

Pos.	Qty.	Article Description	Price / €
1	1	<p>Function tested vertical CNC-machining centre model FZ 08 FX M Year of construction: 2017, weight: 4.500 kg</p> <p>Machine-No. 357-54 Operation hours: 762 hours</p> <p>Scope of delivery:</p> <p>Column moving machining centre in accordance with the scope described below</p>	
1020	1	Machining medium oil	
1060	1	<p>Machine base</p> <p>Splash guard cover with fully enclosed workspace with loading doors, electrically interlocked, including interchangeable safety windows, workspace partition with stainless steel covers, Height 2,070 mm above floor, including machine lamp</p> <p>Machine base prepared for installation of a 2-axis swivel mechanism</p> <p>Minimum distance spindle nose - table surface 118, 5 mm</p> <p>Travel: X-axis 450 mm Y-axis 270 mm Z-axis 310 mm</p>	
1080	1	<p>Spindle head single-spindle for integration of 1 motor spindle</p>	



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1100	1	<p>Main drive with water-cooled motor spindle pressurized with sealing air and monitoring of the tool clamping 7.0 kW at 100% duty cycle 9.0 kW at 25 % duty cycle spindle speed range up to 30,000 min⁻¹ torque max. 11 Nm acceleration from 0 to 30,000 min⁻¹ or deceleration in 1.9 seconds</p> <p>Drilling capacity, dia. 12 mm Tapping capacity M 8 Milling capacity 30 cm³/min made from steel E355</p>	
1120	1	<p>CHIRON spindle monitoring for the graphical display of the load at the main spindle through vibrations from the machining process on the screen. Direct feedback to the operator and machine protection through dynamic warning and switch-off threshold, as well as emergency shut-down at collision.</p>	
1140	1	<p>Automatic tool changer robust, fully enclosed pick up tool changer, with mechanical impact protection and air blast taper cleaning No. of tools 40 Tool places no. 29 till 39 are for turning tools Tool taper HSK-A 40 DIN 69893 Max. tool dia. Max. 47 mm if all magazine pos. are occupied Max. tool dia. Max. 100 mm if adjacent places are free Tool length max. 200 mm Max. tool weight max. 1.2 kg Tool change time approx. 0.8 s (depends on CNC) Chip to chip time approx. 1,9 s (depends on CNC)</p>	
1160	1	<p>Feed drive for X-, Y- and Z-axes digital direct drive with indirect absolute measurement systems Rapid speed 75 - 75 - 75 m/min Acceleration 1,0 - 1,5 - 2,0 g</p>	
1180	1	<p>Direct measurement system X-axis overpressurized</p>	
1200	1	<p>Direct measurement system Y-axis overpressurized</p>	



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1220	1	Direct measurement system Z-axis overpressurized	
1240	1	Automatic central oil lubrication	
1260	1	<p>SIEMENS CNC-control 840D solution line (TCU / NCU 720.3), 1 channel incl. 10.4" TFT color monitor standard keyboard / control panel OP010S operator interface Operate NC-memory 3 MB (max. 1 MB freely available) (max. 200 programs storage capacity) for executing part programs according to DIN 66025 power display, operating hour and piece counter on the screen dark switching of screen look ahead with dynamic pre-control Software limit switch access authorization via key-operated switch for tool compensations, NC-program changes and machine parameters</p> <p>oriented spindle stop re-start into program subroutine technology in high-level language and parameter simultaneous programming</p> <p>cycle support drilling cycles G81-G89 drilling and milling patterns measuring in JOG</p> <p>M and T functions tool offsets for geometry, wear 4 programmable zero offsets G54-G57 30 zero shifts programmable via G-functions tool radius correction with intersection computing insert chamfers and radii crossing radii contour programming scaling function mirror function polar coordinates circular interpolation (360 degrees) 3D and helical interpolation</p> <p>USB-interface at control panel,</p>	



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		<p>sending and receiving CNC-programs in networked operating by the connection with logical drives, for example a network, the wiring to the network is not included,</p> <p>NC-diagnosis with help function machine-diagnosis</p>	
1280	1	<p>Remote diagnosis and teleservice Optimization of the maintenance process and shortening of troubleshooting through faster diagnosis: 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 for the analysis of operation sequences and support with programming problems. Access to PLC for diagnosis, troubleshooting and programming. Notification service by text / email, e.g. at end of job or in the case of breakdown. Simple backup through use of the existing infrastructure in the internet. Safe access through defined user rights, access control and encryption of data. Access through Ethernet connection RJ45.</p> <p>A contract with CHIRON is necessary to use this option.</p> <p>Pre-requisite: The connection of the machine to the internet through in-house network has to be provided by customer.</p>	
1300	1	<p>CHIRON maintenance management on the screen display of the pending maintenance: advance warning = "prepare maintenance" warning = "carry out maintenance" machine stop = "catch up on maintenance"</p> <p>Brief instructions for the pending maintenance with graphic illustration on USB data-carrier. Password protected confirmation of the maintenance work carried out by the maintenance staff.</p>	



