

Bench drilling machines
Upright drilling machines
Gear drilling machines
Lathes
Milling machines
Metal band saws
Metal circular saws
Grinding machines
Polishing machines
Drill bit grinder
Sheet metal processing
Arbor presses
Measuring tools
CNC add-on kits

Metal working machines

The OPTIMUM in quality, price-performance and service





Headquarters in Hallstadt/Bamberg



New logistics centre in Pettstadt



QUALITY AT A COST-EFFICIENT PRICE - OPTIMUM METAL WORKING MACHINES

YOUR REQUIREMENTS ARE OUR TARGET

Since more than 25 years we are dealing with the development, design and production **OPTIMUM** machines. Any one of our products distinguishes itself by quality, accuracy, sustainability and consistent value. Beside our production plants we have our articles solely produced by manufacturers who are able to fulfil our high quality requirements. Our knowledge serves to constantly advance and improve our products.

THE PRODUCTS

You are looking for a functional machine offering comprehensive features at an economical price? Then you make the right choice by purchasing an **OPTIMUM** metal working machine. Our machines are convincing by outstanding quality, accurate manufacturing and offer an "OPTIMUM" in price and performance.

PRODUCTION

Since 2003 **OPTIMUM** produces a large part of its metal working machines in its own factory in Yangzhou in China. There, the quality is controlled by German quality management representatives and production manager on-site. Another large part of the **OPTIMUM** metal working machinery is manufactured exclusively or in accordance with specific requirements for **OPTIMUM**.



Assembly of lathes



Measurement of lathes


Manufacturing on own
CNC machines

Automation



Main catalogue



CNC catalogue





OPTIMUM factory, Yangzhou China



Assembly of drilling machines



Assembly of drilling machines



Final acceptance of CNC milling machines



Assembly of milling machines

THE OPTIMUM GUARANTEE OF QUALITY: ALL OPTIMUM PRODUCTS ARE PRODUCED UNDER HIGH QUALITY REQUIREMENTS.

QUALITY

OPTIMUM products are produced under high quality requirements. There are lots of same or similar products on the market, however, such products do not meet the **OPTIMUM** quality standards.

DISTRIBUTION

OPTIMUM machines can be purchased from your competent specialized dealers on site. An area-wide network of specialized dealers and sales partners - who are supported by the employees of **OPTIMUM** are at your disposal to help you with words and deeds.

Please do not hesitate to call our headquarters under the phone number +49 951/96 555-0. We will put you through to an employee who will be glad to answer your questions.

FOR YOU ON SITE: EUROPE- AND WORLD-WIDE

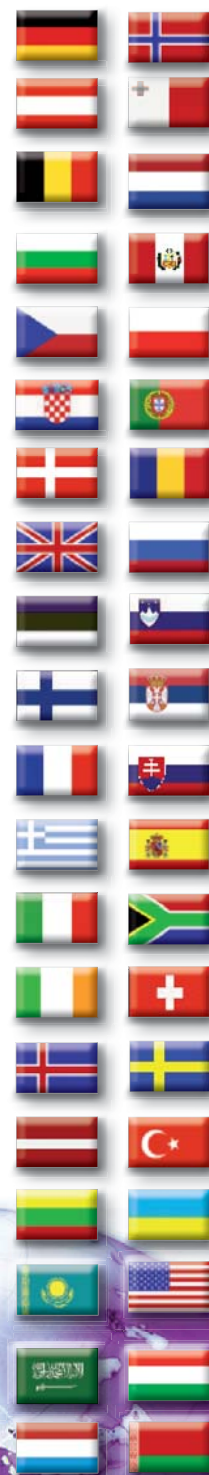
Being a German company, **OPTIMUM** is cooperating with expert partners worldwide from its company headquarters in Hallstadt/Bamberg.

Across the German borders you will find the international sales network of **OPTIMUM** in lots of countries worldwide.

AFTER-SALES-SERVICE

If you need the help of our after-sales service, we as well as your locally specialized dealer will be at your disposal with an experienced service team. A comprehensive stock of spare parts is available at our headoffice so that we are able to supply spare parts at short notice, if necessary. Our service guarantees the best use of your machine for many years.

Kilian Stürmer
Manager

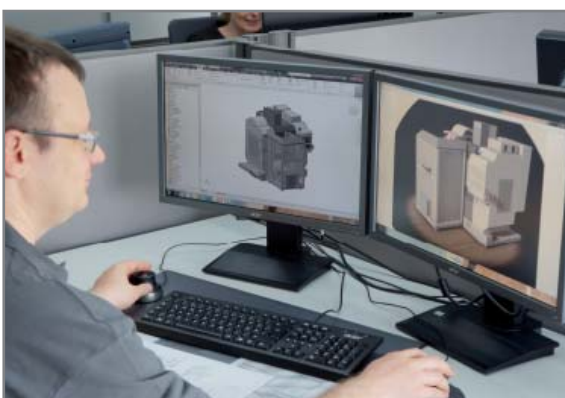




■ Planning

Already during the planning phase our technical department intervenes in the development of new products which are manufactured at our facility as well as at the facilities of our partners. In this way, all marketing influences and customer requirements are immediately added where the future direction for a successful product design is set.

Our technical department has a well-established team of technically highly qualified specialists. Their well-founded expertise allows flexible and creative implementation of all requirements which are demanded for our product and services.



■ Development

The development work is performed by creating a virtual machine model using most modern 3D CAD software. In doing so, beside the optimum functionality of the machine we also pay attention to the re-usability of the data which are created during the development phase. Such data do not only serve to elaborate manufacturing documents and documentations, but also to establish calculations as well as for computer-aided manufacturing and to visualize and simulate the product.



■ Testing in practice

Our engineers are combining theory and practice. Regarding product satisfaction we do not leave anything to chance; application-specific tests are performed on all machines and selected customers are consequently involved in this testing. In this way, any new product first has to prove itself during everyday work before it is included as inherent part in our range of products. The technical analysis helps us to recognize and resolve any remaining weak points.



■ Technical customer support

Our customers may rightly expect that our specialists are using their knowledge and experience to their utmost satisfaction. Our product consultants support the user with technical information. A free of charge phone hotline as well as an info mail account are available which our customers may use in order to receive qualified information or problem solutions short term.



■ Protecting the copyright

In order to continuously protect our technical development work for us as well as for our customers, a patent and protection of registered designs is indispensable. In this way, we continuously maintain the technical advance of **OPTIMUM** products..



■ Technical documentation and risk analysis

Our technical authors are able to achieve a high standardized level which complies with all legal requirements or even exceeds them. These enormous efforts only serve to easily introduce the machine to our customers as well as to guarantee the continuous and safe operation.

In order to compensate the identified safety gaps, measures are taken to minimize the risk in the frame of the analysis. Then an evaluation of the remaining residual risk is performed after having implemented these measures.



■ Supply of spare parts

We know that the rapid availability of spare parts is one of the basic requirements for a satisfying, customer-focused service concept.

At **OPTIMUM Maschinen Germany GmbH**, the planning, coordination and availability of replacement parts are harmonized in a way to ensure maximum benefit regarding economic efficiency and speed.



■ Siemens cooperation partner for CNC training

Since many years Siemens is the system supplier of the control and drive engineering for the CNC controlled lathes and milling machines of the **OPTIMUM Maschinen Germany GmbH**. Due to the long-term and successful cooperation a cooperation partnership for the CNC training in Bavaria was agreed in June 2012.

Target group-specific courses familiarize the participants of the training program with the functions of the various Sinumerik controls.



■ Supplier support

Regular meetings with our engineers contribute to transfer our new developments and enhancements aimed to serial production. This direct support at our production facilities has been indispensable in manufacturing the quality products that our customers have trusted since more than 25 years.

We see the basis for a constantly high customer satisfaction and our current and future market success in the clear technical orientation of our employees.



■ Sales support

The requirements in machines made by OPTIMUM are as versatile as the manufacturing requirements of our end customers and the workpieces which need to be machined. Our representatives and specialized dealers are at your disposal for any further questions with the whole application-specific knowledge of our technicians. The customers are obtaining the support which is necessary to adapt the selected product to the corresponding requirements in a qualified and informative sales conversation.



■ Sales training and training of staff/customers training

The success in handling our products is mainly determined by passing the technical knowledge on to the sales and service employees by consequent internal training measures. This qualification forms the basis so that we are able to guarantee a skilled, qualified consultation and troubleshooting at any time when a customer contacts us.



■ Production support

A team of employees directly influences the production process on site by regular training courses and tests. Only due to this intensive care at the production site we are able to achieve literally the OPTIMUM.



■ Quality management incoming goods inspection

Our well trained quality manager from Germany is the first contact for adhering to quality on site. He is responsible for the dimensional accuracy of the components as well as their control and the quality of the manufacturing process. He is closely working together with our technical department in the headquarters in Germany and thus forming an optimum symbiosis.



■ Quality management production and outgoing goods inspection

Beside delivery reliability and service the quality of our products is of highest importance for us. Our quality is ensured by continuous internal and external monitoring on site by our well-trained and motivated quality manager.

Our comprehensive outgoing goods inspection is performed according to the general technical guidelines.



■ Service support

...because good service is important for us!

Our OPTIMUM technicians are at your disposal to you at any time in case of service in order to support the shop in performing a rapid and targeted repair.

Weak points are analysed and customer wishes noted in close cooperation with the service centre and it's internal and external employees. These points are evaluated under technical points of view and noted down in specific requirement or measure catalogues.



■ DIN EN ISO 9001 - Excellent quality

Our factory is certified according to DIN EN ISO 9001. Thus, all business units and services are subject to demanding quality requirements. Constant high quality for you.

The aim of high quality are enthused customers. With this approach, finally the demanding certification is resulting. Moreover, the key to the long-term success of our company is the trusting relationship to customers and suppliers. Therefore, you are as important for us as the sustainable quality of our products.



■ PREMIUM machines

Our Premium products are manufactured by our ISO 9001 certified subcontracted manufacturers in Europe. Beside a qualitatively high production we can also provide considerably more rapid and flexible purchasing processes by the choice of location. The noticeable improved quality results in technical and optical high-quality products with high functional reliability. Contributing especially to this is the use of high quality components made in Europe.

With our PREMIUM machines "Made in EU" we provide you an OPTIMUM of service and reliability in all fields.



■ Production

The products are manufactures using modern means of production and quality materials. Our level of know-how in production results in marketable products with noticeable unique selling points. The products are manufactured consistently in a uniform production process at the same production site. This vertical integration ensures a very high quality standard.



■ Quality test

In the mechanical engineering, the production of quality is based on a high degree of penetration with a number of quality-relevant parameters and measures. The quality assurance of the production is rounded off by strict final inspections.



Final assembly

The final assembly and commissioning of our PREMIUM machines provides added value for a stable value creation process with the users and allows perfect long-term and unobjectionable working with the machine.



Quality standards

Optimum Maschinen has very intensively examined the question of manufacturing quality. That is why we have chosen manufacturing partners for our range of PREMIUM products, who have established an effective quality management system for their production.



Exclusivity

The PREMIUM products of these types are exclusively manufactured for OPTIMUM. Thus we guarantee that our customer receive unparalleled products.



Coordinate measurement on a 3-D measuring machine

This modern method of measuring technology allows measuring complex surface geometries



Supplier support

The continuous monitoring of the manufacturers is an indispensable prerequisite for a sustainable and long-lasting high quality. Regular supplier audits provide the certainty that we deliver the promised quality to our customers.

The value of sound relation with our suppliers can generally measured in a good cooperation and by high degree of satisfaction.



■ Exhibition

Would you like to take a detailed look on a machine and test it?

No problem.

At our headquarters in Hallstadt near Bamberg we give you the opportunity to visit an exhibition of 2.000 sqm including more than 150 exhibited machines. You are welcome to visit the exhibition and test the machines.

OPTimill®
OPTiturn®

■ Two-stage price-performance ratio

We subdivide our metal working machines into two categories with an "OPTIMUM" in quality and price-performance.

Standard line

Metal processing machines for the professional craftsman.

Premium line

Machines for medium-sized companies and industrial companies. (see page 8 / 9)



■ Measuring

In Germany, Optimum Maschinen Germany GmbH exhibits at important trade fairs as well as at several in-house exhibitions.

In other countries you will find our brand with our partners.

The right solution for every application

You may solve any task in this way

Drilling machines and accessories from page 16 on



Lathes and accessories from page 54 on



Milling machines and accessories from page 114 on



Metal band saws/circular metal saws from page 152 on



Grinding machines from page 176 on



Polishing machines/Metal processing from page 188 on



Machine lamps from page 194 on



Position displays and measuring devices from page 196 on



CNC program from page 202 on



OPTIMUM CNC MACHINES. TECHNIQUE WHICH PAYS OFF

CNC metalworking machines from OPTIMUM:
Intelligent solutions for economical machining.
Powerful, precise and stable value.
In our product portfolio the customers will find the perfect solution for almost any task.



CNC catalogue
Download

Request our catalogue or find the CNC program
under www.optimum-machines.com

CNC lathe product range



SINUMERIK 808D

L 28HS

CNC controlled flatbed lathe
for training centres



SINUMERIK 828 D

L 34HS

CNC controlled flatbed lathe



SINUMERIK 828D Basic T

L 44 PREMIUM

The OPTIMUM CNC lathe with
the following advantages:
Speed, power, accuracy and
durability



SINUMERIK 828D Basic T

L 440/L 460 PREMIUM

OPTIMUM Premium high per-
formance CNC cycle lathe.
High performance. Additional
speed. Highest precision



SINUMERIK 828D Basic T

L 500/L 520 PREMIUM

OPTIMUM Premium high per-
formance CNC cycle lathe with
latest Siemens control



SINUMERIK 840D sl

S 600 PREMIUM

OPTIMUM CNC inclined bed
lathe for speed, performance,
precision and durability



SINUMERIK 840D sl

S 500/S 750 PREMIUM

The OPTIMUM CNC lathe con-
vinces by high speeds, preci-
sion and efficiency as well as
by the additional equipment
such as chip conveyor and C
axis



leaflet
L 44



SINUMERIK 808 D

M 2LS

CNC milling machine with servo-drives



SINUMERIK 808 D

F 4

Stable CNC milling machine equipped with an 8-station tool changer



SINUMERIK 808 D
SINUMERIK 808 D ADVANCED

F 105

The compact solution for small batch production in middle class and training sector



SINUMERIK 828 D

F 151HSC PREMIUM

OPTIMUM PREMIUM CNC-vertical machining center combines maximized productivity with low cost



SINUMERIK 828 D

F 310 PREMIUM

OPTIMUM Premium CNC milling machine is characterized by power, speed, precision and long service life



SINUMERIK 828 D

F 410 PREMIUM

OPTIMUM Premium CNC milling machine is characterized by power, speed, precision and long service life



SINUMERIK 840D sl

FU 5-600 HSC PREMIUM

Optimum Premium 5-axis universal machining center with 4 spindle speeds



SINUMERIK 808 D

F 3

Quality, performance and precision features indicates this modern universal milling machine



SINUMERIK 808 D

F 80

Modern, powerful, easy to use machine tool



SINUMERIK 828 D

F 150 PREMIUM

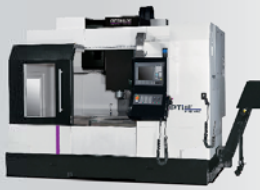
OPTIMUM Premium CNC milling machine distinguished itself by high precision, solid design, efficiency and economy



SINUMERIK 828 D

F 211HSC PREMIUM

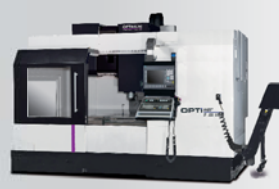
OPTIMUM Premium CNC vertical machining center provide best conditions for a highly productive machining and precision work



SINUMERIK 840D sl

F 311HSC PREMIUM

Efficient OPTIMUM CNC machining center optionally with four spindle speeds, providing an ideal solution for your task



SINUMERIK 840D sl

F 411HSC PREMIUM

Efficient OPTIMUM CNC machining center optionally with four spindle speeds, providing an ideal solution for your task



leaflet
F 150



leaflet
Automation

Technical data of OPTI[®]drill drilling machines for general orientation

	Motor power kw	Drilling capacity in steel max. Ø in mm	Spindle seat	Speed control	Infinitely variable speed control	Coolant equipment (Series)	Thread cutting (Series)	Autom. feed	Working lamp (Series)	direct quick-action drill chuck standard	230V version available	400V version available	Bench drill	Upright drilling machine	Gear drilling machine	Radial drilling machine
B 13	0.3	Ø 13	fixed B16	520 - 2,620							●		●			
B 14	0.35	Ø 14	fixed B16	520 - 2.620						●	●		●			
B 16	0.45	Ø 16	MT 2	660 - 2'500						●	●		●			
B 20	0.55	Ø 20	MT 2	210 - 2'220						●	●		●			
B 25	0.55	Ø 20	MT 3	210 - 2'220						●	●	●		●		
B 32	1.1	Ø 32	MT 4	140 - 2'020						●		●		●		
RB 6T	0.75	Ø 16	MT 2	390 - 3'000							●					●
RB 8S	0.75	Ø 16	MT 2	390 - 3'000							●					●
B 17Pro	0.5	Ø 16	MT 2	500 - 2'520						●	●		●			
B 23Pro	0.75	Ø 25	MT 2	200 - 2'440						●	●	●	●	●		
B 26Pro	0.75	Ø 25	MT 3	200 - 2'440						●		●		●		
B 33Pro	1.1	Ø 30	MT 4	120 - 1'810						●		●				
B 16 H	0.55	Ø 13	MT 2	450 - 3'500						●	●		●			
B 24 H	0.85	Ø 24	MT 2	350 - 4'000					●	●	●	●	●			
B 28 H	0.85	Ø 28	MT 3	120 - 4000					●	●		●		●		
B 34 H	1.5/2.2	Ø 34	MT 4	145 - 4'800					●	●		●		●		
B 16HV	0.55	Ø 16	MT 2	100 - 7'500	●				●	●	●		●			
B 24HV	0.85	Ø 24	MT 2	100 - 5'950	●				●	●	●		●			
B 28HV	0.85	Ø 28	MT 3	35 - 5'600	●	●			●	●	●			●		
DH 24BV	0.85/1.5	Ø 24	MT 2	300- 4'000					●			●	●			
DH 28BV	0.85/1.5	Ø 28	MT 3	300- 4'000					●			●		●		
DH 34BV	1.5/2.2	Ø 34	MT 4	300- 4'000					●			●		●		
DH 40BV	1.5/2.2	Ø 34	MT 4	150- 2'000					●			●				
B 34HV	1.5/2.2	Ø 34	MT 4	40 - 5'000	●	●			●	●	●			●		
B 30BS	2.2	Ø 30	MT 3	30 - 3'900	●	●	●		●	●	●			●		
DH 26GT	0.65	Ø 26	MT 3	105-2'900			●	auto				●		●		
DH 28GS	0.65	Ø 26	MT 3	105-2'900			●		●	●		●		●		
DH 32GS	1.1/1.5	Ø 32	MT 4	75 - 2'000			●	●	●	●		●		●		
DH 32GSV	2.2	Ø 32	MT 4	40 - 3'000	●	●	●	●	●	●		●		●		
B 40E	1.1/1.5	Ø 28	MT 4	95 - 3'200		●		●		●		●		●		
B 40PTE	1.1/1.5	Ø 32	MT 4	95 - 3'200		●		mechan.		●		●		●		
B 40GSP	1.5	Ø 35	MT 4	64 - 3'060		●		mechan.		●		●		●		
B 40GSM	1.5	Ø 35	MT 4	64 - 3'060		●		electromag- netic		●		●		●		
B 50GSM	3/2.4	Ø 50	MT 4	54 - 2'090			●	electromag- netic	●			●		●		
DZ 25	0.8 / 1.2	Ø 25	MT 3	64 - 3'060					●			●		●		
DZ 35	0.8 / 1.2	Ø 35	MT 4	75 - 2'100			●		●			●		●		
DZ 40	1.5	Ø 40	MT 4	93 - 1'420			●		●			●		●		
DZ 50	3	Ø 50	MT 4	45 - 685			●		●			●		●		



DRILLING MACHINES

Cost-efficient bench drills and upright drilling machines with V-belt

Convincing arguments: quality, efficiency and price

- Precisely machined drilling table, can be inclined by $\pm 45^\circ$ and turnable by 360°
 - Solid, largely dimensioned base plate with slots, heavily ribbed at the rear side
 - 400 volt types with right-/left-handed rotation cam switch
 - Millionfold proven quality
- from OPTIdrill B 14
- Serial T-slots for vice fixture



Fig.: B 13

Fig.: B 14

Fig.: B 16

Fig.: B 20

Model	B 13	B 14	B 16	B 20	
Item No	3008131	3008141	3008161	3008201	3008203
Electrical connection					
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph	400 V / 3 Ph
Motor power	300W	350 W	450 W	0.55 kW	
Drilling capacity					
Drilling capacity in steel (S235JR)	Ø 13 mm	Ø 14 mm	Ø 16 mm	Ø 20 mm	
Continuous drilling capacity in steel (S235JR)	Ø 12 mm	Ø 12 mm	Ø 15 mm	Ø 18 mm	
Spindle seat					
Throat depth	104 mm	104 mm	125 mm	170 mm	
Spindle seat	fixed B16	fixed B16	MT 2	MT 2	
Spindle stroke	50 mm	50 mm	65 mm	80 mm	
Speeds					
Spindle speeds	520 - 2'620 min ⁻¹	520 - 2'620 min ⁻¹	660 - 2'500 min ⁻¹	210 - 2220 min ⁻¹	
Number of steps	5 steps	5 steps	5 steps	12 steps	
Drilling table					
Drilling table size length x width	160 x 160 mm	160 x 160 mm	200 x 200 mm	275 x 275 mm	
T-slot size (slot width)	14 mm	14 mm	14 mm	14 mm	
Drilling table slewable / rotatable	± 45° / 360°	± 45° / 360°	± 45° / 360°	± 45° / 360°	
Distance spindle - table	max. 240 mm	max. 330 mm	max. 390 mm	max. 465 mm	
Distance spindle - stand	max. 325 mm	max. 440 mm	max. 525 mm	max. 645 mm	
Stand work surface L x W	135 x 175 mm	140 x 180 mm	160 x 170 mm	205 x 200 mm	
Dimensions					
Column diameter	46 mm	46 mm	60 mm	70 mm	
Length x width x height	420 x 220 x 580 mm	420 x 230 x 700 mm	510 x 270 x 820 mm	600 x 350 x 990 mm	
Net weight	19 kg	21 kg	36 kg	53 kg	
Standard equipment	Gear rim drill chuck (1 - 13 mm)	Quick-action drill chuck (0 - 13 mm) 2 T-slots	Quick-action drill chuck (1 - 16 mm) Morse taper MT 2, 2 T-slots		



Fig.: B 25

Fig.: B 32

Model	B 25	B 32
Item No	3008253	3008323
Machine data		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	0.55 kW	1.1 kW
Drilling capacity		
Drilling capacity in steel (S235JR)	Ø 20 mm	Ø 32 mm
Continuous drilling cap. steel	Ø 18 mm	Ø 28 mm
Spindle seat		
Throat depth	170 mm	225 mm
Spindle seat	MT 3	MT 4
Spindle stroke	80 mm	125 mm
Speeds		
Spindle speeds	210 - 2'220 min ⁻¹	140 - 2'020 min ⁻¹
Number of steps	12 steps	9 steps
Drilling table		
Drilling table size length x width	275 x 275 mm	360 x 360 mm
T-slot size	14 mm	14 mm
Drilling table slewable / rotatable	± 45°/360°	± 45°/360°
Distance spindle - table	max. 760 mm	max. 600 mm
Distance spindle - stand	max. 1'210 mm	max. 1'170 mm
Stand work surface L x W	235 x 220 mm	260 x 270 mm
Dimensions		
Column diameter	Ø 70 mm	Ø 92 mm
Length x width x height	690 x 390 x 1'570 mm	790 x 400 x 1'730 mm
Net weight	60 kg	135 kg
Standard equipment		
	Quick-action drill chuck (1 - 16 mm), 2 T-slots Morse taper MT 3	Quick-action drill chuck (1 - 16 mm), 2 T-slots Morse taper MT 4

Convincing arguments...



