



2020

Over 100 new machines



The new generation of our bestsellers

www.knuth-machinetools.com



KNUTH In-House Exhibit 2019

Our 96-year anniversary celebration at our headquarters in Wasbek, Germany, was attended by a host of customers from Germany and abroad. Our guests took this opportunity to familiarise themselves with the complete KNUTH performance spectrum, to get a look behind the scenes, to discuss their

individual requirements and to test machines under real-life conditions. More than 100 of our 900 in-stock machines were demo-ready, including many new machines from our Machine Program 2020 and our bestsellers, like the STAHLWERK machining centers.



Impressions from the KNUTH In-House Exhibit 2019



The new generation of our bestsellers

The KNUTH Machine Program 2020

We have fortified our strengths. Updates extend across the entire machine program: from machines for conventional turning, milling, drilling and sawing to metalworking and CNC milling. In all of these areas, we now offer new designs and

also larger versions of our proven and tested models. What this means for customers:

- Enhanced functionality and control
- Extended performance spectrum

- Improved cost-efficiency
- Better availability and faster delivery

**KNUTH
Machines
LIVE
DEMO**

info@knuth.de



See for yourself now!

Test them together with the experts to see and feel the quality and advantages of our machines. Nothing is more convincing than your own experience!

Make an appointment for a personal demonstration!



Quality Assurance for your KNUTH Machine

Quality by KNUTH Certified Quality Assurance

More than 1400 machines are shipped annually from our headquarters in Wasbek, Germany. Every machine has to pass a series of tests in our 5-level quality assurance process that covers everything from incoming quality control to alignment testing, and from functional, technical and geometric accuracy tests to the final acceptance test.

These tests are conducted by our master technicians who use a dedicated customized data processing system for this purpose.

An ISO 9001 certified quality management system ensures continuous control and improvement of all quality-relevant activities. Design, development and precision of each individual machine are documented exactly in detailed inspection protocols and acceptance test logs.



All-Encompassing KNUTH Service Worldwide Reliability

Our highly qualified technicians and engineers all over the world ensure reliable service from one central source. And our global supplier network ensures prompt availability of replacement parts and consumables at a local level.

Our on-line Service Help Desk is available 24/7 at:
knuth.de/servicedesk



The Process of Making a
KNUTH Machine Tool

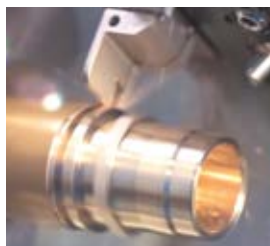


KNUTH Machines in Action

Look us up on YouTube to experience our machines in action before the real-life test on site.

Subscribe to our YouTube channel - Go to KNUTH Machine Tools!

Table of Contents



KNUTH SPECIAL

■ Service	6 - 7
■ STAHLWERK Premium	8 - 23
■ User Report	12 - 13
■ KNUTH Campus	94 - 99
■ Container	148 - 149



TURNING

■ STAHLWERK Premium	14 - 19
■ Servo-Conventional	24 - 31
■ User Reports	26 - 27, 114 - 115
■ CNC Turning	96 - 97, 102 - 125
■ Vertical Lathes	108 - 109
■ Heavy-Duty Lathes	126 - 131
■ Universal / Precision Bench Lathes	132 - 147



MILLING

■ STAHLWERK Premium	20 - 23
■ Servo-Conventional	32 - 45
■ CNC Milling	74 - 93, 98 - 99
■ User Report	152 - 153
■ Gantry-Type Milling Machines	154 - 157
■ Universal Milling Machines	158 - 187
■ Drill Press/Milling Machine	188 - 191



CUTTING SYSTEMS

■ Laser	46 - 49
■ Plasma	50 - 57
■ Water	58 - 59
■ Electric Discharge Machining	62 - 67
■ User Report	64 - 65



DRILLING

■ CNC Drill Units	68 - 73
■ Drill Units	194 - 195
■ Radial Drill Presses	196 - 205
■ Column Drill Presses	206 - 211
■ Bench Drill Presses	212 - 217



SAWING

- Fully Automatic 220 - 233
- Semi-Automatic 234 - 243
- Horizontal Band Saws 244 - 247
- Vertical Band Saws 248 - 249
- Metal Circular Saws 250 - 251



GRINDING

- CNC Grinders 254 - 255, 264 - 269
- Surface Grinders 256 - 263
- User Report 268 - 269
- Cylindrical Grinders 270 - 273
- Tool Grinders 274 - 277
- Belt and Disk Sanders 278 - 283



PRESSES AND SHEARS

- Hydraulic Presses 286 - 299
- CNC Press Brakes 300 - 301
- Swing-Beam Shears 302 - 309
- Profile Steel Cutters 310 - 311
- Notching Machines 312 - 313



BENDERS

- Arbor Bending Machine 316 - 317
- Profile Benders 318 - 319
- Roll Benders 320 - 323
- Folding Machines 324 - 327



MACHINE ACCESSORIES

- Turning 338 - 347
- Milling Machines and Drill Presses 348 - 359
- Dividers 364 - 367
- Position Indicator 368 - 369
- Clamping Tools 370 - 371



WORKSHOP EQUIPMENT

- Machines and Equipment 328 - 335
- Work Station 336 - 337
- Measuring Tools 360 - 363

Ensuring Sustainable Production

Preventive Maintenance – Scheduled Service

Plan your machine availability using our Preventive Maintenance Service.
Maintenance and repair as a means to increase overall system effectiveness.



Machine Inspection - We will prepare a summary to show the exact condition of your machine

- Testing of machine functions
- Testing of safety features
- Creation of a status report

Machine Maintenance - We will reduce your downtimes

- Testing of machine function
- Testing of safety features
- Monitoring and adjustment of all machine components
- Checking all maintenance and wear points according to maintenance schedule
- Creation of a Maintenance Report

Maintenance Agreement - For the most efficient maintenance plan!

- Periodic machine maintenance per Maintenance Agreement
- Scheduled maintenance services provide a reliable predictor of machine availability

Complete Service by KNUTH

Reliable service from a single source

We provide highly qualified technicians and engineers all over the world to ensure reliable service from one central source. And our global supplier network ensures prompt availability of replacement parts and consumables at a local level.



CONSULTATION

- Sample work pieces
- Machine demos



START-UP

- Installation / Commissioning
- On-site Instruction



TRAINING

- User Training
- Maintenance Training



PREVENTIVE MAINTENANCE

- Inspection
- Maintenance



REPAIR

- Machine Repair
- Spare Parts



MACHINE WARRANTY

- Protect Insurance

KNUTH Technical Service Help Desk

KNUTH Parts Service

Our Service Help Desk is available 24/7 online at: [knuth.de/servicedesk](https://www.knuth.de/servicedesk)

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STAHLWERK

PREMIUM LINE

CNC Premium Technology customized for your needs

STAHLWERK SETS NEW STANDARDS FOR MAXIMUM RELIABILITY AND PRECISION

WIDE VARIETY OF OPTIONS FOR OVER 50 MACHINES LET US HELP YOU CONFIGURE THE PERFECT MACHINE FOR YOUR NEEDS

CUSTOMIZED AUTOMATION SOLUTIONS LET YOU GET THE MOST OUT OF YOUR PRODUCTION

STAHLWERK CONSULTATION & SERVICE PACKAGES THE STAHLWERK TEAM WILL BE AT YOUR SIDE

Horizontal Lathes and Turning Centers

ORION

Horizontal Lathes and Turning Centers

MERKUR

Horizontal Heavy Duty Lathes and Turning Centers

TAURUS



ORION 10TLM

Ø 190 / Length 355 mm



ORION 6TLM

Ø 190 / Length 390 mm



ORION 10TL

Ø 280 / Length 485 mm



ORION 6TL

Ø 280 / Length 520 mm



MERKUR 180MR

Ø 270 / Length 380 mm



MERKUR 245LMB

Ø 280 / Length 490 mm



MERKUR 225LMR

Ø 280 / Length 500 mm



MERKUR 200LB

Ø 350 / Length 1000 mm



MERKUR 245LR

Ø 350 / Length 430 mm



MERKUR 245LB

Ø 350 / Length 530 mm



TAURUS 250

Ø 400 / Length 1080 mm



TAURUS 300M

Ø 400 / Length 1080 mm



TAURUS 300L (M)

Ø 400 / Length 2080 mm



TAURUS 450M

Ø 620 / Length 1465 mm



TAURUS 450

Ø 690 / Length 1465 mm



TAURUS 450L

Ø 690 / Length 2265 mm



24 Month Guarantee and Service Package

MAXIMUM RELIABILITY AND PRECISION

Premium CNC machines by STAHLWERK stand out with well-designed construction and offer long-lasting value. Advanced manufacturing processes and optimized production workflows as well as a careful selection and control of suppliers were major factors contributing to this superior product.

The combination of excellent machine quality, premium components and tools allow STAHLWERK to set highest accuracy standards for itself. This also is the basis for branding this line as premium.

Efficiency and sustainable development of all processes and structures inside the company are fortified by an ISO 9001 certified quality management system. This ensures continuous control and improvement of all quality-relevant activities.

Static positioning accuracy, repeatability and finished part measurements are documented in detailed acceptance test logs for every STAHLWERK machine.

Vertical 3-Axis Machining Centers

LUPUS



LUPUS 520L

X 1020 mm / Y 520 mm / Z 510 mm



LUPUS 650

X 1280 mm / Y 670 mm / Z 640 mm



LUPUS 700

X 1500 mm / Y 700 mm / Z 610 mm



LUPUS 1000B

X 1600 mm / Y 1000 mm / Z 800 mm



Compact Vertical 3-Axis Machining Centers

VECTOR

VECTOR 850M

X 850 mm / Y 550 mm / Z 550 mm



VECTOR 1000M

X 1000 mm / Y 550 mm / Z 550 mm



Extensive information is available for every
STAHLWERK series.

Request our brochures today for:
www.stahlwerk-cnc.com

STAHLWERK

PREMIUM LINE



SERVICE PACKAGES

- Individual Customization
- Pilot Production & Time Studies
- Tool and Parts Packages
- Solid Supplier Relations
- 24-Month Warranty
- Insurance, Maintenance and much more

FINANCING

- Leasing / Purchase
- Renting
- Funding

AUTOMATION

- Standard entry-level stations
- Custom solutions and linking of machines
- Industry 4.0 and production software

INDUSTRIES

- Mechanical and System Engineering
- Medical Devices
- Energy / Oil and Gas
- Shipping / Automotive / Aviation

**Trustworthy
and Reliable Services!**

A Custom-Fit, Future-Perfect Investment

Now JAM Automation can cut individual parts much faster and more accurate than ever before on their new STAHLWERK Vector 1000M Machining Center from KNUTH.



JAM Automation has been producing custom automation solutions for the industry since 2001, from the development of custom solutions for the automotive industry to the production of plumbing and electric parts. From their extensive portfolio of test tracks, camera systems, conveyors and cleat belts, XYZ servo axis systems, storage tracks, bunkers, and chain conveyors, JAM selects the required machine components and customizes them to fit the customer's production process.

The smart way to increase production

Almost every machine is unique, and JAM produces most customized single parts in-house. For its milling operations, the company uses a KNUTH VBZ 760 with a TNC 407 Heidenhain control and a KNUTH VHF1. When new capacities were needed in 2017, JAM evaluated several other modern milling machines. A requirement for the new machines was that they could be left running at shift-end for cutting single parts or part families. Additional requirements were: Work table length of at least 1100 mm, multiple clamping system, 30-station tool changer, tool gauging system, speeds up to 10000 rpm, and 30 bar through-spindle cooling.

Siemens 828D control is standard

At the EMO 2017, Operations Manager Hörenbaum was able to experience the power of a STAHLWERK Vector 1000 M machining center in a live demo, and after a follow-up visit at KNUTH's headquarters at Wasbek, he was fully convinced. "We were really happy that our favorite control, the Siemens 828D with ShopMill, and Siemens drives came with the Vector standard package," said Hörenbaum. Since April 2018, the Vector 1000 M is in operation at the facilities in Radevormwald. Machine operator, Damiano Di Paolo, just completed his milling technician training. "For him, this presents a great opportunity, and for us it presents a sound investment in the future", added Hören-

baum. "Thanks to the intensive 2-day training under real-life conditions, operation of the new milling machine worked well right from the start." In day-to-day operations, Di Paolo gets support of an experienced milling technician.

Time Savings through Automation

In the future, JAM wants to carry out all previously outsourced milling work in-house and mitigate any production downtimes during summer vacation periods. "Automated production without operator intervention after shift-end will shorten our cycle times," said Hörenbaum. "And since we added a CAD Reader, contours can now be input and milled directly from a PC."

In addition, KNUTH and JAM Automation now offer jointly developed solutions, since many machines from the KNUTH or STAHLWERK portfolio can be loaded and unloaded automatically via JAM robots.

Micrometer Precision

The production of automated thermoforming equipment and associated molding dies requires extreme precision while working with 1 micrometer thick films. Rohde Maschinenbau uses STAHLWERK Premium Line machine tools to meet these stringent requirements.



Since 1996 the company designs and manufactures automated thermoforming equipment in series production. Their machines are used to process PP, PP-EVOH-PP, PS or APET plastic films to produce cups and bowls for the global food industry. Working with film thicknesses between 0.1 and 3 mm requires extreme precision.

Milling with Micrometer Precision

Rohde was looking for a rugged milling machine that could handle large steel parts and dies up to 1.500 mm in size. The machine should be able to efficiently process workpieces that were 1.300 x 600 mm in size and weighed up to 250 kg with extreme precision. For contouring and curvature of the forming tools an exacting precision in the range of 1 to 5 micrometers is mandatory," explained owner Norbert Rohde." The machine had to work with maximum precision in the 5 micrometer range, even during high throughput speeds and maximum chip removal rates.

Highest Precision at Highest Throughput

Rohde was familiar with the superior service and quality of KNUTH Machine Tools, since they had been using a KNUTH VBZ 760 for several decades. Rohde remembers, "we had in-depth talks, exchanged thoughts and ideas, and discussed the requirements, solutions and their feasibility." STAHLWERK milling experts visited his plant in Eutin several times and after an in-depth analysis, they recommended the LUPUS 700. In turn Rohde traveled to Wabek to see the vertical CNC machining center with its powerful Heidenhain iTNC 530 HSCI control in action. "For this test run, we were able to use our own materials to produce cut parts. The measurably higher precision and the high throughput definitely convinced us," said Rohde.

Impressive Performance and Service

Rohde is fully satisfied. All schedules and agreements were met, and all services and operator training courses for their employees were customized to meet their needs. "Today, the Lupus 700 has successfully been in operation for over two years. It has proven itself and so has the superior preventive maintenance service provided by KNUTH. "It assured us that we would have a reliable and competent business partner at our side," said Rohde. "I definitely would buy the LUPUS 700 again and I highly recommend STAHLWERK machines."

**For complete information on
STAHLWERK machines:**

Lupus 650 - Page 20 / 21

Vector 1000 M - Page 22 / 23

Premium Lathe - powerful and customizable

- » High-Performance Fanuc Oi TF CNC
- » Powerful main spindle with up to 6000 rpm
- » Linear guide and powerful drive with 11/15 kW
- » Programmable tailstock



Actual machine may
vary slightly

QUALITY CUSTOMIZED FOR YOUR NEEDS

- » STAHLWERK PREMIUM LINE includes 6 series for a perfectly rounded portfolio of Premium CNC machines to fit every need and level. We serve smart solutions and top-notch technology for turning, milling and automation applications
- » STAHLWERK PREMIUM LINE ensures superior quality and machine reliability and impresses with sophisticated design and lasting value



SPECIFICATIONS

Working area		Merkur 180MR
Turning-Ø over bed (max.)	mm	490
Swing-Ø over cross slide (max.)	mm	360
Turning diameter (max.)	mm	270
Turning length (max.)	mm	380
Travels		
Travel X-axis	mm	160
Travel Z-axis	mm	390
Angle of slant bed	deg	45
Headstock		
Bar capacity (incl. chuck)	mm	45
Spindle speed	rpm	6.000
Spindle mount		A2-5
Spindle Torque cont./max.	Nm	74 / 110
Lathe chuck diameter	mm	150
Feed		
Feed force X-axis (cont./max.)	kN	7,8 / 17,6
Feed force Z-axis (cont./max.)	kN	7,8 / 17,6
Toolchanger		
Tool changer type		Servo
Number of tool stations	Pieces	12
Shank size	mm	20 x 20
Boring bar mount diameter	mm	32
Turret indexing time	s	0,15
Speed, driven tools	rpm	5.000
Accuracies		
Repeatability	mm	± 0,003
Positioning accuracy	mm	± 0,005
Rapid feed		
Rapid feed X-axis	mm/min	32.000
Rapid feed Z-axis	mm/min	32.000
Tailstock		
Tailstock quill diameter	mm	80
Tailstock quill stroke	mm	80
Tailstock taper	MT	4
Drive capacity		
Motor rating main drive	kW	15
Main drive, continuous load	kW	11
Motor rating, driven tools	kW	3,7
Driven tools, continuous load	kW	2,2
Motor rating X / Z axis	kW	3
Total power consumption	kVA	27
Measures and weights		
Overall dimensions (length x width x height)	m	2,4 x 1,46 x 1,64
Weight	kg	3.050
Part No.		181 202

**MOST
POPULAR**

List of available options:

- 252 704 Siemens 828D (PPU 28X.Y)
- 251 639 Automatic door
- 251 658 Fanuc Manual Guide i
- 251 688 Chain-type chip conveyor (lateral)
- 251 715 Oil mist separator
- 251 805 Renishaw HPRA tool gauging system (removable)

Premium Heavy-Duty Turning Center with C-axis and driven tools

- » High-Performance Fanuc Oi TF CNC
- » Turning diameter of 610 mm and rod capacity of 90 mm
- » Powerful drives with 15/18.5 kW



PERFECTLY INTEGRATED AUTOMATION SOLUTIONS

- » With automation solutions for workpiece and pallet handling, every machine can be configured for semi-automatic or fully automated operation
- » We offer quick ROI through increased efficiency



SPECIFICATIONS

Working area		Taurus 300M
Turning-Ø over bed (max.)	mm	610
Swing-Ø over cross slide (max.)	mm	480
Turning diameter (max.)	mm	400
Turning length (max.)	mm	1.080
Travels		
Travel X-axis	mm	230
Travel Z-axis	mm	1.130
Angle of slant bed	deg	45
Headstock		
Bar capacity (incl. chuck)	mm	90
Spindle speed	rpm	3.000
Spindle mount		A2-8
Spindle Torque max. (steps)	Nm	470
Lathe chuck diameter	mm	300
Angular resolution, C axis	deg	0,001
Feed		
Feed force X-axis (cont./max.)	kN	15,7 / 35,3
Feed force Z-axis (cont./max.)	kN	12,5 / 28,2
Toolchanger		
Tool changer type		Servo
Number of tool stations	Pieces	12
Shank size	mm	25 x 25
Boring bar mount diameter	mm	50
Turret indexing time	sec	0,2
Speed, driven tools	rpm	5.000
Accuracies		
Repeatability X-axis	mm	± 0,005
Repeatability Z-axis	mm	± 0,01
Rapid feed		
Rapid feed X-axis	mm/min	20.000
Rapid feed Z-axis	mm/min	24.000
Tailstock		
Tailstock quill diameter	mm	110
Tailstock quill stroke	mm	100
Tailstock taper	MT	5
Drive capacity		
Motor rating main drive	kW	18,5
Main drive, continuous load	kW	15
Motor rating, driven tools	kW	3,7
Driven tools, continuous load	kW	2,2
Motor rating X-axis	kW	3
Motor rating Z-axis	kW	3
Total power consumption	kVA	39
Measures and weights		
Overall dimensions (length x width x height)	m	3,92 x 1,81 x 2,05
Weight	kg	7.100
Part No.		181 132

**MOST
POPULAR**

List of available options:

- 252 704 Siemens 828D (PPU 28X.Y)
- 251 681 Hydraulic rest
SLU-3,1 (Ø20-165)
- 251 806 Renishaw HPRA tool gauging system (removable)
- 252 100 Renishaw RLP 40Q tool gauging system
- 252 101 IR Receiver for Renishaw RMI-Q
- 252 028 Linear broaching station BMT 65

STAHLWERK

PREMIUM LINE

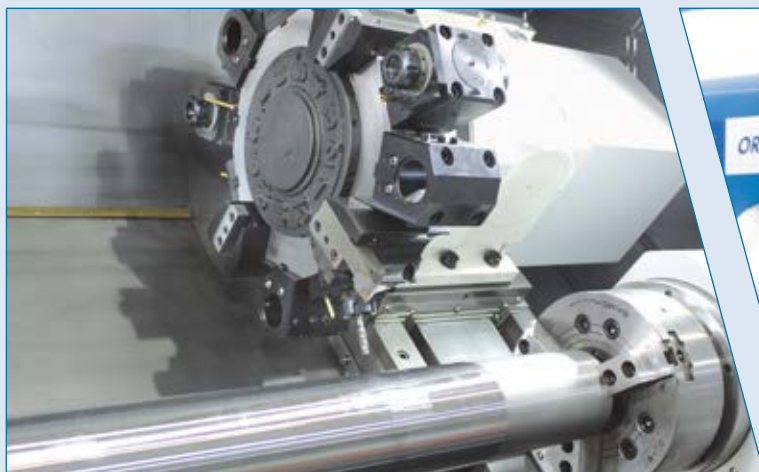
ORION 8TLM

Premium Production Turning Center with C-axis, driven tools, and extra large center width

- » High-Performance Fanuc Oi TF CNC
- » Powerful main spindle with up to 4,500 rpm
- » Powerful drives with 5,5/7,5 kW



Actual machine may vary slightly



SPECIFICATIONS

Working area		Orion 8TLM
Turning-Ø over bed (max.)	mm	480
Swing-Ø over cross slide (max.)	mm	285
Turning diameter (max.)	mm	190
Turning length (max.)	mm	380
Travels		
Travel X-axis	mm	160
Travel Z-axis	mm	390
Angle of slant bed	deg	45
Headstock		
Bar capacity (incl. chuck)	mm	51
Spindle speed	1/min	4.500
Spindle mount		A2-6
Spindle bore	mm	62
Spindle Torque (max.)	Nm	88
Spindle drive method		Belt
Lathe chuck diameter	mm	200
Angular resolution, C axis	deg	360 (0,001)
Feed		
Feed force X-axis (cont./max.)	kN	5 / 18
Feed force Z-axis (cont./max.)	kN	5 / 18
Tooling		
Tool changer type		Servo / VDI 30
Number of tool stations	Pieces	12
Shank size	mm	20 x 20
Boring bar mount diameter	mm	32
Turret indexing time	sec	0,2
Speed, driven tools	1/min	5.000
Accuracies		
Repeatability	mm	± 0,003
Positioning accuracy	mm	± 0,005
Rapid feed		
Rapid feed X-/Z-axis	mm/min	30.000
Tailstock		
Tailstock quill diameter	mm	65
Tailstock quill stroke	mm	80
Tailstock taper	MT	4
Drive capacity		
Motor rating main drive	kW	7,5
Main drive, continuous load	kW	5,5
Motor rating, driven tools	kW	3
Motor rating X / Z axis	kW	1,6
Total power consumption	kVA	27
Measures and weights		
Overall dimensions (length x width x height)	m	2,26 x 1,67 x 1,57
Weight	kg	3.250
Part No.		181 115

**MOST
POPULAR**

List of available options:

- 252 704 Siemens 828D
- 251 805 Renishaw HPRA tool gauging system (removable)
- 252 009 Air blow system for cooling at chuck
- 252 030 Tool gauging
IRP 40.01 für VDI 30
- 251 658 Fanuc Manual Guide i

Premium 3-Axis Machining Center with powerful Fanuc CNC

- » High-Performance Fanuc Oi MF CNC
- » Powerful main spindle with up to 12,000 rpm (optional)
- » Dual-arm tool changer with up to 40 stations (optional)



SERVICE TEAMS AT YOUR SIDE

- » STAHLWERK PREMIUM LINE project teams will support you during the whole process: from the planning stage to implementation and beyond
- » Regardless of the type of contact - by phone, in person on site or express shipments of original service parts - with STAHLWERK PREMIUM LINE you always will benefit from our service technicians' expertise and experience
- » Start-up operations with individual training provided by our service technicians are standard for STAHLWERK PREMIUM LINE



SPECIFICATIONS

Working area		Lupus 650
Table dimensions	mm	1.400 x 700
Table load capacity	kg	1.500
Spindle nose-to-table surface distance	mm	150 - 790
Throat	mm	707
Travels		
Travel X-axis	mm	1.280
Travel Y-axis	mm	670
Travel Z-axis	mm	640
Guideway		Roller
Headstock		
Spindle speed	rpm	8.000
Spindle mount		BBT 40
Spindle Torque cont./max.	Nm	70 / 95
Spindle bearing inner diameter	mm	70
Spindle drive method		Belt
Draw bolts		PS 806
Feed		
Work feed X-axis	mm/min	15.000
Work feed Y-axis	mm/min	15.000
Work feed Z-axis	mm/min	15.000
Toolchanger		
Tool changer type		Twin arm
Tool selection		Memory random
Number of tool stations	Pieces	30
Tool size Ø x L (max.)	mm	85 x 300
Tool weight max.	kg	7
Tool-change time tool/tool	s	1,8
Tool-changing time chip/chip	s	3,9
Accuracies		
Repeatability	mm	± 0,003
Positioning accuracy	mm	± 0,005
Rapid feed		
Rapid feed X-/ Y-axis	mm/min	36.000
Rapid feed Z-axis	mm/min	30.000
Drive capacity		
Motor rating main drive	kW	15
Main drive, continuous load	kW	11
Total power consumption	kVA	36
Voltage	V	220
Mains frequency	Hz	50
Measures and weights		
Overall dimensions (length x width x height)	m	3,3 x 2,35 x 2,94
Weight	kg	7.500
Part No.		181 164

**MOST
POPULAR**

List of available options:

- 252 704 Siemens 828D (PPU 28X.Y)
- 252 220 Siemens Shopmill feature
- 251 730 Spindle speed upgrade to 10,000 rpm
- 251 690 Chip conveyor, chain-type chip conveyor (lateral)
- 251 725 Chip cart 230L
- 252 803 Internal coolant supply 30 bar
- 251 829 Freely configurable M commands
- 252 018 Hydraulic unit for 4 Axes

3-Axis Machining Center featuring a compact design with Siemens Sinumerik 828D control and ShopMill

- » 24-station tool changer, max. Spindle speed 10.000 rpm
- » Coolant-flow through spindle with 30 bar and double filter
- » Drive with 9 kW and BT 40 mount



The VECTOR Series: A bestselling CNC machining center which builds on proven traditions and offers a high level of quality and performance ensuring planning security and economic value for long-term success



SPECIFICATIONS

Working area		Vector 1000M
Table dimensions	mm	1.100 x 550
Table load capacity	kg	800
Spindle nose-to-table surface distance	mm	150 - 700
Spindle center - column	mm	520
Travels		
Travel X-axis	mm	1.000
Travel Y-axis	mm	550
Travel Z-axis	mm	550
Guideway		Roller
Headstock		
Spindle speed	1/min	10.000
Spindle mount		BT 40
Torque, constant	Nm	45
Spindle bearing		7012 x 4
Spindle drive method		Belt
Draw bolts		MAS407
Feed		
Work feed X-axis	mm/min	10.000
Work feed Y-axis	mm/min	10.000
Work feed Z-axis	mm/min	10.000
Tooling		
Tool changer type		Twin arm
Number of tool stations	Pieces	24
Tool selection		Memory random
Tool size Ø x L (max.)	mm	80 x 350
Tool weight max.	kg	7
Tool-change time tool/tool	sec	1,8
Tool-changing time chip/chip	sec	3,9
Accuracies		
Repeatability	mm	± 0,003
Positioning accuracy	mm	± 0,005
Rapid feed		
Rapid feed X-/ Y-axis	mm/min	36.000
Rapid feed Z-axis	mm/min	15.000
Drive capacity		
Main drive, continuous load	kW	9
Total power consumption	kVA	15
Voltage	V	400
Mains frequency	Hz	50
Measures and weights		
Overall dimensions (length x width x height)	m	2,62 x 2,2 x 2,7
Weight	kg	5.100
Part No.		181 270

**MOST
POPULAR**

Standard Equipment:

- Automatic 24-station tool changer
- Inside coolant supply, 30 bar
- Chain-type chip conveyor
- Chip cart
- ShopMill feature
- Coolant gun
- Motor rating upgrade

KNUTH SERVO-CONVENTIONAL

Easier, more precise and more efficient due to integrated electronics

Are you using conventional lathes and milling machines in your workshop for flexible production of single parts and small batches? Are you considering modernizing your equipment to optimize the quality of the finished parts? Do you want to increase productivity, while reducing costs and maintenance and make work simpler and more comfortable? Our range of servo-conventional machine tools provide the right solution:

Servoturn® Highlights

- Maintenance-free feed system with servo motors
- Electronically selectable thread leads
- Constant cutting speed
- Electronic stops
- Infinitely variable feeds and spindle speeds
- Mineral-casting machine frame with linear guides
- Preloaded ball screws on all axes

Your Advantages

- Operators can apply their skills without adapting to a new machine or learning new programming techniques
- Higher operating efficiency for increased productivity
- Higher precision and improved surfaces for increased quality
- Extended tool life reduce costs
- Significantly reduced maintenance
- Low-cost maintenance, large-scale series production technology

Advanced feed technology

- Servo drives that translate your hand movements via preloaded ball screws with the precision and dynamics of modern CNC machines
- 2 selector switches for setting the desired thread leads, feed can be infinitely adjusted from 50% to 100% via an override potentiometer
- Electronic hand-wheels offering the same handling and positioning as with a conventional machine

New lathes bed

- Mineral-casting reduces vibration 6 times faster than cast-iron (GG25)
- Linear guides provide precision, stability, long life, minimum maintenance and replaceable parts

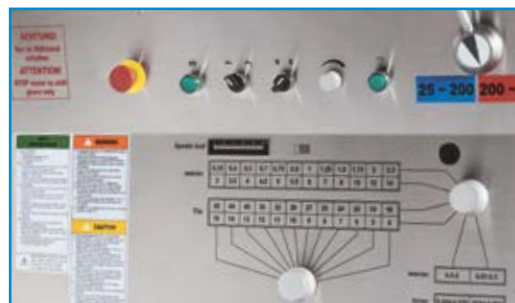
Lathes

The following servo-conventional lathes are available:

Servoturn® 410x1000

Servoturn® 560x2000

Servoturn® 560x3000



Servo-feed technology



CNC level accuracy and surface quality



Electronic stops for X and Z axis



All servo-conventional KNUTH machines can be found on www.knuth-machinetools.com/servo

Servomill® Highlights

- Control developed and built in Germany
- Positioning control for traveling pre-selected paths on all axes
- Constant cutting speed, whereby the feed speed is based on the spindle speed
- Zero-backlash preloaded ball screws
- Servo motors on all axes, infinitely variable feed, rapid feed, and speed control
- Electronic spindle load indicator
- Electronic hand-wheels on all axes
- X, Y and Z axes can be controlled via joystick
- Integrated position indicator with glass scale



Cutter head

Your Advantages

- **Simple:** intuitive operation - practical layout of control elements and streamlined function
- **Faster:** Rapid feed on all axes reduces down-times
- **More precise:** Operated via electronic hand-wheels - axes are powered by high-quality servo drives that translate your hand movements with the precision and dynamics of modern CNC machines
- **More reliable:** Drives, spindles, and measuring systems are totally enclosed or mounted in protective enclosures and virtually maintenance-free
- **More capacity:** this machine only uses premium drive components that are designed for continuous operation
- **Maintenance-free:** no regular maintenance needed for the entire feed drive



Pocketing

Advanced feed technology

- Electronic hand-wheels: smoother and more precise as conventional machines
- Operation via joystick: easy handling, perfect for processing of work sequences
- Electronic fixed stops: set 2 limit stops at 3 positions on each axis by the push of a button
- High repeatability and more positions than on conventional machines
- Constant cutting speed: in a selectable feed-per-spindle revolution ratio in the range of 0.01 to 1 mm/rev – ensures increased efficiency and benefit



Face milling

Milling machines

The following servo-conventional lathes are available:

- Servomill® WF 5 - tool milling machines
- Servomill® 700 700 • 1000 - multi-purpose milling machines
- Servomill® UFM 6 • 8V - universal milling machines
- Servomill® UWF 5 • 10 • 12 • 15 - milling machines with swiveling angle cutter head
- Servomill® KB 2100 bed-type milling machine



High Precision Turning on a CNC Machine

Specialists at ABP Racing use the Servoturn® 410/1000 for high-precision customizations of classic engines.



It all began 30 years ago, when Ralf Welzmüller started a replacement parts business and handled occasional repair jobs. Today, he and his team run a shop with a fully equipped performance test bench, where they develop and sell fine tuning parts. His passion, however, is his third mainstay: optimizing and repairing cylinder heads of valuable and/or very old antique cars and motorcycles, for which replacement parts would cost a fortune or are no longer available today. “We were able to save a rare Bianchi from the 1930s by restoring the heavily damaged cylinder head”, Welzmüller stated as an example. “It took a lot of effort and hard work, but to see this beautiful car in its original condition is absolutely priceless”.

Know-How Meets Precision

His know-how and many years of experience in the machining of cylinder heads with maximum precision are in high demand. It's especially tricky in pre-WWII cars, since the thermal properties of the materials used back then were very different from today's materials. To ensure a smoothly running engine and optimum performance, accuracy to the 100th of a millimeter is necessary. In 2016, Welzmüller was looking for a new lathe for high-precision turning of valve seat inserts and feed-throughs. He needed a machine that was easy to operate, delivered high-quality machining results, and provided quick ROI even if used only intermittently in a repair environment.

Servoturn – “A CNC-Light machine”

Tobias Hamann, KNUTH Sales Associate, suggested the just-introduced Servoturn® 410/1000 to Welzmüller. This servo-conventional lathe features a min-

eral-cast frame, to minimize vibration, and linear guideways. Precise gauge/stop adjustments accurate to the micrometer can be made via electronic hand-wheels and saved with the push of a button. This Teach-In function allows the reuse of values in batch productions, ensuring high repeatability. Ralf Welzmüller tried out the Servoturn® at a tradeshow, and today, two years later, he still is excited about this machine. “It is very easy to adjust the settings, and since I can save these settings for future jobs, I get high repeatability – it's like having a CNC-Light machine.”

Servoturn® 410/1000

Servo-Conventional Precision Lathe

User-friendly, more powerful, reliable, precise
and with increased load capacity

- » Workpiece length: 1,050 mm
- » Turning diameter over bed: 410 mm
- » Spindle bore: 52 mm

For complete information on the Servoturn®
series, please visit www.knuth-machinetools.com



ABP Racing Ralf Welzmüller e.K.
Breitwasenring 32, 72135 Dettenhausen, Germany
Tel: +49 (0)7157-620222
www.abp-racing.de



Ralf Welzmüller can set gauges and stops with ease and precision via electronic hand-wheels. "And since I can save these settings for future recalls, I get high repeatability – it's like having a CNC-Light machine", he added enthusiastically.



To ensure a smoothly running engine, the valve feed-throughs must be machined with accuracy to the 100th of a millimeter.

Superior Surface Quality

The Servoturn® is perfectly equipped for small batch production and repair work. The main spindle works with constant cutting speed, the rpm are infinitely variable, and the thread leads and feeds can be selected via rotary switches. "The Servoturn's feed via override potentiometer can now be infinitely adjusted between 50 and 100 percent during conventional turning," explained Hamann. "The axes are moved via high-quality servo-drives, which translate the hand-wheel rotation with the precision and dynamics of modern CNC machines". The Servoturn® also produces a superior surface quality that rarely can be achieved with conventional machines.

First-Class Service

In a two-day training course, Ralf Welzmüller and his employees learned how to perfectly machine valve seat inserts and feed-throughs. "The training was

great, plus I can call the KNUTH service technician any time to get immediate professional help", said Welzmüller. "And if a part ever fails, it will be replaced promptly." Such superior service is another big plus for Welzmüller, in addition to the excellent cost-effectiveness of KNUTH machines. His workshop also uses a DM 1000A universal lathe and a VHF 3 universal milling machine, which provides large travel ranges and generous work space despite its compact design.



Extensive Standard Equipment

x-Axis with preloaded ball screws

Highlights

- mineral-casting frame
- preloaded ball screws
- electronic hand-wheels
- servo-motor driven axes
- linear guides in Z and X
- V constant

Intuitive operation as we know it from conventional machines - only much better:

- feed and thread leads can be selected via rotary switch - what a brilliant concept
- stops can be set electronically with the press of a button
- feeds are infinitely variable between 50 and 100% via override potentiometer - finally available on a conventional lathe
- micro-control via electronic hand-wheels - but handling and positioning just as with a conventional machine
- axes are powered by high-quality servo drives that translate your hand movements with the precision and dynamics of modern CNC machines
- infinitely variable speed adjustment and constant cutting speed of headstock

Price on request

The definition of a new standard for conventional lathes had to be perfect - therefore, we complemented the Servoturn® with the following features:

Mineral-Casting Machine Frame

- mineral-casting reduces vibration 6 times faster than cast-iron (GG25) and up to 10 times faster than steel- this ensures excellent surface quality that could not be achieved with conventional machines
- excellent thermal stability
- modern manufacturing process with excellent energy footprint

Linear Profile Guide Rails

- maximum reliability and performance
- excellent rigidity, strength and accuracy is achieved by optimum load distribution, designed for accepting high loads and torques
- long life and minimum maintenance
- replaceable parts

Recirculating Ball Screw

- considerably less errors due to looseness (backlash), resulting in significantly higher precision
- significantly reduced friction
- reduced heat development
- less wear for even less maintenance requirements

Specifications

Servoturn® 410/1000

Working area

Workpiece length (max.)	mm	1.050
Turning diameter over bed	mm	410
Turning-Ø over support	mm	250
Bed width	mm	300

Travels

Travel X-axis	mm	225
Travel Z-axis	mm	960
Travel Z1-axis	mm	100

Headstock

Spindle speed	1/min	30 - 3.000
Spindle bore	mm	52
Spindle mount		D1-6
Spindle taper	MT	6

Feed

Feed X-axis	mm/R	0,01 - 2
Feed Z-axis	mm/R	0,01 - 2

Tailstock

Tailstock quill diameter	mm	60
Tailstock taper	MT	4
Tailstock quill stroke	mm	150

Drive capacity

Motor rating main drive	kW	5,5
Motor rating X-axis	kW	1
Motor rating Z-axis	kW	1,6
Supply voltage	V	400

Measures and weights

Overall dimensions (length x width x height)	m	2,45x1,36x1,35
Weight	kg	2.500
Part No.		300825



Servo drive technology – including "Teach-in" buttons that allow setting a limit stop at the current position



Intuitive operation

Standard Equipment

3-axis position indicator, 3-jaw chuck Ø 200 mm, quick change tool holder WBD 25120 (3 pieces), quick change tool holder WBH 32130, quick change tool holder head WB, live rest (10 - 100 mm), coolant system, includes fixed splash guard (wall), protective shield for support, work lamp, operator manual

Options

Part No.

• Oscillation element LK 5	103331
• 4-Jaw Lathe Chuck Steel 200 mm	146472
• E-Servoturn® 410 spare part package for 300825	259222

For additional options for this machine, visit our website and search for Servoturn® 410 (Product Search)



High-performance mineral casting machine frame with high-precision linear guides

Extensive standard equipment

Center widths up to 3 m!

- mineral-casting frame
- preloaded ball screws
- electronic hand-wheels
- servo-motor driven axes
- linear guides
- V constant

Setting new standards with conventional lathes featuring large center widths:

- Heavy, large machine beds made of high-strength mineral-casting
- SERVOTURN® integrates many years of experience and superior construction properties, allowing uninterrupted cuts with high grade surface quality even under highest loads
- Long turning length can be machined with highest precision due to the superior thermal stability and damping properties of this machine
- The extensive SERVOTURN® series offers the same performance and features as servo-conventional precision machines
- All major controls are located for optimum accessibility or are intuitively linked to their respective functions
- A powerful main spindle drive with infinitely variable speed allows machining with constant cutting speed
- Feed and thread leads are selected electronically via a rotary switch, and executed by servo-motors featuring maximum precision and dynamics
- Quick-action tool holder included

Price on request



Standard Equipment

3-axis position indicator, 3-jaw turning chuck, quick change tool holder WCD 32150, quick tool changer head WC, steady rest 19-165 mm, follow rest 16-95 mm, coolant system, includes fixed splash guard (wall), protective shield for support, work lamp, operator manual

Options

Part No.

• Live Center MT 5	106760
• 4-Jaw Lathe Chuck Cast Iron 315 mm	116625

For additional options for this machine, visit our website and search for Servoturn® 560 (Product Search)

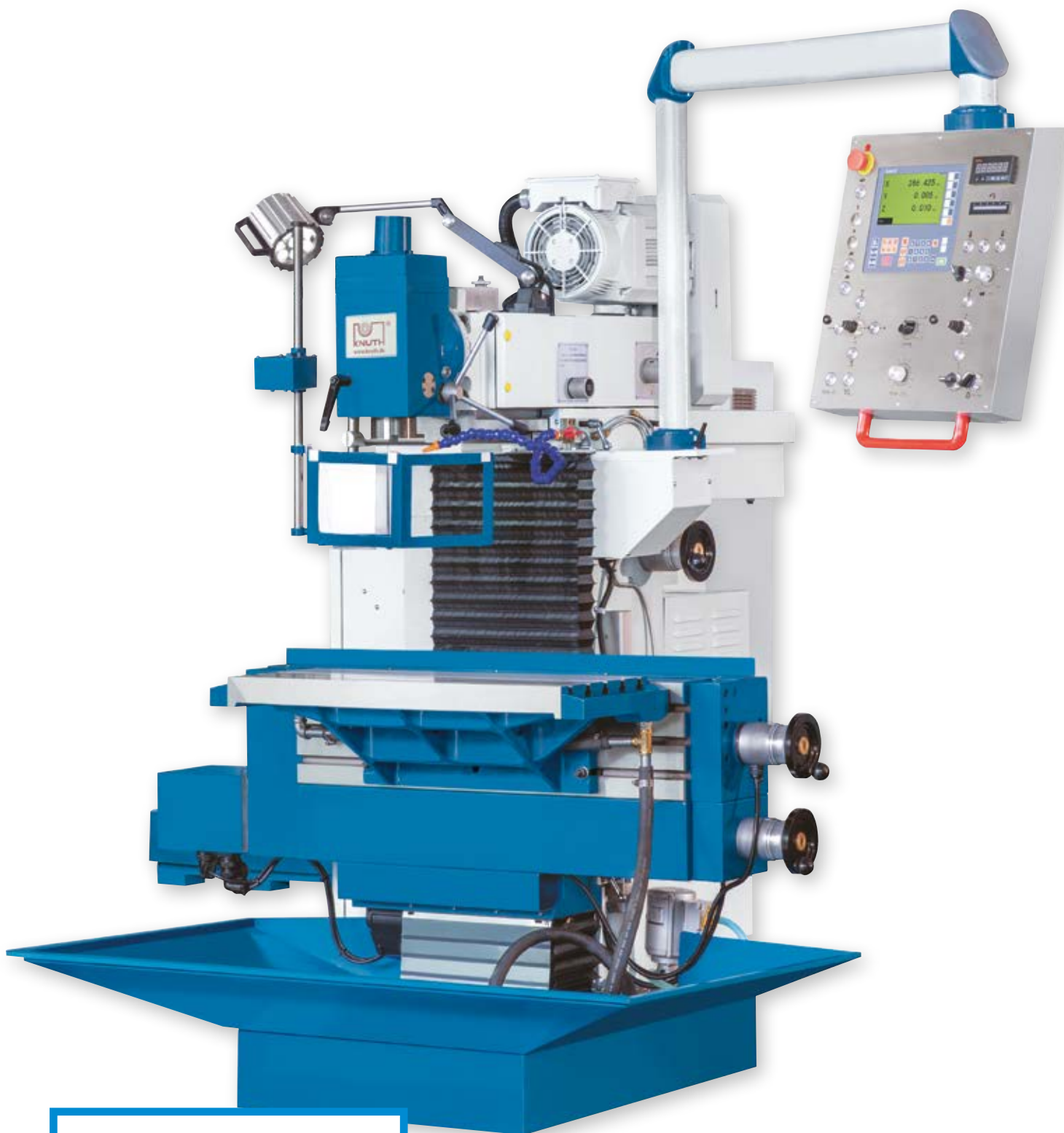
Rigid rests for shaft machining included in standard equipment

Specifications Servoturn®

560/2000

560/3000

Working area			
Workpiece length (max.)	mm	2.200	3.000
Turning diameter over bed	mm	560	560
Turning-Ø over support	mm	350	350
Bed width	mm	350	350
Travels			
Travel X-axis	mm	316	316
Travel Z-axis	mm	2.000	2.800
Travel Z1-axis	mm	100	100
Headstock			
Spindle speed	1/min	25 - 1.600	25 - 1.600
Spindle bore	mm	80	80
Spindle mount		D1-8	D1-8
Spindle taper	MT	7	7
Feed			
Feed X-axis	mm/R	0,01 - 2	0,01 - 2
Feed Z-axis	mm/R	0,01 - 2	0,01 - 2
Tapping			
Tapping, metric	mm	(24) 0,2 - 14	(24) 0,2 - 14
Tapping, whithworth	TPI	(24) 4-48	(24) 4-48
Tailstock			
Tailstock quill diameter	mm	75	75
Tailstock taper	MT	5	5
Tailstock quill stroke	mm	180	180
Drive capacity			
Motor rating main drive	kW	7,5	7,5
Motor rating X-axis	kW	1	1
Motor rating Z-axis	kW	2,3	2,3
Supply voltage	V	400	400
Measures and weights			
Overall dimensions (length x width x height)	m	3,7x1,26x1,8	4,5x1,26x1,8
Weight	kg	4.300	5.000
Part No.		300826	300827



Extensive standard equipment

- Universal tool milling machines are an absolute necessity for tool, form, model, die and device construction
- Rigid machine base with a proven design featuring wide, hardened box ways on all axes

Price on request



Micro-control via electronic hand-wheels - but handling and positioning just as with a conventional machine



Modern control technology made by renowned manufacturers

Specifications		Servomill® WFS 5	
Working area			
Table set up area	mm	750x320	
Setup area (vertical)	mm	890x225	
Table load capacity (max.)	kg	160	
T-slots (number/width/spacing)	mm	3x14x63	
T-slots (number/width/spacing) vertical	mm	5x14x63	
Spindle nose-to-table surface distance	mm	50 - 450	
Spindle center-table surface distance	mm	145 - 545	
Travels			
Travel X-axis	mm	405	
Travel Y-axis	mm	305	
Travel Z-axis	mm	400	
Vertical milling head			
Spindle speed (infinitely variable)	1/min	(2) 40-260 / 260-2.000	
Spindle mount		ISO 40	
Quill stroke	mm	65	
Angular adjustment of vertical head		± 90°	
Feed			
Work feed	mm/min	0 - 1.000	
Rapid feed			
Rapid feed X-, Y-, Z- axis	mm/min	3.000	
Horizontal Milling Spindle			
Spindle mount		ISO 40	
Spindle speed (infinitely variable)	1/min	(2) 40-260 / 260-2.000	
Drive capacity			
Motor rating main drive	kW	3,7	
Supply voltage	V	400	
Measures and weights			
Overall dimensions (length x width x height)	m	1,5x1,7x2,05	
Weight	kg	1.450	
Part No.		301275	

- Users will appreciate this proven operation logic
- The heavy fixed-angle table features a large setup area and high load capacity
- High-precision preloaded ball screws on all 3 axes
- The vertical cutter head swivels and the quill can be moved manually
- For horizontal milling, the vertical cutter head can easily be removed and moved to one side via a fixed swivel arm
- Infinitely variable spindle speed with back-gearing
- Coolant system included in standard equipment
- Large, swiveling control panel with integrated position indicator
- All guideways are lubricated with track lubricant via a central lubrication system

Standard Equipment

3-axis position indicator, electronic hand-wheels, automatic central lubrication, work lamp, guideway covers, coolant system, chip tray, cutter guard, operating tools, operator manual, universal swivel head, horizontal arbor, setup elements

Options

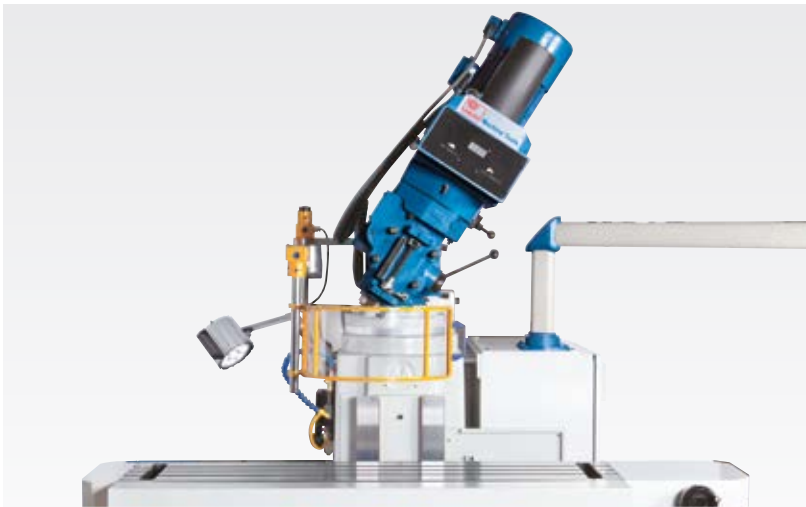
For options for this machine, visit our website and search for Servomill® WFS 5 (Product Search)



Extensive standard equipment

- Rigid machine base in a proven design, and meticulous workmanship
- Variability via swiveling and moving top beam
- Perfectly adjustable dovetail guide on the X axis, and wide square guides in Y and Z direction
- High-precision preloaded ball screws on all 3 axes
- All guides are hardened and ground, and are supplied with oil by the central lubrication unit
- Cutter head swivels with pneumatic tool clamping and powerful 3.7 kW motor
- Infinitely variable spindle speed with back gearing and LED speed indicator
- Manual quill feed with micrometer depth stop allows for precise angular bores
- Large, swiveling control panel with integrated position indicator

Price on request



Cutter head swivels



High precision ball-screws

Specifications

Servomill® 700

Working area		
Table set up area	mm	1.370x300
Table load capacity (max.)	kg	350
Travels		
Travel X-axis	mm	680
Travel Y-axis	mm	365
Travel Z-axis	mm	370
Vertical milling head		
Speed range (infinitely variable, back gear ranges)	1/min	50 - 4.000
Spindle mount		ISO 40
Quill stroke	mm	125
Spindle nose-to-table surface distance	mm	180 - 550
Feed		
Feed speed (infinitely variable)	mm/min	0 - 1.000
Feed per spindle revolution	mm/R	0,01 - 1
Rapid feed		
Rapid feed X-axis	mm/min	5.000
Rapid feed Y-axis	mm/min	3.000
Rapid feed Z-axis	mm/min	2.000
Drive capacity		
Motor rating main drive	kW	3,7
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	2,54x2,16x2,24
Weight	kg	1.800
Part No.		301250



Standard Equipment: X-Pos Positioner

Standard Equipment

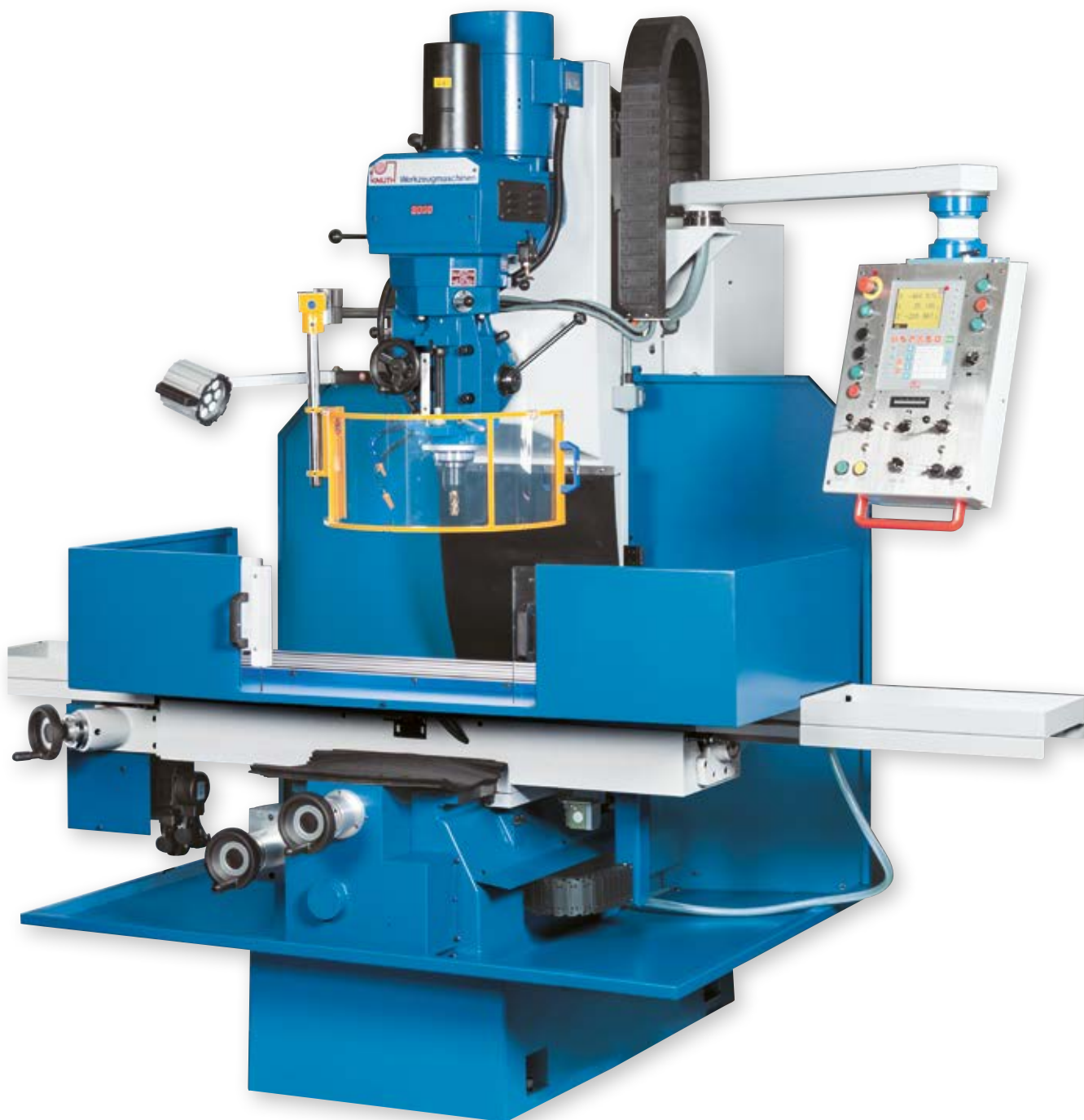
3-axis position indicator, electronic hand-wheels, pneumatic tool clamping, chip tray, work lamp, coolant system, manual central lubrication, horizontal guide-way cover, operating tools, operator manual

Options

Part No.

• Coolant Concentrate 5 Ltr.	103184
• Oscillation element LK 5	103331
• Universal Facing / Lathe Bore Head ADA / SK40	103404
• Adapter SK 40 / MT 4	103740
• Shell End Milling Arbor Ø40 SK 40	103915
• Accessory-Set ISO 40 5-pc.	104596
• Machine vise with pull-down system NZM 125	104918
• De Luxe Clamping Tool Set 16/M14	105300
• ER 40 Collet Set 15 pcs.	106054
• ER 40 Collet Chuck / Mount ISO 40	106062
• Milling Chuck WELDON ISO 40 / Ø 32 mm	106808
• Divider ST 130	110960
• Tailstock / RT 200/250	125820
• Rotary table RT 200	125835

For additional options for this machine, visit our website and search for Servomill® 700 (Product Search)



- Extensive standard equipment
- X.pos Plus Display - For increased productivity, quality and comfort

- Heavy cast-iron frame features a bed-type design
- Large workpiece weights
- Ground and hardened box-ways on Z and Y axis with high load capacity and wear-resistance
- Low-maintenance, robust, and precise preloaded ball screws on all axes
- Supporting weight balance on Z axis ensures smooth travel and minimized wear during drive and guide operation
- Cutter head swivels $\pm 90^\circ$ and quill can be moved automatically or manually

Price on request



All controls are easily accessible



Tilting cutter head and moving quill for angular bores

Specifications	Servomill® 1000	
Working area		
Table set up area	mm	1.524x305
Table load capacity (max.)	kg	500
Travels		
Travel X-axis	mm	1.000
Travel Y-axis	mm	480
Travel Z-axis	mm	560
Vertical milling head		
Speed range (infinitely variable, back gear ranges)	1/min	4.000
Spindle mount		ISO 40
Quill stroke	mm	125
Feed		
Feed speed (infinitely variable)	mm/min	0 - 1.000
Feed per spindle revolution	mm/R	0,01 - 1
Rapid feed		
Rapid feed X-axis	mm/min	5.000
Rapid feed Y-axis	mm/min	3.000
Rapid feed Z-axis	mm/min	2.000
Drive capacity		
Motor rating main drive	kW	3,7
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	2,4x2,1x2,55
Weight	kg	1.820
Part No.		301251

- Pneumatic tool clamping for quick tool changes
- digital speed (rpm) display
- an automatic lubrication system reduces the operator's workload and simplifies maintenance

Standard Equipment

3-axis position indicator, electronic hand-wheels, pneumatic tool clamping, chip tray, work lamp, coolant system, automatic central lubrication, horizontal guideway cover, operating tools, operator manual

Options	Part No.
• Oscillation element LK 5	103331
• De Luxe Clamping Tool Set 16/M14	105300
• ER 40 Collet Set 15 pcs.	106054
• ER 40 Collet Chuck / Mount ISO 40	106062
• HS 125 Hydraulic Machine Vise	125024
• E-Servomill 1000 spare part package for 5 years for art. 301251	259115

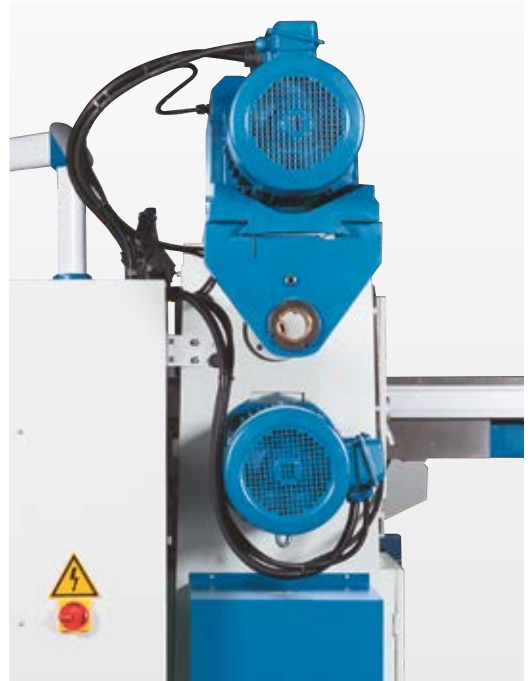
For additional options for this machine, visit our website and search for Servomill® 1000 (Product Search)



Extensive Standard Equipment

- extremely rigid machine bed made of high-strength HT-200 cast-iron with heavy ribbing
- Precision-ground guideways with hardened surfaces for long-term accuracy and wear-resistance
- Quiet precision spindle gears with hardened and ground gears
- Powerful 7.5 kW horizontal spindle and heavy-duty top beam with outer arbor ensure excellent machining results when working with long cutter arbors
- Servo-conventional drives on all axes, infinitely variable with fast rapid feeds
- Preloaded ball screws on all axes ensure superior precision and long-term wear-resistance

Price on request



Universal swivel head and horizontal spindle

Powerful drives for vertical and horizontal spindles

Specifications

Servomill® UWF 5

Working area

Table dimensions	mm	1.600x320
Table load capacity	kg	300
Number of T-slots	Pieces	3
T-slots, width	mm	18
T-slots, spacing	mm	80

Travels

Travel X-axis	mm	1.300
Travel Y-axis	mm	290
Travel Z-axis	mm	450

Milling Head

Speed range (2)	1/min	60-360 / 360-1800
Spindle mount		ISO 50
Swivel angle		360°
Upper beam travel	mm	550
Spindle center-to-table distance	mm	186 - 636

Feed

Feed speed X-axis	mm/min	0 - 1.000
Feed speed Y-axis	mm/min	0 - 1.000
Feed speed Z-axis	mm/min	0 - 1.000

Rapid feed

Rapid feed X-axis	mm/min	5.000
Rapid feed Y-axis	mm/min	3.000
Rapid feed Z-axis	mm/min	1.500

Horizontal Milling Spindle

Speed range (2)	1/min	60-360 / 360-1800
Spindle mount (horizontal)	SK	50
Spindle center-to-table distance	mm	10 - 460

Drive capacity

Motor rating main drive	kW	7,5
Supply voltage	V	400

Measures and weights

Overall dimensions (length x width x height)	m	2,52x2,1x2
Weight	kg	2.800
Part No.		301254



Universal milling machine with large workspace

Standard Equipment

3-axis position indicator, electronic hand-wheels, reducing sleeve (ISO 50 / MK4), milling arbors (27, 32 mm), ISO 50 collet chucks incl. collets up to 16 mm (8 pieces), coolant system, work lamp, chip tray, draw bar, operating tools, operator manual

Options

Part No.

• Oscillation element LK 5	103331
• De Luxe Clamping Tool Set 18/M16	105305
• Divider ST 130	110960
• HS 150 Hydraulic Machine Vise	125028
• Tailstock / RT 200/250	125820
• Rotary table RT 200	125835

For additional options for this machine, visit our website and search for Servomill® UWF 5 (Product Search)



Extensive standard equipment

- Rigid frame design with wide guideways and travels
- Servo-conventional drives on all axes, infinitely variable with fast rapid feeds, synchronized with spindle speed
- Preloaded ball screws on X, Y and Z ensure high precision, low maintenance and low wear
- All gears and guideways are hardened and ground
- Swivelling vertical cutter head, pneumatic tool clamping and powerful 5.5 kW motor
- 2 gear steps for a wide speed range, infinitely variable up to 5000 rpm, and high torque at the spindle
- Horizontal spindle motor with 7.5 kW

Price on request



Cutter head swivels 45°

Specifications			Servomill® UFM 8 V		
Working area					
Table dimensions	mm		1.600x320		
Table load capacity	kg		450		
Number of T-slots	Pieces		3		
T-slots, width	mm		18		
T-slots, spacing	mm		80		
Travels					
Travel X-axis	mm		1.300		
Travel Y-axis	mm		290		
Travel Z-axis	mm		450		
Top slide travel	mm		550		
Vertical milling head					
Speed range (2)	1/min		80-650 / 650-5000		
Spindle mount			SK 40 / DIN 2080		
Quill feeds	mm/R		0,04 / 0,08 / 0,15		
Quill stroke	mm		127		
Swivel range			± 45°		
Feed					
Feed speed X-axis	mm/min		0 - 1.000		
Feed speed Y-axis	mm/min		0 - 1.000		
Feed speed Z-axis	mm/min		0 - 1.000		
Rapid feed					
Rapid feed X-axis	mm/min		5.000		
Rapid feed Y-axis	mm/min		3.000		
Rapid feed Z-axis	mm/min		1.500		
Horizontal Milling Spindle					
Speed range (2)	1/min		60-360 / 360-1800		
Spindle mount			SK 50 / DIN 2080		
Horizontal spindle-to-table surface distance	mm		10 - 460		
Spindle axis-to-top beam distance	mm		245		
Drive capacity					
Motor rating horizontal spindle	kW		7,5		
Motor rating vertical spindle	kW		5,5		
Measures and weights					
Overall dimensions (length x width x height)	m		1,9x2,05x2,5		
Weight	kg		2.400		
Part No.			301255		



Powerful drive for horizontal spindle

Standard Equipment

3-axis position indicator, electronic hand-wheels, pneumatic tool clamping, coolant system, work lamp, chip tray, draw bar, 4-station turret, long cutter arbor Ø 32 mm, operating tools, operator manual

Options	Part No.
• Oscillation element LK 5	103331
• De Luxe Clamping Tool Set 16/M14	105300
• Milling Chuck Set ISO 40	106044
• HS 125 Hydraulic Machine Vise	125024

For additional options for this machine, visit our website and search for Servomill® UFM 8 V (Product Search)



Servomill® UWF 12 is shown

Extensive standard equipment

- Rigid, torsion-proof construction with dovetail guide on X axis, and wide square guides on Y and Z
- Large work table and long travels on all axes
- All guides are hardened, ground, and supplied with oil by a central lubrication unit

Price on request



Powerful headstock drive with auxiliary gearbox (Servomill® UWF 12)

- Infinitely variable feed speeds and rapid feeds can be synchronized to spindle speed by the push of a button
- preloaded ball screw for easy and precise Feeds, and zero backlash
- Robust transmission with hardened and ground gears



Universal swivel head swings easily to a horizontal position

Standard Equipment

3-axis position indicator, collet chuck with collets (4,5,6,8,10,12,14,16 mm diam.), electronic hand-wheels, work lamp, central lubrication, coolant system, operating tools, operator manual

Options	Part No.
• ER 40 Collet Set 15 pcs.	106054
• Milling Chuck WELDON ISO 50 / Ø 6 mm	106811
• Milling Chuck WELDON ISO 50 / Ø 32 mm	106818
• HS 150 Hydraulic Machine Vise	125028
• Rotary Table RT 250	125840
• Tailstock / RT 200/250	125820
• E-Servomill UWF serials spare part package	259214

For available options for this machine, visit our website and search for Servomill® UWF 10, 12 or 15 (Product Search)

Specifications Servomill®

		UWF 10	UWF 12	UWF 15
Working area				
Table dimensions	mm	1.235x460	1.600x500	2.000x500
Table load capacity	kg	800	1.000	1.000
Number of T-slots	Pieces	5	5	5
T-slots, width	mm	18	18	18
T-slots, spacing	mm	80	80	80
Travels				
Travel X-axis	mm	900	1.200	1.400
Travel Y-axis	mm	650	700	700
Travel Z-axis	mm	450	500	500
Milling Head				
Speed range (2)	1/min	30-390 / 390-2050	30-390 / 390-2050	30-390 / 390-2050
Spindle mount		SK 40 / DIN 2080	SK 50 / DIN 2080	SK 50 / DIN 2080
Swivel angle		360°	360°	360°
Spindle center-to-table distance	mm	30 - 480	50 - 550	50 - 550
Feed				
Feed speed X-axis	mm/min	10 - 1.000	10 - 1.000	10 - 1.000
Feed speed Y-axis	mm/min	10 - 1.000	10 - 1.000	10 - 1.000
Feed speed Z-axis	mm/min	5 - 500	5 - 500	5 - 500
Rapid feed				
Rapid feed X-axis	mm/min	2.200	2.200	2.200
Rapid feed Y-axis	mm/min	2.200	2.200	2.200
Rapid feed Z-axis	mm/min	1.100	1.100	1.100
Drive capacity				
Motor rating main drive	kW	7,5	11	11
Measures and weights				
Overall dimensions (length x width x height)	m	2x2,5x2	2,2x2,5x2,1	2,6x2,5x2,1
Weight	kg	4.000	4.500	5.000
Part No.		301256	301257	301258

Servo-conventional bed-type milling machine

Servomill® KB 2100

Heavy workpieces can be machined easier, more precise, and more efficient



- Bed-type machine design for heavy workpieces
- Vertical universal cutter head with 2 swivel levels
- Preloaded ball screws on all axes

- The Servomill represents a new generation of advanced milling machines that are operated like a conventional machine
- Its flexible production without programming brings many advantages for single-part construction, but also provides a cost-effective alternative for the production of small to medium-size batches

- All Servomill milling machines are user-friendly and provide a significantly increased precision and machining performance
- Very high reliability and long service life of all components ensure drastically reduced maintenance and increased reliability
- Heavy-duty bed-type milling machine with servo-conventional feed technology

Price on request



Rigid cutter head features infinitely variable manual angle adjustments at the 90° and 45° level



Servo-drives use preloaded ball screws to translate each hand-wheel movement with the precision and dynamics of modern CNC machines

- An extremely rigid, large-sized box-column design, made of premium cast-iron, provides a solid base for optimum work results
- Extra-wide box ways ensure maximum stability and precision when machining heavy workpieces
- Extra long table travel distance and large table set-up area allow machining of large single parts or interactive machining of several parts - to give you a leading edge over your competition
- The main spindle can be aligned in virtually any spatial angle, and it quickly can be set in the horizontal position.
- High-precision preloaded ball screws on all 3 axes
- Main spindle features infinitely variable spindle speed with back-gearing
- Infinitely variable linear and cross feed
- Control panel on a long extending arm that can be ideally positioned by the operator
- Standard coolant system with large reservoir
- Position indicator is integrated in control panel
- All guideways are lubricated with track lubricant via a central lubrication system

Specifications

Servomill® KB 2100

Working area		
X axis travel	mm	1.500
Y axis travel	mm	650
Z axis travel	mm	650
Table set up area	mm	2.100x500
Table load capacity (max.)	kg	1.800
Spindle nose-to-table surface distance	mm	0 - 650
T-slots (number/width/spacing)	mm	4x20x100
Vertical milling head		
Speed range (infinitely variable, back gear ranges)	1/min	(2) 6-300 / 300-1.500
Spindle mount		ISO 50
Angular adjustment of vertical head		± 360
Feed		
Work feed	mm/min	5 - 1.000
Rapid feed		
Rapid feed X-/ Y-axis	mm/min	6.000
Rapid feed Z-axis	mm/min	3.000
Drive capacity		
Motor rating main drive	kW	11
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	3,22x2,42x2,8
Weight	kg	7.300
Part No.		301286

Standard Equipment

electronic hand-wheels, automatic central lubrication, 3-axis position indicator, universal swivel head, coolant system, work lamp, operating tools, operator manual

Options

Part No.

• Machine vise with pull-down system NKM 200	104922
• Direct indexing head S 200	110966
• Hydraulic Machine Vise HS 200	125029

For additional options for this machine, visit our website and search for Servomill KB 2100 (Product Search)



- This state-of-the-art laser cutting system features a gantry-style construction with drives on both sides and a large working area of 3000 x 1500mm or 4000 mm x 2000 mm that can accommodate most of the common plate sizes
- The Y axis portal features an aluminum die-cast construction with low weight and high rigidity for excellent dynamics
- thermal treatment of the meticulously welded machine frame and all structural parts reliably eliminates production-related material stresses – ensuring long-lasting, precise alignment of all components. This ensures long-term and reproducible cutting edge accuracy and long machine life
- The precision linear guides require minimal maintenance and are designed for long-lasting precision and high cutting speeds.
- High-precision rack-and-pinion gears on the Z and Y axis ensure superior and reliable positioning accuracy
- Powerful servo-motors on all axes ensure high reliability and dynamics of the cutter system
- for the safety of people and the environment, the cutting system is equipped with a machine housing and filter extraction system. Special protective glass windows make it possible to observe the cutting process
- An automatic shuttle table system minimizes production downtimes, since the table can be loaded and unloaded during the cutting process
- Perpendicularity or squareness tolerance for laser cutting acc. to DIN EN ISO 9013-1

Price on request



Control

- Easy operation with user-friendly optimized interface
- Technology database includes cutting parameters and pre-set cycles for various metals
- The efficient processing of all cutting jobs is further supported by user-friendly software for the selection of process parameters
- Solenoid and proportional valves regulate the gas pressures (set in the control) during the cutting process

Cutter head

- High-quality cutter head made by Raytools with motorized focus position adjustment, integrated collision guard, and level control

- Maintenance-free beam guide is provided by a flexible fiberoptic cable and ensures a long tool life

Laser sources

- The ytterbium fiber laser provides 1000 to 4000 W beam power, is made by the renowned manufacturer, Raycus, and ensures maximum cut quality and productivity
- The maintenance-free laser source reduces maintenance and operating cost
- **Laser source and cutter head: Service within 48 hours on workdays (in Germany only) - if necessary, the source or head can be replaced within this timeframe**
- **Laser cutting systems with a cutting length of 6 m and laser power up to 8kW upon request.**



ACE Laser 3015 is shown

Specifications ACE Laser		3015 1.0	3015 1.5	3015 2.0	3015 3.3	3015 4.0
Laser						
fiber laser	W	1.000	1.500	2.000	3.300	4.000
Shaft length	µm	1,08 ± 10%	1,08 ± 10%	1,08 ± 10%	1,08 ± 10%	1,08 ± 10%
Beam power max.	W	1.000	1.500	2.200	3.300	4.400
Power consumption	kW	5	7,5	8,8	15	17
Supply voltage		AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N
Cutting capacity in structural steel	mm	8	10	12	16	20
Cutting capacity in stainless steel	mm	4	5	6	10	12
Cutting capacity in aluminum	mm	3	4	5	8	12
Working area						
Table dimensions	mm	3.000x1.500	3.000x1.500	3.000x1.500	3.000x1.500	3.000x1.500
Max. workpiece weight	kg/dm²	6	6	6	6	6
Axis acceleration X / Y axis	m/s²	10	10	10	10	10
Axis acceleration Z axis	m/s²	8	8	8	8	8
Travels						
Travel X-axis	mm	1.520	1.520	1.520	1.520	1.520
Travel Y-axis	mm	3.050	3.050	3.050	3.050	3.050
Travel Z-axis	mm	100	100	100	100	100
Rapid feed						
X axis rapid feed	m/min	120	120	120	120	120
Y axis rapid feed	m/min	120	120	120	120	120
Change time at cutting table	sec	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
Drive capacity						
Machine drive capacity	kW	1,5	1,5	1,5	1,5	1,5
Machine drive capacity	kW	2	2	2	2	2
Machine drive capacity	kW	0,2	0,2	0,2	0,2	0,2
Measures and weights						
Overall dimensions (length x width x height)	m	9,8x3,7x2,15	9,8x3,7x2,15	9,8x3,7x2,15	9,8x3,7x2,15	9,8x3,7x2,15
Weight	kg	8.000	8.000	8.000	8.000	8.000
Part No.		141010	141011	141012	141013	141014



Standard Equipment

Complete system with CNC-control (CypCut), Ytterbium fiber laser, Raycus, fibre optics, RayTools HP Cutter Head, automatic focus position adjustment, laser protection booth, automatic changing table system, Filter exhaust system, automatic gas console, central lubrication, coolant return cooler, CAD/CAM software (CypCut), operating manual and programming instructions

Options	Part No.
• pipe cutting device 3m (1-4 kW)	253238
• pipe cutting device 6m (1-4 kW)	253237
• Structural Steel Ace Laser Starter Set	253342
• Stainless Steel/Aluminum Ace Laser Starter Set	253343

Specifications ACE Laser

		4020 1.0	4020 1.5	4020 2.0	4020 3.3	4020 4.0
Laser						
fiber laser	W	1.000	1.500	2.000	3.300	4.000
Shaft length	µm	1,08 ± 10%	1,08 ± 10%	1,08 ± 10%	1,08 ± 10%	1,08 ± 10%
Beam power max.	W	1.000	1.500	2.200	3.300	4.400
Power consumption	kW	5	7,5	8,8	15	17
Supply voltage		AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N	AC 380V ± 10%, 50/60Hz, 3xL+N
Cutting capacity in structural steel	mm	8	10	12	16	20
Cutting capacity in stainless steel	mm	4	5	6	10	12
Cutting capacity in aluminum	mm	3	4	5	8	12
Working area						
Table dimensions	mm	4.000x2.000	4.000x2.000	4.000x2.000	4.000x2.000	4.000x2.000
Max. workpiece weight	kg/dm ²	6	6	6	6	6
Axis acceleration X / Y axis	m/s ²	10	10	10	10	10
Axis acceleration Z axis	m/s ²	8	8	8	8	8
Travels						
Travel X-axis	mm	2.020	2.020	2.020	2.020	2.020
Travel Y-axis	mm	4.050	4.050	4.050	4.050	4.050
Travel Z-axis	mm	100	100	100	100	100
Rapid feed						
X axis rapid feed	m/min	120	120	120	120	120
Y axis rapid feed	m/min	120	120	120	120	120
Change time at cutting table	sec	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
Drive capacity						
Machine drive capacity	kW	1,5	1,5	1,5	1,5	1,5
Machine drive capacity	kW	2	2	2	2	2
Machine drive capacity	kW	0,2	0,2	0,2	0,2	0,2
Measures and weights						
Overall dimensions (length x width x height)	m	10,34x4,28x2,2	10,34x4,28x2,2	10,34x4,28x2,2	10,34x4,28x2,2	10,34x4,28x2,2
Weight	kg	9.000	9.000	9.000	9.000	9.000
Part No.		141015	141016	141017	141018	141019

Plasma-Jet TrueCut

World-Class Plasma Cutter System of Kjellberg® and Hypertherm®



Wide variety of equipment packages featuring up to 5-axis cutters

- stand-alone cutter table features rigid steel construction for high load capacity
- stand-alone table eliminates thermal and mechanical influences on the plasma cutter system
- dual-drive bridge
- high-quality linear guides on all axes
- dynamic AC servo drives on all axes with maintenance-free, zero-backlash planetary gears
- low-wear and low-maintenance helical gears are designed for continuous operation
- automatic torch height control
- quick-coupling for cutter head allows quick head exchanges for reduced tooling time
- available with 5-axis cutter head, tube cutter, and many more options
- optimum bed speed even for fine contours and tight radii
- use the existing cutting parameters stored in the control to find the optimum cut

Price on request



Shown with additional „Messer“ oxy-fuel cutter head (optional)



Options	Part No.
• Maxpro 200 Plasma source	253406
• XPR 170 Core Plasma source	253407
• XPR 170 VWI Plasma source	253408
• XPR 170 Optimix Plasma source	253409
• XPR 300 Core Plasma source	253410
• XPR 300 VWI Plasma source	253411
• XPR 300 Optimix Plasma source	253412
• Smart Focus 130 Plasmaquelle	253088
• Smart Focus 200 Plasmaquelle	253089
• Smart Focus 300 Plasmaquelle	253090
• Smart Focus 400 Plasmaquelle	253091

Standard Equipment Hypertherm®

Table prepared for filter system (automatic closure control), Panasonic Servomotors and drivers, Automatic burner height control with Hypertherm THC sensor, Cutting torch with magnetic coupling and crash sensor, Hypertherm Edge Connect CNC-Unit, 15" Touchscreen from ELO, Ethercat-E, Laserpointer, Libellula Wizard PRO, Libellula. CAD 2D

Standard Equipment Kjellberg®

Table prepared for filter system (automatic closure control), Eckelmann Servomotors and drivers, Automatic burner height control from Eckelmann, Cutting torch with magnetic coupling and crash sensor, Eckelmann CNC-Unit, 15" Touchscreen from ELO, A-Modul from Beckhoff, Laserpointer, Libellula Wizard PRO, Libellula. CAD 2D

Specifications TrueCut		1530 K	1530 H	2040 K	2040 H	3060 K	3060 H
Working area							
Cutting Width	mm	1.500	1.500	2.000	2.000	3.000	3.000
Cutting length	mm	3.000	3.000	4.000	4.000	6.000	6.000
Table height	mm	700	700	700	700	700	700
Table load capacity	kg/m ²	520	520	520	520	520	520
Rapid feed	mm/min	18.000	18.000	18.000	18.000	18.000	18.000
Weight (without plasma source)	kg	3.100	3.100	4.100	4.100	9.500	9.500
Plasma source		Kjellberg	Hypertherm	Kjellberg	Hypertherm	Kjellberg	Hypertherm
Part No.		144004	144014	144005	144015	144006	144016

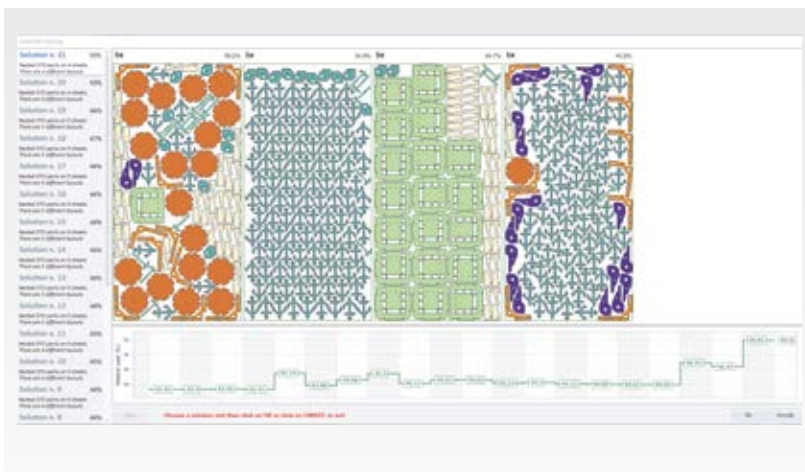
Plasma-Jet Compact

The compact cutting machine of Kjellberg® and Hypertherm®



- The Plasma-Jet TrueCut series set themselves apart from the Plasma-Jet Compact series by a fully integrated machine frame that is connected to the table via a bottom plate, so the machine can be transported in one piece and requires minimum space
- If small plasma sources (e.g. Powermax) are used, they also are stored on a shelf inside the frame
- The standard equipment includes the same high-quality components as the larger series: dual-drive bridge, high-quality linear guides, dynamic AC servo-drives, helical gears, automatic torch height control, magnetic cutter head holder serving as collision guard, optimum cutting data preset in the control.
- These machines provide the same excellent cutting performance as the Plasma-Jet TrueCut series

Price on request



Advanced nesting options with Libellula.CUT



Panasonic servo motors and EtherCAT network type drives

Standard Equipment Hypertherm®

Table prepared for filter system (automatic closure control), Panasonic Servomotors and drivers, Automatic burner height control with Hypertherm THC sensor, Cutting torch with magnetic coupling and crash sensor, Hypertherm Edge Connect CNC-Unit, 15" Touchscreen from ELO, Ethercat-E, Laserpointer, Libellula Wizard PRO, Libellula.CAD 2D

Standard Equipment Kjellberg®

Table prepared for filter system (automatic closure control), Eckelmann Servomotors and drivers, Automatic burner height control from Eckelmann, Cutting torch with magnetic coupling and crash sensor, Eckelmann CNC-Unit, 15" Touchscreen from ELO, A-Modul from Beckhoff, Laserpointer, Libellula Wizard PRO, Libellula.CAD 2D



Optimum track speed even for fine contours and tight radii

Options	Part No.
• Powermax 105 Plasma source	253405
• Maxpro 200 Plasma source	253406
• XPR 170 Core Plasma source	253407
• XPR 170 VWI Plasma source	253408
• XPR 170 Optimix Plasma source	253409
• XPR 300 Core Plasma source	253410
• XPR 300 VWI Plasma source	253411
• XPR 300 Optimix Plasma source	253412
• CutFire 100i Plasma source	253391
• Smart Focus 130 Plasma source	253088
• Smart Focus 200 Plasma source	253089
• Smart Focus 300 Plasma source	253090
• Smart Focus 400 Plasma source	253091

Specifications Compact		1530 K	1530 H	2040 K	2040 H	3060 K	3060 H
Working area							
Cutting Width	mm	1.500	1.500	2.000	2.000	3.000	3.000
Cutting length	mm	3.000	3.000	4.000	4.000	6.000	6.000
Table height	mm	600	600	600	600	600	600
Table load capacity	kg/m ²	410	410	410	410	410	410
Rapid feed	mm/min	18.000	18.000	18.000	18.000	18.000	18.000
Weight (without plasma source)	kg	2.250	2.250	3.550	3.550	8.000	8.000
Plasma source		Kjellberg	Hypertherm	Kjellberg	Hypertherm	Kjellberg	Hypertherm
Part No.		144001	144011	144002	144012	144003	144013

Plasma-Jet Air Pro

Low-cost plasma cutter alternative with Hypertherm® and Kjiellberg® technology



- Compact design with guides integrated into the table frame
- Plasma cutting system for personal use providing high value at a lost cost
- Careful selection of the optimum components ensures that the same cutting functionality is available as in large plasma cutting systems
- Machine can be moved and transported in its fully assembled state
- The drives on both sides of the machine bridge and the drive of the X-slide along the machine bridge are carried out in a permanently precise manner by helical rack and pinion.
- The machine has a segment-wise suction of the working surface, whereby the respective suction flap is opened mechanically by the machine bridge passing.
- The distance between plasma cutting nozzle and plate surface is maintained by the Z axis height control; height control is regulated by an electric arc
- Plasma cutter head with collision guard

Price on request



In plasma cutting, the electric arc between electrode and workpiece is constricted by a cutting nozzle so that a plasma beam of high energy density is generated as an effective cutting tool for metals.