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1320	1	<p>5-axes-milling package for the machining of three-dimensional curved or tilted surfaces with 3 linear and 2 additional axes (TRAORI & CYCLE 800), incl. compressor CompCAD. 5-axes-transformation with tool tracking. The machining task is programmed completely in Cartesian coordinates with Cartesian position and orientation. The resulting movements of all 5 axes are calculated internally with the 5-axes-transformation. 5-axes-tool-length compensation The length of the tool is automatically computed and compensated in the movements of the axes.</p>	
1340	1	<p>2 axis rotary table type CASD 160 with turning spindle and pneumatic rotary feedthrough as C-axis consisting of:</p> <p>NC-swivel axis as B-axis swing angle: - 100° + 45° repetition accuracy ± 5" with absolute, direct path measuring system ECN 225 with direct drive by torque-motor max. transmittable torque 537 Nm with clamping actuated by spring-force holding torque 690 Nm spindle rev. 100 rpm</p> <p>Turning spindle as C-axis Motor spindle watercooled</p> <p>Turning diameter 65 mm 7,3 kW at 100 %, 9,8 kW at 15 % ED, Spindle speed range 15 – 6.500 min-1 – 14,3 Nm, with integrated clamping 60 Nm at 6 bar; 120 Nm at 12 bar (Actuation pneumatic and hydraulic) With direct measuring system Pneumatic rotary feedthrough 3-wired, and compressed air for clamping chucks, incl. turning cycles warranty: 4.000 h</p>	
1360	1	<p>Operating hours and piece counter on the screen</p>	



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1380	1	Socket at control panel (for description see "main circuit")	
1400	1	Electrical cabinet cooler as door mounting unit	
1420	1	Signal lamp for 3 signals Signal "red" = failure Signal "white" = load machine Signal "green" = machine is running	
1440	1	Wash gun placed outside of the machine's splash guard cover, incl. solenoid valve for coolant supply	
1460	1	Oil-free air service unit with electric main switching-off and automatic condensate separator, pressure control of the air supply and micro filter 0.01 µm for sealing air	
1520	1	- Coolant Package -	
1540	1	Coolant equipment with chip container tank capacity approx. 100 l pump capacity 60 l/min at 1 bar Coolant purification through interchangeable sieve box and sedimentation basin. Incl. basin with clamp frame to insert filter fleece for the separation of extra fine chips	
1550	1	- Further additional equipment coolant -	
1555	1	Flow control switch for external cooling	
1560	1	- Options exhaust / fire extinguishing -	
1580	1	Fire extinguishing system CHIRON Kraft & Bauer - extinguishing agent CO2 consisting of: maximum heat detector, flame detector, fire signaling (audible and visual), fire detector with manual release button, extinguishing agent control with supply of CO2 and weight monitoring,	



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		supply pipes with extinguishing nozzles in the working area. Note: The proper functioning of the fire extinguishing system must be checked by a skilled person as needed, but at least once a year.	
1590	1	CHIRON FireEx extinguishing system check by CHIRON experts 1 day - plus expenses for travel and lodging	
1595	1	Exhaust fan with air cleaner exhaust capacity 800 m ³ /h Fumes and gases that arise during the processing are not filtered by this unit. In this case we recommend the connection to a central exhaust system.	
1598	1	Pressure relief valve and shut-off valve to discharge the pressure to the outside and to shut off the suction channel incl. monitoring sensors	
1599	1	- Additional equipment rotary tables / basic fixtures -	
1600	1	- Options pneumatics / hydraulics -	
1620	1	Pneumatic connection controlled with A/B connection for pneumatic clamping device electrically controlled pneumatic connection for double acting clamping cylinder, 1 pressure regulator, pressure control switch by means of differential pressure switch (in case of pressure change automatic pressure sensing)	
1640	1	Pneumatic connection controlled with A connection for pneumatic clamping device electrically controlled pneumatic connection, for single acting clamping cylinder, 1 pressure regulator, pressure control switch with differential pressure switch (in case of pressure change automatic pressure sensing)	
1680	1	- Options measuring / tool breakage control -	
1700	1	CHIRON Lasercontrol 40 NT min. tool dia 0.1 mm, max. tool dia 40 mm, for tool breakage control (in one working area), for automatic tool measurement,	



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		for automatic machine compensation in 2 axes, including process-oriented measuring, software for measuring cycles and strategy program, incl. air jet for tool cleaning and test mandrel with tool holder	
1720	1	Orientation of the turning tools by CHIRON Lasercontrol 40 Increase of the leaser, to ensure a measuring in the Y-axis	
1740	1	Probe for automatic measuring in the machine Blum - probe - package TC 52 for part measuring and automatic machine compensation probe with optical contact module and tool taper suitable for machine spindle tracing pin 50 mm with ruby ball dia. 4 mm infrared-receiver and interface process oriented measuring software for measuring cycles and strategy program	
		Remarks: In order to carry out machine compensations with probe a suitable reference surface is necessary on the machine or on the fixture, or an optional gauge block.	
1760	1	- Options machine operation -	
1780	1	Workpiece clamping/unclamping with open loading door Special operating mode including push button and key-operated switch. Remarks: This operating mode may only be executed if there is no risk of injury from clamping fixtures used. The clamping and unclamping movement of the clamping fixtures must be smaller than 4 mm. This operating mode may be activated with a key-operated switch by authorized and specifically instructed staff only.	
1800	1	Automatic loading door of splash guard cover opening and closing, actuation via push button at control panel	