- Ground multi-toothed follower
- Best power transmission due to aluminium belt pulleys in connection with toothed GATES quality V-belt
- V-belt cover with safety switch



- Guaranteed true running accuracy of better than 0.03 mm measured in the drilling spindle
- Drilling spindle with precision ball bearing
- OPTIMUM quick-action drill chuck included in the standard scope of delivery



- Spindle sleeve lever with softgrip handles for safe working
- Drill depth stop



- User-friendly switch according to IP 54 with undervoltage release
- Separate EMERGENCY-STOP push button

Please find further information on „Accessories for drilling machines“ on page 47

Light-weighted radial drilling machine with large throat to manufacture wood, plastic material and aluminium

Convincing arguments: quality, efficiency and price

- Best power transmission due to aluminium belt pulleys in connection with toothed GATES quality V-belt
- Drilling spindle with precision ball bearings
- V-belt cover with safety switch
- Drill depth stop
- OPTIMUM sprocket wheel drill chuck included in the standard scope of delivery
- Optimum price/performance ratio
- Stable value

Drilling spindle

- Guaranteed true running accuracy better than 0.03 mm measured in the drilling spindle
- Precision ball bearing

Drill chuck protection

- Best possible protection of the user
- Height-adjustable
- Micro switch

Electric motor

- Smooth running
- Powerful
- Aluminium housing

Safety switch

- Easy-to-operate
- Protection class IP 54
- Undervoltage release
- Separate EMERGENCY-STOP push button

Drilling table

- Precisely worked
- Mounting holes for enlarged table support

Steel column

- High smooth running and stability

Drilling table

- Precisely worked
- Transversally running T-slots

Spindle sleeve lever

- Long and ergonomically designed
- Softgrip handles for safe working

Base plate

- Solid and largely dimensioned
- Slots for T-slots
- Heavily ribbed at the rear side

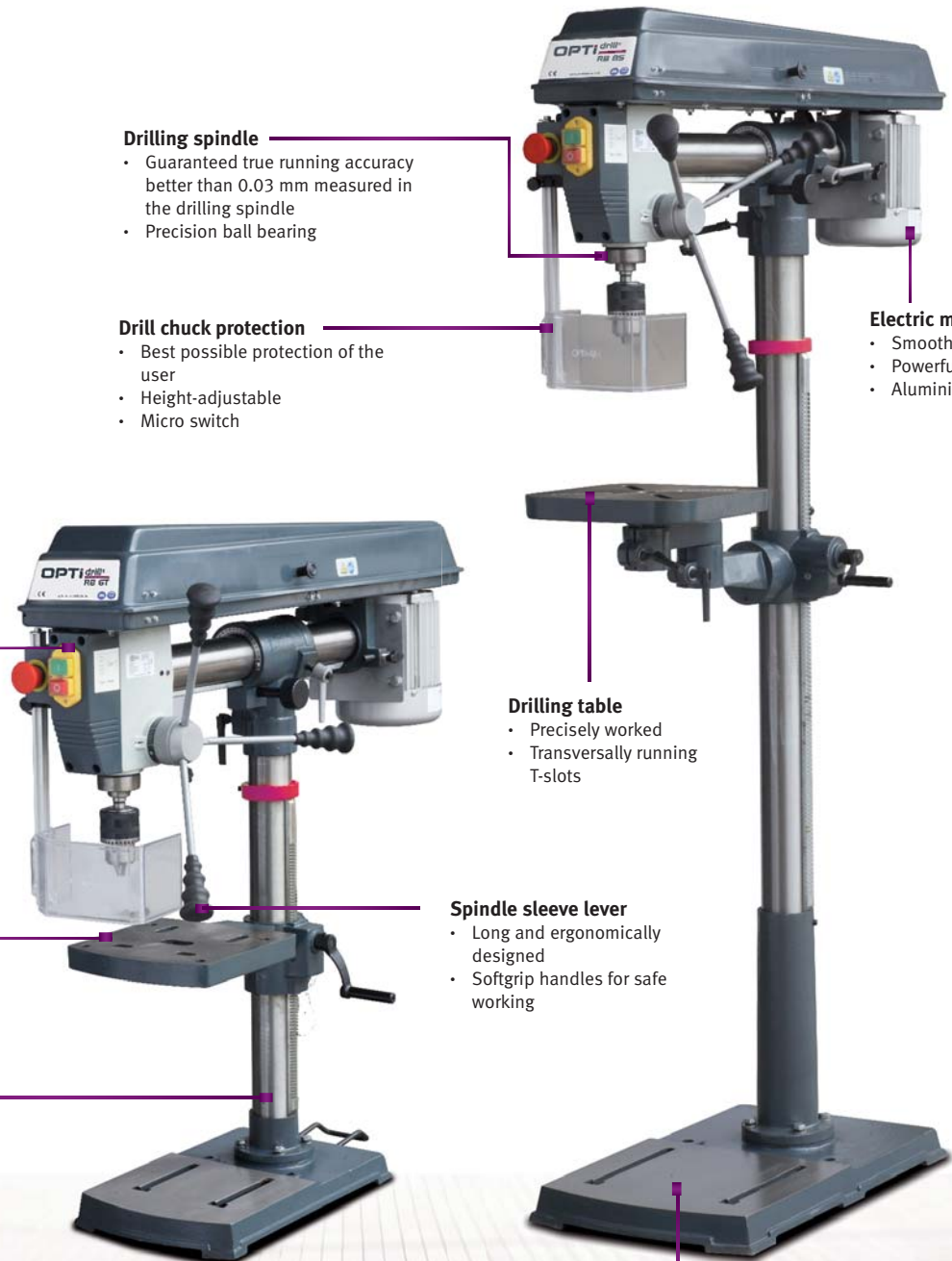




Fig.: OPTIdrill RB 6T

Fig.: OPTIdrill RB 8S

Technical data and accessories

Model	RB 6T	RB 8S
Item No	3009161	3009181
Electrical connection		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor power	750 W	
Drilling capacity		
Drilling capacity in steel (S235JR)	Ø 16 mm	
Continuous drilling capacity in steel (S235JR)	Ø 12 mm	
Spindle seat		
Spindle seat	MT 2	
Throat depth	115 - 430 mm	
Spindle stroke	80 mm	
Speeds		
Spindle speeds	390 - 3'000 min ⁻¹	
Number of steps	5 steps	
Drilling table		
Drilling table size length x width	225 x 230 mm	262 x 262 mm
Slot size	14 mm	
Inclinable drilling table	± 45°	
Distance spindle - table	max. 380 mm	max. 740 mm
Distance spindle - stand	max. 550 mm	max. 1'250 mm
Dimensions		
Column diameter	Ø 60 mm	Ø 70 mm
Length x width x height	820 x 290 x 930 mm	820 x 290 x 1'640 mm
Total weight	40 kg	63 kg
Standard equipment	Gear rim drill chuck (1-16 mm) B 16	
	Morse taper MT 2 - B 16	

Accessories	Item No
Clamping tool kit SPW12	3352017
<ul style="list-style-type: none"> T-slots 14 mm . Draw bar thread M 12 Metric threads 	
Cone drill drift MSP 1	3050636
Twist drill HSS MT 2	3051002
<ul style="list-style-type: none"> Right hand cutting . 9 pieces 	
	

Accessories	Item No
Twist drill Kit coated with titanium	3051010
<ul style="list-style-type: none"> 25 pcs.; drill bit sizes 1 -13 mm 	
Machine vice MSO 75	3000075
Machine vice MSO 100	3000100
<ul style="list-style-type: none"> Many assembly options on the drilling table by oblong holes Exact jaw guiding 	
	

Please find further information on „Accessories for drilling machines“ on page 47

- The drill head can be inclined by ± 45°



- Variable throat by shifting the drilling head



- The drilling table can be inclined by ± 45°



Robust bench drills and upright drilling machines with V-belt drive

Convincing arguments: quality, efficiency and price

- Easy-to-operate safety switch according to IP 54 with undervoltage release and separate EMERGENCY-STOP push button
- 400 volt types with right-/left-handed rotation
- Drill depth stop
- Precisely machined drilling table with diagonally running T-slots
- Height adjustment of the drilling table via toothed rack
- The drilling table can be inclined by $\pm 45^\circ$ and turned by 360°
- V-belt cover with safety switch
- Aluminium die-cast spindle sleeve lever made of one piece with Softgrip handles
- Solid, largely dimensioned base plate with slots, heavily ribbed at the rear side (for OPTIdrill B 33Pro T-slots)
- Heavy type of the whole machine



Fig.: B 17Pro



Fig.: B 23Pro



Fig.: B 26Pro



Fig.: B 33Pro



Belt drive

- High running smoothness thanks to ground multi-toothed follower
- Best power transmission due to aluminium belt pulleys in connection with toothed GATES quality V-belt (from B 23Pro)



- Guaranteed true running accuracy ≤ 0.02 mm measured in the drilling spindle
- Drilling spindle with precision ball bearings
- High-quality quick-action drill chuck
- Largely dimensioned, height adjustable protective screen with safety switch

Technical data and accessories

Model	B 17Pro	B 23Pro	B 26Pro	B 33Pro
Item No (230 V)	3003171	3003231 (230 V)	-	-
Item No (400 V)	-	3003233 (400 V)	3003263	3003333
Machine data				
Electrical connection	230 V / 1 Ph ~50 Hz	230 V/1 Ph or 400 V/3 Ph	400 V/3Ph	400 V / 3 Ph ~50 Hz
Motor power	500 W	750 W	750 W	1.1 kW
Drilling capacity				
Drilling capacity in steel (S235)R	Ø 16 mm	Ø 25 mm	Ø 25 mm	Ø 30 mm
Continuous drilling cap. steel	Ø 12 mm	Ø 20 mm	Ø 20 mm	Ø 25 mm
Spindle seat				
Spindle stroke	65 mm	80 mm	85 mm	120 mm
Spindle seat	MT 2	MT 2	MT 3	MT 4
Throat depth	152 mm	180 mm	210 mm	254 mm
Speeds				
Spindle speeds	500 - 2'520 min ⁻¹	200 - 2'440 min ⁻¹	200 - 2'440 min ⁻¹	120 - 1'810 min ⁻¹
Number of steps	5 steps	12 steps	12 steps	9 steps
Drilling table				
Table work surface length x width	235 x 220 mm	280 x 245 mm	330 x 290 mm	475 x 425 mm
T-slot size	12 mm	12 mm	14 mm	14 mm
Drilling table slewable / rotatable	± 45° / 360°	± 45° / 360°	± 45° / 360°	± 45° / 360°
Distance spindle - table	max. 325 mm	max. 425 mm	max. 720 mm	max. 695 mm
Distance spindle - stand	max. 530 mm	max. 618 mm	max. 1'230 mm	max. 1'180 mm
Stand work surface L x W	220 x 230 mm	240 x 250 mm	385 x 260 mm	410 x 325 mm
Dimensions				
Column diameter	Ø 60 mm	Ø 73 mm	Ø 80 mm	Ø 92 mm
Length x width x height	565 x 275 x 840 mm	615 x 330 x 1'015 mm	670 x 355 x 1'640 mm	755 x 440 x 1'705 mm
Total weight	36,5 kg	58 kg	82 kg	132 kg
Standard equipment				
	Morse taper MT 2 - B 16		Morse taper MT 3 - B 16	Morse taper MT 4 - B 16
	Quick-action drill chuck (1 - 16 mm) B16			
	T-slots			

Accessories OPTIdrill B 17Pro / B 23Pro	Item No	
Direct quick-action drill chuck:		
MT 2 / 1 - 16 mm	3050571	
MT 2 / 1 - 13 mm	3050572	
Morse taper MT 2 - B16	3050659	
Twist drill kit coated with titanium 13mm	3051010	
Twist drill HSS / MT 2	3051002	
Clamping tool kit SPW 10	3352016	
Cone drill drift MSP1	3050636	
Universal coolant equipment 230 V	3352002	

Machine vices	Item No	
BMS 100	3000010	
BMS 120	3000012	
BSI 100	3000210	
BSI 140	3000214	
BSI-Q 100	3000230	
BSI-Q 140	3000234	



Accessories OPTIdrill B 26Pro	Item No	
Direct quick-action drill chuck MT 3/0.3-16 mm	3050573	
Reducing bushes MT 3 - MT 2	3050663	
Morse taper MT 3 - B16	3050660	
Twist drill kit coated with titanium 13mm	3051010	
Twist drill HSS / MT 3	3051003	
Clamping tool kit SPW 12	3352017	
Cone drill drift MSP1	3050636	
Tapping chuck M5-M12	3352042	
Universal coolant equipment 400 V	3352001	

Accessories OPTIdrill B 33Pro	Item No	
Direct quick-action drill chuck MT 4	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium	3051010	
Twist drill HSS / MT 3	3051003	
Clamping tool kit SPW 12	3352017	
Cone drill drift MSP2	3050637	
Tapping chuck M5-M12	3352042	
Universal coolant equipment 400 V	3352001	

Please find further information on
„Accessories for drilling machines“ on page 47

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Robust bench drills and upright drilling machines with V-belt drive

Convincing arguments: quality, efficiency and price

- Smooth running and powerful electrical motor
- Separate EMERGENCY-STOP push button
- 400 volt types with right-handed/left-handed rotation (except B 16H)
- Drilling depth stop
- Precisely machined drilling table with diagonally running T-slots
- 360 ° rotatable drilling table
- V-belt cover with safety switch
- V-belt tensioning device
- Long, ergonomic aluminium die-cast spindle sleeve lever made of one piece with Softgrip handles (OPTIdrill B 16H / B 24H)
- Spindle sleeve lever made of steel (OPTIdrill B 28H / B 34H)
- Solid, largely dimensioned base plate with slots, heavily ribbed at the rear side
- Base plate usable as a working surface for extra high workpieces due to the rotatable drilling table

from OPTIdrill B 24H on:

• Machine luminaire

from OPTIdrill B 28H on:

• Easy tool change due to integrated drill drift

OPTIdrill B 34H

• Digital depth gauge

• Digital speed display



Fig.: B 16 H



Fig.: B 24 H



Fig.: B 28 H



Fig.: B 34 H



Belt drive

- High running smoothness thanks to ground multi-toothed follower
- Best power transmission due to aluminium belt pulleys in connection with toothed GATES quality V-belt



- Guaranteed true running accuracy of better than 0,015 mm measured in the drilling spindle
- Drilling spindle with precision ball bearings
- High-quality OPTIMUM quick-action drill chuck
- Largely dimensioned, height adjustable protective screen with safety switch

Technical data and accessories

Model	B 16 H	B 24 H	B 28 H	B 34 H
Item No (230 V)	-	3020241	-	-
Item No (400 V)	3020217	3020243	3020283	3020333
Machine data				
Electrical connection	400 V / 3 Ph ~50 Hz	230 V/1 Ph or 400 V/3 Ph	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	550 W	850 W	850 W	1.5/2.2 kW
Drilling capacity				
Drilling capacity in steel (S235JR)	Ø 13 mm	Ø 24 mm	Ø 28 mm	Ø 34 mm
Continuous drilling cap. steel	Ø 11 mm	Ø 20 mm	Ø 24 mm	Ø 26 mm
Spindle seat				
Spindle stroke	65 mm	85 mm	105 mm	160 mm
Spindle seat	MT 2	MT 2	MT 3	MT 4
Throat depth	130 mm	165 mm	200 mm	285 mm
Speeds				
Spindle speeds	450 - 3'500 min ⁻¹	350 - 4'000 min ⁻¹	120 - 4'000 min ⁻¹	145 - 4'800 min ⁻¹
Number of steps	5 steps	7 steps	16 steps	2 x 9 steps
Drilling table				
Table work surface length x width	230 x 245 mm	280 x 300mm	340 x 360 mm	420 x 400 mm
T-slot size	12 mm	14 mm	14 mm	14 mm
Turnable drilling table	360°	360°	360°	360°
Distance spindle - table	max. 370 mm	max. 515 mm	max. 860 mm	max. 790 mm
Distance spindle - stand	max. 495 mm	max. 681 mm	max. 1'275 mm	max. 1'275 mm
Stand work surface L x W	200 x 240 mm	280 x 260 mm	320 x 320 mm	390 x 390 mm
Dimensions				
Column diameter	Ø 60 mm	Ø 80 mm	Ø 92 mm	Ø 115 mm
Length x width x height	549 x 300x 848 mm	665 x 434 x 998 mm	698 x 449 x 1'721 mm	918 x 585 x 1'895
Total weight	54 kg	92 kg	142 kg	260 kg
Standard equipment				
	Quick-action drill chuck (1 - 13 mm)	Quick-action drill chuck (1 - 16 mm)	Quick-action drill chuck (1 - 16 mm)	Quick-action drill chuck (1 - 16 mm)
	Morse taper MT 2	Morse taper MT 2	Morse taper MT 3	Morse taper MT 4
	T-slots	T-slots	T-slots	T-slots
Transportation packaging flat rate plus VAT				
	-	-	TPFR 1	TPFR 1

Accessories OPTIDRILL B 16H / B 24H	Item No	
Direct quick-action drill chuck MT 2 1-16 mm	3050571	
Direct quick-action drill chuck MT 2 1-13 mm	3050572	
Morse taper MT 2 - B16	3050659	
Twist drill kit coated with titanium	3051010	
Twist drill HSS / MT 2	3051002	
Clamping tool kit SPW 10	3352016	
Universal coolant equipment 230 V	3352002	
Universal coolant equipment 400 V	3352001	

Accessories OPTIDRILL B 28H	Item No	
Direct quick-action drill chuck MT 3	3050573	
Reducing bushes MT 3 - MT 2	3050663	
Morse taper MT 3 - B16	3050660	
Twist drill kit coated with titanium	3051010	
Twist drill HSS / MT 3	3051003	
Clamping tool kit SPW 12	3352017	
Universal coolant equipment 400 V	3352001	
Tapping chuck M5-M12	3352042	

Machine vices	Item No	
BSI 100	3000210	
BSI 140	3000214	
BSI-Q 100	3000230	
BSI-Q 140	3000234	



Fig.: BSI

Fig.: BSI-Q

Accessories OPTIDRILL B 34H	Item No	
Direct quick-action drill chuck MT 4	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium	3051010	
Clamping tool kit SPW 12	3352017	
Universal coolant equipment 400 V	3352001	
Tapping chuck M5-M12	3352042	

Please find further information on „Accessories for drilling machines“ on page 47

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Bench drills and upright drilling machines with powerful OPTIMUM Brushless drive, electronically adjustable speed

Convincing arguments: quality, efficiency and price

- Smooth running and powerful Brushless-drive
- Easy-to-operate safety switch according to IP 54 with separate emergency stop push button
- Largely dimensioned, height-adjustable screening grid with safety switch for best possible protection of the user
- Long, ergonomic aluminium die-cast spindle sleeve lever made of one piece with Softgrip handles (OPTIdrill B 16HV / B 24HV)
- Spindle sleeve lever made of steel (OPTIdrill B 28HV/ B 34HV)
- Drill depth stop
- V-belt cover with safety switch

from OPTIdrill B 24HV

- Right-hand/left-hand rotation
 - Machine luminaire from OPTIdrill B 28HV
 - Coolant equipment
 - New chips filter according to machinery directive
 - Easy tool change due to integrated drill drift
- OPTIdrill B 34HV
- Spindle stroke 160 mm
 - Threading function



Info „Thermidril“ on page 51

Powerful Brushless drive

- Particularly smooth running
- High power output
- Nearly constant torque over the entire speed range



Belt drive

- Best power transmission due to aluminium belt pulleys in connection with toothed GATES quality V-belt
- High running smoothness thanks to ground multi-toothed follower

Digital speed display

- Easy-to-read
- Integrated in the housing

Speed control

- by means of a potentiometer

True running accuracy

- Guaranteed ≤ 0.015 mm measured in the drilling spindle

Drilling spindle

- Precision ball bearing
- High-quality OPTIMUM quick-action drill chuck as standard

Casting column

- Thick-walled
- High power absorption and stability

Base plate

- Solid
- Largely dimensioned
- Heavily ribbed at the rear side

Opndrill B 34 HV

Operating mode "automatic"

auto

- Motor is starting up automatically after moving the lever
- Stops again in the initial position
- It is not necessary to actuate the push button start and stop for repeated drilling tasks

Operating mode "Threading"



- The engine is being activated by moving the grip downward
- The direction of rotation is changed by pressing the limit switch on the adjustable drilling depth stop



Drilling depth gauge

- Digital
- Accuracy of the display 0.01 mm (B 34HV)

V-belt tensioning device

Machine luminaire (starting from B 24HV)

