



CNC systems made in Germany. Precision with high repeat accuracy!

Miller FF 500/BL-CNC



- With brushless direct drive: Quiet and vibration-free with high precision (accuracy 0.05mm).
- Variable speed pre-selection from 200 - 4,000rpm with digit speed display.
- With double roller bearing recirculating ball spindles at all 3 axes and 3 powerful step motors for driving compound table and milling head.
- Large travel distances: X-axis: approx. 290mm, Y-axis: approx. 100mm, Z-axis: approx. 200mm.
- Stable column with dovetail slideway.
- Including user-friendly software. Runs under WINDOWS® (see description below).

Thanks to CNC control of 3 tool axes machining of steel and non-ferrous metals is possible in all dimensions. This also applies to larger work pieces!

Axes drive with recirculating ball spindles (no backlash) and powerful step motors. Otherwise the mechanical design is almost identical to the miller FF 500/BL: Solid, flat-milled compound table in steel with 3 continuous T-slots for size 8 standard T-nuts. Base of vibration-damping cast steel. Stable column with dovetail slideway. Milling head can be pivoted to the left and right by 90°, with powerful, quiet and shock-free running condenser motor. Poly V-belt drive for 6 spindle speeds (180 - 2,500/min). Additional sleeve feed (30mm) using drilling lever with scale ring (1 graduation line = 1mm). Work piece fixing using steel collets.

Complete with CNC control unit, CNC programme software, all connecting cables, one each multiple range standard type ER 20 collets 6 - 8 - 10 and 12mm and detailed manual.

NO 24 360

See us on YouTube!

Note:

Since the mechanical design of the FF 500/BL-CNC is almost identical to the FF 500/BL, the accessories supplied for it can be used without restriction. This also applies to the dividing attachment UT 400/CNC for the 4th axis!

- ❶ Brushless motor with sophisticated control for high torque, even in the lower speed range.
- ❷ 4-digit speed display for optimum machining.
- ❸ Milling head with aluminium base can be rotated to the left and right by 90° (with degree graduation).
- ❹ Solid plane-milled steel compound table (400 x 125mm) with 3 T-slots.
- ❺ Step motor for Y-axis (travel distance approx. 100mm).
- ❻ Step motor for X-axis (travel distance approx. 290mm).
- ❼ Stable column with dovetail slideway.
- ❽ Step motor for Z-axis mounted in column (travel distance approx. 200mm).

PROXXON CAD/CAM software for WINDOWS®

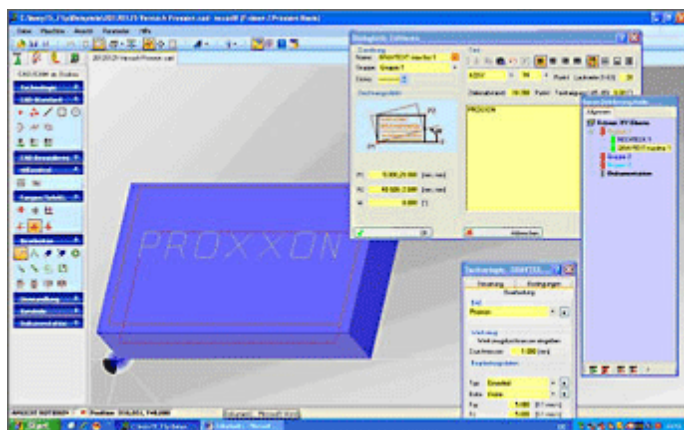
Brief description of software and hardware:

The software is harmonized with mechanics, motors and the control unit of the CNC machine, thus offering the optimum performance.

The CNC control unit controls the step motors of the machine. The PC software provides the machine with the geometry information for travel of the tools (via RS 232 interface). This means that the control unit is the interface between software and the mechanics of the machine.



Powerful micro processors and accordingly dimensioned step motors and phases ensure that the motors always provide enough power for any machining processes. Two freely usable output relays in the casing of the control unit provide facilities for control of additional functions, e.g. a working lamp. Including connection cables with suitable plugs and built-in power supply for connection to 220 - 240V.



