The NUA-25 Machine Group

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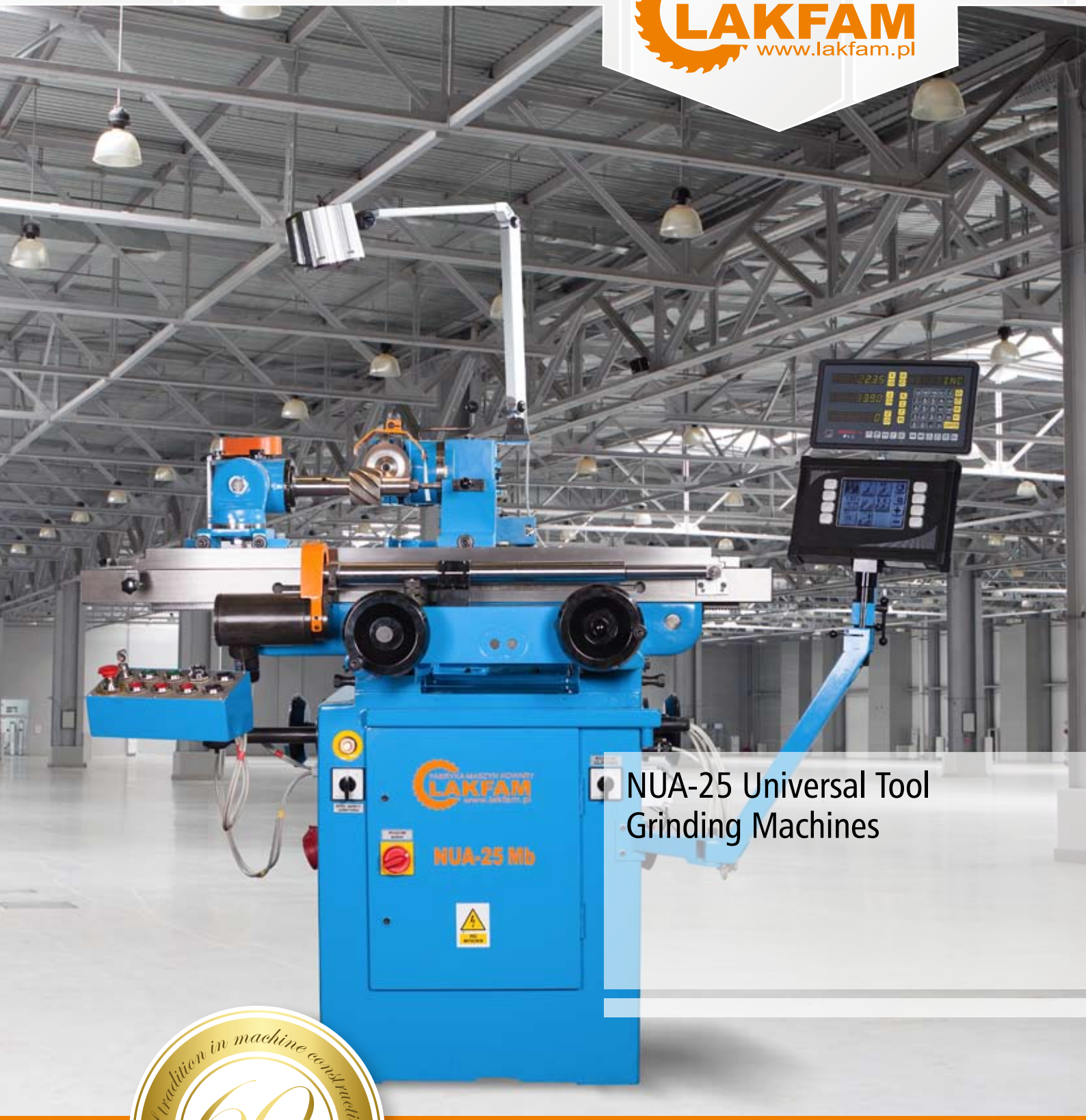


NUA-25 Universal Tool Grinding Machines

of tradition in machine construction
60
years

NUA-25

FEATURES OF THE UNIVERSAL TOOL GRINDERS NUA 25

- Proven robust design
- A wide range of accessories to adapt the machine to different operations, such as:
  - sharpening tools
  - grinding rollers, holes, and surfaces
  - and many more
- Simplicity of use
- Low operating costs

Available versions of the grinder

M – This is the basic version of the NUA grinder equipped with mechanical (manual) travel of the work table moving on rolling guides.