Standard Equipment Hypertherm®

Table prepared for filter system (mechanical closure), Panasonic Servomotors and drivers, Automatic burner height control with Hypertherm THC sensor, Cutting torch with magnetic coupling and crash sensor, Hypertherm Edge Connect CNC-Unit, 15" Touchscreen from ELO, Ethercat-E, Laserpointer, Libellula Wizard PRO, Libellula. CAD 2D

Standard Equipment Kjellberg®

Table prepared for filter system (automatic closure control), Eckelmann Servomotors and drivers, Automatic burner height control from Eckelmann, Cutting torch with magnetic coupling and crash sensor, Eckelmann CNC-Unit, 15" Touchscreen from ELO, A-Modul from Beckhoff, Laserpointer, Libellula Wizard PRO, Libellula. CAD 2D



New software feature, improved hardware, and integrated Hypertherm® cutting technology

Options

	Part No.
• Powermax 105 Plasma source	253405
• CutFire 100i plasma source	253391

For additional options for this machine, visit our website

Specifications Air Pro

		1530 K	1530 H
Working area			
Cutting Width	mm	1.550	1.550
Cutting length	mm	3.050	3.050
Table height	mm	600	600
Table load capacity	kg/m ²	345	345
Rapid feed	mm/min	15.000	15.000
Weight (without plasma source)	kg	1.700	1.700
Plasma source		Kjellberg	Hypertherm
Part No.		144000	144010

Hypertherm® Plasma Source

These plasma sources fulfill all the needs of a powerful, heavy-duty plasma cutting system - they are simple, reliable and unbelievably productive

- Superior cut quality and durability
- Maximized productivity
- Minimized operating cost
- Unsurpassed process flexibility



XPR300™

Unmatched performance and low operating cost

The new XPR300™ is known for its superior X-Definition™ cutting quality in plain carbon steel, steel alloys, and aluminum. Its much higher cutting speed leads to drastically increased productivity, while operating cost are reduced by more than 50%.

3 Gas Console Designs:

- Core™ Console
- Vented Water Injection™ (VWI) Console
- OptiMix™ Console
(incl. patent-pending Vented Water Injection™ (VWI) technology)

Plasma Source		105	MaxPro200	XPR 170	XPR300™*
Cutting capacity in plain carbon steel					
Virtually burr-free	mm	-	20	-	-
Hole cutting capacity in production	mm	16/22	32	40	45
Cut-off (edge-start)	mm	25/38	50	60	80
Cutting capacity in steel alloy					
Hole cutting capacity in production	mm	-	25	22	38
Cut-off (edge-start)	mm	-	50	38	75

* with OptiMix™ Console



EDGE® Connect CNC System

- The optimum control for any requirements
- CNC Software Phoenix® Version 10
- New software functions, improved hardware, and integrated Hypertherm® cutting expertise
Easy to operate, absolutely reliable and powerful
- With the CutPro Wizard, even new users can cut high-quality parts in less than five minutes without training.



Plasma cutting from 1 to 100 mm

The Smart Focus series features a compact design and requires only few settings to achieve excellent cutting results – even under the most demanding conditions

All systems of the Smart Focus series feature the tried-and-tested Contour Cut technology for structural steel cutting.

Small contours, narrow lands and holes with a diameter/material thickness ratio of 1:1 can be cut with superior quality

Using Contour Cut Speed, contours can be cut up to 50% faster

Advantages

- Superior cutting quality (even in stainless steel)
- Tight perpendicularity tolerance
- User-friendly and low maintenance
- Low cutting costs

Specifications*	Smart Focus 130	Smart Focus 200	Smart Focus 300	Smart Focus 400
Power supply				
Cutting current	35 - 130 A	35 - 200 A	35 - 300 A	35 - 400 A
Marking current	10 - 50 A	10 - 50 A	10 - 50 A	10 - 50 A
Cycle time	100%	100%	100%	100%
Cutting capacity				
Maximum	40 mm	60 mm	80 mm	100 mm
Recommended	1 - 32 mm	1 - 40 mm	1 - 60 mm	1 - 70 mm / stainless steel 70 mm/ structural steel 60 mm
Plunge-cut	25 mm	30 mm	40 mm	50 mm
Plasma gases	O ₂ , Ar/H ₂ , N ₂ , air	O ₂ , Ar/H ₂ , N ₂ , air	O ₂ , Ar/H ₂ , N ₂ , air	O ₂ , Ar/H ₂ , N ₂ , air
Marking gases	Ar, N ₂	Ar, N ₂	Ar, N ₂	Ar, N ₂
Overall dimensions (L x W x H)	1030 x 570 x 1260 mm	1030 x 680 x 1450 mm	1030 x 680 x 1450 mm	1030 x 680 x 1450 mm
Weight	266 kg	388 kg	488 kg	563 kg



The Water-Jet is a universal tool for cutting

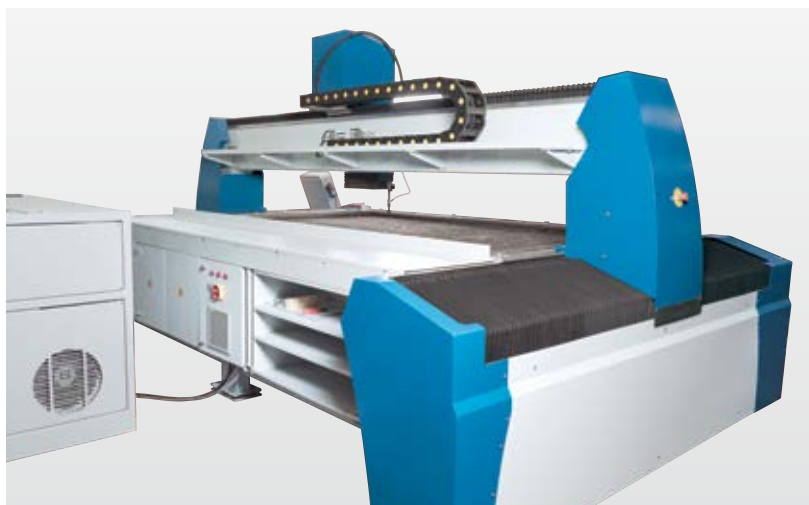
- Very rigid dual-drive machine bridge
- Rigid frame construction (sides are made of stress-free annealed and milled monoblocks, which are fastened with pins during machine setup)
- Premium linear guides on all axes
- Ground and hardened helical gears
- Robust digital servo-drives
- Totally enclosed moving units to protect against ingress of water and dust
- Electronically monitored central lubrication system
- Stand-alone cutting table with high load capacity
- Exchangeable support grid with galvanized (standard) or stainless steel (option) slats
- Powerful CNC machine control
- Intuitive CAD/CAM software
- Swiveling control panel attached to the machine



Options

- Dual-head cutting
- Drill unit
- Laser pointer
- Level control and collision guard
- Water level control
- Abrasives container for 1000 kg sand supply
- Sludge vacuum system
- Oil/air cooler
- Water treatment system
- Water additive for silicate stabilization
- Starter kit
- Stainless steel cutting table surfacing for all Water-Jets

price on request



5-axis cutting system

- Chamfering up to 60°
- TaperControl - cutting angle correction feature
5-axis cutting kinematics **with high dynamics and precision**
- Endless Rotating = no contour interruptions and no repeated plunge-cuts = **time and cost savings**

High-Pressure System BFT Ecotron® 40.37+ (included in standard equipment)

- The most cost-effective high pressure pump made by a world leading manufacturer
- Operating pressure can be adjusted to 400 MPa via an infinitely variable proportional valve
- Optimized hydraulic system
- Oil/air cooler or optional oil/water cooler
- Pressure booster with exceptional lifetime and large pulsation damper
- Other high-pressure systems are available as options (for more information - please visit www.knuth.de)

Standard Equipment:

Water-Jet Cutter System with separate cutting table, support grid with galvanized slats, BFT Ecotron® 40.37+ high-pressure pump with soundproofing enclosure and proportional valve, abrasives cutter head, abrasives conveyor system, abrasives container for 200 kg sand supply, swiveling control panel attached to the machine, electronic hand-wheel, CNC control, CAD/CAM software, operating and programming instructions

The water-jet is a universal tool:

- No thermal stress and only minimal mechanical stress
- No hardening or intrinsic tension on the part
- No dust, smoke or toxic fumes
- Small kerf width and very clean cut edges
- Virtually burr-free cuts = no rework necessary
- Direct plunge-cut at any position

Specifications Water-Jet		2010	3015	3020	2040	2060	3040	3060	3080
Cutting capacity	mm	2050x1050	3050x1550	3050x2050	2050x4050	2050x6050	3050x4050	3050x6050	3050x8050
Z-axis travel	mm	200	200	200	200	200	200	200	200
Max. table load capacity	kg/m ²	1500	1500	1500	1500	1500	1500	1500	1500
rapid feed X / Y / Z-axis	mm/min	20000	20000	20000	20000	20000	20000	20000	20000
Work feed max.	mm/min	5000	5000	5000	5000	5000	5000	5000	5000
Positioning accuracy	mm	+/- 0,06	+/- 0,06	+/- 0,06	+/- 0,06	+/- 0,06	+/- 0,06	+/- 0,06	+/- 0,06
Repeatability	mm	+/- 0,05	+/- 0,05	+/- 0,05	+/- 0,05	+/- 0,05	+/- 0,05	+/- 0,05	+/- 0,05
Overall dimensions (WxDxH)mm (without pumps, sand tank and control)		3450x2000 x 2400	4450x2500 x 2400	4450x3000 x 2400	3450x5000 x 2400	3450x7000 x 2400	4450x5000 x 2400	4450x7000 x 2400	4450x9000 x 2400
Weight (without water)	kg	2420	3370	3930	4960	6620	5950	8310	10500
Part No.		166730	166731	166732	166733	166734	166735	166736	166737

PAGE **62** » NeoSpark B 300 • 500



PAGE **66** » ZNC EDM 250 • ZNC 435 L • ZNC 760 L



PAGE **68** » BO T 130 CNC



PAGE **70** » BO T 110 CNC



PAGE **72** » BO 90 CNC



PAGE **74** » Portalo B CNC 1810 - 8025



PAGE **76** » Millano 5X-400



PAGE **78** » BFM CNC • BFM CNC PRO • BFM CNC UH



PAGE **80** » Matrix 2500



PAGE **82** » X.mill 1100 L



PAGE **84** » X.mill M 900



PAGE **86** » X.mill M 700 • 700 HS



PAGE **88** » X.mill M 640



PAGE **90** » X.mill M 640 ECO



PAGE **92** » X.mill 400



CNC

PAGE **100** » TURNING

PAGE **218** » SAWING

PAGE **252** » GRINDING

PAGE **284** » PRESSING

PAGE **314** » BENDING



NeoSpark B 500 is shown

- The NeoSpark CNC Electric Discharge Machine delivers excellent cutting performance, is cost-effective, and operating cost is extremely low
- The cast-iron machine frame features a modern C-frame with T-base, multiple reinforcing ribs, precision-machined surfaces and thermal stress-relief
- Rigid linear guides and precision preloaded ballscrews on all axes ensure permanent mechanical precision
- The IPC-based control system with servo drives is fine-tuned to the manufacturing process requirements, plus, it is user-oriented and reliable
- 2-step filtration system in the dielectric tank ensures uninterrupted operation and high machining quality



The NeoSpark allows production of delicate contours with superior surface quality

Price on request



High-Speed Wire EDM

Cutting Technology for 3D Metal Printing

- Compared to mechanical divisions, there is virtually no pressure on the component
- Delicate structures can be machined without the risk of deformation or microcracking in the cut surface
- Perfect balance between cutting accuracy and high cutting speed
- Significantly more cost-efficient than conventional wire EDM
- Long wire life ensures high productivity and minimal downtimes

Standard Equipment

erosion wire 0.18 mm, Dielectricum 10 kg, electronic manual control unit, constant wire tensioner, Draht-einrichtungshilfe, generator, USB port, Ethernet port, standard wire guides, dielectric tank with pump, work lamp, warning beacon, AC power stabler, leveling plates and jacks, central lubrication, operating tools, operator manual

In additive production (3D-Printing) the produced complex parts are attached to a metal plate, where the metal plate subsequently will have to be separated from the component (Neospark 500 B Continental Engineering Services)

Specifications

		NeoSpark B 300	NeoSpark B 500
Working area			
Table dimensions	mm	620x440	820x535
workpiece, length x width x thickness (max.)	mm	960x550x300	1.190x650x400
Workpiece weight (max.)	kg	500	800
X axis travel	mm	400	600
Y axis travel	mm	300	400
Travel U / V-axis	mm	70 / 70	70 / 70
Z axis travel	mm	250	350
Cutting angle (with guide)		± 10° / 80 mm	± 10° / 80 mm
Cutting capacity (max.)	mm³/min	200	200
Generator	A	10	10
CNC control			
Display size / type		15" / LED	15" / LED
Controlled axis		4	4
Input increment (min.)	mm	0,001	0,001
Dielectric system			
Dielectric, tank capacity	l	180	180
Feed			
Rapid feed X / Y axis	mm/min	1.000	1.000
Accuracies			
Positioning accuracy X / Y axis	mm	0,01	0,01
Positioning accuracy U/V axis	mm	0,01	0,01
Repeatability X / Y axis	mm	0,005	0,005
Repeatability U / V axis	mm	0,005	0,005
Best surface roughness	µm Ra	0,8	0,8
Drive capacity			
Motor rating X / Y axis	kW	0,15	0,2
Motor rating U / V axis	kW	0,02	0,02
Motor rating Z-axis	kW	0,02	0,06
Total power consumption	kVA	2	2
Supply voltage	V	400	400
Measures and weights			
Overall dimensions (length x width x height)	m	2,04x1,6x1,83	2,4x1,89x2,06
Weight	kg	2.000	2.600
Part No.		180558	180559

A Perfect Cut

Continental Engineering Services rely on High Speed Wire EDM by KNUTH for their 3D-printed production.



Exact Cuts Even in Very Hard Material

"At our Technology Center, we have access to state-of-the-art manufacturing processes and can execute many different process steps in a relatively small space. This will benefit the customer in regards to quality, flexibility, and speed", said Markus Schnell from Product Solutions at CES. Schnell works in Additive Design and Manufacturing (ADaM). They employ additive production, also called 3D-Printing, to produce pipes, brake calipers, holders or frames attached to a metal plate, where the metal plate subsequently will have to be separated from the component. As an alternative to the initially utilized saw, the manufacturing specialists were looking for a wire electric discharge machine (EDM) that could produce smooth cut surfaces and also quickly cut very hard materials, like aluminum and stainless steel. A first look at the market indicated that CES would have to make a considerable investment to find a solution for this relatively minor task.

Continental Engineering Services has nothing to do with automotive tires. CES is a wholly owned subsidiary of Continental and generates most of its sales from development services for automotive and industrial applications. In the specialty fields of automotive interiors, drivetrains and chassis applications, CES develops new solutions for technologically challenging tasks and also adapts large series productions, so customers can fulfill their special requirements.

Their operation is focused on driver assistance systems, automotive electronics, electrical drive systems, and control systems for conventional drives. CES has 1,500 employees – mostly engineers and technicians – at their German headquarters in Frankfurt/Main and other sites in Europe, Asia, and America.

The secret to this success lies in the transfer of automotive expertise in a wide variety of applications and industries, including consultation, development plus manufacturing possibilities, including prototype and small batch productions at their close-by Continental production site in Karben, Germany.

NeoSpark Cuts Solid Metal Plates up to 1,200 x 700 mm

"But then we found the KNUTH NeoSpark 500. Contrary to similar products, it could be used for many different materials and came with an unbeatable price-performance-ratio," Schnell remembered. In 3D Printing, it often is necessary to separate solid metal plates with diameters up

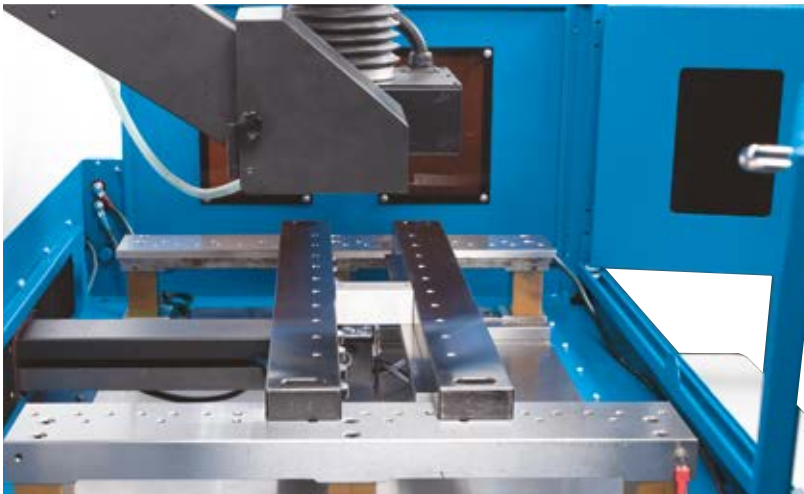


High Speed Wire EDM NeoSpark 500

- High precision and quality plus excellent price/performance ratio
- Workpiece length × width × thickness (max.) 1300 × 800 × 500 mm

Cutting Technology for Metal 3D-Printing High Speed Wire EDM

- Virtually no pressure on the component
- Delicate structures can be machined without the risk of deformation or microcracking in the cut surface
- Perfect balance between cutting accuracy and high cutting speed
- Significantly more cost-efficient than conventional wire EDM
- Long wire life = high productivity and minimal downtimes



The NeoSpark 500 cuts even high-alloyed tool steel with ease.



The workpiece geometry is programmed via Teach-In function to ensure a perfect division. This shows a machined construction platform made of stainless steel components.

to 300 mm. The NeoSpark 500 cuts workpieces with lengths up to 1,200 mm and widths up to 700 mm and uses a molybdenum wire that enables it to cut through extremely hard material with ease. One of the reasons for the superb cutting results is the use of a custom electrolyte that increases the cutting performance and ensures quick removal of the eroded material. KNUTH convinced the skeptical CES engineers with just one sample cut and received the order.

No Rework Necessary

Schnell added: "Operator training was super as well, and it is surprisingly easy to operate. Engineers as well as our trainees can quickly become familiar with this machine." The developers use the High Speed Wire EDM about four hours per day and for a much wider scope than initially thought. "The cutting results are great and no rework is required," said Schnell. "Meanwhile, we also use the NeoSpark to cut finished functional parts in small batches." At CES, the news about the NeoSpark 500's great success has spread. "For our purposes, one machine is sufficient, but other departments that work in manufacturing have also shown quite some interest," revealed Schnell.

**Continental Engineering Services GmbH
Additive Design and Manufacturing (ADaM)**
Dieselstraße 6-20, 61184 Karben, Germany
Phone +49 6039 981541
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ZNC 435 L is shown



Fire extinguishing system for added safety

- 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 renowned European manufacturer

Price on request

- 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

ZNC-EDM 250

Low-Cost Entry-Level Electric Discharge Technology

- NC controlled Z axis feed
- compact design for small part machining
- rigid machine base
- Linear scales in all axes to ensure constant precision
- separate dielectric reservoir
- low-maintenance and high efficiency
- DC servo-drive for precise control and system stability
- easy-to-learn operation
- direct parameter input and adjustment at the control panel
- machining parameters for specific operations can be stored

Standard Equipment

control unit, fire extinguishing system, work lamp, filter system, scale x- / y-axis, chuck, operating tools, operator manual

Options

Part No.

• Planetary erosion head	250277
• adjustable Electrode Holder / ZNC-EDM 250	100107
• Magnetic clamping plate	250278
• E-ZNC 760L spare part package for 100116	259217



ZNC 250 is shown

Specifications

		ZNC-EDM 250	ZNC 435 L	ZNC 760 L
Generator				
Generator power consumption	kVA	3,5	7,5	9
Removal rate (max.)	mm ³ /min	400	500	800
Electrode wear, min.	%	≤ 0,2	≤ 0,2	≤ 0,2
Mean generator capacity	A	40	80	100
Generator weight	kg	0	200	200
Roughing depth	µm Ra	< 0,3	< 0,3	< 0,3
Machine				
X axis travel	mm	250	450	700
Y axis travel	mm	200	350	600
Quill stroke	mm	200	250	300
Table dimensions	mm	450x280	700x450	700x1.200
Electrode holder-to-table distance	mm	200 - 400	250 - 600	300 - 870
Electrode weight (max.)	kg	30	75	200
Workpiece weight (max.)	kg	200	700	2.000
Dimensions (length x width x height)	mm	1.390x1.480x2.100	1.500x1.600x2.100	1.855x1.650x2.550
Weight	kg	1.000	1.800	3.800
Part No.		100105	100115	100116

BO T 130 CNC shown



- The large, heavily ribbed box-column base is made of premium cast-iron to ensure stability and rigidity even under very heavy machining loads
- The massive machine frame features wide guideways in design for table loads up to 5 tons
- The rotating setup table allows flexible 4-sided machining of workpieces without changing the setup
- The rotary table can be locked in 4 positions with high positional precision and features manual clamping fixtures
- The powerful 18.5/22 kW motor ensures constant torque across the entire speed infinitely range
- The Siemens 828D CNC ensures high productivity and precision during production
- Excellent functional interaction between hardware and software ensure high dynamics, while motors and drive technologies provide the necessary precision



Wide guideways

- Telescoping stainless steel covers protect the guides from chips and dirt
- Precision preloaded ball screws in all axes ensure high accuracy with low wear and maintenance
- Easy maintenance due to standard central lubrication system
- Optionally, the machine can be equipped with a tool changer and a controlled indexing rotary table

Price on request

Options

• Arm type ATC, 24 Tools	253427
• 5° indexing CNC work table	253428
• 1° indexing CNC work table	253429
• 0.001° indexing work table for BO T 130 (L) CNC	253430
• Increase Y axis travel with extra 400 mm	253431

Part No.

Standard Equipment

Siemens 828D control, electronic hand-wheel, Manual rotary table with four positions indexing, RS-232 interface, work lamp, central lubrication, operator manual

Specifications

		BO T 130 CNC	BO T 130 L CNC
Working area			
Drilling capacity	mm	50	50
Counterbore diameter (max.)	mm	250	250
Table set up area	mm	1.350x1.000	1.350x1.000
Table load capacity	kg	5.000	5.000
Spindle center-to-table distance	mm	0 - 1.200	0 - 1.200
Number of T-slots	Pieces	7	7
T-slots, width	mm	22	22
T-slots, spacing	mm	125	125
Table rotation range		4 x 90°	4 x 90°
Travels			
Travel X-axis	mm	1.300	1.600
Travel Y-axis	mm	1.200	1.200
Travel Z-axis	mm	1.200	1.200
Travel W-axis	mm	550	550
Headstock			
Speed range	1/min	12 - 1.200	12 - 1.200
Spindle diameter	mm	130	130
Spindle Torque (max.)	Nm	1.500	1.500
Spindle mount		BT 50	BT 50
Facing slide speed	1/min	4 - 125	4 - 125
Rapid feed			
Rapid feed X-axis	mm/min	10.000	10.000
Rapid feed Y-axis	mm/min	10.000	10.000
Rapid feed Z-axis	mm/min	10.000	10.000
Rapid feed W-axis	mm/min	5.000	5.000
Rapid feed B-axis	mm/min	5,5	5,5
Feed			
Feed X-axis	mm/min	5 - 2.000	5 - 2.000
Feed Y-axis	mm/min	5 - 2.000	5 - 2.000
Feed Z-axis	mm/min	5 - 2.000	5 - 2.000
Feed W-axis	mm/min	5 - 2.000	5 - 2.000
Accuracies			
Positioning accuracy X-axis	mm	0,04	0,04
Positioning accuracy Y-axis	mm	0,04	0,04
Positioning accuracy W-axis	mm	0,04	0,04
Positioning accuracy Z-axis	mm	0,04	0,04
Repeatability X-axis	mm	0,02	0,02
Repeatability Y-axis	mm	0,02	0,02
Repeatability T-axis	mm	0,02	0,02
Repeatability W-axis	mm	0,02	0,02
Work table rotation accuracy	"	12	12
Work table repeatability	"	4	4
Drive capacity			
Main motor rating	kW	18,5 / 22	18,5 / 22
Measures and weights			
Overall dimensions (length x width x height)	m	7,1x6,6x3,6	7,1x7x3,6
Weight	kg	17.500	18.500
Part No.		100082	100083



Setup table with manual rotation and manual face slide as standard

- The state-of-the-art machine frame is constructed of premium cast-iron to ensure stability and rigidity even under very heavy machining loads
- 4-side machining is supported by a manually rotated setup table that can be locked with high precision in 4 positions
- The rotary table features a large table center support area that can handle workpiece weights up to 5 tons
- Spindle and facing slide speeds can be quickly adjusted via an infinitely variable rpm control
- Siemens 828D control and drives guarantee high productivity, wide functionality and maximum precision
- Excellent functional interaction between hardware and software ensure high dynamics, while motors and drive technologies provide the necessary precision

- Precision preloaded ball screws in all axes ensure high accuracy with low wear and maintenance
- The powerful 15/18.5 kW motor ensures constant torque across the entire speed infinitely range
- Telescoping steel cover protects the guides from chips and dirt
- Easy maintenance due to standard central lubrication system
- Rotary table with controlled positioning are available as an option

Price on request

Options

• 5° indexing CNC work table	253423
• 1° indexing CNC work table	253424
• 0,001° indexing CNC work table	253425
• Increase Y axis travel with extra 400 mm	253426

Part No.

Standard Equipment

Siemens 828D control, electronic hand-wheel, Manual rotary table with four positions indexing, RS-232 interface, work lamp, central lubrication, operator manual

Specifications

BO T 110 CNC

BO T 110 L CNC

Working area

Drilling capacity	mm	50	50
Counterbore diameter (max.)	mm	240	240
Facing slide working diameter (max.)	mm	800	800
Table set up area	mm	1.320x1.010	1.320x1.010
Table load capacity	kg	5.000	5.000
Spindle center-to-table distance	mm	5 - 905	5 - 905
Number of T-slots	Pieces	7	7
T-slots, width	mm	22	22
T-slots, spacing	mm	125	125
Table rotation range		4 x 90°	4 x 90°

Travels

Travel X-axis	mm	1.200	1.800
Travel Y-axis	mm	900	1.200
Travel Z-axis	mm	1.300	1.300
Travel W-axis	mm	550	550
Facing slide travel	mm	125	125

Headstock

Speed range	1/min	12 - 1.100	12 - 1.100
Spindle diameter	mm	110	110
Spindle Torque (max.)	Nm	1.100	1.100
Spindle mount		BT 50	BT 50
Facing slide speed	1/min	4 - 125	4 - 125

Rapid feed

Rapid feed X-axis	mm/min	10.000	10.000
Rapid feed Y-axis	mm/min	10.000	10.000
Rapid feed Z-axis	mm/min	10.000	10.000
Rapid feed W-axis	mm/min	5.000	5.000
Rapid feed U-axis	mm/min	124	124

Feed

Feed X-axis	mm/min	20 - 1.000	20 - 1.000
Feed Y-axis	mm/min	21 - 1.000	21 - 1.000
Feed Z-axis	mm/min	22 - 1.000	22 - 1.000
Feed W-axis	mm/min	23 - 1.000	23 - 1.000
Facing slide feed	mm/min	0,2 - 80	0,2 - 80

Accuracies

Positioning accuracy X-axis	mm	0,04	0,04
Positioning accuracy Y-axis	mm	0,04	0,04
Positioning accuracy W-axis	mm	0,04	0,04
Positioning accuracy Z-axis	mm	0,04	0,04
Repeatability X-axis	mm	0,02	0,02
Repeatability Y-axis	mm	0,02	0,02
Repeatability T-axis	mm	0,02	0,02
Repeatability W-axis	mm	0,02	0,02
Work table rotation accuracy	"	12	12
Work table repeatability	"	4	4

Drive capacity

Main motor rating	kW	15 / 18,5	15 / 18,5
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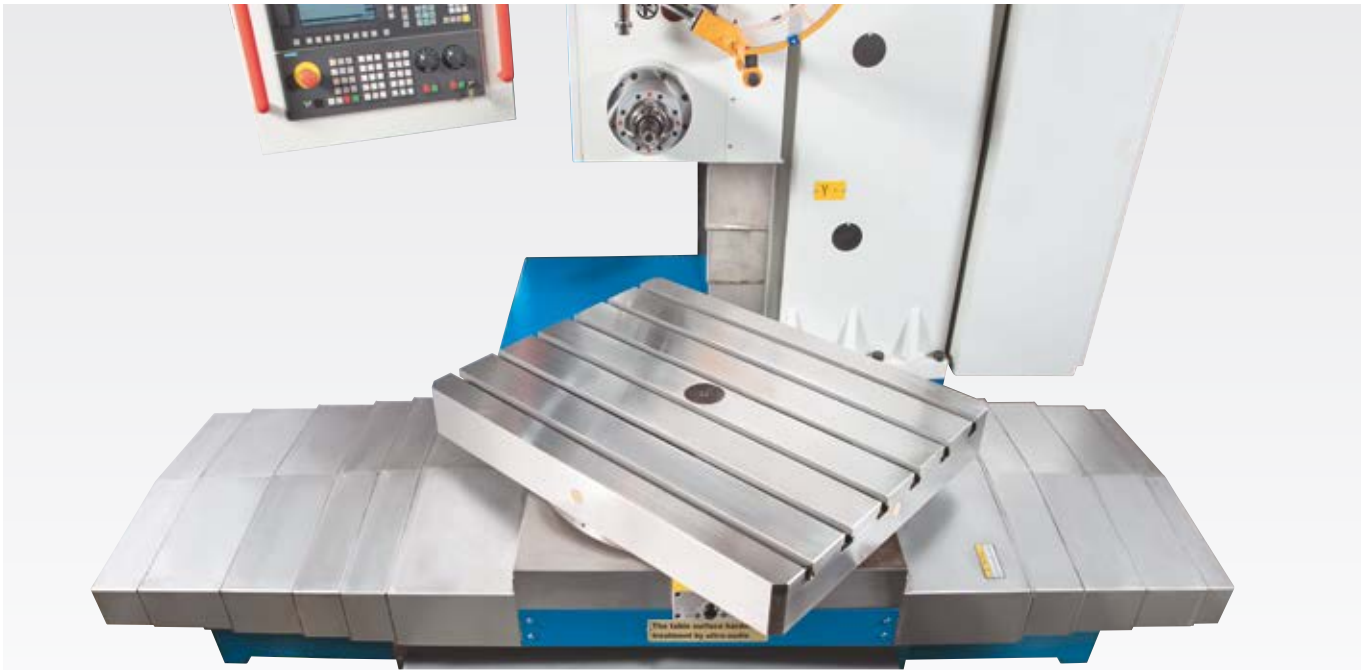
Measures and weights

Overall dimensions (length x width x height)	m	5,5x3,05x2,9	5,5x3,8x3,3
Weight	kg	14.500	18.000
Part No.		100080	100081



- Heavy-duty cast-iron machine frame plus wide guideways for optimum drilling and milling work results
- Manually indexable rotary table, divisions in 5° increments
- Powerful servo-drives and preloaded ball screws with large diameters ensure 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
- A Siemens 828 D control with servo-driven axes meets all requirements of an advanced CNC concept in programming and handling

Price on request



Work Table with hardened surface and 360° rotation

Specifications		BO 90 CNC
Working area		
Drilling capacity	mm	30
Finish bore	mm	200
Milling capacity	cm³/min	55
Table load capacity	kg	1.000
Table dimensions	mm	630x800
Number of T-slots	Pieces	6
T-slots, width	mm	18
Spindle axis-to-table surface distance	mm	570
Table rotation range (5° units)		360
Travels		
Travel X-axis	mm	700
Travel Y-axis	mm	510
Travel Z-axis	mm	800
Headstock		
Spindle speed	1/min	10 - 6.000
Spindle mount		BT 40
Feed		
Feed speed X-axis	mm/min	1 - 2.000
Feed speed Y-axis	mm/min	1 - 2.000
Feed speed Z-axis	mm/min	1 - 2.000
Accuracies		
Positioning accuracies	mm	± 0,008
Repeatabilities	mm	± 0,005
Angular accuracy		± 3"
Drive capacity		
Motor rating main drive	kW	11
Measures and weights		
Overall dimensions (length x width x height)	m	3,55x2,35x2,1
Weight	kg	4.800
Part No.		180027



Table rotates for multi-sided machining

Standard Equipment

Siemens 828 D Basic control, pneumatic rotary table, electronic hand-wheel, halogen lights, central lubrication, drill chuck 3-16 mm / B18, tool-holder bits MT4 / B18, reducing sleeves MT3, MT4, MT5, foundation bolts, operating manual and programming instructions

Options	Part No.
• E-BO 90CNC spare part package for 180027	259116

Portalo B CNC

High-Capacity Portal Machining Center for heavy, high-volume workpieces



- Siemens 828 D control
- High gantry-type design
- High maximum workpiece weights
- High-power drives

- Cast-iron frame with high gantry design for maximum rigidity, small foot print for efficient and economical operation
- In smaller models with up to 1600 mm wide tables the machine frame is a one-piece construction, while larger models feature separate table and column constructions
- Rigid traverses with drives on both sides - perfect synchronization of drives and dynamics
- Large linear guides in X / Y axis and 4 linear roller guides on Z axis ensure lasting precision
- A fixed table allows machining of extra-heavy workpieces
- Precision preloaded ball screws and proven Siemens servo-motors provide dynamic feed and rapid feed on all axes

Price on request



Spindle mount with cutter head



20-station tool changer

- A powerful coolant system combined with the included chip conveyor ensures excellent chip disposal and optimum machining conditions
- Optional universal and angle cutter heads allow angular or lateral machining of workpieces
- plus free 1-day training in Wasbek

Standard Equipment

Siemens 828 D Basic control, electronic handwheel for X and Z axis, separate control panel, air gun, automatic central lubrication, coolant system, work lamp, 2 spiral chip conveyors, CE, 20-station tool changer, operating tools, operating manual and programming instructions

For additional options

For additional options for this machine, visit our website and search for Portalo B CNC (Product Search)

Specifications Portalo B CNC		1810	2516	3016	4025	6025	8025
Working area							
X axis travel	mm	1.050	1.600	1.600	2.500	2.500	2.500
Y axis travel	mm	2.000	2.500	3.200	4.200	6.200	8.200
Z axis travel	mm	550	800	800	1.200	1.200	1.200
Table dimensions	mm	1.900x1.000	2.500x1.600	3.000x1.600	4.000x2.100	6.000x2.100	8.000x2.100
Table load capacity (max.)	kg	9.000	15.000	20.000	30.000	40.000	60.000
T-slots (number x width)	mm	5x18	7x22	7x22	9x28	9x28	9x28
Spindle nose-to-table surface distance	mm	230 - 780	200 - 1.000	200 - 1.000	350 - 1.550	350 - 1.550	350 - 1.550
Headstock							
Spindle speed	1/min	8.000	8.000	8.000	6.000	6.000	6.000
Spindle mount		BT 50	BT 50	BT 50	BT 50	BT 50	BT 50
Feed							
Rapid feed	mm/min	30.000	20.000	20.000	15.000	15.000	15.000
Work feed	mm/min	0 - 15.000	0 - 15.000	0 - 15.000	0 - 15.000	0 - 15.000	0 - 15.000
Torque	Nm	115 - 172	162 - 243	162 - 243	267,5 - 401	267,5 - 401	267,5 - 401
Tooling							
Number of tool stations	Pieces	20	20	20	20	20	20
Tool size Ø x L (max.)	mm	150x250	150x250	150x250	150x280	150x280	150x280
Workpiece width x height	mm	1.300x730	2.000x750	2.000x950	2.860x1.500	2.860x1.500	2.860x1.500
Tool weight max.	kg	15	15	15	15	15	15
Tool-changing time	sec	6	6	6	6	6	6
Accuracies							
Positioning accuracy	mm	0,01	0,01	0,01	0,01	0,01	0,01
Repeatability	mm	0,005	0,005	0,005	0,005	0,005	0,005
Drive capacity							
Motor rating main drive max. / const.	kW	18 / 12	25 / 17	25 / 17	42 / 28	42 / 28	42 / 28
Motor rating X / Y axis	kW	2,1	4,3	4,3	7,7	7,7	7,7
Motor rating Z axis (brakes)	kW	4,3	5,2	5,2	7,7	7,7	7,7
Measures and weights							
Overall dimensions (length x width x height)	m	4,8x3,15x2,8	5,5x3,5x3,4	6,5x3,5x3,4	7,5x6,1x4	9,5x6,1x4	11,5x6,6x4
Weight	kg	20.000	31.000	33.000	44.000	55.000	70.000
Part No.		170043	170044	170045	170046	170047	170048

Millano 5X-400

Perfect 5-axis machining, with torque motors for axis rotation



Millano 5X-400 for simultaneous
milling on up to 5 axes

Price on request



Precision-machined mineral-casting frame

- Based on a compact Gantry-type design, this series offers all benefits of a high-capacity 5-axis machining center
- The machine frame is made of high-end mineral-casting featuring all known benefits of this premium material, including virtually perfect vibration dampening and high thermal stability
- Fast feeds and rapid feeds up to 48 m/min (optionally up to 60 m/min), and axis acceleration up to 1 g for maximum metal removal rates
- Tool changer is integrated in the machine column
- NC rotatary table is solidly supported at 2 points inside the gantry and swivels up to 260° on A axis and 360° on C axis

Optionally the Millano offers a fully integrated turning technology, allowing milling and drilling with highest precision

- Swiveling and rotary table feature a powerful motor, allowing the C axis to perform demanding combinations of turning and milling operations
- Reduced machining time, increased quality through accuracy and increased flexibility
- Turning operations can be performed with a swiveled axis, opening doors to new machining possibilities

Specifications

Millano 5X-400

Working area		
X / Y / Z axis travel	mm	350 / 350 / 346
A axis swivel range		±130°
C axis swivel range		360°
Table dimensions	mm	370x370
Table load capacity (max.)	kg	500
Spindle nose-to-table surface distance	mm	144 - 490
Throat	mm	350
Workpiece diameter	mm	530
Milling diameter X / Y axis	mm	350
Cutting height Z axis	mm	350
Headstock		
Spindle speed	1/min	18.000
Spindle mount		HSK-A50
C axis		
Milling / turning speed	1/min	100 / 1000
Feed		
Rapid feed / work feed (X / Y / Z axis)	mm/min	48.000 / 10.000
Tooling		
Number of tool stations	Pieces	22
Drive capacity		
Motor rating for main drive / coolant system		16 / 4,0 kW
Measures and weights		
Overall dimensions (length x width x height)	m	2,23x2,92x2,56
Weight	kg	4.500
Part No.		180665

Standard Equipment

GPlus S control, integrated NC swivel table (C and A axis), 22-station tool changer, coolant system, central lubrication, electronic hand-wheel, USB interface, totally enclosed, aligning and fastening material, operator manual

Options	Part No.
• linear measurement (Fagor scales) f. Millano 5X-400	251097
• high speed xyz 60 m/min for Millano 5X-400	251099
• E-Millano5X-400/400T spare part package 5 years f.180665/180666	259049

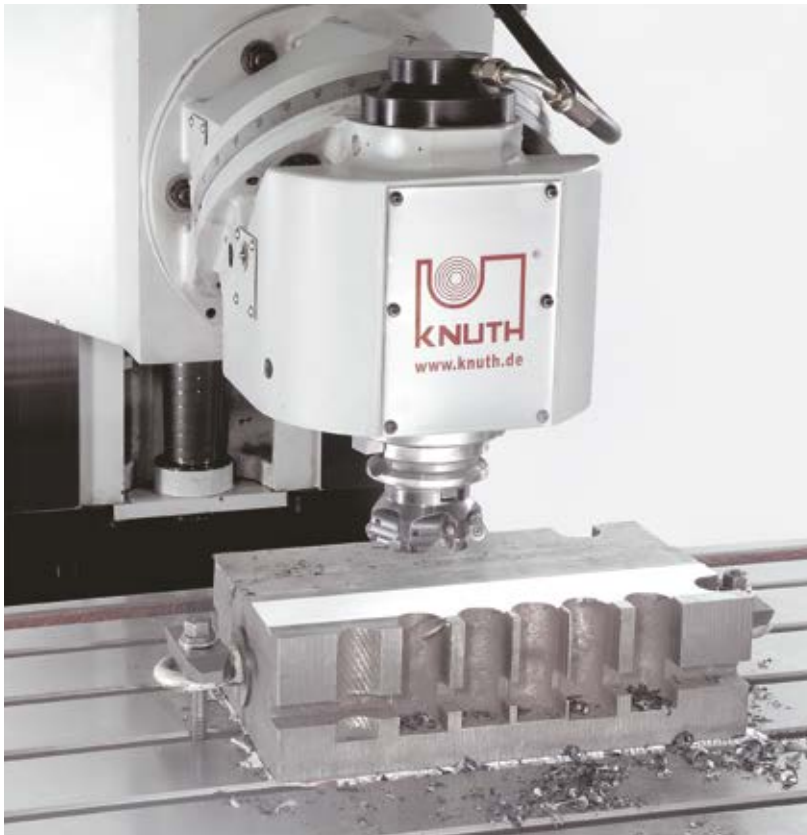
For additional options for this machine, visit our website and search for Millano (Product Search)



BFM CNC Pro shown with totally enclosed housing and chip conveyor

- modern mono-block frame made of Meehanite casting ensures excellent geometric accuracy and provides a large work area
- all machine frame assemblies, like base, column, saddle and table, feature heavy ribbing and excellent rigidity
- rigid table design with extra wide saddle supporting the table and allowing table loads up to 1800 kg
- in addition to wide 4X box-ways on Y, the machine base features support guides for the saddle, allowing maximum precision even under uneven table load distribution
- all guideways are ground, hardened, counter-laminated with Turcite-B, and protected by premium stainless steel covers
- Z axis drive operates with a fine-tuned counter-balance for high-precision response and minimal motor and guide wear
- preloaded ball screws with 63 mm diameter on all axes
- custom bearing block on its own linear guide system at the X axis spindle prevents vibration and torsional effects to ensure a constantly uniform feed

Price on request



BFM 2500 UH

- Features a swiveling universal cutter head that easily and quickly can be changed from vertical to horizontal
- 2 swivel levels allow setting of virtually any angle inside the work space (without tool changer)

Standard Equipment

Control Siemens 828 D with Shopmill, 3D Simulation, coolant system, spindle blow-out system, spiral chip conveyor, automatic central lubrication, electronic hand-wheel, work lamp, USB interface, totally enclosed, preloaded ball screws, 24-station tool changer with dual-arm (BFM Pro CNC), heat exchanger for electric box, operating tools, operator manual

Options

For options for this machine, visit our website and search for BFM CNC (Product Search)

Specifications BFM CNC

		2000 Pro	2500 UH	2500 Pro
Working area				
X axis travel	mm	2.000	2.500	2.500
Y axis travel	mm	860	840	860
Z axis travel	mm	700	700	700
Table set up area	mm	762x2.336	762x2.845	762x2.845
Table load capacity	kg	1.800	1.800	1.800
T-slots (number/width/spacing)	mm	5x18x120	5x18x120	5x18x120
Spindle axis-to-table surface distance	mm	100 - 770	100 - 770	100 - 770
Workpiece weight (max.)	kg	1.800	1.800	1.800
Headstock				
Spindle speed	1/min	8.000	40 - 2.000	8.000
Spindle mount		BT 40	BT 50	BT 40
Feed				
Rapid feed	mm/min	10.000	10.000	10.000
Feed speed X / Y / Z axis	mm/min	5.000	5.000	5.000
Tooling				
Number of tool stations	Pieces	24	-	24
Tool-change time tool/tool	sec	1,5	-	1,5
Tool weight max.	kg	8	-	8
Accuracies				
Positioning accuracy	mm	0,005	0,005	0,005
Repeatability	mm	0,0025	0,0025	0,0025
Drive capacity				
Main drive motor rating (cont/30 min)	kW	11 / 15	11 / 15	11 / 15
Motor rating Y / Z	kW	4,87	4,87	4,87
Motor rating for X-axis drive	kW	4,4	4,4	4,4
Measures and weights				
Overall dimensions (length x width x height)	m	5,69x2,77x2,95	7,63x2,77x2,95	7,63x2,77x2,95
Weight	kg	7.500	8.000	8.000
Part No.		180470	180475	180471



Matrix 2500 CNC with Siemens 828 D Basic is shown

- The machine design has been optimized as part of a finite element analysis to improve the mechanical performance under high loads
- This structure's extremely high load capacity and a solid cast-iron machine table with moveable column make this the perfect machining solution for very large and very heavy parts
- High-quality preloaded ball screws and roller linear guides ensure maximum precision and reliability
- High quality in every detail: The hand-ground mating surfaces allow tight tolerances and ensure an extra long machine life



The long milling bed allows machining of very long parts, or it can be used to set-up several parts to be machined in one operation

Price on request

Standard Equipment

Siemens 828 D Basic or Fanuc 0i-MF (5) control, automatic tool changer with 20 stations and dual-arm, chain-type chip conveyor with cart, preparation for 4th axis (wiring only), electronic hand-wheel, CF card reader, coolant system, 3-color LED signal lamp, cooling system flush gun, compressed air gun, automatic central lubrication, fully enclosed housing, heat exchanger system for control cabinet, machine feet, spindle blow-out system, work lamp

Specifications

Matrix 2500 CNC

Working area		
Table dimensions	mm	2.500x550
Table load capacity	kg	3.500
Spindle nose-to-table surface distance	mm	200 - 802
Spindle center-to-stand distance	mm	620
Number of T-slots	Pieces	5
T-slots, width	mm	18
T-slots, spacing	mm	100
Travels		
Travel X-axis	mm	2.500
Travel Y-axis	mm	550
Travel Z-axis	mm	550
Headstock		
Spindle speed	1/min	8.000
Spindle mount		BT40
Torque, constant	Nm	75,5
Feed		
Work feed X-axis	mm/min	10
Work feed Y-axis	mm/min	10
Work feed Z-axis	mm/min	10
Tooling		
Number of tool stations	Pieces	20
Tool Ø	mm	80
Tool length (max.)	mm	200
Tool weight max.	kg	8
Tool-change time tool/tool	sec	8
Tool-changing time chip/chip	sec	2
Accuracies		
Positioning accuracies	mm	0,010 (full travel)
Repeatabilities	mm	±0.008
Rapid feed		
Rapid feed X-axis	mm/min	25
Rapid feed Y-axis	mm/min	30
Rapid feed Z-axis	mm/min	30
Drive capacity		
Motor rating main drive	kW	15
Main drive, continuous load	kW	11
Motor rating for X-axis drive	kW	3
Motor rating for Y-axis drive	kW	3
Motor rating for Z-axis drive	kW	3
Total power consumption	kVA	25
Measures and weights		
Overall dimensions (length x width x height)	m	5x2,5x2,5
Weight	kg	6.300
Part No. Siemens 828 D		181059
Part No. Fanuc 0i-MF		181058

- Sturdy telescoping covers on all axes protect the guideways from dust and coolant splatter
- The spindle motor features a high torque for powerful machining under high loads
- Powerful and user-friendly Fanuc or Siemens CNC controls with milling and drilling functions



20-Station Tool Changer with twin-gripper arm

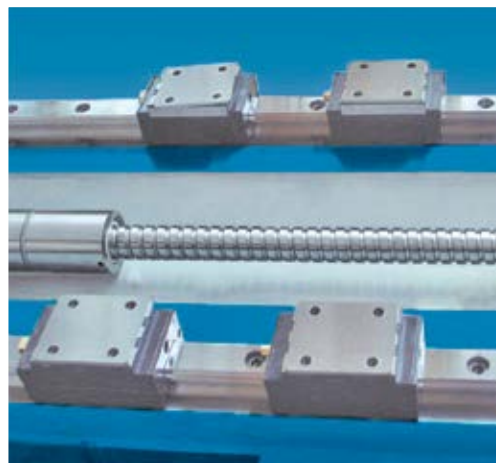


Siemens 828 D Basic control



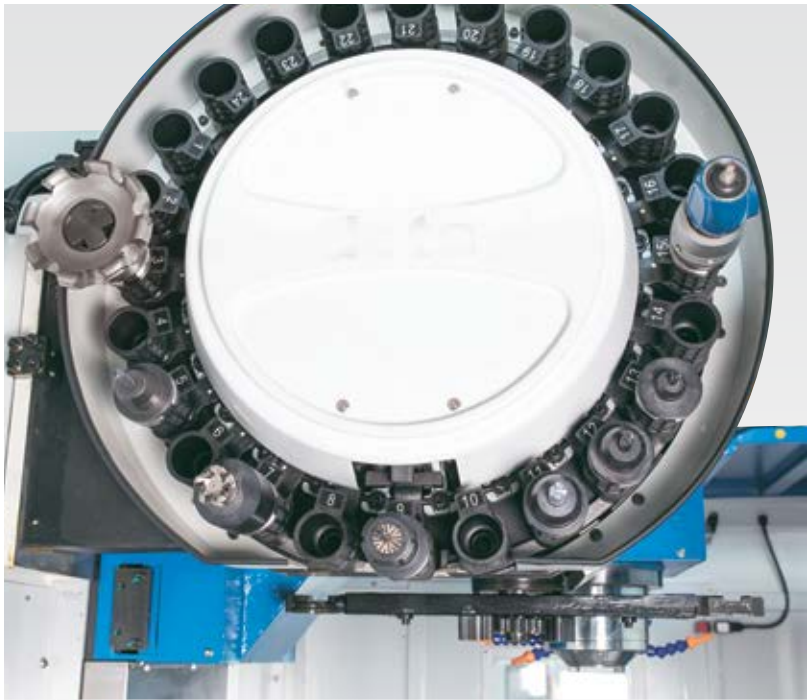
X.mill 1100 L with Siemens 828D control

- machine frame with linear guides in an extra-wide configuration, rigid construction for efficient machining
- rapid feeds up to 48 m/min (optional)
- high-precision preloaded ball screws on all 3 axes
- dual-arm 24-station tool changer for quick and precise tool changes



Precise linear guide systems and preloaded ball screws

price on request



Toolchanger with twin arm gripper

- fully enclosed work space ensures safe and contamination-free work
- very accessible work table for easy setup of clamping tools and workpieces
- powerful servo-drives ensure high feed dynamics
- effective coolant system ensures optimum use of tools and excellent chip removal
- multitude of options allows maximum customization to meet any requirements
- chain-type chip conveyor with 1200 mm high ejector ensures efficient chip removal

Specifications

X.mill 1100 L

Working area		
X-/Y-/Z- axis travel	mm	1100 / 600 / 700
table dimensions	mm	1.200x600
table load capacity	kg	800
spindle nose-to-table distance	mm	100 - 800
distance spindle center - to column	mm	655
t-slots (qty x width x distance)	mm	5x18x100
Main spindle		
spindle speed	1/min	8.000
spindle mount		BT 40
Rapid feed		
X-/Y-axis rapid feed	mm/min	36.000
Z axis rapid feed	mm/min	30.000
work feed X-/Y-axis	mm/min	1 - 12.000
work feed Z-axis	mm/min	1 - 12.000
Tool carrier		
number of tool stations	pcs.	24
OD tool size x tool length (max.)	mm	78/120 x 300
tool weight (max.)	kg	8
tool changing time, chip/chip	s	7,5
tool changing time, tool/tool	s	2,8
Accuracy		
positioning accuracy	mm	± 0,004
repeatability	mm	± 0,003
Drive Capacities		
main motor rating (cont./30 min)		
- Siemens 828D control	kW	9 / 12
- Fanuc Oi-MF	kW	11 / 15
motor rating for X-/Y-/Z-axis	kW	2,9 / 2,9 / 4,4
Dimensions/Weight		
dimensions (LxWxH)	m	3,1x2,4x2,7
weight	kg	6.800
Part No. with Siemens 828 D control		170094
Part No. with Fanuc Oi MF control		170079

Standard Equipment:

Fanuc Oi-MF control with Manual Guide Oi or Siemens 828D control with shopmill, Ridgid tapping., electronic hand-wheel, spindle oil cooler, hinged belt conveyor, 24-station dual-arm tool changer, pneumatic tool clamping, air-conditioned control cabinet , totally enclosed housing, LED work lamp, memory card and RS 232 interface, automatic central lubrication, spindle oil cooler, coolant system, air gun, coolant gun, chip flushing system, operating tools, setup and alignment elements, programming instructions, operator manual

Options

- Fanuc 10,4" color monitor
- Permanent memory 2 GB for Fanuc control
- Spindle BT40 8000 rpm 18.5/22 kW spindle servo-motor for Fanuc control
- Tool measuring system T24E-04-27
- Inside spindle cooler 30 bar with dual filter
- Additional rapid feed X-Y 48 m/min Z 32 m/min
- Spindle speed 15.000 1/min, direct drive

For more information about options, please visit our website and look for X.mill 1100 L (product search)



X.mill M 900 with Fanuc 0i MF (5) control

4.-5. axis optional

- Mineral-casting machine base with cast-iron stand
- Mineral-casting reduces vibration 6 times faster than cast-iron (cast iron) and up to 10 times faster than steel - ensuring exceptionally quiet operation and excellent milling capacity. Excellent thermal stability handles the challenges in everyday production Environments



High-Level Milling

price on request

- superior mechanical properties of the total component package ensure longer tool life
- standard mainspindlemotor with 10.000 1/min
- Spindle oil-cooler ensures stable thermal conditions during continuous operation
- Precise linear guides on all axes feature stainless steel guards for reliable protection
- Precision preloaded ball screws and powerful servo-drives on all 3 axes
- dual-arm 16-station tool changer for quick and precise tool changes
- enclosed work space ensures safe and contamination-free work
- An electronic hand-wheel and very accessible work table for easy setup of clamping tools and workpieces
- LED lighting ensures good visibility in the Workspace
- effective coolant system ensures optimum use of tools and excellent chip removal
- an automatic lubrication system reduces the operator's workload and simplifies maintenance



Handles circular milling under serious conditions

Specifications		X.mill M 900
Work Area		
X / Y / Z-axis travel	mm	850 / 550 / 700
Table dimensions	mm	950 x 550
Table load capacity	kg	700
Spindle nose-to-table distance	mm	100 - 800
Throat	mm	612
T-slots (qty x width x spacing)	mm	5 x 18 x 100
Main Spindle		
Spindle speed	rpm	10,000
Spindle mount		BT 40
Feed		
X / Y-axis rapid feed	mm/min	48,000
Z-axis rapid feed	mm/min	32,000
Work feed X / Y-axis	mm/min	1 - 12,000
Z-axis work feed	mm/min	1 - 12,000
Tool Carrier		
Number of tool stations	pcs.	24
Tool size Ø x L max.	mm	78 (120) x 300
Tool weight (max.)	kg	8
Tool changing time, chip/chip on average	sec	4
Tool changing time, tool/tool	sec	2
Accuracy		
Positioning accuracy / Repeatability	mm	± 0.003 / ± 0.0025
Drive Capacity		
Main drive motor rating, Siemens (cont/30 min)	kW	9 / 12
Main drive motor rating Fanuc (cont/30 min)	kW	11 / 15
Motor rating X / Y / Z-axis drive, Z axis with brakes	kW	3
Dimensions/Weight		
Dimensions (length x width x height)	m	3.0 x 2.22 x 2.65
Weight	kg	6,000
Part No. with Siemens Control		181363
Part No. with Fanuc Control		181362

Standard Equipment:

Fanuc 0i-MF (5) control with Manual Guide 0i, or Siemens 828 D control with Shopmill, 10" color monitor, rigid tapping, indicator light for program status, 24-station tool changer with dual-arm gripper, electronic hand-wheel, spiral chip conveyor, enclosed workspace, air-conditioned control cabinet, automatic central lubrication, LED work lamp, spindle oil cooler, coolant system, hand-held air gun, hand-held coolant gun, setup of CTS, setup of fourth axis, 5 bar chip flushing system, setup and alignment material, operating and programming instructions

Options	Part No.
• Spindle BT 40 12.000 rpm for X.mill M 900 with Fanuc Control	on request
• Inside Spindle Cooler 30 bar with Dual Filter	252498
• Tool Magazine 32 pieces	252499

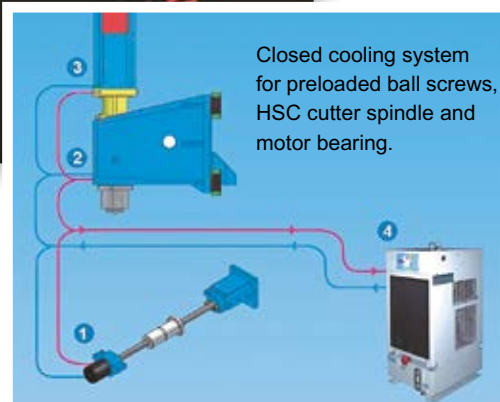
For more information about options, please visit our website and look for X.mill (product search)

- **NEW: X.mill M 700 for die construction**
- **Main spindle speeds up to 24.000 1/min**



X.mill 700 HS with Siemens control is shown

- **KNUTH machining centers with mineral casting frames for high-precision production and maximum productivity**
- excellent damping properties
- high rigidity
- excellent thermal stability
- superior mechanical properties of the total component package ensure longer tool life
- high-speed advance and rapid feed for a significantly increased machine efficiency
- Accessible work table for easy setup and tooling



- 1. X.mill 700 HS, 60 m/min. Rapid feed with 1 g axis acceleration. Preloaded ball screws feature internal cooling to prevent excessive heat build-up during high-speed machine operation
- 2. The cutter spindle features closed-circuit cooling to ensure a constant optimum temperature range (X.mill M 700)
- 3. The milling motor bearing is integrated into the cooling circuit to prevent any heat transfer from the motor to the cutter head

price on request

Standard Equipment

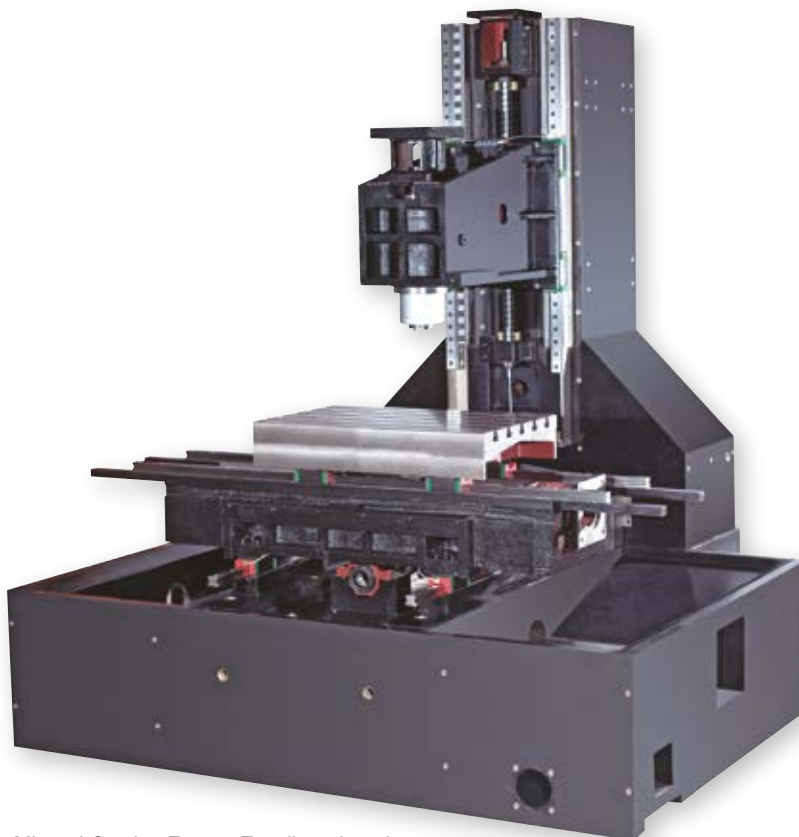
Fanuc Oi-MF control with Manual Guide Oi, or Siemens 828D with Shopmill, 24-station tool changer with dual-arm gripper (X.mill 700 HS), 20-station tool changer with dual-arm gripper (X.mill M 700), electronic hand-wheel, spiral chip conveyor, enclosed workspace, work lamp with program end indicator, cooling system for cutter spindle, cooling system for preloaded ball screw, spindle cooler (X.mill M 700), air-conditioned control cabinet, automatic central lubrication, coolant system, hand-held air gun, hand-held coolant gun, operating tools, operator manual and programming instructions

Options

Part No.

- Coolant Nozzle Ring for Milling Spindle 250313
- HNC5 200V Hydraulic Machine Vise 104936

For additional options for this machine, visit our website and search for X.mill 700 (Product Search)



Mineral Casting Frame: Excellent damping, rigidity and thermal stability

Specifications

X.mill M 700 (SI) X.mill 700 HS(FA) X.mill 700 HS (SI)

Working area

X axis travel	mm	700	700	700
Y axis travel	mm	500	500	500
Z axis travel	mm	500	500	500
Table dimensions	mm	750x450	750x450	750x450
T-slots (number/width/spacing)	mm	5x16x80	5x16x80	5x16x80
Table load capacity	kg	600	400	400
Spindle nose-to-table surface distance	mm	70 - 570	70 - 570	70 - 570
Throat spindle center to frame	mm	530	530	530

Headstock

Spindle drive method		Hybrid	Direct drive	Direct drive
Spindle speed	1/min	24.000	15.000	15.000
Spindle mount		BT 30	ST 40	ST 40

Feed

Rapid feed X / Y / Z axis	mm/min	30.000	60.000	60.000
Work feed X / Y / Z axis	mm/min	12.000	1 - 12.000	1 - 12.000

Tooling

Number of tool stations	Pieces	20	24	24
Tool size Ø x L (max.)	mm	65 (130) x 250	78 (120) x 250	78 (120) x 250
Tool weight max.	kg	5	8	8
Tool-changing time chip/chip	sec	3	-	6
Tool-change time tool/tool	sec	1,8	-	2,8

Accuracies

Positioning accuracies	mm	0,003	0,003	0,003
Repeatabilities	mm	0,0025	0,0025	0,0025

Drive capacity

Main drive motor rating (cont/30 min)	kW	8 / 12	7,5 / 11	12 / 15
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Measures and weights

Overall dimensions (length x width x height)	m	2,5x2,5x2,7	2,7x2,4x2,7	2,7x2,4x2,7
Weight	kg	6.000	6.000	6.000
Part No.		181262	181263	181261



Our bestseller - now with mineral-casting machine base

- Mineral-casting reduces vibration 6 times faster than cast-iron (GG25) and up to 10 times faster than steel – ensuring exceptionally quiet operation and excellent milling capacity. Excellent thermal stability handles the challenges in everyday production Environments



Very quiet operation, short cycle times, and superior surface quality

price on request



Dual-arm 16-station tool changer for quick and precise tool changes

Specifications

X.mill M 640

Working area

X axis travel	mm	640
Y axis travel	mm	400
Z axis travel	mm	500
Table height	mm	850
Table dimensions	mm	750x360
Table load capacity	kg	500
T-slots (number/width/spacing)	mm	3x18x100
Spindle nose-to-table surface distance	mm	50 - 550

Headstock

Speed range	1/min	10.000
Spindle throat	mm	430
Spindle mount		BT 40

Feed

Work feed	mm/min	12.000
Rapid feed X / Y / Z axis	mm/min	36.000

Tooling

Number of tool stations	Pieces	16
Tool size Ø x L (max.)	mm	78x250
Tool weight max.	kg	8
Tool-changing time chip/chip	sec	4
Tool-change time tool/tool	sec	2

Accuracies

Positioning accuracy	mm	± 0,003
Repeatability	mm	± 0,0025

Drive capacity

Main drive motor rating (cont/30 min)		
- Fanuc	kW	7,5 / 11
- Siemens	kW	7 / 10

Measures and weights

Overall dimensions (length x width x height)	m	2,3x1,8x2,4
Weight	kg	4.500
Part No. with Fanuc Control		181360

Part No. with Siemens Control		181364
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- superior mechanical properties of the total component package ensure longer tool life
- Spindle oil-cooler ensures stable thermal conditions during continuous operation
- Linear guides with extra-wide layout and stainless steel guards for reliable protection
- Precision preloaded ball screws and powerful servo-drives on all 3 axes
- enclosed work space ensures safe and contamination-free work
- An electronic hand-wheel and very accessible work table for easy setup of clamping tools and workpieces
- LED lighting ensures good visibility in the Workspace
- effective coolant system ensures optimum use of tools and excellent chip removal
- an automatic lubrication system reduces the operator's workload and simplifies maintenance



Machining time 4h20min (GEST 80), Pins Ø 5 x 0.2 mm, wall thickness 8 x 0.3 mm

Standard Equipment

Control Fanuc 0i-MF (5) control with Manual Guide 0i, or Siemens 828D with Shopmill, 14" color display, electronic hand-wheel, spiral chip conveyor, 16-station tool changer with dual-arm, control cabinet with heat-exchanger, totally enclosed work space, safety lock, work lamp, automatic central lubrication, air gun, manual coolant spray gun, spindle oil cooler, setup of ICS, setup of fourth axis, leveling plates and jacks, operating tools, operator manual

For additional options

for this machine, visit our website and search for X.mill M 640 (Product Search)



- Our bestseller, the X.mill M 640 ECO, features a machine frame with mineral-casting base – mineral-casting reduces vibration 6 times faster than cast iron (GG25) – ensuring exceptionally quiet operation and excellent milling capacity
- Reliable, compact machining center with extensive equipment for streamlined, cost-effective series productions
- premium linear guides and powerful servo drives on all axes
- totally enclosed work space with side doors ensures maximum safety and flexibility
- Siemens 808D Advanced TTL control: cost-effective, easy to handle, superior reliability backed by worldwide service, including software for external programming

price on request



Tool changer with 12 stations

Specifications

X.mill M 640 ECO

Working area		
X axis travel	mm	640
Y axis travel	mm	400
Z axis travel	mm	500
Table dimensions	mm	750x360
Table load capacity	kg	500
T-slots (number/width/spacing)	mm	3x18x100
Spindle nose-to-table surface distance	mm	80 - 580
Headstock		
Spindle speed	1/min	10.000
Spindle throat	mm	430
Spindle mount		BT 40
Feed		
Rapid feed X / Y axis	mm/min	30.000
Rapid feed Z-axis	mm/min	30.000
Work feed	mm/min	10 - 12.000
Tooling		
Number of tool stations	Pieces	12
Tool size Ø x L (max.)	mm	
Tool weight max.	kg	8
Tool-changing time chip/chip	sec	9
Tool-change time tool/tool	sec	7
Accuracies		
Positioning accuracy	mm	± 0,01
Repeatability	mm	± 0,005
Drive capacity		
Motor rating main drive	kW	11
Main drive, continuous load	kW	7,5
Measures and weights		
Overall dimensions (length x width x height)	m	2,3x1,8x2,3
Weight	kg	4.200
Part No.		181333

Standard Equipment

Siemens 808D Advanced TTL, electronic hand-wheel, spiral chip conveyor, servo drive for all 3 axes, 12-station tool changer, control cabinet with heat-exchanger, totally enclosed work space, CE-safety-Glas, safety lock, work lamp, chip tray, automatic central lubrication, air gun, manual coolant spray gun, leveling plates and jacks, operating tools, operator manual

Options

Part No.

• Adapter Sleeve BT40xMT3	103784
• Shell End Milling Arbor Ø13 BT 40	103920
• Collet Chuck BT40-ER32	104202
• Collet Chuck MAS BT40-ER40-80	104206
• Drill Chuck Mount BT40xB16	104792
• De Luxe Clamping Tool Set 18/M16	105305
• Swivel Hold-Down Clamp Set 125/ M16	105800
• ER 32 Collet Set 6 pcs.	106052
• ER 40 Collet Set 15 pcs.	106054
• Milling Chuck WELDON BT 40 / Ø 6	106821
	mm
• Assembly Stand	108930
• HS 125 Hydraulic Machine Vise	125024
• Electronic Edge Tracer	129055

For additional options for this machine, visit our website and search for X.mill M 640 ECO (Product Search)

X.mill 400

Entry-level model for CNC milling, ideal for batch production and training purposes



- BT-40 main spindle mount
- Spindle oil cooler is standard equipment
- Tapping without compensating chuck (rigid tapping)

- Reliable, compact machining center with extensive equipment for streamlined, cost-effective series productions
- Massive cast-iron machine body integrates many years of experience and state-of-the-art technology
- All axes move on premium, fully enclosed linear guideways and precision ball screws and are driven by dynamic servo-motors
- The premium spindle unit features a large tool mount and a spindle oil cooler, which are of great advantage in continuous operations
- Fast rapid feeds and rugged horizontal tool changer allow for efficient machining with minimum downtime

Price on request



Rugged horizontal tool changer with 12 stations



Siemens 808D Advance control

Specifications

X.mill 400

Working area

Table dimensions	mm	600x300
Table load capacity	kg	150
T-slots (number/width/spacing)	mm	3x14x100
Spindle nose-to-table surface distance	mm	100 - 580

Travels

Travel X-axis	mm	400
Travel Y-axis	mm	230
Travel Z-axis	mm	450

Headstock

Spindle speed	1/min	8.000
Spindle mount		BT 40

Feed

Rapid feed X-axis	mm/min	12.000
Rapid feed Y-axis	mm/min	12.000
Rapid feed Z-axis	mm/min	10.000
Work feed X / Y / Z axis	mm/min	1 - 10.000

Tool Head

Number of tool stations	Pieces	12
Tool Ø	mm	50 (120)
Tool length (max.)	mm	200
Tool weight max.	kg	3
Tool-change time tool/tool	sec	7

Accuracies

Positioning accuracies	mm	0,02
Repeatabilities	mm	0,01

Drive capacity

Motor rating main drive	kW	3,7
Motor rating for X-axis drive	kW	0,75
Motor rating for Y-axis drive	kW	0,75
Motor rating for Z-axis drive	kW	1
Total power consumption	kVA	10

Measures and weights

Overall dimensions (length x width x height)	m	2,1x1,9x2,45
Weight	kg	2.200
Part No.		181359

- The totally enclosed work space features a large door and side doors for easy access, safety and cleanliness
- Siemens 808D control: cost-effective, easy to handle, superior reliability backed by worldwide service
- electronic hand-wheel simplifies machine set-up
- The automatic central lubrication system ensures proper lubrication of all lube points

Standard Equipment

Siemens 808D Advance control, 12-station automatic tool changer, electronic hand-wheel, coolant system, operational health status indicator, automatic central lubrication, enclosure, level pads and bolts, work lamp, compressed air gun, operating tools, operator manual

Options

Part No.

• Shell End Milling Arbor Ø40 BT 40	103928
• Milling Chuck WELDON BT 40 / Ø 32 mm	106828
• Collet Chuck MAS BT40-ER40-80	104206
• ER 40 Collet Set 15 pcs.	106054
• Keyless Drill Chuck 1-13 mm B 16	104765
• Keyless Drill Chuck 3-16 mm B 18	104770
• Assembly Stand	108930
• HNCS 100V Hydraulic Machine Vise	104930
• Clamping Tool Set Deluxe 14/M12	105295

For additional options for this machine, visit our website and search for X.mill 400 (Product Search)



Hands-on learning on KNUTH machines with Siemens controls for state certified and practical vocational training

Depending on requirements and training objective, KNUTH CNC machine tools can be used to implement the dual training concept that teaches theoretical content and deepens this knowledge with hands-on practical experience. This principle has been successfully used in continuous vocational training and employee training programs.

The programming instructions with the simulation software of the Siemens 808 control are ideal for CNC beginners, students and apprentices who have completed their training on conventional lathes and milling machines and have a basic knowledge of CNC machining. KNUTH machine tools have a proven track record of decades of successful use at schools and universities worldwide.

KNUTH offers an extensive portfolio for the basic turning and milling training package. The servo-conventional machines, Servoturn and Servomill, represent the new generation of conventional machining.

The Siemens SINUMERIK CNC Controls provide the perfect control solution for each of these machine designs. Compact and user-friendly, the 808D and 828D are ideally suited for basic turning and milling applications as well as standardized machine designs with high CNC performance.

Theoretical and practical training - Be convinced

Take the first step and make yourself familiar with our new training concept. Don't hesitate to ask about a live meeting to learn about the machines, documentation and software.

A visit to our German headquarters in Wasbek provides you an ideal opportunity to gain insight and a complete picture of all aspects of the KNUTH Werkzeugmaschinen training initiative.

While you are there, don't miss the chance to visit the largest machine tool display in Northern Germany.
Make your appointment today - we are looking forward to your visit.

Your KNUTH sales representative

SMARTLAB Package

- **CNC Inclined-Bed Lathe**
with automatic 4-station tool holder and tailstock
- **Vertical Machining Center**
with automatic 4-station tool changer
- Siemens SINUMERIK 808D
- Detailed programming instructions



THE MACHINES - Ideal for vocational training and continuous employee training

- The mobile CNC machines provide the full range of functionality
- Include automatic tool changers for a productive real-world training environment.

LabTurn 2028 - CNC Inclined-Bed Lathe

- Turning diameter over bed 200 mm
- Z-axis travel 155 mm
- 4-station tool turret
- Machine frame features a solid cast-iron inclined-bed construction ensuring excellent rigidity and chip removal
- High-precision linear guides guarantee high rigidity and accuracy
- Central lubrication
- 4-station tool turret with 4 tools for inside and outside machining
- 3-jaw chuck (100 mm) and rigid tailstock are included

LabCenter 260 - CNC Milling Machine

- Travels (X / Y / Z) – 251 x 152 x 168 mm
- Main spindle drive motor 1 kW
- 4-station tool changer
- Carefully machined frame with premium cast-iron construction
- Dovetail guides and preloaded ball screws with servo drives on all axes
- Max. spindle speeds up to 5000 rpm
- Electronic hand-wheel for efficient, professional set-up operations

THE CONTROL - SINUMERIK 808D

The ideal entry-level CNC System

- Easy, intuitive user guidance, ideal for basic turning and milling applications.
- High performance and precision.

Siemens Sinumerik 808D

- Self-explanatory, powerful control with a small footprint
- MDynamics for perfect milling operation
- Sinumerik 808D – included with standard equipment

Compact and robust with panel-based CNC design requiring minimal interfaces, and a resistant IP65 control panel make the SINUMERIK 808D the perfect control for dirty and harsh workshop environments. Additional features of the SINUMERIK 808D are low-profile chicklet key caps for effortless operation and the familiar SINUMERIK soft-key touch and feel.

The SINUMERIK 808D is optimized for turning and milling functions and its technology-specific features make it the perfect control for lathes and machining centers. The range of applications extends from basic standardized milling machines or simple machining centers to cycle lathes and full CNC lathes. Its MDynamics motion control ensures first class turning and milling results.

LabTurn 2028

CNC Turning with maximum precision and minimum space requirement



- The LabTurn is an ideal lathe for CNC training and small batch production of high precision workpieces
- Rigid cast-iron inclined bed design ensures good stability and efficient chip removal
- Precision linear guides ensure high stability and accuracy
- Central lubrication for reduced maintenance



Inclined bed design optimizes work space and chip removal

Price on request



Rigid stainless steel guideway covers

Specifications

LabTurn 2028

Working area		
Workpiece length (max.)	mm	280
Turning diameter over bed	mm	200
Turning-Ø over support	mm	90
Travels		
Travel X-axis	mm	86
Travel Z-axis	mm	155
Headstock		
Speed range	1/min	100 - 3.000
Spindle mount		MK 3
Spindle bore	mm	20
Lathe chuck diameter	mm	100
Feed		
Velocity X / Z axis	mm/min	1.000
Torque X / Z axis	Nm	2,2
Tooling		
Number of tool stations	Pieces	4
Tool shank dimensions	mm	8x8
Boring bar mount diameter	mm	12
Accuracies		
Positioning accuracy X / Z axis	mm	0,022
Repeatability X / Z axis	mm	0,01
Rapid feed		
Rapid feed X-/Z-axis	mm/min	2.000
Tailstock		
Tailstock quill diameter / stroke	mm	20 / 30
Tailstock taper		MK 2
Drive capacity		
Motor rating main drive	kW	1
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	1,4x0,9x1,85
Weight	kg	360
Part No.		181625



8-station tool turret with 4 tools per station for inside and outside turning

- enclosed workspace protects and a large sliding door provides easy access
- Production control technology with superior reliability
- 8-station tool turret with 4 tools per station for inside and outside turning

Standard Equipment

Siemens 808D Advance control, electronic hand-wheel, 8-station turret, mobile base, tailstock, 3-jaw chuck Ø 100 mm, central lubrication, work lamp, operating tools, operating manual and programming instructions

Options	Part No.
• Turning Tool Set with 8 x 8 mm shank dimensions	251477
• Set of indexable inserts	251478
• E-Labturn 2028 spare parts package for 181625	259122



Max. spindle speeds up to 5000 rpm

- Precisely machined frame made of high-quality cast iron
- Dovetail guides and preloaded ball screws with servo drives on all axes
- Electronic hand-wheel for efficient and professional set-up
- 4-station tool changer ensures flexibility and optimum productivity
- Mobile base with storage room for tools and materials

Price on request





4-station tool changer



Pneumatic tool clamping

Specifications

LabCenter 260

Working area		
Table dimensions	mm	400x145
Table load capacity	kg	20
T-slots (number/width/spacing)	mm	3x12x40
Spindle nose-to-table surface distance	mm	60 - 240
Throat	mm	180
Travels		
X / Y / Z axis travel	mm	251 / 152 / 168
Headstock		
Spindle speed	1/min	5.000
Spindle mount		ISO 20
Feed		
Rapid feed X / Y / Z axis	mm/min	2.000
Work feed X / Y / Z axis	mm/min	1.000
Torque X / Y / Z axis	Nm	2,2
Tooling		
Number of tool stations	Pieces	4
Tool size Ø x L (max.)	mm	10x110
Tool weight max.	kg	0,5
Tool-change time tool/tool	sec	10
Accuracies		
Positioning accuracy X / Y / Z axis	mm	± 0,015
Repeatability X / Y / Z axis	mm	± 0,01
Drive capacity		
Motor rating main drive	kW	1
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	1,4x0,9x1,85
Weight	kg	430
Part No.		181615

Standard Equipment

Siemens 808D Advance control, electronic hand-wheel, 4-station tool changer, pneumatic door, mobile base, central lubrication, work lamp, operating tools, operating manual and programming instructions

Options	Part No.
• Collet chucks ISO 20 / ER16	251480
• Collet set ER 16 with collet sizes of 3, 4, 5, 6, 7, 8, 9, and 10 mm	251481
• Engraving tool set	251482
• E-LabCenter 260 spare parts package for 181615	259121

PAGE **102** » PickCell PC 20i



PAGE **104** » VDL 800 CNC



PAGE **106** » Verturn II VDM 1250 • 1600 • 2300 CNC



PAGE **108** » VDM 800 - 2600 S



PAGE **110** » Roturn 400 GT



PAGE **112** » Roturn 400 C • 402 C



PAGE **116** » RoFeeder • Portabot



PAGE **118** » Forceturn 630 • 800



PAGE **120** » Numturn 500 • 660



PAGE **122** » Numturn 420 • 420 ECO



PAGE **124** » TubeTurn CNC



Turning

PAGE **126** » TubeTurn 135 • 200 • 225



PAGE **128** » DL E Heavy



PAGE **130** » DL S



PAGE **132** » Sinus 330 Plus • 400 Plus



PAGE **134** » Sinus D 330 • 400



PAGE **136** » Turnado 230 • 280



PAGE **138** » V-Turn 410/1000 • 410/1500



PAGE **140** » V-Turn 410 PRO



PAGE **142** » Basic Plus



PAGE **144** » Basic 180 Super • 180 V



PAGE **146** » Basic 170 Super





Highlights

- Mineral-casting bed with roller guides
- Automatic workpiece loading and unloading via main spindle
- Workpiece storage
- C axis and 12-station VDI tool-changer with driven tools
- Spindle speed 4500 rpm



Mineral-casting machine frame with roller guide

price on request



Workpiece storage with 8 stations

- Extremely rigid machine structure
- High axis dynamics combined with simple use
- The concept of vertical machining applied to turning
- This design ensures a totally unobstructed fall and complete removal of chips
- Made with modern, future-oriented materials, like this mineral-casting machine bed
- Minimal operator intervention all the way to completely intervention-free production systems
- No need for separate handling systems
- Customized feeders that are adapted for the workpiece and type of machining are available
- Expansions are possible by adding a C-axis and driven tools
- With C-axis and driven tools workpieces can be milled and drilled both radially and axially in just one set-up
- Modules for expansions all the way up to complete production lines with turn-over stations (turns the workpiece from 1st to 2nd side) are available.