Simple creation of work piece geometry

The CAD window is displayed when the programme starts. The work piece contour is created in the familiar WINDOWS® environment. Numerous auxiliary aids help during programme operation, which supports both coordinate entry (absolute and relative) in addition to mouse use.

Technology information is allocated to every drawing element. This makes, for example, different processing speeds and manual tool replacement possible. Read-in of existing files in .dxf format is possible as well.

Automatic generation of CAM data

The finished drawing of the tool is converted, by a mouse click, into the instruction set for the machine. So, machining can be started immediately. The instruction set generated in this way is in accordance with DIN/ISO 66025 and can be manually edited and exported. Conversely, the system also permits importing or complete self writing of data sets.



Software update for the FF 500/BL-CNC

CNC simulation

If requested, the travel distances of the tool are simulated in the graphic window. In this way, faults in the programming can be recognised in time.

Manual work

The handwheels are replaced with the step motors of the CNC machine. Nevertheless, manual machining is possible with the help of cursor buttons, since the step motors can be operated manually.

Software installation

The PC software is supplied on a CD ROM. The problem-free installation is effected under WINDOWS® as usual.

Note:

PC or laptop are not part of the scope of delivery. Minimum requirements for the hardware: Pentium processor with 400 MHz frequency (or comparable), high-quality graphic card (64 MB RAM) and at least 40 MB free hard disc storage.

Technical data:

| | |
|----------------------------|---|
| Power supply | 230V / 50/60Hz |
| Drive | Brushless motor with 400W |
| Spindle drive | Recirculating ball spindle with 4.0mm inclination, |
| X-axis | flank diameter 12mm. Step motor with 2.2A und 1.27Nm dwell moment; travel distance: approx. 290mm |
| Spindle drive | Recirculating ball spindle with 4.0mm inclination, |
| Y-axis | flank diameter 12mm. Step motor with 2.2A and 1.27Nm dwell moment; travel distance: approx. 100mm |
| Spindle drive | Recirculating ball spindle with 4.0mm inclination, |
| Z-axis | flank diameter 12mm. Step motor with 2.2A and 1.27Nm dwell moment; travel distance: approx. 200mm |
| Spindle revolutions | Variable speed pre-selection from 200 - 4,000rpm. |
| Control of step | via CNC control unit (included in scope of delivery) |
| motors | |
| Software | on CD-ROM, installation under Windows 98, Windows 2000, Windows XP, Windows Vista and Windows 7 |
| Drive connection | via RS 232 interface (or: use of a USB adapter), connecting cables to PC included in scope of delivery |
| Sizes | Machine: work table 370 x 350mm, table 400 x 125mm, total height approx. 780mm |
| | Control unit: L 450 x W 270 x H 60 mm |
| Total weight | Machine: approx. 50kg / Control unit: approx. 4kg |

Accessories for miller FF 500/BL-CNC

Dividing attachment UT 400/CNC

4th axis to the PROXXON miller FF 500/CNC. For perfect 3D processing! For individual parts and small series production. For manufacturing divisions, gear wheels, helical gearings, screw spindles and (including irregular) profiles. All angle positions can be approached by computer control. Easy horizontal and vertical construction. Driven by powerful step motor (2.0A) through toothed belts, and virtually free from play, adjustable worm gear. The high transfer ratio (40:1) provides enormous torque. Main spindle with 14mm drill hole and flange to suit face plates and all lathe chucks from the PD 400 lathe system. Smallest increment 0.003°. Recognition of reference position through light barrier. Chuck and work pieces are not included in the package.

NO 24 423



MICROMOT adapter

For use with high-speed MICROMOT rotary tools in combination with the millers FF 500/BL and FF 500/BL-CNC.

The standard milling head is exchanged for the adapter in just a few steps. Our 20mm collar enables to fasten all appliances of the MICROMOT 60 series, the MICROMOT precision drill/grinder FBS 240/E and the MICROMOT professional drill/grinder IBS/E. Especially for applications that require high speeds for small milling cutters (e.g. milling electronic boards), but also for micro drilling. Complete with fastening screws.