- Integrated in the drill head
- Halogen lamp

Drilling table

- Precisely worked
- Transversally running T-slots
- turnable by 360°

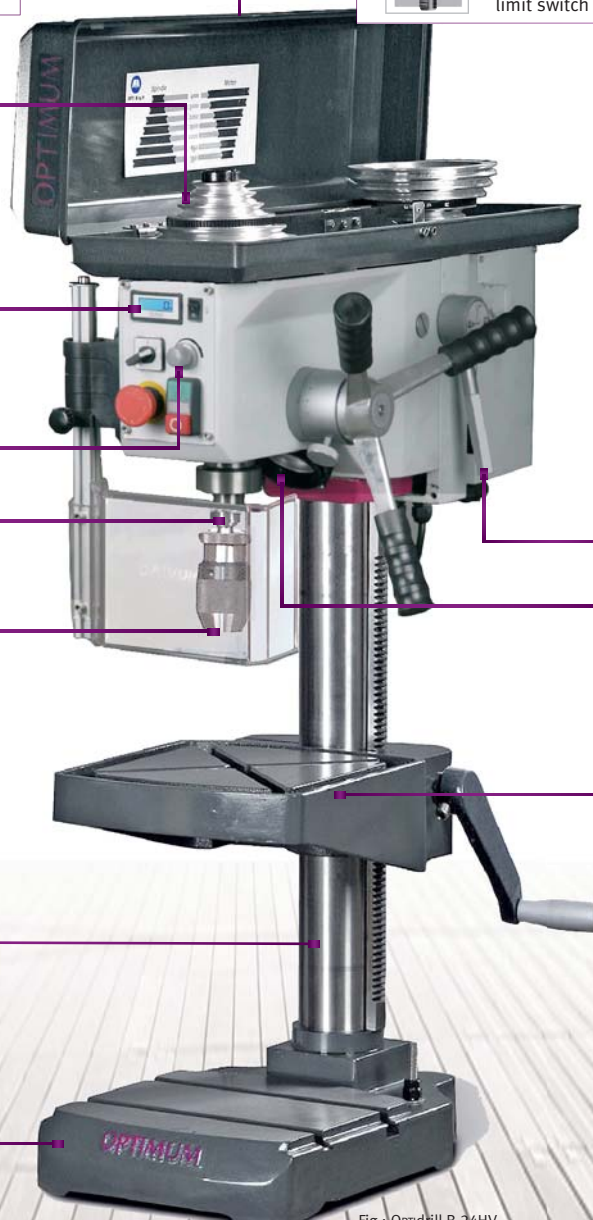


Fig.: Opndrill B 24HV

The drilling machines (with frequency converter) correspond to the standard EN 55011: 2011-04 class C2 - (only use in industrial areas)

Technical data and accessories

Model	B 16HV	B 24HV	B 28HV	B 34HV
Item No	3020218	3020245	3020285	3020335
Machine data				
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Total connected load	1.5 kW	1.5 kW	1.5 kW	2.2 kW
Drilling capacity				
Drilling capacity in steel (S235JR)	Ø 16 mm	Ø 24 mm	Ø 28 mm	Ø 34 mm
Continuous drilling cap. steel	Ø 13 mm	Ø 20 mm	Ø 24 mm	Ø 26 mm
Spindle seat				
Spindle stroke	65 mm	85 mm	105 mm	160 mm
Spindle seat	MT 2	MT 2	MT 3	MT 4
Throat depth	130 mm	165 mm	200 mm	285 mm
Speeds				
Spindle speeds	95 - 6'000 min ⁻¹	100 - 5'950 min ⁻¹	35 - 5'600 min ⁻¹	40 - 5'000 min ⁻¹
Number of steps	5 steps Electr. adjustable speed	4 steps Electr. adjustable speed	12 steps Electr. adjustable speed	9 steps Electr. adjustable speed
Drilling table				
Table work surface length x width	230 x 245 mm	280 x 300 mm	340 x 360 mm	420 x 400 mm
T-slot size	12 mm	14 mm	14 mm	14 mm
Rotatable drilling table	360°	360°	360°	360°
Distance spindle - table	max. 370 mm	max. 515 mm	max. 860 mm	max. 790 mm
Stand work surface L x W	200 x 240 mm	280 x 260 mm	320 x 320 mm	390 x 390 mm
Distance spindle - stand	max. 495 mm	max. 681 mm	max. 1'275 mm	max. 1'275 mm
Dimensions				
Column diameter	Ø 60 mm	Ø 80 mm	Ø 92 mm	Ø 115 mm
Length x width x height	540 x 370 x 850 mm	665 x 434 x 998 mm	701 x 474 x 1'755 mm	918 x 595 x 1'930 mm
Total weight	64 kg	96 kg	166 kg	275 kg
Standard equipment				
	OPTIMUM quality quick-action drill chuck (1 - 13 mm)	OPTIMUM quality quick-action drill chuck (1 - 16 mm)	OPTIMUM quality quick-action drill chuck (1 - 16 mm)	OPTIMUM quality quick-action drill chuck (1 - 16 mm)
	Morse taper MT 2	Morse taper MT 2	Morse taper MT 3	Morse taper MT 4
	T-slots	T-slots	T-slots	T-slots
Transportation packaging flat rate				
	-	-	TPFR 1	TPFR 1

Accessories OPTIDRILL B 16HV / B 24HV	Item No	
Direct quick-action drill chuck:		
MT 2 / 1 - 16 mm	3050571	
MT 2 / 1 - 13 mm	3050572	
Morse taper MT 2 - B16	3050659	
Twist drill kit coated with titanium 13 mm	3051010	
Twist drill HSS / MT 2	3051002	
Clamping tool kit SPW 10	3352016	

Accessories OPTIDRILL B 28HV	Item No	
Direct quick-action drill chuck MT 3	3050573	
Reducing bushes MT 3 - MT 2	3050663	
Morse taper MT 3 - B16	3050660	
Twist drill kit coated with titanium 13 mm	3051010	
Twist drill HSS / MT 3	3051003	
Clamping tool kit SPW 12	3352017	
Tapping chuck M5-M12	3352042	

Machine vices	Item No	
BSI 100	3000210	
BSI 140	3000214	
BSI-Q 100	3000230	
BSI-Q 140	3000234	



Accessories OPTIDRILL B 34HV	Item No	
Direct quick-action drill chuck MT 4/1-16 mm	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium	3051010	
Clamping tool kit SPW 12	3352017	
Tapping chuck M5-M12	3352042	

Please find further information on „Accessories for drilling machines“ on page 47

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Bench drills and upright drilling machines with infinitely variable mechanical gearbox

Convincing arguments: quality, efficiency and price

- Smooth running and powerful electrical motor
- Long, ergonomic aluminium die-cast spindle sleeve lever made of one piece with Softgrip handles (DH 24BV)
- Spindle sleeve lever made of steel (DH 28BV/ DH 34BV)
- Base plate usable as a working surface for extra high workpieces due to the pivoting the drilling table away
- Right-hand/left-hand rotation
- 2 speed stages

- V-belt cover with safety switch
- Easy tool change due to integrated drill drift
- Easy tool change due to integrated drill drift
- Digital depth gauge
- Digital depth gauge
- Intermediate gearbox - so a far higher torque is reached



Info „Thermidril“ on page 51

VARIO DRIVE



Digital speed display

- Easy-to-read
- Integrated in the housing

True running accuracy

- Guaranteed ≤ 0.015 mm measured in the drilling spindle

Chuck guard

- Best possible protection of the user
- Height-adjustable
- Micro switch



Fig.: OPTIdrill DH 24BV



Fig.: OPTIdrill DH 40BV

Infinitely variable mechanical gearbox

- Extremely reliable due to manual speed regulation
- Powerful smooth running
- Durable wide groove belt
- Speed modification while the motor is running
- Permanently optimum efficiency factor of the motor
- New at DH 40BV- with intermediate gearbox



Machine luminaire

- Integrated in the drill head
- Halogen lamp

Drilling spindle

- Precision ball bearing
- High-quality quick-action drill chuck as standard

Drilling table

- Precisely worked
- Transversally running T-slots
- turnable by 360°

Casting column

- Thick-walled
- High power absorption and stability

Base plate

- Solid
- Largely dimensioned
- Heavily ribbed at the rear side

Technical data and accessories

NEW

Model	DH 24BV	DH 28BV	DH 34BV	DH 40BV
Item No	3020420	3020430	3020440	3020450
Machine data				
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	0.85 / 1.5 kW	0.85 / 1.5 kW	1.5 / 2.2 kW	1.5 / 2.2 kW
Drilling capacity				
Drilling capacity in steel (S235JR)	Ø 24 mm	Ø 28 mm	Ø 34 mm	Ø 40 mm
Continuous drilling capacity steel	Ø 20 mm	Ø 24 mm	Ø 26 mm	Ø 32 mm
Spindle seat				
Spindle stroke	85 mm	105 mm	160 mm	160 mm
Spindle seat	MT 2	MT 3	MT 4	MT 4
Throat depth	165 mm	200 mm	285 mm	285 mm
Speeds				
Spindle speeds 2 stages motor, manually	300 - 4'000 min ⁻¹	300 - 4'000 min ⁻¹	300 - 4'000 min ⁻¹	150 - 2'000 min ⁻¹
Drilling table				
Table work surface L x W	280 x 300mm	340 x 360 mm	420 x 400 mm	420 x 400 mm
T-slot size	14 mm	14 mm	14 mm	14 mm
Rotatable drilling table	360°	360°	360°	360°
Distance spindle - table	max. 515 mm	max. 860 mm	max. 790 mm	max. 790 mm
Distance spindle - stand	max. 681 mm	max. 1'275 mm	max. 1'025 mm	max. 1'025 mm
Stand work surface L x W	280 x 260 mm	320 x 320 mm	390 x 390 mm	390 x 420 mm
Dimensions				
Column diameter	Ø 80 mm	Ø 92 mm	Ø 115 mm	Ø 115 mm
Length x width x height	665 x 434 x 1'000 mm	701 x 474 x 1'780 mm	918 x 595 x 1'960 mm	975 x 600 x 2'120 mm
Total weight	115 kg	152 kg	270 kg	275 kg
Standard equipment				
	OPTIMUM quality quick-action drill chuck (1 - 16 mm) Morse taper MT 2 T-slots	OPTIMUM quality quick-action drill chuck (1 - 16 mm) Morse taper MT 3 T-slots	OPTIMUM quality quick-action drill chuck (1 - 16 mm) Morse taper MT 4 T-slots	OPTIMUM quality quick-action drill chuck (1 - 16 mm) Morse taper MT 4 T-slots
Transportation packaging flat rate				
	-	TPFR 1	TPFR 1	TPFR 1

Accessories OPTIdrill DH 24BV	Item No	
Direct quick-action drill chuck:		
MT 2/ 1 - 16 mm	3050571	
MT 2/ 1 - 13 mm	3050572	
Morse taper MT 2 - B16	3050659	
Twist drill kit coated with titanium	3051010	
Twist drill HSS / MT 2	3051002	
Clamping tool kit SPW 10	3352016	
Universal coolant equipment 230 V	3352002	

Accessories OPTIdrill DH 28BV	Item No	
Direct quick-action drill chuck MT 3	3050573	
Reducing bushes MT 3 - MT 2	3050663	
Morse taper MT 3 - B16	3050660	
Twist drill kit coated with titanium	3051010	
Twist drill HSS / MT 3	3051003	
Clamping tool kit SPW 12	3352017	
Universal coolant equipment 400 V	3352001	
Tapping chuck M5-M12	3352042	

Machine vices	Item No	
BSI 100	3000210	
BSI 140	3000214	
BSI-Q 100	3000230	
BSI-Q 140	3000234	

Accessories OPTIdrill DH 34BV / DH 40BV	Item No	
Direct quick-action drill chuck MT 4	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium	3051010	
Clamping tool kit SPW 12	3352017	
Tapping chuck M5-M12	3352042	



Fig.: BSI



Fig.: BSI-Q

Please find further information on
„Accessories for drilling machines“ on page 47

Upright drilling machine with powerful OPTIMUM Brushless drive, electronically adjustable speed

Convincing arguments: quality, efficiency and price

- Smooth running and powerful DC drive with excellent control characteristics
- High running smoothness thanks to ground multi-toothed follower
- Vario Speed (4 belt stages with electronically adjustable speed)
- Best power transmission due to aluminium belt pulleys in connection with GATES 7 M industrial V-belts
- Emergency-stop push button

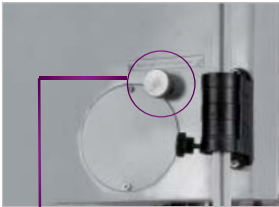
- Drilling spindle with precision ball bearings
- Right-hand/left-hand rotation
- Triple sleeve lever made of steel
- Adjustable drilling depth stop



Info „Thermadrill“ on page 51

V-belt covering

- with safety switch



Spindle locking with integrated drill drift:

- for a simple tool change

Control panel

- Digital speed display
- Emergency-stop push button
- Selector switch operating mode/rotating direction
- Digital depth gauge, accuracy of the display 0.01 mm

Chuck guard

- Best possible protection of the user
- Height-adjustable
- Micro switch

Powerful Brushless drive

- Particularly smooth running
- High power output
- Nearly constant torque over the entire speed range



Quick-action belt clamping of the belt

- Quick-action belt clamping of the belt via eccentric



Machine luminaire

- Integrated in the drill head
- Halogen lamp

Casting column

- Thick-walled
- For high power absorption and stability

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side
- Double clamped

Chip filter

- cleans the coolant from rough components
- according to the machine directive

Coolant equipment

- Coolant tank integrated in the base plate
- Tank capacity of coolant tank 4.5 litres

Base plate

- Usable as a working surface for extra high workpieces due to the rotatable drilling table
- Solid
- Precisely machined surface

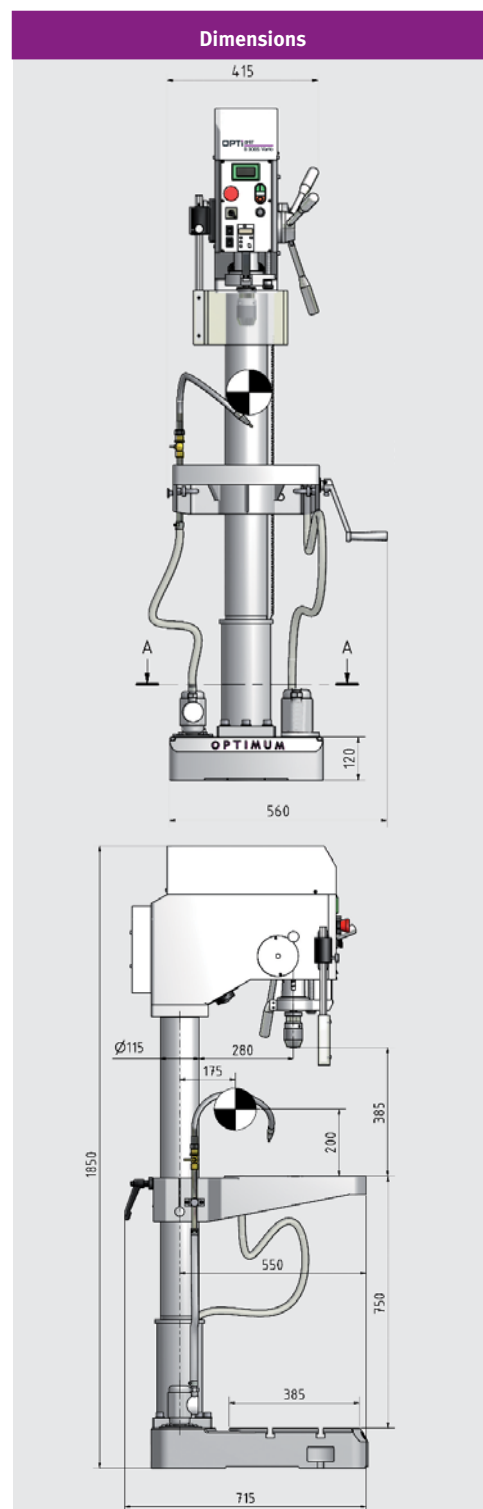


Fig.: OPTIdrill B 30BS Vario

The drill (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in industrial areas)

Technical data and dimensions

Model	
Item No	3021303
Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Total connected load	2.2 kW
Motor coolant pump	40 W
Drilling capacity	
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling cap. steel (S235JR)	Ø 28 mm
Thread cutting in steel (S235JR)	M16
Spindle seat	
Spindle stroke	125 mm
Spindle seat	MT 3
Throat depth	285 mm
Speeds	
Spindle speeds	30 - 3'800 min ⁻¹
Number of steps	4 steps, electrically adjustable speed
Drilling table	
Table work surface length x width	400 x 500 mm
T-slot size	14 mm
Rotatable drilling table	360°
Distance spindle - table	max. 780 mm
Distance spindle - stand	max. 1'230 mm
Stand work surface L x W	270 x 390 mm
Dimensions	
Column diameter	Ø 115 mm
Length x width x height	715 x 560 x 1'850 mm
Total weight	280 kg
Standard equipment	
Quick-action drill chuck 1 - 16 mm B16 Morse taper MT 3 - B16 T-slots	
Transportation packaging flat rate	
TVP 1	



Operating mode "Threading"

- Motor is starting up automatically after moving the lever
- Stops again in the initial position
- It is not necessary to actuate the push button start and stop repeatedly for repeated drilling tasks

Operating mode "automatic"

- The engine is being activated by moving the grip downward
- The direction of rotation is changed by limit switch on the adjustable drilling depth stop

• In order to optimize the drilling capacity - additional speed level

Speed step	1	2	3	4
Speed	30 - 300 min ⁻¹	120 - 1'200 min ⁻¹	240 - 2'400 min ⁻¹	390 - 3'800 min ⁻¹
Torque	100 Nm	25 Nm	13 Nm	6 Nm

Bench drills and upright drilling machines with gear

Convincing arguments: quality, efficiency and price

- High running smoothness thanks to ground multi-toothed follower
- High true running accuracy due to hardened and ground main spindle
- Wide speed range
- Heavy, solid cast iron construction
- Adjustable drilling depth stop with millimetre scale
- Low maintenance gear with grease lubrication

OPTIdrill DH 32GS

- Threading function
- Automatic spindle sleeve feed
- Coolant pump
- Optional foot switch for operating the thread cutting function and to switch right-left



Info „Thermdrill“ on page 51

Gear

- 8 gear stage
- DH 32GS: 75 - 2'000 min⁻¹
- DH26GT/28GS: 75 - 2'900 min⁻¹



Integrated drill drift

- Easy tool change due to ejection mechanism

OPTIdrill DH 32GS

Automatic spindle sleeve feed



- For deep drilling or pocket hole drilling, the coupler of the automatic spindle sleeve feed can be opened or closed at any time by actuating the spindle feed switch

Right-hand/left-hand rotation

Machine luminaire

- Integrated in the drill head
- Halogen lamp

Chuck guard

- Best possible protection of the user
- Height-adjustable
- Micro switch

Casting column

- Thick-walled
- For high power absorption and stability

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side

Coolant equipment

Chip filter

- according to the machine directive

Optional foot switch for DH 32GS

Functions:

- Thread cutting
- Switching from right-hand/left rotation

Item No 3050032



Fig.: OPTIdrill DH 26GT with optional drill chuck

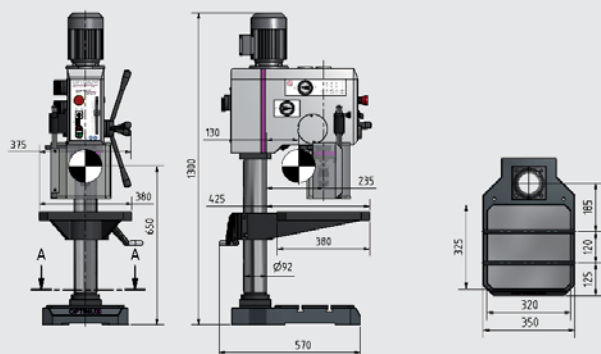


Fig.: OPTIdrill DH 32GS with optional drill chuck

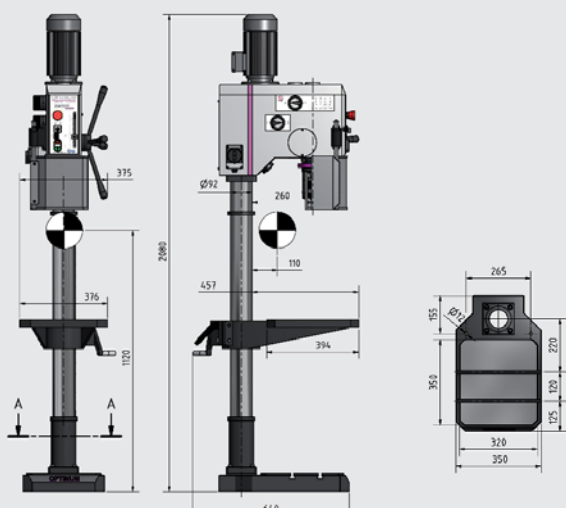
Technical data, dimensions and accessories

Model	DH 26GT	DH 28GS	DH 32GS
Item No	3034220	3034230	3034240
Machine data			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected load	1.1 / 1.5 kW	1.1 / 1.5 kW	1.5 / 2.2 kW
Drilling capacity			
Drilling capacity in steel (S235JR)	Ø 26 mm	Ø 28 mm	Ø 32 mm
Continuous drilling capacity steel (S235JR)	Ø 24 mm	Ø 25 mm	Ø 29 mm
Spindle seat			
Spindle stroke	127 mm	127 mm	125 mm
Spindle seat	MT 3	MT 3	MT 4
Throat depth	235 mm	260 mm	285 mm
Automatic spindle sleeve feed	-	-	0.1 / 0.15 / 0.2 mm
Speeds			
Spindle speeds, 8 steps	75 - 2,900 min ⁻¹	75 - 2,900 min ⁻¹	75 - 2,000 min ⁻¹
Drilling table			
Table work surface length x width	380 x 380 mm	376 x 394 mm	400 x 420 mm
T-slot size	14 mm	14 mm	14 mm
Rotatable drilling table	360°	360°	360°
Distance spindle - table	max. 450 mm	max. 875 mm	max. 820 mm
Distance spindle - stand	max. 610 mm	max. 1'200 mm	max. 1'280 mm
Stand work surface length x width	350 x 322 mm	350 x 356 mm	420 x 644 mm
Dimensions			
Column diameter	Ø 92 mm	Ø 92 mm	Ø 115 mm
Dimensions	600 x 380 x 1'300mm	670 x 550 x 2'080 mm	725 x 450 x 2'200 mm
Total weight	158 kg	175 kg	312 kg
Transportation packaging flat rate			
	-	TPFR 1	TPFR 1

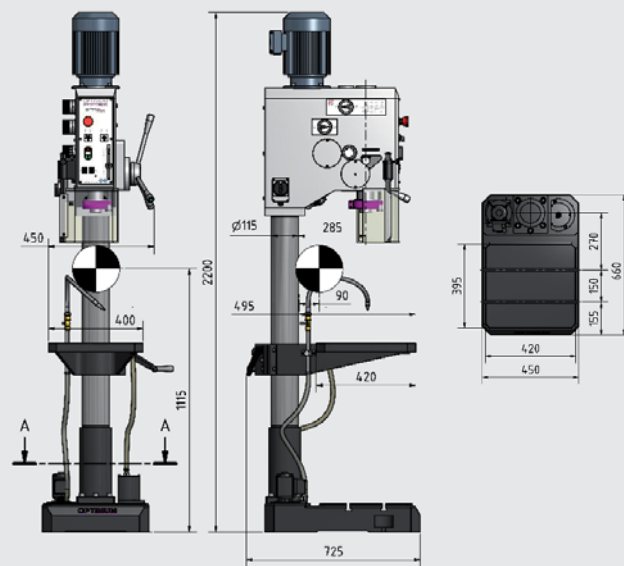
Dimensions DH 26GT



Dimensions DH 28GS



Dimensions DH 32GS



Standard equipment

- Adapter MT 3-B16 (DH 26GT/28GS)
- Adapter MT 4-B16 (DH 32GS)

