TECHNICAL DATASHEET

CNC–BED TYPE MILLING MACHINE

manufacturer	**MTE**
type	**BF 5200**
control	**HEIDENHAIN iTNC 530 HSCI**
built	**2016**

Travels		
Longitudinal (X-Axis)	5.000	mm
Cross (Y-Axis)	1.300	mm
Vertical (Z-Axis)	2.000	mm
Machine is prepared for 4th axis		

Feeds		
X-, Y- and Z-Axis, stepless	2 - 12.000	mm/min.
Rapid traverse in X / Y / Z	15.000	mm/min
Max. feed force in X-, Y- und Z	25.000	N

Clamping table

Surface	5.200 x 1.200	mm
Max. table load	14.000	kg
Number of T-slots	7	
T-slot size	22	H12
Distance of T-slots	160	mm

Universal milling head

Swivel range front/rear plane	2,5 x 1°		With hirth gear
Drive power max.	32	kW	from 198 rpm
Max. Torque	1.520	Nm	
Speed range	0 - 4.000	min-1	
Gear stages	3		Oil cooled, with automatic shifting
0 - 516 rpm	ISO 50	DIN 69871-AD	
460 - 1,288 rpm		DIN 69872 Form A	
1,200 - 4,000 rpm	15.000	N	

Tool spindle BIG-Plus

The tool spindle is equipped with a simultaneous taper and face contact for the tool.

When the tool is drawn into the machine spindle, contact first occurs at the steep taper. The drawing-in force causes the steep taper to expand in the elastic range. The tool is drawn in about 0.01mm further until the tool flange also makes contact with the spindle on the face side.

The use of standard tools with ISO 50 mounting is still possible at any time.

Automatic tool changer (ATC)

Tool pockets	60	Plätze
Tool diameter max.	125/250	mm
Tool length max.	380	mm
Tool weight max.	20	kg
Change positions		horizontal and vertical

Guideways, drives- und measuring systems

- All axis drives with digital drives Fabr. HEIDENHAIN
- Direct measuring systems for X-, Y- and Z-axis Fabr. HEIDENHAIN
- X-, Y- and Z-axis guidance by means of high-precision flat guides - hardened and ground - for maximum precision and dynamics, mating guide coated with Turcite B
- Precision ball screws with preloaded nuts in X, Y and Z axes

Comprehensive high-pressure cooling lubricant system

- Coolant outlet at the front of the milling head via manually swiveling flushing nozzles
- Internal coolant supply through the spindle center (IKZ)
- Main tank with tank volume approx. 800 l, lifting tank with tank volume approx. 150l
- Normal coolant supply 25 l/min 5 bar
- Frequency-controlled high-pressure pump for internal cooling 25 l/min and 37 bar, control via control panel and potentiometer
- Coolant tank incl. paper band filter system and cartridge filters with pressure control
- Magnetic separator for coolant tank
- Oil band skimmer and micro aerator for extended service life of the cooling lubricant

Minimum quantity lubrication system Lubrix

- Manufacturer: Lubrix (DE), Type V7
- An oil-air mixture can be fed through the spindle center (IKZ) as an alternative to the cooling lubricant
- The composition of this mixture is done in a separate unit on the back of the machine
- The dosage can be programmed via M-functions in the control (15 steps)
- Automatic filling device
- Oil flow monitoring

Collision and tool breakage monitoring BRANKAMP (2-channel system)

- Strain sensors are used to monitor any changes in force that occur in the machine. When defined limit values are reached, a machine stop can be triggered in time to avoid major damage.
- Brankamp system with 2 measuring channels and digital display to show the following values:
  - Detection of rapid force changes
  - Display of the current force value
  - Display of the determined and stored force value
  - Display of the set monitoring limits
  - Diagnostic functions
  - Stop counter

CNC-Control HEIDENHAIN iTNC 530 HSCI

Digital numerical sequence control, including digital drive control, hard disk memory, TFT - color screen,
HR 410 - Electronic handwheel for operation of all Axes

Dimensions and weight

Footprint machine	ca. 12,1 x 5,0	m
Total height	ca. 4,20	m
Machine weight ca.	25.000	kg

Electrical connection data

Total power consumption	45	kW
Operating voltage	400	V
Operating frequency	50	Hz

Equipment and accessories

- Machine bed, column and vertical saddle as cast construction stress-relief annealed
- Milling slide as construction in nodular cast iron GJS-600
- universal milling head, positioning via Hirth toothing, front plane 2,5°, rear plane 1°
- Milling head will be overhauled by the manufacturer before delivery!
- Oil cooling unit for cooling the milling head
- Spindle drive 32 kW
- automatic gearbox with 3 gear stages, oil circulation cooled
- Spindle speed max. 4.000 min-1
- Tool spindle BIG Plus
- Brankamp CMS collision monitoring system
- Axis drives by means of precision ball screws and digital servo motors
- Measuring probe system with 3D measuring probe, make M&H, type RWP38.41 with radio transmission
- CNC control HEIDENHAIN iTNC 530 HSCI incl. digital drive technology
- Portable electric handwheel HEIDENHAIN HR 410
- Operating mode 4
- Swiveling operating panel for machine operation in front of the machine and swiveling to the rear for operation from the back of the machine
- Automatic tool changer with 60 magazine positions, change position horizontal/vertical
- Coolant system with external shower ring and increased IKZ through the spindle, paper belt filter, frequency controlled coolant pump, magnetic separator, oil belt skimmer
- minimum quantity lubrication, make LUBRIX
- 2 pcs. chip conveyors lengthwise in the working area in front and behind the working table
- 1 cross conveyor discharge right front, discharge height approx. 1070mm
- Precision flat guides in all axes, counter guide coated with Turcite B
- Precision ball screw spindles in all axes
- Direct measuring system in all axes
- Hydraulic counterbalance in the vertical axis
- Telescopic steel cover of the X-axis
- Milling slides at the top and bottom of the vertical axis closed with link aprons
- Vertical guide covered at top and bottom with bellows
- Work area enclosure closed on all sides.
  The manual sliding doors at the front of the machine can be opened along the entire length of the clamping table.
- Control cabinet air conditioning
- Hydraulic system, make Rexroth
- Work area lighting
- Automatic temperature compensation
- Working area exhaust unit
- Painting RAL 7024 graphite gray/RAL 7038 agate gray
- Approx. operating hours: (Feb 2023) control 16,000 h, machine 14,700 h, program run 6,500 h
- Preparation for connection of a 4th axis (The rotary table itself is not part of the delivery)