The most important structural elements of the machine are made of cast iron, which ensures the operating stability of the grinder. The lateral travel of the device is carried out mechanically. The sliding guides of the body are lined with a material featuring a very low friction coefficient, which results in the cross-travel precision of 0.005 mm. The grinding head is driven by an electric motor, controlled from the operator panel, which also controls the activating and deactivating of the spindle drive.

H – Unlike the M version, the grinder in the H version is equipped with a hydraulic longitudinal travel of the work table with a 360 mm stroke. All components of the hydraulic drive are located inside the machine's body. The drive can be switched from hydraulic to manual by releasing a latch.

The use of a hydraulic drive allows for grinding surfaces, rollers, holes, and for the automatic sharpening of rotary tools, when choosing the appropriate accessories.

a – the basic type of the grinding head equipped with a one-way spindle (left-hand rotation) with a 0.55 kW motor. The head allows for vertical rotation in the range from +15° to 90°, and horizontally to ±173°

b – A new type of the grinding head with a bi-directional spindle (clockwise and counter-clockwise rotation) equipped with a 1.1 kW motor. The head allows for vertical swivel at ±120° and horizontal swivel at 360°. By using an eccentric, the adjustment range in the horizontal plane has been increased.

NUA-25 Ma	NUA-25 Ha	NUA-25 Mb	NUA-25 Hb	
X	X	X	X	MECHANICAL HEAD EXTENSION
	X		X	HYDRAULIC TABLE TRAVEL
		X	X	SPINDLE DRIVE MOTOR 1.1 kW
X	X			SPINDLE DRIVE MOTOR 0.55 kW
				COOLING SYSTEM
		X	X	TWO-DIRECTIONAL GRINDING SPINDLE
		X	X	GRINDING HEAD WITH INCREASED WORKING SPACE

NUA-25, Ma/Mb version

A universal tool grinder with manual travel of the work table and grinding head type a/b

Ma Essential information

- Basic version of the grinder
- Equipped with a grinding head type „a" with a one-way spindle
- Compact and robust design
- Electric travel of the grinding head
- Manual longitudinal travel of the grinding table
- Manual lateral travel of the slide by means of a ball screw drive
- Cross-travel precision 0.005 mm
- Extensive special accessories

Mb Essential information

- Basic version of the grinder
- Equipped with a grinding head type „b" with a two-way spindle
- Greater swivel capacity of the grinding head when compared to the wheelhead type „a"
- More powerful spindle drive 1.1 kW
- Compact and robust design
- Electric travel of the grinding head
- Manual longitudinal travel of the grinding table
- Manual lateral travel of the slide by means of a ball screw drive
- Cross-travel precision 0.005 mm
- Extensive special accessories

TECHNICAL DATA	NUA-25Ma	NUA-25Mb
Table working area	915x135 mm	915x135 mm
Largest distance between the tailstock centres	640 mm	640 mm
Largest distance between the centres of the holding head and the tailstock	485 mm	485 mm
Height of the centres above the table surface	125 mm	125 mm
Longitudinal table travel	410 mm	410 mm
Transverse table travel	230 mm	230 mm
Largest distance between the table's plane and the spindle axis	340 mm	340 mm
Smallest distance between the table's plane and the spindle axis	90 mm	90 mm
Vertical swivel of the grinding wheel's spindle	-15°– +90°	±120°
Horizontal swivel of the grinding wheel's spindle	±176°	±360°
Motor power of the grinding wheel's spindle drive	0,55 kW	1,1 kW
Grinding wheel speed	3850 / 5635 min^{-1}	3850 / 5635 min^{-1}
Maximum allowable weight of the workpiece to be ground on the table	45 kg	45 kg
Overall dimensions (L x W x H)	1350 x 1270 x 1625 mm	1350 x 1270 x 1625 mm
Total weight	1080 kg	1080 kg

NUA-25, Ha/Hb version

A universal tool grinder with hydraulic longitudinal travel of the work table and grinding head type a/b

Ha Essential information

- Hydraulic longitudinal travel of the work table, which allows for grinding rollers, holes, or surfaces
- Equipped with a grinding head type „a" with a one-way spindle
- Compact and robust design
- Electric travel of the grinding head
- Manual lateral travel of the slide by means of a ball screw drive
- Cross-travel precision 0.005 mm
- Extensive special accessories