„Accessories for drilling machines“ on page 47

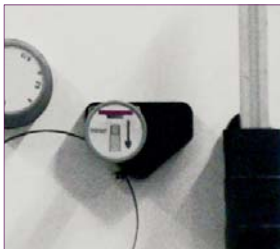
Upright drilling machines with gear and infinitely variable speed control

Convincing arguments: quality, efficiency and price

- High running smoothness thanks to ground multi-toothed follower
- High true running accuracy due to hardened and ground main spindle
- Wide speed range
- Heavy, solid cast iron construction
- Adjustable drilling depth stop with millimetre scale
- Low maintenance gear with grease lubrication
- Threading function
- Optional threading function with foot switch
- Automatic spindle sleeve feed
- High power of the coolant pump and chip filter
- Torque in the lowest gear up to 200 Nm



Info „Thermdrill“ on page 51



Integrated drill drift

- Easy tool change due to ejection mechanism



Automatic spindle sleeve feed

- For deep drilling or pocket hole drilling, the coupler of the automatic spindle sleeve feed can be opened or closed at any time by actuating the spindle feed switch

Right-hand/left-hand rotation

Machine luminaire

- Integrated in the drill head
- Halogen lamp

Chuck guard

- Best possible protection of the user
- Height-adjustable
- Micro switch

Casting column

- Thick-walled
- For high power absorption and stability

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side

Coolant equipment

Chip filter

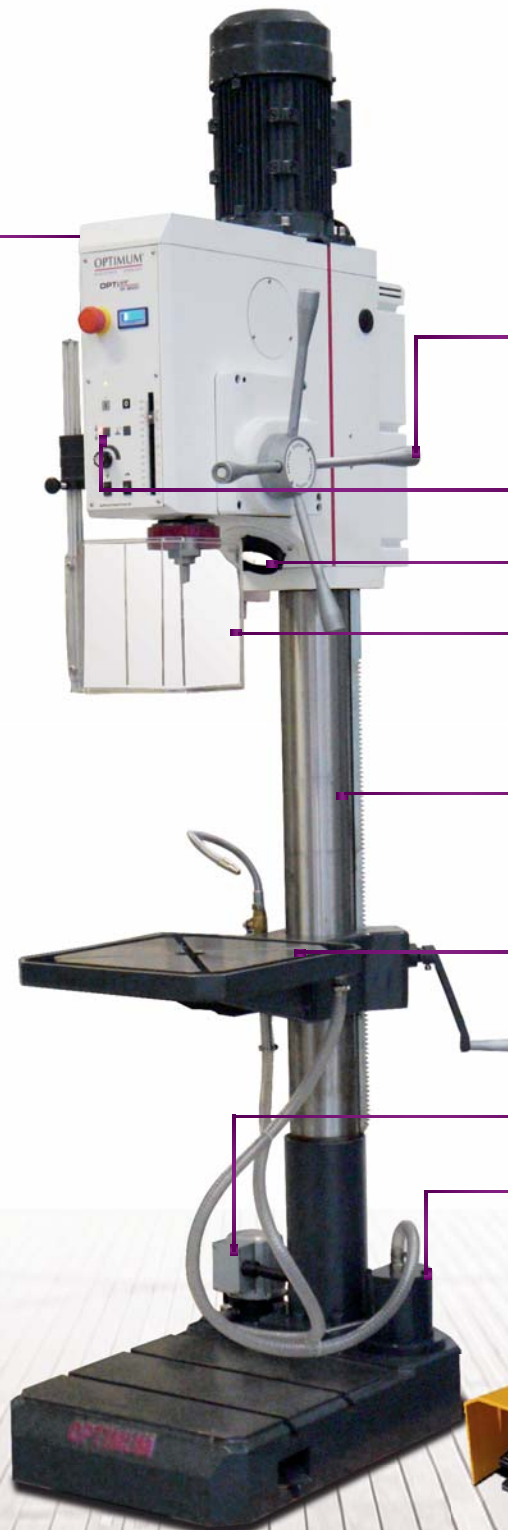
- according to the machine directive

Optional foot switch

Functions:

- Thread cutting
- Switching from right-hand/left rotation

Item No 3050032



Front panel

- User-friendly Softkey-Panel splashproof and glare free
- Digital speed display easy to read

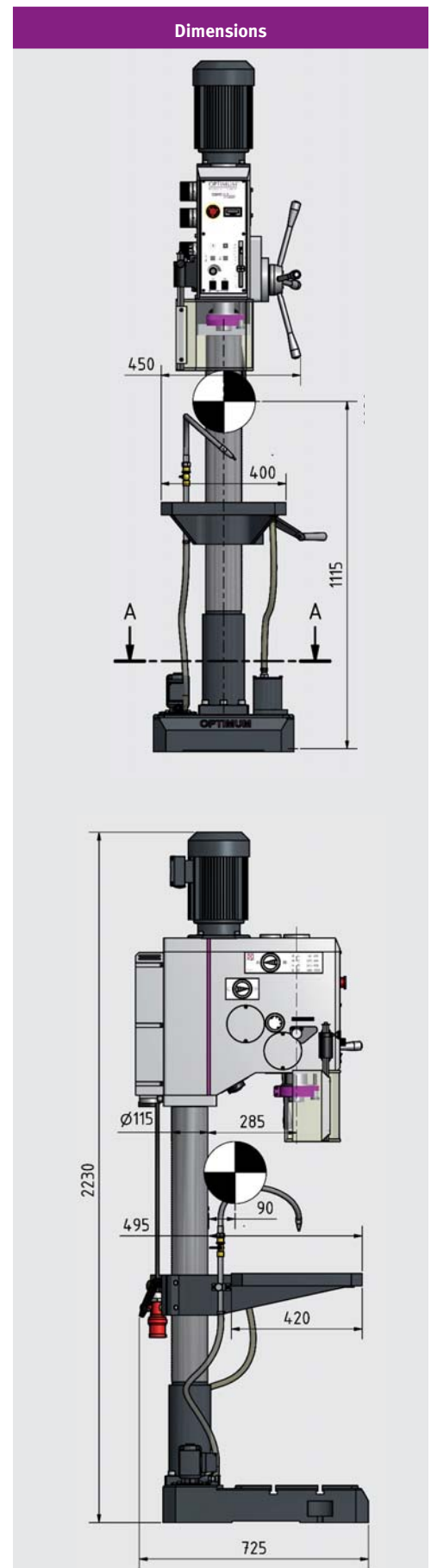
Technical data, dimensions and accessories

Model	DH 32GSV
Item No	3034245
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected load	2.2 kW
Motor coolant pump	100 watts
Drilling capacity	
Drilling capacity in steel (S235JR)	Ø 32 mm
Continuous drilling cap. steel	Ø 29 mm
Spindle seat	
Spindle stroke	100 mm
Spindle seat	MT 4
Throat depth	285 mm
Automatic spindle sleeve feed	0.1 / 0.15 / 0.2 mm
Speeds	
Spindle speeds	40 - 3'000 min ⁻¹
Number of steps	4 steps
Drilling table	
Table work surface length x width	400 x 420 mm
T-slot size	14 mm
Rotatable drilling table	360°
Distance spindle - table	max. 820 mm
Distance spindle - stand	max. 1'280 mm
Stand work surface length x width	420 x 480 mm
Dimensions	
Column diameter	Ø 115 mm
Dimensions	725 x 450 x 2'230 mm
Total weight	302 kg
Standard equipment	
	Adapter MT 4-B16
Transportation packaging flat rate	
	TPFR 1

Accessories	Item No	
Quick-action drill chuck MT 4/1-16 mm	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium 13mm	3051010	
Clamping tool kit SPW 12	3352017	
Tapping chuck M5-M12	3352042	



Machine vices	Item No	
MSO 125	3000125	
MSO 150	3000150	
BMS 150	3000015	
BMS 200	3000020	
BSI 140	3000214	
BSI 200	3000220	



„Accessories for drilling machines“ on page 47

Universal column gear drilling machines with gearbox and 12 speeds. B 40 PTE additionally equipped with automatic feed and slewable drilling table

Convincing arguments: quality, efficiency and price

- Heavy, solid cast iron construction
- Very smooth running due to ground oil-quenched gear wheels
- Large speed range from 95 - 3'200 min⁻¹ due to 12 switchable speeds
- Two-stage quality electrical motor
- Coupling to switch-over from manual rough feed to manual fine feed

Odrill B 40 PTE

- Automatic spindle sleeve feed
- Drilling table horizontally slewable by 360°



Fig.: Odrill B 40E

Base plate

- Usable as a working surface for extra high workpieces due to the rotatable drilling table
- Solid
- Precisely machined surface



Drill head height adjustment

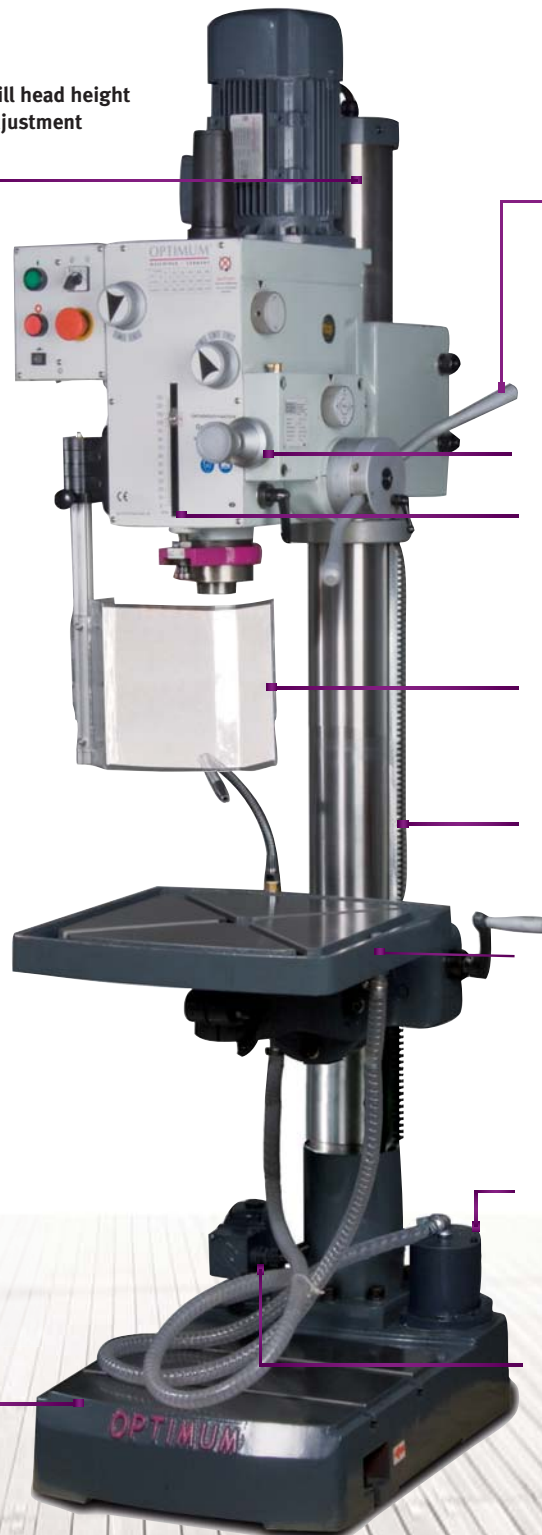


Fig.: Odrill B 40PTE

OPTI drill B 40PTE Automatic spindle sleeve feed

- For deep drilling or pocket hole drilling, the coupler of the automatic spindle sleeve feed can be opened or closed at any time by actuating the spindle feed switch

Sleeve infeed

- via handwheel

Drill depth stop

- Millimetre scale
- adjustable

Chuck guard

- for best possible protection of the user
- Height-adjustable
- Micro switch

Casting column

- Thick-walled
- For high power absorption and stability

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side
- Double clamped

Chip filter

- cleans the coolant from rough components
- according to the machine directive

Coolant equipment

- Coolant tank integrated in the base plate

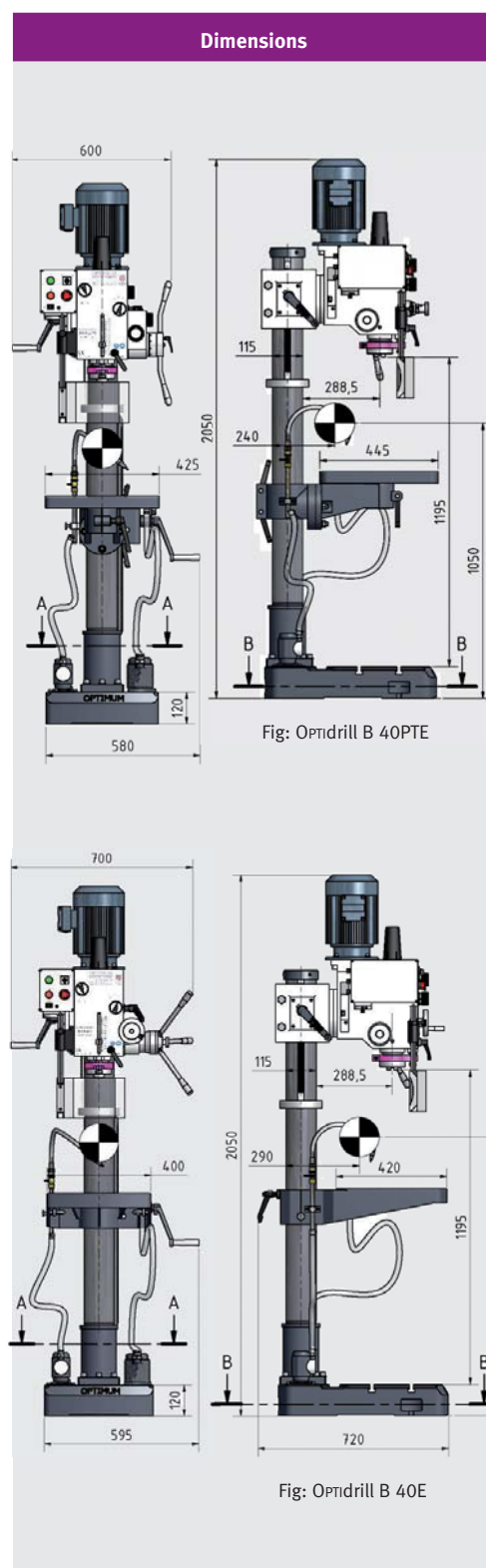
Technical data, dimensions and accessories

Model	B 40E		B 40PTE	
Item No	3034340		3034345	
Machine data				
Electrical connection	400 V / 3 Ph~50 Hz			
Total connected load	1.1 / 1.5 kW			
Motor coolant pump	40 W			
Drilling capacity				
Drilling capacity in steel (S235JR)			Ø 32 mm	
Continuous drilling cap. steel			Ø 25 mm	
Spindle seat				
Spindle stroke			120 mm	
Spindle sleeve diameter			75 mm	
Spindle seat			MT 4	
Throat depth			285 mm	
Autom. spindle sleeve feed	-		0.1/0.18/0.26 mm/rev	
Drill head	rotatable by 360° sleuable by 45°			
Speeds				
Spindle speeds	95 - 3'200 min ⁻¹			
Number of steps	2 x 6 steps			
Drilling table				
Drilling table size length x width	425 x 420 mm		400 x 445 mm	
T-slot size			14 mm	
Rotatable drilling table			360°	
Sleuable drilling table	-		180°	
Distance spindle - table	max. 855 mm			
Distance spindle - stand	max. 1'215 mm			
Stand work surface L x W	385 x 385 mm			
Dimensions				
Column diameter	Ø 115 mm			
Length x width x height	700 x 600 x 2'050 mm		720 x 700 x 2'050 mm	
Total weight	288 kg		302 kg	
Standard equipment	Quick-action drill chuck (1 - 16 mm) Operating tool			
Transportation packaging flat rate	TPFR 1			

Accessories	Item No	
Quick-action drill chuck MT 4/1-16 mm	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium 13 mm	3051010	
Clamping tool kit SPW 12	3352017	
Tapping chuck M5-M12	3352042	



Machine vices	Item No	
MSO 125	3000125	
MSO 150	3000150	
BMS 150	3000015	
BMS 200	3000020	
BSI 140	3000214	
BSI 200	3000220	



Please find further information on
„Accessories for drilling machines“ on page 47

Heavy geared upright drill with coolant system and threading mechanism. OPTIdrill B 40GSM additionally with automatic spindle sleeve feed

Convincing arguments: quality, efficiency and price

- Heavy, solid cast iron construction
- Automatic toothed wheel lubrication via oil pump
- Very smooth running due to ground oil-quenched gear wheels
- High true running accuracy due to hardened and ground main spindle
- Threading unit
- Lockable main switch and motor protection switch

Spindle speed

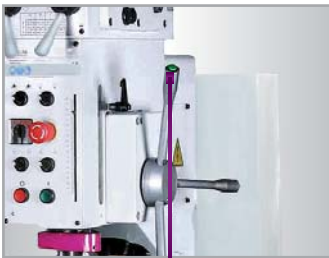
- 9 selectable speeds via gear shifting lever at the front of the drill head
- Two-stage driving motor
- 18 speeds 50 - 1'450 min⁻¹



Easy tool change due to integrated drill drift:

- Insert drill drift
- Press grip upwards
- The taper mandrel is pressed out of the drilling spindle

Spindle sleeve feed 2 steps, 0.1/0.2 mm/rev



OPTIdrill B 40GSM - electrical For deep drilling or pocket hole drilling, the coupler of the automatic spindle sleeve feed can be opened or closed at any time by actuating the spindle feed switch



OPTIdrill B 40GSP - manually



Control cabinet

- Clearly arranged structure
- Generously dimensioned
- Easy-to-attain

Drilling depth stop

- Adjustable using the millimetre scale

Right-hand/left-hand rotation

- when threading

Machine luminaire

- Integrated in the drill head

Casting column

- Thick-walled
- High power absorption
- Extremely robust

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side
- ± 90° Rotation of 360° through it's own axis and about the column

Chip filter

- cleans the coolant from rough components
- according to the machine directive

Coolant equipment

- Coolant tank integrated in the base plate
- Tank capacity 5 litres
- Delivery volume 2 l/min.

Base plate

- Solid
- Parallel running T-slots
- Precisely machined surface

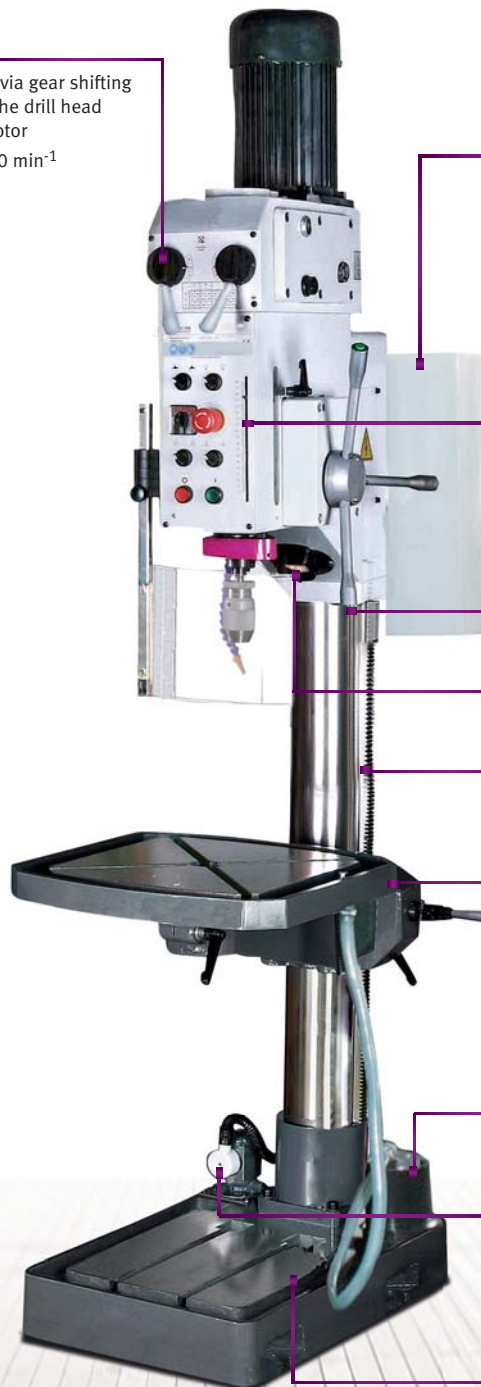


Fig.: OPTIdrill B 40GSM

Technical data, dimensions and accessories

Model	B 40GSP
Item No	3034403
Model	B 40GSM
Item No	3034400
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected load	1.5 kW
Motor coolant pump	40 W
Drilling capacity	
Drilling capacity in steel (S235JR)	Ø 35 mm
Continuous drilling cap. steel	Ø 30 mm
Thread cutting in steel (S235JR)	M 24
Spindle seat	
Spindle stroke	180 mm
Spindle seat	MT 4
Throat depth	350 mm
Spindle sleeve feed	2 steps, 0.1/0.2 mm/rev
Speeds	
Spindle speeds	50 - 1'450 min ⁻¹
Number of steps	18 steps
Drilling table	
Table work surface length x width	560 x 560 mm
T-slot size	18 mm
Drilling table slewable and rotatable	± 90°
Distance spindle - drilling table (max.)	780 mm
Load drilling table	250 kg
Distance spindle - stand	max. 1'320 mm
Stand work surface L x W	510 x 500 mm
Dimensions	
Column diameter	Ø 150 mm
Length x width x height	935 x 560 x 2'280 mm
Total weight	500 kg
Standard equipment	Quick-action drill chuck 1 - 16 mm Morse taper MT 4
Transportation packaging flat rate	TPFR 1

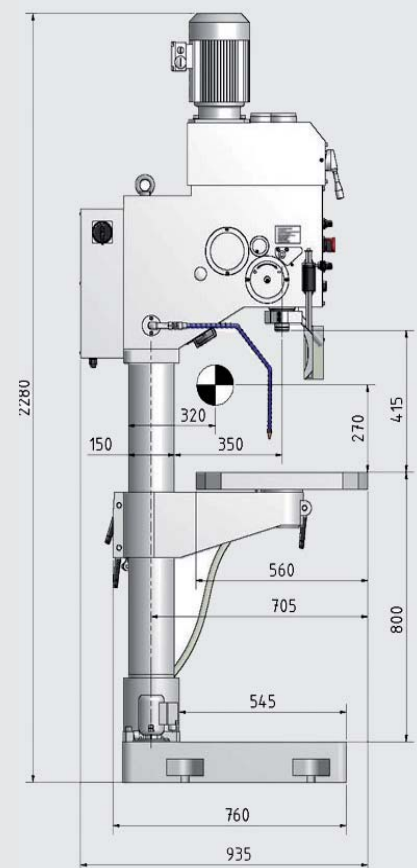
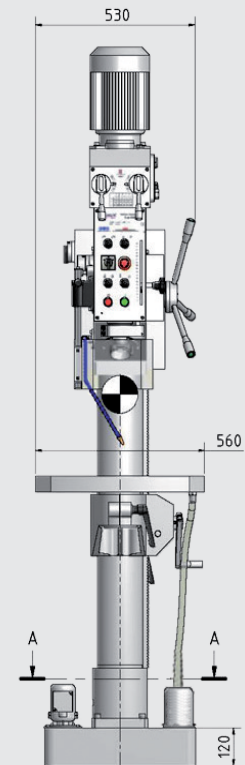
Accessories	Item No	
Quick-action drill chuck MT 4/1-16 mm	3050574	
Reducing bushes MT 4 - MT 3	3050664	
Morse taper MT 4 - B16	3050661	
Twist drill kit coated with titanium Ø 1-13 mm	3051010	
Clamping tool kit SPW 16	3352019	
Tapping chuck M5-M12	3352042	



Machine vices	Item No		
MSO 125	3000125		
MSO 150	3000150		
BMS 150	3000015		
BMS 200	3000020		
BSI 140	3000214		
BSI 200	3000220		



Dimensions



Please find further information on „Accessories for drilling machines“ on page 47

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Heavy gear drilling machine with coolant system and threading mechanism as well as automatic spindle sleeve feed

Convincing arguments: quality, efficiency and price

- Heavy, solid cast iron construction
- Very smooth running due to ground oil-quenched gear wheels
- High true running accuracy due to hardened and ground work spindle
- Two-stage driving motor

- Automatic toothed wheel lubrication via oil pump
- Threading unit
- Lockable main switch and motor protection switch
- Machine luminaire integrated in the drill head

Heavy, solid cast iron construction
950 kg
Smooth running and stable

Integrated drill drift

- Easy tool change due to ejection mechanism



Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side
- $\pm 90^\circ$ Rotation of 360° through its own axis and about the column



Base plate

- Usable as a working surface for extra high workpieces due to the rotatable drilling table
- Solid
- Parallel running T-slots
- Precisely machined surface

Automatic spindle sleeve feed



- For deep drilling or pocket hole drilling, the coupler of the automatic spindle sleeve feed can be opened or closed at any time by actuating the spindle feed switch

Spindle sleeve fine feed

- Via handwheel

Chuck guard

- Best possible protection of the user
- Height-adjustable
- Micro switch

Casting column

- Thick-walled
- High smooth running and stability
- Column diameter 200 mm

Table height adjustment

- Motor driven
- Traverse speed 450 mm/min.

