KNUTH Machine Tools

2011

KNUTH - Machine Tools

THE MOST POWERFUL OF THEM ALL

ST. PETERSBURG • September 2010

www.knuth.de

10x15x9m VERTURN 3000C

We are setting up the VERTURN 3000C Vertical Lathe/Machining Center with C-axis and tool changer at the facilities of our customer, RPC ENTECHMACH Ltd., in St. Petersburg.
For detailed specifications on the VERTURN,
see pages 66 and 67.

www.knuth.de

Headquarters Wasbek / Show Rooms Northern Germany:

KNUTH Werkzeugmaschinen GmbH
Schmalenbrook 14 • 24647 Wasbek / Neumünster
Tel. +49 4321 - 609-0 • Fax +49 4321 - 68900 **info@knuth.de**

Bank Transfer Info: Commerzbank Neumünster RC# 212 400 40, Acct.# 406 090

Accounting Dept.	Tel. 04321 - 609-126	**fibu@knuth.de**
CNC Dept.	Fax 04321 - 609-290	**technik@knuth.de**

Show Rooms Southern Germany: **verkauf-sued@knuth.de**

KNUTH Werkzeugmaschinen GmbH
Alemannenstr. 19 • 85095 Denkendorf near Ingolstadt
Tel. 08466 - 9419-0 • Fax 9419-30

Show Rooms Eastern Germany: **verkauf-ost@knuth.de**

KNUTH-Neutec Handelsges. mbH
Zum Mühlenfließ 8 / Gewerbegebiet • 15366 Neuenhagen bei Berlin
Tel. 03342 - 24870 • Fax 248720

Show Rooms Western Germany: **info@kolks.de**

Kolks GmbH
Prinzenstr. 2 • 46399 Bocholt • Tel. 02871 - 2761-0

Customer Care - Germany

Berlin + New German States
Tel. 03342 - 24870 • Fax 248720 **verkauf-ost@knuth.de**

Postal Code 20000 - 38999
Tel. 04321 - 609-1112 • Fax 609-195 **verkauf-nord@knuth.de**

Postal Code 40000 - 69999
Tel. 04321 - 609-1111 • Fax 609-194 **verkauf-west@knuth.de**

Postal Code 70000 - 97999
Tel. 08466 - 9419-0 • Fax 9419-30 **verkauf-sued@knuth.de**

Customer Care - International
Tel. +49 4321 - 609-1116 • Fax 609-197 **sales-export@knuth.de**

Customer Care GUS / Russia
Tel. +49 4321 - 609-1115 • Fax 609-196 **sales-cis@knuth.de**

Leasing directly from KNUTH – Contact us for more information!
You also find more information on our website www.knuth.de

We constantly strive to keep our prices as low as possible!
Due to our increasing dependence on exchange rate fluctuations, we must maintain a flexible pricing structure. Please visit **www.knuth.de** regularly to stay up-to-date on any price reductions or price adjustments that may become necessary due to increased purchase prices. You also will find our current General Terms and Conditions on this site.
We reserve the right to change any information and data included in the catalog.
Prices do not include value-added taxes.
Free shipping (within Germany) of tools and accessories on the specially marked pages, if ordered through our website
www.knuth.de.
The Special Offer Listing on our website is updated continuously with new samples, demo products, outgoing models, and slightly damaged machines.
Don't miss these excellent deals - visit **www.knuth.de** regularly!

• WARNING •

Please be aware that some suppliers in the Russian and in several other markets make false presentations of their products, misleading customers to believe they are buying Knuth products with the high quality and reliable service they expect. If you have any doubts about the authenticity of a product, please contact us. We will be glad to help you identify, if you are getting an original product.

s.neve@knuth.de

This catalog is effective until September 2011

TRADE SHOWS 2010

27.09. - 02.10.	**ITF Plovdiv** - Bulgaria
28.09. - 02.10.	**AMB Stuttgart** - Germany
05. - 09.10.	**BIMU Milano** - Italy
05. - 08.10.	**Stankostroenie Moscow** - Russia
06. - 08.10.	**Eurotool Krakow** - Poland
06. - 09.10.	**TIB Bucharest** - Rumania
08. - 10.10.	**Mactech Cairo** - Egypt
12. - 15.10.	**Vienna-Tec Vienna** - Austria
25. - 27.10.	**In-House Exhibit Pardubice** - Czech Republic
26. - 30.10.	**EuroBLECH Hannover** - Germany
02. - 04.11.	**Fabtech Atlanta** - USA
05. - 06.11.	**In-House Exhibit at the Knuth Cutting Neumünster** - Germany
11. - 13.11.	**In-House Exhibit Denkendorf Denkendorf / Ingolstadt** - Germany
11. - 13.11.	**In-House Exhibit Eastern Region Neuenhagen / Berlin** - Germany
11. - 13.11.	**Tech-Industry Riga** - Latvia
16. - 20.11.	**Prodex Basel** - Switzerland
17. - 19.11.	**Instrutec Tallinn** - Estonia
17. - 19.11.	**Machinery Almaty** - Kazakhstan
23. - 26.11.	**IX Intern. Industrial Forum Kiev** - Ukraine
01. - 04.12.	**Manufacturing Jakarta** - Indonesia

You also find more information on our website
www.knuth.de

Take advantage of our online portal!

In addition to our complete portfolio of machine tools you will find
- individual brochures with extensive information for each machine
- videos and images
- the latest on current sale events
- up-to-date news

www.knuth.de

Over 120,000 satisfied customers in 40 countries are using machines from KNUTH:

For many decades the name KNUTH has been a synonym for superior quality and satisfied customers. Our continued success is based on the extensive experience and excellent motivation of our employees. We work hard to ensure that our machines will make your work easy.

KNUTH International

KNUTH machine tools are successfully in operation in more than 40 countries. A tight network of German and international offices and dealers ensures our presence in all emerging global markets. 400 dedicated employees with many decades of extensive experience ensure the continued growth of our market shares.

Wasbek • Berlin • Denkendorf / Munich
Vienna • Chicago • Moskow
HongKong • Shenzhen
Johannesburg • Santarem / Portugal
Izmir • Belgrad • Kiev • Finland
Tallinn • Radziszow / Poland
Herm. Mestec / Czech Republic
Lenart / Slovenia • Sao Paulo / Brazil
Petaling Jaya / Malaysia

Take advantage of our unsurpassed Training and Service!

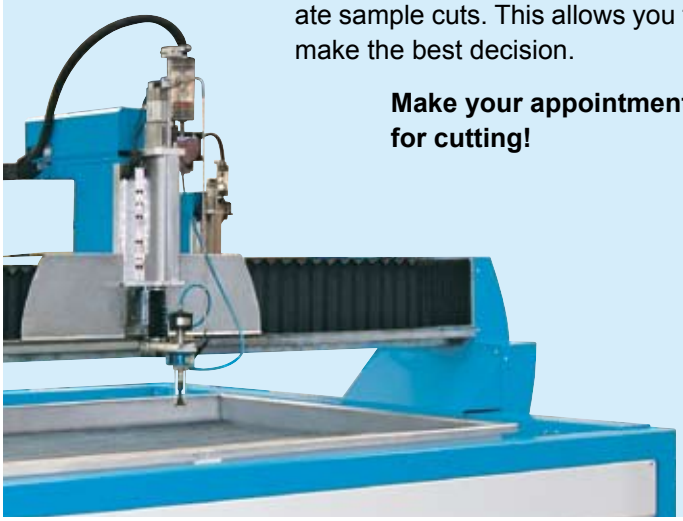
- Your single source for service by highly qualified technicians
- Programming training with purchase of a CNC machine
- high inventory availability due to exten ded warehouse capacity and automated ordering even for spare parts

Welcome to th

KNUTH Cutting Center
Cutting Technology Neumünster

At an area of 1.200 m² we give prospective buyers of laser-jet, water-jet and plasma cutting systems the chance to inform themselves about the various technologies and create sample cuts. This allows you to make the best decision.

Make your appointment for cutting!

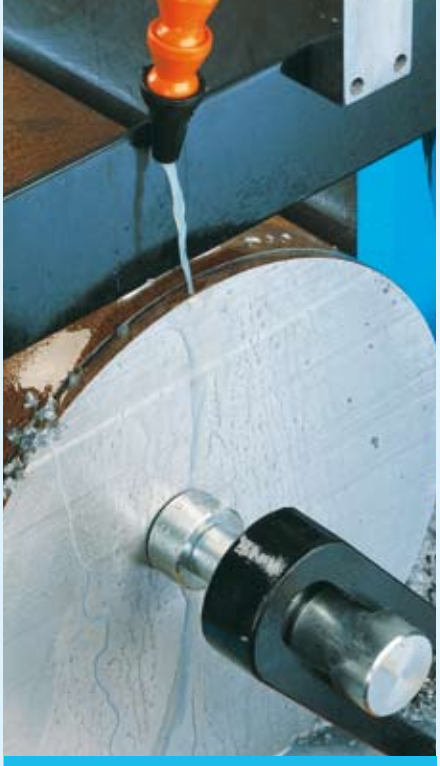


e World of KNUTH Machine Tools

KNUTH Headquarters in Wasbek, Germany

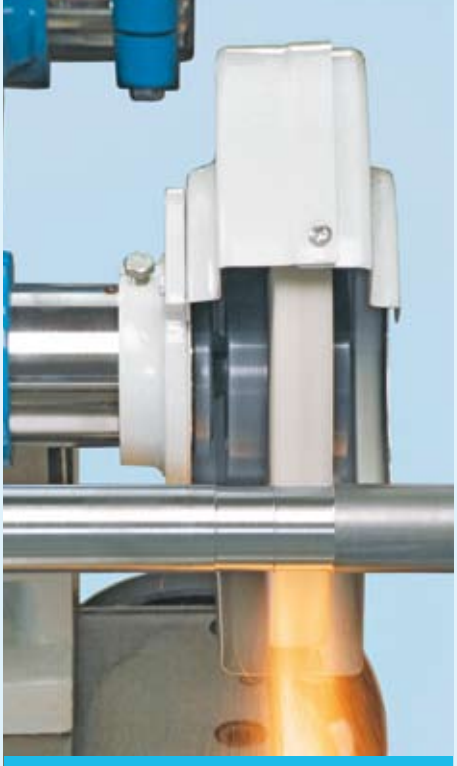
In order to improve our inventory availability we have extended our warehouse capacity by 2.700 m²! We have in our 16.000 m² Wasbek facility our machinery program ready for demonstration. We invite you to a hands-on experience with these fully connected machines.

Opening times: Monday - Friday from 8:00 a.m. to 12:30 p.m and 1:30 p.m. to 5:00 p.m. GST • Saturdays: by appointment only



Saws 166 - 177

Band Saws, horizontal/vertical
Circular Saws
Conventional and NC



Grinding 178 - 194

Surface / Circular / Universal / Tool / Belt Sanders
Conventional and CNC

Sheet Metal Work 195 - 226

Bending, Cutting, Pressing, Punching
Conventional and CNC

Tools & Accessories 227 - 263

Made in Germany

Specifications Laser-Jet			
Cutter System			
travel	- X axis	mm	2500
	- Y axis	mm	1250
	- Z axis	mm	70
machining table height		mm	1000
throat width		mm	2700
max. part weight		kg/dm²	1
rapid feed		mm/min	60000
CO_2 laser/K>0.8			
wavelength		µm	10,6
beam power range		W	60 - 1000
max. pulse peak power		KW	3,5
pulse frequency		Hz	1 - 1000
laser gas			Premix
Accuracy			
positioning accuracy		mm +/-	0,05
repeatability		mm +/-	0,05
Dimensions/Weight			
dimensions		mm	2900 x 3710
weight		kg	2050
Laser Cutting System, 1000 W		Part No.	140 810

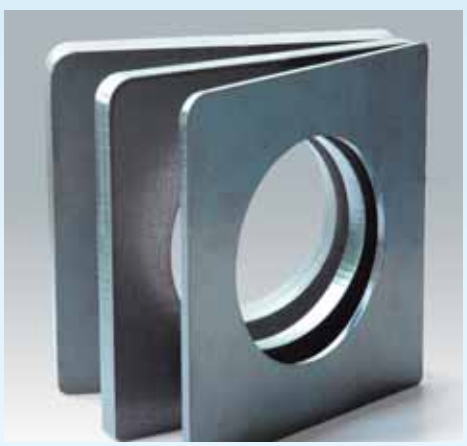
Laser Cutting System, 600 W	Part No.	140 811
Laser Cutting System, 1500 W	Part No.	140 812

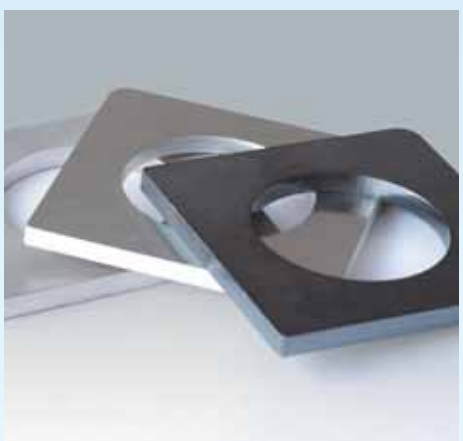
Performance specifications for the 600 W and 1500 W Laser-Jet are available on www.knuth.de

- convenient accessibility for manual removal of cut components
- direct view on cutting process for optimum quality control
- cutting parameters can be adjusted during the cutting process
- connections for optional vacuum lifter and removal fork (optional equipment) are provided for sheet metal handling

Standard Equipment: CNC control system with complete software package, capacitive height sensing, automatic eye shield positioning, coolant regeneration, grid nesting

Optiones	Part No.
• electronic hand-wheel Laser-Jet	250 601





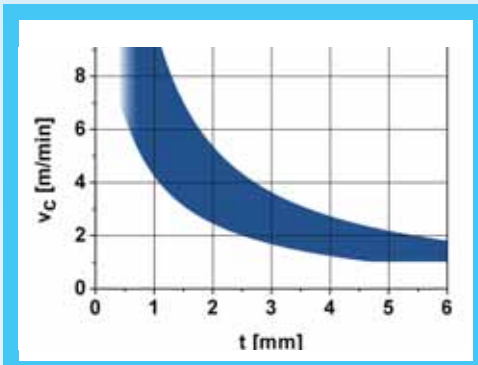
Laser Cutting Systems

Laser-Jet

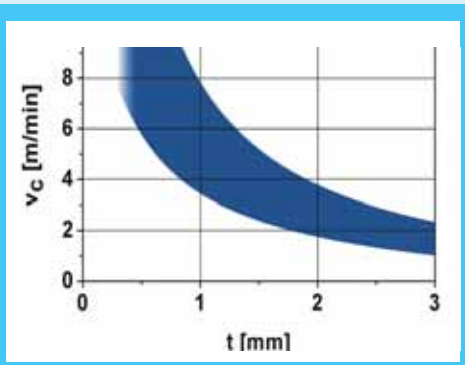
Low-cost entry into the world of advanced laser technology for maximum flexibility

Laser-Jet SM 600 - 0.6 kW CO_2 Laser
Laser-Jet SM 1000 - 1.0 kW CO_2 Laser
Laser-Jet SM 1500 - 1.5 kW CO_2 Laser

- complete system with capacitive height sensing, high-pressure optics for oxide-free cutting, automatic eye shield positioning, and coolant regeneration
- cutter head can be used as scriber, so parts can be cut and scribed in one setup.
- allows simultaneous machining and program setup for the next machining task directly at the machine control panel - saving significant time
- remote machine monitoring and fault diagnostics via Advanced Remote Control (ARC)
- long service intervals of 5,000 operating hours ensure minimized maintenance costs
- cuts a wide variety of different metallic materials
- cutting of complex contours without any rework of the cut edges
- high cutting capacity at low operating costs
- easy operation with integrated laser capacity control and pre-programmed function routines



Laser cutting of unalloyed steels



Oxide-free laser fusion of corrosion-resistant stainless steels

The above diagrams show the possible cutting speed range (v_c) at different plate thicknesses (t) depending on the cut contours. Longitudinal stretched contours without any significant bends allow higher cutting speeds, while tight contours with small bending radiuses result in a reduced speed compared to the maximum speed that would be possible based on the available laser power.

Laser Labeling, Marking and Engraving System
L-Scan

Compact laser for labeling, marking and engraving with a wide range of applications

- standard workable area 100 x 100 mm, available with optional field lens for 70 x 70 mm or 175 x 175 mm
- scan speeds up to 7,000 mm/s
- wide spectrum of applications and materials
- flexible and versatile for use in batch and single-part machining
- user-friendly PC-based software
- laser cooling with controlled heat exchanger is especially well suited for entgraving metallic materials

Standard Equipment: diode-pumped, solid-state laser with 50 W mean beam power; scanner with 2 rotary mirrors and galvo drives; beam expansion; laser pointer; field lens for 100x100 mm machining; industrial PC and LCD monitor; input and control software; heat exchanger for laser cooling; programming and operating instructions

Options	Part No.		Part No.
• 5X Beam Expander for small engraving widths	250 196	• Field lens for 175 x 175 mm workable field	250 198
• Field lens for 70 x 70 mm workable field	250 197	• Turning fixture for cylindrical parts	250 199

Specifications L-Scan		DQF 50	DQF 100
machining surface	mm	100 x 100	100 x 100
setup area	mm	300 x 300	300 x 300
X / Y axis travel	mm	150 / 150	150 / 150
engraving depth	mm	≤ 0,2	≤ 0,5
max. scan speed	mm/s	7000	7000
min. beam width	mm	0,01	0,015
beam wave-length	mm	1,064	1,064
mean laser power (max.	W	50	100
max. pulse frequency	kHz	50	50

line voltage / line frequency	V / Hz	230 / 50	230 / 50
power consumption (without cooling	kW	1,5 - 3,0	1,5 - 3,5
dimensions	mm	600 x 1000 x 1500	600 x 1000 x 1500
weight (without heat exchanger)	kg	200	200
Part No.		170 317	170 315

CNC Laser Engraving and Cutting Systems

L-Graph CNC

Very compact system for universal use

- large variety of materials
- user-friendly PC-based control software
- geometry import from virtually all major graphics and vector file formats
- easy start-up via plug and play
- traverse driven on both sides
- smooth, precise linear guideways in X and Z
- high dynamics with accelerations > 1 g via minimized inertia timing belt drives in X and Y
- constant beam position and laser capacity via water-cooled laser

Standard Equipment: CO2 laser source, input and control software with grid nesting, exhaust vacuum, cooler for laser source, air compressor, replacement lens, USB cable, operating tools, operating and programming instructions

Options	**Part No.**		
• Filter System: suction capacity 280 m3/h / 1.1 kW	250 072	• marker spray for labeling of metals	250 264
		• coolant return cooler for continuous operation	250 074

Specifications L-Graph CNC		**9060/60**	**12090/80**
Working area			
X axis travel	mm	900	1200
Y axis travel	mm	600	900
Z axis travel	mm	230	230
table dimensions	mm	1000 x 700	1300 x 1000
table load capacity	kg	15	15
Feed			
work feed X / Y axis	mm/min	1 - 60000	1 - 60000
rapid feed X / Y axis	m/min	90	90
CO_2 laser			
beam power range in CW mode	W	6 - 60	8 - 80
pulse frequency in CW operation	Hz	CW - 2000	CW - 2000
Accuracy			
positioning accuracy	mm	± 0,01	± 0,01
repeatability	mm	± 0,01	± 0,01
dots per inch resolution	dpi	≤ 2500	≤ 2500
Dimensions/Weight			
power supply	V / Hz	230 / 50	230 V / 50
connected load	kW	1,2	1,4
overall dimensions (LxWxH)	mm	1480 x 1000 x 1180	1780 x 1300 x 1180
weight	kg	180	268
Part No.		170 316	170 320

Plasma-Jet 6020 with exhaust and oxy-fuel flame head (optional)

Standard Equipment: Burny Phantom control, plasma source, automatic cutter head torch height control (THC), water cooling, work table with vacuum connection, operating and programming instructions

Optional Equipment:	
Automatic gas console and Hypertherm Z-axis control	
Part No.	140 774

Optional		**JF 8000**
Exhaust System (optional) for DS		**3015, 4020, 6020, 12030**
suction capacity	m^3/h	8000
power	kW	7,5
filter cartridges	qty	8
Part No.		140 763

Oxy-fuel Flame Head Part No. 140 777

Specifications for Plasma Source		**Max 200**	**HySpeed HSD 130**	**HPR 130 XD**	**HPR 260 XD**	**HPR 400**
max. cutting capacity (edge start) St. 37	mm	50	38	38	64	80
production capacity (plunge-cut) St 37	mm	25	25	16	32	50
cut angle		class 4 - 5 acc. to ISO 9013	class 4 acc. to ISO 9013	class 2 - 4 acc. to ISO 9013	class 2 - 4 acc. to ISO 9013	class 2 - 5 acc. to ISO 9013
plasma source power	kW	30	19,5	22	36	49
cutting current	A	40-200 (infinitely var.)	45-130	30-130	30-260	30-400
gas supply - plasma gas		air, N_2, O_2, (Ar-H_2)	air/air, N_2/air, N_2/CO_2, H35/N_2	H35/N_2, N_2/N_2, H35-N_2/N_2, F5/N_2, air/air, O_2/air, O_2/O_2	H35/N_2, N_2/N_2, H35-N_2/N_2, F5/N_2, air/air, O_2/air, O_2/O_2	0_2/air, $0_2/0_2$, ar/air, H35/N_2, N_2/N_2, H35-N_2/N_2, F5/N_2
overall dimensions (L x W x H)	mm	710x1040x1090	1120x570x1070	1080x566x968	1150x820x1190	1180x880x1260
weight	kg	350	286	318	567	851

Burny Phantom

Hardware platform:
- Processor: 1GHz
- Industrial grade TFT 10.4“ touch screen monitor
- Memory: 512MB DDR RAM
- Operating system: Windows XP Embedded
- Hard drive: 30GB
- Connections/Ports: USB, 3.5“ disk drive, network
- Available UI languages: German, English, Swedish, French, Russian, Italian, Norwegian
- For additional information, please visit www.knuth.de

- high-res interactive graphic color user interface
- easy to use user interface
- reliable control suitable for harsh operating conditions
- quick plate alignment
- expandable standard shapes library
- multitasking and DXF conversion
- GoTo function

Plasma Cutting Systems

Plasma-Jet DS

Superior Plasma Cutter System with Burny Phantom Control System and Hypertherm Plasma Technology

- linear guides on all axes
- dual-drive bridge
- dynamic AC servo drives on all axes with maintenance-free, zero-backlash planetary gears
- low-wear and low-maintenance gears are designed for continuous operation
- wide selection of plasma sources for optimum adaptation to each cutting task
- automatic torch height control of cutter head
- stand-alone cutter table features rigid steel construction for high load capacity
- quick-coupling for cutter head changes in seconds
- minimized tooling time ensure maximum cost savings
- **The machine may be customized with an optional oxy-fuel flame head and a cutter table with a maximum table load of 2000 kg/sqm (more information upon request)**
- magnetic holder of cutter head allows quick change-over from plasma cutting to oxy-fuel flame head cutting

Shown with optional oxy-fuel flame head

Specifications for Plasma-Jet DS		3015	4020	6020	12030
Plasma Cutter System					
control		Burny Phantom	Burny Phantom	Burny Phantom	Burny Phantom
Working Area	mm	3100 x 1600	4100 x 2100	6100 x 2100	12100 x 3100
rapid feed	m/min	16	16	16	16
table load capacity (max.)	kg/m²	560	560	560	560
positioning accuracy	mm	± 0.05	± 0.05	± 0.05	± 0.05
repeatability	mm	± 0.05	± 0.05	± 0.05	± 0.05
overall dim. (LxWxH)	mm	4700 x 3300 x 1700	5300 x 3000 x 1350	7500 x 4300 x 1500	13500 x 5300 x 1500
weight	kg	2000	2600	5300	11100
Max 200 Part No.		140 402	140 407	140 410	140 413
HySpeed HSD 130 Part No.		140 414	140 415	140 416	140 417
HPR 130 XD Part No.		140 403	140 404	140 408	140 411
HPR 260 XD Part No.		140 418	140 419	140 409	140 428
HPR 400 Part No.		140 424	140 425	140 426	140 427

TFGM Plasma Standard Equipment: Powermax 1250 or Powermax 1650 plasma source, machine torch, basic set of nozzles, work table with vacuum connection, partially enclosed workspace, Opticut CNC CAM System completely wired for connection to customer-provided PC, (system requirements: Windows 98/XP, USB port), operator manual

Specifications TFGM Plasma		1010	2010	3015
working area	mm	1050 x 1050	2050 x 1050	3050 x 1550
bridge height	mm	140	14	140
rapid feed	m/min	12	12	12
max. feed	m/min	9	9	9
max. cutting capacity (edge start) St. 37				
- with Powermax 1250		20	20	20
- with Powermax 1650	mm	25	25	25
production capacity (plunge cuts)				
- with Powermax 1250		10	10	10
- with Powermax 1650	mm	12	12	12
air requirement	l/min	300	300	300
min. pressure	bar	8	8	8
connections - exhaust				
Z axis / basin	Ø mm	150/150	150/150	150/150
connected load (machine, without plasma source)	kW	4	4	4
dimensions	mm	1050 x 1050	2050 x 1050	3050 x 1550
weight	kg	500	800	1550
Part No. with Powermax 1250		140 780	140 782	140 784
Part No. with Powermax 1650		141 780	141 782	141 784

Powermax 1650 shown

Powermax 1250 shown

Standard Equipment
- machine torch
- ground wire
- basic set of nozzles

Specifications Hypertherm		Powermax 1250	Powermax 1650
power	kW	20 / 200 - 600 V	30 / 200 - 600 V
cutting current	A	25 - 80	30 - 100
cutting capacity (max.)	mm	16	19
speed (at 12 mm)	mm/min	991	1447

For more information, please contact us or visit www.knuth.de

Plasma Cutting Systems

TFGM Plasma

Low-cost compact Plasma Cutter System, including cutting table, premium plasma source, catch tray, and connection for a smoke exhaust

- high-resolution step motors with planetary gears for exact positionen and high repetability
- robust gear drive for travel speeds up to 250 mm/s
- cost-effective air plasma cutter for structural steel, stainless steel, aluminum, etc.
- linear guides on all axes
- X axis with drives on both sides
- Opticut-CNC software package
- includes Hypertherm Powermax 1250 or 1650 - quick and low-cost with advanced technology
- ready for connection to an exhaust system (not included)
- bridge height: 140 mm

TFGM Plasma 3015 shown

Water-jet cutting with a wide range of applications:

- Mechanical Engineering
- Aerospace Industry
- Residential and Industrial Construction
- Glass Industry
- Wood Processing Industry
- Automotive and Automotive Supplier Industry
- Electric Industry
- Food Industry
- Stonemasonry

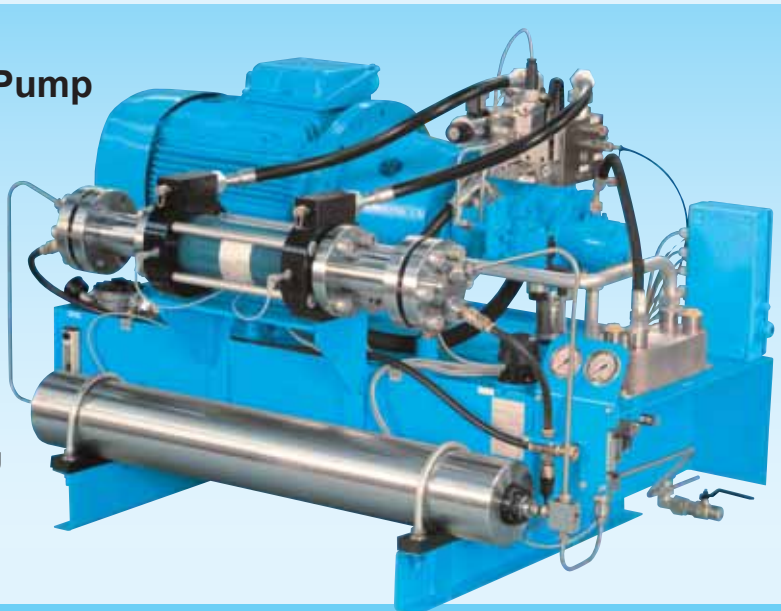
Specifications		Hydro-Jet 2010	Hydro-Jet 3020	Hydro-Jet 6020
cutting capacity	mm	2000 x 1000	3000 x 2000	6000 x 2000
Z axis travel	mm	250	250	250
table load capacity	kg/m²	600	600	600
abrasive / pure-water		yes	yes	yes
cutting tank is isolated from the guide machine		yes	yes	yes
drive type		gear rack	gear rack	gear rack
Feed				
max. feed	m/min	16	16	16
Accuracy				
positioning accuracy	mm	(across 500) ± 0.05	(across 500) ± 0.05	(across 500) ± 0.05
repeatability	mm	(across 500) ± 0.05	(across 500) ± 0.05	(across 500) ± 0.05
Dimensions/Weight				
Dimensions	mm	3360 x 2250 x 4000	4360 x 3250 x 4000	6350 x 3250 x 4000
weight (without water)	kg	1700	2950	3950
Part No.		180 711	180 712	180 713

ECOTRON 40.37 High-Pressure Pump

- the Standard Pump for Hydro-Jet Cutters

- **maximum power and reliability for pure-water and abrasive cutting operations**
- **superior operation safety and ease of maintenance**

- hydraulic drive with axial-piston pump
- infinitely variable pressure control via CNC
- oil/water heat-exchanger for oil cooling system, or optional oil/air cooler
- pressure booster, complete with high-pressure tubing
- pulsation damper with 2.49 liter reservoir
- relief valve integrated in the high-pressure circuit



Specifications High-Pressure System ECOTRON 40.37		
main motor rating	kW	37
flow rate (max.)	l/min	3.8
max. operating overpressure	bar	4000
continuous operating pressure (max.)	bar	3800
gear ratio		1:12.78
oil tank capacity	Liter	130
environmental temperature for oil/air cooler		10 - 35°
environmental temperature for oil/water cooler		10 - 45°

water infeed / waste water connection		0.5“ / 3/8“
water pressure, with booster pump	bar	1 - 3
high pressure connection, 3/8“ & 9/16“ HP pipe		M30x2
air supply	bar	5.5 - 7
compressed air connection for tube (OD)	mm	6
required power connection	A	125
width x depth x height	mm	1800 x 850 x 955
weight	kg	950

For more information, please contact us or visit www.knuth.de

Water-Jet Cutting Systems
Hydro-Jet

Versatile water-jet cutting system for complex cutting tasks

- bilaterally driven and guided gantry
- DC servo motors with zero-backlash gears and precise linear guides on all three axes
- water tank and guide machine are set up as stand-alone units
- fine tuned drive system with helical gears on X and Y axis ensures high precision and reliability
- guideways and drive elements are reliably protected from spray water and contamination
- extra rigid stainless steel tank with high load bearing capacity
- additional catch grid catches small parts
- electronic height-control maintains a constant distance between the water-jet nozzle and the part
- CNC controlled water pressure
- CNC-controlled abrasive material supply (the abrasive sand is precisely metered and fed without pressure)
- very easy programming of PC control with graphic user interface
- optional expansion for 3-D and multiple head applications

GPlus 450
www.knuth-gplus.de

Standard Equipment: CNC control with TFT monitor, electronic hand-wheel, control panel, PACut cutting software, grid nesting, high-pressure pump, abrasive cutter head, abrasives container (1000 kg), abrasives conveyor, autom. Z axis with collision guard, settling tank, operating manual and programming instructions

Options	Part No.		Part No.
starter kit	166 213	abrasive mud vacuum system	180 739
sound proofing pump enclosure	180 769	light barrier	180 829
oil / air cooler for ECOTRON 40.37	180 767	Dual head operation	180 721
Laser Pointer	180 828	3D cutter head	180 738

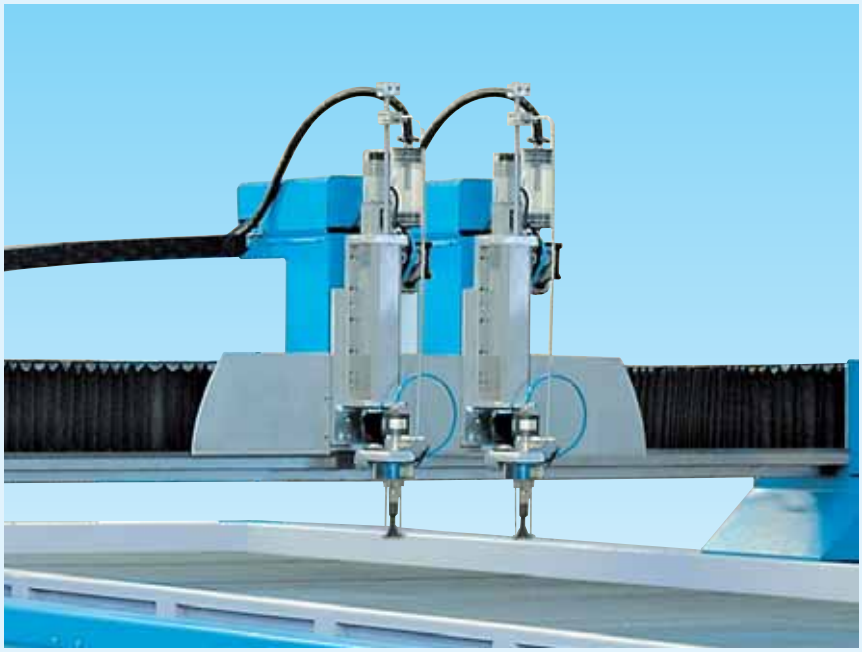
Call us to inquire about the latest best prices under: +49 4321 609-0

Water-Jet Cutting Systems
Hydro-Jet additional options

2nd cutter head

- for parallel cutting in the same operation
- separate 2nd Y axis with slide, driven via guide rod
- over the 2nd Y axis is a CNC controlled Z axis with height control, collision guard and sand metering device
- manual adjustment of head distance
- Z axis stroke 250 mm
- first head cuts across the entire travel range
- in parallel operation Y = 1000 mm
- minimum distance = 100 mm
- maximum distance = 1000 mm

Part No. 180 721



shown with 2nd cutter (option)

Chamfering

- spin axis rotates 360°, and swivel axis tilts 104° (-52°/+52°)
- max. spin/swivel axis travel speed 4m/min
- the software-embedded chamfering module allows quick and easy programming of chamfer cuts
- chamfer can be varied element for element

Part No. 180 738

Chamfering option is shown

Contour Nesting

advanced feature for your work preparation

- several components can be nested on one plate
- parts can be turned, mirrored and nested
- for optimum material utilization
- also available as workstation version

Part No. 180 820

controlled Z axis with height control

electronic hand-wheel

cuts fine contours

For more information, please contact us or visit www.knuth.de

Water-jet Cutting System

Hydro-Jet Eco 0615 S • Eco 0615 SL

Enter the fascinating world of water-jet cutting technology!

Compact Machine Design: guide machine, water tank, settling tank, and control cabinet are mounted on a granite machine frame, making the machine easy to transport and requiring minimal installation

Abrasive Cutting of steel, aluminum, marble, compound materials and much more
- high-precision cuts in virtually any material
- quick programming on an integrated PC control with graphical user interface; software package included
- perfectly tuned drive system
- high-pressure pump, 22 kW or 11 kW

Abrasives container for Eco 0615 SL

GPlus 450
www.knuth-gplus.de

NEW with booster pump

High power - low consumption - minimal maintenance cost

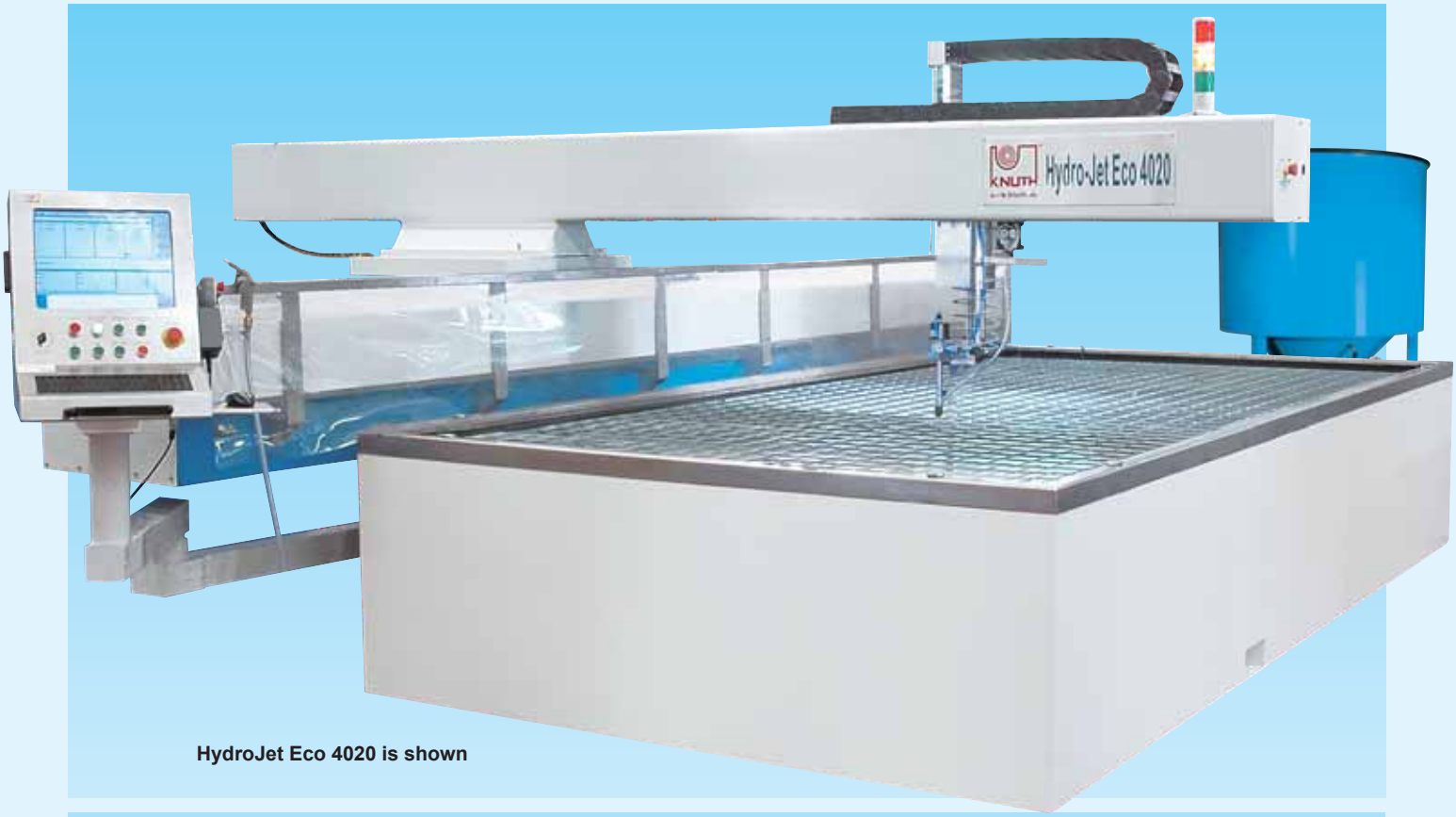
Hydro-Jet Eco 0615 S:
- incl. Eco high-pressure pump
- 2800 bar work pressure
- 3 l/min flow rate
- 22 kW motor rating

Hydro-Jet Eco 0615 SL:
- 3500 bar work pressure
- 1.2 l/min flow rate
- 11 kW motor rating

Standard Equipment: GPlus 450 Cut CNC control with TFT monitor, grid nesting, electronic hand-wheel, control panel, high-pressure pump, abrasive cutter head, abrasives container, sand metering, 3-chamber settling tank, sound proof enclosure (Eco 0615 S), operating and programming instructions

Optiones	Part No.
• Contour Nesting	180 820
• Pump enclosure for Eco 0615 SL	180 769
• Oil/air cooler for Eco 0615 SL	250 213
• Abrasives reservoir, 1 ton cap. for Eco 0615 S	250 598
• Starter Set	166 210
• Light barrier	180 732

Specifications Hydro-Jet			Eco 0615 S	Eco 0615 SL
Cutter System				
cutting capacity		mm	1500 x 600	
Z axis travel		mm	80	
operating pressure		bar	2800	3500
abrasive / pure-water			yes	yes
abrasives containers		kg	75	1000
drive type for X / Y axis			preloaded ball screws	
drive type for Z axis			man. adjustment / hand wheel	
Feed				
max. feed		m/min	4	
Accuracy				
positioning accuracy	X / Y axis	mm	± 0,05 / 300	
repeatability	X / Y axis	mm	± 0,05 / 300	
Dimensions/Weight				
overall dimensions (L x W x H)		mm	2600 x 4100 x 3000	
weight (without high pressure pumpe)		kg	2700	
Part No.			166 205	166 207



HydroJet Eco 4020 is shown

Standard Equipment: CNC control with GPlus 450 Cut and TFT monitor,electronic hand-wheel, control panel, PACut cutting software, grid nesting, high-pressure pump (2800 bar, Hydro-Jet Eco 2515), high-pressure pump Ecotron (3800 bar, Hydro-Jet Eco 4020), abrasive cutter head, abrasives container (1000 kg), abrasives conveyor, programming instructions, operating instructions

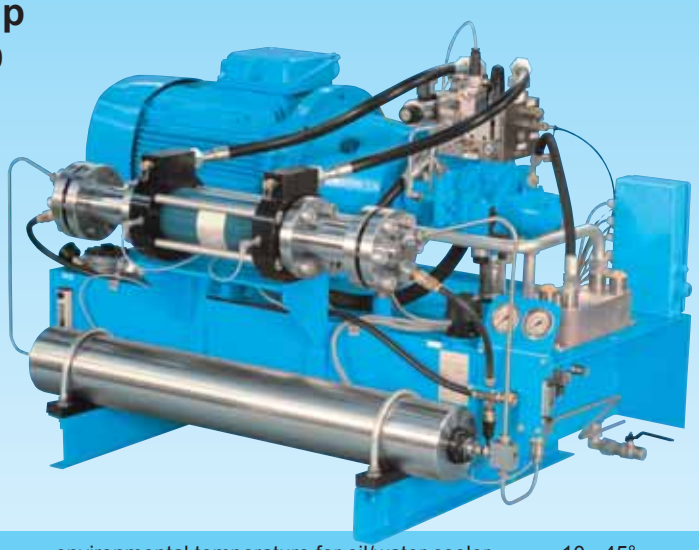
Options	**Part No.**		
• Ecotron 40.37 high-pressure pumpe, 3800 bar (Hydro-Jet Eco 2515	250 599	• laser pointer	180 828
• oil / air cooler for Ecotron 40.37	180 767	• height control and collision guard for Z axis	250 135
• pump enclosure for Ecotron 40.37	180 769	• software option for contour nesting	180 820
		• starter kit	166 213
		• light barrier	180 829

ECOTRON 40.37 High-Pressure Pump

the Standard Pump for the Hydro-Jet Eco 4020

- **maximum power and reliability for pure-water and abrasive cutting operations**
- **superior operation safety and ease of maintenance**

- hydraulic drive with axial-piston pump
- infinitely variable pressure control via CNC
- oil/water heat-exchanger for oil cooling system, or optional oil/air cooler
- pressure booster, complete with high-pressure tubing
- pulsation damper with 2.49 liter reservoir
- relief valve integrated in the high-pressure circuit



Specifications High-Pressure System ECOTRON 40.37		
main motor rating	kW	37
flow rate (max.)	l/min	3,8
max. operating overpressure	bar	4000
continuous operating pressure (max.)	bar	3800
stroke speed	min^{-1}	35
gear ratio		1:12,78
oil tank capacity	l	130
environmental temperature for oil/air cooler		10 - 35°
required air pressure	kg/sec	1,48

environmental temperature for oil/water cooler		10 - 45°
water infeed		0,5“
water pressure, with booster pump	bar	1 - 3
waste water connection		3/8“
high pressure connection, 3/8“ & 9/16“ HP pipe		M30x2
air supply	bar	5,5 - 7
compressed air connection for tube (OD)	mm	6
required power connection	A	125
width x depth x height	mm	1800 x 850 x 955
weight	kg	950

For more information, please contact us or visit www.knuth.de

Water-Jet Cutting Systems

Hydro-Jet Eco 2515 • 4020

Rigid Water-Jet Cutting System with small footprint and maximum operator

- high-pressure system up to 3800 bar
- completely equipped for Abrasive & Pure-Water Cutting
- axes are driven via preloaded ball screws
- Flying Bridge design
- work area is open on three sides for comfortable loading
- mechanical feed on Z axis
- separately set up abrasives container with 1000 kg fill capacity

HydroJet Eco 2515 is shown

Specifications Hydro-Jet		Eco 2515	Eco 4020
cutting capacity	mm	2500 x 1500	4000 x 2000
Z axis travel	mm	155	155
operating pressure	bar	2800	3800
flow rate	l/min.	3	3,8
max. table load capacity	kg/m²	800	800
rapid feed	mm/min	4800	4800
positioning accuracy	mm	± 0,1	± 0,1
repeatability	mm	± 0,05	± 0,05
overall dimensions (L x W x H)	mm	3700 x 3430 x 3500	5700 x 4160 x 3500
weight (without water)	kg	4800	5900
weight with water	kg	8000	12400
fill capacity of sand container (max)	kg	1000	1000
max. sand feed	gram/min.	0 - 500	0 - 500
Part No.		166 200	166 216

GPlus 450Cut

Our Future-Oriented Control System for Cutting Systems

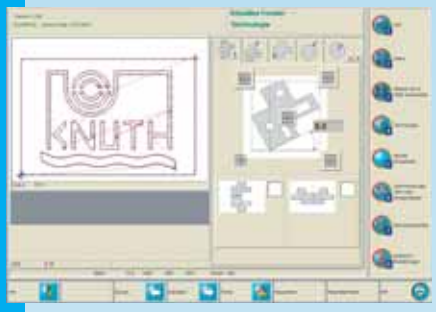
Quick - powerful - user-oriented

- **easy to learn without prior DIN-ISO programming knowledge - from newcomers to professional users**
- **short learning curve for experienced users - immediate productivity**
- **quick programming directly at the machine, or easy transfer of programs to minimize down-times**
- **GPlus Support for any programming questions and quick assistance for problems**

- **Easy, user-oriented operation** allows quick creation of programs
- **Geometry imports** from DXF and DIN/ISO program files
- Faulty geometries can be repaired and edited with the **integrated DXF Analyzer**
- **50 standard macros** simplify the creation of a wide variety of geometries
- **Instant display** of all starting cut changes in the drawing with simulation option
- **Optimum material utilization** via grid nesting function with critical features like turning, mirroring, and manual sorting
- **Material database with plate management function** - for the management of all customer-specific data on machined materials, including cutting technology data, and dimensions
- **Optimum contour approach** made possible by a multitude of definable starting cut conditions differentiating between circular and non-circular inside and outside contours
- **Zoom feature** - enlarges the part view and all starting cuts
- **User-friendly HMI** allows modification of any cutting parameters during cutting, plus easy operation including all required service messages (GPlus 450 Cut)
- **Cutting and marking** of parts in one program

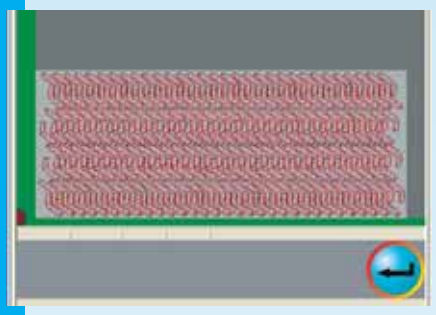
- industrial PC-based CNC
- block processing time: 450 NC blocks per sec
- 40 GB hard drive storage
- 2.0 GHz Intel Celeron processor
- 10/100 MBit Ethernet interface (to load NC programs from a network)
- USB port for data transfers

Plate and Parameter Database

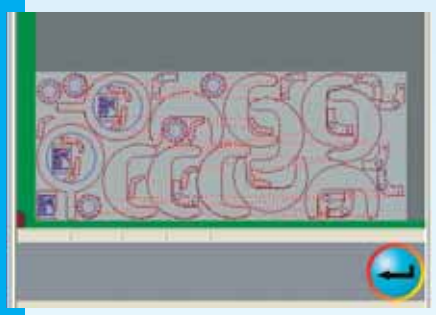


Technology and Machine Setup

Grid Nesting (rectangular nesting)



Parquet Nesting with Part Rotation (optional)



Contour Nesting (optional)

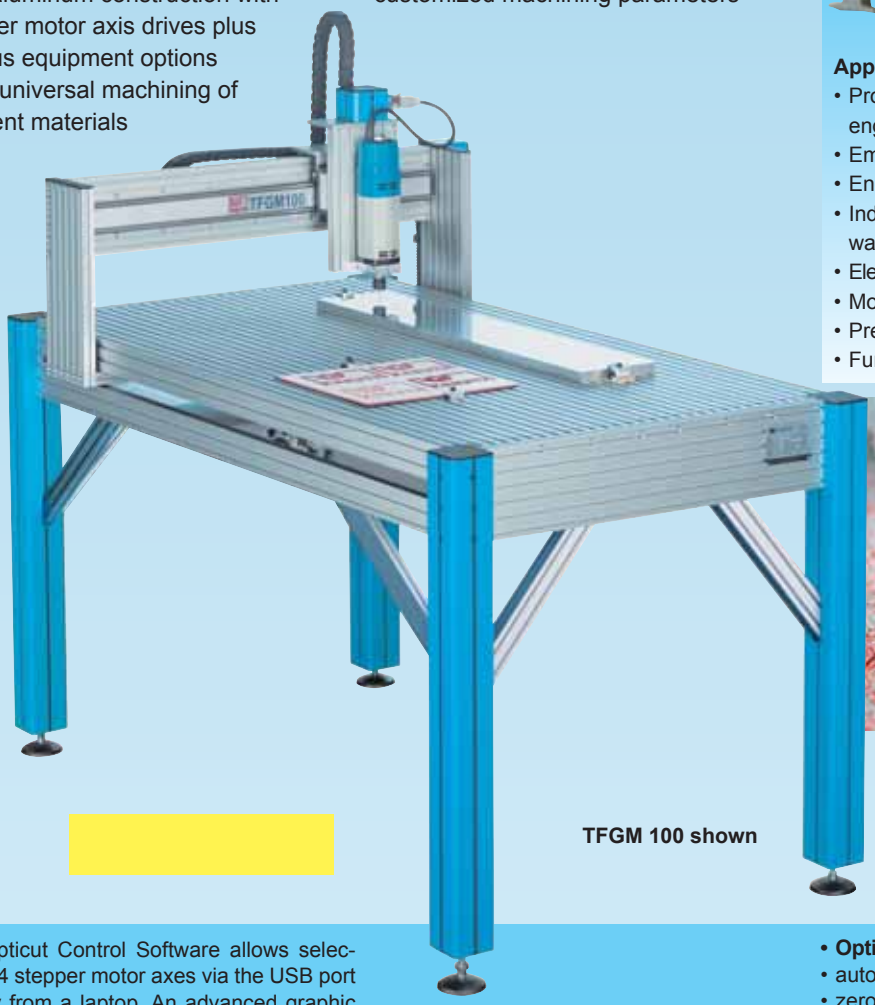
For more information, please contact us or visit www.knuth.de

Bench-type Milling and Engraving Systems

TFGM 35 • 45 • 100 • 1100

Universal use for a variety of milling and engraving applications on different materials like aluminum, brass, copper, PVC, wood, acrylics, hard fiber boards, etc.

- integrated CAM system for automatic control through a PC/Laptop
- rigid aluminum construction with stepper motor axis drives plus various equipment options allow universal machining of different materials
- state-of-the-art controller electronics and user-friendly software for quick and reliable processing of customized machining parameters



TFGM 100 shown

Application Examples:

- Production of advertising material (milling, engraving, cutting)
- Embossing (coins, medals, coining punch)
- Engraving (door signs, goblets)
- Industrial engraving (serial number plates, warning signs)
- Electronics (front plates, control panel labeling, PCBs)
- Model construction (architecture, hobby)
- Precision mechanics
- Furniture industry

The Opticut Control Software allows selection of 4 stepper motor axes via the USB port directly from a laptop. An advanced graphic user interface provides quick access to many tasks, like milling, drilling, foil cutting, engraving, scanning, plotting and ditigalizing. The machine area is represented by the CAD-like user interface of the Opticut Software. From this area, all elements can be displayed, like drawing data, workpiece, zero point, park position, or measuring position. Minimum hardware and software requirements for Opticut are listed below:

- Operating system: Windows 98/ME/2000/XP
- Microsoft. Net Framework V1.1 and
- Microsoft Internet Explorer 5.01
- Microsoft Managed DirectX 9 or higher
- for joystick
- Pentium 400MHz processor or higher
- (or equivalent equipment)
- CD-ROM drive
- RAM: 64 MB
- Hard drive: 40 MB free disk space
- Controller SMC4D

• Opticut CNC 4.4 Features:

- automatic homing
- zeroing
- park position
- spindle with automatic start/stop
- control for automatic cooling spray (optional)
- control for height scanning (optional)
- incremental machining for deep immersion depths
- autom. tool radius compensation, inward and outward
- selective machining sequence
- tool management
- cutting time determination
- import of HPGL.PLT, DIN 66025, .DXF, .EPS and .AI files

Specifications		TFGM 35	TFGM 45	TFGM 100	TFGM 1100
working area	mm	380x480x85	490x560x85	1000x650x85	1050x1050x90
table size	mm	500x700	900x600	1500x800	1200x1150
max. operating speed X,Y	mm/s	60	60	60	60
travel speed	mm/s	4200	4200	4200	4200
std. motor speed	min^{-1}	11.000 - 25.000	11.000 - 25.000	11.000 - 25.000	11.000 - 25.000
voltage	V	220-230	220-230	220-230	220-230
motor rating	kW	1,05	1,05	1,05	1,05
weight	kg	30	42	88	168
Part No.		170 800	170 900	170 902	170 904

Standard Equipment:
standard milling motor spindle, collets 3 mm and 8 mm, universal cutter 1 mm, 2 mm, 3 mm, 4 holding clamps, Opticut CNC 4.4 CAM System - completely wired for connection to customer-provided PC (System Requirements: Windows 98/XP / Vista, USB port)

Perfect cuts and bores within minimum time in all non-ferrous heavy metals, plastic, wood, and with the appropriate equipment even in structural steel

- extensive selection of accessories for a wide application spectrum
- either T-slot setup table or vacuum table included at no extra cos

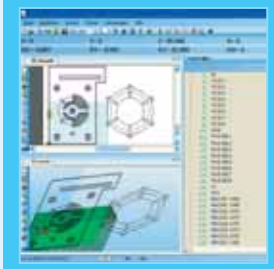
TFGM 2516 with vacuum table shown
Option: spindle motor with tool changer

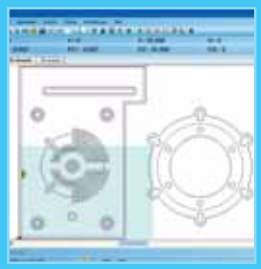
Optional Equipment: tool changer with 5 stations (optionally with 10 stations)

3 vacuum pumps (Model TFGM 2111) for optimum clamping of parts

double linear guides on Y axis

Opticut CNC 4.4 CAM System





The Opticut Control Software allows selection of 4 stepper motor axes via the USB port directly from a laptop.

An advanced graphic user interface provides quick access to many tasks, like milling, drilling, foil cutting, engraving, scanning, plotting and ditigalizing. The machine area is represented by the CAD-like user interface of the Opticut Software. From this area, all elements can be displayed, like drawing data, workpiece, zero point, park position, or measuring position.

Special option: oscillating, tangentially controlled cutter head is available in 3 designs for cutting foam, cardboard, corrugated paperboard, rubber, leather, carpeting, etc. with impressive speed and perfection:

ALVINIL-1000 oscillating electric knife with a speed of 3,500 cuts/minute and a stroke of 3.5 mm
Part No. 170 930

ALVINIL-2000 oscillating electric knife with a speed of 4,500 cuts/minute and a stroke of 6 mm
Part No. 170 912

ALVINIL-3000 oscillating pneumatic knife with a speed of 9,000 cuts/minute and a stroke of 9 mm
Part No. 170 931

Additional options: headstock drives in various designs - upon request with automatic tool-changer, air cooling or recution cooling system, pneumatic clamping or manual clamping, and speeds from 50 to 100000 rpm. Delta / 3-D bundeled end-to-end software solution for CNC routers, engravers, and sign making

For more information, please contact us or visit www.knuth.de

Bench-type Milling and Engraving Systems

TFGM

**The perfect solution for machining large boards!
With cutting speeds up to 150 mm/sec,
and table sizes from 1000 x 1000
to 4000 x 2000 mm**

either T-slot setup table or vacuum table included at no extra cost

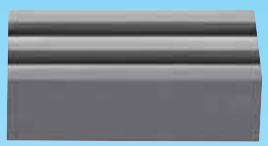
TFGM 1100 Pro shown with vacuum table

TFGM 2111 shown with vacuum table and custom spindle

- Y axis with double linear guides
- X axis with drives on both sides
- extra-wide linear guides combined with an efficient gear drive allow rapid feed speeds up to 12,000 mm/min.
- Z axis includes a motor brake
- 3 vacuum pumps for optimum workpiece fixation
- driven by our OPTICUT CNC controller

Standard Equipment: standard cutter motor spindle, exhaust-ready (without suction device), collets 3 mm and 8 mm, universal cutter 1 mm, 2 mm, 3 mm, four holding clamps, Opticut CNC 4.4 CAM System completely wired for connection to customer-provided PC (system requirements: Windows 98/XP/Vista, USB port)

Specifications		TFGM 1100 Pro	TFGM 2111	TFGM 2516	TFGM 31205	TFGM 41205
Working Area	mm	1050x1050x160	2050x1050x160	2550x1550x160	3050x2050x160	4050x2050x160
table size	mm	1000x1000	2000x1000	2500x1500	3000x2000	4000x2000
max. operating speed	mm/s	150	150	150	150	150
rapid feed	mm/min	12000	12000	12000	12000	12000
std. motor speed	min^{-1}	11.000-25.000	11.000-25.000	11.000-25.000	11.000-25.000	11.000-25.000
motor rating	kW	1,05	1,05	1,05	1,05	1,05
vacuum table power consumption	kW	2,8	4,2	5,6	7,0	7,0
voltage	V	230	230	230	230	230
weight	kg	195	255	405	585	735
Part No. with vacuum table		170 907	170 922	170 924	170 926	170 928
Part No. with T-slot setup table		170 908	170 923	170 925	170 927	170 929



Stamps		**Cones**		**Octagon**	
Material	tool steel	Material	tool steel	Material	tool steel
Height	20 mm	Height	80 mm	Height	30 mm
Machining time	90 min.	Angle	± 5°	Machining time	45 min.
Number of cuts	2 (1 rough, 1 fine)	Machining time	170 min.	Number of cuts	2 (1 rough, 1 fine)
Surface grade	1.2 µ Ra	Number of cuts	1 rough	Surface grade	1.2 µ Ra

- state-of-the art cutting technology ensures excellent surface quality
- consistent wire diameter allows high cutting accuracy; cutting wire runs through only once
- removal speed 70 mm²/min
- independent programming of X/Y and U/V axes
- LCD display
- automatic positioning
- functions include: copy, flip, mirror, scale, rotate
- processing of DXF files
- test run feature
- diagnostics, and much more
- can be programmed during program execution

Standard Equipment: CAD/CAM software, erosion wire 0.25 mm, diamond guides, paper filter, operating tools, RS-232 interface and cable, operator manual

Smart DEM Specifications		
Machine		
max. workpiece size	mm	350 x 450 x 200
max. workpiece weight	kg	300
X/Y table travel	mm	250 x 350
U/V axis travel	mm	30 x 30
wire diameter	mm	0.25
max. wire tension	N	1600
max. cutting angle		+/- 5°/ 100
max. wire spool	kg	6
machine weight	kg	2000
wire guide		diamond wire guide
max. cutting capacity	mm²/min	70
best surface roughness	µ Ra	1.2
positioning accuracy	mm	0,02
connected load	kW/V	3 / 400

Dielectric System		
dielectric fluid		deionized water
reservoir capacity	l	100
filter		paper filter 10µ
CNC control		
display		LCD display
software		ELAPT 3.2
controlled axes		X, Y, U, V
smallest input increment	mm	0.001
interpolation		linear, circular
contour rotation		+/- 90°
position indicator		all axes
interface		RS-232
media drive		3.5” floppy drive
Part No.		180 455

CNC Electric Discharge Machine

SMART DEM

Powerful wire spark erosion machine for production of high-precision dies and electrodes

- best surface grade
- high erosion capacity
- E-Pulse technology
- PC/ control
- easy, quick programming
- CAD/CAM software included

Electric Discharge Machine
ZNC-EDM 250

Low-Cost Entry-Level Electric Discharge Technology

starting at

- NC controlled feed on Z axis
- compact design for machining of small parts
- rigid machine base
- linear scales in all axes to ensure constant precision
- separate dielectric reservoir
- low-maintenance, high efficiency
- DC servo drive for fine-tuning of system stability
- user-friendly, easy to learn operation
- parameters are entered directly and the control panel and can easily be optimized
- parameters set for a particular machining process can be stored

ZNC-EDM 250 shown with optional accessories

Options: adjustable electrode holder for ZNC-EDM 250
Part No. 100 107

Specifications			ZNC-EDM 250	ZNC 435 L	ZNC 760 L
Machine					
travel	- X axis	mm	250	450	700
	- Y axis	mm	200	350	600
quill stroke		mm	200	250	300
table dimensions		mm	450 x 280	700 x 450	700 x 1200
electrode holder-to-table distance		mm	200 - 400	250 - 600	300 - 870
max. electrode weight		kg	30	75	200
max. part weight		kg	200	700	2000
overall dimensions (LxWxH)		mm	1390 x 1480 x 2100	1500 x 1600 x 2100	1855 x 1650 x 2550
weight		kg	1000	1800	3800
Generator					
connected load		kVA	5	7.5	9
mean laser power (max.)		A	40	80	100
max. removal rate		mm^3/min	400	500	800
roughing depth		µm Ra	< 0.3	0.3	0.3
minimum electrode wear		%	≤ 0.2	0.2	0.2
weight		kg	-	200	200
Part No.			100 105	100 115	100 116

CNC-Controlled Electric Discharge Machines

ZNC 435 L • 760 L

For maximum precision and cost-effectiveness

- user-friendly CNC control assists the user in the selection of work parameters
- the machine frame design incorporates modern aspects plus many years of manufacturing experience
- X and Y axes are equipped with preloaded ball screws for low maintenance and high precision
- the main axis is positioned by a precision spindle, which has its own lubricant circuit - ensuring constant temperature conditions at the spindle, minimum friction and maximum precision
- the dielectric system is driven by a premium pump made by a renown European manufacturer
- machine operation is user-oriented and easy to learn
- fine-incremented work parameters allow high powered material removal and finishing in one process
- diagnostics information is very helpful for troubleshooting

ZNC 435 L is shown

Standard Equipment of ZNC 435 L and 760 L: control unit, fire extinguishing system, work lamp, filter, scales for X / Y axis, chuck, operating tools, operator manual

Options for ZNC 435 L and 760 L:	Part No.		
• Planetary erosion head	250 277	• Magnetic clamping plate	250 278
		• Additional options available upon request	

Heavy-duty gantry-type and moving column-type machining centers

PBZ	• for large parts with up to 36 tons weight • very high accuracy even under high cutting forces
Mould-master	• Gantry-type Milling Center for mold construction • including high-capacity milling spindle and HSK mount
Matrix Plus	• Moving-Column Machining Center with cast-iron frame

PBZ • Mouldmaster • Matrix Plus

Horizontal Machining Centers

HBZ	• indexable table for maximum flexibility, and 60-station tool changer
Unicenter	• automatic change from vertical to horizontal machining and vice versa

HBZ • Unicenter 700

Vertical Machining Centers

X-mill	• powerful machining center in a heavy-duty design with state-of-the-art GPlus450 CNC
Rapimill	• highly dynamic gantry design for powerful chip removal in tool making applications
Eco-Center	• low-cost entry-level machine for automatic CNC Milling

X.mill • Rapimill • Eco-Center

Engraving/Milling Machines

X-Graph 650	• powerful gantry-type engraving and milling machine with rigid machine frame
Nano-Graph	• Mini Engraving/Milling Machine, easy to program

X-Graph 650 • Nano-Graph

CNC Milling Machines

EcoMill	• high quality and great price/performance ratio
KB 2100 CNC	• powerful CNC Bed-type Milling Machine with universal swivel head

EcoMill • KB 2100 CNC

High-Quality Machines to support the success of your business!

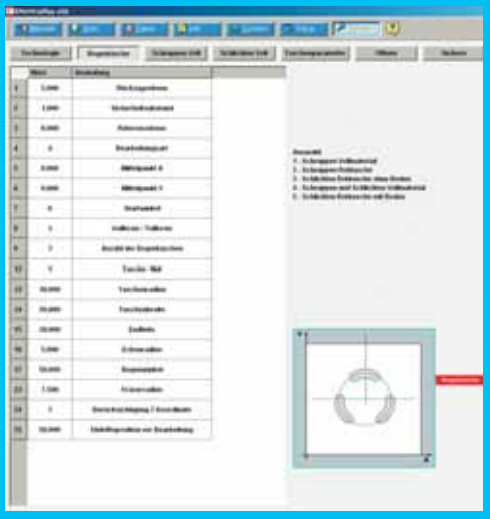
CNC Milling

Large selection – from small low-cost CNC Milling Machines to high-capacity Vertical and Horizontal Machining Centers all the way to large, heavy-duty Moving Column and Gantry-type Milling Centers

NEW and exclusively from KNUTH:

GPlus 450

GPlus 450 Control



- Windows-based CNC control
- optimum user interface developed by users
- wide variety of graphics-based machining cycles
- very large storage capacity (40 GB)
- processing time: 450 NC blocks per sec.

X.mill 700 HS

- World-Class High-Performance Machining Center features Mineral Casting Frame

Matrix Plus

- Moving Column Machine with cast-iron bed
- large travels: max. 3200 x 720 x 620 mm
- high travel speeds up to 32 m/min

X-Graph 650

- High-Precision Engraving and Milling Center
- powerful main drive, automatic tool changer
- spindle speed 18,000 rpm

GPlus 450

CNC Control for milling machines, lathes, and cylindrical grinding machines

Our Windows-based Control System

GPlus Remote Service

With the GPlus CNC you receive the standard capability of online remote diagnostics for your KNUTH machine tool. This easy and quick exchange of machine data simplifies communications an increases machine efficiency – saving you time and money.

All GPlus CNC systems come with a standard Ethernet interface that allows easy integration of your GPlus CNC system in your network. This enables you to work together with our service technicians on your GPlus system.

- Diagnostics: to optimize processes and detection of faults
- Monitoring: to monitor processes

Over 95% of all service requests can be resolved remotely, without the necessity of an on-site visit.

Optionally, the GPlus 450 software may be installed on a regular office PC (System Requirements: Intel processor) whereby the user interface is fully identical with the machine control user interface. This allows for a very realistic operation and programming training of newcomers. The created NC programs can be tested and simulated and are fully executable on the machine‘s control.

The **portable hand control** unit features an ergonomic design with two Acknowledge buttons (safety enable). The machine axes can only be moved, if one Acknowledge button is activated. Two rotary selector switches are provided for axis selection and feed speed setting. Additionally, the hand control unit is equipped with an emergency stop button, an electronic hand-wheel and machine-dependent function keys to simplify machine set-up.

Overview of M Cycles (Milling)
Milling Cycles
- circular pockets
- rectangular pocket,
- arc pockets
- face milling
- thread cutting, inside/outside

Drilling Cycles
- Basic drilling
- Drilling with dwell time
- deep-hole drilling
- Tapping
- Reaming

Drill Patterns
- Hole series
- Hole circle / segment
- Free drill positioning
- Rectangle / parallelogram
- Grid

Overview of T Cycles (Turning)
- Plain turning
- Facing
- Taper turning
- Radius turning
- Plunge-cut
- Recessing forms E and F
- Thread turning
- Multiple thread turning
- Contour turning

Overview of G Cycles (Grinding)
- cylindrical grinding, oscillating
- face grinding, oscillating
- multiple plunge-cut (groove) plane
- multiple plunge-cut (groove) linear
- plain shoulders
- linear shoulders

GPlus 450

CNC Control for milling machines, lathes, and cylindrical grinding machines

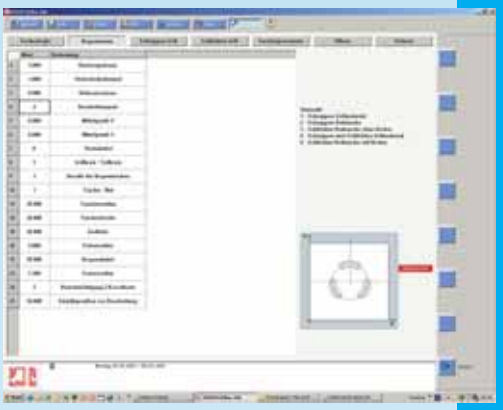
Quick – Precise – Powerful

- The GPlus 450 features a 17“ TFT color monitor with touch-screen display to display all data for a user-friendly programming experience and easy operation
- Status messages show the user the current state of the control

- Frequently used machining sequences can be programmed quick and easy using the graphics-based Cycle Editor.
- With the use of Input masks, the Cycle Editor guides the operator intuitively and self-explanatory through the editing steps. A separate Help Graphic is available for every definable parameter
- Knowledge about the G and M Code-Command Set or special programming language are NOT needed. However, experienced users have the ability to use DIN/ISO programming to create NC programs.

- Graphic simulation with integrated Zoom function for a detailed display of the actual chip removal

- A standard 10/100 MBit Ethernet interface and USB port allow fast data transfers from externally created programs (CAD/CAM) and saving these on the GPlus 450 hard drive



Why PC Technology?
PC Technology serves as platform for high-performance CNCs, since it allows us to automatically take part in the development programs of leading manufacturers of motherboards, hard drives, software, and operating systems. These manufacturers provide us with an „extended workbench“. The rapid development of these components gives the KNUTH GPlus 450 a special edge.

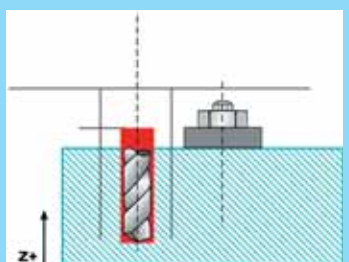
The maximized PC power results in optimized speed, surface quality, and accuracy of the machine tool combined with powerful dynamics and ease of use. This makes the GPlus 450 ideally suited for a large variety of machining technologies, e.g. milling (form construction), turning, grinding, or cutting technologies (water-jet, laser). Programming of technology-specific machining cycles is quick and easy; therefore, this control can be used for both single part and small batch productions.

Windows-based PC System

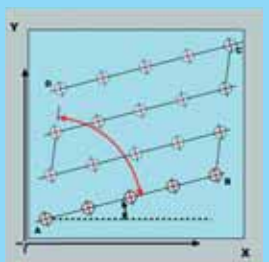
- TFT 17“ touch screen monitor
- single CPU concept (advantage: ties up only 2% of the system capacity)
- 40 GB storage, 2.0 GHz Intel Celeron processor, 256 MB RAM
- block processing time: 450 NC blocks per sec
- 10/100 MBit Ethernet interface (to load NC programs from a network)
- worldwide remote diagnostics
- Profibus, CANopen, DeviceNet implementation is possible
- machine can be integrated in factory networks
- technology-specific cycles for turning, milling, drilling, grinding

NEW! TOUCH PAD

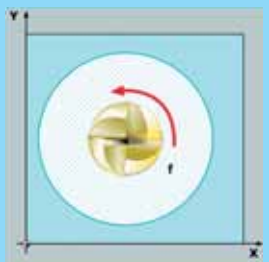
Samples of Parameter Help Graphics



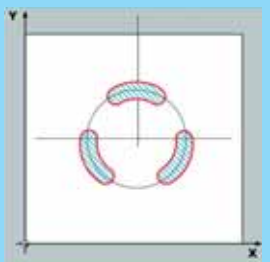
Final boring depth



Inside angle at corner point 1



Feed



Finish Measurement

CNC Drill / Milling Unit

BO 90 CNC

- heavy-duty cast-iron machine frame plus wide guideways ensure optimum drilling and milling work results
- provides long travels on all axes and high table load capacity for machining of large parts
- Siemens servo drives, preloaded ball screws with large diameters, and high-quality linear guideways ensure maximum precision at high travel speeds
- BT 40 spindle mount with automatic tool clamping
- pneumatic rotary table ensures maximum angular accuracy and provides simple adjustment of angle settings
- complete Siemens control package, including a Siemens 802C Control and axis servo drives, fulfills all requirements of a state-of-the-art CNC machine

Specifications BO 90 CNC		
travels		
X axis	mm	700
Y axis	mm	510
Z axis	mm	800
rapid feed (X, Y, Z)	mm/min	15000
work feed (X, Y, Z)	mm/min	1-5000
table rotation range (5° units)		360°
spindle nose-to-table dist.	mm	570
table size	mm	630x630
table load capacity	kg	1000
T-slots	mm	6x18 / H8
headstock mount		BT 40
spindle speed, infinitely variable	min^{-1}	0-6000
drilling capacity	mm	30
finish bore	mm	200
cutting capacity	cm^3/min	55
positioning accuracy	mm	± 0,008
repeatability	mm	± 0,005
angular accuracy		± 3“
motor rating	kW	11
machine weight	kg	4800
overall dimensions (LxWxH)	mm	3550x2350 x2100
Part No.		180 025

Quality by Knuth

Siemens 802 C
www.knuth.de

Standard Equipment: Siemens 802C control, pneumatic rotary table, electronic hand-wheel, halogen work lamp, central lubrication, 125 mm cutter head, drill chuck 3 - 16 mm B18, tool holder bits MT4 B18, reducing sleeves MT3, MT4, MT5, foundation bolts, operator manual and programming instructions

CNC Drill Unit

BO 130 CNC

Heavy-Duty CNC Milling / Drill Unit with Fanuc 0i-MD control for large and heavy parts

- 4-sided machining
- infinitely variable spindle speed with AC servo-motor, 15 kW power and high torque
- wide machine bed with 4 guideways
- rigid milling table with high load capacity for part weights up to 5 tons
- 3-axis CNC control
- rigid square guides ensure consistent work accuracy
- high-quality, high-precision preloaded ball-screws supported by special bearings ensure maximum positioning accuracy for all feed axes
- telescoping stainless steel covers protect the guides from chips and dirt
- rotary table with manual clamping can be locked at 4 positions: 0°. 90°, 180°, and 270°

Standard Equipment: Fanuc 0i-MD control with Manual Guide 0i, electronic hand-wheel, RS232 port, central lubrication, work lamp, operating manual and programming instructions

Specifications BO 130 CNC		
control		Fanuc 0i-MD
spindle diameter	mm	130
drilling capacity	mm	50
counter-boring capacity	mm	250
spindle taper		BT 50
table dimensions	mm	1000 x 1350
max. table load capacity	kg	5000
spindle center-to-table surface distance	mm	0 - 1200
table travel		
- linear axis (X)	mm	1500
- transverse axis (W)	mm	550
axial travel of spindle (Z axis)	mm	1000
headstock travel (Y axis)	mm	1200
number of slots / slot width	quantity/mm	7/22
slot distance	mm	250
spindle speed, infinitely var.	rpm	12 - 1000

max. torque			
- spindle		Nm	1330
- feed motor (X, Z)		Nm	22
- feed motor (Y, W)		Nm	30
spindle feed		mm/min	0.5 - 1000
feed X, Y, W axis / rapid feed		mm/min	5 -2000/10000
Z axis rapid feed		mm/min	5000
positioning accuracy	(X, Y)	mm	0.04
	(Z, W)	mm	0.03
repeatability	(X, Y)	mm	0.02
	(Z, W)	mm	0.015
work table rotation accuracy			± 6“ (4x90°)
work table repeatability			± 3“ (4x90°)
motor rating		kW	13.1 / 15
overall dimensions (LxWxH)		mm	5010x3700x3600
weight		kg	15000
Part No.			180 095

Specifications BO 110 CNC			
control			Siemens 802D
spindle diameter		mm	110
finish bore		mm	240
drilling capacity		mm	50
spindle taper			BT 50
table dimensions		mm	1320 x 950
max. table load capacity		kg	5000
Distance			
spindle center-to-table distance		mm	5 – 905
table travel	linear axis (X)	mm	1300
	transverse axis (W)	mm	1200
axial travel of spindle (Z axis)		mm	550
headstock travel (Y axis)		mm	900
facing slide travel		mm	160
max. work diameter			
facing slide		mm	630
table rotation (B)			360°

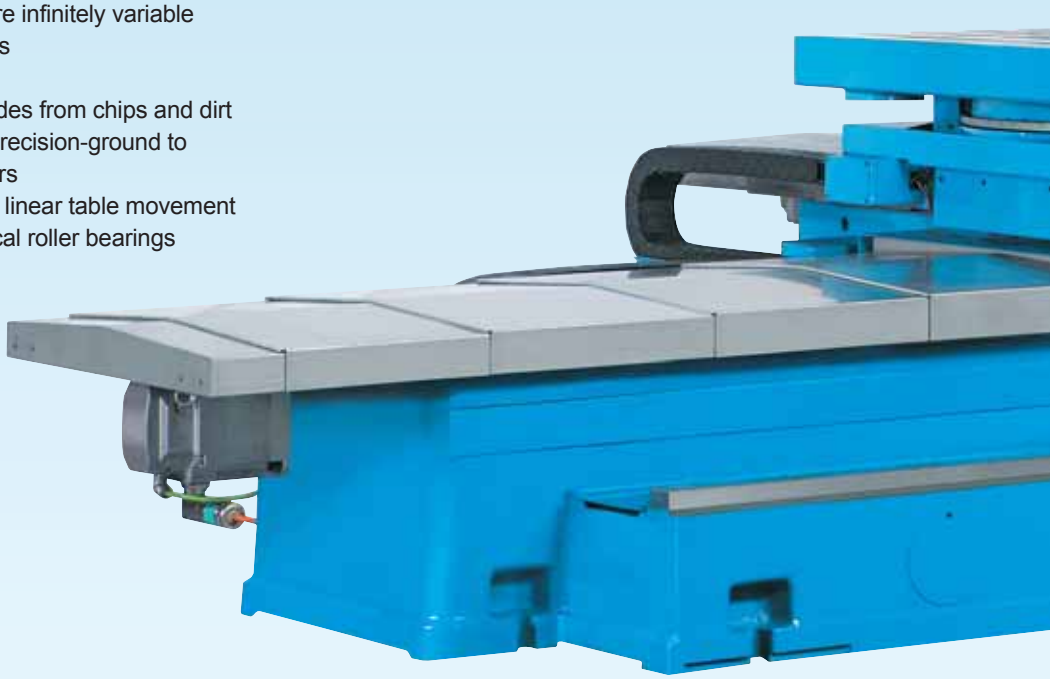
spindle speed, infinitely var.	rpm	12 – 1100
facing slide speed (infinitely var.)	rpm	4 – 130
max. spindle torque	Nm	1100
max. faceplate torque	Nm	1100
max. axial feed force	kN	13
spindle feed	mm/min	0.5 – 1000
feed X / Y / W axis	mm/min	5000
feed Z axis	mm/min	3600
feed facing slide	mm/min	1180
positioning accuracy	mm	X 0.04; Y 0.05; Z 0.06
repeatability X / Y / Z axis	mm	0.015
work table rotation accuracy		+/-6“ (4x90°)
work table repeatability		+/-3“ (4x90°)
motor rating	kW	11
dimensions	mm	5347 x 3020 x 2890
weight	kg	12000
Part No.		100 065

Rotating setup table
- precise table center support provided by preloaded axial/radial cylindrical roller bearings

Standard Equipment: Siemens 802D control, preloaded ball screws, central lubrication, electronic hand-wheel, RS-232 port, PC transfer software, programming instruction, operator manual

Siemens 802 D
www.knuth.de

- spindle speed and facing slide speed are infinitely variable
- rotary table for a part weight up to 5 tons
- 3-axis CNC control
- telescoping steel cover protects the guides from chips and dirt
- rigid square guides are hardened and precision-ground to ensure exact work results for many years
- wide machine bed with 4 guideways for linear table movement
- precise table center support on cylindrical roller bearings
- preloaded ball screws on all feed axes
- automatic central lubrication
- axially adjustable drill spindle with speeds up to 1100 rpm
- powerful main drive motor with 11 kW



CNC Drill Unit

BO 110 CNC

Heavy-Duty CNC Drill Unit with Siemens 802D control for large and heavy parts

POWER = solid machine base and powerful servo drives for very heavy workpieces with weights up to 36000 kg (PBZ 2445)

PERFORMANCE = spindle motor with up to 26 kW peak power, spindle speeds up to 6000 min-1, feeds up to 5000 mm, rapid feed up to 10 m/min for effective machining of large areas

PRECISION = high-strength box way, precision-ground preloaded ball screws combined with precise linear guides ensure high-precision machining

- **A strong machine bed, dual-columns, and a fixed bridge provide a rigid frame structure for maximum rigidity at high work loads and during machining of heavy parts**

- powerful Fanuc 0i-MD control with Manual Guide for quick and easy programming
- quick tool changes in 3 seconds via dual-arm 40-station tool changer for shorter machining times
- very large work table (max. 2000 x 4500 mm) and travels up to 4800 x 3200 mm
- high table load capacity
- 90° angular cutter head for side machining of parts witin just one setup
- chip conveyors on both sides of the table with a capacity of 50 kg/min ensure quick chip removal from workspace
- high-performance coolant system with a capacity of 200 l/min ensures optimum cooling and longer service life

90° angular cutter head

Standard Equipment: Fanuc 0i-MD with Manual Guide 0i, 90° angular cutter head, 40-station tool changer, chip conveyor, electronic hand-wheel, work space lighting, central lubrication, programming instructions, operator manual

Specifications Portamill PBZ Heavy			1435	2025	2035	2445
control			Fanuc 0i-MD	Fanuc 0i-MD	Fanuc 0i-MD	Fanuc 0i-MD
travels	X axis	mm	3700	2800	3800	4800
	Y axis	mm	2100	2700	2700	3200
	Z axis	mm	1000	1200	1200	1200
table size		mm	1250 x 3500	1600 x 2500	1600 x 3500	2000 x 4500
T-slot size		mm	28 x 150	28 x 160	28 x 160	28 x 200
max. table load capacity		kg	6000	8000	10000	36000
spindle mount			BT 50	BT 50	BT 50	BT 50
spindle nose-to-table dist.		mm	200 - 1200	200 - 1400	200 - 1400	200 - 1400
spindle speed		min^{-1}	30 - 6000	30 - 6000	30 - 6000	30 - 6000
spindle motor rating		kW	22 / 26	22 / 26	22 / 26	22 / 26
rapid feed X, Y, Z axis		m/min	10 / 10 / 8	10 / 10 / 8	10 / 10 / 8	10 / 10 / 8

CNC Portal-Type Machining Center

Portamill PBZ Heavy

Power - Performance - Precision

Specifications Portamill PBZ Heavy		1435	2025	2035	2445
work feed	mm/min	20-5000	20-5000	20-5000	20-5000
Tool Changer					
number of tools		40	40	40	40
max. tool diameter	mm	250	250	250	250
max. tool length	mm	500	500	500	500
max. tool weight	kg	20	20	20	20
positioning accuracy	mm	0.035 / 1000	0.035 / 1000	0.035 / 1000	0.035 / 1000
repeatability	mm	0.025	0.025	0.025	0.025
dimensions	mm	9700x4500x5400	8150x5640x5600	10150x5640x5600	12350x6410x5900
weight	kg	35000	46000	50000	75000
Part No.		170 032	170 034	170 036	170 038

- oil-cooled high-speed spindle, up to 3000 rpm
- automatic transmission for powerful chip removal

- flexible work space cover included with standard equipment
- rapid feed speeds up to 15 m/min
- large table for heavy parts up to 3000 kg

Standard Equipment:
Fanuc 18i-MB control with Manual Guide 0i, oil-cooled head-stock, autom. central lubrication, coolant system, spindle blow-out system, control cabinet with heat-exchanger, spiral chip conveyor, electronic hand-wheel, work space lamp, RS-232 port, operating tools, feet and bolts

Specifications HBZ 800			
control			Fanuc 18i-MB
table dimensions		mm	800 x 800
T-slots		mm	7 x 22 H7
max. table load capacity		kg	3000
Travels			
X axis		mm	2000
Y axis		mm	1200
Z axis		mm	1200
spindle mount			BT 50
draw bolts			MAS-P50T-1
spindle speeds		rpm	30 - 3000
motor rating		kW	15 / 18.5
axis motors	X / Y / Z	kW	7
	B	kW	4
spindle center-to-table top distance		mm	0 - 1200
spindle nose-to-table center dist.		mm	275 - 1475
rapid feed X / Y / Z		m/min	15 / 12 / 15
work table turning speed		rpm	4
indexing			1°
work feed X / Y / Z		mm/min	1 - 6000
Tool Changer			
tool stations		qty	60
max. tool length		mm	400
max. tool weight		kg	25
max. tool diameter		mm	125
tool selection			bi-directionally
tool-changing time		sec	13
weight		kg	18000
overall dimensions (LxWxH)		mm	4900 x 5100 x 3250
Part No.			181 070

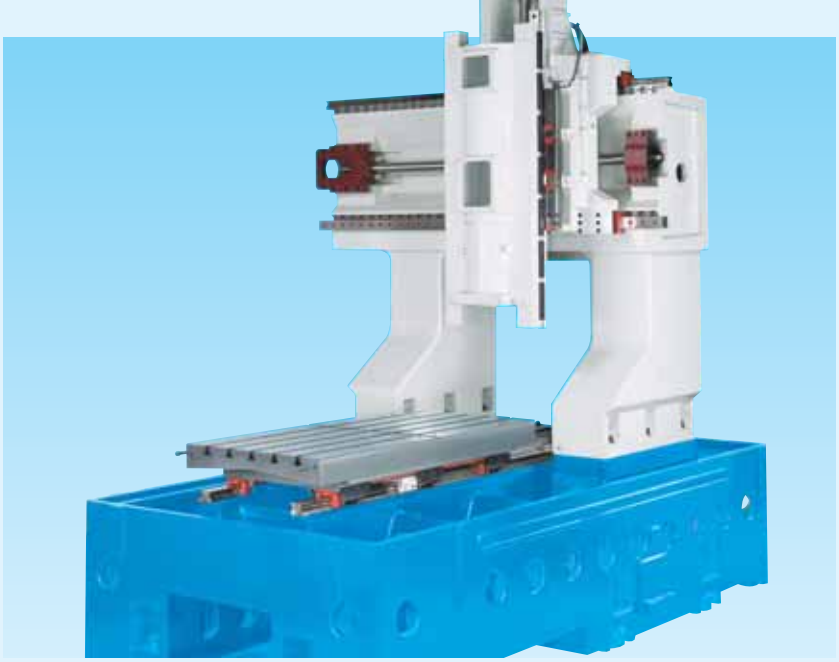
Horizontal CNC Drill Press/Milling Center

HBZ 800

60 tool stations and 4-sided machining let you machine large, complex parts to give you a competitive edge

- heavy machine body with single-column design
- spindle speed range from 30 to 3000 rpm
- 4-track box way
- high-precision indexing work table with servo drive
- max. table load capacity: 3000 kg
- headstock with programmable 2-step gearbox ensures powerful chip removal across the entire speed range
- powerful AC spindle motor, 15 / 18.5 kW
- oil-cooled headstock with temperatur control ensures optimum performance in demanding applications

Call us to inquire about the latest best prices under: +49 4321 609-0



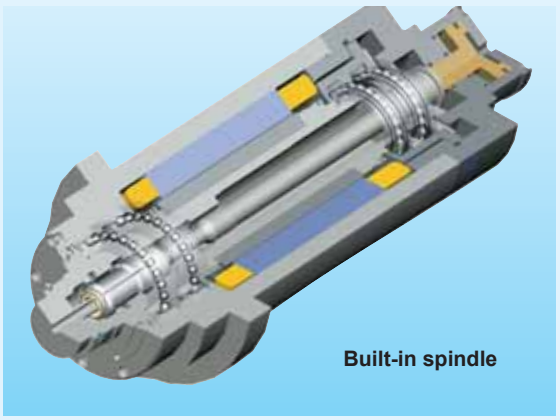
- motor spindle with roller bearings (built-in spindle) ensures maximum stability, axial and radial rigidity for high-speed machining
- one-piece bridge and rigid base are made of Meehanite cast-iron to ensure maximum geometric accuracy and dynamics
- linear roller guide systems for X, Y and Z axes
- large precision preloaded ball screws are directly coupled to the drive motors
- the preloaded ball screws feature an inside cooling system; a control system ensures minimum temperature fluctuations even at the highest feed speeds
- large work space for easy tooling of workpieces

The gantry-type design provides the basis for excellent milling results

Linear Roller Guide System

Automatic tool changer and tool measuring system

Specifications Mouldmaster 1200			
control		Fanuc 21i with Manual Guide 0i	Siemens 810 D with Shopmill
table dimensions	mm	1200 x 600	
T-slots (number/width/spacing)	mm	5 / 18 / 100	
max. table load capacity	kg	1000	
travels - X axis	mm	1100	
- Y axis	mm	600	
- Z axis	mm	500	
spindle mount		HSK-A63	
max. spindle speed	rpm	16000	
motor rating	kW	25	
spindle-to-table distance	mm	150-650	
rapid feed X / Y / Z	m/min	36	
work feed X / Y / Z	mm/min	1 - 20000	
tool changer		disk-type	
tool stations	qty	20	
max. tool length	mm	250	
max. tool weight	kg	12	
max. tool diameter	mm	50	
tool/tool	sec	0.3	
chip/chip	sec	4	
positioning accuracy	mm	± 0.005/300	
repeatability	mm	± 0.005	
machine weight	kg	11500	
overall dimensions (LxWxH)	mm	3100 x 2300 x 3000	
Part No.		180 133	180 134



Built-in spindle

Standard Equipment:
Fanuc 21i control mit Manual Guide 0i or Siemens 810 D with Shopmill, 20-station tool changer, cooled preloaded ball screws on 3 axes, tool measuring system, chip blow-out system control cabinet with heat-exchanger, chip conveyor, central lubrication, RS-232 port, operating tools, setup feet and bolts

CNC Gantry-Type Machining Center

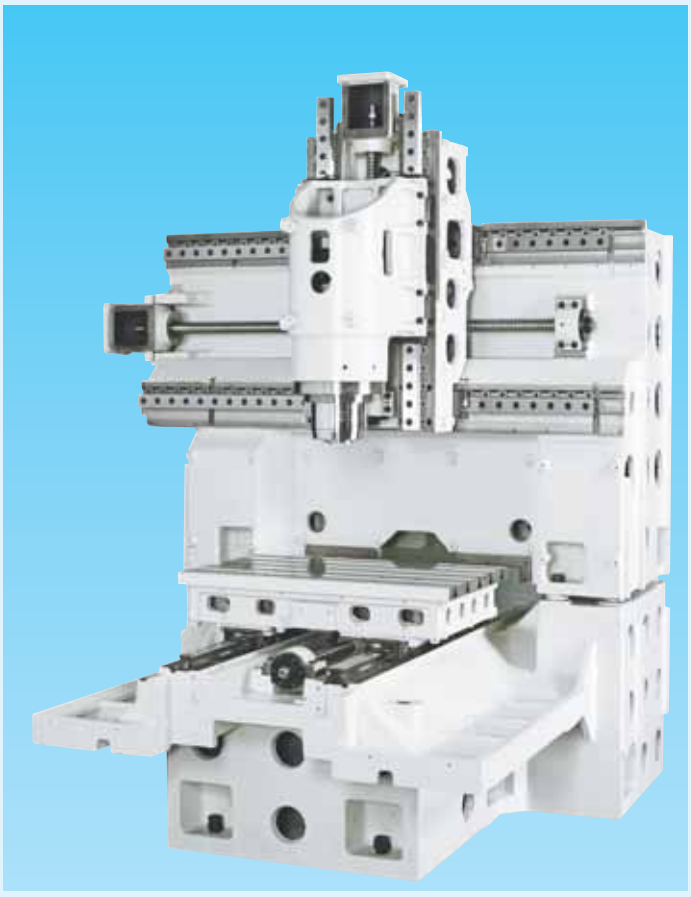
Mouldmaster 1200

Heavy-duty Portal-type Milling Center with high-capacity cutter spindle provides high axis travel speeds and maximum work accuracy

- 16.000 rpm
- 20-station disk tool changer with 4 seconds change time
- rapid feed up to 36 m/min
- HSK-A63 mount
- 25 kW headstock motor
- automatic tool measurement plus

Fanuc 21i
www.knuth.de

Siemens 810 D
www.knuth.de



Work Sample

Work Sample

Standard Equipment: GPlus 450 control, 16-station tool changer, spindle cooler, coolant system, spindle blow-out system, central lubrication, machine feet, operator manual, programming instructions

Optional Equipment:	**Part No.**
• 4th axis, GX 170 P, with manual tailstock	250 218
• manual chuck for GX 170 P	250 219
• 4th and 5th axis PAR 131 R	250 306

Specifications Rapimill 800		
control		GPlus 450
Working Area		
X axis travel	mm	700
Y axis travel	mm	510
Z axis travel	mm	410
spindle nose-to-table dist.	mm	150 - 560
throat	mm	555
table dimensions (LxWxH)	mm	800 x 510
table load capacity (max.)	kg	500
T-slots (number/width/spacing)	mm	5 x 18 x 100
Headstock		
spindle mount		BT 40
spindle speed	min^{-1}	15.000
Feed		
X, Y, Z axis rapid feed	m/min	36
feed speed, X, Y, Z axis	mm/min	1 - 12000

Tools		
tool length (max.)	mm	250
tool weight (max.)	kg	6
tool stations		16
Accuracy		
positioning accuracy	mm	0.003
repeatability	mm	0.002
Drive Capacities		
headstock motor rating	kW	11 / 14
motor rating X axis	kW	4.4
motor rating Y axis	kW	4.4
motor rating Z axis	kW	4.4
coolant tank capacity	Liter	250
overall dimensions (LxWxH)	mm	2680x1940x2800
weight	kg	6500
Part No.		170 130

CNC Vertical Machining Center

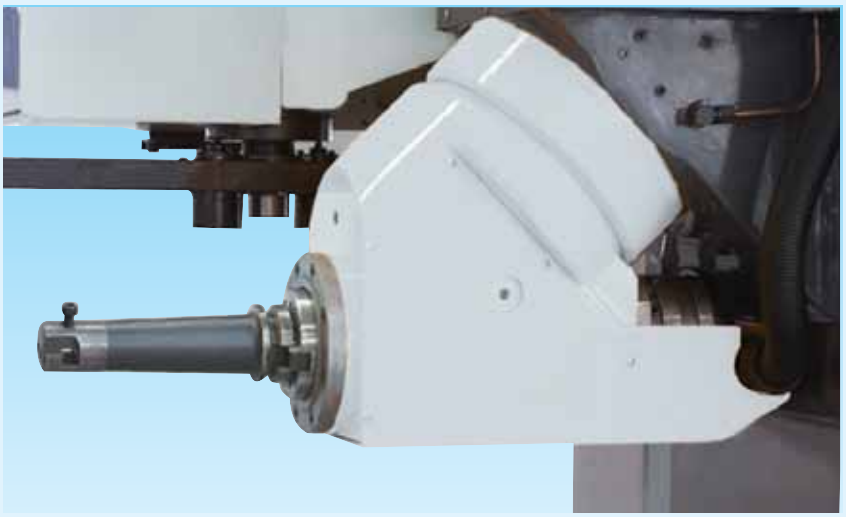
Rapimill 800

Closed, rigid gantry design for superior precision and maximum efficiency in tool making

- spindle speed 15,000 rpm
- rapid feed speeds up to 36 m/min
- GPlus control
- acceleration up to 1 G

Superior design features:

- extremely rigid, special T-type machine frame
- solid base in the same width, one-piece construction, sturdy setup table - full support across the entire travel distance
- high-quality linear guides on all axes allow very high travel speeds (rapid feed up to 36 m/min) plus high table load capacity (max.500 kg) ensure maximum accuracy even at the highest loads
- the special dynamics of these drives plus accelerations up to 1 G and high travel & spindle speeds result in a significant increase in productivity
- the high-capacity spindle unit includes an effective cooling system to ensure constant accuracy during continuous operation; it is extremely powerful and allows spindle speeds up to 15,000 rpm
- the high-performance, user-friendly, network-capable GPlus 450 Control allows maximum utilization of all the superior features of this machine



Horizontal spindle position with optimum chip exhaust for improved surface quality, and longer tool life provide increase production quality and lower costs

Vertical spindle position for easy handling and simple workpiece clamping

- standard 4th axis with 1° x 360 pitch - for multi-sided machining or the use of multiple clamping cubes increase productivity
- swivelling head - sides and top of workpieces can be machined without reclamping - saves time and provides maximum precision and easy progrmming
- column and base feature heavy ribbing for maximum rigidity and powerful machining
- X and Y axis with wide box ways; Z axis with premium linear guides
- telescoping covers protect all guides reliably from contaminations
- large, preloaded ball screws are driven directly by the servo motors
- automatic central lubrication for low maintenance is standard
- easily accessible machine enclosure

Standard Equipment:
- GPlus 450 control
- 30-station tool changer with dual-arm gripper
- electronic hand-wheel
- chip conveyor
- enclosed work space
- Ethernet and USB port
- automatic central lubrication
- cool oil system
- compressed air gun
- operating tools
- operating manual and programming instructions

Specifications Unicenter 700		
rotary indexer - table dimensions	mm	500 x 500
rotary indexer - range		360°
table load capacity	kg	500
T-slots (qty x width x spacing)	mm	5 x 18 x 100
Working area		
X axis travel	mm	700
Y axis travel	mm	810
Z axis travel	mm	700
spindle nose-to-table distance		
- vertical	mm	10 - 690
- horizontal	mm	50 - 740
throat	mm	450
Headstock		
speed range	rpm	20 - 3000
spindle mount		BT 40
Feed		
rapid feed X / Y / Z axis	mm/min	24000
work feed X / Y / Z axis	mm/min	1 - 10000
Tool Carrier		
number of tool stations		30
tool weight (max.)	kg	8

tool-changing time,		
- chip/chip	sec	7
- tool/tool	sec	2
Accuracy		
positioning accuracy X / Y / Z axis	mm	0,015
repeatability X / Y / Z axis	mm	0,01
positioning accuracy B axis (rotary table)	mm	0,015
repeatability B axis (rotary table)	mm	0,01
Drive Capacities		
main motor rating	kW	15
motor rating for X axis	kW	1.8
motor rating Y axis	kW	2.9
motor rating for Z axis	kW	2.9
Dimensions/Weight		
overall dimensions (L x W x H)	mm	3650 x 2800 x 2340
weight	kg	14000
Part No.		181 060

CNC Machining Center

Unicenter 700

30-station tool changer with dual spindle arm

Universal Machining Center – automatic change from vertical to horizontal machining and vice versa

- the Unicenter 700 machining center changes automatically between vertical and horizontal machining simply by swiveling the cutter head
- controlled indexing table for multi-sided machining without reclamping is included

includes total enclosure

GPlus 450
www.knuth-gplus.de

The universal cutter head swivels on two levels for a quick change-over from vertical to horizontal machining. Additionally, the cutter head can be moved to virtually any spatial angle.