Specifications	PickCell PC 20i	
Working area		
X axis, including pick-up distance	mm	260 + 1.050
Swing Ø	mm	450
Z axis	mm	370
Chuck Ø	mm	210
Workpiece weight	kg	30
Feed		
X axis rapid feed	mm	30.000
Z axis rapid feed	mm	30.000
Feed speed	mm/min	5.000
Workpiece storage		
Workpiece storage stations	Pieces	8
Workpiece length (max.)	mm	150
Maximum workpiece weight	kg	30
Workpiece diameter	mm	210
Spindle		
Spindle speed	1/min	4.500
Power s1 / s6	kW	11 / 18,5
Spindle torque S6 -30%	Nm	326
Spindle torque S6 -30%	mm	100
Tool Turret / Block Tool		
Tool stations	Pieces	12
Mount	mm	25x24/ Ø 40
Tool selection system		Random
Tool-changing time	sec	0,9
Drive capacity		
Z axis feed motor with brakes	kW	4
Z axis feed motor with brakes	Nm	22
Y axis feed motor	kW	4
Y axis feed motor	Nm	22
Power supply	kVA	42
Tank Capacity		
Coolant tank	l	160
Oil tank	l	30
Dimensions/Weight		
Overall dimensions (length x width x height)	m	3,5x3,0x2,9
Machine weight	kg	7.000
Part No.		180625

Standard Equipment of this Machine

- Base bed made of mineral-casting provides 6x better vibration damping
- C-axis and VDI40 tool changer with 12 stations for driven tools
- 2 driven VDI40 tools (90° and 180°)
- VDI40 tool holders
- All axes with linear roller guides and special preloading
- Coolant reservoir with 160 liters
- Coolant pressure of 10 bar, including cartridge filter
- Chip conveyor – with an ejection height of 1,200 mm
- Workpiece storage with 8 stations

Standard Equipment

Control Fanuc 0i-TF (1) with manual guide 0i, closed work space, hydraulic hollow 3-jaw chuck 210 mm, chip conveyor chain type, automatic central lubrication, coolant system, electronic hand-wheel, work lamp, operating tools, operator manual

VDL 800 CNC

CNC Turning of large diameter parts with minimum space requirements



- rigid, one-piece column-type machine frame made of premium cast-iron
- vertical design saves time: Workpieces with large diameters can be loaded and unloaded quickly and safely

- large box-ways, hardened and ground
- with plastic counter-laminated guideways minimize wear and ensure jolt-free, accurate positioning
- electrical clamping of cross traverse ensures fixation in target position

price on request



Rigid 4-station tool holder, 40 mm

Specifications

VDL 800 CNC

Working area		
Turning diameter	mm	800
Rotating diameter (max.)	mm	700
X axis travel	mm	520
Z axis travel	mm	700
Workpiece weight (max.)	kg	600
Headstock		
Speed range	1/min	0 - 300
Lathe chuck diameter	mm	500
Feed		
Rapid feed X axis	mm/min	8.000
Z-axis rapid feed rate	mm/min	10.000
Tool head		
Number of tool stations	pcs.	4
Tool shank dimensions	mm	40 x 40
Accuracies		
Positioning accuracy X / Z axis	mm	± 0,04
Repeatability X / Z axis	mm	± 0,02
Drive capacity		
Motor rating main drive	kW	11
Motor rating X-axis	kW	2,3
Motor rating Z-axis	kW	4,7
Measures and weights		
Overall dimensions (l x w x h)	m	2,1 x 1,8 x 2,81
Weight	kg	4.500
Part No.		180664

Standard Equipment

Siemens 808 D Advanced TTL control, electronic hand-wheel, automatic 4-station tool changer, 3-jaw chuck Ø 500 mm, totally enclosed work space, operating tools, operating manual and programming instructions

Options	Part No.
• Coolant Concentrate 5 Ltr.	103184
• Digital Micrometer Calipers 0 - 100 mm	108365
• Clamped Turning Tool Set 25 mm	108670
• Indexable Insert Set 25 mm, 30 pcs.	108675
• Hydraulic measuring tripod	108810
• Power Worker Metal Cutter	123040
• Digital Inside Micrometer Set 5-100 mm	127400
• Digital Feeder Gauge +/-0.5mm	127410

For available options for this machine, visit our website and search for VDL 800 CNC (Product Search)

Verturn II VDM CNC

Efficiency and precision for high quality, power, and reliability



- heat-treated machine bed made of premium HT250 cast-iron
- large, induction-hardened and precision-ground rectangular guides with synthetic coating ensure optimum sliding and damping properties
- high-precision preloaded ball screws from renowned manufacturers on all axes
- hydraulic clamping of cross traverse



price on request



Face plate with 4-station tool changer

Standard Equipment

Siemens 828 D control, electronic hand-wheel, 4-jaw face plate chuck, automatic 4-station tool changer, coolant system, control cabinet with heat-exchanger, signal lamp, chip conveyor, hydraulic unit, oil cooler, working area lightening, operating tools, operator manual

Options	Part No.
• Coolant Concentrate 5 Ltr.	103184
• Clamped Turning Tool Set 25 mm	108670
• Indexable Insert Set 25 mm, 30 pcs.	108675
• Hydraulic measuring tripod	108810
• Power Worker Metal Cutter	123040

For additional options for this machine, visit our website and search for Verturn II (Product Search)

- Includes the proven Siemens 828 D SL
- 4-step precision gears and infinitely variable 45 kW main motor - for high torque (up to 40000 Nm) across the entire speed range
- Chip conveyor with chip carriage and automatic 4-station tool changes complete this extensive standard equipment

Specifications Verturn II VDM		1250 CNC	1600 CNC	2300 CNC
Working area				
Turning diameter, vertical	mm	1.250	1.600	2.300
Machining height (max.)	mm	1.000	1.200	1.400
X axis travel	mm	700	915	1.180
Z axis travel	mm	650	800	1.000
Travel Z1-axis	mm	650	850	1.050
Workpiece weight (max.)	kg	3.200	5.000	8.000
Headstock				
Speed range	1/min	0,5 - 250	0,5 - 200	0,5 - 100
Torque max.	Nm	23.000	37.500	52.500
Lathe chuck diameter	mm	1.000	1.400	2.000
Feed				
Rapid feed X / Z axis	mm/min	4.000	4.000	4.000
Feed W-axis	mm/min	440	440	440
Tooling				
Number of tool stations	Pieces	4	4	4
Tool-change time tool/tool	sec	10	10	10
Tool weight max.	kg	25	25	25
Accuracies				
Positioning accuracy	mm	0,03	0,03	0,03
Repeatability	mm	0,015	0,015	0,015
Drive capacity				
Motor rating main drive	kW	30	45	45
Motor rating feed	kW	2,2	2,2	2,2
Measures and weights				
Overall dimensions (length x width x height)	m	5,3x3,8x4,2	6,5x4,2x4,4	7,6x5x5,4
Weight	kg	9.500	12.000	20.000
Part No.		180675	180676	180677



Incl. position indicator

- Infinitely variable feed control via servo-motor
- Optimum tooling and easy access for cranes and forklift trucks
- Heavy-duty column with wide, hardened guideways
- hydraulic clamping of cross traverse
- Rigid guide construction ensures maximum rigidity and accuracy of the vertical boom

- 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
- Servo motor technology ensures powerful, infinitely variable feed of the vertical boom

Price on request



Standard Equipment

3-axis position indicator, totally enclosed work space, chip conveyor, tool holder, vertical, tool holder, horizontal, automatic central lubrication, work lamp, anchor bolts, operating tools, operator manual

Options

Part No.

• Coolant System	251430
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Vertical support includes a 5-station tool holder, side support with independent feed for inside and outside turning

Specifications VDM

		800 S	1000 S	1250 S	1600 S	2300 S	2600 S
Working area							
Rotating diameter (max.)	mm	800	1.000	1.250	1.600	2.300	2.600
Turning diameter of upper tool holder	mm	800	1.000	1.250	1.600	2.300	2.600
Turning diameter of side tool holder	mm	720	900	1.000	1.400	2.000	2.300
Machining height (max.)	mm	800	800	1.000	1.000	1.350	1.500
Swivel range of upper tool holder		± 30°	± 30°	± 30°	± 30°	± 30°	± 30°
Workpiece length (max.)	mm	800	800	1.000	1.000	1.350	1.500
Workpiece weight (max.)	kg	1.200	2.000	3.200	5.000	8.000	10.000
Travels							
Travel X1 axis, upper support	mm	570	670	700	915	1.150	1.300
Travel Z1 axis, upper support	mm	600	600	650	800	1.000	1.000
Travel W-axis, traverse	mm	580	580	650	650	1.000	1.100
Travel X2 axis, side support	mm	500	500	630	630	630	730
Travel Z2 axis, side support	mm	800	800	900	900	980	1.180
Headstock							
Speed range	1/min	(16) 10 - 315	(16) 8 - 250	(16) 6,3 - 200	(16) 5 - 160	(16) 3,2 - 100	(16) 1,4 - 45
Spindle Torque (max.)	Nm	10.000	12.500	17.500	25.000	32.000	32.000
Rotary table diameter	mm	720	900	1.000	1.400	2.000	2.300
Feed							
Velocity X / Z axis	mm/min	0,8 - 86	0,8 - 86	0,8 - 86	0,8 - 86	0,8 - 86	0,8 - 86
Feed speed W-axis	mm/min	440	440	440	440	440	440
Rapid feed of upper / side support	mm/min	1.800	1.800	1.800	1.800	1.800	1.800
Tool shank dimensions	mm	30x40	30x40	30x40	30x40	30x40	30x40
Tool weight (max.)	kg	50	50	50	50	50	50
Drive capacity							
Motor rating main drive	kW	22	22	22	30	37	37
Motor rating X / Z axis	kW	1,3 / 1,8	1,3 / 1,8	1,3 / 1,8	1,3 / 1,8	1,3 / 1,8	1,3 / 1,8
Measures and weights							
Overall dimensions (length x width x height)	m	4,9x3,5 x4,15	4,9x3,6 x4,15	5,3x3,8 x4,2	6,5x4,2 x4,4	7,6x5 x5,4	7,9x5,3 x5,4
Weight	kg	6.500	7.100	9.000	12.500	19.000	22.000
Part No.		301390	301391	301392	301393	301394	301396

Roturn 400 GT

Inclined bed lathe with linear tool changer and driven tools



Roturn 400 GT is shown with optional accessories

Extensive standard equipment

- Linear tool changers are ideal for the serial production of smaller workpieces - shortest tool changing times and absolutely reliable features ensure increased productivity
- Machine frame with inclined bed construction for high rigidity and easy chip removal
- Hardened linear guides on X and Z ensure maximum precision and reliability
- Totally enclosed workspace for optimum protection and cleanliness and a large sliding door provides easy Access
- The tried and tested SIEMENS 828 D Basic control meets all requirements for advanced control technology



Siemens Sinumerik 828 D Basic for turning applications - a compact and user-friendly solution for lathes

Highlights

- Easy, dialog-guided user interface
- Complete bandwidth of technology cycles
- High performance and precision

Price on request



Linear tool changer with a radial driven tool (optional)

Specifications

Roturn 400 GT

Working area

Workpiece length (max.)	mm	380
Center height	mm	200
Turning diameter over bed	mm	400
Turning-Ø over support	mm	140

Travels

Travel X-axis	mm	460
Travel Z-axis	mm	400

Headstock

Speed range	1/min	60 - 5.000
Spindle mount		A2-5
Spindle bore	mm	46
Spindle bore with draw tube	mm	36

Tooling

Tool changer type		Linear changer
Tool shank dimensions	mm	20x20
Boring bar mount diameter	mm	38

Rapid feed

Rapid feed X-axis	mm/min	25.000
Rapid feed Z-axis	mm/min	25.000

Driven tools (optional)

Number of driven tools	Pieces	1
Speed range, driven tools	1/min	7.500
Collet		ER 25

Drive capacity

Main motor rating	kW	7,5 / 5,5
Motor rating coolant pump	kW	0,18

Measures and weights

Overall dimensions (length x width x height)	m	1,95x1,5x1,75
Weight	kg	2.500
Part No.		180632

- Main spindle driven by a powerful servo Motor
- A hydraulic 160 mm 3-jaw chuck is included in the standard equipment
- Chip conveyor and powerful coolant system are also included in the standard Equipment
- Automatic central lubrication system ensures reliable lubrication of guideways
- The machine can be equipped with an optional driven tool for radial and axial machining

Standard Equipment

Siemens 828 D Basic control, hydr.160 mm 3-jaw lathe chuck with through-hole, driven tool (radial), automatic central lubrication, Chain-type chip conveyor, heat Exchanger for electric control cabinet, closed work space, work lamp, coolant system, operating tools, operator manual

Options

Part No.

• Electric turret with 8 tools	252743
• RoFeeder 65 Short-Bar feeder for CNC lathes	253018



Extensive standard equipment

- Heavy machine frame with inclined bed ensuring high rigidity and easy chip removal
- Precise linear guides in X and Z for high stability and accuracy even at highest loads
- The enclosed work space is easily accessible through a large sliding door
- Future-proof: the Siemens 828 D Basic control meets all requirements for advanced control technology
- The 8-station tool turret ensures a large work area and quick and precise tool changes
- A powerful 15 kW headstock motor delivers high torque across the entire speed range



Siemens Sinumerik 828 D Basic for turning applications - a compact and user-friendly solution for lathes

Proven record:

- Easy, dialog-guided user interface
- Complete bandwidth of technology cycles
- High performance and precision

Price on request



- Hydraulic 200 mm (Roturn 400 C) / 250 mm (Roturn 402 C) 3-jaw chuck with through-hole
- Tailstock with hydraulically operated quill with a maximum stroke of 85 mm
- Automatic central lubrication system ensures reliable lubrication of guideways
- Hinged belt conveyor and high-performance coolant system included in standard equipment

Standard Equipment

Siemens 828 D Basic control, hydr. 3-jaw lathe chuck 200 mm (Roturn 400 C) / 250 mm (Roturn 402 C) with through-hole, hydr. tailstock, automatic central lubrication, Chain-type chip conveyor, heat Exchanger for electric control cabinet, closed work space, work lamp, coolant system, air gun, coolant system flush gun, operating tools, operator manual

Options

Part No.

- | Options | Part No. |
|-------------------------------------|----------|
| • Portabot 2811 linear gantry robot | 253056 |

8-station tool turret reduces downtime

Specifications

Roturn 400 C

Roturn 402 C

Working area

Workpiece length (max.)	mm	430	430
Center height	mm	200	200
Turning diameter over bed	mm	400	400
Turning diameter over support	mm	250	250

Travels

Travel X-axis	mm	200	200
Travel Z-axis	mm	450	450

Headstock

Lathe chuck diameter	mm	200	250
Speed range	1/min	50 - 3.000	50 - 2.000
Spindle mount		A2-6	A2-8
Spindle bore	mm	62	86
Spindle bore with draw tube	mm	46	75

Tool Head

Number of tool stations	Pieces	8	8
Tool shank dimensions	mm	25x25	25x25
Boring bar mount diameter	mm	40	40

Rapid feed

Rapid feed X-axis	mm/min	16.000	16.000
Rapid feed Z-axis	mm/min	20.000	20.000

Tailstock

Tailstock taper	MT	5	5
Tailstock quill diameter	mm	88	88
Tailstock quill stroke	mm	85	85

Drive capacity

Main motor rating	kW	15 / 11	15 / 11
Motor rating coolant pump	kW	0,18	0,18

Measures and weights

Overall dimensions (length x width x height)	m	3,8x1,87x1,91	3,8x1,87x1,91
Weight	kg	3.340	3.400
Part No.		180633	180628

Maximum Performance in Hazardous Situations

Minimax Global, a worldwide leading manufacturer of high-tech extinguishing and fire protection equipment, uses the KNUTH Roturn 400C CNC Inclined Bed Lathe for its production.



Roturn 400 C turns with consistent high quality

When Minimax developed a new production chain for dry sprinkler systems at its headquarters in Bad Oldesloe, Germany, their foremen, Dieter Donner, was looking for a new lathe for their production facility. „The tubing system is assembled with coated steel pipes that must be provided with threads on both sides. The threads must be cut quickly and with consistent high quality,” explained Dieter Donner. Andreas Hendrich, Manager of Sales in Northern Germany, recommended the Roturn 400C CNC Inclined Bed Lathe, and was convinced: “With such high-precision turning performance, we can contribute to the reliability and safety of these systems at the end-customers’ sites.” The heavy machine frame of the Roturn 400C guarantees maximum rigidity and excellent chip removal. It features precise

Customized extinguishing and fire protection technology products by Minimax are used worldwide wherever fire hazards exist: in automotive plants, factories, logistics centers, office and residential buildings, data centers, and on ships.

Originally founded in 1902, today’s Minimax Viking Group employs more than 8,800 employees and is the second largest fire protection gear provider worldwide with annual sales of over 1.6 billion euros.

Roturn 400 C

CNC Inclined Bed Lathes

With Siemens 828D Basic Control

- » Spindle bore 62 mm
- » Turning diameter over bed 400 mm
- » Workpiece length 430 mm

For detailed information on this series, please visit www.knuth-machinetools.com



The Roturn 400 C in action at Minimax



linear guides in X and Z to ensure high stability and accuracy even under highest loads. With its 15-kW main shaft motor, the Roturn 400 C capable of high torque in all speed ranges, and the Siemens 828 D Basic control meets all current control technology requirements. A user-friendly, dialog-guided user interface allows quick and accurate parameter settings and execution of maintenance tasks.

Cost-effective solution for multi-shift operation

After a visit at KNUTH's headquarters in Wasbek, Germany, Donner was convinced of the many advantages the Roturn could bring for his operation "We are already using several KNUTH machines and are very satisfied with the quality," said Donner. "We appreciate the great price/performance ratio and in this case also the fast availability of this machine." In virtually no time, KNUTH provided the Roturn 400 C with a spindle extension to allow tube lengths up to 120 cm. Two Minimax employees attended a workshop to receive intensive training in the operation and settings of this machine.

The Roturn 400 C spindle was lengthened so that pipes up to 120 cm long could be processed. Due to its high process and high-quality work results, this cost-effective lathe is ideal for multi-shift operations.

They then conveyed their knowledge to their colleagues in production. Currently, the Roturn 400 C is used in single-shift operation. However, due to its process reliability and high-quality output, this cost-effective lathe is also a great choice for multi-shift operations, which is already planned for production at Minimax. Donner has only good things to say about working with the people from Wasbek: "To buy a new machine, I will always turn to KNUTH."

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RoFeeder 65 S

Industrial-grade short rod loader for the Roturn 400 series and CNC lathes



Flexible processing of rods with diameters up to 65 mm

- This automatic rod feed features a universal design and can be used on many CNC production machines.
- No spindle speed limit; however, machine- and material-specific spindle reduction bushings (available upon request) will be required
- The I/O interface for all commonly used CNC lathes is very easy to set up
- All components are very robust for an almost maintenance-free operation
- The standard handheld control unit simplifies the rod loader's set-up and operation
- Assembly cost quote upon request (Part No. 270061)



The rod magazine control can be configured at the user-friendly control panel

Specifications

RoFeeder 65 S

General

Bar diameter	mm	5 - 65
Rod length	mm	280 - 1.550
Spindle height	mm	850 - 1.250
Air supply	kg/cm ²	5 - 7

Drive capacity

Power supply voltage	V/Hz	400 /50
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Measures and weights

Weight	kg	320
Part No. (no assembly cost)		253018

PLC control

- The PLC control features a large LCD, is user-friendly and comfortable
- The return stroke can be adjusted by the operator for custom requirements
- Self-diagnostics help minimize idle times during troubleshooting
- The remaining piece length is defined by parameters to support highly efficient material utilization

Standard Equipment

PLC control

Price on request

Portabot 2811

KNUTH's linear gantry technology offers a cost-efficient solution for the loading and unloading of machine tools



- The standardized module system is flexible and can easily be adapted for customer-specific requirements
- Robust hollow structural steel sections form the gantry base on both axes
- Hardened and ground rack-and-pinion gears ensure long lasting positioning accuracy/repeatability and high reliability
- Proven linear guide systems on both moving axes
- The linear gantry robot is equipped with a dual gripper system and a gripper with swiveling axis, allowing unloading and loading in one operation
- The compact stand-alone control features a hand-held controller and is aligned with the gantry's linear robotics ensuring an easy connection to the respective machine control, quick start/up and truly simple operation of the entire system



Dual grippers are provided for unloading and loading in one operation

Specifications

Portabot 2811

Working area

Z axis vertical travel	mm	1.100
X axis travel	mm	280

Rapid feed

X axis rapid feed	m/min	45
Z axis rapid feed	m/min	50

Gripper

Maximum workpiece weight	kg	1,5
Part No. (no assembly cost)		253056

- Installation cost will be provided upon request (for part no. 270061); installation is included with the Roturn 400 C
- Automatic material storage system with 10 stations for the management of blanks and finished parts
- The safety packages needed for operation can be customized to meet individual requirements

Standard Equipment

NC control LNC R680 with 7" colourdisplay, dual gripper, Material memory with 10 stations, safety guard, operator manual

Price on request



Forceturn 800.30 is shown

- Spindle bores 85 mm / 105 mm
- Spindle speeds up to 2250 rpm

- Lots of experience went into the design and construction of this machine bed featuring large guides that are hardened, ground and counter-laminated
- Powerful main drive motor handles part weights up to 1,7 t with ease
- Infinitely variable, programmable, and adjustable spindle speeds with automatic 3-step main gear
- Fagor 8055i A-TC featuring intuitive, easy to learn cycle programming, including Profile Editor, for batch and single part production of complex workpieces
- Graphical simulation for added safety
- Heavy, automatic 4-station servo-driven tool changer for programmed tool changes
- 2 electronic hand-wheels at the control panel for manual operation and quick and easy setup of new workpieces and tools
- A high-performance coolant system and automatic central lubrication system are included



Easy handling: for positioning, the tailstock can be coupled to the support



Compact control unit with electronic hand-wheels

price on request



Option: steady rests up to 400 mm diameter

Standard Equipment

Fagor 8055i / A-TC Control, 2 electronic hand-wheels, 3-jaw chuck Ø 300 mm, automatic 3-step gears, 4-station servo tool holder, coolant system, central lubrication, tailstock, work lamp, operating tools, operating manual and programming instructions

Options	Part No.
• 4-jaw Lathe Chuck, cast-iron, 457 mm Ø	250103
• Steady Rest 130 - 370 mm	250935
• Steady Rest 50-300 mm	250936
• Steady Rest 280-400 mm	250937

For additional options for this machine, visit our website and search for Forceturn (Product Search)

Specifications Forceturn		630.15	630.30	630.50	800.15	800.30	800.50
Working area							
Turning diameter over bed	mm	670	670	670	818	818	818
Bed width	mm	450	450	450	450	450	450
Center height	mm	335	335	335	420	420	420
Turning diameter over support	mm	400	400	400	570	570	570
Workpiece length (max.)	mm	1.600	3.100	5.100	1.600	3.100	5.100
X-axis travel	mm	450	450	450	450	450	450
Z-axis travel	mm	1.500	3.000	5.000	1.500	3.000	5.000
Headstock							
Speed range	rpm	27 - 2.250	27 - 2.250	27 - 2.250	20 - 1.500	20 - 1.500	20 - 1.500
Spindle mount		D1-8	D1-8	D1-8	A1-11	A1-11	A1-11
Spindle bore	mm	85	85	85	105	105	105
Feed							
Rapid feed X / Z-axis	mm/min	5.000	5.000	5.000	5.000	5.000	5.000
Tool head							
Number of tool stations	pcs.	4	4	4	4	4	4
Tailstock							
Tailstock quill stroke	mm	170	170	170	170	170	170
Tailstock quill taper / Ø	mm	MT5 / 105	MT5 / 105	MT5 / 105	MT5 / 105	MT5 / 105	MT5 / 105
Accuracies							
Positioning accuracy X-axis	mm	0,015	0,015	0,015	0,015	0,015	0,015
Positioning accuracy Z-axis	mm	0,015	0,02	0,03	0,015	0,02	0,03
Repeatability X-axis	mm	0,007	0,007	0,007	0,007	0,007	0,007
Repeatability Z-axis	mm	0,007	0,01	0,015	0,007	0,01	0,015
Drive capacity							
Main drive motor rating (cont/30 min)	kW	15 / 22	15 / 22	15 / 22	15 / 22	15 / 22	15 / 22
Motor rating X / Z-axis	kW	2 / 3,6	2 / 3,6	2 / 3,6	2 / 3,6	2 / 3,6	2 / 3,6
Total power consumption	kVA	40	40	40	40	40	40
Measures and weights							
Overall dimensions (length x width x height) m		4x2,25x2,25	5,5x2,25x2,25	7,5x2,25x2,45	4x2,25x2,25	5,5x2,25x2,25	7,5x2,25x2,45
Weight	kg	4.100	5.600	7.600	4.500	6.000	8.000
Part No.		100350	100351	100352	100353	100354	100355



Numturn 660/2000 is shown
with Siemens control and optional accessories

Extensive standard equipment

- heavy ribbed machine bed with bed guides and wide V-blocks allow for heavy-duty machining
- headstock and main spindle are designed for constant precision and optimum temperature balance
- high-quality spindle bearings ensure constant precision during continuous operation
- the heavy-duty tailstock is easy to handle and features a high clamping force
- an automatic 8-station VDI tool turret is part of the standard package and ensures maximum flexibility and productivity
- hydraulic chuck with adjustable holding force included in standard equipment
- the machine housing can be completely closed and is easily accessible through a wide opening sliding door
- this series is available with Siemens 808D Advanced TTL or Fagor 8055i A-TC control
- controls and ergonomics correspond to the current Numturn generation and facilitate rapid familiarization
- smart central lubrication system for low-maintenance operation
- every machine purchase includes 1 day free training at our Wasbek (Germany) facilities

price on request



Standard Equipment:

Fagor 8055i A-TC or Siemens 808D Advanced TTLcontrol, 2 electronic hand-wheels, hydr. tailstock, 8-station tool turret acc. to VDI 30, hydraulic 3-jaw chuck 250 mm (Numturn 500), hydraulic 3-jaw chuck 300 mm (Numturn 660), automatic central lubrication, work lamp, operating tools, operating manual and programming instructions

Options	Art-Nr:
• Chain-type chip conveyor	251865
• Steady rest	252146
• Follow rest	252147

For available options for these machines, visit our website and search for Numturn 500 and Numturn 660 (product search)

VDI turret for 8 tools for inside and outside machining

Specifications Numturn		500/1000	500/1500	500/2000	660/1000	660/1500	660/2000
Working area							
Center width	mm	920	1.450	1.950	970	1.470	1.970
Max. turning diam. over bed	mm	500	500	500	660	660	660
Max. turning diam. over support	mm	300	300	300	450	450	450
Machining length (max.)	mm	750	1.230	1.730	730	1.230	1.730
Travel X axis	mm	260	260	260	350	350	350
Travel Z axis	mm	920	1.420	1.900	920	1.420	1.900
Headstock							
Spindle speed	1/min	60 - 2.000	60 - 2.000	60 - 2.000	60 - 2.000	60 - 2.000	60 - 2.000
Spindle mount		A2-8	A2-8	A2-8	A2-8	A2-8	A2-8
Lathe chuck Ø	mm	250	250	250	300	300	300
Spindle capacity with draw tube	mm	70	70	70	70	70	70
Feed							
X axis rapid feed	mm/min	4.000	4.000	4.000	6.000	6.000	6.000
Z axis rapid feed	mm/min	8.000	8.000	8.000	8.000	8.000	8.000
Tool Carrier							
Number of tool stations	pcs.	8	8	8	8	8	8
Number of tool stations							
Tailstock taper	MT	5	5	5	5	5	5
Tailstock quill diameter	mm	75	75	75	75	75	75
Tailstock quill stroke	mm	150	150	150	150	150	150
Accuracy							
Positioning accuracy X-/Z-axis	mm	± 0,006 / 0,008	± 0,006 / 0,008	± 0,006 / 0,008	± 0,006 / 0,008	± 0,006 / 0,008	± 0,006 / 0,008
Repeatability X-/Z-axis	mm	± 0,005 / 0,008	± 0,005 / 0,008	± 0,005 / 0,008	± 0,005 / 0,008	± 0,005 / 0,008	± 0,005 / 0,008
Drive Capacities							
Main spindle motor rating (cont./30 min)	kW	11 / 15	11 / 15	15 / 18,5	15 / 18,5	15 / 18,5	15 / 18,5
Torque axis X	Nm	10	10	10	10	10	10
Torque axis Z	Nm	15	15	15	15	15	15
Coolant pump motor rating	kW	0,125	0,125	0,125	0,125	0,125	0,125
Dimensions/Weight							
Dimensions (LxBxH)	m	3,12x1,76x1,84	3,65x1,76x1,84	4,12x1,75x1,84	3,12x1,97x1,84	3,62x1,97x1,84	4,12x1,97x1,84
Weight	kg	3.000	3.300	3.600	3.200	3.600	4.000
Part No. with Fagor Control		180157	180158	180159	180195	180196	180197
Part No. with Siemens Control		182060	182061	182062	182163	182164	182165



Numturn 420 CNC is shown

Extensive standard equipment

- The Numturn includes hydraulic chucks (200 mm) with adjustable holding force, and a 8-station tool turret ; Numturn Eco also includes a hand chuck and quick-change tool holder
- User-oriented cycle interface for easy parts programming - turning cycles with many programming options to create a complete parts program
- USB port for easy data transfers
- Numturn 420 with servo-drive for main spindle



VDI 30 Tool Turret with 8 stations (Numturn 420)

Price on request

Standard Equipment:

Siemens 808D Advanced TTL control, 2 electronic hand-wheels, hydraulic tailstock, hydraulic 3-jaw chuck (200 mm diam. for Numturn 420), 3-jaw hand chuck (200 mm diam. for Numturn 420 Eco), 8-station tool turret (Numturn 420), quick-change tool holder (Numturn Eco), automatic central lubrication, work lamp, operating tools, operator manual, and programming instructions

Options

Part No.

• Coolant Concentrate 5 Ltr.	103184
• Tool Holder WBD 25x120	103291
• Live Center MT 3	106750
• Live Center MT 4	106755
• Power Worker Metal Cutter	123040



Numturn 420 ECO is shown

Specifications Numturn

420 SI

420 ECO

Working area			
Workpiece length (max.)	mm	1.000	1.000
Turning diameter over bed	mm	420	420
Turning-Ø over support	mm	230	230
Travels			
Travel X-axis	mm	220	220
Travel Z-axis	mm	920	920
Headstock			
Spindle speed	1/min	60 - 3.000	60 - 3.000
Spindle mount		A2-6	A2-6
Spindle bore	mm	62	62
Spindle bore with draw tube	mm	48	48
Tooling			
Number of tool stations	Pieces	8	1
Accuracies			
Positioning accuracy X-axis	mm	0,006	0,006
Positioning accuracy Z-axis	mm	0,008	0,008
Repeatability X-axis	mm	0,005	0,005
Repeatability Z-axis	mm	0,008	0,008
Rapid feed			
Rapid feed X-axis	mm/min	4.000	4.000
Rapid feed Z-axis	mm/min	8.000	8.000
Tailstock			
Tailstock quill stroke	mm	100	100
Tailstock quill taper / Ø	mm	MK 4 / Ø 60	MK 4 / Ø 60
Drive capacity			
Motor rating main drive	kW	7,5	7,5
Motor rating coolant pump	kW	0,125	0,125
Motor rating X / Z axis	kW	1,5	1,5
Measures and weights			
Overall dimensions (length x width x height)	m	2,85x1,58x1,75	2,85x1,58x1,75
Weight	kg	2.750	2.750
Part No.		182189	182149



- Fanuc 0i-TD with Manual Guide 0i
- Spindle bore up to 360 mm

- This machine was designed for use in demanding petroleum industry applications and integrates decades of experience
- The wide machine bed features large, hardened and ground guideways and high rigidity
- Machining lengths up to 3000 mm - expandable to 16000 mm upon request
- Massive headstock with main spindle running in tapered roller bearings, and 2 lathe chuck mounts
- Spindle bore 280 and 360 mm (standard) - Up to 630 mm through-bore upon request
- Fanuc 0i-TF-V with Manual Guide 0i features advanced control technology and maximum reliability
- high-torque drives and preloaded ball screws on all axes
- Automatic 2-step gears with 2 infinitely variable speed ranges



Steady rest with large capacity

- Hardened and ground gears for effective power transmission
- Powerful main drive motor with 30 kW rating
- Heavy-duty 4-station tool holder with automatic tool changing function
- Including high-performance coolant system, and central lubrication unit

price on request



4-jaw chuck, at left side

Standard Equipment

Fanuc Oi-TF V with Manual Guide Oi, electronic hand-wheel, two 4-jaw faceplate lathe chucks 720 mm Ø (800 mm Ø for 3630), automatic 2-step gears, 4-station tool holder, steady rest 50-470 mm, coolant system, central lubrication, mechanical tailstock, work lamp, operating tools, operating manual and programming instructions

Options	Part No.
• E-TubeTurn 2830 CNC spare part package for 5 years for 180630	259114
• E-TubeTurn 3630 CNC spare part package for 5 years for 180631	259111
• Clamped Turning Tool Set 16/20/24 mm, 9-pc	108780
• Indexable Insert Set 16/20/24 mm, 30-pc	108782
• Coolant Concentrate 5 Ltr.	103184

Specifications TubeTurn CNC

		2830	3630
Working area			
Turning diameter over bed	mm	1.000	1.000
Turning-Ø over support	mm	650	620
Bed width	mm	600	755
Center height	mm	500	500
Machining length (max.)	mm	3.000	3.000
X axis travel	mm	600	610
Z axis travel	mm	2.800	2.800
Headstock			
Speed range	1/min	5 - 450	3 - 315
Spindle bore	mm	280	360
Feed			
Rapid feed X-/Z-axis	mm/min	4000 / 6000	4000 / 6000
Tooling			
Number of tool stations	Pieces	4	4
Accuracies			
Positioning accuracy X / Z axis	mm	0,03 / 0,06	0,03 / 0,06
Repeatability X / Z axis	mm	0,012 / 0,025	0,012 / 0,025
Tailstock			
Tailstock taper		MT 6	metric 80
Tailstock quill diameter	mm	120	160
Tailstock quill stroke	mm	250	300
Drive capacity			
Motor rating main drive	kW	18,5	30
Motor rating X / Z axis	kW	2,5	3
Total power consumption	kVA	35	50
Measures and weights			
Overall dimensions (length x width x height)	m	5,8x1,4x1,5	6,3x2x1,75
Weight	kg	8.000	13.000
Part No.		180630	180631



Extensive standard equipment

- heavy machine bed made of premium cast-iron with hardened and ground guideways
- Spindle bore from 130 to 225 mm
- massive headstock with high-precision spindle running in tapered roller bearings, and 2 lathe chuck mounts on both sides
- gears are hardened and ground
- high torque at the working spindle ensures high chip removal rates when machining parts with large diameters
- powerful main drive motor with 7,5 kW power
- central, practical controls for feeds and thread leads
- wide spectrum of inch and metric threads
- heavy-duty 4-station tool holder
- coolant system is included
- taper turning unit with 500 mm turning length



Spindle bores up to 225 mm



Taper turning unit is included

price on request



Standard Equipment:

3-axis position indicator, 4-station tool holder, two 3-jaw chuck 400 mm (TubeTurn 135), 3-jaw chuck Ø 500 mm (TubeTurn 200 and 225), 4-jaw face plate chuck Ø 520 mm (TubeTurn 200 and 225), Taper turning unit, coolant system, operator manual

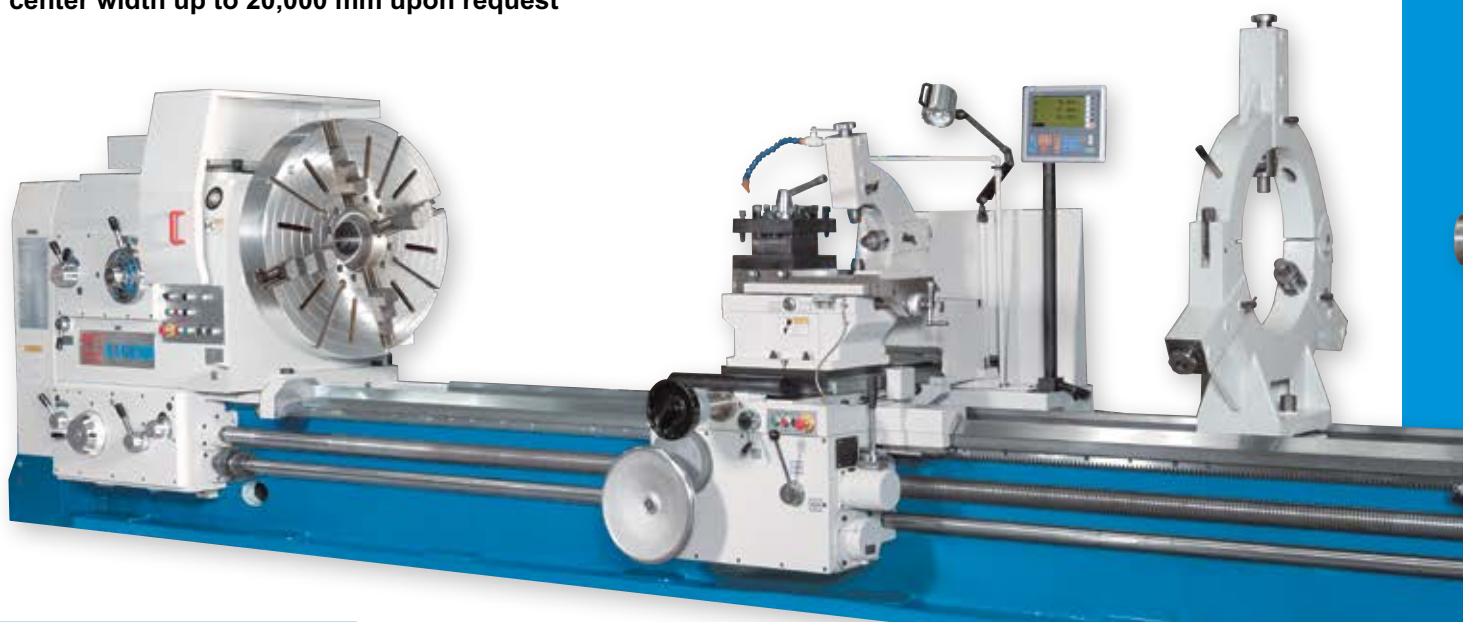
Options	Part No.
• Steady rest 320 mm	251055
• Quick-Change Tool Holder Set WC	103196

For additional options for this machine, visit our website and search for TubeTurn (Product Search)

The rear-mounted lathe chuck ensures increased stability for long workpieces

Specifications TubeTurn		135	200	225
Working area				
Workpiece length (max.)	mm	1.300	1.300	1.300
Turning diameter over bed	mm	630	630	630
Turning diameter over support	mm	350	350	380
X-axis travel	mm	340	340	340
Z-axis travel	mm	1.300	1.300	1.300
Headstock				
Speed range	rpm	14 - 496	24 - 300	24 - 300
Spindle Torque (max.)	Nm	1.920	2.050	1.920
Lathe chuck diameter	mm	400	500	500
Spindle bore	mm	130	200	225
Spindle bore in chuck	mm	130	200	225
Rapid feed				
Rapid feed X-axis	mm/min	3.000	3.000	3.000
Rapid feed Z-axis	mm/min	4.000	4.000	4.000
Tool head				
Number of tool stations	pcs.	4	4	4
Tool shank dimensions	mm	32x32	32x32	32x32
Tailstock				
Tailstock taper	MT	5	5	5
Tailstock quill diameter	mm	100	100	100
Tailstock quill stroke	mm	205	230	230
Drive capacity				
Motor rating main drive	kW	7,5	7,5	7,5
Total power consumption	kVA	8,5	9	9
Measures and weights				
Overall dimensions (length x width x height)	m	3,66x1,45x1,39	3,66x1,45x1,39	3,66x1,45x1,41
Weight	kg	4.100	4.190	4.264
Part No.		301739	301740	301741

Machines with center heights up to 1,250 mm and center width up to 20,000 mm upon request



price on request

Extensive standard equipment

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)		rpm	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/U	0.064 - 12			0.064 - 12			
	- Z-axis	mm/U	0.032 - 6			0.032 - 6			
	- Z1-axis	mm/U	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	GPZ	0,5 - 60 (48)			0,5 - 60 (48)			
tailstock quill taper diam.		mm	metric 80 / 160			MT 6 / 200			
tailstock quill stroke		mm	300			300			
tailstock cross adjustment		mm	± 2,5			± 2,5			
headstock motor rating / voltage		kW / V	22 / 400			30 / 400			
overall dimensions (LxWxH)		m	6,04 x 2,06	8,04 x 2,06	11,04 x 2,06	5,2 x 2,2	6,1 x 2,2	8,1 x 2,2	12,92 x 2,38
			x 2,23	x 2,23	x 2,23	x 2,4	x 2,4	x 2,4	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

Options

Part No.

steady rest for series

• DL E Heavy 620, 220 - 630 mm	250 642
• DL E Heavy 800, 260 - 900 mm	250 644
• DL E Heavy 1000, 500 - 1100 mm	250 646

follow rest for series

• DL E Heavy 800, 50 - 220 mm	250 643
• DL E Heavy 1000, 50 - 220 mm	250 645

DL E Heavy 620/5000 shown
3-axis position indicator included



Rest diameters up to 1100 mm (option for DL E Heavy 1000)

- **Powerful 22-kW motor ensures very high chip removal capacity**
- Heavy, large cast-iron body and machine bed with strong ribbing to reduce vibrations to a minimum
- Induction hardened and ground guideways
- Sturdy multi-disk clutch for headstock drive
- Separate rapid feed motor for X and Z-axis
- Joystick control for X and Z feeds is mounted directly to support
- Motorized positioning of the tailstock (all models with a minimum center width of 3000 mm)

Standard Equipment:

3-axis position indicator, 4-jaw independent chuck (DL E 500 and 620 series $\varnothing = 1000$ mm, DL E 800 series $\varnothing = 1400$ mm, DL E 1000 series $\varnothing = 1600$ mm), coolant system, steady rest (DL E 500 series 50 - 470 mm, DL E 620 series 50 - 590 mm, DL E 800 and 1000 series 220 - 630 mm), follow rest 50 - 220 mm (except DL E 800 and 1000 series), motorized tailstock (all models with a minimum center width of 3000 mm), LED work lamp, centers, reducing sleeves, foundation bolts, central lubrication, operating tools, operator manual

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	mm	- over bed (max)	1000				1250			
	mm	- over support (max)	650				900			
travel	mm	- X axis	510				630			
	mm	- Z axis	1300	2800	4800	7800	1300	2800	4800	7800
	mm	- Z1 axis	300				300			
workpiece weight (max.)	kg		6000				6000			
bed width	mm		755				755			
top-slide swivel range			$\pm 180^\circ$				$\pm 180^\circ$			
spindle speed (forward/reverse)	rpm		3,15 - 315 (21) / 3,15 - 315 (12)				3,15 - 315 (21) / 3,15 - 315 (12)			
spindle bore	mm		130				130			
spindle mount			ISO A2-15				ISO A2-15			
feed	mm/U	- X axis	0,064 - 12				0,064 - 12			
	mm/U	- Z axis	0,032 - 6				0,032 - 6			
	mm/U	- Z1 axis	0,016 - 3				0,016 - 3			
rapid feed	mm/min	- X axis	1870				1870			
	mm/min	- Z axis	3740				3740			
thread cutting	mm	- metric	1 - 120 (45)				1 - 120 (45)			
	DP	- diametric	30 - 1/4 (42)				30 - 1/4 (42)			
	mm	- module	0,5 - 60 (46)				0,5 - 60 (46)			
	GPZ	- Whitworth	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		$\pm 2,5$				$\pm 2,5$			
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



Extensive standard equipment

- Extra heavy, wide machine bed with heavy ribbing and one-piece mono-block construction
- Induction-hardened and ground guide slots ensure long-term accuracy and minimum wear
- Massive headstock with high-precision main spindle on a tapered roller bearing with 100 mm spindle bore for excellent stability under heavy loads
- Very quiet operation at maximum spindle speed
- All guideways are generously sized and gears are hardened and ground

Specifications DL S		425/1500	425/3000	425/4000	425/5000	515/1500	515/3000	515/4000	515/5000
Center width	mm	1500	3000	4000	5000	1500	3000	4000	5000
Turning diameter over bed	mm			850				1000	
Turning diameter over support	mm			520				720	
Turning diameter over bridge	mm			1150				1350	
X axis travel	mm			550				550	
Z axis travel	mm	1380	2800	3800	4800	1380	2800	3800	4800
Z1 axis travel	mm			250				250	
Tool dimensions	mm			32 x 32				32 x 32	
Max. part weight	kg			4000				4000	
Bridge length	mm			470				470	
Bed width	mm			600				600	
Speed range	rpm			5 - 630				5 - 630	
Spindle bore	mm			100				100	
Spindle mount				A2 - 11				A2 - 11	
X axis feed	mm/min			(64) 0,04 - 4,8				(64) 0,04 - 4,8	
Z axis feed	mm/min			(64) 0,08 - 9,6				(64) 0,08 - 9,6	
Z1 axis feed	mm/min			(64) 0,02 - 2,4				(64) 0,02 - 2,4	
X axis rapid feed	mm/min			1800				1800	

price on request

- Manual 4-step auxiliary gearbox, premium frequency drive technology combined with main spindle motor ratings up to 18.5 kW allow exact tuning of speed and torque for heavy-duty machining
- Joystick control for X and Z-feeds is mounted directly to support
- Rapid feed for X and Z-axes allow quick support positioning and less down-time
- Adjustable overload clutch in apron protects the feed mechanics from damage and failure



Standard Equipment:

3-axis position indicator, 4-jaw faceplate chuck Ø 800 mm (DL S 425), 4-jaw faceplate chuck Ø 1000 mm (DL S 515), 4-station tool holder, steady rest 40 - 350 mm (except 425/1500 S and 515/1500 S), follow rest 30 - 120 mm (except 425/1500 S and 515/1500 S), steady center, reducing sleeve, chuck guard, support guard, coolant system, work lamp, operating tool, operator manual

Specifications DL S		425/1500	425/3000	425/4000	425/5000	515/1500	515/3000	515/4000	515/5000
Z axis rapid feed	mm/min		3640				3640		
Top-slide swivel range			90°				90°		
Tapping - metric	mm		(56) 1 - 120				(56) 1 - 120		
Tapping- inch			(56) 30 - 1/4				(56) 30 - 1/4		
Thread cutting, module	m		(56) 0,5 - 60				(56) 0,5 - 60		
Thread cutting, diametric	DP		(56) 60 - 0,5				(56) 60 - 0,5		
Tailstock quill taper diam.	mm		MK 6 / Ø 120				MK 6 / Ø 120		
Tailstock quill stroke	mm		250				250		
Main motor rating	kW		15				18,5		
Feed motor rating	kW		1,1				1,1		
Coolant system motor rating	kW		0,15				0,15		
Total connected load	kVA		20				23		
Voltage	V		400				400		
Dimensions (LxWxH)	mm	3650x1500 x1500	5150x1500 x1500	6150x1500 x1500	7150x1500 x1500	3650x1500 x1600	5150x1500 x1600	6150x1500 x1600	7150x1500 x1600
Weight	kg	5600	5900	6800	8300	5600	6800	8400	9500
Part No. with position indicator		301 510	301 511	301 512	301 513	301 514	301 515	301 516	301 517



Support with top slide

Options

Part No.

DL 425 S:

• Motorized tailstock movement	251 157
• 3-jaw chuck (500 mm)	251 158
• Rest (100 - 520 mm)	251 156
• Coolant concentrate 5 L	103 184

DL 515 S:

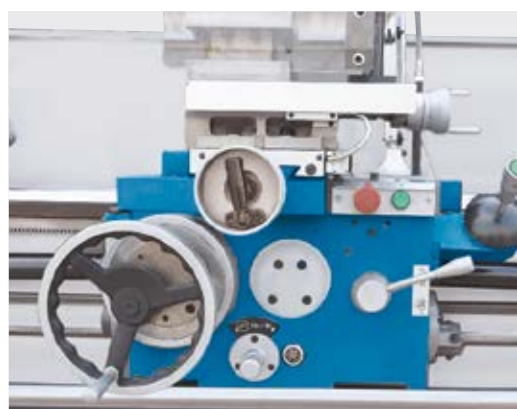
• Motorized tailstock movement	251 161
• 3-jaw chuck (500 mm)	251 162
• Rest (300 - 720 mm)	251 160
• Coolant concentrate 5 L	103 184

For additional options for this machines, visit our website and search for DL S (product search)



- Extensive standard equipment
- Taper turning unit included
- Rapid feed on X-axis and Z-axis
- Powerful main drive

- The heavy, generously sized lathe bed features a removable bridge for machining of workpieces with larger diameters
- Gears, transmission shafts, and guideways are hardened and ground to guarantee very quiet operation and long tool life
- An oil pump ensures reliable lubrication of the main spindle and main drive
- The rugged design of all components ensures maximum accuracy, quiet operation, and superior machining performance
- This series also features a large spindle bore
- A central lubrication system supplies all guideways with lubrication and simplifies maintenance
- The apron runs in an oil bath for low maintenance and high reliability
- The main spindle's manual clutch simplifies working with heavy workpieces



All controls at the support feature an intuitive design, an E-Stop switch is provided for safety

- Stops for the automatic feed can be set across the entire travel distance
- A linear and transverse rapid feed reduces downtime
- Taper turning and quick-change tool holder system are part of the extensive standard equipment

Price on request



Standard Equipment

3-jaw chuck Ø 325 mm, 4-jaw chuck Ø 400 mm, chip tray, coolant system, dead center, follow rest 20 - 100 mm, face plate 630 mm, oil pistol, includes fixed splash guard (wall), steady rest 100-240 mm, work lamp, 3-axis position indicator, taper turning unit, quick tool changer head WC, Quick change tool holder (4 pcs), bed stop with stop turret on support, operating tools, operator manual

Options

For additional options for this machine, visit our website and search for Sinus Plus (Product Search)

Adjustable cam stops automatically stop the automatic feed, and the active cam is selected by rotating and engaging the stop shaft

Specifications Sinus Plus		330/1000	330/1500	330/2000	330/3000	400/1000	400/1500	400/2000	400/3000
Working area									
Workpiece length (max.)	mm	1.000	1.500	2.000	3.000	1.000	1.500	2.000	3.000
Turning diameter over bed	mm	660	660	660	660	770	770	770	770
Turning-Ø over support	mm	420	420	420	420	575	575	575	575
Turning diameter without gap bridge	mm	870	870	870	870	1.050	1.050	1.050	1.050
Gap bridge length	mm	230	230	230	230	230	230	230	230
Bed width	mm	405	405	405	405	405	405	405	405
Travels									
Travel Z1-axis	mm	145	145	145	145	145	145	145	145
Swing range of top slide		70°	70°	70°	70°	70°	70°	70°	70°
Headstock									
Spindle speed	1/min	36 - 1.600	36 - 1.600	36 - 1.600	36 - 1.600	36 - 1.600	36 - 1.600	36 - 1.600	36 - 1.600
Spindle bore	mm	105	105	105	105	105	105	105	105
Spindle mount		D1-8	D1-8	D1-8	D1-8	D1-8	D1-8	D1-8	D1-8
Feed									
Feed X-axis	mm/R	0,027 - 1,07	0,027 - 1,07	0,027 - 1,07	0,027 - 1,07	0,027 - 1,07	0,027 - 1,07	0,027 - 1,07	0,027 - 1,07
Feed Z-axis	mm/R	0,063 - 2,52	0,063 - 2,52	0,063 - 2,52	0,063 - 2,52	0,063 - 2,52	0,063 - 2,52	0,063 - 2,52	0,063 - 2,52
Tapping									
Tapping, metric	mm	(22) 1 - 14	(22) 1 - 14	(22) 1 - 14	(22) 1 - 14	(22) 1 - 14	(22) 1 - 14	(22) 1 - 14	(22) 1 - 14
Tapping, diametric	DP	(24) 4 - 56	(24) 4 - 56	(24) 4 - 56	(24) 4 - 56	(24) 4 - 56	(24) 4 - 56	(24) 4 - 56	(24) 4 - 56
Tapping, module	mm	(18) 0,5 - 7	(18) 0,5 - 7	(18) 0,5 - 7	(18) 0,5 - 7	(18) 0,5 - 7	(18) 0,5 - 7	(18) 0,5 - 7	(18) 0,5 - 7
Tapping, whitworth	TPI	(26) 28 - 2	(26) 28 - 2	(26) 28 - 2	(26) 28 - 2	(26) 28 - 2	(26) 28 - 2	(26) 28 - 2	(26) 28 - 2
Rapid feed									
Rapid feed X-axis	mm/min	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900
Rapid feed Z-axis	mm/min	4.000	4.500	4.500	4.500	4.500	4.500	4.500	4.500
Tailstock									
Tailstock taper	MT	5	5	5	5	5	5	5	5
Tailstock quill diameter	mm	75	75	75	75	75	75	75	75
Tailstock quill stroke	mm	150	150	150	150	150	150	150	150
Tailstock traverse adjustment	mm	± 10	± 10	± 10	± 10	± 10	± 10	± 10	± 10
Drive capacity									
Motor rating main drive	kW	9	9	9	9	9	9	9	9
Supply voltage	V	400	400	400	400	400	400	400	400
Measures and weights									
Overall dimensions	m	2,5x1,1x1,45	3x1,1x1,45	3,5x1,1x1,45	4,5x1,1x1,45	2,5x1,1x1,54	3x1,1x1,54	3,5x1,1x1,54	4,5x1,1x1,54
Weight	kg	3.000	3.200	3.400	3.900	3.100	3.300	3.500	4.000
Part No.		300040	300041	300042	300043	300044	300045	300046	300047



Sinus D 330/2000 shown

- Extensive standard equipment
- Total price including 3-axis position indicator (assembled)

- removable bridge (250 mm) for machining of large parts with diameters up to 1035 mm
- high accuracy and low-noise operation even at high cutting power
- heavy and large bed
- hardened guideways (>HB 400)
- 105 mm spindle capacity for machining of large parts
- manual central lubrication
- automatic lubrication of headstock and main drive
- protected leadscrew
- overload protection for feed shaft and leadscrew
- support moves in linear and cross direction via rapid feed



Rests ensure maximum precision when machining long workpieces

Price on request



Taper turning unit is included

Standard Equipment

3-axis position indicator, 3-jaw chuck Ø 315 mm, 4-jaw face plate chuck Ø 400 mm, face plate Ø 500 mm (Sinus 400), face plate Ø 450 mm (Sinus 330), dog plate, quick tool changer head, Quick change tool holder, includes fixed splash guard (wall), coolant system, steady and follow rest, taper turning unit, chuck guard, work lamp, reducing sleeves, dead center, operating tools, operator manual

Options

For available options for this machine, visit our website and search for Sinus D (Product Search)

Specifications Sinus D		330/1500	330/2000	330/3000	400/1500	400/2000	400/3000
Working area							
Workpiece length (max.)	mm	1.500	2.000	3.000	1.500	2.000	3.000
Turning diameter over bed	mm	660	660	660	800	800	800
Turning-Ø over support	mm	440	440	440	570	570	570
Turning diameter without gap bridge	mm	900	900	900	1.035	1.035	1.035
Gap bridge length	mm	320	320	320	330	330	330
Bed width	mm	400	400	400	400	400	400
Travels							
Travel X-axis	mm	368	368	368	420	420	420
Travel Z1-axis	mm	230	230	230	230	230	230
Swing range of top slide		45°	45°	45°	70°	70°	70°
Headstock							
Spindle speed	1/min	(16) 25 - 1.600	(16) 25 - 1.600	(16) 25 - 1.600	(16) 25 - 1.600	(16) 25 - 1.600	(16) 25 - 1.600
Spindle bore	mm	105	105	105	105	105	105
Spindle mount		D1-8	D1-8	D1-8	D1-8	D1-8	D1-8
Spindle taper	MT	5	5	5		5	5
Feed							
Feed X-axis (25)	mm/R	0,022 - 0,74	0,022 - 0,74	0,022 - 0,74	0,022 - 0,74	0,022 - 0,74	0,022 - 0,74
Feed Z-axis (25)	mm/R	0,044 - 1,48	0,044 - 1,48	0,044 - 1,48	0,044 - 1,48	0,044 - 1,48	0,044 - 1,48
Tapping							
Tapping, metric	mm	(54) 0,45 - 120	(54) 0,45 - 120	(54) 0,45 - 120	(54) 0,45 - 120	(54) 0,45 - 120	(54) 0,45 - 120
Tapping, diametric	DP	(42) 0,88 - 160	(42) 0,88 - 160	(42) 0,88 - 160	(42) 0,88 - 160	(42) 0,88 - 160	(42) 0,88 - 160
Tapping, module	mm	(46) 0,25 - 60	(46) 0,25 - 60	(46) 0,25 - 60	(46) 0,25 - 60	(46) 0,25 - 60	(46) 0,25 - 60
Tapping, whitworth	TPI	(54) 7/16 - 80	(54) 7/16 - 80	(54) 7/16 - 80	(54) 7/16 - 80	(54) 7/16 - 80	(54) 7/16 - 80
Rapid feed							
Rapid feed X-axis	mm/min	2.000	2.000	2.000	2.000	2.000	2.000
Rapid feed Z-axis	mm/min	4.000	4.000	4.000	4.000	4.000	4.000
Tailstock							
Tailstock taper	MT	5	5	5	5	5	5
Tailstock quill diameter	mm	90	90	90	90	90	90
Tailstock quill stroke	mm	235	235	235	235	235	235
Tailstock traverse adjustment	mm	± 12,5	± 12,5	± 0,5 in	± 11	± 11	± 11
Drive capacity							
Motor rating main drive	kW	7,5	7,5	7,5	7,5	7,5	7,5
Supply voltage	V	400	400	400	400	400	400
Measures and weights							
Overall dimensions (length x width x height)	m	3,21x1,23x1,6	3,71x1,23x1,6	4,71x1,23x1,6	3,24x1,14x1,14	3,74x1,14x1,91	4,74x1,14x1,91
Weight	kg	2.800	2.900	3.300	3.220	3.500	3.870
Part No.		300010	300011	300012	300015	300013	300014



Turnado 230/1500 V is shown with 3-axis position indicator and infinitely variable speed

- **Extensive standard equipment**
- **Includes 3-axis position indicator and stop spindle (fully assembled)**

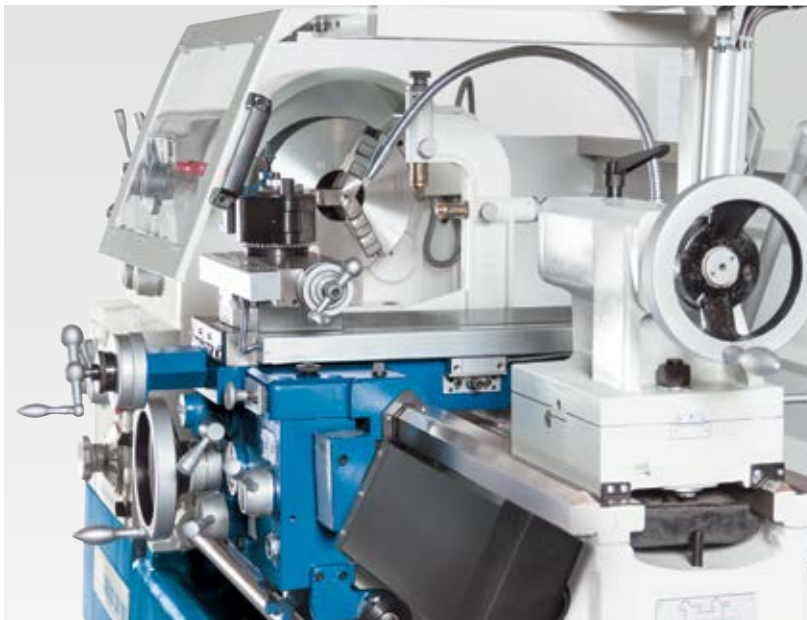
- cost-effective, lasting value
- practically arranged control panel with ergonomic layout of selection levers
- Camlock spindle mount D1-6 and D1-8
- wide bed, ground and hardened
- offset tailstock for taper turning
- large number of thread leads
- removable gap bridge for machining of large diameter
- stop spindle with adjustable travel stops



Constant cutting speed for flawless surfaces

- **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
- 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 quality comparable to CNC lathes

price on request



Large steady and follow rests are included

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), quick-action tool holder head, quick-action tool changer, coolant system, steady and follow rests, stop spindle, splatter guard, chuck guard, foot brake pedal, LED work lamp, reducing sleeve, steady center, thread gauge, operating tools, operator manual

Options	Part No.
• Quick-Set Spindle Bore Stop Size 7 56-66mm	103022
• Pivoted Mounts LK 6	103332
• 4-Jaw Lathe Chuck Steel 315 mm	146483

For additional options for these machines, visit our website and search for Turnado (Product Search)

Specifications Turnado		230/1000	230/1500	230/2000	280/1500	280/2000
Working Area						
Workpiece length (max.)	mm	1.000	1.500	2.000	1.428	1.928
Turning diameter over bed	mm	460	460	460	560	560
Turning diameter over support	mm	224	224	224	355	355
Turning diameter over gap bridge	mm	690	690	690	785	785
Gap bridge length / Bed width	mm	155 / 300	155 / 300	155 / 300	170 / 350	170 / 350
Swing range of top slide	°	± 52	± 52	± 52	± 52	± 52
Travels						
Travel X-axis / Z1-axis	mm	285 / 128	285 / 128	285 / 128	316 / 130	316 / 130
Headstock						
Spindle speed						
- with positioning indicator	1/min	(12) 25-2.000	(12) 25-2.000	(12) 25-2.000	(12) 25-1.600	(12) 25-1.600
Spindle with infinitely variable speed adjustment	1/min	L 30-600 H 600-3.000	L 30-600 H 600-3.000	L 30-600 H 600-3.000	L 25-200 H 200-1.600	L 25-200 H 200-1.600
Spindle bore	mm	58	58	58	80	80
Spindle mount / taper		Camlock D1-6 / MK6	Camlock D1-6 / MK6	Camlock D1-6 / MK6	Camlock D1-8 / MK7	Camlock D1-8 / MK7
Feed						
Feed X-axis	mm/U	0,014-0,784	0,014-0,784	0,014-0,784	0,02-0,573	0,02-0,573
Feed Z-axis	mm/U	0,031-1,7	0,031-1,7	0,031-1,7	0,059-1,646	0,059-1,646
Tapping						
Tapping, metric	mm	(47) 0,1-14	(47) 0,1-14	(47) 0,1-14	(47) 0,1-14	(47) 0,1-14
Tapping, diametric	DP	(50) 4-112	(50) 4-112	(50) 4-112	(50) 4-112	(50) 4-112
Tapping, module	m	(39) 0,1-7	(39) 0,1-7	(39) 0,1-7	(39) 0,1-7	(39) 0,1-7
Tapping, whitworth	TPI	(60) 2-112	(60) 2-112	(60) 2-112	(60) 2-112	(60) 2-112
Tailstock						
Tailstock quill taper / Ø	mm	MK4 / 60	MK4 / 60	MK4 / 60	MK5 / 75	MK5 / 75
Tailstock quill stroke	mm	120	120	120	180	180
Tailstock traverse adjustment	mm	± 13	± 13	± 13	± 12	± 12
Drive Capacity						
Motor rating / voltage	kW/V	5,5 / 400	5,5 / 400	5,5 / 400	5,5 / 400	5,5 / 400
Motor rating with infinitely var. speed adjustment	kW/V	7,5 / 400	7,5 / 400	7,5 / 400	7,5 / 400	7,5 / 400
Measures and Weights						
Overall dimensions (l x w x h)	m	2,2x1,08x1,34	2,75x1,08x1,34	3,25x1,08x1,34	2,84x1,15x1,34	3,34x1,15x1,46
Weight	kg	1.720	1.970	2.100	2.370	2.720
Part No. with pos. indicator and infinitely variable speed adjustment		320570	320571	320575	320572	320573
Part No. with pos. indicator		320555	320558	320557	320559	320560



Shown with optional equipment

- Extensive standard Equipment
- Speeds up to 3000 rpm
- Constant cutting speed



Steady and follow rests are included

- **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 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
- 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
- incl. 3-axis position indicator with integrated spindle speed display, fully assembled

Price on request



Quick-change tool holder

Standard Equipment

3-axis position indicator, 4-jaw face plate chuck Ø 250 mm, face plate Ø 350 mm, change gears, quick change tool holder head WB, quick change tool holder WBD 25120, coolant system, steady and follow rest, turret stop, micrometer stop, chip tray, includes fixed splash guard (wall), protective shield for support, chuck guard, foot brake pedal, halogen lights, thread gauge, operating tools, operator manual

Options

Part No.

• 3-Jaw Lathe Chuck Steel 200 mm	146372
• Tool Holder WBD 32x140	103294
• Turning Tool Set 8 pcs., 20 mm	108700

For additional options for this machine, visit our website and search for V-Turn (Product Search)

Specifications

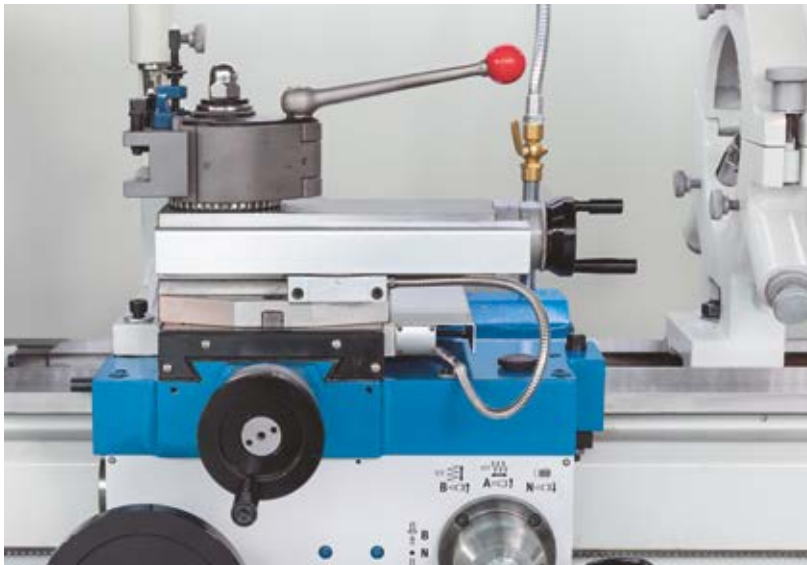
		V-Turn 410/1000	V-Turn 410/1500
Working area			
Center width	mm	1.000	1.500
Center height	mm	205	205
Turning diameter over bed	mm	380	380
Turning diameter over gap bridge	mm	580	580
Turning-Ø over support	mm	255	255
Gap bridge length	mm	250	190
Bed width	mm	250	250
Travels			
Travel X-axis	mm	210	210
Travel Z1-axis	mm	140	140
Swing range of top slide		± 45°	± 45°
Headstock			
Speed range, high	1/min	550 - 3.000	550 - 3.000
Speed range, low	1/min	30 - 550	30 - 550
Spindle bore	mm	52	52
Spindle mount		Camlock D1-6	Camlock D1-6
Spindle taper	MT	6	6
Feed			
Feed X-axis	mm/R	0,025 - 0,85	0,025 - 0,85
Feed Z-axis	mm/R	0,05 - 1,7	0,05 - 1,7
Tapping			
Tapping, metric	mm	(39) 0,2-14	(39) 0,2-14
Tapping, diametric	DP	(21) 8-44	(21) 8-44
Tapping, module	mm	(18) 0,3 - 3,5	(18) 0,3 - 3,5
Tapping, whithworth	TPI	(45) 2-72	(45) 2-72
Tailstock			
Tailstock quill diameter	mm	50	50
Tailstock taper	MT	4	4
Tailstock quill stroke	mm	120	120
Tailstock traverse adjustment	mm	± 13	± 13
Drive capacity			
Motor rating main drive	kW	5,5	5,5
Supply voltage	V	400	400
Measures and weights			
Overall dimensions (length x width x height)	m	1,94x1x1,32	2,44x1x1,32
Weight	kg	1.200	1.800
Part No.		300820	300821



Extensive standard equipment

- incl. 3-axis position indicator with integrated spindle speed display, fully assembled
- The redesigned machine enclosure and added safety features make this machine even more ergonomic, complementing functionality and design
- 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 quality comparable to CNC lathes
- A heavily ribbed machine bed, rigid headstock and a massive one-piece cast-iron stand form a solid machine base
- Wide, induction-hardened guideways ensure superior turning results and long life
- Facing and top slides feature adjustable guideways and spindle nuts
- High-precision pre-loaded spindle bearings ensure superior concentricity and load capacity
- A powerful 5.5 kW main spindle motor ensures rapid acceleration and powerful chip removal across the entire speed range

Price on request



Extensive accessories, including quick-change tool holder system



Central lubrication is integrated into the support for easy maintenance and handling

Specifications			V-Turn 410 PRO
Working area			
Center width	mm		1.000
Center height	mm		205
Turning diameter over bed	mm		380
Turning diameter over gap bridge	mm		580
Turning-Ø over support	mm		255
Gap bridge length	mm		250
Bed width	mm		250
Travels			
Travel X-axis	mm		210
Travel Z1-axis	mm		140
Swing range of top slide			± 45°
Headstock			
Speed range, high	1/min		550 - 3.000
Speed range, low	1/min		30 - 550
Spindle bore	mm		52
Spindle mount			Camlock D1-6
Spindle taper	MT		6
Feed			
Feed X-axis	mm/R		0,013 - 0,45
Feed Z-axis	mm/R		0,026 - 0,9
Tapping			
Tapping, metric	mm		(39) 0,2-14
Tapping, diametric	DP		(21) 8-44
Tapping, module	mm		(18) 0,3 - 3,5
Tapping, whithworth	TPI		(45) 2-72
Tailstock			
Tailstock quill diameter	mm		50
Tailstock taper	MT		4
Tailstock quill stroke	mm		120
Tailstock traverse adjustment	mm		± 13
Drive capacity			
Motor rating main drive	kW		5,5
Supply voltage	V		400
Measures and weights			
Overall dimensions (length x width x height)	m		1,94x1x1,5
Weight	kg		1.210
Part No.			300822

- Back-gearing ensures high torque for highly efficient machining
- the extensive features of the X.Pos Position Indicator are complemented here with a digital speed indicator and an easy to program auxiliary function

Standard Equipment

3-axis position indicator, 4-jaw face plate chuck Ø 250 mm, face plate Ø 350 mm, change gears, quick change tool holder head WB, quick change tool holder WBD 25120, coolant system, steady and follow rest, chip tray, includes fixed splash guard (wall), protective shield for support, setup elements, operating tools, operator manual

Options	Part No.
• 3-Jaw Lathe Chuck Steel 200 mm	146372
• Quick-Set Spindle Bore Stop Size 6 46-58mm	103020
• Coolant Concentrate 5 Ltr.	103184
• Live Center MT 4	106755
• Oscillation Element LK 3	103330
• Accessory-Set MT 4 8-pc.	104594
• Power Worker Metal Cutter	123040
• Live Centers, assortment MT 4	106790
• Measuring Tool Set M5	108344



Extensive standard equipment

- cast-iron bed, heavily ribbed
- induction-hardened and precision-ground box ways
- headstock with Camlock D1-4" mount, bore diam. 38 mm, run in 2 adjustable tapered roller bearings
- tailstock can be moved ± 10 mm for taper turning
- guides are adjustable via tapered gibbs

price on request



steady and follow rests included in standard package



Quick-action tool holder included



Positioning indicator on X, Z and Z1 axes

Specifications Basic Plus

Working area		
Center width	mm	810
Turning diameter over bed	mm	300
Turning-Ø over support	mm	178
Turning diameter over gap bridge	mm	430
Bed width	mm	180
Travels		
Travel X-axis	mm	155
Travel Z1-axis	mm	95
Swing range of top slide		± 60°
Headstock		
Spindle speed	1/min	(9) 60 - 1.550
Spindle bore	mm	38
Spindle mount		Camlock D1-4
Spindle taper	MT	5
Feed		
Feed X-axis	mm/R	0,014 - 0,38
Feed Z-axis	mm/R	0,052 - 1,392
Tapping		
Tapping, metric	mm	(26) 0,4-7
Tapping, whithworth	TPI	(34) 4-56
Tailstock		
Tailstock quill diameter	mm	32
Tailstock taper	MT	3
Tailstock quill stroke	mm	100
Tailstock traverse adjustment	mm	± 10
Drive capacity		
Motor rating main drive	kW	1,1
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	1,6x0,75x1,27
Weight	kg	520
Part No.		300809



Option: Turret MT 3

Standard Equipment

3-axis position indicator, 3-jaw chuck Ø 160 mm, 4-jaw face plate chuck Ø 200 mm, face plate Ø 250 mm, quick change tool holder, quick change tool holder head, steady and follow rests, chip tray, includes fixed splash guard (wall), chuck guard, base, change gears, reducing sleeves, dead center, thread gauge, operating tools, operator manual

Options	Part No.
• Quick-Set Spindle Bore Stop Size 4 30-38mm	103016
• Turret Head MT 3	105049
• 4-Jaw Lathe Chuck Steel 160 mm	116600

For available options for this machine, please visit our website and search for Basic Plus (Product Search)

Basic 180 Super • V

The highlight of the Basic series – powerful and fully equipped

Extensive Standard Equipment



Basic 180 V

- Speeds up to 3000 rpm
- Constant cutting speed

Basic 180

- cast-iron bed, heavily ribbed
- all box ways 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
- tailstock can be moved ± 10 mm for taper turning
- guides are adjustable via tapered gibs
- test certificate in accordance with DIN
- including 3-axis position indicator, fully assembled

Basic 180 V

with infinitely variable speed

- position indicator with speed display
- infinitely variable spindle speed on 2 gear levels
- speed up to 3000 min⁻¹
- constant cutting speed: speed adapts to the part radius - constant speed ensures uniform quality finish at any diameter.
- main motor rating 4 kW

price on request



Standard Equipment

3-axis position indicator, 4-jaw face plate chuck Ø 200 mm, face plate Ø 320 mm, change gears, quick change tool holder head WE, quick change tool holder WED 20100, coolant system, steady and follow rest, chip tray, includes fixed splash guard (wall), chuck guard, foot brake pedal, base, work lamp, micrometer longitudinal stop, reducing sleeves, dead center, thread gauge, operating tools, operator manual

Options

Part No.