Coolant equipment

- Coolant tank integrated in the base plate
- Tank capacity 5 litres
- Delivery volume 2 l/min.

Chip filter

- cleans the coolant from rough components
- according to the machine directive

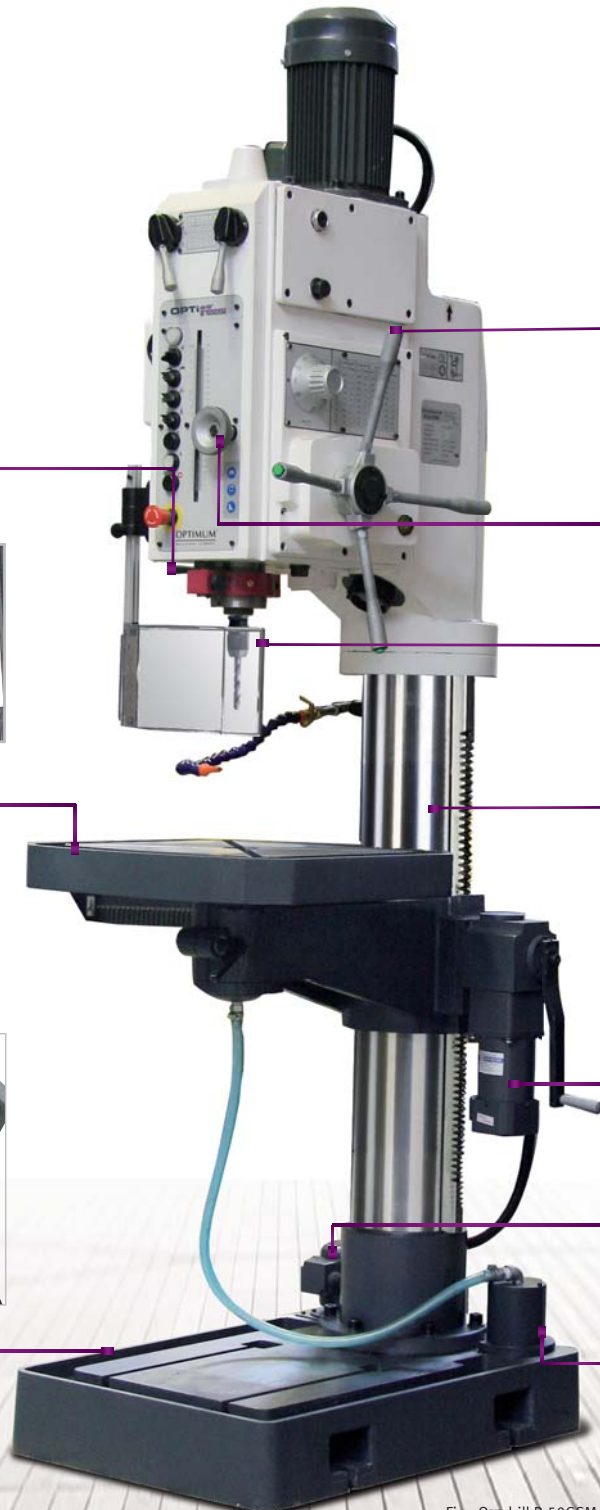
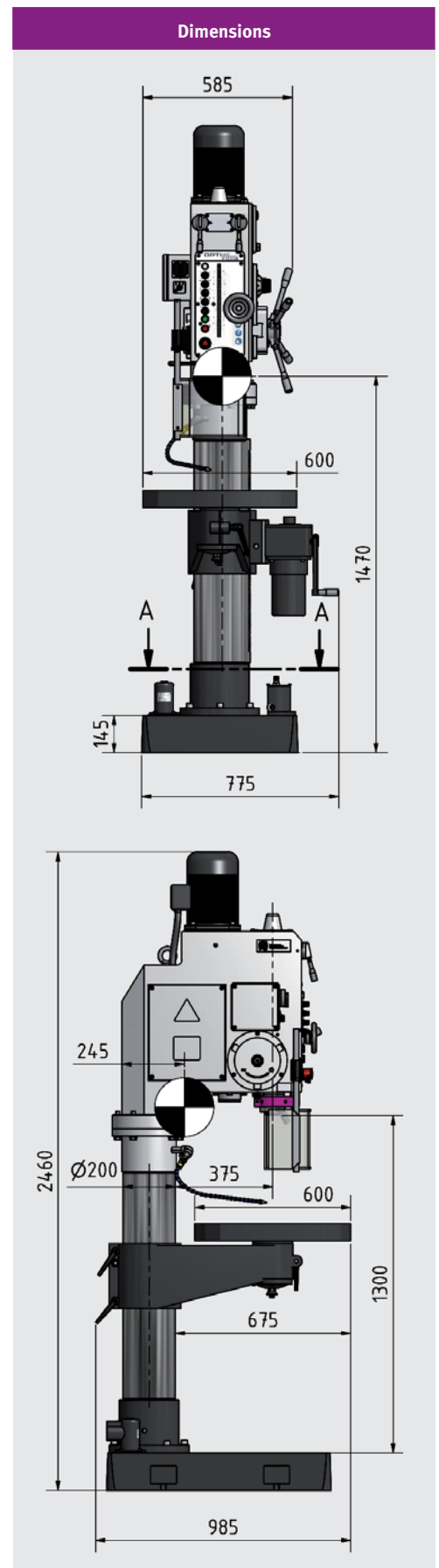


Fig.: OPTIdrill B 50GSM

Technical data, dimensions and accessories

Model	B 50GSM
Item No	3034500
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected load	3.0 / 2.4 kW
Motor coolant pump	40 W
Drilling capacity	
Drilling capacity in steel (S235JR)	Ø 50 mm
Continuous drilling cap. steel	Ø 45 mm
Thread cutting in steel (S235JR)	M 42
Spindle seat	
Spindle stroke	230 mm
Spindle seat	MT 4
Throat depth	375 mm
Autom. spindle sleeve feed	6 gear stages, 0.05-0.3 mm/rev
Speeds	
Spindle speeds	54 - 2'090 min ⁻¹
Number of steps	18 steps
Drilling table	
Table work surface length x width	600 x 600 mm
T-slot size	18 mm
Load drilling table	300kg
Sleuable and rotatable drilling table	± 90°
Distance spindle - table	max. 800 mm
Distance spindle - stand	max. 1'300mm
Stand work surface length x width	600 x 520 mm
Dimensions	
Column diameter	Ø 200 mm
Length x width x height	1'134 x 600 x 2'460 mm
Total weight	950 kg
Standard equipment	Quick-action drill chuck 1 - 16 mm Morse taper MT 4 T-slots
Transportation packaging flat rate	TPFR 1

Accessories	Item No	
Direct quick-action drill chuck MT 4/1-16 mm	3050574	
		
Reducing bushes MT 4 - MT 3	3050664	
Twist drill HSS incl. Morse taper MT 3	3051003	
Morse taper MT 4 - B16	3050661	
		
Clamping tool kit SPW 16	3352019	
Tapping chuck M5-M12	3352042	
		



Please find further information on „Accessories for drilling machines“ on page 47

Heavy PREMIUM gear drilling machine

Convincing arguments: quality, efficiency and price

• 3 Year OPTIMUM-warranty*

- High smooth running due to hardened and ground gearwheels
- Thick-walled, largely dimensioned cast column for high force absorption and stability
- High true running accuracy due to hardened and ground main spindle made of high quality steel

- High continuous drilling capacity
- Automatic drill drift
- Drill chuck protection with micro switch
- Threading function
- Electrical system made by European manufacturers
- Safety switching avoids unsafe start-up



- First quality finish
- Best quality
- High quality materials
- High functional safety
- Durable and stable value



Electrics

- made by European manufacturers
- Clearly arranged switch cabinet

Integrated drill drift

- Easy tool change

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Heavily ribbed at the rear side
- 360° turnable round the column



Spindle speed

- 8 selectable speeds via gear shifting lever

Machine luminaire

- Integrated in the drill head

Casting column

- Thick-walled
- High power absorption
- Extremely robust

Fig.: OPTIdrill DZ 25 with optional drill chuck and drill

Technical data, dimensions and accessories

Model	DZ 25
Item No	3041030
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Drive motor	0.8 / 1.2 kW
Motor coolant pump	60 watts
Drilling capacity	
Drilling capacity in steel (ST60 - E335)	Ø 25 mm
Continuous drilling capacity in steel	Ø 25 mm
Threading in steel (ST60 - E335)	M 22
Spindle seat	
Spindle stroke	120 mm
Spindle seat	MT 3
Throat depth	250 mm
Speeds	
Spindle speeds	65 - 3'060 min ⁻¹
Number of steps	8 steps
Drilling table	
Table work surface length x width	270 x 300 mm
T-slot size / distance / number	14 mm / 2 / 150 mm
Load drilling table	160 kg
Rotatable drilling table	360°
Distance spindle - table	min. 170 mm / max. 680 mm
Distance spindle - stand	max 1'185 mm
Dimensions	
Column diameter	Ø 100 mm
Length x width x height	600 x 805 x 2'025 mm
Total weight	260 kg
Transport surcharge	
	(TPZ600)



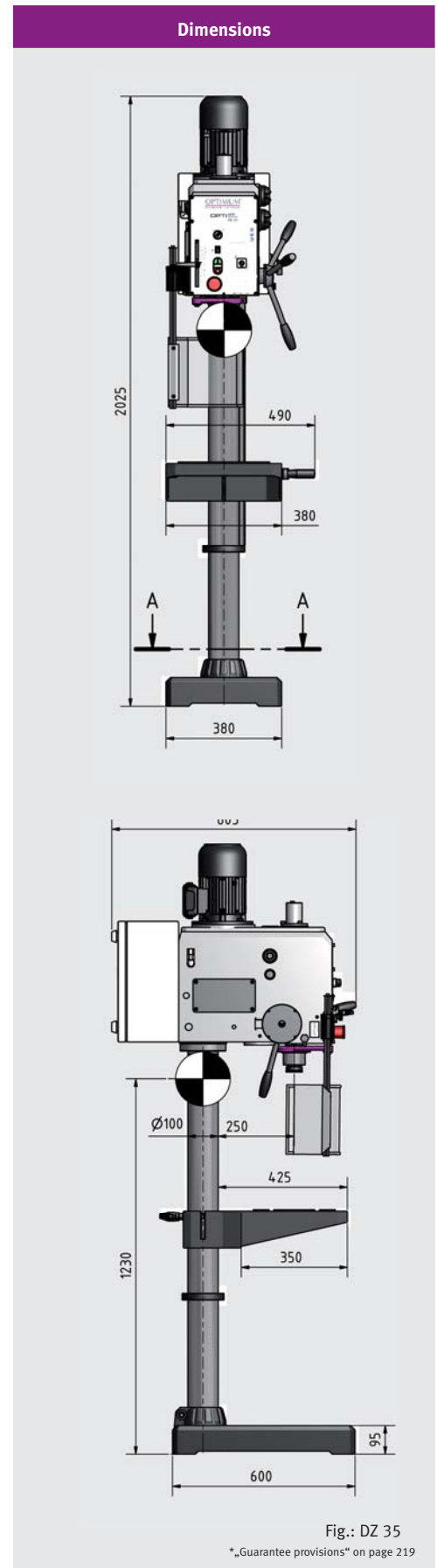
Accessories	Item No	
Direct quick-action drill chuck MT 3/0.3-16 mm	3050573	
Direct quick-action drill chuck MT 4 / 1-16 mm	3050574	
		
Reducing bushes MT 4 - MT 3	3050664	
Reducing bushes MT 3 - MT 2	3050663	
Twist drill HSS incl. Morse taper MT 3	3051003	
Morse taper MT 4 - B16	3050661	
Morse taper MT 3 - B16	3050660	
Clamping tool kit SPW 12	3352017	
Clamping tool kit SPW 14	3352018	
Tapping chuck M5-M12	3352042	
Machine vice BSI 140	3000214	
Machine vice BSI 200	3000220	
Machine vices BSI-Q 140	3000234	
Machine vices BSI-Q 200	3000240	
		

Fig.: BSI 200



Please find further information on
„Accessories for drilling machines“ on page 47

Heavy PREMIUM gear drilling machines

Convincing arguments: quality, efficiency and price

• 3 Year OPTIMUM-warranty*

- High smooth running due to hardened and ground gearwheels
- Thick-walled, largely dimensioned cast column for high force absorption and stability
- High true running accuracy due to hardened and ground main spindle made of high quality steel

- High continuous drilling capacity
- Automatic drill drift
- Drill chuck protection with micro switch
- Threading function
- Electrical system made by European manufacturers
- Safety switching avoids unsafe start-up
- Feed gear



- First quality finish
- Best quality
- High quality materials
- High functional safety
- Durable and stable value



Fig.: OPTIdrill DZ 35 with optional drill chuck and drill



Fig.: OPTIdrill DZ 50 with optional drill chuck and drill

Spindle speed

- 8 resp. 9 selectable speeds via gear shifting lever

Mechanical automatic feed

- Select the desired feed and engage the lever of the automatic feed.
- By reaching the adjusted depth stop the advance lever is disengaged again.

Integrated drill drift

- Easy tool change

Machine luminaire

- Integrated in the drill head

Casting column

- Thick-walled
- High power absorption
- Extremely robust

Drilling table

- Largely dimensioned
- Solid
- Precisely worked
- Heavily ribbed at the rear side
- 90° turnable around the own axis with scale
- 360° turnable round the column

Coolant equipment

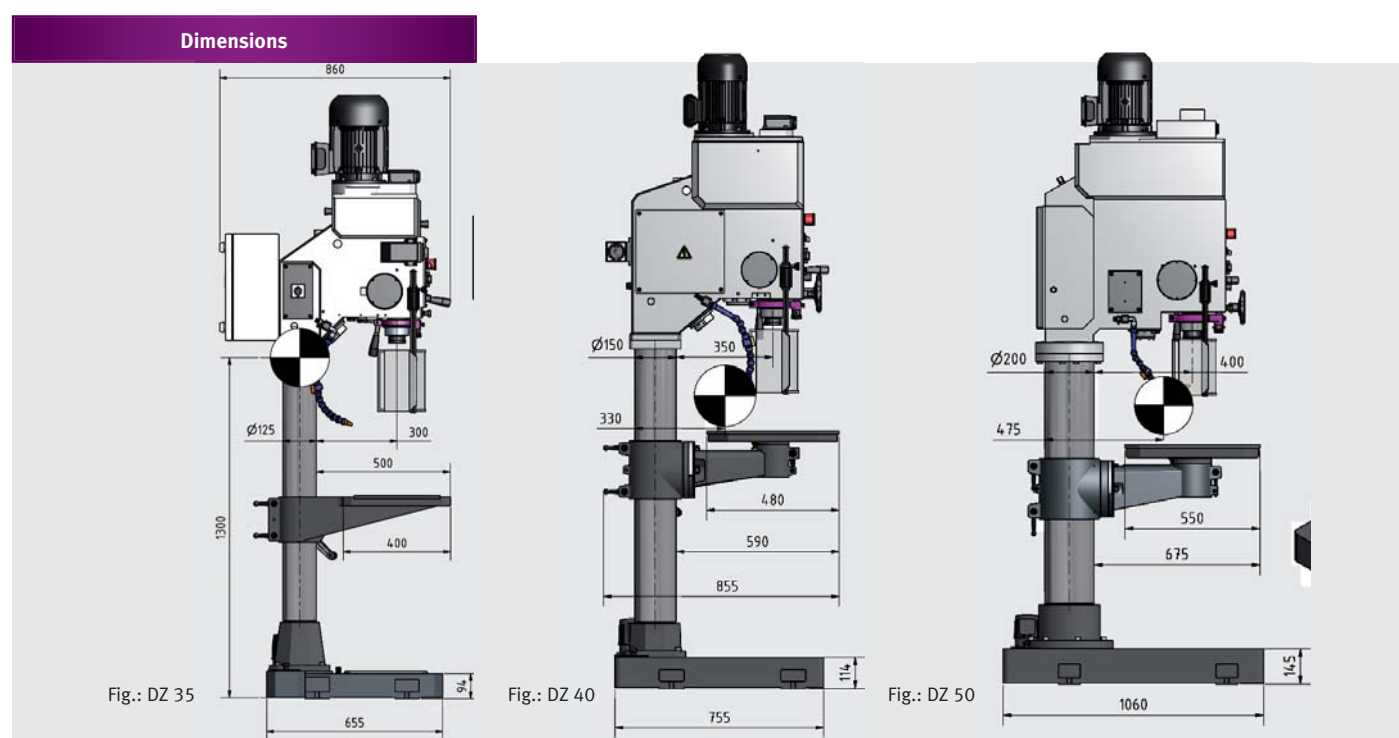
- Coolant tank integrated in the base plate

Base plate

- Solid
- 3 pcs. parallel running T-slots
- Precisely machined surface

Technical data, accessories and dimensions

Model	DZ 35	DZ 40	DZ 50
Item No	3041060	3041070	3041090
Machine data			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Drive motor	0.9 / 1.5 kW	1.5 kW	3 kW
Motor coolant pump	60 watts	60 watts	60 watts
Drilling capacity			
Drilling capacity in steel (ST60 - E335)	Ø 35 mm	Ø 40 mm	Ø 50 mm
Continuous drilling capacity in steel	Ø 35 mm	Ø 40 mm	Ø 50 mm
Threading in steel (ST60 - E335)	M 28	M 35	M 40
Spindle seat			
Spindle stroke	160 mm	180 mm	260 mm
Spindle seat	MT 4	MT 4	MT 4
Throat depth	300 mm	350 mm	400 mm
Automatic spindle sleeve feed	3 steps/ 0.1 - 0.3 mm/rev	3 steps/ 0.1 - 0.24 mm/rev	4 steps/ 0.08 - 0.35 mm/rev
Speeds			
Spindle speeds	75 - 2'100 min ⁻¹	93 - 1'420 min ⁻¹	45 - 1'115 min ⁻¹
Number of steps	8 steps	8 steps	9 steps
Drilling table			
Table work surface length x width	400 x 420 mm	480 x 480 mm	550 x 550 mm
T-slot size / number / distance	16 mm / 3/ 121 mm	16 mm / 3/ 125 mm	18 mm / 3/ 160 mm
Load drilling table	180 kg	200 kg	275 kg
Rotatable drilling table	360°	360°	360°
Distance spindle - table	min. 70 mm / max. 885 mm	min. 95 mm / max. 865 mm	min. 70 mm / max. 800 mm
Distance spindle - stand	max 1'245 mm	max. 1'201 mm	max. 1'270 mm
Stand work surface L x W	310 x 288 mm	356 x 370 mm	500 x 700 mm
T-slot size / number / distance	18 mm / 2/ 180 mm	16 / 2 / 220 mm	16 / 3 / 138 mm
Dimensions			
Column diameter	Ø 125 mm	Ø 150 mm	Ø 200 mm
Length x width x height	520 x 860 x 2'260 mm	820 x 565 x 2'300mm	1'060 x 615 x 2'590 mm
Total weight	317 kg	435 kg	850 kg
Transport surcharge			
	(TPZ600)	(TPZ600)	(TPZ1000)



*„Guarantee provisions“ on page 219

„Accessories for drilling machines“ on page 47

Compatibility overview of accessories for drilling machines

Accessories items for drilling																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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OPTIMUM Precision quick-action drill chuck

True running accuracy 0.06 mm

0 - 8 mm; B16	3050608	
0 - 10 mm; B16	3050610	
0 - 13 mm; B16	3050623	
1 - 16 mm; B16	3050626	



OPTIMUM Direct quick-action drill chuck

MT 2 1 - 16 mm; up to 6'000 min⁻¹	3050571	
MT 2 1 - 13 mm; up to 8'000 min⁻¹	3050572	
MK 2 1 - 16 mm; up to 6'000 min⁻¹	3050573	
MT 4 1 - 16 mm; up to 6'000 min⁻¹	3050574	



ROHM Quick action drill chuck

1 - 13 mm; B16	305 0656	
3 - 16 mm; B16	305 0657	



Cone drill drift

MSP 1 for MT 1 - MT 3	3050636	
MSP 2 for MT 4 - MT 6	3050637	



Reducing bushes

MT 3 - MT 2	3050663	
MT 4 - MT 3	3050664	
MT 4 - MT 2	3050665	



Morse taper

MT 2 - B16	3050659	
MT 3 - B16	3050660	
MT 4 - B16	3050661	
MT 5 - B16	3050675	
MT 6 - B16	3050676	



Extension bushings

MT 2 - MT 3	3050667	
MT 3 - MT 4	3050668	



Tapping chuck M5 - M12

3352042


- Integrated quick return, immediately effective when changing the feed direction
- Sliding clutch 4-stage adjustable
- With seat B16