Standard Equipment: Fanuc 0i MD control with Manual Guide 0i, elektronic hand-wheel, Ethernet and USB ports, ISO 50 collet chuck, collets (4, 6, 8, 12, 16, 18, 22, 26 mm), ISO 50 milling arbor (shank diam. 40 mm), reducing sleeve ISO 50 / MT 4, central lubrication, anchoring bolts 6 x M12 x 500 mm, work lamp, operating tools, operator manual

Specifications KB 2100 NC		
Working area		
X axis travel	mm	1500
Y axis travel	mm	600
Z axis travel	mm	650
table dimensions	mm	2100 x 500
table load capacity	kg	2000
T-slots (qty x width x dist)	mm	4 x 20 x 100
spindle mount		ST 50
Feed		
X axis rapid feed	mm/min	6000
Y axis rapid feed	mm/min	6000
Z axis rapid feed	mm/min	3000
feed speed, X axis	mm/min	2.5 - 3000
feed speed, Y axis	mm/min	2.5 - 3000
feed speed, Z axis	mm/min	2.5 - 2500
universal cutter head		
spindle speed	rpm	35 - 1345
spindle mount		ISO 50
throat	mm	610
spindle nose-to-table distance (vertical)	mm	0 - 650
spindle nose-to-table distance (horizontal)	mm	8 - 660
Drive Capacities		
motor rating		
- main drive	kW	7.5
- X / Y axis	kW	2.5
- Z axis	kW	1.4
- coolant pump	kW	0.55
Dimensions/Weight		
dimensions	mm	3650 x 2380 x 2750
weight	kg	7300
Part No.		101 420

For more information, please contact us or visit www.knuth.de

Bed-Type CNC Milling Machines

KB 2100 CNC

Powerful CNC Milling Machine with universal swivel head for complex, heavy or long parts

- heavy machine bed made of premium cast-iron to ensure maximum precision and rigidity plus extraordinary dynamic properties
- all guideways are hardened and coated with Turcite-B in cross direction - for smooth operation and long machine life
- the universal cutter head swivels on two levels, is rigid and easy to adjust
- high table load capacity and easy access for feeding large and heavy parts
- powerful 7.5 kW motor for strong performance
- Fanuc 0i-Mate MD with Manual Guide 0i - user-friendly and comfortable to use
- automatic central lubrication with timing and quantity control for simplified maintenance

CNC Mini Engraving/Milling Machine

Nano-Graph

Precise and quick machining for complex engravings

- rigid machine frame with profile rail guides
- high-precision preloaded ball screws on all 3 axes
- high-speed spindle motor for universal material machining
- easy and quick to program
- Look Ahead function
- easily accessible work space

Standard Equipment:
Mach 3 control software with interface cable for connecting to customer-provided PC (system requirements: Windows 95 / 98 / XP / 2000, USB port), collets (3 mm, 4 mm, 6 mm), 1 tool kit, clamping means, USB port, operating tools, operating and programming instructions

Specifications Nano-Graph		
Working area		
X / Y / Z axis travel	mm	300 / 300 / 90
table dimensions	mm	350 x 350
T-slots (qty x width x spacing)	mm	5 x 8 x 50
spindle nose-to-table dist.	mm	0 - 90
Headstock		
speed range / spindle mount	rpm	6000-24000 / ER 12
Feed		
rapid feed	mm/min	18000
work feed	mm/min	0 - 4500
Accuracy		

		F
positioning accuracy	mm	0,05 / 300
repeatability	mm	0,01
Drive Capacities		
main motor rating	kW	1,5
total connected load	kW	2
power supply	V	230
Dimensions/Weight		
Dimensions	mm	700 x 700 x 630
weight	kg	105
Part No.		170 355

X-Graph 650 CNC duty cycles

Specifications X-Graph 650 CNC			
Working area			
CNC Control			GPlus 450
travel	- X axis	mm	550
	- Y axis	mm	650
	- Z axis	mm	220
table dimensions		mm	600 x 540
table load capacity (max.)		kg	300
spindle nose-to-table dist.		mm	80 - 300
T-slots (qty x width x spacing)		mm	5 x 16 x 115
Feed			
rapid feed X / Y / Z		mm/min	15000
feed X / Y / Z		mm/min	8000
Headstock			
spindle speed		rpm	100 - 18000
Tool Carrier			
tool mount			BT 30

		B
number of tool stations		12
tool size Ø x L (max.)	mm	12 x 40
tool weight (max.)	kg	3
tool-changing time		
- tool/tool	sec	13
- chip/chip, including tool measurement	sec	26
Accuracy		
positioning accuracy	mm	0,01
repeatability	mm	0,005
Drive Capacities		
main motor rating	kW	3,2
Dimensions/Weight		
overall dimensions (LxWxH)	mm	2000x2000x2340
weight	kg	3000
Part No.		180 114

For more information, please contact us or visit www.knuth.de

CNC Engraving and Milling Center

X-Graph 650 CNC

Extra rigid gantry-type construction with GPlus technology for stringent demands in complex milling and engraving applications

- spindle speed 18,000 rpm
- 12-station tool changer

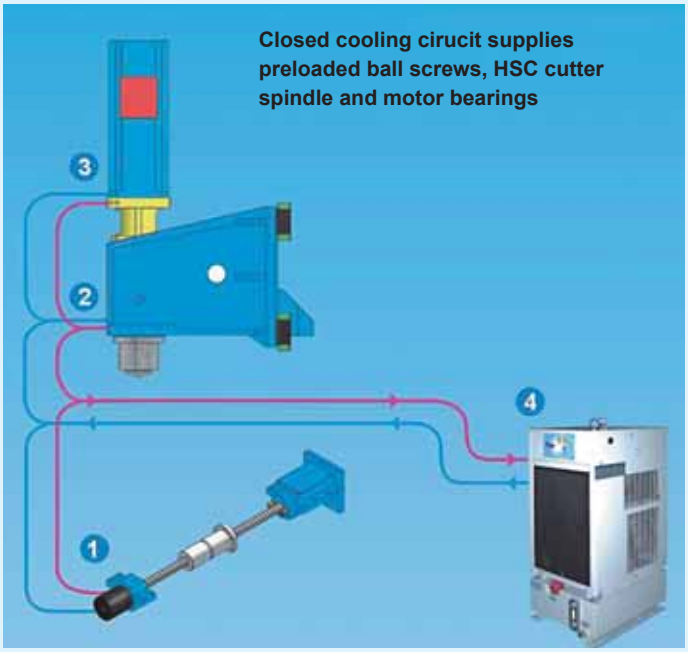
GPlus 450
www.knuth-gplus.de

- extra heavy gantry-type design, powerful drives, premium linear guideways and preloaded ball screws
- **GPlus control allows quick data transfers** and complete integration of complex CAD/CAM files
- Using the **graphics-based Cycle Editor**, even CNC newcomers can quickly and easily create programs for frequently used machining processes.
- The fast processor of the GPlus control ensures short machining times and perfect part surfaces, especially when milling complex 3-D designs.
- **spindle cooling** feature for increased tool life and maximum spindle accuracy

Options	Part No.
• tool length measurement	250 307
• 4th axis, GX 125 P, with manual tailstock	250 308
• manual chuck for GX 125 P	250 309
• 4th and 5th axis PAR 131 R	250 306
• collet chuck ER 20 / BT 30	148 560
• collet chuck kit 12-pack (0.5 to 12 mm)	148 561
• draw bolt s BT 30 - 45	148 562
• wrench	148 563

Standard Equipment: GPlus 450 control, 12-station tool changer, electronic hand-wheel, headstock cooling, totally enclosed work space, halogen lamp, Ethernet and USB port, automatic central lubrication, coolant system, machine feet, operating tools, operator manual

Specifications X-Graph 650 CNC, see page 50



1. The inside cooling system prevents excessive heating of the ball screws during high-speed operation of the machine
2. The cutter spindle features closed-circuit cooling to ensure a constant optimum temperature range
3. The milling motor bearing is integrated into the cooling circuit to prevent any heat transfer from the motor to the cutter head
4. High-capacity cooling system

Standard Equipment: GPlus 450 CNC control, 24-station tool changer with dual-arm gripper, electronic hand-wheel, spiral chip conveyor, totally enclosed work space, work lamp with program end indicator, Ethernet and USB ports, cooling system for milling spindle (X.mill 700 HS), cooling system for preloaded ball screw (X.mill 700 HS), air-conditioned control cabinet, automatic central lubrication, cutting oil system, , spray gun for rinsing, operating tools, operating and programming instructions

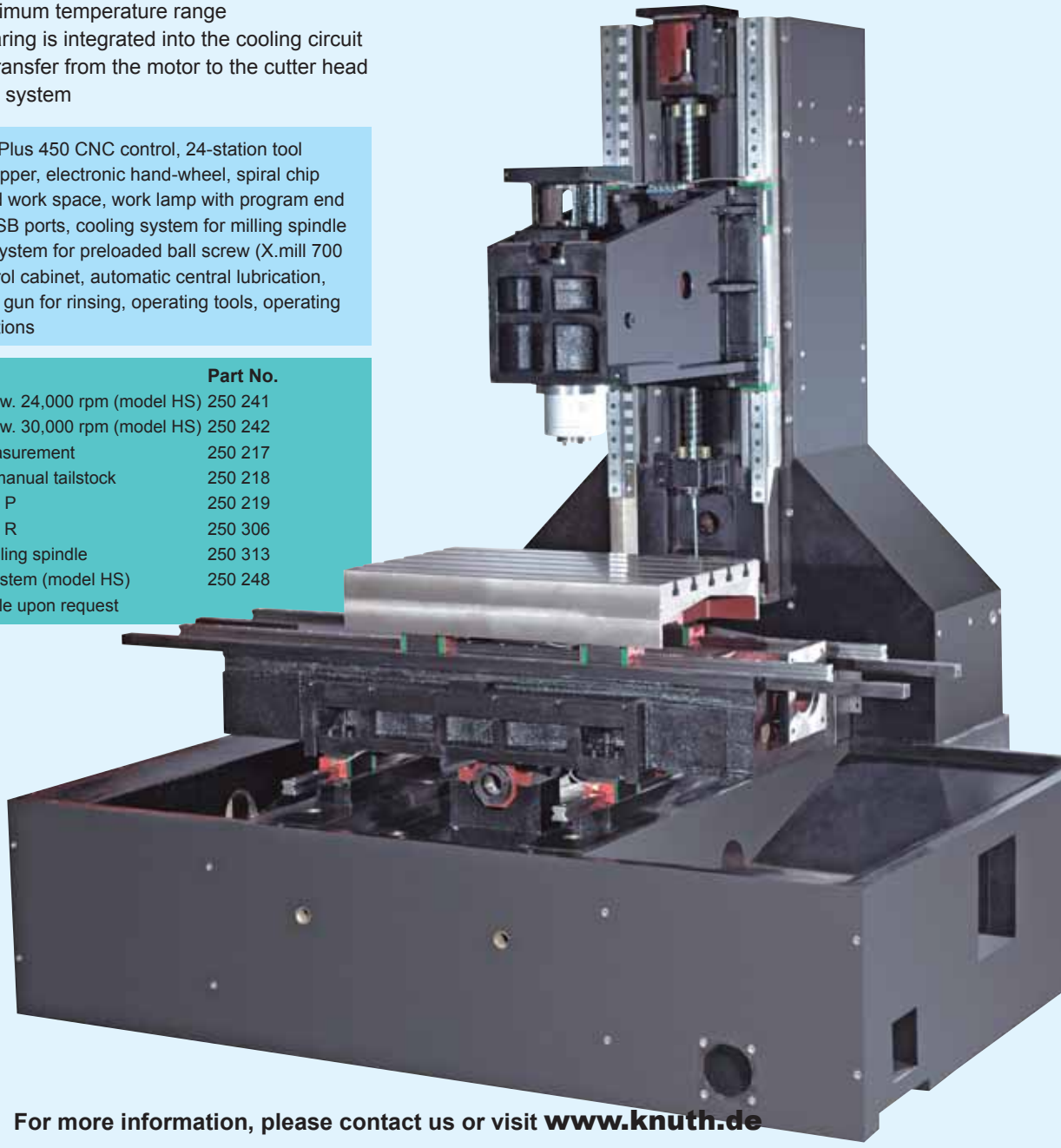
Options	Part No.
• milling spindle HSK-E 50 w. 24,000 rpm (model HS)	250 241
• milling spindle HSK-E 50 w. 30,000 rpm (model HS)	250 242
• automatic tool length measurement	250 217
• 4th axis, GX 170 P, with manual tailstock	250 218
• manual chuck for GX 170 P	250 219
• 4th and 5th axis PAR 131 R	250 306
• coolant nozzle ring for milling spindle	250 313
• linear scale measuring system (model HS)	250 248
• additional options available upon request	

Base and column made of mineral casting

Mineral casting machine frames provide superior damping properties:
• high rigidity
*** excellent thermal stability**

The mineral casting frame combined with state-of-the art machine components allows high-precision machining, prolongs tool life and increases productivity

- high-speed advance and rapid feed for a significantly increased machine efficiency
- constant accuracy and stability ensured by premium preloaded ball screws with integrated cooling (X.mill 700 HS)
- milling spindle with closed cooling circuit for maximum precision and durability at high-speed machining operations (X.mill 700 HS)
- easy accessibility of work table for easy setup and tooling



Premium CNC Machining Center

X.mill 700 • 700 HS

World-Class High-Performance Machining Center features Mineral Casting Frame

- Cutter spindle with direct drive
- Cutter spindle speed 15,000 rpm (24,000 and 30,000 rpm optional)
- Preloaded bal screws with inside cooling
- Rapid feed 60 m/min
- Axis acceleration 1g

Specifications		X.mill 700	X.mill 700 HS
Working area			
X axis travel	mm	700	700
Y axis travel	mm	500	500
Z axis travel	mm	500	500
table dimensions	mm	750 x 450	750 x 450
table load capacity	kg	300	300
T-slots (number/width/spacing)	mm	5 x 16 x 80	5 x 16 x 80
spindle nose-to-table distance	mm	70 - 570	70 - 570
throat (spindle center to frame distance)	mm	530	530
headstock / drive type		belt drive	direct drive
spindle speed	rpm	8000	15000
spindle mount		BT 40	BT 40
Feed			
rapid feed X / Y / Z axis	mm/min	30000	60000
work feed X / Y / Z axis	mm/min	10000	12000
Tool Carrier			
number of tool stations	qty	24	24
tool size Ø x L (max.)	mm	78 (120) x 250	78 (120) x 250
tool weight (max.)	kg	8	8
tool-changing time			
- chip/chip	sec	3	3
- tool/tool	sec	2.5	2.5
Accuracy			
positioning accuracy	mm	0.003 / 300	0.003 / 300
repeatability	mm	0.002 / 300	0.002 / 300
Drive Capacities			
main drive (continuous/30 min)	kW	7.5 / 11	7.5 / 11
motor rating of drive X / Y / Z axis	kW	1.8	2.9
total connected load	kVA	20	22
Dimensions/Weight			
dimensions	mm	2500 x 2500 x 2700	2600 x 2500 x 2700
weight	kg	6000	6000
Part No.		170 083	181 260

CNC Vertical Machining Center
X.mill 640

The Power Package = compact, powerful, precise and very economical

- **State-of-the-Art GPlus 450 CNC control**
- **16-station tool-changer with dual-arm**
  - 1.6 sec changing time
- **rapid feed 30 m/min**

GPlus 450
www.knuth-gplus.de

- high-quality linear guides on all axes
- powerful axis servo drives
- solid cast-iron machine body serves as foundation for high precision at high travel speeds, and powerful chip removal
- totally enclosed work space with side doors ensures maximum safety and flexibility
- quick tool changes and pneumatic clamping for reduced cost

Standard Equipment:
GPlus 450 control, electronic hand-wheel, servo drives on all 3 axes, 16-station tool turret, pneumatic tool clamping, totally enclosed work space, work lamp, Ethernet and USB ports, tilted chip tray, spindle oil-cooler, automatic central lubrication operating tools, operator manual

Optional Equipment:	**Part No.**
• 4th axis, GX 170 P, with manual tailstock	250 218
• manual chuck for GX 170 P	250 219
• 4th and 5th axis PAR 131 R	250 306

Specifications X.mill 640			
control			GPlus 450
travels	- X axis	mm	640
	- Y axis	mm	400
	- Z axis	mm	500
spindle nose-to-table dist.		mm	50 - 550
table	- size	mm	750 x 360
	- vertical	mm	850
	- max. load	kg	300
T-slots	- width	mm	18
	- distance	mm	100
	- quantity		3
Spindle - mount	- mount		BT 40
	- speed	min^{-1}	60 - 8000
	- motor	kW	7.5/11
	- throat	mm	430
rapid feed X, Y, Z axis		mm/min	30000
work feed		mm/min	5 - 5000
Accuracy	- positioning accuracy	mm	+/- 0.01/300
	- repeatability	mm	+/- 0.005
max. tool diameter		mm	78
max. tool length		mm	250
max. tool weight		kg	8
tool-changing time		sec	1.6
weight		kg	3600
overall dimensions (LxWxH)		mm	1930 x 2500 x 2400
Part No.			181 285

CNC Machining Center
X.mill 900 C

Rigid and powerful -
The Allrounder with wide box ways

Standard Equipment
- GPlus 450 control
- 24-station tool changer with dual-arm gripper
- electronic hand-wheel
- spiral chip conveyor
- enclosed work space
- work lamp with program end indicator
- Ethernet and USB port
- spindle oil cooler
- air-conditioned control cabinet
- automatic central lubrication
- coolant system
- chip flushing system plus spray gun for flushing, 12 bar
- compressed air gun
- operating tools
- operating manual and programming instructions

GPlus 450
www.knuth-gplus.de

- extra wide and rigid machine frame for high static loads and heavy-duty machining
- box ways with wide support surface ensure high rigidity and long tool life
- high-precision preloaded ball screws on all 3 axes
- servo drives on all 3 axes
- very accessible work table for easy setup and tooling
- enclosed machine body
- effective coolant system ensures to ensure long tool life, including pneumatic tool clamping

Options	Part No.	Options	Part No.
• milling spindle, 10,000 rpm	250 216	• manual chuck for GX 170 / 210 P	250 219
• autom. tool length measurement	250 217	• 4th and 5th axis, GF 170 P	250 294
• 4th axis, GX 170 P, with manual tailstock	250 218	• coolant fed through milling spindle (30 bar)	250 222
• 4th axis, GX 210 P, with manual tailstock	250 220	• chain-type chip conveyor	250 223

Specifications X.mill 900 C					
Working area			tool size Ø x L (max.)	mm	78/120 x 300
X / Y / Z axis travel	mm	850 / 550 / 700	tool weight (max.)	kg	8
table dimensions	mm	950 x 550	tool changing time chip/chip	sec	7
table load capacity	kg	650	tool-changing time, tool-to tool	sec	2
T-slots (qty x width x distance))	mm	5 x 18 x 100	**Accuracy**		
spindle nose-to-table distance	mm	100 - 800	positioning accuracy	mm	0,01
throat	mm	605	repeatability	mm	0,005
Headstock			**Drive Capacities**		
speed range / spindle mount	rpm	60 Nm / BT 40	motor rating main drive (cont/30 min)	kW	11 / 15
Feed			motor rating for X / Y / Z axis drive	kW	2,9
rapid feed X / Y axis	mm/min	20000	**Dimensions/Weight**		
Z axis rapid feed	mm/min	16000	Dimensions	mm	2600 x 2220 x 2650
work feed	mm/min	5 - 10000	weight	kg	6000
number of tool stations	qty	24	Part No.		182 246

X.mill 1500 shown

Standard Equipment for X.mill 1000, 1300, 1500: GPlus 450 control, tool changer with dual-arm gripper, chip conveyor, electronic hand-wheel, Servo drives for all axes, pneumatic tool clamping, totally enclosed work space, work lamp, RS-232 and USB ports, automatic central lubrication operating tools, operator manual

Options	**Part No.**		
• 4th axis* GX 170 P für X.mill 1000	250 218	• 4th axis* GX 320 H for X.mill 1300 / 1500	250 297
• 4th axis* GX 210 P für X.mill 1000	250 220	• manual chuck for GX 255 / 320 H	250 299
• manual chuck for GX 170 / 210 P	250 219	• 4th axis* GX 400 H for X.mill 1500	250 048
• 4th and 5th axis, GF 170 P for Xmill 1000	250 294	• manual chuck for GX 400 H	250 049
• 4th axis* GX 255 H for X.mill 1300	250 296	• 4th and 5th axis, GF 211 P for Xmill 1300 / 1500	250 295
		• 4th and 5th axis, GF 256 H for Xmill 1300 / 1500	250 293

Specifications		**X.mill 1000**	**X.mill 1300**	**X.mill 1500**
control		GPlus 450	GPlus 450	GPlus 450
Working area				
X axis travel	mm	1020	1300	1500
Y axis travel	mm	510	700	800
Z axis travel	mm	560	650	700
table dimensions	mm	1200 x 500	1400 x 710	1700 x 800
table load capacity	kg	500	1000	1500
T-slots (qty x width x spacing)	mm	5 x 18 x 100	5 x 18 x 150	5 x 22 x 135
spindle nose-to-table dist.	mm	150 - 710	150 - 800	170 - 870
throat	mm	575	785	800
Headstock				
speed range	rpm	60 - 8000	60 - 8000	60 - 8000
spindle mount		BT 40	BT 50	BT 50
Feed				
rapid feed X / Y axis	mm/min	20000	15000	15000
Z axis rapid feed	mm/min	16000	10000	10000
work feed	mm/min	5 - 5000	5 - 5000	5 - 5000
Tool Carrier				
tool stations		24	24	24
Accuracy				
positioning accuracy	mm	± 0.01	± 0.01	± 0.01
repeatability	mm	± 0.005	± 0.005	± 0.005
Drive Capacities				
main drive motor rating (cont/30 min)		11 / 15	11 / 15	15 / 18.5
Dimensions/Weight				
overall dimensions (LxWxH)	mm	3100 x 2500 x 2600	3560 x 3481 x 3071	4270 x 3413 x 3067
weight	kg	6600	11000	14000
Part No.		182 243	182 240	182 238

* with manual tailstock

CNC Vertical Machining Center

X.mill 1000 • 1300 • 1500

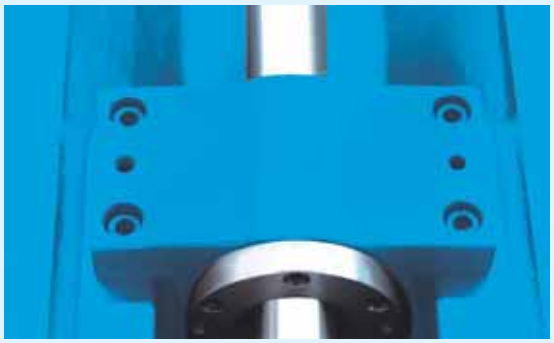
for machining of large, heavy parts with extra-wide rectangular guides

- 24-station tool changer with fast dual-arm grippers; tool changing time of 1.7 sec
- machine bed and vertical guide system feature very wide hardended and ground rectangular guideways
- 4-track box ways in the machine bed for high table load capacity (X.mill 1300, X.mill 1500)
- large high-precision preloaded ball screws are driven directly by servo motors for maximum reliability and precision
- pneumatic tool clamping for easy and quick tool changes
- automatic central lubrication for low maintenance
- powerful headstock motors, 11 to 18,5 kW in continuous operation

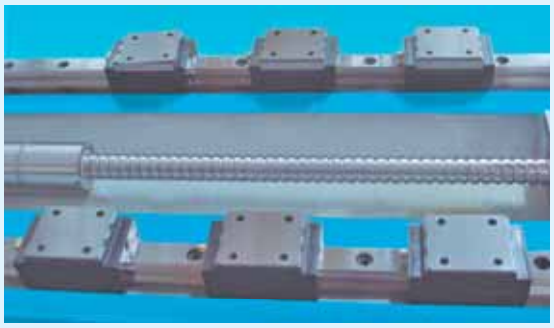
X.mill 1000 shown

4-track box way (X.mill 1300 / 1500)

heavy-duty torsion-resis-tant cast-iron frame

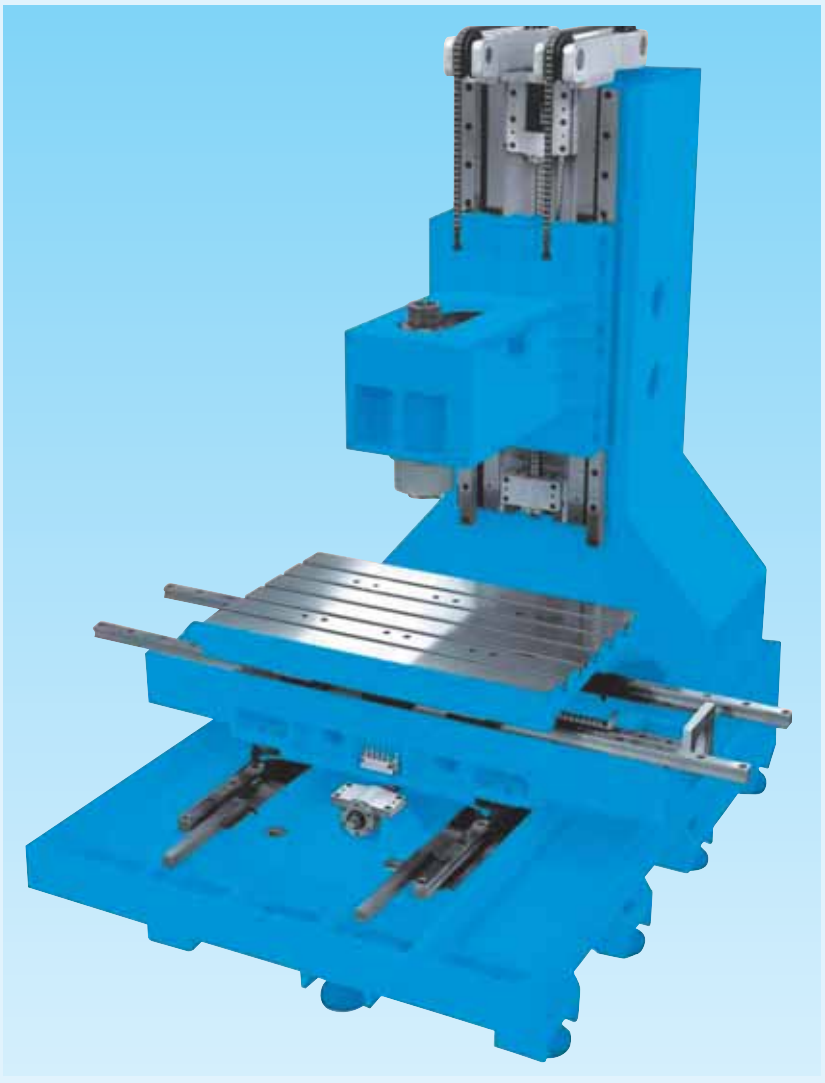


preloaded ball screws



precise linear guide system

extra-wide machine bed



heavy-duty machine base

Standard Equipment:

- GPlus 450 control
- 24-station tool changer with dual-arm gripper
- electronic hand-wheel
- spiral chip conveyor
- enclosed work space
- work lamp with program end indicator
- Ethernet and USB port
- air-conditioned control cabinet
- automatic central lubrication
- coolant system
- chip flushing system plus spray gun for flushing, 12 bar
- compressed air gun
- operating tools
- operating manual and programming instructions

Options	Part No.	Options	Part No.
• Spindle Oil Cooler	250 227	• manual chuck for GX 170 / 210 P	250 219
• milling spindle, 10,000 rpm	250 216	• 4th axis, NCT 250 R, with manual tailstock	250 236
• milling spindle, 15000 rpm	250 231	• manual chuck 200 mm	250 237
• rapid feed X / Y axis, 48 m/min	250 230	• 4th and 5th axis, GF 170 P	250 294
• autom. tool length measurement	250 217	• 4th and 5th axis, GF 210 P	250 295
• 4th axis, GX 170 P, with manual tailstock	250 218	• coolant fed through milling spindle (30 bar)	250 222
• 4th axis, GX 210 P, with manual tailstock	250 220	• chain-type chip conveyor	250 229

Specifications X.mill 1100 L		
Working area		
X / Y / Z axis travel	mm	1100 / 600 / 700
table dimensions	mm	1200 x 600
table load capacity (max.)	kg	850
T-slots (qty x width x spacing)	mm	5 x 18 x 100
spindle nose-to-table distance	mm	100 - 800
throat	mm	655
Headstock		
spindle speed (max.)	rpm	8000
spindle mount		BT 40
Feed		
rapid feed X / Y / Z axis	mm/min	32000
work feed	mm/min	1 - 12000
Tool Carrier		
number of tool stations		24
tool size Ø x L (max.)	mm	78 x 300
tool weight (max.)	kg	8
tool changing time chip/chip	sec	8
tool changing time, tool/tool	sec	1.6
Accuracy		
positioning accuracy	mm	0.003
repeatability	mm	0,002
Drive Capacities		
main drive motor rating (cont/30 min)	kW	11 / 15
motor rating for X / Y / Z axis drive	kW	2.9 / 2.9 / 4.4
Dimensions/Weight		
dimensions	mm	2900x2220x2700
weight	kg	6800
Part No.		170 082

CNC Vertical Machining Center

X.mill 1100 L

Precise and quick - for machining of complex and heavy parts

- machine frame with linear guides in an extra-wide configuration, rigid construction for efficient machining
- linear guide system for rapid feeds up to 48 m/min (option)
- high-precision preloaded ball screws on all 3 axes
- dual-arm 24-station tool changer for quick and precise tool changes
- chip conveyor and purge system for optional chip remover system
- very accessible work table for easy setup and tooling
- enclosed work space ensures safe and contamination-free work

Chip Flushing System

Gear step (Option)

X.mill 1890 with gears (option) shown

Standard Equipment:

- GPlus 450 control
- Ethernet and USB ports
- 24-station tool changer with dual-arm gripper
- totally enclosed work space
- spiral chip conveyor
- electronic hand-wheel
- servo drives on all axes spindle with gear step 6000 rpm / BT 50 spindle oil cooler
- pneumatic tool clamping
- air-conditioned control cabinet
- chip flushing system
- thread cutting without compensating chuck
- coolant system
- air and coolant spray wand
- automatic central lubrication
- work space lighting
- signal lamp
- alignment elements
- operating tools
- operating manual and programming instructions

Options	**Part No.**		
• chain-type chip conveyor (X.mill 1680)	250 055	• coolant fed through spindle (70 bar)	250 047
• chain-type chip conveyor (X.mill 1890)	250 054	• 4th axis, GX 400 H, with manual tailstock	250 048
• tool length measurement	250 046	• manual chuck for GX 400 H	250 049
		• 4th and 5th axis, GF 256 H	250 293

Specifications		**X.mill 1680**	**X.mill 1890**
control		GPlus 450	GPlus 450
Working area			
X axis travel	mm	1600	1800
Y axis travel	mm	820	920
Z axis travel	mm	700	700
table dimensions	mm	1700 x 820	1900 x 900
table load capacity	kg	2200	3000
T-slots (qty x width x spacing)	mm	7 x 18 x 120	7 x 18 x 120
spindle nose-to-table distance	mm	180 - 880	180 - 880
throat (spindle center to frame)	mm	900	1025
Headstock			
speed range	rpm	8000	8000
spindle mount		BT50	BT50
Feed			
rapid feed X / Y / Z axis	mm/min	15000	15000
work feed X / Y / Z axis	mm/min	1 - 7000	1 - 7000

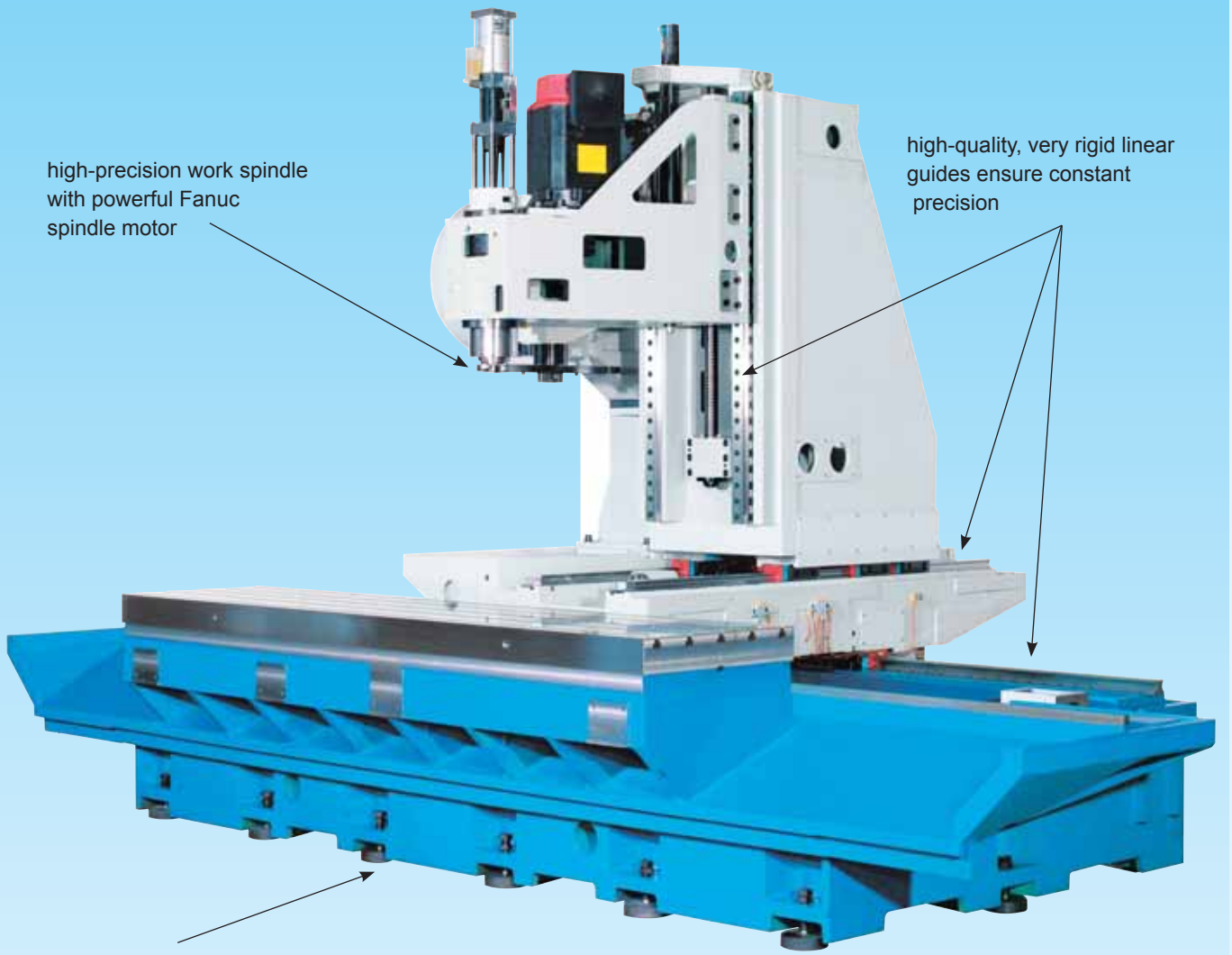
Vertical CNC Machining Centers
X.mill 1680 • 1890

Rigidity, maximum precision and cost-effective operation make this proven series even more powerful

- extra wide cast-iron frame with heavy ribbing minimizes vibrations, resonance and torsion to ensure maximum accuracy and optimum surfaces of the part
- extra-wide rectangular X axis guideways ensure superior rigidity during heavy chip removal operations and allow machining of large and heavy parts
- extraordinary table load capacity up to 3000 kg (X.mill 1890)
- all guideways are ground, hardened and protected by premium stainless steel covers
- large, preloaded ball screws are driven directly by the servo motors

X.mill 1890 shown with optional accessories

Specifications		X.mill 1680	X.mill 1890
number of tool stations		24	24
tool size Ø x L (max.)	mm	Ø 110 x 300	Ø 110 x 300
for tooling		Ø 180 x 300	Ø 180 x 300
tool weight (max.)	kg	15	15
tool changing time, tool/tool	sek	2,5	2,5
Accuracy			
positioning accuracy	mm	± 0,004 / 300	± 0,004 / 300
repeatability	mm	± 0,003	± 0,003
Drive Capacities			
main drive (continuous/30 min)	kW	15 / 18,5	18,5 / 22
motor rating for X / Y / Z axis drive	kW	4,4 / 4,4 / 5,5	4,4 / 4,4 / 5,5
Dimensions/Weight			
overall dimensions (LxWxH)	mm	4300 x 3400 x 3100	4500 x 3400 x 3200
weight	kg	14000	16500
Part No.		170 085	170 086



- the headstock features high-precision ceramic bearings, is dynamically balanced, and includes a spindle oil cooler
- the tool changes is moved together with the X axis, ensuring shortes tool changing times
- spindle motor with two modes: low speed range for high torque, high speed range for minimized vibrations
- an inside spindle cooler with filter system and 15 bar pressure is available as an option

Specifications Matrix Plus		**2200**	**3200**
control		Fanuc 0i-MD	
Working area			
X axis travel	mm	2200	3200
Y axis travel	mm	620	720
Z axis travel	mm	620	620
table dimensions	mm	2500x600	3500x600
table load capacity (max.)	kg	1800	2500
T-slots (number/width/spacing)	mm	5x18x125	5x18x125
spindle nose-to-table distance	mm	120-740	120-740
Headstock			
spindle speed (max.)	rpm	10000	10000
headstock torque (max.)	Nm	95	95
spindle mount		BT 40	BT 40
Feed			
rapid feed X / Y / Z axis	mm/min	32000	32000
work feed X / Y / Z axis	mm/min	1-10000	1-10000
Tool Changer			
number of tool stations	qty	24	24
tool diameter (max.)	mm	76	76
tool length (max.)	mm	300	300
tool weight (max.)	kg	7	7
tool-changing time,			
- chip/chip	sec	8	8
- tool/tool	sec	1	1
Accuracy			
positioning accuracy	mm	± 0.003	± 0.003
repeatability	mm	± 0.002	± 0.002
Drive Capacities			
main drive motor rating (cont. op. / 30 min.)	kW	11 / 15	11 / 15
motor rating X axis	kW	4	7
motor rating Y/Z axis	kW	4	4
Dimensions/Weight			
overall dimensions (L x W x H)	mm	4068x5810 x3000	4168x6810 x3000
weight	kg	14200	17500
Part No.		181 045	181 046

For more information, please contact us or visit www.knuth.de

Moving Column Vertical CNC Machining Center
Matrix Plus

High-dynamics – for efficient milling of very large and heavy parts

- the machine frame is made of Meehanite GA-350 casting, which has been tempered to ensure an extremely rigid structure with excellent damping properties
- engineered using the most advanced CAD technology, and optimized with FEM for maximum rigidity and strength
- the long milling table holds loads of 1800 or 2500 kg and allows simultaneous clamping of multiple parts, or long-bed machining
- column and cutter head travel on wide high-precision linear guideways

Standard Equipment: Fanuc 0i-MD control including Manual Guide 0i, 24-station tool changer, thread cutting without compensating chuck, spindle cooling, chip conveyor, spindle blow-out system, totally enclosed work space, heat exchanger for control cabinet, electronic hand-wheel, automatic central lubrication, work lamp, operating and programming instructions

Options	Part No.		
• chain-type conveyor with chip container	250 039	• absolute measuring system with Fagor scales	250 042
• tool changer with 32 tools	250 040	• coolant fed through spindle (15 bar)	250 043
• tool changer with 40 tools	250 041	• headstock speed 12000 rpm, direct drive, with Fanuc spindle motor	250 044

CNC Milling Machine • CNC Vertikal Machining Center

EcoMill 350 • EcoCenter 350

The perfect machine for your entry into the world of CNC machining!

The CNC Milling Machine with GPlus CNC control provides a low-cost method for the production of single parts and series parts. It is available without tool changer (EcoMill) or can be ordered with a 10-station tool changer (EcoCenter) for increased automation.

- preloaded ball screws on all axes, preloaded with nut and counter-nut
- rigid cast-iron bed with hardened and counter-coated box ways
- infinitely variable speed from 60 to 3000 rpm - EcoMill, 60 - 6000 rpm - EcoCenter)
- high-quality spindle ensures very quiet operation and long service life

GPlus 450
www.knuth-gplus.de

Standard Equipment for EcoMill 350: GPlus 450 control, coolant system, ISO 30 collet chuck with collets (4, 5, 6, 8, 10 and 12 mm diam.), central lubrication, electronic hand-wheel, work lamp, USB port, M16 draw bar, operating tools, programming instructions

Standard Equipment for EcoCenter 350: GPlus 450 control, coolant system, totally enclosed work space, work lamp, USB port, central lubrication, electronic hand-wheel, 10-station tool changer, operating tools, operator manual

Specifications			EcoMill	EcoCenter
control			GPlus 450	GPlus 450
table dimensions		mm	800x240	800x240
max. table load capacity		kg	100	100
T-slots (number/width/spacing)			3x14x74	3x14x75
travels	X axis	mm	385	400
	Y axis	mm	230	240
	Z axis	mm	385	380
spindle-to-table distance		mm	60-460	60-460
throat		mm	300	300
max. milling capacity, vertical Ø		mm	12	12
spindle mount			ISO 30	BT 30
speed range		min^{-1}	60-3000	60-6000
rapid feed (X, Y, Z)		mm/min	6000	6000
feed (X, Y, Z infin. variable))		mm/min	2.5-2000	2.5-2000
number of tool stations			-	10 each
tool size Ø x L (max.)		mm	-	92x120
tool weight (max.)		kg	-	4
positioning accuracy		mm	0.025	0.025
repeatability		mm	0.012	0.012
feed motor (X/Y/Z)		kW	0.45/0.85/0.85	0.85/0.85/0.85
coolant pump		kW	0.04	0.04
headstock motor		kW	2.2	3.7
overall dimensions (LxWxH)		mm	1830x1600 x1960	1870x1650 x2000
weight		kg	1400	1520
Part No.			180 122	180 123

CNC Turning

High-Performance Machines to support the success of your business!

From small low-cost Cycle Lathes to powerful Inclined Bed Lathes and large Vertical Lathes

CNC Inclined Bed Lathes

StarChip
- low price and high power, with headstock drives up to 15 kW, and extesive selection ofstandard equipment

Compact
- long-time proven lathes with Fanuc control or with the new GPlus 450 CNC

Ecoturn
- heavy-duty Lathes with 37 kW drive and automatic gear levels for a very high torque

Saturn
- optionally with C axis and driven tools

Roturn
- high-precision series production of small parts, small footprint, inclined bed design with 6-staiton tool turret

Turnstar
- universal - small footprint - optionally with C axis and driven tools

StarChip
Compact
Ecoturn
Saturn
Roturn
Turnstar

CNC Lathes with Cycle Control

- interactive graphics-based cycle programming
- from manual operation via two electronic hand-wheels to fully automated CNC machining
- center widths from 1000 to 6200 mm, turning diamters from 400 to 1600 mm
- high drive power and automatic gear levels for extremely powerful chip removal

Proton
Numturn
Forceturn

Vertical CNC Lathes

- For high-precision machining of large and heavy parts
- these 4 very distinct series offer different standard equipment and various degrees of automation
- machining diameters up to 4000 mm
- workpiece weights up 10 t

VDM
Verturn
Dualturn

Electric 6-station tool turret

Siemens 802-D SL CNC control

- **6-station tool turret for quick tool changes**
- **high-precision machining of large and very heavy parts**
- **headstock drive with up to 28 kW power**
- **gear ratios with up to 1000 Nm torque at the headstock**
- machine bed and head stock feature excellent construction properties ensuring superior machine rigidity and high table load capacities from 5000 to 8000 kg
- heavy ribbing and an arc-shaped column with wide dual boxways at the cross travel ensure maximum stability and minimum vibrations
- a rigid ram unit allows quick and precise positioning in the premium linear guideways of the cross travel
- motorized cross travel with preloaded ball screws allows accurate manual positioning of the workpiece
- the powerful main drive features 2-step gears made by ZF, whereby each gear step is infinitely variable
- gears are custom designed for this machine type to provide a very high torque of 800 to 1000 Nm at the headstock
- the 4-jaw face chuck allows easy clamping of complex workpieces
- the work area is easily accessible through a wide opening safety door for easy loading, setup and unloading of the machine
- easy maintenance due to central lubrication system

Specifications		**Verturn 1250**	**Verturn 1600**
control		Siemens 802-D SL	Siemens 802-D SL
Working area			
clamping plate diameter	mm	1000	1400
turning diameter	mm	1250	1600
turning length	mm	1000	1200
max. part weight	tons	5 @ <100 rpm	8 @ <80 rpm
gear steps		2	2
speed ranges (infinitely var.)	rpm	2 - 250 250 - 400	2 - 250 250 - 400
Tool Carrier (traverse)			
X axis travel	mm	-50 to +800	-50 to +950
Z axis travel	mm	800	800
Z axis rapid feed	m/min	12	12
Accuracy			
positioning accuracy	mm	0.015	0.015
repeatability	mm	0.01	0.01
Drive Capacities			
main motor rating	kW	28	28
Dimensions/Weight			
dimensions	mm	5500 x 3300 x 4200	6500 x 3900 x 4500
weight	kg	17000	27000
Part No.		180 653	180 654

CNC Vertical Lathes

Verturn 1250 • 1600

Extremely powerful vertical machining with reliable control technology

Siemens 802 D SL
www.knuth.de

Verturn 1600 is shown

Standard Equipment: Siemens 802 D SL control, 6-station tool turret, electronic hand-wheel, chip conveyor, totally enclosed work space, work space lighting, work lamp with program end indicator, automatic central lubrication, cutting oil system, air-conditions control cabinet, guideway covers, air gun, operating tools, operating and programming instructions

• Options	Part No.		Part No.
• hydraulic 3-jaw chuck	250 315	• driven tools (C-axis)	250 322
• hydraulic 4-jaw chuck	250 316	• Additional options available upon request	

Call us to inquire about the latest best prices under: +49 4321 609-0

6-station tool turret provides high degree of automation and quick changing at the CNC controlled work unit

- the machine and all individual assemblies are made of premium HT 300 cast-iron for excellent machine rigidity
- heavy ribbed gantry with wide cross travel dual boxways made of premium HT 300 cast-iron give this machine excellent rigidity at minimum vibration even during heaviest chip removal operations
- vertical cross travel is infinitely variable for optimum positioning according to workpiece height
- very strong main drive designed for continuous operation
- strong hydraulic clamping for all axes
- the 4-jaw face chuck allows easy clamping of complex workpieces
- easy access to the workspace
- easy maintenance due to a central lubrication system

Specifications Dualturn		**2500**	**2900**	**3200**	**4000**
Working area					
max. turning diameter at the tool holder	mm	2500	2900	3200	4000
table diameter	mm	2250	2250	2830	3150
max. turning height	mm	1600	2000	2000	2000
X axis travel	mm	1000	1000	1000	1000
Z axis travel	mm	1400	1400	1730	2250
workpiece weight (max.)	kg	10000	10000	10000	10000
tool holder		left side: basic right side: electric 6-station tool turret			
. machining force at					
- the left tool holder	kN	30	30	30	30
- the right tool holder	kN	35	35	35	35
max. total machining force	kN	65	65	65	65
Headstock					
speed range (infinitely var.)	rpm	(4) 1 - 80	(4) 1 - 80	(4) 1 - 63	(4) 1 - 50
max. torque	Nm	6300	6300	6300	6300
Feed					
feed speed X / Z1	mm/min	0,1 - 500	0,1 - 500	0,1 - 500	0,1 - 500
travel speed of guide arm	mm	350	350	350	350
rapid feed X	mm/min	6000	6000	6000	6000
Accuracy					
positioning accuracy	mm	0,03	0,03	0,03	0,03
repeatability	mm	0,015	0,015	0,015	0,015
Drive Capacities					
main motor rating	kW	55	55	55	55
Dimensions/Weight					
dimensions	mm	5320x5010x5670	5620x5010x5670	5920x5010x5670	6220x5010x5670
weight	kg	32000	35000	38000	46000
Part No.		180 655	180 658	180 656	180 659

CNC Vertical Lathes

Dualturn

Heavy dual-column design combining modern CNC control technology with conventional control technology for maximum reliability and efficiency

- high-precision machining of large and very heavy parts
- traverse with 2 work units - including Siemens 802 D CNC Motion Control, and conventional operation
- 55 kW headstock motor for powerful machining operations

Dualturn 2900 shown

Siemens 802 D SL
www.knuth.de

Standard Equipment: Siemens 802 D SL control, independent chuck, 6-station tool turret (electric), automatic central lubrication, air-conditioned control cabinet, work lamp with program end indicator, hydraulic unit, oil cooler, draw bolts and assembly tools, operating tools, operator manual

CNC Vertical Lathes

VDM 1250 • 1600 • 2000 CNC

Efficience and Precision - with proven control technology

- heat-treated machine bed made of premium HT300 cast-iron
- large, induction-hardened and precision-ground rectangular guides with plastic coating
- 4-step precision gears and infinitely variable 55 kW main motor - for high torque (up to 40000 Nm) across the entire speed range
- high-precision preloaded ball screws from renown manufacturers on all axes
- includes the proven Siemens 802 D SL control
- hydraulic clamping of cross traverse
- highly accessible 4-jaw face chuck allows easy clamping of complex workpieces

Standard Equipment: Siemens 802 D SL control, electronic hand wheel, 4-jaw face chuck, electrical 4-station tool changer, totally enclosed work space, coolant system, automatic central lubrication, separate control cabinet, heat exchanger for control cabinet, signal lamp, chip conveyor, chip tray, hydraulic unit, oil cooler, work space lighting, operating tools, operator manual

Specifications VDM		**1250 CNC**	**1600 CNC**	**2000 CNC**
control		Siemens 802-D SL		
Working area				
turning diameter (max.)	mm	1250	1600	2000
max. machining height	mm	1000	1200	1250
X axis travel	mm	850	1020	1250
Z axis travel	mm	700	800	800
W axis travel, vertical	mm	650	850/1050	900
max. part weight	kg	3200	5000	8000
Headstock				
speed range	rpm	1 - 250	1 - 200	3,2 - 100
torque (max.)	Nm	25000	32000	40000
lathe chuck diameter	mm	1050	1400	1800
Feed				
rapid feed X / Z axis	mm/min	6000	6000	6000
W axis feed	mm/min	440	440	440
Tool Changer				
number of tool stations		4	4	4
tool-changing time (tool to tool)	sec	30	30	30
tool weight (max.)	kg	25	25	25
Accuracy				
positioning accuracy	mm	0.03	0.03	0.03
repeatability	mm	0,015	0,015	0,015
Drive Capacities				
main drive motor rating (cont. / 30 min.)	kW	30 / 37	45 / 55	45 / 55
motor rating Y / Z axis	kW	2.2	2.2	2.2
Dimensions/Weight				
overall dimensions (LxWxH)	mm	4860x2877 x3400	5260x3260 x3698	6100x3300 x4100
weight	kg	9000	13200	15000
Part No.		180 650	180 651	180 652

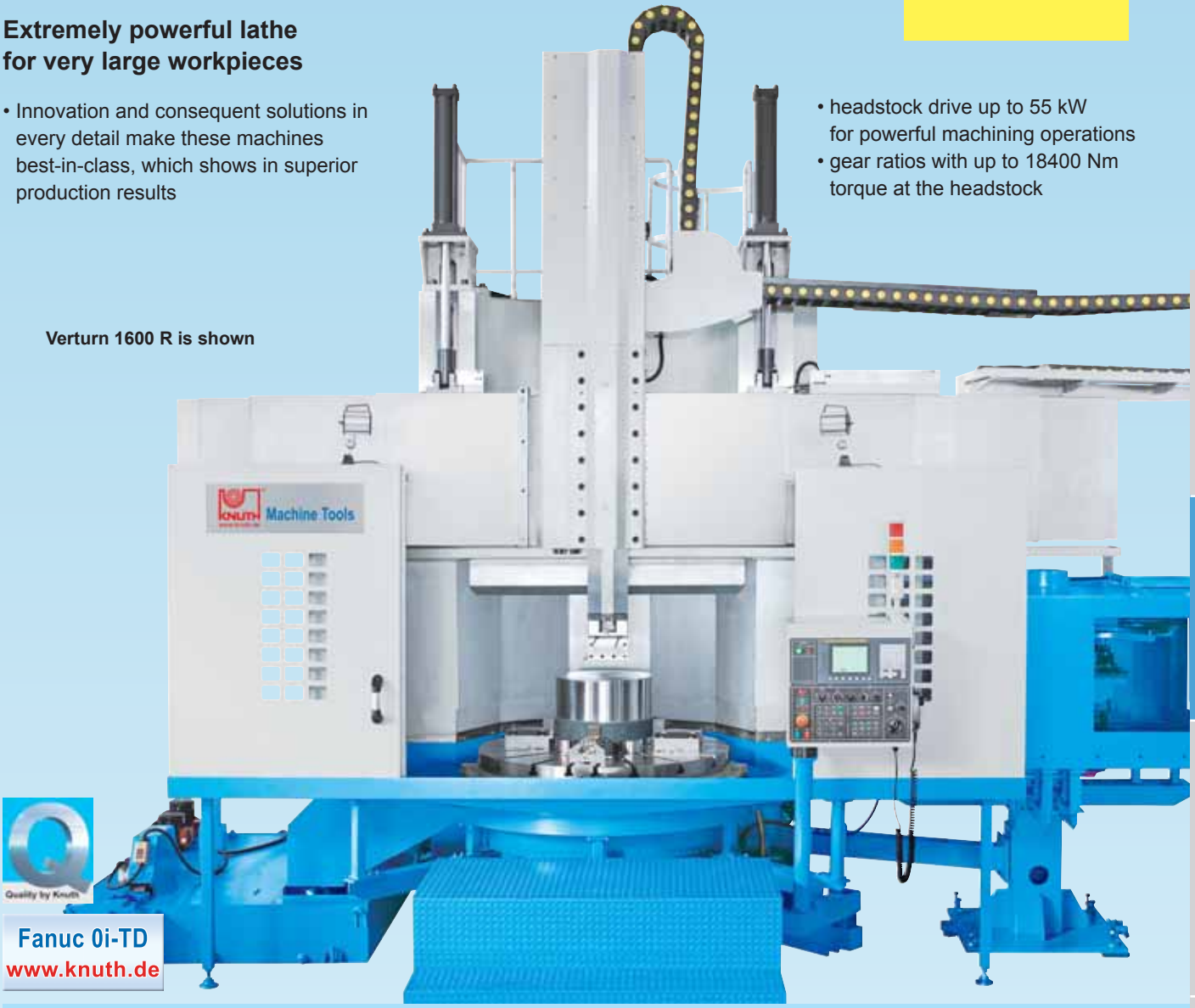
CNC Vertical Turning Centers

Verturn 1600 R • 2000 R

Extremely powerful lathe for very large workpieces

- Innovation and consequent solutions in every detail make these machines best-in-class, which shows in superior production results
- headstock drive up to 55 kW for powerful machining operations
- gear ratios with up to 18400 Nm torque at the headstock

Verturn 1600 R is shown



Fanuc 0i-TD
www.knuth.de

Standard Equipment: Fanuc 0i-TD control with Manual Guide 0i, chip conveyor with collector, totally enclosed work space, 12-station tool changer, 4-jaw face chuck Ø 1250 mm (Verturn 1600 R), 4-jaw face chuck Ø 1600 mm (Verturn 2000 R), parts counter, tool holder cooler, oil cooler for gears and bearings, heat exchanger for control cabinet, hydraulic unit, tool holder set, automatic central lubrication, coolant system, work lamp, signal lamp, foundation bolts, operating tools, operating and programming instructions

Specifications Verturn		1600 R	2000 R
control		Fanuc 0i-TD	
Working area			
max. in-gap diameter	mm	1600	2000
max. turning diameter	mm	1600	2000
max. machining height	mm	1200	1600
X axis travel range	mm	-820/+ 1000	-1020/+ 1220
X axis travel	mm	1820	2240
Z axis travel	mm	900	900
W axis travel, vertical	mm	(3) 500	(4) 750
max. part weight	kg	8000	10000
Headstock			
speed range	rpm	(2) 1 - 312	(2) 1 - 256
max. torque of headstock	Nm	12400	18400
lathe chuck diameter	mm	1250	1600
Feed			
rapid feed X / Z axis	mm/min	10000	10000
Tool Changer			
number of tool stations	qty	12	12
tool-changing time tool/tool	sec	1	1
tool weight (max.)	kg	50	50
Accuracy			
positioning accuracy X / Z axis	mm	± 0.01	± 0.01
repeatability X / Z axis	mm	± 0,005	± 0,005
Drive Capacities			
main drive motor rating (cont. / 30 min.)	kW	37 / 45	45 / 55
motor rating Y / Z axis	kW	7	7
Dimensions/Weight			
overall dimensions (LxWxH)	mm	6100x4500 x5230	6940x5500 x5550
weight	kg	22000	28000
Part No.		100 370	100 371

Vertical boom swivels ± 30°

cross travel with fine feed increments

- optimum tooling and easy access for cranes and forklift trucks
- top support includes a 5-station tool holder, side support with independent feed for perfect inside and outside turning
- the heavy column design and hardened guideways for cross traverse and side support give this machine the proper rigidity to support its power
- cross traverse clamping is hydraulic, and the set position will be fixated exactly
- the material and sturdy guide structure give the vertical boom excellent stability and accuracy for large throat widths
- the spindle runs in a high-precision two-row roller bearing and is adjustable
- reduction gear drive ensures high torque and a speed range of 10 - 315 rpm (depending on model)
- automatic central lubrication for simplified maintenance

Specifications		**VDM 800**	**VDM 1000**	**VDM 1250**	**VDM 1600**	**VDM 2300**	**VDM 2600**
Working area							
max. in-gap diameter	mm	800	1000	1250	1600	2300	2600
max. turning diameter							
- top tool holder set	mm	800	1000	1250	1600	2300	2600
- side tool holder set	mm	800	1000	1250	1600	2000	2300
max. machining height	mm	800	800	1000	1000	1350	1500
travel							
- X1 axis, upper support	mm	570	670	700	915	1150	1300
- Z1 axis, upper support	mm	650	650	650	800	800	1000
- W axis travel	mm	580	580	650	650	890	1100
- X2 axis travel, side support	mm	500	500	600	630	630	730
- Z2 axis travel							
side support	mm	810	810	900	900	1150	1180
swivel range of upper tool holder		± 30°	± 30°	± 30°	± 30°	± 30°	± 30°
max. part length	mm	800	800	1000	1000	1350	1500
max. part weight	kg	1200	2000	3200	5000	8000	10000
Headstock							
speed range	min^{-1}	(16) 10 - 315	(16) 8 - 250	(16) 6,3 - 200	(16) 5 - 160	(16) 2,5 - 80	(16) 1,2 - 40
max. torque of headstock	Nm	9800	12250	17500	25000	24500	31360
rotary table diameter	mm	720	900	1000	1400	2000	2300
Feed							
feed speed X / Z axis	mm/min	(12) 0,8 - 86	(12) 0,8 - 86	(12) 0,8 - 86	(12) 0,8 - 86	(12) 0,8 - 86	(12) 0,8 - 86
W axis feed	mm/min	440	440	440	440	440	440
rapid feed of upper support	mm/min	1800	1800	1800	1800	1800	1800
rapid feed of side support	mm/min	1800	1800	1800	1800	1800	1800
tool holder	mm	30 x 30	30 x 40	30 x 40	30 x 40	30 x 40	30 x 40
tool weight (max.)	kg	50	50	50	50	50	50
Drive Capacities							
main motor rating	kW	22	22	22	22	30	37
motor rating Y / Z axis	kW	1,5	1,5	1,5	1,5	1,5	1,5
Dimensions/Weight							
overall dimensions (LxWxH)	mm	2080x2621 x3515	2187x2711 x3515	2360x2270 x2800	2830x2670 x2810	3210x2850 x3300	3300x4000 x3500
weight	kg	6500	7100	8500	12500	18000	22000
Part No.		300 380	300 381	300 382	300 383	300 384	300 385

Vertical Lathes
VDM 800 - 2600

Solid and proven technology, power and precision for the production of heavy workpieces

- the massive machine base and a large headstock give the entire structure a solid foundation
- turning diameters up to 2600 mm

incl. 3-axis position indicator

shown without 5-station tool changer

Standard Equipment: 3-axis position indicator, vertical and horizontal tool holder, central lubrication, work lamp, foundation bolts, operating tools, operator manual

Options	Part No.		Part No.
• Partial table cover			
- VDM 800, VDM 1000, VDM 1250, VDM 1600	250 122	• cool-down system	250 125
- VDM 2300	250 123	• chip conveyor	250 126
- VDM 2600	250 124		

Call us to inquire about the latest best prices under: +49 4321 609-0

Option: autom. linear measuring device for tools

programmable tailstock

- robust inclined bed design made of meehanite casting, torsionally rigid and precision machined for superior turning results
- headstock made of high-alloy steel, hardened, precision-ground and dynamically balanced
- the rigid linear guideways feature large cross-sections in both axes, high load capacity, superior accuracy, low wear and low maintenance
- the hydraulic tool changer works very fast and selects the next tool bi-directionally, reducing down-times
- hydraulic lathe chuck for secure workpiece clamping
- the powerful coolant system with filtration provides high pressure for excellent chip blow=out and long tool life
- easy maintenance due to standard central lubrication system

Specifications Saturn		**280 L**	**300 L**	**300 BL**
Working area				
center width	mm	485	485	485
turning diameter over bed (max)	mm	450	500	500
turning diameter over support (max)	mm	280	300	300
X axis travel	mm	170	190	190
Z axis travel	mm	400	400	400
Headstock		A2-5	A2-6	A2-6
speed range	rpm	0 - 6000	0 - 4500	0 - 3500
headstock torque (max.)	Nm	120	160	160
spindle mount		MT 6	MT 6	MT 6
lathe chuck diameter	mm	150	200	250
spindle bore / rod capacity	mm	56 / 45	66 / 52	75 / 65
Feed				
rapid feed X / Z axis	mm/min	30000	30000	30000
Tool Carrier				
number of tool stations	qty	12	10	10
tool shank dimensions	mm	20	25	25
boring bar holder diameter	mm	32	40	40
Tailstock				
tailstock taper		MT 4	MT 4	MT 4
tailstock quill diameter / tailstock quill stroke	mm	80 / 100	80 / 100	80 / 100
Accuracy				
positioning accuracy X / Z axis	mm	0.004 / 300	0.004 / 300	0.004 / 300
repeatability X / Z axis	mm	0,002	0,002	0,002
Drive Capacities				
main drive (continuous/30 min)	kW	11 / 15	15 / 18	15 / 18
motor rating Y / Z axis	kW	3	3	3
Dimensions/Weight				
dimensions	mm	1950 x 1750	2650 x 1750	2650 x 1750
weight	kg	4200	4500	4500
Part No. with Fanuc 0i-TD Control		180 355	180 356	180 357
Part No. with Siemens 802 SL Control		180 465	180 466	180 467

CNC Inclined Bed Lathe
Saturn

Unsurpassed functionality for demanding turning operations
accurate - powerful - universal

- high-quality linear guides for dynamic axis movements
- hydraulic tool changer with 12 or 10 stations
- large spindle capacity
  for machining of rods
- extensive options, like C-axis and VDI turret with driven tools,
  and rod loader cartridge
- programmable tailstock (option)

Saturn 280 shown with Fanuc control and optional accessories shown

Standard Equipment: Fanuc 0i-TD control with Manual Guide 0i or Siemens 802 D SL control, hydraulic 3-jaw lathe chuck (1 set for hard jaws and 1 set for soft jaws), hydraulic tool turret, tool holder set, chain-type chip conveyor with chip collector, thread cutting without compensating chuck, heat exchanger for electric control cabinet, totally enclosed case, signal lamp, work space lighting, live center, operating tools, operator manual, programming instructions

Options	Part No.		Part No.
• rod loader interface	250 266	• wireless edge measurement system	250 270
• rod loader cartridge DH 65 L 1200 mm	250 267	• high-pressure coolant system with 20 bar pressure	250 272
• parts catcher	250 268	• oil mist exhaust vacuum	250 273
• parts conveyor	250 269	• automatic doors	250 274
• autom. linear measuring device for tools	250 300	• air conditioning for electric control cabinet	250 275
• C axis with VDI tool turret for driven tools	250 271	• oil / water separator system	250 276
		• programmable tailstock	250 301

CNC Lathe
StarChip 450

Powerful and dynamic - includes extensive standard equipment

- inclined 45° machine bed, monoblock design, made of premium tension-free annealed cast-iron
- precision-ground preloaded ball screws with preloaded nuts and precision linear guides – low maintenance and high reliability
- hydraulic unit with coolant system to maintain constant oil temperature during continuous operation
- high-pressure cooling system through the bidirectional tool turret
- Fanuc 0i-Mate Control with Manual Guide 0i
- Duplomatic 8-station tool turret for quick and bidirectional tool changes

StarChip 450 shown

Fanuc 0i-Mate
www.knuth.de

Standard Equipment:
Fanuc 0i-Mate control with Manual Guide 0i, electr. handwheel, chip conveyor, hydr. 8-station turret, hydr. tailstock, hydr. 3-jaw chuck Ø 210 mm, high-pressure coolant system, autom. central lubrication, work lamp, programming manuals, operator manual, operating tools

Option

- Handybar bar feed — Part No. 123 960
- Heavybar 30 bar feed — Part No. 123 970

Specifications StarChip 450		
control		Fanuc 0i-Mate
max. turning diameter		
- over bed	mm	450
- over support	mm	200
max. workpiece diam.	mm	280
max. workpiece length	mm	500
machine bed incline		45°
spindel speed	min^{-1}	45 - 4000
headstock motor type		Fanuc B12/7000i
spindle motor rating (cont./30 min.)	kW	11/15
spindle taper		A 2-5
spindle bore	mm	Ø 35
chuck bore	mm	Ø 50
3-jaw hydraulic chuck		8” (210 mm)
max. spindle torque (cont./30 min.)	Nm	91 / 124
travels - X axis	mm	170
- Z axis	mm	500
rapid feed	m/min	20
Ø of both preloaded ball screws	mm	32
number of tool stations		8
tool shank	mm	20 x 20
boring bar holder	mm	32
tailstock quill/-Ø	mm	MK 5 / 80
tailstock quill travel	mm	100
dimensions (LxWxH)	mm	3625 x 1700 x 1700
weight	kg	5000
Part no.		180 150

CNC Horizontal Lathe

Turnstar 200 C

Low-cost turned parts with maximum precision!

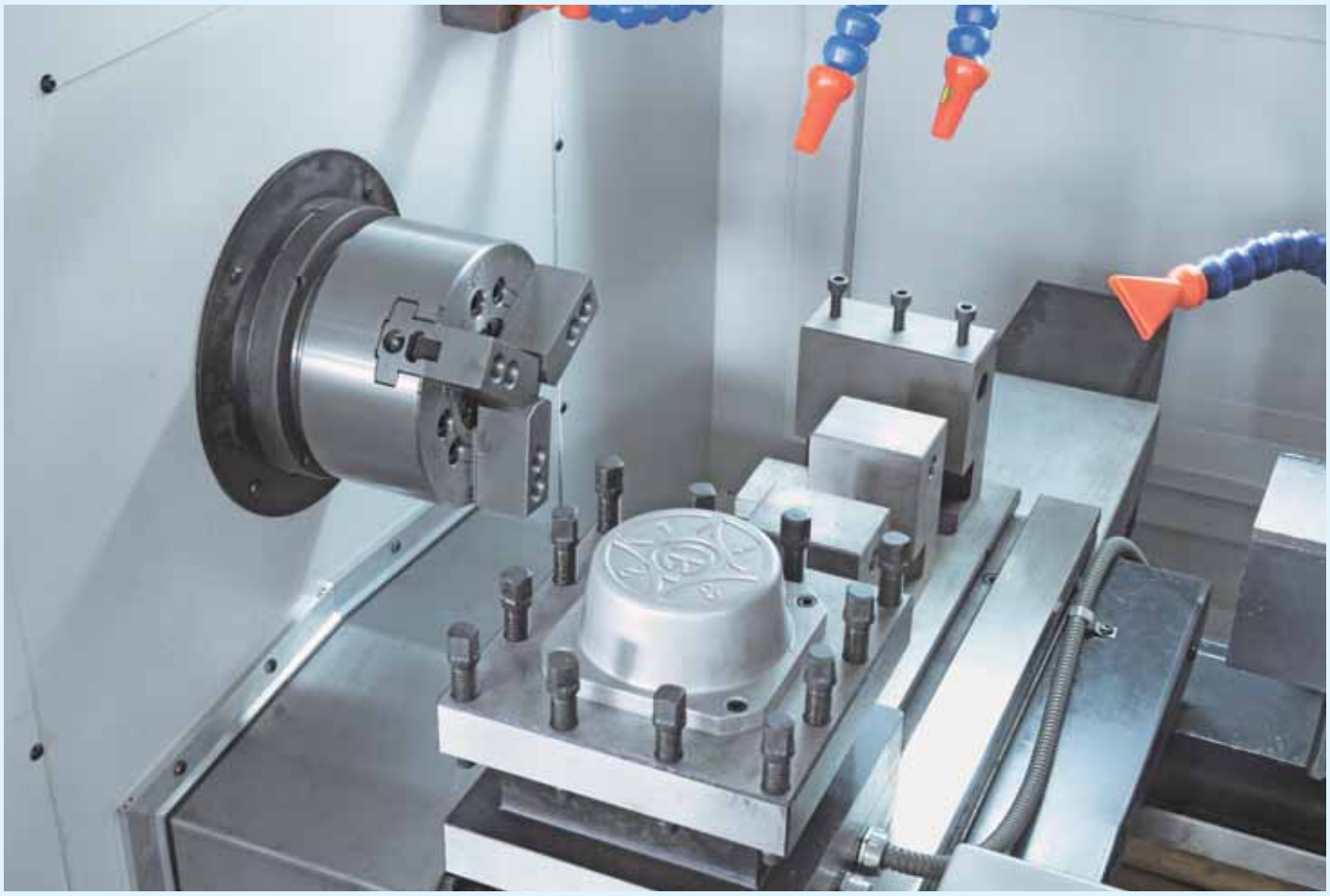
- ribbed, wide machine bed made of tempered cast-iron for maximum rigidity and constant accuracy
- wide linear guides and large preloaded ball screws allow low-friction and very accurate positioning of the tool slide
- infinitely variable speeds, wide speed range
- linear tool changer for up to 6 tools allows quick tool changes
- very exact and rigid headstock support on radial angular ball bearings and two rows of cylindrical roller bearings
- hydraulic collet chuck ensures minimal deformation during clamping, even with small part diameters; excellent concentricity

GPlus 450
www.knuth-gplus.de

Standard Equipment: GPlus 450 control, 6-station linear tool changer, hydraulic collet chuck, collets, hydraulic unit, automatic central lubrication, chip tray, operating tools, operator manual

Options: Collets from 2 to 35 mm — Part No. 106 300 - 106 333 (intermediate sizes upon request)

Specifications Turnstar 200 C		
Working area		
max. turning diam. over bed	mm	440
max. turning diam. over support	mm	180
workpiece length (max.)	mm	200
X / Z axis travel	mm	800 / 230
Headstock		
speed range	rpm	70 - 4000
spindle mount		A2-5
spindle bore	mm	45
spindle bore inside chuck	mm	35
Feed		
rapid feed X / Z axis	mm/min	8000 / 15000
Tool Carrier		
number of tool stations		6
tool shank dimensions	mm	20 x 20
boring bar holder diameter	mm	20
Accuracy		
positioning accuracy X / Z axis	mm	0.015 / 0.016
repeatability X / Z axis	mm	0.010 / 0.012
Drive Capacities		
main motor rating	kW	4
motor rating for X / Z axis drive	kW	1 / 1.5
total connected load	kVA	8.3
Dimensions/Weight		
dimensions	mm	2100 x 1850 x 1690
weight	kg	1700
Part No.		180 620



Lots of spance for special tools – the wide linear setup table allows many combination possibilities

- easy access to the work space through large sliding door
- central lubrication fed to guides and preloaded ball screws
- hydraulic workpiece clamping via hydraulic 3-jaw chuck with 160 mm diameter ensures easy and exact setup of the workpiece
- electric tool changer with 4 stations, 3 boring bar holders
- rapid feed up to 15 m/min for effective and cost-efficient machining operations
- The GPlus control features a 17“ TFT color monitor with touch-screen display that shows all data for a user-friendly programming experience and easy operation

Standard Equipment:

- GPlus 450 control
- electric 4-station tool changer
- 3 boring bar holders
- hydraulic 3-jaw chuck Ø 160 mm
- hydraulic unit
- automatic central lubrication
- coolant system
- totally enclosed case
- chip tray
- operating tools
- operator manual

Specifications Turnstar 300 C		
Working area		
max. turning diam. over bed	mm	380
max. turning diam. over support	mm	180
center width	mm	450
machining length (max.)	mm	300
X axis travel	mm	620
Z axis travel	mm	500
Headstock		
speed range	rpm	70 - 4000
spindle mount		A2-5
lathe chuck diameter	mm	160
bore	mm	55
spindle bore inside chuck	mm	45
Feed		
X axis rapid feed	mm/min	12000
Z axis rapid feed	mm/min	15000
Tool Carrier		
number of tool stations		7
tool shank dimensions	mm	20 x 20
boring bar holder diameter	mm	20

Tailstock		
tailstock taper		MT 4
tailstock quill diameter	mm	60
tailstock quill stroke	mm	120
Accuracy		
positioning accuracy X axis	mm	0.015
positioning accuracy Z axis	mm	0.025
repeatability X axis	mm	0.01
repeatability Z axis	mm	0.015
Drive Capacities		
main motor rating	kW	4
motor rating for X axis	kW	1
motor rating for Z axis	kW	1.5
total connected load	kVA	8.3
Dimensions/Weight		
dimensions	mm	2200 x 1470 x 2000
weight	kg	2200
Part No.		180 621

CNC Horizontal Lathe

Turnstar 300 C

Low-cost turned parts with maximum precision!

