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Item	Qty	Description
1000	1	Vertical CNC-machining center CHIRON FZ 12 S
1040	1	Year of construction: 2000 Condition: completely refurbished According to described below scope of delivery Column moving machining centre with NC-swivel equipment Suitable for dry-machining with optimized chip drop Guideways with long-term-grease lubrication
1060	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 cm ³ /min
1080	1	Travel: X-axis 550 mm Y-axis 400 mm Z-axis 425 mm
1100	1	Machine enclosure with sliding doors, electrically interlocked, 2200 mm high above floor, incl. machine lamp service friendly with removable side walls vertical bellows
1120	1	2 axis rotary table type ZAS 400 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 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

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max. transport 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
 Counter bearing incl. pneumatic clamping system
 without drive
 max. torque via clamping system 2.000 Nm

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|------|---|--|
| 1140 | 1 | <p>Automatic tool changer
 No. of tools 20
 Tool shaft HSK A 63 DIN 69893
 Max. tool dia. 65 mm if all magazine pos. are occupied
 Max. tool dia. 150 mm if adjacent places are free
 Max. tool weight 2,5 kg (5,0 kg at 4 places)
 Tool change time appr. 0,9 s (depends on CNC)
 Chip-to-chip-time appr. 2,4 s (depends on CNC)</p> |
| 1160 | 1 | <p>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.
 with 0,5 g acceleration</p> |
| 1200 | 1 | <p>SIEMENS CNC-control 840D
 (MMC 100.2 / NCU 571.2)
 incl. 10,4" TFT colour LCD screen / full keyboard OP032S
 NC-memory 256 KB
 (max.200 programmes storage capacity)
 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
 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</p> |

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		dimension metric or inch software limitswitch NC-diagnosis machine-diagnosis absolute indirect path measurement systems powermeter in screen rigid tapping look ahead function
1220	1	Working hours and piece counter in the screen
1240	1	Thermocontrol (deactivated with use of measuring systems e.g. spindle probe, stationary 3D probe or laser control)
1260	1	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.
1280	1	Wash gun
1300	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 high pressure circuit with coolant filtration via paperbondfilter and twinfilter incl. bed flushing system (This filtration method will not eliminate increasing cast iron slurry from the coolant equipment.)
1320	1	70 bar high pressure pump flow rate 20 l/min at 30 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
1340	1	Vakuum-Vollstromreinigung (Ausnahme Wannenspülung) Reinheitsgrad 50 µm nur in Verbindung mit HD-Späneförderer
1360	1	Machine preparation for through tool coolant system including: <ul style="list-style-type: none"> - 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

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and flow control switch
 - Solenoid valve, controlled via machine program

* At HSK A63 we recommend for tool holders the use of our patented coolant tube with sieve.
 Advantages: Decrease of the clogging in the internal coolant channel.

(Subject: required high pressure equipment)

- 1380 1 **Direct measuring system A-axis**
 via angle encoder system Heidenhain RON 287
 Accuracy: $\pm 8''$

- 1400 1 **Direct measuring system B-axis**
 via angle encoder system Heidenhain RON 287
 Accuracy: $\pm 8''$

- 1420 1 **Central Pneumatic or Hydraulic Turning Supply**
 2-fold, integrated in A- and B-axis,
 with 2 connecting couplings in the center of the face plate
 Precondition: hydraulic connection
 with hydraulic unit
 or controlled pneumatic supply

- 1460 1 **Automatic loading door of total enclosure**
 opening and closing, actuating to closing via
 two-hand push buttons

- 1480 1 **Fully enclosed work space**

- 1500 1 **Exhaust fan with air cleaner**
 exhaust capacity 1.000 m³/h

 Smoke and gases that arise during the
 processing are not filtered by this unit.
 In this case we recommend the connection
 to a central exhaust fan.

- 1520 1 **Cabinet cooler as a door mounting unit**
 with sealed cabinet

- 1540 1 **Blechabdeckung**
 für Hydraulik- bzw. Pneumatik-Aggregate

- 1560 1 **Pneumatic connection**
 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)

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- 1580 1 **Hydraulic connection for 200 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
- 1590 1 **Central Pneumatic or Hydraulic Turning Supply**
2-fold, integrated in A- and B-axis, with 2 connecting couplings in the center of the face plate
Precondition: hydraulic connection with hydraulic unit or controlled pneumatic supply
- 1600 1 **Hydraulic unit**
pressure: 200 bar
supply capacity: 6 l/min.
incl. valves for supply of 1 clamping device and 1 pressure switch for clamping control
- 1640 1 **Portable handwheel**
for conventional travel control panel
- 1660 1 **Signal lamp for 3 signals**
Signal "red" = failure
Signal "white" = machine loaded
Signal "green" = machine is running
mounted on machine enclosure

(for FZ 12 W Magnum)
- 1680 1 **Meßstaster für automatisches Messen in der Maschine**
Renishaw-Meßstaster - Paket MP10
- Meßstaster mit optischem Berührungsmodul
Steilkegelschaft HSK A-63
mit eingebautem Ein-/Ausgangsschalter
Tastereinsatz 50 mm mit Rubin-Kugel Ø 6
- Interface MI12
- Tragarm für Infrarotempfänger
- NC-Option: Prozessnahes Messen
- NC-Option: Software für Meßzyklen
- 1700 1 **Maschinenfarbe**
Zweikomponenten-Strukturack - 2-farbig
hellgrau nach NCS S1502-B
basaltgrau nach RAL 7012
- 1720 1 **Werkzeuge**
Werkzeuge müssen ausgewuchtet werden nach VDI 2060 Gutestufe Q 2,0

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1740 1 **Documentation acc. to CE of the first delivery into market**
1 x safety regulations in a folder in English
1 x complete documentation on a USB as PDF
Language of the operating manuals and safety in English