Standard equipment:

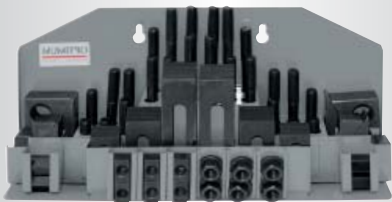
- 2 flexible collets
- 2 open-end wrenches
- 1 Allen key



Accessories for drilling machines


Twist drill kit	3051010	
<ul style="list-style-type: none"> • 25 pcs.; sizes 1 -13 mm • Coated with titanium • Higher service life and durability • More rapid working results • Lower wear • Metal box 		
		

Twist drill HSS incl. Morse taper		
<ul style="list-style-type: none"> • 9 pieces; Sizes 14,5/16/18/20/22/24/26/28/30 mm • Long durability • Good chip evacuation • Right hand cutting 		
MT 2	3051002	
MT 3	3051003	
		

Clamping tool kit SPW		
<ul style="list-style-type: none"> • 58 pieces, in practical tool holder • Metric threads • 24 pcs. draw-in bolts • 6 pcs. T-slots • 6 pcs. nuts • 4 pcs. elongation nuts • 6 pcs. step blocks • 12 pcs. step blocks 		
SPW 8	3352015	
• T-slots 10 mm; Draw bar thread M 8		
SPW 10	3352016	
• T-slots 12 mm; Draw bar thread M 10		
SPW 12	3352017	
• T-slots 14 mm; Draw bar thread M 12		
SPW 14	3352018	
• T-slots 16 mm; Draw bar thread M 14		
SPW 16	3352019	
• T-slots 18 mm; Draw bar thread M 16		
		

Universal coolant equipment		
<ul style="list-style-type: none"> • Delivery height max. 2.5 m • Delivery volume 8 l/min • Tank capacity 11 l • Tank size L x W x H: 370 x 245 x 170 mm • Complete including tank, flexible tube and hose • With switch-plug combination • Magnetic attachment of the coolant hose • For self-assembly 		
Universal coolant equipment 230 V/1 Ph	3352002	
Universal coolant equipment 400 V/3 Ph	3352001	
		

Coolant lubricant sprayer with magnetic MMC1	3356663	
<ul style="list-style-type: none"> • Foot size L x W x H: 62 x 50 x 55.5 mm • Magnetic stand holding force 75 kg • Flexible hose • Length of the coolant hose 500 mm 		
		

Coolant hoses with magnetic holder KMS 2	3356660	
<ul style="list-style-type: none"> • Two variable coolant hoses made of individual plastic elements • Not electro conductive • Magnetic stand holding force to 50 kg • Length of the coolant hoses 295 mm • Flexible and stable • Resistant against most solvents and chemicals • Universally applicable on all machine tools 		
		

End mill kit HSS

- Coated with titanium
- Higher hardness and stability with 2 - to 5-times longer durability
- Double cutting capacity
- Better workpiece surface
- With cylindrical shank and Weldon flats
- Type with 2 cutting edges for milling keyways and slots as well as cut-outs from the workpiece centre
- Vertical or lateral milling operations are possible
- Type with 4 cutting edges with 30 ° right-handed helix for good chip removal for normal to resistant materials
- Wooden box

12 pieces

3352113

- 6 milling cutters, short type · type with 2 cutting edges
DIN 1835 B (ø12x73, ø10 x 63, ø8 x 61, ø6 x 52, ø5 x 52, ø4 x 51 mm)
- 6 milling cutters, short type · type with 4 cutting edges.
DIN 1835 B (ø12 x 83, ø10 x 73, ø8 x 6, ø6 x 57, ø5 x 57, ø4 x 55 mm)

20 pieces

338 6200

- 10 milling cutters DIN 327 D · short type · 2 cutting edges
DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)
- 10 milling cutters DIN 844 B · short type · 4 cutting edges
DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)



LED - machine lamp 3-500

3351010

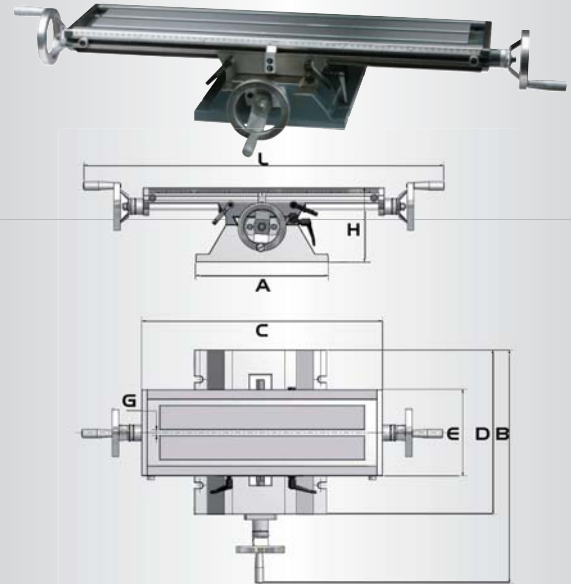
- Energy saving
- Durable LED lamp
- High positioning stability
- Coated articulated arm with a length of 500 mm
- Optimum mobility of the articulated arm
- Cable length 1.2 m
- Illumination temperature 4'000 - 4'500 K
- Protection class IP 65
- 24 V illuminant
- 9 watts / 230 V connection



Cross table KT

- Coolant channel
- Adjustable dovetail guide
- Adjustable handwheel scaling with a division of 0.05 mm

KT 120	3356595
KT 179	3356596
KT 180	3356591
KT 210	3356600



Technical data	KT 120	KT 179	KT 180	KT 210
A (width of stand)	222 mm	274 mm	274 mm	280 mm
D (length of stand)	280 mm	340 mm	340 mm	362 mm
C (table length)	400 mm	500 mm	700 mm	730 mm
E (table width)	120 mm	180 mm	180 mm	210 mm
G (t-slot size)	10 mm	12 mm	12 mm	14 mm
L x B x H (mm)	506 x 400 x 140	748 x 483 x 155	948 x 483 x 155	1'060 x 538 x 185
Net weight	22 kg	32 kg	49 kg	84 kg

Travels

X axis	220 mm	287 mm	480 mm	480 mm
Y axis	165 mm	167 mm	170 mm	210 mm
Load max.	40 kg	55 kg	55 kg	80 kg

Holding down clamp, kit of 2 pcs.

- Adjustable clamping height
- Brass plate under clamping arm protects the material against damages

Table groove 14 mm/M 12	3352031
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- L x W x H: 115 x 42 x 39 mm
- Height adjustment: 0 - 89 mm

Table groove 18 mm/M 16	3352032
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- L x W x H: 133 x 50 x 49 mm
- Height adjustment: 0 - 101 mm

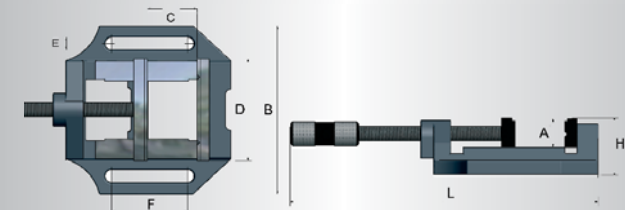


Machine vices

Machine vices MSO with prisms

- Smooth running
- Exact jaw guide, also at high axial load
- Spindle with rolled trapezoidal thread
- Many assembly options on the drilling table by oblong holes

MSO 75	3000075
MSO 100	3000100
MSO 125	3000125
MSO 150	3000150



Techn. data	A	C	D	E	F	L	B	H	kg
MSO 75 mm	28	55	75	12.5	55	270	130	52	2.3
MSO 100 mm	28	90	100	12.5	74	350	165	55	3.2
MSO 125 mm	30	110	125	12.5	80	400	182	65	4.5
MSO 150 mm	35	130	150	14.5	110	455	208	67	6.2

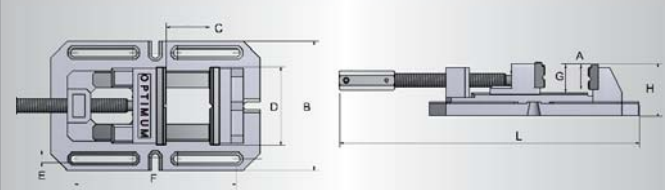


MSO 100

Machine vices BSI

- Drilling machine vices of industrial quality
- Replaceable prism jaws
- Long guideway of mobile jaw, thus no tilting
- Precision ground prism jaws
- Many assembly options on the drilling table by oblong holes
- High quality cast iron
- Scraped guide surfaces

BSI 100	3000210
BSI 140	3000214
BSI 200	3000220



Techn. data	A	C	D	E	F	G	L	B	H	kg
BSI 100 mm	35	110	100	12	216	40	max. 460	170	74	8.7
BSI 140 mm	45	150	140	14	290	50	max. 610	230	93	18
BSI 200 mm	58	200	200	16	406	64	max. 788	290	118	37

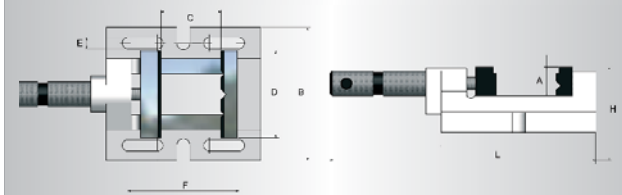


BSI 140

Machine vices BMS with prisms

- Robust type with prism jaws
- Smooth running
- Exact jaw guiding
- Spindle with rolled trapezoidal thread
- Many assembly options on the drilling table by oblong holes

BMS 85	3000008
BMS 100	3000010
BMS 120	3000012
BMS 150	3000015
BMS 200	3000020



Techn. data	A	C	D	E	F	L	B	H	kg
BMS 85 mm	27	70	85	11	109	260	130	60	3.2
BMS 100 mm	30	90	100	12.5	125	280	150	66	4.6
BMS 120 mm	35	110	120	12.5	146	330	170	70	5.6
BMS 150 mm	45	130	150	12.5	180	375	200	78	7.6
BMS 200 mm	60	160	200	12.5	210	445	252	95	16

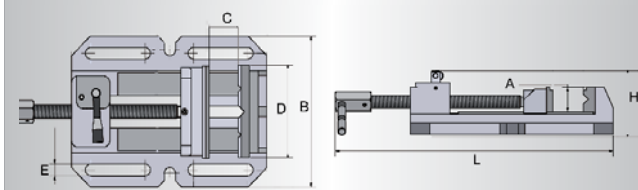


BMS 85

Machine vices BSI-Q

- Drilling machine vices of industrial quality
- Quick action clamping by means of a quick action closure
- Replaceable prism jaws
- Long guideway of mobile jaw, thus no tilting
- Precision ground prism jaws
- Many assembly options on the drilling table by oblong holes
- High quality cast iron Scraped guide surfaces

BSI-Q 100	3000230
BSI-Q 140	3000234
BSI-Q 200	3000240



Techn. data	A	C	D	E	L	B	H	kg
BSI-Q 100 mm	30	105	100	12	max. 335	150	95	5.5
BSI-Q 140 mm	40	155	140	14	max. 415	200	100	10.7
BSI-Q 200 mm	55	220	200	16	max. 525	275	125	20.2



BSI-Q 100

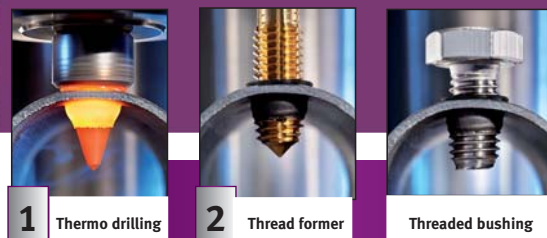


THERMADRILL®

The bushing that really works!

Threading bushings which are no longer loose!

When flow drilling a twist-secured bushing is formed of the existing material without chips by friction heat and then this bushing is threaded.



- **No more getting loose or turning**
Saves annoying drilling and avoids claims
- **Easy assembly**
On almost any OPTIMUM drill press
- **Huge cost savings**
compared with rivet nut since only two steps
- **Quality - Made in Germany**

You need

1

Therm drill



FORM
For bushings
With collar



CUT
For bushings
without collar

- Suitable for aluminium, non-ferrous metal, steel, stainless steel. Made of hard metal with special polygon cut

2

Thread former



with TiN
coating
and lubricating
grooves
Tolerance 6HX
C-shape

- Conventional tool holders usable

3

Basic equipment



Includes all you need in order TO BE ABLE TO WORK with the ThermoDrill immediately

Size	Type	max. material- thickness	Item No	max. material- thickness	Item No
M4	short	1.5	3060104	2.0	3060164
	long	2.5	3060124	4.0	3060144
M5	short	2.0	3060105	3.0	3060165
	long	3.0	3060125	4.5	3060145
M6	short	2.0	3060106	3.0	3060166
	long	3.5	3060126	5.0	3060146
M8	short	2.5	3060108	4.0	3060168
	long	4.0	3060128	6.0	3060148
M10	short	2.5	3060110	4.0	3060170
	long	4.5	3060130	6.5	3060150
M12	short	2.5	3060112	4.0	3060172
	long	4.5	3060132	6.5	3060152

Other thread sizes available (in metric-fine and pipe thread)

Size	Item No	Seats	Item No
M4 x 0.7	3060184	MT 2	3060005
M5 x 0.8	3060185	Content: 1 x THERMADRILL paste 100 g 1 x thread moulder oil 100 ml 1 pcs. open-end wrench 1x hook spanner 1 x tool holder with air ring MT 3 1x case 1 x reducing sleeve MT 3-MT 2 4 x collets (Ø 6/8/10/12 mm)	
M6 x 1.0	3060186		
M8 x 1.25	3060188		
M10 x 1.25	3060190		
M12 x 1.25	3060192		

Tool-Set = Thermo drill + thread former

THERMADRILL paste

Thread moulder oil

Type FORM

Type CUT

Size	Type	max. material- thickness	Item No	max. material- thickness	Item No
M4	short	1.5	3060024	2.0	3060044
	long	2.5	3060034	4.0	3060054
M5	short	2.0	3060025	3.0	3060045
	long	3.0	3060035	4.5	3060055
M6	short	2.0	3060026	3.0	3060046
	long	3.5	3060036	5.0	3060056
M8	short	2.5	3060028	4.0	3060048
	long	4.0	3060038	6.0	3060058
M10	short	2.5	3060030	4.0	3060050
	long	4.5	3060040	6.5	3060060
M12	short	2.5	3060032	4.0	3060052
	long	4.5	3060042	6.5	3060062

Bundle	Item No.	Bundle	Item No.
for flow drilling		including brush	
1 kg	3060090	1 litres	3060092
For protecting of thermal drill from excessive wear.		High-oil particularly suitable for thread forming in aluminium, copper, brass, steel, stainless steel.	

Other thread sizes available (in metric-fine and pipe thread)

OPTIturn®

TU 3610V
TU 4210V
TH 4615V
TH 5620V

Machines according
Standard EN
61800



Converter SINAMICS G120D

- Enhanced safety function (STO, SLS)
- Energetic recovery system, low circuit feedback
- **Energy saving of up to 20 %**
- No braking resistor required
- Easy and rapid diagnosis capability by means of LED
- Continuous standardized plug connection
- Robust construction of flat type (IP65)
- EMV class C2 according to EN 61800-3
- **Safety Integrated without transmitter!**
- Directly switching over
- Rapidly braking
- High overload

**Modern converter technology
powered by Siemens**



- **STO - Safe Torque Off** according to EN 61800-5
- **SLS - Safety Limited Speed** according to EN 61800-5

Energetic recovery system (Efficient Infeed Technology)

- Energy saving by a recovery system in the generator operation of the motor
- Omission of the braking resistor
- Considerably less space required compared to common compact converters
- No additional heat generation when braking

Energy saving with intelligent drive solution



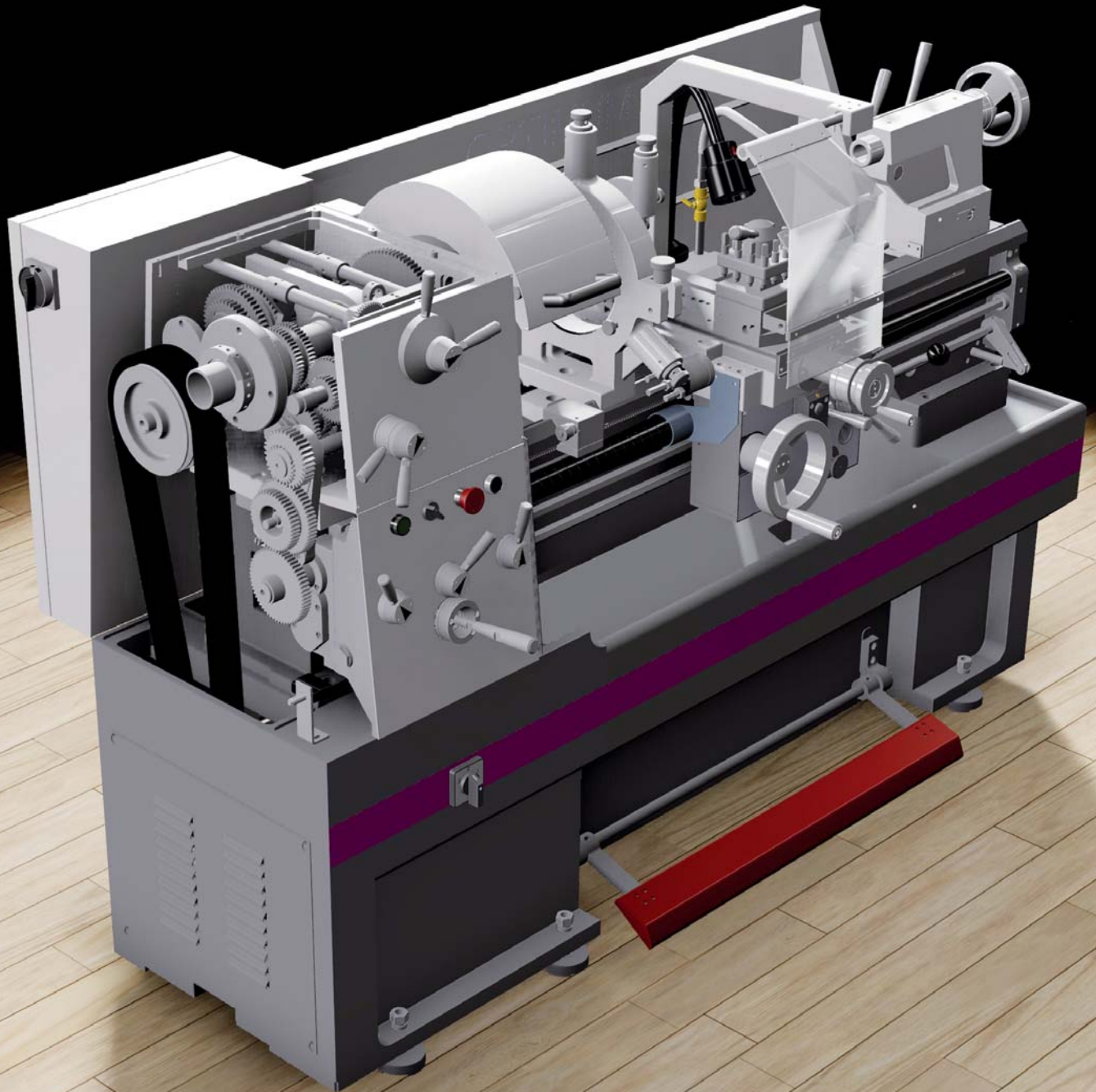
SINUMERIK Safety Integrated®

is the comprehensive safety pack for person and machine protection, is working extremely reliable, efficient and profitable. It guarantees safe and practicable operation of the machine for all required operating conditions. All safety functions fulfil the requirements according to SL 2 /PL d and are certified accordingly and listed under NRTL.

Comprehensive, highly active safety functions result in rapid,

situation-related reactions in case of a fault due to the integration of the safety functions in the drive and control. Among others, the safe monitoring of speed, standstill and position are integrated. The security-relevant signals can be linked due to the safe, programmable logics without any additional hardware.





LATHES
LATHES

Technical data of the **OPTi turn®** lathes for general orientation

	Motor power kw	Centre height	Centre width	Turning Ø diameter via Machine bed	Spindle speed	Spindle taper	3-jaw chuck (Series)	4-jaw chuck (Series)	Vario-drive	Digital speed display	DPA	Machine lamp (Series)	230V version available	400V version available
TU 1503V	0.45	75	300	140	120 - 3'000		●		●				●	
TU 2004V	0.6	100	300	200	150 - 2'500	MT 3	●		●	●			●	
TU 2304	0.75	115	450	230	125 - 2'000	MT 3	●						●	●
TU 2304V	0.75	115	450	230	150 - 2'200	MT 3	●		●	●			●	
TU 2406	0.75	125	550	250	125 - 2'000	MT 3	●						●	●
TU 2406V	1.1	125	550	250	150 - 2'500	MT 3	●		●	●			●	
TU 2506	0.75	125	550	250	125 - 2'000	MT 4	●						●	●
TU 2506V	1.5	125	550	250	30 - 4'000	MT 4	●		●	●			●	
TU 2807	0.85	140	700	266	150 - 2'000	MT 4	●						●	●
TU 2807V	1.5	140	700	266	30 - 4'000	MT 4	●		●	●			●	
TU 3008	1.5	180	800	300	150 - 2'000	MT 5	●							●
TU 3008V	1.5	180	800	300	30 - 3'000	MT 5	●		●				●	
D 320 x 920	1.5	160	920	320	65 - 1'800	MT 5	●	●			●/-	●		●
TU 3209V	1.5	160	920	320	12 - 2'500	MT 5	●	●	●	●	●	●	●	
D 330 x 1000	1.5	165	1'000	330	70 - 2'000	MT 5	●	●			●/-	●		
D 360 x 1000	1.5 / 2.4	180	1'000	356	45 - 1'800	MT 5	●	●			●/-	●		●
TU 3610V	4	180	1'000	356	30 - 3'000	MT 5	●	●	●	●	●	●		●
D 420 x 1000 D 420 x 1500	4.5	210	1'000 1'500	420	45 - 1'800	MT 6	●	●			●/-	●		●
TU 4210V	5.5	210	1'000	420	30 - 3'000	MT 6	●	●	●	●	●	●		●
TH 4610 TH 4615 TH 4620	5.5	230	1'000 1'500 2'000	465	25 - 2'000	MT 6					●	●		●
TH 4615V	7.5	230	1'500	465	30 - 2'000	MT 6			●	●	●	●		●
TH 5615 TH 5620 TH 5630	7.5	280	1'500 2'000 3'000	560	25 - 1'600	MT 7					●	●		●
TH 5620V	7.5	280	2'000	560	25 - 1600	MT 7			●	●	●	●		●
D 660 x 2000 D 660 x 2000	9	330	2'000 3'000	660	25 - 1'600	MT7	●	●			●	●		●
TU 8020 TU 8030	11	330	2'000 3'000	660	25 - 1'600	MT7	●	●	●	●	●	●		●
TZ 4012	4	200	1'150	400	40 - 2'200	MT4				●	●	●		●
TZ 5216	5.5	260	1'625	530	30 - 1'500	MT5				●	●	●		●
TZ 5216V	5.5	260	1'625	530	80 - 1'700	MT5				●	●	●		●
TZ 6222	5.5	310	2'225	620	30 - 1'500	MT5				●	●	●		●

The new compact lathe with electronically adjustable speed

OPTIMUM
the original

Convincing arguments: quality, efficiency and price

- DC motor
- Ribbed prism bed made of grey cast iron, inductively hardened and ground
- Hardened and ground bed guideways
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- True running accuracy - Lathe chuck max 0.05 mm
- With leading spindle for threading or automatic longitudinal turning
- With longitudinal slide, cross slide and top slide
- Automatic longitudinal/leading spindle drive
- Right-/left-handed rotation switchable on
- Drill chuck protection with micro switch the control panel
- Handwheels with adjustable precision scaling of 0.04/0.01 mm
- Double tool holder
- All guideways adjustable via V-ledges free of play
- Comprehensive accessory
- Emergency stop push button
- Low power electronics
- EMC filter, class B (used in households)



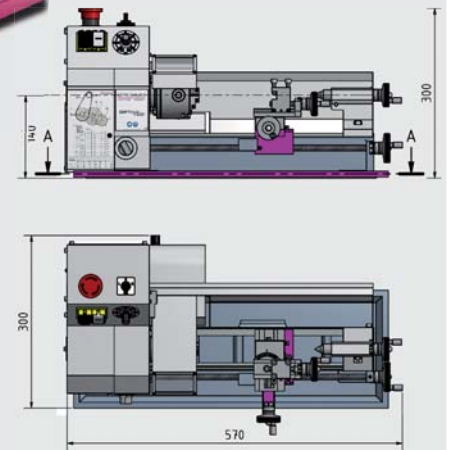
with greater centre height/ width

Convincing arguments...