• Oscillation element LT 3	103330
• Live Center MT 3	106750
• 4-Jaw Lathe Chuck Steel 200 mm	116601

For additional options for this machine, visit our website and search for Basic 180 (Product Search)

Select the optimum spindle speed for the Basic 180 Super via its 16-step main drive

Specifications

Basic 180 Super

Basic 180 V

Working area

Center width	mm	1.000	1.000
Turning diameter over bed	mm	356	356
Turning-Ø over support	mm	220	220
Turning diameter over gap bridge	mm	506	506
Gap bridge length	mm	206	206
Bed width	mm	206	206

Travels

Travel X-axis	mm	178	178
Travel Z1-axis	mm	92	92
Swing range of top slide		± 50°	± 50°

Headstock

Spindle speed	1/min	(16) 45 - 1.800	30 - 3.000
Spindle bore	mm	38	38
Spindle mount		Camlock D1-4	Camlock D1-4
Spindle taper	MT	5	5

Feed

Feed X-axis	mm/R	0,015 - 0,22	0,015 - 0,22
Feed Z-axis	mm/R	0,043 - 0,653	0,043 - 0,653

Tapping

Tapping, metric	mm	(37) 0,4-7	(37) 0,4-7
Tapping, whithworth	TPI	(28) 4-56	(28) 4-56

Tailstock

Tailstock quill diameter	mm	45	45
Tailstock taper	MT	3	3
Tailstock quill stroke	mm	120	120
Tailstock traverse adjustment	mm	± 10	± 10

Drive capacity

Motor rating main drive	kW	2,4	4
Supply voltage	V	400	400

Measures and weights

Overall dimensions (length x width x height)	m	1,95x0,79x1,2	1,95x0,79x1,2
Weight	kg	880	880
Part No.		300805	300807

Basic 170 Super

Solid Precision Bench Lathe with large center width



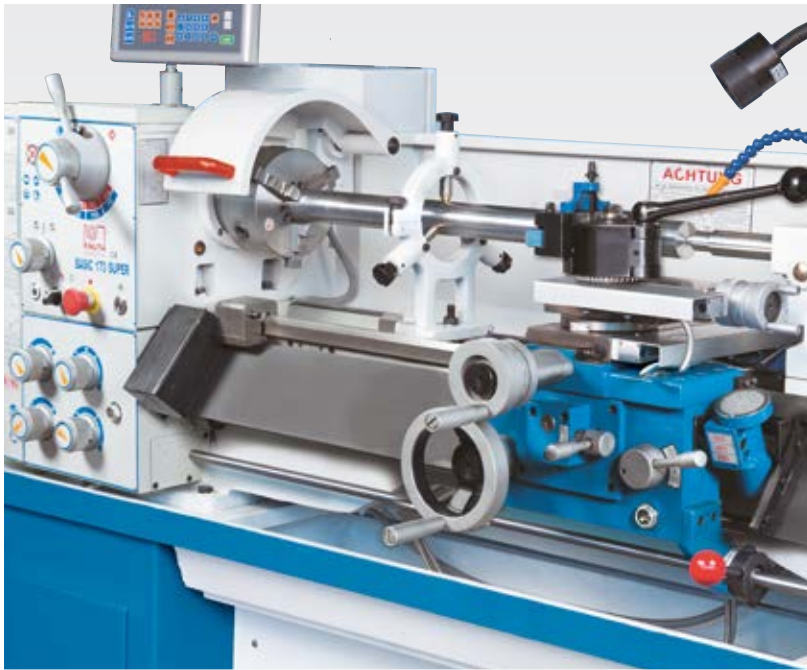
- Extensive standard equipment
- Max. spindle speed 2000 rpm

- hardened and ground headstocks gears
- gap bridge
- max. spindle speed 2000 rpm
- adjustable headstock bearing
- cast-iron bed, double v-guide, hardened and ground
- interlocking feature prevents simultaneous advance of leadscrew and feed shaft

Price on request



The thread gauge allows for resuming the thread after the apron nut for retrograde motion has been opened



Long workpieces are supported in rigid rests



Micrometer bed stop ensures repeatability

Specifications

Basic 170 Super

Working area		
Center width	mm	1.000
Turning diameter over bed	mm	330
Turning-Ø over support	mm	198
Turning diameter over gap bridge	mm	470
Gap bridge length	mm	210
Bed width	mm	187
Travels		
Travel X-axis	mm	170
Travel Z1-axis	mm	95
Swing range of top slide		± 360°
Headstock		
Spindle speed	1/min	(8) 70 - 2.000
Spindle bore	mm	38
Spindle mount		Camlock D1-4
Spindle taper	MT	5
Feed		
Feed X-axis	mm/R	0,014 - 0,38
Feed Z-axis	mm/R	0,052 - 1,392
Tapping		
Tapping, metric	mm	(26) 0,4-7
Tapping, whithworth	TPI	(34) 4-56
Tailstock		
Tailstock quill diameter	mm	33
Tailstock taper	MT	3
Tailstock quill stroke	mm	100
Tailstock traverse adjustment	mm	± 10
Drive capacity		
Motor rating main drive	kW	1,5
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	1,83x0,68x1,32
Weight	kg	520
Part No.		300815

- oil-bath lubricated main drive and feed gear
- double-walled apron box with oil-bath lubrication
- all guideways are adjustable

Standard Equipment

3-axis position indicator, 3-jaw chuck Ø 160 mm, 4-jaw face plate chuck Ø 200 mm, face plate Ø 280 mm, quick change tool holder head WE, quick change tool holder WED 20100, steady and follow rest, includes fixed splash guard (wall), chuck guard, foot brake pedal, base, work lamp, dead center, operating tools, operator manual

Options	Part No.
• Coolant System	102985
• Coolant Concentrate 5 Ltr.	103184
• Live Centers, assortment MT 3	106785
• Power Worker Metal Cutter	123040
• Clamped Turning Tool Set 16 mm	108772
• Replacem. 12/16/20 mm 5pc / Clamping Turning Tool	108775
• 4-Jaw Lathe Chuck Steel 200 mm	116601
• 3-Jaw Lathe Chuck Steel 200 mm	116501
• E-Basic170 Super (MT) spare part package for 5 years	259172

For additional options for this machine, visit our website and search for Basic 170 Super (Product Search)



- A comprehensively equipped workshop that is completely mobile and ready for use at any location
- This very sturdy shipping container was customized for this specific purpose. It can easily be transported by ship, railway or truck
- It includes a lathe, a drill press/milling machine, a miter band saw, a workshop press, and various hand devices and small equipment for pressing, grinding, welding, and more
- Machines are equipped with a basic selection of clamping devices and tools
- Three solid workbenches serve as machine stands, while offering plenty of storage room for standard and optional equipment
- Multiple receptacles
- Good lighting through LED lights in the ceiling
- An additional workbench serves as large work surface and features a heavy-duty workbench vise
- Two windows let plenty of daylight into the work space, and can be closed via blinds
- **Insulation, air conditioner, and heater ensure that this unit can be used in different climates**



Large opening for loading materials and supplies

price on request



Standard Equipment

Mark Super SV Drill Press / Milling Machine with variable frequency drive, **Basic Plus** lathe, **HB 250 A** band saw, **KS 100 B** belt sander, **KNWP 30 M** hydraulic workshop press, 1 door 800x1940 mm clear opening, 2 pivot/tilt PVC windows 780x1070 mm with insulation glass, air conditioner with remote control, 1 input and output with CEE connection 400V, junction box with circuit breaker, 2 forklift pockets, tool cart, workbenches (3 x as machine stands, 1 x as work surface), LINZ-Generator with Honda 4-stroke engine 16 KVA, 230/400 V, compressor Dari Spider 24/195 (24 L tank, 8 bar max., 1.1 kW), electric welding machine MINIARC EVO 180, bench vise 150 MM, compass saw Bosch Professionell, rotary hammer impact drill Bosch GBH 2-26 DRE, angle grinder Bosch GWS 20-230, turning tool set for lathe, tool set for milling machine, welding machine accessories (electrodes and face shield), hand tapping set M3 - M12, threading/lathe tool indexable insert holder, 50 dies, lathe tool indexable insert holder (plain turning), 10 indexable inserts, lathe tool indexable insert holder (plain turning and facing), 10 indexable inserts, lathe tool insert holder, (cutting off), 10 indexable inserts, boring bar indexable insert holder (inside turning), 10 indexable inserts, center drill size 6.3, drill set 1-13 mm (25 pieces), live center MK 3, accessory set, MK 3 (7 pieces), assorted clamping tools, De Luxe 16 / M14, PB 120 v-block drill press vise, HSS TiN end milling set, 6-piece ER32 collet chuck set, ER 40 collet chuck / MT 4 shank, 8-piece MT4 accessory set

Specifications

General		Workshop Container	
Max. stacked load	kg		192.000
Dimensions/Weight			
Outer dimensions LxWxH	m		6,06* x 2,44 x 2,59
Internal dimensions LxWxH	m		5,9 x 2,35 x 2,39
Door opening WxH	m		2,34 x 2,28
Volume	m³		33
Intrinsic weight (plus equipment)	kg		2.370
Max. gross weight	kg		30.480
Part No.			199702

* the air-conditioning unit will add 0,54 m to the container length



Solid vise



Generator for power supply



Air Compressor



Compact welder, including face shield and electrodes



Tool cabinet with complete assortment of tools

PAGE **154** » Portamill Duo 2012 • 3012 • 4012



PAGE **156** » Portamill 208 • 308



PAGE **158** » FPK 5



PAGE **160** » FPK 4 • FPK 6



PAGE **162** » KB 2100



PAGE **164** » KB 1400



PAGE **166** » UWF 5



PAGE **168** » UWF 3



PAGE **170** » UWF 3.2



PAGE **172** » UWF 1.1



Milling

PAGE **174** » UWF 1.2



PAGE **176** » VHF 3



PAGE **178** » VHF 3.2



PAGE **180** » VHF 1.1



PAGE **182** » VHF 2



PAGE **184** » MF 1 P • MF 1 VP



PAGE **186** » MF 5 VP



PAGE **188** » SBF 40

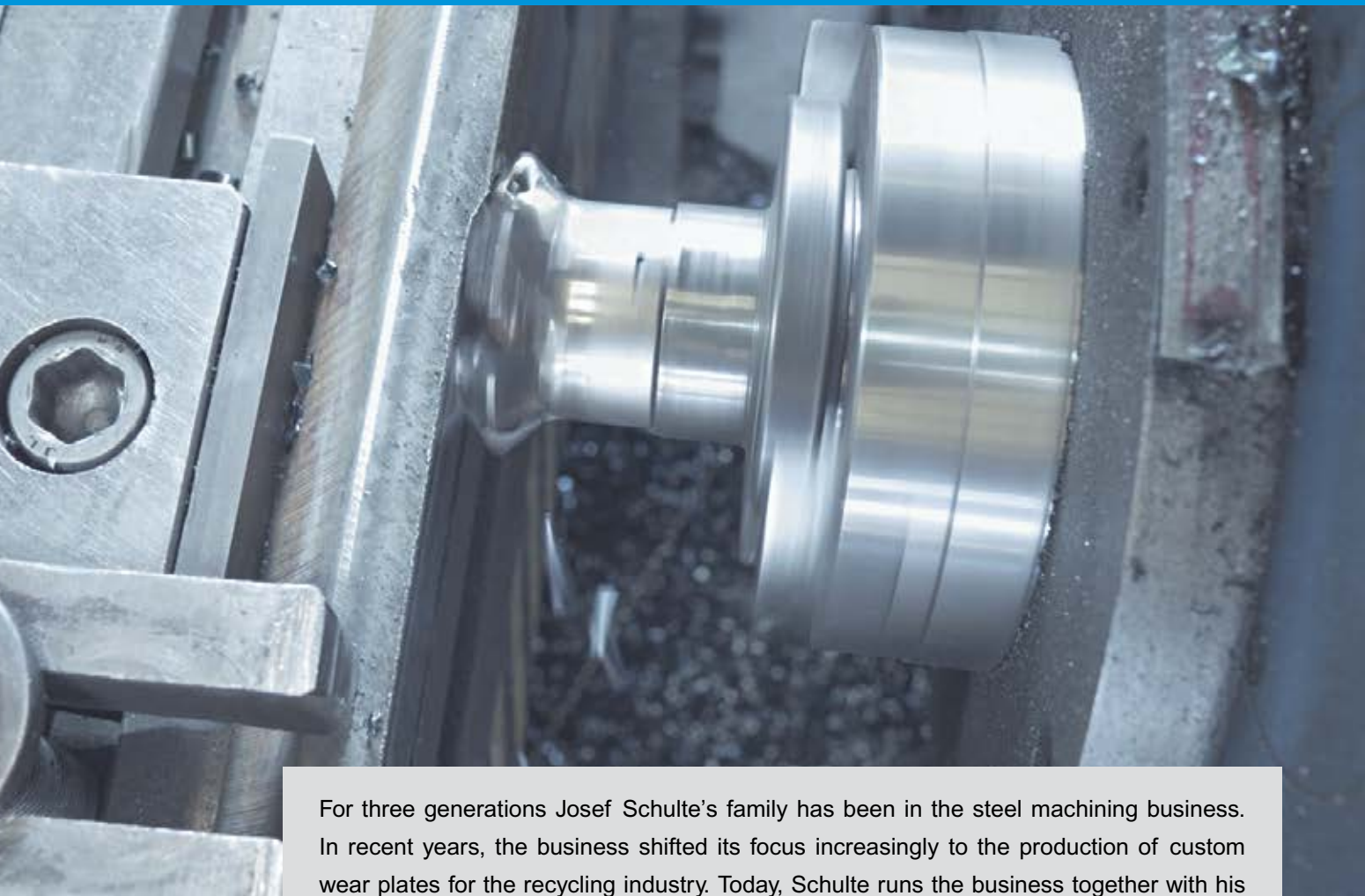


PAGE **190** » Mark Super S



Safety shields for the recycling industry

VST Verschleißtechnik uses a Portamill Duo 4012 from KNUTH to machine 500 HB wear-resistant steel.



For three generations Josef Schulte's family has been in the steel machining business. In recent years, the business shifted its focus increasingly to the production of custom wear plates for the recycling industry. Today, Schulte runs the business together with his business partner, Johannes Stiens. They serve mainly customers in the scrap metal processing industry, but have been increasingly expanding to include wood processing and agricultural operations. With 30 employees, the company processes about 1000 tons of materials per year for their customers, machine manufacturers, and end users in Germany. Only about 20 % of their orders come from neighboring European countries.

Conventional Power

The major criterion in wear protection technology is stability of the material and high-precision machining of the protective shields to ensure long machine life. Materials are constantly advancing and become increasingly harder. For VST Verschleißtechnik that means a constant flow of new challenges. "Our own machines also must be able to withstand these hard materials," explained Schulte. The most widely used steel is Hardox 500 from Sweden. In 2016, the milling machine they

used for the circumferential adaptation of wear bars had to be replaced. Schulte requested another conventional milling machine, since a CNC machine's automatic, rotating milling cutter heads would wear out too fast, if exposed to this extremely hard material.



Portamill Duo

Conventional Gantry-Type Milling Machine

Vertical and horizontal milling with long travels

- Table load capacity (max.) 6000 kg
- Table dimensions 4000 x 1250 mm
- Vertical spindle motor rating 7.5 kW

For detailed information on this series, please visit www.knuth-machinetools.com



Even materials with 500 Brinell hardness are no challenge for the Portamill Duo.

Power meets Precision

KNUTH project manager, Andreas Hendrich, remembers: "After careful examination of all their criteria, we recommended our Portamill Duo 4012 as an ideal solution to Mr. Schulte." This gantry-type milling machine provides high machining power and X-axis feed rates up to 2.620 mm/min. Machine bed, columns, and traverse form a solid cast-iron frame structure that is firmly integrated into the machine base. This especially rigid construction ensures the Portamill Duo's utmost stability even during extreme machining loads. In addition, it features two driven cutter heads (horizontal and vertical).

For Toughest Conditions

An uncomplicated visit at a nearby reference customer's site convinced Schulte. "We were able to try out a smaller but equally powerful Portamill Duo using our tools on our 500 HB steel", Schulte said. The machine was adapted slightly for the specialized requirements at VST. Now, both cutter heads can be rotated 45 degrees in both directions. Additionally, the machine was equipped with a hand-



KNUTH Sales Associate, Andreas Hendrich (center)

wheel-operated worm gear, a scale with 1-degree increments, and a digital position indicator for the horizontal cutter head. Now the Portamill Duo has been milling extremely hard steel materials for VST since the end of 2016, and today it is fully utilized in a two-shift operation. Josef Schulte is very satisfied with his purchase: "The machine meets all our requirements and expectations."

Contact

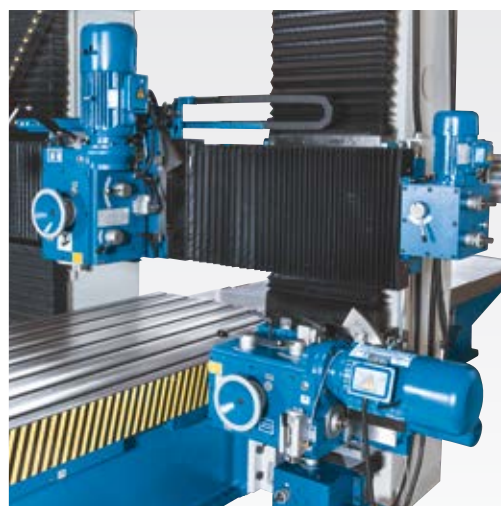
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 Werkstr. 18 • 34414 Warburg
 Phone +49 (0) 5642 - 9816-0
 Fax +49 (0) 5642-7726
j.schulte@vst-scherfelde.de



Portamill Duo 4012 is shown

Extensive Standard Equipment

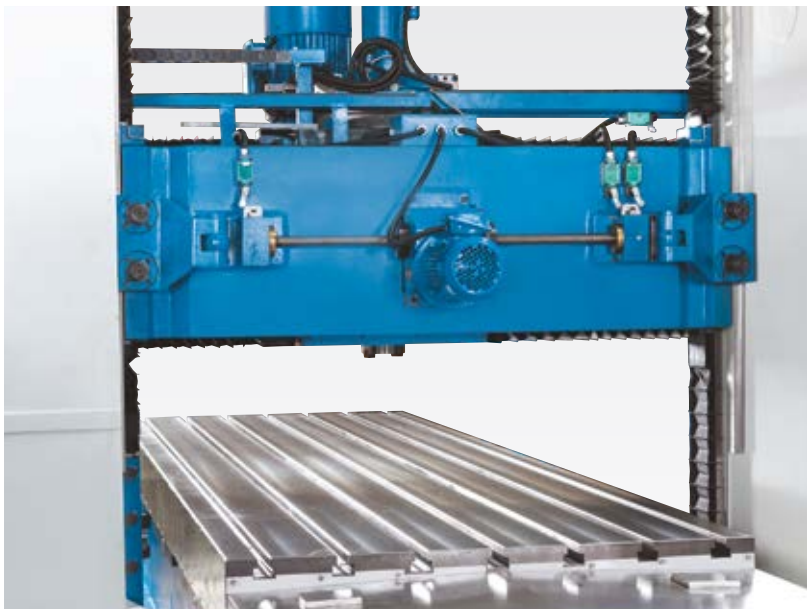
- bed, columns and travel tracks form a solid cast-iron frame structure for high rigidity under hard machining conditions and high table loads
- the gantry construction is fully integrated into the machine frame for maximum rigidity
- the traverse height is adjustable, ensuring high rigidity even with flat workpieces, since the throat size can be minimized
- rigid guides with ground surfaces support the table across the entire travel distance to ensure constant high geometric accuracy
- infinitely variable feed on X
- including weight balancing system for easy movement and precise positioning of the horizontal spindle head
- standard automatic central lubrication
- 2-sided machining of the workpiece in vertical and horizontal direction with only one setup
- both spindle heads swivel $\pm 45^\circ$



2 main spindle heads to give you a competitive edge

- vertical spindle head on height-adjustable traverse can be moved across the entire machining width
- easy positioning of the horizontal spindle on the right column guide on Y axis, and via a compact guideway slide 300 mm on the Z axis

price on request



Extremely powerful clamping of traverse ensures fixation in target position

Standard Equipment

3-axis position indicator, central lubrication, foundation bolts, operating tools, operator manual

Options

Part No.

• Hydraulic Machine Vise HNCS 200V	104936
• Hydraulic Machine Vise HS 200	125029
• Pneumatic clamping (horiz. & vertical)	251458
• E-Portamill DUO spare part package for 5 years	259137

For additional options for this machine, visit our website and search for Portamill Duo (Product Search)

Specifications Portamill Duo

2012

3012

4012

Travels

Travel X-axis	mm	2.000	3.000	4.000
Travel Y-axis	mm	1.400	1.400	1.400
Travel Z-axis	mm	1.000	1.000	1.000

Working area of horizontal milling spindle

Travel Y-axis	mm	500	500	500
Travel Z-axis	mm	300	300	300
Spindle center-to-table distance	mm	0 - 500	0 - 500	0 - 500
Table dimensions	mm	2.000x1.250	3.000x1.250	4.000x1.250
Table load capacity (max.)	kg	3.000	4.000	6.000
T-slots (number x width x spacing)	mm	7x28x200	7x28x200	7x28x200

Horizontal spindle

Feed Y-axis	mm/min	50, 265, 730	50, 265, 730	50, 265, 730
Rapid feed Z-axis	mm/min	280	280	280
Speed range	1/min	82 - 505	82 - 505	82 - 505
Spindle mount (horizontal)	ISO	50	50	50

Vertical spindle

Rapid feed Y-axis	mm/min	890	890	890
Feed Y-axis	mm/min	65, 320, 890	65, 320, 890	65, 320, 890
Rapid feed Z-axis	mm/min	280	280	280
Spindle nose-to-table surface distance	mm	130 - 1.130	130 - 1.130	130 - 1.130
Speed range	1/min	82 - 505	82 - 505	82 - 505
Spindle mount (vertical)	ISO	50	50	50

Feed

Rapid feed X axis	mm/min	1.300	2.620	2.620
Feed X-axis	mm/min	0 - 1.300	0 - 2.620	0 - 2.620
Z axis rapid feed (gantry)	mm/min	432	432	432

Drive capacity

Motor rating vertical spindle	kW	7,5	7,5	7,5
Motor rating horizontal spindle	kW	7,5	7,5	7,5
Motor rating X-axis	kW	5,5	7,5	7,5
Motor rating Y / Z	kW	1,25	1,25	1,25

Measures and weights

Overall dimensions (length x width x height)	m	5x3,55x3,15	7x3,55x3,15	9x3,55x3,15
Weight	kg	12.800	15.849	19.755
Part No.		362732	362733	362734



Furnished with completely assembled 3-axis position indicator

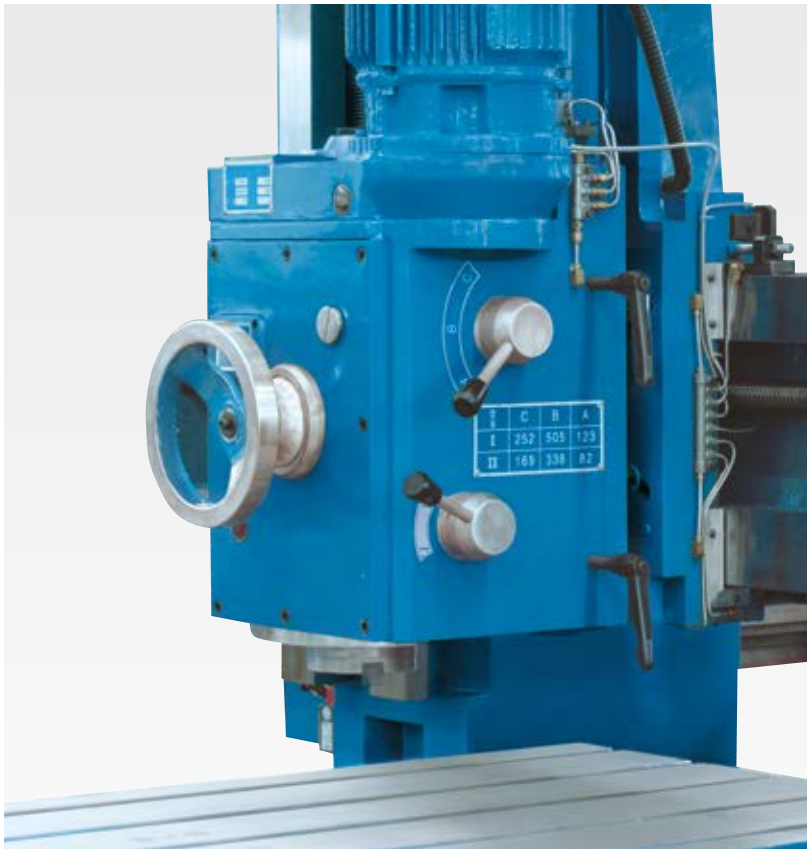


Portamill 208 is shown

Extensive standard equipment

- heavy cast-iron machine frame provides a rigid structure with firmly integrated gantry; the setup table provides support across the entire travel distance, including height-adjustable traverse
- large setup table is moving on a rigid combination of v-guides and box-ways with ground surfaces for maximum accuracy across the entire work area, independent of table loads and load distribution
- both table guides are integrated into a permanent oil circuit; hydrostatic bearings prevent heat build-up and wear, and ensure lasting maximum precision
- this machine type handles work pieces with weights up to 2000 kg
- the manually shifted 6-step gear delivers high torque at the headstock
- infinitely variable automatic feed on X axis

Price on request



Manual precision feed of cutter head, motorized rapid feed

- mechanical axis clamping on all axes
- swiveling control panel with long arm allows a wide action radius for the user
- automatic central lubrication cutter head (standard)

Standard Equipment

3-axis position indicator, automatic central lubrication, work lamp, foundation bolts, operating tools, operator manual

Options	Part No.
• Machine vise with pull-down system NZM 200	104922
• Hydraulic Machine Vise HS 200	125029
• E-Portamill 208/308 spare part package 5 years f. 362735/362736	259045

For additional options for this machine, visit our website and search for Portamill (Product Search)

Specifications

		Portamill 208	Portamill 308
Working area			
Table dimensions	mm	2.000x800	3.000x800
Table load capacity (max.)	kg	2.000	2.000
T-slots (number x width x spacing)	mm	5x22x160	5x22x160
Spindle nose-to-table surface distance	mm	0 - 800	0 - 800
Travels			
Travel X-axis	mm	2.000	3.000
Travel Y-axis	mm	1.100	1.100
Travel Z-axis	mm	800	800
Headstock			
Speed range	1/min	82 - 505	82 - 505
Torque max.	Nm	790	790
Spindle mount			ISO 50
Feed			
Rapid feed X axis	mm/min	1.400	1.300
Rapid feed Y-axis	mm/min	890	890
Z axis rapid feed (gantry)	mm/min	429	429
Z axis rapid feed (cutter head)	mm/min	280	280
Work feed X-axis	mm/min	0 - 1.300	0 - 2.600
Work feed Y-axis	mm/min	65 - 320	65 - 320
Drive capacity			
Motor rating headstock	kW	7,5	7,5
Motor rating X-axis	kW	1,1	1,1
Motor rating Y	kW	4	4
Motor rating Z-axis	kW	2,2	2,2
Measures and weights			
Overall dimensions (length x width x height)	m	4x3x2,3	6x3x2,3
Weight	kg	5.400	6.200
Part No.		362735	362736



total price including 3-axis position indicator assembled



3-axis position indicator, X.pos Plus (standard)

price on request



Proven control logic – highly appreciated by users



Stable knee with large setup area

Specifications		FPK 5
Working area		
Table dimensions	mm	460x800
Vertical table	mm	274x842
Table load capacity (max.)	kg	400
T-slots (number/width/spacing)	mm	7x14x63
Table load capacity, vertical table (max.)	kg	600
T-slots, vertical table (number x width x spacing)	mm	4x14x63
Travels		
Travel X-axis	mm	500
Travel Y-axis	mm	400
Travel Z-axis	mm	400
Vertical Milling Spindle		
Spindle mount		
Travel pinole	mm	80
Adjustment range	mm	150
Feed		
Work feed X / Y / Z axis	mm/min	(18) 6,3 - 630
Rapid feed		
Rapid feed X-, Y-, Z- axis	mm/min	1.300
Horizontal Milling Spindle		
Speed range	1/min	(18) 50 - 2.500
Spindle mount		ISO 40
Drive capacity		
Motor rating main drive	kW	3,75 / 4,4
Motor rating feed	kW	0,8 / 1,2
Connected load, total	kVA	5,7
Supply voltage		400 V / 50 Hz
Measures and weights		
Overall dimensions (length x width x height)	m	1,98x1,35x1,9
Space requirement incl. safety zone	m	2,5x2,5
Door opening (width x height)	m	1,3x1,8
Weight	kg	1.415
Part No.		302336

- Universal tool milling machines are an absolute necessity for tool, form, model, die and device constructio
- Its flexible production without programming brings many advantages for single-part construction, but also provides a cost-effective alternative for the production of small to medium-size Batches
- Its proven design features excellent rigidity and performance
- The heavy fixed-angle table features a large setup area and high load capacity
- The vertical cutter head swivels and the quill can be moved manually
- Includes a manual central lubrication system for reliable lubrication of all guideways
- Standard coolant system with large reservoir
- All operating controls are clearly arranged and placed ergonomically

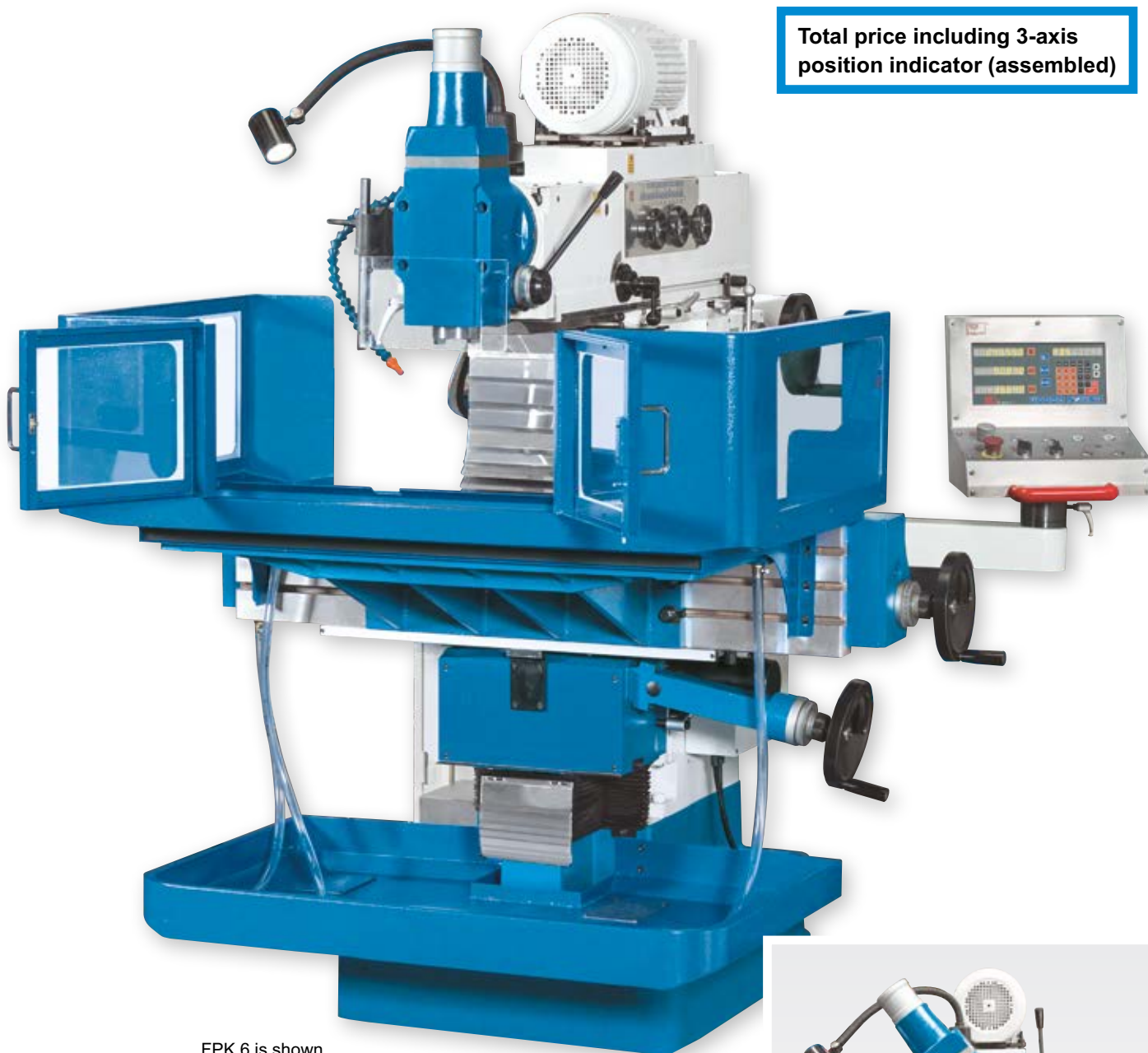
Standard Equipment

3-axis position indicator X.pos Plus, coolant system, fixed-angle table, outer arbor support for horizontal milling, work lamp, chip tray, splatter guard, manual central lubrication, operating tools, operator manual

Options

For additional options for this machine, visit our website and search for FPK 5 (Product Search)

Total price including 3-axis
position indicator (assembled)



FPK 6 is shown

- The **FPK 6** features rigid box ways in the Z-axis, while X- and Y-axes are equipped with micro-adjustable dovetail guides
- The **FPK 4** features dovetail guides on all axes
- All guides are hardened and precision ground
- Precision preloaded ball screws on all axes
- Ergonomically arranged controls and a swivelling control panel plus standard digital position indicator for maximum operator comfort

Price on request



Angel-adjustable vertical cutter head with
sliding quill

- Both machines have rigid outer arbors for horizontal milling
- Automatic feed on all axes, infinitely variable with fast rapid feed
- The micro-stepped main spindle drive provides a wide speed range and high torque
- extensive accessory package included
- Central lubrication system is standard equipment

Standard Equipment

3-axis position indicator, central lubrication, reducing sleeves MT1, MT2, MT3, adapter ISO 40 / MT 3, cutter arbor, long, 27 mm, preloaded ball screws, Z axis guideway covers, chip tray, coolant system, work lamp, draw bar (M16) for horizontal / vertical, levelling pads and bolts, operating tools, operator manual

Options

	Part No.
• Coolant Concentrate 5 Ltr.	103184
• Clamping Tool Set De Luxe 14/M12	105295
• Divider ST 130	110960
• E-FPK 6 spare part package for 302335	259203

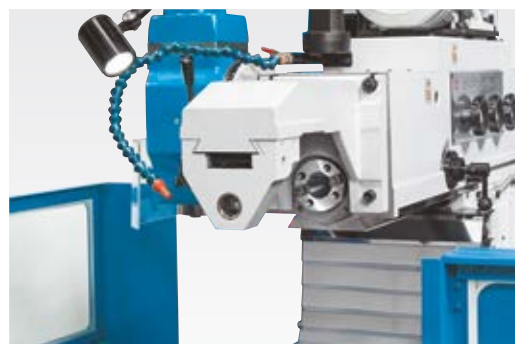
For additional options for this machine, visit our website and search for FPK (Product Search)

Specifications

		FPK 4	FPK 6
Working area			
Table dimensions	mm	320x750	500x900
Vertical table	mm	220x830	250x1.200
Table load capacity (max.)	kg	285	360
T-slots (number/width/spacing)	mm	5x14x63	7x14x63
T-slots, vertical table (number x width x spacing)	mm	2x14x126	3x14x63
Travels			
Travel X-axis manual / autom.	mm	380 / 360	600 / 560
Travel Y-axis manual / autom.	mm	200 / 180	480 / 440
Travel Z-axis manual / autom.	mm	360 / 330	360 / 330
Vertical Milling Spindle			
Travel pinole	mm	125	120
Spindle center - column (min.)	mm	280	165
Spindle center - column (max.)	mm	485	550
Feed			
Work feed X-axis	mm/min	8 - 450	10 - 450
Work feed Y-axis	mm/min	8 - 450	10 - 450
Work feed Z-axis	mm/min	8 - 450	10 - 450
Rapid feed			
Rapid feed X-axis	mm/min	680	680
Rapid feed Y-axis	mm/min	680	680
Rapid feed Z-axis	mm/min	680	680
Horizontal Milling Spindle / Vertical Milling Spindle			
Speed range	1/min	(12) 50 - 2.000	(18) 50 - 2.000
Spindle mount		ISO 40	ISO 40
Drive capacity			
Motor rating main drive	kW	2,2	3,75
Motor rating coolant pump	kW	0,09	0,09
Measures and weights			
Overall dimensions (length x width x height)	m	1,2x1,3x1,8	1,5x1,8x1,95
Weight	kg	1.180	1.450
Part No.		302337	302335



The main spindle drive is located centrally in the FPK 4



The FPK 6 features an outer arbor support for long milling arbors



Extensive Standard Equipment

- an extremely rigid, large-sized box-column design, made of premium cast-iron, provides a solid base for optimum work results
- extra wide guideways ensure maximum stability and precision at high loads
- extra long table travel distance (1500 mm) and large table set-up area (2100 x 500 mm) allow machining of large single parts or interactive machining of several parts - to give you a leading edge over your competition
- wide spindle speed range from 40 to 1600 rpm
- infinitely variable linear and cross feed

price on request



Rigid outer arbor system for long milling arbors

- control panel on a long extending arm that can be ideally positioned by the operator
- This universal cutter head features maximum rigidity and quiet operation. The angle can be set manually on an infinitely adjustable scale from 90° to 45°. This allows an exact adjustment of the headstock in user-defined spatial angles and easy movement to a horizontal position.
- The KB 2100 includes a horizontal cutter arbor holder with excellent rigidity, allowing the user to fully utilize the advantages of a bed-type milling machine design for machining with long cutter arbors.

Specifications

KB 2100

Working area		
X axis travel	mm	1.500
Y axis travel	mm	670
Z axis travel	mm	0 - 670
Table set up area	mm	2.100x500
Table load capacity (max.)	kg	2.000
T-slots (number/spacing)	mm	4x20
Vertical milling head		
Spindle speed (vertical)	1/min	(12) 40 - 1.600
Speed range	1/min	(12) 40 - 1.600
Throat	mm	610
Vertical spindle-to-table	mm	0 - 670
Milling head swivel range		360
Feed		
Rapid feed X / Y axis	mm/min	3.500
Rapid feed Z-axis	mm/min	1.750
Feed speed X / Y axis	mm/min	20 - 1.800
Drive capacity		
Motor rating main drive	kW	7,5
Motor rating feed	kW	2
Motor rating coolant pump	kW	0,55
Measures and weights		
Overall dimensions (length x width x height)	m	3,3x2,38x2,75
Weight	kg	7.300
Part No.		301285



2 swivel levels allowing to set virtually any angle

Standard Equipment

3-axis position indicator, universal swivel head, coolant system, draw bar, 1 set ISO 50 milling chucks(8pc. 4, 6, 8, 12, 16, 18, 22, 26mm), cutter arbor ISO 50 Ø 40 mm, horizontal arbor holder, horizontal arbor Ø 32 mm, work lamp, operating tools, foundation bolts M12 x 500 mm, operator manual

Options

Part No.

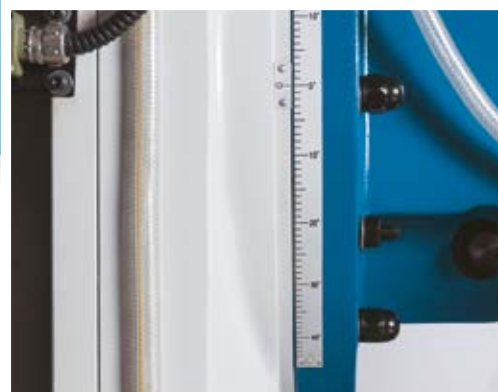
• Universal Indexing Head 320 mm / KB 2100	101286
• Optional Accessory Set / ST 155	110971
• Tailstock / RT 320	125825

For additional options for this machine, visit our website and search for KB 2100 (Product Search)

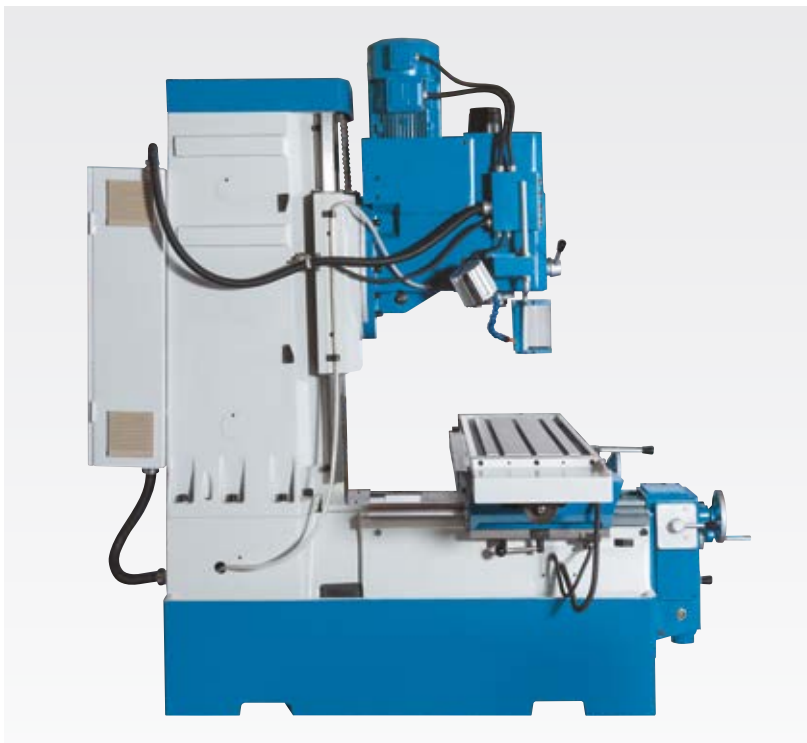


Extensive standard equipment

Price on request



The very rigid cutter head can be precisely swiveled and aligned



Heavy-duty design with large throat and generous work space



Face milling with cutter head

Specifications

KB 1400

Working area

Spindle nose-to-table dist.	mm	150 - 650
Table size	mm	1.400x400
Number of T-slots	Pieces	3
Table set up area	mm	1.400x400
T-slots, width	mm	18
T-slots, spacing	mm	100
Head swivel range		± 45°
Speed height-adjustment (max.)	mm/min	1.670

Travels

Travel X-axis	mm	950
Travel Y-axis	mm	400
Travel Z-axis	mm	500

Vertical milling head

Spindle mount		ISO 50
Throat	mm	510
Speed range	1/min	30 - 1.800
Quill stroke	mm	105

Feed

Feed speed X / Y axis	mm/min	(9) 18 - 627
Feed speed Z-axis	mm/min	18 - 627

Rapid feed

Rapid feed in all axis	mm/min	1.670
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Drive capacity

Motor rating main drive	kW	7,5
Motor rating feed	kW	0,75
Motor for Z-axis	kW	0,75
Motor rating coolant pump	kW	0,04

Measures and weights

Flow rate, coolant pump	l/min	12
Overall dimensions (length x width x height)	m	2,29x1,77x2,12
Weight	kg	3.660
Part No.		301320

- 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 increases precision and extremely high table load capacity! This effect is emphasized even more by the large, heavy cast-iron frame (Meehanite) and extremely wide box ways.
- infinitely variable speed adjustment provided through frequency drive
- Rigid rectangular guideways for long-lasting accuracy
- Meehanite cast-iron frame
- cutter head swivels ± 45°
- standard 3-axis position indicator

Standard Equipment

3-axis position indicator, collet chuck with collets (4,5,6,8,10,12,14,16 mm diam.), reducing sleeves MT4, MT3, MT2, cutter arbor Ø 40 mm, coolant system, work lamp, central lubrication, operating tools, operator manual

Options

Part No.

• HS 150 Hydraulic Machine Vise	125028
• Milling Chuck WELDON ISO 50 / Ø 25 mm	106817
• E-KB1400 spare part package for 301320	259007

For additional options for this machine, visit our website and search for KB 1400 (Product Search)



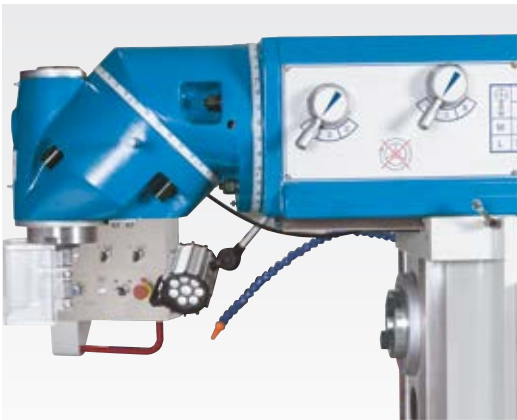
Extensive standard equipment

price on request

- Extremely rigid machine bed made of high-strength HT-200 cast-iron with heavy ribbing
- Precision-ground guideways with hardened surfaces for long-term accuracy and wear-resistance
- Large work area of 1325 x 360 mm and up to 500 kg table load capacity



Powerful horizontal spindle with its own drive



Universal cutter head, swivels on 2 levels



Integrated manual central lubrication

Specifications		UWF 5
Working area		
X axis travel	mm	750
Y axis travel	mm	280
Z axis travel	mm	390
Table dimensions	mm	1.325x360
Table load capacity (max.)	kg	500
T-slots (number/width/spacing)	mm	3x18x80
Milling Head		
Speed range	1/min	(12) 60 - 1.750
Spindle mount		ISO 50
Swivel angle		360°
Upper beam travel	mm	550
Spindle center-to-table distance	mm	175 - 565
Feed		
Rapid feed X axis	mm/min	1.200
Rapid feed Y-axis	mm/min	800
Rapid feed Z-axis	mm/min	600
Feed X-axis	mm/min	30 - 750
Feed Y-axis	mm/min	20 - 500
Feed Z-axis	mm/min	15 - 375
Horizontal Milling Spindle		
Speed range	1/min	(12) 60 - 1.800
Spindle mount		ISO 50
Throat	mm	380 - 930
Drive capacity		
Motor rating vertical / horizontal	kW	4 / 5,5
Motor rating feed X- /Y- / Z- axis	kW	1,5
Motor rating coolant pump	kW	0,09
Measures and weights		
Overall dimensions (length x width x height)	m	1,8x2,1x2
Weight	kg	2.885
Part No.		362750

- Quiet, precision-made headstock gears with hardened and ground gears
- Universal cutter head swivels on 2 levels - quick change-over from horizontal to vertical machining
- By combining both swivel levels, almost any spatial angle can be set
- Powerful axis servo-motors allow infinite adjustment of feeds on all 3 axes
- Control panel swings out to either side and features an integrated position indicator

Standard Equipment

3-axis position indicator, reducing sleeve ISO 50 / MT4, milling arbors (27, 32 mm), ISO 50 collet chucks incl. collets up to 16 mm (8 pieces), outer arbor support for horizontal milling, coolant system, work lamp, chip tray, draw bar, operating tools, operator manual

Options	Part No.
• Oscillation element LT 5	103331
• Rotary table RT 200	125835
• E-UWF 5 spare part package for 5 years for art. no. 362750	259022

For additional options for this machine, visit our website and search for UWF 5 (Product Search)



Extensive standard equipment

- sturdy, zero-backlash rectangular guideways
- Universal cutter head with 2 levels can be adjusted to virtually any 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

price on request



Rigid outer arbor support for long milling arbors



Cutter head swivels on 2 levels

Specifications

UWF 3

Working area		
X axis travel	mm	1.000
Y axis travel	mm	245
Z axis travel	mm	450
Table set up area	mm	1.320x320
Table load capacity (max.)	kg	260
T-slots (number/width/spacing)	mm	5x14x63
Horizontal spindle		
Spindle speed (horizontal)	1/min	(12) 40 - 1.300
Spindle mount		ISO 40
Horizontal spindle-to-table surface distance	mm	20 - 470
Vertical milling head		
Spindle speed (vertical)	1/min	(11) 45 - 1.660
Spindle mount		ISO 40
Throat	mm	200 - 760
Spindle nose-to-table surface distance	mm	200 - 650
Milling head swivel range		360
Feed		
Rapid feed X / Y axis	mm/min	1.200
Rapid feed Z-axis	mm/min	400
Feed speed X-axis	mm/min	(8) 20 - 360
Feed speed Y-axis	mm/min	(8) 20 - 360
Drive capacity		
Motor rating horizontal spindle	kW	3
Motor rating vertical spindle	kW	3
Motor rating X, Y axis feed	kW	0,55
Motor rating coolant pump	kW	0,09
Measures and weights		
Overall dimensions (length x width x height)	m	2,02x1,71x1,99
Weight	kg	2.000
Part No.		370297

Standard Equipment

3-axis position indicator, central lubrication, coolant system, work lamp, collet chuck with collets (4,5,6,8,10,12,14,16 mm diam.), horizontal arbor Ø 27 mm and Ø 40 mm, outer arbor support for horizontal milling, short milling arbor 32 mm, operating tools, operator manual

Options	Part No.
• Oscillation element LT 5	103331
• Reduction Sleeve SK 40 / SK 30	103750
• Adapter SK 40 / MT 4	103740
• Clamping Tool Set De Luxe 14/M12	105295
• Step of Step Blocks	105340
• Divider ST 130	110960
• HS 125 Hydraulic Machine Vise	125024
• E-UWF3 spare part package for 370297	259017

For additional options for this machine, visit our website and search for UWF 3 (Product Search)



- Universal vertical cutter head design
- Servo-motor drive for infinitely variable feed
- Horizontal spindle with outer arbor support for long milling arbors
- Vertical and horizontal spindle with separate drives
- Work table swivels in linear direction

Price on request



Vertical and horizontal spindle each have their separate drive

- Extremely rigid machine bed made of high-strength HT-200 cast-iron with heavy ribbing
- Large rectangular guideways ensure precision and quiet operation within permissible high loads
- Precision-ground guideways with hardened surfaces for long-term accuracy and wear-resistance
- The milling table features a large setup area and can be rotated in linear direction
- Quiet, precision-made headstock gears with hardened and ground gears
- Universal cutter head swivels on 2 levels - quick change-over from horizontal to vertical machining
- By combining both swivel levels, almost any spatial angle can be set
- Standard outer arbor support with bronze plain bearings accommodates long milling arbors in the horizontal spindle
- Powerful servo-motor for infinite variation of feeds in all 3 axes
- Minimum downtime due to rapid positioning of work table and rapid feeds in all axes
- Control panel swivels for comfortable operation
- Coolant system and chip tray are included

Specifications

UWF 3.2

Working area		
Table set up area	mm	1.370x320
Table load capacity (max.)	kg	300
T-slots (number/width/spacing)	mm	3x14x80
Milling table swivel range	deg	45
Travels		
Travel X-axis	mm	1.000
Travel Y-axis	mm	360
Travel Z-axis	mm	400
Vertical milling head		
Speed range	1/min	(11) 45 - 1.660
Spindle mount		DIN 2080 / ISO 40
Throat	mm	300 - 765
Vertical spindle-to-table surface distance	mm	260 - 660
Milling head swivel range	deg	360
Horizontal Milling Spindle		
Spindle speed (horizontal)	1/min	(12) 35 - 1.500
Spindle mount		ISO 40
Horizontal spindle-to-table surface distance	mm	75 - 475
Feed		
Feed speed X-axis	mm/min	(9) 30 - 830
Feed speed Y-axis	mm/min	(9) 30 - 830
Feed speed Z-axis	mm/min	23 - 625
Rapid feed		
Rapid feed X-axis	mm/min	1.335
Rapid feed Y-axis	mm/min	1.335
Rapid feed Z-axis	mm/min	1.000
Drive capacity		
Motor rating main drive	kW	3
Measures and weights		
Overall dimensions (length x width x height)	m	1,9x1,75x2
Weight	kg	1.950
Part No.		362695

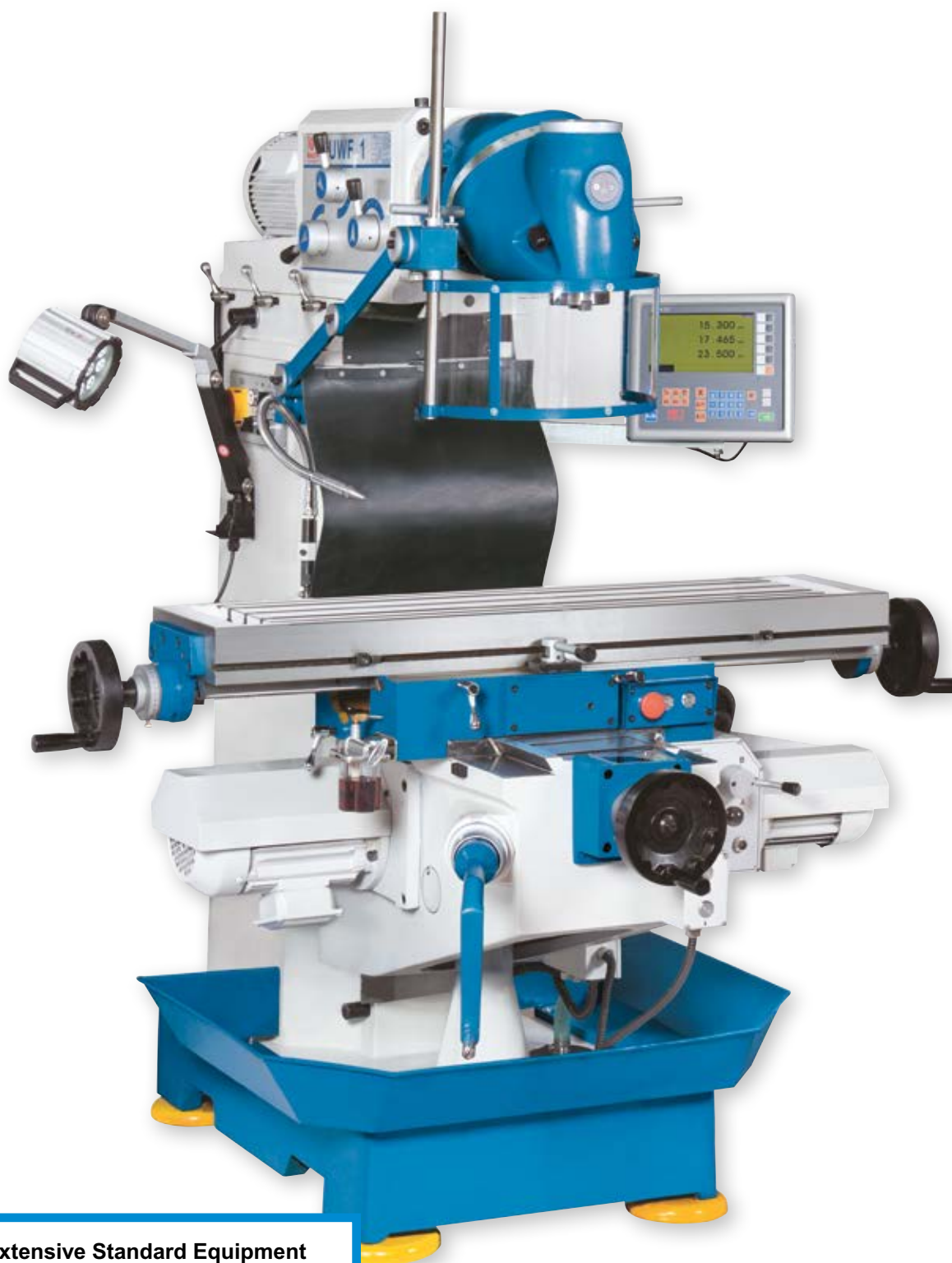
Standard Equipment

chip tray, coolant system, central lubrication, 3-axis position indicator, M16 draw bar, outer arbor support for horizontal milling, work lamp, operating tools, operator manual

Options

Part No.

• Oscillation Element LK 5	103331
• Shell End Milling Arbor Ø22 SK 40	103900
• Accessory-Set ISO 40 5-pc.	104596
• Clamping Tool Set Deluxe 14/M12	105295
• ER 40 Collet Set 15 pcs.	106075
• HS 125 Hydraulic Machine Vise	125024



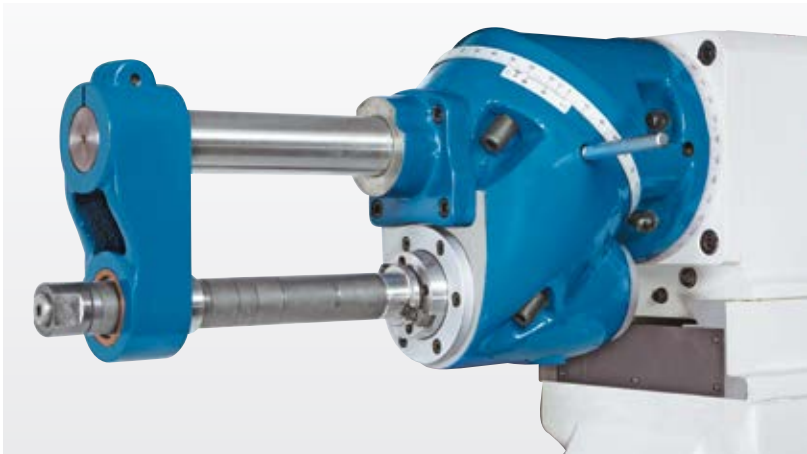
Extensive Standard Equipment

- Heavy machine frame with wide, adjustable dovetail guides in all axes
- Rigid universal cutter head, can be moved to virtually any spatial angle on two levels
- Automatic table feed on X and Y axes, including rapid feed
- Motorized height adjustment in Z direction

Price on request



Automatic feed



Horizontal cutter (standard equipment)



Cutter head swivels on 2 levels

Specifications		UWF 1.1
Working area		
Table set up area	mm	1.120x260
Table load capacity (max.)	kg	250
T-slots (number/width/spacing)	mm	3x14x63
Travels		
Travel X-axis	mm	600
Travel Y-axis	mm	240
Travel Z-axis	mm	380
Vertical milling head		
Speed range	1/min	45 - 1.660
Spindle mount		DIN 2080 / ISO 40
Throat	mm	60 - 500
Vertical spindle-to-table surface distance	mm	100 - 480
Milling head swivel range		360
Feed		
Rapid feed Z-axis	mm/min	422
Feed speed X / Y axis	mm/min	(9) 24 - 402
Drive capacity		
Motor rating main drive	kW	2,2
Measures and weights		
Overall dimensions (length x width x height)	m	1,66x1,5x1,73
Weight	kg	1.480
Part No.		362693

Standard Equipment	
3-axis position indicator, outer arbor support for horizontal milling, milling chuck with collets 4,5,6,8,10,12,14,16 mm, long cutter arbor Ø 32 mm, coolant system, work lamp, operator manual	
Options	
	Part No.
• Oscillation element LK 3	103330
• Clamping Tool Set De Luxe 14/M12	105295
• Rotary table RT 200	125835
• E-UWF1.1 spare part package for 362693	259010

For additional options for this machine, visit our website and search for UWF 1.1 (Product Search)



- HURON-type cutter head - rigid and universal
- Servo-motor drive for infinitely variable feed
- Horizontal spindle with outer arbor support for long milling arbors
- Swiveling work table

- Extremely rigid machine bed made of high-strength HT-200 cast-iron with heavy ribbing
- Large rectangular guideways ensure precision and quiet operation within permissible high loads
- Universal cutter head swivels on 2 levels - quick change-over from horizontal to vertical machining
- By combining both swivel levels, almost any spatial angle can be set

Price on request



- Outer arbor support for horizontal milling, mounts to cutter head
- The milling table features a large setup area and can be rotated in linear direction
- Precision-ground guideways with hardened surfaces for long-term accuracy and wear-resistance
- Quiet, precision-made headstock gears with hardened and ground gears
- Powerful servo-motor for infinite variation of feeds in all 3 axes
- Minimum down-times due to rapid positioning of work table and rapid feeds in all axes
- Control panel swivels for comfortable operation
- Coolant system and chip tray are included

Easy handling: feeds are controlled directly at the milling console

Specifications

UWF 1.2

Working area		
Table set up area	mm	1.370x300
Table load capacity (max.)	kg	300
T-slots (number/width/spacing)	mm	3x14x80
Milling table swivel range	deg	45
Travels		
Travel X-axis	mm	1.000
Travel Y-axis	mm	360
Travel Z-axis	mm	400
Vertical milling head		
Speed range	1/min	(11) 45 - 1.660
Spindle mount		DIN 2080 / ISO 40
Throat	mm	150 - 550
Vertical spindle-to-table surface distance	mm	100 - 500
Milling head swivel range	deg	360
Feed		
Feed speed X-axis	mm/min	(9) 30 - 830
Feed speed Y-axis	mm/min	(9) 30 - 830
Feed speed Z-axis	mm/min	23 - 625
Rapid feed		
Rapid feed X-axis	mm/min	1.335
Rapid feed Y-axis	mm/min	1.335
Rapid feed Z-axis	mm/min	1.000
Drive capacity		
Motor rating main drive	kW	3
Measures and weights		
Overall dimensions (length x width x height)	m	1,83x1,76x1,7
Weight	kg	1.750
Part No.		362694

Standard Equipment

chip tray, coolant system, central lubrication, 3-axis position indicator, operator manual, M16 draw bar, operating tools, outer arbor support for horizontal milling

Options	Part No.
• Oscillation element LK 5	103331
• Shell End Milling Arbor Ø22 SK 40	103900
• Accessory-Set ISO 40 5-pc.	104596
• Clamping Tool Set Deluxe 14/M12	105295
• ER 40 Collet Set 15 pcs.	106075
• HS 125 Hydraulic Machine Vise	125024



Extensive Standard Equipment

price on request



Cutter head swivels $\pm 45^\circ$



Horizontal milling spindle with outer arbor support for long milling arbors

- all 3 axes with automatic feed and rapid feeds
- vertical head swivels $\pm 45^\circ$
- 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
- for horizontal spindle operations, the top beam including head can be completely rotated on the stand

Specifications

VHF 3

Work table

Table set up area	mm	1.320x320
T-slots (number/width/spacing)	mm	5x14x63
Table load capacity (max.)	kg	300

Vertical milling head

Spindle mount		ISO 40
Spindle speed (vertical)	1/min	(8) 90 - 2.000
Quill stroke	mm	120
Quill feeds	mm/R	(3) 0,08; 0,15; 0,25
Throat	mm	200 - 540
Vertical spindle-to-table surface distance	mm	140 - 540
Head swivel range		$\pm 45^\circ$

Feed

Travel in X-axis	mm	750
Travel Y-axis	mm	245
Travel Z-axis	mm	430
Feed speed X-axis	mm/min	(8) 20 - 360
Feed speed Y-axis	mm/min	(8) 20 - 360
Rapid feed X axis	mm/min	1.024
Rapid feed Z-axis	mm/min	670
Rapid feed Y-axis	mm/min	1.024

Horizontal milling head

Spindle mount		ISO 40
Spindle speeds	1/min	(12) 40 - 1.300
Horizontal spindle-to-table surface distance	mm	50 - 450

Drive capacity

Drive motors (vertical / horizontal)	kW	2,2 / 2,2
Motor rating feed	kW	0,55
Motor rating coolant pump	kW	0,09

Measures and weights

Overall dimensions (length x width x height)	m	1,71x1,72x2,33
Weight	kg	1.800
Part No.		301410



Automatic 3-step quill feed

- 3 automatic quill feeds
- adjustable ground dovetail guideways on the X-axis and wide square guideways on Y and Z-axis
- clamping device in all 3 axes
- adjustable stops for drilling depth and table adjustment

Standard Equipment

3-axis position indicator, drill chuck 16 mm, cutter arbor $\varnothing 27$ mm, cutter arbor $\varnothing 40$ mm, collet chuck ISO 40 with collets $\varnothing 4,5,6,8,10,12,14,16$ mm, reducing sleeve ISO 40 / MT3 and ISO 40 / MT2, coolant system, chip tray, work lamp, operating tools, operator

Options

Part No.

• Coolant Concentrate 5 Ltr.	103184
• Adapter SK 40 / MT 3	103730
• Collet Chuck SK 40	104320
• Machine vise with pull-down system NZM 125	104918
• Clamping Tool Set De Luxe 14/M12	105295
• Step of Step Blocks	105340
• Milling Chuck Set ISO 40	106044
• Roughing End Mill Cutter 63	108402
• Roughing Shank Cutter 10 pcs.	108445
• Mounting Shaft ISO 40	108637
• Assembly Stand	108930
• E-VHF3 spare part package for 5 years for art. no. 301410	259178

For additional options for this machine, visit our website and search for VHF 3 (Product Search)



- Vertical spindle is infinitely variable up to 3750 rpm
- Cutter head can be rotated and tilted
- Servo-motor drive for infinitely variable feed in all axes
- Horizontal spindle with outer arbor support for long milling arbors
- Milling table swivels in linear direction

Price on request



Precision-ground guideways with hardened surfaces for long-term accuracy and wear-resistance

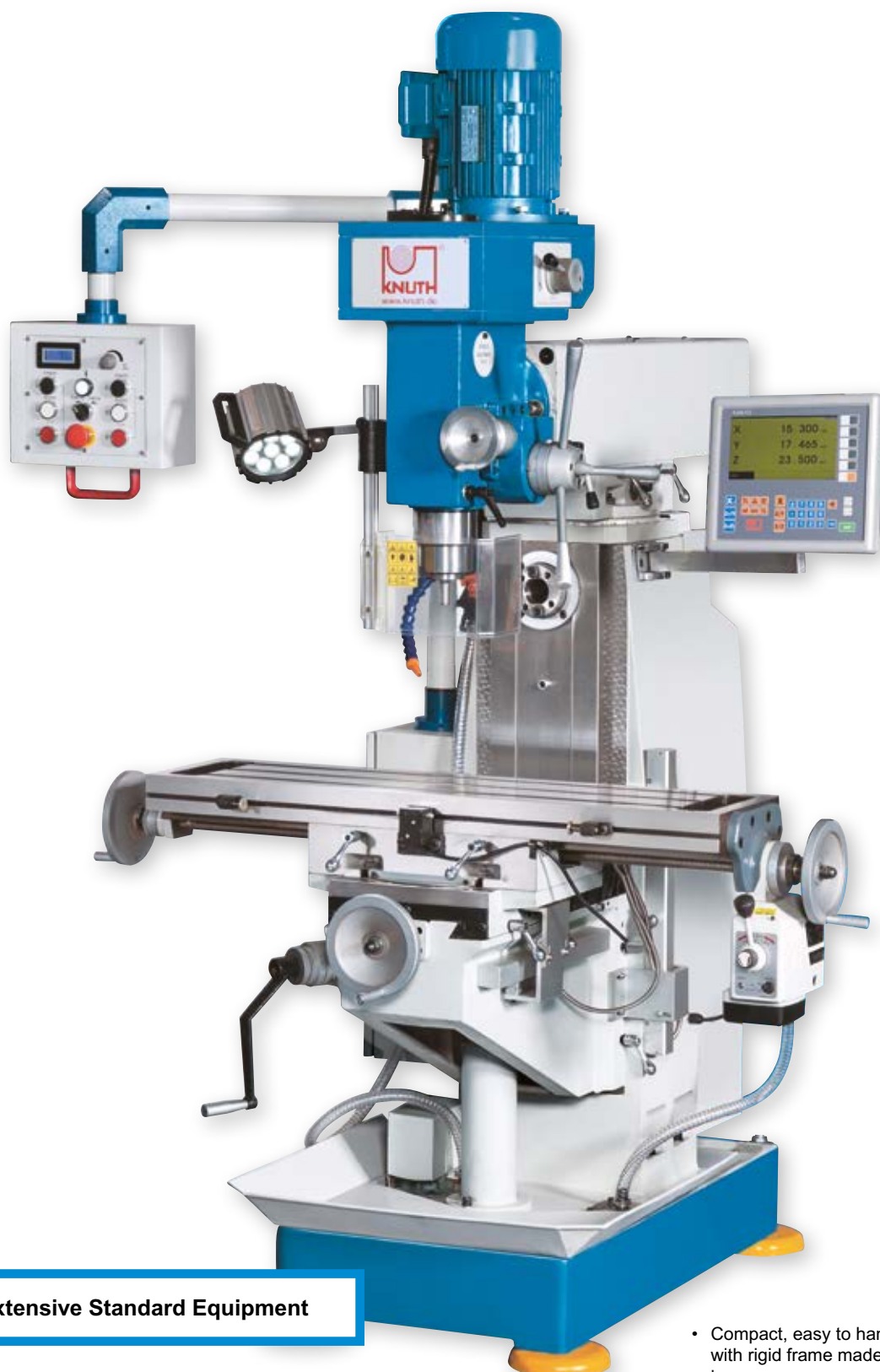
- Extremely rigid machine bed made of high-strength HT-200 cast-iron with heavy ribbing
- Quiet, precision-made headstock gears with hardened and ground gears
- The milling table features a large setup area and can be rotated in linear direction
- The cutter head quill features a 3-step automatic feed and automatic depth shut-off, but can also be moved manually
- For angular bores, the vertical cutter head swivels in two directions: r + l ±90°; tilt fwd + rev ±45°
- Spindle speed of vertical cutter head is infinitely variable over a wide speed range; an auxiliary gearbox ensures powerful torque
- Vertical and horizontal spindle each have their separate drive
- Standard outer arbor support with bronze plain bearings accommodates long milling arbors in the horizontal spindle
- Powerful axis servo-motors allow infinite adjustment of feeds on all 3 axes
- Minimum downtime due to rapid positioning of work table and rapid feeds in all axes
- Control panel swivels for comfortable operation
- Coolant system and chip tray are included

Specifications		VHF 3.2
Working area		
Table set up area	mm	1.370x320
Table load capacity (max.)	kg	300
T-slots (number/width/spacing)	mm	3x14x80
Milling table swivel range	deg	45
Travels		
Travel X-axis	mm	1.000
Travel Y-axis	mm	360
Travel Z-axis	mm	400
Vertical milling head		
Speed range	1/min	50 - 3.750
Spindle mount		ISO 40
Throat	mm	178 - 868
Vertical spindle-to-table surface distance	mm	160 - 560
Milling head swivel range	deg	90
Cutter head tilt angle	deg	45
Horizontal Milling Spindle		
Spindle speed (horizontal)	1/min	(12) 35 - 1.500
Spindle mount		ISO 40
Horizontal spindle-to-table surface distance	mm	75 - 475
Feed		
Feed speed X-axis	mm/min	(8) 30 - 830
Feed speed Y-axis	mm/min	(8) 30 - 830
Feed speed Z-axis	mm/min	(8) 23 - 625
Rapid feed		
Rapid feed X-axis	mm/min	1.335
Rapid feed Y-axis	mm/min	1.335
Rapid feed Z-axis	mm/min	1.000
Drive capacity		
Main drive motor rating (vertical)	kW	3,7
Main drive motor rating (horizontal)	kW	3
Measures and weights		
Overall dimensions (length x width x height)	m	1,9x1,75x2,35
Weight	kg	1.950
Part No.		301411

Standard Equipment

chip tray, coolant system, central lubrication, 3-axis position indicator, operator manual, M16 draw bar, operating tools, cutter arbor Ø 27 mm

Options	Part No.
• Oscillation Element LK 5	103331
• Shell End Milling Arbor Ø22 SK 40	103900
• Accessory-Set ISO 40 5-pc.	104596
• Clamping Tool Set Deluxe 14/M12	105295
• ER 40 Collet Set 15 pcs.	106075
• HS 125 Hydraulic Machine Vise	125024



Extensive Standard Equipment

Price on request

- Compact, easy to handle universal milling machine with rigid frame made of vibration-dampening cast iron
- Easy to shift back-gearing via 2-step gears integrated into the vertical cutter head, plus variable frequency for high torque at the main spindle



Solid top beam with outer arbor allows rigid mounting of long milling arbors



Swiveling cutter head with sliding quill



Cutter table swivels in X axis

- Entire cutter head swivels $\pm 45^\circ$, quill movement via capstan handle, or quill micro-feed via hand-wheel
- Horizontal spindle features a quiet, low-maintenance v-belt drive
- Large setup table swivels horizontally
- Proven TV 1000 on X axis allows automatic advance and rapid feed of table, including infinitely variable speed and adjustable limit stops
- Coolant system and chip tray are included

Specifications

VHF 1.1

Working area		
Drilling capacity	mm	25
Milling diameter in steel (max.)	mm	18
X axis travel	mm	535
Y axis travel	mm	220
Z axis travel	mm	320
Table set up area	mm	1.000x240
Table load capacity (max.)	kg	150
Vertical milling head		
Spindle speeds	1/min	100 - 2.000
Spindle mount		ISO 40
Quill stroke	mm	120
Throat (spindle to frame)	mm	200 - 700
Spindle nose-to-table surface distance	mm	65 - 385
Horizontal milling head		
Spindle speeds	1/min	60 - 1.350
Horizontal spindle-to-table surface distance	mm	0 - 300
Drive capacity		
Motor rating horizontal spindle	kW	2,2
Motor rating vertical spindle	kW	1,5
Measures and weights		
Overall dimensions (length x width x height)	m	1,38x1,22x2,15
Weight	kg	1.000
Part No.		362665

Standard Equipment

3-axis position indicator, 2 long cutter arbors ($\varnothing 22, \varnothing 27$ mm), drill chuck 16 mm, reducing sleeve ISO 40 / MT3 and ISO 40 / MT2, coolant system, work lamp, operating tools

Options

Part No.

• Oscillation element LK 3	103330
• Accessory-Set ISO 40 5-pc.	104596
• Machine Vise MS 125	104955
• Clamping Tool Set De Luxe 14/M12	105295
• Swivel Hold-Down Clamp Set 100/ M12	105790
• Mounting Shaft ISO 40	108637
• Divider ST 130	110960
• HS 125 Hydraulic Machine Vise	125024
• Rotary table RT 200	125835
• E-VHF1.1 spare part package for 5 years for art. 362665	259015

For additional options for this machine, visit our website and search for VHF 1.1 (Product Search)



Extensive Standard Equipment

Price on request



Outer arbor and long milling arbor included in standard equipment



Vertical and horizontal spindles, each with their own drive



Rapid feed on Z axis with safety switch

- **This excellent price/performance ratio is made possible by high volume production with standardized VHF assemblies**
- height adjustment of the work table via automatic feed - precision feed via smooth hand crank
- All 3 axes are provided with clamping devices
- the vertical head swivels to both sides ($\pm 90^\circ$), quill feed through capstan or with fine feed hand wheel
- the installed feed (standard equipment) allows movement of the X-axis by hand wheel or through the feed feature
- for horizontal spindle work, the top beam can be turned with; the head by $\pm 180^\circ$ on the stand. Spindle speed is controlled through the gear lever.

Standard Equipment

3-axis position indicator, 2 long cutter arbors ($\varnothing 22, \varnothing 27$ mm), collet set 4-16 mm with mount, drill chuck 16 mm, reducing sleeve ISO 40 / MT3 and ISO 40 / MT2, coolant system, work lamp, operating tools

Specifications

VHF 2

Working area		
Drilling capacity in steel	mm	30
Max. end mill diameter	mm	25
Tapping capacity, steel		M 16
Max. end face mill diameter	mm	100
X axis travel	mm	600
Y axis travel	mm	270
Z axis travel	mm	300
Table set up area	mm	1.120x260
Vertical milling head		
Spindle speeds	1/min	(8) 115 - 1.750
Spindle mount		ISO 40
Quill stroke	mm	120
Throat (spindle to frame)	mm	160 - 610
Spindle nose-to-table surface distance	mm	60 - 360
Horizontal Milling Spindle		
Spindle speeds	1/min	(12) 40 - 1.300
Horizontal spindle-to-table surface distance	mm	0 - 300
Drive capacity		
Motor rating horizontal spindle	kW	2,2
Motor rating vertical spindle	kW	1,5
Measures and weights		
Overall dimensions (length x width x height)	m	1,71x1,48x2,1
Weight	kg	1.400
Part No.		362650

Options

Part No.

• Oscillation element LK 3	103330
• Universal Facing / Lathe Bore Head ADA / SK40	103404
• Adapter SK 40 / MT 2	103720
• Coolant Concentrate 5 Ltr.	103184
• Shell End Milling Arbor $\varnothing 27$ SK 40	103905
• Reduction Sleeve SK 40 / SK 30	103750
• Collet Chuck SK 40	104320
• Keyless Drill Chuck 1-13 mm B 16	104765
• Accessory-Set ISO 40 5-pc.	104596
• Keyless Drill Chuck 3-16 mm B 18	104770
• Drill Chuck Arbors ISO 40 / B 18	104781
• Machine Vise MS 125	104955
• Clamping Tool Set De Luxe 14/M12	105295
• Divider ST 130	110960
• Optional Accessory Set / ST 130	110970
• Rotary table RT 200	125835
• E-VHF2 spare part package for 362650	259019

For additional options for this machine, visit our website and search for VHF 2 (Product Search)



MF 1 VP is shown

Extensive standard equipment

MF 1 VP

- The most widely used milling machine type in the world - with standard pneumatic tool clamping
- infinitely variable hand wheel adjustment
- Larger table with larger travel on X-axis
- TV 1000 automatic table advance on X-axis is included, retrofitting of Y-axis available

price on request

- head swivels through 3 axes:
swivel $r + l \pm 90^\circ$;
tilt forward + reverse $\pm 45^\circ$;
rotation on the column $\pm 45^\circ$
- 3 automatic drill feeds
- manual coarse feed for quill, with change-over for manual fine feed
- quill with automatic micrometer depth stop
- spindle mount ISO 30
- central lubrication for spindle, nut and guides
- pneumatic tool clamping

Standard Equipment

3-axis position indicator, TV 1000 automatic table advance (on MF 1 VP), pneumatic tool clamping, coolant system, manual central lubrication, vertical guideway cover, work lamp, operating tools, operator manual

Options	Part No.
• Accessory-Set ISO 30 4-pc.	104595
• Machine vise with pull-down system NZM 125	104918
• HS 125 Hydraulic Machine Vise	125024

For additional options for this machine, visit our website and search for MF 1 (Product Search)



MF 1 P

- Speed is changed by shifting the 2-step drive motor transmission, or by selecting the desired gear ratio at the drive belt (4 speed steps per gear ratio)
- Automatic table feed, type TV 1000 in X and Y, can easily be retrofitted

Specifications

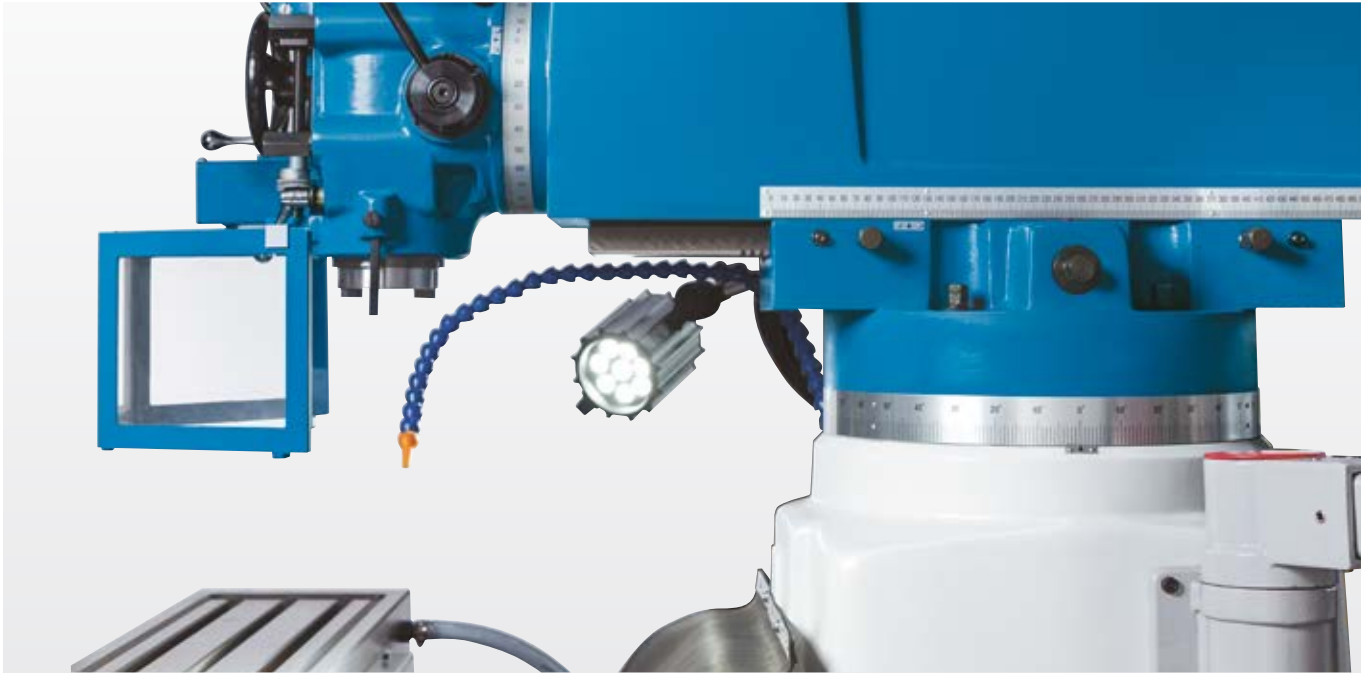
		MF 1 P	MF 1 VP
Working area			
X axis travel	mm	670	760
Y axis travel	mm	290	290
Z axis travel	mm	370	370
Table set up area	mm	1.060 x 230	1.245 x 230
T-slots (number/width/spacing)	mm	3 x 16 x 63,5	3 x 16 x 63,5
Vertical milling head			
Spindle speeds	rpm	(16) 80 - 4.500	(2) 60 - 4.200
Spindle mount / Quill stroke	mm	127 / ISO 30	ISO 30 / 127
Throat	mm	171 - 476	171 - 476
Feed speed X-axis	mm/min	-	19-890
Feed			
Quill feeds	mm/R	(3) 0,04; 0,08; 0,15	(3) 0,04; 0,08; 0,13
Console travel (Z-axis)	mm	-	370
Drive capacity			
Motor rating main drive	kW	2,2	2,25
Measures and weights			
Overall dimensions (length x width x height)	m	2 x 1,6 x 2,09	2,05 x 1,63 x 2,07
Weight	kg	1.100	950
Part No.		301219	301215



- Extensive standard equipment
- Infinitely variable spindle speeds up to 3600 rpm

- ISO 40 spindle
- 3 automatic drill feeds
- manual coarse feed for quill, with change-over for manual fine feed
- quill with micrometer depth stop
- reversing switch for forward reverse rotation
- spindle brakes

Price on request



Variable throat widths and machining angles



Wide, rigid box ways on Z and Y-axes

- infinitely variable speeds
- head swivels $\pm 90^\circ$ 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
- pneumatic tool clamping

Specifications		MF 5 VP
Working area		
Table size	mm	1.370x250
Table load capacity (max.)	kg	350
Travels		
X / Y / Z axis travel	mm	800 x 390 x 380
Vertical milling head		
Speed range, infinitely variable	1/min	70 - 3.600
Spindle mount		ISO 40
Quill stroke	mm	127
Feed		
Quill feeds	mm/R	(3) 0,04; 0,08; 0,15
Drive capacity		
Motor rating main drive	kW	3,75
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	2,54x2,16x2,24
Weight	kg	1.590
Part No.		301217

Standard Equipment

3-axis position indicator, table feed TV 1000 in X- and Y-axis, pneumatic tool clamping, chip tray, coolant system, central lubrication, horizontal guideway cover, operating tools, operator manual

Options	Part No.
• Accessory-Set ISO 40 5-pc.	104596
• Divider ST 130	110960
• HS 125 Hydraulic Machine Vise	125024

For additional options for this machine, visit our website and search for MF 5 (Product Search)



Extensive Standard Equipment

- **Drilling and Milling – a true added value for a low price**
- Large compound sliding table with automatic infinitely variable feed on X for coordinate drilling and light milling work
- quiet operation with oil-bath lubricated gears for long tool life and durability



Infinitely variable milling table feed

price on request



Coolant system with reservoir integrated into machine foot

Automatic quill feed with 3-step gears

Specifications

SBF 40

Working area		
Work feed	mm/min	0 - 420
Rapid feed	mm/min	600
Table set up area	mm	730x210
Table load capacity (max.)	kg	100
T-slot table (qty x width x spacing)	mm	3x14x63
T-slot foot (qty x width x spacing)	mm	2x14x200
spindle speeds (12)	1/min	75 - 3.200
Spindle mount		MK 4
Quill stroke	mm	120
Throat	mm	278
Column diameter	mm	115
Spindle nose-to-table surface distance	mm	600
Spindle nose-to-foot distance	mm	1.180
Drilling capacity in steel / ST37	mm	40
Head swivel range		± 45°
Thread cutting in steel / ST37		M16
Travels		
Travel X-axis	mm	500
Travel Y-axis	mm	190
Travel Z1-axis	mm	530
Travel Z2-axis	mm	530
Headstock		
Spindle mount		MK 4
Drive capacity		
Motor rating main drive	kW	1,1 / 1,5
Coolant system	kW	0,04
Measures and weights		
Overall dimensions (length x width x height)	m	0,83x0,76x1,85
Weight	kg	390
Part No.		101573

- the milling machine's high-quality spindle bearing can withstand higher loads for the long term
- manual drill feed can be switched to high-precision feed via a hand-wheel
- controllable automatic feed with 3 gear steps
- adjustable height of gear head and table
- table guides are adjustable with high precision via taper gibs
- gear head swivels to both sides
- cutter mounts are secured by an M16 drawbar
- tapping feature
- integrated coolant system

Standard Equipment

tapping unit, table feed TV 1000, draw bar, drill chuck, tool-holder bits, coolant system, operator manual

Options

Part No.