- ribbed, wide machine bed made of tempered cast-iron for maximum rigidity and constant accuracy
- wear-resistant box ways and large preloaded ball screws allow low-friction and very accurate positioning of the tool slide on all axes
- powerful spindle motor with infinitely variable speed
- very exact and rigid headstock support on radial angular ball bearings and two rows of cylindrical roller bearings

GPlus 450
www.knuth-gplus.de

- headstock with infinitely variable speed adjustment - change-over to C axis (RS model) for exact angle positioning and thread cutting function
- powered drilling/cutter heads with 2 tools are mounted in a radial position and are moved via the Y axis; 2 driven axial drill heads are mounted directly on the linear changer (RS model)
- all axes feature powerful servo motors
- The GPlus control features a 17“ TFT color monitor with touch-screen display that shows all data for user-friendly programming experience and easy operation
- quick setup of drilling, milling and thread cutting tasks on turned parts directly at the GPlus control
- all guideways and preloaded ball screws are lubricated timely and adequately by the central lubrication system

Very precise C axis angle positioning (RS model) and driven tools for drilling and milling of turned parts

Standard Equipment:

- GPlus 450 control
- 6-station linear tool changer (S model)
- 3-station linear tool changer (RS model)
- 2 driven axial drilling/cutter heads (RS model)
- 2 driven radial drilling/cutter heads (RS model)
- C and Y axes (RS model)
- hydraulic 3-jaw chuck Ø 160 mm
- hydraulic unit
- automatic central lubrication
- coolant system
- totally enclosed case
- chip tray
- operating tools
- operator manual

Specifications Turnstar		**200 S**	**200 RS**
Working area			
max. turning diam. over bed	mm	440	440
max. turning diam. over support	mm	180	180
workpiece length (max.)	mm	200	200
X axis travel	mm	800	800
Z axis travel	mm	250	250
Headstock			
speed range	rpm	70 - 4000	70 - 4500
spindle inside taper		1:50	1:50
lathe chuck diameter	mm	160	160
spindle bore	mm	55	55
spindle bore inside chuck	mm	45	45
Feed			
X axis rapid feed	mm/min	12000	12000
Z axis rapid feed	mm/min	18000	18000
Tool Carrier			
number of tool stations		6	3
tool shank dimensions	mm	20 x 20	20 x 20
boring bar mount diameter	mm	20	20
Driven Tools			
Quantity		-	4
spindle speed	rpm	-	1400
torque	Nm	-	7

Accuracy			
positioning accuracy			
- X axis	mm	0,013	0,013
- Y axis	mm	-	0,013
- Z axis	mm	0,015	0,015
- C axis		-	0,03°
repeatability			
- X axis	mm	0,004	0,004
- Y axis	mm	-	0,004
- Z axis	mm	0,006	0,006
- C axis		-	0,01°
Drive Capacities			
main motor rating	kW	4	4,5
motor rating for X axis	kW	1	1
motor rating Y axis	kW	-	0,75
motor rating for Z axis	kW	1,5	1,5
motor rating for driven tools	kW	-	0,75
total connected load	kVA	8,3	8,8
Dimensions/Weight			
dimensions	mm	2160x1520 x1940	2160x1520 x1940
weight	kg	2100	2100
Part No.		180 623	180 622

CNC Horizontal Lathe

Turnstar 200 S • RS

Universal, quick, compact - also with C and Y axes and driven tools

- compact CNC lathe with a 30° inclined bed constructed of heavy, torsionally rigid cast-iron to ensure optimum results at high machining rates
- wide linear guides and large preloaded ball screws allow low-friction and very accurate positioning of the tool slide on all axes
- linear tool changer with 6 stations (S model) and rapid feeds up to 18 m/min allow quick tool changes and efficient production
- very exact and rigid headstock support on radial angular ball bearings and two rows of cylindrical roller bearings
- easy access to the totally enclosed work space via a wide opening door
- hydraulic 3-jaw chuck with 160 mm diameter ensures easy and exact setup of the workpiece
- all guideways and the centally positioned preloaded ball screw-sare realiably protected by telescoping covers

Turnstar 200 S is shown

Compact 330:

- with state-of-the-art GPlus 450 CNC control
- spindle capacity of 34 mm
- drive motor 5.5 / 7.5 kW
- hydraulic 8-station tool turret
- hydraulic power chuck 169 mm
- rapid feed 30 m/min
- linear guides on all axes

Compact 330 with 8-station tool turret, and GPlus 450

Standard Equipment Compact 330:
GPlus 450 CNC control, 3-jaw power chuck 169 mm, 8-station tool turret, coolant system, setup kit, assembly tools, operator manual and programming instructions

Compact 330 Options	**Part No.**
• Chip conveyor	180 077
• Rod loader cartridge 1.25 m	100 127
• Handybar bar feed	123 960
• Heavybar 30 bar feed	123 970

Specifications Compact		**330**	**480**
control		GPlus 450	Fanuc 0i-TC
Working area			
workpiece diameter over bed	mm	330	480
workpiece diameter over support	mm	140	321
max. machining diam.	mm	140	210
max. machining length	mm	130	508
X axis travel	mm	107	176
Z axis travel	mm	230	520
machine bed angle		45°	45°
Headstock			
spindle speed	rpm	6000	4500
spindle mount		A2-5	A2-6
spindle bore	mm	Ø 34	Ø 51
hydr. 3-jaw chuck	mm	169	200
rapid feed	mm/min	30000	30000

Compact		**330**	**480**
Tool Carrier			
number of tool stations		8	10
tool shank dimensions	mm	20 x 20	25 x 25
boring bar holder	mm	25	40
Tailstock			
tailstock taper		-	MK4
tailstock quill diameter	mm	-	65
tail stock quill travel	mm	-	50
Drive Capacities			
main drive motor rating (cont/30 min)	kW	5,5 / 7,5	11 / 15
Dimensions/Weight			
overall dimensions (L x W x H)	mm	2020 x 1290 x 1580	3099 x 1390 x 1690
weight	kg	1800	2900
Part No.		180 076	100 024

For more information, please contact us or visit www.knuth.de

CNC Inclined Bed Lathe

Compact 330 • 480

Reliable Universal CNC Lathe with torsionally rigid 45° inclined bed, made of meehanite casting with quality tooling and many years of proven service

Compact 480
- incl. Fanuc 0i-TC, and Manual Guide 0i
- spindle capacity of 51 mm
- drive motor 11 / 15 kW
- hydraulic 10-station tool turret
- hydraulic power chuck 200 mm
- rapid feed 30 m/min
- linear guides on all axes

Compact 480 with Fanuc Oi-TC & Manual Guide 0i is shown

Fanuc 0i-TC
www.knuth.de

Standard Equipment Compact 480:
Fanuc 0i-TC CNC control with Manual Guide 0i, 3-jaw power chuck (200 mm), 10-station tool turret, hydraulic tailstock MT4, coolant system, setup kit, assembly tools, operator manual and programming instructions

Compact 480 Options	Part No.
• Parts catcher	100 124
• Chip conveyor	100 125
• Rod loader cartridge 1.2 m	100 126
• Handybar bar feed	123 960
• Heavybar 30 bar feed	123 970
• Heavybar 60 bar feed	123 975

Call us to inquire about the latest best prices under: +49 4321 609-0

- premium electromechanical tool turret(Baruffaldi License)
- bi-directional tool selection
- Short indexing time
- low-maintenance, easy access to electric components
- life-time lubrication of mechanical components

Ecoturn 520 shown

Specifications Ecoturn		**520/650**	**520/1150**	**520/1650**	**650/1000**	**650/1500**	**650/2000**
Fanuc control		0i-Mate TC	0i-Mate TC	0i-Mate TC	0i-Mate TC	0i-Mate TC	0i-Mate TC
Working Area							
turning diameter over bed (max)	mm	520	520	520	650	650	650
turning diameter over support (max)	mm	380	380	380	480	480	480
center width	mm	650	1150	1650	1000	1500	2000
center height	mm	290	290	290	355	355	355
X axis travel	mm	257	270	270	320	320	320
Z axis travel	mm	563	1250	1750	1110	1610	2110
Headstock							
headstock motor rating (cont./30min)	kW	18.5/22	18.5/22	18.5/22	30/37	30/37	30/37
spindle torque (max.)	Nm	442	442	442	1432	1432	1432
spindle speed	min^{-1}	30-2000	30-2000	30-2000	30-1000	30-1000	30-1000
spindle bore	mm	65	65	65	105	105	105
spindle bore with draw bar	mm	45	45	45	62	62	62
spindle nose		ASA A2-6	ASA A2-6	ASA A2-6	ASA A2-11	ASA A2-11	ASA A2-11
Feed							
X axis rapid feed	m/min	8	8	8	10	10	10
Z axis rapid feed	m/min	12	12	12	12	12	12
thread cutting	mm	0.01-100	0.01-100	0.01-100	0.01-100	0.01-100	0.01-100
tool changer							
type		turret	turret	turret	turret	turret	turret
tool stations		8	8	8	8	8	8
tool mount shank size	mm	25 x 25	25 x 25	25 x 25	32 x 25	32 x 25	32 x 32
drill holder diameter	mm	40	40	40	50	50	50
Tailstock							
tailstock quill stroke	mm	90	90	90	120	120	125
tailstock quill taper		MT4	MT4	MT4	MT5	MT5	MT5
tailstock quick diameter	mm	100	100	100	125	125	125
Accuracy							
positioning accuracy X axis	mm	0.016	0.016	0.016	0.016	0.016	0.016
positioning accuracy Z axis	mm	0.025	0.032	0.04	0.025	0.032	0.04
repeatability X axis	mm	0.007	0.007	0.007	0.007	0.007	0.007
repeatability Z axis	mm	0.01	0.013	0.016	0.01	0.013	0.016
Dimensions/Weight							
overall dimensions (LxWxH)	mm	4190 x 1506 x 1872	4864 x 1506 x 1872	5184 x 1506 x 1872	5037 x 1787 x 2194	5537 x 1742 x 2194	6037 x 1742 x 2194
weight	kg	6900	7400	7900	8500	9500	10500
Part No. incl. chip conveyor		100 270	100 271	100 272	100 273	100 274	100 275

For more information, please contact us or visit www.knuth.de

CNC Inclined Bed Lathe

Ecoturn 520 • 650

Heavy-duty CNC Lathe for cost-effective machining of large parts and series production

- extra heavy inclined bed design for powerful machining of large parts with turning diameters up to 650 mm over the bed and parts lengths up to 2000 mm
- premium equipment including 8-station tool turret, hydraulic power chuck, and hydraulic tailstock
- extra wide hardened rectangular guides and plastic-coated counter-guides ensure smooth and quiet operation and constant precision
- Fanuc Oi-Mate control with Manual Guide 0i for easy operation
- 22 kW or 37 kW main drive and standard gear step (Ecoturn 650) ensure high torque at the spindle

Ecoturn 650 shown

Standard Equipment: Fanuc Manual Guide 0i, chip conveyor, tool turret, hydraulic tailstock, hydraulic 3-jaw chuck with 250 mm diam. (Ecoturn 520), hydraulic 3-jaw chuck with 300 mm diam. (Ecoturn 650), automatic lubrication, coolant system, dead center, machine feet, fastening bolts, electronic hand-wheel, operating tools, operator manual

8-station turret

Extra-heavy inclined bed design for superior turning results

CNC Inclined Bed Lathe

Roturn 250

Compact Automatic Lathe with Inclined Bed for precise batch production of small turned parts

- 2.2 kW headstock motor with wide speed range (~ 4500 rpm)
- rectangular guideways ensure maximum rigidity and high accuracy
- workspace with inclined bed design, complete protection from flying chips, and large door safety glass
- advanced control technology and comfortable operation via Fanuc 0i-Mate plus Manual Guide 0i
- 6-station tool turret reduces idle times
- hydraulic power chuck 125 mm
- automatic central lubrication for reduced maintenance

Standard Equipment: Fanuc 0i-Mate TD with Manual Guide 0i, 6-station tool turret, hydraulic 3-jaw chuck (125 mm diam.), central lubrication, chip tray, operating manual and programming instructions

Specifications Roturn 250			
working area			
max. turning diam. over bed		mm	250
max. turning diam. over support		mm	130
travel	- X axis	mm	130
	- Z axis	mm	175
Headstock			
spindle speed		min^{-1}	200 - 4500
spindle nose			A2-4
Feed			
rapid feed	- X axis	mm/min	8000
	- Z axis	mm/min	10000
work feed	- X axis	mm/min	1500
	- Z axis	mm/min	1500

Tool Carrier		
tool-changer type		turret
number of tool stations	qty	6
tool shank dimensions	mm	16 x 16
Accuracy		
positioning accuracy	mm	0,0
repeatability	mm	0,01
Drive Capacities		
headstock motor rating	kW	2,2
Dimensions/Weight		
overall dimensions (LxWxH)	mm	1620 x 1090 x 1450
weight	kg	1200
Part No.		180 600

CNC Cycle Lathes

Proton 400 • 560 • 660 • 800

Powerful, flexible and productive with optimum price/performance ratio

fulfill every demand from turning shops, tool makers, mechanical operations to training facilities

- powerful drive with high-performance motors and automatic gear steps for efficient machining
- multi-station tool turret/changer for maximum automation
- induction-hardened guideways and Turcite-B laminates reduce friction and increase the service-life
- portable, ergonomically designed control panel for optimum handling
- 2 electronic hand wheels for easy manual operation and positioning
- automatic central lubrication
- large spindle capacity of 52 / 82 / 100 mm

Proton 660 FA shown

Fagor 8055i
www.knuth.de

Siemens 802C MM
www.knuth.de

Standard Equipment:
CNC control Siemens 802C MM / Fagor 8055i, 3-jaw chuck 2 electronic hand-wheels, tool changer, automatic central lubrication, work lamp, dead center, live center, steady rest 30-200 mm (only for Part No. 180 274), steady rest 40-250 mm (only for Part Nos. 180 275 and 180 276), follow rest 20-100 mm (only for Part Nos. 180274 and 180275), operating tools, operator manual

Proton 800 - with Fagor 8055 i Control and powerful 15 kW drive

Proton 800 shown

Specifications Proton			400/1000	560/1500	560/2000
control			Siemens 802C MM	Siemens 802C MM	Siemens 802C MM
working area					
center width		mm	1000	1500	2000
turning diameter over bed (max)		mm	400	560	560
turning diameter over support (max)		mm	200	330	330
travel	- X axis	mm	225	305	305
	- Z axis	mm	870	1430	1930
speed range		min^{-1}	20-650, 75-2500	7-135, 30-550, 110-2200	7-135, 30-550, 110-2200
spindle mount			D1-6	D1-8	D1-8
lathe chuck diameter (hydr.)		mm	200	-	-
lathe chuck diameter (manual)		mm	-	250	250
spindle bore		mm	52 (32)	82	82
Feed					
rapid feed	- X axis	m/min	4	6	6
	- Z axis	m/min	5	10	10
Tool Carrier					
tool-changer type (electr.)			tool turret	tool turret	tool turret
number of tool stations		qty	6	6	6
tool shank dimensions		mm	20x20	25x25	25x25
boring bar holder diameter		Ø mm	25	32	32
Tailstock					
tailstock taper			MT4	MT5	MT5
tailstock quick diameter		mm	63	75	75
tailstock quill stroke		mm	130	150	150
Accuracy					
positioning accuracy	- X axis	mm	0,03	0,03	0,03
	- Z axis	mm	0,04	0,04	0,04
repeatability	- X axis	mm	0,012	0,012	0,012
	- Z axis	mm	0,016	0,016	0,016
Drive Capacities					
main drive (cont/30 min)		kW	5,5 / 7,5	7,5 / 11	7,5 / 11
motor rating X		kW	1,2	1,2	1,2
motor rating Z axis		kW	1,2	1,2	1,2
coolant pump motor rating		kW	0,12	0,12	0,12
total connected load		kW	16	24	24
Dimensions/Weight					
dimensions		mm	2550x1480x1520	3330x1750x1620	3830x1750x1700
weight		kg	1950	2750	2850
Part No.			180 270	180 271	180 272

Powerful Cycle Lathes in 2 designs:

Proton Si

- economical solution with modern Siemens control and a wide variety of machining cycles

Proton FA

- advanced solution with state-of-the-art Fagor 8055i cycle control for optimum operator control

Specifications Proton			660/1500	660/2000	800/2000	800/3000
control			Fagor 8055i	Fagor 8055i	Fagor 8055i	Fagor 8055i
working area						
center width		mm	1500	2000	2000	3000
turning diameter over bed (max)		mm	660	660	800	800
turning diameter over support (max)		mm	430	430	490	490
travel	- X axis	mm	305	305	420	420
	- Z axis	mm	1430	1930	1835	2735
speed range		min^{-1}	7-135, 30-550, 110-2200	7-135, 30-550, 110-2200	100-300, 300-1000	100-300, 300-1000
spindle mount			D1-8	D1-8	D1-11	D1-11
lathe chuck diameter (hydr.)		mm	-	-	-	-
lathe chuck diameter (manual)		mm	315	315	400	400
spindle bore		mm	82	82	100	100
Feed						
rapid feed	- X axis	m/min	6	6	4	4
	- Z axis	m/min	10	10	8	8
Tool Carrier						
tool-changer type (electr.)			tool turret	tool turret	tool changer	tool changer
number of tool stations		qty	6	6	4	4
tool shank dimensions		mm	25x25	25x25	32x25	32x25
boring bar holder diameter		Ø mm	32	32	-	-
Tailstock						
tailstock taper			MT5	MT5	MT6	MT6
tailstock quick diameter		mm	75	75	100	100
tailstock quill stroke		mm	150	150	240	240
Accuracy						
positioning accuracy	- X axis	mm	0,03	0,03	0,03	0,03
	- Z axis	mm	0,04	0,04	0,05	0,05
repeatability	- X axis	mm	0,012	0,012	0,012	0,012
	- Z axis	m	0,016	0,016	0,025	0,025
Drive Capacities						
main drive (cont/30 min)		kW	7.5 / 11	7.5 / 11	11 / 15	11 / 15
motor rating X		kW	1.2	1.2	1.2	1.2
motor rating Z axis		kW	1.2	1.2	2.5	2.5
coolant pump motor rating		kW	0.12	0.12	0.12	0.12
total connected load		kW	24	24	27	27
Dimensions/Weight						
dimensions		mm	3330x1750x1700	3830x1750x1700	4510x2000x1800	5410x2000x1800
weight		kg	2850	2950	5800	6100
Part No.			180 273	180 274	180 275	180 276

CNC Lathes with Cycle Control

Proton 560/1500 • 560/2000

Interactive cycle programming with graphic support for cost-effective batch and single-part production

- heavy-duty cycle-controlled lathe
- automatic 4-station tool changer for increased productivity
- automatic gear steps for high pulling force
- infinitely variable speed for optimum work results
- two electronic hand-wheels for manual operation
- program complex parts without any DIN programming knowledge
- implemented cycles for facing and plain turning radius, taper, thread, plunge-cut and complete contouring

Fagor 8055 TC
www.knuth.de

Standard Equipment: Fagor 8055 control, 3-jaw chuck (250 mm diam.), autom. central lubrication, autom. 4-station tool changer, tailstock, LED work lamp, coolant system, 2 sliding doors with windows, steady rest (Ø 20-150 mm), follow rest (Ø 20 - 90 mm), operating and programming instructions

Specifications Proton		560/1500	560/2000
control		Fagor 8055 TC	
turning diam. over bed	mm	560	
turning diam. over cross slide	mm	300	
center height	mm	265	
center width	mm	1500	2000
bed width	mm	400	
spindle speeds			
- high, 2 levels	min^{-1}	400 - 1000 800 - 2000	
- low, 2 levels	min^{-1}	25 - 250 + 200 - 500	
spindle mount		C 8 (stud bolt)	
spindle bore	mm	80	
tool shank	mm	25 x 25	
cross slide travel	mm	300	
Tailstock			
- quill diameter	mm	85	
- quill stroke	mm	150	
- taper		MT 5	
repeatability X, Z	mm	0.012; 0.02	
positioning accuracy X, Z	mm	0.03; 0.045	
headstock motor	kW	7.5	
overall dimensions (LxWxH)	mm	3440x1340 x1750	3910x1340 x1750
weight	kg	3700	4700
Part No.		180 164	180 176

CNC Cycle Lathe
Numturn 420

Enter a new dimension of Operating control

The Siemens 802S MM Base combines the user-friendliness and high flexibility of a conventional lathe with the precision and efficiency of a state-of-the-art CNC machine

- manually transverse the X and Z axes via 2 electronic hand-wheels
- Semi-automatic operation by defining individual cycles
- induction-hardened, ground guideways
- infinitely programmable spindle speed on 2 gear levels for a powerful spindle drive
- longitudinal and transverse movements via preloaded ball screws
- hydraulic chuck with adjustable holding force
- automatic central lubrication

Standard Equipment: Siemens 802 S MM Base Line control, 2 electronic hand wheels, hydraulic 3-jaw chuck (200 mm diam.), 8-station tool turret, automatic central lubrication, work lamp, operating tools, operator manual, programming instructions

Specifications Numturn 420		
Siemens control		802S MM Base Line
turning diameter over bed (max)	mm	415
turning diameter over support (max)	mm	220
center width	mm	1000
workpiece length (max.)	mm	850
X / Z axis travel	mm	200 / 760
headstock motor rating	kW	7,5
spindle speed	rpm	30 - 2400
spindle bore	mm	52
hydraulic 3-jaw chuck capacity	mm	32
spindle nose		A2-6
Feed		
rapid feed X / Z axis	m/min	6 / 8
X / Z axis feed	mm/rev	0.01 – 100
coolant pump motor rating	kW	0.12
motor rating Y / Z axis	kW	1.2
tool-changer type		turret
tool stations		8
tool mount shank size	mm	20x20
drill holder diameter	mm	30
tailstock quill stroke	mm	130
tailstock quill taper		MT 4
tailstock quill diameter	mm	60
Accuracy		
- repeatability X / Z axis	mm	0.005 / 0.01
overall dimensions (LxWxH)	mm	2470x1400x1790
weight	kg	2000
Part No.		180 140

Forceturn 1840 shown including the following optional accessories:

- 8-station tool turret acc. to VDI 30, hydraulic
- manual operation via two electronic hand wheels - exact positionen and machine information are displayed on the monitor

Options for Forceturn 1840	Part No.		Part No.
• 3-jaw lathe chuck, Ø 200 mm / 58 mm bore	250 142	• servo headstock motor: Fagor 7.5 / 11 kW	250 065
• 3-jaw lathe chuck, Ø 250 mm / 87 mm bore	250 143	• 4-station electric tool holder	250 147
• 3-jaw hydraulic lathe chuck, Ø 200 mm / 45 mm bore	250 028	• 8-station tool turret acc. to VDI 30, hydraulic	250 148
• 3-jaw hydraulic lathe chuck, Ø 250 mm / 45 mm bore	250 029	• hydraulic tailstock	250 149
• 4-jaw face chuck Ø 350 mm	250 144	• steady rest with roller bearing, 20 - 160 mm	250 150
• chip conveyor with chip container	250 145	• follow rest 25 - 90 mm	250 151
• headstock drive 7.5 kW	250 146	• spindle oil cooler	250 152
		• live center	250 153
		• air conditioning for control cabinet	250 154

Options for Forceturn 2160	Part No.		Part No.
• 3-jaw lathe chuck, Ø 250 mm / 87 mm bore	250 155	• chip conveyor with chip container	250 161
• 3-jaw lathe chuck, Ø 300 mm / 105 mm bore	250 156	• servo headstock motor: Fagor 11 / 15 kW	250 066
• 3-jaw hydraulic lathe chuck, Ø 250 mm / 75 mm bore	250 031	• servo headstock motor: Fagor 15 / 22 kW	250 067
• 3-jaw hydraulic lathe chuck, Ø 300 mm / 91 mm bore	250 030	• 4-station electric tool holder	250 162
• 4-jaw Face Chuck Ø 450 mm	250 157	• 8-station tool turret acc. to VDI 30, hydraulic	250 085
• 105 mm spindle bore in connection with an 11 kW main motor and A2-11 mount must be purchased separately	250 159	• hydraulic tailstock	250 163
• 4-jaw face chuck Ø 550 mm / A 2-11	250 160	• steady rest with roller bearing, 80 - 280 mm	250 164
		• follow rest 30 - 170 mm	250 165
		• spindle oil cooler	250 166
		• live center	250 167
		• air conditioning for control cabinet	250 086

Specifications Forceturn		1840	2160
control		Fagor 8055i A-TC	
Working area			
center width	mm	1000	1500
center height	mm	230	270
max. turning diam. over bed	mm	460	540
max. turning diam. over support	mm	230	310
X axis travel	mm	280	350
Z axis travel	mm	810	1310
Headstock			
speed range	rpm	(3) 33-3100	(3) 27-2250
spindle mount		D1-6	D1-8
spindle bore	mm	56	85
Feed			
X axis rapid feed	mm/min	5000	5000
Z axis rapid feed	mm/min	7000	7000
Tailstock			
tailstock taper		MT 5	MT 5
tailstock quill diameter	mm	75	75
tailstock quill stroke	mm	170	170

Accuracy			
positioning accuracy			
- X axis	mm	0.01	0.01
- Z axis	mm	0.015	0.02
repeatability			
- X axis	mm	0.008	0.008
- Z axis	mm	0.01	0.015
Drive Capacities			
main motor rating	kW	5,5	7,5
motor rating X axis	kW	2	2
motor rating Z axis	kW	2	2
X axis motor torque	Nm	6.3	6.3
Z axis motor torque	Nm	6.3	6.3
Dimensions/Weight			
overall dimensions (L x W x H)	mm	2720x1870 x1900	3220x1870 x1900
weight	kg	2900	3400
Part No.		180 360	180 361

For more information, please contact us or visit www.knuth.de

CNC Lathes with Cycle Control

Forceturn 1840 • 2160

Maximum precision for single parts, series production, and even very complex turned partsequipped with state-of-the-art Fagor 8055i control

- cycle programming - optimum operator control
- quick and easy creation of programs
- 2 electronic hand-wheels to allow manual operation
- automatic transmission for powerful chip removal
- quick-change tool changer included
- headstock with 2 tapered roller bearings (triple bearing) to ensure high accuracy and stability
- powerful, controlled spindle motor and automatic 3-step gear provide optimum power across the entire speed range
- precision preloaded ball screws in both axes
- the legendary easy operation of the Fagor control allows every operator quick programming, even without any programming knowledge
- degree of automation is scalable and can be expanded via a wide variety of options for your individual requirements

Fagor 8055i
www.knuth.de

Forceturn 2160 shown with optional accessories

Standard Equipment: Fagor 8055i / A-TC control, automatic 3-step gear, Fagor X and Z servo-motors, quick-change tool holder, manual tailstock, central lubrication, coolant system, work lamp, hoisting device (crane), operating tools, operating and programming instructions

Specifications Forceturn XL		4380	43120	43160	43200	43240
control				Fagor 8055i / A-TC		
Working area						
center width	mm	2200	3200	4200	5200	6200
center height	mm	550	550	550	550	550
turning diameter over bed (max)	mm	1100	1100	1100	1100	1100
turning diameter over support (max)	mm	700	700	70	700	700
X / Z axis travel	mm	680 / 2200	680 / 3200	680 / 4200	680 / 5200	680 / 6200
Headstock						
speed range	rpm	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750
spindle mount		A2-11	A2-11	A2-11	A2-11	A2-11
spindle bore	mm	155	155	155	155	155
Feed						
X axis rapid feed	mm/min	5000	5000	5000	5000	5000
Z axis rapid feed	mm/min	7000	7000	7000	7000	7000
work feed X / Z axis	mm/min	0.001-500	0.001-500	0.001-500	0.001-500	0,001-500
Tailstock						
tailstock taper		MT 6	MT 6	MT 6	MT 6	MT 6
tailstock quill diameter	mm	165	165	165	165	165
tailstock quill stroke	mm	300	300	300	300	300
Accuracy						
positioning accuracy X / Z axis	mm	0.05 / 0.03	0.05 / 0.04	0.05 / 0.045	0.05 / 0.05	0.05 / 0.055
repeatability X / Z axis	mm	0.03 / 0.025	0.03 / 0.035	0.03 / 0.04	0.03 / 0.045	0.03 / 0.05
Drive Capacities						
main motor rating (cont/30 min)	kW	28 / 42	28 / 42	28 / 42	28 / 42	28 / 42
motor rating Y / Z axis	kW	3.62 / 10.7	3.62 / 10.7	3.62 / 10.7	3.62 / 10.7	3.62 / 10.7
X / Z axis motor torque	Nm	17.3 / 51.1	17.3 / 51.1	17.3 / 51.1	17.3 / 51.1	17.3 / 51.1
Dimensions/Weight						
overall dimensions (LxWxH)	mm	6730x2828 x2195	7730x2828 x2195	8730x2828 x2195	9370x2828 x2195	10730x2828 x2195
weight	kg	12300	13900	15500	17100	18700
Part No.		180 362	180 363	180 364	180 365	180 366

Specifications Forceturn XL		5260	5280	52120	52160	52200	52240
control				Fagor 8055i / A-TC			
Working area							
center width	mm	1700	2200	3200	4200	5200	6200
center height	mm	650	650	650	650	650	650
turning diameter over bed (max)	mm	1300	1300	1300	1300	1300	1300
turning diameter over support (max)	mm	900	900	900	900	900	900
X / Z axis travel	mm	680 / 1700	680 / 2200	680 / 3200	680 / 4200	680 / 5200	680 / 6200
Headstock							
speed range	rpm	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750
spindle mount		A2-11	A2-11	A2-11	A2-11	A2-11	A2-11
spindle bore	mm	155	155	155	155	155	155
Feed							
X axis rapid feed	mm/min	5000	5000	5000	5000	5000	5000
Z axis rapid feed	mm/min	7000	7000	7000	7000	7000	7000
work feed X / Z axis	mm/min	0.001 - 500	0.001 - 500	0.001 - 500	0.001 - 500	0.001 - 500	0.001 - 500
Tailstock							
tailstock taper		MT 6	MT 6	MT 6	MT 6	MT 6	MT 6
tailstock quill diameter	mm	165	165	165	165	165	165
tailstock quill stroke	mm	300	300	300	300	300	300
Accuracy							
positioning accuracy X / Z axis	mm	0.05 / 0.2	0.05 / 0.3	0.05 / 0.04	0.05 / 0.045	0.05 / 0.05	0.05 / 0.055
repeatability X / Z axis	mm	0.03 / 0.015	0.03 / 0.025	0.03 / 0.035	0.03 / 0.04	0.03 / 0.045	0.03 / 0.05
Drive Capacities							
main motor rating (cont/30 min)	kW	28 / 42	28 / 42	28 / 42	28 / 42	28 / 42	28 / 42
motor rating Y / Z axis	kW	3,62 / 10,7	3,62 / 10,7	3,62 / 10,7	3,62 / 10,7	3,62 / 10,7	3,62 / 10,7
X / Z axis motor torque	Nm	17,3 / 51,1	17,3 / 51,1	17,3 / 51,1	17,3 / 51,1	17,3 / 51,1	17,3 / 51,1
Dimensions/Weight							
overall dimensions (LxWxH)	mm	6230x2828 x2195	6730x2828 x2195	7730x2828 x2195	8730x2828 x2195	9730x2828 x2195	10730x2828 x2195
weight	kg	12000	12800	14400	16000 kg	17600 kg	19200 kg
Part No.		180 367	180 368	180 369	180 370	180 371	180 372

CNC Lathes with Cycle Control

Forceturn XL

Superior, proven machine design with a premium control for single part and series production

- heavy-duty Lathe Series for powerful chip removal
- the legendary easy operation of the Fagor control allows every operator quick programming, even without any programming knowledge
- powerful Fagor servo motor with 42 kW peak power
- automatic 3-step gears ensures high torque
- machining of turned parts with diameters up to 1,600 mm (above support 1,050 mm diameter)
- center widths from 1,700 to 6,200 mm
- large spindle bore of 155 mm (optionally up to 400 mm)

Forceturn 52120 XL shown with optional accessories

Standard Equipment: Fagor 8055i / A-TC, electronic hand wheel, automatic 3-step gears, chip conveyor, quick tool changer head WD, coolant system, central lubrication, hydraulic tailstock, spindle oil cooler, work lamp, crane-type hoist, operating tools, operator manual and programming instructions

Options	Part No.
• spindle bores up to 230 mm with A2-15 mount	250 168
• spindle bores up to 305 mm with A2-20 mount	250 169
• spindle bores up to 410 mm with A2-28 mount	250 170
• 3-jaw chuck, Ø 400 mm / 155 mm bore	250 171
• 3-jaw chuck, Ø 630 mm / 260 mm bore	250 172
• 4-jaw face chuck Ø 500 mm with A 2-11 mount	250 173
• 4-jaw face chuck Ø 610 mm with A 2-15 mount	250 175
• 4-jaw face chuck Ø 710 mm with A 2-20 mount	250 177
• 4-jaw face chuck Ø 1010 mm with A 2-28 mount	250 179
• rear lathe chuck mount	
- A2-11 for 153 mm spindle bore	250 183
- A2-15 for 230 mm spindle bore	250 184
- A2-20 for 305 mm spindle bore	250 185
- A2-28 for 410 mm spindle bore	250 186
• hydraulic 3-jaw chuck, 380 mm diam.	250 181
• hydraulic 3-jaw chuck, 450 mm diam.	250 182
• 4-station electric tool holder	250 187
• Sauter 8-station electric tool turret (VDI 50)	250 188
• Sauter 8-station electric tool turret (VDI 60)	250 189
• C-axis for driven tools with Sauter 8-station tool changer (VDI) for	
- spindle bore of 153 mm	250 075
- spindle bore 230 mm	250 190
- spindle bore 305 mm	250 191
• live center	250 192
• coolant pump with 20 bar pressure	250 193
• steady rest with roller bearing, 120 - 350 mm	250 127
• steady rest with roller bearing, 300 - 600 mm	250 128
• follow rest 80 - 350 mm	250 129

Forceturn 5280 with 4-jaw face chuck and quick-change tool holder

All components in any machine of this series have been designed and machined with utmost care

- wide bed made from meehanite casting with rigid, hardened and ground guides
- spindle and gears made of CroMo and are hardened and ground
- reliable lubricant supply for all gear components via oil pump and oil bath
- headstock with 2 tapered roller bearings and 1 roller bearing (triple bearing) to ensure high accuracy and stability
- precision preloaded ball screws with large cross-sections are rigid and provide high capacity
- heavy-duty tailstock for powerful and safe chip removal on long or heavy parts
- extensive optional equipment allows customized degree of automation for individual requirements

Specifications Forceturn XL		**6260**	**6280**	**62160**	**62200**	**62240**
control				Fagor 8055i / A-TC		
Working area						
center width	mm	1700	2200	4200	5200	6200
center height	mm	800	800	800	800	800
turning diameter over bed (max)	mm	1600	1600	1600	1600	1600
turning diameter over support (max)	mm	1050	1050	1050	1050	1050
X / Z axis travel	mm	830 / 1700	830 / 2200	830 / 4200	830 / 5200	830 / 6200
Headstock						
speed range	rpm	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750	(3) 6-750
spindle mount		A2-11	A2-11	A2-11	A2-11	A2-11
spindle bore	mm	155	155	155	155	155
Feed						
X axis rapid feed	mm/min	5000	5000	5000	5000	5000
Z axis rapid feed	mm/min	7000	7000	7000	7000	7000
work feed X / Y axis	mm/min	0.001 - 500	0.001 - 500	0.001 - 500	0.001 - 500	0.001 - 500
Tailstock						
tailstock taper		MT 6	MT 6	MT 6	MT 6	MT 6
tailstock quill diameter	mm	165	165	165	165	165
tailstock quill stroke	mm	300	300	300	300	300
Accuracy						
positioning accuracy X / Z axis	mm	0.05 / 0.02	0.05 / 0.03	0.05 / 0.045	0.05 / 0.05	0.05 / 0.055
repeatability X / Z axis	mm	0.03 / 0.015	0.03 / 0.025	0.03 / 0.04	0.03 / 0.045	0.03 / 0.05
Drive Capacities						
main motor rating (cont/30 min)	kW	28 / 42	28 / 42	28 / 42	28 / 42	28 / 42
motor rating Y / Z axis	kW	3.62 / 10.7	3.62 / 10.7	3.62 / 10.7	3.62 / 10.7	3.62 / 10.7
X / Z axis motor torque	Nm	17.3 / 51.1	17.3 / 51.1	17.3 / 51.1	17.3 / 51.1	17.3 / 51.1
Dimensions/Weight						
overall dimensions (LxWxH)	mm	6240x3346 x2578	7200x3000 x3050	9200x3000 x3050	9740x3346 x2578	10740x3346 x3050
weight	kg	13000	13800	17000	18600	20000
Part No.		180 373	180 374	180 375	180 376	180 377

For more information, please contact us or visit www.knuth.de

CNC Lathes

Proton XL • XXL

Heavy-duty Cycle Lathes with powerful Fagor 8055 control for demanding applications and turning of complex single parts and series production parts

- heavy-duty lathes for powerful chip removal and high accuracy
- a variety of center widths and turning diameters give the user an optimum selection
- powerful motors and automatic 4-step gears ensure high chip removal power
- high torques even at low spindle speeds
- precise turning of complex contours - both inside and outside
- large guideways and a rigid machine bed provide for excellent machine stability
- the extraordinary solid design reduces vibrations to a minimum
- 4-station tool changer automatically performs the programmed tool changes, resulting in a significant productivity increase.

100 mm spindle bore

Fagor 8055
www.knuth.de

Standard Equipment for Proton XL: Fagor 8055 control, 3-jaw chuck (325 mm diam. for XL 630 series), 3-jaw chuck (500 mm diam. for XL 800 series), 4-station tool changer, tailstock, dead center MT5, autom. central lubrication, coolant system, work lamp, operating tools, operating manual and programming instructions

Call us to inquire about the latest best prices under: +49 4321 609-0

KNUTH

CNC Lathes

Proton XL • XXL

Specifications Proton		XL 630.15	XL 630.30	XL 630.50	XL 800.15	XL 800.30	XL 800.50
control		Fagor 8055	Fagor 8055	Fagor 8055	Fagor 8055	Fagor 8055	Fagor 8055
max. turning diameter							
- over bed / - over support (max)	mm	630 / 340	630 / 340	630 / 340	800 / 520	800 / 520	800 / 520
center width	mm	1500	3000	5000	1500	3000	5000
bed width	mm	550	550	550	550	550 550	
Z axis travel	mm	1350	2850	4850	1350	2850	4850
X axis travel	mm	400	400	400	400	490	400
X axis rapid feed	m/min	3	3	3	3	3	3
Z axis rapid feed	m/min	6	6	6	6	6	6
spindle bore	mm	100	100	100	100	100	100
spindle mount		C 11	C 11	C 11	C 11	C 11	C 11
spindle speed (4 steps)	rpm	12,5-1000	12,5-1000	12,5-1000	12,5-1000	10-800	12,5-1000
main motor rating	kW	11	11	11	11	11	11
headstock torque (max.)	Nm	1354	1354	1354	1354	1405	1354
coolant pump	W	90	90	90	90	90	90
tailstock quill stroke	mm	250	250	250	250	250	250
tailstock taper		MK5	MK5	MK5	MK5	MK5	MK5
tailstock quick diameter	mm	100	100	100	100	100	100
chuck diameter	mm	325	325	325	325	500	325
tool stations		4	4	4	4	4	4
tool shank	mm	32x32	32x32	32x32	32x32	32x32	32x32
positioning accuracy X axis	mm	0,03	0,03	0,03	0,03	0,03	0,03
positioning accuracy Z axis	mm	0,045	0,06	0,08	0,045	0,06	0,08
repeatability X axis	mm	0,012	0,012	0,012	0,012	0,012	0,012
repeatability Z axis	mm	0,02	0,025	0,025	0,02	0,025	0,025
overall dimensions (LxWxH)	mm	3677x1783 x1790	5177x1783 x1790	7577x1783 x1790	3677x2000 x1830	5177x2000 x1830	7577x2000 x1830
weight	kg	4000	5000	7100	4200	5200	7300
Part No.		100 300	100 301	100 302	100 303	100 304	100 305

Specifications Proton		XXL 1000.15	XXL 1000.30	XXL 1000.50
control		Fagor 8055	Fagor 8055	Fagor 8055
max. turning diameter				
over bed (max)	mm	1000	1000	1000
over support (max)	mm	630	630	630
center width	mm	1500	3000	5000
bed width	mm	755	755	755
Z axis travel	mm	1300	2800	4800
X axis travel	mm	570	570	570
X axis rapid feed	m/min	3	3	3
Z axis rapid feed	m/min	6	6	6
spindle bore	mm	130	130	130
spindle mount		A2-15	A2-15	A2-15
spindle speed (4 steps)	rpm	3,15-315	3,15-315	3,15-315
main motor rating	kW	22	22	22
headstock torque (max.)	Nm	6303	6303	6303
coolant pump	W	150	150	150
tailstock quill stroke	mm	300	300	300
tailstock taper		MK6	MK6	MK6
tailstock quick diameter	mm	160	160	160
chuck diameter	mm	1000	1000	1000
tool stations		4	4	4
tool shank	mm	40x40	40x40	40x40
positioning accuracy X axis	mm	0,03	0,03	0,03
positioning accuracy Z axis	mm	0,045	0,06	0,08
repeatability X axis	mm	0,012	0,012	0,012
repeatability Z axis	mm	0,02	0,025	0,025
overall dimensions (LxWxH)	mm	4800x2185x2194	6300x2185x2194	8300x2185x2194
weight	kg	9000	11000	13000
Part No.		100 309	100 310	100 311

CNC Lathes

Proton XXL

Heavy-duty Cycle Lathe with massive machine bed and 22 kW main motor power

130 mm spindle bore

- turning diameter over bed up to 1250 mm
- center widths from 1500 to 5000 mm
- very high torque
- spindle bore 130 mm
- 755 mm wide bed

Fagor CNC 8055 Cycle Control

- versatile and powerful plus extremely easy operation
- very easy to operate without previous programming knowledge, quick to learn
- easy set-up and storage of tool parameters
- for track programming, the user merely enters any known data for the contour into the smart profile editor
- complete graphics support
- various cycles, like facing and plain turning, includes linear and taper thread cutting; inside and outside
- interactive, graphic help window is available during cycle input

Proton XXL 1250 shown

Fagor 8055
www.knuth.de

Standard Equipment for Proton XXL:
Fagor 8055 control, 4-jaw independent chuck 1000 mm diam., 4-station tool changer, electrically driven tailstock, dead center MT6, autom. central lubrication, coolant system, work lamp, operating tools, operating manual and programming instructions

Call us to inquire about the latest best prices under: +49 4321 609-0

Proton XXL

Proton XXL 1250 shown

Proton XXL 1250 - program-controlled, self-positioning 4-station tool holder

Proton XXL 1250 - tailstock with 300 mm quill stroke

Specifications Proton		XXL 1250.15	XXL 1250.30	XXL 1250.50
control		Fagor 8055	Fagor 8055	Fagor 8055
max. turning diameter				
over bed (max)	mm	1250	1250	1250
over support (max)	mm	880	880	880
center width	mm	1500	3000	5000
bed width	mm	755	755	755
Z axis travel	mm	1300	2800	4800
X axis travel	mm	570	570	570
X axis rapid feed	m/min	3	3	3
Z axis rapid feed	m/min	6	6	6
spindle bore	mm	130	130	130
spindle mount		A2-15	A2-15	A2-15
spindle speed (4 steps)	rpm	3,15-315	3,15-315	3,15-315
main motor rating	kW	22	22	22
headstock torque (max.)	Nm	6303	6303	6303
coolant pump	W	150	150	150
tailstock quill stroke	mm	300	300	300
tailstock taper		MK6	MK6	MK6
tailstock quick diameter	mm	160	160	160
chuck diameter	mm	1000	1000	1000
tool stations		4	4	4
tool shank	mm	40x40	40x40	40x40
positioning accuracy X axis	mm	0,03	0,03	0,03
positioning accuracy Z axis	mm	0,045	0,06	0,08
repeatability X axis	mm	0,012	0,012	0,012
repeatability Z axis	mm	0,02	0,025	0,025
overall dimensions (LxWxH)	mm	4800x2185 x2219	6300x2185 x2219	8300x2185 x2219
weight	kg	10000	12000	15000
Part No.		100 312	100 313	100 314

Lathes

From small Mechanics Lathes to large Heavy-Duty Lathes:

22 pages full of lathes - a comprehensive program covering all conventional turning applications

Heavy-duty lathes with center widths up to 8000 mm and turning diameters up to 2000 mm

DL E Heavy • DL B

Heavy, powerful lathes with large spindle capacity and large turning diameter, center widths up to 3000 mm and turning diameters up to 760 mm

Sinus D • Solidturn

Lathes for high-tech demands
- infinitely variable speed up to 3000 rpm
- constant cutting speed

V -Turn 410 • Turnado

Powerful, medium-heavy lathes, with long service life and many decades of proven performance

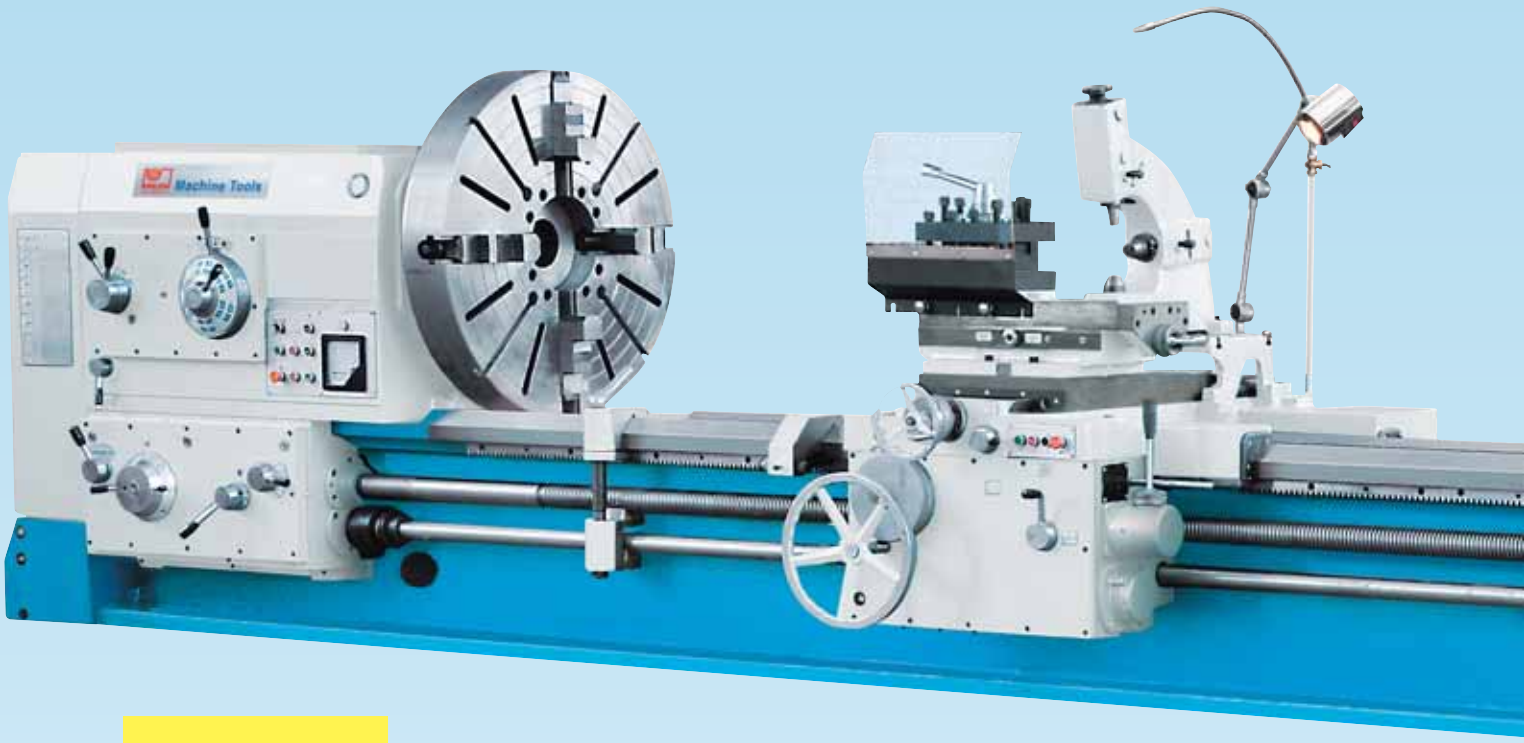
DM 1000 A

Mechanics lathes with aproven design and solid technology for a low price

Basic

Furnished with completely assembled 3-axis position indicator

Standard Equipment for DL E Heavy:
3-axis position indicator, 4-jaw independent chuck (500/1500 bis 500/8000 Ø=1000mm) (620/1500 to 620/8000 Ø=1000mm) (800/3000 to 800/8000 Ø=1400mm) (1000/2000 to 1000/8000 Ø=1600mm), coolant system, steady rest, follow rest (except for 800/3000 to 800/8000 and 1000/2000 to 1000/8000), halogen work lamp, centers, reducing sleeves, foundation bolts, central lubrication, operating tools, operator manual



incl. position indicator

Specifications DL E Heavy			500/1500	500/3000	500/5000	500/8000	620/1500	620/3000	620/5000	620/8000
center width		mm	1500	3000	5000	8000	1500	3000	5000	8000
turning diameter	- over bed (max)	mm	1000				1250			
	- over support (max)	mm	650				900			
travel	- X axis	mm	510				630			
	- Z axis	mm	1300	2800	4800	7800	1300	2800	4800	7800
	- Z1 axis	mm	300				300			
workpiece weight (max.)		kg	6000				6000			
bed width		mm	755				755			
top-slide swivel range			± 180°				± 180°			
spindle speed (forward/reverse)		min^{-1}	3,15 - 315 (21) / 3,15 - 400 (12)				3,15 - 315 (21) / 3,15 - 400 (12)			
spindle bore		mm	130				130			
spindle mount			ISO A2-15				ISO A2-15			
Feed	- X axis	mm/rev	0.64 - 12				0.64 - 12			
	- Z axis	mm/rev	0.032 - 6				0.032 - 6			
	- Z1 axis	mm/rev	0.016 - 3				0.016 - 3			
rapid feed	- X axis	mm/min	1870				1870			
	- Z axis	mm/min	3740				3740			
thread cutting	- metric	mm	1 - 120 (45)				1 - 120 (45)			
	- diametric	DP	30 - 1/4 (42)				30 - 1/4 (42)			
	- module	mm	0,5 - 60 (46)				0.5 - 60 (46)			
	- Whitworth	TPI	0,5 - 60 (48)				0,5 - 60 (48)			
tailstock quill taper diam.		mm	metric 80 / 160				metric 80 / 160			
tailstock quill stroke		mm	300				300			
tailstock cross adjustment		mm	± 2,5				± 2,5			
headstock motor rating / voltage		kW / V	22 / 400				22 / 400			
overall dimensions (LxWxH)		m	4,6 x 1,85 x 1,79	6,1 x 1,81 x 1,79	8,1 x 1,81 x 1,79	11,1 x 1,81 x 1,79	4,6 x 1,81 x 1,79	6,1 x 1,88 x 1,92	8,1 x 1,88 x 1,92	11,1 x 1,88 x 1,92
weight		kg	9350	10850	12650	16100	9750	11550	13300	16800
Part No. with position indicator			300 499	300 500	300 502	300 504	300 505	300 506	300 508	300 510

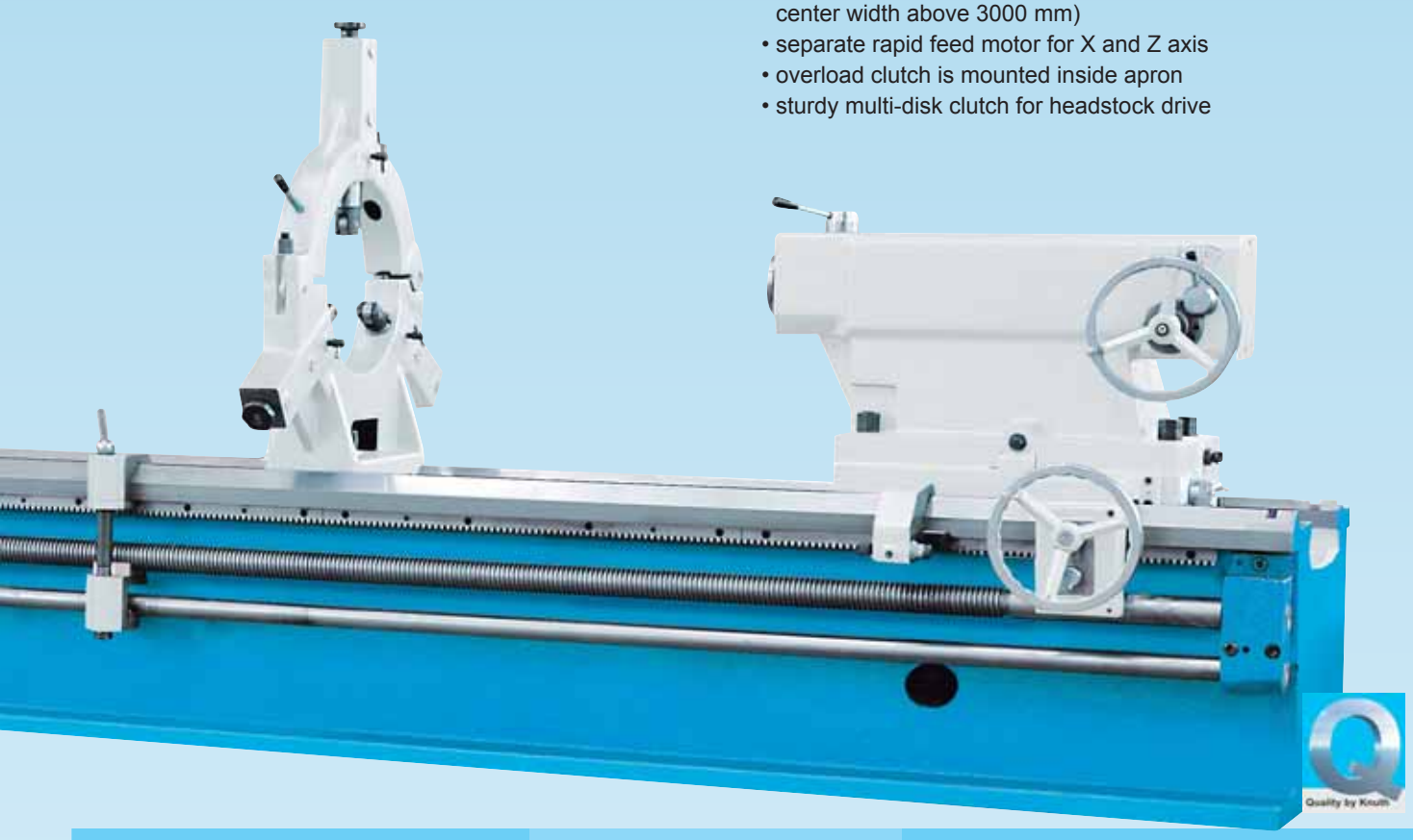
For more information, please contact us or visit www.knuth.de

Universal Heavy-Duty Lathee

DL E Heavy

130 mm spindle bore, large turning diameter and center widths up to 5,000 mm

- powerful 22-kW motor ensures very high chip removal capacity
- induction hardened and ground guideways
- large spindle bearings
- a heavy, large cast-iron body and machine bed with strong ribbing reduce vibrations to a minimum
- Joystick control for X and Z axis feed is mounted directly to support
- hand lever for tailstock adjustment (only on machines with a center width above 3000 mm)
- separate rapid feed motor for X and Z axis
- overload clutch is mounted inside apron
- sturdy multi-disk clutch for headstock drive

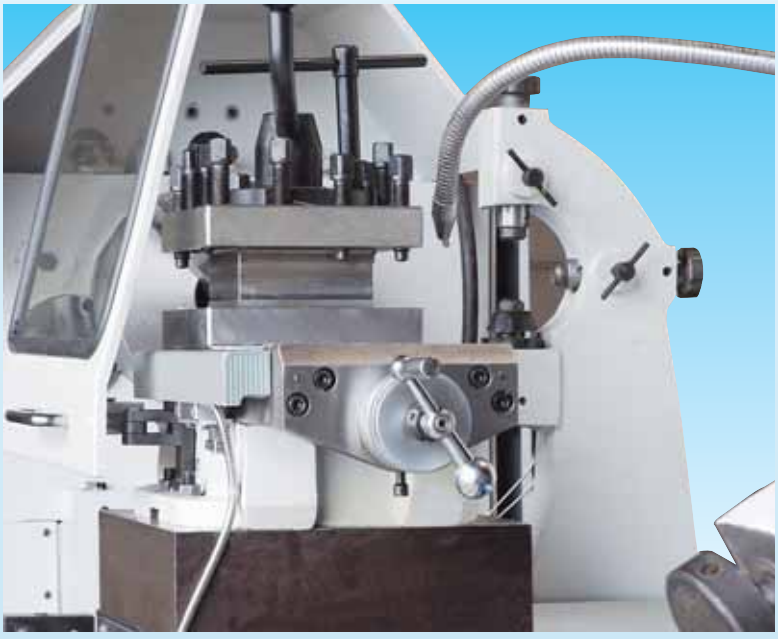


Specification DL E Heavy			800/3000	800/5000	800/8000	1000/2000	1000/3000	1000/5000	1000/8000
center width		mm	3000	5000	8000	2000	3000	5000	8000
turning diameter	- over bed (max)	mm	1600			2000			
	- over support (max)	mm	1280			1600			
travel	- X axis	mm	820			1020			
	- Z axis	mm	2800	4800	7800	1800	2800	4800	7800
	- Z1 axis	mm	200			200			
workpiece weight (max.)		kg	6000			10000			
bed width		mm	970			1100			
top-slide swivel range			± 180°			± 180°			
spindle speed (forward/reverse)		min^{-1}	2,5 - 250 (21) / 3,15 - 250 (12)			2 - 200 (21) / 2,5 - 200 (12)			
spindle bore		mm	130			130			
spindle mount			ISO A2-15			ISO A2-15			
Feed	- X axis	mm/rev	0.064 - 12			0.064 - 12			
	- Z axis	mm/rev	0.032 - 6			0.032 - 6			
	- Z1 axis	mm/rev	0.016 - 3			0.016 - 3			
rapid feed	- X axis	mm/min	1870			1870			
	- Z axis	mm/min	3740			3740			
thread cutting	- metric	mm	1 - 120 (45)			1 - 120 (45)			
	- diametric	DP	30 - 1/4 (42)			30 - 1/4 (42)			
	- module	mm	0,5 - 60 (46)			0,5 - 60 (46)			
	- Whitworth	TPI	0,5 - 60 (48)			0,5 - 60 (48)			
tailstock quill taper diam.		mm	metric 80 / 160			metric 80 / 160			
tailstock quill stroke		mm	300			300			
tailstock cross adjustment		mm	± 2,5			± 2,5			
headstock motor rating / voltage		kW / V	22 / 400			22 / 400			
overall dimensions (LxWxH)		m	6,04 x 2,06 x 2,23	8,04 x 2,06 x 2,23	11,04 x 2,06 x 2,23	5,2 x 2,2 x 2,4	6,1 x 2,2 x 2,4	8,1 x 2,2 x 2,4	12,92 x 2,38 x 2,51
weight		kg	12900	16200	21020	13000	18500	23200	30080
Part No. with position indicator			300 512	300 514	300 516	300 518	300 519	300 520	300 522

Universal Heavy-Duty Lathe
DL B

Rigid and Accurate - for machining of part diameters up to 105 mm

- extra heavy ribbed machine bed
- induction hardened and ground guideways
- massive headstock with high-precision spindle running in tapered roller bearings
- Gears are hardened and ground
- large capacity spindle bore of 105 mm
- central, easy to operate control for feeds and thread leads
- wide spectrum of diametric, inch, module, and metric threads
- support and top slide are designed for high cutting forces
- joystick control for X and Z feeds mounted directly to support
- powerful 11 kW motor for powerful machining
- overload clutch is mounted inside apron
- includes completely assembled 3-axis position indicator



DL 465/3000B shown

Specifications DL		465/1500B	465/3000B	465/4000B	465/5000B	550/1500B	550/3000B	550/4000B	550/5000B
center width	mm	1500	3000	4000	5000	1500	3000	4000	5000
max. turning diameter									
- over bed	mm	950	950	950	950	1100	1100	1100	1100
- over support	mm	670	670	670	670	790	790	790	790
- over gap bridge	mm	1120	1120	1120	1120	1270	1270	1270	1270
gab bridge length	mm	390	390	390	390	390	390	390	390
bed width	mm	550	550	550	550	550	550	550	550
spindle speeds									
(quantity/range)	min^{-1}	(18) 6-800	(18) 6-800	(18) 6-800	(18) 6-800	(18) 6-800	(18) 6-800	(18) 6-800	(18) 6-800
spindle bore	mm	105							
spindle taper		MT5							
longitudinal feeds	mm/rev	(64) 0.1 - 24.3							
transverse feeds	mm/rev	0.05 - 12.15							
rapid feed (longit/transv)	mm/min	4000							
max. cross slide travel	mm	500					575		
max. top slide travel	mm	200							
swing range of top slide		+/- 90°							
tapping									
- metric	mm	(50) 1-240							
- Whitworth		(26) 14 -1							
- module	mm	(53)0.5-120							
- diametric	DP	(24) 28-1							
tailstock quill taper diam.	mm	MT5 / Ø100							
tailstock quill stroke	mm	250							
tailstock transverse adjustment	mm	+/- 15							
motorating	kW / V	11 / 380							
dimensions (LxWxH)	mm	3510x1550 x1670	5010x1550 x1670	6010x1550 x1670	7010x1550 x1670	3510x1590 x1760	5010x1590 x1760	6010x1590 x1760	7010x1590 x1760
weight	kg	4850	5900	6600	7700	5250	6300	7100	8100
Part No.		301 470	301 472	301 474	301 476	301 478	301 480	301 482	301 484

Standard Equipment DL B: position indicator, 3-jaw chuck Ø 325 mm, 4-jaw independent chuck (500 mm diam.), face plate Ø 950 mm (DL465), face plate Ø 1100 mm (DL550), change gears, 4-station tool holder, coolant system, steady rest and follow rest, chuck guard, protective shield for support, halogen work lamp, steady center, operating tools, operator manual, (for more information, please visit www.knuth.de)

incl. position indicator

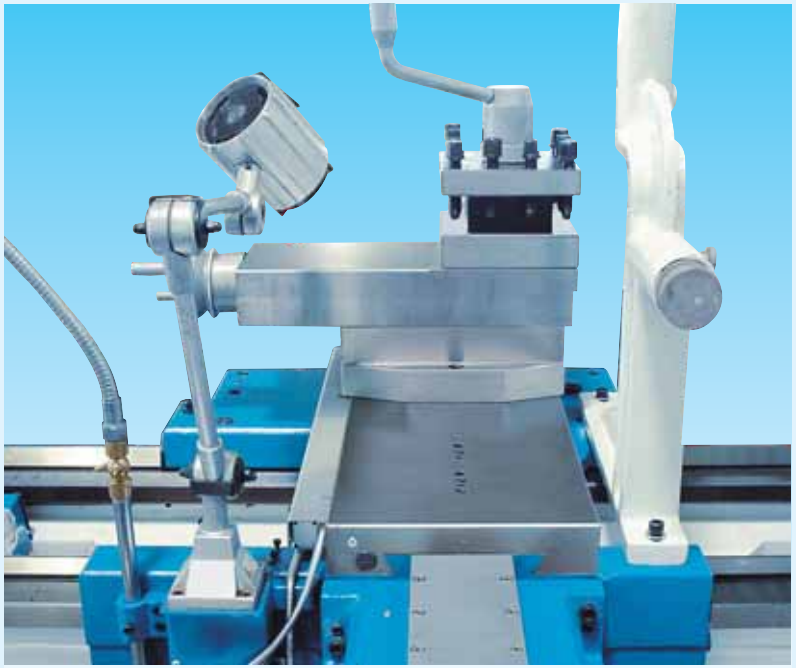
CNC Precision Lathe

Sinus D

Precision Lathe with large center height and spindle bore of 105 mm, including taper turning and assembled 3-axis position indicator

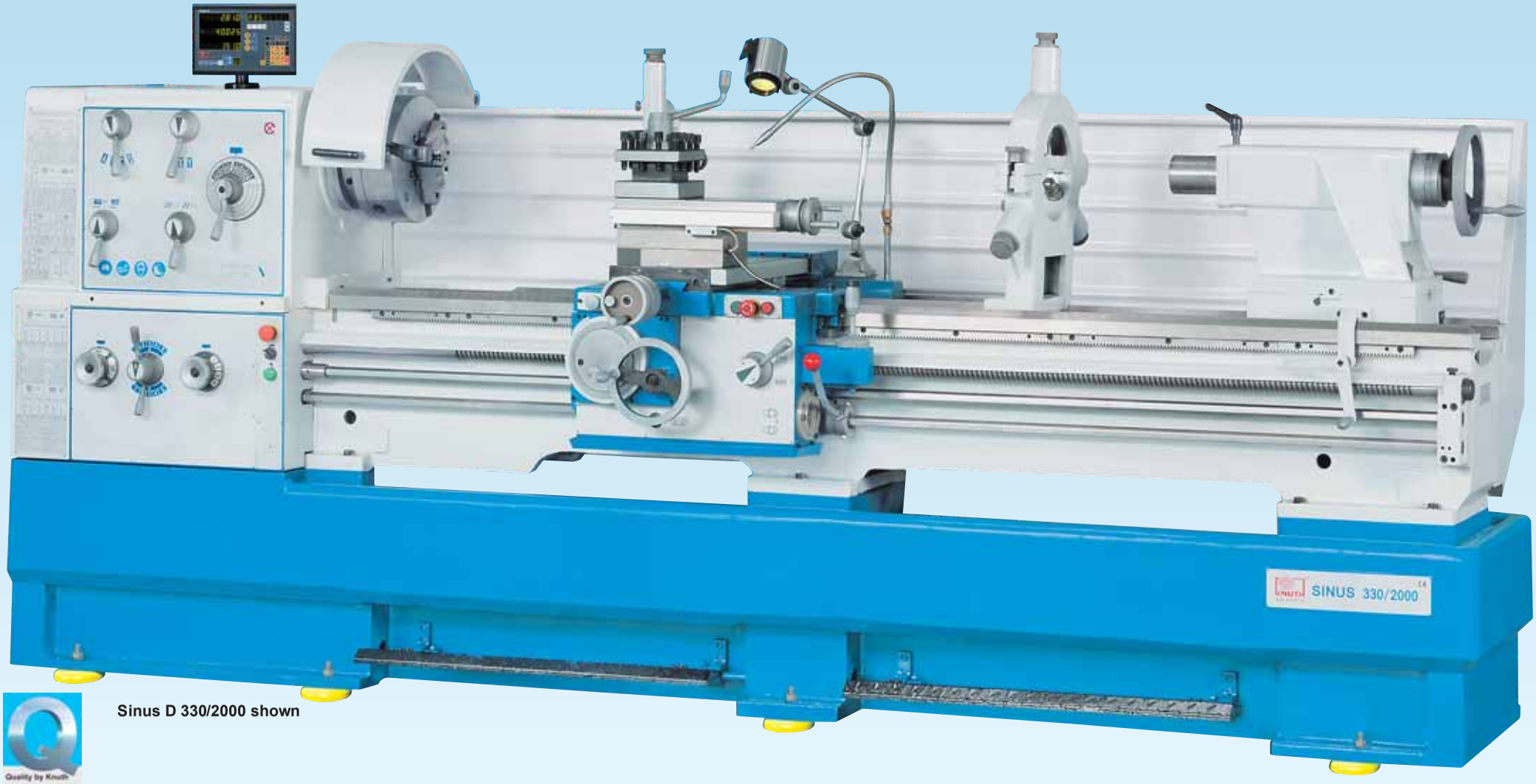
- removable bridge (320 mm) for machining of large parts with diameters up to 900 mm
- high precision and quiet opertion even at maximum loads
- heavy, large bed
- hardened guideways (>HB 400)
- 105 mm spindle capacity for machining of large partsf
- manual central lubrication
- multi-disk clutch for soft starts when working with heavy parts
- automatic lubrication of headstock and main gears
- protected leadscrew
- overload protection for feed shaft and leadscrew
- rapid feed

Specifications Sinus		330/1500 D	330/2000 D	330/3000 D
center width	mm	1500	2000	3000
max. turning diam. over bed	mm	660	660	660
max. turning diam. over support	mm	440	440	440
max. turning diam. w/o bridge	mm	900	900	900
bridge length	mm	320	320	320
bed width	mm	400	400	400
spindle speed (steps)	min^{-1}	25 - 1600 (16)	25 - 1600 (16)	25 - 1600 (16)
spindle bore Ø	mm	105	105	105
spindle mount / taper		D1-8 / MT5	D1-8 / MT5	D1-8 / MT5
longitudinal feeds	mm/rev	(25) 0.044 - 1.48	(25) 0.044 - 1.48	(25) 0.044 - 1.48
transverse feeds	mm/rev	(25) 0.022 - 0.74	(25) 0.022 - 0.74	(25) 0.022 - 0.74
rapid feed (longit./transv)	m/min	4 / 2	4 / 2	4 / 2
max. cross-slide travel	mm	368	368	368
max. top-slide travel	mm	230	230	230
top-slide swivel range		45°	45°	45°
tapping - metric	mm	(54) 0.45 - 120	(54) 0.45 - 120	(54) 0.45 - 120
- Whitworth	TPI	(54) 0.44 - 80	(54) 0.44 - 80	(54) 0.44 - 80
- module	mm	(46) 0.25 - 60	(46) 0.25 - 60	(46) 0.25 - 60
- diametric	DP	(42) 0.88 - 160	(42) 0.88 - 160	(42) 0.88 - 160
tailstock taper / Ø	mm	MT 5 / 90	MT 5 / 90	MT 5 / 90
tailstock quill stroke	mm	235	235	235
tailstock cross adjustment	mm	12.5	12.5	12.5
motor rating / voltage	kW / V	7.5/400	7.5/400	7.5/400
overall dimensions (LxWxH)	mm	3210 x 1230 x 1600	3707 x 1230 x 1595	4707 x 1230 x 1595
weight	kg	2700	2900	3300
Part No. incl. position indicator		300 010	300 011	300 012



Standard Equipment: 3-axis position indicator, 3-jaw chuck (315 mm diam.), 4-jaw chuck (400 mm diam.) face place with 450 mm diam., dog plate, 4-station tool holder, up to 2000 mm center width, includes splatter guard (wall); from 3000 mm upwards with splatter guard (moves along with support), coolant system, steady rest and follow rest, taper turning feature, chuck guard, halogen work lamp, reducing sleeves, dead centers, operating tools, operator manual

Total Price including 3-axis position indicator (assembled)



Sinus D 330/2000 shown

Call us to inquire about the latest best prices under: +49 4321 609-0

Standard Equipment: 3-axis position indicator, 3-jaw chuck (250 mm diam.), (Solidturn 200, 250), 3-jaw chuck (315 mm diam.), (Solidturn 330, 380), 4-jaw face plate chuck 315 mm diam (Solidturn 200, 250), 4-jaw face plate chuck 400 mm diam. (Solidturn 330, 380), follow rest, steady rest, coolant system, halogen work lamp, chuck guard, splatter guard, dead center, face plate with 380 mm diam. (Solidturn 200), face plate with 480 mm diam. (Solidturn 250), face plate with 650 mm diam. (Solidturn 330), face plate with 750 mm diam. (Solidturn 380), dog plate, anchor bolts, Quick-action tool changer (carrier and insert) operating tools, operator manual

CNC Precision Lathe

Solidturn

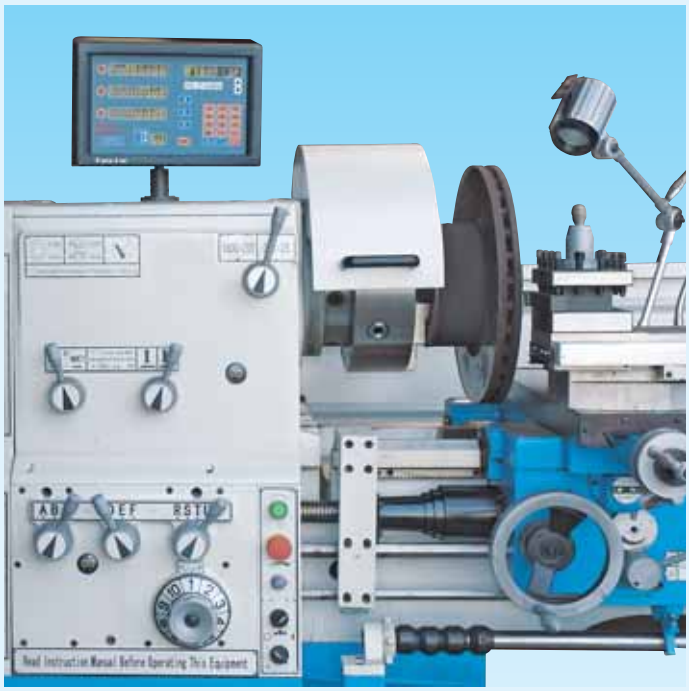
High Precision for mechanical construction, maintenance applications, and training including 3-axis position indicator

- heavy-duty ribbed machine bed in one-piece construction absorbs vibrations even during roughing opreations.
- extra wide guideways are induction hardened and ground providing long service-life and maximum accuracy
- hardened and ground gears run in a recirculating oil lubrication system to ensure a powerful and quiet spindle drive
- headstock with precision bearings for maximum concentricity and precision
- ergonomically shaped and arranged controls
- precise shifting of gear steps for speed and feed selection
- fine graduated steps for feeds and thread leads
- electrically interlocked chuck guard
- including micrometer stop and overload clutch
- Single-lever switch on support for transverse feed

- **Total Price including 3-axis position indicator (assembled)**
- **powerful drive 7.5 or 11 kW**
- **large spindle capacity, 82 or 105 mm Ø**
- **394 mm wide bed**

Specifications Solidturn			200/1000	200/1500	200/2000	250/1000	250/1500	250/2000	250/3000
Working Area									
center width		mm	1000	1500	2000	1000	1500	2000	3000
turning diameter	- over bed (max)	mm	400			500			
	- over support (max)	mm	230			290			
	- over bridge (max.)	mm	700			760			
travel	- X axis	mm	320			320			
	- Z1 axis	mm	135			135			
bridge length		mm	300			300			
bed width		mm	394			394			
top-slide swivel range			180°			180°			
Headstock									
spindle speeds (quantity/range)		min^{-1}	(16) 26 - 2000			(16) 26 - 2000			
spindle bore		mm	82			82			
spindle mount			D1-8			D1-8			
Feed									
	- X axis	mm/rev	(45) 0.022-0.74			(45) 0.022-0.74			
	- Z axis	mm/rev	(45) 0.044-1.48			(45) 0,044-1,48			
thread cutting									
	- metric	mm	(73) 0.35-80			(73) 0.35-80			
	- diametric	DP	(47) 7/8-16			(47) 7/8-160			
	- module	mm	(45) 0,2-40			(45) 0,2-40			
	- Whitworth	TPI	(47) 80-7/16			(47) 80-7/16			
Tailstock									
tailstock quick diameter		mm	75			75			
tailstock taper			MT5			MT5			
tailstock quill stroke		mm	150			150			
tailstock cross adjustment		mm	±15			±15			
Drive Capacities									
headstock motor rating		kW	7.5			7.5			
power supply		V	400			400			
Dimensions/Weight									
overall dimensions (LxWxH)		mm	2780x1120 x1600	3280x1120 x1600	3780x1120 x1600	2780x1120 x1600	3280x1120 x1600	3780x1120 x1600	4780x1120 x1600
weight		kg	2120	2170	2280	2170	2220	2330	3080
Part No. with position indicator			300 900	300 901	300 902	300 903	300 904	300 905	300 906

Specifications Solidturn			330/1500	330/2000	330/3000	380/2000	380/3000
Working Area							
center width		mm	1500	2000	3000	2000	3000
turning diameter	- over bed (max)	mm		660			760
	- over support (max)	mm		440			540
	- over bridge (max.)	mm		870			965
travel	- X axis	mm		355			355
	- Z1 axis	mm		150			150
bridge length		mm		500			500
bed width		mm		394			394
top-slide swivel range				180°			180°
Headstock							
spindle speeds (quantity/range)		min^{-1}		(16) 26 - 1700			(16) 23 - 1530
spindle bore		mm		105			105
spindle mount				D1-8			D1-8
Feed							
	- X axis	mm/rev		(45) 0.022-0.74			(45) 0.022-0.74
	- Z axis	mm/rev		(45) 0.044-1.48			(45) 0.044-1.48
thread cutting							
	- metric	mm		(73) 0.35-80			(73) 0.35-80
	- diametric	DP		(47) 7/8-160			(47) 7/8-160
	- module	mm		(45) 0.2-40			(45) 0.2-40
	- Whitworth	TPI		(47) 80-7/16			(47) 80-7/16
Tailstock							
tailstock quick diameter		mm		75			75
tailstock taper				MT5			MT5
tailstock quill stroke		mm		150			150
tailstock cross adjustment		mm		±15			±15
Drive Capacities							
headstock motor rating		kW		11			11
power supply		V		400			400
Dimensions/Weight							
overall dimensions (LxWxH)		mm	3280x1120 x1600	3780x1120 x1600	4780x1120 x1600	3780x1120 x1600	4780x1120 x1600
weight		kg	2270	2380	3150	2600	3200
Part No. with position indicator			300 910	300 911	300 912	300 913	300 914



Everything within reach – the Operating Controls

Constant cutting speed for a continuously flawless surface

Turnado with infinitely variable speed adjustment:

- back gearing, first-class control technology and a powerful headstock motor allow a wide range of speeds and high torque for powerful machining
- very quiet operation at maximum spindle speed
- max. speed for the Turnado 230 series is 3000 rpm, infinitely variable
- the extensive features of the X.Pos Position Indicator are complemented by a speed display and vconst (constant speed) function: During face turning, the spindle speed automatically adapts to the changing workpiece diameter – the constant cutting speed at the cutting edge of the turning tool ensures superior turning results with a quality comparable to CNC lathes
- a quick-action tool changer system is available as an option

Specifications Turnado		**230 x 1000**	**230 x 1500**	**280 x 1500**	**280 x 2000**	**280 x 3000**
center width	mm	1010	1510	1428	1928	2928
max. turning diam. - over bed	mm	460		560		
- over support	mm	270		355		
- over bridge	mm	690		785		
bridge length	mm	155		170		
bed width	mm	290		350		
spindle speeds (quantity/range)	min^{-1}	(12) 25 - 2000		(12) 25 - 1600		
V-const	min.	L 30-600 / H 600-3000		L 25-200 / H 200-1600		
spindle bore	mm	58		80		
spindle mount / taper		Camlock D1-6 / MK 6		Camlock D1-8 / MK 7		
longitudinal feeds	mm/rev	0,031 - 1,7		0,059 - 1,646		
transverse feeds	mm/rev	0,014 - 0,784		0,020 - 0,573		
max. cross-slide travel	mm	290		316		
max. top-slide travel	mm	128		130		
top-slide swivel range		± 52°		± 52°		
thread cutting - metric	mm	(41) 0,1 - 14		(47) 0,2 - 14		
- Whitworth		(60) 2 - 112		(60) 2 - 112 TPI		
- module	mm	(34) 0,1 - 7		(39) 0,1 - 7		
- diametric	DP	(50) 4 - 112		(50) 4 - 112		
tailstock quill taper / Ø	mm	MK 4 / 60		MK 5 / 75		
tailstock quill stroke	mm	123		180		
tailstock cross adjustment	mm	± 13		± 12		
motor rating / voltage	kW / V	5,5 / 400		7,5 / 400		
overall dimensions (LxWxH)	mm	2170x1060 x1370	2720x1040 x1370	2840x1150 x1460	3340x1150 x1460	4340x1150 x1460
weight	kg	1720	1970	2370	2720	3430
Part No. with position indicator		320 555	320 558	320 559	320 560	320 561
Part No. with position indicator plus V-const		320 570	320 571	320 572	320 573	320 574

Lead Screw and Feed Shaft Lathes

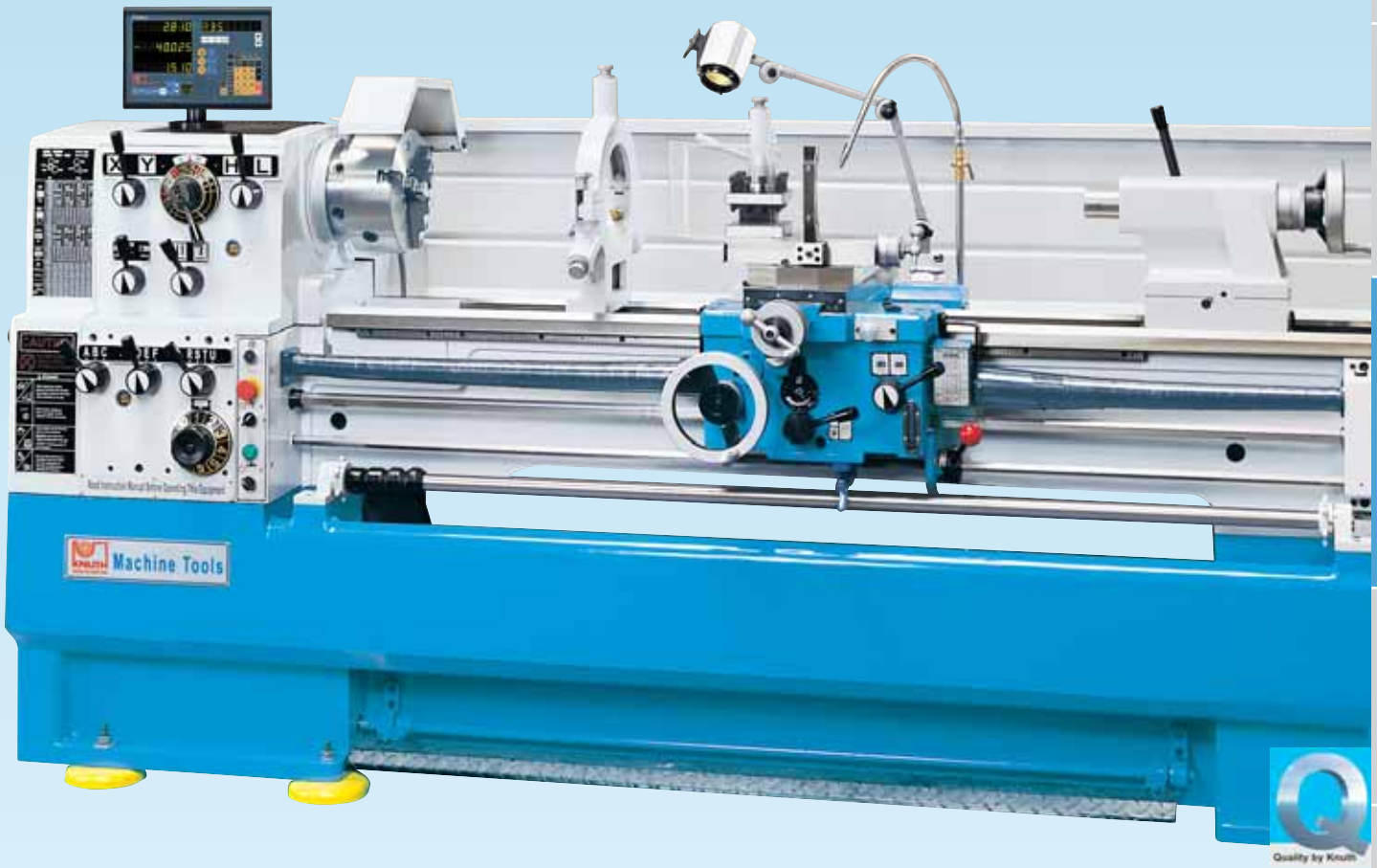
Turnado 230 • 280

including stop spindle

A proven classic in 2 designs: with manual transmission, or with infinitely variable speed adjustment and constant speed (vconst)

- Low Price and Lasting High Value
- well arranged control panel with ergonomically located selectors
- Camlock spindle mount D1-6 and D1-8
- wide bed, ground and hardened
- tailstock can be moved sideways for taper turning
- large number of thread leads
- removable bridge for machining of large diameters
- stop spindle with four adjustable linear stops

incl. Position Indicator



Standard Equipment: 3-axis position indicator, 3-jaw chuck Ø 250 mm (Turnado 230), 3-jaw chuck Ø 315 mm (Turnado 280), 4-jaw face plate chuck Ø 300 mm (Turnado 230), 4-jaw face plate chuck Ø 400 mm (Turnado 280), face plate Ø 350 mm (Turnado 230), face plate Ø 450 mm (Turnado 280), 4-station tool holder, coolant system, steady and follow rests, stop spindle, splatter guard, chuck guard, foot brake pedal, halogen work lamp, reducing sleeve, steady center, thread gauge, operating tools, operator manual

Options	Part No.
• 4-jaw lathe chuck 250 mm for Turnado 230	116 624
• 4-jaw lathe chuck 250 mm for Turnado 230 with infinitely variable speed adjustment	146 473
• 4-jaw lathe chuck 315 mm for Turnado 280	146 483
• quick-change tool holder set WB for Turnado 230	103 195
• quick-change tool holder set WC for Turnado 280	103 196
plus assembly	103 315
• live center MT 5	106 760
• oscillation element LT 33 (per unit) for Turnado 230	103 321
• oscillation element LT 55 (per unit) for Turnado 280	103 322
• clamped turning tool set 25 mm	108 670
• indexable insert set, 25 mm, 30 pieces	108 675
• Power Worker chip lift-off device	123 040
• knurling tool kit, angled	108 521
• knurl holder	108 520
• coolant concentrate 5 l	103 184
• Additional options available upon request	

The cutting speed selected by the operator...

... will be held constant by automatically controlling the spindle speed ...

... up to a maximum speed of 3000 rpm.