- Wide range of threading due to change gear kit
- Simple and rapid speed change via V-belt
- Safety switch in covering

Dimensions



Model	TU 1503V
Item No	3420260

Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Spindle	
Driving motor	450 W
Spindle taper	MT 1
Spindle hole	Ø 11 mm
Tool holder seat height	12 mm
Work areas	
Centre height	75 mm
Centre width	300 mm
Turning diameter (max.)	140 mm
Bed width	70 mm
Speed range	
	120 - 3'000 min ⁻¹
Number of steps	Electronically adjustable speed
Travels	
Travel top slide	40 mm
Travel cross slide	55 mm
Feed and thread pitch	
Longitudinal feed	0.05 - 0.1 mm/rev
Pitch - Metric (11)	0.5 - 1.5 mm/rev
Tailstock	
Tailstock seat	MT 1 shortened
Tailstock - sleeve travel	30 mm
Dimensions L x W x H	
	560 x 320 x 290 mm
Net weight	24 kg

Standard equipment

Three jaw lathe chuck Ø 80 mm, fixed centre point MT1, lathe chuck protection, splash board, chip tray, 2-fold tool holder, change gear kit, operator tools,

Accessories	Item No
Four jaw lathe chuck Ø 80 mm	3440286
Three-jaw lathe chuck Ø 80 mm	3440287
Follow rest Ø max. 45mm	3440210
Steady rest Ø max. 40 mm	3440211
Follow rest MT 1	3440700
Collet chuck ER 16	3440281
Collet kit ER 16, 1 - 10 mm, 12 pcs.	3440282
Lathe tool kit 8 mm, 5 pcs.	3441662
Lathe tool kit 8 mm, 11 pcs.	3441008

Please find further information on „Accessories for lathes“ on page 97

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Lathe with infinitely variable speed control and digital speed

Convincing arguments: quality, efficiency and price

- Precise manufacturing
- Heavily ribbed prism bed made of steel casting, inductively hardened and precision ground
- Hardened and ground bed guideways
- Hardened spindle nose (DIN 6350)
- Guaranteed true running accuracy of the spindle nose better than 0.009 mm
- Automatic longitudinal/leading spindle drive
- With longitudinal slide, cross slide and top slide
- Right-/left-handed rotation switchable on
- Emergency-stop push button
- Lathe chuck protection
- Thrust bearing
- Leading spindle run on two porous bearings
- Large threading range due to set of change gears
- Change gear train
- EMC filter, class B (used in households)

Digital Position Indicator DRO5

Item No	3383975
---------	---------

Magnetic tape 1100 mm

Item No	3383978
---------	---------

Workshop assembly

Item No	9000420
---------	---------



Main spindle

- Hardened and with re-adjustable accurate taper roller bearings
- Taper roller bearing of P5 quality
- Cylindrical centring consumption
- Hardened spindle nose with a \varnothing 21 mm spindle hole

Lathe chuck

- True running accuracy 0.04 mm

Chip protection

- at the top slide

Quadruplicate tool holder

- turnable

Rolled trapezoid thread

- Lead screw

Tailstock

- Adjustable for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.02 mm

Digital speed display

- Easy to read digital speed display

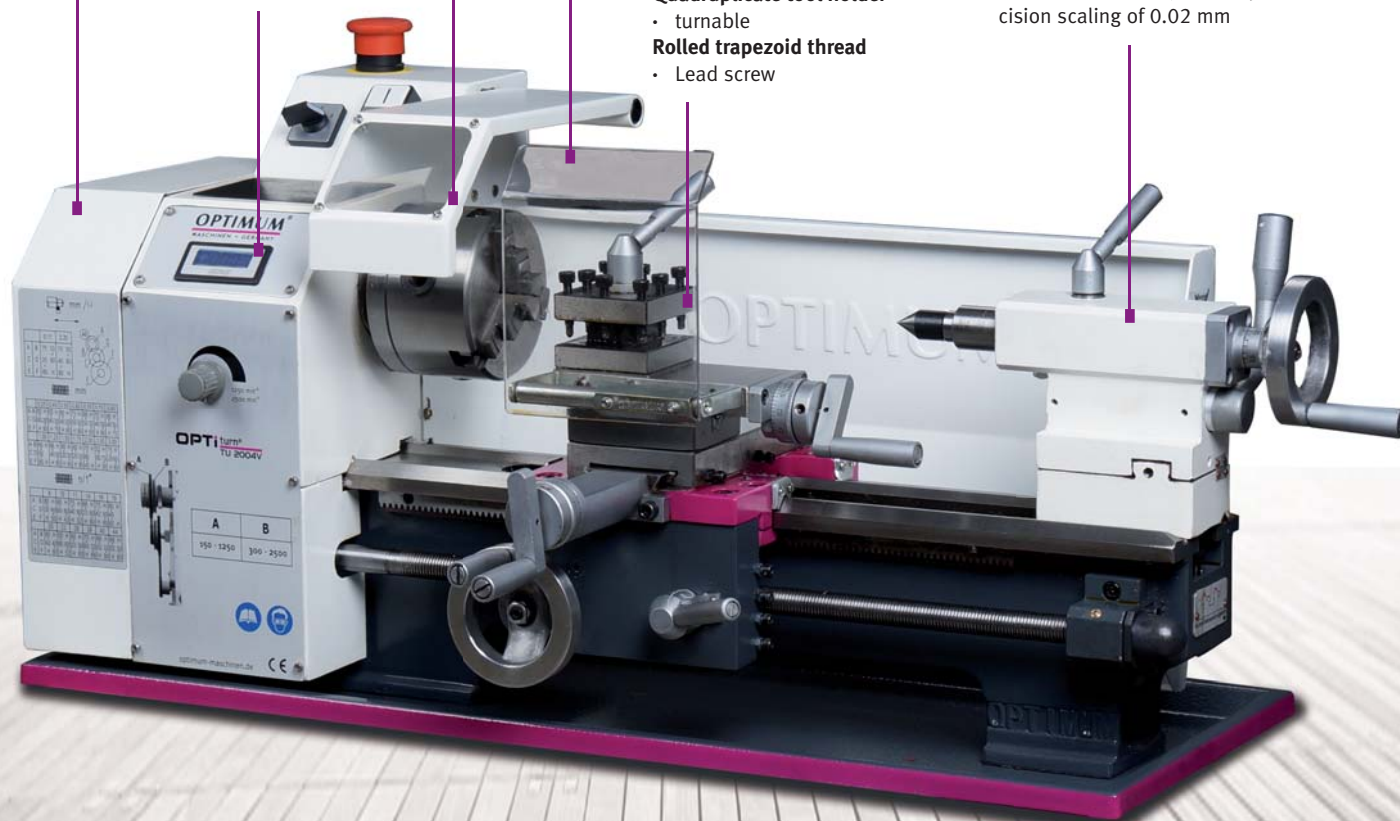


Fig.: Opti turn TU 2004V

Technical data, dimensions and accessories

Model	TU 2004 V
Item No	3420310
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Spindle	
Driving motor	600 W
Spindle taper	MT 3
Spindle hole	Ø 21 mm
Rod opening lathe chuck	20 mm
Tool holder seat height	max. 12 mm
Work areas	
Centre height	100 mm
Centre width	300 mm
Turning diameter (max.)	200 mm
Turning Ø over cross slide	110 mm
Bed width	100 mm
Speed range	
Spindle speeds	150 - 2'500 min ⁻¹
Number of steps	2 steps, electrically adjustable speed
Travels	
Travel top slide	55 mm
Travel cross slide	75 mm
Feed and thread pitch	
Longitudinal feed	0,1 / 0,2 mm/U
Pitch - Metric (14)	0.25 - 3 mm/rev
Pitch - Inch (12)	44 - 8 threads/1"
Tailstock	
Tailstock seat	MT 2
Tailstock - sleeve travel	65 mm
Dimensions L x W x H:	830 x 425 x 360 mm
Net weight	61 kg

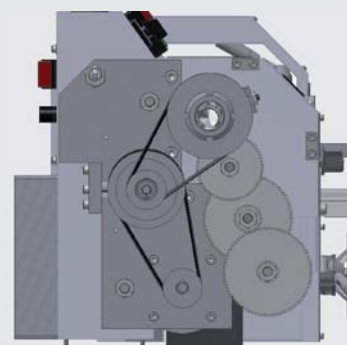
Standard equipment

- Three jaw chuck Ø 100 mm
- Steady centre MT 2 and MT 3
- Splash board and Chip tray
- Quadruple tool holder
- Change gear kit
- Operating tool

Accessories	Item No	
Four jaw lathe chuck Ø 100 mm	3442810	
Flange for lathe chucks Ø 100 mm	3440312	
Collet chuck cylindrical ER25	3440305	
Face clamping disc Ø 170 mm	3440295	
Follow rest Ø max. 40 mm	3440230	
Steady rest Ø max. 50 mm	3440231	
Fixed center MT 2	3440702	
Quick action tool holder SWH-AA	3384311	
Workshop assembly SWH	9000401	
Lathe tool kit 10 mm, 5 pcs.	3441664	

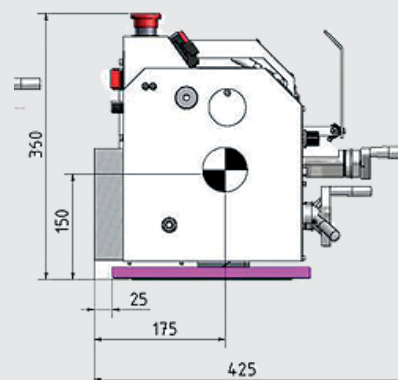
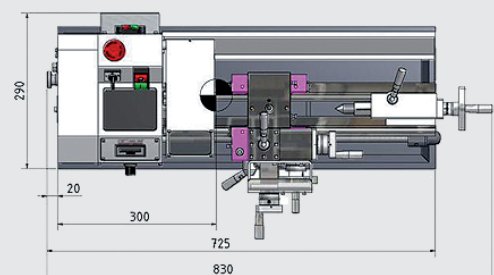
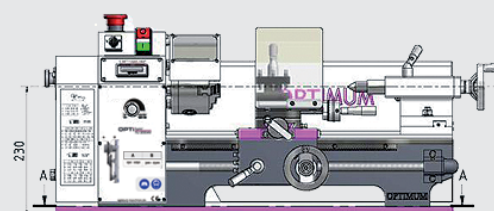


Convincing arguments...



- Wide range of threading due to change gear kit
- Simple and rapid speed change via V-belt

Dimensions



Please find further information on „Accessories for lathes“ on page 97

Lathes for the demanding do-it-yourselfer. TU 2304V with electronically infinitely variable drive.

Convincing arguments: quality, efficiency and price

- Precise manufacturing
- Hardened and ground bed guideways
- Guaranteed true running accuracy of the spindle nose better than 0.009 mm
- True running accuracy - Lathe chuck better than 0.05 mm
- With leading spindle for threading or automatic longitudinal turning
- Right-/left-handed rotation switchable on
- Rolled trapezoid spindles
- Emergency-stop push button

- Comprehensive accessory
- Stable value

TU 2304 V

- Powerful motor and mostly constant torque delivery
- Speed change easily adjustable via potentiometer
- Digital speed display
- EMC filter, class B (used in households)

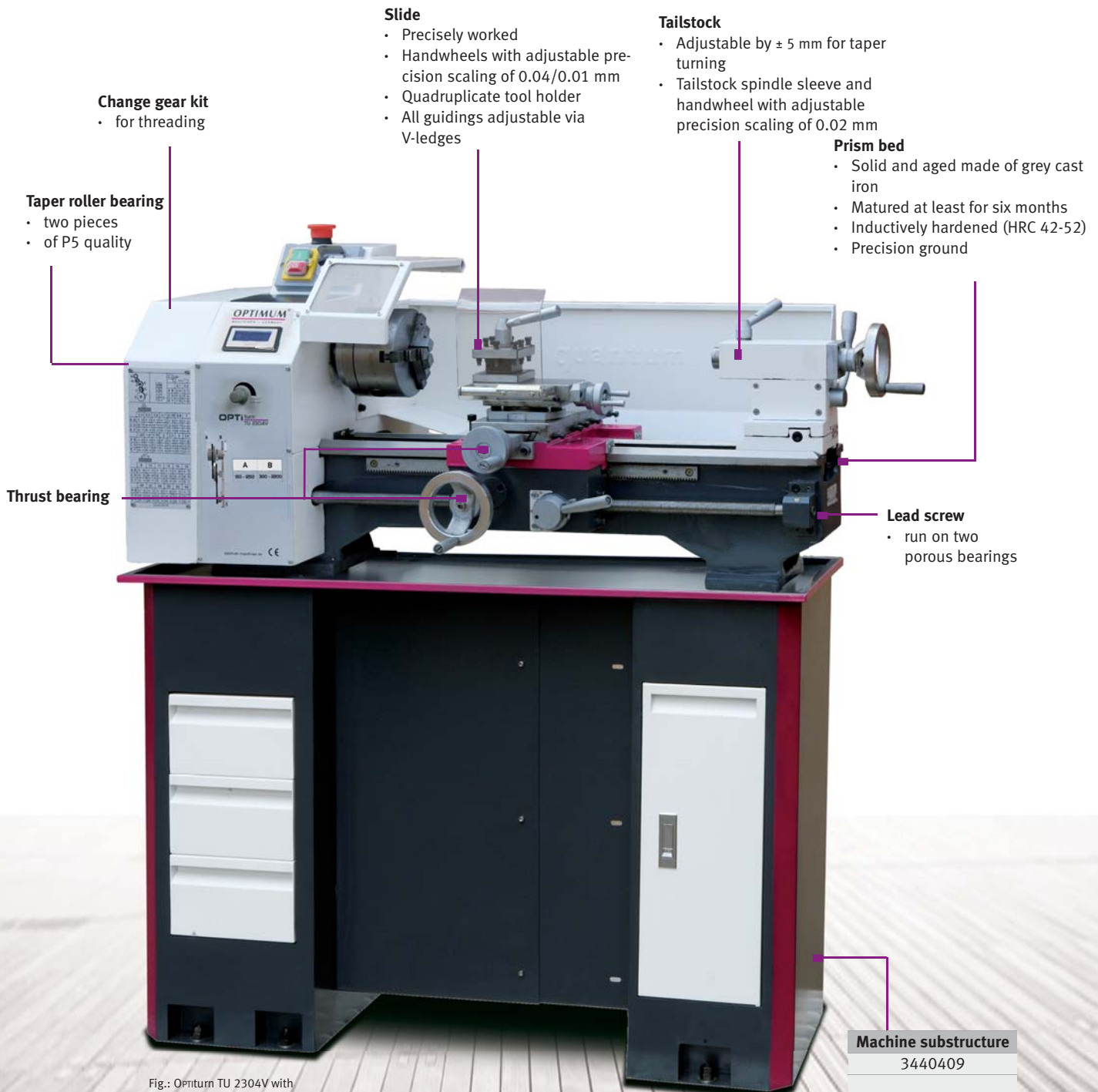


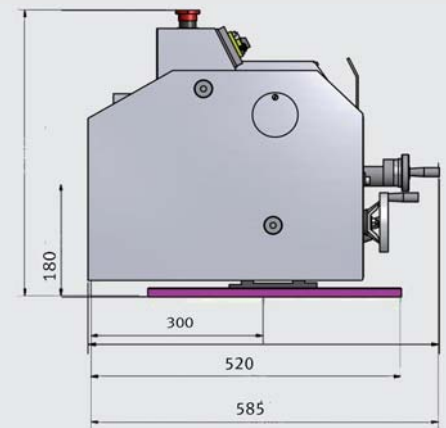
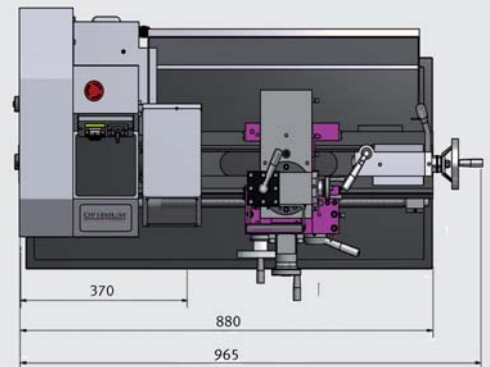
Fig.: OPTi turn TU 2304V with optional machine base

Technical data, dimensions and accessories

Model	TU 2304
Item No	3420320
Model	TU 2304V
Item No	3420325
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Spindle	
Driving motor	750 W
Spindle taper	MT 3
Spindle hole, rod passage	Ø 20 mm
Spindle seat	cylindrical Ø 72 mm
Quadruple tool holder seat height	14 x 14 mm
Machine data	
Centre height	115 mm
Centre width	450 mm
Turning Ø over lathe bed	230 mm
Bed dimension	135 mm
Speed range	
Spindle speed	125 - 2'000 min ⁻¹
Number of steps	6 steps
Spindle speed TU 2304V	150 - 2'200 min ⁻¹
Number of steps TU 2304V	2 steps, electrically adjustable speed
Travels	
Travel top slide	75 mm
Travel cross slide	120 mm
Thread pitches	
Pitch - Metric in the range of	0.4 - 3.5 mm/rev
Pitch - Inch in the range of	44 - 10 threads/1"
Tailstock	
Tailstock seat	MT 2
Tailstock - sleeve travel	70 mm
Dimensions	
Length x width x height	965 x 585 x 510 mm
Weight TU 2304	111 kg
Weight TU 2304V	114 kg

Accessories	Item No	
Three jaw chuck Ø 125 mm, Speed 3'000 min ⁻¹	3442712	
Four jaw chuck Ø 125 mm, Speed 2'750 min ⁻¹	3442812	
Three jaw chuck CI3P Ø 125 mm steel, Speed 3'200 min ⁻¹	3442020	
Three jaw chuck CI3P Ø 125 mm steel, Speed 4'800 min ⁻¹	3442520	
Flange for three jaw chuck Ø 125 mm	3440313	
Face clamping disc Ø 240 mm	3441352	
Steady rest passage up to Ø max. 55 mm	3440361	
Follow rest passage up to Ø max. 34 mm	3440360	
Fixed center MT 2	3440702	
Collet kit ER 25, 1 - 16 mm	3441109	
Collet chuck	3440505	
Quick action tool holder SWH 1-A	3384301	
Workshop assembly SWH	9000401	
NEW Lathe tool kit 10 mm, 11 pcs.	3441108	
NEW Lathe tool kit 10 mm, 5 pcs.	3441664	
NEW Lathe tool kit 12 mm, 5 pcs.	3441666	
NEW Lathe tool kit 12 mm, 5 pcs. „Made in Germany“	3441212	
NEW Position display digital DRO5 incl. magnetic sensors	3383975	
Magnetic tape length 1'100 mm	3383978	
Workshop assembly	9000420	

Dimensions



Standard equipment

- Three jaw chuck Ø 100 mm
- Steady centre MT 2
- Steady centre MT 3
- Splash guard
- Chip tray
- Quadruple tool holder
- Change gear kit
- Operating tool



Position display digital DRO5
Info „DRO 5“ on page 200

Please find further information on „Accessories for lathes“ on page 97

Lathes for the demanding do-it-yourselfer. TU 2406V with electronically infinitely variable drive.