• Accessory-Set MT 4 8-pc.	104594
• Mounting Shaft MT 4	108641
• E-SBF 40 spare part package for 5 years for art. no. 101573	259119

For additional options for this machine, visit our website and search for SBF (Product Search)

Mark Super S • SV

Increased comfort for this compact, versatile powerhouse



- Extensive standard equipment package
- Automatic quill feed
- Large travel with TV 1000 table feed
- Multi-function position indicator

Mark Super S • SV

- Motorized cutter head movement and hand-wheel for exact positioning of head
- Hand-wheel for quill micro-feed
- Digital depth indicator for quill travel
- Tapping unit with adjustable rotation reversal for thread cutting
- Hardened gear racks and shafts for quiet operation and long life
- Rigid base with storage room is included
- Infinitely variable feed on X is included

price on request



Head swivels $\pm 45^\circ$

- **Mark Super SV - more power and variable speed control for a wider range of applications**
- Two gear steps and premium frequency control technology ensure high torque across the entire speed range for powerful machining
- The selected spindle speed is displayed directly on the control panel

Specifications

Working area

X axis travel autom./manual	mm
Y axis travel	mm
Table dimensions	mm
Drilling capacity in steel	mm
Guide width	mm
Shaft milling	mm
Head elevation	mm
T-slots (number/width/spacing)	mm

Vertical milling head

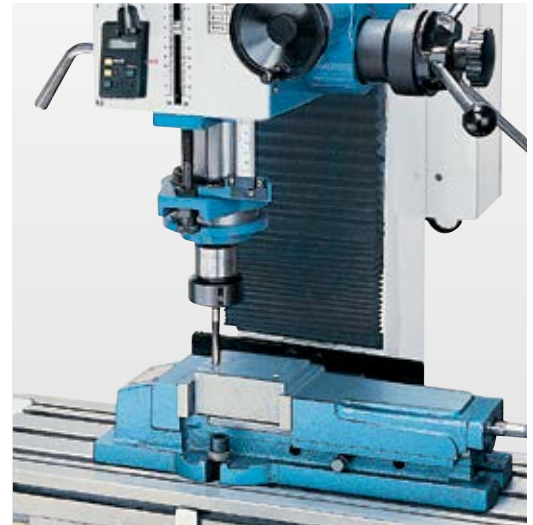
Speed	1/min
Spindle mount	
Quill stroke	mm
Quill diameter	mm
Spindle nose-to-table distance	mm
Throat	mm
Head swivel range	

Drive capacity

Supply voltage	V
Main motor rating	kW

Measures and weights

Overall dimensions (length x width x height)	m
Weight	kg
Part No.	



Tapping

Standard Equipment

3-axis position indicator, automatic quill feed (Mark Super SV), base, table feed TV 1000, drill chuck 13 mm, tool-holder bits, operator manual

Options

Options	Part No.
• Clamping Tool Set De Luxe 14/M12	105295
• Mounting Shaft MT 4	108641
• Electronic Edge Tracer	129055

For additional options for this machine, visit our website and search for Mark Super (Product Search)

Mark Super S

Mark Super SV

X axis travel autom./manual	mm	480 / 560	480 / 560
Y axis travel	mm	190	190
Table dimensions	mm	800x240	800x240
Drilling capacity in steel	mm	32	25
Guide width	mm	190	120
Shaft milling	mm	32	25
Head elevation	mm	350	380
T-slots (number/width/spacing)	mm	3x14x80	3x14x80
Speed	1/min	(12) 75-3200	(2) 75-438 / 438-2500
Spindle mount		MT 4	MK 4
Quill stroke	mm	120	120
Quill diameter	mm	75	75
Spindle nose-to-table distance	mm	460	450
Throat	mm	258	258
Head swivel range		$\pm 45^\circ$	$\pm 45^\circ$
Supply voltage	V	400	400
Main motor rating	kW	1,5 / 1,1	1,5
Overall dimensions (length x width x height)	m	1,25x0,95x1,42	1,24x0,93x2,1
Weight	kg	380	480
Part No.		301498	301490

PAGE **194** » BO 110 • 130



PAGE **196** » R 40 V • 60 V • 80 V • 100



PAGE **198** » R 40 V • 60 V • 80 V • 100



PAGE **200** » R 60 VT



PAGE **202** » R 32 Basic



PAGE **204** » KSR 40 Advance



Drilling

PAGE **206** » KSB 32A • 40B • 50C • 63B



PAGE **208** » SSB 40 F Super • 50 F Super



PAGE **210** » SSB 32 Xn • 40 Xn



PAGE **212** » TSB 25 • 35

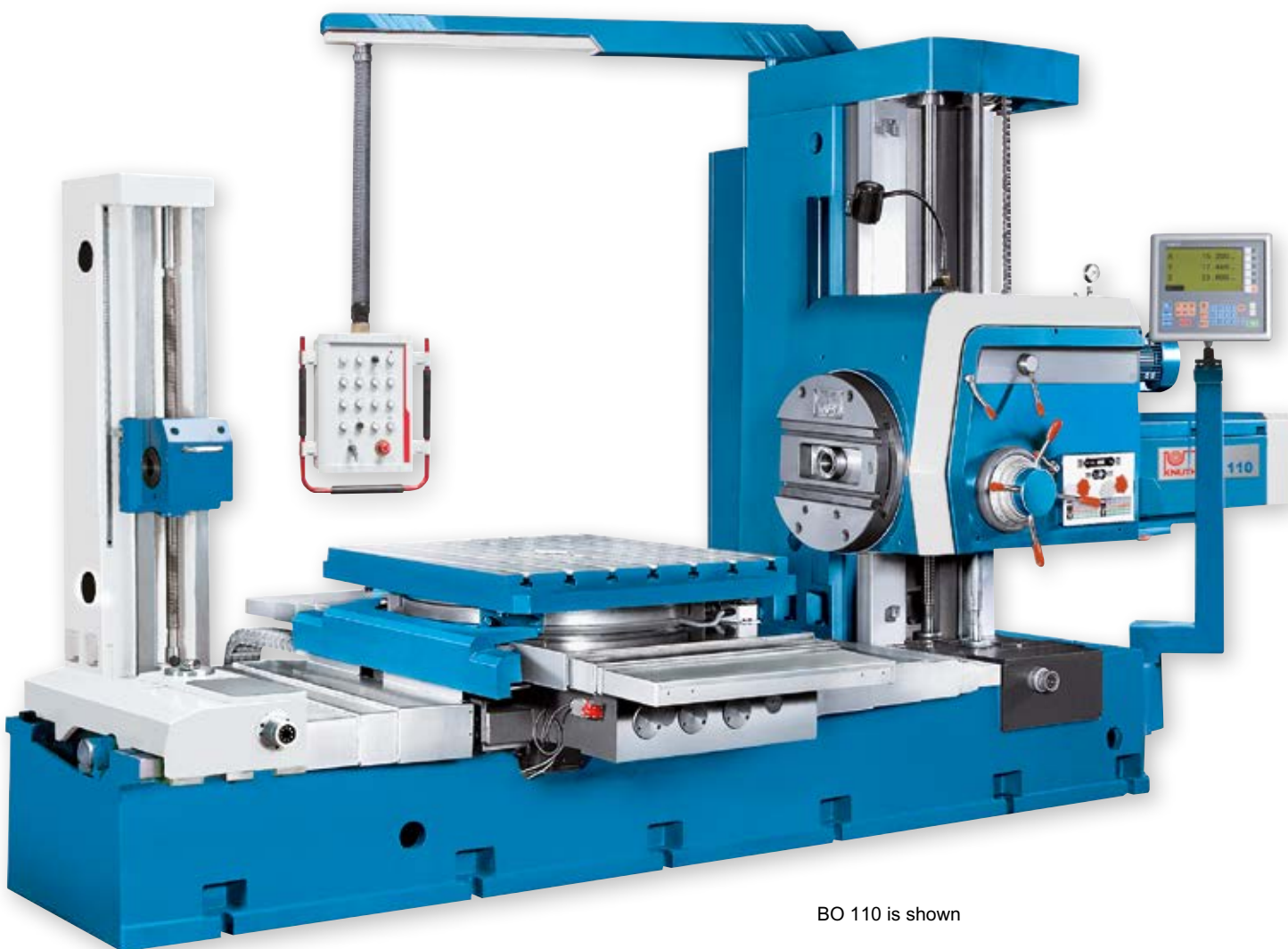


PAGE **214** » KST • KSS



PAGE **216** » KB 20 S • 32 SF • 20 SV • 32 SFV





BO 110 is shown

- 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
- faceplate and drill spindle with different task-specific speed ranges according to the various functions
- table rotates 360°
- telescoping steel cover protects the guides from chips and dirt
- BO 110 incl. tailstock (optional on BO 130)

Price on request



Swivelling set-up table with motorized feed and hydraulic clamping

Standard Equipment

3-axis position indicator, wedge strip, central lubrication, work lamp, foundation bolts, operating tools, operator manual

Options

Part No.

• Boring tool holder for facing plate for BO 130	250606
• Milling tool holder for facing plate for BO 130	250607
• Boring head	250609
• Option B axis DRO for BO 130 - 399022	252721

For additional options for this machine, visit our website and search for BO 110 or BO 130 (Product Search)

Specifications

BO 110

BO 130

Working area			
X axis travel	mm	900	2.000
Y axis travel	mm	900	1.800
Z axis travel	mm	600	900
W axis travel	mm	1.000	2.000
Facing slide travel	mm	180	250
Table set up area	mm	1.100x960	1.600x1.800
Table load capacity	kg	2.500	10.000
Spindle axis-to-table surface distance	mm	0 - 900	0 - 1.800
Rotation speed of rotary table	1/min	1	1,2
Headstock			
Speed range	1/min	(22) 8 - 1.000	(24) 4 - 800
Spindle diameter	mm	110	130
Main spindle torque (max.)	Nm	1.225	3.136
Spindle mount		SK 50	SK 50
Facing slide speed	1/min	(18) 4 - 200	(18) 2,5 - 125
Feed force, axial (max.)	kN	12,25	31,36
Facing slide torque (max.)	Nm	1.960	4.900
Cutting capacity			
Drilling capacity	mm	50	60
Feed			
Feed X / Y / Z / W axis	mm/R	(36) 0,01 - 6	(36) 0,01 - 6
Facing slide feed	mm/min	(18) 0,08 - 12	(18) 0,08 - 12
Accuracies			
Read-out accuracy (optic)	mm	0,01	0,005
Counter-bore accuracy	µm	H7 Ra-1,6	H7 Ra-1,6
Rapid feed			
Rapid feed X-axis	mm/min	2.500	2.500
Rapid feed Y-axis	mm/min	2.500	2.500
Rapid feed W-axis	mm/min	2.500	2.500
Drive capacity			
Motor rating main drive	kW	7,5	15
Motor rating servo drive	kW	-	5,5
Motor rating, rapid reed	kW	3	-
Motor rating hydraulic pump	kW	0,37	0,37
Measures and weights			
Overall dimensions (length x width x height)	m	4,88x2,45x2,75	7,03x4,66x3,8
Weight	kg	11.500	29.300
Part No.		301499	399022



R 60 V is shown

- base, column, boom and gear head are made of premium high-quality cast
- major design features include a large column and a highly torsion-resistant boom
- boom height adjustment via a powerful motorized drive and vertical spindle
- the boom lifting gears run in an oil-bath for maximum reliability and minimum wear
- advanced column swivel design with optimized clamping features, maximum rigidity and minimum clamping offset
- swivel axis and travel axis feature extremely smooth operation to make the operator's everyday production work easier
- the gears feature hardened and precision-ground chrome-nickel steel gears for smooth and low-noise operation
- all gear parts are lubricated reliably via oil pump
- the main spindle runs on precision bearings and features an automatic spindle brake

price on request

Standard Equipment

coolant system, cube table, LED lights, operator manual

Options

Part No.

• Accessory-Set MT 4 8-pc.	104594
• Compound Sliding Tables 855x295	106017
• Drill Press quick-action machine vise with V-guides PBS 200	125007

For additional options for this machine, visit our website and search for Radial (Product Search)

R 40 V - new design • Infinitely variable speed control • Large work area



R 40 V

- 40 mm boring capacity, large throat and optimum machining height
- infinitely variable speed control with back gearing for high torque across the entire speed range
- 4-step feed gears
- the boom can be moved vertically, while column and head remain clamped and fixed in their positions
- the drill head can be moved radially and positioned with high precision via a centrally located hand-wheel
- a clamping lever at the drill head allows the operator to release the boom so it can be moved via a hand-wheel and to swivel the boom and fix it again in its position
- manual central lubrication

R 60 V • R 80 V

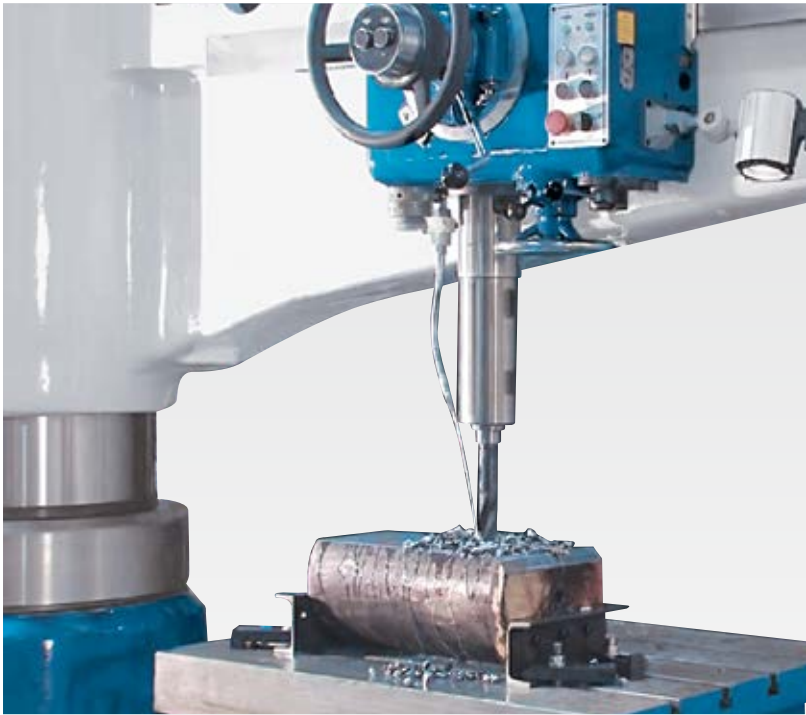
- Optimum size/performance ratio and a new drive technology make these two systems bestsellers
- infinitely variable spindle speed and easy to read digital display
- the quills of the R 60 V and R 80 V feature guided counterweights for easy handling and increased safety
- manually shiftable feed gears with 8 steps
- independent hydraulic clamping: boom can be moved vertically without affecting the spindle-to-bore alignment
- drill head and column can be clamped/released together or separately with the push of a button
- a central lubrication system ensures reliable lubrication of the column



R 100 is shown

- quill teeth are precision-ground for a smooth feed and minimum wear
- the drill head moves on hardened and ground guideways
- all models feature adjustable overload clutches in the feeds
- adjustable boring depth stop with large, easy to read scale

- all operator controls are placed within reach for convenient and practical handling and quick learning
- powerful coolant system with coolant reservoir integrated into the machine foot



Powerful machining with automatic feed

R 60 V is shown

R 100

- A large throat and high boring capacities are supported by a very rigid structural design, without compromising the ease of handling and smoothness of operation
- The drill head features a rigid design with motorized or manual movement
- Spindle speeds and feed velocity are hydraulically controlled for easy and safe operation
- The drill spindle is driven by a multi-disk reversing clutch to avoid excessive load peaks; easy operation
- Independent hydraulic clamping of head, column and boom
- Drill head and column can be clamped/released together or separately; controlled via push button
- Boom and column are oiled through a reliable central lubrication system

Specifications		R 40 V	R 60 V	R 80 V	R 100
Working area					
Drilling capacity in steel	mm	40	62	80	100
Tapping capacity (steel / casting)		M 32 / M 40	M 46 / M 52	M 52 / M 60	M 70 / M 80
Drilling depth (max.)	mm	260	315	400	500
Machine table dimensions	mm	2.050x920x180	2.400x1.000x200	3.380x1.230x280	4.425x1.630x300
Cube table dimensions	mm	620x450x450	500x710x500	580x850x500	1.250x800x630
Spindle-to-column surface distance	mm	300 - 1.300	350 - 1.600	450 - 2.550	570 - 3.150
Spindle nose-to-table surface distance	mm	300 - 1.200	350 - 1.250	400 - 1.580	750 - 2.500
Drill head travel (horizontal)	mm	1.000	1.250	2.100	2.580
Arm stroke (vertical)	mm	640	585	800	1.000
Column diameter	mm	280	350	450	700
Headstock					
Speed range	rpm	54 - 2.150	38 - 2.000	30 - 1.400	(22) 8 - 1.000
Spindle mount		MK 4	MK 5	MK 6	MK 6
Feed					
Feeds	mm/R	0,1 - 0,63	0,06 - 1	0,06 - 1,38	0,06 - 3,2
Drive capacity					
Motor rating main drive	kW	2,2	4	7,5	15
Stroke motor	kW	1,1	1,5	2,2	3
Measures and weights					
Overall dimensions (length x width x height)	m	2,07x0,85x2,43	2,49x1,05x2,78	3,59x1,25x3,53	4,78x1,63x4,72
Weight	kg	2.300	3.800	7.400	20.000
Part No.		101556	101649	101558	101653



- Unique operating concept
- Servomotor-driven quill feed
- Large touchscreen
- Rigid design and powerful performance

Price on request



All functions are shown on the touchscreen's graphic display

- Base, column, boom and gear head are made of premium high-quality cast
- major design features include a large column and a highly torsion-resistant boom
- boom height adjustment via a powerful motorized drive and vertical spindle
- the boom lifting gears run in an oil-bath for maximum reliability and minimum wear
- swivel axis and travel axis feature extremely smooth operation to make the operator's everyday production work easier
- a central lubrication system ensures reliable lubrication of the column

- **Electronically controlled servo quill feed with large touchscreen display**
- Drilling depth is electronically set and the input value is checked by the system
- Measuring units for input and display can be selected by the operator (mm or inch)
- The high-performance coolant system enabled at the touchscreen and will be turned on and off as a function of the main spindle
- The machine has 2 gear steps, and the rpm can be infinitely varied and displayed at the monitor
- A servo motor provides infinitely variable control of the quill feed - upon reaching the preselected drilling depth, the quill automatically returns to the starting position
- Thread cutting is, however, completely manual, i. e., the operator changes the quill's rotational direction upon reaching the drilling depth
- The operator sets the boom height by touching the respective icon, whereupon the system automatically releases and fixates the hydraulic clamps, turns off the lift motor, and considers all set limit stops
- Drill head and column can be clamped/released together or separately
- Boom can be moved vertically without losing the spindle-to-bore alignment

- The control software also provides recommendations for rpm and feed in relation to the desired drill size
- Various alarm screens warn the operator in case of operational errors and display information on the operational state

Specifications

R 60 VT

Working area		
Drilling capacity	mm	60
Tapping capacity (steel / casting)		M 45 / M 50
Drilling depth (max.)	mm	315
Spindle nose-to-table surface distance	mm	350 - 1.250
Drill head travel (horizontal)	mm	1.250
Headstock		
Speed range	1/min	(2) 38 - 2.000
Spindle mount		MK 5
Feed		
Feeds	mm/min	0 - 300
Drive capacity		
Motor rating main drive	kW	4
Stroke motor	kW	1,5
Measures and weights		
Overall dimensions (length x width x height)	m	2,49x1,05x2,78
Weight	kg	3.800
Part No.		101656

Standard Equipment

coolant system, cube table, work lamp, operator manual

Options

Part No.

• Extension Sleeve MT 4/5	104670
• Taper Drift MT 4/5	104695
• Tapping Attachment M8 - M20 (MT3 + MT4)	106037
• Mounting Shaft MT 4	108641
• Drill Press quick-action machine vise with V-guides PBS 200	125007



Rigid column base with central main switch

price on request



Swiveling boom for large throat widths

- 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 of consistent accuracy
- mechanical clamping for head, column and arm

Specifications

R 32 Basic

Working area		
Tapping capacity (steel / casting)	mm	32
Column diameter	mm	200
Throat (spindle-to-column surface) max.	mm	820
Throat (spindle-to-column surface) min.	mm	320
Spindle nose-to-table distance (max.)	mm	860
Spindle nose-to-table dist. min.	mm	320
Cube table dimensions (LxWxH)	mm	400x400x350
Machine table dimensions (LxWxH)	mm	1.370x700x160
Quill stroke	mm	240
Headstock		
Spindle mount		MT 4
Speeds (number/range)	rpm	(6) 75 - 1.220
Feed		
Speeds (number/range)	mm/R	(3) 0,1 - 0,25
Drive capacity		
Motor rating	kW	1,5
Measures and weights		
Overall dimensions (length x width x height)	m	1,41x0,72x1,89
Weight	kg	1.425
Part No.		101522



Hand-lever for quill feed is used to control the automatic feed

Standard Equipment

coolant system, cube table, halogen lights

Options

Part No.

• Accessory-Set MT 4 8-pc.	104594
• Hydraulic Machine Vise HS 125	125024
• Machine Vise MS 125	104955
• Universal Facing / Lathe Bore Head ADA / MT 4	103402
• Reduction Sleeve MT 4/1	103820
• Reduction Sleeve MT 4/2	103825
• Reduction Sleeve MT 4/3	103830
• Shell End Milling Arbor Ø16 MT 4	103860
• Taper Drift MT 4/5	104695
• Tool Holder Bit MT 4 / B 16	104745
• Keyless Drill Chuck 1-13 mm B 16	104765
• Machine Vise MS 160	104960
• Compound Sliding Table 730x210 mm	106009
• Tapping Attachment M5 - M12 (MT3 + MT4)	106035
• Hand Reamer Set	107610
• HSS Form Countersink Set round 2 - 12 mm	107615
• Roughing End Mill Cutter 40	108400
• Mounting Shaft MT 4	108641
• Combo Flat Counter Sink	108655
• Power Worker Metal Cutter	123040
• Drill Press quick-action machine vise with V-guides PBS 140	125006
• Precision Inside Micrometer Set 50-600 mm	129048

For additional options for this machine, visit our website and search for R 32 (Product Search)

KSR 40 Advance

Linear guides for easy handling and excellent stability



- Infinitely variable spindle speed
- Digital drilling depth indicator

- powerful machine for drilling, tapping, countersinking and boring
- large travel ranges and many different machining stations provide maximum setup and machining possibilities
- extremely sturdy construction ensures high accuracy and reliability

price on request



Additional setup area meets all your requirements

- 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

Specifications

KSR 40 Advance

Working Area		
Drilling capacity	mm	40
Tapping capacity (max.)		M 30
Throat	mm	950
Spindle nose-to-table distance (max.)	mm	780
Column stroke	mm	380
Quill stroke	mm	200
Head swivel range	deg	± 90
Column diameter	mm	220
Table set up area	mm	1.200x505
T-slots (number x width)	mm	3 / 18
Travels		
Upper beam travel	mm	590
Headstock		
Spindle mount	MT	4
Spindle speeds, infinitely variable	rpm	50 - 315, 315 - 2000
Feed		
Spindle feeds (number)	mm/R	(6) 0,08 - 0,5
Drive Capacity		
Main motor	kW/V	2,2 / 400
Motor for height adjustment	kW/V	1,5 / 400
Coolant pump motor	kW/V	0,37 / 400
Supply voltage	V	400
Measures and Weights		
Overall dimensions (length x width x height)	m	1,72x1,2x2,25
Weight	kg	2.740
Part No.		162363



Easy handling and sophisticated functionality

- drill head swivels ±90 degrees
- automatic feed with depth stop trigger
- thick-walled column and large dimensions of all components ensure maximum accuracy
- digital boring depth display

Standard Equipment

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

Options

Part No.

• Coolant Concentrate 5 Ltr.	103184
• Universal Facing / Lathe Bore Head ADA / MT 4	103402
• De Luxe Clamping Tool Set 18/M16	105305
• Reduction Sleeve MT 4/2	103825
• Reduction Sleeve MT 4/3	103830
• Machine Vise with Pull-Down System NZM 160	104920
• Machine Vise with Pull-Down System NZM 200	104922
• Tapping Attachment M8 - M20 (MT3 + MT4)	106037
• Lathe Bore Head with Boring Bar Set 75 mm 12 pcs.	108633
• Precision Inside Micrometer Set 50-600 mm	129048

For available options for this machine, visit our website and search for KSR 40 (Product Search)



KSB 40 B is shown with optional accessories



KSB 63 B is shown

- box-column design provides high load capacity, and is torsion-proof and rigid
- table and drill head can be moved individually for an optimum machining height
- 9-step feed and speed gears, with oil-bath lubrication

- high torque across the entire speed range
- thread-cutting unit automatically reverses upon reaching the preset depth
- Rapid quill feed with drill cycle processing (KSB 63 B)

price on request



Standard Equipment

coolant system, tapping unit, rapid feed motor for quill stroke (KSB 63), halogen lights, operating tools, operator manual

Options	Part No.
• E-KSB40B/50C spare part package 5 years for art. 101693/101694	259058
• E-KSB32 A spare part package for 5 years for art. no. 101692	259057
• Direct indexing head S 200	110966
• Rotary Table RT 250	125840
• Swivel Table ST 380	129345
• Compound Sliding Table 730 x 210 mm	106009
• Drill Press quick-action machine vise with V-guides PBS 200	125007
• UMS 200 Universal Machine Vise	125032
• Accessory-Set MT 4 8-pc.	104594
• De Luxe Clamping Tool Set 18/M16	105305
• Tapping chuck GSF M6-24/MT4	104713
• Coolant Concentrate 5 Ltr.	103184
• Universal Facing / Lathe Bore Head ADA / MT 4	103402
• Lathe Bore Head with Boring Bar Set 75 mm 12-pc.	108633
• Mounting Shaft MT 4	108641
• Tool Holder Bit MT4/B16	104745
• Tool Holder Bit MT4/B18	104750

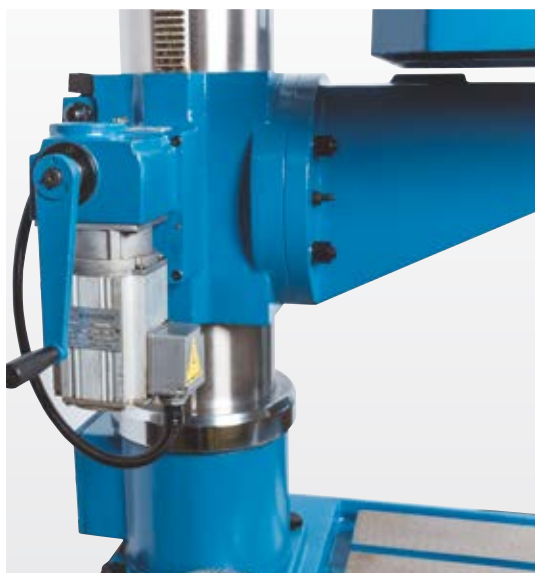
For additional options for this machine, visit our website and search for KSB (Product Search)

Change-over points of the thread cutting unit are adjusted at a large scale ring via switching cams

Specifications		KSB 32A	KSB 40B	KSB 50C	KSB 63B
Working area					
Drilling capacity in steel	mm	32	40	50	63
Feed force	N	9.000	16.000	16.000	30.000
Throat	mm	280	335	335	375
Vertical head travel	mm	200	200	195	260
Quill stroke	mm	200	250	250	250
Spindle feeds / number	mm/R	(9) 0,056 - 1,8	(9) 0,056 - 1,8	(9) 0,056 - 1,8	(6) 0,1 - 0,78
Spindle nose-to-table distance (max.)	mm	690	650	725	860
Table stroke	mm	300	315	315	300
T-slots, width	mm	14	18	18	22
Number of T-slots	Pieces	3	3	3	3
Table set up area	mm	400x550	480x560	480x560	650x550
Headstock					
Spindle Torque (max.)	Nm	160	350	350	800
Spindle mount		MK 4	MK 4	MK 5	MK 5
Speeds / number	1/min	(12) 50 - 2.000	(12) 31,5 - 1.400	(9) 45 - 850	(9) 40 - 570
Drive capacity					
Spindle drive	kW	2,2	3	4	5,5
Motor rating coolant pump	kW	0,09	0,09	0,09	0,09
Measures and weights					
Flow rate	l/min	25	25	25	25
Overall dimensions (length x width x height)	m	0,96x0,85x2,34	1,04x0,91x2,53	1,04x0,91x2,54	0,97x1,45x2,79
Weight	kg	950	1.250	1.250	2.500
Part No.		101692	101693	101694	101695

SSB 40 F Super • 50 F Super

Production Drill Press with infinitely variable speed and tapping feature



Drill press table with motorized travel and adjustable angle

- Motorized table height adjustments
- Automatic quill feed
- Infinitely adjustable speed



SSB 50 F Super is shown

Price on request

- **Ideal for single part and series productions, for drilling, countersinking, reaming and tapping**
- 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
- Digital boring depth display
- Large drilling table with circumferential coolant groove, height adjustment, and $\pm 45^\circ$ swivel range
- Tapping unit is standard

Standard Equipment

tapping unit, protective shield, work lamp, coolant system, operating tools, operator manual

Options

	Part No.
• PB 100 V-Block Drill Press Vise	104840
• Reduction Sleeve MT 4/2	103825
• Mounting Shaft MT 4	108641

For additional options for this machine, visit our website and search for SSB F Super (Product Search)



Digital display and ergonomically positioned controls ensure maximum user comfort

Specifications

		SSB 40 F Super	SSB 50 F Super
Working area			
Drilling capacity	mm	40	50
Tapping capacity, steel		M 24	M 30
Table set up area	mm	540x440	580x460
Quill stroke	mm	190	200
Manual table travel	mm	570	530
Powered table travel	mm	430	410
Table swivel range (max.)		$\pm 45^\circ$	$\pm 45^\circ$
Column diameter	mm	140	180
Spindle nose-to-table distance (max.)	mm	665	590
Spindle nose-to-foot distance	mm	1.195	1.175
Throat	mm	340	360
Headstock			
Speed range	1/min	60 - 2.600	50 - 2.200
Spindle mount		MK 4	MK 4
Feed			
Quill feeds	mm/R	0,1; 0,2; 0,3; 0,4 (4)	0,08; 0,12; 0,17; 0,24; 0,35; 0,50 (6)
Drive capacity			
Motor rating / voltage	kW/V	2 / 400	3 / 400
Measures and weights			
Overall dimensions (length x width x height)	m	1x0,65x2,22	1,15x0,68x2,36
Weight	kg	500	650
Part No.		162335	101669

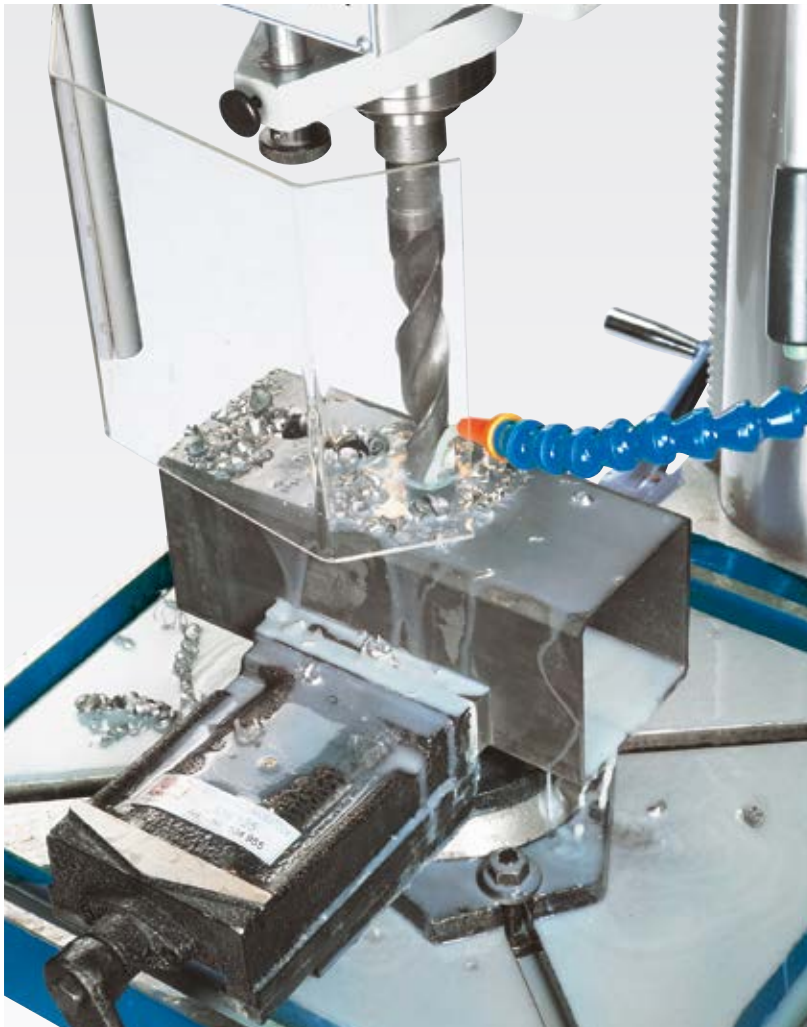


SSB 32 Xn

- 2-step motor
- head swivels 45°, adjustable height
- digital rpm display

SSB 40 Xn shown

price on request



- heavy cast-iron construction with thick-walled column
- tapping feature
- automatic drill feeds controlled by an electromagnetic clutch
- including coolant system and work lamp
- table rotates and swivels $\pm 45^\circ$

Standard Equipment

tapping unit, protective shield, halogen lights, coolant system, operating tools, operator manual

Options	Part No.
• E-SSB 32XN spare part package for 5 years for part no. 162332	259132
• Drill press machine vise with V-guides PB 100	104840
• Accessory-Set MT 4 8-pc.	104594
• Drill press machine vise with V-guides PB 120	104845
• Clamping Tool Set De Luxe 14/M12	105295
• E-SSB40Xn spare parts package for 5 years for part no. 162338	259134

For additional options for this machine, visit our website and search for SSB 32 und 40 Xn (Product Search)

Specifications

		SSB 32 Xn	SSB 40 Xn
Working area			
Drilling capacity	mm	32	40
Tapping capacity, steel		M 20	M24
Table set up area	mm	500x420	540x440
Table stroke	mm	490	550
Quill stroke	mm	160	190
Table swivel range (max.)		$\pm 45^\circ$	$\pm 45^\circ$
Spindle nose-to-table distance (max.)	mm	630	610
Spindle nose-to-foot distance	mm	1.185	1.195
Throat	mm	320	340
Column diameter	mm	120	140
Head travel	mm	285	-
Head swivel range		$\pm 45^\circ$	-
Headstock			
Spindle mount		MK 4	MK 4
Spindle speed	1/min	(12) 125 - 3.030	(12) 75 - 2.020
Feed			
Quill feeds	mm/R	0,1; 0,2; 0,3	0,12; 0,24; 0,4
Drive capacity			
Motor rating / voltage	kW/V	1,2 / 400	1,5 / 400
Measures and weights			
Overall dimensions (length x width x height)	m	0,84x0,5x1,96	0,95x0,61x2,23
Weight	kg	540	550
Part No.		162332	162339



TSB 25 is shown



TSB 35 is shown
with digital rpm display

price on request



TSB 25: compact design with manual transmission



Universal machine base with storage room (Part No. 123952)

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

TSB 35

- automatic quill feed
- rpm indicator
- coolant system
- head swivels $\pm 45^\circ$
- tapping feature



Swiveling drill head and automatic feed with 3 gear steps

Standard Equipment

base, protective shield, tapping unit (TSB 35), LED work lamp, coolant system (TSB 35), drill chuck, operating tools, operator manual

Options

Options	Part No.
• Vise PB 100	104840
• Clamping Tool Set De Luxe 14/M12	105295
• Accessory-Set MT 4 8-pc.	104594

For additional options for this machine, visit our website and search for TSB (Product Search)

Specifications

		TSB 25	TSB 35
Working area			
Drilling capacity in steel	mm	25	35
Tapping capacity, steel		M 16	M 22
Foot set up area (length x width)	mm	310x320	370x360
Quill stroke	mm	110	155
Vertical head travel	mm	470	515
Spindle nose-to-foot distance	mm	650	645
Throat	mm	240	320
Column diameter	mm	95	120
Speed range	rpm	(6) 125 - 2.825	(12) 125 - 3.030
Headstock			
Spindle mount		MT 3	MT 4
Feed			
Quill feeds	mm/R	-	(3) 0,1; 0,2; 0,3
Drive capacity			
Motor rating main drive	kW	0,75	1,2
Measures and weights			
Overall dimensions (length x width x height)	m	0,7x0,41x1,56	0,81x0,5x1,67
Weight	kg	220	340
Part No.		162340	162345



KST 16V is shown

KST 16V, KSS 25V
• Automatic feed



KSS 32 is shown

KSS 25V and KSS 32
• Coolant system included

price on request



Robust, vibration-free, low-maintenance drive



Coolant system is integrated into the machine base (KSS 25V, KSS 32)



Drill table swivels and can be rotated around column



Universal machine base with storage room, only KST 16 and KST 16V (Part No. 123952)

- belt drive for low-noise operation, low-maintenance and robust design
- precision spindle bearing - long life and high accuracy
- table movement via hand-crank and gear rack
- adjustable depth stop at the capstan handle
- long quill stroke with precision guide
- thick-walled column for maximum rigidity during machining of large parts

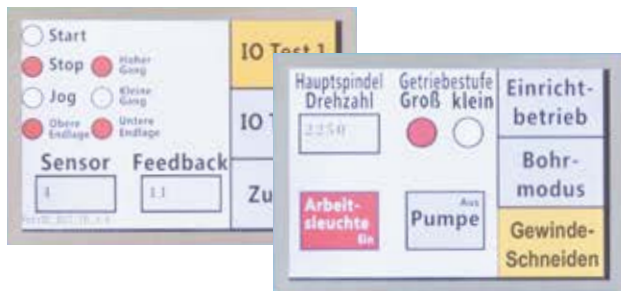
Standard Equipment:

Drill chuck with key, tool-holder bits, taper drift, coolant system (KSS 25V, KSS 32), automatic feed (KST 16V, KSS 25V), operating tools, operator manual

Options	Part No.
• Vise UMS 100	125030
• Clamping Tool Set De Luxe 14/M12	105295
• Accessory-Set MT 3, 7-pc.	104593
• Swivel Hold-Down Clamp Set 100/M12	105790
• Compound Sliding Tables 230x145	106001
• Hand Reamer Set	107610
• Roughing End Mill Cutter 40	108400
• Combo Flat Counter Sink	108655
• Inside Micrometer Set 3-Point 11-20	129061

For additional options, visit our website and search for KST and KSS (Product Search)

Specifications		KST 16	KST 16V	KST 25	KSS 25V	KSS 32
Working area						
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
Spindle nose-to-table distance (max.)	mm	375	375	425	680	750
Spindle nose-to-foot dist. (max.)	mm	610	610	610	965	975
Table set up area	mm	280x310	280x310	280x310	330x380	330x380
Foot set up area (length x width)	mm	245x245	245x245	245x245	330x320	300x325
Headstock						
Spindle mount		MT 2	MT 2	MT 3	MT 3	MT 3
Spindle speed range	rpm	(6) 290 - 2.000	(6) 290 - 2.000	(9) 160 - 1.820	(6) 230 - 2.160	(9) 160 - 1.880
Feed						
Automatic feed	mm/R	-	(4) 0,10; 0,14; 0,17; 0,25		(3) 0,10; 0,16; 0,17; 0,25	-
Drive capacity						
Motor rating / voltage	kW	0,75 / 400 V	0,75 / 400 V	1,1 / 400 V	1,5 / 400 V	1,5 / 400 V
Measures and weights						
Height	mm	1.050	1.050	1.050	1.580	1.760
Weight	kg	108	108	108	190	190
Part No.		162510	162500	162506	162502	162508



Touchscreen with comfortable selection of functions, like drilling, thread-cutting, and setup operations (SV and SFV)



KB 20 SV is shown



KB 32 SFV is shown

Price on request

- Modern design, high-quality cast-iron, and excellent workmanship combined with superior rigidity, function and appearance
- Heavy, precision-ground work table with diagonal T-slots
- Very smooth height adjustment of drill table, even under high loads
- Large base plate with ground setup area and parallel T-slots
- Forward and reverse, plus automatic reversal of direction for thread cutting
- Spindle shank and spindle are hardened and ground



(S and SV)



KB 20 S is shown



KB 32 SF is shown

- Robust belt drive and quiet, powerful motor
- Integrated LED work lamp is standard
- S-series models with digital speed indicator

V models:

- Infinitely variable speed adjustment via potentiometer
- Touchscreen with comfortable selection of functions, like drilling, thread-cutting, and setup operations
- The control unit allows querying of all limit switches and shows all functionalities, like coolant system, rpm and work lamp

Standard Equipment

work lamp, coolant system (KB 32), drill chuck, tool-holder bits, drill press vice, tapping unit, operating tools, operator manual

Options

for this machine, visit our website and search for KB 20 S or KB 32 SF (Product Search)



Universal machine base with storage room for the KB 20 S / KB 20 SV (Part No. 123952)

Specifications

		KB 20 SV	KB 20 S	KB 32 SF	KB 32 SFV
Working area					
Drilling capacity	mm	20	20	32	32
Tapping capacity (max.)		M 16	M 20	M 24	M 24
Table set up area	mm	255x255	255x255	330x330	380x400
Spindle nose-to-table dist.	mm	366	366	813	820
Spindle nose-to-foot distance	mm	678	678	1.236	1.236
Throat	mm	240	240	265	265
Column diameter	mm	85	85	100	100
Headstock					
Speed range	1/min	205 - 2.045	(5) 320 - 1.820	(8) 320 - 1.820	(2) 140 - 2.250
Spindle mount		MK2	MK2	MK3	MK3
Quill stroke	mm	135	135	150	150
Drive capacity					
Motor rating / voltage	kW/V	1,1 / 400	1,1 / 400	1,5 / 400	1,5 / 400
Measures and weights					
Overall dimensions (length x width x height)	m	1x0,56x1,4	0,94x0,49x1,39	1x0,6x2,1	0,9x0,6x1,9
Weight	kg	179	170	345	310
Part No.		170462	170460	170461	170463

PAGE **220** » ABS 460 TNC



PAGE **222** » ABS 600 TNC



PAGE **224** » ABS 330 TNC



PAGE **226** » ABS 300 NC



PAGE **228** » ABS 320 B



Saws

PAGE **230** » ABS 325 L • 380 L • 460 L • 560 L



PAGE **232** » ABS 280 T



PAGE **234** » HB 280 T • 400 T



PAGE **236** » HB 280 TG



PAGE **238** » HB 300 PLC



PAGE **240** » HB 280 B • 320 BS



PAGE **242** » HB 380 L - 1020 L



PAGE **244** » SBS 255 • SBS 355



PAGE **246** » HB 150 • 210 A • 250 A • B 200 S



PAGE **248** » VB 300 • 360 • 410 • 510 • 610



PAGE **250** » KHK 350 • KKS 250 • 275 • 315 • 350 T

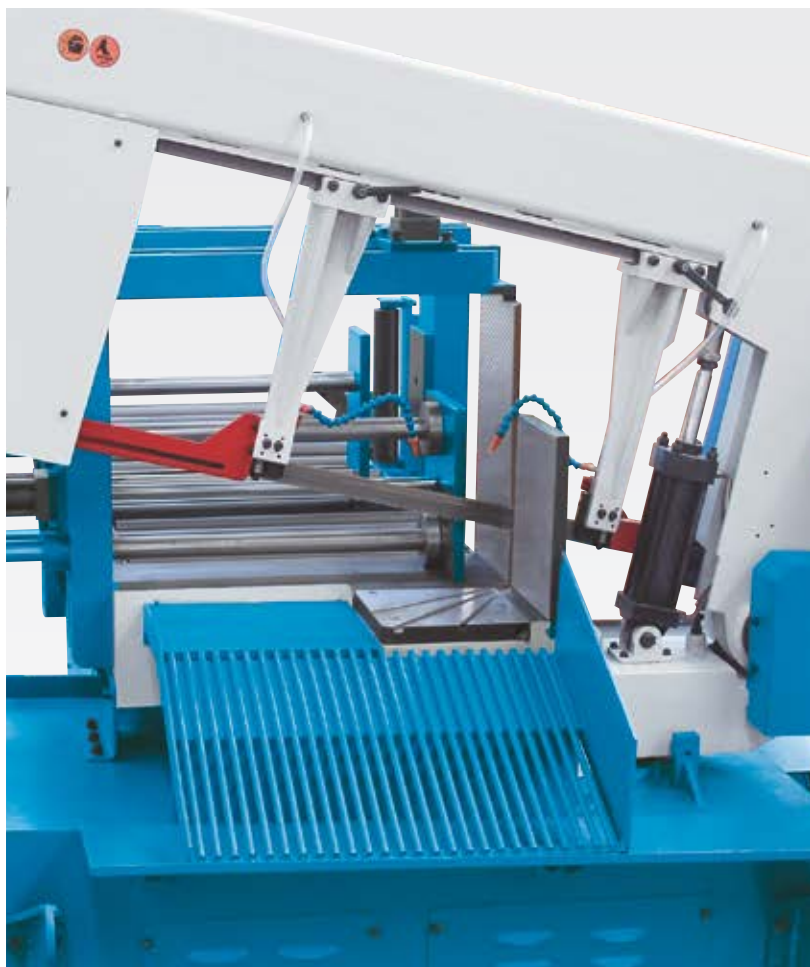




- PLC control
- Automatic cut angle adjustment at 90°, 30° and 45°
- Large touchscreen display
- Fully automated workpiece feed

- Cut angle can be automatically positioned at 90, 45 and 30°
- Robust touch screen control panel for easy programming of the cutting task
- Automatic workpiece feed features a precision linear measuring system
- Hydraulic saw frame feed, infinitely variable
- Servo-motor drive provides infinitely variable saw blade cutting speeds and high torque across the entire speed range
- Band speed indicator on the display
- Precise and stable saw band guides ensure high angular accuracy

Price on request



Dual hydraulic gantry vise ensures maximum stability, even during machining of bundles



Control panel swivels and features an intuitive layout

Specifications

ABS 460 TNC

Cutting Capacities		
Cutting speed	m/min	23 - 95
Feed per scale division X-axis	mm	650
Working height	mm	850
Cutting capacity 90° - round	mm	460
Cutting capacity 90° - square	mm	350
Cutting capacity 90° - flat	mm	650x350
Cutting capacity 30° (round)	mm	310
Cutting capacity 30° (square)	mm	310
Cutting capacity 30° (flat)	mm	310x350
Cutting capacity 45° - round	mm	460
Cutting capacity 45° - square	mm	350
Cutting capacity 45° - flat	mm	460x350
Cutting capacity 60° (round)	mm	460
Cutting capacity 60° (square)	mm	350
Cutting capacity 60° (flat)	mm	580x350
Drive capacity		
Motor rating main drive	kW	5,5
Motor rating hydraulic pump	kW	1,5
Motor rating coolant pump	kW	0,045
Measures and weights		
Belt dimensions	mm	5.220x41x1,3
Overall dimensions (length x width x height)	m	3,23x2,72x1,77
Weight	kg	2.430
Part No.		152824

Standard Equipment

NC control, hydraulic vice, hydraulic feed vise, bi-metallic band saw blade, touch screen monitor, coolant system, chip brush, material support base with roller, operating tools, operator manual

Options

Part No.

• Bimetallic Bandsaw Blade ABS 460 TNC (3/4 T)	119226
• Bimetallic Bandsaw Blade ABS 460 TNC (4/6 T)	119227



- PLC and linear measuring system
- Automatic cut angle adjustment 0° - 45°
- Large touchscreen display
- Fully automated workpiece feed

- For efficient severing cuts of large diameters this heavy machine provides NC-controlled material feeds and cutting cycles
- The robust touchscreen is mounted to a rotating control panel for quick programming and safe handling of the machine
- The machine frame is a torsion-resistant dual-column construction that ensures superior stability and torsional strength
- The hydraulically controlled saw frame feed can be infinitely adjusted as needed by the operator
- The hydraulically controlled vise positions the workpiece in the programmed position, while a second vise secures the workpiece precisely in front of the saw blade
- The linear measuring system is mounted at the feed system to ensure precise workpiece dimensions and exact repeatability

Price on request



The desired sawing angle is programmable for automatic positioning (15°, 30°, 45°)

- An infinitely variable high-torque servo-motor allows adjustments based on cutting speed
- Band speed indicator on the display
- Spiral chip conveyor is part of the standard equipment

Specifications

ABS 600 TNC

Cutting Capacities

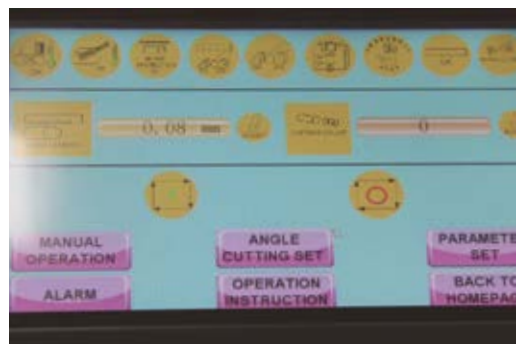
Cutting speed	m/min	0 - 100
Feed per scale division X-axis	mm	600
Cutting capacity 90° - round	mm	600
Cutting capacity 90° - square	mm	600
Cutting capacity 90° - flat	mm	850x600
Cutting capacity 45° - round	mm	400
Cutting capacity 45° - square	mm	400
Cutting capacity 45° - flat	mm	400x600

Drive capacity

Motor rating main drive	kW	5,5
Motor rating hydraulic pump	kW	1,5
Motor rating coolant pump	kW	0,09

Measures and weights

Belt dimensions	mm	6.685x54x1,6
Overall dimensions (length x width x height)	m	3,11x3,38x2,35
Weight	kg	3.945
Part No.		152825



PLC with graphic touchscreen display

Standard Equipment

PLC control, chip brush, hydraulic vice, bi-metallic band saw blade, touch screen monitor, work lamp, chip conveyor, coolant system, material support, operating tools, operator manual

Options

Part No.

• Bimetallic Bandsaw Blade for ABS 600 TNC (3/4 T)	119228
• Bimetallic Bandsaw Blade (4/6 T)	119229



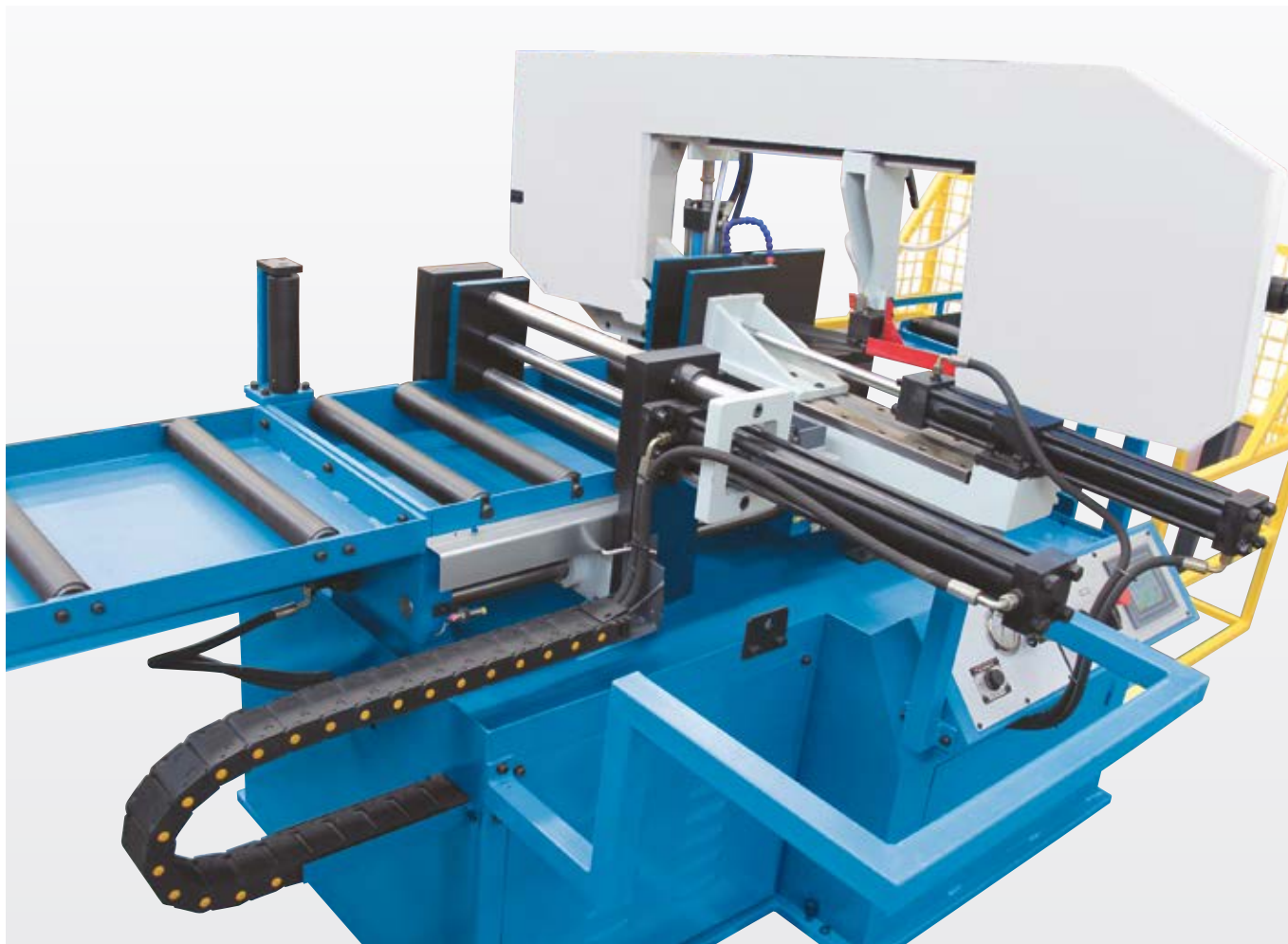
- PLC with graphic touchscreen display
- Manual cut angle adjustment from 0° - 60°
- Fully automated workpiece feed

- Automatic workpiece feed and cutting cycle can be programmed via PLC
- Programming is easy via a user-friendly graphic touchscreen interface
- Input can be in metric or imperial units
- 2-step drive motor for easy saw blade speed adjustments
- Rigid, adjustable saw blade guides can easily be adjusted for different workpiece diameters



PLC with graphic touchscreen

Price on request



Feed and workpiece clamping via powerful hydraulic vises

Specifications

ABS 330 TNC

Cutting Capacities

Cutting speed	m/min	40/80
Feed per scale division X-axis	mm	500
Working height	mm	850
Cutting capacity 90° - round	mm	330
Cutting capacity 90° - square	mm	250
Cutting capacity 90° - flat	mm	460x250
Cutting capacity 30° (round)	mm	205
Cutting capacity 30° (square)	mm	205
Cutting capacity 30° (flat)	mm	205x250
Cutting capacity 45° - round	mm	305
Cutting capacity 45° - square	mm	250
Cutting capacity 45° - flat	mm	305x250
Cutting capacity 60° (round)	mm	310
Cutting capacity 60° (square)	mm	250
Cutting capacity 60° (flat)	mm	375x250

Drive capacity

Main motor rating	kW	1,5/2,2
Motor rating hydraulic pump	kW	0,75
Motor rating coolant pump	kW	0,045

Measures and weights

Belt dimensions	mm	3.960x27x0,9
Overall dimensions (length x width x height)	m	6,47x2,25x1,4
Weight	kg	1.520
Part No.		152820

- Safety during automatic operation is ensured by secure workspace enclosures
- Linear and transverse feed/discharge roller tracks are part of the standard equipment

Standard Equipment

PLC control, chip brush, Feed roller table (3 meters), Hydraulic workpiece feed, bi-metallic band saw blade, touch screen monitor, coolant system, operating tools, operator manual

Options

Part No.

• Bi-Metallic Bandsaw Blade for ABS 330 TNC (3/4 T)	119230
• Bi-Metallic Bandsaw Blade for ABS 330 TNC (4/6 T)	119231
• Bi-Metallic Bandsaw Blade for ABS 330 TNC (5/8 T)	119232



- **Siemens SIMATIC PLC**
- **Autom. cutting angle adjustment**
- **Large Touchscreen display**
- **Fully automated workpiece feed**

- Cutting angle settings 0° - 45°
- Robust touch screen control panel
- automatic workpiece feed
- torsion-resistant dual-column construction
- hydraulic saw frame feed via chrome-plated column guide
- slightly inclined saw frame improves cutting performance and increases the service-life

- dual hydraulic workpiece clamping
- infinitely variable cutting speed
- Programmable automatic angle positioner can be set in 1° increments from 0° to 45°
- precise and stable saw band guides ensure high angular accuracy
- automatic band breakage control
- Infinitely variable saw blade speed with settings shown on the display

Price on request



Both vises are designed as hydraulic bundle vises (standard equipment)



In Auto Mode, feed distance, cut angle, and number of cuts can be programmed within the respective configurations

Standard Equipment

Siemens PLC control, autom. cleaning brush, feed roller table (2 meters), 1 saw blade, touch screen monitor, manual central lubrication, automatic parts counter, bundle vise, chip conveyor, coolant system, operating tools, operator manual

Options

Part No.

• E-ABS300NC spare parts package for 152880	259005
• 3 meter roller table for ABS 300 NC	252714
• 2 meter roller table for ABS 300 NC	251909
• Bi-Metallic Bandsaw Blade / ABS 300 NC (5/8 Z")	119212
• Bi-Metallic Bandsaw Blade / ABS 300 NC (4/6 Z")	119211
• Bi-Metallic Bandsaw Blade / ABS 300 NC (3/4 Z")	119210
• Coolant Concentrate 5 Ltr.	103184
• Bi-Metallic Band Saw Blade / ABS 400 L (3-4 Z/Z)	119246
• Bi-Metallic Band Saw Blade / ABS 400 L (4-6 Z/Z)	119247
• Bi-Metallic Band Saw Blade / ABS 400 L (5-8 Z/Z)	119248
• 2 meter roller table for ABS 400 NC	253365

For more information on band saw blades, please visit our website and look for ABS 300 NC and ABS 400 NC (Product Search)

Specifications

		ABS 300 NC	ABS 400 NC
Cutting capacities			
Feed per scale division X-axis	mm	400	400
Cutting speed	m/min	20 - 90	20 - 80
Cutting capacity 0° - circular / square	mm	300	400
Cutting capacity 0° (flat)	mm	360x300	400x400
Cutting capacity 30° - circular / square	mm	300	400
Cutting capacity 30° (flat)	mm	300x300	400x400
Cutting capacity 45° - flat	mm	240x300	350x400
Cutting capacity 45° - circular / square	mm	240	350
Drive capacity			
Motor rating main drive	kW	3	4
Motor rating hydraulic pump	kW	0,75	0,75
Motor rating coolant pump	kW	0,09	0,09
Measures and weights			
Belt dimensions	mm	4.430x34x1,1	5.590x41x1,1
Overall dimensions (length x width x height)	m	2,2x2x1,7	2,4x2,3x2
Weight	kg	1.900	2.900
Part No.		152880	152883

ABS 320 B

Fully automated for continuous operation - proven reliability, convincing Price and Performance



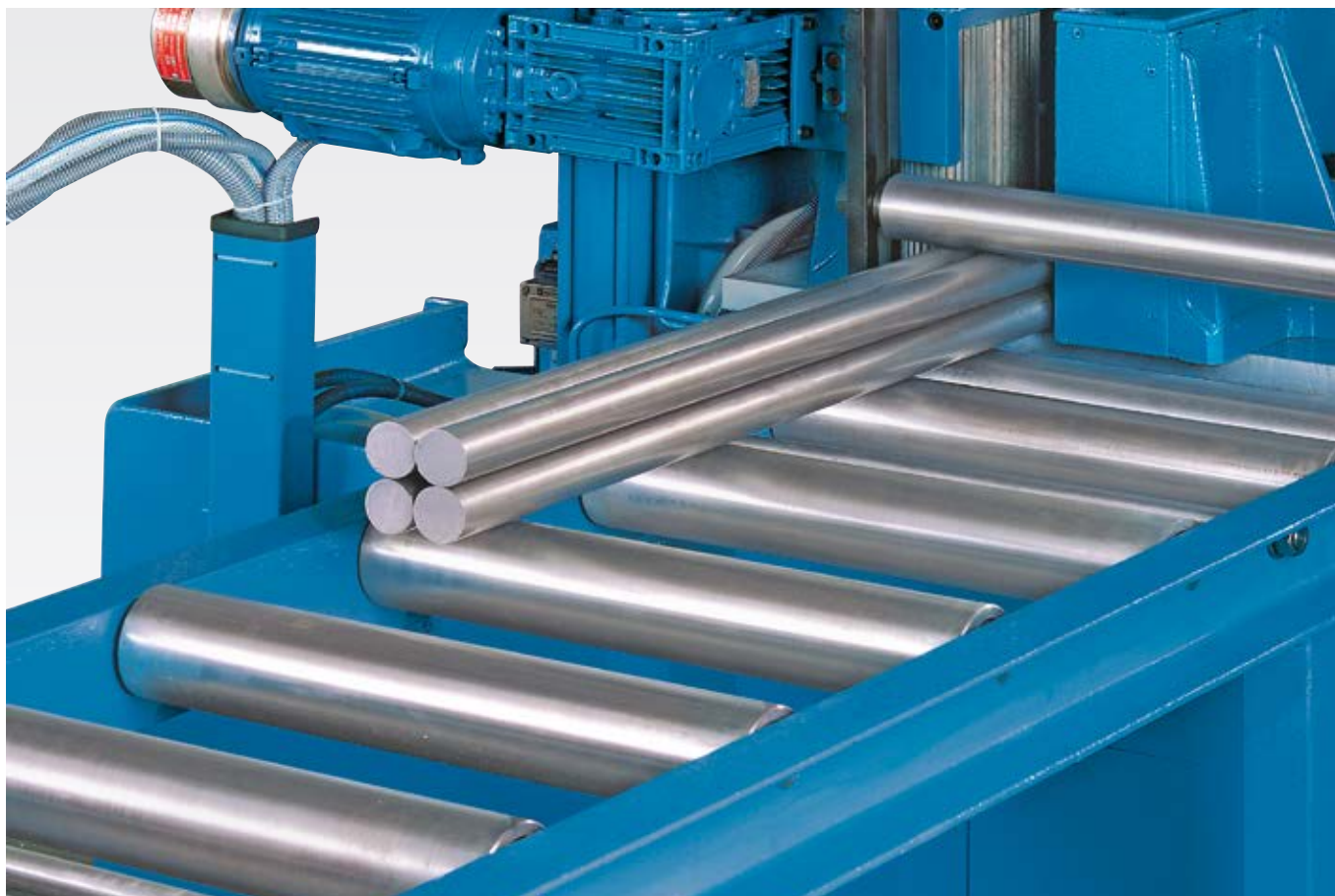
Cutting capacity 90°

- circular: Ø 320mm
- square: 300mm
- rectangular: 320 to 200 mm



Automatic limitation of frame lift-off upon completion of the cut

Price on request



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 size hydraulic cylinder for constant quiet operation
- automatic adjustment of cutting height

Specifications

ABS 320 B

Working area		
Roller guide length	mm	1.200
Feed rollers	Pieces	6
Cutting capacities		
Cutting capacity - circular	mm	Ø 320
Cutting capacity - square	mm	300
Cutting capacity - rectangular	mm	320x200
Stop length	mm	500
Cutting speed infinitely variable	m/min	20 - 100
Drive capacity		
Motor rating / voltage	kW/V	2,25 / 400
Motor rating hydraulic pump	kW	0,37
Motor rating coolant pump	kW	0,12
Motor rating feed	kW	0,25
Measures and weights		
Belt dimensions	mm	27x0,9x3.660
Overall dimensions (length x width x height)	m	1,85x0,85x1,25
Weight	kg	660
Part No.		152755

Standard Equipment

automatic band break control, bundle vise, coolant system, operating tools, operating tools, saw-band, chip wiper, feed roller table 1,2 m, operator manual, operator manual

Options

Part No.

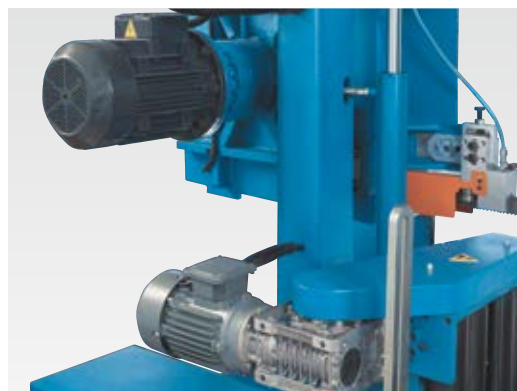
• Coolant Concentrate 5 Ltr.	103184
• Bi-Metallic Bandsaw Blade ABS 320 BS (3/4 Z")	119875
• Bi-Metallic Bandsaw Blade ABS 320 BS (5/8 Z")	119877
• 3 meter roller table for ABS 320 B	251888

For more information on band saw blades, please visit our website and look for ABS 320 B (Product Search)



ABS 46 L is shown

- torsionally rigid machine frame made of a robust steel construction with high-quality linear guides
- proven material feed system with hardened workpiece guide rollers and hydraulic workpiece clamping
- shorter machining times are made possible by an advanced hydraulic saw frame feed design, including a new pressure control system to master any sawing tasks - infinitely variable setting of feed speed and cutting pressure
- all required settings are accessible and clearly labeled at the second control valve for easy adjustments
- optical registration of the workpiece height allows empty runs in rapid feed mode for an optimum change-over to work feed and limiting of the vertical saw frame travel - everything is automated to reduce operator work load



Powerful saw blade/feed motors and heavy-duty gears can handle demanding applications and high loads with quiet operation and minimal space requirement.

Price on request



Driven feedrate rolls stop automatically when the material



Solid feed roller table and material guide for workpiece bundles

Standard Equipment

saw-band, workpiece counter, band break control, coolant system, hydraulic clamping, mechanical saw blade tensioning with hydraulic pressure gauge, feed roller table 1,2 m, linear stop, operator manual

Bi-Metallic Band Saw Blades

for model	dimensions	teeth/inch
ABS-325 L	4160 x 34 x 1,1	3/4, 4/6, 5/8
ABS-380 L	4800 x 34 x 1,1	3/4, 4/6, 5/8
ABS-460 L	5200 x 41 x 1,3	3/4, 4/6, 5/8
ABS-560 L	6000 x 41 x 1,3	3/4, 4/6, 5/8

For more information on band saw blades, please visit our website and look for ABS L (product search)

Specifications

Cutting capacities

Cutting capacity 90° circular / square / rectangular	mm	Ø 325 / 325 / 350 x 325	Ø 380 / 380 / 430 x 380	Ø 460 / 460 / 470 x 460	Ø 560 / 560 / 570 x 560
Cutting speed infinitely variable	m/min	20 - 100	20 - 100	20 - 100	20 - 100

Drive capacity

Motor rating / voltage	kW/V	2,2 / 400	3 / 400	4 / 400	4 / 400
Hydraulic motor / feed motor	kW	0,55 / 0,25	0,55 / 0,25	0,55 / 0,25	1,1 / 0,55

Measures and weights

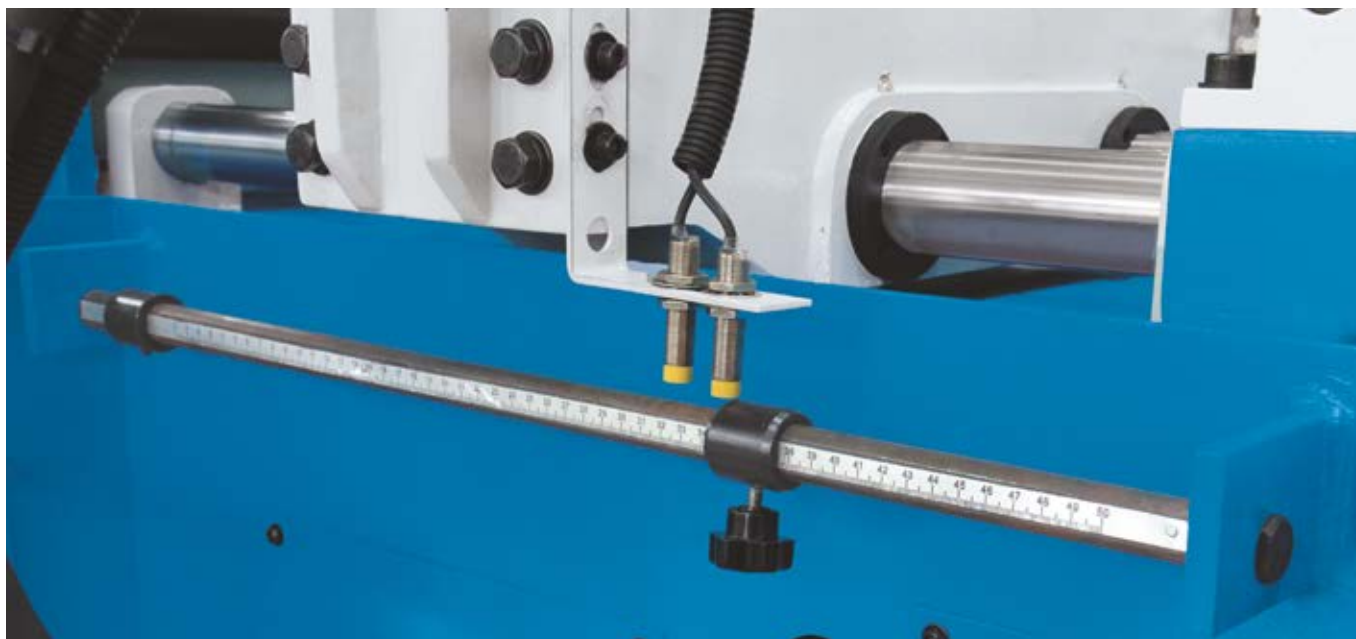
Stop length	mm	500	500	500	500
Overall dimensions (length x width x height)	m	2,45x0,9x1,5	2,9x0,95x1,66	3,1x1x1,8	3,5x1,05x2,05
Weight	kg	880	1.250	1.500	2.100
Part No.		152757	152761	152766	152771



- Hydraulic workpiece clamping,
- Fully automated workpiece feed

- The machine frame is designed as torsion-proof dual-column construction to allow powerful, precise machining with minimal vibration
- The remove cabinet-mounted control panel is user-friendly and provides optimum visibility of the workpiece during machining
- A second non-traversing vise secures the positioned workpiece automatically at the cut line
- Feed and tensioning of the vises are hydraulically controlled
- The hydraulically controlled lowering of the saw is infinitely variable
- At the end of each sawing cycle, the saw blade frame will return to the home position

Price on request



Automatic workpiece feed and traversing vise with manually adjustable stroke limit stop

- For an even wider spectrum of applications, the standard equipment includes a bundle clamping fixture
- Rigid saw blade guides can easily be adjusted to different workpiece diameters
- Blade speed is adjustable to 3 settings
- A high-performance coolant system and a mobile material support base are part of the standard equipment

Standard Equipment

1 saw blade, bundle vise, coolant system, work lamp, material support block, operating tools, operator manual

Bundle vise is provided for cutting entire material packs to length



Specifications

ABS 280 T

Cutting Capacities		
Cutting speed	m/min	27, 45, 69
Cutting capacity 0° (round)	mm	280
Cutting capacity 0° (square)	mm	280
Cutting capacity 0° (flat)	mm	280x280
Drive capacity		
Motor rating main drive	kW	3
Motor rating hydraulic pump	kW	0,75
Motor rating coolant pump	kW	0,045
Measures and weights		
Belt dimensions	mm	3.505x27x0,9
Overall dimensions (length x width x height)	m	2,24x1,8x1,63
Weight	kg	1.010
Part No.		152828

Options

Part No.

• Bimetallic Bandsaw Blade ABS/HB 280 T (3/4 T)	119233
• Bimetallic Bandsaw Blade ABS/HB 280 T (4/6 T)	119234
• Bimetallic Bandsaw Blade ABS/HB 280 T (5/8 T)	119235

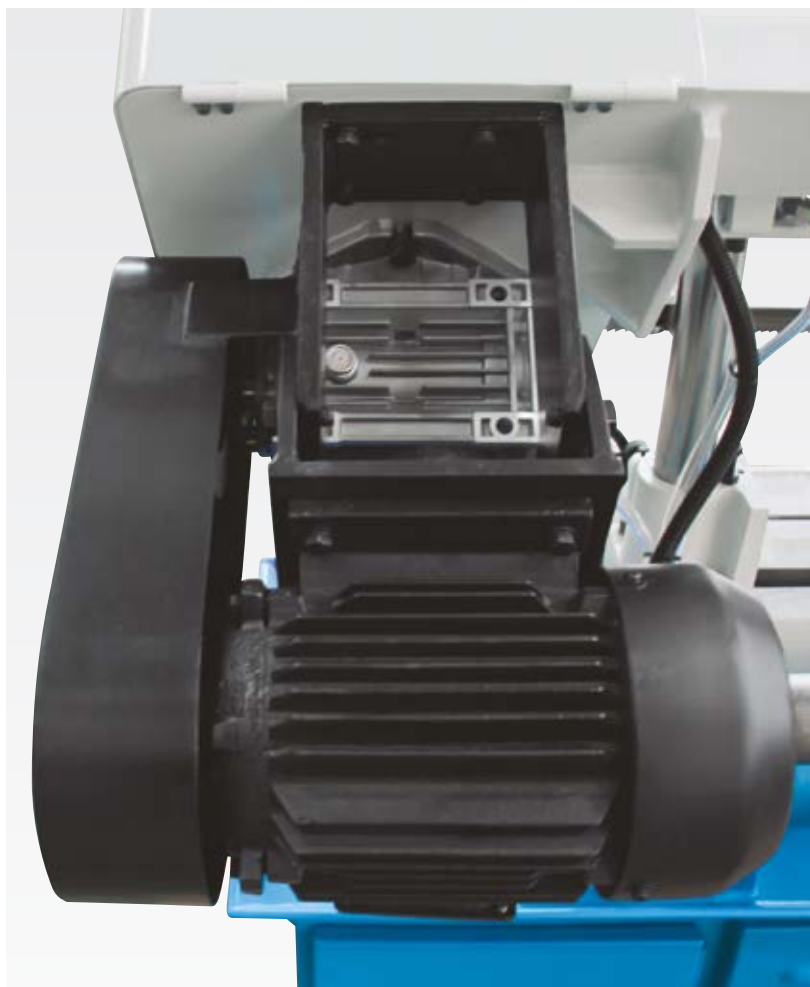


HB 280 T is shown

- Hydraulic workpiece clamping,
- Dual-column construction

- The torsion-resistant dual-column construction and rigid, heavy cast-iron frame ensure minimal vibration
- Hydraulically controlled saw frame feed
- At the end of the cutting cycle, the machine automatically shuts off and the saw blade returns to its adjustable home position
- The hydraulic vise of the HB 280T features a hand-wheel for micro adjustments

Price on request



V-belt drive for HB 280 T



Material support base, only for HB 280 T

Standard Equipment

bi-metallic band saw blade, support block for HB 280 T, support rollers for HB 400 T, coolant system, work lamp, operating tools, operator manual

- The powerful motorized saw blade drive is belt-driven on the HB 280T and reduction gear-driven on the HB 400T
- The HB 400T features a precision-machined support table with integrated feed rollers and hydraulic saw blade tensioning
- Coolant system and material support base are part of the standard equipment

Options	Part No.
• Bimetallic Bandsaw Blade HB 400 T (3/4 T)	119239
• Bimetallic Bandsaw Blade HB 400 T (4/6 T)	119240

Specifications

		HB 280 T	HB 400 T
Cutting Capacities			
Cutting speed	m/min	27, 45, 69	36, 56
Cutting capacity 0° (round)	mm	280	400
Cutting capacity 0° (square)	mm	280	400
Cutting capacity 0° (flat)	mm	280x280	400x400
Drive capacity			
Motor rating main drive	kW	3	3 - 4
Motor rating hydraulic pump	kW	0,55	0,75
Motor rating coolant pump	kW	0,045	0,045
Measures and weights			
Belt dimensions	mm	3.505x27x0,9	5.000x41x1,3
Overall dimensions (length x width x height)	m	2,18x1,31x1,61	2,7x1,35x2,15
Weight	kg	695	1.325
Part No.		152826	152821



- Cutting angle adjustment 0° - 45°
- Hydraulic workpiece clamping

- The machine frame is designed as a torsion-resistant dual-column construction for maximum stability and accuracy
- A user-friendly control panel with intuitive user controls is integrated into the control cabinet
- Hydraulically controlled saw blade feed allows exact feed adjustments
- At the end of each sawing cycle, the saw blade frame will return to the home position

Price on request



Rotating saw frame with dual-column guide

- A hydraulically tensioned vise ensures reliable workpiece fixation
- Rigid saw blade guides are easily adjustable
- A high-performance coolant system and a mobile workpiece support base are part of the standard equipment

Specifications

HB 280 TG

Cutting Capacities		
Cutting speed	m/min	27, 45, 69
Working height	mm	685
Cutting capacity 0° (round)	mm	280
Cutting capacity 0° (square)	mm	280
Cutting capacity 0° (flat)	mm	320x280
Cutting capacity 30° (round)	mm	260
Cutting capacity 30° (square)	mm	260
Cutting capacity 30° (flat)	mm	260x280
Cutting capacity 45° - round	mm	170
Cutting capacity 45° - square	mm	170
Cutting capacity 45° - flat	mm	170x280
Drive capacity		
Motor rating main drive	kW	3
Motor rating hydraulic pump	kW	0,55
Motor rating coolant pump	kW	0,045
Measures and weights		
Belt dimensions	mm	3.625x0,9x27
Overall dimensions (length x width x height)	m	2,15x1,3x1,6
Weight	kg	820
Part No.		152827



Precise positioning of the saw blade at any desired angle from 0° to 45°, using an easy-to-read scale.

Standard Equipment

bi-metallic band saw blade, hydraulic vice, work lamp, coolant system, stand support with roller, operating tools, operator manual

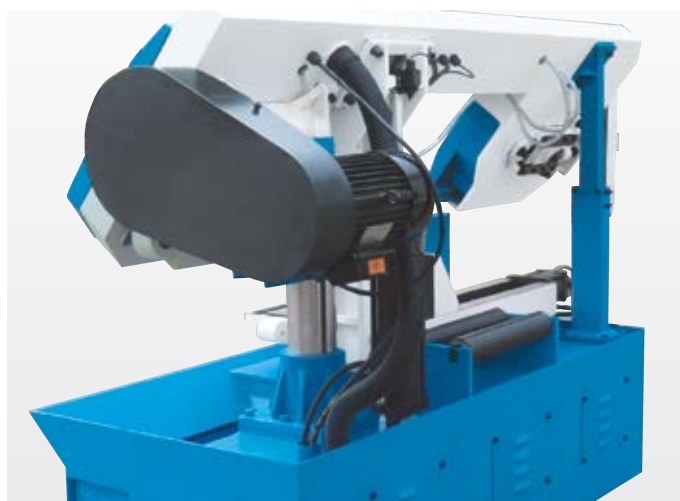
Options

Part No.

