

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

- 1 1 Completely refurbished vertical CNC-machining centre model FZ 12 S**
Year of construction: 2000, weight: 6.620 kg

Machine-No. 152-56

Scope of delivery:

- 100 1 **Column moving machining centre** with NC-swivel equipment
 Suitable for dry-machining with optimized chip drop
 Guideways with long-term-grease lubrication

- 200 1 **Main Spindle drive with AC-motor**
 10,0 KW at 100 %
 18,0 KW at 25 %
 Spindle speed range: 20 - 12.000 rpm - max. 140 Nm

Drilling capacity in steel Ø 36 mm (with insert drill)
 Tapping capacity M 27
 Milling capacity in steel 250 cm³/min

- 300 1 **Travel:**
 X-axis 550 mm
 Y-axis 400 mm
 Z-axis 425 mm
 with variable tool changing level

- 400 1 **Automatic tool changer, guaranteed against chips**
 Tool places 20
 Tool shaft HSK A63 DIN 69893
 Tool-Ø max. 65 mm
 Tool-Ø if adjacent places are free max. 150 mm
 Tool weight max. 2,5 kg (5,0 kg on 4 places)
 Tool changing time approx. 0,9 s (depends on CNC)
 Chip-to-chip-time approx. 2,4 s (depends on CNC)

- 500 1 **AC-servo motors for x-, y- and z-axes**
 digital direct drives with **direct absolute encoder**
 rapid traverse in all axes 60 m/min with acceleration of 0,5 g



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600	1	<p>2 axis rotary table type ZAS 280 consisting of: 4th and 5th axis smallest increment 0,001° Swivel axis (B-axis) Face plate Ø 355° Swing angle 90° ± 15° Tilting accuracy ± 30" with via worm drive system incl. hydraulic clamping system max. transmittable torque 1.100 Nm max. torque if the table is clamped 2.200 Nm max spindle rev. 16 rpm</p> <p>NC-Rotary table (A-axis) faceplate Ø 425 mm with thread and pin hole grid M16 x ø 15 H7 x 50 mm incl pneumatic clamping system Tilting accuracy ± 15" with max. transport weight (workpiece weight): 400 kg via worm drive system max. transmittable torque 1.500 Nm max. torque if the table is clamped 3.000 Nm Max spindle rev. 25 rpm</p> <p>Counter bearing incl. pneumatic clamping system without drive max. torque via clamping system 2.000 Nm</p>	
700	1	<p>SIEMENS CNC-control 840D (MMC 103./ NCU 573.2, 6 measuring cycles, 1 canal) incl. 10,4" TFT colour LCD screen / full keyboard OP032S Hard disk, NC-memory 1,5 GB programmes storage capacity Dialog programing, milling simulation reloading block by block from the hard disk for ISO 66025 programming 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</p>	



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		crossingradius 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 (2 x V24) orientated spindlestop drip feed function through V24 interface dimension metric or inch software limitswitch NC-diagnosis machine-diagnosis absolute indirect path measurement systems, rigid tapping	
800	1	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 programm to recovery the production readiness.	
900	1	Working hours and piece counter in the screen	
1000	1	Thermocontrol	
1100	1	Machine enclosure with loading door, electrically interlocked, 2200 mm high above floor, incl. machine lamp service friendly with removable side walls vertical bellows	
1200	1	Coolant equipment with chip conveyor (scratch band) (for cast iron slurry) discharge height 850 mm, tank capacity 500 l, pump capacity 150 l/min at 1,3 bar pump capacity 20 l/min at 20 bar incl. bed flushing system	



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1300	1	70 bar high pressure pump flow rate 20 l/min at 20 bar - 11 l/min at 70 bar with vario pressure control valve for 8 programmable pressure stages pre-defined pressure steps (20, 30, 40, 50, 55, 60, 65, 70 bar) instead of standard high pressure pump	
1400	1	Vacuum full flow cleaning degree of purity 50 µm	
1500	1	Machine preparation for through tool coolant system including, DIN 69893 HSK A63 collet	
1600	1	Direct measuring system A-axis via angle encoder system Heidenhain RON 287 Accuracy: ±8"	
1700	1	Direct measuring system B-axis via angle encoder system Heidenhain RON 287 Accuracy: ±8"	
1800	1	Pneumatic connection 2-fold, integrated in A- and B-axis, on the face plate	
1900	1	Hydraulic connection 2-fold, integrated in A- and B-axis, on the face plate	
2000	1	Automatic loading door of total enclosure opening and closing, actuating to closing via two-hand push buttons	
2100	1	Fully enclosed working area	
2200	1	Exhaust fan with air cleaner exhaust capacity 1.000 m3/h	
2300	1	Cabinet cooler as a door mounting unit	
2400	1	Sheet covering for hydraulic – and pneumatic units	



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2500	1	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)	
2600	1	Hydraulic connection for 210 bar with 2 connecting couplings "A + B" and hydraulic installation up to outside of machine bed, electrical control for clamping ON - OFF via push button at control panel	
2700	1	HAWE Hydraulic unit pressure: 210 bar supply capacity: 6 l/min. incl. valves for supply of 1 clamping device and 1 pressure switch for clamping control	
2800	1	Portable handwheel for conventional travel	
3000	1	Signal lamp for 3 signals Signal "red" = failure Signal "white" = machine loaded Signal "green" = machine is running	
3100	1	Probe for automatic measuring in the machine Renishaw - probe - package MP10 probe with optical contact module HSK-A63 with installed input/output switch tracing pin 50 mm with ruby ball dia. 6 mm Interface MI12 bracket for infrared-receiver process oriented measuring software for measuring cycles	
3200	1	Cutting tools The cutting tools have to be balanced according to VDI 2060, class G 2,0 Machine colour Two-components-structure varnish - 2 colours light grey acc. to NCS S1502-B basalt grey acc. to RAL 7012	



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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.