- the extensive features of the X.Pos Position Indicator (catalog page 256) are complemented here with a digital speed indicator and an easy to program auxiliary function
- Constant speed: During face turning, the spindle speed automatically adapts to the changing workpiece diameter – the constant cutting speed at the cutting edge of the turning tool ensures superior turning results with a quality comparable to CNC lathes
- a quick-action tool changer system is available as an option

Standard Equipment:
3-axis position indicator, 4-jaw chuck (250 mm diam.), face place with 350 mm diam., change gears, 4-station tool holder, coolant system, steady and follow rests, turret stop, micrometer stop, chip tray, splatter guard, support shield, chuck guard, foot brake pedal, halogen work lamp, thread gauge, operating tools, operator manual

Options	Part No.
• 3-jaw chuck, Ø 200 mm Camlock 1-6, 4000 rpm	146 372
• 4-jaw chuck, Ø 200 mm Camlock 1-6, 4000 rpm	146 472
• quick-change tool holder set WB	103 195
plus assembly	103 315
• live center MT 4	106 755
• oscillation element LT 33 (per piece)	103 321
• clamped turning tool set 25 mm	108 670
• coolant concentrate 5 l	103 184
• Power Worker chip lift-off device	123 040
• turret MT 4	105 050
• knurling tool kit, angled	108 521
• knurl holder	108 520
• quick-adjusting spindle bore stop, size 6	103 020
• indexable insert set, 25 mm, 30 pieces	108 675
• accessory set, MT 4 (8 pieces)	104 594

Specifications V-Turn 410		
center width	mm	1000
max. turning diam.		
- over bed	mm	410
- over support	mm	255
- over bridge	mm	580
bridge length	mm	250
bed width	mm	250
spindle speeds	min^{-1}	L 30 - 550
(range)		H 550 - 3000
spindle bore	mm	52
spindle mount / taper		Camlock D1-6 / MK 6
longitudinal feeds	mm/U	0,05 - 1,7
transverse feeds	mm/U	0,025 - 0,85
max. cross-slide travel	mm	210
max. top-slide travel	mm	102
top-slide swivel range		± 45°
tapping		
- metric	mm	(39) 0,2 - 14
- whitworth		(45) 2 - 72
- module	mm	(18) 0,3 - 3,5
- diametric	DP	(21) 8 - 44
tailstock quill taper diam. / Ø	mm	MK 4 / 50
tailstock quill stroke	mm	120
tailstock cross adjustment	mm	13
motor rating / voltage	kW/V	5,5 / 400
dimensions (LxWxH)	mm	1940 x 820 x 1280
weight	kg	1550
Part No. inc. position indicator		300 820

CNC Precision Lathe

V-Turn 410

including 3-axis position indicator with intergrated spindle speed indicator, completely assembled

Convincing Price and Performance!
With infinitely variable speed adjustment and constant cutting speed

- a heavy ribbed machine bed and a massive one-piece cast-iron frame provide the solid basis for this machine
- wide, hardened and ground guideways ensure superior turning results and long life
- large spindle bearings and high-precision headstock ensure excellent concentricity
- headstock gears and shafts are hardened and ground for quiet operation und constant speed
- 5.5 kW headstock motor ensures powerful machining
- spindle speeds are infinitely variable from 30 to 550 and 50 to 3000 rpm
- micrometer and turret stop are included
- integrated central lubrication at the support for low maintenance

Shown with optional accessories

Universal Lathe
DM 1000 A

Large spindle capacity of 52 mm and powerful 5.5 kW motor

- heavy-duty bed with large dimensions, hardened and precision-ground, removable bridge
- adjustable overload clutch inside the support
- large headstock in a solid bearing with Camlock D1/6
- all gears and shafts are hardened and ground and run in an oil-bath
- foot brakes for instant stop and shut-down of the headstock
- manual central lubrication

incl. Position Indicator

Standard Equipment: 3-axis position indicator, 3-jaw chuck Ø 250 mm, 4-jaw face plate chuck Ø 320 mm, face plate Ø 520 mm, change gears, 4-station tool holder, coolant system, steady and follow rests, splatter guard, chuck guard, foot brake pedal, work lamp, reducing sleeve, 2 steady centers, operating tools, operator manual

Option	Part No.		
4-jaw lathe chuck 250 mm	116 624	oscillation element LT 33	103 321
quick-change tool holder set WB	103 195	clamped turning tool set 25 mm	108 670
live center MT 4	106 755	coolant concentrate 5 l	103 184
		For more options, please contact us or visit www.knuth.de	

Specifications DM 1000 A					
center width	mm	1000	max. top-slide travel	mm	140
max. turning diam.			top-slide swivel range		± 45°
- over bed	mm	400	tapping		
- over support	mm	240	- metric	mm	(30) 0,45 - 20
- over bridge	mm	580	- whitworth		(35) 80 - 1 3/4
bridge length	mm	200	- module	mm	(25) 0,25-10
bed width	mm	290	- diametric	DP	(30) 160-3 1/2
spindle speeds (number/range)	rpm	(12) 30 - 1600	tailstock quill taper diam.	mm	MT4 / 60
			tailstock quill stroke	mm	130
spindle bore	mm	52	tailstock cross adjustment	mm	± 5
spindle mount / taper		Camlock D1-6 /MT6	motor rating / voltage	kW / V	5,5 / 400
longitudinal feeds	mm/r	0,039 - 1,1	dimensions (LxWxH)	mm	2180 x 970 x 1280
transverse feeds	mm/r	0,018 - 0,55	weight	kg	1450
max. cross-slide travel	mm	240	Part No. incl. position indicator		320 612

Basic

The most successful The Basic Series - Long record of proven performance in craft and industry applications

- Ideal for single part and batch production, or for training
- Universal range of applications
- Reliability, Lasting value
- User-friendly operation
- Excellent price/performance ratio
- Extensive accessory package included
- Short delivery time
- Reliable replacement parts availability
- High customer satisfaction
- After-Sales Service
- Quality by Knuth

- Powerful drive
- Camlock quick-action clamp
- Hardened guideways
- Lathe beds with heavy ribbing
- Rigid, heavy-duty cast-iron design
- Basic 180 V with v-const and 3000 min^{-1}
- Guideways are induction-hardened and ground
- Gears are hardened and precision-ground
- Oil-bath lubrication
- Headstock runs in precision-bearings
- Large spindle bore
- Very quiet operation
- Total Price including digital 3-axis assembled
- Safety equipment according to CE

Basic 180 Super

Basic 180 V

Basic 170 Super

Basic Plus

KNUTH

Lathe

Basic 180 Super

Precise tool shop lathe machine at a low price

- cast-iron bed, heavily ribbed
- all tracks are induction-hardened and precision ground
- headstock with D1-4" mount, bore diam. 38 mm, run in 2 adjustable tapered roller bearings
- all gears are made of Cr-Ni steel, hardened, precision ground, with oil bath lubrication
- powerful main drive (2.4 kW), including base frame
- slides are adjustable via tapered gibs
- tailstock can be moved ± 10 mm for taper turning
- closed cooling circuit

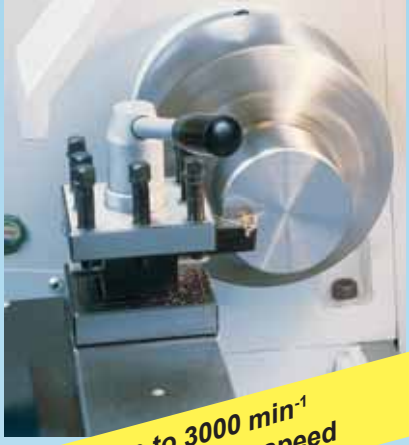
incl. position indicator

Standard Equipment: position indicator, 3-jaw chuck Ø 160mm, 4-jaw face plate chuck Ø 200mm, face plate Ø 320mm, 4-station tool holder, coolant system, steady and follow rests, chip tray, splatter guard, chuck guard, foot brake pedal, base, micrometer longitudinal stop, change gears, reducing sleeves, steady center, thread gauge, operating tools, operator manual

Specifications Basic 180 Super		
center width	mm	1000
max. turning diam.		
- over bed	mm	356
- over support	mm	220
- over bridge	mm	506
bridge length	mm	206
bed width	mm	206
spindle speeds (number/range)	rpm	(16) 45 - 1800
spindle bore	mm	38
spindle mount / taper		Camlock D1-4 / MT 5
longitudinal feeds	mm/r	0,043 - 0,653
transverse feeds	mm/r	0,015 - 0,220
max. cross-slide travel	mm	178
max. top-slide travel	mm	92
top-slide swivel range		± 50°
tapping		
- metric	mm	(37) 0,4 - 7
- whitworth		(28) 4 - 56
tailstock quill taper diam.	mm	MT 3 / 45
tailstock quill stroke	mm	120
tailstock cross adjustment	mm	± 10
motor rating / voltage	kW / V	1,5/2,4 / 400
dimensions (LxWxH)	mm	1945 x 785 x 1204
weight	kg	880
Part No. incl. position indicator		300 805

Mechanics Lathe

Basic 180 V



• Speed up to 3000 min^{-1}
• Consistent cutting speed

Cost-effective precision lathe provides consistent cutting speed: Vconst!

- Speed adapts to the part radius - consistent track speed ensures uniform quality finish at any diameter.
- position indicator with speed display
- infinitely variable spindle speed on 2 gear levels

incl. position indicator

Standard Equipment: 3-axis position indicator, 4-jaw faceplate chuck Ø 200 mm, faceplate Ø 320 mm, change gears, 4-station tool holder, coolant system, steady rest and follow rest, chip collection tray, splatter guard, chuck guard, foot brakes, base, halogen work lamp, axial micrometer stop, reducing sleeve, dead center, thread gauge, operating tools, operator manual

Shown with optional accessories:	• 3-jaw chuck Ø 160 mm Camlock 1-4“ 4500 min^{-1}	Part No. 146 378
	• 4-jaw chuck Ø 160 mm Camlock 1-4“ 4500 min^{-1}	Part No. 116 600

Specifications Basic 180 V		
center width	mm	1000
max. turning diam.		
- across bed	mm	356
- across support	mm	220
- across bridge	mm	506
bridge length	mm	206
bed width	mm	206
spindle speed (inf. variable) (range)	min^{-1}	L 45 - 1800 H 155 - 3000
spindle bore	mm	38
spindle mount/taper		Camlock D1-4 / MT 5
longitudinal feeds	mm/rev	0.043 - 0.653
transverse feeds	mm/rev	0.015 - 0.220
max. cross slide travel	mm	178 max.
compound travel	mm	92
swivel range - compound		± 50°
tapping		
- metric	mm	(37) 0,4 - 7
- Whitworth		(28) 4 - 56
tailstock quill taper/ -Ø	mm	MT 3 / 45
tailstock quill stroke	mm	120
tailstock transverse adjustment	mm	± 10
moter rating/voltage	kW / V	4 / 400
dimensions (LxWxH)	mm	1945 x 785 x 1204
weight	kg	880
Part No. incl. position indicator		300 807

Mechanics Lathe
Basic Plus

‘Low-Cost-Version’ leadscrew and feed shaft lathe

- cast-iron bed, heavily ribbed
- induction-hardened and precision ground tracks
- headstock with camlock D1-4" mount, bore diam. 38 mm, run in 2 adjustable precision tapered roller bearings
- tracks adjustable via tapered gibs
- tailstock can be moved ± 10 mm for taper milling

incl. position indicator

Standard Equipment: position indicator, 3-jaw chuck Ø 160 mm, 4-jaw face plate chuck Ø 200 mm, face plate Ø 250 mm, 4-station tool holder, steady and follow rests, chip tray, splatter guard, chuck guard, base, change gears, reducing sleeves, steady centers, thread gauge, operating tools, operator manual

Specifications Basic Plus		
center width	mm	810
max. turning diam.		
- over bed	mm	300
- over support	mm	178
- over bridge	mm	430
bed width	mm	180
spindle speeds (number/range)	rpm	(9) 60 - 1500
spindle bore	mm	38
spindle mount / taper		Camlock D1-4 / MK 4
longitudinal feeds	mm/r	0,052 - 1,392
transverse feeds	mm/r	0,014 - 0,38
max. cross-slide travel	mm	175
max. top-slide travel	mm	95
top-slide swivel range		± 60°
tapping		
- metric	mm	(26) 0,4 - 7
- whitworth		(34) 4 - 56
tailstock quill taper diam.	mm	MK 3 / 32
tailstock quill stroke	mm	100
tailstock cross adjustment	mm	± 10
motor rating / voltage	kW / V	1,1 / 400
dimensions (LxWxH)	mm	1600 x 750 x 1270
weight	kg	520
Part No. incl. position indicator		300 809

Mechanics Lathe

Basic 170 Super

Solid Precision Bench Lathe with large center width

- hardened and ground headstock gears
- gapped bedway
- max. speed 2000 min^{-1}
- adjustable headstock bearing
- oil-bath lubricated main drive and feed gear
- shift gear system to change feed direction
- cast-iron bed, double v-guide, hardened and ground
- interlocking feature prevents simultaneous advance of leadscrew and feed shaft
- double-walled apron box with oil-bath lubrication

incl. position indicator

Standard Equipment: position indicator, 3-jaw chuck Ø 160 mm, 4-jaw face plate chuck Ø 200 mm, face plate Ø 320 mm, 4-station tool holder, steady and follow rests, splatter guard, chuck guard, foot brake pedal, base, halogen work lamp, steady center, operating tools, operator manual

Specifications Basic 170 Super		
center width	mm	1000
max. turning diameter		
- over bed	mm	330
- over support	mm	198
- over bridge	mm	470
bridge length	mm	166
bed width	mm	187
spindle speeds (number/range)	rpm	(8) 70 - 2000
spindle bore	mm	38
spindle mount / taper		Camlock D1-4 / MT 5
longitudinal feeds	mm/r	0,022 - 1,551
transverse feeds	mm/r	0,026 - 2,713
max. cross-slide travel	mm	160
max. top-slide travel	mm	68
top-slide swivel range		± 60°
tapping		
- metric	mm	(32) 0,4 - 7
- whitworth		(32) 4 - 56
tailstock quill taper diam.	mm	MT 3 / 33
tailstock quill stroke	mm	100
tailstock cross adjustment	mm	± 10
motor rating / voltage	kW / V	1,5 / 400
dimensions (LxWxH)	mm	1830 x 680 x 1320
weight	kg	520
Part No. incl. position indicator		300 815

Call us to inquire about the latest best prices under: +49 4321 609-0

Turret Lathe

HRD 42PF • HRD 60PF

High productivity, easy handling – the ideal option for series production

HRD 60PF shown

Pneumatic collet clamping with 5.8 bar pressure; uses 0.15 l air per clamping

- the HRD PF series provides an electric speed control for comfortable and quick rpm adjustments via a 12-position rotary switch
- a powerful drive motor (5.5 kW) provides plenty of power at all speed levels
- fine speed adjustments from 120 to 2000 rpm
- automatic tool turret change-over and single-lever operation against adjustable end stops allow short machining times and maximum repeatability

Standard Equpment: coolant system, bar feeder, collet chuck

Collet mount	**Ø 30 mm**	**Ø 42 mm**	**Ø 60 mm**	**F**
collet diameter (1 mm increm.)	03 - 29 mm	03 - 41 mm	04 - 59 mm	
Part No.	116 2+Ø	116 1+Ø	116 0+Ø	
Part No.	116 230	116 142	116 060	

Specifications		**HRD 42PF**	**HRD 60PF**
max. part			
- round	mm	42	60
- hexagonal	mm	36	51
- square	mm	30	41
collet mount	Ø	30, 42	42, 60
travel			
- axial slide	mm	90	90
- cross slide	mm	100	100
- turrent slide	mm	150	150
- cut-off slide	mm	35	35
main rating 400V	kW	5,5	5,5
spindle speed	min^{-1}	(2) 120-2000	(2) 120-2000
coolant pump	kW	0,1	0,1
weight with bar feeder	kg	880	910
dimensions (LxWxH)	mm	1600x800x1600	1600x800x1600
Part No.		100 823	100 826
		D	**C**

For more information, please contact us or visit www.knuth.de

Universal Lathe/Milling Machine

Universa 550 V

Turning - Milling - Drilling

The ideal machine for the demanding requirements of model builders, training facilities, and precision mechanics

incl. position indicator

- very practical machine with leadscrew for turning / milling / drilling of parts
- infinitely variable speed adjustment, with digital speed indicator for 2 ranges – quiet belt drive for turning, 2-step gear for milling
- easy tooling change-over from turning to drilling / milling
- rigid machine bed with hardened and ground guideways, taper gibs for zero-backlash adjustments
- precision bearings ensure high spindle concentricity
- tailstock adjustable for tape turning
- milling unit with swivel head
- cross slide with T-slots for parts clamping

- **incl. 2-axis position indicator with integrated spindle rotation display, fully assembled**

Standard Equipment: position indicator, 3-jaw chuck Ø 125 mm, digital speed indicator, 4-station tool holder, chip tray, splatter guard wall, chuck guard, base, operating tools, operator manual

Specifications Universa 550 V		
Turning		
center width	mm	550
max. turning diameter		
- over bed	mm	250
- ober support	mm	150
bed width	mm	135
spindle speeds (inf. variable)	min^{-1}	Lo 50 - 1250
2 steps via belt drive		Hi 100 - 2500
spindle bore	mm	26
spindle mount / taper		MT 4
longitudinal feeds	mm/rev	0.07 - 0.20
max. cross slide travel	mm	70
max. top slide travel	mm	115
Tapping		
- metric	mm	0.4 - 3.5
- inch	TPI	8 - 56
tailstock quill taper / -Ø	mm	MT 2 / Ø35
tailstock quill stroke	mm	70
tailstock cross adjustment	mm	6
motor rating/ voltage	kW / V	0.75 / 230
Milling		
max. drilling capacity	mm	16
max. end milling cap.	mm	16
spindle mount		MT 2
spindle-to-table distance	mm	150
throat	mm	175
head swivel		± 90°
speed (infin. variable)	min^{-1}	Lo 50 - 1125
2 gear steps		Hi 100 - 2250
motor rating / voltage	kW / V	0.5 / 230
dimensions (LxWxH)	mm	1200 x 530 x 1550
weight	kg	125
Part No. incl. position indicator		101 490

Mini CNC Drill Press/Milling Machine

PicoMill CNC

Small CNC Milling Machine for training, model construction and small batch productions

- standard electronic hand-wheel
- rigid cast-iron frame with wide dovetail guides
- preloaded ball screws on all axes
- manual central lubrication
- infinitely variable spindle speed

GPlus 450
www.knuth-gplus.de

Standard Equipment:
- GPlus 450 control
- drill chuck Ø 1-13 mm
- central lubrication
- base
- operating tools • operator manual
- programming instructions

Standard Cycles Milling:
- deep-hole drilling
- tapping with compensating chuck
- hole series - circle
- hole series - line
- drilling, countersinking
- milling of pockets, grooves, and round pockets

Specifications PicoMill CNC					
drilling capacity in steel	mm	25	table travel	mm	254 x 105
slot milling up to	mm	20	repeatability	mm	0,01
max cutter diameter	mm	80	positioning accuracy	mm	0,01
max spindle-to-table distance	mm	250	spindle motor rating	kW	1
spindle stroke	mm	80	dimensions (LxWxH)	mm	830 x 800 x 1700
throat	mm	232			
spindle mount		MT 3	weight	kg	391
spindle speeds	rpm	150 - 2000	Part No.		180 511
table set-up area	mm	450 x 160			

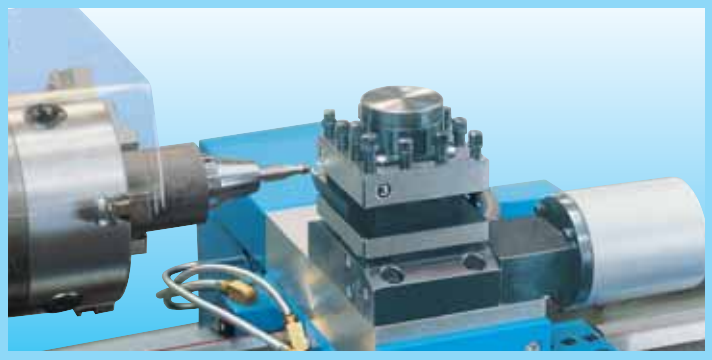
For more information, please contact us or visit www.knuth.de

Mini CNC Lathe

PicoTurn CNC

Small CNC Lathe for training, model construction and small batch productions

- automatic 4-station tool changer
- infinitely variable spindle speed
- small footprint
- manual central lubrication
- preloaded ballscrews
- electronic hand-wheel



Standard Cycles Turning
- plunge-cut
- recess
- chip removal
- tapping
- drilling, spotfacing
- deep-hole drilling
- tapping with
- compensating chuck
- reaming

Standard Equipment:
- GPlus 450 control
- 3-jaw chuck Ø 125 mm
- autom. 4-station tool changer
- central lubrication
- base
- operating tools
- operator manual
- programming instructions

Specifications PicoTurn CNC		
center width	mm	550
max. turning Ø over bed	mm	250
bed width	mm	135
spindle speeds (inf. variable) (range)	min^{-1}	150 - 1750
spindle mount		MT 3
longitudinal feeds	mm/min	500
transverse feeds	mm/min	250
rapid feed (long./transv)	mm/min	2000/1000
max. cross slide travel	mm	75
tailstock quill taper/ -ø	mm	MT 2 / 30
tailstock quill stroke	mm	50
tailstock transv. adjustm.	mm	± 4
motor rating / voltage	kW / V	1 / 230
connected load	kVA	1,6
dimensions (LxBxH)	mm	1200 x 530 x 1300
weight	kg	400
Part No.		180 501

UWF 10 shown

incl. position indicator

- extra large work table and large travel ranges on all axes
- sturdy and torsionally rigid construction
- universal swivel head – cutter can be moved to any spatial angle
- infinitely variable feed speed and rapid feed with servo motor and axis control on all 3 axes
- preloaded ball screw - zero-backlash preloaded for easy and precise feeds
- simultaneous axis movement
- Turcite-B coated guides
- dovetail guide on X axis
- square guides on Y and Z axes (only Z axis on the UWF 10)
- hardened and ground gears, nitrated
- swivelling control panel, fully equipped with all operating elements
- automatic lubricant supply
- spindle brakes
- equipment according to CE

Standard Equipment:
position indicator, universal swivel head, operating tools, automatic central lubrication, coolant system, operator manual

Specifications		UWF 10	UWF 12 B	UWF 15 B
setup area (L x W)	mm	1235 x 460	1635 x 500	2000 x 500
Number of T-slots		5	5	5
T-slot width	mm	18	18	18
T-slot distance	mm	80	80	80
table traverse, longitundinal x	mm	900	1300	1500
table traverse, vertical z	mm	450	450	500
cross traverse (milling bar) y	mm	650	650	650
head swivels		360°	360°	360°
spindle mount		ISO 40	ISO 50	ISO 50
spindle speeds	min^{-1}	(27) 30 - 2050	(27) 30 - 2050	(27) 30 - 2050
feed, longit. (infin. var.)	mm/min	10 - 1000	10 - 1000	10 - 1000
feed, cross (infinite)	mm/min	10 - 1000	10 - 1000	10 - 1000
feed, vertical (infinite)	mm/min	6 - 640	5 - 500	5 - 500
rapid feed, longit.	mm/min	2540	2200	2200
rapid feed, cross	mm/min	2540	2200	2200
rapid feed, vertical	mm/min	1700	1100	1100
spindle nose-table distance	mm	50 - 500	80 - 530	80 - 530
throat	mm	63 - 713	60 - 760	60 - 760
main motor rating	kW	5.5	7.5	7.5
axis drive for each axis		DC Servo	DC Servo	DC Servo
max. table load capacity	kg	800	1800	1800
dimensions (LxWxH)	mm	1940 x 2220 x 2115	2140 x 2621 x 1940	2140 x 2986 x 1940
weight	kg	3000	3400	5500
Part No. w. position indicator		301 240	301 271	301 272

For more information, please contact us or visit www.knuth.de

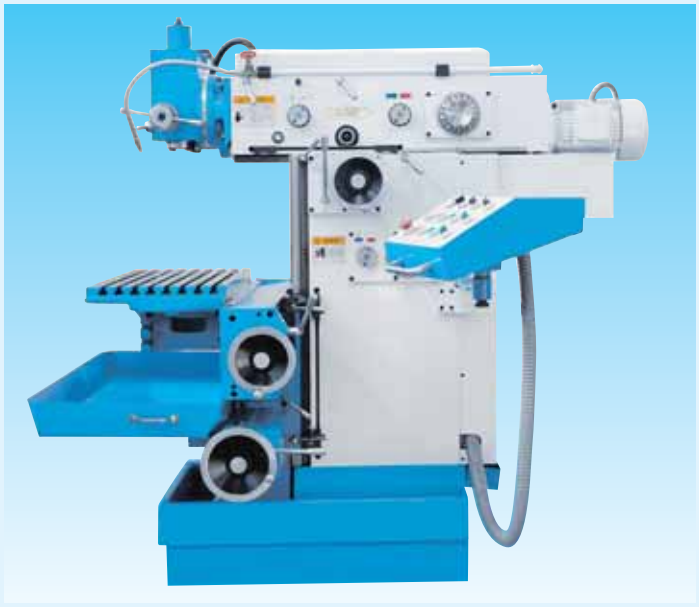
Universal Milling Machine

UWF 10 • 12B • 15B

- Servo drive x, y, z
- extra large working area

Total Price including 3-axis assembled

UWF 12B
Ill. including position indicator



- ribbed machine stand ensures maximum dynamic rigidity and constant precision
- vertical setup table with 5 setup slots allows individual positioning of the sturdy, large work table
- micro-tuning (18 steps) of spindle gears to maintain a constant optimum spindle speed
- fine adjustments of work feeds and rapid feed on all axes ensure maximum versatility and productivity
- the quill can be advanced manually or automatically (3 steps)
- very wide hardened guideways ensure constant accuracy
- ergonomically arranged controls and a swivelling control panel plus standard digital position indicator for maximum operator comfort
- including automatic lubrication system

Specifications WF 4.2			
Working Area			
travel	- X axis	mm	500
	- Y axis	mm	350
	- Z axis	mm	400
table setup area		mm	800 x 400
table load capacity (max.)		kg	300
T-slots (qty x width x spacing)		mm	8 x 14 x 45
Feed			
rapid feed	- X axis	mm/min	1200
	- Y axis	mm/min	1200
	- Z axis	mm/min	1200
Feed Speed	- X axis	mm/min	10 - 500 (18)
	- Y axis	mm/min	10 - 500 (18)
	- Z axis	mm/min	10 - 500 (18)
quill feeds		mm/U	0,03 / 0,06 / 0,12
Vertical Cutter Head			
spindle speed		min^{-1}	40 - 2000 (18)
spindle mount			ISO 40

quill stroke	mm	60
throat	mm	170 - 520
spindle nose-to-table distance	mm	5 - 405
head swivel range		±90°
Horizontal Cutter Head		
spindle speed	min^{-1}	40 - 2000 (18)
spindle mount		ISO 40
spindle axis-to-table distance	mm	35 - 435
Drive Capacities		
main motor rating	kW	3
motor rating for feed	kW	1,5
coolant pump motor rating	kW	0,075
Dimensions/Weight		
overall dimensions (LxWxH)	mm	1820 x 1640 x 1710
weight	kg	2300
Part No.		370 313

For more information, please contact us or visit www.knuth.de

Tool Milling Machine
WF 4.2

B

Total Price including 3-axis position indicator (assembled)

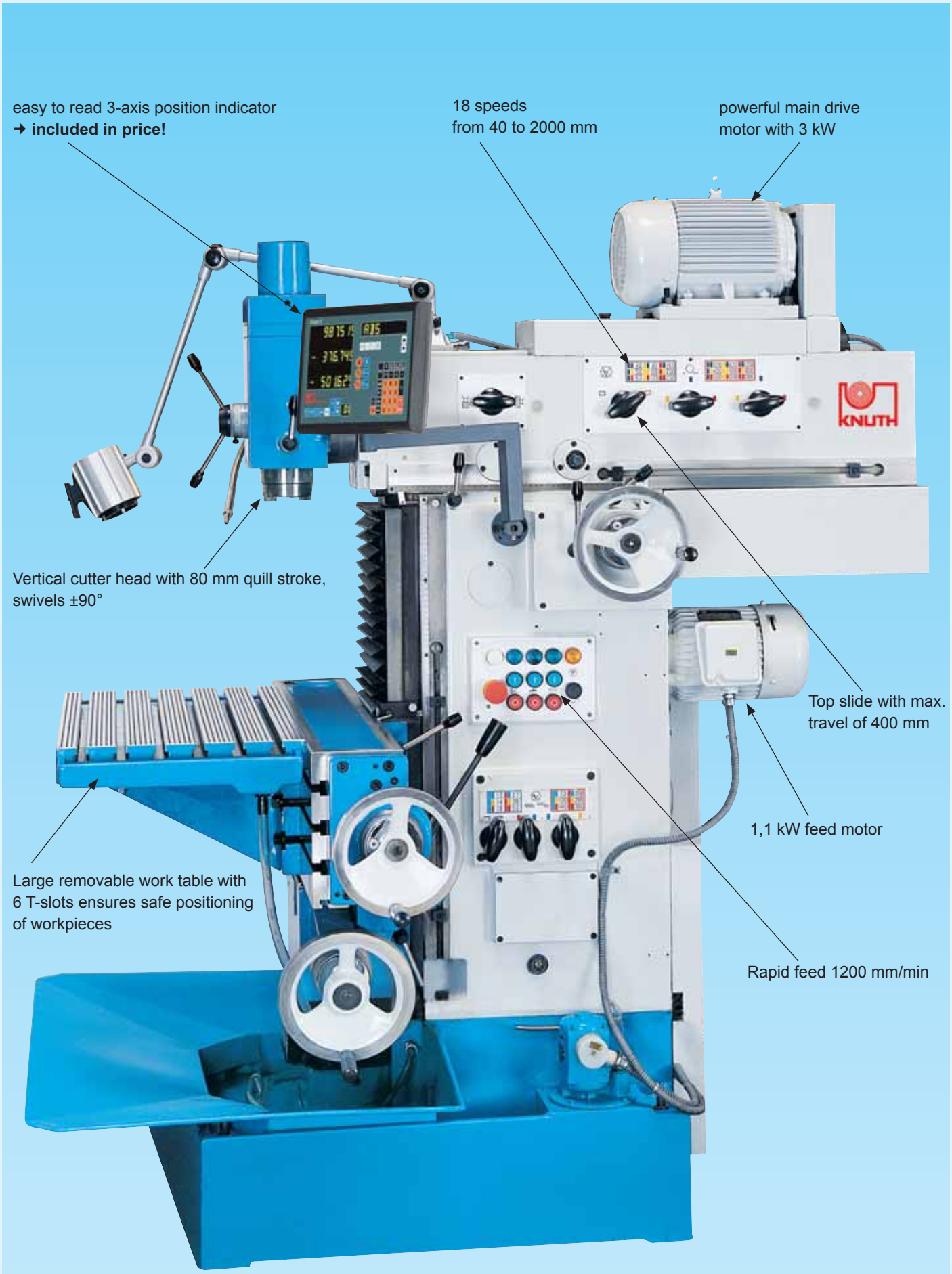
Heavy-duty Universal Tool Milling Machine, for tool and die construction, form and mold construction as well as for training use.

- high machining quality and maximum reliability
- separate feed gears with fine gradation and rapid feeds in all axes
- large work table (800 x 400 mm) and travels up to 500 x 350 x 400 mm for maximum versatility
- Extensive accessory package included

Optional Equipment:
Universal swivel table 630x300,
X/Y axis swivel range: +/- 30°, Z axis swivel range: 360°
Part No. 170 313

Standard Equipment:
3-axis position indicator, milling arbors (16, 22, 27 mm), short tool shaft (22, 27 mm), reducing sleeves (MT1, MT2, MT3, MT4), cutter head clamping assembly, collet chuck set (includes 4, 5, 6, 8, 10, 12, 14, 16 mm), drill chuck (0-6 mm diam.), Ø 1-13mm, chip tray, draw bar, anchor bolts, coolant system, outer arbor support for horizontal milling, work lamp, operating tools, operator manual

Call us to inquire about the latest best prices under: +49 4321 609-0


easy to read 3-axis position indicator
➜ **included in price!**
18 speeds
from 40 to 2000 mm
powerful main drive
motor with 3 kW
Vertical cutter head with 80 mm quill stroke,
swivels ±90°
Top slide with max.
travel of 400 mm
1,1 kW feed motor
Large removable work table with
6 T-slots ensures safe positioning
of workpieces
Rapid feed 1200 mm/min
KNUTH

WF 4.1 shown

Tool Milling Machines
WF 4.1 • 3.1 • 2.1

Milling Machines for Tool Construction with Digital Position Indicator

- automatic feeds on all 3 axes
- outer arbor support for horizontal milling
- heavily ribbed cast-iron machine stand ensures maximum static and dynamic rigidity
- steamlined arrangement of operating controls on the right side
- vertical head quill for drilling, with hand lever feed
- quill stroke 80 mm
- central lubrication
- hardened guideways
- chip collector pan

WF 4.1 shown incl. position indicator

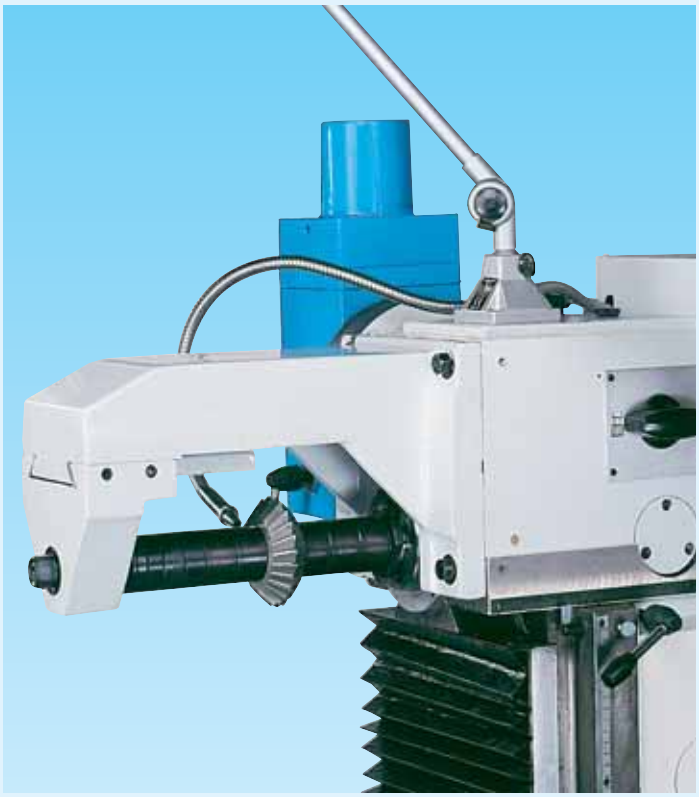
- to use the WF 2.1 for horizontal milling, just rotate the vertical milling head 90°
- outer arbor for horizontal milling is included in standard equipment
- wide variety of applications

WF 2.1 shown

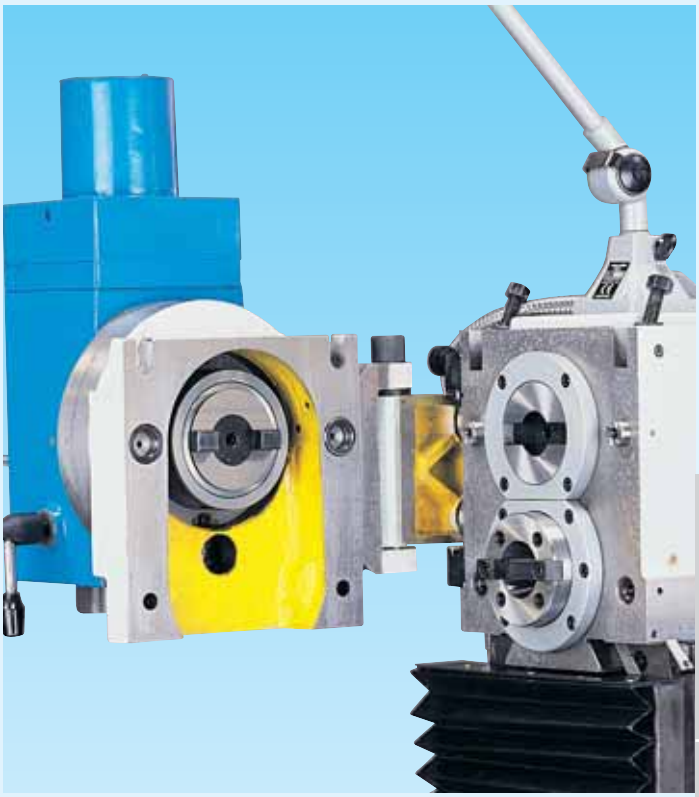
Optional Equipment: universal swivel table for WF4.1 WF3.1 WF2.1		
setup area	mm	320 x 620
swivel around X and Y axis		± 30°
swivel around Z axis		360°
Part No.		129 347

Standard Equipment: position indicator, work lamp, 4 long cutter arbors (16, 22, 27, 32 mm), reducing sleeves (MT 1, 2, 3), collet chuck with collets (2, 3, 4, 5, 6, 8, 10, 12 mm), draw bar, coolant system, chip tray, outer arbor support for horizontal milling, operator manual, work lamp, foundation bolts, operator tools

Specifications			WF 2.1	WF 3.1	WF 4.1
work space dimensions		mm	750 x 320	750 x 320	800 x 400
vertical table dimensions		mm	830 x 225	830 x 225	1060 x 250
T-slots, work table		mm	(5) 14 x 63	(5) 14 x 63	(6) 14 x 63
T-slots, vertical table		mm	(2) 14 x 126	(3) 14 x 63	(3) 14 x 63
table load capacity		kg	300	300	300
travels	- longitudinal (X)	mm	405	405	500
	- transverse (Y)	mm	200	305	400
	- vertical (Z)	mm	390	400	400
spindle axis-to-table surface distance					
	- horizontal spindle	mm	35 - 425	85 - 485	50 - 450
	- vertical spindle	mm	75 - 445	50 - 450	50 - 450
max. throat		mm	680	425	540
speed range		min^{-1}	(12) 40 - 1600	(18) 40 - 2000	(18) 40 - 2000
spindle mount			ISO 40	ISO 40	ISO 40
feeds X, Y, Z axis		mm/min	8 - 310	10 - 380	10 - 380
rapid feed		mm/min	1200	1200	1200
quill stroke		mm	80	80	80
main motor rating		kW	2.2	2.2	3
feed motor rating		kW	0.75	0.75	1.1
dimensions (LxWxH)		mm	1390 x 1430 x 1820	1215 x 1200 x 1800	1390 x 1430 x 1820
weight		kg	1100	1300	1400
Part No. w. position indicator			302 331	302 332	302 333



Horizontal milling with outer arbor support



Swivel arm moves the vertical cutter head for horizontal milling

The WF 4.1 Milling Machine features a vertical cutter head with a +/- 90º swivel range. The set degrees are easily read on the integrated degree scale. The large quill features a stroke of 80 mm and is clamped mechanically via lever. For horizontal milling applications, merely remove the vertical cutter head via the swivel arm, shift the upper beam, and mount an outer arbor support.

Conversion and setup costs are very low.
All 3 axis of this machine are equipped with automatic feeds and rapid feeds. The X and Y axes are engaged and disengaged via one single directional lever. For the cross feed (Y), a separate lever has been provided at the upper beam.
In addition, all axes can be manually moved using the integrated scaled hand-wheels.

Bed-Type Milling Machine
KB 2500

Universal with high intrinsic weight

- very rigid, heavy machine bed made of premium cast-iron to ensure maximum precision and low vibration
- cutter head swivels 360° for versatile use and complex machining tasks
- quick change-over of milling spindle from vertical to horizontal alignment
- 2 swivel levels allowing to set virtually any angle
- wide spectrum of applications made possible by high table load capacity of 3000 kg and large setup area
- reliable hydraulic clamping on all axes
- powerful 11 kW motor for high-capacity machining
- hardened guideways ensure precision an durability

Standard Equipment: 3-axis position indicator, collet chuck ISO 50 with collets (4, 6, 8, 12, 16, 18, 22, 26 mm diam.), reducing sleeve (ISO 50/MT4), coolant system, foundation bolts 11xM24x500, operating tools, operator manual

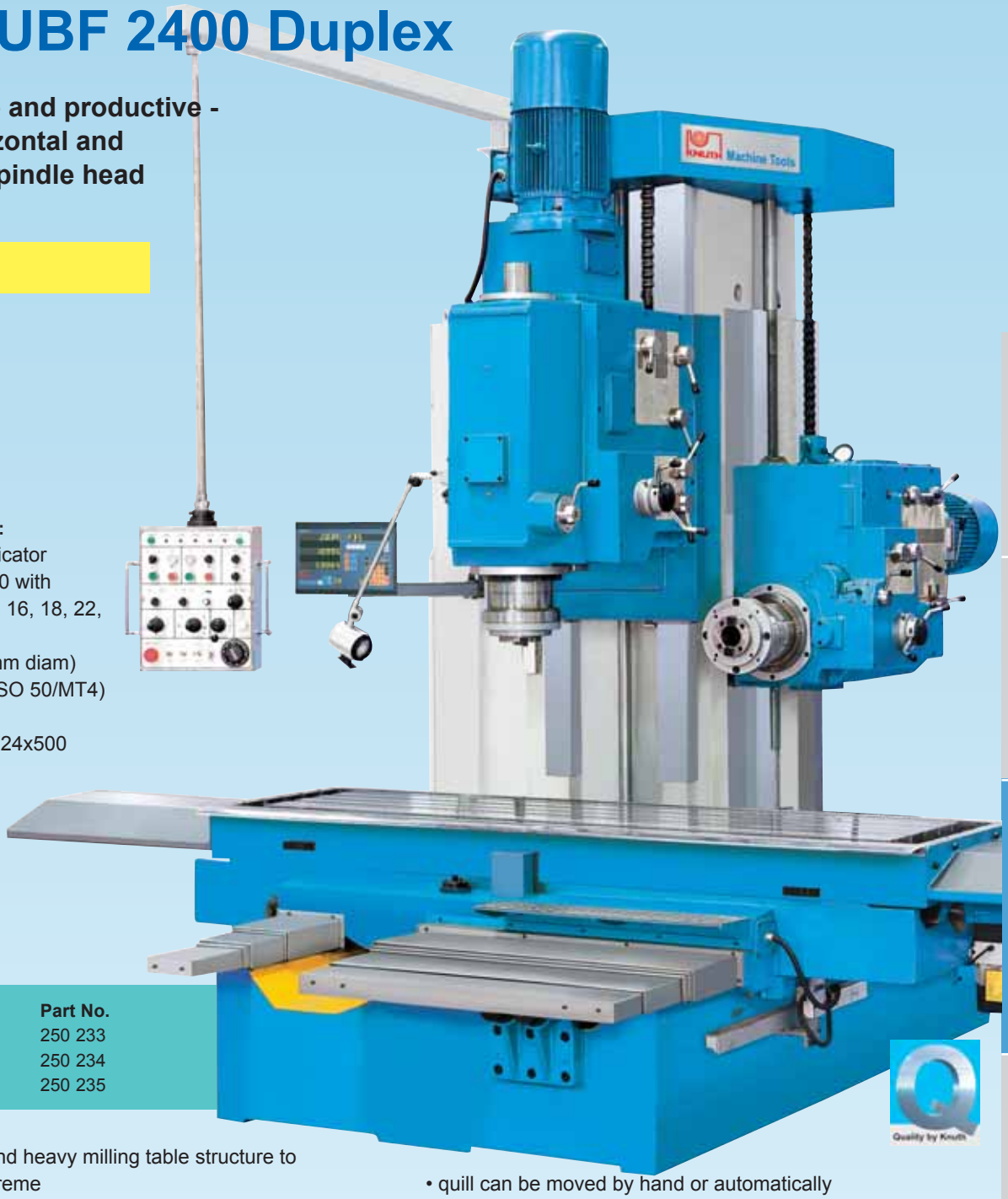
Options	Part No.
• divider F11160A	250 233
• rotary table TS 400	250 234
• vise 200 mm	250 235

Specifications KB 2500		
Working area		
X axis travel	mm	1500
Y axis travel	mm	650
Z axis travel	mm	900
table dimensions	mm	2500 x 600
table load capacity	kg	3000
T-slots (qty x width x spacing)	mm	3 x 22 x 152
Feed		
rapid feed X / Y axis	mm/min	3000
Z axis rapid feed	mm/min	2000
X / Y axis feed speed	mm/min	12 - 1250
feed speed, Z axis	mm/min	12 - 1250
Cutter head		
spindle speed	rpm	50 - 1624
spindle mount		ISO 50
spindle nose-to-table distance	mm	50 - 700
head swivel range		360°
Drive Capacities		
main motor rating	kW	11
feed motor rating	kW	2.9
coolant pump motor rating	kW	0,09
Dimensions/Weight		
dimensions	mm	3200 x 3200 x 2750
weight	kg	12000 kg
Part No.		301 425

Bed-Type Milling Machine

UBF 2400 Duplex

Cost-effective and productive - with one horizontal and one vertical spindle head



Standard Equipment:

- 3-axis position indicator
- collet chuck ISO 50 with collets (4, 6, 8, 12, 16, 18, 22, 26 mm diam.)
- milling arbor (40 mm diam)
- reducing sleeve (ISO 50/MT4)
- coolant system
- foundation bolts M24x500
- operating tools
- operator manual

Options	Part No.
• divider F11160A	250 233
• rotary table TS 400	250 234
• vise 200 mm	250 235

- wide guideways and heavy milling table structure to accommodate extreme workpiece weights up to 3 tons
- separately guided vertical and horizontal spindle allows machining on both sides in one setup
- automatic feed on all axes, infinitely variable - electronic handwheel for manual traversing
- quill can be moved by hand or automatically
- hydraulic clamping for reliable fixation in the selected position
- every spindle head is equipped with its own powerful 11 kW motor
- easy maintenance due to central lubrication system
- stainless steel guideway covers

Specifications UBF 2400 Duplex		
Working area		
X axis travel	mm	1630
Y / Z axis travel	mm	800
table dimensions	mm	2400 x 650
table load capacity	kg	3000
T-slots (qty x width x spacing)	mm	5 x 22 x 100
Vertical and Horizontal Cutter Head		
speed range	rpm	23 - 1000 (12)
spindle mount		ISO 50
quill stroke	mm	190
quill diameter	mm	200
feed speed, infinitely variable	mm/min.	20 - 2200
spindle nose-to-table distance	mm	40 - 840
spindle center-to-table distance	mm	0 - 800
Drive Capacities		
main motor rating	kW	11 kW (2x)
feed motor rating	kW	4.4
coolant pump motor rating	W	90
power supply	V	400
Dimensions/Weight		
dimensions	mm	3000 x 4000 x 3800
weight	kg	16000
Part No.		362 427

Bed-Type Milling Machine

KB 2100

Large machine bed, wide column, plus high intrinsic weight - Power package for machining of large parts and heavy-duty chip removal capacity

- extra wide box ways ensure maximum stability and precision at high table loads
- hardened and ground guideways for consistent accuracy
- long table travel (1500 mm) and large table setup area
- wide spindle speed range from 40 to 1600 rpm
- universal swivel head - the tool can be turned to any angle and horizontally
- infinitely variable linear and cross feed
- telescope cover for Z axis

incl. Position Indicator

Optional Equipment:

universal indexing head 320 mm	Part No. 101 286
universal indexing head 250 mm	Part No. 101 287
universal indexing head 200 mm	Part No. 101 288
rotary table 320 mm	Part No. 101 289

Standard Equipment: universal swivel head, coolant system, drawbar, 1 set ISO 50 milling chucks (8-pc. 4, 6, 8, 12, 18, 22, 26 mm), ISO 50 milling arbor (40 mm diam.), horizontal arbor holder, horizontal milling arbor (32 mm diam.), work space lighting, operating tools, foundation bolts M12 x 500 mm, operator manual

Specifications KB 2100

Work Table			
table setup area		mm	2100 x 500
T-slots # / spacing		mm	4 / 20
table load capacity		kg	2000
feeds			
travel	X axis	mm	1500
	Y axis	mm	700
	Z axis	mm	0 - 700
feed speed			
	X axis (inf. var.)	mm/min	20 - 1800
	Y axis (inf. var.)	mm/min	20 - 1800
rapid feed	X axis	mm/min	3500
	Y axis	mm/min	3500
	Z axis	mm/min	1750

Vertical Cutter Head		
spindle mount		ISO 50
spindle speed (range / #)	rpm	40 - 1600 / 12
throat	mm	610
vertical spindle-to-table distance	mm	0 - 700
head swivel range		360°
Drive Capacities		
main motor	kW	7,5
feed motor	kW	2
coolant pump	kW	0,55
overall dimensions (LxWxH)	mm	3300 x 2380 x 2750
machine weight	kg	7300
Part No. with position indicator		301 285

Bed-Type Milling Machine
KB 1400

incl. Position Indicator

High-Capacity Bed-Type Milling Machine for large parts and heavy machining

Only the cutter head (with the part) – not the machine table – moves on the Z axis. This results in improved stability, less vibration, and ultimately in **increased precision and extremely high table load capacity!**

Additionally, this effect is enhanced by a large, heavy cast-iron frame (Mehanite) and extremely wide flat guideways.

- infinitely variable speed adjustment provided through frequency drive
- rigid, rectangular flat guideways ensure consistent accuracy
- Mehanite cast-iron frame
- hardened and ground guideways on all axes
- cutter head swivels ± 45°
- standard 3-axis position indicator

Standard Equipment KB 1400: position indicator, collet chuck with collets Ø 4, 5, 6, 8, 10, 12, 14, 16 mm, reducing sleeves MT4, MT3 and MT2, cutter arbor Ø 40, machine vise 160mm, coolant system, work lamp, central lubrication, operating tools, operator manual

Specifications KB 1400			
spindle mount vertical			ISO 50
spindle nose-to-table dist.		mm	150 - 650
throat		mm	510
speeds		min^{-1}	18-1800 (infinitely var.)
table size		mm	1400 x 400
head swivel range			± 45°
travel	- X axis	mm	1000
	- Y axis	mm	400
	- Z axis	mm	500
feed speed	- X / Y axis	mm/min	18 - 627 (9 steps)
	- Z axis	mm/min	18 - 627
rapid feed		mm/min	1670

T-slots (# x width x spacing)	mm	3 x 18 x 100
max. speed of height adjustment	mm/min	1670
quill travel	mm	105
main motor	kW	7,5
feed motor	kW	0,75
Z axis motor	kW	0,75
coolant pump	W	40
coolant pump flow rate	l/min	12
overall dimensions (LxWxH)	mm	2290 x 1770 x 2120
weight	kg	3660
Part No. with position indicator		301 320

F

Vertical Milling Machine
VFM 4

Total price including 3-axis position indicator (assembled)

Rugged Knee-and-Column Milling Machine - ideal for single-part production, rework, and repairs

- massive machine frame with very rigid knee slide
- X and Y axis with automatic feed and rapid feed
- Z axis with motorized rapid feed
- work table and guides are hardened and ground
- extremely rigid cutter head, swivels +/-35°
- manual quill feed for boring and micro-feed

Standard Equipment:
3-axis position indicator, milling chuck ISO50 with collets (4, 5, 8, 10, 12, 14, 16 mm), reducing sleeve ISO50/MT4, draw bar, central lubrication, work lamp, operating tools, operator manual

Options	Part No.		Part No.
• machine vise NZM 160	104 920	• milling chuck WELDON ISO 50 / Ø 6 mm	106 813
• oscillation element LT 55 (per piece)	103 322	• milling chuck WELDON ISO 50 / Ø 32 mm	106 818
• coolant concentrate 5 l	103 184	• clamping tools, assorted, De Luxe 16/M16	105 300
• Power Worker chip lift-off device	123 040	• reducing sleeve ST50 / ST40	103 770

Specifications VFM 4		
Working area		
X axis travel	mm	1000
Y axis travel	mm	300
Z axis travel	mm	400
table setup area	mm	1320 x 320
T-slots (qty x width x spacing)	mm	5 x 14 x 63
throat	mm	360
head swivel range		± 35°
workpiece weight (max.)	kg	300
Feed		
rapid feed X / Y axis	mm/min	1200
Z axis rapid feed	mm/min	600
X / Y axis feed speed	mm/min	(8) 20 - 360

Vertical Cutter Head		
speed range	rpm	58 - 1710
spindle mount		ISO 50
quill stroke	mm	70
vertical spindle-to-table distance	mm	45 - 445
Drive Capacities		
main motor rating	kW	4
feed motor rating	kW	0.55
coolant pump motor rating	kW	0.09
Dimensions/Weight		
overall dimensions (LxWxH)	mm	2220 x 1820 x 1880
weight	kg	2300
Part No. with position indicator		301 281

For more information, please contact us or visit www.knuth.de

Universal Knee-and-Column Drill Press/Milling Machine

DRIM 50 S • UFM 1.2

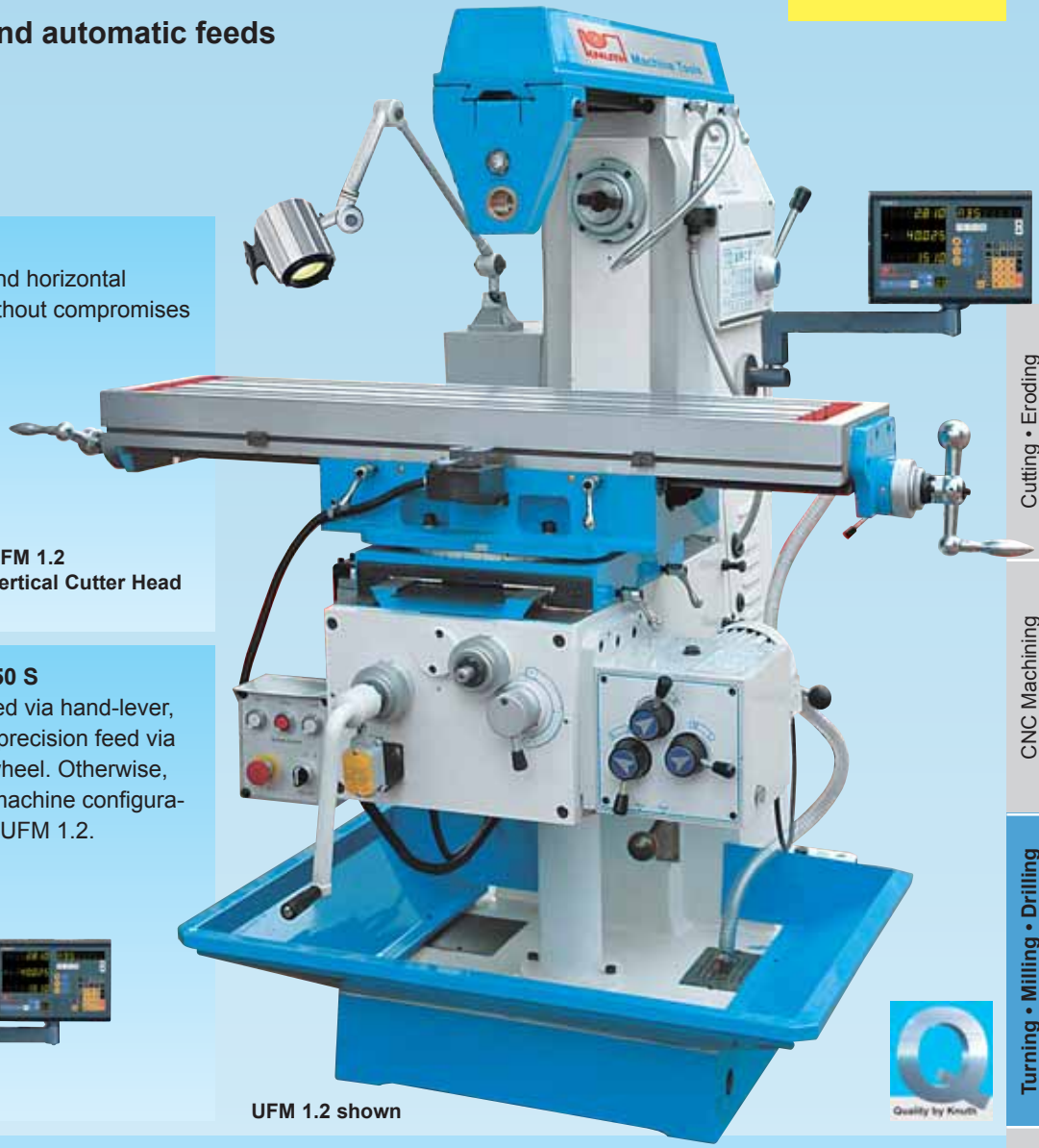
Large travel distance and automatic feeds

- automatic feed on all 3 axes
- cutter head swivels ± 45°
- clamping fixture on all 3 axes

UFM 1.2
vertical and horizontal milling without compromises in rigidity

UFM 1.2
Vertical Cutter Head

DRIM 50 S
quill feed via hand-lever, or fine precision feed via hand-wheel. Otherwise, same configuration as UFM 1.2.



UFM 1.2 shown

Standard Equipment: 3-axis position indicator, drill chuck (Ø 13 mm, DRIM 50 S), milling chuck (ISO 30) with collets 4, 5, 6, 8, 10, 12, 14, 16 mm, machine vise 160 mm, reducing sleeve ISO 30 / MT3, fastening bolts (UFM 1.2), operating tools, operator manual

Specifications		DRIM 50 S	UFM 1.2
Working area			
X axis travel	mm	680	680
Y axis travel	mm	290	290
Z axis travel	mm	395	395
table dimensions	mm	280x1120	280x1120
table load capacity (max.)	kg	180	200
T-slots (number/width/spacing)	mm	3x14x70	3x14x70
Chip Removal Rates			
drilling capacity in steel	mm	50	50
max. milling diameter in steel	mm	100	100
tapping capacity in steel	mm	32	32
Feed			
rapid feed X / Y axis	mm/min	630	630
Z axis rapid feed	mm/min	200	200
feed speed X / Y axis	mm/min	(8) 24-450	(8) 24-450
feed speed Z axis	mm/min	(8) 8-140	(8) 8-140
Vertical Cutter Head			
spindle speed	rpm	115-1750	60-2600
spindle mount		ISO 30	ISO 30
quill stroke	mm	125	120
throat	mm	250	110
spindle nose-to-table distance	mm	50-400	0-400
head swivel range		45°	45°
Horizontal Milling Spindle			
spindle speed	rpm	-	40-1800
spindle mount		-	ISO 30
horizontal spindle-to-table distance	mm	-	0-400
spindle nose-to-table distanc	mm	50-395	65-450
Drive Capacities			
motor rating for horizontal spindle	kW	-	1.5
motor rating for vertical spindle	kW	1.5	1.5
feed motor rating	kW	0.75	0.75
coolant pump motor rating	kW	0.4	0.4
Dimensions/Weight			
dimensions	mm	1250x1120 x2100	1200x1600 x2220
weight	kg	700	900
Part No.		362 428	362 705

Universal Knee-and-Column Milling Machine
UWF 4

Superior price/performance ratio, for single part production and training purposes

Standard Equipment:
3-axis position indicator, outer arbor support for horizontal milling, milling chuck set ISO 50 (4, 5, 6, 8, 10, 12, 14, 16 mm), shell-end mill arbor ISO 50/32 mm, adapter sleeve ST 50/MT4, machine vise, vertical and horizontal drawbar, coolant system, central lubrication, halogen work lamp, operating tools, test certificate, operator manual

- including 3-axis position indicator
- vertical and horizontal spindles feature their own powerful drives
- all gears and shafts are hardened and ground
- large, wide, supported table rotates ± 35°
- wide rigid, hardened rectangular guideways
- ensure maximum stability
- the vertical cutter head swivels on 2 levels allowing virtually any angle setting
- automatic feeds and rapid feeds on all axes
- central lubrication for low-maintenance operation

Specifications UWF 4		
Working area		
X axis travel	mm	1000
Y axis travel	mm	280 / 290
Z axis travel	mm	400
table dimensions	mm	1320 x 360
table load capacity (max.)	kg	250
T-slots (qty x width x spacing)	mm	3 x 14 x 95
Feed		
rapid feed X / Y / Z axis	mm/min	1290 / 1205 / 513
feed speed, X axis	mm/min	22 - 420
feed speed, Y axis	mm/min	22 - 393
feed speed, Z axis	mm/min	10 - 168
Vertical Cutter Head		
spindle speed	rpm	(12) 60 - 1750
spindle mount		ISO 50
throat	mm	230 - 730
spindle nose-to-table distance	mm	170 - 570
head swivel range		360°
Horizontal Cutter Head		
spindle speed	rpm	(12) 58 - 1800
spindle mount		ISO 50
spindle axis-to-table distance	mm	0 - 400
Drive Capacities		
motor rating horizontal / vertical spindle	kW	4
feed motor rating	kW	1.1
coolant pump motor rating	kW	0.09
Dimensions/Weight		
overall dimensions (LxWxH)	mm	1980x2020x1900
weight	kg	2200
Part No.		362 700

Universal Milling Machine
UFM 3 Plus

Versatile and powerful

Horizontal milling with rigid outer arbor support

Standard Equipment:
- 3-axis position indicator
- horizontal milling arbors (Ø22, Ø27 mm)
- 2 milling arbors (Ø22, Ø27 mm)
- collets (5, 6, 8, 10, 12, 14 mm diam.)
- reducing sleeves (MT2, MT3)
- draw bar
- 1 set wrenches
- collet puller
- foundation bolts M20 x 500 mm
- operator manual

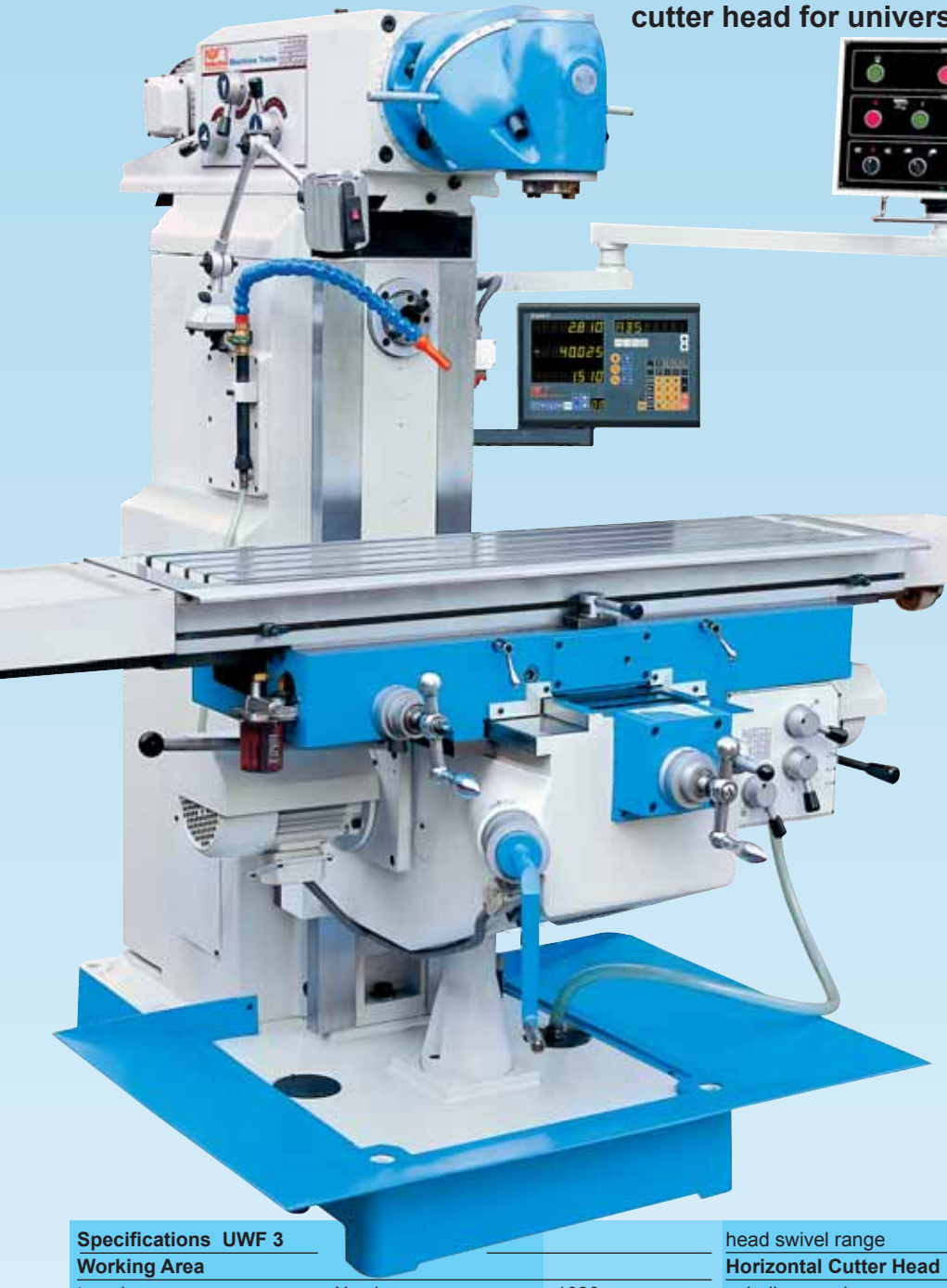
- The Knee-and-Column Milling Machine features a heavily ribbed box-shaped design that will absorb any static and dynamic forces and provides superior rigidity
- all controls and indicators are practically arranged
- automatic feeds and rapid feeds on all 3 axes
- universal cutter head swivels at two levels for vertical/ horizontal/angular milling
- work table rotates 45°
- simultaneous machining of one part with the horizontal and vertical spindle is possible

Specifications UFM 3 Plus			
table dimensions		mm	1500 x 300
table load capacity (max.)		kg	250
travel	- longitudinal	mm	780
	- transverse	mm	235
	- vertical	mm	400
	- top slide	mm	470
feed	- longit., transv.	mm/min	17 - 720
	- vertical	mm/min	4 - 240
rapid feed	- longit., transv.	mm/min	2100
	- vertical	mm/min	700
number of feeds			14
T-slots		mm	(3) 18
T-slot spacing		mm	70
table rotation			± 45°
horizontal spindle-to-table distance		mm	20 - 420
spindle mount			ISO 40
spindle speed	- horizontal	min^{-1}	(12) 35 - 1600
	- vertical	min^{-1}	(8) 67 - 1600
drive motor rating	- horizontal spindle	kW	4
	- vertical spindle	kW	2.2
feed motor		kW	0.75
dimensions (LxWxH)		mm	1695 x 1535 x 1728
weight		kg	2850
Part no. incl. position indicator			362 692

Total Price including 3-axis position indicator (assembled)

Universal Milling Machine
UWF 3

Sturdy Universal Milling Machine with swivelling cutter head for universal machining applications



- sturdy, zero-backlash rectangular guideways
- universal cutter head with 2 levels can be adjusted to virtually any spheric angle (HURON System)
- rapid feeds on all axes allow quick positioning
- control panel swivels for comfortable operation
- separate drives with gearbox for powerful material removal
- large machine table with one 1000 mm X travel

Standard Equipment:
3-axis position indicator, central lubrication, coolant system, work lamp, collet chuck, collets (4, 5, 6, 8, 10, 12, 14, 16 mm), machine vise 160 mm, horizontal milling arbor Ø 27 mm and Ø 40 mm, short milling arbor 32mm, operating tools, operator manual

Specifications UWF 3			
Working Area			
travel	- X axis	mm	1000
	- Y axis	mm	290
	- Z axis	mm	450
table setup area		mm	1320x320
table load capacity (max.)		kg	260
T-slots (qty x width x spacing)		mm	5x14x63
Feed			
rapid feed	- X / Yaxis	mm/min	1200
	- Z axis	mm/min	400
Feed Speed	- X axis	mm/min	20-360 (8)
	- Y axis	mm/min	30-360 (8)
Vertical Cutter Head			
spindle speed		min^{-1}	45-1660 (11)
spindle mount			ISO 40
throat		mm	200-760
spindle nose-to-table distance		mm	200-650
head swivel range			360°
Horizontal Cutter Head			
spindle speed		min^{-1}	40-1300 (12)
spindle mount			ISO40
horizontal spindle-to-table distance		mm	20-470
spindle axis-to-table distance		mm	200-650
Drive Capacities			
motor rating for horizontal spindle		kW	3
motor rating for vertical spindle		kW	3
motor rating for feed		kW	0,55
motor rating for Z axis feed		kW	0,75
coolant pump motor rating		kW	0,09
Dimensions/Weight			
dimensions		mm	2020x1710 x1994
weight		kg	2000
Part No.			370 297

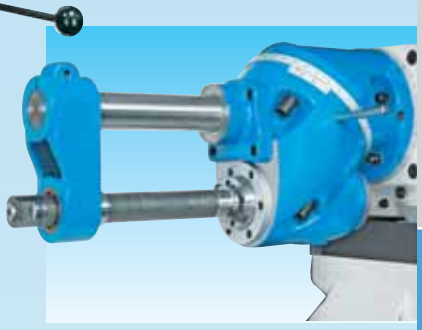
Universal Milling Machine
UWF 1

with Universal Swivel Head

incl. position indicator

Solid engineering, rigid construction, and exacting performance

- extra large work table with ± 45° swivel range
- excellent priceperformance ratio
- universal cutter head adjusts to any spatial angle



Standard Equipment: position indicator, outer arbor support for horizontal milling, cutter chuck with 4, 5, 6, 8, 10, 12, 14, 16 mm collets, machine vise with 160mm wide jaws, long cutter arbor Ø 32 mm, coolant system, halogen work lamp, operator manual

Specifications UWF 1		
Work Area		
table setup area	mm	1120 x 260
T-slots (number/width/distance)	mm	5 - 14 - 50
table load capacity	kg	250
Feeds		
X axis travel	mm	600
Y axis travel	mm	270
Z axis travel	mm	400
feed speed, X axis	mm/min	(8) 24 - 720
rapid feed, X axis	mm/min	720
Vertical Cutter Head		
spindle mount		ISO 40
spindle speeds	min^{-1}	45 - 1660
throat	mm	60 - 500
vertical spindle-to-table surface distance	mm	0 - 440
head swivel range		360°
Horizontal Cutter Head		
spindle mount		ISO 40
spindle speeds	min^{-1}	45 - 1660
Drives		
main motor rating	kW	2.2
Dimensions and Weights		
dimensions (LxWxH)	mm	1660x1500x1730
weight	kg	1300
Part No. incl. position indicator		362 691

Multi-Purpose Milling Machine

MF 5 V

all the benefits of the MF 1 V plus:

- more rigid and more powerful with 3.75 kW motor
- ISO 40 spindle
- 3 automatic drill feeds
- manual coarse feed for quill, toggles to micro-feed
- quill with micrometer depth stop
- reverse switch for forward and reverse operation
- spindle brakes
- wide square guides in y and z axis
- infinitely variable speeds
- head swivels ± 90° to the right and to the left
- TV 1000 table feed in x and y, infinitely variable with rapid feed
- coolant system
- chip tray
- central lubrication
- optional preloaded ball screw for X and Y axis

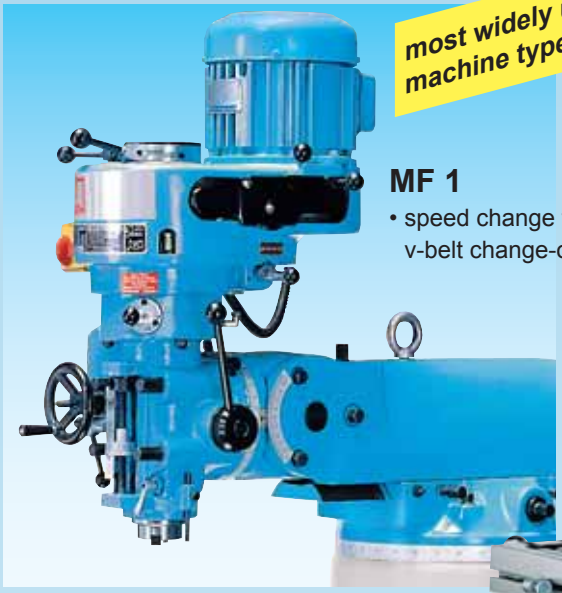
incl. position indicator

Standard Equipment: 3-axis position indicator, chip tray, coolant system, manually operated central lubrication, horizontal guideway cover, operating tools, operator manual

Specifications MF 5 V		
table size	mm	1370 x 250
travel X, Y, Z axis	mm	800 x 390 x 380
quill	mm	127
spindle taper		ISO 40
quill feeds (3 steps)	mm/r	0.04 / 0.08 / 0.15
speed range infinitely variable	min^{-1}	70 - 3600
spindle motor	V / kW	400 / 3,75
max. table load cap.	kg	350
weight	kg	1590
dimensions (LxWxH)	mm	2540 x 2156 x 2235
Part No. with position indicator		301 223
Part No. with position indicator plus preloaded ball screw		301 224

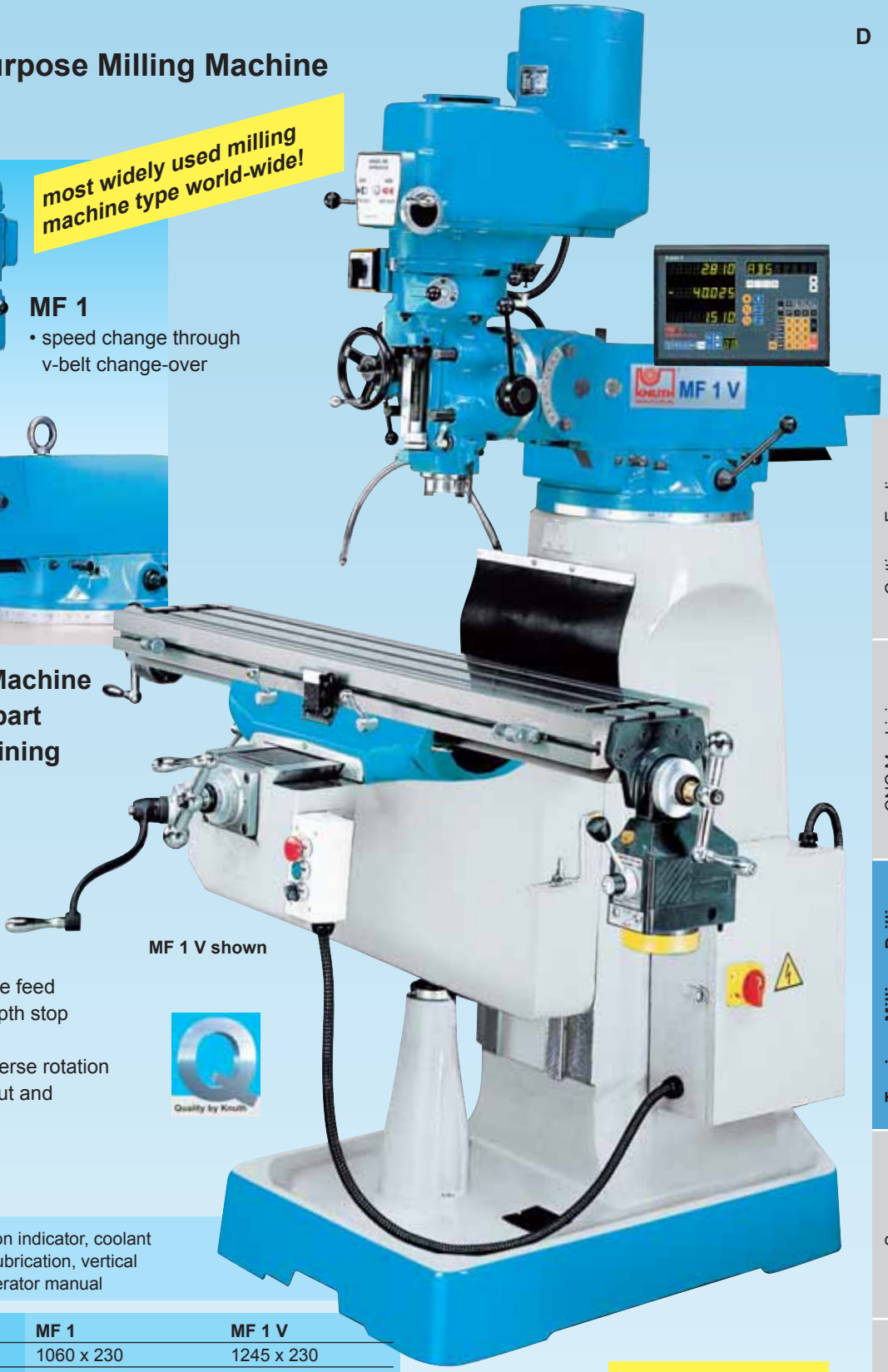
Multi-Purpose Milling Machine
MF

most widely used milling machine type world-wide!



MF 1

- speed change through v-belt change-over



MF 1 V shown

Multi-Purpose Milling Machine for workshops, single part production, design, training

- universal use
- head swivels through 3 axes
  swivel r + l ± 90°
  tilt forward + reverse ± 45°
  rotation on the column ± 45°
- 3 automat. drill feeds
- manual coarse feed for quill, with change-over for manual fine feed
- quill with autom. micrometer depth stop
- spindle mount ISO 30
- reversing switch for forward reverse rotation
- central lubrication for spindle, nut and guitdes
- man. spindle brakes
- test certificate

Standard Equipment: 3-axis position indicator, coolant system, manually operated central lubrication, vertical guideway cover, operating tools, operator manual

Specifications		MF 1	MF 1 V
table dimensions	mm	1060 x 230	1245 x 230
traverses x-axis / Y-axis	mm	670 / 290	760 / 290
console travel (Z-axis)	mm	370	370
quill travel (Z-axis)	mm	127	127
spindle mount		ISO 30	SK / ISO 3
quill advances	mm/U	(3) 0,04; 0,08; 0,15	(3) 0,04; 0,08; 0,13
table length advance (TV 1000)	mm/min	-	19 - 890 infin. variable rapid feed
T-slot / T-slot spacing	mm	3x16 / 63,5	3x16 / 63,5
speeds	min^{-1}	(16) 80 - 4500	70 - 3600, inf. variable
throat	mm	171 - 476	171 - 476
main motor rating	kW	2,2	2,25
dimensions (L x W x H)	mm	2000 x 1600 x 2088	2045 x 1630 x 2070
weight	kg	1100	950
Part no. incl. position indicator		301 228	301 214

incl. position indicator

MF 1 V

- infinitely variable handwheel adjustment
- extremely large table with traverses
- coolant system
- with table advance TV 1000 in X direction
- dove-tail guides, adjustable
- available with recirculating ball screws in X and Y for maximum precision and minimum force

MF1V with preloaded ball srew + position indicator
Part no. 301 206

Universal Milling Machine
VHF 1

Flexible Entry-Level Machine - a very compact horizontal/vertical Drill Press/ Milling Machine Combination

- compact, easy to handle universal milling machine with rigid frame made of vibration-dampening cast-iron
- vertical cutter head with robust gears for smooth shifting
- quill moves via capstan handle or manual precision feed
- horizontal spindle speed adjustable via easy accessible belt drive
- table swivels horizontally
- table feed in X direction with gear drive for positive power transmission without loss of torque
- adjustable stops on all axes
- wide, adjustable dovetail guides with clamping fixtures on all axes

incl. position indicator

Vertical head with horizontal swivel to both sides, top beam with horizontal swivel

Specifications		VHF 1	VHF 2
max. drill capacity in steel	mm	30	30
max. milling capacity in steel	mm	25	25
tapping up to		M 16	M16
reaming up to	mm	100	100
spindle taper		ISO 40	ISO 40
spindle speeds, vertical		8	8
speed range	min^{-1}	115 - 1750	115 - 1750
spindle speeds, horizontal		9	12
speed range	min^{-1}	60 - 1350	40 - 1300
spindle-to-frame distance	mm	200 - 700	160 - 610
spindle nose-to-table distance	mm	65 - 385	90 - 400
horiz. spindle nose-to-table dist.	mm	0 - 300	50 - 360
table setup area	mm	1000 x 240	1120 x 280
X travel	mm	585	600
Y travel	mm	200	220
Z travel	mm	335	360
quill stroke	mm	120	120
motor, vertical	kW	1,5	1,5
motor, horizontal	kW	2,2	2,2
dimensions (LxWxH)	mm	1290 x 1220 x 2100	1320 x 1280 x 2220
weight	kg	850	1350
Part No. incl. position indicator		362 660	362 670

Universal Milling Machine
VHF 2

VHF - ideal series for mechanic workshops, training, single part and replacement part manufacturing, and prototyping.

This excellent price/performance ratio is made possible by high-volume production with standardized VHF assemblies

incl. position indicator

feed gears with rapid feed

wide, adjustable guides

upper beam swivels

Standard Equipment:
3-axis position indicator, 2 milling arbors (Ø22, Ø27 mm), collet set - 4 to 16 mm with mount, drill chuck 16 mm, milling chuck ISO 40, reducing sleeve ISO 40 / MT3, reducing sleeve ISO 40 / MT2, vise, work lamp, operating tools, coolant system

- height adjustment of the work table via automatic feed - precision feed via smooth hand crank – all 3 axes are provided with clamping fixtures
- the vertical head swivels to both sides (± 90°), the quill is fed via capstan handle or manual precision feed (hand wheel)
- the integrated feed (standard equipment) allows moving of the X axis by hand wehel or via feed
- for horizontal machining, the top beam including the head can be rotated by ± 180° on the column, the spindle speed is changed via gears

Call us to inquire about the latest best prices under: +49 4321 609-0

Universal Milling Machine
VHF 3

incl. position indicator

Solid Universal Milling Machine for drilling and milling work requiring long travel distances

- all 3 axes with automatic feed and rapid feeds
- vertical head swivels ±45°
- spindle speeds for horizontal and vertical spindle controlled by separate switch gears with oil-bath lubrication
- capstan-controlled quill feed for drilling, manual micro-feed for milling
- 3 automatic quill feeds
- for horizontal spindle operations, the top beam including head can be completely rotated on the stand
- adjustable ground dovetail guideways on the X axis, and wide square guideways on Y and Z axis
- clamping on all 3 axes
- adjustable stops for drilling depth and table adjustment

Standard Equipment:
position indicator, drilling chuck Ø 16 mm, milling chuck ISO 40, collet chuck ISO 40 incl. collets (Ø 4, 5, 6, 8, 10, 12, 14, 16 mm), reducing sleeve ISO 40 / MT3 and ISO 40 / MT2, coolant system, chip tray, work lamp, machine vise 160 mm, operating tools, operator manual

Specifications VHF 3			
work table			
table set-up area		mm	1320 x 320
T-slots (quantity / width / distance)		mm	5 / 14 / 50
table load capacity		kg	300
feeds			
travel	- X axis	mm	750
	- Y axis	mm	280
	- Z axis	mm	430
feed speeds X axis (from - to / number)		mm/min	20 - 360 / 8
feed speeds Y axis		mm/min	20 - 360 / 8
rapid feed	- X axis	mm/min	1024
	- Y axis	mm/min	1024
	- Z axis	mm/min	670
vertical cutter head			
spindle mount			ISO 40
spindle speeds (from - to / number)		min^{-1}	90 - 2000 / 8
quill stroke		mm	120
quill feeds (3)		mm/rev	0.08; 0.15; 0.25
throat		mm	200 - 540
vertical spindle-to-table distance		mm	140 - 540
head swivel range			±45°
horizontal cutter head			
spindle mount			ISO 40
spindle speeds (from - to / number)		min^{-1}	38 - 1310 / 12
spindle axis (horizontal) to table distance		mm	50 - 450
drive rating			
drive motors (vertical / horizontal)		kW	2,2 / 2,2
feed motor		kW	0.55
coolant pump		kW	0.09
physical measurements			
dimensions (LxWxH)		mm	1710x1720x2330
machine weight		kg	1800
Part No. incl. position indicator			301 410

Drill Press/Milling Machine
KBF 50

for drilling, milling, tapping, reaming, and universal use in mechanical engineering, training and construction

Total Price including 3-axis position indicator (assembled)

- machine head runs in sturdy dovetail guide
- motorized machine head positioning
- automatic quill feed (3 steps)
- manual quill feed for drilling and fine feed for milling
- multi-step gear for maximum drilling and milling capacity
- large compound sliding table on rigid guideways
- automatic table feed, X and Y axis

Standard Equipment:
position indicator, rigid cast-iron base frame, coolant system, central lubrication, vertical guideway cover, operating tools, work lamp, operator's manual, collet chuck set, drill chuck, tool mounts

Specifications KBF 50		
max. drilling capacity	mm	Ø 50 ST 37
spindle taper		ISO 40
quill stroke	mm	180
travel spindle nose to table	mm	120 - 620
spindle speed	min^{-1}	(16) 94 - 2256
feeds (3)	mm/r	0.1, 0.15, 0.3
table working surface	mm	1220 x 360
T-slots (3)	mm	14 x 95
travels	mm	X = 630, Y = 360
table power feed (8)	mm/min.	24 - 720
spindle drive motor	V / kW	400 / 1,5/2,4
dimensions (L x W x H)	mm	1730 x 1730 x 2300
weight	kg	1400
Part No. incl. position indicator		362 410

Examples of Applications:

inside diameter boring and facing

milling with milling arbor

slot cutting with divider

angle boring

tapping

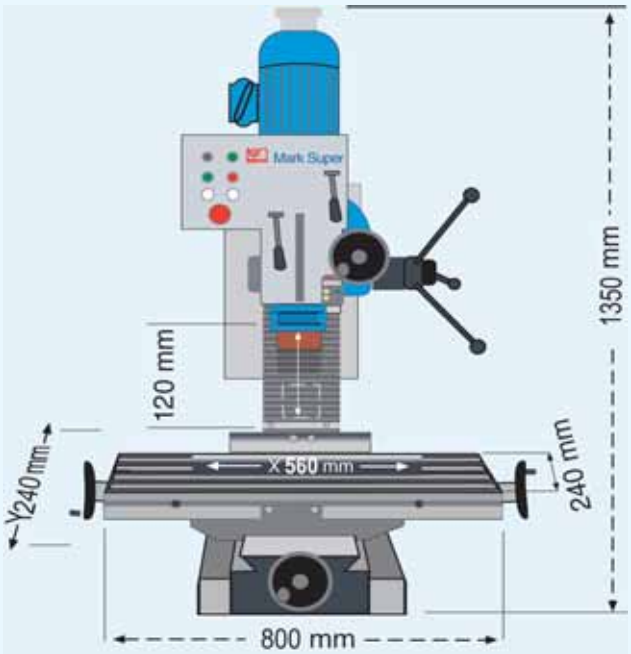
- rigid, and safety-oriented structure of all operation groups, manufactured with maximum precision
- the enclosed design of all operation and drive train elements prevents contamination, and ensures troublefree operation.

Option

- the infinitely variable table feed TV 1000 M (page 230) includes adjustable limit stops, which activate the shut-off upon contact. The point of origin can be approached via the rapid traverse.