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1850	1	- Options electrical cabinet -	
1855	1	Undervoltage relay in case of inadmissible deviation of the power supply the machine will be defined shutdown.	
1860	1	- Options NC- control -	
1880	1	SIEMENS Tool lifetime monitoring with: tool place organization sister tool organization	
1900	1	Feed per revolution for rigid tapping	
1920	1	CHIRON Kinematics Fit with measuring ball To ensure best milling results 5-axis-machines require calibration at regular intervals. This option provides for automatic measuring of the machine kinematics by sampling a measuring ball in the working area and subsequent adjustment of the machine-transformation parameters for rotating and tilting axes. For machines with 2 axis rotary table or swivel head with rotary table. Incl. option for NC control and calibrated measuring ball with holder. Pre-requisite: spindle probe and 5-axes-machining on machines with Siemens or Fanuc control	
1940	1	- Options Automation -	
1960	1	Universal, automatic loading and unloading-system with 6-axis robot and pallet stack fully integrated, space-saving design. Unlimited access to the working respectively loading area of the machine for changeover operations or manual loading through revolving door. Integrated safety enclosure with drip pan for spilled coolant. Including tray for NIO parts, machine equipment, loader interface and direct door switch in position 'door open'. New raw part pallets respectively finished part pallets can be added respectively withdrawn without interruption. Pallet stack prepared to contain pallets 300 x 400 mm. Stack height: max. 24 pallets at a maximum of 20 mm (pallet with	



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		<p>workpiece), if the pallets are higher, the number of pallets will reduce accordingly (12, 8 or 6 pallets at a maximum of 45 mm, 70 mm or 95 mm). Weight: maximum 5 kg per pallet with 24 pallets, a total of maximum 120 kg.</p> <p>Robot: FANUC LR Mate 200 iD 7L with FANUC R-30iB control, for the integration of a pneumatically activated workpiece gripper with workpiece-specific gripper fingers. Incl. 'Start/stop' button for a defined stop and restarting of the robot, 'Home position' button to move the robot to the home position and 'Empty cycle' button to empty the machine Pallet handling within the automatic loading and unloading-system is carried out by the robot. Blower system to clean workpiece and clamping fixture mounted to the robot, incl. controlled pneumatic connection</p> <p>Remarks: workpiece-specific items such as pallets, pallet inlays gripper fingers, and robot programming are not included in the scope of supply of the loading and unloading system.</p> <p>Recommended options for the machine: automatic doors tool life monitoring tool breakage control fixture washing chip conveyor, if not included in basic machine parts location / air sensing</p>	
1980	1	<p>Double gripper pneumatically activated prepared for installation of workpiece-specific gripper fingers, max. weight of workpiece approx. 1.5 kg.</p>	
2000	1	<p>Turning station for workpieces designed for 2 positions: 0° and 180° prepared for installation of workpiece-specific gripper fingers, incl. controlled pneumatic connection</p>	
2020	1	<p>Tray for SPC parts to withdraw workpieces from automatic cycle, selection through NC-program or via button 'Measuring part request'</p>	



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2040	6	Base pallet 300 mm x 400 mm made of sheet steel, without workpiece-specific pallet inlays	
2340	1	- Execution of documentation -	
2360	1	Language NC control Language NC control german	
2380	1	Operating manual according to Machinery Directive 2006/42/EG 1 printout in a ring binder (DIN A4) and (1) USB data-carrier in file format PDF	
2400	1	Documentation spare parts / wear parts list/ Bill of materials 1 printout in a ring binder (DIN A4) and (1) USB data-carrier in file format PDF Language parts lists / prints german	
2420	1	Documentation of circuit diagram and fluidic scheme 1 printout in a ring binder (DIN A4) and (1) USB data-carrier in file format PDF	
2440	1	- Execution other -	
2460	1	CHIRON FluidTower in fully enclosed design, for space-saving accommodation and vibration decoupling of ancillary equipment.	
2500	1	Installation elements Installation of an oil pan directly on the sheet steel is not allowed. We will not assume liability for any resulting problems. The machine documents for approval contain a proposal for the appropriate design of the oil pan. Machine color two-component structured paint - 3 colors light grey acc. to NCS S1502-B blue acc. to NCS S2050-R80B grey basalt acc. to RAL 7012	



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Main circuit

pressure supply 6 bar +1 bar / -0.5 bar for all procedures
 room temperature: 15 up to max 40 degrees Celsius
 Neutral conductor resistant
 Protective conductor existing
 Frequency 50 Hz
 Power outlet type SEV24508 TYP13
 Supply voltage machine 3x400 volt ± 10%
 Power outlet voltage 230 volt ± 10%

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.