Hb Essential information

- Hydraulic longitudinal travel of the work table, which allows for grinding rollers, holes, or surfaces
- Equipped with a grinding head type „b" with a two-way spindle
- Greater swivel capacity of the grinding head when compared to the wheelhead type „a"
- More powerful spindle drive 1.1 kW
- Compact and robust design
- Electric travel of the grinding head
- Manual lateral travel of the slide by means of a ball screw drive
- Cross-travel precision 0.005 mm
- Extensive special accessories

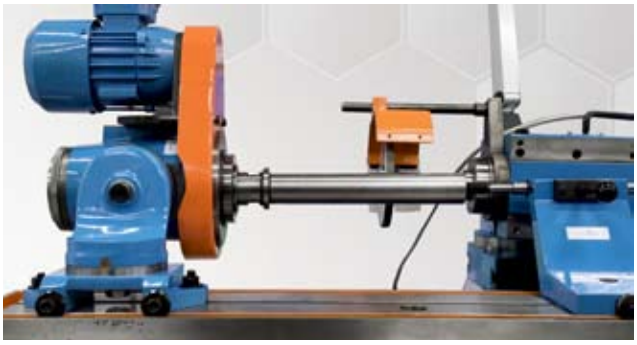
TECHNICAL DATA	NUA-25Ha	NUA-25Hb
Table working area	915x135 mm	915x135 mm
Largest distance between the tailstock centres	640 mm	640 mm
Largest distance between the centres of the holding head and the tailstock	485 mm	485 mm
Height of the centres above the table surface	125 mm	125 mm
Longitudinal table travel	410 mm	410 mm
Transverse table travel	205 mm	230 mm
Largest distance between the table's plane and the spindle axis	330 mm	340 mm
Smallest distance between the table's plane and the spindle axis	90 mm	90 mm
Vertical swivel of the grinding wheel's spindle	-15° ÷ +90°	±120°
Horizontal swivel of the grinding wheel's spindle	±176°	±360°
Motor power of the grinding wheel's spindle drive	0,55 kW	1,1 kW
Grinding wheel speed	3850 / 5635 min^{-1}	3850 / 5635 min^{-1}
Maximum allowable weight of the workpiece to be ground on the table	45 kg	45 kg
Overall dimensions (L x W x H)	1350x1270x1625mm	1350x1270x1625 mm
Total weight	1080 kg	1080 kg

SPECIAL EQUIPMENT FOR THE NUA 25 SERIES GRINDERS

Versatile holding head (001.010.350)
Includes the Morse taper 5 for mounting arbours or tools

Dividing tool (001.010.360)
Designed for the 001.010.350 head, installed on a universal holding head and used for sharpening cutting tools.
The attachment consists of a locking mechanism, a correction mechanism, and interchangeable dividing disks.

Drive (1650) for the versatile holding head 001.010.350



Right-side moveable tailstock (720) + Left-side fixed tailstock (730)
Used to fix objects in the centres or to support workpieces to be machined

Universal support (740)
Designed to support the teeth of cutters, reamers, and other small workpieces during the sharpening process

Workpiece centre alignment template (770)
It can also be used to determine the axis of the holding head and the tailstock

SPECIAL EQUIPMENT FOR THE NUA 25 SERIES GRINDERS

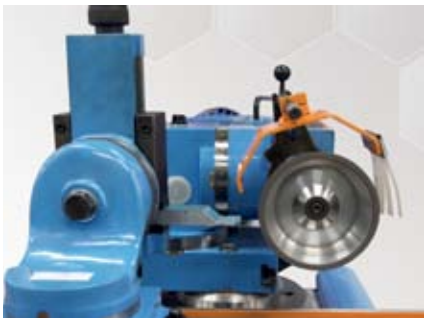
Grinding attachment for circular cutters (1000)
Installed on the NUA-25 grinder, enables the manual sharpening of circular and gear cutters up to 200 mm in diameter.

Collet set (1109) for clamping tools with a cylindrical shank in the holding head 001.010.350, 002.008.000 or in a device for grinding along the helical line 001.100.000

Tool for sharpening right-rotation drill bits (1450), from 5 mm to 25 mm in diameter, with a cylindrical and conical shank.

Tool for sharpening right- and left-rotation drill bits (001.123.000), from 25 mm to 65 mm in diameter, with a cylindrical and conical shank.

Vice (1500) attached to the table of the NUA- 25 grinder, designed for clamping small size workpieces (e.g. lathe tools, box-tool cutters). The jaw width is 165 mm Jaw opening: 65 mm, vertical and horizontal swivel 360°.