Part no. 121 477

H



Specifications MARK SUPER		F
Operating Range		
head elevation	mm	320
spindle column	mm	260
work table	mm	800 x 240
x-way	mm	560
y-way	mm	200
speeds	min^{-1}	(12) 75 - 3200
spindle nose-to-table distance (max.)	mm	530
Head + Column		
spindle mount		MT 4
quill elevation	mm	120
quill diameter	mm	75
head swivel		± 45°
column-Ø / width	mm	190
drilling capacity	mm	32
end milling	mm	28
motor	kW/V	1,1 / 400
dimension (LxWxH)	mm	990 x 900 x 2100
weight	kg	380
Part No. with position indicator		301 495

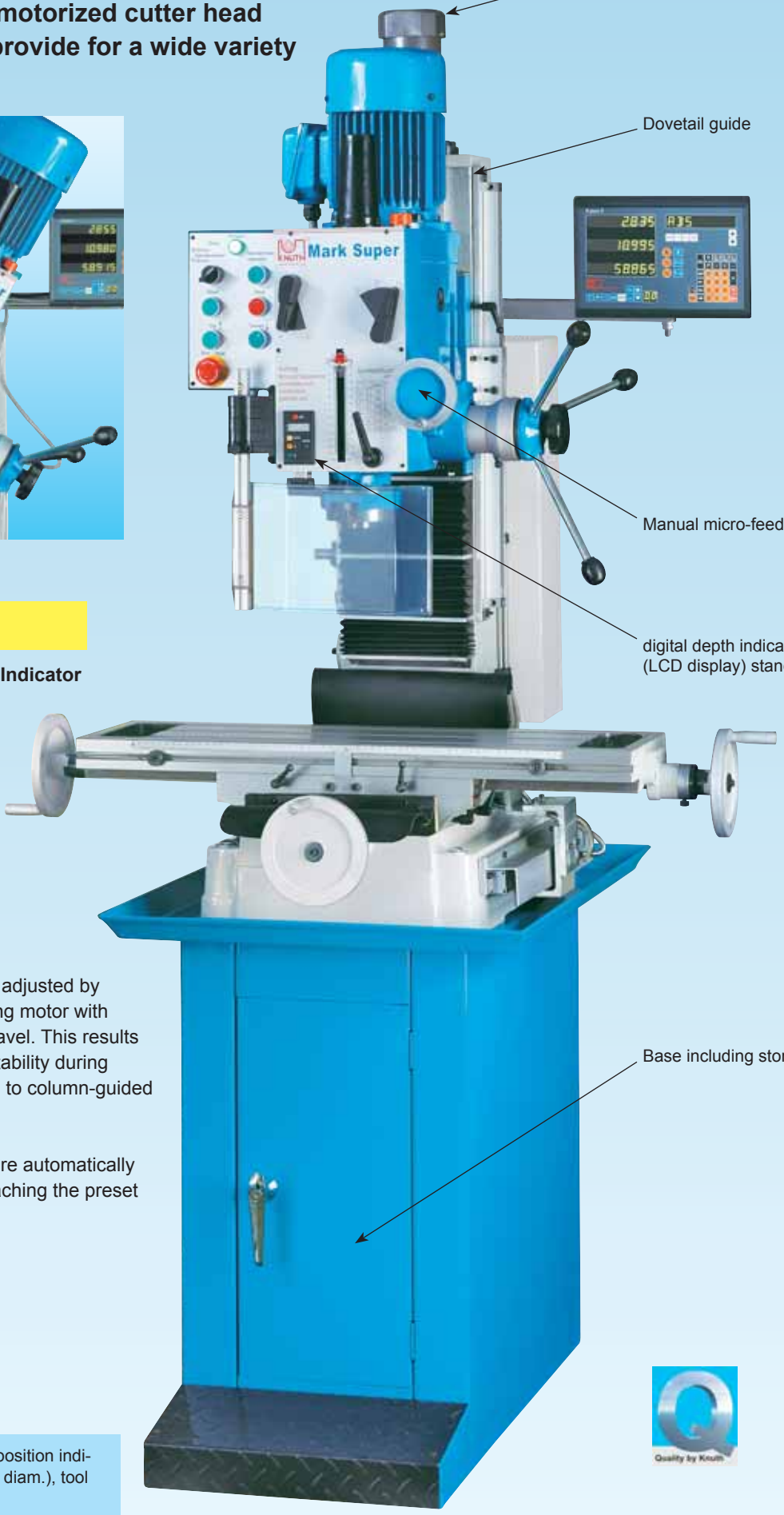
Drill Press/Milling Machine

Mark Super

Dovetail guide and motorized cutter head height adjustment provide for a wide variety of applications

Head swivels ± 45°

incl. Position Indicator



The machine head height is adjusted by dovetail guide and an levating motor with spindle to provide precise travel. This results in a significantly improved stability during milling operations compared to column-guided systems.

The integrated tapping feature automatically changes directions upon reaching the preset depth.

Standard Equipment: 3-axis position indicator, base, drill chuck (13 mm diam.), tool holder bits, operating tools

Radial Drill Press

R 32 Basic

Rigid Radial Drill Press with an unbeatable price/ performance ratio

Standard Equipment:
- coolant system
- cube table
- halogen work lamp

- for drilling, reaming and tapping
- machine frame made of high-quality fine-grain cast-iron with heavy ribbing to ensure maximum reduction of vibrations
- precision-ground gears for quiet operation
- practical layout of electrical and mechanical controls at the headstock for easy operation
- motorized arm height adjustment
- the spindle is made of high-quality hardened steel for consistent accuracy
- mechanical clamping for head, column, and arm

Specifications R 32 Basic		
drilling capacity (steel / cast-iron)	mm	32
column diameter	mm	200
throat (spindel-to-column surface) max.	mm	820
throat (spindel-to-column surface) min.	mm	320
spindle nose-to-table dist. max.	mm	860
spindle nose-to-table dist. min.	mm	320
cube table dimensions (LxWxH)	mm	400 x 400 x 350
machine table dimensions (LxWxH)	mm	1370 x 700 x160
spindle mount		MT 4
quill stroke	mm	240
speeds (quantity/range)	rpm	6 (75-1220)
feeds (quantity/range)	mm/rev	3 (0.1-0.25)
motor rating	kW	1.5
weight (approximate)	kg	1425
overall dimensions (LxWxH)	mm	1407 x 720 x 1885
Part No.		101 522

Horizontal Drill / Milling Unit

BO 110 • BO 130

BO 110 shown
standard Digidat position indicator in 3 axes on all machines

Table load capacity up to 10 tons and a Working Area up to 2,000 x 2,000 mm speak for themselves!

- rigid, hardened and precision ground square guides ensure many years of accurate operation
- mechanical functions that may not be run simultaneously are provided with interlocks
- headstock and feed gears are equipped with an overload clutch
- lever-operated shift gears for positioning of the wheels in the desired position
- the manual control panel is set up user-friendly and clearly, the panel includes controls for spindle rotation, tool clamping, scale lighting, etc.
- table rotates 360°
- telescoping steel covers protect the guides from chips and contamination
- with variable frequency drive, plus 3-axis servo motor
- tailstock included (BO 110), optional (BO 130)

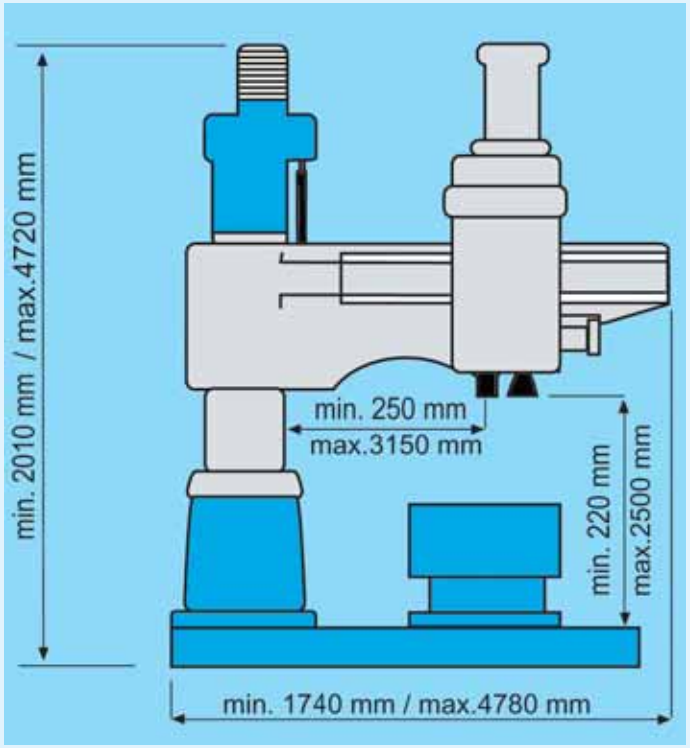
Standard Equipment: 3-axis position indicator, alignment wedges, central lubrication, work lamp, foundation bolts, operating tools, operator manual

Specifications		BO 110	BO 130
spindle diameter	mm	110	130
spindle taper		ISO 50	ISO 50
spindle feed	mm	600	900
facing slide feed	mm	180	250
facing slide rotation, 18 steps	rpm	4 - 200	2.5 - 125
max. table load capacity	kg	2500	10000
max. spindle axial thrust	N	12250	31360
spindle center-to-table distance	mm	0 - 900	0 - 1800
drilling capacity	mm	50	60
spindle speeds		22	24
speed range	rpm	8 - 1000	4 - 800
facing slide speed (rpm)		18	18

speed range	rpm	4 - 200	2.5 - 125
Feed for quill, headstock, and table/spindle rotation			
range I @ 8 - 400 rpm	mm/rev	18 (0.04 - 6)	
range II @ 500 - 1000 rpm	mm/rev	18 (0.01 - 1.53)	
Feed of facing slide, headstock, and table, facing slide rotation			
range I - 18 steps	mm/rev	0.08 - 12	0.08 - 12
max. spindle torque	Nm	1225	3136
max. lathe chuck torque	Nm	1960	4900
travel travel - longit./transv.	mm	1100/900	2000/2000
vertical head travel	mm	900	1800
table setup area	mm	1100x960	1600x1800
rapid feed, headstock	m/min	2.5	2.,5

rotary table rotational speed	rpm	1	1,2
main motor rating	kW	7.5	15
rapid feed motor	kW	3	5.5
hydraulic pump	kW	0.75	1.5
spindle stroke motor	kW	4	5.5
read-out accuracy, optic	mm	0.01	0.005
counter-bore accuracy	µm	H7 Ra-1.6	H7 Ra-1.6
overall dimensions (LxWxH)	mm	4880x2454 x2749	7030x4660 x3800
weight	kg	11500	29300
Part No. with position indicator		301 499	399 022
Price with position indicator			

- for drilling, reaming, and tapping
- made of high-quality fine grain cast-iron with heavyduty ribbing to ensure extremely low vibration
- oil-bath lubricated gearbox with hardened, precision ground Cr-Ni steel gears
- quiet operation
- easily accessible front panel arrangement of electrical and mechanical controls
- arm height adjustable through elevating screw and elevating motor
- ground and hardened guideways on arm
- hydr. operated feed and spindle drive (except R 60)
- with mechanical head and arm clamping (R 40)
- R 60, R70, R 80 and R 100 with hydraulicmechanical clamping
- Model R 60 features an infinitely variable speed control allowing perfect tool-specific and material-specific adjustment of the cutting speed includes digital display



Specifications		R 40	R 60	R 70	R 80	R 100
drilling capacity (steel / cast iron)	mm	40	60/72	70	80	100
tapping capacity (steel / cast iron)		M 30 / M 36	M 40 / M 52	M 50 / M 56	M 56 / M 64	M 70 / M 80
dist. from spindle to column surface, max.	mm	1000	1600	2000	2500	3150
dist. from spindle to column surface, min.	mm	250	350	450	500	570
drill head travel (horizontal)	mm	750	1250	1600	2000	2580
max. spindle nose to table distance	mm	560	1250	1600	2000	2500
min. spindle nose to table distance	mm	220	350	400	550	750
arm stroke (vertical)	mm	550	620	600	1000	1000
cube table dimensions (L x W x H)	mm	450x600x450	500x750x500	800x630x500	1000x800x560	1000x800x560
machine table dimensions (L x W x H)	mm	939x598x150	1700x980x200	2000x1000x200	3530x1400x300	2750x1220x300
spindle mount		MT 4	MK 5	MK 5	MT 6	MT 6
max. drilling depth	mm	250	315	400	450	500
speeds (number / range)	min^{-1}	8 (71 - 1800)	infinitely var. (38-2000)	16 (20 - 1600)	16 (16 - 1250)	22 (8 - 1000)
feeds (number / range)	mm/rev	4 (0.13 - 0.54)	8 (0,06 - 1,0)	16 (0.04 - 3.2)	16 (0.04 - 3.2)	16 (0.06 - 3.2)
motor rating	kW	2.2	3,7	5,5	7.5	15
elevating motor	kW	0.75	1,1	1.5	3	3
machine dimensions (L x W x H)	mm	1740x750x2360	2490x1000x2598	3080x1250x3300	3730x1400x4025	4780x1630x4720
weight (approx.)	kg	1400	3500	7000	11000	20000
Part No.		101 550	101 649	101 654	101 652	101 653

Radial Drilling Machine

R 40 • R 60 • R 70 • R 80 • R 100

High capacity radial drill presses for every requirement - at a very affordable price

Standard Equipment: coolant system, cube table, halogen work lamp

Option	Part No.		Part No.
• reducing sleeve MT 5/2	103 835	• HSS drills MT 1/2	102 460
• reducing sleeve MT 5/3	103 840	• HSS drills MT 2/3	102 450
• reducing sleeve MT 5/4	103 845	• HSS drill set TiN 1-13 mm	102 470
• HSS drills 13 mm-25 mm	102 480	• accessory set, MT 4 (8-pc)	104 594

Call us to inquire about the latest best prices under: +49 4321 609-0

Box-Column Drill Press
KSB

Universal Machine for Drilling, Reaming and Tapping

- rigid cast-iron box-column design with heavy ribbing for heavy-duty applications
- table guide (dovetail guide mounted on cast-iron body), torsion-proof - no column guide
- 9 or 12 speeds, controlled via left-hand single-lever control for quick, precise, and definite control
- 6 or 9 feeds, controlled via right-hand single-lever control for quick, precise, and definite control
- autom. tapping unit automatically reverses upon reaching the preset depth
- extremely quiet operation

Standard Equipment: coolant system, tapping unit, halogen work lamp, operating tools, operator manual

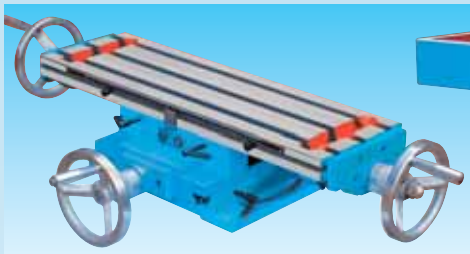
Specifications		KSB 25 A	KSB 32 A	KSB 40 B	KSB 50 C	KSB 63 B	KSB 80 B	KSB 100
drilling capacity in steel	mm	25	32	40	50	63	80	100
feed force	N	9000	9000	16000	16000	30000	30000	45000
torque	Nm	160	160	350	350	800	800	1150
spindle drive	kW	2,2	2,2	3	4	5,5	5,5	7,5
spindle taper		MK 3	MK 4	MK 4	MK 5	MK 5	MK 6	MK 6
throat	mm	280	280	335	335	375	375	480
vertical head travel	mm	200	200	200	195	260	260	300
quill stroke	mm	200	200	250	250	250	250	310
speed range / #	min^{-1}	50-2000/9	50-2000/9	31,5-1400/12	45-850/9	40-570/9	40-570/9	26-320/6
spindle feeds / #	mm/U	0,056-1,80/9	0,056-1,80/9	0,056-1,80/9	0,056-1,80/9	0,1-0,78/6	0,1-0,78/6	0,1-0,71/6
max. spindle nose-to-table dist.	mm	725	690	750	725	860	810	850
vertical table travel	mm	300	300	315	315	300	300	300
T-slot width / #	mm	14 / 3	14 / 3	18 / 3	18 / 3	22 / 3	22 / 3	22 / 3
table setup area	mm	400 x 550	400 x 550	480 x 560	480 x 560	650 x 550	650 x 550	760 x 650
coolant pump	W	90	90	90	90	90	90	75
flow rate	l/min	25	25	25	25	25	25	25
overall dimensions (LxWxH)	mm	962x847 x2340	962x847 x2340	1040x90 5x2530	1040x905 x2535	965x1452 x2787	965x1452x 2787	1465x970 x3170
weight	kg	950	950	1250	1250	2500	2500	3500
Part No.		101 691	101 692	101 693	101 694	101 695	101 696	101 697

High-Speed Radial Drill Press
KSR 40 Advance

infinitely variable spindle speed with digital display, and a digital drilling depth indicator provide extra convenience for the operator

Linear guides for flexible handling and maximum rigidity

- large travel ranges and many different machining stations provide maximum setup and machining possibilities
- powerful machine for drilling, tapping, countersinking and boring
- extremely sturdy construction ensures high accuracy and reliability
- quick and precise tool positioning: hydraulic clamping is released by the push of a button, head easily swivels forward, backward and horizontally
- motorized up and down movement of drill head
- height can be adjusted without changing the drilling position
- provides great flexibility when machining large parts
- drill head swivels ± 90 degrees
- autom. feed with depth stop trigger
- thick-walled column and large dimensions of all components ensure maximum accuracy
- digital drilling depth indicator



Optional Compound Sliding Table

Optional Milling Chuck with Collets

Optional Equipment:		
Compound Sliding Table with Milling Chuck Set		
Compound Sliding Table		
table size	mm	640x205
cross travel	mm	370
linear travel	mm	150
dimensions	mm	238x320
weight	kg	238
Milling Chuck with Collets		
collet diameter	mm	6, 8, 10, 12, 14, 16
Part No.		162 364

Standard Equipment: digital speed indicator, additional setup areas at the side and rear, cube table, swivelling horizontal table, digital boring depth indicator, halogen work lamp, coolant system, tapping option, drill chuck with tool-holder bits, reducing sleeves, operating tools, operator manual

Specifications KSR 40 Advance		
max. drilling capacity	mm	Ø 40
max. tapping capacity		M30
distance (spindle-to-column)	mm	560
max. dist. (spindle nose-to-table)	mm	740
upper beam travel	mm	600
column stroke	mm	450
quill stroke	mm	200
head swivel range		± 90°
spindle mount		MT 4
spindle speeds, inf. variable	min^{-1}	50 - 315, 315 - 2000
spindle feeds (quantity)	mm/rev	0.08 - 0.5 (6)
column diameter	mm	Ø 220
table setup area (LxW)	mm	1200 x 505
T-slots, qty x width (table)	mm	3 / 18
main motor	kW/V	2.2 / 400
height adjustment motor	kW/V	1.5 / 400
coolant pump motor	kW/V	0.37 / 400
dimensions (LxWxH)	mm	1720x1200x2250
weight	kg	2740
Part no.		162 363

Column Drill Press with Milling Function

SBF 32

Drilling, tapping and light milling operations

Universal machining possibilities with a small footprint and low price.

- drill feed with change-over to micro-feed per hand wheel
- cutter mounts are clamped via M16 draw bar
- adjustable height of machine head and table
- guides are adjustable via taper gibs
- quiet gears with 12 speed levels
- compound sliding table with scale and adjustable stops for coordinate drilling and light milling work
- drilling/milling head swivels 45°
- rigid work spindle runs in tapered roller bearings

Specifications SBF 32			
Working Area			
travel	- X axis	mm	370
	- Y axis	mm	190
	- Z axis	mm	120
table setup area		mm	710 x 210
table load capacity (max.)		kg	100
T-slots (number/width/spacing)		mm	3 x 14 x 50
T-slot foot (number/width/spacing)		mm	2 x 14 x 200
spindle speeds		min^{-1}	75 - 3200 (12)
spindle mount			MT 4
quill stroke		mm	120
throat		mm	270
column diameter		mm	115
spindle nose-to-table distance		mm	610
spindle nose-to-foot dist.		mm	1180
drilling capacity in steel / ST37		mm	32
head swivel range			± 45°
thread cutting in steel / St 37			M16

Standard Equipment: draw bar, drill chuck and tool-holder bits, coolant system, operator manual

Drive Capacities		
main motor rating	kW	1.1
coolant system	kW	0,04
Dimensions/Weight		
overall dimensions (LxWxH)	mm	880 x 750 x 1700
weight	kg	340
Part No.		101 570

Column Drill Presses
SSB F Super

Production Drill Press with infinitely variable speed and thread-cutting function

Ideal for single part and batch productions, for drilling, countersinking, reaming, and thread-cutting

- very rigid construction with thick-walled column and large throat
- infinitely variable speed adjustment with back gearing and digital speed display
- 4 automatic drill feeds with electromagnetic clutch control and automatic shut-off when reaching the limit stop
- motorized table height adjustments
- large drilling table with circumferential coolant groove, height adjustment, and ± 45° swivel range
- thread cutter is included with standard equipment

digital drilling depth indicator

SSB 40 F Super is shown

SSB 50 F Super is shown

Standard Equipment: thread-cutting unit, protective shield, halogen work lamp, coolant system, operating tools, operator manual

Specifications SSB		40 F Super	50 F Super
drilling capacity (diam.)	mm	40	50
tapping capacity		M 24	M 30
table setup area	mm	520 x 440	580 x 460
quill stroke	mm	190	200
spindle mount		MT 4	MT 4
speed	rpm	60 - 2600	50 - 2200
feed / # settings	mm/rev	0.1: 0.2; 0.3; 0.4 (4)	0.1; 0.2; 0.3; 0.4 (4)
spindle nose-to-table dist.	mm	665	590
spindle nose-to-foot dist.	mm	1195	1175
throat	mm	340	360
table travel	mm	570 450 (motorized)	530 410 (motorized)
table swivel range		± 45°	± 45°
column diameter	mm	140	180
motor rating	kW / V	2 / 400	2.2 / 400
overall dim. (LxWxH)	mm	1000x650x2220	1150x680x2360
weight	kg	500	650
Part No.		162 337	101 668

Column Drill Presses

SSB 32 Xn • SSB 40 Xn

Powerful Universal Drill Presses for versatile use in the workshop

- heavy cast-iron construction with thick-walled column
- thread-cutting feature is standard
- automatic drill feeds are activated and deactivated via electromagnetic clutch
- including coolant system and work lamp
- table rotates and swivels ±45°
- 2-step motor (SSB 32 Xn)
- head swivels ±45°, adjustable height (SSB 32 Xn)
- digital speed (rpm) display (SSB 32 Xn)

Standard Equipment
- thread cutter
- protective shield
- halogen work lamp
- coolant system
- operating tools
- operator manual

SSB 32 Xn shown

SSB 40 Xn shown

Specifications		SSB 32 Xn	SSB 40 Xn
drilling capacity (diam.)	mm	32	4
tapping capacity	mm	M 20	M 24
table setup area	mm	500 x 420	570 x 480
quill stroke	mm	160	190
spindle mount		MT 4	MT 4
speed range / #	rpm	125 - 3030 / 12	72 - 2150 / 9
feed / # settings	mm/rev	0.1; 0.2; 0.3 / 3	0.12; 0.24; 0.42 / 3
spindle nose-to-table dist.	mm	630	665
spindle nose-to-foot dist.	mm	1185	1195
throat	mm	320	360
table travel	mm	415	570
head travel	mm	285	-
head swivel range		± 45°	-
table swivel range		± 45°	± 45°
column diameter	mm	120	140
motor rating	kW / V	1.2 / 400	2 / 400
overall dim.(LxWxH)	mm	835x500x1960	965x580x2275
weight	kg	540	550
Part No.		162 332	162 338

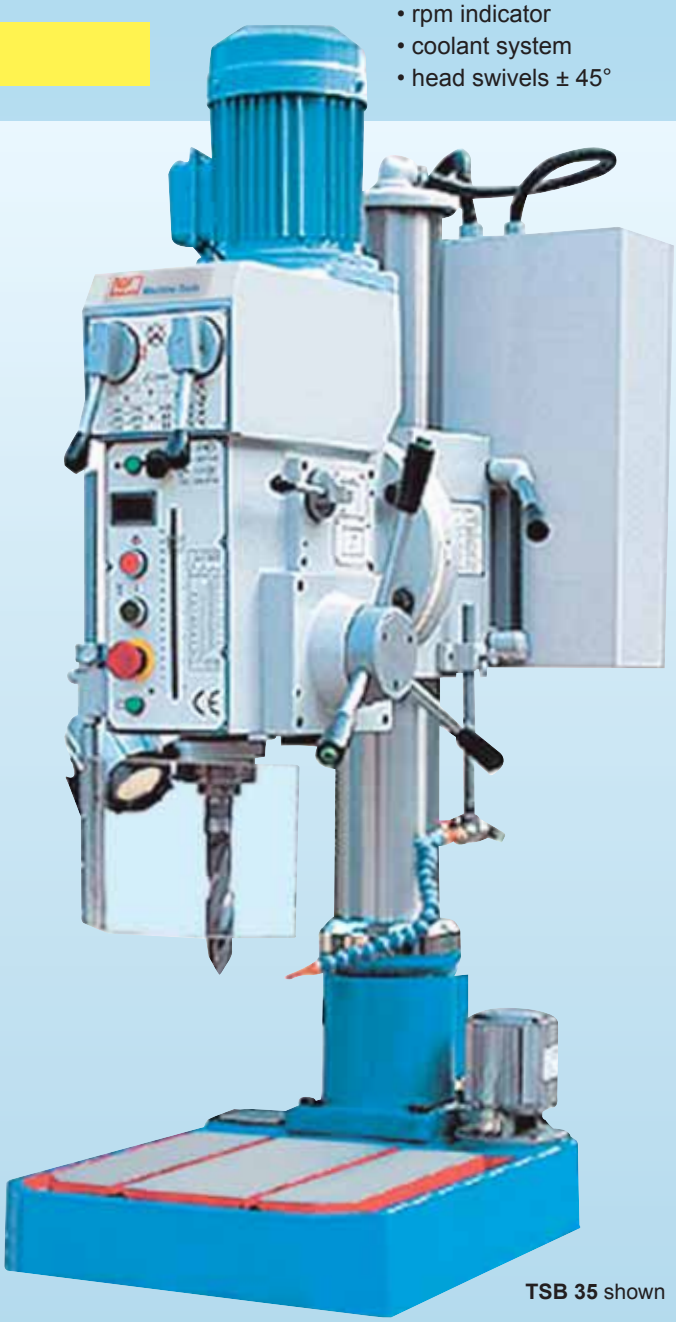
Bench-mounted Column Drill Press
TSB 25 • TSB 35

Versatile Use in Workshop Applications

- rigid cast-iron construction
- height-adjustable machine head
- 6 or 12 speed levels
- rectangular table with T-slots and circumferential coolant groove

TSB 35
- automatic quill feed
- rpm indicator
- coolant system
- head swivels ± 45°

TSB 25 shown



TSB 35 shown

Standard Equipment: base, protective shield, halogen lamp, coolant system (SSB 35), drill chuck, operating tools, operator manual

Specifications		TSB 25	TSB 35
drilling capacity in steel	mm	25	35
tapping capacity in steel		M 16	M 22
Working area			
setup area, foot	mm	310 x 320	370 x 360
quill stroke	mm	110	155
vertical head travel	mm	470	515
spindle nose-to-foot dist.	mm	650	645
throat	mm	240	320
column diameter	mm	95	120
spindle speed	min^{-1}	(6) 125-2825	(12) 125-3030
spindle mount		MK 3	MK 4
Drive Capacities			
main motor rating	kW	0,75	1
Feed			
quill feeds	mm/U	-	(3) 0,1; 0,2; 0,3
Dimensions/Weight			
dimensions	mm	700 x 410 x 1560	810 x 500 x 1670
weight	kg	220	340
Part No.		162 340	162 345

KST 16V shown

KSS 32 shown

Industrial Drill Presses

KST • KSS

Rigid table (KST) and column drill presses (KSS) with large work tables

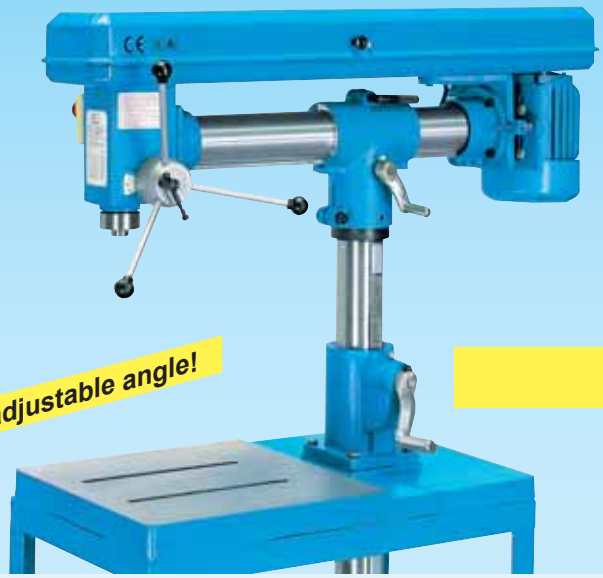
Specifications		KST 16	KST 16V	KST 25	KSS 25V	KSS 32
drilling capacity	mm	16	16	25	25	32
column diameter	mm	85	85	85	102	102
quill stroke	mm	100	100	93	130	130
throat	mm	180	180	180	230	230
max. distance						
spindle to table	mm	425	425	425	680	750
spindle to foot	mm	610	610	610	965	975
mount		MT 2	MT 2	MT 2	MT 3	MT 3
spindle speed range	min-1	(6) 290-2000	(6) 290-2000	(9) 160-1820	(6) 230-2160	(9) 160-1880
automatic feed		-	(4) 0.10; 0.14; 0.17;0.25	-	(3) 0.10; 0.16; 0.25	-
table setup area	mm	280 x 310	280 x 310	280 x 310	330 x 380	330 x 380
foot setup area	mm	245 x 245	245 x 245	245 x 245	330 x 320	300 x 325
motor, 400 V	kW	0.75	0.75	1.1	1.5	1.5
weight	kg	108	108	108	190	190
height	mm	1050	1050	1050	1580	1760
Part No.		162 510	162 500	162 506	162 502	162 508

- automatic feed (model KST 16V + KSS 25V)
- coolant system (model KSS 25V + KSS 32)
- quiet belt drive
- high precision spindle bearing
- handwheel and gear rack for table movement
- adjustable depth stop
- large quill stroke
- thick-walled column

Radial Drill Press

AKB 16

H

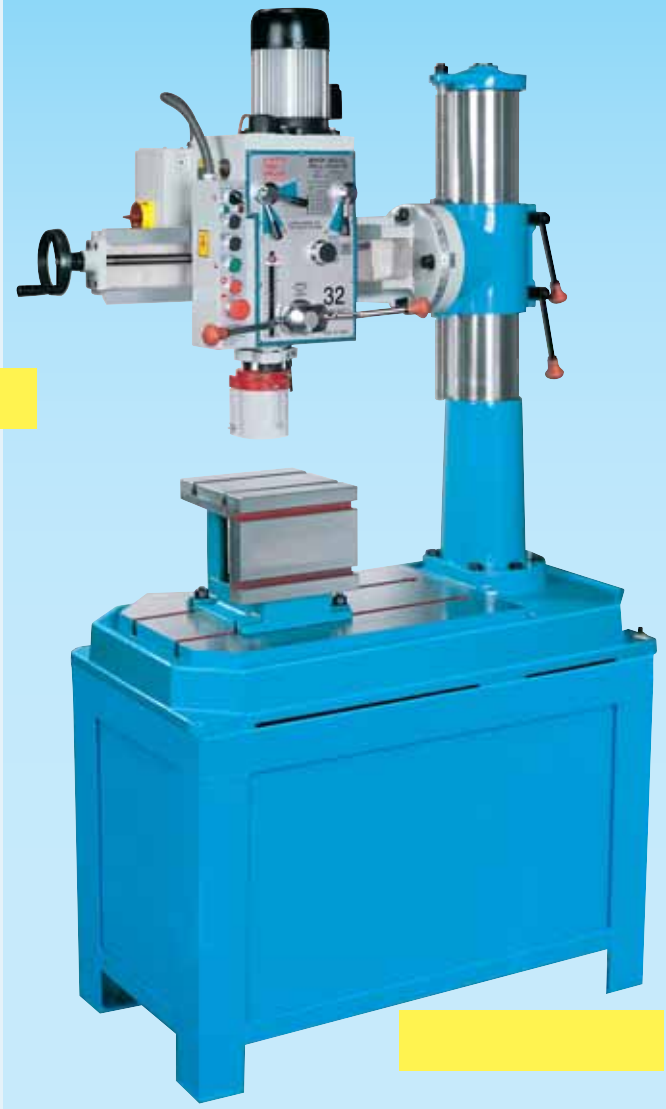


adjustable angle!

Bench-Type Radial Drill Press

R 32

F



- handwheel for arm height adjustment
- clamping lever to fix head and column
- standard with cube table and base
- tapping feature and autom. drilling feeds

Standard Equipment: base, cube table, reducing sleeve MT2 / MT1, operator manual

Precision Drill Press

Speedy Drill

D

6 mm ø
12000 min^{-1}

for Precision Mechanics and Electricians

- very high speed range up to 12000 min^{-1}
- aluminum sheaves ensure quiet operation
- handwheel for head height adjustment
- easy to read boring depth scale
- work table with T-slot
- speed control through v-belts

Specifications		R 32	AKB 16	Speedy Drill
drilling cap.	mm		16	6
cast-iron / St 37	mm	32 / 25	-	-
tapping capacity	mm	22	-	-
spindle mount		MT 3	MT 2	B 10
max. quill stroke	mm	135	80	65
spindle speed	min^{-1}	(8) 100-1600	(9) 240-3200	(3) 2000-5000-12000
feed	min^{-1}	0.08 ; 0.14 ; 0.22	-	-
distance				
spindle nose-to-foot		275 - 680	570	60 - 195
spindle center-to-column		300 - 720	160 - 520	140
arm / head rotation		360°	± 30°	360°
arm swivel		± 45°	45°	-
table dim. (LxWxH)	mm	250 x 250 x 250	750 x 450 x 850	-
foot dimensions (LxW)	mm	1050 x 550	-	200 x 200
motor rating	kW	0.75 / 400	0.5 / 400	0.25 / 400
overall dim. (LxWxH)	mm	1240 x 550 x 1195	850 x 550 x1850	620 x 320 x 615
weight	kg	380	80	32
Part No.		101 515	101 840	162 394

Gear-Drive Drill Press
KGB

Heavy-duty Gear Drill Press at a Low Price

Ill. KGB

Ill. KGB 30

Specifications		KGB 25	KGB 30
max. drill cap. in steel	mm	25	25
thread		M 16	M 16
quill stroke	mm	140	140
spindle taper		MT 3	MT 3
speed range	min^{-1}	(8) 100 - 2900	(8) 100 - 2900
spindle-to-column dist.	mm	225	225
head swivel		-	± 45°
spindle-to-table distance	mm	110 - 405	30 - 600
spindle-to-base distance	mm	-	107
travel	mm	-	460
max. head travel	mm	300	240
table setup area	mm	290 x 300	335 x 385
motor rating 400 V	kW	0,55 / 0,75	0,55 / 0,75
dimensions (L x W x H)	mm	390 x 552 x 1240	470 x 640 x 1670
weight	kg	200	270
Part no.		101 690	101 685

- 8 speed steps with positive torque transmission – no belt slippage
- easy speed adjustment via two levers
- heavy construction with thick-walled column
- hand wheel for vertical feed of head
- depth scale with adjustable depth stop
- vertical table feed (only KGB 30)
- work table swivels +/-50° (only KGB 30)

Magnetic Drill Press
MBM

Quick and easy drilling for a large variety of applications

- rigid design
- safe and reliable hold of the magnetic foot on steel or cast-iron workpieces
- industrial mount morse taper

see additional drills on page 243

Part No.	Ejector pin for core drill	H
111 885	w. 25mm cutting depth, Ø=13mm	
111 883	w. 25mm cutting depth, Ø=14mm + up	
111 886	w. 50mm cutting depth, Ø=13mm	
111 884	w. 50mm cutting depth, Ø=14mm + up	

Part No.	Design	H
111 880	adapter for core drill, MT 2	
111 882	adapter for core drill, MT 3	
111 881	adapter for core drill, MT 4	

Specifications		MBM 23	MBM 32	MBM 38	MBM 49	F
max. drilling capacity		Ø 23	Ø 32	Ø 38	Ø 49	
speed		350	160	150	120	
holding force	N	13000	14500	15500	16500	
stroke	mm	180	260	260	260	
mount		MT 2	MT 4	MT 4	MT 4	
rated voltage	V	230	380	380	380	
motor rating	kW	1	1.6	1.7	1.9	
weight	kg	25,5	51	51	51	
Part No.		101 900	101 905	101 910	101 915	

Core Drill cutting depth 25 mm		H
Part No.	Shaft-Ø	
111 913	13 mm	
111 914	14 mm	
111 915	15 mm	
111 916	16 mm	
111 917	17 mm	
111 918	18 mm	
111 919	19 mm	
111 920	20 mm	
111 921	21 mm	
111 922	22 mm	
111 923	23 mm	
111 924	24 mm	
111 925	25 mm	
111 926	26 mm	
111 927	27 mm	
111 928	28 mm	
111 929	29 mm	
111 930	30 mm	
111 931	31 mm	
111 932	32 mm	
111 933	33 mm	
111 934	34 mm	
111 935	35 mm	
111 936	36 mm	
111 937	37 mm	
111 938	38 mm	
111 939	39 mm	
111 940	40 mm	
111 941	41 mm	
111 942	42 mm	
111 943	43 mm	
111 944	44 mm	
111 945	45 mm	
111 946	46 mm	
111 947	47 mm	
111 948	48 mm	
111 949	49 mm	

Core Drill cutting depth 50 mm	
Part No.	Shaft-Ø
113 913	13 mm
113 914	14 mm
113 915	15 mm
113 916	16 mm
113 917	17 mm
113 918	18 mm
113 919	19 mm
113 920	20 mm
113 921	21 mm
113 922	22 mm
113 923	23 mm
113 924	24 mm
113 925	25 mm
113 926	26 mm
113 927	27 mm
113 928	28 mm
113 929	29 mm
113 930	30 mm
113 931	31 mm
113 932	32 mm
113 933	33 mm
113 934	34 mm
113 935	35 mm
113 936	36 mm
113 937	37 mm
113 938	38 mm
113 939	39 mm
113 940	40 mm
113 941	41 mm
113 942	42 mm
113 943	43 mm
113 944	44 mm
113 945	45 mm
113 946	46 mm
113 947	47 mm
113 948	48 mm
113 949	49 mm

Band Saws

Band saws offer a cost-effective alternative to other dividing processes.
These band saws excel with high accuracy and sawing speed.

VB

Vertical Band Saws

- vertical band saw with proven solid design
- including band welder
- work table with adjustable angle
- infinitely variable speed
- 2-level band speed ranges, starting with VB 410 for even more versatility

HB • KHS

Semi-Automatic Band Saws

- semi-automatic saw operation, saw frame lifts off automatically at the end of the cut
- manual material feed
- manual tool clamping; optional hydraulic clamping available
- feed roller track, 1200 mm
- saw frame guided on one side (HB 280 / 320)
- strong double-column design (HB 350 - 1100)

KHS:

- equipped with hydraulic part clamping

ABS

Automatic Band Saws

- automatic saw operation with automatic material feed, plus pre-setting of part quantity
- manual tool clamping; optional hydraulic clamping available
- bundle vise
- feed roller track, 1200 mm
- saw frame guided on one side (ABS 280B / 320B)
- rigid dual-column design (ABS 350B - 550B)

SBS • HB

Miter Band Saws

- semi-automatic and manual miter band saws
- quick-clamping feature
- easy angle adjustment - without shifting the material
- linear stop and base included

B 180

Band Saws for Mobile Operations

- independent sawing process with automatic shut-off at the end of the cut
- easy angle adjustment for miter cuts
- B 180 S with swivelling frame
- infinitely variable cut pressure
- including mobile base

Metal band saws
VB

Vertical Metal Band Saws with Proven Solid Construction, including Band Saw Blade Welder

VB 610 shown

- torsionally rigid steel construction
- table tilts ±15° in all directions
- **New! Electrical speed control** from 20 - 85 m/min and 120 - 500 m/min, with band speed indicator (VB 410 and higher)
- increased cutting precision
- functional and practical design
- high-precision blade guides with carbide-tipped back-roller
- blow-out feature results in improved cut control
- with replaceable plastic bandage
- hand wheel for quick blade tension adjustments
- blade welder with stress relief, saw-shears, grinding stone, chip box

optimum blade tension via hand-wheel

Standard Equipment: complete saw blade welder, lighting, 1 saw blade

Bandsaw Blades for model	Dimensions	Teeth/Inch
VB 300	2490 x 5 x 0,65 mm / 2490 x 10 x 0,65 mm	10 / 14 / 22
VB 360	2900 x 5 x 0,65 mm / 2490 x 10 x 0,65 mm	10 / 14 / 22
VB 410	3365 x 5 x 0,65 mm / 3365 x 10 x 0,65 mm	10 / 14 / 22
VB 510	3840 x 5 x 0,65 mm / 3840 x 10 x 0,65 mm	10 / 14 / 22
VB 610	3950 x 5 x 0,65 mm / 3950 x 10 x 0,65 mm	10 / 14 / (22 only for 5 mm width)

Specifications		VB 300	VB 360	VB 410	VB 510	VB 610
cutting capacity						
height x throat	mm	175 x 310	230 x 355	300 x 410	310 x 520	300 x 600
speeds	m/min	20 - 90	20 - 90	20 - 85 + 120 - 500	20 - 85 + 120 - 500	20 - 85 + 120 - 500
blade width	mm	3 - 16	3 - 16	3 - 16	3 - 16	3 - 16
table	mm	500 x 400	500 x 400	600 x 500	600 x 500	600x500/280x500
table adjustment		15°	15°	15°	15°	15°
motor rating / voltage	kW/V	0,4 / 400	0,75 / 400	1,5 / 400	1,5 / 400	1,5 / 400
table height	mm	890	960	1000	1000	1015
overall dim. (LxWxH)	mm	355 x 630 x 1560	360 x 690 x 1735	440 x 815 x 1900	700 x 1100 x 2000	700 x 1295 x 2000
weight	kg	225	250	440	500	700
Part No.		102 500	102 550	102 690	102 692	102 694

Please indicate the size and type of teeth when ordering saw blades!

Semi-Automatic Horizontal Band Saw
KHS S

Rigid columns to guide extra long parts

- infinitely variable hydraulic saw feed ensures high-quality results and minimum tool wear
- hydraulic tool clamping
- automatic shut-down upon completion of the sawing operation
- overload protection
- bundle vise
- carbide saw blade guides
- heavy-duty saw blade guide arms

KHS S 4230/70 shown

Standard Equipment:
hydraulic workpiece clamping, bundle vise, saw blade, coolant system, linear stop, operator manual

Bi-Metallic Bandsaw Blades

for model	Part No.	Dimensions	Teeth/Inch
S 4230/70	119 102	4585x34x1,10	3 / 4
S 4240/60	119 103	4870x41x1,30	5 / 8

Semi-Automatic Horizontal Band Saw
KHS

Powerful workshop saw

- infinitely variable hydraulic saw feed
- Autom. shut-down upon completion of sawing operation
- overload protection
- bundle vise
- heavy-duty saw blade guide arms

KHS 4038 shown

Standard Equipment:
hydraulic work-piece clamping, bundle vise, saw blade, coolant system, linear stop, operator manual

Bi-Metallic Bandsaw Blades

for model	Part No.	Dimensions	Teeth/Inch
KHS 4028	119 100	3350x27x0,90	4 / 6
KHS 4038	119 101	4115x34x1,10	3 / 4

Specifications			KHS S4230/70	KHS S4240/60	KHS 4028	KHS 4038
cutting capacity 90°	circular	mm	Ø 300	Ø 400	Ø 280	Ø 380
	rectangular	mm	300 x 700	400 x 600	220 x 300	250 x 400
cutting speeds		m/min	25/36/47/58/80	26/35/53/71/89	20/45/90	25/35/45/55/77
power / voltage		kW/V	3,8 / 400	4,2 / 400	2,3 / 400	3,5 / 400
overall dimensions (LxWxH)		mm	2250x990x1550	2375x1040x1620	1800 x 1150 x 1200	2100 x 1200 x 1340
weight		kg	1110	1470	580	960
Part No.			152 902	152 903	152 900	152 901

Semi-Automatic swivelling Miter Band Saw

SBS 230

High Precision and Low Cost – with bilateral swivel frame for cutting tubes, beams and profile sections

- an easy to operate, highly accurate miter adjustment ensures that virtually all cutting requirements can be met
- high-precision saw blade guide via adjustable, rigid guide arms
- saw frame lifts off automatically upon completion of the cut
- 2 band speeds via 2-step motor

Standard Equipment SBS 230: coolant system, quick-action vise, 2-step motor, 1 saw blade, material stop, band breakage control, operator manual

SBS 230 shown

SBS 330 shown

SBS 330

Flexible use in industrial and steel construction

- for machining of tubes, beams, solid materials and hollow sections of steel and stainless steel
- easy adjustment and central clamping in the selected angle from -60° to 45°
- heavy-duty drive with low maintenance
- saw frame runs in adjustable bearings on a heavy cast-iron base
- an adjustable hydraulic cylinder allows fine-tuned saw frame feed
- powerful hydraulic machine vise
- precise saw blade guide
- saw frame lifts off automatically upon completion of the cut

Standard Equipment SBS 330: coolant system, hydraulic vise, 2-step motor, 1 saw blade, feed roller table (1 m long), band breakage control, operator manual

			SBS 230	SBS 330
cutting capacity 90°	circular/square	mm	Ø 230 / 230	Ø 330 / 250
	rectangular	mm	320 x 130	460 x 250
cutting capacity 45°, left	circular/square	mm	Ø 220 / 190	Ø 305 / 250
	rectangular	mm	230 x 140	305 x 250
cutting capacity 45°, right	circular/square	mm	Ø 180 / 150	Ø 305 / 250
	rectangular	mm	220 x 60	305 x 250

Specifications		SBS 230	SBS 330
cutting speed	m/min	35 / 70	40 / 80
motor rating	kW	1 / 1.5	1.5 / 2.2
power supply	V	400	400
overall dimensions (LxWxH)	mm	1350 x 900 x 1300	2310 x 1070 x 1630
weight	kg	345	750
Part No.		152 790	152 795

Band Saw Blades		
SBS 230		
Part No.	**Dimensions**	**Teeth/Inch**
119 905	2720 x 27 x 0,90	4 / 6
119 906	2720 x 27 x 0,90	8 / 12
SBS 330		
119 940	3960 x 27 x 0,9	4 / 6
119 941	3960 x 27 x 0,9	8 / 12

Please indicate the size and type of teeth when ordering saw blades!

Horizontal Workshop Band Saw

HB 210 A • HB 250 A

Practical Workshop Saw for Miter Cuts up to 60°

- cast-iron saw frame, one-piece construction
- hydraulic cylinder for infinitely variable saw frame feed
- for miter cuts, the operator moves the saw frame - not the material
- vise with quick-action clamping feature
- pressure gauge indicates saw blade tension
- rigid saw blade guides, adjustable
- coolant system
- linear stop

NEW!
vario Speed • 230 V
www.knuth.de

HB 250 A shown

Bi-Metallic Band Saw Blades *		
for model	**dimensions**	**teeth/inch**
HB 210 A	2080 x 20 x 0,90	4/6, 8/12
HB 250 A	2480 x 27 x 0,90	3/4, 4/6, 6, 14

Specification			**HB 210 A**	**HB 250 A**
cutting	90° circular	mm	170	225
capacity	90° rectangular	mm	140 x 210	245 x 180
	60° circular	mm	-	100
	60° square	mm	-	100
	45° circular	mm	125	160
	45° rectangular	mm	100 x 125	-
	45° square	mm	-	160
main motor		kW	0,75 / 400 V	1,1 / 400 V
cutting speeds		m/min	40; 80	45; 90
weight		kg	158	200
dimensions (LxBxH)		mm	1300 x 580 x 780	1380 x 580 x 930
Part no.			152 850	152 796

Roller Conveyor

- steel frame made of U-profiles, bolted cross travels,
- steel support rollers
- head plate for installation at the machine (one-sided)
- the U-profile is designed to ensure friction-free, smooth operation even with lateral projections
- material discharge roller track with adjustable linear stop
- sturdy supports with wide adjustment range from 650 to 850 mm

Long Feed Roller Stand Length	Distance	Number of Supports	Max. Load Capacity	Part No.
1000 mm	330 mm	4	600 kg	152 870
2000 mm	280 mm	4	1200 kg	152 871
3000 mm	270 mm	6	1800 kg	152 872
Discharge Roller Track with Linear Stop				
1000 mm	330 mm	4	600 kg	152 873
2000 mm	280 mm	4	1200 kg	152 874
3000 mm	270 mm	6	1800 kg	152 875

*** Please indicate the size and type of teeth when ordering saw blades!**

Dual Miter Band Saws
SBS 225 • 255 • 270 H

Versatile and powerful

- rigid saw frame, one-piece cast-iron construction
- features a pressure gauge for exact saw blade tensioning – longer tool life, lower costs and more precise cuts
- swivels 60° to the right, and 45° to the left

SBS 270 H shown

SBS 225 shown

- 2 belt speeds for a wide spectrum of applications
- includes coolant system
- hydraulic cylinder for infinitely variable saw frame feed
- semi-automatic band saw SBS 270 H features hydraulic workpiece clamping and automatic frame lift-off upon completion of the cut

Standard Equipment:
1 saw blade, coolant system, machine base, pressure gauge for blade tensioning, hydraulic cylinder for automatic feed

Options	Part No.
Mobile base with rollers 700 x 650 x 60 mm (for SBS 225 and SBS 255)	152 701

Bi-Metallic Band Saw Blades

for model	dimensions	Teeth/Inch
SBS 225	2480 x 27 x 0,90	3/4, 4/6
SBS 255	2750 x 27 x 0,90	3/4, 4/6
SBS 270 H	2925 x 27 x 0,90	3/4, 4/6

Specifications			SBS 225	SBS 255	SBS 270 H
cutting capacity 90°	circular / square	mm	225 / 150	255 / 230	270 / 260
	rectangular	mm	245 x 150	315 x 230	350 x 250
cutting capacity 60°, forward	circular / square	mm	90	115	140
	rectangular	mm	110 x 90	115 x 160	140 x 140
cutting capacity 45° reverse	circular / square	mm	130	160	200 / 170
	rectangular	mm	130 x 130	160 x 160	200 x 140
cutting capacity 45°, forward	circular / square	mm	150 / 145	195	230 / 150
	rectangular	mm	154 x 215	195 x 230	230 x 150
cutting speed		m/min	45, 90	45, 90	36, 72
motor rating		kW / V	1,1 / 400	1,5 / 400	1,9 / 400
overall dimensions (LxWxH)		mm	1460 x 730 x 1060	1720 x 730 x 1130	1930 x 970 x 1120
weight		kg	295	380	600
Part No.			152 785	152 786	152 787

Please indicate the size and type of teeth when ordering saw blades!

Fully Automated Band Saw

ABS 280 B • ABS 320 B

Low-cost cutting solution with high productivity for automatic cutting to length of solid materials, tubes, profile sections, etc. made of steel, cast-iron, non-ferrous and light metals

A bundle vise is provided for cutting entire material packs to length

- **saw frame** and machine bed are made of premium cast-iron for torsion-free performance even under maximum loads
- new helical gears ensure above-average service life and low maintenance
- infinitely variable saw frame feed
- large sized hydraulic cylinder for constant quiet operation
- automatic **adjustment of cutting height**

Bi-Metallic Band Saw Blades

for model	Dimensions	Teeth/Inch
ABS 280 B	3400 x 27 x 0,90	3/4, 6/10
ABS 320 B	3660 x 27 x 0,90	3/4, 4/6, 5/8

Standard Equipment:
autom. band breakage control, bundle vise, coolant system, saw blade, operating tools, chip wiper, feed roller table 120 cm, operator manual

Specifications		ABS 280 B	ABS 320 B
Cutting Capacity			
cutting capacity (circular)	mm	Ø 280	Ø 320
cutting capacity (square)	mM	270	300
cutting capacity (rectangular)	mm	250 x 280	320 x 200
stop length	mm	500	500
cutting speed, infinitely variable	m/min	20 - 100	20 - 100
Working area			
feed roller table length	mm	1200	1200
number of feed rollers		4	6

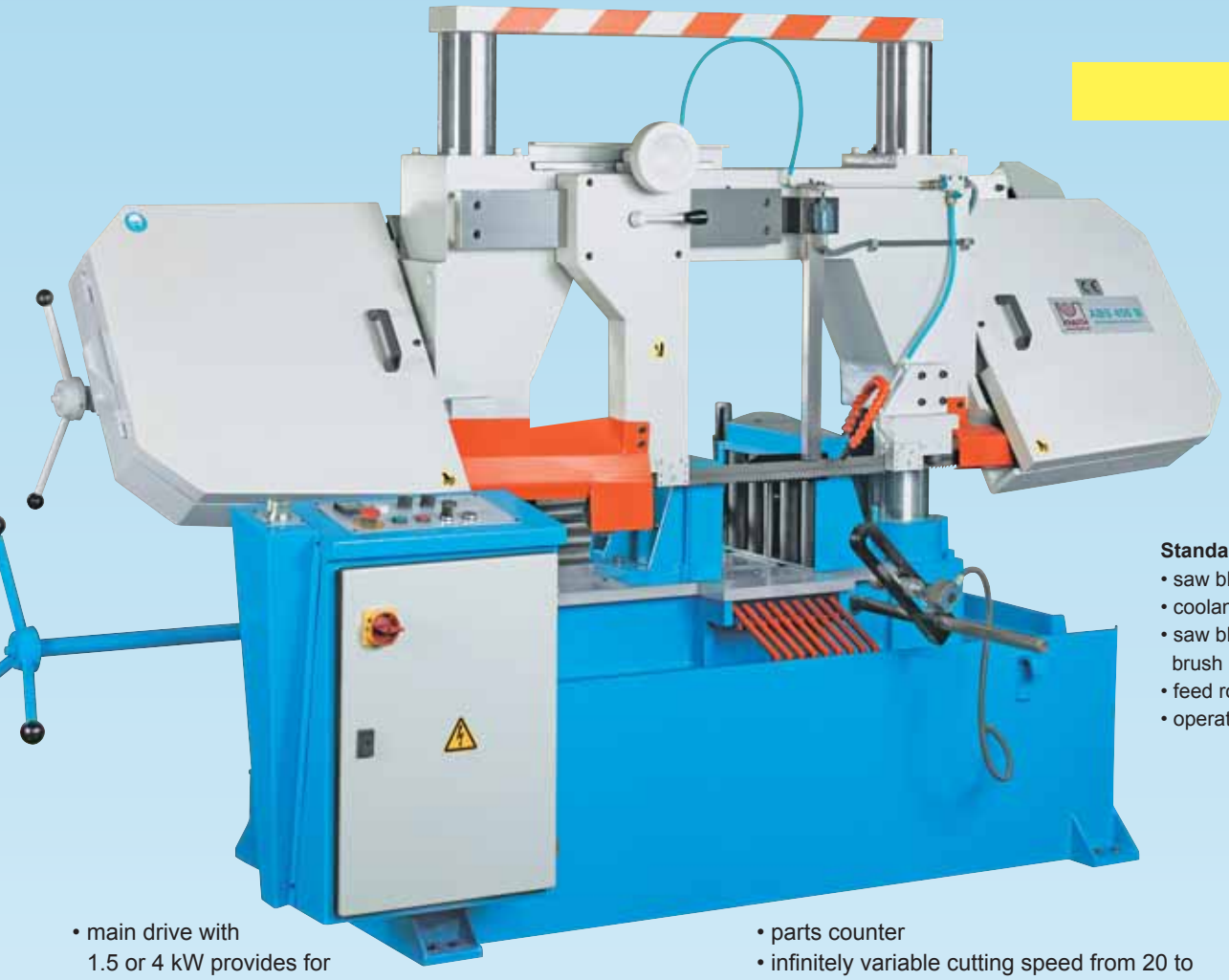
Drive Capacities			
main motor rating	kW	1.5 / 400 V	1.5 / 400 V
motor rating hydraulic pump	kW	0.37	0.37
feed motor rating	kW	0.25	0.25
motor rating Coolant pump	kW	0.12	0.12
Dimensions/Weight			
overall dimensions (LxWxH)	mm	1800 x 850 x 1200	1850 x 850 x 1250
weight	kg	600	660
Part No.		152 750	152 755

Please indicate the size and type of teeth when ordering saw blades!

High-Performance Bandsaws

ABS 320 C • 350 B • 450 B • 550 B

Fully automatic high-performance bandsaw with twin column guide system



Standard Equipment:
- saw blade, bundle vise
- coolant system
- saw blade cleaner brush
- feed roller table
- operator manual

- main drive with 1.5 or 4 kW provides for sufficient power reserves
- rigid dual-column guide for parallel cuts
- torsion-resistant weldment
- helical gears, designed for continuous operation with above average life time and low maintenance
- parts counter
- infinitely variable cutting speed from 20 to 100 mm/min for optimum cutting results
- band breakage control
- carbide saw-band guides
- coolant system with 3 nozzles
- feed roller table and linear stop are standard equipment

Bi-Metallic Band Saw Blades for model	Dimensions	Teeth/Inch
ABS 320 C	4130 x 27 x 0,90	3/4, 4/6, 5/8
ABS 350 B	5000 x 34 x 1,10	3/4, 4/6, 5/8
ABS 450 B	6000 x 41 x 1,30	3/4, 4/6, 5/8
ABS 550 B	6800 x 41 x 1,30	3/4, 4/6, 5/8

Specifications		ABS 320 C	ABS 350 B	ABS 450 B	ABS 550 B
cutting capacity					
- circular /square	mm	Ø 320 / 320	Ø 350 / 350	Ø 450 / 450	Ø 550 / 550
- rectangular	mm	350x320	370x350	470x450	570x550
cutting speed (infinitely var.)	m/min	20-100	20 -100	20 - 100	20 - 100
drive motor rating	kW	1,5/400 V	2,2/400V	3/400 V	4/400 V
hydraulic motor	kW	0,55	0,75	1,1	1,1
feed motor	kW	0,25	0,25	0,25	0,55
stop length	mm	500	500	500	500
roller track length	mm	1000	1000	1000	1000
dimensions	mm	2100x900x1500	2700x1100x1650	3100x1200x1880	3350x1200x2100
weight	kg	940	1400	1800	2100
Part no.		152 756	152 760	152 765	152 770

Please indicate the size and type of teeth when ordering saw blades!

Semi-Automatic Band-Saws

HB 280 B • HB 320 BS

Highly reliable Horizontal Band Saws with easy, comfortable miter adjustment

HB 320 BS shown

- infinitely variable hydraulic saw advance ensures optimum cutting results and minimized tool wear
- automatic shut-off upon completionof saw process
- band break sensor activates automatic shut-off upon band break
- helical gears, designed for continuous operation with above average life timeinfinitely variable cutting speed from 20 to 100 m/min
- coolant system

Highlight HB 320 BS

- saw frame swivels allowing universal angle setting
- - no need to swivel the workpiece!
- including feed roller stand, 1.2 m long

HB 280 B shown

Standard Equipment: part clamping fixture, coolant system, longitudinal stop, 1.2 m long feed roller table (only HB 320 BS), operator manual

Bi-Metallic Band Saw Blades		
for model	HB 280 B	HB 320 BS
Dimension	3400 x 27 x 0,90	4160 x 27 x 0,90
Teeth/Inch	3/4, 6/10	3/4, 6/10

Specifications		HB 280 B	HB 320 BS
cutting capacity 90°	- circular mm	Ø 280	Ø 320
	- square mm	280 x 280	320 x 320
	- rectangular	350 x 200	610 x 320
cutting capacity 45°	- circular mm	Ø 240	Ø 320
	- square mm	210	320
	- rectangular	260 x 320	355 x 320
cutting capacity 30°	- circular mm	-	260
	- square mm	-	225
	- rectangular	-	280 x 200

cutting speed infinitely var.	m/min.	20 - 100	20 - 100
motor rating / voltage	kW/V	1,5 / 400	1,5 / 400
coolant pump	kW	0.12	0.12
dimensions (LxWxH)	mm	1800 x 850 x 1000	2100 x 1200 x 1340
weight	kg5	30	1000
Part No.		152 797	152 798

Please indicate the size and type of teeth when ordering saw blades!

Semi-Automatic Band-Saws
HB

HB 800 shown

Sawing with highest precision, where others meet their limits!
High-performance band saw, suitable for very large workpieces

- rigid dual-column guide saw-frame
- for precise sawing of sections and solid material like steel, aluminum and other material
- helical gears, designed for continuous operation with above average life time and low maintenance
- infinitely variable cutting speed from 20 to 100 mm/min provides high cutting efficiency
- vertical force regulated by hydraulic cylinder
- adjustable cutting height
- autom. saw-band shutdown and startup at the end of each cut

Standard Equipment: manual workpiece clamping (HB 350, HB 450, HB 550), hydraulic workpiece clamping (HB 800, HB 1100), coolant system, feed roller table 1,2 m (except for HB 1100), infinitely variable cutting speed, operator manual

Bi-Metallic Band Saw Blades

for model	Dimensions	Teeth/Inch
HB 350	5000 x 34 x 1,10	3/4, 4/6, 5/8
HB 450	6000 x 41 x 1,30	3/4, 4/6, 5/8
HB 550	6800 x 41 x 1,30	3/4, 4/6, 5/8
HB 800	8200 x 41 x 1,30	3/4, 4/6, 5/8
HB 1100	12000 x 67 x 1,60	3/4, 4/6

Specifications		HB 350	HB 450	HB 550	HB 800	HB 1100
cutting cap. 90°						
- circular / square	mm	Ø 350 / 350	Ø 450 / 450	Ø 550 / 550	Ø 800 / 800	Ø 1100 / 1100
- rectangular	mm	520 x 350	650 x 450	750 x 550	850 x 800	1100 x 1300
cutting cap.45°						
- circular / square	mm	Ø 270 / 270	Ø 350 / 350	Ø 400 / 400	Ø 480 / 480	-
- rectangular	mm	270 x 350	350 x 450	400 x 550	480 x 800	-
cutting speed	m/min	20-100 infinitely var.	20-100 infinitely var.	20-100 infinitely var.	20-100 infinitely var..	20-100 infinitely var.
motor rating / voltage	kW/V	2,2 / 400	3 / 400	4 / 400	4 / 400	7,5 / 400
dimensions (LxWxH)	mm	2700 x 1100 x 1650	3050 x 1200 x 1880	3350 x 1200 x 2080	3850 x 1200 x 2600	5300 x 1200 x 3400
weight	kg	1300	1700	2000	2400	6800
Part No.		152 800	152 805	152 810	152 815	152 801

Please indicate the size and type of teeth when ordering saw blades!

Miter band saws

B 180 • B 180 S

Band Saws - an economic alternative to frame and circular saws

- thin saw blade for reduced material removal
- long life - the saw blade is used over its entire length
- can be used as horizontal or vertical band saw (support table for vertical sawing is included)
- exact cuts - rigid construction prevents belt track deviations
- support pressure is infinitely variable from 0 to maximum pressure via hydraulic cylinder
- quiet, low-vibration operation
- **B 180** - vise allows angular cuts from 90° to 45°
- **B 180 S** - Saw frame swivels between 90° and 45° - it is not necessary to move the material

B 180 S shown

B 180 is shown

Standard Equipment:
mobile base, saw blade, table for vertical cutting, coolant system

Options	Part No.
• coolant concentrate 5 l	103 184
• Power Worker chip lift-off device	123 040

Band Saw Blades		
Part No.	**dimensions**	**Teeth/Inch**
109 774	2360 x 20 x 0,80	8
109 775	2360 x 20 x 0,80	14
Bi-Metallic Band Saw Blades		
119 774	2360 x 20 x 0,80	8 / 12
119 775	2360 x 20 x 0,80	10 / 14

Specifications		B 180	B 180 S
cutting capacity 90°			
- circular	mm	180	180
- rectangular	mm	180 x 290	180 x 220
cutting capacity 45°			
- circular	mm	100	100
- rectangular	mm	100 x 120	100 x 120
main motor	kW	0,75 / 400 V	0,75 / 400 V
belt speed	m/min	22 / 33 / 45 / 65	39 / 66 / 82
dimensions	mm	1244 x 457 x 1580	1220 x 610 x 1580
weight	kg	105	180
Part No.		102 750	102 745

Please indicate the size and type of teeth when ordering saw blades!

Metal Circular Saw
KHK 350

Semi-Automatic Circular Saw with pneumatic part clamping

- quick-action vise with pneumatic clamping reduces setup time
- automatic sawing process with infinitely variable feed speed
- two saw blade speeds for optimum cutting results in different materials
- miter cuts up to ± 45°
- gears running in oilbath

Standard Equipment: quick-action clamping vise, linear stop, foot switch, machine base, coolant system

Specifications KHK 350			
cutting capacity	90° rectangular	mm	135 x 110
	90° circular /square	mm	120 / 120
	45° rectangular	mm	110 x 90
	45° circular /square	mm	110 / 110
speed (rotations)		min^{-1}	38, 19
vise opening		mm	145
air supply		bar	6
air consumption		l/min	120
main motor rating		kW	1,5 / 400 V
dimensions		mm	1100 x 640 x 1680
weight		kg	310
Part No.			102 139

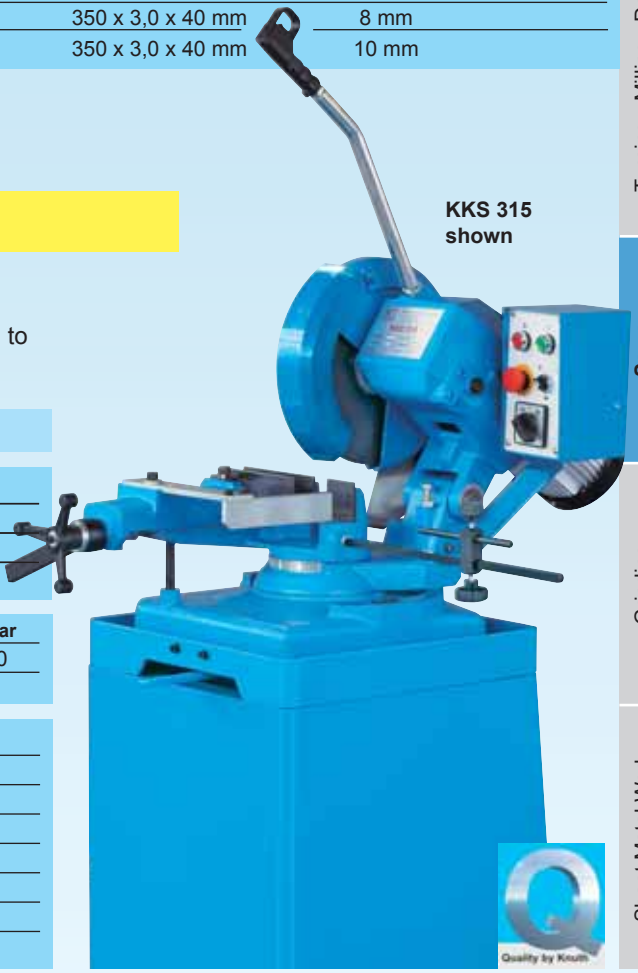
Saw-Blades

Part No.	dimensions	circular pitch
102 430	350 x 3,0 x 40 mm	4 mm
102 431	350 x 3,0 x 40 mm	6 mm
102 432	350 x 3,0 x 40 mm	8 mm
102 433	350 x 3,0 x 40 mm	10 mm

Metal Circular Saw
KKS

Rigid, Reliable and Maximum Angle Precision

- oil-bath lubricated gear
- integrated coolant tank
- head swivels 45° to the left and to the right



KKS 315 shown

Standard Equipment: quick-clamp vise, base and coolant system

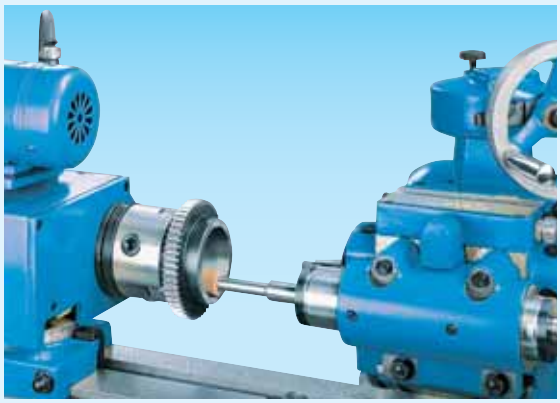
Saw-Blades

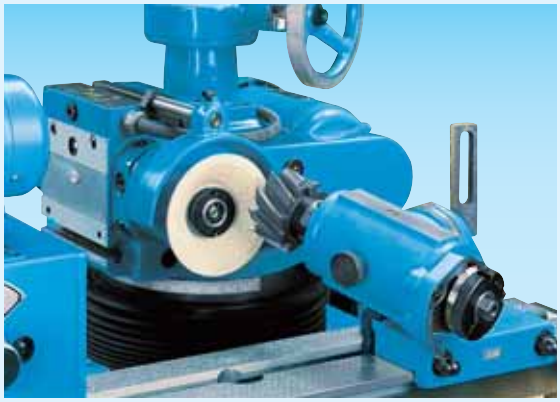
for Modell	Part No.	dimensions	circular pitch
KKS 250	109 803, 109 802	250 x 2,0 x 32 mm	4, 6
KKS 315	109 741, 109 742	315 x 2,5 x 32 mm	4, 6

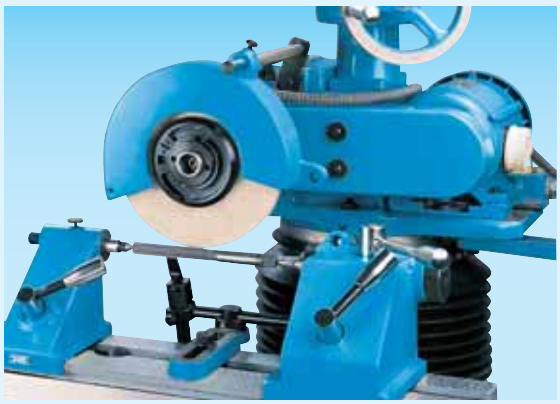
KKS 250	circular	square	rectangular
90°	80	65	80x55
45° L/R	65/58	55/45	60x55/55x45

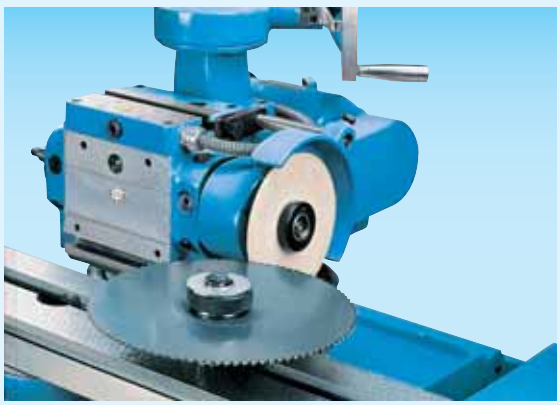
KKS 315	circular	square	rectangular
90°	100	82	110x70
45° L/R	100	82	85x70

Specifications		KKS 250	KKS 315
max. sawblade diam.	mm	250	315
motor 400 V 2-speed.	kW	0,73 / 2,2	1,47 / 2,2
speed (rotations)	min^{-1}	45, 90	44, 88
width of vise	mm	100	120
weight	kg	131	175
Part no.		102 130	102 136





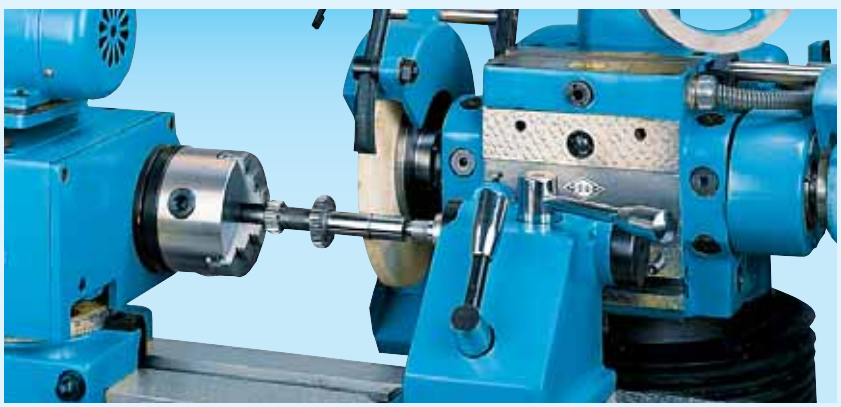




Universal Grinding Machine
Multi-Grind

Specifications Multi-Grind		
max. workpiece diameter	mm	200
max. workpiece length	mm	500
max. external grinding dimensions	mm	Ø 5 - 50 x 400
max. internal grinding dimensions	mm	Ø 10 - 50 x 75
tool grinding dimensions	mm	200 x 500
surface grinding dimensions	mm	200 x 50
max. workpiece weight	kg	ca. 10
taper of headstock		MT 2
speeds of headstock	min^{-1}	110, 200, 300
swivel		± 90°
chuck diameter	mm	100
traverse (manual)		
grinding headstock		
- vertical	mm	200
- transverse	mm	200
scale division for height adjustment	mm	0,01
height adjustment per handwheel rotation	mm	1
scale division for transverse feed fine/coarse	mm	0,005 / 0,02
transverse adj. per handwheel rotation fine/coarse	mm	1 / 4
(horizontal) swivel range of grinding headstock		± 90°
grinding spindle speed	min^{-1}	2500
max. grinding wheel dimensions	mm	Ø 200 x 20 x 75
internal grinding spindle speed	min^{-1}	13500
die grinder	mm	Ø 25 x 20 x 6
	mm	10 x 10 x 3
max. longitudinal table traverse	mm	480
longitud. feed speed (hydraulic)	mm	ca. 0,01 - 6
manual, w/ hydraulic support	m/min	bis ca. 7
table swivel range		+ 45° - 30°
tailstock taper		MT 2
quill travel	mm	14
total drive output	kW	2,525
grinding wheel motor output	kW	1,1
dimensions (L x W x H)	mm	1520 x 1130 x 1170
weight	kg	1300
part no.		102 781

Standard Equipment: coolant system, dust suction system, tool mount / indexing head MT 4, internal grinding unit, including 2 die grinders, 4 grinding wheels, three-jaw chuck (100 mm diam.), left tailstock, right tailstock MT 2, center point, half center point, balancing stand, spindle extension, vise for surface grinding (3-D angle adjustment), spring stop, 5 drivers, dresser, various splash guards, wheel guard (2x), automatic central lubrication, operation manual, test certificate



Universal Grinding Machine

Multi-Grind

When we designed the KNUTH Multi-Grind, our goal was to combine all functions of cylindrical, surface, and tool grinding into one machine.

Ideal for tool and die construction, mechanical production, design processes, laboratories and training

The functionality of the Multi-Grind ranges from external and internal cylindrical grinding to taper grinding. The Multi-Grind also allows easy tool grinding (sharpening of cutters, reamers and turning tools) and is suitable for light surface grinding
jobs

Three-Point Bearing
The custom three-point bearing of the grinding spindle ensures minimum temperature effects and consistent grinding quality.

Feed Drives
Hydraulic table feed (longitudinal) with automatic change of direction. An additional
manually operated longitudinal feed with hydraulic support allows feed speeds up to 7 m/min.

Grinding Headstock
Special grinding headstock design allows simultaneous setup of 2 different grinding wheels.
The grinding headstock travels transverse, is height adjustable, and swivels around the vertical axis.

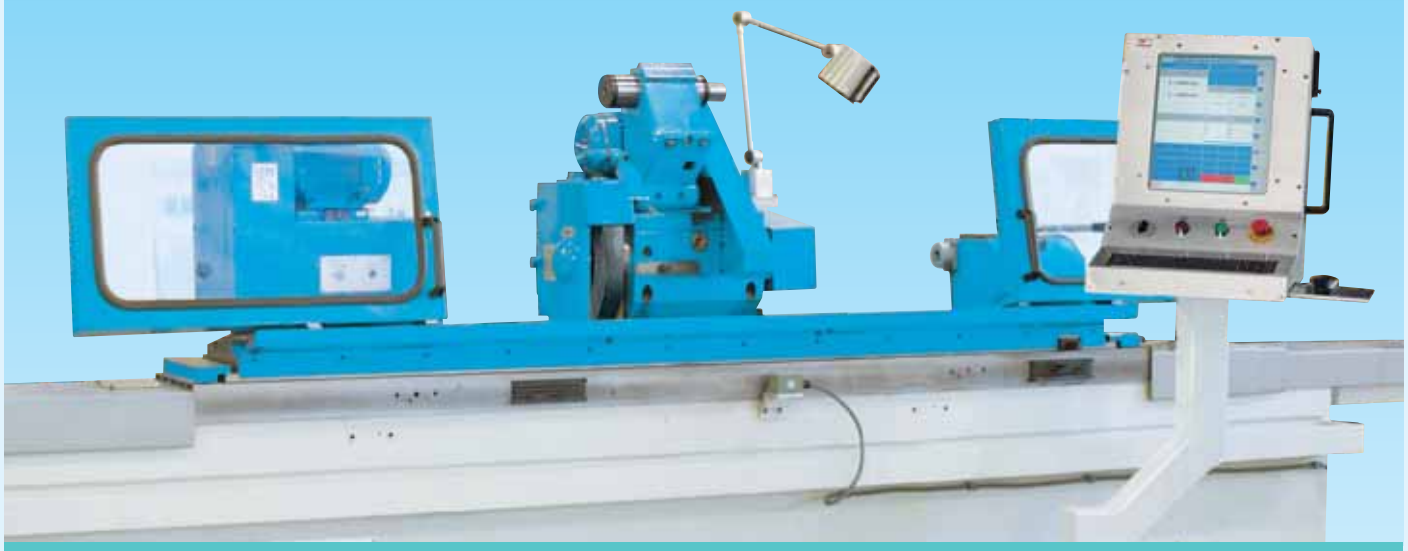
Speeds
The headstock operates at 3 different speeds (110, 200, 300 min^{-1}) which are set through an easy to operate gear shift lever.

