CHIRON Group

Data sheet No. 20469411 / 13.08.2024

Item	Qty	Description
1000	1	**Vertical CNC-machining center** **DZ 15 W Magnum high speed plus 297-97**
1040	1	**Condition**: partly refurbished **Year of construction:** 2015
		Moving column machine according to the scope described below
1060	1	**Machine base in mineral casting technology**
1080	1	**Splash guard cladding with fully enclosed work area** with loading door, electrically secured incl. replaceable safety windows Work area partition with stainless steel slats Height 2140 mm above floor, incl. machine light
1100	1	**Mini control panel** with start and acknowledgement button for pallet organization M61/M62
1120	1	**Integrated workpiece changing device IWW 0/180°** for optimum chip fall with center partition made of sheet steel, Workpiece changing time approx. 3.5 s depending on weight, self-regulating by self-learning speed control. Transport load per side 0 - max. 250 kg, max. 120 kg weight difference between the two sides of the table. Each side of the table is prepared for the assembly of a rotary table package.
1140	1	**Distance spindle mount - pivot center IWW maximum 35 mm**
1160	1	**Travels:** X-axis 400 mm Y-axis 400 mm Z-axis 425 mm
1180	1	**2-axis swivel device CHIRON CASD 280-2** **built into the integrated workpiece changing device IWW 0/180°** **consisting of** NC axes ready to plug in smallest input step 0.0001° Pneumatic connection controlled for sealing air Pneumatic connection controlled for clamping Technical description: Bridge dimension 700 mm Swivel axis ATU 200 as A-axis Swivel angle - 10° / + 138° Swivel radius 285 mm Bridge dimension 700 mm Repeat accuracy ± 5" with absolute, direct path measuring system ECN 225

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NC rotary table as C-axis
2 x faceplate ø 245 mm
with thread and fitting hole grid
M16 x ø 15 H7 x 50 mm
Spindle distance a = 320 mm
Repeat accuracy ± 5" with
absolute, direct measuring system ECN 225
digital direct drive with torque motor
max. transmittable torque 180 Nm
with pneumatic clamping
Holding torque 690 Nm
max. transport load 75 kg per face plate
Speed 200 min-1

Counter bearing without drive
Total holding torque of swivel axis
and counter bearing 2,000 Nm

1200 1 **Central hydraulic or pneumatic rotary feed-through**
6-core, integrated in A- and C-axis
with 6 O-ring connections in the center of the faceplate
Remark:
Power-operated clamping devices on the faceplate
require additional connections and clamping circuits

1220 1 **Assignment of work area - rotary table**
AF1 Rotary table CASD 280/2 Positioning axis
AF2 Rotary table CASD 280/2 positioning axis

1240 1 **Double-spindle headstock**
Prepared to accommodate 2 main spindle motors with spindles
Spindle distance in X-axis 320 mm

1260 1 **Main spindle drive with 2 water-cooled AC motors**
with sealing air, with tool clamping monitoring
12.0 kW at 100% ED
18.0 kW at 25% duty cycle
Speed up to 20,000 min-¹
Torque max. 90 Nm
Speed acceleration from 0 to 20,000 min-¹
or deceleration in 2.2 seconds

Drilling capacity 2 x Ø 36 mm
Thread cutting 2 x M 24
Milling capacity 2 x 150 cm³/min
in E335 steel

1280 1 **Chip-safe automatic tool changer**
Tool places 2 x 12
Tool shank HSK-A 63 DIN 69893
Tool Ø max. 65 mm
Tool Ø with free neighboring places max. 175 mm
Tool weight max. 2.5 kg (5.0 kg at 2 x 2 places)
Tool change time approx. 0.9 s (depending on control system)

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1300 1 **Feed drive for X-, Y- and Z-axis**
Digital direct drives with indirect absolute position measuring systems
Rapid traverse speed 75 - 75 - 75 m/min
Axis acceleration 1.0 - 1.0 - 1.0 g

1320 1 **Direct displacement encoder X-axis**
overpressured

1340 1 **Direct displacement encoder Y-axis**
overpressured

1360 1 **Direct distance measuring system Z-axis**
overpressured

1380 1 **Automatische zentrale Ölschmierung**

1400 1 **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

oriented spindle stop
re-start into program
subroutine technology in high-level language and parameter
simultaneous programming
cycle support

drilling cycles G81-G89
drilling and milling patterns
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
dimension metric or inch
scaling function
mirror function
polar coordinates
circular interpolation (360 degrees)
3D and helical interpolation

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USB-interface at control panel,

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,

NC-diagnosis with help function
machine-diagnosis

1420 1 **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.

The router is available free of charge.
If this part or this service will not be used, the router is going to be removed
by our service-staff.

During warranty this service is free of charge.
After the warranty has expired, you have the option of extending the
warranty on an annual basis.

Pre-requisite:
The connection of the machine to the internet through in-house
network has to be provided by customer.