Hole grinding device (1700) for the NUA-25 machine, with a grinding head type „a" and hydraulic travel of the table, which allows for grinding holes in workpieces with diameters ranging from 14 mm to 75 mm.

Hole grinding device (001.105.000)
For the NUA- 25 machine with a grinding head type „b" and hydraulic travel of the table, which allows for grinding holes in workpieces with diameters ranging from 14 mm to 75 mm.

Raising blocks (1750) allow for grinding workpieces within a larger diameter range by raising the axis of the centres of the holding head's spindle and the tailstocks above the table. The height of the blocks is 50 mm.

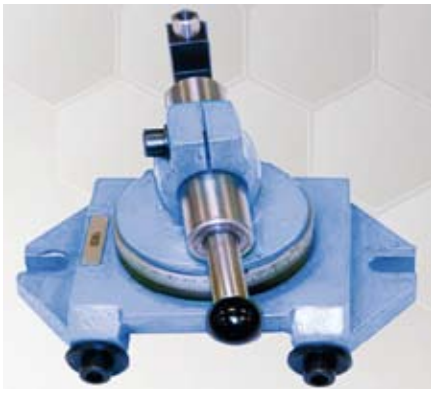
SPECIAL EQUIPMENT FOR THE NUA 25 SERIES GRINDERS

Three-jaw self-centring chuck (1760a)

for fixing small workpieces and workpieces with holes intended for grinding. Chuck diameter is 125 mm

Device for angle-dressing grinding wheels (1800)

The dressing angle of grinding wheels in the range of 0-90 degrees, the largest diamond cross traverse 40 mm.

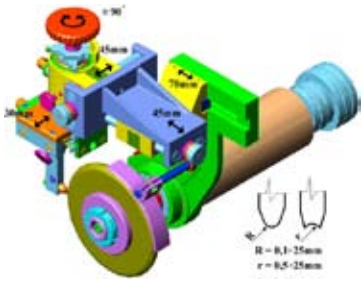


Device for dressing grinding wheels along the radius (1850)

It enables the diamond turning of grinding wheels within the following range:
- convex radius 15 mm
- concave radius 30 mm. The angle of inclination of the diamond holder is 90 degrees.

Versatile dressing device for grinding wheels (001.140.000)

It enables the precise dressing of grinding wheels with a maximum diameter of 200 mm, with the traverse accuracy of 0.01 mm



Device for the static balancing of grinding wheels (1950)

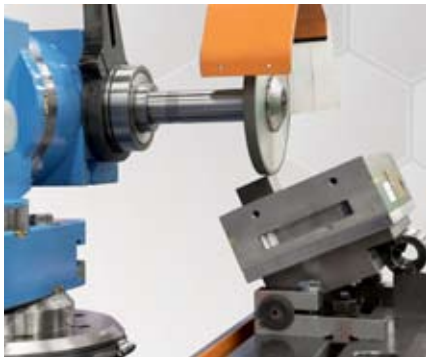
This device features simple design and principles of use and is designed for the precise static balancing of grinding wheels.

Magnetic chuck dia 160 mm (2000)

is designed for clamping non-standard shaped workpieces for grinding.

Device for angle grinding with a magnetic table (2050)

It features permanent magnets designed for clamping ferromagnetic workpieces during grinding operations.



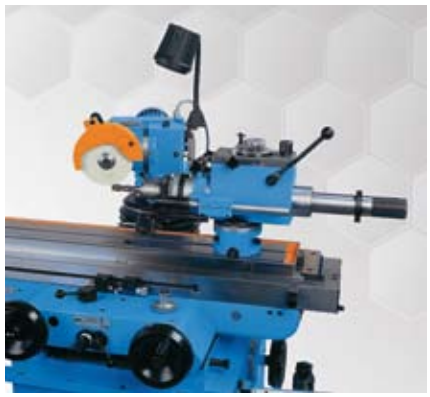
Grinding spindle L=400 mm (7200)

allows for certain grinding operations to be carried out without the use of extended grinding holders. This is particularly useful for surface grinding, where a rigid mounting of the short holder for a grinding wheel allows for improving the quality of the ground surface.

SPECIAL EQUIPMENT FOR THE NUA 25 SERIES GRINDERS

Device for grinding along the helical line (001.100.000)

designed for manual sharpening of tools, such as hobs, slotting mills, screwtaps. Holder diameter 125 mm



Sharpening device for radial slotting mills (001.101.000)

Designed to sharpen the clearance surface of cutting tools featuring convex semi-circular or partially circular blades with a maximum diameter of 320 mm.