Additional Features ...
- Central lubrication system
- Sturdy construction – the KNUTH Multi-Grind body is made of solid cast-iron and weight 1300 kg; minimizes vibration effects
- Electrical components are mounted easily accessible in a control cabinet and conform to VDE regulations
- an extensive assortment of accessories, incl. coolant system (delivery up to 22 l/min.), and vacuum system are standard equipmenmt

Steuerung GPlus 450

optimized for maximum operator corform when operating cylindrical grinding machines -

customized for the strict requirements of demanding grinding operations



Optional Equipment: Pulcom Measuring System Part No. 250 600

Standard Equipment for RSM 1000 CNC and RSM 1500 CNC: GPlus 450 control, inside grinder, grinding wheel dresser, 3-jaw chuck Ø 200 mm, steady rest, follow rest, grinding wheel balancing station, balancing arbor 80 mm, center MT 4, rough grinding wheel, fine grinding wheel, inside grinding arbor, foundation bolts, coolant system with magnetic separator, operating tools, programming and operating instructions

Specifications RSM		500 CNC	1000 CNC	1500 CNC
Working area				
center height	mm	100	180	180
center width	mm	520	1000	1500
grinding length (max.)	mm	500	1000	1500
workpiece weight (max.)	kg	10	150	150
workpiece diameter (max.)	mm	150	320	320
X axis travel	mm	115	200	200
Z axis travel	mm	-	1200	1700
inside grinding diameter	mm	10 - 40	30 - 100	30 - 100
inside grinding depth	mm	50	125	125
table feed, infinitely variable	m/min	0 - 4,5	0.1 - 5	0.1 - 5
table swivel (right / left)		7° / 7°	7° / 3°	6° / 3°
top slide strokes (max.)	mm	65	200	200
Headstock				
work spindle speed, infinitely variable	min^{-1}	50 - 600	25 - 220	25 - 220
headstock swivel range r/l		10° / 90°	90°	90° / 90°
work spindle taper		MT 4	MT 4	MT 4
work spindle, taper		MT 4	MT 4	MT 4
Grinding Headstock				
grinding spindle speed	rpm	2000	1670	1670
inside grinding spindle speed	rpm	17000	10000	10000
grinding headstock swivel range (r+l)		180°	30°	30°
Tailstock				
tailstock taper		MT 2	MT 4	MT 4
Drive Capacities				
work spindle motor rating	kW	0.37	1.5	1.5
outside grinding motor rating	kW	2.2	5.5	5.5
inside grinding motor rating	kW	0.36	1.1	1.1
motor rating X axis feed	kW	0.85	1.8	1.8
motor rating Z axis feed	kW	1.3	2.9	2.9
total connected load	kVA	6	15	15
Dimensions/Weight				
grinding wheel dimensions	mm	300 x 40 x 127	400 x 50 x 203	400 x 50 x 203
dimensions	mm	1210 x 1246 x 1140	3220 x 2000 x 2050	4220 x 2000 x 2050
weight	kg	2200	5300	6100
Part No.		100 014	100 140	100 141

CNC Cylindrical Grinding Machines

RSM 500 • 1000 • 1500 CNC

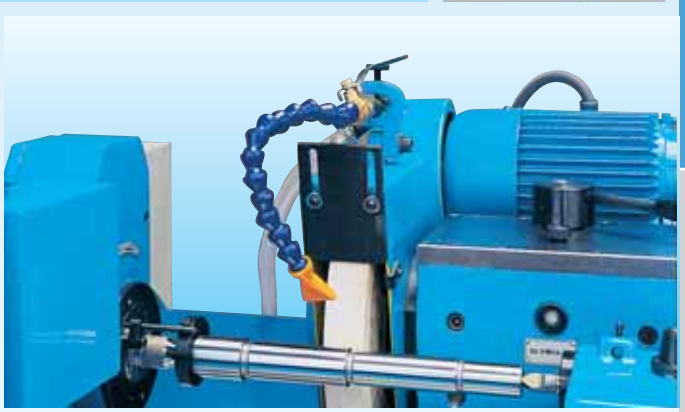
High-Precision Cylindrical Grinding Machine for Inside and Outside Machining

- superior machining quality and high flexibility for series and small batch productions
- these proven, solid machine frames with wide V-guides and boxways ensure low vibrations for optimum work results
- axes are driven by a servo drive and run on precision preloaded ball screws
- high-precision hydrodynamic bearings of the grinding spindle ensure optimum grinding results
- graphic support for grinding cycles makes this machine especially easy to use
- inside grinder is included in the standard package

Standard Equipment for RSM 500 CNC: GPlus 450 control, inside grinder, 3-jaw chuck (80 mm), balancing station, truing feature, centers, dressing feature, grinding wheel flange, coolant system, automatic central lubrication, operator manual and programming instructions

GPlus 450
www.knuth-gplus.de

measuring system (option)



easy programming of grinding cycles

Cylindrical Grinding Machines
RSM 500 B

for external and internal cylindrical grinding in single part and series productions

- massive, vibration-dampening machine frame for maximum precision
- hardened and ground guides
- quick change-over from outside to inside grinding
- adjustable dual-sided spindle support with segmented plain bearings
- hydrodynamic support of the headstock ensures superior precision and surface quality
- infinitely variable table advance
- tailstock quill can moved hydraulically via foot switch
- coolant system with filtration

incl. Position Indicator

Standard Equipment: 2-axis position indicator, inside grinder, 3-jaw chuck (165 mm), chuck flange, balancing station, balancing arbor, truing feature, centers, grinding wheel flange, coolant system, open rest, drive chuck, operating tools, operator manual

Options	Part No.	Options	Part No.
• closed rest	250 239	• radius tool	250 240

Specifications RSM 500 B		
Working area		
center height	mm	135
center width	mm	500
grinding diameter	mm	8 - 200
workpiece weight (max.)	kg	80
grinder head travel	mm	150
grinder head travel on top slide	mm	550
inside grinding diameter	mm	13 - 100
inside grinding depth	mm	125
table swivel range (max.)		-5° / +9°
Headstock		
work spindle taper		MT 4
work spindle swivel range		± 90°
work spindle speed	rpm	(6) 25 - 380
Grinding Headstock		
grinding spindle speed	rpm	1800
inside grinding spindle speed	rpm	20000
circumferential speeds	m/sec	35
grinding headstock swivel range		± 180°
Feed		
feed speed Z axis (inf. var.)	m/min	0.1 - 4
feed per hand-wheel rotation - X axis	mm	1
feed per scale division X axis	mm	0.005
Accuracy		
accuracy at chuck, outside	mm	0.0025
accuracy at chuck, inside	mm	0.0025
accuracy between centers	mm	0.01 / 500
roughing depth, outside		Ra 0.032
roughing depth, inside		Ra 0.063
Tailstock		
tailstock taper		MT 4
tailstock quill stroke	mm	25
Drive Capacities		
motor rating grinding spindle	kW	4
work spindle motor rating	kW	0.75
total connected load	kVA	5.4
Dimensions/Weight		
grinding wheel dimensions	mm	400 x 50 x 203
dimensions	mm	2500 x 1600 x 1500
weight	kg	2500
Part No. with position indicator		101 435

For more information, please contact us or visit www.knuth.de

Cylindrical Grinding Machine
RSM 750

Universal Cylindrical Grinder, mid-range size, for external and internal grinding; suitable for parts and series production

F

incl. position indicator

- high-quality, rigid construction for high grinding precision
- precise alignment of spindle head and grinding headstock
- extremely quiet operation and high-precision guideways
- grinding spindle with double-sided support provided by 3-segmented bronze plain bearings
- longitudinal and transverse travel on a combination of V-guides and flat-guides
- grinding headstock can be rotated by 180° to switch between internal and external grinding
- hydraulic longitudinal feed, infinitely variable
- hydraulic or manual return and positioning of grinding wheel
- machine table swivels for taper grinding
- hydraulic tailstock control via foot pedal

Accuracy (between centers):		
eccentricity (external)	mm	0.003
cylindrical deviation	mm	0.005
roughing depth	µm	Ra<0.04

Standard Equipment: 2-axis position indicator, 3-jaw chuck Ø 125 mm, coolant system, grinding wheel dresser, balancing stand, center points, internal grinding unit, dog plate, operating tools, operator manual

Specifications RSM 750		
center height	mm	125
max. grinding length	mm	750
grindng diameter	mm	8 - 200
max. part weight	kg	50
max. longitudinal table travel	mm	800
max. table swivel range		± 7°
table feed	m/min	0.1 - 4
feeds per handwheel revolution	mm	6
Headstock		
spindle speeds / number	min^{-1}	60 - 460 (6)
spindle taper		MT 3
tailstock taper		MT 3
tailstock spindle stroke	mm	25
Grinding headstock		
speed	min^{-1}	1820
max. stroke	mm	150
feeds per handwheel revolution	mm	1
grinding wheel dim. (Øxwidthxbore)	mm	400 x 40 x 203
overall drive capacity	kW	4.24
dimensions (LxWxH)	mm	2700 x 1420 x 1600
weight	kg	2700
Part No. incl. position indicator		170 150

Conventional Cylindrical Grinding Machine
RSM 1000 • RSM 1500

Standard Equipment:
2-axis position indicator, inside grinding unit, open rest, closed rest, 3-jaw chuck, coolant system, grinding wheel dresser, balancing bench, balancing mandrel, surface plate, grinding wheel flange, grinding wheel, center point, front and rear splatter guard, dog plate, operating tools, operating manual, test certificate

Accuracy:
(over entire length)

concentricity	0.003 mm
cylindr. deviation	0.006 mm (over 1000)
	0.008 mm (over 1500)
roghing depth	ra<=0.32 µm

Specifications		RSM 1000	RSM 1500
center height	mm	180	180
max. grinding diameter	mm	320	320
with steady rest	mm	60	60
min. grinding diameter	mm	8	8
max. grinding length	mm	1000	1500
inside grinding diameter	mm	with rest 35-100	
	mm	without rest 30-100	
max. inside grinding depth	mm	125	125
headstock taper		MT 4	MT 4
tailstock taper		MT 4	MT 4
max. workpiece weight betw. centers	kg	150	150
tailstock spindle travel	mm	30	30
min. grinding disk feed	mm	0.0025	0.0025
max. headstock swivel		+90°	+90°
headstock speed	min^{-1}	25 - 220 (infinitely var.)	
chuck diameter	mm	200	200
max. table length travel	mm	1000	1500
max. table swivel range		+3° / -7°	+3° / -6°
table feed	m/min	0.1 - 4	0.1 - 4
gr. wheel dim.: OD x W x ID	mm	400x50x203	400x50x203

wheel speeds	m/s	35	35
speeds	rpm	1670	1670
max. wheel head travel	mm	246	246
rapid feed / return	mm	50	50
feed per handwheel rotation	mm	0.5; 2	0.5; 2
feed per scale division	mm	0.0025; 0.01	0.0025; 0.01
max. swivel range		± 30°	± 30°
inside grinding feature, grinding wheel dim.			
- max.	mm	50x25x13	50x25x13
- min.	mm	17x20x6	17x20x6
speeds	min^{-1}	10000	10000
total drive power	kW	9	9
grinding disk motor rating	kW	5.5	5.5
hydraulic motor	kW	0.75	0.75
headstock	kW	1.5	1.5
coolant pump	kW	0.12	0.12
dimensions (LxWxH)	mm	3605x1810x1515	4605x1810x1515
weight	kg	3700	4300
Part No. incl. position indicator		102 445	102 446

Conventional Cylindrical Grinding Machine

RSM 1000 • RSM 1500

High-Precision Cylindrical Grinding Machines for Inside and Outside Turning

incl. position indicator

- Grinding spindle supported on both sides in an adjustable 3-segment bushing
- A hydro-dynamic system produces an oil film between bushing and spindle to reduce vibration ensuring maximum precision and surface quality. This type of bearing increase the spindle's life and stability.
- Precise alignment of spindle head and rigid guideways ensure optimum work results in a variety of applications.
- Large-sized table swivels in two directions.
- Table movement by handwheel or automatically by hydraulic length feed.
- Infinitely variable feed.
- A dwell time can be set at the end of the table travel.
- Accuracy tested in accordance with ISO for cylindricalgrinding machines
- The sturdy spindle head swivels 30° to the left and the right
- Pawl-feed in combination with a zero-stop allows repeated feed without checking the feed scale.
- Including inside grinding feature and automatic infeed
- Hydraulic or manual rapid feed with return

High-Capacity Surface Grinders
HFS E VC • VR

High-Performance Surface Grinders with programmable Siemens PLC Control

- servo drives on X and Y axis for maximum precision
- Y and X axis can be positioned via an electronic hand wheel (VR models)

incl. Position Indicator

HFS E VR shown

Standard Equipment for HFS E VR / VC: 2-axis position indicator, grinding wheel, hydraulic oil cooler, magnetic clamping plate, grinding wheel flange, balancing shaft, balancing station, splatter guard, adjustable machine feet, electronic hand-wheel (VR models only), diamond dresser, automatic central lubrication, automatic degausser, operating tools, operating instructions

Specifications HFS E			50100 VC	60120 VC	80160 VR	80220 VR
Working area						
travel	- X axis	mm	1200	1400	1900	2500
	- Y axis	mm	540	660	900	900
sanding area (max.)		mm	1000x500	1200x610	1600x810	2200x810
workpiece weight (max.)		kg	700	970	1630	2240
spindle axis-to-table distance (max.)		mm	600	600	820	820
table dimensions		mm	1000x500	1260x610	1600x810	2200x810
T-slots (spacing x qty x width)		mm	160x3x18	200x3x18	250x3x22	250x3x22
scale ring division	- Y axis	mm	0,02	0,02	0.005 (electronic hand-wheel)	
	- Z axis	mm	0,002	0,002	0.005 (electronic hand-wheel)	
feed per hand wheel rotation						
- Y axis		mm	5	5	0,5 / 5	0,5 / 5
- Z axis		mm	0,5	0,5	0,5 / 5	0,5 / 5
Feed						
Feed Speed	- X axis	m/min	5-25	5-25	5-25	5-25
	- Y axis	mm/min	1250	1250	50-2000	50-2000
autom. feed	- Y axis	mm	0,5-20	0,5-20	1-30	1-30
	- Z axis	mm	0,005 / 0,01 / 0,015 / 0,02 / 0,03 / 0,04		0,005-0,05	0,005-0,05
Z axis rapid feed		mm/min	230	230	50-2000	50-2000
Drive Capacities						
headstock motor		kW	7,5	7,5	18,5	18,5
motor rating - hydraulic pump		kW	4	5,5	5,5	5,5
total connected load		kVA	12	14	28,5	28,5
electromagnetic clamping plate		mm	1000x500	1000x600	(2x) 800x800	(2x) 1000x800
Dimensions/Weight						
grinding wheel dimensions		mm	355x(20-50)x127	355x(20-50)x127	500x75x305	500x75x305
overall dimensions (L x W x H)		mm	4700x2200x2570	4740x2400x2570	4700x3500x2720	6000x3500x2720
weight		kg	5500	6500	10000	11500
Part No. with position indicator			124 400	124 402	124 412	124 413

Surface Grinder
HFS

High precision and easy operation ensure efficient and cost-effective machining of all your parts

incl. position indicator

HFS 4080 VC shown with optional accessories

- designed for continuous operation at maximum speed, very quiet operation, maximum accuracy and minimal heat accumulation ensure optimum machining results
- grinding spindle runs in maintenance-free preloaded precision angular ball bearings
- automatic transverse and longitudinal feed
- rapid feed for setup to desired work height (HFS VC)
- adjustable roughing, finishing, and spark-out strokes hydraulic longitudinal table movement on Y axis (HFS VC)
- double table V-guide in transverse table, V-guide and flat guides in longitudinal table
- table guideways are hardened, ground, and PTFE (polytetrafuorethylene) counterlaminated - ensuring maximum wear resistance
- high table load capacity for heavy parts
- external hydraulic unit ensures high temperature stability
- automatic central lubrication

Specifications		HFS 2550 C	HFS 3063 C	HFS 4080 C
work table dimensions	mm	250 x 500	300 x 630	400 x 800
max. part weight	kg	180	270	500
max. travel - longitudinal	mm	560	765	910
- transverse	mm	275	340	450
spindle center-to-table distance	mm	450	565	580
hydr. table movement	m/min		7 - 23	
autom. cross feed	mm		0.1 - 8	
rapid cross feed	mm/min		990	
scale ring division Y axis	mm		0.02	
rapid vertical feed	mm/min		460	
scale ring division Z axis	mm		0.005	
grinding wheel dimensions	mm	200 x 20 x 31,75	350 x 40 x 127	350 x 40 x 127
grinding spindle motor	kW	2,2	5,5	5,5
dimensions (LxWxH)	mm	2650 x 2150 x 1675	2800 x 2200 x 1890	3600 x 2400 x 1890
weight	kg	1800	2700	3800
Part No. incl. position indicator		124 284	124 292	124 300

with autom. vertical feed		HFS 2550 VC	HFS 3063 VC	HFS 4080 VC
autom. vertical feed	mm	0,005 - 0,05	0,005 - 0,05	0,005 - 0,05
servo motor	kW	0,5	0,5	0,5
control		Siemens SPS (PLC)	Siemens SPS (PLC)	Siemens SPS (PLC)
Part No. incl. position indicator		124 288	124 296	124 304

"V" model pre-programmed vertical feed with servo drive

Standard Equipment:
2-axis position indicator, grinding wheel, wheel flange, balancing shaft, balancing stand, halogen table lamp, adjustment screws, degaussing system, operating tools, operator manual

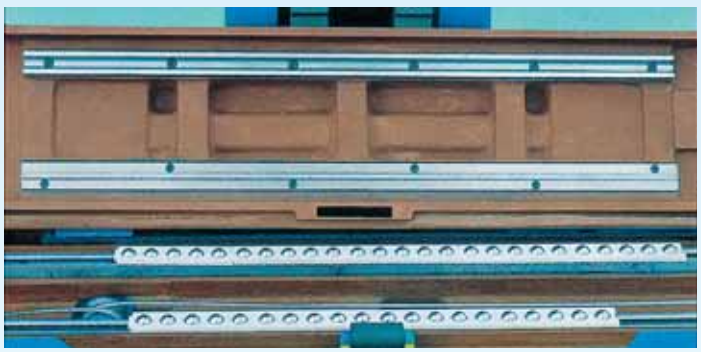
Optional Equipment:
- electromag. clamping plate
  250 x 500 mm
  Part No. 122 286
  300 x 600 mm
  Part No. 122 294
  400 x 800 mm
  Part No. 122 302
- coolant system and exhaust system
  Part No. 122 309
- magnetic coolant cleaning system
  Part No. 122 310

Manual Surface Grinder
FSM 480

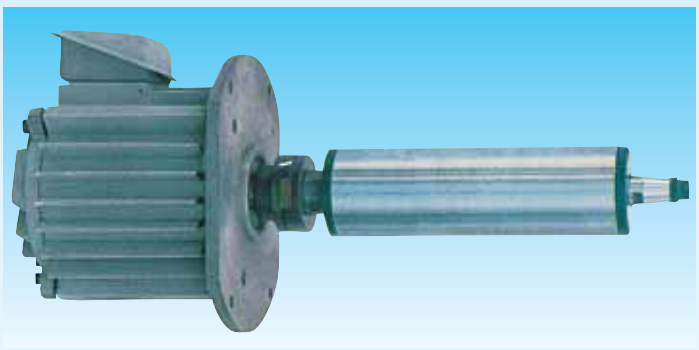
- spindle resists high loads; mounted in pre-loaded angular deep-groove ball bearings ensures low-vibration operation, high accuracy, increased lifetime, and low maintenance
- completely leakproof, and balanced spindle motor with high load capacity
- solid, vibration-absorbing construction
- V- and flat guides in x and y direction for consistently high accuracy
- longitudinal table movement over linear ball guide; linear ball track
- longitudinal table travel via cogged belt for smooth movement
- adjustable handwheel scales for vertical and transverse adjustments allows setting of point of origin at any position
- central lubrication
- grinding parallelism 0.005 mm / 300 mm

Standard Equipment: exhaust vacuum, work lamp, grinding wheel 200 x 13 x 32 mm, magnetic clamping plate 125 x 300 mm, diamond dresser, balancing shaft, balancing station, operating tools, machine vice 75 mm, grinding wheel dresser holder

Specifications FSM 480		
longitudinal table travel	mm	480
transverse travel	mm	230
spindle-table distance	mm	470
roughness		RA> = 0,63
table work area	mm	210 x 450
wheel dimensions	mm	200 x 13 x 32
feed / handwheel rotation / scale gradation		
- transverse/longit.dir.	mm	4 / 0,002
- vertical direction	mm	2 / 0,001
motor output	kW	1,85
weight	kg	730
Part no.		122 801



linear ball track



flanged spindle

For more information, please contact us or visit www.knuth.de

Drill Bit and Cutter Grinding Machine

BFT

Adjustable clearance angle for perfect grinding results

- high accuracy
- fast grinding process
- simple operation
- guaranteed highest cutting symmetry
- adjustable clearance angle
- grinds all drills, step drills, sheet metal drills, wood drills, and cutters made of HSS and carbide

Specifications BFT		
angle adjustment		40 - 100°
grinding capacity	mm	Ø1,5 - 32 MK2 / MK3
grinding wheel speed	min^{-1}	4200
motor rating	V / kW	400 / 0.18
dimensions (LxWxH)	mm	750-830-1070
weight	kg	180
Part No.		122 968

diamand disk set
150x32x32 and 125x32x32 mm
Part No. 122 967

Standard Equipment: base, self-centering 6-B chuck, halogen work lamp, operating tools, grinding wheels, mounts MT2 and MT3

Universal Tool Grinder
SM

Universal Tool Grinder for grinding profile forms

shown with standard equipment

H

Specifications SM		
max. collet diameter	mm	18
max. grinding diameter	mm	25
taper grinding		0° ~ 180°
rear angle		0° ~ 45°
speed	rpm	5200
cup wheel	mm	100x50x20
motor	W / V	180 / 400
weight machine	kg	56
weight base	kg	17
dimensions	mm	450x400x350
tool holder travel	mm	140
tool holder handwheel rotation		18
spindle handwheel rotation		8
Part No.		102 880

Standard Equipment: base, dresser, grinding wheel mount, grinding wheel, operating tools, operator manual, spare parts list, test certificate, collets 3, 4, 6, 8, 10 mm

Optional Equipment for SM					
Name	**Part No.**	collet 2,5 mm	102 864	collet 10 mm	102 869
diamond wheel	102 861	collet 3 mm	102 865	collet 12 mm	102 870
wheel flange	102 874	collet 4 mm	102 866	collet 16 mm	102 871
cup wheel	102 875	collet 6 mm	102 867	collet 18 mm	102 872
		collet 8 mm	102 868	diamond dresser shank	102 877

Support Grinding Device
SUS 210 • SUS 190

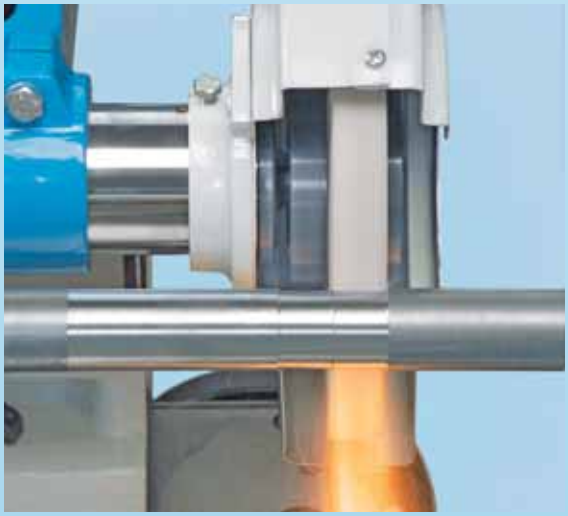
for external and internal cylindrical

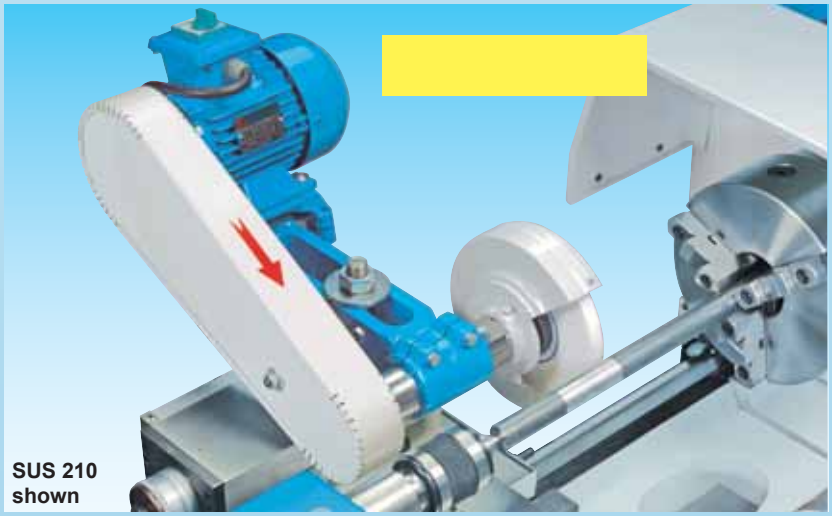
H

Specifications		SUS 190	SUS 210
speed range	rpm	3850	3320
dimensions	mm	460 x 320 x 390	570 x 330 x 390
grinding wheel dimensions	mm	175 x 32 x 20	200 x 32 x 20
motor rating	W	375	750
weight	kg	22	30
Part no.		112 795	112 796

- grinding unit is clamped to the tool holder attachment bolt (**SUS 210** 40 mm Ø and **SUS 190** 35 mm Ø)

grinding wheel		
for SUS 190	standard corundum	# 112 793
	silicon carbide	# 112 794
for SUS 210	standard corundum	# 112 797
	silicon carbide	# 112 798





SUS 210 shown

Specifications KSW 200		
max. grinding diameter	mm	125
max. grinding length	mm	320
longitudinal table movement	mm	300
transverse table movement	mm	150
spindle-to-table distance	mm	115
pivoting grinding head		± 40°
motor	W / min^{-1}	180 / 2800
dimensions (LxBxH)	mm	1300 x 780 x 950
weight	kg	280
Part no.		101 417

KNUTH

Universal Tool Grinding Machine

KSW 200

Standard Equipment: right and left tailstock, spring stop, variable table stops, standard center 60°, half center 60°, 1 cupwheel and 1 diamond top wheel (125x35x32mm), 1 grinding wheel and 1 poppet (125x15x32mm) 3-jaw turning chuck, twist drill grinding feature, turning tool holder, cutter mandrels 16 mm, 27 mm, 32 mm, base frame, operating tools, operator manual

Belt / Disk Sander Combination

KS 100

- fine-adjustment of abrasive belt
- Belt sanding feature, vertical and horizontal use
- support table convertible for belt and/ or disk sanding operation
- low-vibration operation
- including miter stop 0° - 60°
- adjustable tool table angle

III. KS 100

Specifications KS 100		
angular adj. of table		0° - 45°
angular adj. belt		0° - 90°
table area	mm	160 x 220
belt	mm	100 x 915
disc	mm	Ø 150
speed	min^{-1}	1420
motor 230 V	kW	0,25
dimensions	mm	520 x 290 x 278
weight	kg	17
Part no.		102 820

KS 100		
	Discs	Belt
Grit	Part no.	Part no.
K 40	102 734	102 735
K 80	102 821	102 827
K 100	102 822	102 828
K 120	102 823	102 829
K 180	102 824	102 830
K 240	-	102 831
K 400	102 826	102 832

KS 150

III. KS 150
Base is included

Specifications KS 150		
angular adj. table		0° - 45°
table area	mm	310 x 190
belt	mm	150 x 1220
angular adj. belt		0° - 90°
speed (belt)	m/sek.	11
disc diameter	mm	Ø 230
speed (disc)	min^{-1}	1500
motor 400 V	kW	0,6
height	mm	1000
weight	kg	59
Part no.		102 800

KS 150		
	Discs	Belt
Grit	Part no.	Part no.
K 40	102 721	102 725
K 60	-	102 726
K 80	102 801	102 807
K 100	102 802	102 808
K 120	102 803	102 809
K 180	102 804	102 810
K 240	102 805	102 811
K 400	102 806	102 812

BS 150 • BS 220

For metal machining in industrial and commercial operations

- rigid workshop machine design for machining of faces, edges and radii
- high-torque motors and vibration-free operation ensure superior grinding results
- large grinding surface with safe cover for protection when not in use
- equipped with 2 exhaust suction connectors

BS 150 - 2 belt speeds for machining of different materials

BS 150 is shown

BS 220 is shown

- quick sanding belt replacement via single-lever belt tightener system and easy adjustment of belt tracking
- practical angle adjustment at the base frame

Standard Equipment: sanding belt, belt cover, machine base

Specifications		BS 150	BS 220
band speed (BS 150 with 2 steps)	m/sec	29 / 14,5	14,5
motor rating	kW / V	4 , 400	4, 400
belt dimensions	mm	150 x 2000	220 x 2000
dimensions (LxWxH)	mm	1050 x 512 x950	1070 x 580 x 950
weight	kg	90	102
Part No.		112 875	112 877

Fabric Sanding Belt		
Grit	**BS 150**	**BS 220**
K40	112 860	113 880
K60	112 861	113 881
K80	112 862	113 882
K100	112 863	113 883
K120	112 864	113 884
K180	112 865	113 885
K240	112 866	113 886
K400	112 867	113 887

F

Turning Tool Grinder
DS

- cup wheels set up on both sides (150 mm)
- 0.74 kW motor, 230 Volt
- 2850 min^{-1}
- 18 mm Ø shaft
- weight 55 kg
- angular slide stops, 45°, on both sides
- both tables swivel 45°, read-out on scale
- catch trays and coolant reservoir for both sides, exchangeable Part No. 102 785

Carbide cup wheel	Part No. 120 785
HSS cup wheel	Part No. 120 780

H

Belt / Disk Sander Combination
BTM 250

Universal Sander for Workshop Applications

- support table for disk and belt sanding
- easy belt change with quick-lock mechanism
- belt sander can be used horizontally and vertically
- dust suction connector at disk and belt sander unit
- balanced sander disk for vibration-free operation

rigid steel base included

Specifications BTM 250		
Belt Sander		
belt size	mm	150 x 1220
belt speed	m/sec	8,4
table dimensions	mm	152 x 267
Disk Sander		
disk diameter	mm	250
disk speed	rpm	2100
table dimensions	mm	190 x 330
table angle adjustment	45°	
400 V motor	kW	0.75
overall dim. (LxWxH)	mm	585 x 660 x 1550
weight	kg	78
Part No.		112 700

Grit Part No.	Disks 10-pack	Price Part No.	Belt Each	
K 40	112 705	H	102 725	J
K 60	112 706	H	102 726	J
K 80	112 707	H	102 807	J
K 100	112 708	H	102 808	J
K 120	112 709	H	102 809	J
K 180	112 710	H	102 810	J
K 240	112 711	H	102 811	J
K 400	112 712	H	102 812	J

Sheet Metal Work

Covers every aspect of sheet metal work - from cutting to braking, roll bending to punching and notching. Your will find fast eccentric shaft presses, powerful hydraulic presses, and much more on the following pages.

- hydraulic swing-beam shears for cuts up to 20 mm thick and 4 meters long
- motorized swing-beam shears for plate thicknesses up to 4 mm
- Manual swing-beam shears for up to 1.5 mm thick plates

Swing-Beam Shears

- C-Frame Press, also for deep-drawing
- 2-column presses for folding and mold pressing
- workshop presses with double-acting cylinder
- 16 to 200 tons force

Hydraulic Press Brakes

- for closed or open tools
- in various designs and with different equipment
- 10 to 250 tons force

Eccentric Shaft Press

- conventional with digital indicators
- CNC-controlled with 3, 4, or more controlled axes
- folding capacity of 40 to 400 tons
- brake length up to 6 meters

Hydraulic Press Brakes

- 3-roller machines with a wide spectrum of features - manual, motorized, or hydraulic drives
- 4-roller machines for optimum machiningof large and very thick plates
- machining length from 1 to 4 meters
- folding capacity from 1 to 85 mm

Roll Bending Machines

- 2 or 3 driven rollers
- motor drive or hydraulic drive
- standard or custom rollers
- manual operation, NC Teach-in, or with premium CNC control with graphic user interface

Ring and Profile Benders

- for universal machining on 5 stations with up to 165 tons brake force
- punching, cutting, notching
- 7 different models

Hydraulic Profile Steel Cutters

- various designs with folding lengths from 1000 to 2500 mm, 1 to 2.5 mm plate thickness
- continuous or segmented male die

Folding Machines

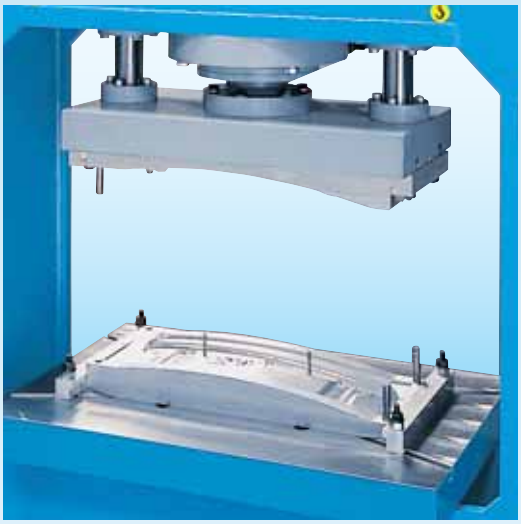
Hydraulic Press
KP

Hydraulic Press for Bending, Blanking and Dies

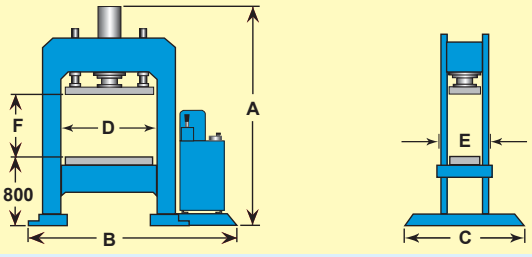
- strong hydraulic cylinder and two circular guides ensure uniform and precise feeding during press operation
- also suitable as try-out press
- ram plate and large work table with T-slots for tool clamping
- firmly bolted work table
- adjustable end stop

KP 70 shown

Operation Example



Model	A	B	C	D	E	F
KP 70	2250	1700	700	900	500	500
KP 100	2300	1900	850	1050	600	500
KP 150	2600	2300	1000	1250	700	500
KP 200	2700	2300	1500	1250	700	500



Specifications		KP 70	KP 100	KP 150	KP 200
capacity	t	70	100	150	200
cylinder stroke	mm	500	500	500	500
rapid feed	mm/s	18	22	20	20
stroke speed	mm/s	2	2	2	2
motor rating	kW	1,5	4	3,2	7,5
weight	kg	1100	1600	3000	4300
Part No.		131 560	131 565	131 570	131 575

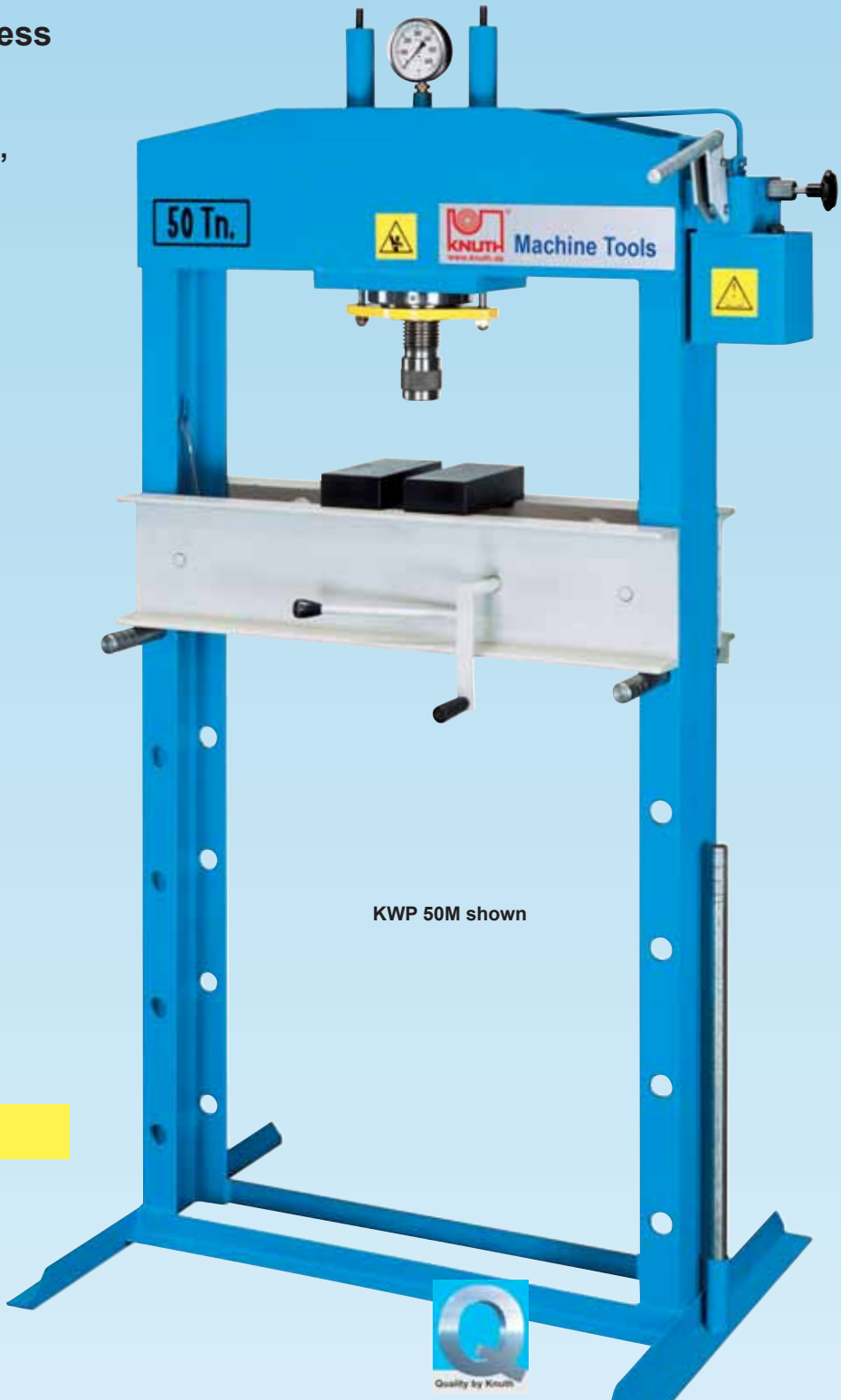
Workshop Press KWP

Ideal for craft shops, schools, and training facilities

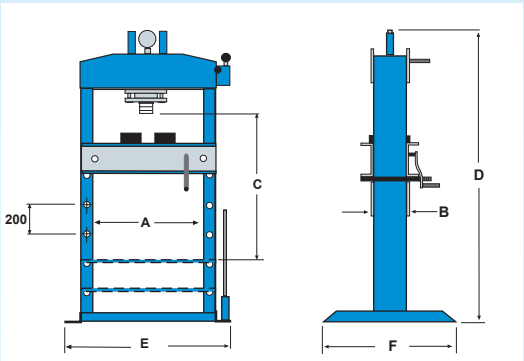
For any repair and installation work, e. g. :

- removal and installation of press-fit bearings, bolts and bushings
- straightening beams, shafts, axles, and sections
- pressing and climping
- load tests and weld sample testing
- tool setup- material testing

- rigid weldment design
- reliable, highly accurate hydraulic system, european mfg
- pump lever for manual pressing buildup
- piston and return-spring reset
- rigid base table with selecttable heights, height adjusted by handwheel
- ram height also adjustable via screw
- with guided cylinders



KWP 50M shown



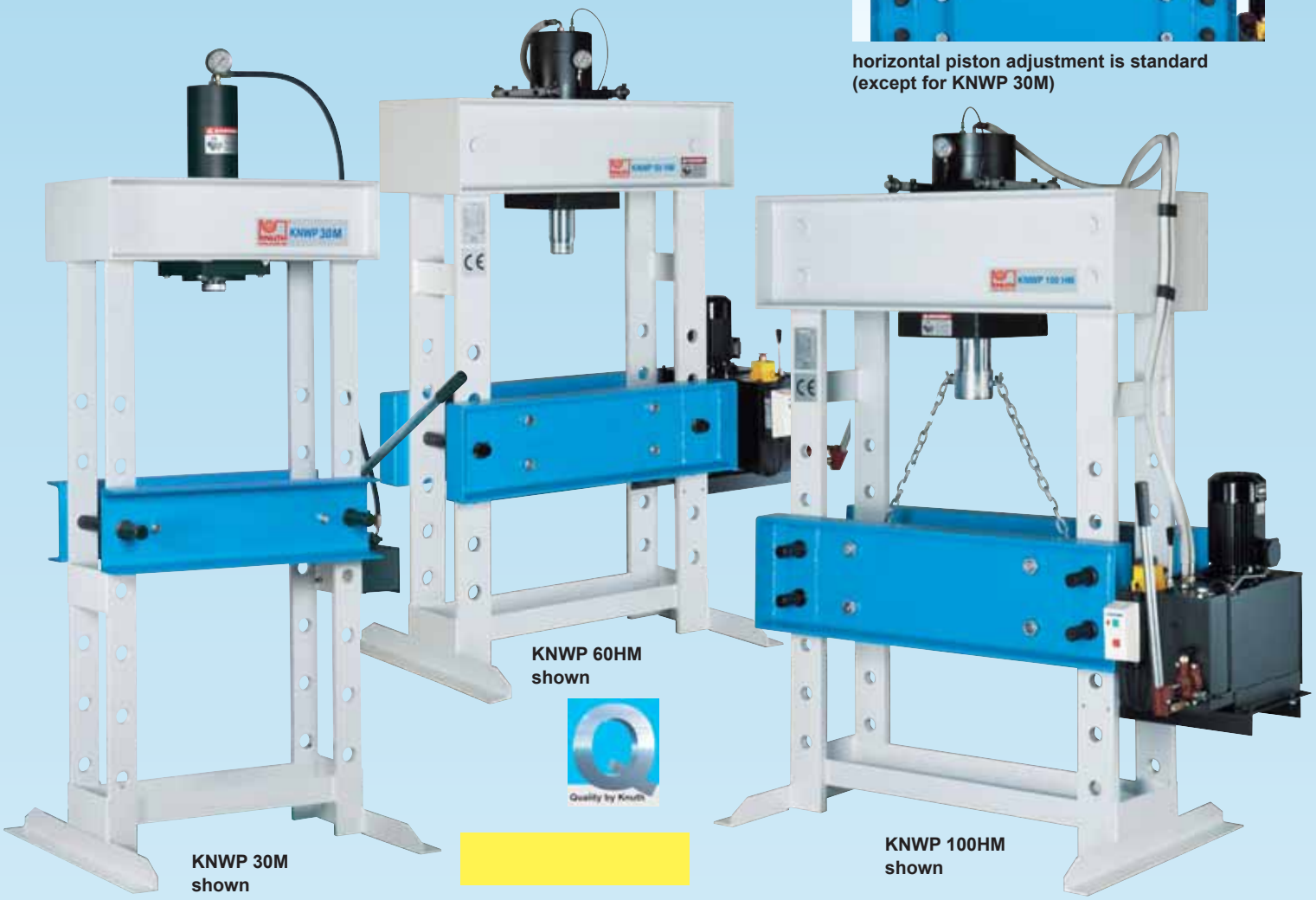
Standard Equipment: screw, pressure gauge, handwheel adjustable work table, 2 base plates, operator manual

Specifications		KWP 50 M	KWP 80 M
capacity	t	50	80
manual pump		1	1
max. pressure	bar	500	500
piston stroke	mm	120	120
screw stroke	mm	100	100
circular guides		2	2
A	mm	770	850
B	mm	165	205
C	mm	1020	1020
D	mm	1910	2050
E	mm	1000	1140
F	mm	750	800
weight	kg	230	330
Part No.		131 736	131 739

Hydraulic Workshop Presses
KNWP

Hydraulic Workshop Presses with double-acting cylinder (except KNWP 30M), easy to use

horizontal piston adjustment is standard (except for KNWP 30M)



KNWP 60HM shown

KNWP 30M shown

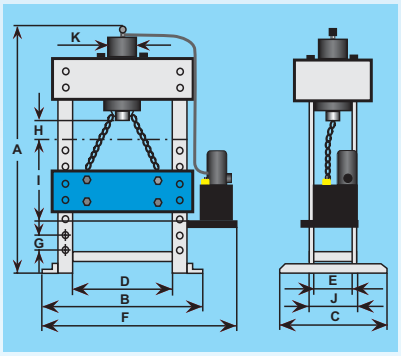
KNWP 100HM shown

Specifications		KNWP30M	KNWP60HM	KNWP100HM	KNWP160HM
capacity	t	30	60	100	160
motor rating	kW	-	1,5	2,2	3
stroke rate	mm/min	-	132	162	138
(2 steps)			552	552	534
return speed	mm/min	-	762	738	720
max. pressure	bar	310	235	266	283
piston stroke	mm	220	400	400	400
Hydraulics					
flow rate	l/min	-	3.3 / 13.5	5.8 / 19.6	7.3 / 28.4
oil tank capacity	l	2	20	20	20
dimensions					
A	mm	1983	2040	2110	2212
B	mm	840	1150	1320	1600
C	mm	750	900	900	1100
D	mm	560	750	920	1100
E	mm	200	250	300	350
F	mm	919	1490	1660	1905
G	mm	150	150	150	150
H	mm	174	191	174	203
I	mm	900	750	750	750
J	mm	230	505	564	614
K	mm	130	210	254	324
weight	kg	230	685	955	1575
Part No.		131 740	131 760	131 762	131 764

- 30 to 160 tons force
- ideal for repair and assembly work
- truing of axles, supports, shafts, and much more
- removal and pressfitting bearings and bushings

all HM models with motorized hydraulic drive

- automatic piston return
- 2-step hydraulic unit
- supply voltage 3x400V / 50 Hz
- horizontal piston adjustment

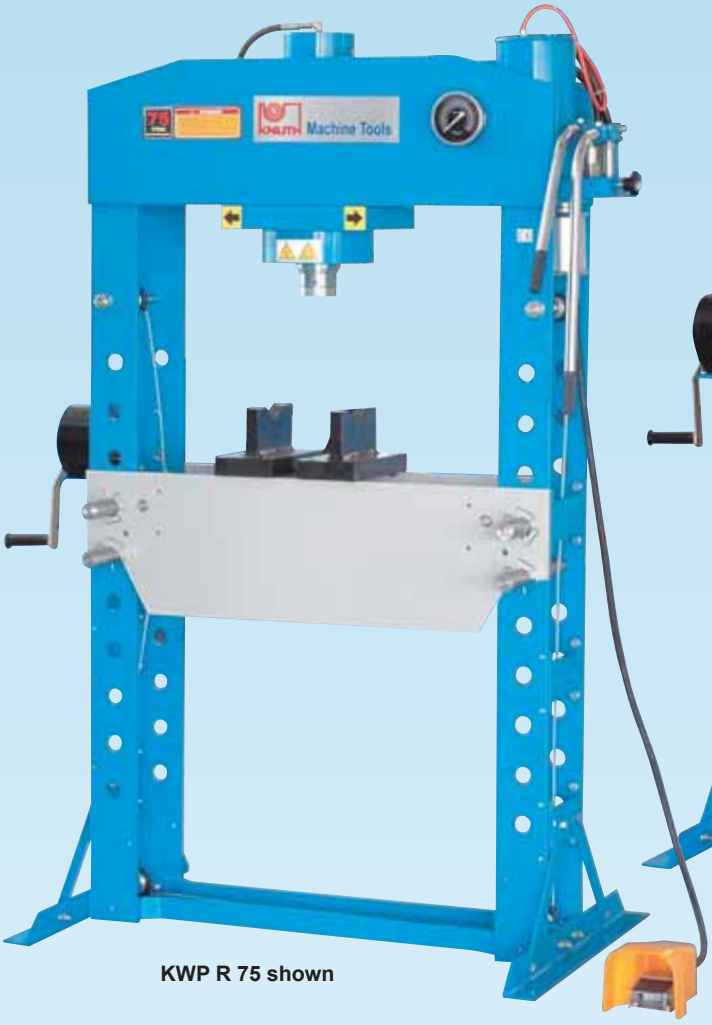


For more information, please contact us or visit www.knuth.de

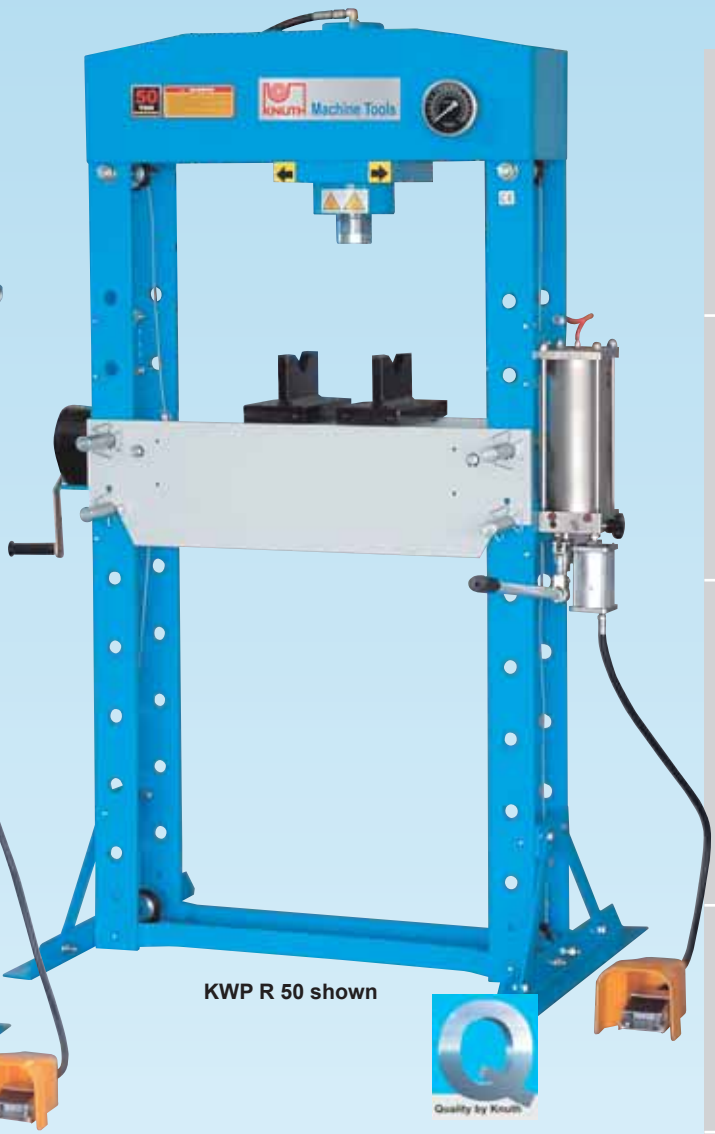
Workshop Presses
KWP R

Universal Workshop Press with hydraulics and compressed air

- The perfect option for every application: manual operation - for short ram strokes, ideal for straightening jobs or for press-fitting bearings and studs
- ram operation via air driven hydraulic pump or via foot switch
- automatic ram return
- gantry and table are made of a rigid steel construction, carefully machined and assembled
- work cylinder moves horizontally
- lower table height adjustable via crank; dual holding bolts ensure safe and easy operation
- workpiece supports with v-guides are standard



KWP R 75 shown



KWP R 50 shown

Standard Equipment: pressure gauge, via crank adjustable work table, 2 base plates, operating instructions

Specifications		KWP R 30	KWP R 50	KWP R 75	KWP R 100
Working area					
force	tons	30	50	75	100
max. pressure	bar	580	620	600	640
stroke length	mm	150	200	250	300
gantry width	mm	550	730	800	787
air connection	NPT	1/4”	1/4”	1/4”	1/4”
air pressure	bar	7.5 - 8.5	7.5 - 8.5	7.5 - 8.5	7.5 - 8.5
operating speed	mm/sec	1.2	1.2	1.2	1.2
Dimensions/Weight					
overall dimensions (WxDxH)	mm	810 x 700 x 1805	1360 x 1090 x 1920	1450 x 800 x 1940	1199 x 990 x 2048
weight	kg	200	365	425	672
Part No.		170 345	170 346	170 347	170 348

Hydraulic C-Frame Press

HPK 16

Semi-automatic hydraulic press for a large variety of applications, like compression moulding, punching, and bending

- rigid, torque-resistant steel weldment
- powerful hydraulic system for high travel speeds
- ram-plate and work table have T-slots for tool clamping
- C-frame design makes this press ideally suitable for machining of large parts
- jogging mode for easy press set-up
- micro-switches for simple adjustment of travel distances for automatic operation
- manual operation of quick sample processes,
- part counter
- automatic mode can be adjusted time-dependent or distance-dependent
- provided without CE certificate; only for export into countries outside the EU

Specifications HPK 16		
press force	kN	160
cylinder stroke	mm	250
table size	mm	500x380
forward motion speed	mm/s	208
work speed	mm/s	25
reverse motion speed	mm/s	145
table bore	mm	Ø120
max. ram-to-table distance	mm	400
throat	mm	200
motor rating	kW/V	4 / 400
dimensions	mm	900 x 680 x 1900
weight	kg	1700
Part No.		170 208

Hydraulic 4-Column Workshop Press

HSP 630

High-Capacity Hydraulic Press with precise ram plate feed via 4-column guide

- rigid, torsion-resistant steel weldment construction
- machine table and ram-plate with 4-column guide, including T-slots and bores for attachment and alignment of tool and parts
- long piston stroke of 400 mm or 550 mm
- infinitely variable pressure regulation
- micro-switch for quick stroke adjustment
- part counter
- rapid feed for short machining times
- provided without CE certificate; only for export into countries outside the EU

Specifications HSP 630		
Main cylinder		
force	kN	630
travel	mm	400
rapid feed	mm/s	163
work speed	mm/s	19,5
return speed	mm/s	197
max. ram-to-table distance	mm	600
table size / ram-plate size	mm	715x500
dist. between columns		505x285
motor rating	kW	7,5
dim. (LxWxH)	mm	1010x950 x2500
weight	kg	2350
Part No.		170 207

Hydraulic C-Frame Press

HPK

Die Press and Try-Out Press

- strong hydraulic cylinder and two circular guides ensure uniform and precise feeding during press operation
- ideal for die pressing, blanking, bending, and much more
- semi-automatic with lever and micro-switch
- stroke length with quick adaption to next tool
- ram plate and work table with T-slots for tool clamping
- firmly bolted work table
- advance and reverse jog operation for easy machine set-up
- stroke limit adjustable by micro-switch
- optimum table height
- 2-stage hydraulic pump

Standard Equipment: ram plate and work table with T-slots, adjustable ram stroke, pressure gauge, hand lever operation, operator manual

Specifications		HPK 40	HPK 70	HPK 100	HPK 150
press force	t	40	70	100	150
cylinder stroke	mm	500	500	500	500
stroke speed	mm/s	4	2	2	3
rapid feed	mm/s	29	20	22	20
work table	mm	700 x 500	700 x 500	800 x 600	800 x 600
ram plate	mm	700 x 350	700 x 350	700 x 350	800 x 400
length x width	mm	1000 x 1500	1000 x 1500	1200 x 1900	1500 x 2200
height	mm	2500	2500	2600	3000
weight	kg	2050	2200	3400	5500
Part No.		131 568	131 574	131 566	131 576

KEX 60 SP - Powerful, safe, and rigid

with pneumatic clutch and light barrier protection for open tools

- torsion-resistant weldment
- high-quality bearings ensure quiet, smooth operation
- 4 guideways for precise stamp control
- central lubrication system for low-maintenance operation
- two-hand operation and foot pedal ensure maximum safety and operator comfort
- crankshaft and flywheel are made of high-grade steel
- mechanical overload protection protects the machine from damages caused by overload conditions
- gears with oil-bath lubrication
- clutch and brake combination ensures low-maintenance operation
- workspace with protective guards on three sides
- the KEX 60 SP comes with a standard PLC system
- the PLC detects and controls the crankshaft position
- the PLC lubricates the machine automatically after a certain number of strokes
- two independent counters show the number of stamp strokes and the machine's total operating hours
- the AC converter allows adjustment of various work speeds
- a light barrier is provided in addition to the two-hand control for increased safety

KEX 60 SP is shown

KEX 60 SP Standard Equipment: mechanical overload protection, foot switch, two-hand control panel, automatic central lubrication, work space enclosure, light barier, pneumatic clutch, PLC Control, AC converter, infinitely variable stroke adjustment, operating tools, operator manual

Specifications		KEX 10	KEX 15	KEX 20	KEX 30	KEX 60 SP
force	tons	10	15	20	30	60
intermediate plate-to-ram dist.	mm	130	172	196	215	285
base plate-to-ram dist.	mm	180	226	261	290	360
stroke	mm	40	40	50	60	100
throat	mm	150	200	200	200	250
ram mount	mm	Ø 25	Ø 30	Ø 35	Ø 40	Ø 45
stroke speed	min-1	200	200	160	140	65
stroke adjustment	mm	10-40	10-40	10-50	10-60	10-100
setup area	mm	270x380	320x490	360x550	400x600	500x700
table bore	mm	Ø 100	Ø 130	Ø 140	Ø 150	Ø 180
flywheel	mm	Ø 540	Ø 585	Ø 680	Ø 710	Ø 685
motor rating	kW	0,75	1,5	2,2	3	5,5
dimensions	mm	760x770x1662	964x724x1726	1042x794x1856	790x1025x1965	1164x1320x2358
weight	kg	530	740	1150	1600	3500
Part No.		130 070	130 071	131 390	131 392	131 395
with pneumatic clutch, 2-hand operation, light barrier			**KEX 15 P**	**KEX 20 P**	**KEX 30 P**	
Part No.		-	130 072	131 391	131 393	-

Eccentric Shaft Press

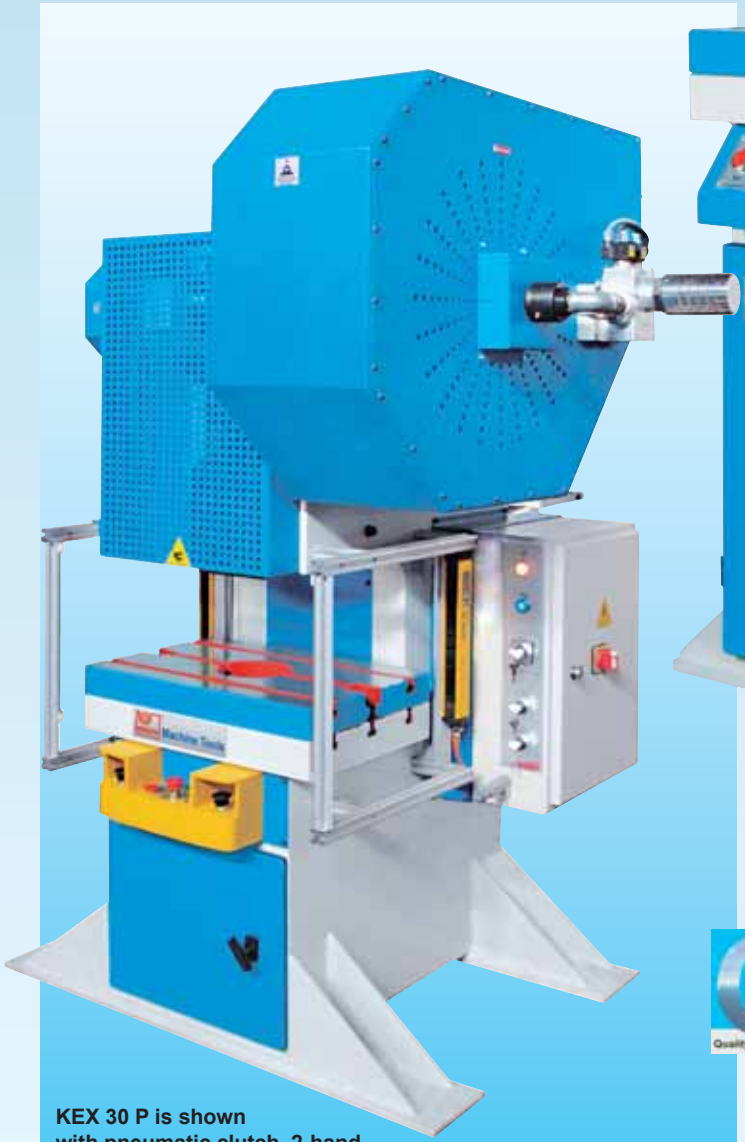
KEX 10 • 15 • 20 • 30 • 60 SP

Compact, powerful Single-Column Eccentric Presses with forces in the range of 10 to 60 tons

- **KEX 10, 15, 20, and 30 with standard clutch for closed tools**
- heavy-duty steel weldment
- high stroke speed equals low-cost operation
- ram guideway made of brass/steel
- foot switch
- quiet operation
- central lubrication

KEX 15 P, 20 P, 30 P:
Same description as above, however, these models include a pneumatic clutch and 2-hand control and light barrier

KEX 15 is shown



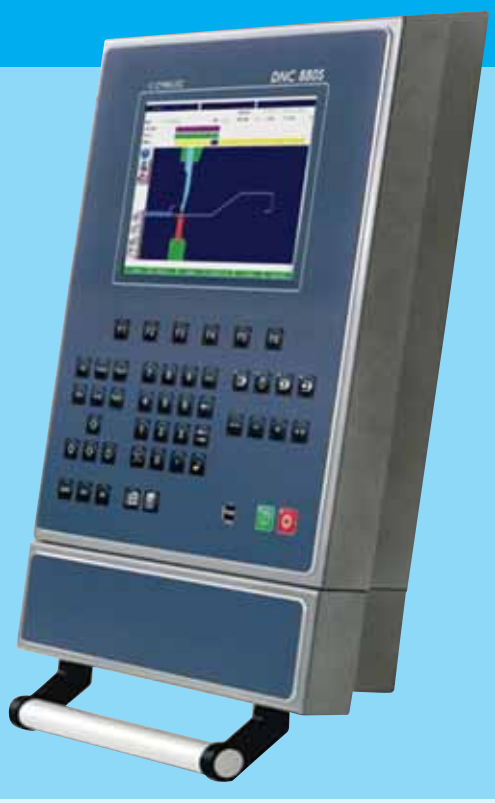
KEX 30 P is shown with pneumatic clutch, 2-hand control, and light barrier

Standard Equipment for KEX 10 • 15 • 20 • 30: mechanical overload protection, foot switch, central lubrication, workspace enclosure, operating tools, operator manual

Cybelec DNC 880 S

- intuitive programming with clear, easy to read color-coded field functions
- complete programming of parts on one programming page
- comfortable operation via ergonomically tilted keyboard and 10“ TFT color monitor
- offline 2-D software to prepare production programs at the PC, and to verify the feasibility of program editing at the machine
- quick and easy modification of existing machining programs increases productivity
- 2-D graphic display for multiple simulations:
  - optimum folding sequences
  - tools, plus the plate position inside the tools
  - collision warnings

  are displayed according to the user-defined criteria
- supports over 20 languages



rear stops on two high-precision linear guides

- Folding depth adjustment via CNC-controlled directional control valve is monitored by linear scales
- Bending force is calculated via CNC control and can be integrated into the programs
- automatic lower crowning with hydraulic drive
- Low-maintenance rear stop with preloaded ball screws and servo drives, plus automatic depth and height adjustment
- Lazersafe for maximum operator safety and optimum operation
- Manual male die crowning within tool clamping is standard
- Premium components made by renown manufacturers ensure maximum machine reliability

Specifications AHK F CNC		1540	2580	32160	32200	41160	41250	61250	62320
Working Area									
force	tons	40	80	160	200	160	250	250	320
brake length	mm	1500	2500	3200	3200	4100	4100	6100	6200
rear stop	mm	600	600	600	600	600	600	600	600
distance between columns	mm	1200	2050	2700	2700	3600	3600	5600	5600
throat	mm	280	320	350	400	350	400	400	400
max. stroke	mm	380	450	480	520	480	520	520	520
bending speed	mm/sec	11	11	9,5	9	9,5	7,5	7,5	7,5
rapid feed	mm/sec	80	80	100	100	100	100	100	100
return speed	mm/sec	110	80	95	100	95	95	95	105
motor rating	kW	4	7,5	15	18,5	15	18,5	18,5	22
Dimensions/Weight									
hydraulic tank volume	Liter	145	240	440	700	600	930	1000	1000
overall dimensions (LxWxH)	mm	1700x1600 x2200	2700x1700 x2500	3300x1800 x2700	3300x2900 x2900	4300x1800 x2800	4300x2000 x2980	6300x2000 x3350	6400x2100 x3800
weight	kg	3500	7200	11800	14700	13800	18000	30000	33600
Part No.		182 970	182 971	182 972	182 980	182 973	182 981	182 982	182 983

Additional machine sizes available upon request

Hydr. CNC Press Brakes

AHK F CNC

Heavy-Duty Press Brake
with state-of-the-art Cybelec 880 S CNC Control

- 4 controlled axes with graphic color display
- controlled hydraulic lower crowning

Standard Equipment: 4 controlled axes (Y1, Y2, X, R, automatic lower crowning, Lazersafe, die, male die, support arms operating tools, operator manual

Options:
- System male dies with 90°, 88°, 60° and 30° angles, plus clamping and radius tools upon request - many types of tools can be shipped within 24 hours

quick-change system for male die

height-adjustable finger stops

hydraulic cylinder for lower crowning and manual micro-adjustment of rear stop

Position Indicator

preloaded ball screws for zero-back-lash positioning of the rear stop

Lazersafe: mobile status/dialog display with magnetic rear for easy mounting

Specifications AHK A		25100	32125	32160	32200	32250	32320	41250	61250	61320
Working Area										
force	tons	100	125	160	200	250	320	250	250	320
brake length	mm	2500	3200	3200	3200	3200	3200	4100	6100	6100
rear stop	mm	600	600	600	600	600	600	600	600	600
distance between columns	mm	2000	2700	2700	2700	2700	2700	3300	5400	5400
throat	mm	350	350	350	400	400	400	400	400	400
max. stroke	mm	160	160	160	200	200	250	200	200	250
bending speed	mm/sec	9	9	9	7,5	7,5	9	7,5	7,5	9
rapid feed	mm/sec	80	80	80	80	80	80	80	80	80
return speed	mm/sec	70	90	85	90	90	65	90	90	65
Drive Capacities										
motor rating	kW	7,5	11	11	15	18,5	22	18,5	18,5	22
Dimensions/Weight										
hydraulic tank volume	Liter	400	480	480	480	480	700	580	750	1000
overall dimensions (LxWxH)	mm	2600x1620 x2500	3300x1680 x2540	3300x1720 x2540	3410x1780 x2740	3420x1830 x2810	3400x2150 x3245	4200x1830 x2810	6200x1900 x3150	6300x2340 x3600
weight	kg	6700	8600	9600	12500	14500	17100	17600	24400	32000
Part No.		171 300	171 301	171 302	171 303	171 304	171 306	171 305	171 307	171 308

Additional machine sizes available upon request

Hydraulic Press Brakes
AHK A

Exact angle - every time!
Press with high intrinsic weight and hydraulic lower crowning

- hydraulic lower crowning for significantly increased productivity
- digital indicators for rear and depth stops

- The press brakes of this series are manufactured in standardized bulk series to ensure solid quality and significant cost savings
- The frame is made of solid steel weldment for overhead mounting
- Manual upper and hydraulic lower crowning ensure high manufacturing qualtiy.
- Large torsion shaft guarantees synchronism between both hydraulic cylinders.
- Motorized rear stop with manual micro-adjustments
- Motors (from ABB) and hydraulic components from renown manufacturers guarantee high machining quality and high reliability.
- Light curtain for maximum safety, safety interlock and protective covers
- hardened hydraulic cylinders for long service life

Lazersafe: maximum operator safety without the need of restrictive light-barrier systems

Standard Equipment:
E-Position Indicator, rear stop, support arms standard stamp and die, foot switch, Lazersafe, operator manual

Options:
- System male dies with 90°, 88°, 60° and 30° angles, plus clamping and radius tools upon request - many types of tools can be shipped within 24 hours

Specifications		KHT 2504 F	KHT 3206 F	KHT 3210 F	KHT 3212 F	KHT 3216 F	KHT 3220 F	KHT 4006 F	KHT 4010 F	KHT 4016 F	KHT 6012 F	KHT 6016 F
Working area												
plate thickness St 42 (max.)	mm	4	6	10	12	16	20	6	10	16	12	16
cutting length (max.)	mm	2500	3200	3200	3200	3200	3200	4000	4000	4000	6000	6000
rear stop	mm	560	560	760	760	760	960	560	760	800	800	1000
cut angle		1,5°	1,5°	1,5°	1,5°	2,5°	2,5°	1,5°	1,5°	2,5°	1,5°	2,5°
strokes per minute	strokes/min	25	18	15	9	7	5	15	9	5	5	4
hold-down	qty	11	13	15	15	18	19	18	19	22	29	26
work table height	mm	800	800	810	810	810	850	800	810	800	800	1000
support arms / quantity	mm / qty	1060 / 3	1060 / 3	1260 / 3	1260 / 3	1260 / 3	1260 / 3	1060 / 4	1260 / 4	1160 / 4	1160 / 5	1160 / 5
Drive Capacities												
motor rating - hydraulic pump	kW	7,5	7,5	15	18,5	22	45	7,5	15	22	18,5	22
Dimensions/Weight												
hydraulic tank volume	Liter	240	290	420	400	400	430	380	410	450	450	450
dimensions	mm	3100x1470 x1560	3840x1610 x1620	4080x1980 x1955	3945x2270 x2055	4100x2300 x2265	4140x2450 x2305	4630x1850 x1700	4670x2025 x1920	4850x2300 x2320	6900x2600 x2640	6820x2720 x2750
weight	kg	4800	6600	10300	12500	15500	22000	8900	12500	19500	33000	46000
Part No.		133 500*	133 502*	133 504	133 506	133 508	133 510	133 512*	133 514	133 516	133 522	133 524

E-20+ control is shown

*** Plate hold-up** (Models 2504 F, 3206 F, and 4006 F)
ensures exact positioning of the plate at the rear stop when using thin materials

- **Standard Equipment:**
- E-20+ control
- rear stop
- standard upper and lower knife
- support arms, front
- foot switch
- shadow graph display of cut line
- operator manual

Additional machine sizes available upon request

Hydraulic Swing-Beam Plate Shears

KHT F

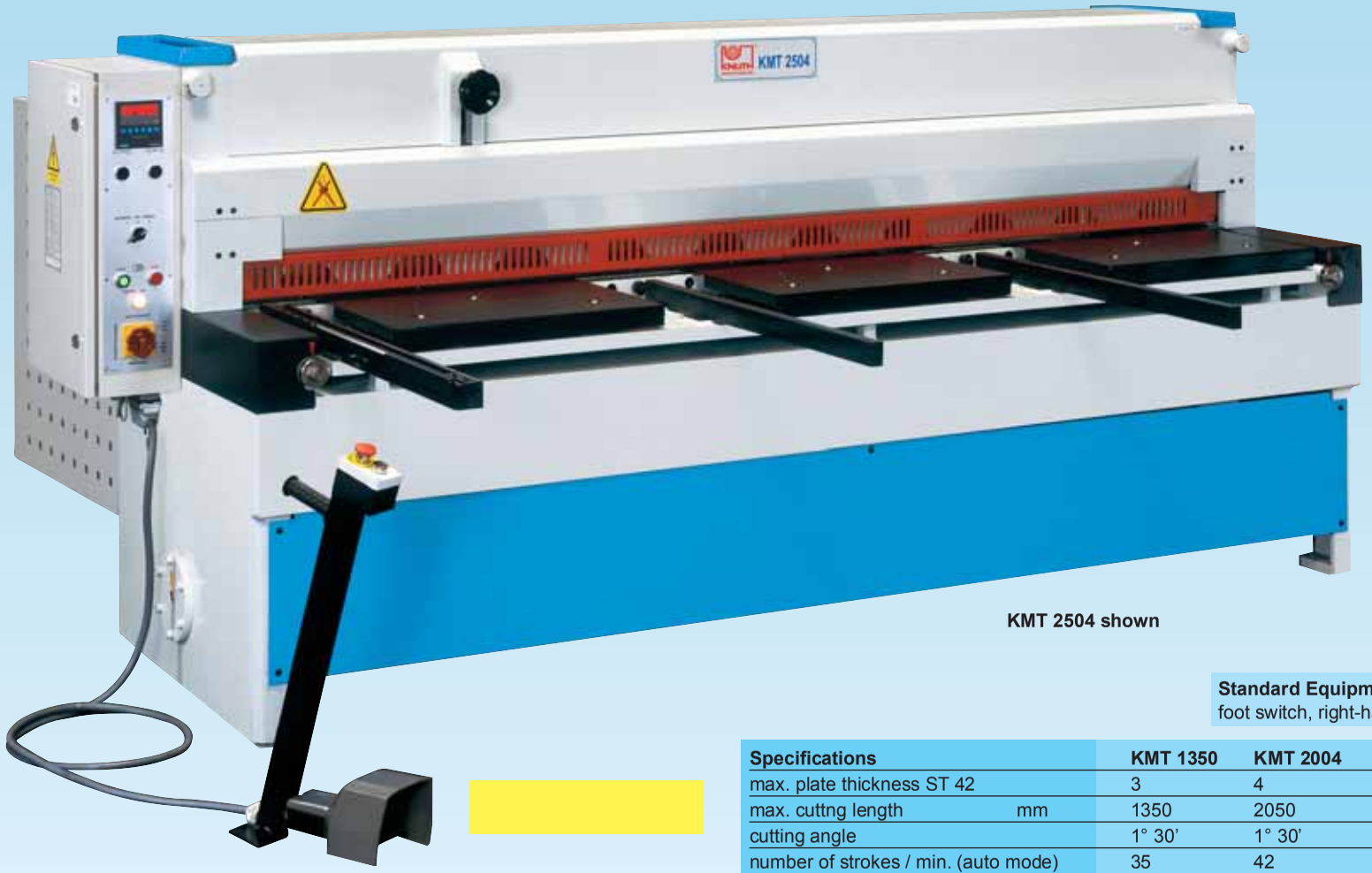
Rigid, reliable and user-friendly

E-20+ control for fast and safe operation with high accuracy

- Machine frame and cutter bar are designed with extremely solid, carefully machined weldment structures to withstand highest loads
- The proven swing beam design allows small knife angles for maximum cut quality and minimum distortion at the workpiece
- A rigid rear stop with premium preloaded ball screws and low-maintenance linear guides ensure long-term dimensional stability of the workpiece
- Shadow graph indicates the cut line
- Hydraulically operated hold-down provides uniform and reliable fixation of the workpiece
- Infinitely adjustable cut length saves valuable time when producing small parts
- Premium hydraulic and electric components ensure safe operation and high availability

Call us to inquire about the latest best prices under: +49 4321 609-0

Motorized Swing-Beam Shears
KMT



KMT 2504 shown

- heavy steel weldment construction for maximum stability
- quiet drive with brake motor; all components run on maintenance-free bearngs
- prallel knife guides ensure high cutting precision
- high-strength knives made of steel alloy, hardened and ground
- side stop and 2 front support arms
- selection switch for single and continuous stroke
- hold-down system with slip-resistent rubber coating and engagement safety guard

KMT 1350, 2050, 2550, 3050
- cost-effective design with precision-machined machine table
- manual rear stop 450 mm

KMT 2004, 2504
- extra heavy-duty design with high-power motor
- support table with roller balls for easy handling of parts
- motorized rear stop 750 mm, with digital display
- adjustable blade gap

Standard Equipment: knife set, rear stop, CE-conforming safety features, foot switch, right-hand longitudinal stop, and 2 support arms

Specifications		KMT 1350	KMT 2004	KMT 2050	KMT 2504	KMT 2550	KMT 3050
max. plate thickness ST 42		3	4	3	4	2,5	2
max. cuttng length	mm	1350	2050	2050	2550	2550	3050
cutting angle		1° 30'	1° 30'	2° 12'	1° 30'	1° 30'	1° 30'
number of strokes / min. (auto mode)		35	42	35	42	35	35
work table height	mm	850	850	850	850	850	850
main motor rating	kW	3	7.5	3	7.5	3	3
rear stop	mm	450	750	450	750	450	450
dimension (LxWxH)	mm	1700x1350 x1200	2550x2260 x1330	2400x1350 x1200	3030x2000 x1330	2900x1350 x1200	3500x1350 x1200
weight	kg	950	2300	1150	3200	1350	1500
Part No.		130 234	132 238	130 235	132 239	130 236	130 237

For more information, please contact us or visit www.knuth.de

Hydraulic 4-Roller Roll Bending Machines

RBM

For roll-bending of elliptical and conical forms, prebending and bending in one operating step

- massive machine frame, based on an advanced design and many years of experience
- hydraulic safety chuck for easy removal of the part
- roller feed and adjustment of parallelism and taper at the control panel
- all rollers are hardened and equipped with precision bearings
- hydraulically driven top and bottom rollers
- hydraulic components from Parker and Bosch
- electric components from Siemens and Telemecanique
- minimum bending diameter = 5 times the diameter of the top roller

Standard Equipment:
hardened rollers, conical bending feature, digital display, control panel, operator manual

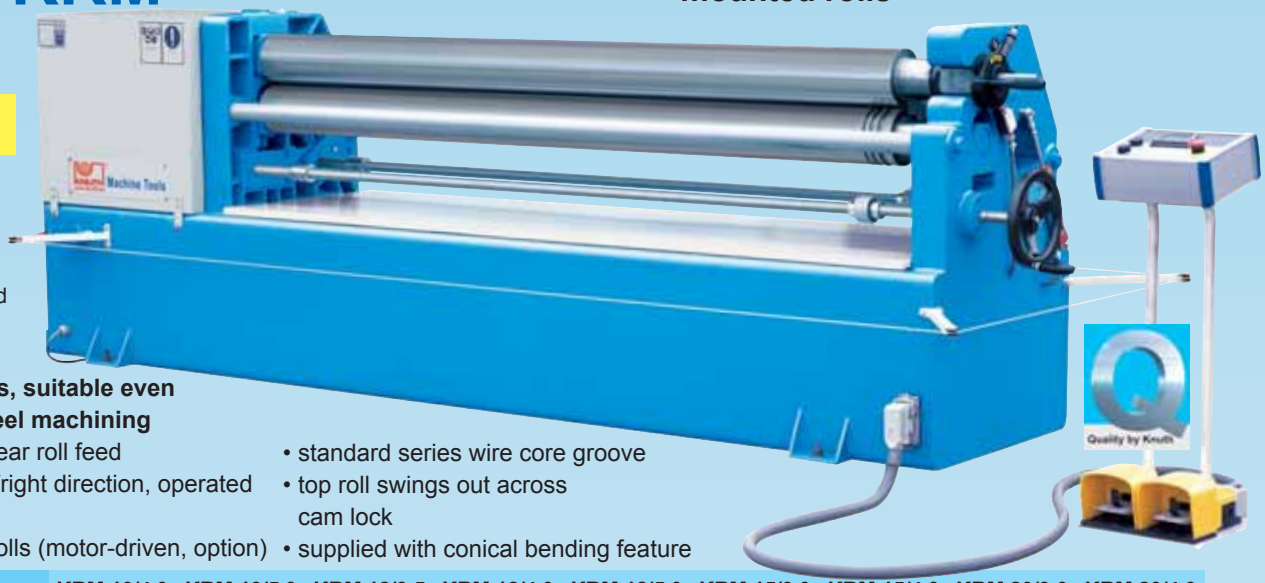
Optional Equipment:
with CNC or NC Teach-In control (see page 248), infinitely variable turning speed - regulated via control panel, lateral and central support for large-Ø plate-rings, material feed table

Specifications RBM		20/04	20/16	25/06	25/13	25/20	25/35	30/10	30/16	30/40	30/70	40/06	40/13
work length	mm	2100	2100	2600	2600	2600	2600	3100	3100	3100	3100	4100	4100
max. thickness	mm	6	20	8	16	25	45	13	20	50	85	8	16
max. plate thickness for prebending	mm	4	16	6	13	20	35	10	16	40	70	6	13
upper roller Ø	mm	160	300	210	300	360	460	300	360	540	700	300	390
bottom roller Ø	mm	140	270	190	270	330	420	270	330	500	650	270	360
side roller Ø	mm	120	210	170	210	250	360	210	250	440	550	210	300
motor rating	kW	2,2	15	7,5	11	18,5	30	11	15	55	110	7,5	15
length	mm	4142	4532	4642	5032	5042	5969	5532	5542	6669	6600	6532	7241
width	mm	1140	1730	1390	1730	1900	2300	1730	1900	3000	3450	1730	2100
height	mm	1037	1489	1300	1489	1677	2585	1489	1677	2925	3900	1489	1983
weight	kg	2320	7000	4600	8110	11800	30000	8800	13200	52000	80000	9930	20800
Part No.		131 900	131 903	131 906	131 909	131 912	131 915	131 921	131 924	131 927	131 930	131 933	131936
Part No. CNC Control		131 901	131904	131 907	131 910	131 913	131 916	131 922	131 925	131 928	-	131 934	131 937
Part No. NC Teach-In		131 902	131 905	131 908	131 911	131 914	131 917	131 923	131 926	131 929	131 932	131 935	131 938

For conical bending, reduce all bend values by 50 %. The use of hardened bending rolls is recommended!

3-Roll Bending Machine
KRM

Modern design, user-friendly machine with asymetrical mounted rolls



KRM 10/4.0 shown
including optional equipment (motorized rear roll adjustment)

- **hardened rollers, suitable even for stainless steel machining**
- hand-wheel for rear roll feed
- motor driven left/right direction, operated with foot switch
- quick adjusting rolls (motor-driven, option)
- standard series wire core groove
- top roll swings out across cam lock
- supplied with conical bending feature

Specifications		KRM 10/4,0	KRM 10/5,0	KRM 12/3,5	KRM 12/4,0	KRM 12/5,0	KRM 15/3,0	KRM 15/4,0	KRM 20/3,0	KRM 20/4,0
roll length	mm	1050	1050	1270	1270	1270	1550	1550	2050	2050
prebend	mm	4,0	5,0	3,5	4,0	5,0	3,0	4,0	3,0	4,0
sheet thickness	mm	5,0	5,5	4	4,5	5,5	3,5	4,5	4,0	4,5
roll diam.	mm	110	130	110	120	140	110	130	130	140
min. bending Ø	mm	150	190	150	175	210	150	190	190	210
motor rating	kW	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2
length	mm	1820	1820	2020	2020	2020	2320	2320	2820	2800
width	mm	850	900	850	850	900	850	900	900	900
height	mm	1150	1200	1150	1150	1200	1150	1200	1200	1200
weight	kg	1080	1220	1150	1250	1365	1220	1360	1480	1530
Part no.		131 960	131 961	131 962	131 963	131 964	131 965	131 966	131 967	131 968

For conical bending, reduce all bend values by 50 %. The use of hardened bending rolls is recommended!

3-Roll Bending Machine
KRM-S

Asymetrical 3-Roll Bending Machine with one-side Prebend

- **hardened rollers, suitable even for stainless steel machining**
- taper bending fixture
- motorized rear roller adjustment
- Machine constructed of steel
- High quality steel rollers
- rollers are centrally powered by planetary gears and brake motor
- Top roller swings out
- Self-braking main motor
- Seperate control panel
- Meets CE requirements

KRM-S 15/7 shown
including optional equipment
(motorized bottom roller adjustment, extended rollers and profile rollers)

Specifications		KRM-S 15/7	KRM-S 20/5	KRM-S 20/6	KRM-S 25/4	KRM-S 25/5	KRM-S 30/3	KRM-S 30/4
roll length	mm	1600	2100	2100	2600	2600	3100	3100
prebend	mm	7	5	6	4	5	3	4
sheet thickness	mm	8	6	7	5	6	4	5
roll diam.	mm	170	170	190	170	190	170	190
min. bending Ø	mm	255	255	285	255	285	255	285
motor rating	kW	4	4	4	4	4	4	4
dimensions (LxHxW)	mm	3150x820 x1130	3650x820 x1130	3900x920 x1200	4150x820 x1130	4400x920 x1200	4650x820 x1130	4650x920 x1200
weight	kg	1900	2300	3600	2750	4200	3200	4600
Part no.		130 760	130 761	130 762	130 763	130 764	130 765	130 766

Optional Equipment:
motor-driven bottom roller adjustment, extended roller ends for profile roller mounting, profile roller set, digital display

KRM-A

3-Roller Roll Bender

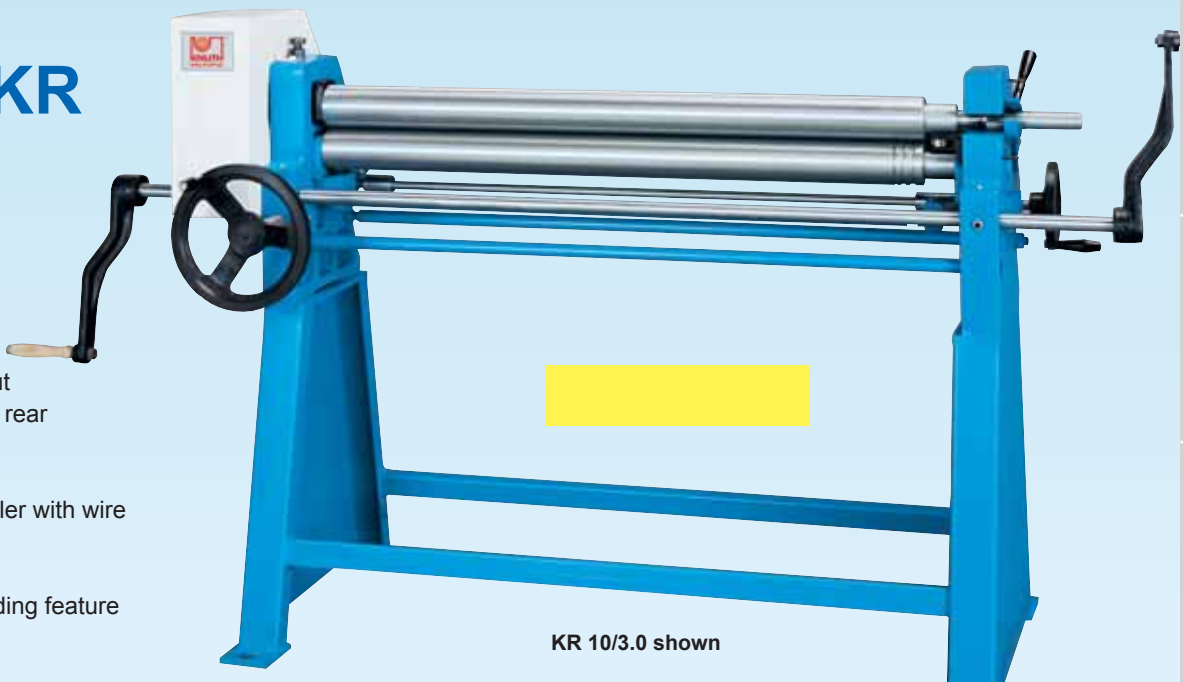
KRM-A 20/1.5 shown

Specifications		KRM-A 10/3,0	KRM-A 12/2,5	KRM-A 15/2,2	KRM-A 20/1,5
roller length	mm	1050	1250	1550	2050
pre-bend	mm	3,0	2,5	2,2	1,5
max. plate thickness	mm	3,3	3,0	2,5	2,0
roller Ø	mm	90	90	90	95
min. bending Ø	mm	130	130	130	135
roller speed	m/min	6	6	6	6
motor rating	kW	1,1	1,1	1,1	1,1
length	mm	2100	2350	2600	3030
width	mm	800	800	800	800
height	mm	1130	1130	1130	1130
weight	kg	500	570	570	635
Part No.		131 881	131 882	131 883	131 884

- asymmetrical 3-roller roll bender
- **hardened rollers, suitable even for stainless steel machining**
- adjustable bottom and rear roller
- standard wire core groove
- top roller swings out with eccentric closure
- foot switch
- manual feed of rear roller
- brake motor
- includes taper bending feature

KR

Roll Benders



KR 10/3.0 shown

- **hardened rollers, suitable even for stainless steel machining**
- top roller swings out
- easy adjustment of rear and bottom roller via handwheel
- bottom and rear roller with wire core groove
- back gear
- includes taper bending feature

Specifications		KR 10/1,0	KR 10/1,5	KR 10/3,0	KR 12/1,5	KR 15/2,0	KR 20/1,5
rolling length	mm	1050	1050	1050	1250	1550	2050
plate thickness	mm	1,0	1,5	3,0	1,5	2,2	1,8
roller Ø	mm	56	70	90	75	90	95
dimensions (LxWxH)	mm	1300x700x1100	1300x700x1100	2100x800x1130	2000x800x1120	2600x800x1100	3030x800x1130
weight	kg	240	320	500	510	570	635
Part.-No.		131 885	131 886	131 887	131 888	131 889	130 716

Motorized Ring and Profile Benders

KPB 50 • KPB 30

Cost-Effective Ring and Profile Benders for universal trade applications

KPB 50 shown

- millimeter scale for roller adjustment
- ground drive shafts with double support provided by cone bearings at both ends
- one-piece gliding central block mounted on hardened crosshead
- mechanical feed, 2 driving rollers, horizontal and vertical applications

Example Profiles	KBP 30 Dimens.	min. BendingØ	Rollers	KPB 50 Dimens.	min. BendingØ	Rollers
	50x10	800	A	60x10/50x12	800	A
	80x15	700	A	120x15	750	A
	30x30	700	A	35x35/20x20	1200/400	A
	Ø 30	700	B	Ø 35	800	B
	40x5	400	A	50x5	850	A
	40x5	500	A	50x5	1200	A
	50x6	800	A	50	650	A
	50	850	A	50	900	A
	UNP50	400	B	UNP60	550	B
	UNP50	500	B	UNP60	700	B
	1 1/2“	900	B	33,7x2,65	320	B
	Ø 60x2	1200	B	Ø 70x2	1200	B
	40x40x3		B	60x60x3		B
	50x30x3		B	50x40x3		B

Specifications		KPB 30	KPB 50
shaft diam.	mm	30/35	50
roller diam.	mm	132/137	155
roller speed	min^{-1}	2.1	4.3
motor rating	kW	0.75	1.5
weight	kg	185	400
length	mm	670	730
width	mm	530	830
height including base	mm	1350	1350
Part No.		130 158	131 151

Standard Equipment: standard rolls, foot switch, control panel, operating tools, operator manual

A Standard Rollers
B Special Rollers

Hydraulic Ring and Profile Benders

KPB 45 • 61 • 81 • 101 • 121

Powerful Production Machine for complex bending tasks

KPB 45
- including a modular roller system for optimum adaptation to desired profile
- manually adjustable leveling rolls
- hardened and ground shafts
- allows horizontal and vertical machining
- hydraulic components made by leading manufacturers
- hydraulic movement of upper roll
- separate control panel

KPB 61, 81, 101, 121
- optimum adaptation to a large variety of profiles using the modular roller system
- high-precision bending with 3 motor-driven rollers on models KPB 61 and KPB 81, and 3 hydraulic-driven rollers on models KPB 101 and KPB 121
- hardened and ground shafts
- adjustable overload protection
- hydraulic feed of bottom rollers with digital display
- KPB 121 includes hydraulically adjustable straightening rollers; optional for KPB 61, 81 and 101
- allows horizontal and vertical machining
- hydraulic components made by leading manufacturers

KPB 45 shown

KPB 101 shown including optional accessories hydraulically controlled straightening rollers

Standard Equipment KPB 45: control panel, standard rollers, operating tools, operator manual

Standard Equipment KPB 61, 81, 101, 121: digital display, hydraulically controlled straightening rollers (KPB 121), mechanically controlled straightening rollers (KPB 121), control panel, standard rollers, operating tools, operator manual

Specifications		KPB 45	KPB 61	KPB 81	KPB 101	KPB 121
shaft diameter	mm	50 / 40	60	80	100	120
bending speed	m/min	3,3	6,4	4,2	5,4	4
roller diameter	mm	152 / 162	177	245	315	390
driven rollers	quant.	3	3	3	3	3
drive motor	kW / V	1,5 / 400	4 / 400	5,5 / 400	11 / 400	15 / 400
dimensions (LxWxH)	mm	780x950x1650	1260x940x1390	1375x1040x1540	1435x1220x1680	1985x1450x2040
weight	kg	500	1080	1600	3500	4720
Part No.		131 150	131 194	131 200	131 206	131 212
Part No. with NC Teach-In		-	131 196	131 202	131 208	131 214
Part No. with CNC Control		-	131 198	131 204	131 210	131 216

• HPS 45 D is a 1-cylinder version
• Models HPS 55/110 D, HPS 80/150 D and HPS 110/180 D provide 2 hydraulic cylinders for simultaneous work at 2 stations

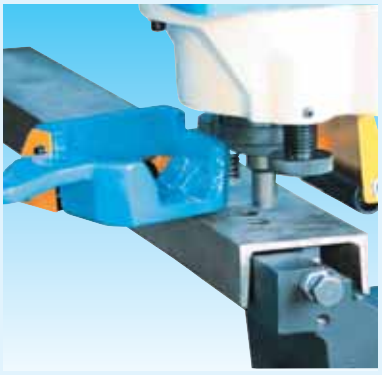
HPS 45 D shown

B

structural steel station

steel plate station

angle steel station



hole punch station

notching station

Specifications - HPS		45 D	55/110 D	80/150 D	110/180 D
Punch press					
press force	t	45	55	80	120
max. capacity	mm	Ø 27 x 13	Ø 40 x 10	Ø 40 x 14	Ø 50 x 17
diameter x thickness	mm	Ø 18 x 18	Ø 20 x 20	Ø 24 x 24	Ø 35 x 25
throat	mm	160	250	300	400
stroke	mm	21	60	70	80
strokes/min (20 mm)		20	37	38	38
table size	mm	450 x 160	550 x 250	550 x 300	500 x 470
working height	mm	1010	1080	1195	1061
Steel cutters					
cutting capacity, flat					
- max. thickness	mm	200 x 13	200 x 20	300 x 20	330 x 25
- max. width	mm	300 x 10	300 x 15	450 x 15	600 x 16
knife length	mm	305	305	475	610
cutting capacity, round	mm	30	40	45	60
cutting capacity, square	mm	30	40	45	50
working height	mm	1010	890	1032	880
Profile cutter					
cutting capacity 90°	mm	80 x 80 x 8	120 x 120 x 10	130 x 130 x 13	160 x 160 x 14
cutting capacity 45°	mm	-	70 x 70 x 7	70 x 70 x 7	70 x 70 x 8
working height	mm	1020	1100	1250	1220
Notcher					
material thickness	mm	7	10	12	13
depth V90xWidthxThickn	mm	40 x 40 x 7	42 x 42 x 10	52 x 52 x 12	52 x 52 x 13
motor rating	kW	3	5,5	11	7.5
dimensions (LxWxH)	mm	1460 x 1400 x 1620	1480 x 1800 x 1730	2025 x 1780 x 2700	2355 x 960 x 1790
weight	kg	810	1300	2700	4800
Part No.		130 170	130 172	130 174	130 176

Hydraulic Profile Steel Cutters
HPS

Universal Machining Operations at 5 Work Stations

- **Punching**
- **Cutting**
- **Notching**

HPS 80/150 D shown

Flat Steel Cutters
- lower knife provides 4 cutting edges
- table with angular and linear stops

Angular Profile Steel Cutters
- rear stop adjustable up to 1000 mm
  - manual operation on model HPS 45 D, automatic cut activation on all other models

Rod Steel Station
- hold-down for round and square steel
- rear stop at 1,000 mm

Notching Station
- table with scales and stop

Hole Punch Station
- for punching sheet metals, flat steel and U-section steel
- heavy-duty table ensures high-quality punching results
- models HPS 110/180 D a. HPS 165 C provide an extra-wide throat
- infinitely variable stroke adjustment
- including adapter for „Peddinghaus“ stamps and dies (only HPSD)
- hydraulic overload valves


Flat Steel Station


Angular Steel Station


Hole Punch Station


Notching Station

Call us to inquire about the latest best prices under: +49 4321 609-0

Motorized Folding Machine

KMS 2020

Easy handling - high bending length

- massive, robust weldment construction with high rigidity
- motor driven male die and bending bar
- infinitely variable adjustment of bending angle
- operation via foot switch

Standard Equipment: foot switch, manual bending angle adjustment, operator manual

Specifications		KMS 2020	KMS 2520	KMS 3020
folding length	mm	2020	2520	3020
bending capacity, structural steel		1.5	1	1
bending angle		0 - 135°	0 - 135°	0 - 135°
top beam stroke	mm	100	100	100
motor rating	kW	0.75	0.75	0.75
top beam motor	kW	0.37	0.37	0.37
dimensions	mm	2830x760x1410	3330x760x1410	3830x760x1450
weight	kg	1050	1310	1630
Part No.		131 345	131 346	131 347