1440 1 **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"

Brief instructions for the pending
maintenance with graphic illustration on CD-ROM.
Password protected confirmation of the
maintenance work carried out by the maintenance staff.

1460 1 **Hydraulic unit**
for continuous operation
pressure: 200 bar

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1480 1 **Operating hours and piece counter**
on the screen

1500 1 **Socket at control panel**
(for description see "main circuit")

1520 1 **Socket for portable mini-hand wheel**
without EMERGENCY-STOP button, at control panel

1540 1 **Electrical cabinet cooler mounted to the door**

1560 1 **Signal light for 3 signals**
Signal "red" = fault
Signal "yellow" = machine loaded
Signal "green" = machine running

1580 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

1600 1 **Chip conveyor (scraper belt)**
tank capacity 390 l
pump capacity 250 l/min at 1.4 bar
coolant purification through slotted filter box

1620 1 **Machine preparation for coolant flowing through spindle**
with rotary feedthrough at the hollow shaft
and high pressure piping with flow control switch.

Note:
At SK version in form A.
At HSK we recommend the use of the patented coolant tube with sieve for the tool holders.
Advantage: Decrease the risk of clogging in the internal coolant bores.

1640 1 **Coolant equipment KF 150 / FKA 500**
(also for sludge generating materials, e.g. grey cast iron, GGG, Al with Si >/= 12%)
tank capacity 500 l

low pressure pump capacity from 40 l/min. at 3.2 bar
up to 120 l/min at 3.2 bar
high pressure pump capacity 28 l/min at 30bar

full stream purification via compact paper bond filter KF 150,
with coolant purification 50 µm nominal
twin filter in the high pressure circuit for
the protection of the machine

1660 1 **Fixture washing**
in the machining station

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1680 1 **Extraction unit with air cleaner**
Extraction capacity 800 m³/h

Fumes and gases produced during processing are not
are not extracted by this unit.
In this case, we recommend connection to
a central extraction system.

1700 1 **Workpiece support control**
(air sensing)
for coarse sensing
with energy-efficient back pressure monitoring via 1 pressure switch
incl. pneumatic and electrical installation
Note: max. 3 nozzles per switch
For rotary table and basic devices, additional
additional rotary feedthroughs may be required.

1720 1 **Pneumatic connection**
with uncontrolled line and 1 connection coupling

1740 1 **Hydraulic connection for 200 bar**
with 2 connection couplings A+B
and hydraulic installation up to connection
outside the machine base frame
incl. directional control valve for controlling
of 1 double-acting clamping circuit
with pressure switch for electrical clamping pressure control
and electrical control for clamping OPEN-CLOSE

1760 1 **CHIRON Lasercontrol Single F1000**
for tool breakage control
min. Tool diameter > 1 mm
Transmitter-receiver distance > 1,000 and <= 2,000 mm,
incl. test mandrel with tool holder
Transmitter and receiver
Dirt cover with lock

1780 1 **Automatic loading door of the splash guard cladding**
"opening" and "closing",
Actuation via button on the control panel

1800 1 **Walk Switch**

1820 1 **M function package**
M72/M73 and M74/M75: 2 function pairs for "ON/OFF simple"
M76/M78: Control of a peripheral device with external reset
(interlocking of the machine sequence)

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1840 1 **Variable clamping logic CHIRON**
For defining different clamping and unclamping sequences,
for max. 10 functions with max. 8 steps,
taking into account delay times and
Clamping circuit monitoring such as pressure switches or
air contact control.
Saving and subsequent loading of the created configuration
configuration enables quick retooling.

1860 1 **SIEMENS tool life monitoring with:**
Tool station organization
Sister tool organization

1880 1 **Reverse feed**
for thread cutting without compensating chuck

1900 1 **Electrical loader interface with Profibus**
for loading through automatic loading door
for automatic loading system,
with DP/DP coupler (slave) in the control cabinet,
according to CHIRON loader interface documentation,
consisting of: Circuit diagram, signal description and function diagram,
Interface tested according to CW description,
incl. key switch and indicator light in the control panel "with loader",
incl. direct door query in "open" position.

Interface design deviating from the standard, as well as
Commissioning is charged at cost.
Waiting times during commissioning will be invoiced.

Recommended expansion stages of the machine:
Automatic doors
Tool life monitoring
Tool breakage monitoring
Fixture flushing
Chip conveyor, if not already in basic machine
Workpiece support monitoring / air sensing
Automatic central lubrication

Note: For robot loading or interlinking
the machine must be anchored. If required, anchoring can be
by CHIRON for a charge at cost if required.
be taken over

1920 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

1940 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

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1960	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
1980	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.
2000	1	**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
2020	1	**Machine measurement** Laser measurement of the machine according to VDI / DGQ3441
2040	1	**Conversion of the front doors to laminated safety glass panes** Replacement interval 8 years
2060	1	**Conversion of the side doors to laminated safety glass panes** Replacement interval 8 years