity	M 24
Milling capacity in steel	250 cm ³ /min

Main Spindle drive with AC-motor

9,5 KW at 100 %
 14,0 KW at 15 %
 Spindle speed range: 20 - 20.000 rpm - max.90 Nm
 Spindle speed range and deceleration from 0 – 20.000 min⁻¹
 each 2,2 seconds

Travel:

X-axis	550 mm
Y-axis	400 mm
Z-axis	360 mm

Automatic tool changer

Tool places	48
Tool shaft	HSK A63 DIN 69893
Tool-Ø	max. 82 mm
Tool-Ø	
if adjacent places are free	max. 125 mm
Tool length	max. 250 mm
Tool weight	max. 5,0 kg (optional max. 10,0 kg)
Chip-to-chip-time	approx. 2,4 s (depends on CNC)



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AC-servo motors for x-, y- and z-axes

digital direct drives with indirect absolute path measuring system
rapid traverse in all axes 60 m/min.
acceleration: 0,5 g in X-axis
1,0 g in Y-axis
1,2 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.)

2 axis rotary table type ZAS 280

consisting of:
4th and 5th axis
smallest increment 0,001°

Tilting axis

Tilting angle: $\pm 100^\circ$
Tilting accuracy $\pm 8''$ with
absolute, direct path measuring system RCN 220
via worm drive system
incl. hydraulic clamping system
max. transmittable torque 1.100 Nm
max. torque if the table is clamped 3.600 Nm
max spindle rev. 20 rpm

rotary table faceplate dia 280 mm
with thread and pin hole grid M16 x \varnothing 15 H7 x 50 mm
incl hydraulic clamping system
Tilting accuracy $\pm 8''$ with
absolute, direct path measuring system RCN 220
max. transport weight (workpiece weight): 300 kg
via worm drive system
max. transmittable torque 700 Nm
max. torque if the table is clamped 2.800 Nm
Max spindle rev. 33 rpm

Counter bearing incl. hydraulic clamping system
without drive
max. torque via clamping system 3.600 Nm

Hydraulic unit for clamping of faceplate and counter bearing



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Central Pneumatic or Hydraulic Turning Supply
 4-fold, integrated in A- and B-axis,
 with 4 O-ring connections in the center of the face plate
 Remark:
 power-actuated clamping fixtures on the faceplate
 require additional connections and clamping circuits.

HEIDENHAIN CNC-control TNC 430M

with SIEMENS servo- and main spindle motors
 (9 axes plus spindle)
 incl. 10,4" TFT flat colour LCD screen / full keyboard
 hard disk with 1,5 GB
 for ISO 66025 programming and Heidenhain plain language
 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
 support through cycles
 polar coordinates
 tool offsets for geometry, wear
 tool radius correction for
 intersection computing
 crossingradius
 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 (V24) and RS 422
 orientated spindle stop
 drip feed function from hard disk
 or through V24 interface
 dimension metric or inch
 software limit switch
 NC-diagnosis/machine-diagnosis
 absolute indirect path measurement systems
 rigid tapping
 tool magazine with firm place coding

Working hours and piece counter
 in the screen



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Socket 230 V
at control panel

Cabinet cooler as a door mounting unit

Machine enclosure
with loading door, electrically interlocked,
2200 mm high above floor, incl. machine lamp
service friendly with removable side walls
vertical bellows

Chip conveyor (scratch band)
discharge height 1050 mm, tank capacity 400 ltr,
pump capacity 150 ltr/min at 2,0 bar, incl. bed flushing system

Installation elements

Wash gun

Fully enclosed working area

Central grease lubrication

Coolant equipment
(for cast iron slurry)
tank capacity 800 ltr.,
pump capacity 200 ltr/min at 2,5 bar
(the pump in the chip conveyor becomes the lift pump)
pump capacity 20 ltr/min at 30 bar
high pressure circuit with coolant filtration via paperbondfilter PF50
and twinfilter incl. bed flushing system
(This filtration method will not eliminate increasing cast iron
slurry from the coolant equipment.)



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Machine preparation

for through tool coolant system including:

- Sealing system in the DIN 69893 HSK A63 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)

Suction point

for customer specific installation with socket 400V 15A

Glass scales

maker HEIDENHAIN, overpressured in all axes X, Y, Z = 550 x 400 x 360 mm

Pneumatic connection

electrically controlled pneumatic connection, control via ON/OFF button at the control panel for double acting clamping cylinder; incl. clamping pressure control; conduct up to the connection outside of the machine base for clamping and loosen or rather for control of the powerful-clamping system (pressure transducer) not on the rotary transmission)

Hydraulic connection, not controlled

incl. bulkhead union and quick change couplings from the connectors outside the machine base to the rotary coupling on the ZASP 280

Ethernet-card

incl. software for TNC 430M

Portable handwheel

Brand: Heidenhain

Parameterization of the cycles 19



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Cutting tools

The cutting tools have to be balanced according to DIN ISO 1940, class G 2,5, 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 - 3 colours
light grey acc. to NCS S1502-B
blue acc. to NCS S2050-R80B
basalt grey acc. to RAL 7012

Main circuit

total power supply 400 / 230V \pm 6%/-10 % - 50 cycles N/PE,
neutral conductor, load possible
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.