Hydraulic Folding Machines

HSBS

Robust, precise and cost-effective

- rigid machine body - solid weldment
- segmented male die
- reliable and low-maintenance thanks to very robust construction
- powerful hydraulic cylinder for male die and bending beam, operated via foot switch
- premium electric components (e.g. Siemens, Schneider)

Standard Equipment: foot switch, operating tools, operator manual

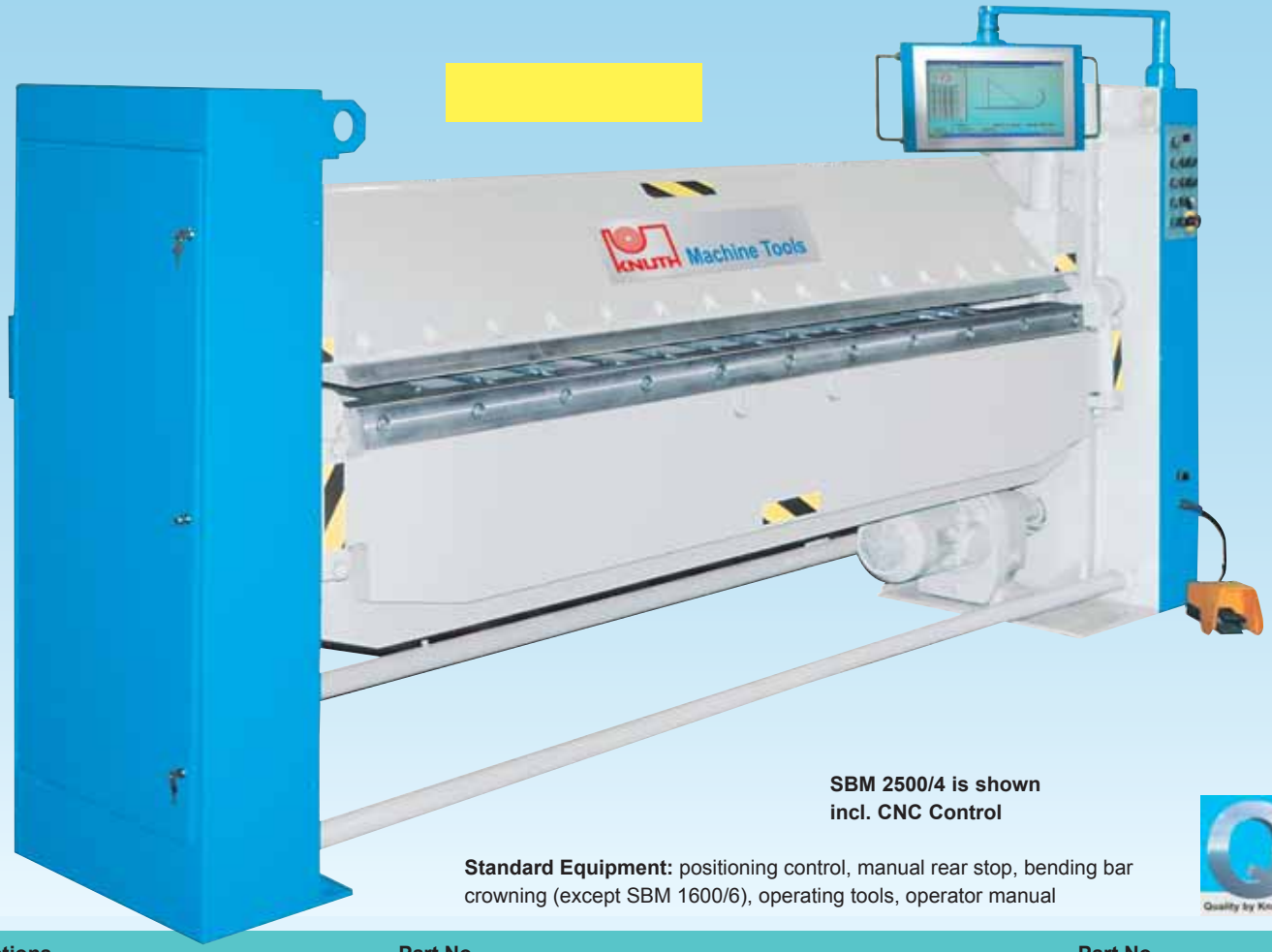
Specifications		HSBS 25/2	HSBS 25/3
folding length	mm	2500	2500
bending capacity, structural steel	mm	0.5 - 1,5	0.5 - 3
bending capaicty, stainless steel	mm	0.5 - 1	0.5-1.5
bending angle		20 - 120°	20 - 120°
top beam stroke	mm	140	140
motor rating	kW	4	5.5
dimensions	mm	3350x950x1400	2950x800x1400
weight	kg	1260	2900
Part No.		131 340	131 341

Motorized Folding Machine

SBM 1600/6 • 2000/5 • 2500/4 NC

Productive, cost-effective and high accuracy

- positioning control for pre-selection of bending angle and top beam stroke; also controls the optional motorized rear stop
- very rigid machine, motors on both sides drive the bending beam for accurate bending and high repeatability
- reliable 2-step gears with oil-bath lubrication drive the bending bar
- manual bending bar crowning (SBM 2500/4 and SBM 2000/5) ensures perfect bending results with all plate thicknesses



SBM 2500/4 is shown incl. CNC Control

Standard Equipment: positioning control, manual rear stop, bending bar crowning (except SBM 1600/6), operating tools, operator manual

Options	Part No.		Part No.
• motorized rear stop	250 214	• split bending bar 1600 mm	250 310
• Advantech PPC CNC control with motorized rear stop	250 215	• split bending bar 2000 mm	250 311
		• split bending bar 2500 mm	250 312

Specifications		SBM 1600/6 NC	SBM 2000/5 NC	SBM 2500/4 NC
Working area				
folding length	mm	1600	2000	2500
bending capacity (@ 500N/mm²)	mm	6	5	4
folding angle		0 - 125°	0 - 125°	0 - 125°
top beam stroke	mm	15 - 175	15 - 175	15 - 175
top beam feed	mm/sec	12	12	12
top beam bending speed	°/sec	25	25	25
rear stop	mm	100 - 400	100 - 400	100 - 400
Drive Capacities				
total connected load	kVA	6.2	6.2	6.2
Dimensions/Weight				
dimensions	mm	2490 x 760 x 1520	2900 x 710 x 1520	3400 x 710 x 1520
weight	kg	2700	2900	3230
Part No.		131 352	131 351	131 350

Manual Shears

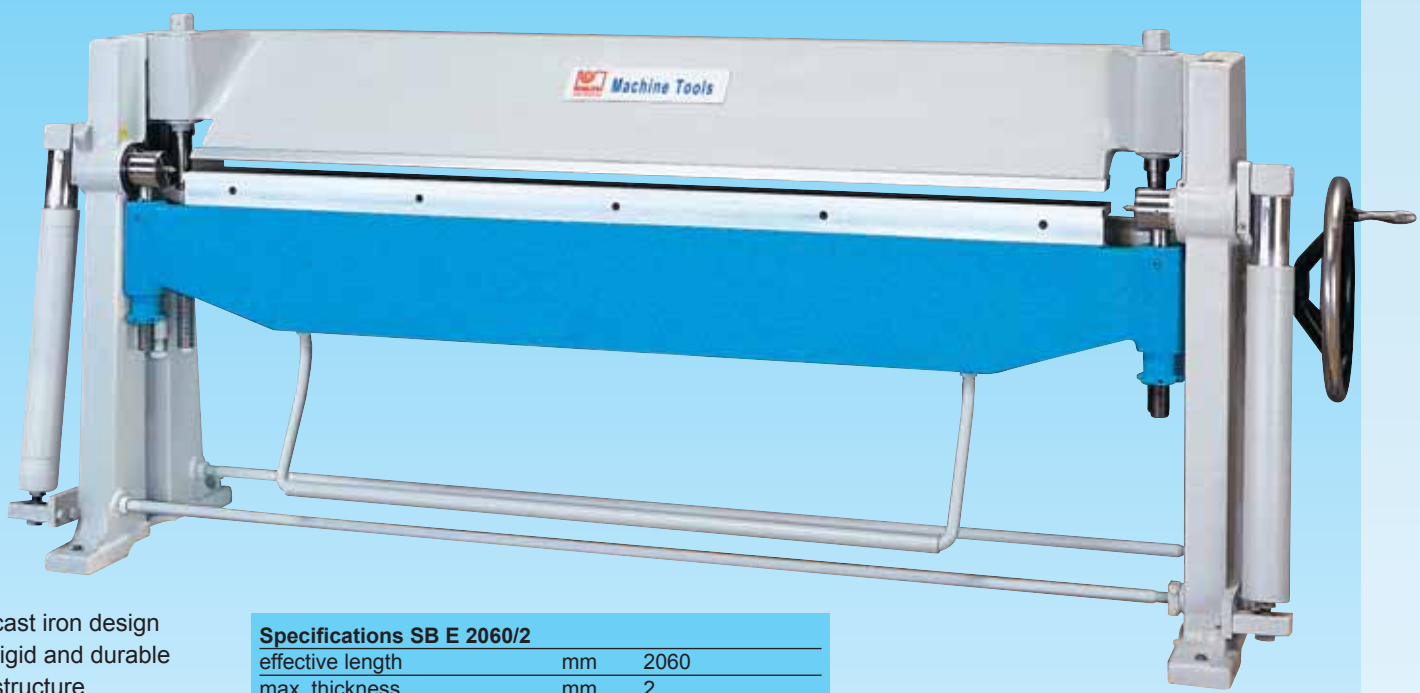
KHS E 1000

- large dimensions steelplates sheets can be pushed through

Specifications KHS E 1000		
max. sheet thickn.	mm	1,5
work length	mm	1040
table	mm	640x1000
stop	mm	0-600
height	mm	1500
width	mm	1000
length	mm	1300
weight	kg	460
Part no.		132 036

Folding Machine

SB E 2060/2



- cast iron design
- rigid and durable structure
- versatile applications

Specifications SB E 2060/2		
effective length	mm	2060
max. thickness	mm	2
max. bending radius		135°
top beam travel	mm	210
adj. lower bending beam	mm	100
weight	kg	1750
dimensions (LxWxH)	mm	2900 x 650 x 1740
Part no.		131 336

Folding Machines

SBS 1020/2,5 • SBS 1270/2,0

- for formed component bending
- compression spring for top beam counterbalance
- cam lock and rebound spring for bending beam counterbalance
- bow handle for bending beam rotation
- adjustable bending angle stop with scale up to 135°
- segmented top beam tools
- segment sizes
  - **SBS 1020/2.5:** 25, 30, 35, 40, 45, 50, 75, 100, 150, 200, 270 mm
  - **SBS 1270/2.0:** 25, 30, 35, 40, 45, 50, 75, 100, 150, 200, 250, 270 mm

Specifications		SBS 1020/2.5	SBS 1270/2.0
max. folding cap.St 42	mm	2.5	2.0
max. folding length	mm	1020	1270
max. folding angle		135°	135°
dimensions (LxWxH)	mm	1348x850x1175	1598x900x1175
weight	kg	285	330
Part No.		131 364	131 363

Folding Machine

SBS E 2020/2,0

- Segmenting:
  25, 30, 35, 40, 45, 50, 75, 100, 150, 200, 200, 270, 400 and 400 mm
- Lever for the swivel movement of the bending beam

Specifications SBS E 2020/2,0		
max. bending capac. ST 45	mm	2,0
max. bending length	mm	2020
inf. var. bending angle		0 - 135°
working height	mm	910
dimensions (LxWxH)	mm	2565 x 560 x 1265
Weight	kg	1020
Part No.		131 367

Folding Machine

MagBend 1250

Versatile and user-friendly - with magnetic plate clamping

- versatile and efficient with exchangeable top beams
- easy to use magnetic clamp with a press force of 6 tons over the entire length
- high accuracy and repeatability due to depth stops and folding angle stops with scales
- includes extensive standard equipment for easy machining of deep containers and polygon tubes
- top beams can be easily exchanged to produce many different bending shapes

Standard Equipment: plain top beam, segmented top beam, grooved top beam, rectangular top beam, foot switch, rear stop, angle stop, operating instructions

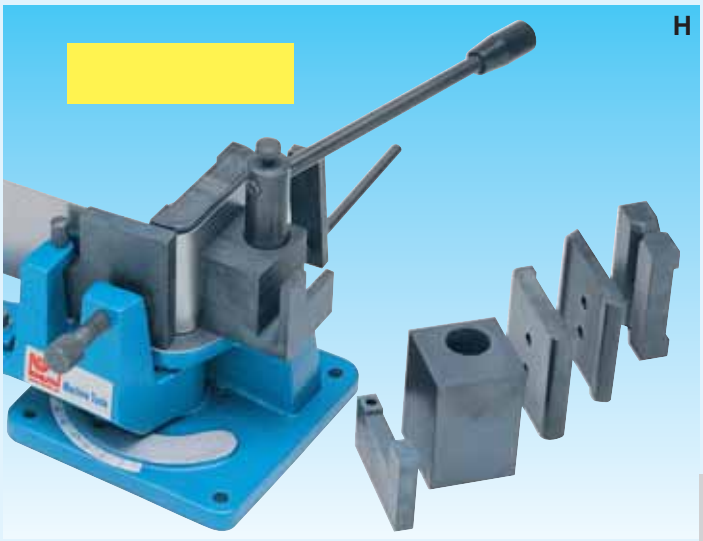
Specifications MagBend 1250		
folding length	mm	1250
capacity in steel (St 42)	mm	1,6
folding angle		0 - 135°
stop depth	mm	640
clamping force	tons	6
Dimensions	mm	1320 x 920 x 930
weight	kg	220
Part No.		170 350

Angle Iron Bender
KW 100

for exact cold and hot bending of flat, round, and square steel

- sturdy design for screw- mounting on workbench
- infintiely variable bending stop adjustment
- with eccenter quick-clamp for streamlined operation
- bending angle read-out up to 120°
- bending angle stop for high repeatability
- ideal for repair shops and metal working shops

Standard Equipment: angle stop, bending plates, bending lever, material stop



Specifications Model KW 100		
weight	kg	38
dimensions (LxWxH)	mm	380 x 250 x 260
Part No.		129 122

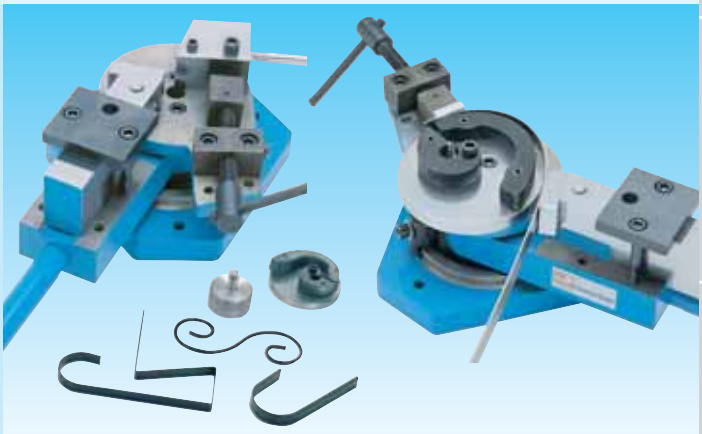
			Cold	Hot
▬	Flat steel	mm	100 x 5	100 x 15
	or	mm	60 x 8	100 x 12
●	Round steel	mm	18	30
■	Square steel	mm	16 x 16	30 x 30
▬	Flat copper		100 x 12	-

Universal Bender

for angle, round, loop, and coil bending

- to produce grids, doors, gates, balcony railings, patio furniture as well as rod iron lamps.
- with hardened bending segments
- suitable for steel, brass, copper, and aluminum
- round bar up to 15 mm
- square bar up to 13 mm, flat bar up to 30 x 8 mm

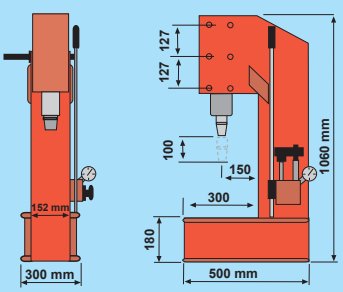
Part No. 130 127



Hydraulic Presses
HP 15

- 15 t
- piston bore 80 mm
- pressure 300 kg/cm²
- ram to table distance 500 mm
- table 300 x 300 mm
- height 1060 mm
- weight 145 kg

Part no. 130 042



Arbor Press
5 T

- for press-fitting and pulling bearings
- aligning, bending and broaching
- **base**
  Part no. 123 952

1 T - force 5 kN,
workpiece size max. 147 mm
Part no. 109 536

2 T - force 10 kN,
workpiece size max. 215 mm
Part no. 109 537

3 T - force 15 kN,
workpiece size max. 317 mm
Part no. 109 538

5 T - force 20 kN,
workpiece size max. 400 mm
Part no. 109 540

3 IN 1

One machine for Cutting, Folding, and Roll Bending

- Ideal combination machine for sheet metal machining up to a length of 1000 mm and a thickness of 0.8 mm
- cutting stop
- roll bending starting with a diameter of 40 mm, adjustable, 1000 mm opening
- folding with a max. angle of 180° press segments 25 - 750 mm
- adjustable rear stop

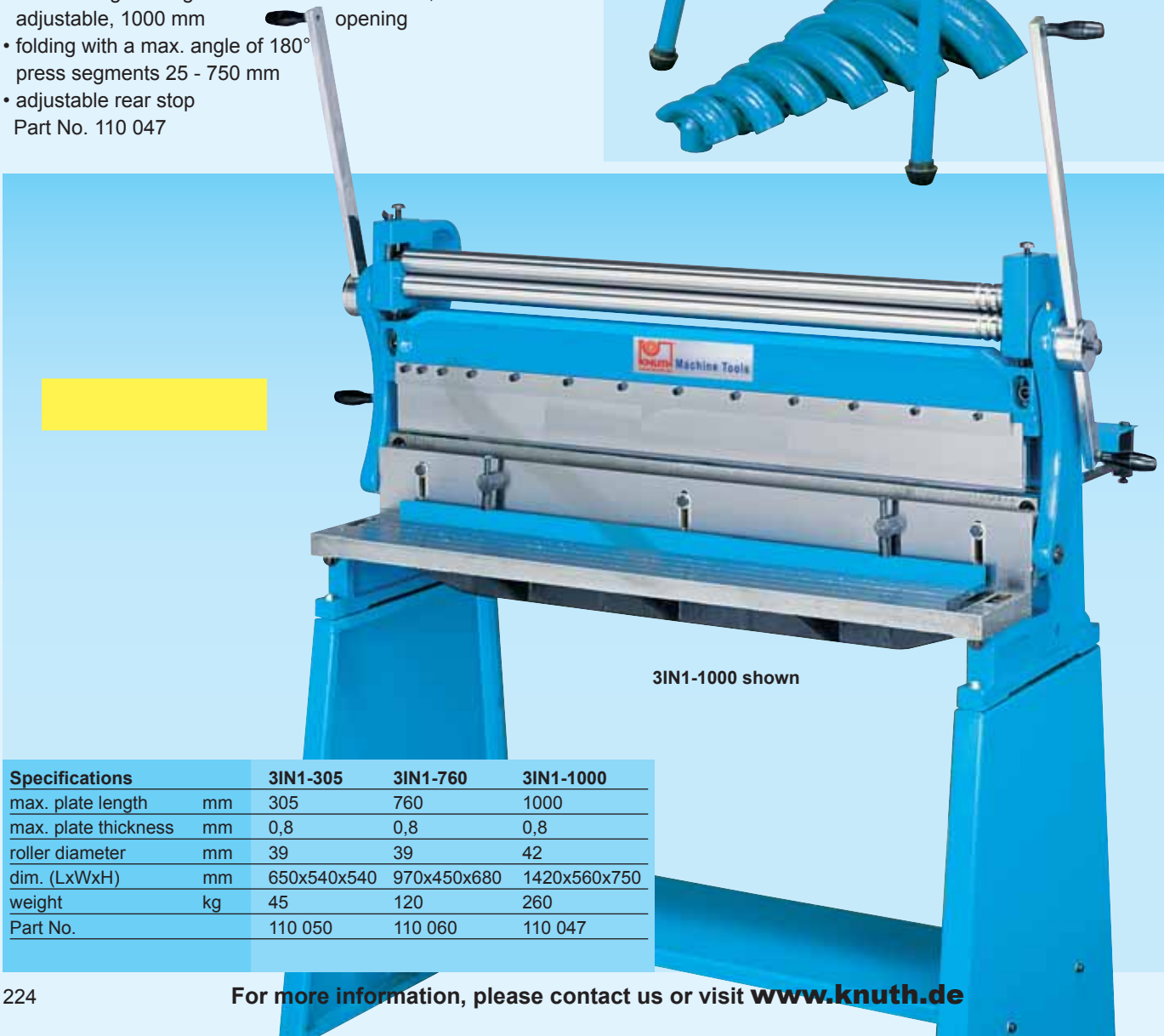
Part No. 110 047

Hydraulic Tube Bender 1/2“ - 2“

H

- 10 to pressure
- 6 bending segments
- 3-leg stand

Part no. 129 112



3IN1-1000 shown

Specifications		3IN1-305	3IN1-760	3IN1-1000
max. plate length	mm	305	760	1000
max. plate thickness	mm	0,8	0,8	0,8
roller diameter	mm	39	39	42
dim. (LxWxH)	mm	650x540x540	970x450x680	1420x560x750
weight	kg	45	120	260
Part No.		110 050	110 060	110 047

Tube Notcher

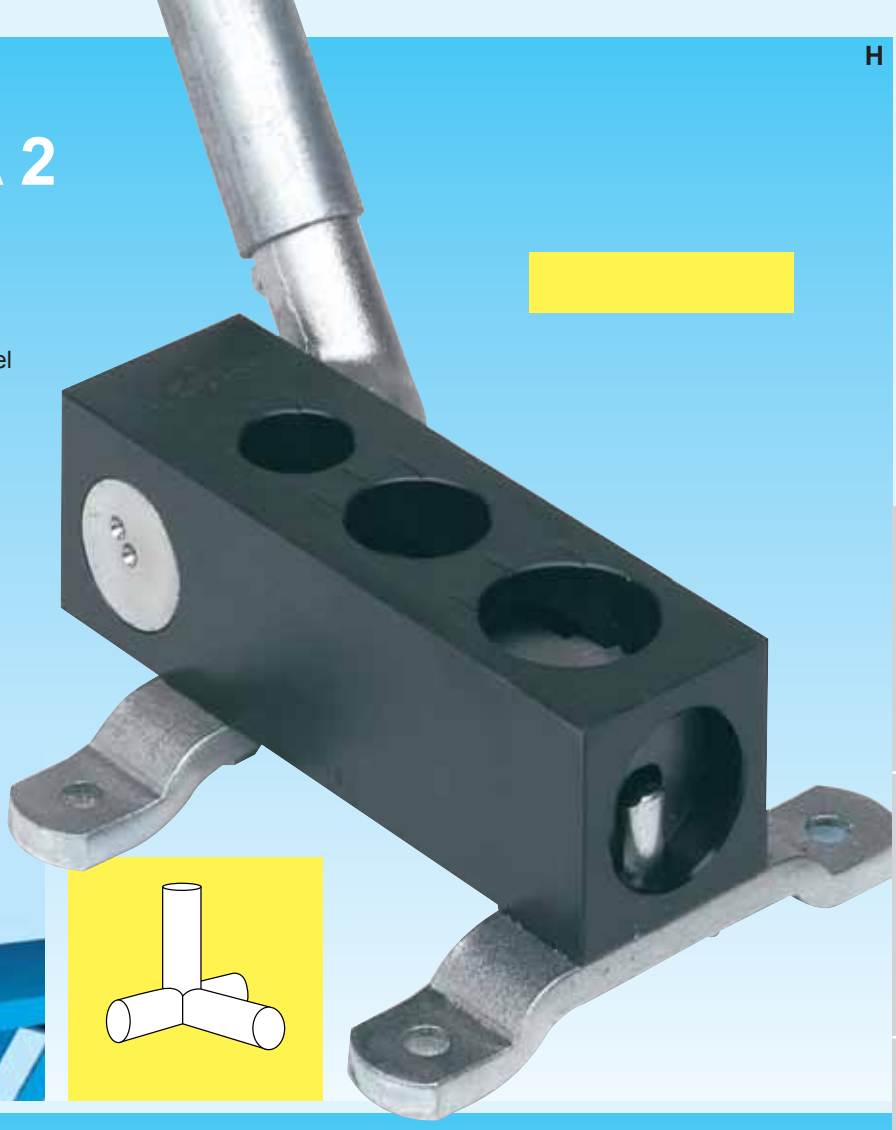
RA 1 • RA 2

Allows easy joining and welding of tubes at a 90° angle

- for tubes with up to 5 mm wall thickness, steel or non-ferrous metal
- several tube diameters combined in 1 device
- horizontal and vertical operation
- suitable for double-connection

RA 1 - diameter 27 - 43 mm
Part No. 130 126

RA 2 - diameter 49.5 - 61.5 mm
Part No. 130 129



Electr. Tube Notcher

RAX

Suitable for continuous operation, with 1.5 kW Electric Motor

- high productivity
- low cost
- simple and quick operation
- several diameters instantly available
- operation with 230 Volt
- for tube diameters: 1/4“, 3/8”, 1/2”, 3/4”, 1”, 1 1/4”, 1 1/2”, 2”

- weight 62 kg
- motor rating 1.5 kW
- max. material thickness 3 mm

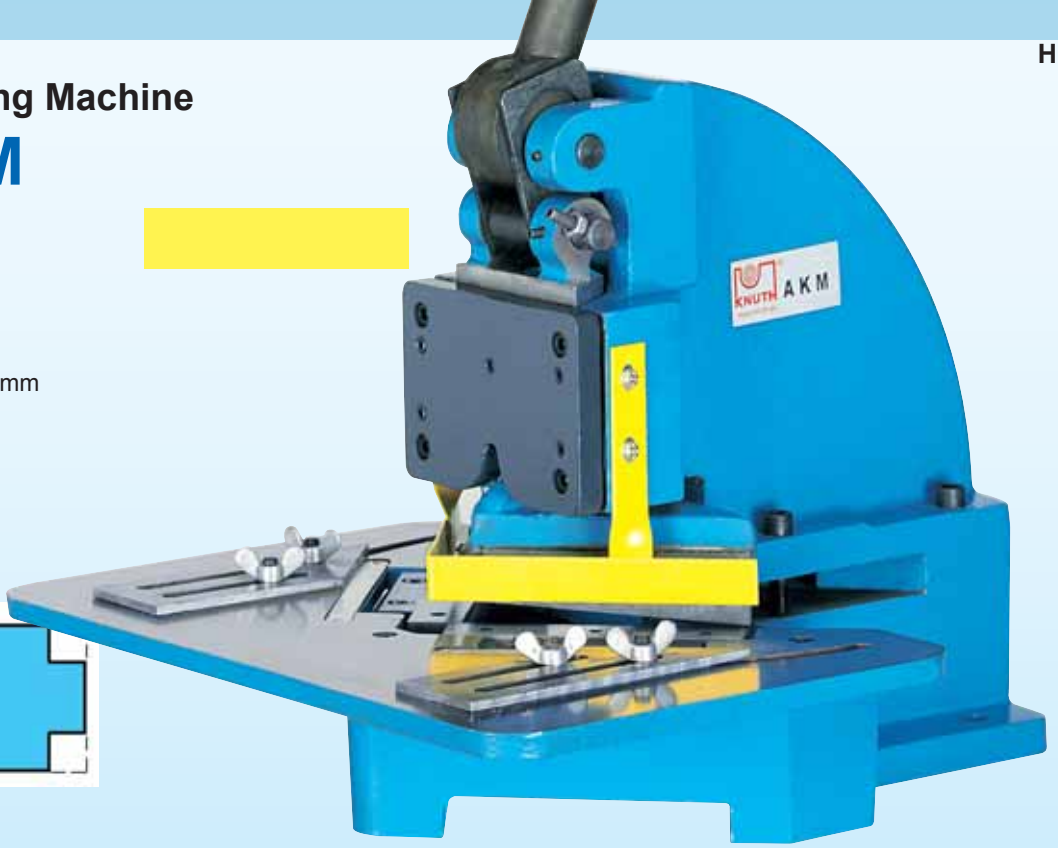
Part No. 130 125

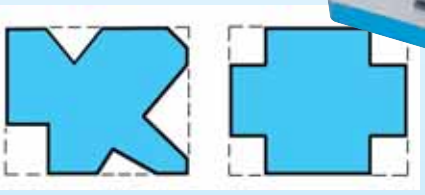
Notching Machine
AKM

- max. 4 t pressure capacity
- punches 152 x 152 mm
- 90° angle 152 x 152 mm
- plate thickness 1.6 mm
- ram stroke 20 mm
- dimensions 640 x 540 x 570 mm
- weight 95 kg

Part no. 130 602

replacement knife
Part no.130 612

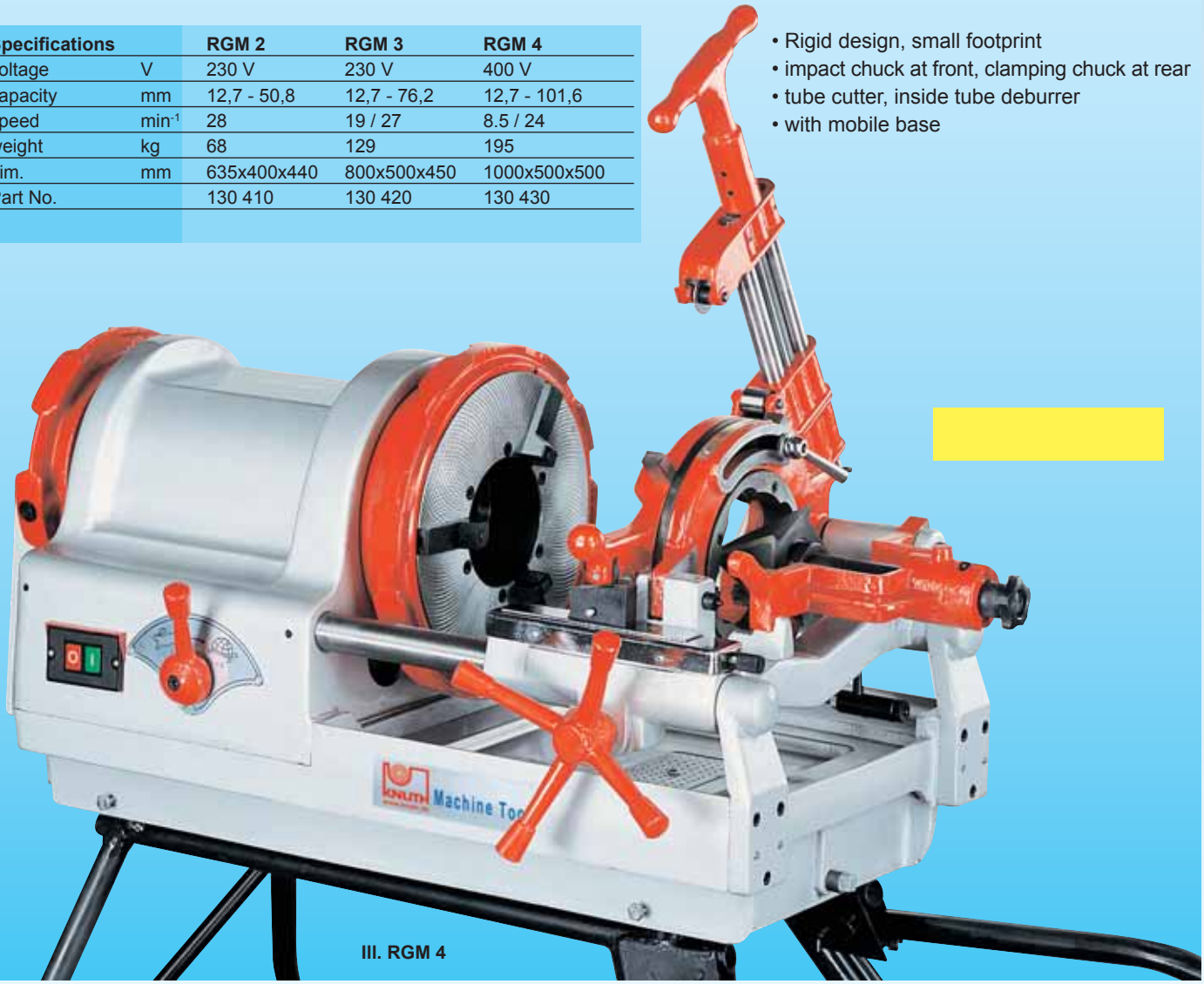




Pipe-Thread Cutter
RGM

Specifications		RGM 2	RGM 3	RGM 4
voltage	V	230 V	230 V	400 V
capacity	mm	12,7 - 50,8	12,7 - 76,2	12,7 - 101,6
speed	min^{-1}	28	19 / 27	8.5 / 24
weight	kg	68	129	195
dim.	mm	635x400x440	800x500x450	1000x500x500
Part No.		130 410	130 420	130 430

- Rigid design, small footprint
- impact chuck at front, clamping chuck at rear
- tube cutter, inside tube deburrer
- with mobile base



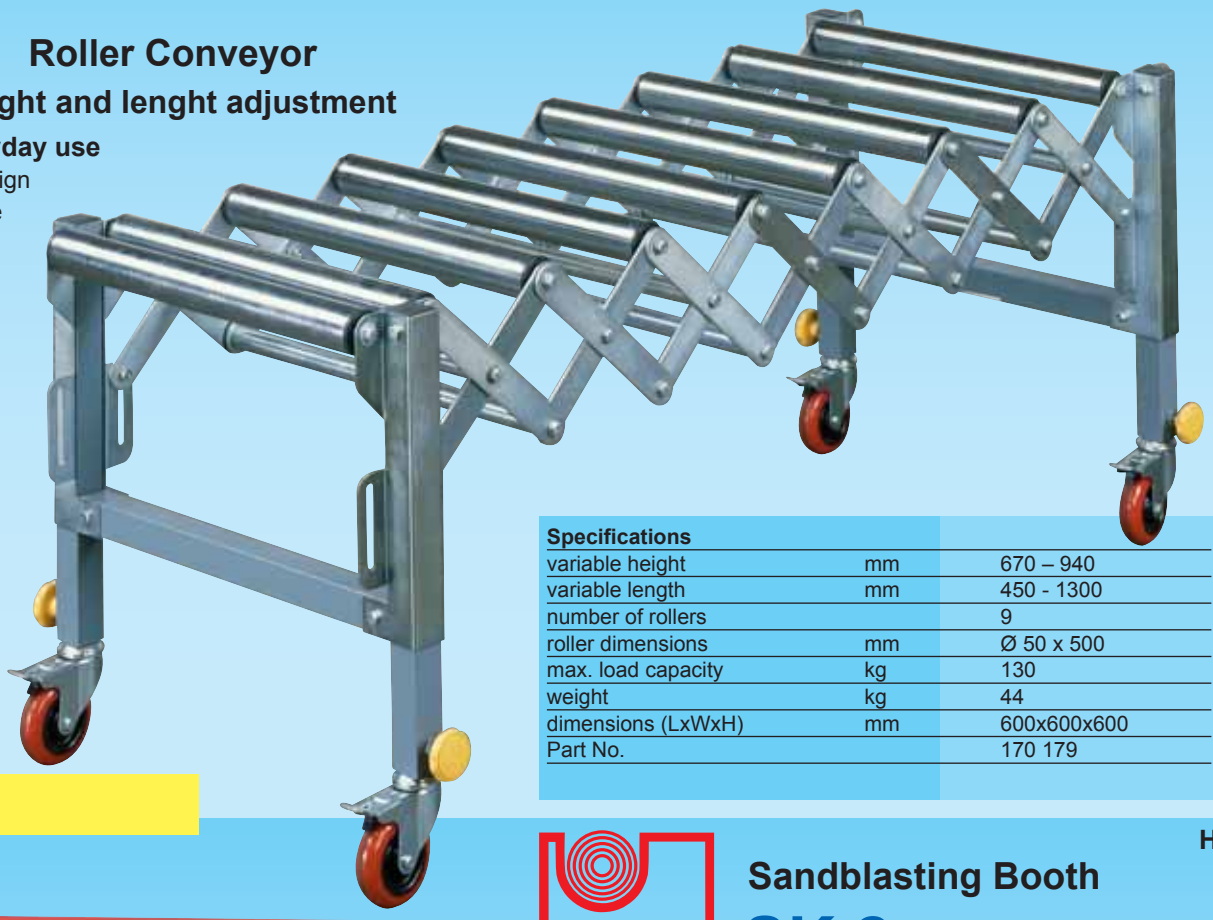
Ill. RGM 4

Roller Conveyor

variable height and lenght adjustment

Ideal for everyday use

- very sturdy design and flexible use



Specifications		
variable height	mm	670 – 940
variable length	mm	450 - 1300
number of rollers		9
roller dimensions	mm	Ø 50 x 500
max. load capacity	kg	130
weight	kg	44
dimensions (LxWxH)	mm	600x600x600
Part No.		170 179

Sandblasting Booth SK 2

Sandblasting booth for rust removal, cleaning, degreasing, descaling, roughening, polishing, matting, deburring, hardening, etc.

- sandblasting gun with replaceable ceramic nozzles
- dust-tight booth, rigid steel plate construction
- transparent glass viewing window
- two side doors, dust-tight closure
- dust exhaust connector

Please note that sandblasting requires larger compressors than other compressed air jobs. Small compressors cannot produce the required power, which will lead to inadequate blasting results.

Standard Equipment: air hose, work gloves, interior lighting, protective film, 4 ceramic nozzles, operator manual

Specifications SK 2		
work space	mm	890 x 660 x 400
grain sizes	mesh	60 – 100
air consumption	l/min	590
required air pressure	bar	4 – 8
hopper capacity	l	37
weight	kg	55
arm hole openings	mm	180
air connector		1/4“
Part No.		109 481

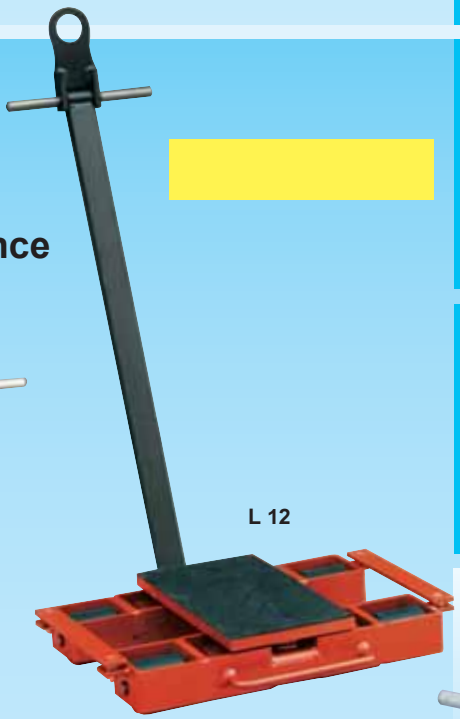
	Part No.
spare gloves SK2	109 486
spare ceramic nozzle set (4 / 5 / 6 / 7 mm}	119 494
spare ceramic nozzle 4 mm	119 487
spare ceramic nozzle 5 mm	119 488
spare ceramic nozzle 6 mm	119 489
spare ceramic nozzle 7 mm	119 490

Hydraulic Machine Lift

- makes your machinery mobile
- ensures safety
- optimal solution for lifting and transportation problems
- eliminates accidents and property damage

Hydraulic Machine Lift		H 3	H 8
load capacity	t	3	8
lifting range	mm	15 - 240	25 - 295
intrinsic weight	kg	21,5	28
Part No.		140 305	140 310

Load Guidance



L 12

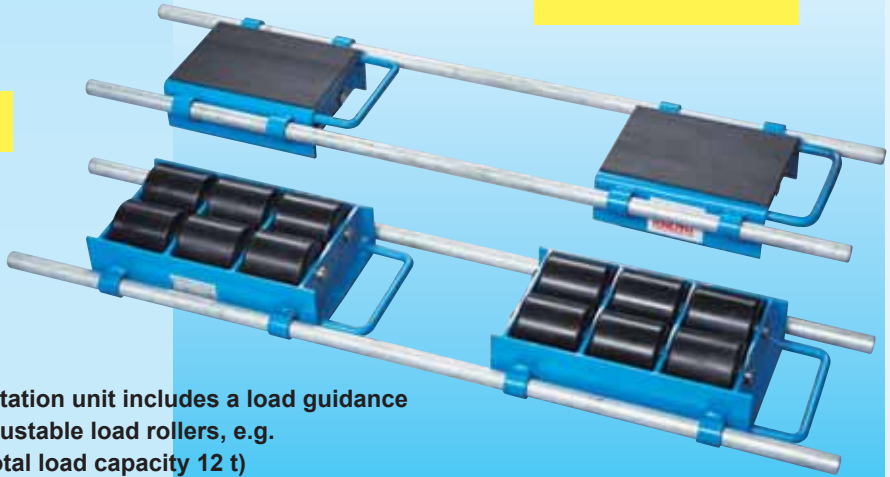
L 6

Load Guidance		L 6	L 12
load capacity	t	6	12
number of rollers	pcs.	8	8
roller material		plastic	steel
dimensions	mm	630 x 400 x 115	630 x 400 x 115
intrinsic weight	kg	50	66
Part No.		140 206	140 212

Adjustable Load Rollers		R 6	R 12
load capacity	t	6	12
number of rollers	pcs.	8	12
roller material		plastic	plastic
dimensions	mm	300 x 250 x 115	360 x 220 x 115
intrinsic weight	kg	30	38
Part No.		140 106	140 112

Load Rollers

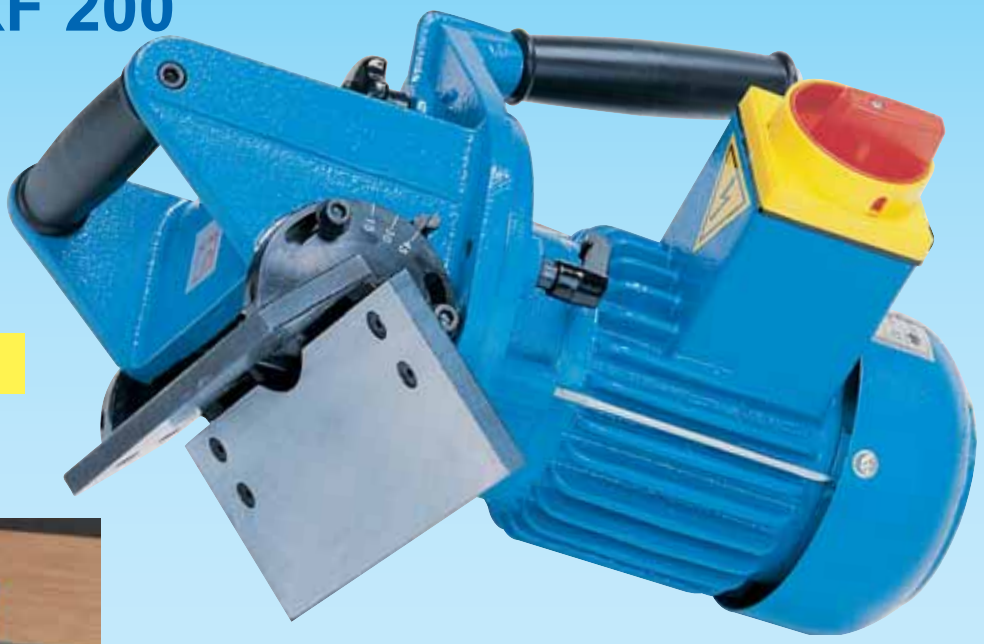
adjustable



Each transportation unit includes a load guidance model and adjustable load rollers, e.g. L 6 and R 6 (total load capacity 12 t)

Portable Edge Beveller

KF 200



- for chamfering, deburring, and 45° bevelling of steel, aluminum and many other materials
- easy operation
- tungsten alloy blades for ultimate tensile strength, hardness and long service life

Replacement Tool Bits
Set, Part no. 101 354

motor rating	kW	0.37
speed	1/min	3500
guide bar length	mm	200
bevel height	mm	0-5
adjustable angle		15°-45°
weight	kg	11
dimensions	mm	360x200x260
Part No.		101 350

Edge Beveller

KF 500

- for bevelling, deburring and 45° chamfering
- max. bevel width 3 mm
- excellent surface quality
- quicker and more uniform results
- very long service life due to reversible tool tips (usable on 4 sides)

Part No. 101 355

Replacement Tool Bits
Set, Part no. 101 354

Angle	Voltage	Power	max. Speed	Tbl Length	Weight
15 - 45°	230 V	0.75 kW	3400 min^{-1}	500 mm	50 kg
	1 Phase				

KNUTH

Milling Table Feed

TV 1000 M • TV 1000

TV 1000 M

horizontal mount
(Mark Super)
TV 1000 M Part no. 121 477

TV 1000

vertical mount
(see ill., a. MF1 V)
TV 1000 Part no. 121 470

Assembly TV 1000 / TV 1000 M,
Part no. 101 476

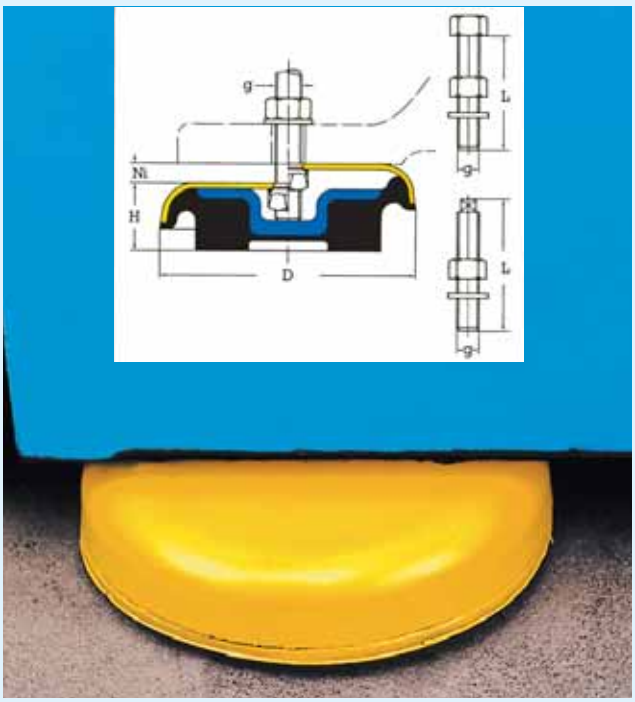
The milling table feed model TV 1000 is an infinitely variable feed control with a range from 19 to 800 mm/min.
2 adjustable table stops provide an automatic shut-off.
The rapid traverse (1000 mm/min) allows quick positioning of the table. Torque is 12 Nm.
The TV 1000 table feed unit can be retrofit on most milling machines. After mounting of the TV 1000, the table still can be moved manually.

Pivoted Mounts

- damper elements absorb shock and vibration
- vibration-free machine operation
- set screws allow for easy machine alignment

Specifications load capacity per element (kg)	LK 33	LK 55	LK 66
lathes	330	800	1600
milling machines	500	1300	2000
surface grinding machines	330	800	1600
misc. machines	1200	3000	4000
max. structural load	2000	4000	6000
Part no.	103 321	103 322	103 323

	Nl	D	H	L	g
LK-33	12	120	32	100	M 12
LK-55	12	160	35	120	M 16
LK-66	12	185	39	160	M 20



LED Work Lamps
LED

Excellent illumination with low energy consumption and long service life

- a true advancement in lighting technology – perfect for any production situation, where good lighting is needed
- the high-power LED module generates light with a color temperature corresponding to natural light; it is vibration and shock resistant and provides a mean service life of 50,000 hours – ideal for harsh operating conditions
- LED lights provide virtually the same light intensity as conventional halogen lights, but they save energy and cost
- the lamp enclosures are very rugged and protected against ingress of water, oil and dust (IP 65)
- low heat generation increases safety and helps avoid temperature-related problems

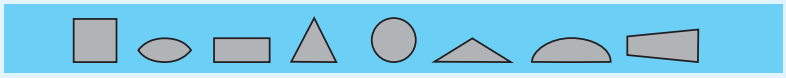
Specifications		LED flex	LED 100	LED 280	LED 400
arm length	mm	500	-	320 + 280	320 + 400
light source		HI POWER LED 3 W / 3 bulbs	HI POWER LED 1 W / 8 bulbs	HI POWER LED 1 W / 8 bulbs	HI POWER LED 1 W / 8 bulbs
service life	hours	50000	50000	50000	50000
light angle		30°	70°	70°	70°
color temperature	K	6000-7000	6000-7000	6000-7000	6000-7000
light intensity	mm	>1100 LUX (700)	>1100 LUX (700)	>1100 LUX (700)	>1100 LUX (700)
surface temperature		<50°	<50°	<50°	<50°
voltage	V	AC/DC24	AC/DC24	AC/DC24	AC/DC24
current	mA	700	700	700	700
power	W	9	8	8	8
IP		IP 65	IP 65	IP 65	IP 65
cable length	m	1.2	1.2	1.2	1.2
Part No.		110 030	110 031	110 032	110 033

Diamond Files Set, 10 pieces

J

- shank diam.3 mm, length 140 mm
- for cutting of hardened steel, hard metal, ceramics, glass and rock
- wrapped in plastic bags
- grit, medium D 126

Part no. 129 440



H

Hand reamer set

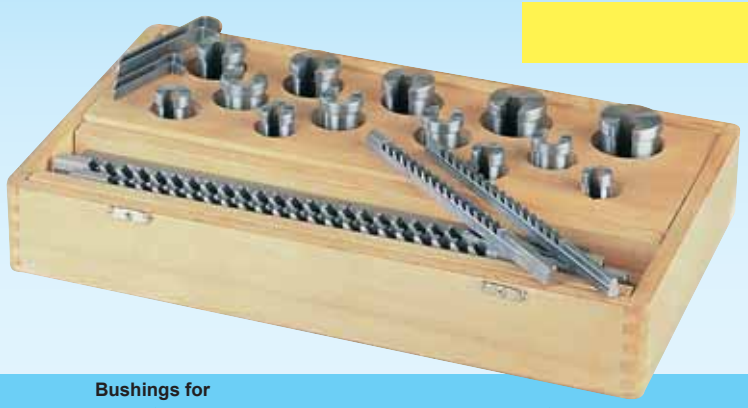
- adjustment range 12 - 38,75 mm
- suitable for mm/inch
- 11 adjustable hand reamers are included in the set

Part no. 107 610

Keyway Broach

F

- quick, precise reaming of keyways in bores (gears, v-beltpulleys, etc.), HSS, solid ground, Push Broaching Set for JS9 transition fit



Keyway	Bushings for Bore Ø				Part No.
2x2x130	6	8	10	-	
3x3x130	6	8	10	-	108 310
4x4x150	12	14	15	16	
5x5x150	12	14	15	16	
6x6x300	18	19	20	22	
8x7x300	25	26	28	30	108 315

Keyway	Bore Ø				Part No.
10x8x330	32	34	35	36	
12x8x330	38	40	42	44	
14x9x330	45	46	48	50	108 320
16x10x330	52	54	55	61	
18x11x330	58	60	62	65	108 325

5 Ltr. Coolant Concentrate

- improved chip flow, longer tool service life, and better cut profile
- for sawing, drilling, milling, turning of steel, castiron, stainless steel, non-ferrous and light metals
- dilute with water 1:20

Part No. 103 184

Coolant System

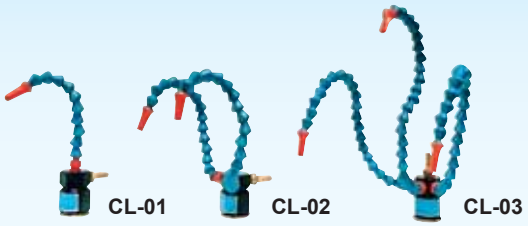
H

- retrofitable, supplied disassembled
- motor 400 V, 90 Watt
- 4.5 l volume coolant reservoir
- with flexible grommet and with shut-off valve
- with 1.5 m coolant hose

Part No. 102 985

Coolant Hose

- variable coolant hose consisting of individual plastic elements - for all machine tools
- replaces all conventional systems
- resistant to most solvents and chemicals
- suitable not only for coolant supply but also for blowing out workpieces and machine tables



Model	Part No	Price €		
CL-00	102 990		CL-01	102 992
CL-0	102 991		CL-02	102 993
			CL-03	102 994

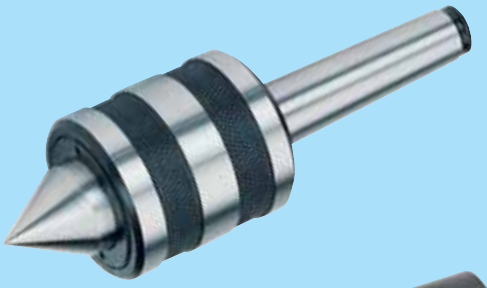
Live Center, assortment

- with 7 replaceable centers
- body made of hardened and ground tool steel
- precision needle bearing ensures high concentricity, long life, and high load capacity
- mushroom diameters 32, 2 x 13, 9, 7 and 5.5 mm

Morse Taper	Part no.
MT 2	106 780
MT 3	106 785
MT 4	106 790

Live Centers

- precision needle bearing
- hardened and ground point 60°

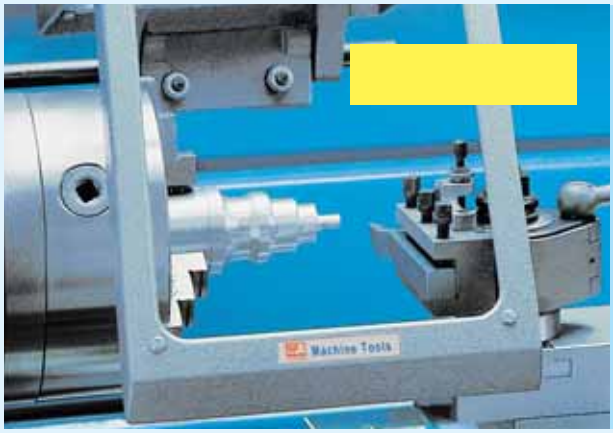


Morse Taper	Point Ø	O.D.	Length	Part no.
MT 2	22	38	125	106 745
MT 3	26	47	158	106 750
MT 4	30	57	190	106 755
MT 5	45	70	240	106 760

Tapping Chuck

- for insertion in the tailstock of lathes
- MT 3 - shank
- tool mount bushing slides onto tapered shank.
- length compensation by simply sliding the bushing on the mounting shank.
- complete with wooden case for drill and 5, 6, 7, 10 mm shanks, dies with 16, 20, 25, 30 mm diameters

Part no. 108 130



Lathe Guards

- can be mounted optionally at the headstock or with clamping fixtures at the slide
- aluminum injection-molded frame with acrylic view glass

mounting at	Front Frame HxW mm	Rear Frame HxW mm	Max. Chuck Ø mm	Part No.
headstock	180x170	180x170	150	103 005
headstock	240x210	260x210	300	103 006
headstock	350x260	360x260	460	103 007
slide	240x210	260x210	300	103 008
slide	350x260	360x260	460	103 009

Power Worker Metal Cutter

- universal, quick and mobile use even at limited access locations
- safe and clean working environment
- reduces risk of injuries caused by sharp metal edges
- recyclable due to separable material
- long service life due to permanent magnet
- adjustable rod length
- compact dimensions: 390 mm long, Ø 25 mm
- low weight: 600 g

Part No. 123 040

Turret Head MT 4

- shaft MT 4
- drilling 1 - 13 mm
- thread cutting and tapping M3 - M12
- reaming 4 - 12 mm
- centering 1 - 4 mm
- tool mounts: 2 drill chucks 1.5 - 13 mm, 1 center point, 1 taper mount MT 1, 1 each thread cutting unit for tap a. die holder
- weight 7.5 kg

Part no. 105 050

for upright use only, e.g. tailstock

Save time and money with a turret that fits MT 4 + MT 3

for upright use only, e.g. tailstock

Turret Head MT 3

- shaft MT 3
- drilling 1 - 13 mm
- 4 tool holder mounts:
  2 drill chucks
  1 center point
  1 thread cutting unit
  weight: 4 kg

Part No. 105 049

Radius Cutting Head

Clamps into the turning tool just like a tool-holder.

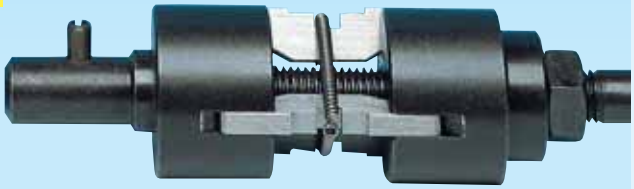
- For inside and outside machining of convex and concave forms.
- For turning of 90°, 180° radius. Radius from 0 to 25 mm.
- Machining depth up to 7 mm in ST50.

Part no. 103 350

Quick-Set Spindle Bore Stop

Size	Range	Wrench length	Part no.
1	19-23	540	103 010
2	22-26	540	103 012
3	25-31	540	103 014
4	30-38	640	103 016
5	38-48	640	103 018
6	46-58	740	103 020
7	56-66	740	103 022
8	64-81	940	103 024
9	79-91	940	103 025
10	90-110	940	103 026
11	110-130	940	103 027

- for lathes
- quick and easy adjustment to any hollow-spindle point
- easy adjustment - just tightening with a safety wrench



III.
Part no. 108 770

• 5 turning tools
• for steel working
• 5 forms (left, right, centered)

III.
Part no. 108 680

III. Part no. 108 670

Clamped Turning Tool Set:
P25 indexable insert for forged, rolled and tempered steel. All tools with indexable inserts, 1 indexable insert set (s.above), 3 shims 90 x 18 x 11 mm, tools, specifications, shank height 25 mm Part no. 108 670
Indexable insert set: 30 pc. Part no. 108 675
Clamped turning tool set: shank height 20 mm, shanks 20 mm, 9 tools Part no. 108 778
Indexable insert set: 30 pc. Part no.108 779
Clamped turning tool set: Part no. 108 780
5 tools cutting height 16mm, shanks 20mm
3 tools cutting height 20mm, shanks 20mm
1 tool cutting height 24mm, shanks 20mm
Indexable insert set: 30 pc. Part no. 108 782

Clamped Turning Tool Set

Shank	Part no.	5 replacem.
10 mm	108 770	108 774
12 mm	108 771	108 775
16 mm	108 772	108 775
20 mm	108 773	108 775

Turning Tool Set

• with soldered-on carbinde plates for steel, 8 pieces
shank 12 mm, Part no. 108 680
shank 16 mm, Part no. 108 690
shank 20 mm, Part no. 108 700

Knurl Holder

• shank H20, B14, total 140 mm
• incl. 2 knurl sets, angled 1 mmr
Part no. 108 520

knurl set, angles, Part no. 108 521

Clamped Turning Tool Set

Includes 8 different clamped turning tools, listed in the sequence shown (Part no. 108 670):

1. necking turning tool, clamping system C, workpiece Ø 60 mm

size	cutting point height	V	f	a
25x25x140mm	-	100 m/min.	0,2-0,4 mm	4 mm

2. tapping turning tool 60°, clamping system C

size	cutting point height	V	f	a
25x20x120mm	25 mm	-	-	-

3. stepped, right-hand turning tool, plate form S, clamping system M, cutting length 16 mm, incl. chip chute

size	cutting point height	V	f	a
25x20x125mm	-	80 m/min.	0,6-0,7 mm	6 mm

4. curved, right-hand turning tool, plate form S, clamping system M, cutting length 16 mm, incl. chip chute

size	cutting point height	V	f	a
25x20x125mm	-	80 m/min.	0,4-0,5 mm	4 mm

5. stepped, right-hand inside turning tool, clamping system C

size	cutting point height	V	f	a
18x18x180mm	14 mm	60 m/min.	0,2 mm	4 mm

6. curved, right-hand turning tool, plate form S, clamping system C, cutting length 16 mm, incl. chip chute

size	cutting point height	V	f	a
18x18x180mm	14 mm	60 m/min.	0,2 mm	4 mm

7. stepped, right-hand turning tool, plate form S, clamping system M, cutting length 20 mm, incl. chip chute

size	cutting point height	V	f	a
20x20x125mm	-	100 m/min.	0,4-0,5 mm	4 mm

8. female thread turning tool, clamping system C

size	cutting point height	V	f	a
18x18x180mm	25 mm	-	-	-

Lathe Chucks

F

3-jaw chuck / cast iron

Ø mm	Camlock mount	Speed rpm	Bore mm	Weight kg	Part No.
125	D1-4	3200	32	5	116 519
160	D1-4	3000	42	9	116 520
160	D1-5	3000	42	9	116 521
200	D1-4	2500	55	19	116 527
200	D1-6	2500	55	19	116 528
250	D1-6	2000	76	32	116 522
315	D1-8	1500	103	51	116 523
315	D1-11	1500	103	51	116 524
500	D1-8	700	136	150	116 525
500	D1-11	700	190	150	116 526

4-jaw chuck / cast-iron

Ø mm	Camlock mount	Speed rpm	Bore mm	Weight kg	Part No.
125	D1-4	3200	32	5	116 619
160	D1-4	3000	42	9	116 620
160	D1-5	3000	42	9	116 621
200	D1-4	2500	55	19	116 622
200	D1-6	2500	55	19	116 623
250	D1-6	2000	76	32	116 624
315	D1-8	1500	103	51	116 625
315	D1-11	1500	103	51	116 626
500	D1-8	700	136	150	116 627
500	D1-11	700	190	150	116 628

3-jaw chuck / steel

Ø mm	Camlock mount	Speed rpm	Bore mm	Weight kg	Part No.
160	D1-4	4500	42	9	146 378
200	D1-4	4000	55	19	116 501
200	D1-6	4000	55	19	146 372
250	D1-6	3500	76	32	146 377
250	D1-8	3500	76	32	146 373
315	D1-6	2800	103	51	146 374
315	D1-8	2800	103	51	146 383
315	D1-11	2800	103	51	116 505
400	D1-8	2000	136	150	116 506
400	D1-11	2000	190	150	116 507

4-jaw chuck / steel

Ø mm	Camlock mount	Speed rpm	Bore mm	Weight kg	Part No.
160	D1-4	4500	35,5	9	116 600
200	D1-4	4000	55	19	116 601
200	D1-6	4000	55	19	146 472
250	D1-6	3500	76	32	146 477
250	D1-8	3500	76	32	146 473
315	D1-6	2800	103	51	116 604
315	D1-8	2800	103	51	146 483
315	D1-11	2800	103	51	116 605
400	D1-8	2000	136	101	116 606
400	D1-11	2000	136	101	116 607

Soft Jaw Pads for 3-jaw chuck (cast-iron / steel)

Ø mm	Length mm	Width mm	Height mm	Part No.
160	78	25	41,5	116 550
200	90	27	13,5	116 551
250	103	32,5	51,5	116 552
315	120	37	55,0	116 553
400	140	42	64,5	116 554
500	140	42	74,5	116 555

Soft Jaw Pads for 4-jaw chuck (cast-iron / steel)

Ø mm	Length mm	Width mm	Height mm	Part No.
160	78	25	41,5	116 650
200	90	27	13,5	116 651
250	103	32,5	51,5	116 652
315	120	37	55,0	116 653
400	140	42	64,5	116 654
500	145	60	82,0	116 555

4-Jaw Independent Chuck

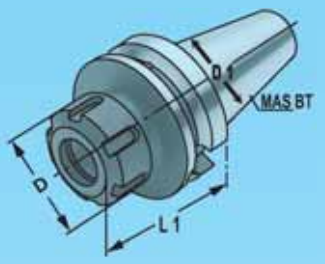
Soft jaws for 4-jaw independent chuck

Ø mm	Length mm	Width mm	Height mm	Part No.
200	92,50	40	43,5	116 690
250	109,00	47	51,5	116 691
315	124,90	52	55,0	116 692
400	145,00	52	64,5	116 693
500	145,00	60	82,0	116 694

4-Jaw Independent Chuck

Ø mm	Camlock mount	Weight, kg	Part No.
200	D1-4	10,0	116 670
200	D1-5	10,0	116 671
250	D1-6	27,5	116 672
315	D1-6	39,5	116 673
315	D1-8	39,5	116 674
400	D1-8	60,0	116 675
500	D1-11	95,5	116 676

Collet Chuck MAS-BT



Model	D	D1	L1	Part No.	H
BT30-ER25	42	31,75	70	104 200	
BT30-ER32	50	31,75	70	104 201	
BT40-ER32	50	44,45	100	104 202	
BT40-ER40	63	44,45	100	104 203	
BT50-ER32	50	69,85	100	104 204	
BT50-ER40	63	69,85	100	104 205	

ER Collet Set,

DIN 6499
Form B

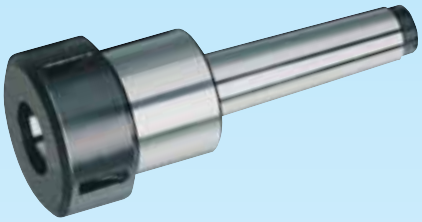
		Part No.	F
ER 25, 16-pieces	1 - 16 mm	106 050	
ER 32, 6-pieces	6, 8, 10, 12, 16, 20 mm	106 052	
ER 40, 15-pieces	3, 4, 5, 6, 8, 10, 12, 14, 15, 16, 18, 20, 22, 24, 26 mm	106 054	

For other chucks for MT 3 / MT 4, visit www.knuth.de

ER Collet Chucks

ER 32					F
Mount	MT 3	MT 4	ISO 30	ISO 40	
Part No.	106 057	106 058	106 055	106 056	
ER 40					
Part No.	106 063	106 064	106 061	106 062	

Collet Chucks for End Mills

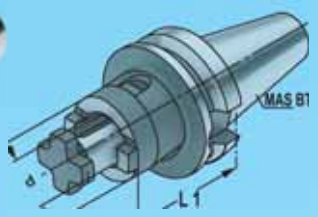


Tool Taper	Chuck Range	Part No.	H
MT 3	2 - 20	104 300	
MT 4	2 - 20	104 305	
ST 30	2 - 20	104 310	
ST 40	2 - 20	104 320	

Collets from 2 to 20 mm Ø

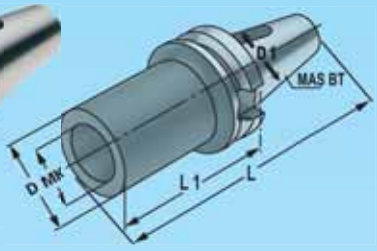
2 mm Ø Part No. 104 325, 3 mm Ø Part No. 104 330 ...

Combo Shell-end Milling Arbor MAS-BT



Model	d	L1	Part No.	H
BT30x13	13	55	103 950	
BT30x16	16	55	103 951	
BT30x22	22	55	103 952	
BT40x40	40	100	103 953	
BT50x40	40	100	103 954	
BT50x50	50	125	103 955	

Adapter Sleeves MAS-BT



Model	D	D1	L	L1	Part No.	H
BT30xMK1	25	31,75	93,40	45	103 780	
BT30xMK2	32	31,75	108,40	60	103 781	
BT30xMK3	40	31,75	128,40	80	103 782	
BT40xMK2	32	44,45	125,40	60	103 783	
BT40xMK3	40	44,45	140,40	75	103 784	
BT40xMK4	40	44, 45	160, 4	95	103 785	

Drill Chuck Mount MAS-BT

Model	D	D1	L	L1	L2	Part No.	H
BT30xB16	15,733	31,75	117,40	45	24	104 790	
BT30xB18	17,75	31,75	125,40	45	32	104 791	
BT40xB16	15,733	44,45	134,40	45	24	104 792	
BT40xB18	17,75	44,45	142,40	45	32	104 793	

Drill Chucks see page 241

Draw Bolts MAS-BT

Model	Part No.		Part No.		H
	A	A	B	B	
BT 30 (A) (B)	103 600		103 604		
BT 40 (A) (B)	103 601		103 605		
BT 50 (A) (B)	103 603		103 607		

Reduction sleeves ISO / ISO

- hardened and ground

Part No..	ISO / ISO	P		
103 750	40 / 30		103 760	50 / 30
			103 770	50 / 40

Shell end milling arbors

- for cutters with cross or longitudinal slot
- including parallel key, driver ring, cutter tightening screw, special wrench

Part No.	ISO	Arbor Ø	Draw-in thread
103 850	MK 3	16	M12
103 855	MK 3	22	M12
103 860	MK 4	16	M16
103 861	MK 4	22	M16
103 865	30	16	M12
103 870	30	22	M12
103 875	30	27	M12
103 880	30	32	M12
103 895	40	16	M16
103 900	40	22	M16
103 905	40	27	M16
103 910	40	32	M16
103 915	40	40	M16
103 920	BT 40	13	M16
103 922	BT 40	22	M16
103 924	BT 40	27	M16
103 926	BT 40	32	M16
103 928	BT 40	40	M16

Adapter ISO / MT

- for tools with Morse taper shank and ISO mount
- hardened and ground

Part No..	ISO / MT		
103 700	30 / 2	103 740	40 / 4
103 710	30 / 3	103 742	BT 40 / 2
103 720	40 / 2	103 744	BT 40 / 3
103 730	40 / 3	103 746	BT 40 / 4

Milling Chuck for Cutter
with Weldon-Shaft

- for tools with cylindrical shank and setup area in accordance with DIN 1835 B
- forged, case-hardened, precision ground

ISO 40		ISO 50		BT 40		BT 30	
Ø	Part no.	Ø	Part no.	Ø	Part no.	Ø	Part no.
6 mm	106 801	6 mm	106 811	6 mm	106 821	6 mm	106 831
8 mm	106 802	8 mm	106 812	8 mm	106 822	8 mm	106 832
10 mm	106 803	10 mm	106 813	10 mm	106 823	10 mm	106 833
12 mm	106 804	12 mm	106 814	12 mm	106 824	12 mm	106 834
16 mm	106 805	16 mm	106 815	16 mm	106 825	14 mm	106 835
20 mm	106 806	20 mm	106 816	20 mm	106 826	16 mm	106 836
25 mm	106 807	25 mm	106 817	25 mm	106 827	18 mm	106 837
32 mm	106 808	32 mm	106 818	32 mm	106 828	20 mm	106 838

F

End Milling Set HSS

TiN coated, 20 pieces
- 2 - 5 times longer service life
- double cutting power
- improved part surface

DIN 327 D, short length
designed with 2 cutting edges. Face teeth for centric cuts. For cutting keyways/grooves (P 9 fitting) and center cut-out. Vertical or side cutting possible, with cyl. shaft and side drive dog acc. to DIN 1835 B ,3, 4, 5, 6, 8, 10, 12, 14, 18, 20 mm

DIN 844 B, short length
designed with 4 cutting edges with 30° righ-hand spiral for excellent chip removal. Facing teeth for centric cuts. For normal to hard materials, with cyl. shaft and side drive dogs DIN 1835 B, 3, 4, 5, 6, 8, 10, 12, 14, 18, 20 mm

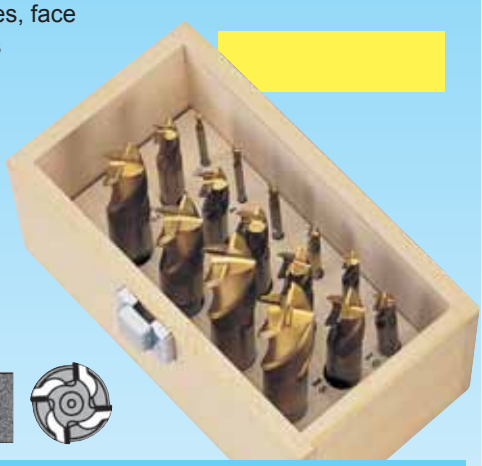
Part No. 108 440

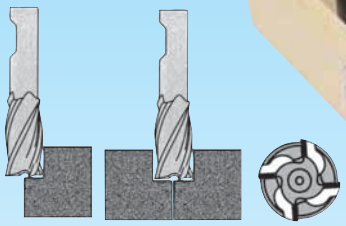
F

End Milling Set DIN 844 B

- **TiN coated**
- HSS, short length
- right-hand spiral 30°
- multiple cutting edges, face teeth for centric cuts
- side drive dogs
- 15 pcs. 3-25 mm, with cyl. shaft

Part No. 108 450





mm Ø	Shaft-Ø						
3	4	6	6	14	12	20	20
4	4	8	8	15	12	22	20
5	5	10	10	16	16	24	20
		12	12	18	16	25	20

H

End Milling Set, 9 pieces, HSS

- two-sided, centric cutting
- Ø 1,5 - 4,5 mm, 0,5 mm increments

Part no. 108 455

F

Roughing Shank Cutter

Set = 10 pc
- DIN 844 B, DIN 1835 B, Weldon shaft
- HSS, ionized, and therefore HRC 68
- right-hand cut
- for materials up to 1000 N/mm² strength
- diameters: 6, 8, 10, 12, 14, 16, 18, 20, 22, 25 mm

Part No. 108 445

F

Indexable Insert End Mills Set 25 mm

- shaft 19 mm, Weldon shaft with torque surface
- with carbide tips, tip class P20

Part No. 107 800

10 replacement tips, R (circular)	Part No. 107 802
10 replacement tips, S90°(square)	Part No. 107 803
10 replacement tips, T60°(triangular)	Part No. 107 804

Roughing End Mill Cutter

- with cross groove
- right-hand cut with right-hand spiral
- HSS-E, hardness HRC 68
- roughing cut teeth

Ø mm	Width mm	Bore mm	Part No.
40	32	16	108 400
50	36	22	108 401
63	40	27	108 402
80	45	27	108 403

F

Electronic Edge Tracer

- for setup on
  - drill presses
  - milling machines
  - machining centers, etc.
- LED display lights upon workpiece contact
- outside and inside centering
- when passing the reference edge, the calibrated ball is pushed off
- shaft 20 mm

Part no. 129 055

H

Edge Tracer Set

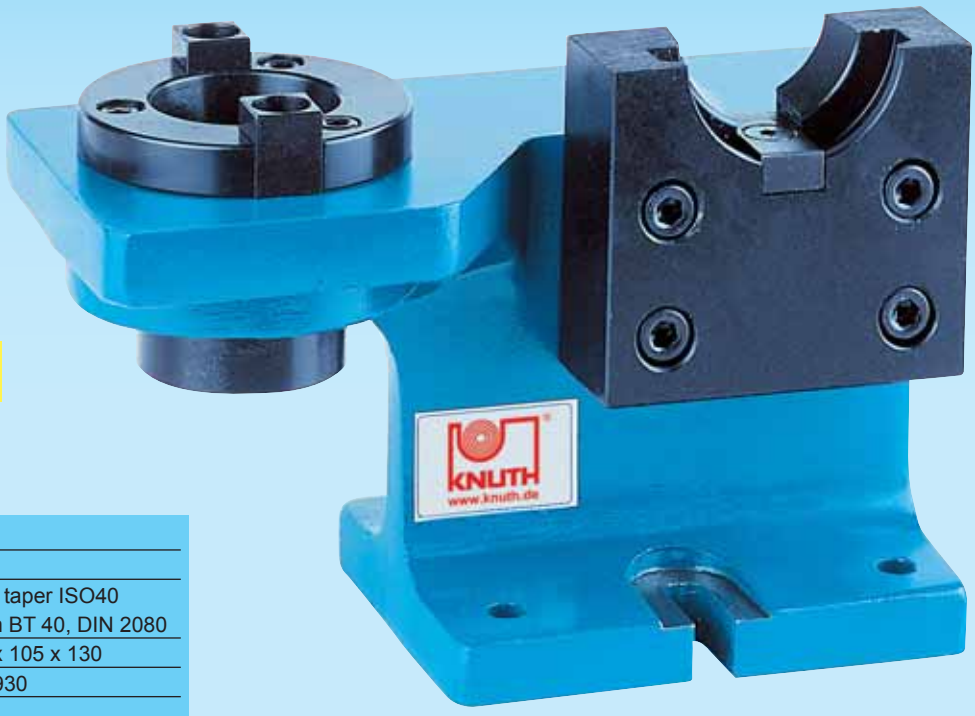
- 1-two-sided 10x10x4 / 2-single sided 10x10
- 3-two-sided 10x10x4 / 4-single sided 10x4
- 5-two-sided 12x12x4

Part no. 108 057

H

Assembly Stand

- for milling and boring tool setup
- horizontal and vertical mount
- simplifies the setup and reduces the tooling time at the machinee



Specifications		
clamping grooves	mm	10
mounts		short taper ISO40 Norm BT 40, DIN 2080
dimensions (LxWxH)	mm	210 x 105 x 130
Part No.		108 930

Accessory-Set for Drill Presses

- incl. keyless drill chuck and drill chuck arbors
- in wooden case

Content / Set:	MT 2 (6-pc.)	MT 3 (7-pc.)	MT 4 (8-pc.)	ISO 30 (4-pc.)	ISO 40 (5-pc.)
reducing sleeve	MT 2 / MT 1	MT 3 / MT 2	MT 4 / MT 3	ISO 30 / MT 2	ISO 40 / MT 2
reducing sleeve	-	MT 3 / MT 1	MT 4 / MT 2	ISO 30 / MT 3	ISO 40 / MT 3
reducing sleeve	-	-	MT 4 / MT 1	-	ISO 40 / MT 4
extension sleeve	MT 2 / MT 3	MT 3 / MT 4	MT 4 / MT 5	-	-
tool holder bit	MT 2 / B 16	MT 3 / B 18	MT 4 / B 18	ISO 30 / B 18	ISO 40 / B 18
tool holder bit	MT 2 / B 18	MT 3 / B 16	MT 4 / B 16	-	-
keyless drill chuck	3 - 16 mm / B 18	3 - 16 mm / B 18	3 - 16 mm / B 18	3 - 16 mm / B 18	3 - 16 mm / B 18
keyless drill chuck	1 - 13 mm / 16	1 - 13 mm / B 16	1 - 13 mm / B 16	-	-
Part no.	104 592	104 593	104 594	104 595	104 596

Tool holder bit for drill chuck

MT 2	Part no.	MT 3	Part no.	MT 4	Part no.
B 16	104 725	B 16	104 739	B 16	104 745
B 18	104 730	B 18	104 740	B 18	104 750

Keyless drill chuck

setup area	mount	Part no.
1 - 13 mm	B 16	104 765
3 - 16 mm	B 18	104 770

Drill chuck arbors

pintle	taper	Part no.	taper	Part no.	taper	Part no.
B 16	ISO 30	104 775	ISO 40	104 780	BT 40	104 785
B 18	ISO 30	104 776	ISO 40	104 781	BT 40	104 786

Reducing sleeves MT / MT

MT	Part no.	MT	Part no.	MT	Part no.
2 / 1	103 805	4 / 1	103 820	5 / 2	103 835
3 / 1	103 810	4 / 2	103 825	5 / 3	103 840
3 / 2	103 815	4 / 3	103 830	5 / 4	103 845

Extension sleeves

MT	Part no.	MT	Part no.	MT	Part no.
2 / 3	104 660	3 / 4	104 665	4 / 5	104 670

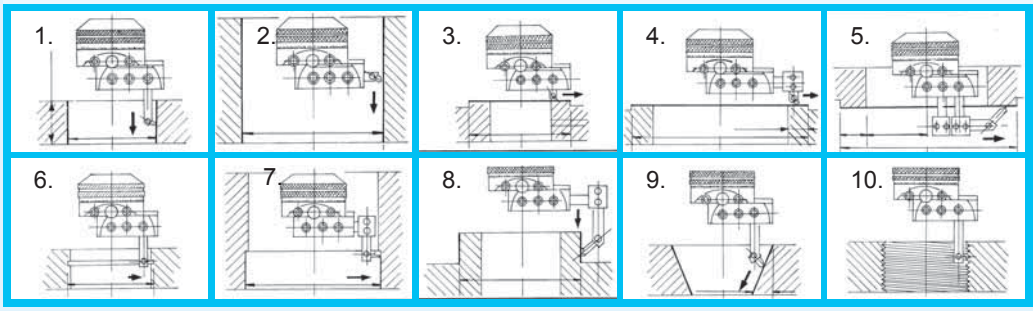
Taper drift

MT	Part no.	MT	Part no.
2 / 3	104 690	4 / 5	104 695

Universal Facing / Lathe Bore Head
ADA

- with self-actuated slide advance and automatic stop activation
- can be used on drill presses, lathes, milling machines, etc.
- autom. advance ensures consistent feed of tools
- adjustable guides
- adjustable stops
- made of carbon-chromium-molybdenum steel
- all parts are hardened and precision-ground
- guaranteed maximum accuracy
- incl. reducing sleeves 4, 8, 12 mm

Standard Equipment:
boring bar holder



1. bores (small diameters)
2. bores (large diameters)
3. facing (small diameters)
4. facing (large diameters)
5. facing (back side)
6. groove cutting
7. recesses in large bores
8. external turning
9. taper turning
10. tapping

Specifications ADA		MT3	MT4	SK30	SK40
external turning diameter	mm	150	350	350	350
max. cross slide adjustment	mm	± 15	± 25	± 25	± 25
micro-feed per angle degree		0.005	0.005	0.005	0.005
rapid feed	mm/rev	2	3	3	3
autom. feed/rev		0.02, 0.04, 0.06, 0.08, 0.10, 0.12	0.03, 0.06, 0.09, 0.18	0.03, 0.06, 0.09, 0.18	0.03, 0.06, 0.09, 0.12
boring bar diameter	mm	18	22	22	22
Part No.		103 401	103 402	103 403	103 404

MK 4 shown

ISO 40 shown

Mounting Shafts

shaft with draw bolt	MT 3	MT 4	ISO 30	ISO 40
Part No.	108 639	108 641	108 635	108 637

Lathe Bore Head with Boring Bar Set

Boring Head shown with 12-piece boring bar set and optional accessories (mounting shaft)

- for easy inside diameter turning on drill presses, lathes, and milling machines
- micrometer screw for precise inside turning diameter adjustment
- high-quality steel, hardened and precision-ground
- feed: 0.01 mm/graduation line
- 2 vertical tool mounts, 1 horizontal tool mount

Boring Head with 9-piece boring bar set		
head diameter	mm	50
tool mount	mm	12
possible bore diameters	mm	10 - 125
Part No.		108 631

Boring Head with 12-piece boring bar set		
head diameter	mm	75
tool mount	mm	18
possible bore diameters	mm	12 - 225
Part No.		108 633

H

Stepped Drill Kit, 5 pieces

- made of high-speed steel
- cylindrical shaft mount
- stepless drilling in thinnest plate metal without pilot bore
- burr-free drilling without plate deformation
- drills and deburs simultaneously with the next drill step
- the best drilling results are achieved with good lubrication

Shank diameter	Steps mm
6 mm	Ø 4/6/8/10/12
8 mm	Ø 4/6/8 /10/12/14/16/18/20
10 mm	Ø 5/8,8/11,8/15,3/19/24,5/28
10 mm	Ø 4/6/8/10/12/14/16/18/20/22/24/26/28/30
12 mm	Ø 4/6/9/12/15/18/21/24/27/30/33/36/39
Part.-No.	111 890

F

Drill DIN 338, TiN

- ground and titanium nitride coated HSS Drill Bits
- 25-piece set, 1 - 13 mm, in 0.5 mm increments
- for all steel types and metals (V4A, special alloys, nickel-chromium steel)
- up to 6X longer life compared to conventional HSS drills
- allows higher cutting speeds
- in a steel box

Part No. 102 470

Price €

Ø	Part no.
1,0	102 200
1,5	102 201
2,0	102 202
2,5	102 203
3,0	102 204
3,5	102 205
4,0	102 206
4,5	102 207
5,0	102 208
5,5	102 209
6,0	102 210
6,5	102 211
7,0	102 212
7,5	102 213
8,0	102 214
8,5	102 215
9,0	102 216
9,5	102 217
10,0	102 218
10,5	102 219
11,0	102 220
11,5	102 221
12,0	102 222
12,5	102 223
13,0	102 224

HSS Drill

with morse taper
MT 1: 14,5 mm
MT 2: 15, 16, 17,18, 19, 20, 21, 22, 23 mm
Part No. 102 460

with morse taper
MT 2: 14,5; 16, 18, 20, 22 mm
MT 3: 24, 26, 28, 30 mm
Part No. 102 450

F

drill diam. 0.25 - 1.0 mm
- shank diam. 0,25 - 1,0 mm
- 20 per steel box

Part No. 102 468

J

w/ cyl. shank
13 - 25 mm
- all shanks 13 mm
- dimensions: 13, 14, 15, 16, 18, 20, 22, 25 mm

Part No. 102 480

Tapping Attachment

H

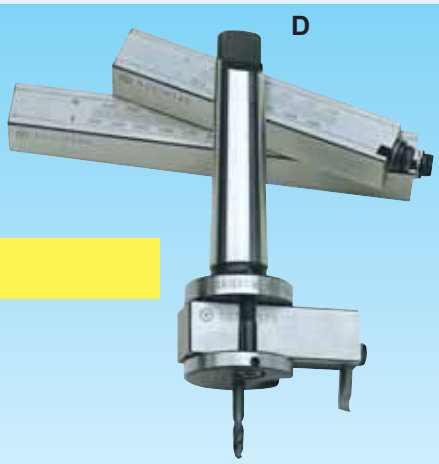
- integrated quick-return acts promptly upon feed direction change
- slip coupling torque adjustable to 4 levels
- including MT 2 and MT 3 shank or MT 3 and MT 4 shank
- for thread cutter
  - M 2 - M 7 (MT 2 + MT 3) Part no. 106 033
  - M 5 - M 12 (MT 3 + MT 4) Part no. 106 035
  - M 8 - M 20 (MT 3 + MT 4) Part no. 106 037

Circular Cutters

D

- cuts steel up to 10 mm thick and/or 20 mm for two-sided work surfaces
- infinitely variable diameter adjustment 30 - 300 mm

MT 2, Part no. 129 290
MT 3, Part no. 129 291



Replacem. twist drill
Part no. 129 295 **Price €**
Replacem. knife 5 per pack.
Part no. 129 297

H

Counter Sink, 90 °

- 5, 6, 8, 10, 12 mm
- HSS, 3 cutters

Part no. 108 665

HSS Form Countersink 1 set, round

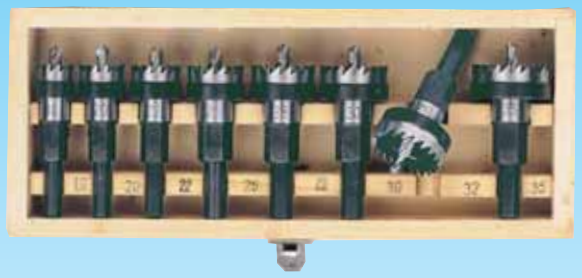
F

- with parallel shank
- within stand
- the set consists of 8 countersinks

Set 2 - 12 mm
(2, 3, 4, 5, 6, 8, 10 + 12 mm)
Part no. 107 615

Set 6 - 20 mm
(6, 8, 10, 12, 14, 16, 18 + 20 mm)
Part no. 107 617

H



Drill Bit Set, 8 pieces

- HSS, ground, 16, 20, 22, 25, 28, 30, 35 mm
- max. boring depth 3 mm, boring diameter 6 mm
- shaft Ø 7,5 or 9,5 mm

Part no. 107 620

Combo Flat Counter Sink in Wood Stand

H

Multiple cutter countersink with front face bore. Exchangeable pilot pins allow the use of one countersink for several pilot bores of different sizes.