• Bi-Metallic Bandsaw Blade (3/4 T)	119236
• Bi-Metallic Bandsaw Blade (4/6 T)	119237
• Bi-Metallic Bandsaw Blade (5/8 T)	119238

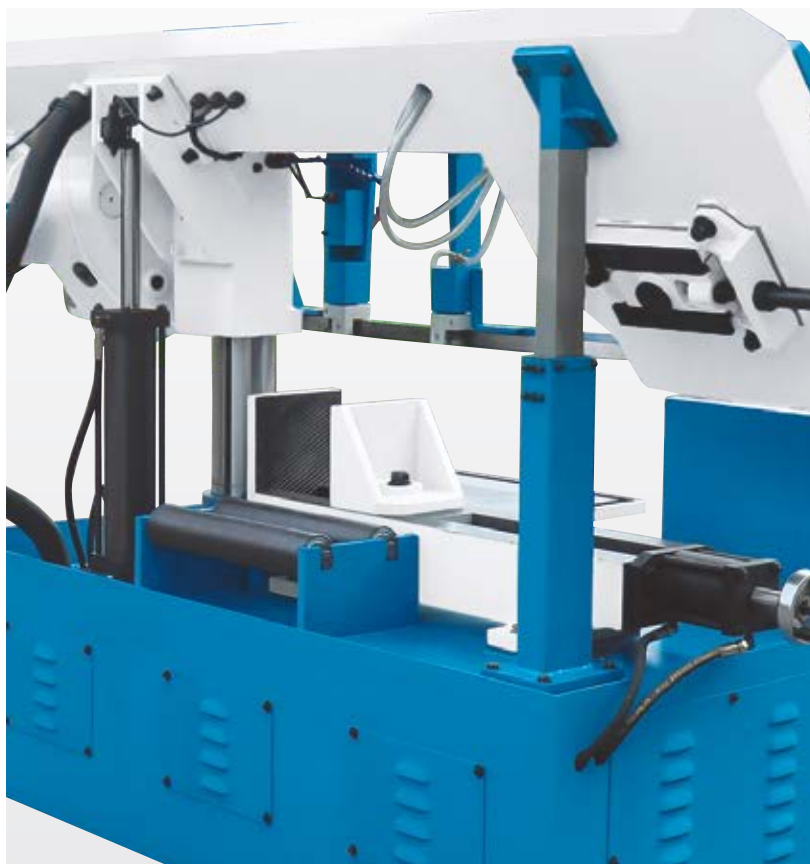


- Large touchscreen display
- Hydraulic workpiece clamping



Coolant tank is integrated in the base, and saw dust is filtered out into a collection container

Price on request



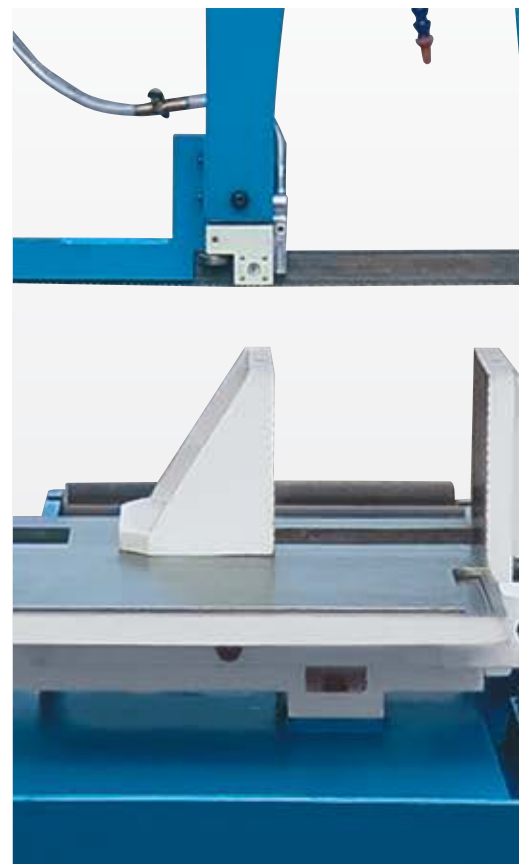
Roller support for easy material advancement

- Rigid saw frame and rugged column guide ensure high precision and angular accuracy
- User-friendly control panel with rugged touchscreen
- Hydraulically controlled saw frame feed via generously spaced column guide
- Hydraulic vise ensures secure hold during cutting cycle
- Saw blade speed can be adjusted to 4 settings
- Precise, rigid saw blade guides ensure long saw blade life and high cutting precision
- Automatic saw blade overload control ensures long saw blade life
- Support table with integrated feed rollers simplifies material handling

Specifications

HB 300 PLC

Cutting Capacities		
Cutting speed	m/min	30, 50, 75, 90
Cutting capacity 0° (round)	mm	300
Cutting capacity 0° (square)	mm	300
Cutting capacity 0° (flat)	mm	500x300
Drive capacity		
Motor rating main drive	kW	3
Motor rating hydraulic pump	kW	0,75
Motor rating coolant pump	kW	0,045
Measures and weights		
Belt dimensions	mm	4.180x34x1,1
Overall dimensions (length x width x height)	m	2,05x1,17x1,45
Weight	kg	1.085
Part No.		152823



Hydraulic vise

Standard Equipment

bi-metallic band saw blade, touch screen monitor, hydraulic vice, coolant system, work lamp, material support base with roller, operating tools, operator manual

Options

Part No.

• Bimetallic Bandsaw Blade for HB 300 PLC (3/4 T)	119223
• Bimetallic Bandsaw Blade for HB 300 PLC (4/6 T)	119224
• Bimetallic Bandsaw Blade for HB 300 PLC (5/8 T)	119225



HB 280 B shown

- infinitely variable hydraulic saw advance ensures optimum cutting results and minimized tool wear
- automatic shut-off upon completion of saw process
- band break sensor activates automatic shut-off upon band break
- helical gears, designed for continuous operation with above average life time and low maintenance
- infinitely variable cutting speed from 20 to 100 m/min
- coolant system
- HB 280 B : the clamping jaws of the vise can be adjusted by 45°

Highlights HB 320 BS

- saw frame swivels allowing universal angle setting - no need to swivel the workpiece!
- includes feed roller stand, 1.2 m long
- automatic lifting of the bandsaw with switching device for variable workpiece sizes

price on request



HB 320 BS with swiveling sawframe (60°) and feed roller table



HB 320 BS: after cutting the sawframe is lifted automatically



Easily accessible cooling tank with large chip protection screen

Standard Equipment:

Part clamping fixture, coolant system, longitudinal stop, 1,2 m long roller table (HB 320 BS only), roller table (HB 280 B only), operator manual

Bi-Metallic Band Saw Blades

for Modell	dimension	teeth/inch
HB 280 B	3400 x 27 x 0,9	3/4, 6/10
HB 320 BS	4160 x 34 x 1,1	3/4, 6/10

For more information on band saw blades, please visit our website and look for HB 280 B / HB 320 BS (product search)

Specifications

Specifications		HB 280 B	HB 320 BS
Cutting capacities			
Cutting capacity 90° (round)	mm	280	320
Cutting capacity 90° (square)	mm	280	320
Cutting capacity 90° (flat)	mm	350x200	610x320
Cutting capacity 45° (round)	mm	240	320
Cutting capacity 45° (square)	mm	210	320
Cutting capacity 45° (flat)	mm	240x180	355x320
Cutting capacity 30° (round)	mm	-	260
Cutting capacity 30° (square)	mm	-	225
Cutting capacity 30° (flat)	mm	-	280 x 200
Cutting speed infinitely variable	m/min	20 - 100	20 - 100
Drive capacity			
Motor rating / voltage	kW	1,5 / 400 V	2,2 / 400 V
Coolant pump	kW	0,12	0,12
Measures and weights			
Belt dimensions	mm	3.400x27x0,9	4.160x34x1,1
Overall dimensions (length x width x height)	m	1,8x0,85x1	2,1x1,2x1,34
Weight	kg	530	1.000
Part No.		152797	152798



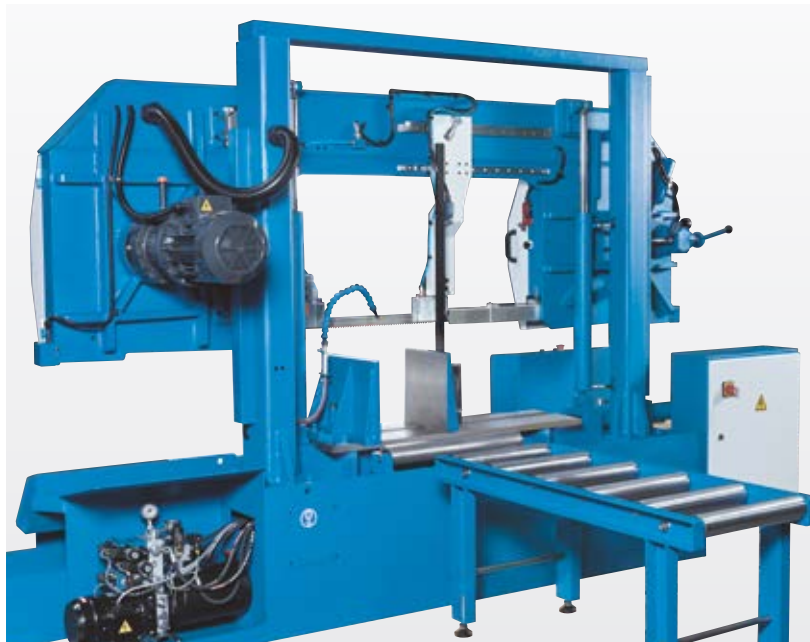
With linear guide technology!

- torsion-proof steel construction with dual-column guide – rigid and vibration absorbing
- the saw frame features a mono-frame design for travel across large linear guides
- advanced hydraulic saw frame feed with new pressure regulating system (PAS) allows optimum adjustment for every sawing task: infinitely variable feed speed and cutting power control provide a wide spectrum of machining possibilities with just one saw blade type
- the control valve features identifications and labeling for sheets, solid materials and various other material types to provide maximum user-friendly handling
- optical registration of the workpiece height allows fully automated empty runs in rapid feed mode for a timely optimum change-over to work feed as well as limiting the vertical saw frame travel and keeping down-times to a minimum
- every model of this series provides infinitely variable cutting speeds from 20 to 100 m/min

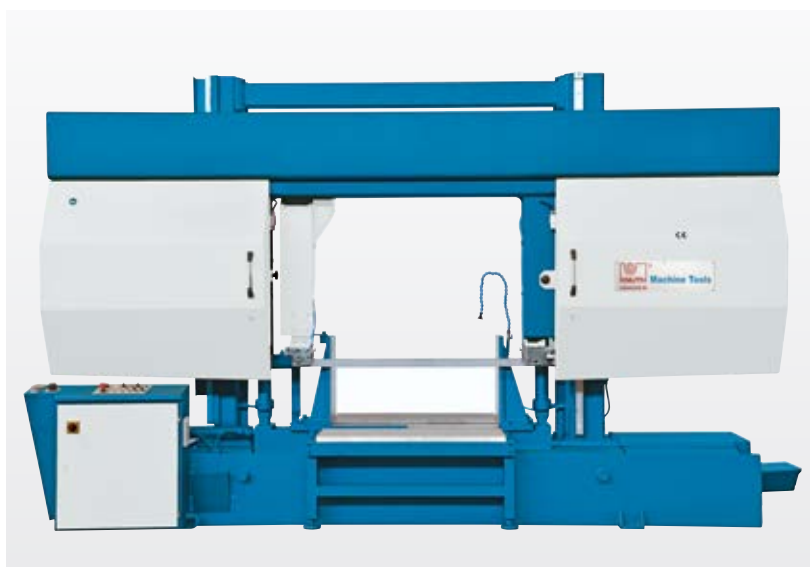


The constant pressure control (PAS) allows optimized feeding depending on material and profile type

Price on request



Feed roller table is standard equipment



HB1020 L – easy material handling through input / output rollers

- powerful motors and low-maintenance gear units for high reliability
- hydraulic workpiece clamping is now standard equipment on all models
- pressure gauge ensures correct saw blade tension for increased blade life and lower cost
- removable coolant reservoir for simplified maintenance
- **Hydraulic saw blade tensioning** (HB 810 L and 1020 L)

Options

for this machines, visit our website and search for HB 380 L – HB 1020 L (Product Search)

Standard Equipment

bi-metallic band saw blade, hydraulic part clamping, hydraulic sawblade tensioning, input / output rollers, automatic stroke height adjustment, automatic stroke height adjustment, coolant system, infinitely variable cutting speed, operator manual

Bi-Metallic Band Saw Blades

for model	Dimensions in mm	Teeth/inch
HB 380 L	4800 x 34 x 1,1	3/4, 4/6, 5/8
HB 460 L	5200 x 41 x 1,3	3/4, 4/6, 5/8
HB 560 L	6000 x 41 x 1,3	3/4, 4/6, 5/8
HB 810 L	8200 x 41 x 1,3	3/4, 4/6, 5/8
HB 1020 L	9500 x 54 x 1,6	3/4, 4/6

For more information on band saw blades, please visit our website and look for HB 380 L – HB 1020 L (Product Search)

Specifications

		HB 380 L	HB 460 L	HB 560 L	HB 810 L	HB 1020 L
Cutting capacities						
Cutting capacity 90° - circular / square	mm	380	460	560	810	1.020
Cutting capacity 90° - flat	mm	520x380	650x460	750x560	810x850	1.020x1.020
Cutting capacity 45° - circular / square	mm	300	380	560	810	675
Cutting capacity 45° - flat	mm	300x380	380x460	410x560	480x850	675x1.020
Cutting speed infinitely variable	m/min	20 - 100	20 - 100	20 - 100	20 - 100	20 - 100
Drive capacity						
Motor rating main drive	kW	3	4	4	4	7,5
Motor rating hydraulic pump	kW	0,55	0,55	1,1	1,5	2,2
Motor rating coolant pump	kW	0,12	0,12	0,12	0,12	0,12
Measures and weights						
Belt dimensions	mm	4.800x34x1,1	5.200x41x1,3	6.000x41x1,3	8.200x41x1,3	9.500x54x1,6
Overall dimensions (length x width x height)	m	2,85x1,66x0,93	3,1x1,8x1	3,2x1,2x0,5	3,9x1,2x2,35	4,5x1,7x2,75
Weight	kg	1.150	1.410	1.750	2.300	5.860
Part No.		152802	152806	152811	152816	152808



SBS 355 is shown

SBS 355

- Rigid vise with lateral slide, long stroke and long guideways in the movable jaw segments
- Hydraulic quick-action clamping fixture with proven performance in series production ensures constant tension to the last cut
- Infinitely variable saw blade speed for optimum machining of a wide range of materials and profiles
- Easy handling - at the end of the cut, the integrated hydraulics lift the saw frame to the home position

SBS 255

- The SBS 255 features a round setup table, which pivots in synchrony with the saw frame
- Mechanical quick-action clamping allows for quick release and fixation of workpieces via hand-lever; ideal for small batches

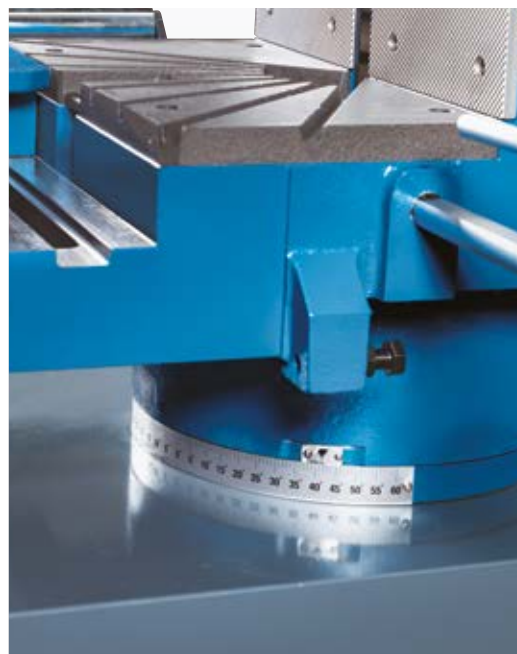


SBS 255 is shown

Price on request



Saw frame with hydraulic or manual feed



Easy to read angle setting

- The one-piece cast-iron saw frame is torsion-proof and swivels 60° to the right, and 45° to the left
- Rigid saw blade guides offer a wide adjustment range for workpieces with small and large cross-sections
- The combination of carbide jaws and adjustable ball bearing guides ensure precision cuts
- A wide bi-metallic saw blade ensures additional stability during heavy machining operations
- Saw frame features manual feed for sensitive workpiece characteristics
- Hardened, polished helical gear with large bronze drive wheel for long service life
- Quiet operation, short machining times and easy handling ensure increased productivity
- Powerful motor for continuous operation
- High-capacity coolant system is included
- Includes base

Standard Equipment

1 saw blade, coolant system, base, pressure gauge for saw blade tensioning, hydraulic cylinder for saw frame, inverter for infinitely variable saw blade speed (SBS 355), hydraulic tool clamping (SBS 355), operator manual

Bi-metallic saw blades

for model	Dimensions in mm	Teeth/inch
SBS 255	2750 x 27 x 0.9	3/4, 4/6
SBS 355	3770 x 27 x 0.9	3/4, 4/6, 5/8

For more information on band saw blades, please visit our website and look for SBS 255 or SBS 355 (Product Search)

Specifications

Cutting capacities		SBS 255	SBS 355
Cutting capacity 90° - circular / square	mm	255 / 230	355 / 300
Cutting capacity 90° - flat	mm	315x230	300x530
Cutting capacity 45° L - circular / square	mm	160 / 160	300 / 270
Cutting capacity 45° (flat) L	mm	160x160	270x270
Cutting capacity 45° R - circular / square	mm	195 / 195	355 / 290
Cutting capacity 45° (flat) R	mm	195x230	290x360
Cutting capacity 60° R - circular / square	mm	115 / 115	240 / 170
Cutting capacity 60° R (flat)	mm	115x160	170x240
Cutting speed	m/min	45 / 90	20 - 80 (infinitely var.)
Drive capacity		SBS 255	SBS 355
Main motor rating	kW	1,5 / 400 V	2,2 / 400 V
Measures and weights		SBS 255	SBS 355
Overall dimensions (length x width x height)	m	1,72x0,73x1,13	2,18x0,97x1,13
Weight	kg	380	805
Part No.		152786	152788



HB 250 A is shown

Specifications

		HB 150	HB 210A	HB 250A
Cutting Capacities				
Cutting capacity 90° - round	mm	150	170	225
Cutting capacity 90° - flat	mm	120x200	140x200	245x190
Cutting capacity 60° - round	mm	-	-	90
Cutting capacity 45° - flat	mm	90x130	95x130	210x155
Cutting capacity 45° - round	mm	120	125	155
Belt speed	m/min	40 / 80	40 / 80	40 / 90
Drive Capacity				
Motor rating main drive	kW	0,6	0,75	1,1
Measures and Weights				
Overall dimensions (l x w x h)	m	1,16x0,71x0,79	1,3x0,58x0,88	1,36x0,58x0,9
Weight	kg	212	152	185
Part No.		152822	152850	152796

Price on request



HB 150 is shown



HB 210 A is shown

- cast-iron saw frame, one-piece construction
- for miter cuts, the operator moves the saw frame - not the material
- Hydraulic cylinder provides for infinitely variable support pressure and saw frame feed
- vise with quick-action clamping feature

Standard Equipment

1 saw blade, coolant system, base, quick-action vise, hydraulic cylinder for saw frame, operator manual

Bi-metallic saw blades

for model	Dimensions in mm	Teeth/inch
HB 150	2060 x 20 x 0,90	4/6, 5/8
HB 210 A	2080 x 20 x 0,80	5/8, 10/14
HB 250 A	2480 x 27 x 0,90	5/8, 8/12

For more information on band saw blades, please visit our website and look for HB 150, HB 210 A or HB 250 A (Product Search)



Price on request

- saw frame swivels - allowing angular cuts to 45°
- coolant system is included
- thin saw blade for reduced material removal

Specifications

B 200 S

Cutting capacities

Cutting capacity 90° - round	mm	205
Cutting capacity 90° - square	mm	205
Cutting capacity 90° - flat	mm	205x215
Cutting capacity 45° (square) L	mm	115
Cutting capacity 45° (round) L	mm	135
Cutting capacity 45° (flat) L	mm	205x115
Belt speed	m/min	24 / 41 / 61 / 82

Drive capacity

Motor rating main drive	kW	1,1
Supply voltage	V	400

Measures and weights

Belt dimensions	mm	2.360x20x0,9
Overall dimensions (length x width x height)	m	1,23x0,65x1,32
Weight	kg	190
Part No.		102752



Minimum down-times: allows precise adjustment of angular stops, including quick-action clamps at the vise

- exact cuts - rigid construction prevents belt track deviations
- quiet, low-vibration operation
- saw frame feed is infinitely variable via hydraulic cylinder

Standard Equipment

coolant system, quick-action vice, mobile base, saw-band, operator manual

Bi-Metallic Band Saw Blades

for model	Dimensions	Teeth/inch	Part No.
B 200 S	2360 x 20 x 0.90	4/6	119 150

For more information on band saw blades, please visit our website and look for B 200 S (Product Search)



VB 610 shown

- torsionally rigid steel construction
- table tilts $\pm 15^\circ$ in all directions
- Electrical speed control from 20-85 m/min and 120-500 m/min, with band speed indicator (from VB 410)
- increased cutting precision
- functional and practical design
- high-precision blade guides with carbide-tipped back-roller
- blow-out feature results in improved cut control

price on request



Optimum blade tension via hand-wheel

- replaceable plastic bandage
- hand wheel for quick blade tension adjustments
- blade welder with stress relief, saw-shears, grinding stone, chip box

Standard Equipment

saw band welder assembly, lighting, 1 saw blade



Precise saw blade guide can be adjusted to various blade widths

Options	Part No.
• Saw Blade / VB 610 (10 T'')	109781
• Saw Blade / VB 610 (14 T'')	109783
• Saw Blade / VB 610 (24 T'')	119785

For more information on band saw blades, please visit our website and look for VB (product search)

Specifications		VB 300	VB 360	VB 410	VB 510	VB 610
Working area						
Table dimensions	mm	500x400	500x400	600x500	600x500	600x500 / 280x500
Table height	mm	890	960	1.000	1.000	1.015
Table-adjustment	deg	15	15	15	15	15
Cutting capacities						
Cutting capacity height x throat	mm	175x310	175x310	300x410	310x520	340x610
Speed	m/min	20-90	20-90	20-85 + 120-500	20-85 + 120-500	20-85 + 120-500
Drive capacity						
Motor rating / voltage	kW	0,4 / 400 V	0,75 / 400 V	1,5 / 400 V	1,5 / 400 V	1,5 / 400 V
Measures and weights						
Blade width	mm	3 - 16	3 - 16	3 - 16	3 - 16	3 - 16
Overall dimensions (length x width x height)	m	0,36x0,63x1,56	0,36x0,63x1,56	0,44x0,82x1,9	0,7x1,1x2	0,7x1,3x2
Weight	kg	225	225	440	500	700
Part No.		102500	102550	102690	102692	102694

- 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



Pneumatic center-clamping vise

Standard Equipment

quick-action vise, linear stop, foot pedal, base, coolant system

Options

for this machine, visit our website and search for KHK 350 (Product Search)

Saw-Blades

circular pitch	dimensions mm	Part No.
4	350 x 3 x 40	102430
6	350 x 3 x 40	102431
8	350 x 3 x 40	102432
10	350 x 3 x 40	102433

For more information on band saw blades, please visit our website and look for KHK 350 (Product Search)



Specifications KHK 350

Working area		
Speed	1/min	38, 19
Width of vise	mm	145
Air supply	bar	6
Air consumption	l/min	120
Cutting Capacities		
Cutting capacity 90° - circular / square	mm	95 / 90
Cutting capacity 45° - circular / square	mm	90 / 75
Drive capacity		
Main motor rating	kW	0,75 / 1,5
Supply voltage	V	400
Measures and weights		
Overall dimensions (length x width x height)	m	1,13x0,65x1,68
Weight	kg	310
Part No.		102139

Price on request

KKS 315 T is shown



- Easy operation, rugged design, and precise angular cuts make this circular cold saw a "must-have" basic for any workshop
- The models KKS 250 and 275 T provide a rigid vise with quick-action clamping feature and are ideal for small batch productions
- KKS 315 T / KKS 350 T feature a self-centering dual vise that hold the workpiece firmly on both sides of the saw blade
- The miter can be adjusted up to +/- 45 degrees by rotating the gear head
- All models have high-torque motors, and the KKS 315 and 350 T also have reversible poles and 2 speeds
- An integrated coolant system is part of the standard equipment on all models

Standard Equipment

self centering double vise (KKS 315 / 350 T), quick-action vise (KKS 250 / 275 T), base, coolant system, 1 saw blade, linear stop

Options

Part No.

• Circular Saw Blade / KKS 250 (pitch 6)	109802
• Circular Saw Blade / KKS 315 (pitch 6)	109808
• Circular Saw Blade / KKS 350 (pitch 5)	109809
• Circular Saw Blade / KKS 275 (pitch 6)	109810



Dual vise (KKS 315 / 350 T)

Price on request

Specifications

		KKS 250 T	KKS 275 T	KKS 315 T	KKS 350 T
Working area					
Max. saw blade diameter	mm	250	275	315	350
Shaft diameter	mm	32	32	40	32
Speed	1/min	42	42	18/36	18/36
Width of vise	mm	100	100	145	145
Working height	mm	960	960	960	960
Cutting capacities					
Cutting capacity 90° - round	mm	60	70	100	120
Cutting capacity 90° - square	mm	55	65	100	110
Cutting capacity 90° - flat	mm	75x45	90x45	140x90	140x100
Cutting capacity 45° (round) L	mm	55	65	90	105
Cutting capacity 45° (square) L	mm	50	60	90	100
Cutting capacity 45° (flat) L	mm	55x45	70x45	100x90	100x100
Cutting capacity 45° (round) R	mm	55	65	90	105
Cutting capacity 45° (square) R	mm	50	60	90	100
Cutting capacity 45° (flat) R	mm	55x45	70x45	100x90	100x100
Drive capacity					
Main motor rating	kW	1,1	1,1	0,75 / 1,3	0,75 / 1,3
Supply voltage	V	400	400	400	400
Measures and weights					
Overall dimensions (length x width x height)	m	0,92x0,48x1,71	0,92x0,48x1,78	0,92x0,56x1,78	0,97x0,56x1,83
Weight	kg	143	148	227	236
Part No.		102119	102118	102120	102121



Grinders

PAGE **254** » FS 4080 M CNC



PAGE **256** » HFS 52 • 73 • 104 • 160 NC



PAGE **258** » HFS B VC • Advance



PAGE **260** » HFS 2550 • 3063 • 4080 B



PAGE **262** » FSM 480



PAGE **264** » RSM 1000 • 1500 B CNC



PAGE **266** » RSM M 500 CNC



PAGE **270** » RSM 500 A • RSM 800



PAGE **272** » RSM 750 • 1000 • 1500 • 2000C



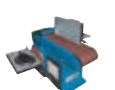
PAGE **274** » Multi-Grind



PAGE **276** » SM • SUS • KSW 200 • BFT



PAGE **278** » KS 100 B • KS 150 B • BKS 250 • BTM 250



PAGE **280** » KEM 250 • EM 250 • KRA 75 T



PAGE **282** » DSB D • KS 75 • B 150



Extensive standard equipment



- This design allows superior evenness of ground surfaces and a dimensional stability that could not be achieved with conventional machine designs
- Further advantages of this machine are its quiet operation, maximum accuracy, and low heat accumulation
- The mineral-casting frame dampens vibrations 6 times faster than cast-iron (GG25) and up to 10 times faster than steel
- In addition to its vibration-proof solidity, this material also provides excellent thermal stability
- Linear roller guides on all axes ensure excellent rigidity, accuracy, and optimum load distribution
- Powerful servo-drives and preloaded ball screws on all axes ensure a uniform feed
- A specially selected preloaded ball screw provides for a higher accuracy class (C2), and a manually read linear scale complements the vertical axis drive
- All axes can be positioned precisely via an electronic hand-wheel
- The grind spindle head features a heavy, solid design and runs on high-precision, maintenance-free preloaded angular ball bearings
- Automatic central lubrication minimizes maintenance
- Optional vacuum clamping fixtures are available for custom applications/materials
- Siemens 828D control with grinding package, trueing cycles, and profile grinding function

price on request



Specifications

FS 4080 M CNC

Working area		
Workpiece weight (max.)	kg	450
Spindle axis-to-table surface distance	mm	620
Dimensions magnetic clamping plate	mm	400 x 800
T-slots, width	mm	14
Number of T-slots	Stück	3
Division (electronic hand-wheel) Z-axis	mm/min	0,001
Travels		
Travel X-axis	mm	930
Travel Z-axis	mm	430
Headstock		
Spindle speed	1/min	50 - 2300
Rapid feed		
Rapid feed Z-axis	m/min	1 - 40
Rapid feed Y-axis	m/min	1,2
Rapid feed X-axis	m/min	1 - 12
Accuracy		
Positioning accuracy Y-axis	mm	0,0015
Repeatability Y-axis	mm	0,001
Drive capacity		
Motor rating main drive	kW	5,3
Z-axis servo motor	kW	3,1
Y-axis servo motor	kW	2,3
X-axis servo motor	kW	2,3
Measures and weights		
Grinding wheels dimensions	mm	400 x 40 x 127
Overall dimensions (l x w x h)	m	2,8 x 2,43 x 2,4
Weight	kg	5000
Part No.		122450

Standard Equipment:

Siemens 828D, Electromagnetic clamping plate, Coolant system, Y axis with linear scale, Electronic hand-wheel, Automatic central lubrication, Grinding wheel dresser, Grinding wheel flange, Grinding wheel, LED work lamp, Balancing arbor, Balancing station, Totally enclosed housing, Trueing and setup tools, Tool box, Operator manual

Options

Part No.:

• RENISHAW measuring system LP 2	252439
• Tool touch sensor T24E-04-27	252440
• Oil mist catch for FS 4080 M CNC	252441



- This machine is designed for continuous operation at high machining speeds and features quiet operation, maximum accuracy and minimal heat-buildup for guaranteed optimum work results
- Dual guides for linear table motion
- Grinding spindle head and Z-axis run in precision linear guides on preloaded ball screws
- Servo drives on Y and Z-axes and hydraulic linear table movement can be adjusted via an infinitely variable electronic proportional valve for precise and consistent feed
- 3-step electronic hand-wheel allows for precise positioning of Y and Z-axes



External hydraulic unit and oil cooler ensure thermal stability during continuous operation

price on request



Extensive standard equipment

VC Model

- VC models feature an automatic vertical feed, whereby the operator can preselect the depth and quantity
- Grinding wheel idle feeds can be motorized - a true time-saver
- The rigid, wide work table moves only on one axis - this design allows for an extra-long table guideway on a very wide machine base, ensuring perfect load distribution at both travel end positions.
- V-guides and boxways are counter-laminated with Turcite B, ensuring smooth table movement at any load.
- Column moves in the Z axis on hand-scraped, counter-laminated V-guides and boxways, ensuring total elimination of any stick-slip effect.
- The grinding spindle moves only vertically - this design ensures 100% exact grinding wheel feed with maximum angular precision across the entire work area.
- Hydraulically operated linear table movement, infinitely variable, high consistency, and soft reversal of direction
- The stand-alone hydraulic unit is easy to maintain and mechanically and thermally separated from the main machine frame to ensure the most constant working conditions possible.
- Large grinding spindle, dynamically balanced, completely sealed with permanent lubrication
- Grinding spindles are carefully assembled by experienced professionals in air-conditioned clean rooms using selected precision bearings.



In automatic mode, the vertical feed increments can be preselected (VC models)

price on request



HFS B 80150 Advance is shown

- Once the machine is put into operation, the automatic central lubrication system supplies all guides and preloaded ball screws with the correct amount of oil.
- Optionally, all models can be equipped with a mechanical grinding wheel dresser that can be used at any grinding height and column position - this reduces unnecessary down-times.

Advanced Model

- Advance models feature an electronic PLC and a touchscreen display for easy programming of grinding cycles
- An electronic hand-wheel allows for easy set-up and manual axis movement on Advance models
- In automatic mode, the operator-defined feeds, spark-out strokes and homing motions are automatically processed, and upon completion coolant supply, spindle and feed are stopped

Standard Equipment

2-axis position indicator, grinding wheel, grinding wheel flange, electromagnetic clamping plate, coolant system, balancing station, balancing shaft, diamond dresser, setup elements, anchor bolts, operating tools, operator manual

Options

Part No.

• Magnetic coolant separator	251497
• Coolant and exhaust system	251467

Specifications HFS B		50100	50150	60150	60200	80150
Working area						
Grinding area (max.)	mm	500x1.000	500x1.500	600x1.500	600x2.000	800x1.500
Spindle nose-to-table surface distance	mm	590	590	600	600	800
Travels						
Travel X-axis	mm	1.140	1.600	1.600	2.230	1.600
Travel Y-axis	mm	540	540	650	650	850
Feed						
Feed speed X-axis	mm/min	5 - 25	5 - 25	5 - 25	5 - 25	7 - 25
Feed depth, Y axis	mm	0,005 - 0,04	0,005 - 0,04	0,005 - 0,04	0,005 - 0,04	-
Feed depth, Y axis (Advance)	mm	-	-	-	-	0,001 - 0,01
Automatic Z axis feed	mm/min	0,5 - 12	0,5 - 12	0,5 - 12	0,5 - 12	0,5 - 12
Grinding wheel						
Speed (50 Hz)	1/min	1.450	1.450	1.450	1.450	1.450
Drive capacity						
Main drive, continuous load	kW	7,5	7,5	7,5	7,5	7,5
Measures and weights						
Grinding wheels dimensions	mm	355x40x127	355x40x127	400x50x127	400x50x127	400x50x127
Overall dimensions (length x width x height)	m	4,45x2,2x2,2	5,81x2,45x2,2	5,81x2,45x2,3	6,2x2,76x2,3	5,81x2,9x3,2
Weight	kg	5.000	6.000	7.250	8.500	8.250
HFS B model with automatic vertical feed		50100 VC	50150 VC	60150 VC	60200 VC	-
Part No.		124909	124911	124913	124915	-
HFS B model with NC (Advance)		-	-	-	-	80150 Advance
Part No.		-	-	-	-	124917



- The heavy cast-iron machine frame provides excellent rigidity and torsional strength, and is equipped with dual V-guides for cross travel and combined V-guides and boxways for linear motion
- A large work area and high table load capacity allow machining of larger, heavy workpieces with highest precision
- Superior quiet operation and low heat build-up ensure optimum work results in continuous operations
- C models feature manual grinding-wheel feeds

PLC model

- A PLC plus a servo-drive on Y axis simplify the input of grinding cycles for plane and slot grinding

Grinding Spindle

- The grinding spindle is large sized, dynamically balanced, completely sealed and permanently lubricated
- Preloaded precision bearings ensure maximum grinding performance and reliability for long production hours

Hydraulics

- The hydraulic linear table movement is infinitely variable, very constant, and ensures soft directional changes
- The external hydraulic unit with oil cooler unit ensures perfect temperature stability

price on request



The standard position indicator ensures high precision and production safety

Standard Equipment:

2-axis position indicator, grinding-wheel, grinding-wheel flange, coolant system, balancing shaft, LED work light, magnetic clamping plate, set screws, operating tools, operator manual

Options

Part No.

Coolant and vacuum system	251 864
Magnetic coolant cleaning system (for 124 900 - 124 905)	251 468
Magnetic coolant cleaning system (for 124 906 - 124 908)	251 496

Specifications HFS B		2550	3063	4080
Work area				
Part weight	kg	300	420	700
Spindle nose-to-table distance	mm	520	520	580
Table dimensions	mm	255 x 510	300 x 600	400 x 800
Scale ring division Y-axis	mm	0,005	0,005	0,005
Scale ring division Z-axis	mm	0,02	0,02	0,02
Automatic cross feed on Z-axis	mm	0,5 - 10	0,5 - 10	0,5 - 10
Automatic vertical feed on Y-axis (PLC model)	mm	0,005 - 0,05	0,005 - 0,05	0,005 - 0,05
Travels				
X / Y-axis travel	mm	560 / 280	660 / 340	850 / 440
Grinding wheel				
Grinding wheel dimensions	mm	200 x 25 x 32	355 x 40 x 127	355 x 40 x 127
Speed	min ⁻¹	2850	1450	1450
Feed				
Hydraulic X-axis feed	m/min	7 bis 25	7 bis 25	7 bis 25
Drive Capacities				
Main motor rating	kW	2,2	4	5,5
Hydraulic motor power	kW	1,5	1,5	2,2
Dimensions/Weight				
Dimensions	mm	1.960 x 1.560 x 2.140	2.150 x 1.940 x 2.195	2.720 x 2.155 x 2.195
Weight	kg	1.680	1.900	2.800
HFS B model				
		2550 C	3063 C	4080 C
Part No.		124 900	124 903	124 906
HFS B model with automatic vertical feed				
		2550 PLC	3063 PLC	4080 PLC
Part No.		124 902	124 905	124 908

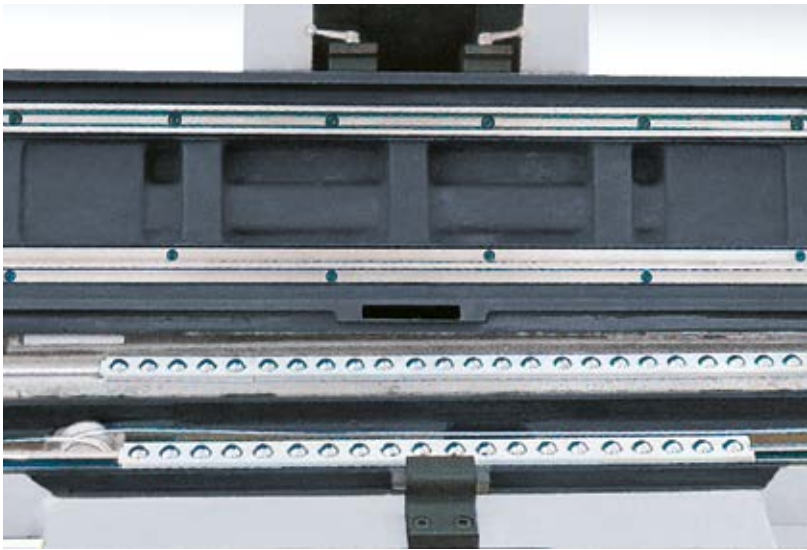


- spindle resists high loads; mounted in pre-loaded angular deep-groove ball bearings ensures low-vibration operation, high accuracy, increased lifetime and low maintenance
- completely leak-proof and balanced spindle motor with high load capacity
- solid, vibration-absorbing construction
- V- and flat guides in X and Y direction for consistently high accuracy
- longitudinal table movement over linear ball guide; linear roller guideway
- adjustable hand wheel scales for vertical and transverse adjustments allows zeroing at any position
- central lubrication
- grinding parallelism 0,005 mm / 300 mm



Permanent magnetic clamping plates with micro pole pitch - ideal for high-precision grinding work

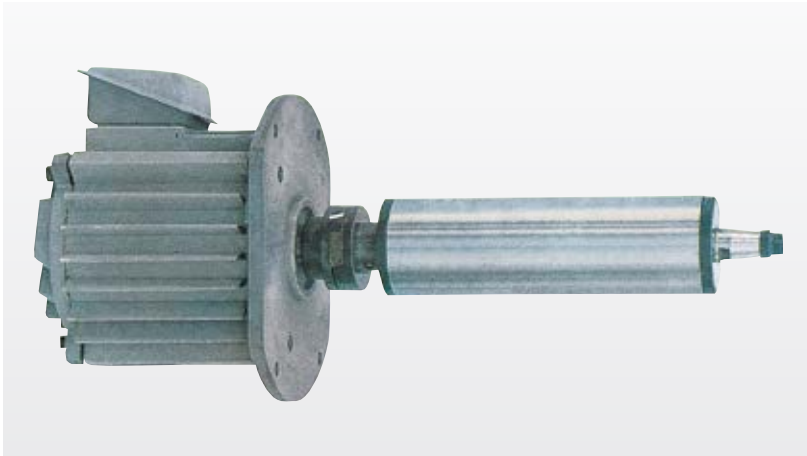
Price on request



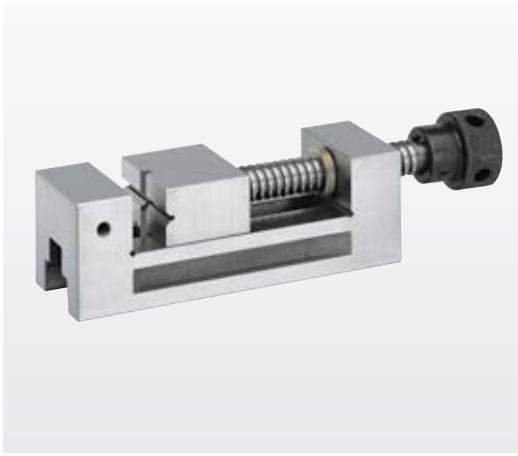
Linear ball guide for guide for smooth table travel



Angle-adjustable grinding vise (standard equipment)



Main spindle drive with advanced precision bearing



PSG 50 is shown (optional)

Specifications		FSM 480
Working area		
Table dimensions	mm	210x450
Spindle axis-to-table surface distance	mm	450
Travels		
Travel X-axis	mm	480
Travel Y-axis	mm	230
Travel distance per hand-wheel rotation, X-axis	mm	5
Travel distance per hand-wheel rotation, Y-axis	mm	5
Travel distance per hand-wheel rotation, Z-axis	mm	1
Feed		
Scale ring division X-axis	mm	0,02
Scale ring division Y-axis	mm	0,02
Scale ring division Z-axis	mm	0,005
Accuracies		
Roughness	µm Ra	>= 0,63
Drive capacity		
Motor rating main drive	kW	1,5
Measures and weights		
Grinding wheels dimensions	mm	200x13x32
Weight	kg	730
Part No.		122802

Standard Equipment	
exhaust vacuum, work lamp, magnetic clamping plate 125 x 300 mm, diamond dresser, balancing shaft, balancing station, Angle - adjustable grinding vise, grinding wheel dresser holder, operating tools, operator manual	
Options	
• Coolant Concentrate 5 Ltr.	103184
• Parallel Indicators 400x63x40, 8µ, pairs	127255
• Rule 400x60x25, 2.6µ	127260
• Surface Plate 400x250x70 mm, 6µ	127270
• Digital Height Gauge and Scriber 300 mm	129038



RSM 1000 B CNC is shown



Work table swivels to both sides with precise adjustment

- superior machining quality and high flexibility for small batch productions
- these proven, solid machine frames with wide V-guides and boxways ensure low vibrations for optimum work results
- Servo-driven axes run on precision preloaded ball screws
- Table and grinding headstock are controlled via electronic hand-wheels
- high-precision hydrodynamic bearings of the grinding spindle ensure optimum grinding results
- Fagor control, optimized for grinding cycles

price on request



Easy programming of grinding cycles: Plunge-cut grinding, plunge-cut grinding with oscillation, and cylindrical grinding

Control

- Featuring standard cycles plus KNUTH-specific cycle user interface that can be customized to match the existing machine configuration - for maximum utilization and optimized processes
- Automatic grinding wheel dressing cycle can be selected before finishing operation (incl. compensation)

Standard Equipment

control Fagor 8055i FL-TCO, internal grinding equipment, 3-jaw chuck, steady rest, follow rest, balancing station, balancing mandrel, center MT 4, grinding wheel, grinding wheel, inside grinding arbor, foundation bolts, coolant system with magnetic separator, automatic central lubrication, leveling feet, work lamp, operating tools, operating manual and programming instructions

Specifications

		RSM 1000 B CNC	RSM 1500 B CNC
Working area			
Center height	mm	180	180
Workpiece length (max.)	mm	1.000	1.500
Grinding length	mm	1.000	1.500
Workpiece weight (max.)	kg	150	150
Grinding diameter	mm	320	320
Inside grinding diameter	mm	30 - 100	30 - 100
Inside grinding depth	mm	125	125
Table swivel range (max.)	R / L	7° / 3°	6° / 3°
Travels			
Travel X-axis	mm	200	240
Feed			
Table feed, infinitely variable	m/min	0,1 - 4	0,1 - 4
Headstock			
Working spindle speed, infinitely variable	1/min	25 - 220	40 - 220
Workpiece headstock swivel range r/l		360° / 90° pitch	360° / 45° pitch
Working spindle taper	MT	4	4
Grinding headstock			
Grinding spindle speed	1/min	1.670	1.670
Inside grinding spindle speed	1/min	10.000	10.000
Grinding headstock swivel range (r+l)		30° / 180°	30° / 180°
Tailstock			
Tailstock taper	MT	4	4
Drive capacity			
Motor rating working spindle	kW	1,5	1,5
Motor rating outside grinding	kW	5,5	5,5
Motor rating inside grinding	kW	1,1	1,1
Motor rating X axis feed	kW	1,8	1,8
Motor rating Z axis feed	kW	2,9	2,9
Total power consumption	kVA	15	15
Measures and weights			
Grinding wheels dimensions	mm	400x50x203	400x50x203
Overall dimensions (length x width x height)	m	4,2x2,24x1,8	5,6x2,26x1,85
Weight	kg	5.300	6.000
Part No.		101145	101146



- Mineral-casting machine frame
- Large linear guide
- Electronic hand-wheels
- Preloaded ball screws on all axes
- Fagor control



The combination of preloaded ball screws and linear guides ensures low wear and long lasting precision

Price on request



Mineral-casting: excellent thermal properties (no warm-up necessary) - vibrations are absorbed by the frame

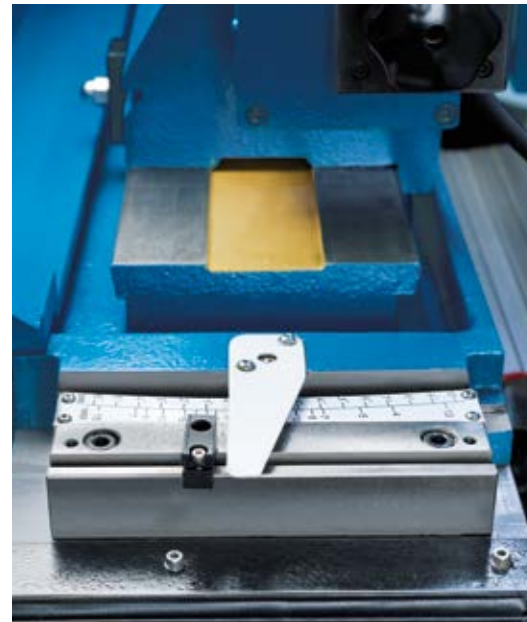


Table with work spindle and tailstock swings to the right and to the left

Specifications RSM

M 500 CNC

Working area		
Center height	mm	135
Workpiece length (max.)	mm	550
Grinding length	mm	500
Workpiece weight (max.)	kg	50
Grinding diameter	mm	200
Inside grinding diameter	mm	20 - 100
Inside grinding depth	mm	125
Table swivel range (max.)	R / L	3° / 9°
Travels		
Travel X-axis	mm	160
Travel Z-axis	mm	600
Feed		
Table feed, infinitely variable	m/min	0,1 - 4
Headstock		
Working spindle speed, infinitely variable	1/min	40 - 460
Workpiece headstock swivel range r/l		360° / 45° pitch
Working spindle taper	MT	4
Grinding headstock		
Grinding spindle speed	1/min	1.670
Inside grinding spindle speed	1/min	15.000
Grinding headstock swivel range (r+l)		30° / 180°
Tailstock		
Tailstock taper	MT	4
Drive capacity		
Motor rating working spindle	kW	0,75
Motor rating outside grinding	kW	4
Motor rating X axis feed	kW	1,3
Motor rating Z axis feed	kW	1,3
Total power consumption	kVA	11
Measures and weights		
Grinding wheels dimensions	mm	400x50x203
Overall dimensions (length x width x height)	m	2,9x2,24x1,75
Weight	kg	3.500
Part No.		100005

- superior machining quality and high flexibility for small batch productions
- Mineral casting dampens vibrations 6x faster than GG 25 cast iron, ensuring extraordinarily quiet operation and superior grinding performance
- Servo-driven axes run on precision preloaded ball screws
- The inside grinding spindle can be turned in via 180° rotation of the grinding headstock
- Table and grinding headstock are controlled via electronic hand-wheels
- high-precision hydrodynamic bearings of the grinding spindle ensure optimum grinding results
- Fagor control, optimized for grinding cycles

Standard Equipment

control Fagor 8055i FL-TCO, internal grinding equipment, 3-jaw chuck, balancing station, center point, totally enclosed work space, coolant system, automatic central lubrication, leveling feet, grinding wheel flange, work lamp, operating manual and programming instructions

Focus on the Perfect Cut

For the production of high-precision machining tools, Kopp uses RSM 500 CNC Cylindrical Grinders from KNUTH.



In 1970, Helmut Kopp Sr. founded the tool grinding business, Kopp Schleiftechnik GmbH, with three manual tool grinding machines. Today, the company is headquartered in Lindenfels, Germany, has 40 employees and serves customers in the automotive, aerospace, medical, energy, and engineering industries across Germany and in neighboring countries. In 2016, Kopp expanded and moved into its newly constructed headquarters and 1,500 m² production area. At this location, they operate 20 CNC grinding machines for an annual production of approximately 400,000 high-precision carbide milling tools for cutting and drilling metals and plastic materials. Their standard portfolio alone includes approximately 1,000 individual products.

High-Speed Precision

"It does not matter, if it's a micro or XXL solution - maximum accuracy and speed always are priorities", said Jürgen Kopp, the newest leader of this family business. These attributes are most important for their own production machines as well. In 2006, the company had to replace some of their cylindrical grinding machines. These machines were used to grind solid carbide metal rods with an accuracy that lies within one-thousandth of a millimeter. The new machine had to provide sufficient capacity to machine workpieces in diameters up to 520 mm and up to 10 kg weight with maximum speed and precision.



RSM 500 B CNC CNC Cylindrical Grinding Machine

High-precision cylindrical grinding machine for inside and outside machining

- » Control: Fagor
- » Center height: 135 mm
- » Workpiece length: 550 mm
- » Grinding diameter: 200 mm

For detailed information on the RSM series, please visit www.knuth-machinetools.com



Maximum Precision: The RSM 500 CNC features a solid machine base with wide V guideways and box ways to ensure minimum vibration and smooth operation.

Hydrodynamic spindle bearings

At a local KNUTH dealership, Kopp found a used RSM 500 CNC that met all these requirements. This machine features a solid machine base with wide V guideways and box ways to ensure minimum vibration and smooth operation for optimum work results. The grinding spindle provides superior precision and features hydrodynamic bearings. KNUTH checked the machine before it was delivered to Kopp to ensure it's full functionality and to verify that it would fulfill the precision requirements. "Cylindrical grinding is an exacting discipline," explained Patrick Jöhnk, Sales Associate at KNUTH Werkzeugmaschinen. "On one hand, we often have to deal with extremely hard metals, and on the other hand, it requires exact calculations that consider heating and expansion of the material during machining, which has to be compensated for by the machine." More intricate workpieces require a more exacting machine and operator processes.

Reliable Quality, Excellent Service

KNUTH provided training to familiarize Kopp employees with the RSM 500 CNC. They will use the machine for cylindrically grinding solid carbide metal rods to a precision within one-thousandth of a millimeter, before refining them to stepped tools and stepped cutters. In 2011, Kopp bought two more RSM 500 CNC machines, which now are fully utilized every day. Kopp states that he is very satisfied. "We rarely have downtimes with our KNUTH machines, and the occasional replacement of a spindle or minor repairs are quick and easy. Kopp and KNUTH share the common goal of constantly providing reliable quality and great service. By offering customized service packages, KNUTH helps prevent failures caused by wear and tear, and supports an interruption-free manufacturing and production process for their customers.

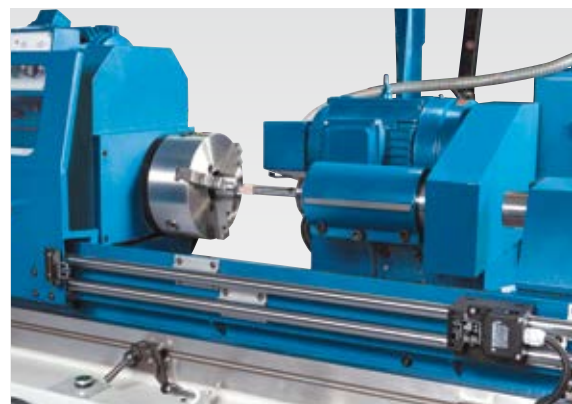
Contact

Kopp-Schleiftechnik GmbH
Tool Grinding & Tool Making
Am Raupenstein 21 • 64678 Lindenfels
info@kopp-schleiftechnik.de



Extensive Standard Equipment

- Proven and extremely rigid machine frame made of premium cast-iron - this machine's high intrinsic weight, diligent design and production create optimum conditions for excellent grinding and sanding results
- Infinitely variable hydraulic linear feed
- High-precision guideways for linear and transverse motion featuring a combination of V-guides and boxways



Grinding headstock can be rotated 180° to change from inside to outside grinding

price on request

- Hydraulic adjustment of the grinding headstock simplifies set-up, workpiece exchanges and reduces downtime
- Grinding spindle with segmented high-precision bearing, adjustable and low maintenance
- Work spindle speeds are infinitely variable and can be easily adjusted and optimized during the machining process
- Machine table swivels for easy taper grinding
- Hydraulic tailstock with foot switch

Standard Equipment

2-axis position indicator, internal grinding equipment, 3-jaw chuck Ø 200 mm, chuck flange, balancing station, balancing mandrel, dress equipment, center point, grinding wheel flange, coolant system, open rest, closed rest, drivers, work lamp, operating tools, operator manual



RSM 500 A is shown

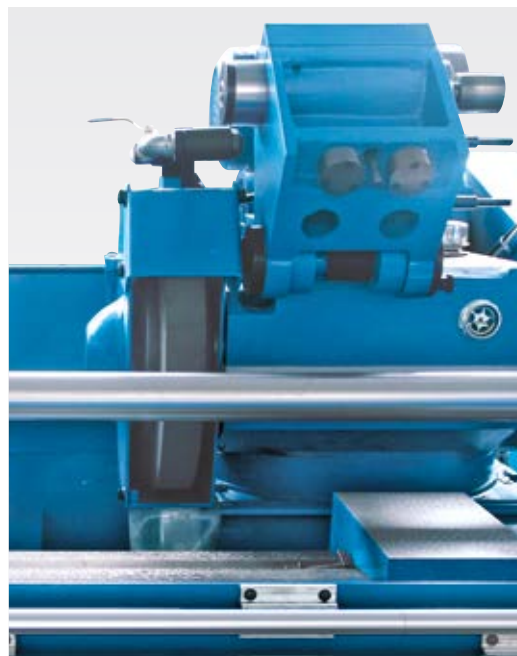
Specifications

		RSM 500 A	RSM 800
Work area			
Center height	mm	135	135
Workpiece length	mm	650	950
Grinding length (max.)	mm	500	800
Max. grinding diameter	mm	8 - 200	8 - 200
Inside grinding diameter without rest	mm	10 - 100	13 - 100
Workpiece weight between centers (max.)	kg	50	50
Chuck diameter	mm	165	165
Inside grinding depth	mm	125	125
Table swivel (right / left)		-3° / +9°	-3° / +8°
Circumferential speeds	m/sec	38	38
Feed			
Table feed, infinitely variable	m/min	0.1 - 4	0.1 - 4
Feed per scale division - X axis	mm	0.005	0.005
Headstock			
Work spindle speeds	rpm	25 - 220	25 - 380
Work spindle swivel range		0 - 45°	0 - 45°
Work spindle taper		MT 4	MT 4
Grinding Headstock			
Inside grinding spindle speed	rpm	16,000	16,000
Grinding headstock swivel range (r+l)		± 30°	± 30°
Tailstock			
Tailstock taper	mm	MT 4	MT 4
Drive Capacity			
Total connected load	kVA	5.625	5.625
Dimensions/Weight			
Grinding wheel dimensions	mm	400 x 50 x 203	400 x 50 x 203
Grinding stone dimensions, inside grinding (max.)	mm	50 x 25 x 13	50 x 25 x 13
Grinding stone dimensions, inside grinding (min.)	mm	17 x 20 x 6	17 x 20 x 6
Overall dimensions (L x W x H)	m	2.5 x 1.6 x 1.5	3.0 x 1.6 x 1.5
Weight	kg	2,500	3,000
Part No.		302430	370150



RSM 1000 C incl. position indicator is shown

- The table features large dimensions and swivels in two directions - table movement via hand-wheel or automatically via linear hydraulic feed
- The robust feed valve allows very precise micro-feed control on the X axis, including a user-adjustable dwell time at the end of the longitudinal table travel
- Hydraulic ratchet feed simplifies exact X axis positioning, limited by an adjustable zero stop, and repeated feeds by the push of a button
- The grinding spindle features hydrostatic bearings and provides for maximum precision and surface quality, plus extraordinary tool life and rigidity
- The powerful grinding spindle motor is designed for continuous operation
- The heavy-duty spindle head swivels 30° to the left and to the right; the work spindle head swivels 45°
- Inside grinder included
- Integrated rapid feed on Z axis with manual return



RSM Series Grinding Spindle

Price on request

Standard Equipment

2-axis position indicator, internal grinding equipment, open rest, closed rest, 3-jaw chuck Ø 200 mm, coolant system, grinding wheel dresser, balancing station, balancing mandrel, grinding wheel flange, center point, front and rear splatter guard, drivers, operating tools, operator manual, test certificate

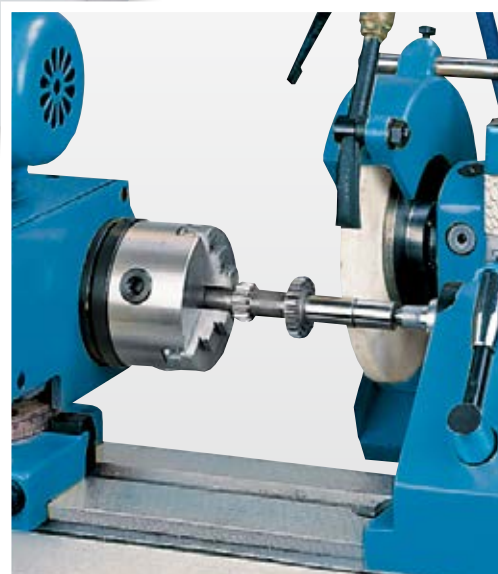


Specifications RSM		750 C	1000 C	1500 C	2000 C
Working area					
Center height	mm	135	180	180	180
Grinding diameter	mm	8 - 200	8 - 320	8 - 320	15 - 320
With steady rest	mm	8 - 60	60	60	150
Grinding length	mm	750	1.000	1.500	2.000
Inside grinding diameter with rest	mm	35 - 100	35 - 100	35 - 100	35 - 100
Inside grinding diameter without rest	mm	25 - 100	30 - 100	30 - 100	30 - 100
Inside grinding depth	mm	125	125	125	125
Workpiece weight between centers (max.)	kg	80	150	150	150
Grinding wheel feed (min.)	mm	0,0025	0,0025	0,0025	0,0025
Chuck diameter	mm	200	200	200	200
Table swivel range (max.)		-2° / +6°	-3° / +7°	-3° / +6°	-3° / +5°
Wheel speeds	m/s	35	35	35	34,2
Work spindle speeds	1/min	50 Hz: 25-380	50 Hz: 25-220	50 Hz: 25-220	50 Hz: 25-220
Travels					
Grinding head travel	mm	200	250	250	250
Feed					
Table feed, infinitely variable	m/min	0,1 - 4	0,1 - 4	0,1 - 4	0,1 - 4
Feed per hand-wheel rotation X-axis	mm	0,5	1	1	1
Feed per scale division X-axis	mm	0,0025	0,0025	0,0025	0,0025
Accuracies					
Run-out deviation	mm	0,003	0,003	0,003	0,003
Cylindrical deviation	mm	0,008	0,01	0,01	0,01
Roughness	µm Ra	<=0,32	<=0,32	<=0,32	<=0,32
Headstock					
Working headstock swivel range	deg	0 - 45	0 - 45	0 - 45	0 - 45
Working spindle taper	MT	4	4	4	4
Grinding headstock					
Grinding spindle speed	1/min	0 - 1.670	0 - 1.670	0 - 1.670	0 - 1.305,6
Grinding headstock swivel range (r+l)		30°	30°	30°	30°
Inside grinding spindle speed	1/min	10.000	10.000	10.000	10.000
Tailstock					
Tailstock taper	MT	4	4	4	4
Tailstock quill stroke	mm	25	30	30	30
Drive capacity					
Motor rating - grinding spindle / hydraulic pump	kW	4 / 0,75	5,5 / 0,75	5,5 / 0,75	7,5 / 0,75
Motor rating inside grinding	kW	1,1	1,1	1,1	1,1
Motor rating - headstock / coolant pump	kW	0,75 / 0,13	1,5 / 0,125	1,5 / 0,125	1,5 / 0,125
Measures and weights					
Grinding wheels dimensions	mm	400x50x203	400x50x203	400x50x203	500x50x203
Grindstone dimensions, inside grinding (max.)	mm	50x40x16	50x25x13	50x25x13	50x25x13
Grindstone dimensions, inside grinding (min.)	mm	45x35x10	17x20x6	17x20x6	17x20x6
Overall dimensions (length x width x height)	m	3x1,8x1,65	3,61x1,81x1,52	4,61x1,81x1,52	5,61x1,81x1,52
Weight	kg	3.500	3.700	4.300	6.600
Part No.		302444	302445	302446	302447



Smallest footprint possible! 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**
- **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 can be moved in transverse direction and also vertically; and it can be rotated around the vertical axis.



Outside cylindrical grinding for lengths up to 400 mm

price on request

Standard Equipment

coolant system, exhaust vacuum, tool mount / indexing head MT 4, internal grinding unit including 2 die grinders, 4 grinding wheels, 3-jaw chuck Ø 100 mm, left tailstock, right tailstock MT 2, center point, half center points, balancing station, spindle extension, vise for surface grinding (3-D angle adjustment), spring stop, 5 drivers, various splash guards, grinding wheel guard (2x), automatic central lubrication, operator manual, test certificate

Specifications

Working area

Workpiece diameter	mm	200
Workpiece length (max.)	mm	500
Outside grinding measure, maximum	mm	Ø 5-50 x 400
Inside grinding measures, optimal	mm	Ø 10-50 x 75
Tool grinding measure	mm	200x500
Surface grinding dimensions	mm	200x50
Workpiece weight (max.)	kg	10
Table swivel range (max.)		+45° / -30°

Travels

Max. longitudinal table travel	mm	480
--------------------------------	----	-----

Feed

Transverse adjustment per hand-wheel turn fine / rough	mm	1 / 4
Scale division of transverse feed fine / rough	mm	0,005 / 0,02
Scale division of height adjustment	mm	0,01
Longitudinal feed speed (hydraulic)	m/min	0,01-6
Manual, hydraulic assist	m/min	7

Headstock

Working headstock swivel range		± 90°
Working spindle speed	rpm	(3) 110 - 300
Working spindle taper		MT 2
Chuck diameter	mm	100

Grinding headstock

Grinding spindle speed	rpm	2.500
Inside grinding spindle speed	rpm	13.500
Grinding headstock swivel range		± 90°
Grinding headstock - vertical / - transverse	mm	200

Tailstock

Height adjustment per handwheel rotation	mm	1
Tailstock taper		MT 2
Tailstock quill stroke	mm	14

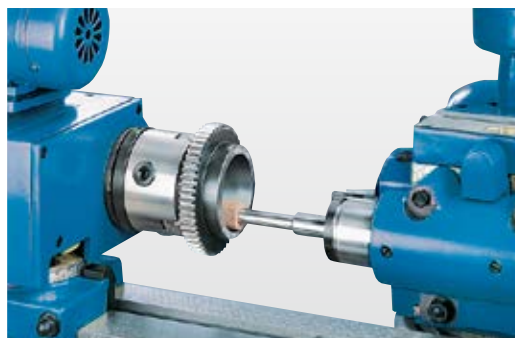
Drive capacity

Total drive capacity	kW	2,525
Grinding wheel motor rating	kW	1,1

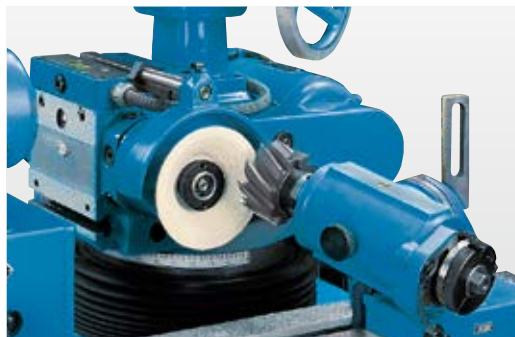
Measures and weights

Grinding wheels dimensions	mm	200x20x75
Pencil grinders	mm	Ø 25x20x6 / 10x10x3
Overall dimensions (length x width x height)	m	1,52x1,35x1,4
Weight	kg	1.300
Part No.		102781

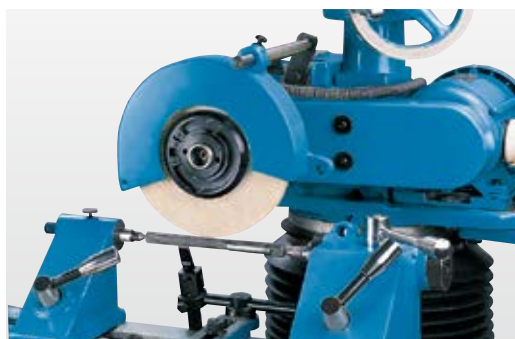
Multi Grind



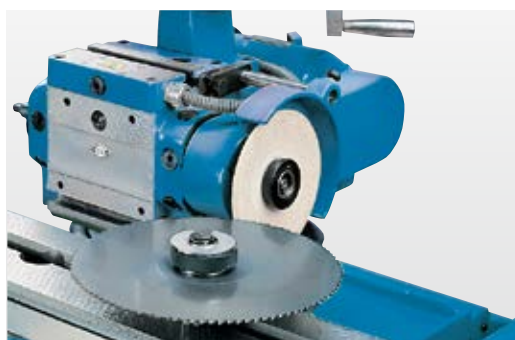
High-speed inside cylindrical grinding



Rigid angle-adjustable workpiece mounts



Swiveling headstock and extensive accessories



Saw blade sharpening



Surface grinder with angular adjustable vise

Universal Tool Grinder

SM

Universal Tool Grinder for grinding profile forms



Shown with
standard equipment



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	100 x 50 x 20
Tool holder travel	mm	140
Tool holder handwheel rotation	mm	18
Spindle handwheel rotation	mm	8
Motor	W / V	180 / 400
Dimensions	mm	450 x 400 x 350
Weight Machine / Base	kg	56 / 17
Part No.		102880

Standard Equipment:

Base, wheel mount, grinding wheel, collets 3, 4, 6, 8, 10 mm, operating tools, manual, spare parts list, test certificate

Options

Part No:

• Diamond wheel	102861
• Collet 2,5 / 3 / 4 mm	102864 / 865 / 866
• Collet 6 / 8 / 10 mm	102867 / 868 / 869
• Collet 12 / 16 / 18 mm	102870 / 871 / 872
• Wheel flange	102874
• Cup wheel	102875
• Diamond dresser shank	102877

Support Grinding Device

SUS 210 • SUS 190

For external cylindrical grinding

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	26	33
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

Part No.

SUS 190	standard corundum	112 793
	silicon carbide	112 794
SUS 210	standard corundum	112 797
	silicon carbide	112 798



SUS 210 is 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 / rpm	180 / 2800
dimensions (LxWxH)	m	0,65 x 0,58 x 1,4
weight	kg	200
Part no.		101 417



Application examples

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, 22 mm, 32 mm, base frame, operating tools, operator manual



- 6-jaw precision chuck for maximum accuracy
- guaranteed optimum cutting symmetry
- simple operation
- adjustable clearance angle
- grinds all drills, step drills, sheet metal drills, wood drills, and cutters made of HSS and carbide
- available with optional diamond wheel

Standard Equipment:

Base, self-centering 6-jaw chuck, operating tools, grinding wheels, mounts MT2 and MT3

Options	Part No.:
• Diamond disk set 150 x 32 x 32 and 125 x 32 x 32 mm	122967

Specifications		BFT
angle adjustment	mm	40 - 100°
grinding capacity	mm	Ø1,5 - 26
grinding wheel speed	rpm	4200
motor rating	W / V	180 / 400
dimensions (LxWxH)	mm	750 x 830 x 1070
weight	kg	180
Part No.		122 968

For available options for this machine, visit our website and search for BFT (Product Search)

KS 100 B

Small footprint - ideal for workshop operations

- incl. support table and workpiece stop for surface and edge grinding
- Sanding belt swivels to vertical position

Standard Equipment:

Support table, stop, sanding belt, sanding disk, operator manual

Specifications KS 100 B

Table dimensions	mm	158 x 225
Table angle adjustment		45°
Belt speed	m/s	8
Belt sander with adjustable angle		0 - 90°
Belt dimensions	mm	100 x 915
Sanding pad diameter	mm	150
Motor rating / Voltage	kW / V	0,4 / 230
Dimensions (L x W x H)	mm	560 x 270 x 300
Weight	kg	17
Part No.		102815



KS 100 B is shown

Grit	Disks Part No.	Belt Part No.
K 40	102734	102735
K 80	102821	102827
K 100	102822	102828
K 120	102823	102829
K 180	102824	102830
K 240	102825	102831
K 400	102826	102832

KS 150 B

- large sanding surface for smoothing, beveling and deburring
- belt Sander can be used for horizontal and vertical operation
- disk sander is ideally suited for contours, small surfaces and edges
- support table swivels up to 45° and can be used for belt and disk sanding
- the included miter stop can be adjusted from 0° - 90°
- powerful motors and low vibrations ensure optimum sanding results

Standard Equipment:

Adjustable stop, support table, base, sanding disk, sanding belt, operator manual

Specifications KS 150 B

Table angle adjustment		45°
Belt speed	m/s	5,5
Belt dimensions	mm	150 x 1220
Belt sander with adjustable angle		90°
Sanding pad diameter	mm	230
Disk speed	m/s	23,3
Motor rating / Voltage	kW / V	0,75 / 230
Height	mm	915
Weight	kg	50
Part No.		102816

KS 150 B is shown
Base is included



Grit	Disks Part No.	Belt Part No.
K 40	102721	102725
K 80	102801	102807
K 100	102802	102808
K 120	102803	102809
K 180	102804	102810
K 240	-	102811
K 400	102806	102812

Belt Sander/Edge Beveling Machine

BKS 250

Practical combination for belt sanding and edge beveling

Specifications

BKS 250

Work area - belt sanding

Belt speed	m/s	14,5
Table area, belt-grinding	mm	159x375
Angular adj. of table	deg	70 - 135
Belt dimensions	mm	150x1.220

Work area - beveling

Workpiece length (Min)	mm	90
Angle adjustment	deg	15 - 45
Speed (max.)	1/min	3.400
Max.bevel width 45°	mm	6
Max.bevel width 15°	mm	5

Drive capacity

Motor rating main drive	kW	1,1
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Measures and weights

Overall dimensions	m	0,85x0,63x1,14
Weight	kg	118
Part No.		102885

Belt sanding

- Large support table for workpieces
- Removable idler cover for contour grinding
- Easy belt replacement
- For sanding belts, see BTM 250

Edge beveling

- Can be used for rounding, deburring and chamfering
- Excellent surface quality
- Long tool life

Standard Equipment

base, dust suction connector, stops, sanding belt, grinding wheel

Rigid steel base included



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

Specifications

Belt size	mm	150 x 1220
Belt speed	m/s	8,4
Table dimensions	mm	152 x 267

Disk Sander

Disk diameter	mm	250
Disk speed	min ⁻¹	1600
Table dimensions	mm	190 x 330
Table angle adjustment		45°
400 V motor	kW	1,1
Overall dim. (LxWxH)	mm	585 x 660
Weight	kg	78
Part No.		112700

Grit

Disks

Art.-Nr.:

Belt

Art.-Nr.:

K 40	112705	102725
K 60	112706	102726
K 80	112707	102807
K 100	112708	102808
K 120	112709	102809
K 180	112710	102810
K 240	112711	102811
K 400	112712	102812



Vertical grinding surface with support table

Edge Deburring Machine

KEM 250

Effective and quick deburring of sheet metal and other flat material



- Two counter-rotating flap wheels allow simultaneous deburring on both sides
- Separately controlled drive motors for single-side deburring
- Ideal for deburring up to 10 mm thick material
- Ready for connection of an exhaust system



Open cover allows for handling of small surfaces

price on request

Standard Equipment:

Machine base, grinding rotor 250 x 50 / K60, operating instructions

Options	Part No.:
Set of grinding rotors	
- 250 x 50 / K80	252836
- 250 x 50 / K60	252837
- 250 x 50 / K80 stainless steel	252838
- 250 x 50 Set of 2 pc.	252839

Specifications KEM 250

Plate thickness, max.	mm	10
Grinding rotors	mm	250 x 50
Grinding rate	m/sec	18
Motor speed	RPM	1400
Main motor rating	kW	0.55
Dimensions/Weight		
Overall dimensions (L x W x H)	m	0.46 x 0.67 x 0.48
Weight	kg	70
Part No.		102857

Tube and Profile Bending Machine

EM 250

Powerful bending machine for industrial and commercial operations



Standard Equipment:

Machine base, wire wheel brush, connection for a vacuum exhaust, operator manual

Options	Part No.:
Vacuum exhaust	252840
Wire wheel brush	
- 250 x 45 mm / 0.3 mm	252841
- 250 x 45 mm / 0.5 mm	252842
- 250 x 45 mm / 0.2 mm	252843
- 250 x 45 for stainless steel	252844

- For deburring of tubes, profiles and flat material
- Workpieces can be deburred inside and outside
- Including rigid machine foot
- Ready for connection of an external vacuum exhaust
- Wire wheel brushes with different wire diameters available, including wheels for machining of stainless steel
- 5 year warranty for drive motor

Specifications EM 250

Work area		
Dimensions wire wheel brush	mm	250 x 45 x 24
Drive Capacity		
Speed	RPM	3000
Main motor rating	kW	2.2
Voltage	V	400
Dimensions/Weight		
Overall dimensions (L x W x H)	m	0.33 x 0.64 x 1.16
Weight	kg	50
Part No.		102858

Price on request



Price on request



Extra solid clamping system with rigid v-block jaws for a secure hold of tubes, flat and square materials

- Suitable for tube diameters from 20 to 76.1 mm
- Grinding angle adjust. from 30 to 90°
- Comfortable handling of the entire grinding system
- Quick and easy grinding wheel replacement

- Large grinding surface on top of machine, for deburring or sanding of surfaces
- The drive roller at the machine rear can be used for grinding operations
- Two belt speeds - step 1 for stainless steel and aluminum - step 2 for steel and other materials
- Rigid, vibration-damping base with roller mount

Standard Equipment

base, 1 Standard-grinding belt K 36, 1 grinding roll diameter 42,4 mm, operating tools, operator manual

Specifications

KRA 75 T

Working area		
Grinding diameter	mm	20 - 76
Angle adjustment		30 - 90°
Drive capacity		
Motor rating	kW	2,2 / 2,8
Measures and weights		
Belt dimensions	mm	100x2.000
Overall dim. (l x w x h)	m	1,45x1,15x0,65
Weight	kg	158
Part No.		170202

Sanding wheels

Diam.	Part No.
20 mm	253353
26 mm	253354
32 mm	253355
42 mm	253356
48 mm	253357
60 mm	253358
76 mm	253359

Sanding belts 100 x 2000 mm

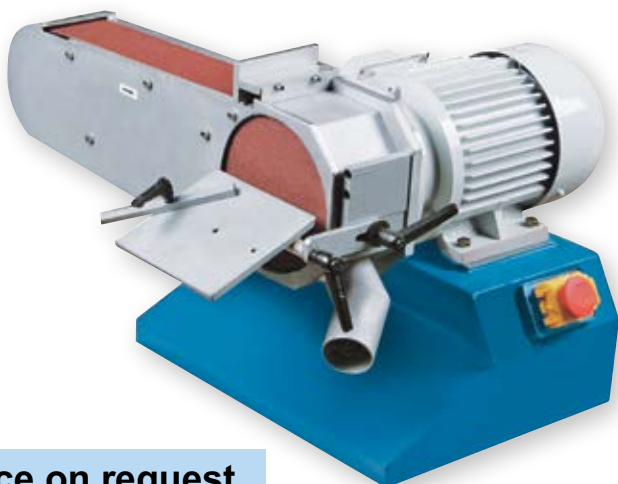
Grit	Part No.
K 36	102840
K 40	102841
K 80	102842
K 100	102843
K 120	102844
K 180	102845
K 240	102846
K 400	102847

Combination belt grinder

KS 75 Super

Excellent grinding results due to vibration-free operation and high rigidity

- Solid: Bench grinder with solid cast-iron base
- Universal: The support table can be adjusted to any angle up to 45°
- Simple: Belt changer and manually adjustable belt tensioner



Price on request

Specifications

KS 75

Vacuum Exhaust

Connection duct diameter	mm	50
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Work Area

Sanding disks	mm	150
Belt dimensions	mm	75 x 1,180
Grinder table	mm	85 x 215

Drive Capacity

Belt speed	m/sec	11
Sanding disk speed	rpm	1,410
Motor rating	kW	1.1
Voltage	V	400

Dimensions/Weight

Overall dimensions (L x W x H)m	0.7 x 0.5 x 0.5	
Weight	kg	68
Part No.	102817	

Standard Equipment:

Sanding belt, sanding disk, operator manual

Dual pedestal grinders

DSB D

Rigid dual pedestal grinders for industrial and commercial applications



DSB 300 C
is shown

- Heavy-duty design with rigid cast-iron body and maintenance-free motor
- Balanced rotor and premium bearings ensure quiet operation and optimum results
- Safety always comes first: Emergency stop switch and safety observation shield
- Premium components for long tool life and endurance under rough workshop conditions

Standard Equipment:

Machine base, safety observation shield, 2 universal corundum wheels

Specifications

DSB 200 D

DSB 250 D

DSB 300 D

Grinding Wheel	mm	Ø 200 x 32 x Ø 30	Ø 250 x 32 x Ø 30	Ø 300 x 50 x Ø 75
Speed	rpm	2,950	2,950	1,450
400 V motor	kW	0.9	0.9	2.2
Weight	mm	28	32	84
Part No.		112 151	112 152	112 150
Part No. roughing disk		112 147	112 155	112 145
Part No. finishing disk		112 148	112 156	112 146

Price on request

Price on request



B 150 SD with integrated vacuum exhaust is shown



Large grinding surface with fixed stop



B 150 is shown

- Powerful motor with a 5-year warranty, vacuum exhaust is integrated into the base (B 150 SD)
- Contact wheel for point and radius grinding
- Excellent grinding results due to vibration-free operation and high rigidity
- Adjustable grinding support with customizable adjustable eye protection
- Grinding belts can be changed within seconds via a quick-change vise, no tools required

Standard Equipment for B 150 SD:

Machine base, 1 standard sanding belt, vacuum exhaust, operator manual

Standard Equipment for B 150:

Machine base, safety observation shield support table, operator manual

Specifications		B 150	B 150 SD
Work Area			
Contact wheel	mm	200 x 150	200 x 150
Belt dimensions	mm	150 x 2,000	150 x 2,000
Sanding area	mm	595	605
Drive Capacity			
Speed	rpm	2,800	3,000
Main motor rating	kW	4	3.5
Vacuum exhaust			
Suction capacity	m³/h	-	630
Dimensions/Weight			
Overall dimensions (L x W x H)	m	1.0 x 0.55 x 1.0	1.02 x 0.6 x 1.0
Weight	mm	120	120
Part No.		102850	102855

Grit	Belt Part No.:
40 grit	112860
60 grit	112861
80 grit	112862
100 grit	112863
120 grit	112864
180 grit	112865
240 grit	112866
400 grit	112867



Pressing/Shearing

PAGE **286** » PWP 100



PAGE **288** » KNWP 60 • 100 • 100 L • 160 • 160 L • 200



PAGE **290** » KNWP 15 • 30 • 50 M • Notching Tools



PAGE **292** » KHP 28 NC



PAGE **294** » KVP 50 - 300



PAGE **296** » KP 70 • 100 • 150 • 200



PAGE **298** » HPK 40 • 70 • 100 • 150



PAGE **300** » AHK H CNC 15060 - 60400



PAGE **302** » KHT H CNC 3006 - 4016



PAGE **304** » KHT H NC 3006 - 4010



PAGE **306** » KMT B 1253 - 2053



PAGE **308** » KMT B 1304 • 2552 • 2554 NC



PAGE **310** » HPS S



PAGE **312** » KAM 250





- This press with its manually movable gantry is manufactured exclusively in Europe and made of high-grade quality steel
- The large setup table makes it perfect for straightening large sheet metal plates and structures
- This machine is perfectly suited for performing stress tests, welding sample testing, and material testing
- Repairs, assembly work, straightening of axes, beams, shafts as well as press-fitting or removing bearings and bushings can easily be performed on this machine
- With a manually movable gantry and a laterally positioned cylinder, the entire table surface can be utilized for machining.
- The hydraulic system is powerful and reliable; the hydraulic cylinder can be moved via a motor or manually (via hand-pump)