The professional drill/grinder IBS/E depicted here is not included.

NO 24 346



Splash guard and chip collecting tray for PROXXON milling machines

Made of 1.5mm thick sheet steel, powder-coated. Secure stand due to drill holes for fastening to a work surface (the use of steel sleeves keeps the tray tightly sealed). L 700mm, W 420mm, H 40mm.

Suitable for FF 230, FF 400, FF 500, FF 500/CNC, FF 500 - ready for CNC, FF 500/BL, FF 500/BL-CNC and FF 500/BL-CNC-ready as well as for mill/drill unit BFB 2000 and compound table KT 150.

Note: The milling machine depicted here is not included.

NO 24 322



Gear tooth chuck (10mm). With adapter.

Industrial quality, however not as accurate as the collets. With 10mm adapter which fits into the 10mm collet. Includes the chuck key.

NO 24 110



Multiple range standard type ER 20 collets (not depicted)

For the mill/drill PF 400 (from production no. 401-10910) and miller FF 500 (from production no. 5648). High concentricity and repeat accuracy. May be reduced to 0.5mm under their nominal diameter (intermediate sizes not required). D = 21mm, L = 31.5mm. One each of 2.4 - 3 - 3.2 - 4 and 5mm are included. Supplied in wooden box with sliding lid.

NO 24 253

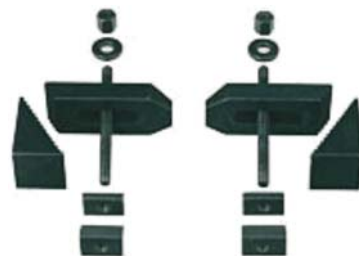
Step clamp set of steel.

2 step blocks and clamps each.

With matching slot nuts and fastening screws for T-slots as per MICROMOT standard (12 x 6 x 5mm). In wooden box with sliding lid.

NO 24 256 For work pieces up to 20mm thickness

NO 24 257 For work pieces up to 35mm thickness



Precision vice PM 60

Perfectly rectangular. To be placed sideways and on the end face. With matching nuts and screws for fixation in MICROMOT standard T-slots (12 x 6 x 5mm). Supplied in wooden box with sliding lid. Jaw width 60mm. Clamping capacity 42mm. Total length 100mm.

NO 24 255



Precision V-blocks

Used to clamp various work pieces. Made from hardened steel, precision ground in pairs. Four different depths of prism incisions V, all at 90°. Size 50 x 30 x 30mm. The solid clamp and knurled knob ensure superb securing of the workpiece. Supplied in a wooden box with sliding lid.

NO 24 262 2 pieces



Three piece centre drill set

Made of HSS steel. DIN 333 (type A) 60°. Complete set centre drills with sizes of 2 - 2.5 and 3.15mm.

NO 24 630



Milling cutter set (2 - 5mm)

All cutters with 6mm shaft. Cutters of Ø 2 - 3 - 4 and 5mm. Double fluted according to DIN 327. Made of HSS-Co5. Comes in wooden box with sliding lid.

NO 24 610



Milling cutter set (6 - 10mm)

4 cutters Ø 6 - 7 - 8 and 10mm. Four flute design according to DIN 844. Shafts 6 and 10mm respectively. Made of HSS-Co5. Comes in wooden box with sliding lid.

NO 24 620

**Edge finder set**

Used for fast and accurate location of starting point of work pieces with respect to the machine spindle on milling machines. Size 6 x 6 x 50mm and 6 x 5 x 75mm. Comes in wooden box with sliding lid.

NO 24 434

**14-piece parallel supports set**

For adjusting work on drilling machines, lathes and milling machines. Made of high-alloy, hardened steel (58 - 62 HRC). Parallel accuracy 0.02mm. 2 each of 8 x 10, 15, 20, 25, 30, 35 and 40mm. Length 100mm. Packed in a wooden box.

NO 24 266