Cooling system (001.103.000)

It enables the grinding of workpieces and wet sharpening of tools. The set includes covers mounted on the machine, a tank with a pump, and the necessary hoses

Device for dressing grinding wheels, when grinding rollers and holes (001.104.000)

Enables dressing of grinding wheels, when grinding rollers and holes, without removing the tool from the grinding table.

Magnetic table (001.107.000)

is designed for holding workpieces, when grinding flat surfaces.

Table dimensions 250x125x50 mm

Automatic lateral travel of a slide (001.117.000)

Enables tools to be automatically sharpened with a regular pitch. The automatic transverse travel mechanism enables the slide to be moved along the „Y" axis with a minimum increment of 0.01 mm, and an accuracy of 0.005 mm, in a single sharpening pass

Table screw drive (001.150.000)

The use of a screw drive in the longitudinal table for the NUA-25 grinders enables the automatic sharpening of tools with blades shaped along the helical line.

Automatic dividing head with DC motors (001.160.000)

is used for the mounting of shank tools and tools installed on arbours. Enables the sharpening of tools along the helical line in an automatic cycle

SPECIAL EQUIPMENT FOR THE NUA 25 SERIES GRINDERS

Device for automatic sharpening straight-toothed cutters (AF-250)

Diameters up to 250 mm. Sharpening takes place after entering the necessary data in the intuitive controller which is a part of the attachment

Device for the automatic sharpening circular saws (Ap-630)

Diameters up to 630 mm. Sharpening takes place after entering the necessary data in the intuitive controller which is a part of the attachment

Digital linear scales for reading the vertical and transverse axes (LP-250/350)

Designed to determine the position of the fixed headstock in relation to the table, along the vertical and transverse axes.

Wet filter dust extraction unit (001.134.000)

Dust extraction unit is used for all types of "dry" works. It reduces the amount of dust concentration in the working area, while the grinder is working

Small holding head (002.008.000)

Designed for clamping tools or other small workpieces during grinding with all-purpose tool grinders

Dividing tool (002.008.000p)

Works with a small dividing head 002.008.000

Edge finder for a set of finger joint cutters (004.001.500)

Designed for aligning the cutters in the axis of the grinding wheel.

EXAMPLES OF APPLICATION

No.	Sharpened tools	Device
1.	Drills	1450
2.	Drills	001.123.000
3.	Drills sharpened by tapering, using the Mores shank	Head + set of clamping devices
4.	Drills sharpened by tapering, using the cylindrical shank	Face milling cutter 001.010.350 + self centring holder
5.	Metal circular saws: a) Sharpened manually b) Sharpened automatically	 a) 720, 730 + tilting support + set of arbours b) 001.160.000 + set of arbours
6.	Circular cutters with straight and bevel teeth	1000 + set of reduction sleeves
7.	Plain milling cutters with straight teeth: a) manual method b) automatic method	 a) 720, 730 + tilting support + set of arbours b) 001.160.000 + 001.117.000 + set of arbours
8.	Plain milling cutters with bevel teeth: a) manual method b) automatic method c) manual method	 a) 720, 730 + tilting support + set of arbours b) 001.160.000 + 001.150.000 + 001.117.000 c) 001.100.000 +set of holders and arbours
9.	Gear circular cutters: a) manual method b) automatic method	 a) 1000 + arbours b) 001.160.000 + 001.150.000 + 001.117.000
10.	Gear cutting hobs	001.160.000 + 001.150.000 + 001.117.000 + set of arbours
11.	Slotting mills: a) manual method b) automatic method c) manual method	 a) 1100 + support 740 b) 001.160.000 + 001.150.000 + 001.117.000 c) 001.100.000 + set of holders
12.	Radial slotting mills	001.101.000 + set of holders
13.	Arbour reamers	720 + 730 + tilting support 740
14.	Shell reamers	720 + 730 + tilting support 740
15.	Face milling cutters	Face milling cutter 001.010.350 (ISO50) + reduction sleeves (ISO40)
16.	Lathe tools	Vice 1500
17.	Circular tools	720 + 730 + tilting support 740 + set of arbours + inverter
18.	Box-tool cutters	tool cutters Vice 1500
19.	Taps with straight grooves	720 + 730 + set of centres
20.	Taps with helical grooves	001.160.000 + 001.150.000 + 001.117.000 or 001.100.000 + set of sleeves
21.	Circular saws dia 100-630mm	AP 630

Technologia ostrzenia

Grinding Technology

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