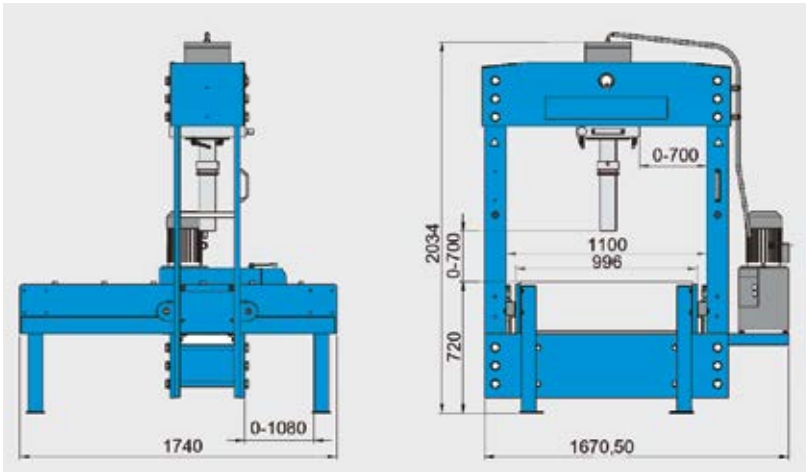
Price on request



Piston unit can be moved laterally



Long-stroke piston



Gantry can be moved across the entire table surface

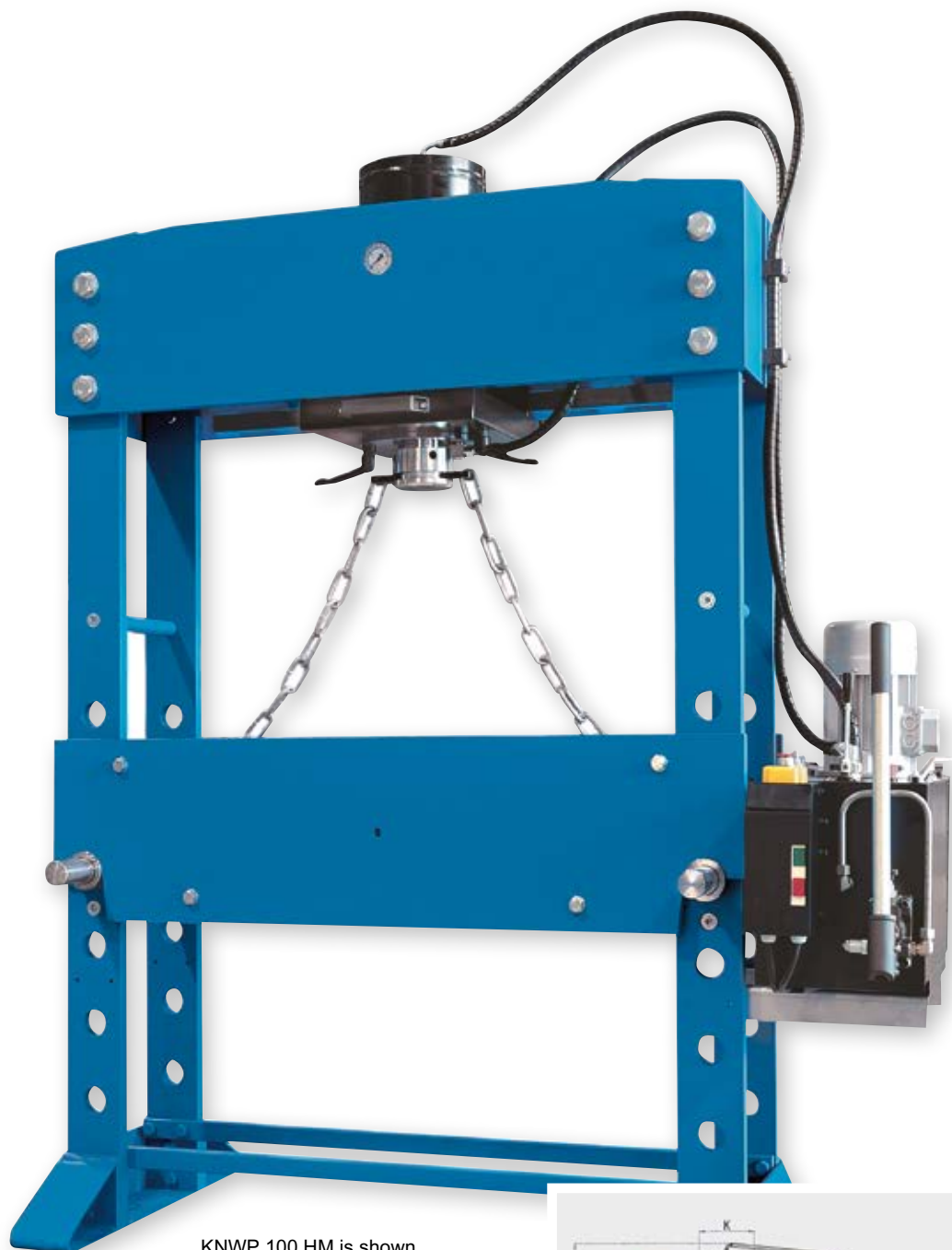
Specifications

		PWP 100	PWP 150
Working area			
Gantry width	mm	1.100	1.100
Table dimensions	mm	1.740x996	1.740x996
Table height	mm	720	760
Distance piston/ table surface max.	mm	700	700
Pressure force	kN	981	1.570
Operating pressure (max.)	bar	258	255
Stroke	mm	380	400
Forward motion speed	mm/s	7,54	7,48
Press speed	mm/s	2,47	2,4
Return speed	mm/s	9,06	9,35
Drive capacity			
Motor rating hydraulic pump	kW	2,2	3
Measures and weights			
Hydraulic tank volume	l	30	30
Overall dimensions (length x width x height)	m	1,74x1,67 x2,03	1,74x1,73 x2,1
Weight	kg	1.395	2.185
Part No.		131546	131548

- The press features an integrated pressure gauge
- The motorized hydraulic unit is operated via joystick and features 2-step hydraulics - with change-over switch for changing between quick-stroke and work stroke, shut-off during high-speed operation, and pressure regulator
- The manual pumping feature allows high-precision press operation

Standard Equipment

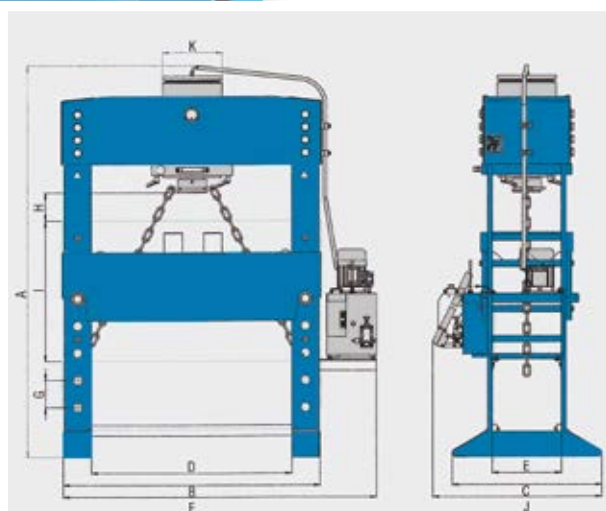
operator manual, pressure gauge, hydraulic unit



KNWP 100 HM is shown

- 60 to 200 tons force
- ideal for repair and assembly work
- truing of axles, supports, shafts and much more
- for removal and pressfitting bearings and bushings

Price on request

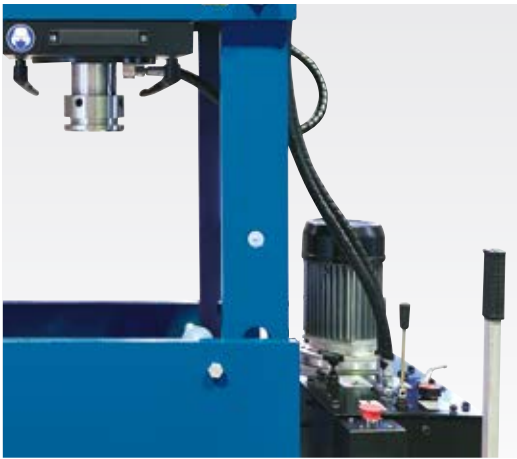




The press is operated via joystick



A hand pump is available for very delicate work



The hydraulic cylinder can be moved laterally and is clamped mechanically

- Aall HM models with motorized hydraulic drive
- 2-step hydraulic unit
- supply voltage 3x400 V / 50 Hz
- Work cylinder with smooth horizontal adjustment

Options	Part No.
• V-Block Kit for KNWP 60 HM	253360
• V-Block Kit for KNWP 100 HM	252875
• V-Block Kit forKNWP 160 HM	253361
• V-Block Kit for KNWP 200 HM	251056



Table height can be adjusted comfortably via hydraulic lifting gear

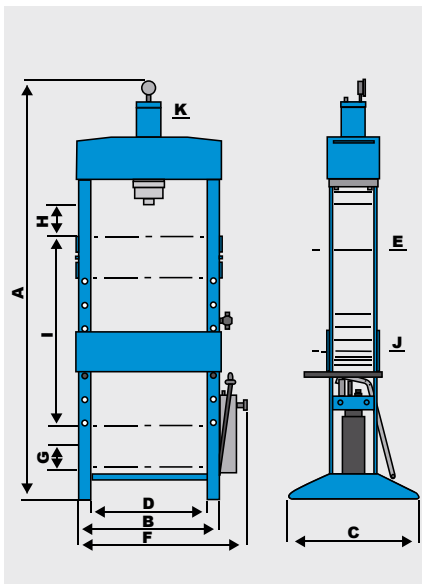
Specifications KNWP HM		60	100	100 L	160	160 L	200
Working area							
Pressure force	t	60	100	100	160	160	200
Operating pressure (max.)	bar	259	258	258	255	255	243
Stroke	mm	380	380	380	400	400	400
Forward motion speed	mm/s	8,69	7,54	7,54	7,48	7,48	5,73
Press speed	mm/s	2,07	2,47	2,47	2,4	2,4	1,84
Return speed	mm/s	10,79	9,06	9,06	9,35	9,35	7,08
Drive capacity							
Motor rating hydraulic pump	kW	1,5	2,2	2,2	3	3	3
Measures and weights							
Hydraulic tank volume	l	41	46	46	57	57	64
Weight	kg	540	970	1.145	1.195	1.430	1.690
Dimensions							
A	mm	2.120	2.140	2.080	2.200	2.270	2.270
B	mm	1.000	1.350	1.750	1.410	1.810	1.610
C	mm	695	755	755	825	825	865
D	mm	750	1.100	1.500	1.100	1.500	1.300
E	mm	260	300	300	380	380	410
F	mm	1.315	1.665	2.065	1.725	2.125	1.925
G	mm	150	150	150	150	150	150
H	mm	197	180	130	180	180	180
I	mm	750	750	750	750	750	750
J	mm	805	865	865	935	935	975
K	mm	200	250	250	325	325	368
Part No.		131744	131745	131765	131746	131766	131747



V-shaped support set



foot control (KNWP 30 / 50 M) only


KNWP 30 M
is shown

Specifications KNWP M

		15	30	50
Working area				
Pressure force	t	15	30	50
Operating pressure (max.)	bar	382,2	374,6	399,5
Piston travel per quick stroke	mm	7,84	3,84	2,46
Piston travel per work stroke	mm	0,96	0,47	0,3
Total piston stroke	mm	160	160	160
Flow rate quick stroke	l/min	31,5	31,5	31,5
Throat width	mm	560	565	750
te work stroke	l/min	3,8	3,8	3,8

Measures and weights

Hydraulic tank volume	l	1,65	1,65	1,65
Oil tank capacity	l	1,65	1,65	2,5
Weight	kg	117	150	250

Dimensions

A	mm	1.930	2.050	2.120
B	mm	690	695	925
C	mm	600	640	760
D	mm	560	565	750
E	mm	190	230	300
F	mm	825	830	1.100
G	mm	100	115	115
H	mm	115	155	155
I	mm	900	920	920
J	mm	215	255	325
K	mm	82	115	14
Part No.		131742	131741	131743

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 crimping
- load tests and weld sample testing
- straightening of workpieces
- material testing
- rigid machine frame featuring a carefully machined weldment structure
- hydraulic pump can be operated by hand or foot control (KNWP 30 / 50 M)
- 2-step hydraulics – with change-over switch for changing between quick-stroke and work stroke
- the support table features a rigid design, but is easy to handle with adjustable height
- Includes multi-function die for straightening flat material and corrugation
- Table lifting System (KNWP 50 M)
- Hydraulic cylinder with side adjustments (KNWP 30/50 M)

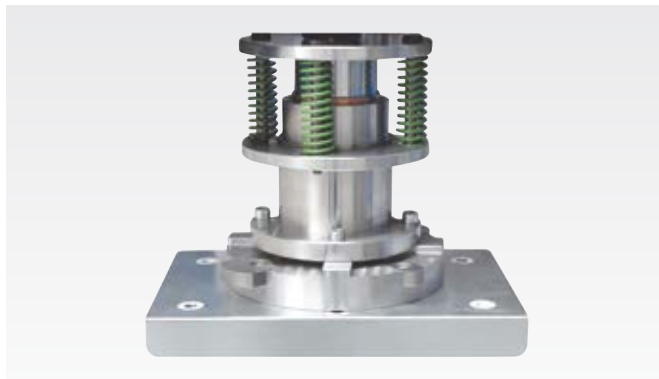
price on request

Notching Tools

The perfect extension to any workshop press



90° Notching Tool



Corner Rounder Punch Tool



Corner Wedge Punch Tool



Tube Notcher Tool



Wedge Notcher Tool

- **Designed for a max. press force of 16 t**
- Tool holder with guide for tubes and profiles
- Notching tools for tube diameters 3/4", 1", 1 1/4", 1 1/2"
- Notching tools for rectangular profiles: Corner wedge, wedge, and slotted hole
- Radius notching tool 10, 15, 20 and 28 mm
- 90° notching tool 80 x 80 mm, complete assembly

Specifications		Tube Notcher Tool				Corner notcher			Notching Tool	
		3/4"	1"	1 1/4"	1 1/2"	90° Wedge	90° Slotted hole	Wedge	90°	Radius
Notcher										
Plate thickness (max.)	mm	3,2	3,2	3,2	3,2	4	4	4	2	5
Measures and weights										
Overall dimensions	mm	3/4"	1"	1 1/4"	1 1/2"	-	-	-	80x80	10, 15, 20, 28
Part No.		252968	252969	252970	252971	252972	252974	252973	252976	252975

price on request

KHP 28 NC

Bending and straightening - powerful and compact



Made in Europe

- The horizontal bending and straightening press features a stamp and a 4-channel die for machining up to 200 mm wide material
- The work table can be set up for a wide range of applications, depending on the type of tools placed on the table and installed in the tool mounts
- The work table features an angle scale that simplifies alignment of the bending process

Price on request



User-friendly control panel



Manual side stop for batch production



Angle lines are engraved in the work table for easy orientation



Hydraulic cylinder with long stroke for a wide range of applications



Compact hydraulic unit located inside base

Specifications

KHP 28 NC

Working area		
Pressure force	t	28
hydraulic pressure max.	bar	200
Y-axis stroke	mm	180
piston diam.	mm	130
Bending speed	mm/s	2 - 9,8
Return speed	mm/s	20
Table size	mm	300x550
fastening holes in working table	Pieces	4
diameter fastening holes	mm	70
Drive capacity		
Motor rating main drive	kW	4
Measures and weights		
Overall dimensions (length x width x height)	m	1,15x0,75x1,1
Weight	kg	650
Part No.		131547

- The hydraulic system can be regulated via pressure and flow valves, allowing the user to control the pressing force and work speed according to requirements
- The integrated pressure gauge provides an exact indication of the current bending force
- Practically arranged control panel, and easy to read LED display showing the work cylinder positions
- The operator can choose between manual or automatic control, and up to 4 different programs can be stored
- The hydraulic press is controlled via a safety foot switch

Standard Equipment

stamps and dies, material stop, operator manual



**Dual-action cylinder and maintenance-free guides:
Quality and Reliability – Made in Europe**

price on request

- Two T-slots in the table and two T-slots in the ram plate accommodate large workpieces and tools
- Adjustable pressure control for application-specific power metering, with an easy to read Display
- Idle run and work speed plus manual or semi-automatic operation can be preselected at the control Panel
- Light barriers, safety foot switch plus side and rear safety guards ensure operator safety and uninterrupted production
- Modern machine design with interesting options, like CNC control or requirement-specific geometry Adaptation

Standard Equipment

foot pedal, Ram plate, Arbeitsplatte, light barrier, operator manual

The ram plate is guided by 4 columns, allowing optimum load distribution across the entire setup area, ensuring minimal up-bending



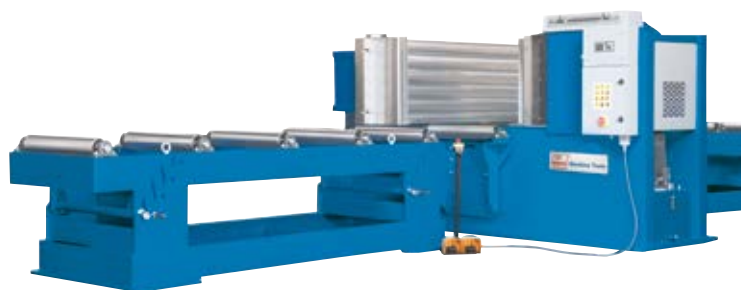
For more information on the KRP, KPP or KCP Series and further presses, visit www.knuth-machinetools.com



Hydraulic Production Presses
KPP 80 - 500



Hydraulic C-frame Presses
KCP 50 - 150



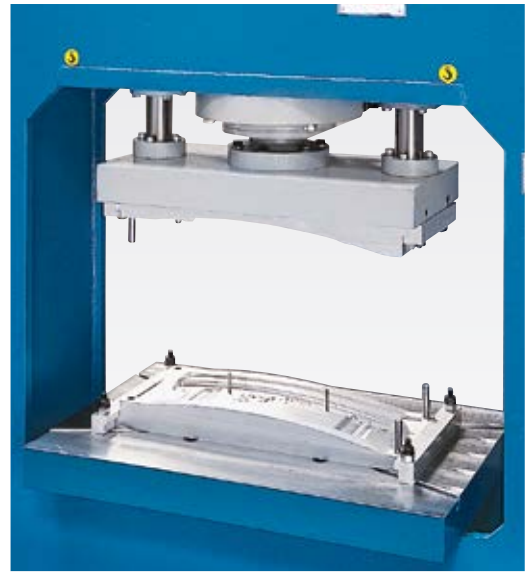
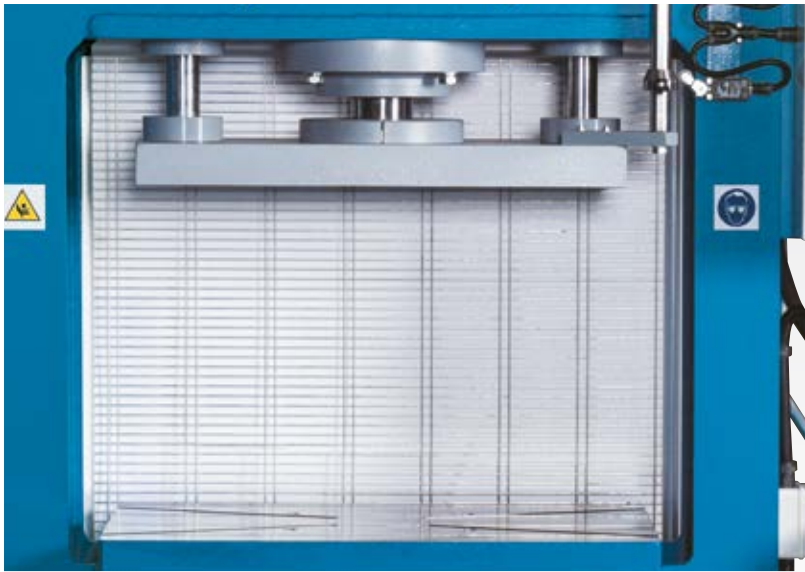
Hydraulic Straightening and Die Presses
KRP 150 - 300

Specifications		KVP 50	KVP 80	KVP 100	KVP 150	KVP 220	KVP 300
Working area							
Pressure force	t	50	80	100	150	220	300
Piston travel	mm	450	450	450	450	450	450
Stroke speed	mm/s	6,3	6	6,2	3,9	3,8	2,8
Return speed	mm/s	42	36	48	31	30	18
Guideway diameters	mm	60	80	100	120	120	150
Ram-plate size	mm	750x620	900x850	1.050x950	1.050x950	1.200x950	1.300x1.000
Column distance	mm	750x410	900x600	1.050x650	1.050x590	1.200x590	1.300x570
Workpiece height (max.)	mm	600	600	650	700	750	800
Working height	mm	750	900	900	900	900	900
Rapid feed							
Rapid feed	mm/s	32	25	31	20	17	13
Drive capacity							
Motor rating	kW	4	5,5	7,5	11	15	22
Measures and weights							
Height	mm	2.800	2.875	2.925	3.050	3.125	3.250
Weight	kg	3.200	3.750	4.300	5.100	6.560	7.150
Part No.		131700	131701	131702	131703	131704	131705



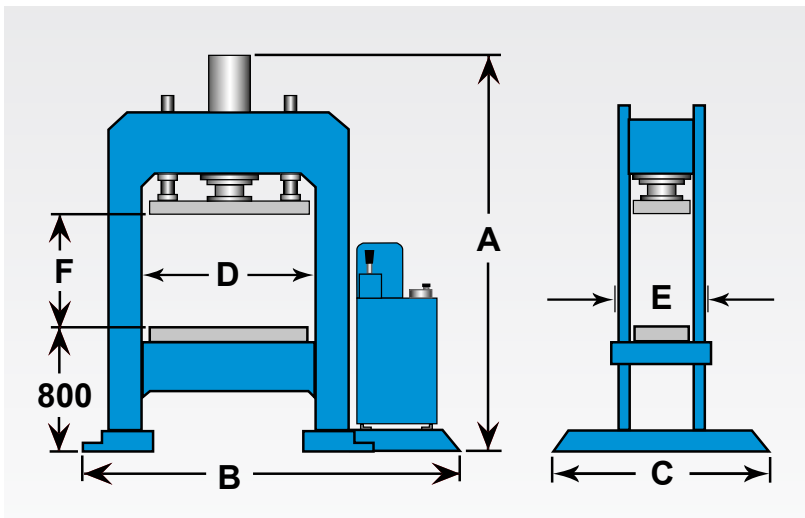
KP 70 is shown

price on request



Large throat 900 - 1250 mm

Operation Example



- 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

Specifications		KP 70	KP 100	KP 150	KP 200
Working area					
Pressure force	t	70	100	150	200
Stroke	mm	500	500	500	500
Stroke speed	mm/s	2	2	2	2
Rapid feed					
Rapid feed	mm/min	1.080	1.320	1.200	1.200
Drive capacity					
Motor rating hydraulic pump	kW	1,5	4	3,2	7,5
Measures and weights					
Weight	kg	1.100	1.600	3.000	4.300
Dimensions					
A	mm	2.250	2.300	2.600	2.700
B	mm	1.700	1.900	2.300	2.300
C	mm	700	850	1.500	1.500
D	mm	900	1.050	1.250	1.250
E	mm	500	600	510	700
F	mm	500	500	500	500
Part No.		131560	131565	131570	131575



- large ram plates and work tables for large workpieces or multiple clamping
- strong hydraulic cylinder and two circular guides ensure uniform and precise feeding during press operation



Compact hydraulic unit integrated in the machine column

price on request



2 additional circular guides ensure parallelism of the ram plates during machining

- ideal for die pressing, blanking, bending and much more
- 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, manual control lever, operator manual

Specifications		HPK 40	HPK 70	HPK 100	HPK 150
Working area					
Pressure force	t	40	70	100	150
Table dimensions	mm	700x500	700x500	800x600	900x600
Stroke	mm	500	500	500	500
Ram-plate size	mm	700x350	700x350	700x350	800x400
Stroke speed	mm/s	4	2	2	3
Rapid feed					
Rapid feed	mm/min	1.740	1.200	1.320	1.200
Measures and weights					
Overall dimensions (length x width x height)	m	1x1,5x2,5	1,2x1,5x2,5	1,2x1,9x2,6	1,5x2,2x3
Weight	kg	1.500	2.100	3.400	5.500
Part No.		131568	131574	131566	131576



AHK D 30175 CNC shown

Machine Frame and Male Die

- The machine frame is made of a high-precision, stress-relieved steel weldment
- All components subject to tensile loads have been carefully constructed and designed with large radii to eliminate the risk of welding cracks
- All components were treated in a modern paint and drying system and feature two coats of paint, each coat with a minimum thickness of 60 micron

Work Area

- A large throat, long stroke, and narrow table ensure plenty of free space to accommodate complex bending sequences

Crowning

- All machines include a manual crowning system inside the table; a motorized crowning version is available as an option

Hydraulics

- Cylinder bodies are forged from solid SAE 1040 material
- Perfectly matched hydraulic components and measuring systems ensure exact synchronization of work cylinders

Back Gauge

- Linear guides and large preloaded ball screws are mounted in a protective enclosure to ensure smooth operation even under the most difficult environmental conditions
- Exact adjustment of back gauge finger height

Front Support Arms

- Rigid linear guide and ball bearings for boom ensure maximum stability and easy positioning

Bending Tools

- Promecam (European) tool mounts accommodate an extensive selection of bending Tools
- All tools are hardened and ground, and allow precise setup
- Manual quick-action clamping system for tool mount shortens tool changing times

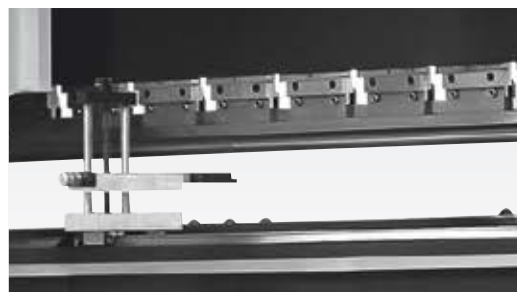
Safety and Productivity

- Safety features are based on the latest CE regulations

Price on request

Standard Equipment

Cybelec Touch 8 2D control, X axis back gauge with servo motor, manual lower table crowning, quick-action clamping of male die, 2 front support arms moving on linear guides, light barrier, 2 front support arms moving on linear guides, foot pedal with e-stop switch, operator manual, European type Top Tool H = 67 mm, European type Bottom Tool 4V H: 60x60 mm, 2 hight adjustable back gauge fingers, European tool clamping system



Height-adjustable back gauge

Specifications AHK H CNC		15060	20080	26100	30100	30135	30175	30220	30320
Working area									
Pressure force	t	60	80	100	100	135	175	220	320
Brake length	mm	1.500	2.100	2.600	3.100	3.100	3.100	3.100	3.100
Brake length	mm	1.300	1.700	2.200	2.600	2.600	2.600	2.600	2.600
Throat	mm	310	310	410	410	410	410	410	510
Stroke	mm	205	205	205	205	205	205	205	365
Clear opening	mm	410	410	485	485	485	485	485	585
Table width	mm	108	108	108	108	108	108	108	154
Travels									
Travel in X-axis	mm	500	500	500	750	750	750	750	750
Feed									
Bending speed	mm/s	10	10	10	10	10	10	10	9
Rapid feed	mm/s	140	140	140	140	140	130	130	100
Return speed	mm/s	120	120	110	110	100	100	100	90
Drive capacity									
Motor rating main drive	kW	5,5	7,5	11	11	15	18,5	22	30
Measures and weights									
Hydraulic tank volume	l	100	100	250	250	250	250	250	350
Overall dimensions (length x width x height)	m	2,15x1,5 x2,3	3,05x1,65 x2,35	3,4x1,85 x2,65	3,9x1,95 x2,75	3,9x1,95 x2,8	3,9x2 x2,85	3,95x2 x2,9	4x2,25 x3,2
Weight	kg	4.000	5.000	6.500	7.800	9.000	10.500	12.000	15.000
Part No.		182600	182601	182602	182603	182604	182605	182606	182607

Specifications AHK H CNC		37220	40175	40220	40320	40400	60320	60400
Working area								
Pressure force	t	220	175	220	320	400	320	400
Brake length	mm	3.700	4.100	4.100	4.100	4.100	6.100	6.100
Brake length	mm	3.200	3.600	3.600	3.600	3.400	5.100	5.100
Throat	mm	410	410	410	510	510	510	510
Stroke	mm	265	265	265	365	365	365	365
Clear opening	mm	485	485	485	585	585	585	585
Table width	mm	108	108	108	154	154	154	240
Travels								
Travel in X-axis	mm	750	750	750	750	750	750	750
Feed								
Bending speed	mm/s	10	10	9	8	8	8	8
Rapid feed	mm/s	110	120	100	90	90	80	70
Return speed	mm/s	100	100	100	80	80	80	60
Drive capacity								
Motor rating main drive	kW	22	18,5	22	30	37	30	37
Measures and weights								
Hydraulic tank volume	l	250	250	250	350	350	350	500
Overall dimensions (length x width x height)	m	4,55x2 x3	4,95x2 x2,9	4,95x2 x3	5x2,25 x3,25	5x2,25 x3,35	7x2,25 x3,55	7,05x2,25 x3,75
Weight	kg	13.500	12.000	15.000	21.000	25.500	28.500	36.000
Part No.		182608	182609	182610	182611	182612	182613	182614



KHT H 3006 CNC with optional accessories is shown

These guided hydraulic plate shears with CNC-controlled back gauge, kerf and cutting angle combine high quality and reliability with a user-friendly design

Machine Frame

- The very rigid and heavy machine frame has been welded to tight tolerances and annealed
- All components subject to tensile loads have been carefully constructed and designed with large radii to permanently eliminate the risk of cracking
- The table features a bottom cutter mount and cutter bar and has been designed for minimal torsion and optimum load distribution
- All components were treated in a modern paint and drying system and feature two coats of paint, each coat with a minimum thickness of 60 micron

Material Support

- The large work table features roller balls and a rigid lateral angular stop for easy handling and safe plate alignment
- Long, sturdy support arms safely hold large plates

Hydraulics

- Polished pistons on both hydraulic cylinders feature superior 2 micron surface grades, ensuring a long seal life
- Cylinder bodies are forged from high-strength SAE 1040 material
- The entire hydraulic system is reliable, low-maintenance and easy to service
- During the cut, hydraulically regulated hold-downs ensure steady fixation of the sheet metal plate close to the cut-line

Back Gauge and Control

- Length, thickness, and strength of the plate material can easily be entered by the user into the programmable control unit, which then automatically will select the appropriate positions for kerf, cutting angle and cutting length
- The back gauge system is very robust and perfectly suited for rough production environments
- Linear guides and preloaded ball screws are mounted in a protective enclosure

Price on request



KHT H 3006 CNC is shown

Equipment

- Electric components made by renowned manufacturers ensure problem-free operation and high availability
- Upper and lower knives suitable for stainless steel
- The machine is operated via a foot pedal with emergency stop switch, and the pedal can be located wherever it is most convenient

Safety

- Safety features are based on the latest CE regulations
- The rear-mounted light barrier system protects the work area

Standard Equipment

CybeleC Touch 8 controller, CNC controlled blade gap adjustment, CNC controlled cutting length adjustment, CNC controlled rake angle adjustment, hand safety guard, cut-line lighting, material support table with rollers, motorized rear stop 1000 mm, side stop with scale and T-slot plus tilt stop (L= 1000 mm), 2 support arms, safety system for work area, foot pedal with E-stop switch, standard upper and lower knives, operator manual

Specifications KHT H CNC		3006	3010	3013	3016	4006	4010	4013	4016
Working Area									
Plate thickness (max.)	mm	6	10	13	16	6	10	13	16
Working length	mm	3.080	3.080	3.080	3.080	4.080	4.080	4.080	4.080
Throat	mm	150	150	150	150	150	150	150	150
Cutting angle	deg	0,3 - 2	0,3 - 2,1	0,3 - 2,3	0,3 - 2,3	0,3 - 2	0,3 - 2,1	0,3 - 2,3	0,3 - 2,3
Strokes per minute	H/min	21	19	17	12	20	17	13	10
Hold-down	Pieces	13	16	19	16	20	20	20	20
Back Gauge									
Rear stop	mm	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Feed speed X-axis	mm/min	100	100	100	100	100	100	100	100
Front Support Arms									
Number of support arms	Pieces	3	3	3	3	4	4	4	4
Length of support arms	mm	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Drive Capacity									
Motor rating main drive	kW	11	18,5	22	30	11	18,5	22	30
Hydraulic tank volume	l	180	280	280	400	180	280	280	400
Measures and Weights									
Overall dimensions (length x width x height)	m	4x2 x1,9	4,1x2,1 x2,1	4,1x2,2 x2,4	4,2x2,2 x2,5	5,15x2,1 x2,05	5,18x2,15 x2,35	5,23x2,2 x2,5	5,25x2,2 x2,85
Weight	kg	7.000	8.600	11.000	16.700	9.400	13.000	15.500	21.500
Part No.		183260	183261	183262	183263	183264	183265	183266	183267



KHT H 3006 NC is shown with optional equipment (central lubrication system and NC control)

The hydraulic shear with NC back gauge combines high quality, reliability and easy handling with superior cutting performance

Machine Frame

- The machine frame is made of a high-precision, stress-relieved steel weldment
- The table features a bottom cutter mount and cutter bar and has been designed for minimal torsion and optimum load distribution
- Kerf adjustment centrally located above the cutter bar
- All components were treated in a modern paint and drying system and feature two coats of paint, each coat with a minimum thickness of 60 micron

Material Support

- The large work table features roller balls and a rigid lateral angular stop for easy handling and safe plate alignment
- Long, sturdy support arms safely hold large plates

Hydraulics

- Polished pistons on both hydraulic cylinders feature superior 2 micron surface grades, ensuring a long seal life
- Cylinder bodies are forged from high-strength SAE 1040 material
- The entire hydraulic system is reliable, low-maintenance and easy to service
- During the cut, hydraulically regulated hold-downs ensure steady fixation of the sheet metal plate close to the cut-line

Back Gauge and Control

- The back gauge system is very robust and perfectly suited for rough production environments
- Linear guides and preloaded ball screws are mounted in a protective enclosure
- The user-friendly NC positions the back gauge precisely for single cuts or for program runs

Price on request



KHT H 3006 NC is shown

Equipment

- Electric components made by renowned manufacturers ensure problem-free operation and high availability
- Upper and lower knives suitable for stainless steel
- The machine is operated via a foot pedal with emergency stop switch, and the pedal can be located wherever it is most convenient

Safety

- Safety features are based on the latest CE regulations
- The light-barrier safety system is located at the rear of the fully integrated machine enclosure and perfectly secures the work area

Standard Equipment

Laser Schneidlinie, BRL 401.2 NC Control Unit, blade gap adjustment, hand safety guard, material support table with rollers, foot pedal with E-stop switch, safety system for work area, back gauging, support arms (L=1000 mm) 2 pcs., side stop with scale and T-slot plus tilt stop (L= 1000 mm), motorized rear stop 1000 mm, standard upper and lower tool, operator manual

Specifications KHT H NC

		3006	3010	4006	4010
Working area					
Plate thickness (max.)	mm	6	10	6	10
Working length	mm	3.080	3.080	4.080	4.080
Throat	mm	150	150	150	150
Cutting angle	deg	1,3	1,5	1,3	1,5
Strokes per minute	H/min	10	10	9	9
Hold-down	Pieces	14	17	20	20
Hold-down capacity	t	16	20	25	25
Table size	mm	3.500x490x810	3.500x550x860	4.540x530x860	4.540x580x910
Back Gauge					
Rear stop	mm	1.000	1.000	1.000	1.000
Feed speed X-axis	mm/min	100	100	100	100
Front Support Arms					
Number of support arms	Pieces	3	3	4	4
Length of support arms	mm	1.000	1.000	1.000	1.000
Drive capacity					
Motor rating main drive	kW	15	30	15	30
Hydraulic tank volume	l	150	300	150	300
Measures and weights					
Overall dimensions (length x width x height)	m	3,95x3,05x2,16	4x3,1x2,32	4,95x4,95x2,36	5x5x2,48
Weight	kg	6.700	9.600	11.400	14.500
Part No.		183251	183252	183254	183255



KMT B 1253 is shown

- Manual back gauge
- High cutting power

Machine Frame and Drive System

- The machine frame is made of a rigid, solid steel weldment
- A rubber-coated hold-down automatically fixates the plate
- A small knife angle ensures cut accuracy

Material Support

- The rigid side angle stop simplifies alignment of the plate to the cut line
- Rugged support arms ensure a good hold of large plates on the support table

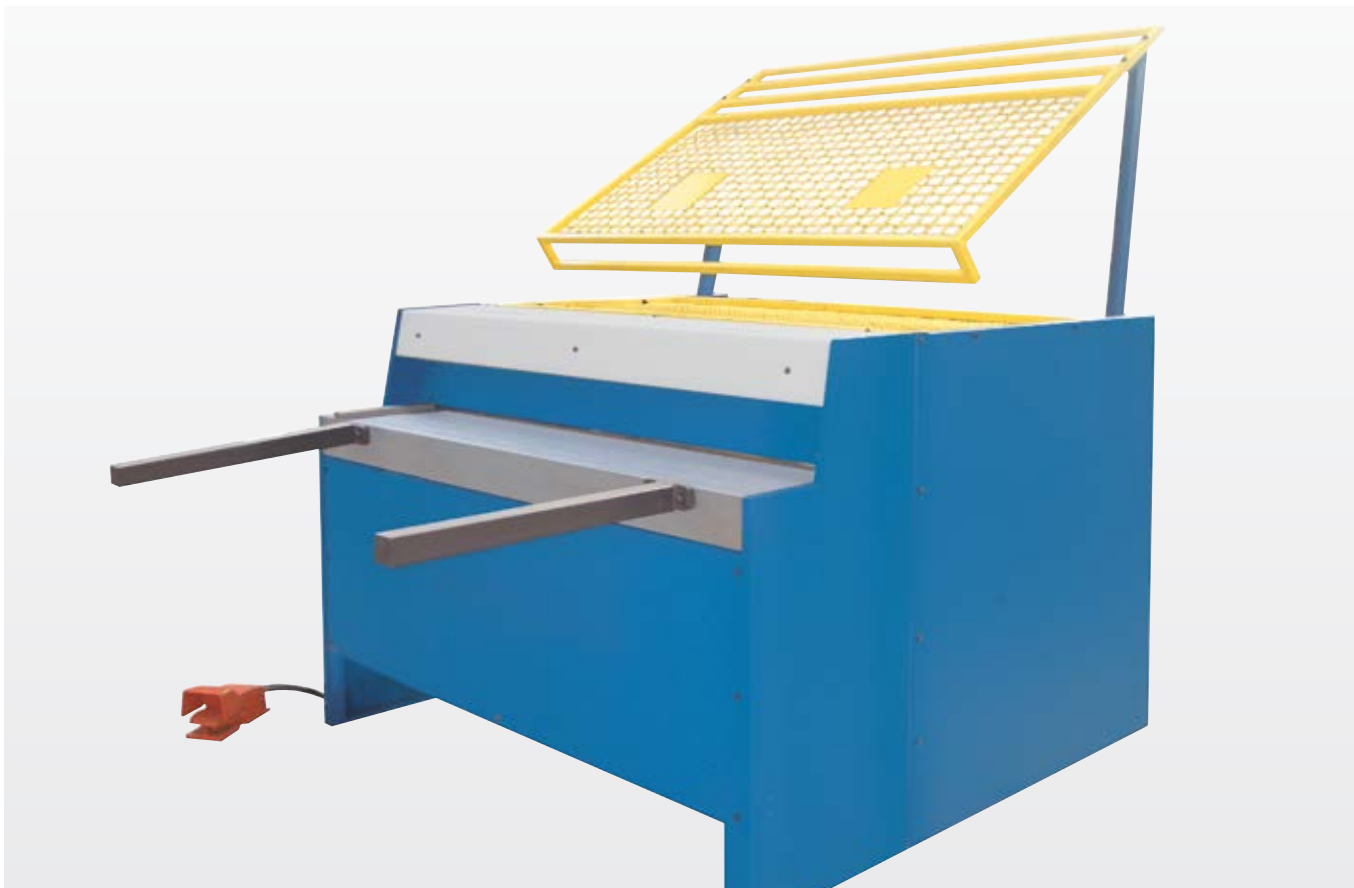
Operation and Ergonomics

- Illuminated cut line ensures good visibility of marking
- The mobile foot switch provides hands-free control

Back Gauge

- Manual back gauge with scale
- The motorized back gauge is robust and rigid and can handle any challenges in everyday operations
- The work area at the back gauge is covered with safety panels

Price on request



Swivel-mounted workspace enclosure ensures operator safety

Standard Equipment

foot pedal, Side angle stop, support arms, automatic hold-down device, cut-line lighting, manual rear stop, operator manual

Specifications KMT B		1253	1254	2052	2053
Working area					
Structural steel plate thickness	mm	0,8 - 3	0,8 - 4	0,8 - 2	0,8 - 3
Working length	mm	1.250	1.250	2.050	2.050
Cutting angle	deg	2	2,4	2	2
Strokes per minute (automatic mode)	H/min	30	30	30	30
Knife length	mm	1.350	1.350	2.100	2.100
Work table height	mm	830	830	830	830
Support arms	mm	600	600	600	600
Number of support arms	Pieces	2	2	3	3
Back Gauge					
Rear stop	mm	630	630	630	630
Drive capacity					
Motor rating main drive	kW	3	4	3	4
Measures and weights					
Overall dimensions (length x width x height)	m	1,69x1,48x1,1	1,72x1,6x1,19	2,5x1,67x1,1	2,5x1,6x1,19
Weight	kg	850	1.185	1.300	1.520
Part No.		133640	133642	133643	133641



KMT B 2552 NC is shown

- **Controlled back gauge**
- **4.3" touchscreen**
- **Reversible upper and lower knife**

Machine Frame and Drive System

- The machine frame is made of a robust steel weldment treated with stress-relief annealing
- An automatic hold-down fixates the plate during cutting
- The double-edged upper and lower knives can be rotated and reused

Material Support

- The rigid side angle stop simplifies alignment of the plate to the cut line

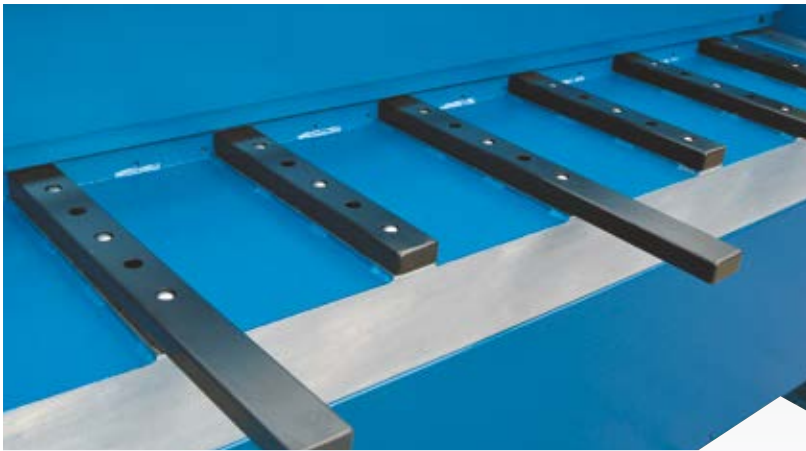
Operation and Ergonomics

- The PLC back-gauge control with 4.3" touchscreen features a user-friendly graphic interface for quick and easy programming
- The mobile control unit features a foot switch, so the operator has both hands free

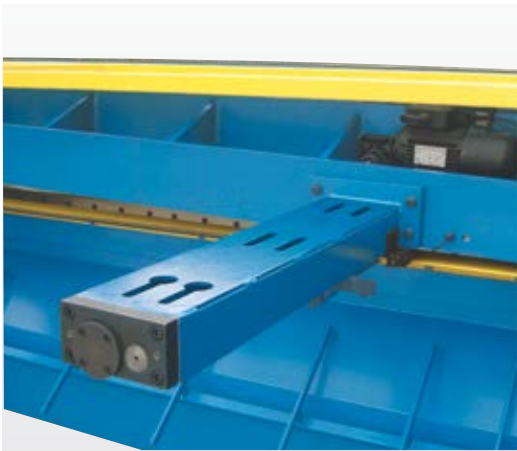
Back Gauge

- The motorized back gauge can be positioned manually or automatically
- A plate hold-up fixture prevents any overhang of the plate in front of the back gauge to ensure maximum accuracy and quality of every cut, even in thin plates
- Support arms are positioned via an air cylinder and lowered in sync with the cutting process

Price on request



Robust support arms with material support rollers simplify handling and provide a secure hold for large plates



The rugged back gauge stands up to every day production challenges



Accessible work area at the back gauge is secured by a swivel door

Standard Equipment

pcl control, work lamp, safety guard with power off after open door, Back gauge with 4,3" Touchscreen, foot pedal, cut-line lighting, lateral stop, Support arms with material support balls, powered rear stop, hold-down, pneumatic sheet hold-up device, Safety cover Working area Backgauge, operator manual

Specifications KMT B		1304 NC	2552 NC	2554 NC
Working area				
Structural steel plate thickness	mm	0,8 - 4	0,8 - 2	0,8 - 4
Working length	mm	1.300	2.550	2.550
Cutting angle	deg	2,4	1,6	1,8
Strokes per minute (automatic mode)	H/min	30	30	30
Knife length	mm	1.353	2.570	2.570
Work table height	mm	830	830	830
Support arms	mm	600	600	600
Number of support arms	Pieces	5	5	5
Back Gauge				
Rear stop	mm	630	630	630
Drive capacity				
Motor rating main drive	kW	4	4	7,5
Measures and weights				
Overall dimensions (length x width x height)	m	1,75x1,82x1,19	3x1,78x1,24	3,05x1,87x1,26
Weight	kg	1.355	1.900	2.500
Part No.		133652	133653	133650



Flat Steel Cutters

- For strip steel, flat steel, wide flat steel
- table with angular and linear stops
- Adjustable hold-down
- lower knife provides 4 cutting edges

Angular Profile Steel Cutters

- For angle steel sections
- Cut angle 90° and 45°
- Adjustable material guide plate

Rod Steel Station

- For round and square steel
- Robust material guide plate

Back Gauge

- Including swivel boom
- For use on Flat Steel, Angular Steel and Rod Steel Stations
- The HPS H 45 and HPS H 60 come with a manual back gauge
- Electric back gauges for automatic cut activation are provided on the HPS 65 H, HPS 85 H, HPS 115 H, HPS 175 H

Hole Punch Station

- For punching round holes and slots in sheet metals, flat steel and U-section steel
- Table with adjustable angular stops
- infinitely variable stroke adjustment
- Premium Kingsland tools
- Hydraulic overload protection

Notching Station

- Rigid support table with adjustable stops

Standard Equipment

Easy replaceable punch holder, stamps and dies, angle cutting blade, flat bar cutting blade, notching blade, solid bar cutting blade, back gauge, foot pedal with emergency stop button, hook spanner wrench, work lamp

Price on request



Back gauge with automatic cut activation



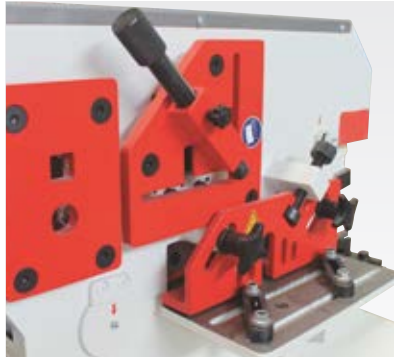
Notching station with safeguard



- Models HPS 45H and HPS 60 H feature a powerful hydraulic cylinder
- Models HPS 65 H, HPS 85 H, HPS 115 H and HPS 175 feature 2 hydraulic cylinders allowing simultaneous operation at 2 stations



Hole punch station featuring large support table



Compact design and excellent rigidity

Specifications HPS

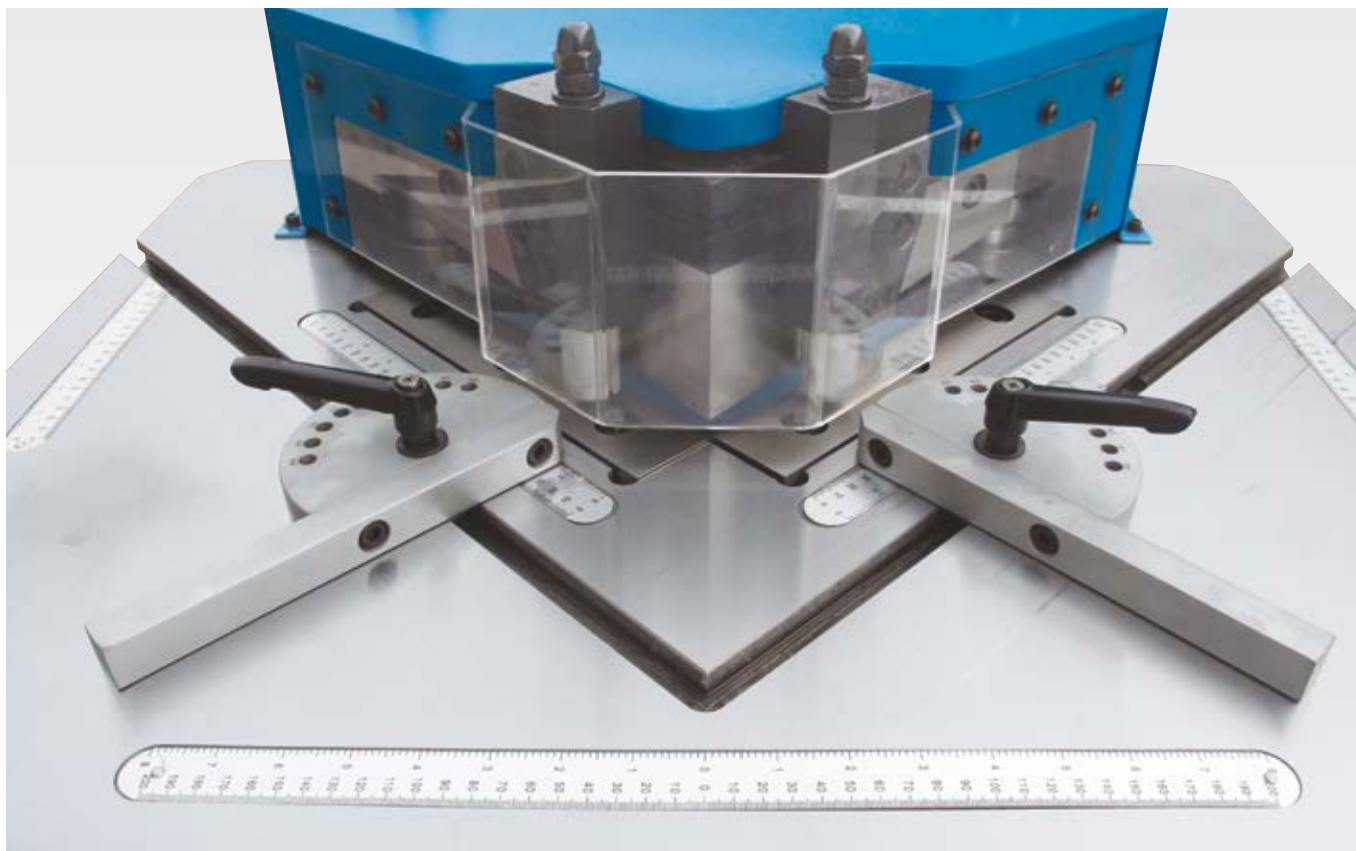
		45 H	60 H	65 H	85 H	115 H	175 H
Working area							
Number of hydraulic cylinders	Pieces	1	1	2	2	2	2
Punch press							
Pressure force	t	45	60	65	85	115	175
Punch capacity (max.)	mm	22x15	28x15	26x20	33x20	34x26	40x32
Diameter x thickness	mm	38x8	38x11	57x10	57x12	55x16	57x22
Throat	mm	190	225	305	355	405	625
Stroke	mm	35	50	55	80	80	80
Stroke number (at 20 mm stroke)	H/min	20	25	25	25	25	25
Working height	mm	935	935	1.005	1.070	1.070	1.130
Steel cutter							
Cutting capacity flat (max. width)	mm	300x12	300x15	375x15	480x15	600x15	600x20
Cutting capacity flat (max. thickness)	mm	200x15	200x20	300x20	380x20	380x25	380x30
Knife length	mm	320	320	380	485	610	610
Cutting capacity round	mm	30	40	45	50	55	65
Cutting capacity square	mm	25	35	45	50	50	55
Steel cutter working height	mm	940	930	895	930	905	905
Profile cutter							
Cutting capacity 90°	mm	100x100x10	120x120x12	130x130x13	150x150x15	160x160x16	200x200x20
Cutting capacity 45°	mm	60x6	70x7	70x7	80x8	80x8	80x8
Profile cutter working height	mm	1.135	1.130	1.130	1.190	1.190	1.160
Notcher							
Plate thickness (max.)	mm	8	10	10	13	13	16
Width	mm	35	42	45	52	60	65
Depth	mm	100	100	100	100	100	100
Drive capacity							
Motor rating hydraulic pump	kW	4	4	5,5	7,5	11	11
Measures and weights							
Overall dimensions (length x width x height)	m	1,33x0,77 x1,46	1,46x0,77 x1,46	1,68x0,77 x1,76	1,86x0,77 x1,89	2,04x0,77 x1,89	2,81x1,02 x2,21
Weight	kg	1.200	1.400	1.700	2.250	3.150	5.750
Part No.		131180	131181	131182	131183	131184	131185



- Cutting capacity up to 6.5mm
- Automatic kerf adjustment
- Large work table

- The KAM 250 fixed-angle notcher features a compact design and long cutting length
- The powerful hydraulic drive and heavy, rigid construction allow machining of up to 6.5 mm thick plates
- Automatic kerf adjustment simplifies machining operations and minimizes down-times

Price on request



Adjustable clamping lever simplifies safe handling of stops



The machine provides a user-friendly design and reliable functionality

- The large work table features a 90° slot that runs parallel to the cut line, which can accommodate two indexable angular stops
- Easy to read scale bars allow precise workpiece alignment underneath the cutter head
- Automatic hold-downs hold the workpiece close to the knife during the cutting process
- Notched material is ejected to the side
- Easy and comfortable operation via foot switch

Specifications

KAM 250

Working area		
Cutting angle	deg	90
Max cut length	mm	250
Max cut thickness	mm	6,5
Strokes per minute	Pieces	24
Table size	mm	810x750
Motor rating	kW	4
Operating pressure	bar	120
Measures and weights		
Oil tank capacity	l	35
Overall dimensions (length x width x height)	m	1,01x0,85x1,4
Weight	kg	630
Part No.		130610

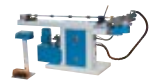
Standard Equipment

Footpedal with emergency stop, angle stop, operator manual



Bending

PAGE **316** » DBM 32



PAGE **318** » KPB 30 • 50 • KPB 45 • 61 • 81 • 101



PAGE **320** » KRM-A • KR • KRM • KRM-S



PAGE **322** » RBM 20/04 • 20/16 • 25/06 ...



PAGE **324** » HBM 2045 • 2065 ...



PAGE **326** » KHS E • SBS • SBS E



PAGE **328** » KSM 12 • 25 • 40





- Stationary bending machine for tube sizes up to 32 mm
- Rigid, heavy-duty weldment construction with compact stand-alone bending head
- Interchangeable bending tools for easy refitting for other bending diameters
- Powerful hydraulic tube clamping for improved bending quality
- CNC with storage for up to 100 programs
- Data input via a large 7" touchscreen
- Parallel support is included in standard equipment

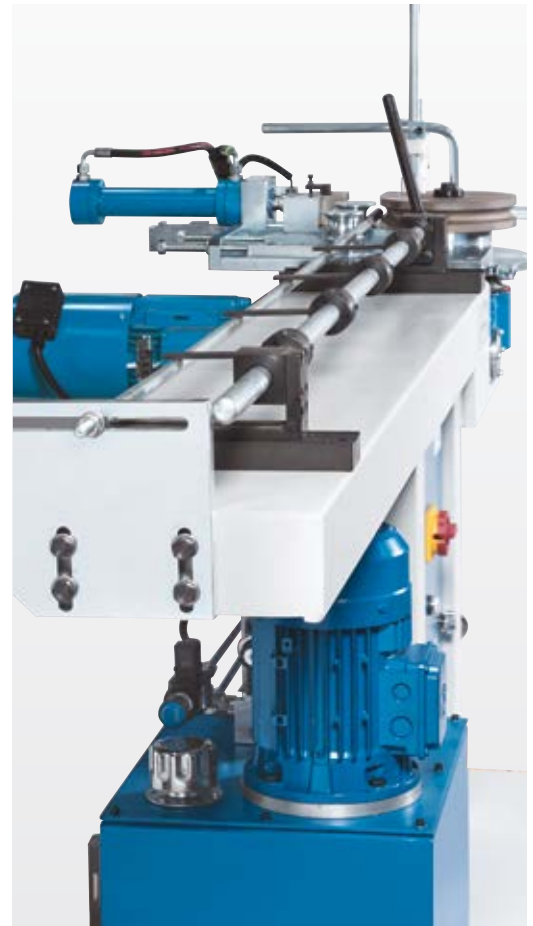


Compact hydraulic unit for powerful tube clamping

Price on request



Hydraulic workpiece clamping, and maximum bending angle of 190°



Arbor length 2000 mm

KNUTH offers the optimum tools for any application.
A standard tool kit includes bending die, clamping jaw, and arbor tip.

For a customized offer that meets your individual requirements, we need the following information:

- Outside tube diameter ($\varnothing$)
- Wall thickness (t)
- Workpiece length (mm)
- Mean bending radius (CLR)
- Inside radius (R)
- Desired bending angle (°)

Specifications

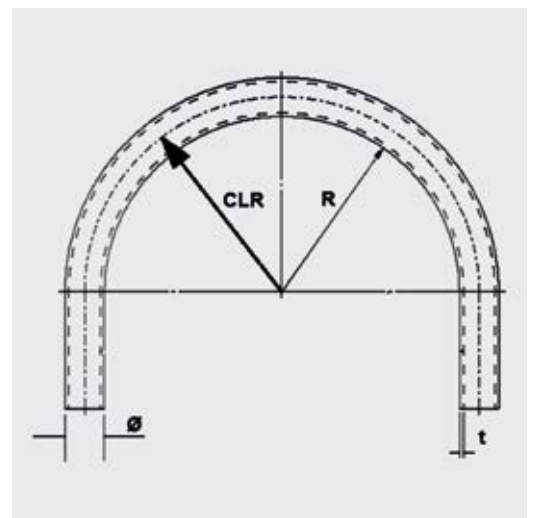
DBM 32

Working area

Max. diameter of pipes	mm	32
Max. tube wall thickness	mm	3
Max. bending radius	mm	275
Max. bending angle	deg	190
Tube bending rate		8,5
Motor rating	kW	2,2
Hydraulic motor rating	kW	1,5

Measures and weights

Overall dimensions (length x width x height)	m	1x2,1x1,05
Weight	kg	400
Part No.		131375



Standard Equipment

7" touchscreen control unit with foot switch, hydraulic tube clamping, forming dies, clamping jaw, parallel rest, operator manual



KPB 50 shown



KPB 30 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	KPB 30			KPB 50		
Profiles	Dimens.	BendingØ*	Rollers	Dimens.	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	A
	UNP50	500	B	UNP60	700	A
	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

* min. Bending Ø

A Standard Rollers

B Special Rollers

Standard Equipment

standard rollers, foot pedal, control panel, operating tools, operator manual

Specifications

KPB 30 KPB 50

Working area

Shaft Ø	mm	30 / 35	50
Roll Ø	mm	132 / 137	155
Bending speed	m/min	2,1	4,3

Drive capacity

Motor rating main drive	kW	0,75	1,5
-------------------------	----	------	-----

Measures and weights

Overall dimensions (length x width)	m	0,67x 0,53	0,73x 0,83
Height including base	mm	1.350	1.350
Weight	kg	185	400
Part No.		130158	131151

price on request

KPB 45

- incl. a modular roller system for optimum adaptation to desired profile
- manually adjustable leveling rolls
- hardened and ground shafts
- allows horizontal or vertical machining
- hydraulic components made by leading manufactures
- hydraulic movement of upper roll
- separate control panel

Standard Equipment KPB 45

control panel, standard rollers, operating tools, operator manual



KPB 45 shown

KPB 61, 81, 101

- optimum adaptation to a large variety of profiles using the modular roller system
- 3 hydraulic-driven rollers
- hardened and ground shafts
- overload slip-clutch
- hydraulic feed of bottom rollers with digital display
- hydraulically adjustable straightening rollers; optional
- allows horizontal or vertical machining
- hydraulic components made by leading manufactures

Standard Equipment KPB 61, 81, 101

digital display, control panel, standard rollers, operating tools, operator manual



KPB 61 shown

price on request

KPB 81 shown incl. optional accessories
hydraulically controlled straightening rollers

Specifications		KPB 45	KPB 61	KPB 81	KPB 101
Working area					
Shaft Ø	mm	50 / 40	60	80	100
Roll Ø	mm	152 / 162	177	245	315
Bending speed	m/min	3,3	6,4	4,2	5,4
Driven roll	Pieces	3	3	3	3
Drive capacity					
Motor rating hydraulic pump	kW	1,5	4	5,5	11
Supply voltage	V	400	400	400	400
Measures and weights					
Overall dimensions (length x width x height)	m	0,78x0,95x1,65	1,26x0,94x1,39	1,38x1,04x1,54	1,44x1,22x1,68
Weight	kg	500	1.080	1.600	3.500
Part No.		131150	131194	131200	131206

Motorized 3-Roll Bending Machine

KRM

Motorized drive with foot pedal control and safety switch



KRM-A 20/1,5 is shown

- 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

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
prebend	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

Manual Roll Benders

KR

Rigid cast-iron construction with manually driven rollers



KR 10/3,0 is 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	131 890

3-Roll Bending Machine KRM • KRM S

Modern design, user-friendly machine with asymmetrical 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	1250	1250	1250	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 diameter	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	2320	2020	2020	2620	2320	3300	3240
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

Asymmetrical 3-Roll Bending Machine with one-side Prebend



KRM-S 15/7 shown including optional equipment (motorized bottom roller adjustment, extended rollers and profile rollers)

- 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
- separate control panel
- meets CE requirements

Options

motor-driven bottom roller adjustment, extended roller ends for profile roller mounting, profile roller set, digital display

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 diameter	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 x1200	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



RBM 25/20 is shown

Specifications RBM		20/04	20/16	25/06	25/13	25/20
work length	mm	2100	2100	2600	2600	2600
max. thickness	mm	6	20	8	16	25
max. plate thickness for prebending	mm	4	16	6	13	20
upper roller Ø	mm	160	300	210	300	360
bottom roller Ø	mm	140	270	190	270	330
side roller Ø	mm	120	210	170	210	250
motor rating	kW	2,2	15	7,5	11	18,5
length	mm	4142	4532	4642	5032	5042
width	mm	1140	1730	1390	1730	1900
height	mm	1037	1489	1300	1489	1677
weight	kg	2320	7000	4600	8110	11800
Part No.		131 900	131 903	131 906	131 909	131 912
Part No. NC Teach-In		131 902	131 905	131 908	131 911	131 914

price on request



- 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 (RBM 30/70)
3 times the diameter of the top roller (except RBM 30/70)

Standard Equipment:

hardened rollers, conical bending feature, digital display, control panel, operator manual

Options	Part No.:
• CNC control	on request
• Infinitely variable turning speed	133 903
• Material feed table	133 934
• Lateral support	133 935
• Central support	133 936

Specifications RBM		25/35	30/10	30/16	30/40	40/06	40/13
work length	mm	2600	3100	3100	3100	4100	4100
max. thickness	mm	45	13	20	50	8	16
max. plate thickness for prebending	mm	35	10	16	40	6	13
upper roller Ø	mm	460	300	360	540	300	390
bottom roller Ø	mm	420	270	330	510	270	360
side roller Ø	mm	360	210	250	440	210	300
motor rating	kW	30	11	15	55	7,5	15
length	mm	5969	5532	5542	6669	6532	7241
width	mm	2300	1730	1900	3000	1730	2100
height	mm	2585	1489	1677	2925	1489	1983
weight	kg	30000	8800	13200	40000	9930	20800
Part No.		131 915	131 921	131 924	131 927	131 933	131 936
Part No. NC Teach-In		131 917	131 923	131 926	131 929	131 935	131 938



- rigid machine frame and powerful hydraulics ensure superior production quality, accuracy and reliability
- design and equipment allow high machining speed with short tooling time and minimum down time
- powerful drives feature, low-maintenance hydraulics
- hydraulic upper die adjustment with clamping pressure control and display at the control panel
- fine adjustment of the clamping gap to avoid damages to the workpiece surface
- lower beam with manual adjustment and crowning
- manually adjustable rear stop (600 mm), and angular positioning control M15S with LED-Display are standard equipment
- bending angles up to 135°
- segmented upper die with segment divisions of 76 mm (7 each), 102 mm (3 each), 127 mm (7 each) and 152 mm (2 each) (HBM 2045)
- flexible operation with mobile triple foot switch

Standard Equipment

position controller M15S, manual rear stop, segmented upper die 76 - 152 mm, mobile foot switch, operating tools, operator manual



Adjustable upper die clamping pressure

Price on request



Rear view of the machine - manual rear stop



Standard upper die with segmentations of 76, 102, 127 and 152 mm



Exact folding angle adjustment via positioning control (standard)

Specifications HBM		2045	2065	2545	2565	3145	3165
Working area							
Working length	mm	2.035	2.035	2.540	2.540	3.100	3.100
Bending capacity, structural steel	mm	4,5	6,5	4,5	6,5	4,5	6,5
Bending capacity, stainless steel	mm	3	4,5	3	4,5	3	4,5
Bending bar angle (range)		0-135°	0-135°	0-135°	0-135°	0-135°	0-135°
Top beam travel	mm	100	100	100	100	100	100
Adj. lower bending beam	mm	25	25	25	25	25	25
Drive capacity							
Motor rating main drive	kW	5,5	7,5	5,5	7,5	5,5	7,5
Measures and weights							
Hydraulic tank volume	l	90	90	90	90	90	90
Overall dimensions (length x width x height)	m	3,3x1,55 x1,9	3,3x1,55 x1,9	3,9x1,7 x1,9	3,9x1,75 x2,05	4,5x1,75 x1,95	4,5x1,75 x2,05
Weight	kg	3.200	4.328	5.100	6.200	5.500	7.100
Part No.		131402	131404	131408	131410	131414	131416

Manual Swing-Beam Shears

KHS E 1000

Robust manual swing-beam shears for easy and precise cutting of plates up to 1.5 mm thick



Price on request

- large dimensions steelplates sheets can be pushed through
- Sheet Hold-downs device with eccentric clamping
- End stops adjustable by hand

Specifications		KHS E 1000
max. sheet thickn.	mm	1,5
work length	mm	1040
table	mm	605x1100
stop	mm	0-580
height	mm	1500
width	mm	1000
length	mm	1300
weight	kg	460
Part no.		132 036

Folding Machine

SBS 1020/2,5 • 1270/2,0

Heavy manual folding machine with segmented upper tool



Price on request

- 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	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	mm	1348x850	1598x900
(LxWxH)		x1175	x1175
weight	kg	285	330
Part No.		131 364	131 363



SBS E 2020/2.0 is shown

- The series has a rugged, very robust design and is impressively easy to handle while delivering maximum accuracy.
- All models of this series have a hardened, segmented male die.
- Segments can be removed individually, so all sides of the basin can be bent
- Adjustable angular stop for the production of angular small batches
- A manually adjustable rear gauge is available as an option

Options

For additional options for this machine, visit our website and search for SBS E (Product Search)



Exact bending angle across the entire work length

Specifications

		2020/2,0	2540/1,5	3020/1,2
Working area				
Working length	mm	2.020	2.540	3.020
Plate thickness (max.)	mm	2	1,5	1,2
Working height	mm	920	920	920
Male Die				
Stroke	mm	120	120	120
Bending Die				
Bending angle (max.)	deg	135	135	135
Adjustment range for A axis	mm	15	15	15
Measures and weights				
Overall dimensions (length x width x height)	m	2,8x0,85x1,3	3,32x0,72x1,5	3,8x0,72x1,5
Weight	kg	1.025	1.250	1.385
Part No.		131367	131371	131372

Price on request



- 4 sets of standard rollers
- Includes base
- Foot switch with integrated E-stop

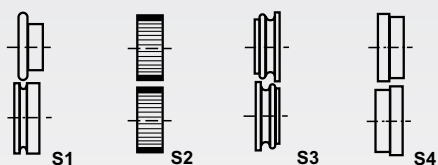
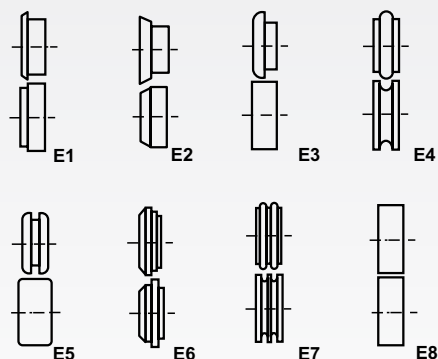
- The KSM 12 machine frame is made of a rugged cast-iron construction
- The powerful KSM 25/40 features an extremely solid weldment construction with thick steel walls
- All models have powerful motors with reduction gears, and brake systems
- Four sets of beading and crimping rollers are included
- Additional roller sets for a wide variety of applications are available as an option
- Easy handling is supported by a mobile control unit with E-Stop switch

- Two large foot switches simplify changing between rotational directions for not circumferential beads
- A rigid, extremely stable stop plate allows for exacting work
- The rugged base has a minimal footprint

Standard Equipment

base, foot pedal, 4 pieces standard rolls, operator manual

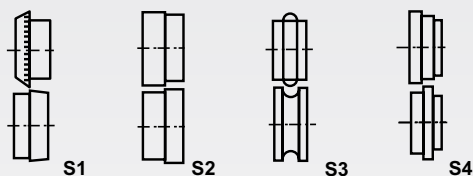
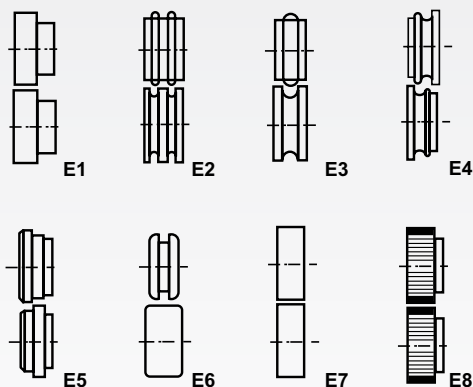
Price on request

Standard Rollers**Extra Rollers**

Standard and custom rollers for KSM 12



KSM 12 Beading Machine with base and control unit

Standard Rollers**Extra Rollers**

Standard and custom rollers for KSM 25 and 40

Options**Part No.**

• special rolls type E1 for KSM 40 / item 130021	257378
• special rolls type E2 for KSM 40 / item 130021	257379
• special rolls type E3 for KSM 40 / item 130021	257380
• special rolls type E4 for KSM 40 / item 130021	257381
• special rolls type E5 for KSM 40 / item 130021	257382
• special rolls type E6 for KSM 40 / item 130021	257383
• special rolls type E7 for KSM 40 / item 130021	257384
• special rolls type E8 for KSM 40 / item 130021	257385

Specifications

		KSM 12	KSM 25	KSM 40
Working area				
Plate thickness (max.)	mm	1,2	2,5	4
Roller distance max.	mm	56	92	132
Throat	mm	200	280	300
Speed	1/min	32	20	15
Drive capacity				
Motor rating	kW	0,75	1,5	2,2
Measures and weights				
Overall dimensions (length x width x height)	m	1,1x0,48x1,48	1,47x0,58x135	1,65x0,58x1,4
Weight	kg	120	235	341
Part No.		130018	130019	130021



Tube Notcher

RA 1 • RA 2

Allows easy joining and welding of tubes at a 90° angle

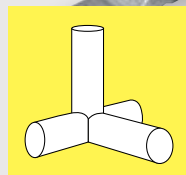
- for tubes with up to 5 mm wall thickness, steel or non-ferrous metal
- several tube diameters combined in 1 device
- horizontal and vertical operation
- suitable for double-connection

RA 1 - diameter 27 - 43 mm

Part No. 130 126

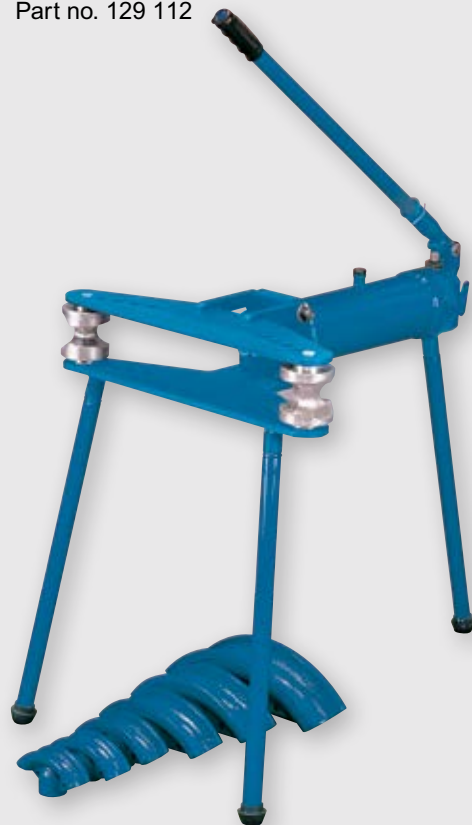
RA 2 - diameter 49.5 - 61.5 mm

Part No. 130 129



Hydraulic Tube Bender 1/2" - 2"

- 10 to pressure
 - 6 bending segments
 - 3-leg stand
- Part no. 129 112



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





Angle Iron Bender

KW 100

for exact cold and hot bending of flat, round, and square steel

- sturdy design for screw-mounting on workbench
- infinitely variable bending stop adjustment
- with eccentric 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

340,- €



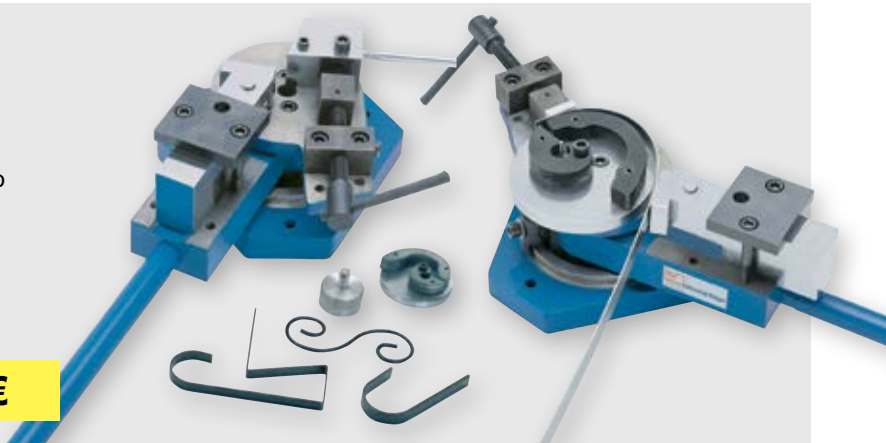
			Cold	Hot
■	Flat steel	mm	100 x 5	100 x 15
	or	mm	60 x 8	100 x 12
●	Round steel	mm	18	30
■	Square steel	mm	16 x 16	30 x 30
■	Flat copper		100 x 12	-

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

390,- €

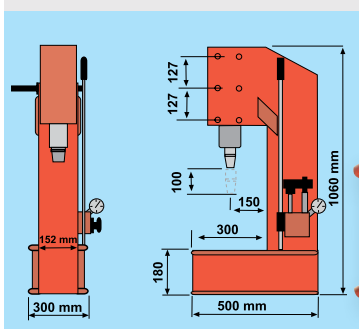


Hydraulic Presses

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

2.230,- €



Arbor Press

5 T

- for press-fitting and pulling bearings
 - aligning, bending and broaching
 - base
- Part no. 123 952

100,- €

- 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





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

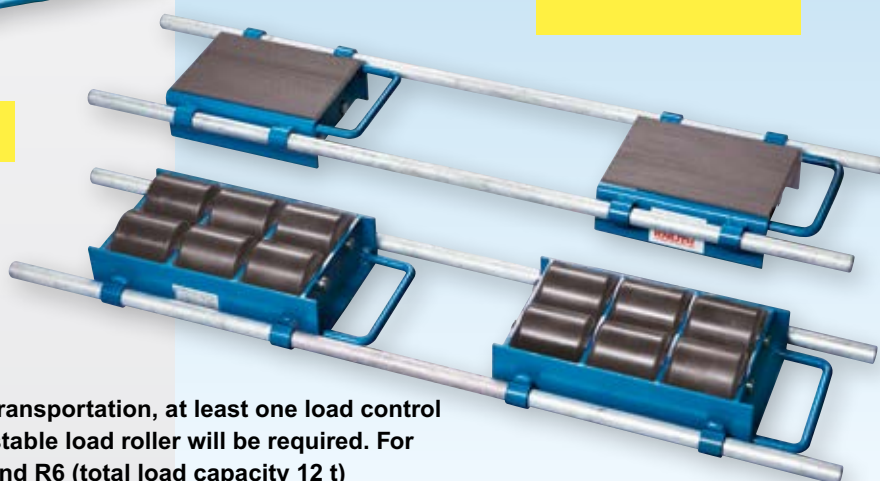


L 6

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 410 x 100
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 250 x 200 x 115	350 x 200 x 115
intrinsic weight	kg 30	38
Part No.	140 106	140 112

Load Rollers adjustable



For machine transportation, at least one load control and one adjustable load roller will be required. For example: L6 and R6 (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. 101 352

motor rating	kW	0.37
speed	rpm	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 rpm	500 mm	29 kg
	1 Phase				



Drill bit grinding machine

KSM 13



starting at

- For HSS and carbide drills with diameters from 4 to 13 mm
- Chamfering of relief angle (rear of drill bit), chamfering of point angle
- Point grinding (KSM 13 S only)
- Free grinding of drill bit center
- Optimum grinding path to provide controlled chip removal at the drill

Specifications KSM 13 • 13 S

Grinding diameter	mm	4 - 13
Motor rating		180 W / 220 V
Grinding wheel material		CBN
Dimensions	mm	395 x 220 x 290
Weight	kg	22
KSM 13 Part No.		112 820
KSM 13 S Part No.		112 825

Options

Grinding wheel for KSM 13	Part. No. 112 821
Grinding wheel for KSM 13 S	Part. No. 112 829



End mill grinder

FSM 14 S



- For grinding of HSS and carbide cutters with diam. from 3 to 14 mm
- Cutters with 2, 3 and 4 blades can be machined; cutters with 6 blades can be machined, if their diameter is at least 12 mm
- Easy grinding of circumferential spiral blades
- Rapid tooling - quick setup of cutters at the machine
- 2 grinding wheels are included
- 6 collets with the common diameters of 4, 6, 8, 10, 12, 14 mm

Specifications FSM 14 S

Grinding diameter	mm	4 - 14
Motor rating main drive	kW / V	0,16 / 220
Grinding wheel material		CBN
Overall dimensions	m	0,61 x 0,25 x 0,3
Weight	kg	22
Part No.		112 800

Options

Face cutter grinding wheel	Part. No. 112 801
Diagonal cutter grinding wheel	Part. No. 112 802



Tap Grinder

GSM 20



- Portable tap grinder for tap sizes M5 to M20
- Suitable for taps with 2, 3, and 4 flutes
- Regular regrinding is recommended for the following reasons:
 - to maintain good surface quality
 - to maintain dimensional stability of threads
 - to prevent tool breakage due to increasing cutting forces

Specifications GSM 20

Grinding area		M5 - M20
Point angle		5°-30°
Motor rating		180 W / 220 V
Speed	rpm	5300
Dimensions	mm	350 x 230 x 270
Weight	kg	12
Part No.		112 810

Options

Diamond cutting wheel	Part. No. 112 811
-----------------------	-------------------



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. 270 020

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.

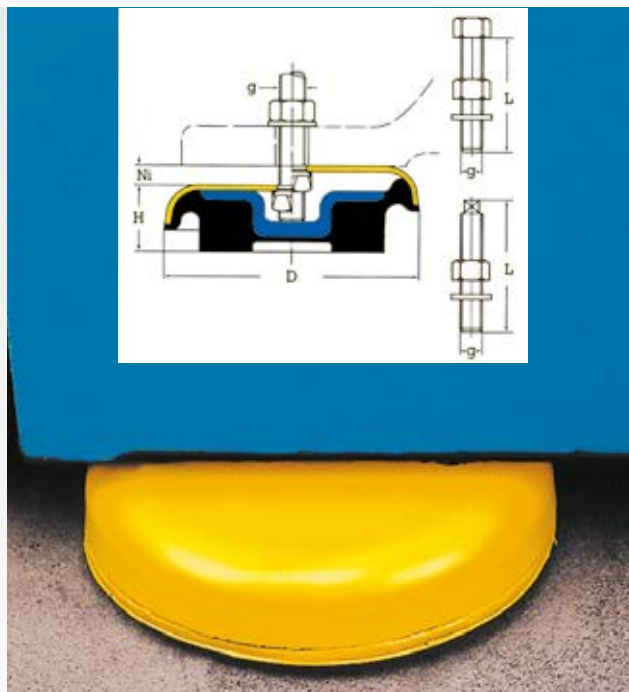
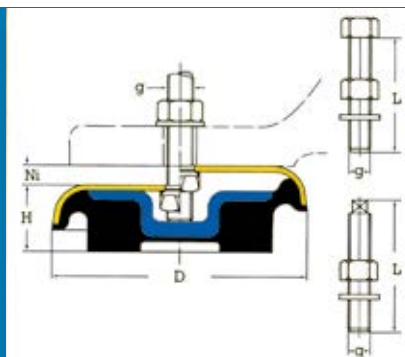
The TV 1000 table feed unit can be retrofit on most milling machines. After mounting of the TV 1000, the table still can be moved manually.