MT2 shank
Flat countersink: Ø14.5-24.5 mm
Sizes: Ø14,5 / 16,5 / 18,5 / 20,5 / 22,5 / 24,5 mm
Pilot pin: Ø7-15 mm
Sizes: Ø7 / 7,5 / 8 / 8,5 / 9 / 9,5 / 10 / 10,5 / 11 / 11,5 / 12 / 13 / 14 / 15 mm
Part No. 108 655

Carbide Milling Bits

F

- 6 mm shank
- includes 12 pieces

Part no. 108 430

5C Collet Chuck

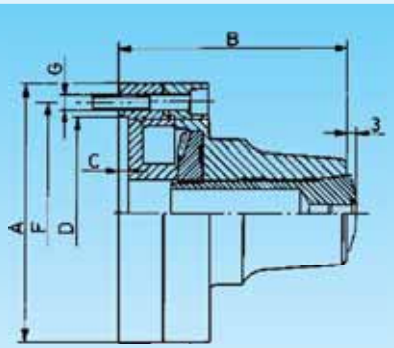
B

- the key-verified chuck ensures uniform and torsion-free clamping of workpieces
- quick setup and easy handling
- the 5C Collet System is available in mm-increments from 1 to 25 mm

Part No. 181 321

5C Collet Chuck for Lathes

Ø	125 mm
A	126 mm
B	107,5 mm
C	4 mm
D	95 mm
F	108 mm
G	3 x M8 x 45
weight	5 kg



Stop Screws for 5C collets

H

- threads are hardened across their entire length
- adjustable for workpiece depths up to 75 mm (from the collet surface)

Part No. 106 220

5C collets

- hardened and precision ground premium steel
- female and male threads

Clamping-Part No. H

Ø		Ø	
1	106 103	13	106 155
2	106 104	14	106 160
3	106 105	15	106 165
4	106 110	16	106 170
5	106 115	17	106 175
6	106 120	18	106 180
7	106 125	19	106 185
8	106 130	20	106 190
9	106 135	21	106 195
10	106 140	22	106 200
11	106 145	23	106 205
12	106 150	24	106 210
		25	106 215

Power collet holders (vertical and horizontal)

H

- with setup angle for vertical and horizontal use

Part No. 106 090

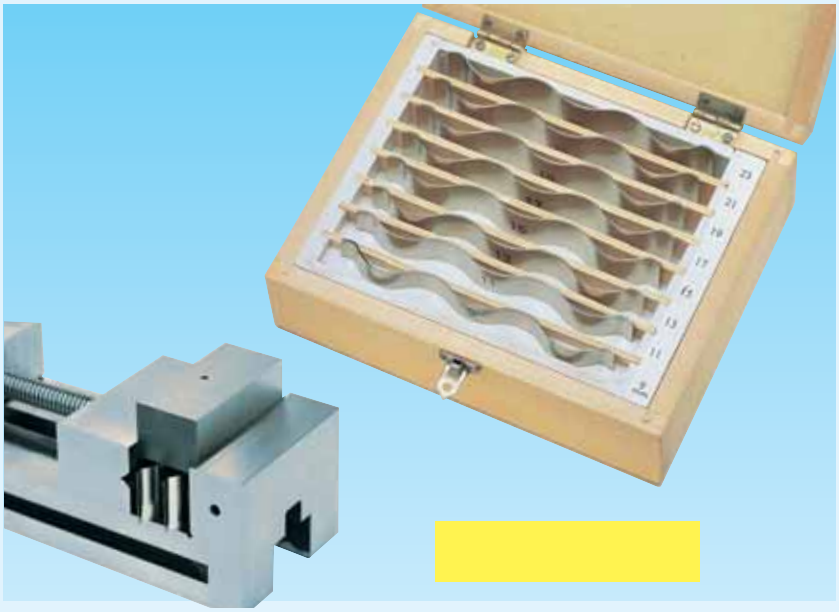
Power collet holders

Corrugated Parallel Pads

H

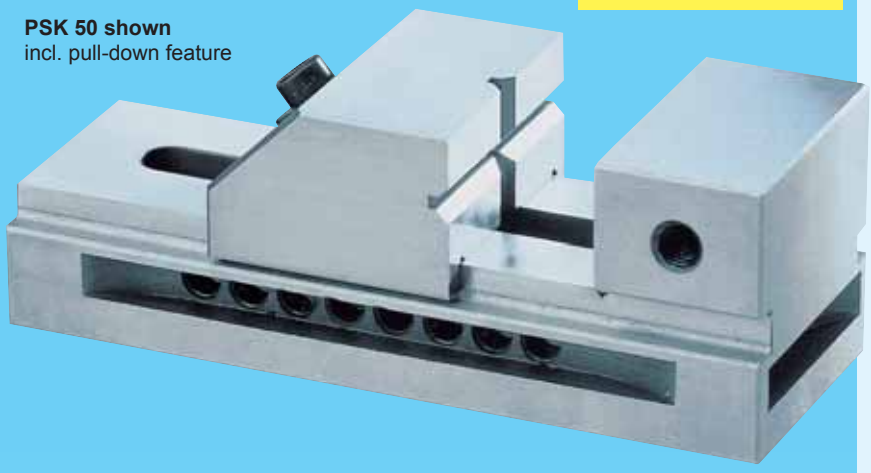
- save time when clamping parts for grinding, cutting, drilling, etc.
- no chips stay back on the support face, which ensures maximum parallelism of the clamped workpiece
- several flat or single thin workpieces can be easily clamped
- spring steel, hardened and tempered , 110 mm long, ± 0,005 mm parallelism, precision-ground
- 8 pairs per set - 2 mm increments

9-23 mm
Part No. 128 960
25-39 mm
Part No. 128 961



KNUTH **Vises**

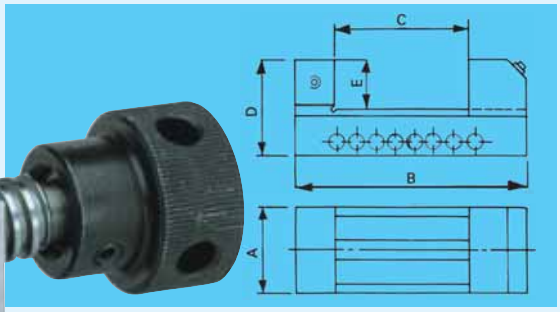
PSK 50 shown
incl. pull-down feature



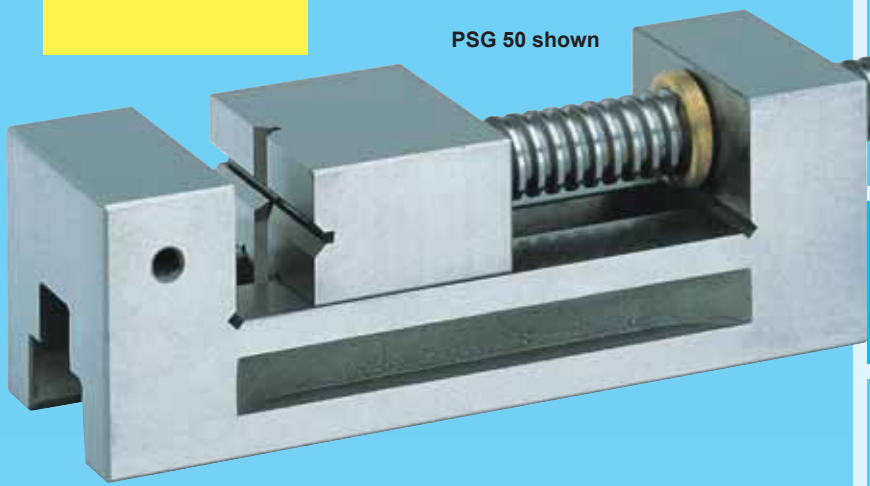
Precision Grinding and Control Vise

- high precision, robust structure, hardened and ground v-grooves, high holding capacity
- can be used on 4 different sides
- face parallelism 0.005 to 100 mm
- solid steel structure, hardness 58-62 HRC
- weight PSK 50 = 2,5 kg, PSK 75 = 4,5 kg, PSK 100 = 11 kg, PSK 125 = 15 kg

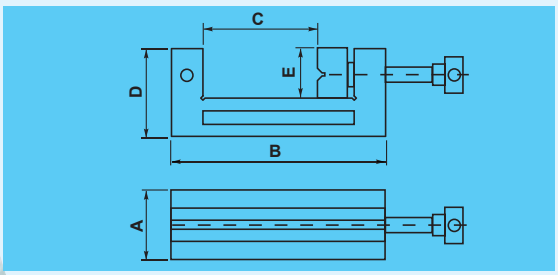
Model	A	B	C	D	E	Part no.
PSK 50	50	140	65	50	25	128 820
PSK 75	73	180	100	70	35	128 821
PSK 100	100	245	125	90	45	128 824
PSK 125	125	285	160	100	50	128 825

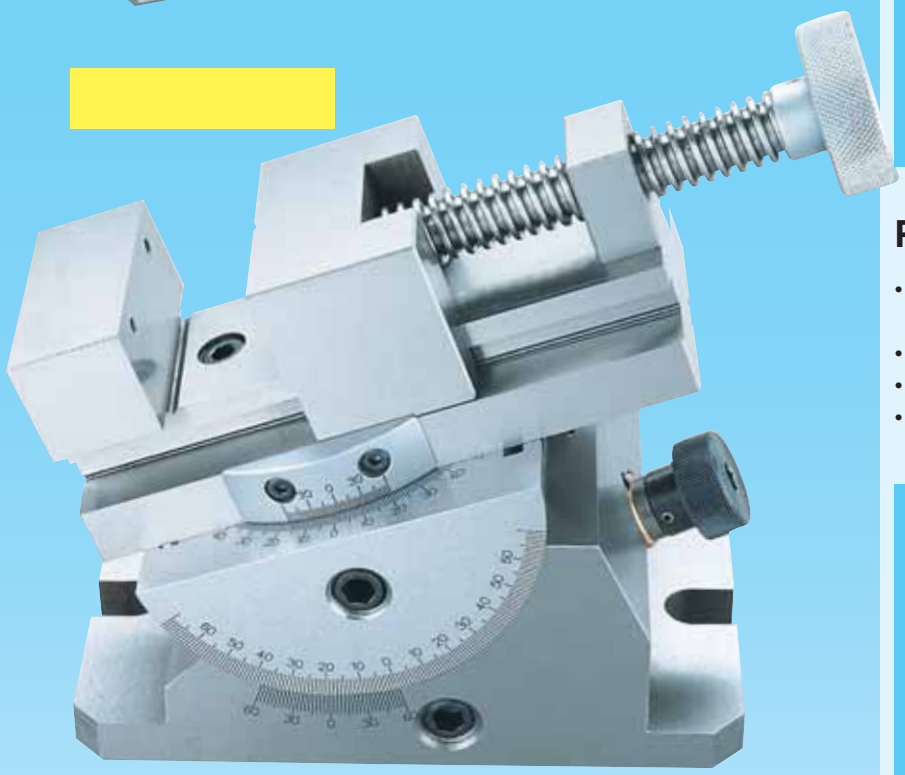


PSG 50 shown



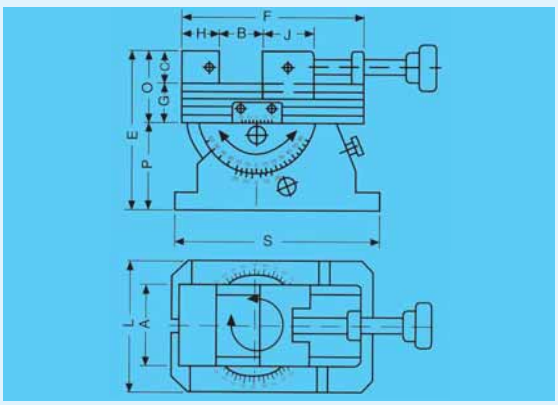
Model	A	B	C	D	E	Part no.
PSG 50	50	155	65	50	25	128 826
PSG 75	73	210	100	70	35	128 827
PSG 100	100	260	125	90	45	128 828
PSG 125	125	300	160	100	50	128 829





PSS

- swivels on 2 levels, 360° horizontal, ± 45° vertical
- scale for precise minute readout
- screw for upward and downward swing
- for grinding, boring, milling, eroding



	A	B	C	E	F	G	H	J	L	O	P	S	N.W.	Part no.
PSS 70	70	80	30	137	160	32	33	45	110	62	75	180	12 kg	128 815

Hydraulic Machine Vise
HNCS

- high-grade machine vise for hydraulic clamping of parts
- hardened and ground surfaces ensure high-precision clamping, even when working with in-series connected vises
- 4 work surfaces
- pull-down system for maximum secure clamping
- spindle safety guard protects from chips
- face parallelism 0.02 mm

HNCS		100V	130V	160V	200V
jaw width	mm	100	130	160	200
clear opening	mm	0-125	0-180	0-240	0-280
jaw height	mm	48	55	58	63
overall height	mm	133	150	163	173
holding force	kN	36	46	56	71
weight	kg	25	38	57	78
Part No.		104 930	104 932	104 934	104 936

Optional Equipment:

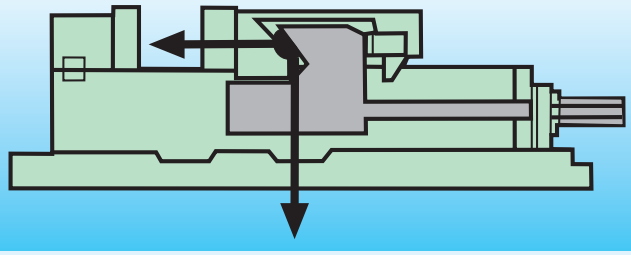
Dial for HNCS		100V	130V	160V	200V
dial diam.	mm	248	296	312	378
dial height	mm	27	30	34	44
Part No.		104 931	104 933	104 935	104 937

Machine vise with pull-down system
NZM

pull-down system: absolutely secure work-piece hold even during heavy workpiece cutting

- made of high-quality cast-iron
- hardened and precision-ground steel jaws
- dial turns 360° and has 1° scale division
- parallelism ± 0.0025 mm
- precise, hardened jaw guides

Specifications		NZM100	NZM125	NZM160	NZM200
jaw width	mm	100	125	160	200
jaw height	mm	32	40	45	50
opening capacity	mm	100	125	190	190
height	mm	118	136	157	179
dial diameter	mm	160	187	230	268
weight	kg	16	24	49	56
Part No.		104 916	104 918	104 920	104 922



Precision Machine Vise
PMS

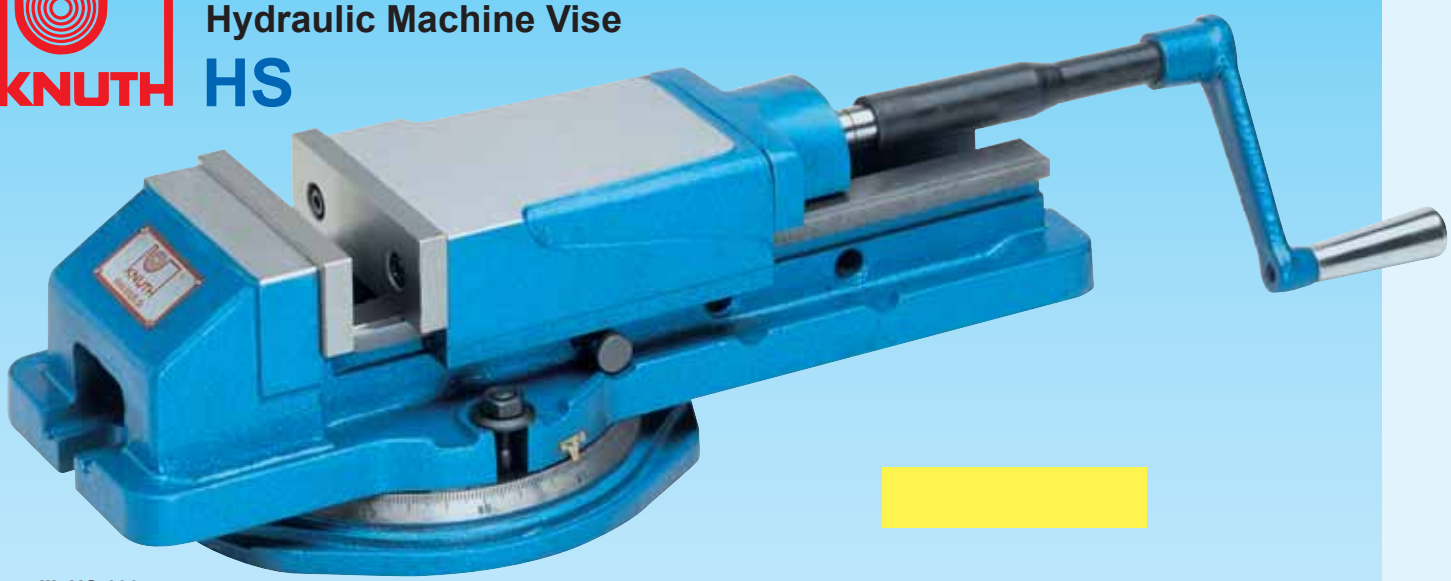
swivels on 2 axes

III. PMS 50

- high precision vise for accurate and exact precisionmechanics work (also suitable for watch making, jewelry industries)
- swivels from horizontal (180°) to vertical (90°)
- turns 360° on a dial
- jaws are made of hardened and precision-ground tool steel

Specifications		PMS 50	PMS 75	PMS 100
Jaw height	mm	23	34	40
Width	mm	50	75	100
Throat	mm	50	75	100
Weight	kg	3,8	9,6	17,3
Part no.		125 010	125 011	125 012

Hydraulic Machine Vise
HS



III. HS 100

Specifications		HS 100	HS 125	HS 150	HS 200
jaw width	mm	110	135	150	200
clear opening	mm	170	220	300	300
jaw height	mm	36	48	51	65
holding force	KN	25	40	45	80
swivel-base / weight	kg	10	12	22	32
dimens. (LxWxH)	mm	525x160 x94	670x185 x118	800x240 x133	800x280 x158
weight	kg	26	42,5	75	125
Part no.		105 096	125 024	125 028	125 029

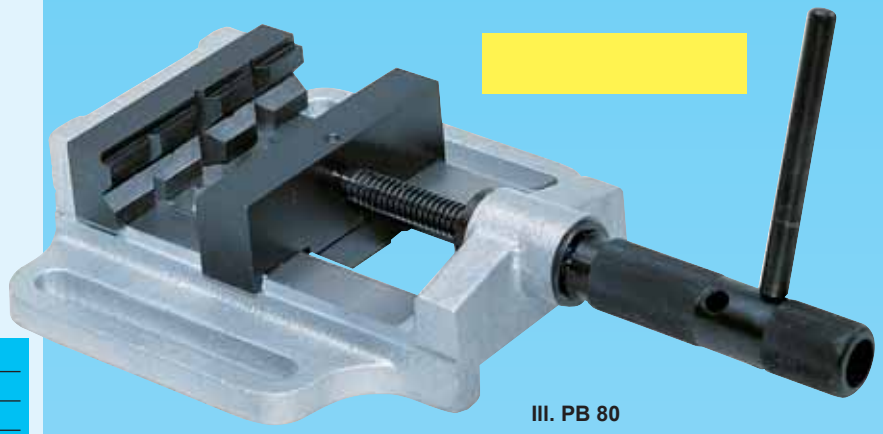
- hardened and precision-ground jaws and body
- high precision and wear-resistant material ensure long service-life
- clamping pressure is up to ten times as high as with conventional machine vises
- swivel-base mounted vise body, 360° swivel
- consistent clamping pressure, unaffected by vibration and shock
- hydraulic power amplifier

PB

Precision Drill Press Vise

- 1 horizontal v-groove and 3 vertical v-grooves
- precision-ground base and guides
- parallelism of jaws: 0,02 mm guide to base: 0,02 mm

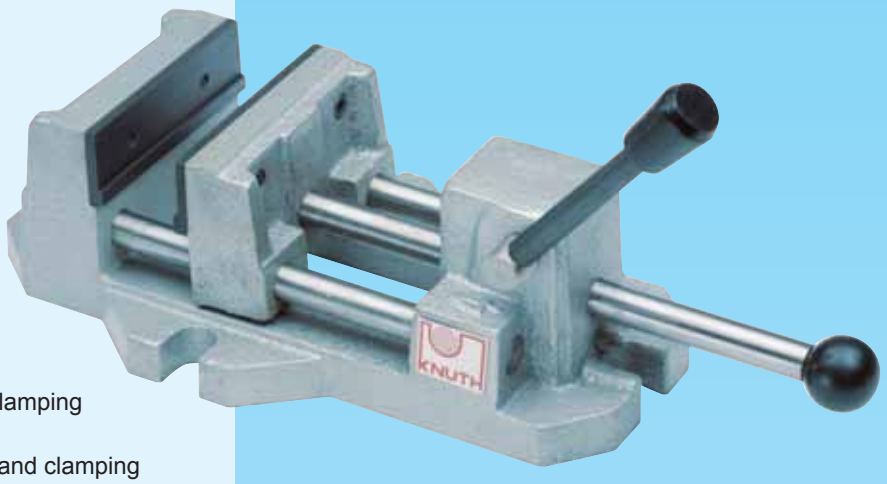
Model	Jaw width	Opening	Jaw depth	Part No.
PB 80	80 mm	80 mm	25 mm	104 835
PB 100	100 mm	96 mm	31 mm	104 840
PB 120	120 mm	105 mm	31 mm	104 845



Ill. PB 80

Quick-Action Vise

BMS



- shiftable chuck jaw
- clamping lever operation for clamping and locking
- ground and hardened guides and clamping mechanism, high-quality cast iron (FC 25)
- steel clamping jaws
- jaw width 100 mm
- clamp. width 108 mm

Part no. 104 925

Ill. MS 100

Machine Vise

MS

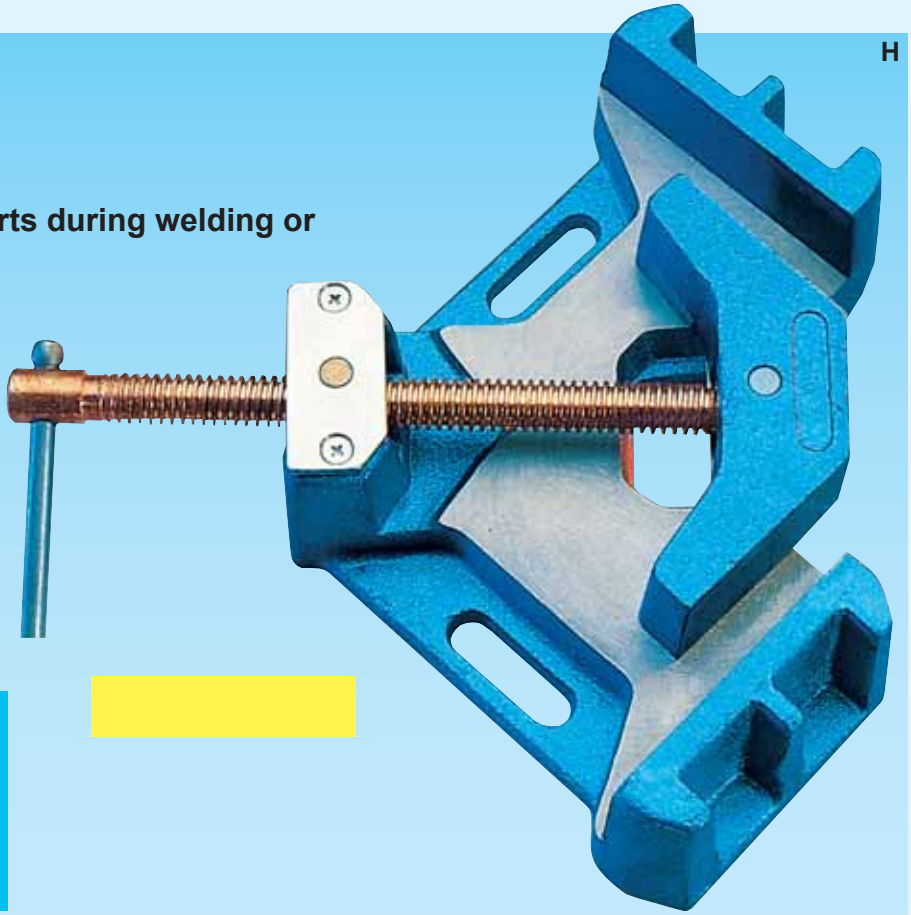
- high quality cast iron
- hardened and ground replaceable steel jaws
- covered spindle
- forged bronze spindle nut
- including hand crank, swivel-base, and scale

Specifications		MS 100	MS 125	MS 160	MS 200
jaw width	mm	100	125	160	200
jaw height	mm	40	45	50	60
opening capac.	mm	80	100	125	160
height	mm	100	125	190	250
weight	kg	12	20	32	60
Part no.		104 950	104 955	104 960	104 965

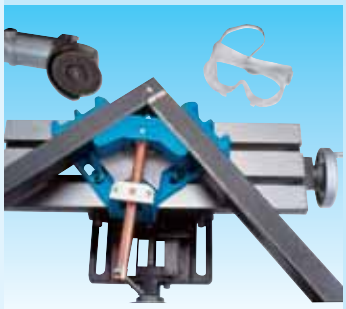
Angle Vise

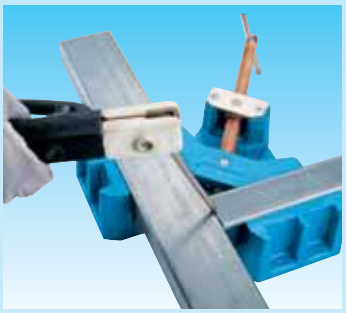
Precise angular clamping of parts during welding or assembly work

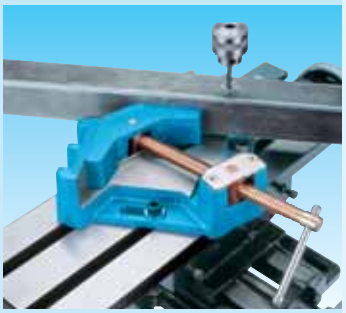
- rigid cast-iron construction
- the ideal supporting tool for any workshop
- use for metal, wood, or plastic
- ideal for right angle welding of parts
- always joins at a 90° angle, either as butt corner joint, miter joint or T-connection
- copper-plated spindle and spindle nut prevent burnt-on weld beads and splatter



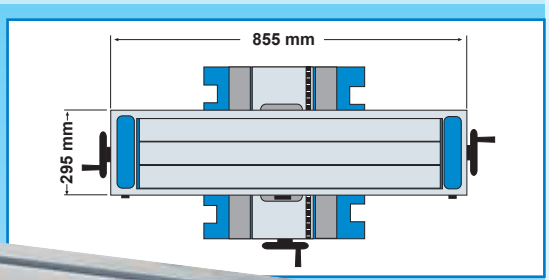
Specifications for Angle Vise			
max. clamping width	mm	105	125
max. capacity	mm	60	100
jaw height	mm	35	60
weight	kg	5.1	9
Part No.		107 005	107 010

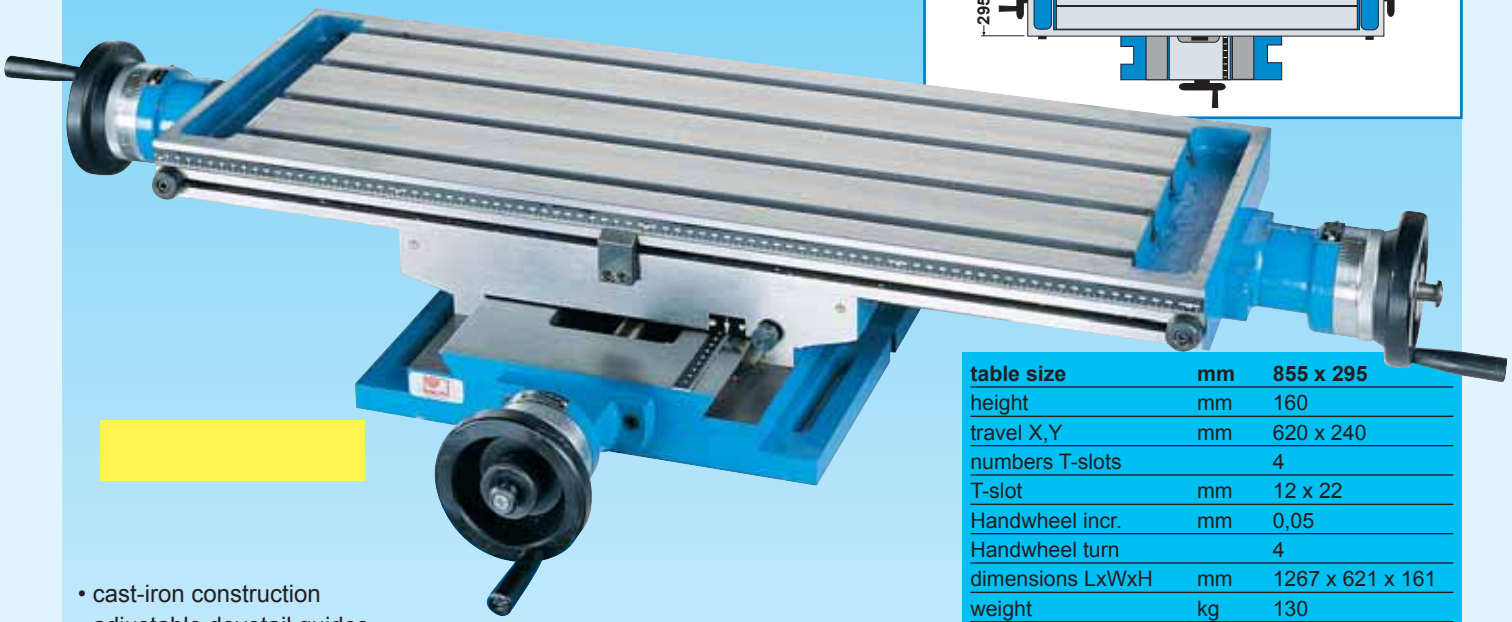






Compound sliding table
855 x 295 mm





- cast-iron construction
- adjustable dovetail guides
- T-slot, coolant groove

table size	mm	855 x 295
height	mm	160
travel X,Y	mm	620 x 240
numbers T-slots		4
T-slot	mm	12 x 22
Handwheel incr.	mm	0,05
Handwheel turn		4
dimensions LxWxH	mm	1267 x 621 x 161
weight	kg	130
Part.-no.		106 017

Compound Sliding Tables

For small cutting operations on the bench or floor drill press

Ill. Compound Sliding Tables 145 x 230

table size		230 x 145	320 x 145	510 x 240
height	mm	154	154	197
cross travel	mm	120	120	190
longitud. travel	mm	160	260	350
T-slots	mm	10	10	13
max. table load capacity	kg	85	100	140
swivel range		360°	360°	360°
handwheel incr.	mm	0,025	0,025	0,05
weight	kg	25	30	86
Part no.		106 001	106 003	106 006

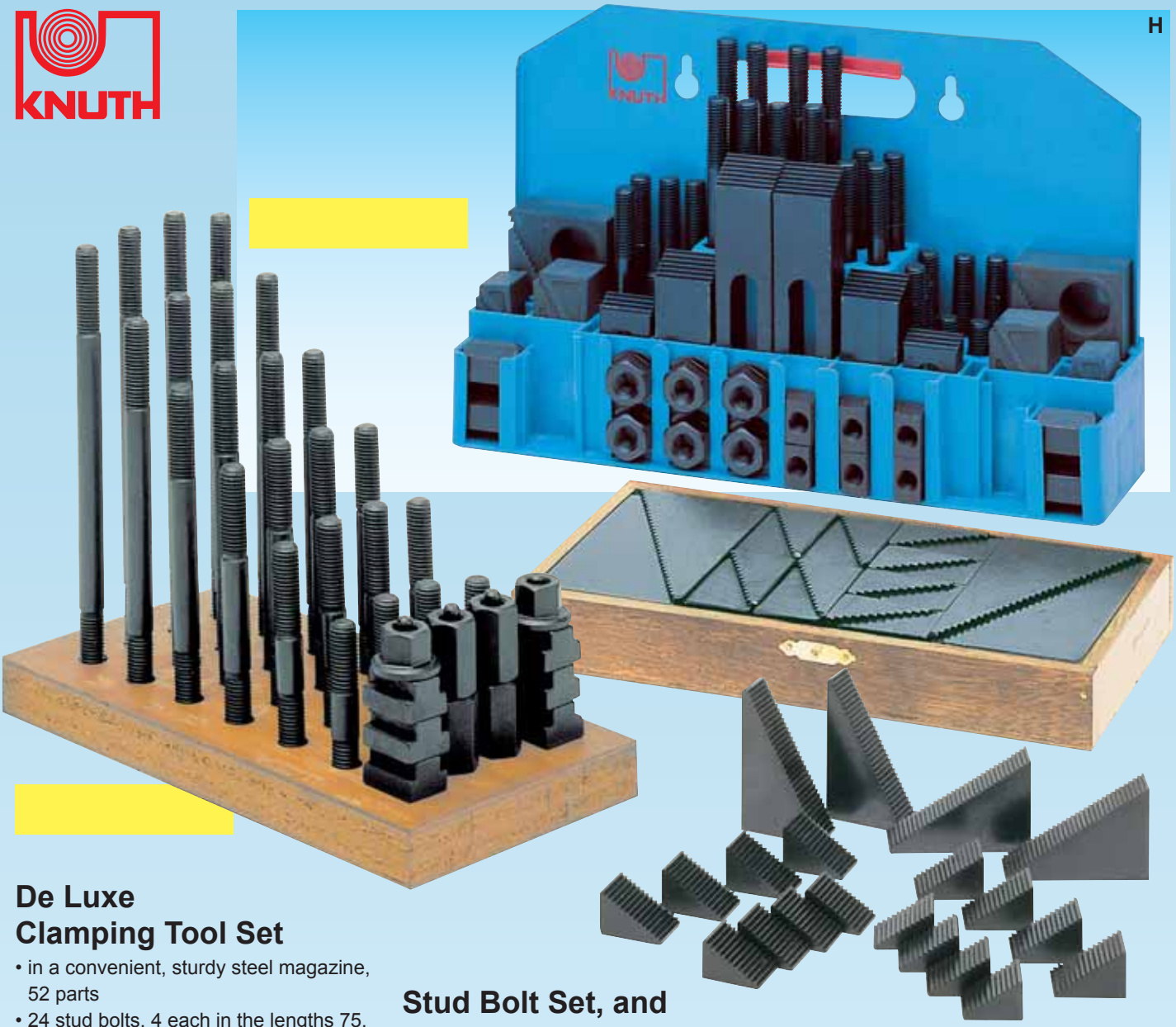
- cast iron dovetail guides

Swivel Table ST

For precise machining of corner bores, angular cutting, angular grinding, etc.

- 1 scale gradation direct read-out at the table
- cast-iron frame, ground table surface and guideways

Specifications		ST 250	ST 300	ST 380
number of T-slots		3	3	3
T-slot spacing	mm	55	60	90
T-slot width	mm	12	12	16
swivel angle		± 50°	± 50°	± 50°
weight	kg	20	37	45
dimensions (LxWxH)	mm	254x178x127	300x240x165	381x254x165
Part no.		129 335	129 340	129 345



De Luxe Clamping Tool Set

- in a convenient, sturdy steel magazine, 52 parts
- 24 stud bolts, 4 each in the lengths 75, 100, 125, 150, 175, 200 mm
- 4 extension nuts, 6 stepped clamps (3 pair), 6 T-slot nuts, 6 hexagon nuts flanged, step blocks (3 pairs)

	Thread	Part no.
12	M 10	105 290
14	M 12	105 295
16	M 14	105 300
18	M 16	105 305

Stud Bolt Set, and T-Slot Nuts

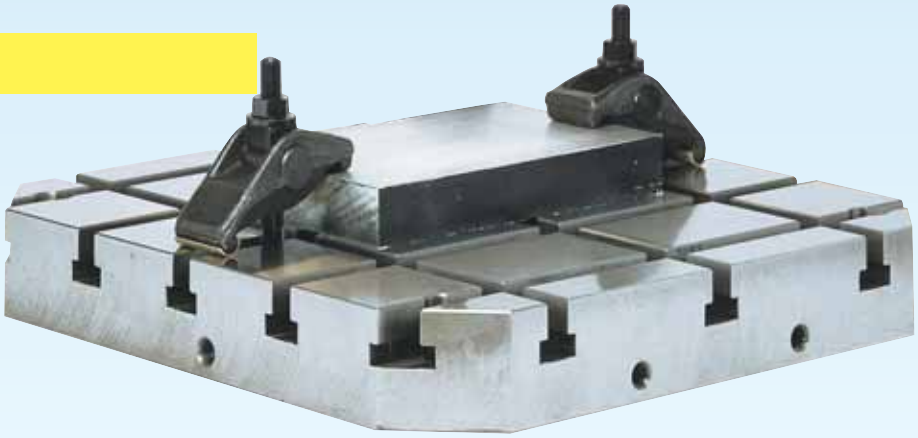
- 38 parts
- 24 stud bolts, 4 ea in the lengths 75, 100, 125, 150, 175, 200 mm
- 6 T-slot nuts
- 4 extension nuts
- hexagon nuts flanged

	Thread	Part no.
14	M 12	105 355
16	M 14	105 360

Set of Step Blocks

- 20 each (10 pairs) in wooden box
- black-finished steel

Part no. 105 340

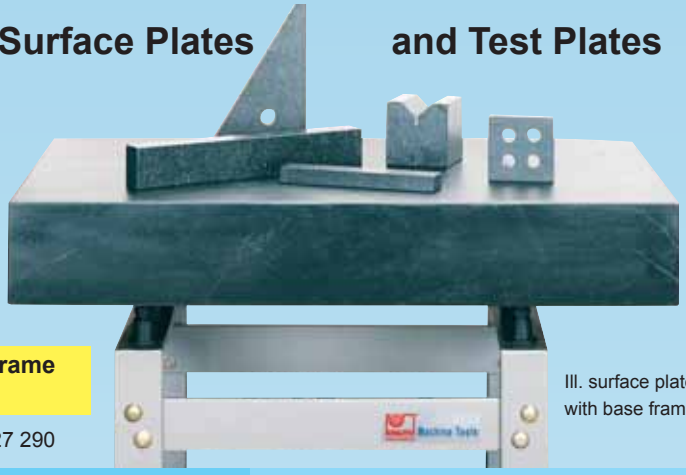


2-PC. swivel hold-down clamp sets

- high quality steel, black-finished
- vailable in pairs only

Length	Bore for stud bolts	Part no.
100	M 12	105 790
100	M 14	105 795
125	M 16	105 800

Surface Plates and Test Plates



Ill. surface plate with base frame

base frame

Part. No.127 290

- compressive strength 250-260 N/mm²
- DIN 876/0
- Mohs hardness 6-7
- corrosion-free
- thermal and dynamic stability
- no electric or thermal conductivity
- blueish-black granite, ground and lobed with fine, light colored inclusions

90°-angle	Part.no
20x160x100	127 220
25x250x160	127 225
40x400x250	127 230

Part no.V-blocks, pairs	Part no.
L100xW100xH100mm, 90°	127 240
L100xW160xH160mm, 90°	127 245

parallel indicators, pairs	Part no.
160x25x16, 3 µ	127 250
400x63x40, 8 µ	127 255

rulers/edges	Part no.
400x60x25, 2,6 µ	127 260
1000x160x50, 5 µ	127 265

surface plate	Part no.
400 x 250 x 70, 6 µ	127 270
630 x 400 x 100, 7 µ	127 275
1000 x 630 x 150, 9 µ	127 280
base frame for 630 + 1000 mm	127 290

Cast-iron surface plate - grade 0

- rigid ribbed cast-iron
- scraped surface
- unfinished surfaces are painted
- accuracy acc. to DIN 876

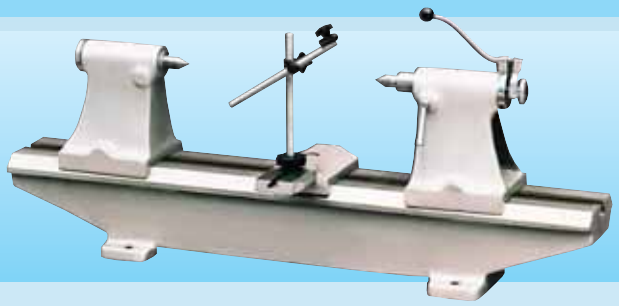
Dimens. (mm)	500x400	800x600	1000x600	1000x1000	1000x1500	1000x2000
Part. no.	127 302	127 304	127 306	127 308	127 310	127 312

Concentricity Tester

H

- center distance 0-600 mm
- center height 170 mm
- weight 79 kg

Part no. 127 350



Magnetic micrometer Holders

F

3-in-1 Clamping
Just turn the clamping knob for a quick and secure fixation of all 3 motion points
- foot dimensions 63 x 50 x 55 mm
- holding power 60 kg

Part No. 108 796

shown with optional equipment

Hydraulic high-precision magnetic measuring tripod
- central clamping with 1 rotating knob
- high clamping force via hydraulics
- foot dim. 90x50x55mm
- holding power 50 kg

Part No. 108 810

Individual clamping
- measuring column 12 mm Ø x 181 mm
- transverse arm 10 mm Ø x 150 mm
- foot dimensions 63 x 50 x 55 mm
- holding power 60 kg
- plus fine adjustments

Part No. 108 800

Magnetic V-BLOCK

Face is ground exactly square to the v-block surface. For round, rectangular, and square workpieces. Use for grinding, drilling, and as a control station. V-block angle 90°

H	B	B1	L	Part no.
70	60	47	70	108 880
95	70	50	102	108 885

PRECISION ANGLE - V-BLOCKS

- hardened (HRC 52-55°)
- precision ground
- accuracy 10
- Nonius readout
- swivels 0° - 60°
- dimensions (LxWxH): 100 x 30 x 50 mm

Part no. 128 930

F

Measuring Tools

Dial Gauge

- accuracy acc. to DIN 878
- matte-finish chrome-plated metal encl.
- clamping shaft 8mm h6
- outer race with 2 adjustable tolerance markers
- gradation 0.01 mm
- measuring range 10 mm

Part No. 129 020

Precision Dial

- accuracy and design acc. to industry standard
- measuring range 0 - 1.27 mm
- clamping shaft 8 mm
- smallest increment 0.002 mm

Part No. 129 022

Precision Dial Gauge

- accuracy acc. to DIN 2270
- automatically reversing tracer arm
- rotating outer race for zeroing
- stainless steel precision bearing for friction-free adjustment of tracing point
- gradation 0.01 mm
- measuring range 0.8 mm (0-40-0)
- including wooden case

Part No. 129 065

3-Point Inside Micrometer, Sets

H

- Accuracy acc. to DIN 863
- read-out: 0.005 mm
- scale drum and scale sleeve
- with satin chrome-plated finish
- drum diam. 19 mm to 11 mm drum diam. 23 mm over 11 mm
- screw pitch 0.5 mm
- measuring face: carbide
- with ratchet, screwdriver, wrench, adjustment and extension
- includes wooden case

Range	Part No.
11-14, 14-17,17-20 Adj. Ring 11 and 17 mm	129 061
20-25, 25-30, 30-35, 35-40, Adj. Ring: 25 and 35 mm	129 062
40-50, 50-60, 60-70, 70-80, 80-90, 90-100 Adj. Ring: 50, 70 and 90 mm	129 063

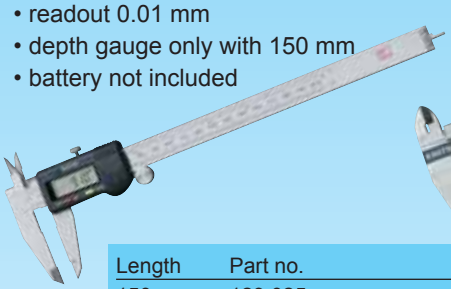
Precision Inside Micrometer Set 50 - 600 mm

- screw 50 - 63 mm with 6 extension elements (13, 25, 50, 100, 150, 200 mm)
- control gauge 50 mm
- reading accuracy 0.01 mm
- steel, satin chrome-plated finish
- incl. wooden box

Part No. 129 048

Digital Caliper Rules

- automatical switch off after 5 min.
- 5-digit LCD display
- stainless steel
- oil and dirt protected
- toggle switch inch / mm
- accuracy ± 0.02 mm
- readout 0.01 mm
- depth gauge only with 150 mm
- battery not included

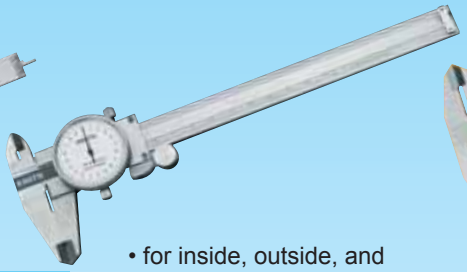


Length	Part no.
150 mm	129 025
200 mm	129 026
300 mm	129 027
500* mm	129 029

(* 500 mm nur mit unteren Schnabel lieferbar)

Dial Caliper

- including clamping screw
- measuring range 150 mm or 300 mm
- 0.02 mm increments
- satin chrome plated



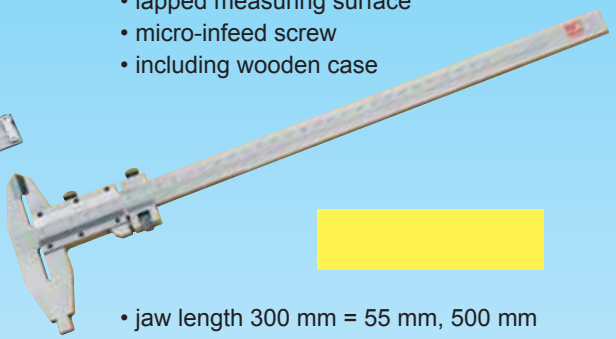
- for inside, outside, and height measurments
- including case

150 mm, Part no. 129 030

300 mm, Part no. 129 131

Workshop Caliper INOX

- lapped measuring surface
- micro-infeed screw
- including wooden case



- jaw length 300 mm = 55 mm, 500 mm = 100 mm and 1000 mm = 140 mm
- caliper jaw 20 mm (300 mm = 15 mm)

Length	Part no.
300* mm	129 031
500* mm	129 032
1000* mm	129 033

(* available with bottom spout only)

Measuring Tools

External Micrometer Set 6-pcs. 150 - 300 mm

- measuring range 25 mm each
- accuracy in acc. with DIN 863
- readout 0.01 mm
- satin chrome-plated scales
- micrometer screw diam. 8 mm
- C-frame with hand protection
- thimble diam. 17 mm
- including ratchet
- spindle pitch 0.5 mm
- with adjustment gauge
- including wooden case
- measuring range 150-175, 175-200, 200-225, 225-250, 250-275, 275-300 mm

Part no. 129 012

External Micrometer Set 6 pcs. 0 - 150 mm

- accuracy acc. to DIN 863
- readout 0.01 mm
- satin chrome-plated scales
- micrometer screw diam. 6.35 mm
- tungsten carbide tipped measuring surfaces
- C-frame with hand protection
- thimble diam. 17 mm
- including ratchet
- spindle pitch 0.5 mm
- measuring range 25 mm and up with adjustm. gauge
- including wooden box
- measuring range 0-25, 25-50, 50-75, 75-100, 100-125, 125-150 mm

Part no. 129 010

Digital Micrometer Calipers

- large LCD display 30 x 10 mm
- accuracy according to DIN 863
- smallest input increment 0.001 mm
- carbide measuring surface
- automatic display of max. and min. values
- zeroing at any point
- unit selection (metric/inch)
- interface for printer connection

Meas. Range	Part No.
0 - 25 mm	108 360
25 - 50 mm	108 361
50 - 75 mm	108 362
75 - 100 mm	108 363
0 - 100 mm	108 365

(4 pieces per set)

Parallel Gauge-Block Sets, 83 pc.

- accuracy acc. to DIN ISO 3650
- material: a carefully selected, high quality, special steel alloy, aged, hardened, and hand lapped. Accuracy of parallel end measurements conforms to DIN 861
- for the control of check gauges, and for the adjustment of length measuring devices, as well as exact testing in standards laboratory
- 1 each 1.005, 49 each 1.01 -1.49 23 each 0.5 - 9.50, 10 each 10 - 100 (83 total)

Part no. 129 000

Measuring Tool Set M5

in sturdy wooden box consisting of:

- depth gauge 200 mm, rust-proof, with clamping bolt, satin chrome-plating 100 mm, readout 0.05mm
- vernier caliper 150 mm, with instant adjustment, satin chromeplated, Nonius 0.05 mm
- ext. micrometer 0 - 25 mm, satin chrome-plated, readout 0.01 mm tungsten carbide tipped
- bevelled steel square 100 mm, bevelled steel edge 100 mm

Part no. 108 344

... and suddenly your old machine tool is exact again!

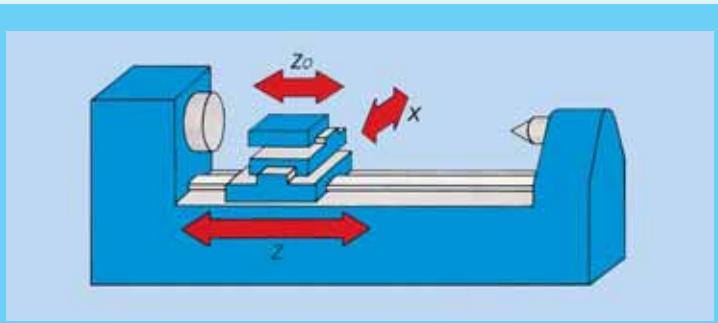
Miniature Precision Scales (incl. metal enclosure)	
Meas. length *	**Part No.**
100 mm	111 501
150 mm	111 502
200 mm	111 503
250 mm	111 504
300 mm	111 505
350 mm	111 506
400 mm	111 507
450 mm	111 508
500 mm	111 509
550 mm	111 510
600 mm	111 511
650 mm	111 512
700 mm	111 513
750 mm	111 514
800 mm	111 515
850 mm	111 516
900 mm	111 517
950 mm	111 518
1000 mm	111 519
1100 mm	111 521
1200 mm	111 523
1300 mm	111 525
1400 mm	111 527
1500 mm	111 529
1600 mm	111 531
1700 mm	111 533
1800 mm	111 535
1900 mm	111 537
2000 mm	111 539
3000 mm	111 559

* minimum length = max. mechan. traverse
higher gauge length upon request

3-Axis Position Indicator X.pos 3

As new addition or for retrofitting machine tools like milling machines and lathes, including measuring machines

- more accuracy
- lower error rate
- increased manufacturing safety
- significant time savings
- increased productivity
- easy to read display
- operator-specific features
- convenient keyboard layout
- resolution: 0.01 / 0.005 mm
- default coordinates
- axis position is maintained when display is turned off
- hole circle pattern calculation
- pocket calculator feature
- storage for 10 tools
- radius / diameter toggle
- mm/inch conversion
- easy expansion and maintenance-free operation
- display for top (Z0) and bedway slide (Z1) both separate and in differential / cumulative mode for lathes
  Part No. 123 459



Position Indicators.... a Must for any Machine Tool

Hardness Tester
HP 100

Electronic Hardness Tester
THL 201

tests the hardness of steel, cast-iron, stainless steel, aluminum, brass, and copper in seconds

- Versatile and user-friendly -
- hardness tester for Brinell, Rockwell and Vickers
- wide measuring range and large measurement storage (hold 255 measurements)
- 128 x 64 mm LCD
- accuracy +/- 0.8%
- sturdy cast aluminum housing for easy handling
- data can be transferred to a PC via USB cable
- rechargeable battery powered via USB port

Part No. 128 910

Standard Equipment:
- Test block
- USB interface cable
- operator manual

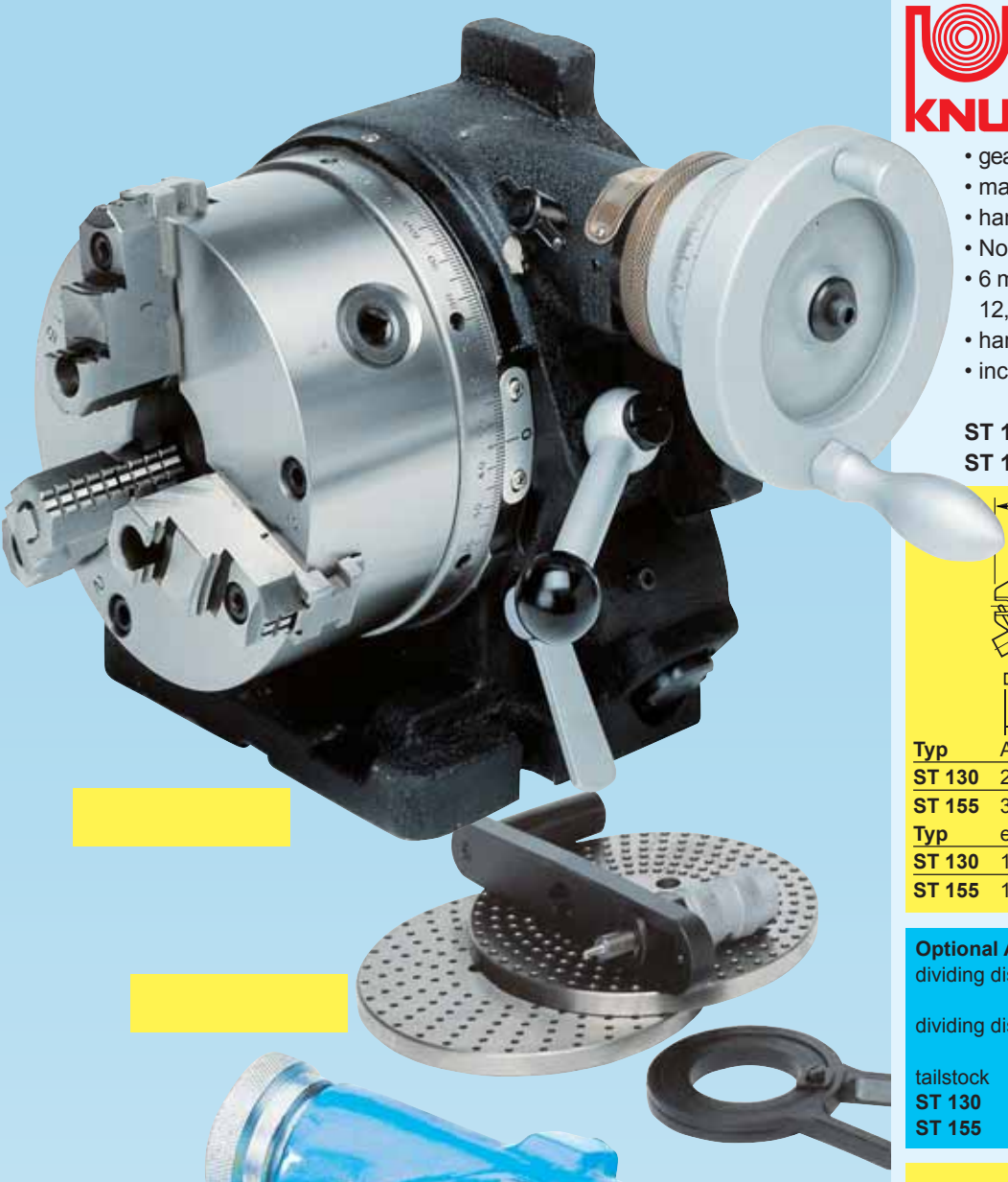
Heavy-duty Hardness Tester for workshop applications

- measuring ranges: Rockwell HRA > 70, HRB 30-100, HRC 20-67
- max. part height 170 mm
- throat 135 mm
- dimensions 466 x 238 x 630 mm
- weight 65 kg

Part No. 128 918

Standard Equipment:
- 3 weights: 60 kg / 100 kg / 150kg
- 2 flat test benches
- 1 prismatic (V-guide) test bench
- 1 penetrator with diamond tip
- 1 penetrator with steel ball
- Rockwell-standard block
- operator manual

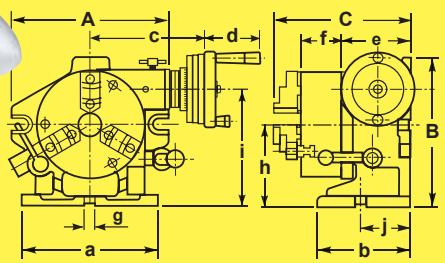
Options
- **hardness tester diamond** Part No. 128 915



Divider
ST

- gear ratio 1:90, disengages for direct division
- manual 360° rotation of chuck
- handwheel with scale ring
- Nonius division 10"
- 6 masks for direct division of 2, 3, 4, 6, 8, 12, 24 parts
- hardened and ground teeth
- including 160 or 200 mm 3-jaw chuck

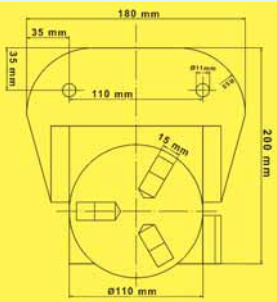
ST 130 Part no. 110 960
ST 155 Part no. 110 965



Typ	A	B	C	a	b	c	d
ST 130	250	235	221	220	150	184	82
ST 155	310	285	243	225	160	201	82
Typ	e	f	g	h	i	j	Weight
ST 130	112	66	16	130	186	80	48 kg
ST 155	125	75	16	155	232	90	76 kg

Optional Accessory Set for ST 130 + ST 155:

dividing disc A	26, 28, 30, 32, 34, 37, 38, 39, 41, 43, 44, 46, 47, 49, 51, 53, 57, 59
dividing disc B	61, 63, 67, 69, 71, 73, 77, 79, 81, 83, 87, 89, 91, 93, 97, 99
tailstock	
ST 130	Part no. 110 970
ST 155	Part no. 110 971

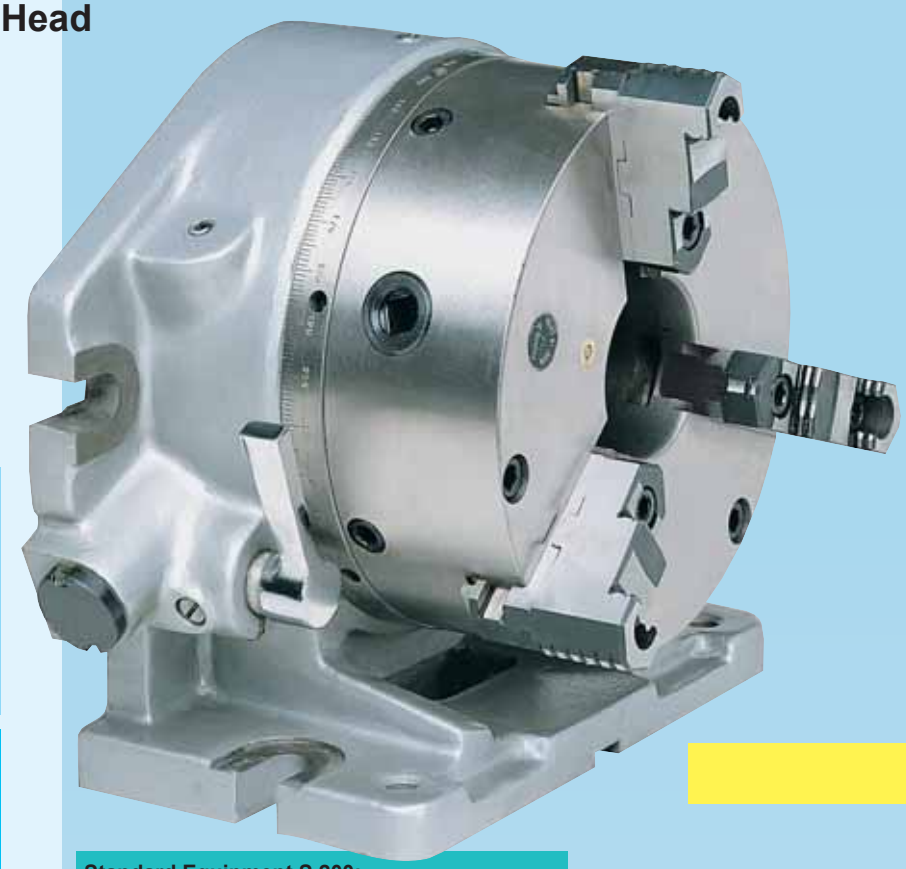


Divider
T 110

- swivels from horizontal to vertical 90° (scale)
- incl. 3-jaw chuck 110 mm
- center height 70 mm
- incl. thumb screw for chuck rotation 360° (scale)
- lathe chuck opening 25 mm
- disengages for direct manual turning of the chuck
- weight: 9 kg
  Part no. 110 940

Direct Indexing Head
S 200

The S200 Direct Indexing Head can be used in a horizontal or vertical setup. The indexing unit is enclosed in the resistant cast-iron body of the divider, where it is protected from contamination to ensure precise and consistent divisions of 2, 3, 4, 6, 8, 12, and 24. An easy-to-read circumferentially mounted Nonius scale provides exact divisions up to 360°. A sturdy **clamping lever** is provided for the torsion-proof fixture of the chuck at any set position.



Accuracy		
spindle concentricity, radial	mm	0.01
axial concentricity, clamping plate	mm	0.015
plane parallelism from clamping plate to base plate	mm	0.02
squareness of setup area	mm	0.015/200
indexing accuracy (for 24)		25”

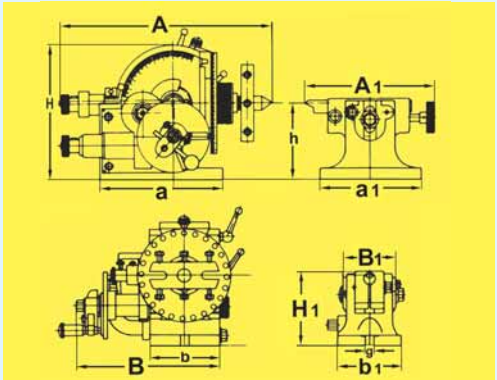
Specifications S 200		
center height	mm	150
3-jaw chuck	mm	210
divisions		2, 3, 4, 6, 8, 12, 24
Part No.		110 966

Standard Equipment S 200:
6 indexing masks, chuck, operating tools

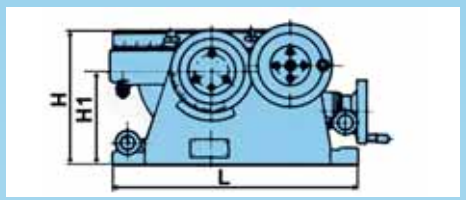
Universal Indexing Head
HT

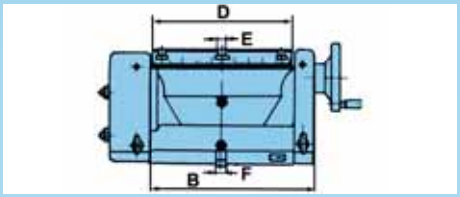
- for direct and indirect divisions
- spindle runs in precision tapered roller bearings
- phosphorous/bronze worm gear with hardened and ground CrNi steel worm
- disengage gears for direct divisions
- gear ratio 40:1
- swivels from 10° below horizontal to vertical (-10° to 90°)
- every division for 2 to 50 parts, and many divisions up to 380 parts
  Part No. 110 953

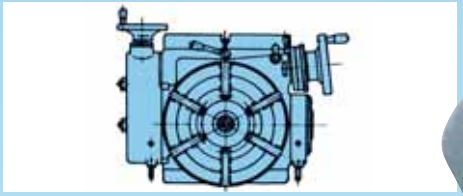
Standard Equipment: tailstock, 2 dividing plates, center, drive chuck, and chuck flange



HT 0 Indexing Head								Tailstock						
A	B	H	h	a	b	g	spindle bore	A1	B1	H1	h	a1	b1	g
189	140	173	100	160	91	13	18	176	80	107.4	100	130	92	13







Swivelable Rotary Table
RTS

Accuracy	RTS 250	RTS 320
face concentricity of work table setup surface	< = 0,020	
concentricity of setup table	< = 0,020	
parallelism of setup to base surface	< = 0,020	
concentricity of setup table taper bore	< = 0,010	
parallelism of table setup to cross groove	< = 0,020	<=0,020mm
division accuracy	45“	

- completely enclosed design, prevents contamination from dirt and chips
- setup table rotates on a large, ring-
- shaped, oil-bath lubricated, guideway
- the very effective clamp pulls the setup table down straight, without any change of position or radial pressure, and presses it against the guideway
- for quick manual turning, the worm can be disengaged from the worm gear by pushing down the hand-lever
- the zero-backlash of worm and worm gear is adjustable
- setup table with 360° scale
- the high precision worm gear is almost as large as the rotary table
- hardened, ground, and oil-bath lubricated worm
- worm gear ratio 90:1
- handwheel scale gradation 10"
- handwheel can be replaced with indexing plate

Type	D	H	H1	B	L	F	E	d	MT	Ratio	Weight	Part no.
RTS 250	250	205	140	260	310	14	12	30	Nr.3	1:90	78 kg	125 810
RTS 320	320	255	175	332	380	18	14	40	Nr.4	1:90	133 kg	125 815

INDEX Feature
- for direct and indirect division
- from 2 to 66, all divisions from 68 to 132 dividable by 2, 3 a. 5 can be performed

Part no. 125 805

Rotary Table
RT

Index Feature

RT 160 - 320

- for direct and indirect division
- from 2 to 66: all divisions from 68 to 132: those divisable by 2, 3 and 5 can be performed

Part no. 125 805 -

RT 100

Part no. 125 802

Tailstock for RT 100

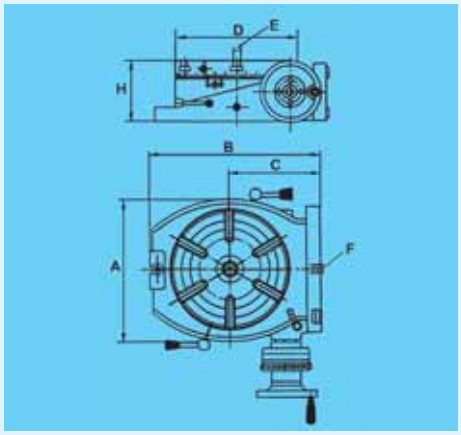
Part no. 125 801

Tailstock for RT 200 and RT 250

Part no. 125 820

Tailstock for RT 320

- Part no. 125 825
- design features as described under RTS
- type RT 100 with 3 radial setup T-slots
- type RT 160 and RT 200 with 4 radial setup T-slots (14 mm)
- type RT 250 and RT 320 with 6 radial setup T-slots
- very low profile
- guide slot in the vertical base plane
- except for RT 160, all RTs can be used vertically



Accuracy (max. deviation)	
face concentricity of work table setup surface	300 : 0,015
work table concentricity	0,015
parallelism of setup table to base plane	300 : 0,02
taper bore concentricity	0,01
parallelism of bore axis to vertical setup surface	0,03
parallelism of bore axis to groove in the vertical setup surface	0,02
parallelism between vertical setup surface and connecting axis taper center-tailstock center	0,02
parallelism between groove in the vertical setup surface and the connecting axis between centers	0,02
division accuracy	45“

Type	D	H	A	B	C	E	F	MT	d	Ratio	Weight	Setup	Part no.
RT 100	110	75	118	145	85	10	10	2	25	1:90	7,25	hor. + vert.	125 800
RT 160	160	85	196	242	125	10	12	2	25	1:90	16,5 kg	horizontal	125 830
RT 200	200	100	236	285	150	12	14	3	30	1:90	30,5 kg	hor. + vert.	125 835
RT 250	250	110	286	328	170	12	14	3	30	1:90	44 kg	hor. + vert.	125 840
RT 320	320	120	360	410	210	14	18	4	40	1:90	75 kg	hor. + vert.	125 845

CNC Gantry-Type Milling Machine

PFM 4000 - 16000

Heavy-duty Gantry-Type Milling Machines provide superior chip removal rates

for precise milling of very large and heavy parts

- the compact gantry design provides high power with a small footprint
- the fixed setup table can handle workpiece weights up to 8 tons/m2
- up to 16000 mm machining length and widths up to 2550 mm
- the very rigid bridge provdes a distance of 1700 mm between spindle and setup table
- work spindle with powerful high-torque drives

Standard Equipment: Siemens 802 D SL control, totally enclosed work space, hydraulic tool clamping, thread cutting without compensating chuck, automatic central lubrication, coolant system, foundation bolts, operating and programming instructions

Options
- 90° angular cutter head
Part No. 250,032
- universal cutter head
Part No. 250,033

Specifications PFM		4000	5000	6000	8000	10000	12000	14000	16000
X axis travel	mm	4000	5000	6000	8000	10000	12000	14000	16000
Y axis travel	mm	2550	2550	2550	2550	2550	2550	2550	2550
Z axis travel	mm	1300	1300	1300	1300	1300	1300	1300	1300
headstock motor rating	kW	22	22	22	22	22	22	22	22
weight	kg	26000	28000	30000	32000	34000	36000	38000	40000
Part No.		180 220	180 221	180 222	180 223	180 224	180 225	180 226	180 227

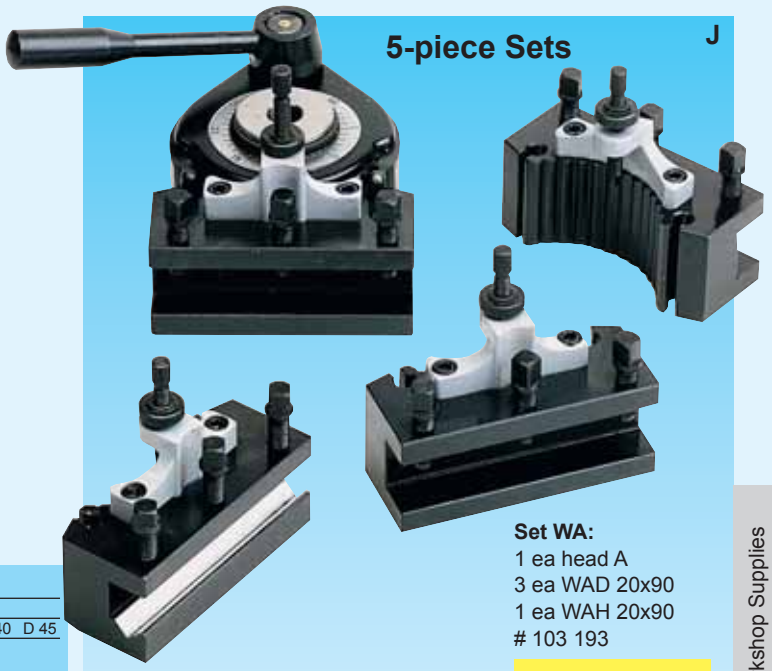
Quick-Change Tool Holder

- fits all standard german quick-change tool holder
- tool holder head and tool holder feature profile-ground gearing
- tool holders are clamped against the central body's gears by means of 2 chuck halves and an eccentric bolt
- repeat accuracy 0,01 mm
- tool holders can be adjusted to 40 different angles on the central body
- angle scale provided on head
- holder height adjustment with a thumb screw

fits onto machine (# 103 315)

Select tool changer head in accordance with table

size		A		E		B		C		
tool changer size		D 16	D 20	D 20	D 25	D 25	D 32	D 32	D 40	D 45
max. machine drive power	HP	3		6		9		18		
machine turning diam.	mm	150-300		200-400		300-500		400-700		
max. slide width	z mm	100		120		150		180		
min. cutting edge height	x mm	h + y		h + y		h + y		h + y		
max. cutting edge height	mm	x + hv		x + hv		x + hv		x + hv		
height adjustment	hv mm	11		17	15	20	11	40	35	30
tool support	y mm	9		10	11	12,5	14	15	16	17
tool support width	d mm	12		20		20		20	30	30
max. tool height	h mm	16	20	20	25	25	32	32	40	45
max. total width	v mm	100		125		150		192	202	202
total height	s mm	54		68		75		105		
max. reach	u mm	48		60		71		92	102	102
standard bore	t mm	20		20		32		40		
max. bore	t max. mm	31		31		51		70		
max. bore depth	mm	35		35		45		75		



5-piece Sets

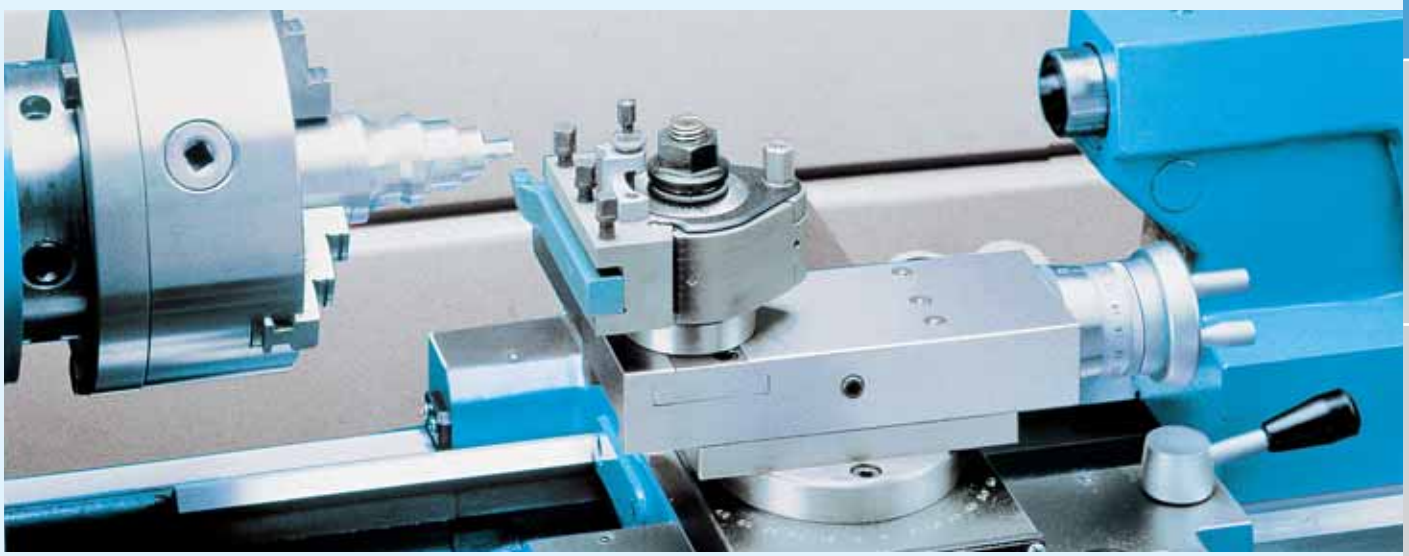
J

Set WA:
1 ea head A
3 ea WAD 20x90
1 ea WAH 20x90
103 193

Set WE:
1 ea head E
3 ea WED 20x100
1 ea WEH 30x100
103 194

Set WB:
1 ea head B
3 ea WBD 26x120
1 ea WBH 36x120
103 195

Set WC:
1 ea head C
3 ea WCD 32x150
1 ea WCH 35x150
103 196



WA 103 189

WAD	a 16	l 75	103 271	
WAD	16	90	103 272	
WAD	20	75	103 273	
WAD	20	90	103 274	
WED	20	100	103 281	WE 103 190
WED	25	100	103 282	
WBD	25	120	103 291	WB 103 191
WBD	25	140	103 292	
WBD	32	120	103 293	
WBD	32	140	103 294	
WCD	32	150	103 301	WC 103 192
WCD	32	170	103 302	
WCD	40	150	103 303	
WCD	40	170	103 304	
WCD	45	170	103 305	

WAH d 20 l 85 103 275

WEH 30 100 103 283

WBH 30 130 103 295
WBH 18 120 103 298

WCH 35 150 103 306
WCH 50 160 103 307

WAJ d 30 l 80 103 276

WEJ 30 100 103 284
WEJ 40 100 103 285

WBJ 40 120 103 296

WCJ 40 160 103-308
WCJ 50 160 103 309

WAA-AO 103 277

WEA-A2a 103 286

WBA-A2a 103 297

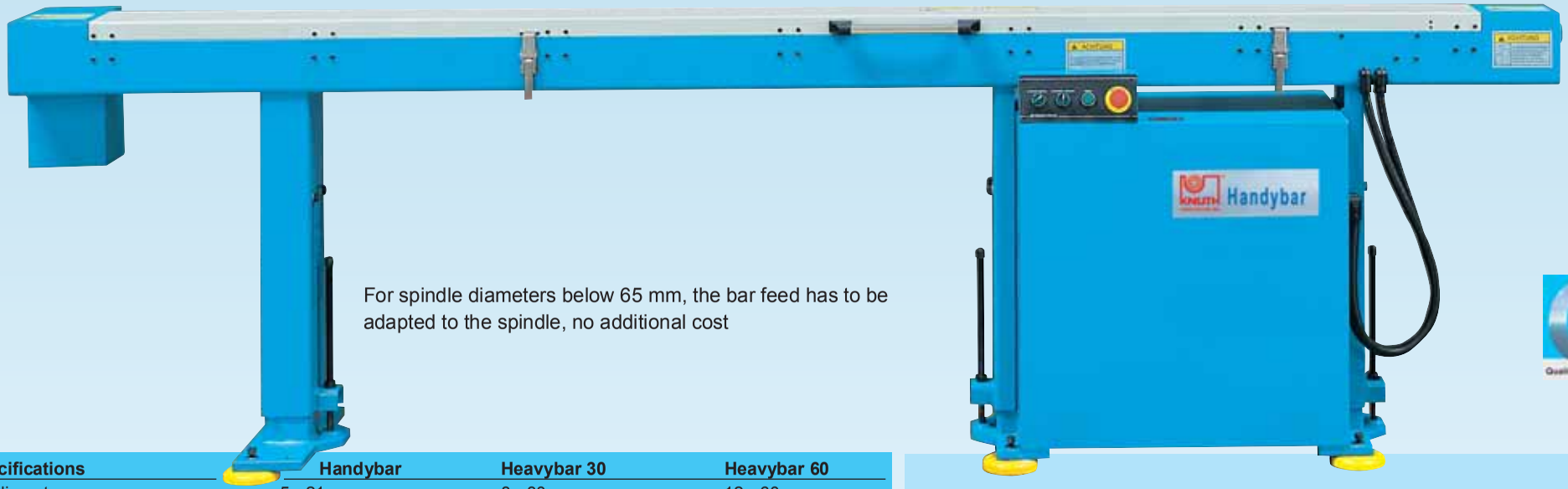
WCA-A3a 103 310

Bar Feed for CNC Lathes

Handybar • Heavybar

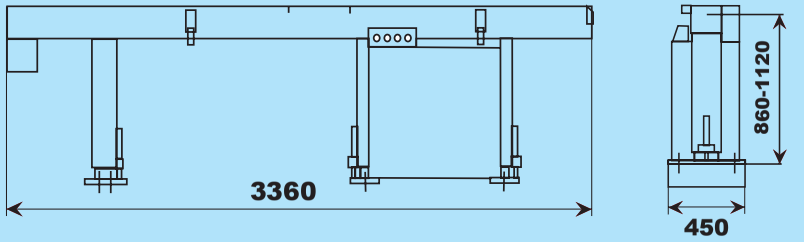
quick and easy change of material diameters

- mechanical torque adjustment of feed ensures problem-free continuous operation
- feed timer is adjustable at the machine - no special programming at the CNC unit required
- improved workpiece surfaces due to low-vibration operation during bar machining -- the material is completely supported and remains centered



For spindle diameters below 65 mm, the bar feed has to be adapted to the spindle, no additional cost

Specifications		Handybar	Heavybar 30	Heavybar 60
bar diameter	mm	5 - 21	8 - 30	12 - 60
required spindle diameter	mm	25	35 mm (1)	65 (2)
bar length	mm	3000	3000	4000
spindle center height	mm	880 - 1120	880 - 1120	880
voltage supply		400 V / 10 A / 50 - 60 Hz	400 V / 10 A / 50 - 60 Hz	
weight	kg	250	350	425
oil reservoir	l	50	50	50
Part No.		123 960	123 970	123 975



Heavy-Duty CNC Lathe
Vulkan 4K

High-capacity machining for part weights up to 120 tons and 4000 mm turning diameters

- KNUTH Vulkan Heavy-Duty Lathes feature a modular design for customer-specific configurations based on the exact specifications provided by the customer (see Specifications)
- from configuration to startup, the machine is designed in close cooperation with the machine manufacturer
- the machine manufacturer will setup the machines at the customer‘s site and perform the startup
- controls and drive components as well as mechanical and electrical components come from renown suppliers and meet international standards
- the machine frame features a multi-track bed and a modular design
- tool towers are easy to traverse on separate guideways

Standard Equipment: Siemens 802 D SL control, 4-jaw independent chuck 3200 mm, chip guard to protect the operator, work space lamp, operating tools, operator manual

Options	Part No.	Price $
• rests 600 - 1400 mm	250 302	
• rests 1400 - 2500 mm	250 303	
• Additional options available upon request		

Siemens 802 D SL
www.knuth.de

Specifications Vulkan 4K		802 D SL
Siemens control		
Working area		
max. turning diam. over bed	mm	4000
max. turning diam. over cross slide	mm	3000
max. part weight	kg	120000 with rest
max. part length	mm	8000
chuck diameter	mm	3200
max. torque at the lathe chuck	Nm	120000
max. cutting force at the tool	KN	100

spindle speed (infinitely variable)	min^{-1}	(2) 0,4 - 80
Z axis travel	mm	8500
X axis travel	mm	1700
rapid feed Z / X axis	mm/min	2000
Z / X axis feed	mm/min	1 - 2000
tool shank dimensions	mm	80 x 80
tailstock quill stroke	mm	200
tailstock rapid feed speed	mm/min	2000
Z axis servo motor torque	Nm	41
X axis servo motor torque	Nm	61
Accuracy		

positioning accuracy Z / X axis	mm	0,035 / 0,08
repeatability Z / X axis	mm	0,02 / 0,035
Drive Capacities		
main motor rating	kW	DC 144
total connected load	kVA	240
Dimensions/Weight		
overall dimensions (L x W x H)	mm	16500 x 6000 x 5000
weight	kg	260000
Part No.		101 501

Call us to inquire about the latest best prices under: +49 4321 609-0

KNUTH Werkzeugmaschinen GmbH • Schmalenbrook 14 • D-24647 Wasbek • Tel. +49 4321/609-0 • Fax +49 4321/68900

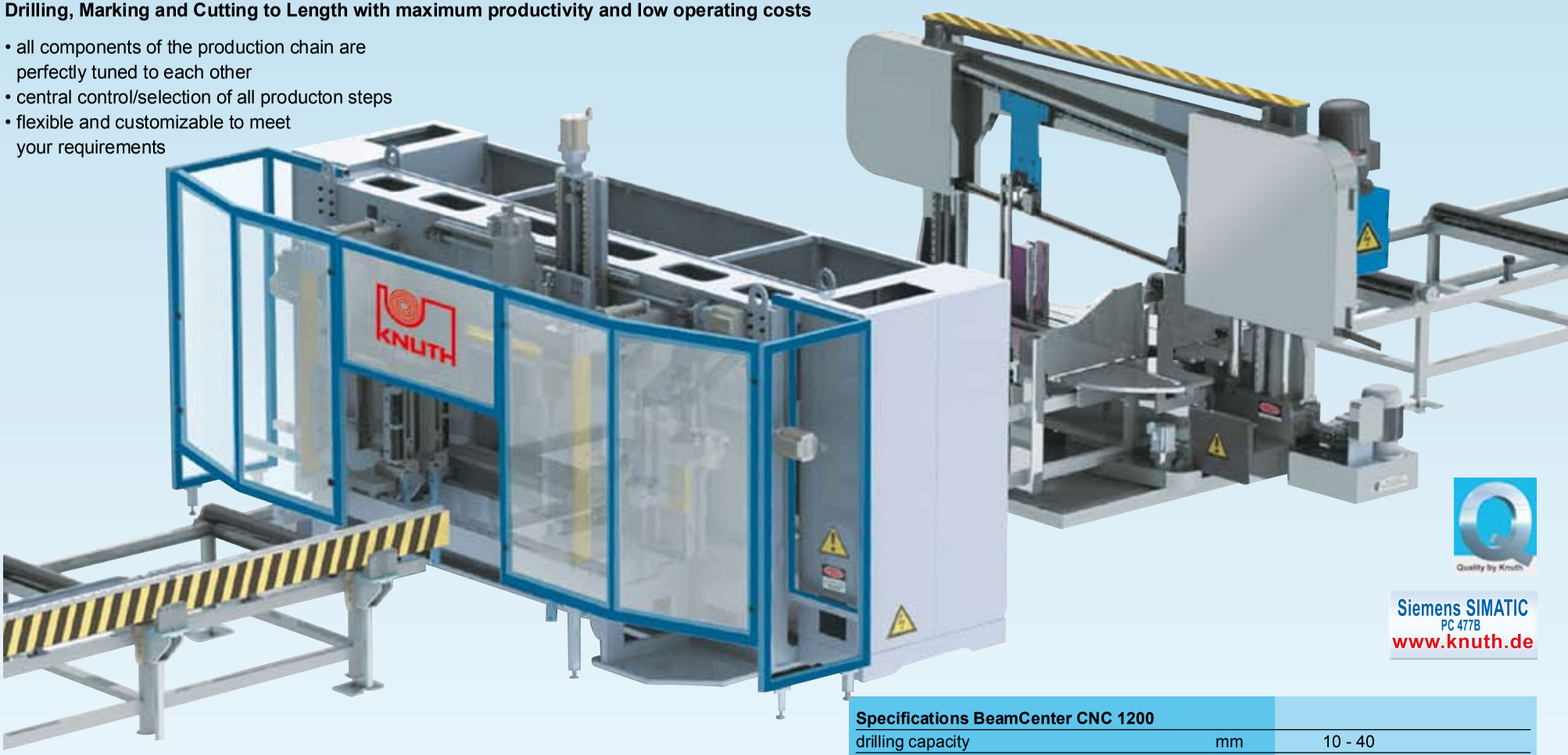
CNC Production Center for Beam Construction

BeamCenter CNC

Multi-side CNC Drilling for large profile

Drilling, Marking and Cutting to Length with maximum productivity and low operating costs

- all components of the production chain are perfectly tuned to each other
- central control/selection of all producton steps
- flexible and customizable to meet your requirements



Siemens SIMATIC
PC 477B
www.knuth.de

Ready for a demo at our headquarters in Wasbek, Germany. Please call to make an appointment.

Specifications BeamCenter CNC 1200		
drilling capacity	mm	10 - 40
# of drill spindles, vertical		1
# of drill spindles, horizontal		2
max. machining dim. (W x H x L)	mm	1200 x 500 x 12000
spindle speed	min^{-1}	200 - 3000
motor rating, drill spindle	kW	11
Part No.		181 027