

TECHNICAL DATASHEET

CNC-TRAVELLING COLUMN MILLING MACHINE

manufacturer	PARPAS
type	SHARK One
control	HEIDENHAIN iTNC 530 HSCI
built	2016



Travels

X-axis (longitudinal)	3.500 mm
Y-axis (cross)	1.083 mm
Z-axis (vertical)	1.074 mm

Clamping table

Clamping surface	4.000 x 1.000 mm
Thread bore with fitting	

Feeds

X-, Y- and Z-axis, stepless	2 - 30.000	mm/min.
Rapid feed X / Y / Z	30	m/min
Max. feed force of axis	10.000	N

2-axis Milling Head

2-axis milling head TUB-E92 with power on Torque-Motors for 5-axis-simultaneous processing		
power 100% ED	29	kW
Speed, stepless	0 - 18.000	Min-1
Max. torque	92	Nm
Turning speed axis A/C	60	min-1
Tool taper	HSK 63A-DIN 69893	

Automatic Tool Changer ATC

Tool places	30	Places
Tool diam. max.	90	mm
Tool length max.	320	mm
Tool weight max.	8	kg
Changing positions	vertical	

Guides, drive and measuring systems

- All axis drives with digital drives manufacturer HEIDENHAIN
- Direct measuring systems for X,Y, and Z axis manufacturer HEIDENHAIN
- X-, Y- and Z-axis guidance using high-precision linear guides for maximum precision and dynamics
- Precision ball screw with preloaded nuts in X-, Y- and Z-axis

Coolant Equipment with Chip conveyor

- Coolant outlet, switchable from coolant to air, at the front of the milling head via manually swivelling nozzles
- Internal coolant supply, switchable from coolant to air, through the spindle centre.
- Tank volume approx. 1.000 l
- Normal coolant supply 25l/min 5 bar
- High pressure pump for internal cooling 20 l/min 50 bar
- Coolant tank incl. Cartridge filter and paper-belt filter system
- Hinged belt chip conveyor, discharge height approx. 750 mm

CNC-control HEIDENHAIN iTNC 530 HSCI

Digital numerical sequence control for up to nine axis plus spindle, including digital drive control, hard disk memory, 19" TFT color screen,

Fixed Cycles:

Standard drilling and milling cycles, deep drilling, tapping with and without chuck, milling of slots, rectangular and circular pockets, rectangular and circular studs, boring, drill milling (helical path), roughing, drilling patterns, head swiveling, countersinking, displacement and/or rotation of the coordinate system, Mirroring, Scaling factor also axis-specific, Tool Center Point Management TCPM, Linear interpolation on 5 axes, Circular interpolation on 2 axes and on 3 axes with rotated working plane, Tilting the working plane, Helical interpolation with overlap between arc and linear path, Spline

Interpolation to level 3, block execution time for 3-D lines without tool compensation = 0.5ms,

Interfaces:

V24/RS-232-C + V11/RS-422, data transmission speed up to max. 115 KB/sec,
Fast Ethernet Base T interface with 100 MB/sec, one interface for large data volumes with LSV2 protocol, data input in DIN/ISO or HEIDENHAIN dialog language.

Programming functions:

Polar or Cartesian coordinates, absolute or incremental values, mm/inch change-over.
Machining with handwheel overlay
Direct programming of the spindle speed
Parametrics with mathematical functions with variables
Graphic mode with 2-D contours also during execution of another NC program
teach-in mode
tool corrections
3-D tool radius
Preview calculation of the contour with radius correction
Scale factors also on an independent axis. Mirror image on 3 axes
Tool and tool data tables and constant tool path
Possibility of program input during machining - also with graphic function
Subroutine method and program block repetition
Soft contour approach with attachment and separation on tangent line, right-angled and/or tangent circle. Corner rounding function
Graphical representation of the machining program or simulation with plan view, 3-level view, 3D view and zoom function, even while other NC programs are being executed.
Program check with display of machining time
Program block resumption and/or program stop with decoupling and repositioning
self-diagnosis function

Kinematics Opt

Measures the tool center and the CNC calculates the orientation of the static accuracy.
The software corrects any space errors and compensates the new position of the tool center with respect to the absolute value.

HR 520 - Electronic handwheel for operating all axes with display

Measurement, weight

Floor space required	ca. 8,3 x 6,7	m
Machine height	ca. 3,60	m
Machine weight	ca. 28.000	kg

Electrical supply data

Power input	120	A
Operating voltage	400	V
Operating frequency	50	Hz

Equipment

- Machine bed, column and vertical saddle as welded steel construction, annealed with low tension
- Milling slider as welded steel construction
- Orthogonal milling head TUB-E92 with motor spindle, C- and A-axis drive via torque motors
- Oil cooling unit for cooling the milling head
- CNC thermal compensation
- Spindle drive 29 kW
- Spindle speed max. 18.000 min⁻¹
- Axle drives by means of precision ball screws and digital servo motors
- Touch probe system manufacturer BLUM, TC 63-30 with radio transmission and automatic measuring cycles
- Milling head Measurement "Kinematics Opt"
- Laser tool presetter BLUM - NT version mounted on machine table
- CNC control HEIDENHAIN iTNC 530 HSCI incl. digital drive technology
- Portable electronic handwheel HEIDENHAIN HR 520 with 3 m spiral cable
- swivelling control panel for machine operation in front of the machine
- Automatic tool changer with 30 magazine places, change position vertical
- Coolant system with external shower rim and IKZ through the spindle
- 1 chip conveyor in the working area, ejection right
- Pretensioned linear guides in all axes
- Precision ball screws in all axes
- Hydraulic weight compensation in the vertical axis
- Bellows cover of the X-axis
- Milling slide above and below in the vertical axis with bellows covers with attached stainless steel lamellas closed
- Work area enclosure closed on all sides. Back side of the work area with bellows cover with attached stainless steel lamellas closed. The manual sliding doors on the front of the machine can be opened and closed over the entire length of the table. Safety fencing for the back machine area with two secured access doors.