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 3	LK 5	LK 6
Lathes	270	380	900
Milling machines	370	500	1,600
Surface grinders	500	900	2,400
Punch press / strokes 100	420	800	2,000
Punch press / strokes 150	260	400	1,000
Punch press / strokes 200	180	200	450
Part No.	103 330	103 331	103 332

	NI	D	H	L	g
LK 3	12	120	32	100	M 12
LK 5	12	160	35	120	M 16
LK 6	12	180	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)



LED - Strip Lights and Ring Lights

- strong magnets on the back ensure quick mounting and reliable hold even in areas that are difficult to access, like angles and corners
- 12 / 24 Volt supply directly from the control cabinet via included mains transformer and cable



Specifications		LED rings			LED strips			
dimensions	mm	85	100	200	270	570	870	1120
Part No.		670 600	670 601	670 602	670 603	670 604	670 605	670 606

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		>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

Lathe headstock

- Incl. chrome-plated fastening rod and safety micro-switches
- Easy mounting via screws at the headstock

For lathe chuck	Part No.
400 mm	103 030
500 mm	103 031
600 mm	103 032



Lathe support

- Incl. safety micro-switch
- Rigid steel construction, swivels to both sides
- Polycarbonate viewing window

Dimensions (HXW)	Part No.
1500 x 150 mm	103 033
1500 x 200 mm	103 034



Lead screw and feed shaft guards

- Resistant against oil, heat and acid, meets safety class M2
- High-strength aramide belt with strong polyurethane connection for high loads
- Individually mountable at machine

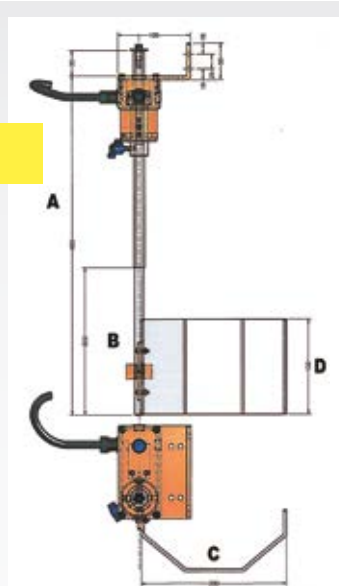
Dimensions (LxH)	Part No.
1500 x 150 mm	103 035
1500 x 200 mm	103 036
2000 x 200 mm	103 037
3000 x 250 mm	103 038



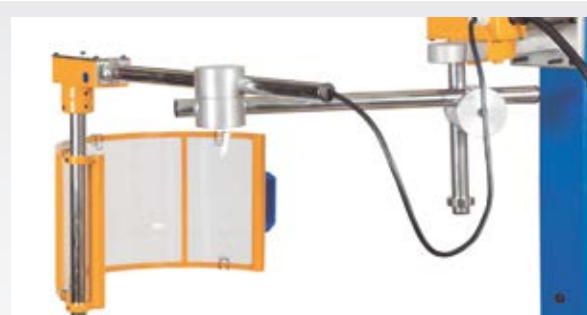
Drill Press Quill

- Incl. safety micro-switch
- Adjustable to boring depth
- Polycarbonate viewing window

Model	Part No.
BP 1	103 043
BP 2	103 044



A	465 mm
B	202 mm
C	200 (BP 1) / 300 mm (BP 2)
D	130 (BP 1) / 200 mm (BP 2)



Milling machine - cutter spindle

- Strong construction with robust connectors
- Individually adjustable arms
- Easy mounting via screws
- 2 electric safety switches
- Can be mounted left or right

Disk diameter	Part No. right side	Part No. left side
400 mm	103 039	103 041
500 mm	103 040	103 042



Diamond Files Set, 10 pieces

- 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



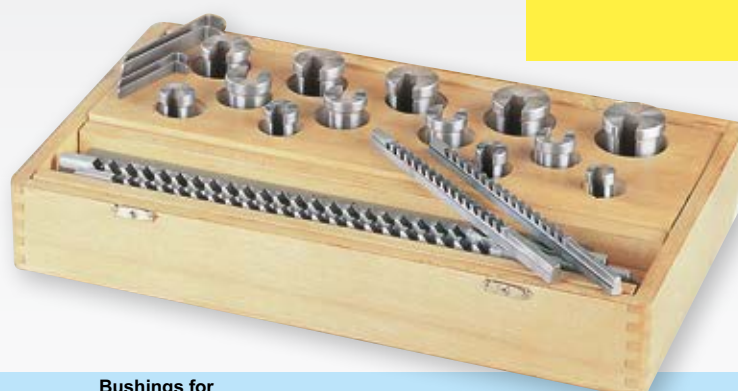
Hand reamer set

- 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

- quick, precise reaming of keyways in bores (gears, v-belpulleys, etc.), HSS, solid ground, Push Broaching Set for JS9 transition fit



Bushings for					
Keyway	Bore Ø	Part No.	Keyway	Bore Ø	Part No.
2x2x130	6 8 10 -		10x8x330	32 34 35 36	
3x3x130	6 8 10 -	108 310	12x8x330	38 40 42 44	
4x4x150	12 14 15 16		14x9x330	45 46 48 50 108 320	
5x5x150	12 14 15 16		16x10x330	52 54 55 56	
6x6x300	18 19 20 22		18x11x330	58 60 62 65 108 325	
8x7x300	25 26 28 30 108 315				

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

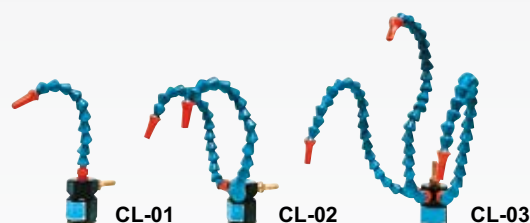
- retrofitable, supplied disassembled
- motor 400 V, 90 Watt
- 4.5 l volume coolant reservoir
- with flexible grommet and with shut-off valve
- with 1.5 m coolant hose

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-01	102 992
CL-00	102 990		CL-02	102 993
CL-0	102 991		CL-03	102 994





Live centers assorted package

- With 7 replaceable centers
- Body made of special tool steel, hardened and ground
- Precision needle bearings ensure excellent concentricity and high load bearing capacity
- Button diameters up to 32.2 mm



Morse taper	Part No.
MT 2	106 780
MT 3	106 785
MT 4	106 790

Live centers

- Precision needle bearings
- Center is hardened and ground, 60°

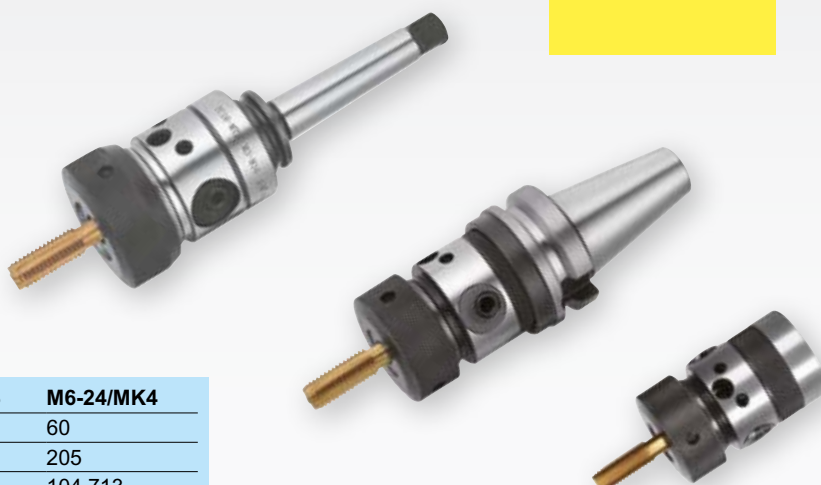


Morse taper	Center Ø	Body	Length	Part No.
MT 2	22	38	125	106 745
MT 3	26	47	158	106 750
MT 4	30	57	190	106 755
MT 5	45	70	240	106 760

Thread-Cutting Chuck

Compact design featuring high stability and safety features

- Quick and easy tool changes
- Wide setup range - in addition to metric, British, and US standards, it also accommodates custom sizes
- Applications: Thread cutters, drill presses, high-speed lathes, and CNC machining centers



Specifications GSF		M2-13/B16	M5-20/B18	M6-24/MK4
Diameter	mm	48	54	60
Length	mm	73	85	205
Part No.		104 710	104 712	104 713

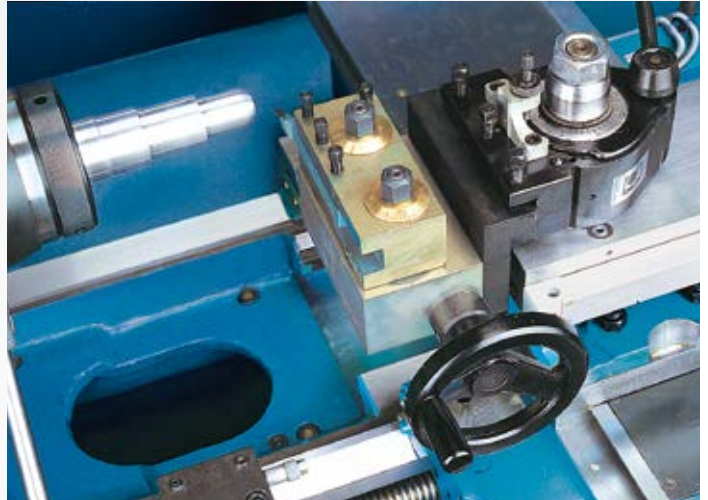


Radius Cutting Head

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



- for lathes
- quick and easy adjustment to any hollow-spindle point
- easy adjustment - just tightening with a safety wrench

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

Power Worker Chip Lift-Off Device

- For a safe and clean work environment, even at difficult to access places
- Reduced risk of injuries caused by sharp chips
- Separable materials for easy recycling
- Stainless steel enclosures and powerful permanent solenoids ensure long tool life
- Easy to handle dimensions: 368 - 593 mm length, Ø 25 mm
- Low weight: 600 g

Part No. 123 040



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: Part no. 108 670
P25 indexable insert for forged, rolled and tempered steel. All tools with indexable inserts, 1 indexable insert set (s. above), tools, specifications, shank height 25 mm

Indexable insert set: 30 pc. Part no. 108 675

Clamped turning tool set: Part no. 108 778
shank height 20 and 25 mm, shanks 20 mm, 9 tools

Indexable insert set: 30 pc. Part no. 108 779

Clamped turning tool set: Part no. 108 780
5 tools cutting height 16 mm, shanks 20 mm
3 tools cutting height 20 mm, shanks 20 mm
1 tool cutting height 24 mm, shanks 20 mm

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 carbide 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 mm
- 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
25x25x140 mm	-	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
25x20x120 mm	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
25x20x125 mm	-	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
25x20x125 mm	-	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
18x18x180 mm	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
18x18x180 mm	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
20x20x125 mm	-	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
18x18x180 mm	25 mm	-	-	-



Cutting Tools



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

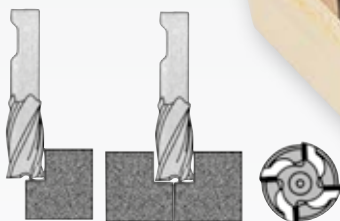
designed with 4 cutting edges with 30° right-hand spiral for excellent chip removal. Facing teeth for centric cuts. For normal to hard materials, with cyl. shaft and side drive dogs DIN 1835 B, 3, 4, 5, 6, 8, 10, 12, 14, 18, 20 mm

Part No. 108 440

End Milling Set DIN 844 B

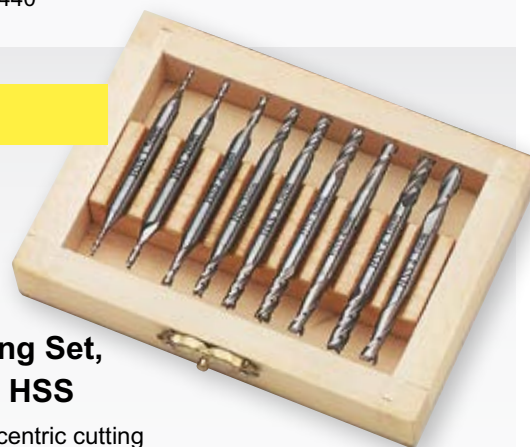
- TiN coated
- HSS, short length
- right-hand spiral 30°
- multiple cutting edges, face teeth for centric cuts
- side drive dogs

- 15 pcs. 3-25 mm, with cyl. shaft
- Part No. 108 451



End Milling Set, 9 pieces, HSS

- two-sided, centric cutting
 - Ø 1,5 - 4,5 mm, 0,5 mm increments
- Part no. 108 455



mm Ø	Shaft-Ø	6	6	14	12	20	20
3	6	8	10	15	12	22	20
4	6	10	10	16	16	24	25
5	6	12	12	18	16	25	25

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 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



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

Tapping Attachment

- 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



Counter Sink, 90 °

- 5, 6, 8, 10, 12 mm
 - HSS, 3 cutters
- Part No. 108 665



HSS Form Countersink 1 set, round

- 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



Combo Flat Counter Sink in Wood Stand

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

- 6 mm shank
 - includes 12 pieces
- Part No. 108 430





KNUTH Lathe Chuck

Excellent clamping force, high concentricity, and long life

- Manually operated lathe chucks with spiral ring and centric clamping action for DIN 55029 spindle heads with Camlock stud bolts
- Lathe chucks are available with diameters up to 500 mm and short tapers up to size 11
- Precision-machined lathe chuck bodies are available in cast-iron and steel



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

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	136	150	116 507

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	43,0	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



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

4-jaw chuck / steel

Ø mm	Camlock mount	Speed rpm	Bore mm	Weight kg	Part No.
160	D1-4	4500	41	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 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	40,0	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	116 655



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

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	120,00	52	55,0	116 692
400	145,00	52	64,5	116 693
500	145,00	60	82,0	116 694



Quick-Change Tool Holder

5-piece Sets

Set WA:

1 ea head A
3 ea WAD 20x90
1 ea WAH 20x90
Part No. 103 193

Set WB:

1 ea head B
3 ea WBD 25x120
1 ea WBH 32x120
Part No. 103 195

Set WD1:

1 ea head D1
3 ea WD1D 63x180
1 ea WD1H 63x180
Part No. 103 197

Set WE:

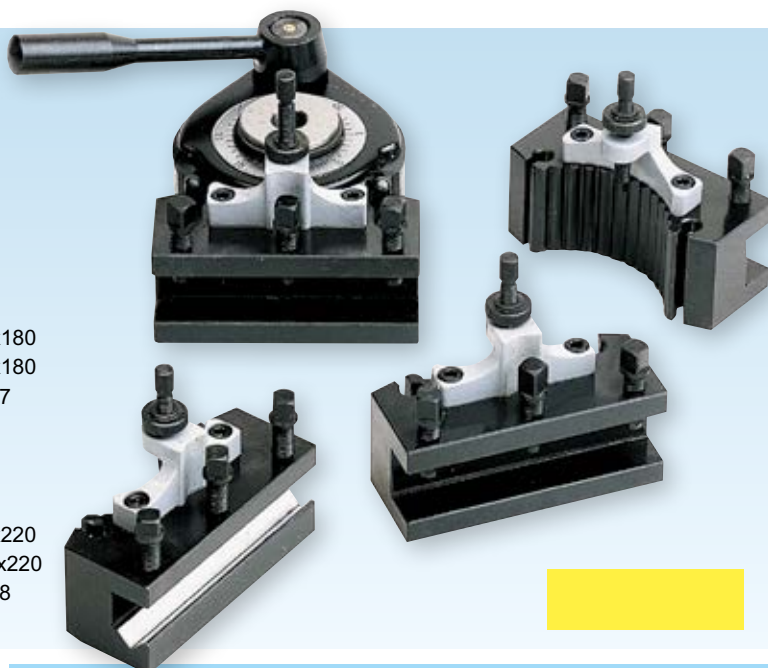
1 ea head E
3 ea WED 20x100
1 ea WEH 30x100
Part No. 103 194

Set WC:

1 ea head C
3 ea WCD 32x150
1 ea WCH 40x160
Part No. 103 196

Set WD2:

1 ea head D2
3 ea WD2D 63x220
1 ea. WD2H 70x220
Part No. 103 198



- 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 (Part No. 270 021)

Selection of tool holder head according to the respective table

size	W	A	E	B	C	D1	D2
Tool changer size	D	16 20	20 25	25 32	32 40	40 45	40 50 63 50 63
Machine:							
- Drive power, max.	kW	2.2	4.4	6.6	13.2	20	28
- Turning diameter	mm	150-300	200-400	300-500	400-700	500-1000	600-1100
Slide width, max.	z mm	100	120	150	180	200	250
Cutting edge height							
- min.	x mm	h + y	h + y	h + y	h + y	h + y	h + y
- max.	mm	x + hv	x + hv	x + hv	x + hv	x + hv	x + hv
Height adjustability	mm	11	17 15	20 11	40 35 30	35 30 20	20 30
Tool support	y mm	9	10 11	12.5 14	15 16 17	20 20 25	20 25
Height of tool							
max.	h mm	16 20	20 25	25 32	32 40 45	40 50 63	50 63
Overall width, max.	v mm	100	125	150	192 202 202	230 234 242	275 282
Overall height	s mm	54	68	75	105	122	135
Throat, max.	u mm	48	60	71	92 102 102	112 116 124	140 147
Bore, max.	t mm	31	31	51	70	40	80



WA 103 189	WB 103 191	WC 103 192	WD1 103 360	WD2 103 198
WAD a 16 l 75 103 271	WBD 25 120 103 291	WCD 32 150 103 301	WD1D 40 180 103 364	WD2D 63 220 103 198
WAD 16 90 103 272	WBD 25 140 103 292	WCD 32 170 103 302	WD1D 50 180 103 365	
WAD 20 75 103 273	WBD 32 120 103 293	WCD 40 150 103 303	WD1D 63 180 103 361	
WAD 20 90 103 274	WBD 32 140 103 294	WCD 40 170 103 304		
		WCD 45 170 103 305		
WEH 30 100 103 283	WBH 18 120 103 298	WCH 50 160 103 307	WD1H 63 180 103 362	
WEJ 40 100 103 285	WBJ 40 120 103 296	WCJ 50 160 103 309	WD1J 63 180 103 363	
WEA-A2a 103 286	WBA-A2a 103 297	WCA-A3a 103 310		



Reduction sleeves ISO / ISO

- hardened and ground



Part No.	ISO / ISO	Price €	103 760	50 / 30
103 750	40 / 30		103 770	50 / 40

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

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
103 930	BT 40	16	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

Milling Chuck for Cutter with Weldon-Shaft

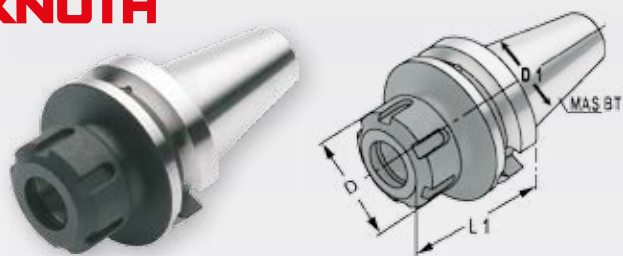
- for tools with cylindrical shank and setup area in accordance with DIN 1835 B
- forged, case-hardened, precision ground



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



Collet Chuck MAS-BT



Model	D	D1	L1	Part No.
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	80	104 206
BT50-ER32	50	69,85	100	104 204
BT50-ER40	63	69,85	100	104 205

ER Collet Set, DIN 6499 Form B



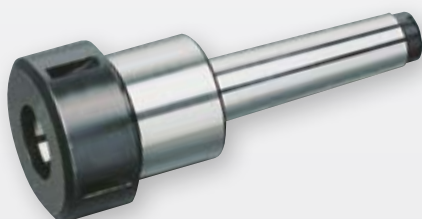
		Part No.
ER 25, 16-pieces	1 - 16 mm	106 050
ER 32, 6-pieces	6, 8, 10, 12, 16, 20 mm	106 052
ER 40, 15-pieces	3, 4, 5, 6, 8, 10, 12, 14, 15, 16, 18, 20, 22, 24, 25 mm	106 075

For other chucks for MT 3 / MT 4, visit www.knuth.de

ER Collet Chucks

ER 32				
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

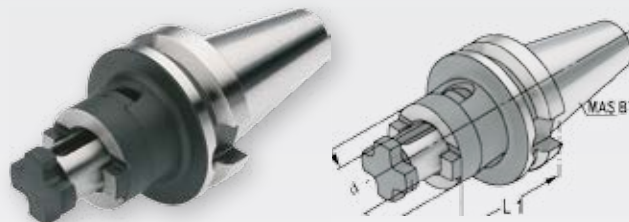


Tool Taper	Chuck Range	Part No.
ST 30	2 - 20	104 310
ST 40	2 - 20	104 320

Collets from 2 to 20 mm Ø

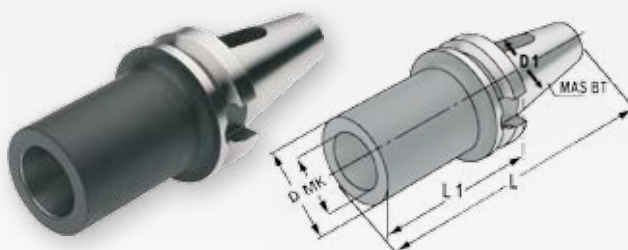
2 mm Ø Part No. 104 325, 3 mm Ø Part No. 104 330 ...

Combo Shell-end Milling Arbor MAS-BT



Model	d	L1	Part No.
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.
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	48	44,45	160,4	95	103 785

Drill Chuck Mount MAS-BT



Model	D	D1	L	L1	L2	Part No.
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

Draw Bolts DIN 69872

Model	Part No.	Part No.
	A	B
SK 30 (A) (B)	103 600	103 604
SK 40 (A) (B)	103 601	103 605
SK 50 (A) (B)	103 603	103 607



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

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.
12	M 10	105 290
14	M 12	105 295
16	M 14	105 300
18	M 16	105 305

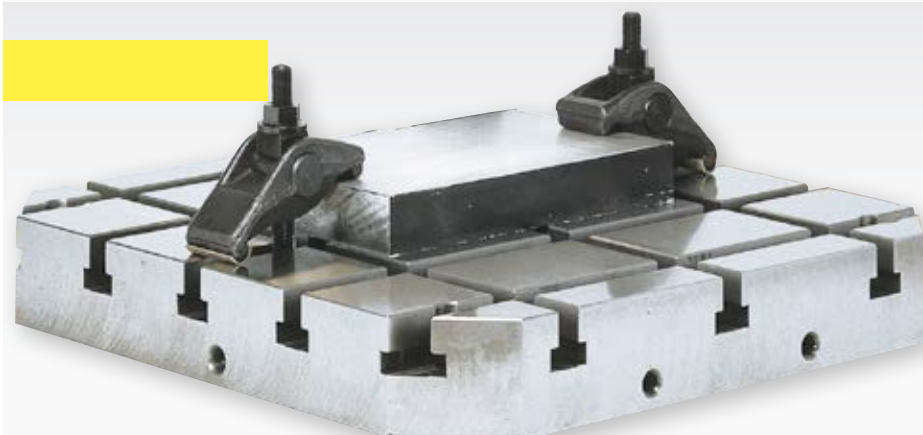


	Thread	Part No.
14	M 12	105 355
16	M 14	105 360

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
- available 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



Accessories for Drill Presses

- includes quick-action drill chuck and bits
- packed in a wooden case



Contents / Set:	MT 2 (6-piece)	MT 3 (7-piece)	MT 4 (8-piece)	ISO 30 (4-piece)	ISO 40 (5-piece)
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 Bits	MT 2 / B 16	MT 3 / B 18	MT 4 / B 18	ISO 30 / B 18	ISO 40 / B 18
Tool-Holder Bits	MT 2 / B 18	MT 3 / B 16	MT 4 / B 16	-	-
Quick-action 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
Quick-action 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

Reducing sleeves MT/MT Tool-Holder Bits for drill chuck Drill Chuck Mount

MT	Part No.
2 / 1	103 805
3 / 1	103 810
3 / 2	103 815
4 / 1	103 820
4 / 2	103 825
4 / 3	103 830
5 / 2	103 835
5 / 3	103 840
5 / 4	103 845

MT 2	Part No.
B 16	104 725
B 18	104 730
MT 3	
B 16	104 739
B 18	104 740
MT 4	
B 16	104 745
B 18	104 750

Taper	Bits	Part No.
ISO 30	B 16	104 775
ISO 30	B 18	104 776
ISO 40	B 16	104 780
ISO 40	B 18	104 781
BT 40	B 16	104 785
BT 40	B 18	104 786

Taper Drifts

MT	Part No.
2 / 3	104 690
4 / 5	104 695

Extension Sleeves

MT	Part No.
2 / 3	104 660
3 / 4	104 665
4 / 5	104 670

Quick-Action Drill Chuck

Chuck Range	Mount	Part No.
1 - 13 mm	B 16	104 765
3 - 16 mm	B 18	104 770

Edge Tracer Set

- 1 bilateral 10x10x4 / 2 unilateral 10x10
- 3 bilateral 10x10x4 / 4 unilateral 10x4
- 5 bilateral 12x12x4

Part No. 108 057



Electronic Edge Tracer

- for setting up drill presses and milling machines, machining centers, etc.
 - LED indicator lights up as soon as the workpiece is being touched
 - outside and inside centering
 - when moving across the reference edge, the measuring ball is pushed aside
 - 20 mm shank
- Part No. 129 055

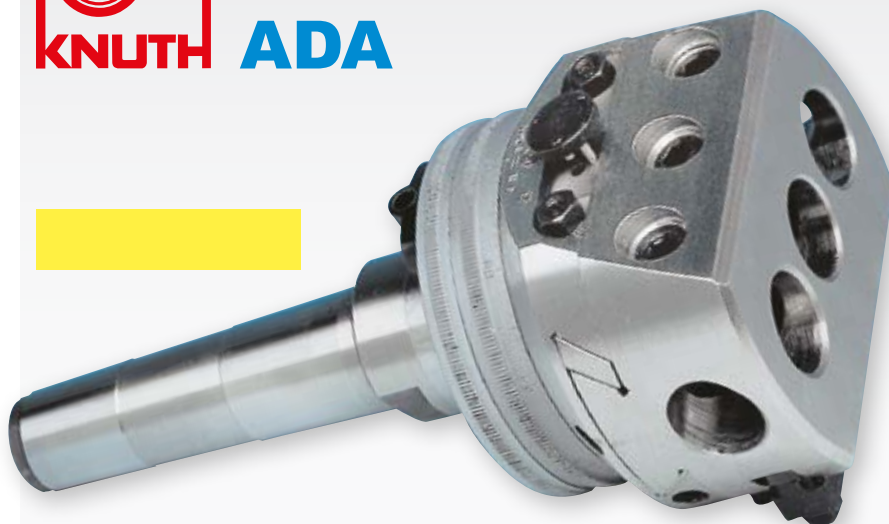


Assembly Stand

- for setting up milling and drilling tools
- horizontal and vertical mounts
- for easier set-up and shorter tooling times

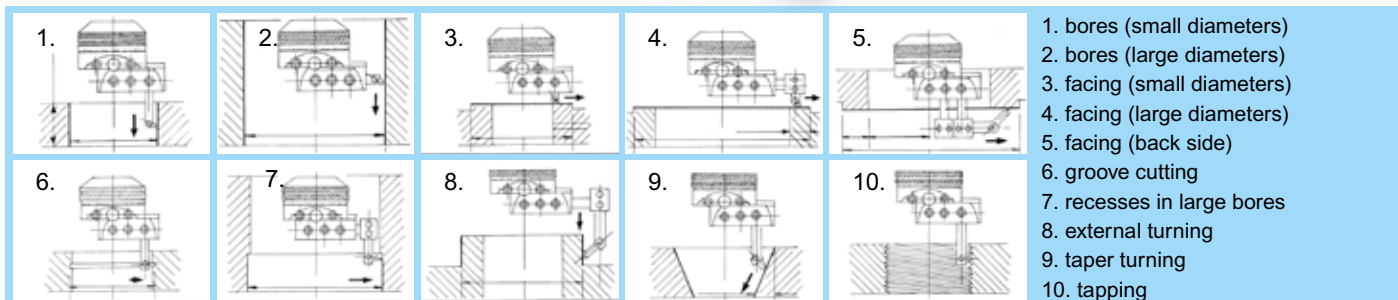


Specifications	
flutes	10 mm
mounts vert./ horiz.	ST 40, BT 40, DIN 2080 / BT 40
dim. (LxWxH)	210 x 105 x 130 mm
Part No.	108 930



- 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



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



Mounting Shafts		MT 3	MT 4	ISO 30	ISO 40
shaft with draw bolt					
Part No.		108 639	108 641	108 635	108 637

- 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

Lathe Bore Head with Boring Bar Set



Boring Head shown
with 12-piece boring bar set and optional accessories (mounting shaft)

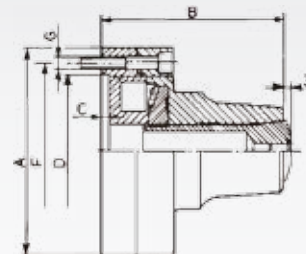
Boring Head with 12-piece boring bar set		
head diameter	mm	75
tool mount	mm	18
possible bore diameters	mm	12 - 225
Part No.		108 633

5C Collet Chuck

- 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

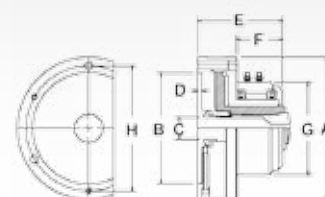


Ø	125 mm	D	95 mm
A	126 mm	F	108 mm
B	107,5 mm	G	3 x M8 x 45
C	4 mm	weight	5 kg

Pneumatic 5C Collet Chuck

- pneumatic 5C collet chuck for rapid tool changes
- including 26 mm through-hole
- fits all 5C collets
- spindle bore 26 mm
- speed (max.) 5000 rpm

Part No. 181 322



A	168 mm	F	55 mm
B	130 mm	G	110 mm
C	26 mm	H	147
D	5 mm	weight	10 kg
E	100 mm		

5C collets

- hardened and precision ground premium steel
- female and male threads



Clamping-Part No.		8	106 130	17	106 175
Ø		9	106 135	18	106 180
1	106 103	10	106 140	19	106 185
2	106 104	11	106 145	20	106 190
3	106 105	12	106 150	21	106 195
4	106 110	13	106 155	22	106 200
5	106 115	14	106 160	23	106 205
6	106 120	15	106 165	24	106 210
7	106 125	16	106 170	25	106 215

Stop Screws for 5C collets

- threads are hardened across their entire length
- adjustable for workpiece depths up to 75 mm (from the collet surface)

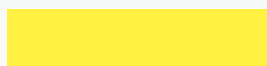
Part No. 106 220



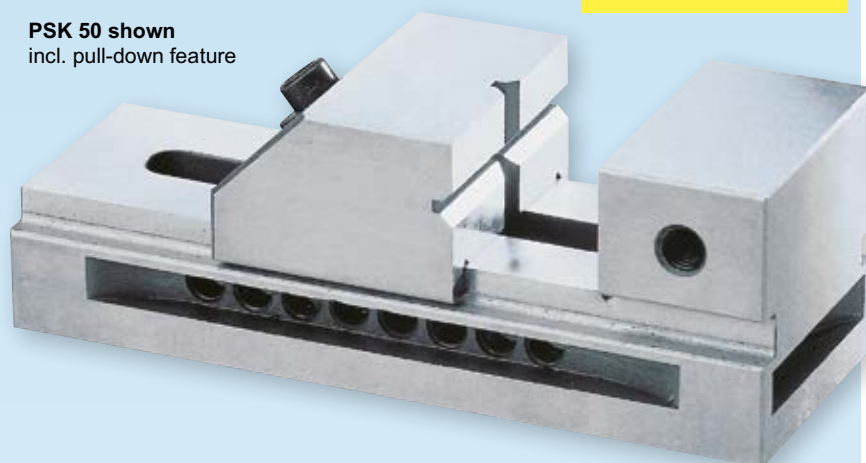
Power collet holders (vertical and horizontal)

- with setup angle for vertical and horizontal use
- compatible with 5C collets

Part No. 106 090



PSK 50 shown
incl. pull-down feature



PSG 50 shown



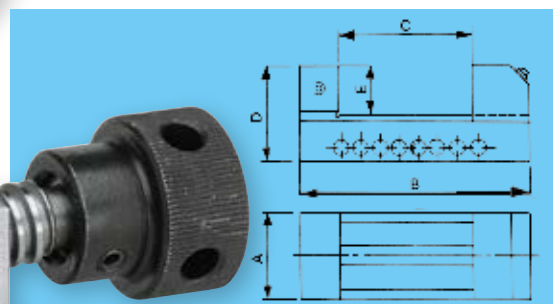
PSS 70 shown



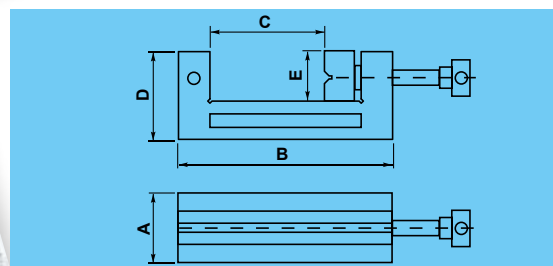
Precision Grinding and Control Vise

- 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 = 10 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

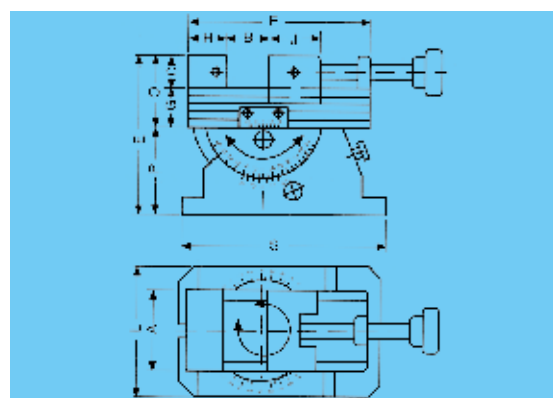


Model	A	B	C	D	E	Part no.
PSG 50	50	155	65	50	25	128 826
PSG 75	73	210	100	70	35	128 827
PSG 100	100	260	125	90	45	128 828
PSG 125	125	300	160	100	50	128 829



PSS

- swivels on 2 levels, 360° horizontal, $\pm 45^\circ$ 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



Precision Machine Vise

PMZ



Specifications		PMZ 100	PMZ 125	PMZ 150	PMZ 200
jaw width	mm	36	36	48	63
jaw width	mm	102	132	153	203
opening capacity	mm	100	105	150	200
length	mm	320	350	400	520
width	mm	106	134	153	204
height	mm	86	96	115	134
weight	kg	13	19,5	30	58
Part No.		125 015	125 016	125 017	125 018

- Pull-down system: absolute secure workpiece hold
- made of high-quality cast iron with ground surfaces on all sides
- hardened and precision-ground steel jaws, can be mounted front and back



Corrugated Parallel Pads

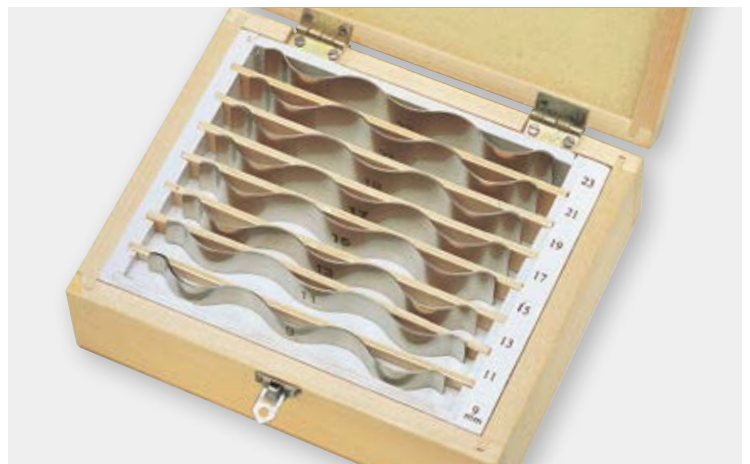
- save time when clamping parts for grinding, cutting, drilling, etc.
- no chips stay back on the support face, which ensures maximum parallelism of the clamped workpiece
- several flat or single thin workpieces can be easily clamped
- spring steel, hardened and tempered , 110 mm long, $\pm 0,005$ mm parallelism, precision-ground
- 8 pairs per set - 2 mm increments

9 - 23 mm

Part No. 128 960

25 - 39 mm

Part No. 128 961





- 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

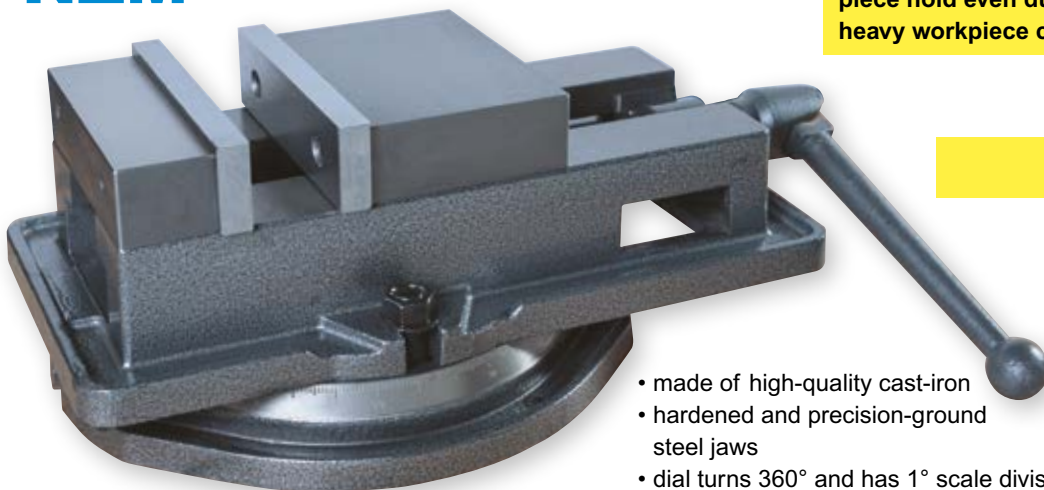
HNCS		100V	130V	160V	200V
jaw width	mm	100	130	160	200
clear opening	mm	0-125	0-180	0-240	0-280
jaw height	mm	48	55	58	63
overall height	mm	133	150	163	173
holding force	kN	36	46	56	71
weight	kg	25	38	57	78
Part No.		104 930	104 932	104 934	104 936



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

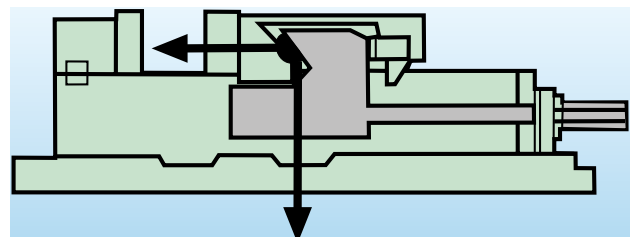
Machine vise with pull-down system



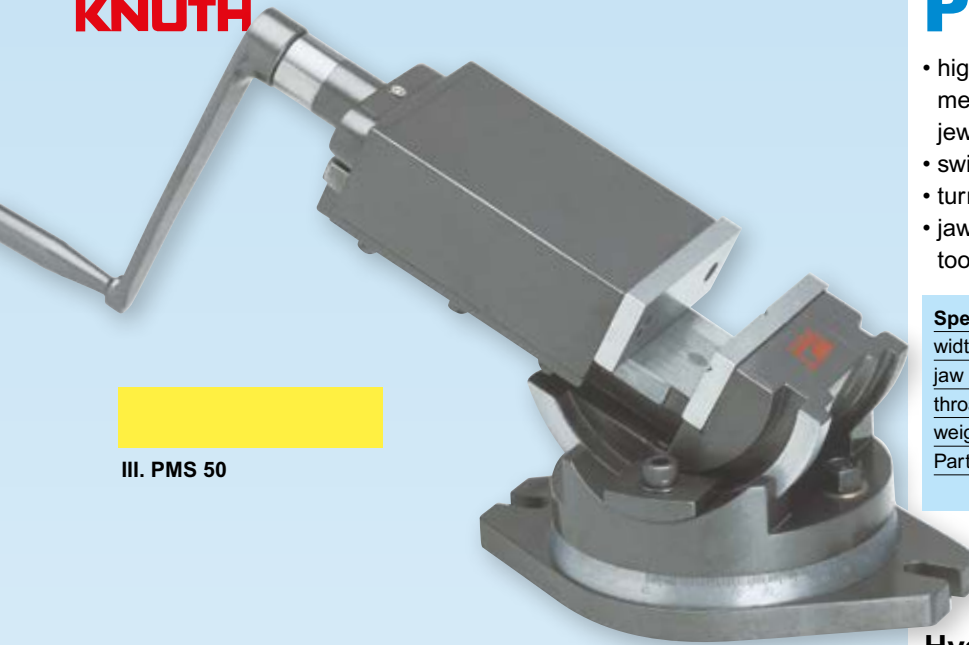
pull-down system:
absolutely secure work-
piece hold even during
heavy workpiece cutting

- made of high-quality cast-iron
- hardened and precision-ground steel jaws
- dial turns 360° and has 1° scale division
- parallelism $\pm 0,03$ mm / 100 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	170	230
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



swivels on 2 axes



III. PMS 50

Precision Machine Vise

PMS

- high precision vise for accurate and exact precision mechanics 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

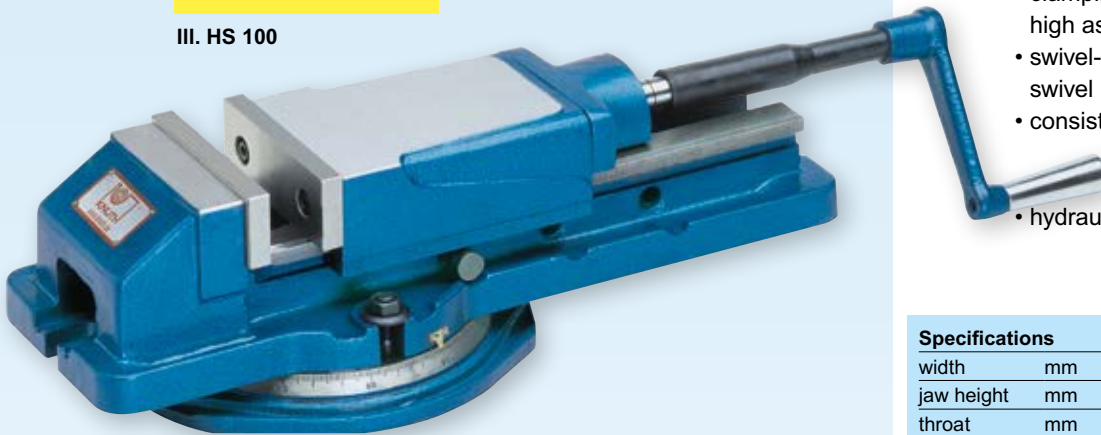
Specifications		PMS 50	PMS 75	PMS 100
width	mm	50	75	104
jaw height	mm	23	34	42
throat	mm	50	75	102
weight	kg	3,8	9,6	17,3
Part No.		125 010	125 011	125 012

Hydraulic Machine Vise

HS

- 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

III. HS 100



Specifications		HS 100	HS 125	HS 150	HS 200
width	mm	110	135	150	200
jaw height	mm	36	48	51	65
throat	mm	180	220	293	300
weight	kg	26	42,5	75	125
Part No.		105 096	125 024	125 028	125 029

III. MS 100



Machine Vise

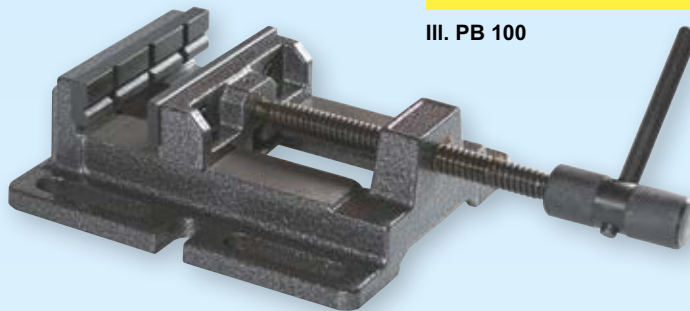
MS

- 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	30	35	45	45
opening cap.	mm	80	100	122	156
weight	kg	9,5	15	30	40
Part No.		104 950	104 955	104 960	104 965

- 1 horizontal V-guide and 3 vertical V-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	65 mm	30 mm	104 830
PB 100	100 mm	96 mm	31 mm	104 840
PB 120	125 mm	110 mm	31 mm	104 845



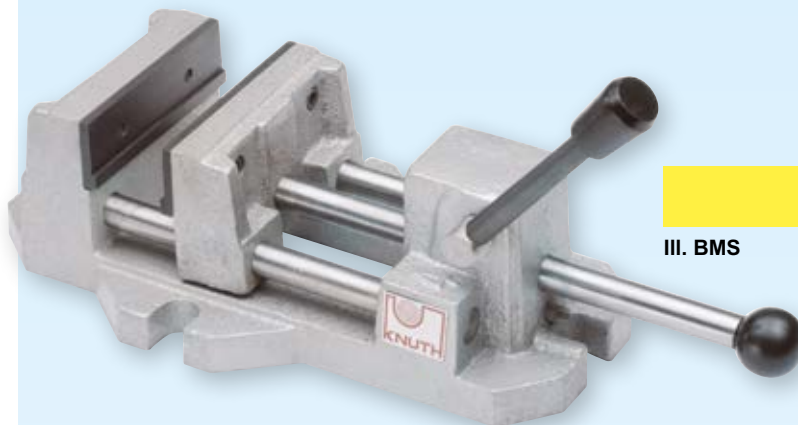
III. PB 100

Quick-action vise

BMS

- quick and easy positioning of clamping chuck
- clamp and lock are activated by pulling down the clamping lever
- guides and clamping mechanism are ground and hardened premium cast iron (FC 25)
- clamping jaws made of steel
- jaw width 100 mm, clamping width 125 mm

Part No. 104 925



III. BMS

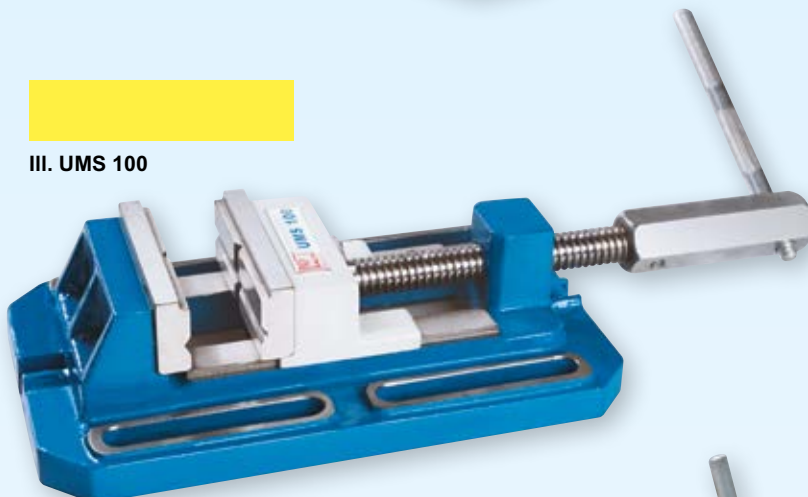
Universal Machine Vice

UMS

- deep hole bores for flexible clamping
- low height for cost-effective use of machine

Specifications		UMS 100	UMS 140	UMS 200
jaw width	mm	100	144	200
opening	mm	100	147	222
jaw depth	mm	40	50	60
assembly width	mm	170	189	250
height	mm	72	89	114
length	mm	460	610	788
deep hole dim.	mm	88 x 12	105 x 14	163 x 14
weight	kg	13	18	38
Part No.		125 030	125 031	125 032

III. UMS 100



Solid vise, ideal for drill presses

Drill press quick-action machine vise with V-guides

PBS

- spindle nut with 3x interlocking teeth ensures high clamping force and a secure hold
- replaceable jaws made of hardened and ground steel
- wide and flat construction
- long slots for many setup possibilities

Specifications		PBS 100	PBS 140	PBS 200
jaw width	mm	100	140	200
jaw height	mm	36	40	60
opening	mm	100	155	225
weight	kg	13	18	20
Part No.		125 005	125 006	125 007

III. PBS 140



integrated quick-action clamping



Angle vise

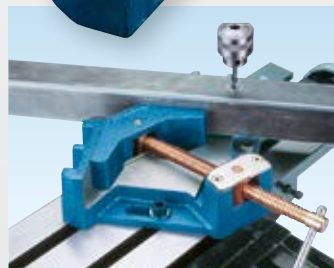
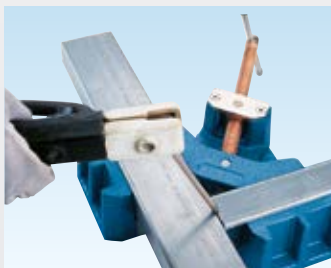
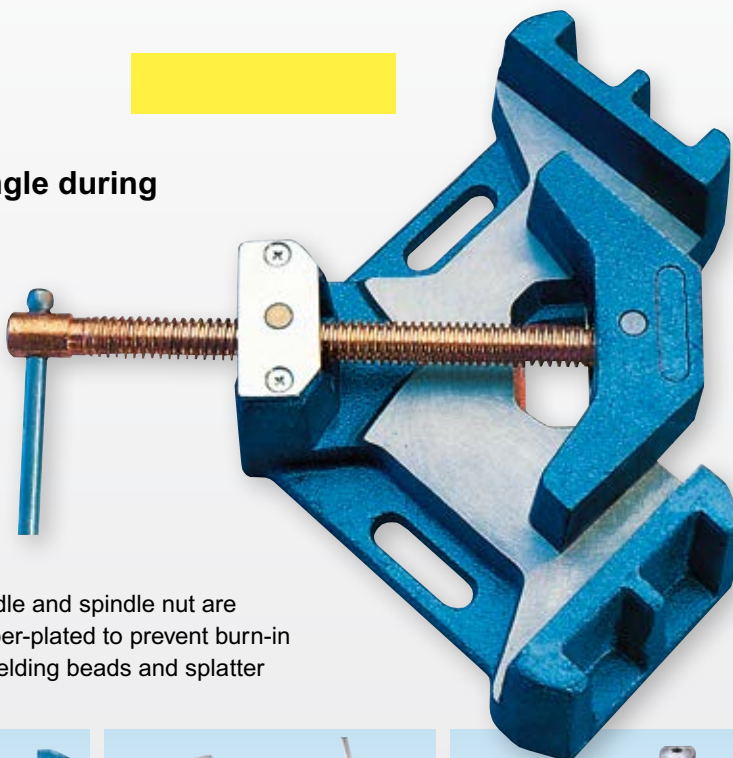
For clamping of parts at the precise angle during welding or assembly

- heavy-duty cast-iron design
- ideal for welded joints at a right angle
- the joint will always be in a perfect 90° angle, regardless if it is a corner joint, miter joint, or T-connection, even in different workpiece widths

Specifications for angle vise

max. clamping width mm	105	125
max. opening mm	85	100
jaw height mm	38	60
weight kg	5.1	9
Part No.	107 005	107 010

- spindle and spindle nut are copper-plated to prevent burn-in of welding beads and splatter

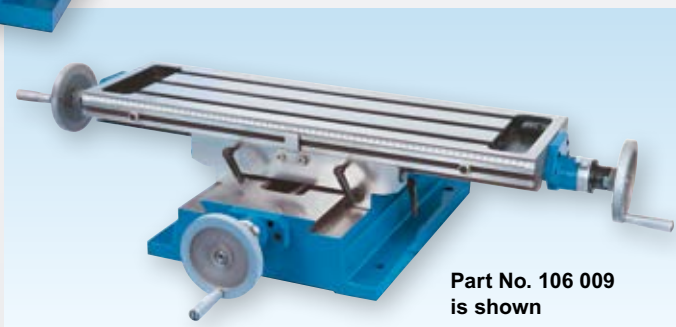


Compound Sliding Table

**Rigid and precise
Compound sliding table
for coordinate drilling
on radial, column and
bench drill presses**

- cast-iron structure
- T-slots, coolant groove
- dovetail guides, adjustable

Part No. 106 017 is shown



Part No. 106 009 is shown

Specifications

table setup area mm	730x210	855x295
table height mm	196	160
X / Y axis travel mm	500x210	620x240
T-slot width mm	14	12x22

hand-wheel scale divisions	0.05	0.05
dimensions mm	1065x625	1267x621
weight kg	98	130
Part No.	106 009	106 017



Compound Sliding Tables

For small cutting operations on the bench or floor drill press



table size		235 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

III. Compound Sliding Tables 145 x 230

- 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



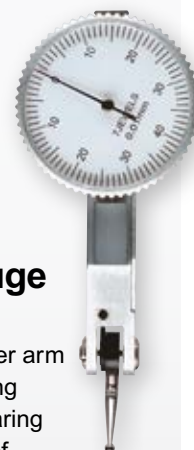
Dial Gauge

- 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

- 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



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



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



Digital Caliper Rules

- toggle switch inch / mm
- accuracy ± 0.02 mm
- readout 0.01 mm
- up to 300 mm measuring range, with inside probe tips

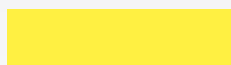


Length	Part No.
150 mm	129 025
200 mm	129 026
300 mm	129 027
500* mm	129 029

(* 500 mm available with bottom spout only)

Dial Caliper

- including clamping screw
- measuring range 150 mm or 300 mm
- 0.02 mm increments
- satin chrome plated
- for inside, outside and height measurements



Length	Part No.
150 mm	129 030
300 mm	129 131

Workshop Caliper INOX

- lapped measuring surface
- micro-infeed screw
- jaw length 300 mm = 55 mm, 500 mm = 100 mm and 1000 mm = 150 mm
- caliper jaw 20 mm (300 mm = 15 mm)



Length	Part No.
300 mm	129 031
500 mm	129 032
1000 mm	129 033

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 a. 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 0.05 mm
 - 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





base frame

Part No. 127 290

III. surface plate
with base frame

- 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.	V-blocks, pairs	Part No.	Parallel indicators, pairs	Part No.
20x160x100	127 220	L100xW100xH100mm, 90°	127 240	160x25x16, 3 µm	127 250
25x250x160	127 225	L100xW160xH160mm, 90°	127 245	400x63x40, 8 µm	127 255
40x400x250	127 230				

Rulers / Edges	Part No.
400x60x25, 2,6 µm	127 260
1000x160x50, 5 µm	127 265

Surface plate	Part No.
400 x 250 x 70, 6 µm	127 270
625 x 400 x 110, 7 µm	127 275
1000 x 630 x 150, 9 µm	127 280
base frame for 630 + 1000 mm	127 290

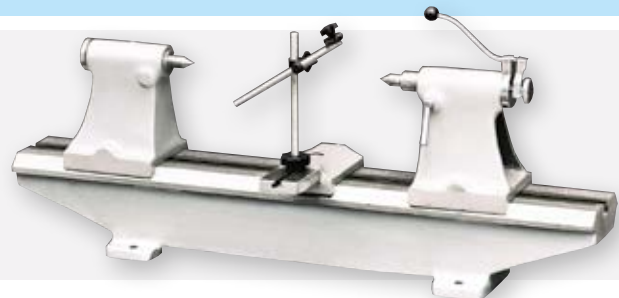
Cast-iron surface plate - grade 0

- 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

- center distance 0-600 mm
 - center height 170 mm
 - weight 79 kg
- Part No. 127 350



Magnetic micrometer Holders

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. 65x50x55mm
 - 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 -30° - 60°
 - dimensions (LxWxH): 100 x 30 x 50 mm
- Part No. 128 930





Hardness Tester

HP 100

**Heavy-Duty Hardness Tester
for workshop operations**

- measuring range Rockwell HRA > 70, HRB 30 - 100, HRC 20 - 67
- max. part height 170 mm
- throat 135 mm
- dim. 466x238x630 mm
- weight 65 kg

Part No. 128 918



Standard Equipment:

3 weights (60, 100, 150 kg), 2 level test benches, 1 V-guide test bench, 1 penetrator with diamond tip, 1 penetrator with steel ball, Rockwell standard block, operating instructions

Options:

hardness tester diamond

Part No. 128 915

Electronic Hardness Tester

THL 201

hardness testing in seconds for steel, cast-iron, stainless steel, aluminum, brass, and copper

- versatile and user-friendly
- hardness tester for testing hardness acc. to Brinell, Rockwell and Vickers
- wide measuring range and large measurement storage (holds 255 measurements)
- 128 x 64 mm LCD
- accuracy +/- 0.8%
- sturdy cast aluminum housing for easy handling
- rechargeable battery powered via USB port

Part No. 128 910

Standard Equipment:

test block, USB cable, operating instructions



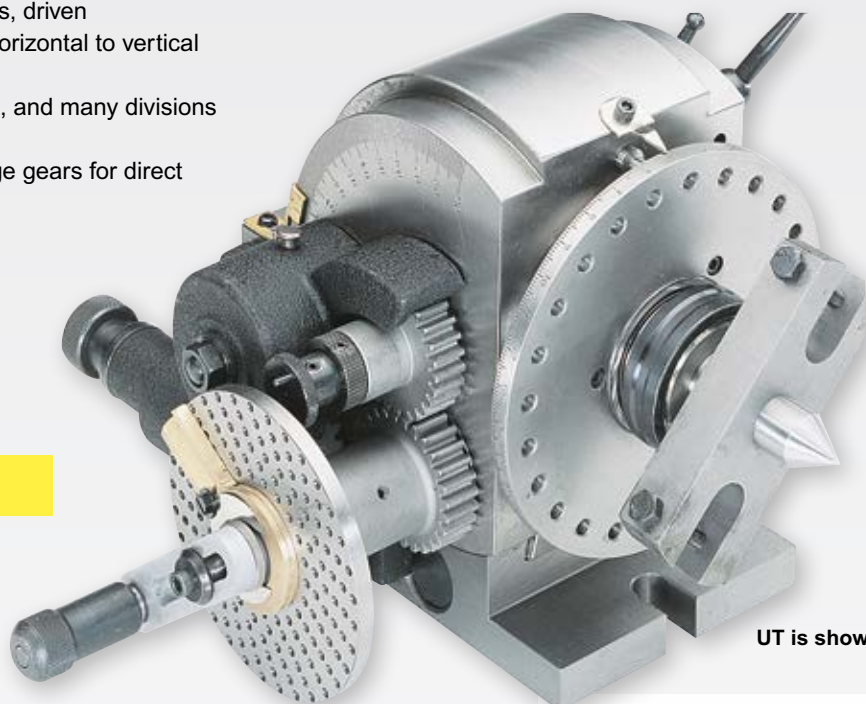


Universal Divider

UT

- For direct and indirect differential indexing
- For cutting helical grooves, driven
- Swivels from 10° below horizontal to vertical (-10° to 90°)
- Any division 2 to 50 parts, and many divisions up to 380° parts
- Gear ratio 40:1, disengage gears for direct indexing

Part No. 110 980



UT is shown

Standard Equipment for UT:

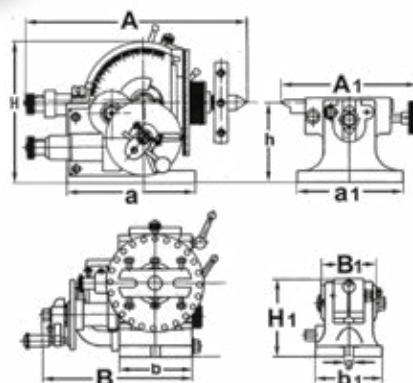
Tailstock, 3 indexing plates, center, drive chuck and drive gear set incl. shears (machine table) and 12 change gears, operating tools

UT

365	272	236	132,7	213	134	16	205 - 255	88	139	132,7	175	124	16
-----	-----	-----	-------	-----	-----	----	-----------	----	-----	-------	-----	-----	----

HT

A	B	H	h	a	b	g	A1	B1	H1	h	a1	b1	g
189	140	173	100	160	91	13	176	80	107,4	100	130	92	13



Universal Indexing Head

HT

- For direct and indirect divisions
- Gear ratio 40:1, disengage gears for direct indexing
- Swivels from 10° below horizontal to vertical (-10° to 90°)
- Any division for 2 to 50 parts and many divisions up to 380° parts

Part No. 110 953



HT is shown

Standard Equipment for HT:

Tailstock, 2 indexing plates, center, drive chuck and chuck flange



Dividers

ST 130 • 155

- gear ratio 1:90, disengageable, chuck can be rotated manually by 360°
- hand-wheel with scale ring, Nonius graduation 10"
- 6 masks for direct division of 2, 3, 4, 6, 8, 12, 24
- hardened and ground teeth with 3-jaw chuck, 160 or 200 mm

ST 130 Part No. 110 960

ST 155 Part No. 110 965



Optional accessory set for ST 130 & ST 155:

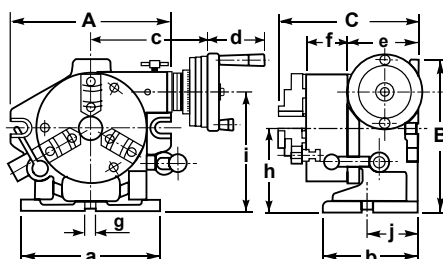
dividing plate A 26, 28, 30, 32, 34, 37, 38, 39, 41, 43, 44, 46, 47, 49, 51, 53, 57, 59

dividing plate 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



Typ	A	B	C	a	b
ST 130	250	235	221	220	150
ST 155	310	285	243	225	160
Typ	c	d	e	f	g
ST 130	184	82	112	66	16
ST 155	201	82	125	75	16
Typ	h	i	j	Weight	
ST 130	130	186	80	48 kg	
ST 155	155	232	90	76 kg	

Direct indexing head

S 200

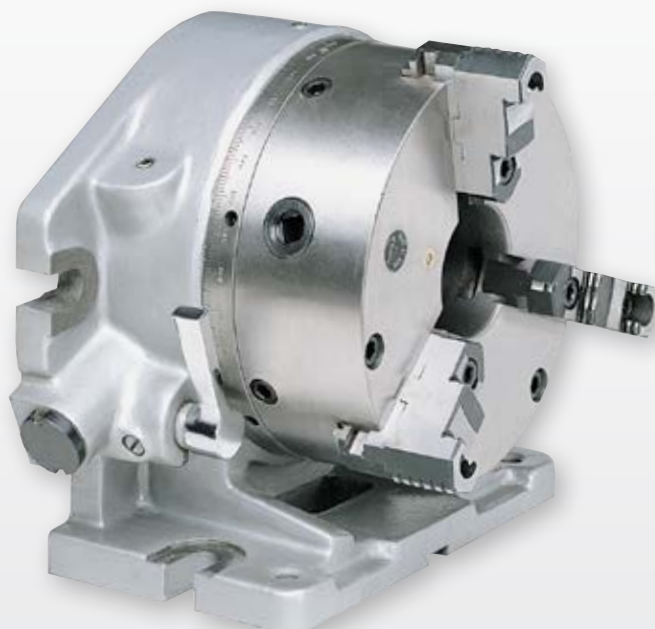
The S200 Direct Indexing Head can be used in a horizontal or vertical setup. The indexing unit is enclosed in the resistant cast-iron body of the divider, where it is protected from contamination to ensure precise and consistent divisions of 2, 3, 4, 6, 8, 12 and 24. An easy-to-read circumferentially mounted Nonius scale provides exact divisions up to 360°.

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 parts)		25"

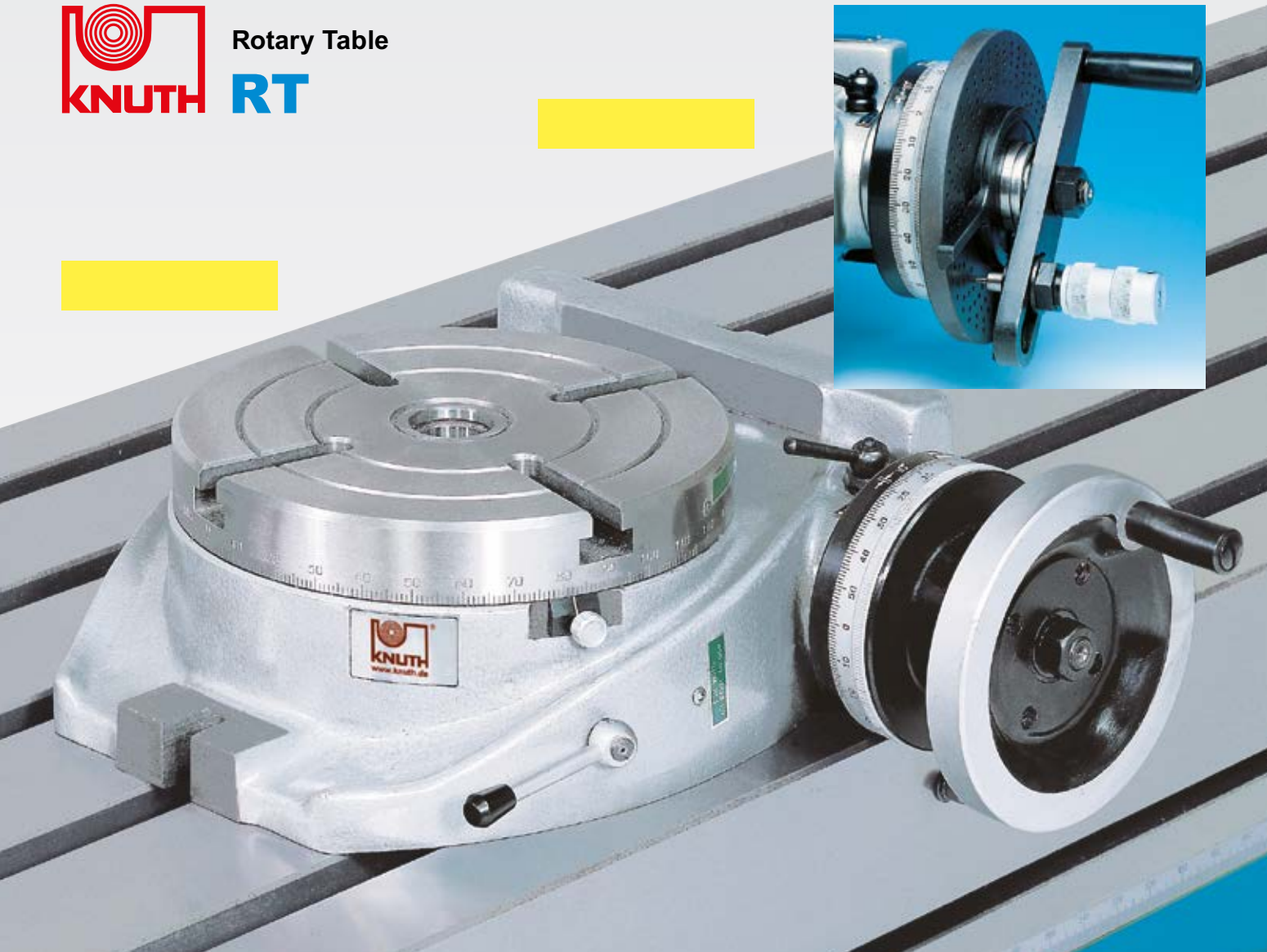
Specifications S 200

Center height mm	150	3-jaw chuck	mm	200
divisions	2, 3, 4, 6, 8, 12, 24	Weight	kg	59
		Part No.		110 966



Standard Equipment S 200:

6 indexing masks, chuck, operating tools



Index Feature

- RT 160 - 320
- for direct and indirect division
- from 2 to 66: all divisions from 68 to 132: those divisible 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

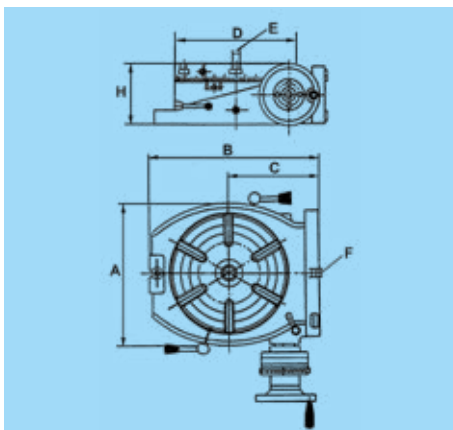
Part No. 125 820

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)

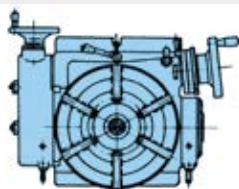
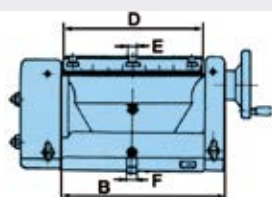
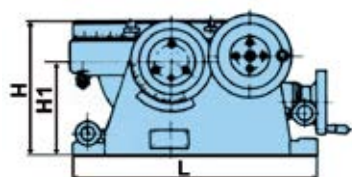
- type RT 250 and RT 320 with 6 radial setup T-slots
- very low profile
- guide slot in the vertical base plane
- except for RT 160, all RTs can be used vertically



Accuracy (max. deviation)

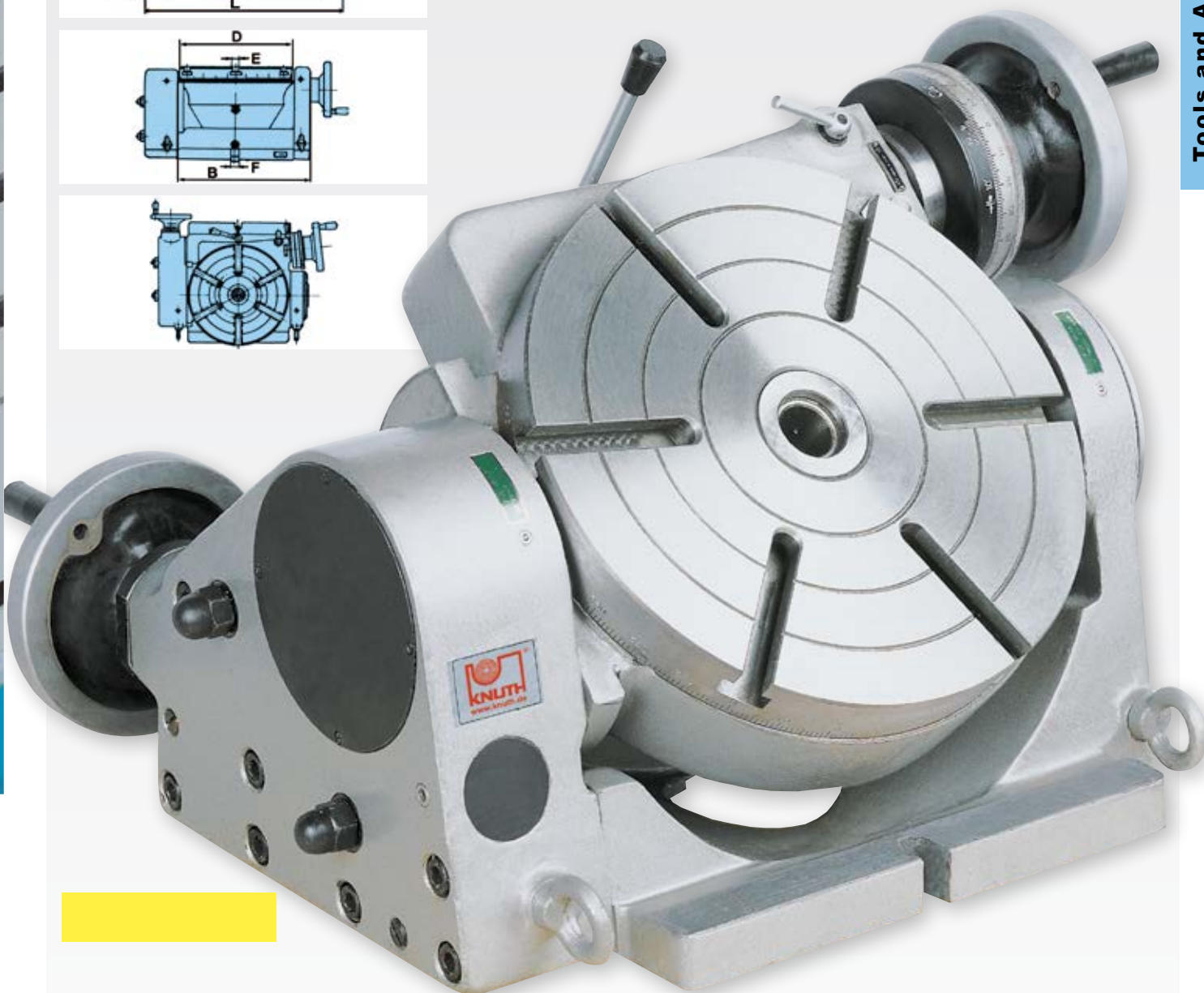
face concentricity of work table	
setup surface	300 : 0,015
work table concentricity	0,015
parallelism of setup table	
to base plane	300 : 0,02
taper bore concentricity	0,01
parallelism of bore axis to	
vertical setup surface	0,03
parallelism of bore axis to groove	
in the vertical setup surface	0,02
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	85	118	150	90	10	10	2	25	1:90	7,25	hor. + vert.	125 800
RT 160	160	75	196	260	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



Swivelable Rotary Table

RTS



Accuracy	RTS 250	RTS 320
face concentricity of work table setup surface	$\leq 0,020$	
concentricity of setup table	$\leq 0,020$	
parallelism of setup to base surface	$\leq 0,020$	
concentricity of setup table taper bore	$\leq 0,010$	
parallelism of table setup to cross groove	$\leq 0,020 \leq 0,020\text{mm}$	
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

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

Type	D	H	H1	B	L	F	E	d	MT	Ratio	Weight	Part No.
RTS 250	250	205	140	252	310	14	12	30	Nr.3	1:90	78 kg	125 810
RTS 320	320	255	175	322	380	18	14	40	Nr.4	1:90	133 kg	125 815



Mini precision gauges (including metal jacket)

Measuring 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. mechanical travel
Longer measuring lengths upon request

3-axis position indicator, X.pos 3.2

For new installations or for retrofitting existing machine tools and measuring systems

The new generation of displays is more powerful, robust, and reliable

- High-resolution 7" color display and powerful CPU for instant display of all functions and values
- The new generation of displays uses system-on-chip technology to integrate all functions on one chip for a more compact and reliable design
- Easy mounting and maintenance-free operation
- Increased accuracy
- Lower error rate
- Higher operator safety
- Significant time savings
- Increased productivity
- User-specific functions
- Resolution of 0.005 mm
- Default coordinates
- Pocket calculator function
- mm/inch conversion

Functions for milling machines:

- Calculation of hole circle pattern
- Calculation of hole line pattern
- Coordinate storage
- Skew coordinate function

- Arc coordinate function
- Radius machining function, simple

Functions for lathes:

- Display of top slide (Z0) and bed slide (Z1) either individually or as differentiation/summation circuit for lathes
- Storage for 9 tools
- Taper function
- Radius / diameter toggle

Fully compatible with older X.pos scales - upgrade now! X.pos - Increase your productivity, quality, and comfort, available in many languages (English, German, Spanish, Italian, French, Czech, Portuguese, Russian, Turkish, Swedish, Romanian, Japanese, Korean, Arabic, Hindi, and many more)

Part No. 123 461

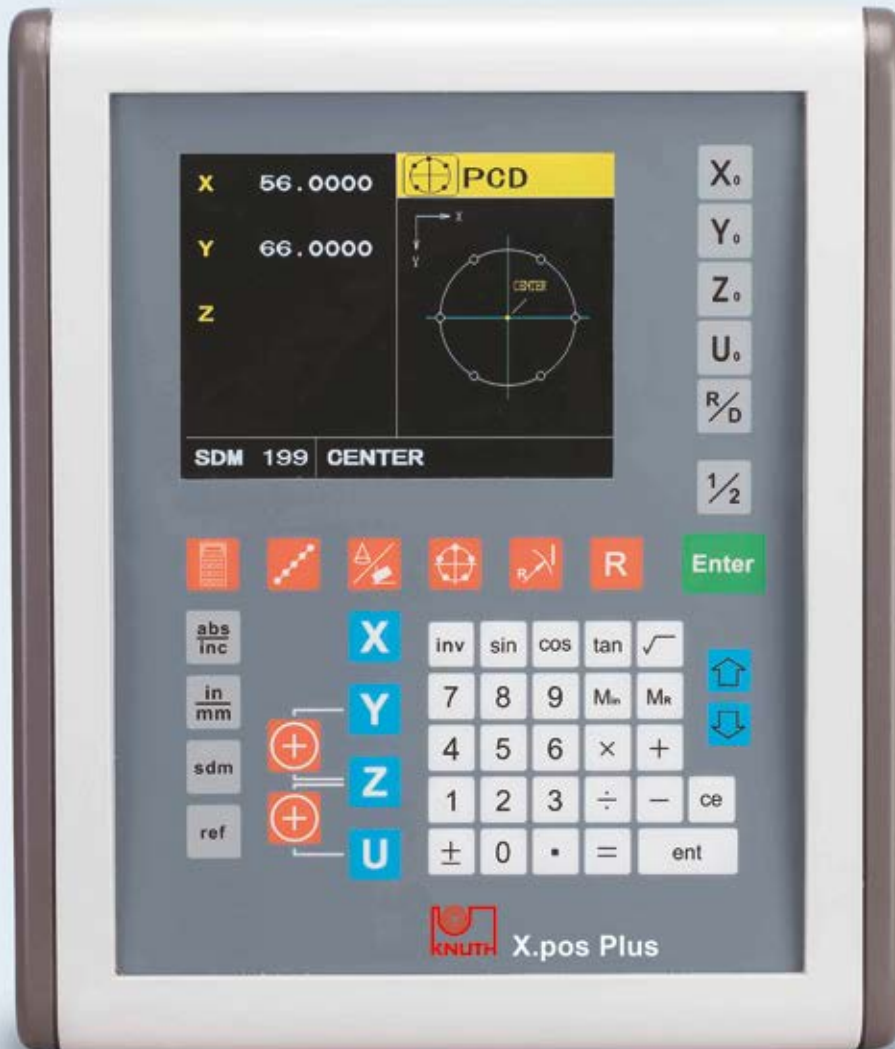
Position Indicators - an absolute necessity for all machine tools



3-axis position indicator

X.pos Plus

Fully compatible with older X.pos scales - upgrade now!



X.pos Plus - You will gain productivity, quality and comfort

- Default coordinates
- Calculation of hole circle pattern
- Vibration filter feature
- mm/inch conversion
- 8 display languages
- Pocket calculator function

For new installations or for retrofitting existing milling machines, drill presses, grinders or even measuring machines

- high-resolution display with excellent legibility
- state-of-the art electronics and a very robust, completely sealed enclosure ensure maximum safety and optimum production conditions
- a major focus during the development and selection of electronic components was the achievement of maximum resistance against external interferences and maintaining low temperature levels
- background colors of the display can be changed as required or desired
- the keyboard membrane is highly resistant and yet very comfortable to touch
- when using for lathes, the values for top slide (Z0) and bed slide (Z1) can be displayed either individually or as differentiation/summation circuit for lathes
- the display also provides a key to toggle between radius and diameter
- the axis position is maintained when the display is turned off
- graphical support with residual path display and sketch drawing
- linear and non-linear length correction is possible
- easy mounting, easy electric connection, and maintenance-free operation

Part No. 123 455

Clamping tools

Quick and easy online orders



Basic chuck



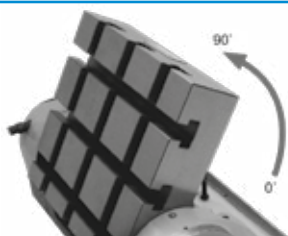
Lathe Chuck Stop



2- / 3-jaw power chuck



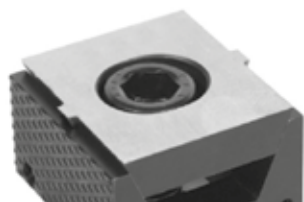
**3-Jaw Wedge Bar
Power Chuck**



Swiveling Setup Table



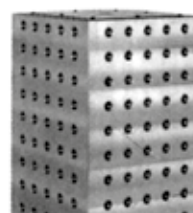
V-Blocks



Wedge-actuated chuck



Driven coordinate tables



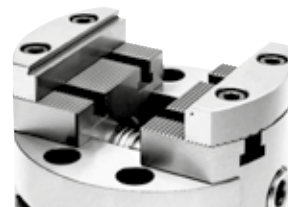
Grid cube



Tap holder



Face driver



Centric chuck



Set of blocks gauges



Dial gauges



**Safety guard
with magnetic foot**



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ACE-Laser

- higher beam power
- faster exchange of cutting tables
- pipe cutting device

page 46



CNC Wire Cutting Machine

NeoSpark B 500

- higher accuracy
- higher productivity

page 62



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Universal Lathe

V-Turn 410 PRO

- easier operation
- new design

page 140



Universal Lathe

Sinus Plus

- higher cutting capacity
- extra rigid casting

page 132



CNC Press Break

AHK H CNC

- more variants
- higher bending speeds
- brushless servo back gauge with ball screws

page 300

