

Lathe System PD 400/CNC



PD 400 CNC

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### Lathe System PD 400/CNC



- With recirculating ball spindles and two powerful step motors,
  - control unit with activation of the main spindle and the step motors,
  - user-friendly and WINDOWS compatible software (see description on the right).



# The tried-and-tested PROXXON lathe PD 400 with CNC control. Multi-purpose for individual parts and small series manufacture.

Axle drive by step motors and recirculating ball spindles (to avoid reversal backlash). For facing and longitudinal turning, for turning balls, radii and any freely formed contours made of steel and non-ferrous metal. Workpiece machining is effected automatically by software and can be reproduced as often as required. Solid, heavy cast iron bed and ground "wide-legged" precision Vee guide ensure vibration-free working and optimum precision. Since the mechanical design is practically identical to the PD 400, the accessories supplied for it can be used without restriction (and the PF 400 milling equipment).

Complete with recirculating ball spindles, powerful step motors and the required limit switches, the CNC control unit, all necessary connecting cables and the software on CD-ROM. **Detailed technical data is listed on the back!** 



#### Note:

Double roller bearing recirculating ball spindle paired with powerful step motor driven in microstep guarantee high machining precision and repeat accuracy.



# The control unit as an interface between the CAD software and the CNC controlled lathe.

The CNC control unit is located in a solid aluminium casing and contains a micro processor and the output stages for the step motors.

It controls the step motors of both the axles drives and the drive for the main spindle using the PC data and, with two freely useable output relays, additionally offers the possibility to control an automatic cooling unit or signal display, for example.

The installed mains supply circuit makes it possible to connect directly to the 220 – 240V mains voltage. The data transfer from the PC to the control unit is effected via an RS232 interface.

All connecting cables required to control the main spindle, the step motors and the limit switches are pre-assembled and equipped with suitable connectors, and are part of the scope of delivery.



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

and at least 40MB free hard disc storage.

#### Simple creation of workpiece geometry

When the programme is started, the CAD window initially appears on the screen. The contour of the workpiece is created in the usual Windows® environment.

In the graphic, colour elements help to show the difference between lathe chuck, blank and designed workpiece.

Comprehensive aids make it easier for the user to operate the programme; in addition to use of the mouse, it also supports entry of co-ordinates (absolute and relative). It is possible to import existing files in the current data formats (e.g. dxf or hpgl).

Technology information is allocated to each character element. Various processing speeds and manual tool replacement are, for example, possible when machining the workpiece.

#### 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.

#### **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

With the PD 400/CNC, the handwheels are replaced with highprecision step motors. Manual machining is possible with the help of the 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 automatically under Windows®.

## Lathe System PD 400/CNC - Technical Data

Centre distance	400mm
Height of centres	85mm
Spindle take-up	MK 3
Spindle aperture	20.5mm
Spindle rotation precision	5/1,000mm
Lathe chuck	Precise RÖHM 3-jaw chuck, centrically tensioning (up to 100mm)
Sleeve	MK 2, with scale
Steel holder	Multiple steel holder with height-adjustable holder elements
Spindle revolutions	Selectable with switch (two-stage) and by placing drive belt:
4e	80 – 160 – 330 – 660 – 1,400 – 2,800rpm.
Drive	Induction motor with 550W
Spindle drive Z axis	Recirculating ball spindle with 4mm inclination, flank diameter 12mm.
	Step motor with 1.8A and 50Ncm dwell moment; travel distance: 300mm
Spindle drive X axis	Recirculating ball spindle with 2.0mm inclination, flank diameter 8mm.
	Step motor with 1.8A and 50Ncm dwell moment; travel distance: 70mm
Control of the step motors	via CNC control unit (included in scope of delivery)
Power supply	220 – 240V / 50Hz-mains voltage
Software	on CD ROM, installation under Windows®
Size (L x D x H)	PD 400 CNC: 900 x 460 x 300mm
	Control unit: 450 x 270 x 60mm
Total weight	PD 400/CNC: approx. 45kg
	Control unit: approx. 4kg