Convincing arguments: quality, efficiency and price

- Precise manufacturing
- Hardened and ground bed guideways
- Guaranteed true running accuracy of the spindle nose better than 0.009 mm
- True running accuracy - Lathe chuck better than 0.05 mm
- With leading spindle for threading or automatic longitudinal turning
- Right-/left-handed rotation switchable on
- Rolled trapezoid spindles
- Emergency-stop push button

- Comprehensive accessory
- Stable value

OPTIMUM
the original

TU 2406 V

- Powerful motor and mostly constant torque delivery
- Speed change easily adjustable via potentiometer
- Digital speed display
- EMC filter, class B (used in households)

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.01 mm
- Quadruplicate tool holder
- All guidings adjustable via V-ledges

Tailstock

- Adjustable by ± 5 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.02 mm

Change gear kit

- for threading

Taper roller bearing

- two pieces
- of P5 quality

Thrust bearing

Lead screw

- run on two porous bearings



Prism bed

- Solid and aged made of grey cast iron
- Matured at least for six months
- Inductively hardened (HRC 42-52)
- Precision ground



Accessories

Item No

Machine base

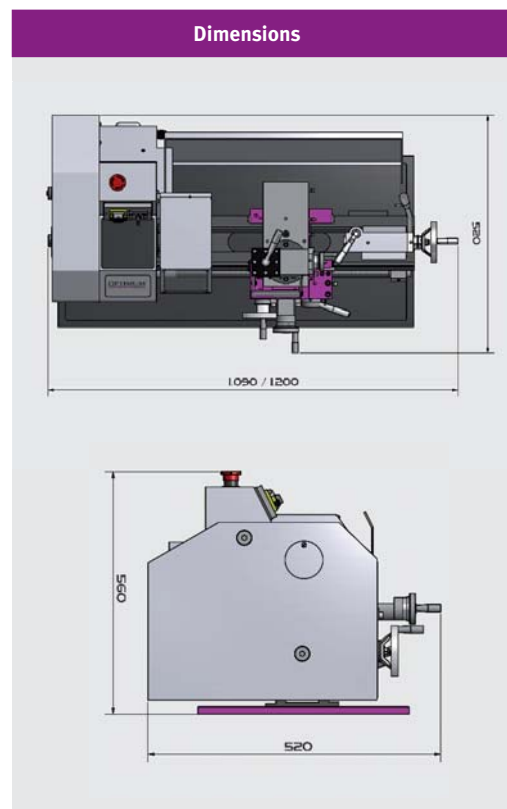
3440409

Fig.: Opnturn TU 2404V with option

Technical data, dimensions and accessories

Model	TU 2406
Item No (230 V)	3420350
Item No (400 V)	3420353
	NEW
Model	TU 2406V
Item No (230 V)	3420355
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz or 400 V / 3 Ph ~50 Hz
Connection TU 2406V	230 V / 1 Ph ~50 Hz
Spindle	
Driving motor	750 W
Drive motor TU 2406V	1.1 kW
Spindle taper	MT 3
Spindle hole	Ø 21 mm
Spindle seat	cylindrical Ø 52 mm
Quadruple tool holder seat height	14 x 14 mm
Machine data	
Centre height	125 mm
Centre width	550 mm
Turning Ø over lathe bed	250 mm
Bed dimension	135 mm
Speed range	
Spindle speed	125 - 2'000 min ⁻¹
Number of steps	6 steps
Spindle speed TU 2406V	150 - 2'500 min ⁻¹
Number of steps TU 2406V	2 steps, electrically adjustable speed
Travels	
Travel top slide	75 mm
Travel cross slide	120 mm
Thread pitches	
Pitch - Metric in the range of	0.4 - 3.5 mm/rev
Pitch - Inch in the range of	44 - 10 threads/1"
Tailstock	
Tailstock seat	MT 2
Tailstock - sleeve travel	70 mm
Dimensions	
Length x width x height	1'310 x 520 x 560 mm
Net weight	125 kg

Accessories	Item No	
Three jaw chuck Ø 125 mm, Speed 3'000 min ⁻¹	3442712	
Four jaw chuck Ø 125 mm, Speed 2'750 min ⁻¹	3442812	
Three jaw chuck Cl3P Ø 125 mm cast iron, Speed 3'200 min ⁻¹	3442020	
Three jaw chuck Cl3P Ø 125 mm steel, Speed 4'800 min ⁻¹	3442520	
Flange for three jaw chuck Ø 125 mm	3440511	
Face clamping disc Ø 240 mm	3440552	
Steady rest Ø max. 50 mm	3440515	
Follow rest Ø max. 34 mm	3441310	
Fixed center MT 2	3440702	
Collet chuck	3440505	
Collet kit ER 25, 1 - 16 mm	3441109	
Quick action tool holder SWH 1-A	3384301	
Workshop assembly SWH	9000401	
Lathe tool kit 10 mm, 11 pcs.	3441108	
Lathe tool kit 10 mm, 5 pcs.	3441664	
Lathe tool kit 12 mm, 5 pcs.	3441666	
Lathe tool kit 12 mm, 5 pcs. „Made in Germany“	3441212	
Workshop assembly	9000420	



Standard equipment

- Three jaw chuck Ø 125 mm
- Steady centre MT 2
- Steady centre MT 3
- Splash guard
- Chip tray
- Quadruple tool holder
- Change gear kit
- Operating tool



Position display digital DRO 5 incl. 3 magnetic sensors	3383975	NEW
Magnetic tape Length 1'100 mm	3383978	

Please find further information on „Accessories for lathes“ on page 97

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Lead screw lathes with feed gear for demanding users. Vario type with infinitely variable speed control for brushless motor

Convincing arguments: quality, efficiency and price

- Precise manufacturing
- Powerful, maintenance free motor
- Heavily ribbed prism bed made of grey cast iron, inductively hardened and precision ground
- Hardened and ground bed guideways
- Guaranteed true running accuracy of the spindle nose better than 0.009 mm
- True running accuracy of the lathe chuck better than 0.04 mm
- Automatic longitudinal/leading spindle drive
- With leading spindle for threading or automatic longitudinal turning
- Right-/left-handed rotation switchable on
- Leading spindle run on two porous bearings
- Handwheels on the slide with adjustable precision scaling of 0.04/0.01 mm
- Change gear kit for thread cutting
- Thrust bearing
- Emergency-stop push button
- Fully equipped machine, the user can immediately start to work productively

TU 2506 V / TU 2807 V

- Smooth and high performance DC drive with excellent control characteristics
- High-precision tool chuck for higher speeds
- Speed change easily adjustable via potentiometer
- Digital speed display



05.2012

Powerful Brushless drive

- Particularly smooth running
- Nearly constant torque over the entire speed range
- High power output



Slide

- Quadruplicate tool holder
- All guideways adjustable via V-ledges free of play
- Rolled trapezoid spindles
- Chip protection at the top slide
- Milling machine BF20V mountable
- Top slide adjustable on cross slide

Tailstock

- Adjustable by ± 5 mm for taper turning
- Tailstock spindle sleeve and hand-wheel with adjustable precision scaling of 0.02 mm
- Rapid and easy adjustment of the tailstock by means of a clamping lever

Main spindle

- Hardened and with re-adjustable precision taper roller bearings
- Two taper roller bearing of P5 quality
- Short taper, hardened spindle nose with a \varnothing spindle hole of $\varnothing 26$ mm

Feed gear

- Smooth running
- Rounded toothed wheels
- running in the oil bath



Fig.: Optimum TU 2807V

Accessories

Item No

Machine base

3440409

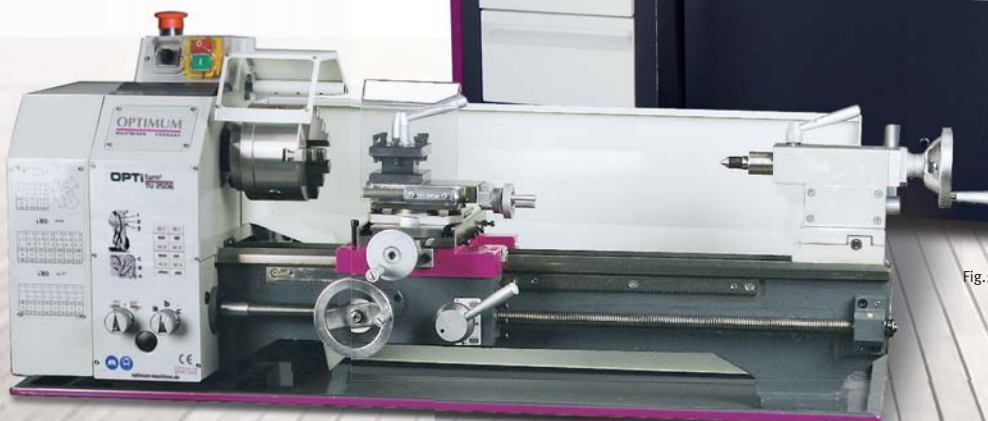


Fig.: Optimum TU 2506

The Vario lathe (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

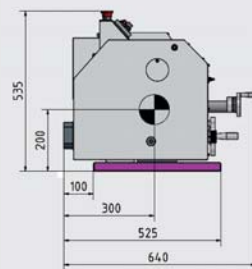
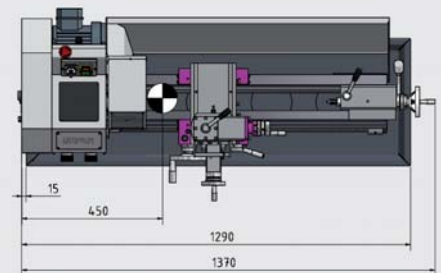
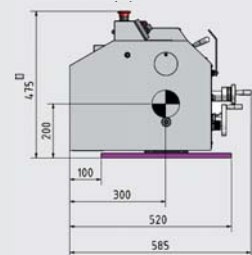
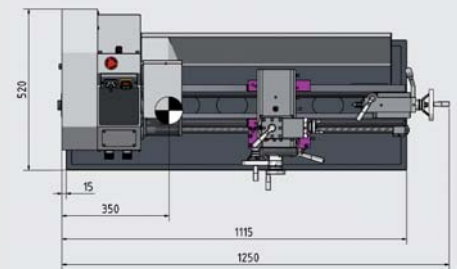


CNC add-on kit
„TU 2506 / TU 2807“ on
page 212

Technical data and accessories

Model	TU 2506	TU 2807
Item No (230 V)	3425001	3427001
Item No (400 V)	3425003	3427003
Model	TU 2506V	TU 2807V
Item No (230 V)	3425006	3427006
Electrical connection		
Connection	230 V / 1 Ph ~50 Hz or 400 V / 3 Ph ~50 Hz	
Connection Vario-machines	230 V / 1 Ph ~50 Hz	
Spindle		
Driving motor	750 W	850 W
Drive motor Vario-machines	1.5 kW	
Spindle taper	MT 4	
Spindle hole	Ø 26 mm	
Spindle seat	Short taper	
Quadruple tool holder Height	max. 13 mm	max. 13.5 mm
Machine data		
Centre height	125 mm	140 mm
Centre width	550 mm	700 mm
Turning Ø over lathe bed	250 mm	266 mm
Bed width	135 mm	180 mm
Speed range		
Spindle speed	125 - 2'000 min ⁻¹	150 - 2'000 min ⁻¹
Number of steps	6 steps	
Spindle speed Vario machines	30 - 4,000 min ⁻¹	
Number of steps Vario machines	4 steps, electrically adjustable speed	
Travels		
Travel top slide	70 mm	60 mm
Travel cross slide	110 mm	160 mm
Feeds and thread pitches		
Longitudinal feed in the range of	0.07 - 0.2 mm/rev	
Pitch - Metric in the range of	0.2 - 3.5 mm/rev	
Pitch - Inch in the range of	56 - 8 threads/1"	
Tailstock		
Tailstock seat	MT 2	
Tailstock - sleeve travel	65 mm	85 mm
Dimensions		
Length x width x height	1'250 x 585 x 475 mm	1'370 x 640 x 535 mm
Length x Width x Height Vario	1'250 x 650 x 420 mm	1'370 x 660 x 440 mm
Net weight	125 kg	180 kg
Standard equipment	3-jaw lathe chuck Ø 125 mm, fixed center MT 2 / MT 4, HSS lathe chisel, quadruple tool holder change gear kit, operating tool	

Dimensions



Please find further information on „Accessories for lathes“ on page 97

Accessories TU 2506 / TU 2506V	Item No	
Face clamping disc Ø 240 mm	3441352	
Steady rest Ø max. 50 mm	3441315	
Follow rest Ø max. 34 mm	3441310	
Running center MT 2	3440702	
Lathe tool kit 10 mm, 11 pcs.	3441108	
Collet kit ER 25, 1 - 16 mm	3441109	
Collet kit ER 32, 3 - 20 mm	3441122	
Collet chuck ER 25	3441305	
Collet chuck ER 32	3441306	
Quick action tool holder SWH 1-A	3384301	
Workshop assembly SWH	9000401	
NEW Lathe tool kit 12 mm, 5 pcs.	3441666	
Add-on adapter column/milling head BF20V	3356572	
Add-on adapter column/milling head BF16V	3356568	
BF20AV - milling head and column of BF20V	3338129	

Accessories TU 2807 / TU 2807V	Item No	
Face clamping disc Ø 265 mm	3441452	
Flange for lathe chuck Ø 160 mm	3441413	
Steady rest Ø max. 55 mm	3441415	
Follow rest Ø max. 56 mm	3441410	
Running center MT 2	3440702	
Lathe tool kit 10 mm, 11 pcs.	3441108	
Collet kit ER 25, 1 - 16 mm	3441109	
Collet kit ER 32, 3 - 20 mm	3441122	
Collet chuck ER 25	3441305	
Collet chuck ER 32	3441306	
Quick action tool holder SWH 1-A	3384301	
Workshop assembly SWH	9000401	
NEW Lathe tool kit 12 mm, 5 pcs.	3441666	
Add-on adapter column/milling head BF20V	3356572	
Add-on adapter column/milling head BF16V	3356568	

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Centre lathe with longitudinal and cross feed. Vario model with brushless motor

Convincing arguments: quality, efficiency and price

- Precise manufacturing
- Powerful, maintenance free motor
- Big spindle drill Ø 38 mm
- Electronically adjustable speed
- Heavily ribbed prism bed made of grey cast iron, inductively hardened and precision ground
- Hardened and ground bed guideways
- Guaranteed true running accuracy of the spindle nose better than 0.009 mm
- True running accuracy of the lathe chuck better than 0.04 mm
- Right-/left-handed rotation switchable on
- With leading spindle for threading or automatic longitudinal turning
- Leading spindle run on two porous bearings
- Automatic longitudinal/ cross feed
- Cover for leading spindle and feed rod
- Handwheels on the slide with adjustable precision scaling of 0.04/0.01 mm
- Change gear kit for thread cutting
- Thrust bearing
- Emergency-stop push button and low-voltage release

TU 3008V Powerful Brushless drive

- Particularly smooth running
- Nearly constant torque over the entire speed range
- High power output



Slide

- Quadruplicate tool holder
- All guideways adjustable via V-ledges free of play
- Big dimensioned chip protection at the top slide

Tailstock

- Adjustable for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.02 mm
- Rapid and easy adjustment of the tailstock by means of a clamping lever

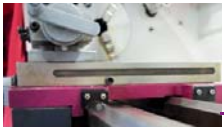
Main spindle

- Hardened and with re-adjustable precision taper roller bearings

Feed gear

- Smooth running
- Rounded toothed wheels
- running in the oil bath

Preparation



- Prepared for measurement system mounting the X and Z axis

Machine base

Item No	3440409
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TU3008 available from May 2015

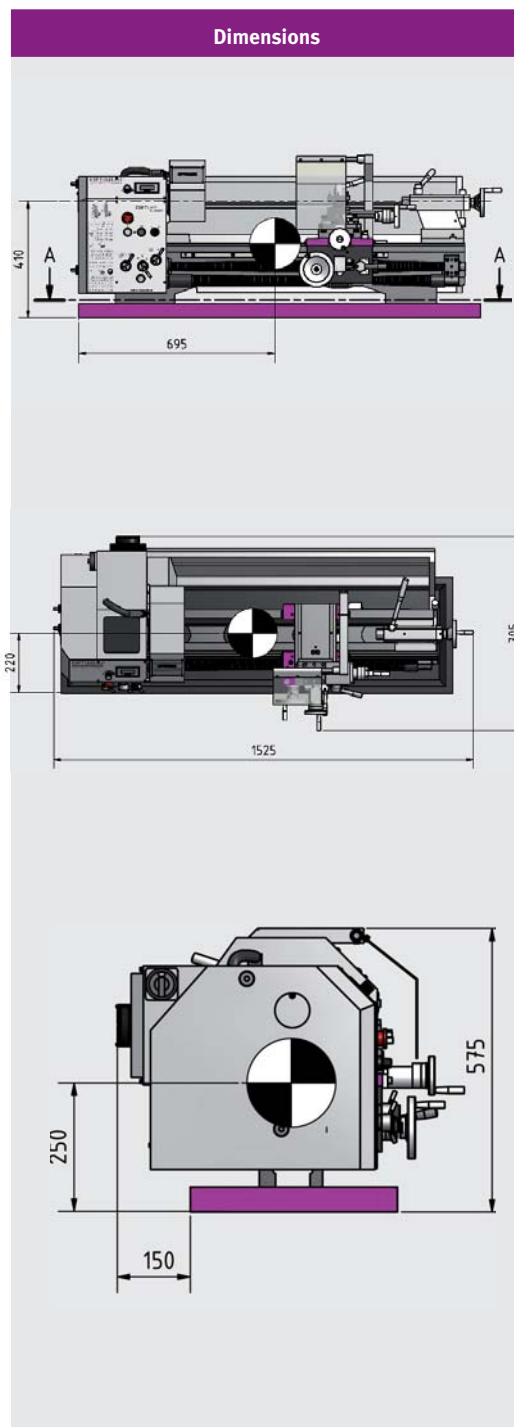
The Vario lathe (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Fig.: OPTimum TU 3008V with optional machine base

Technical data, dimensions and accessories

Model	TU 3008
Item No	3427200
Model	TU 3008V
Item No	3427205
Electrical connection	
Connection TU 3008	400 V ~50Hz
Connection TU 3008V	230 V ~50Hz
Spindle	
Drive motor TU 3008	1.1 kW
Drive motor TU 3008V	1.5 kW
Spindle taper	MT5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 36 mm
Quadruple tool holder seat height	25 mm
Machine data	
Centre height	150 mm
Centre width	800 mm
Turning Ø over lathe bed	300 mm
Turning Ø over cross slide	180 mm
Bed width	180 mm
Speed range	
Spindle speed	150 - 2'000 min ⁻¹
Number of steps	6 steps
Spindle speed TU 3008V	30 - 3'000 min ⁻¹
Number of steps TU 3008V	5 steps, electrically adjustable speed
Travels	
Travel top slide	65 mm
Travel cross slide	150 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.085 - 0.832 mm/rev
Cross feeds in the range of	0.01 - 0.1 mm/rev
Pitch - Metric in the range of	0.2 - 3.5 mm/rev
Pitch - Inch in the range of	56 - 8 Gg/1"
Tailstock	
Tailstock seat	MT 3
Tailstock sleeve travel	70 mm
Dimensions	
Length x width x height	1'500 x 720 x 690 mm
Weight	260 kg
Standard equipment	3-jaw chuck Ø 160 mm Fixed center MT 3 / MT 5 Quadruple tool holder Change gear kit Operating tool

Accessories	Item No	
Follow rest passage Ø 6 - 60 mm	3441460	
Steady rest passage Ø 6 - 60 mm	3441461	
Collet kit 3 - 25 mm, 5c 17 pcs.	3441509	
Quick action tool holder SWH 3-E	3384303	
Workshop assembly SWH	9000400	
Lathe tool kit 16 mm, 11 pcs.	3441508	
Lathe tool kit 16 mm, 5 pcs. „Made in Germany“	3441216	
Vibration damping machine foot	3381016	



Please find further information on
„Accessories for lathes“ on page 97

Completely equipped centre lathe with feed mechanism running in the oil bath. DPA version with digital position display DPA 2000

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 4
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Electrical system with Siemens components
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed/left-handed rotation on the bed slide switchable via stem
- Protective cover lead screw
- Machine substructure including tool compartment

DPA machines:

- **Digital position display DPA 2000**
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Glass scales

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Main spindle gearwheels smooth running, hardened and ground

Fast acting feed gear

- Closed structure

Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quadruplicate tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide $\pm 90^\circ$

Halogen machine lamp

- Coated articulated arm
- High positioning stability

Prism bed

- Heavily ribbed
- Inductively hardened
- Precision ground

Tailstock

- Adjustable by ± 10 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

Bed insert

- The turning diameter is increased to 430 mm by taking out the bed bridge

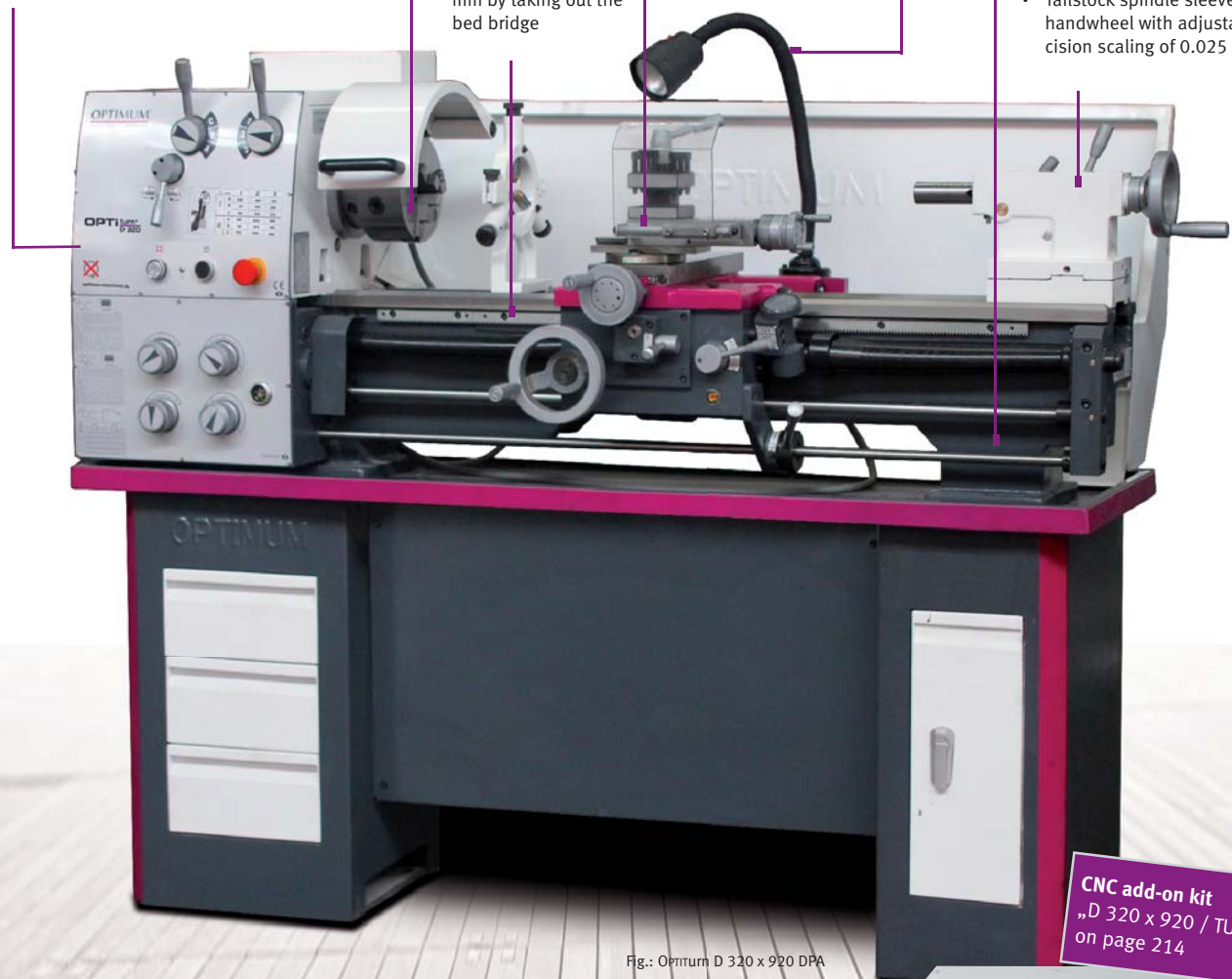


Fig.: OPTi turn D 320 x 920 DPA

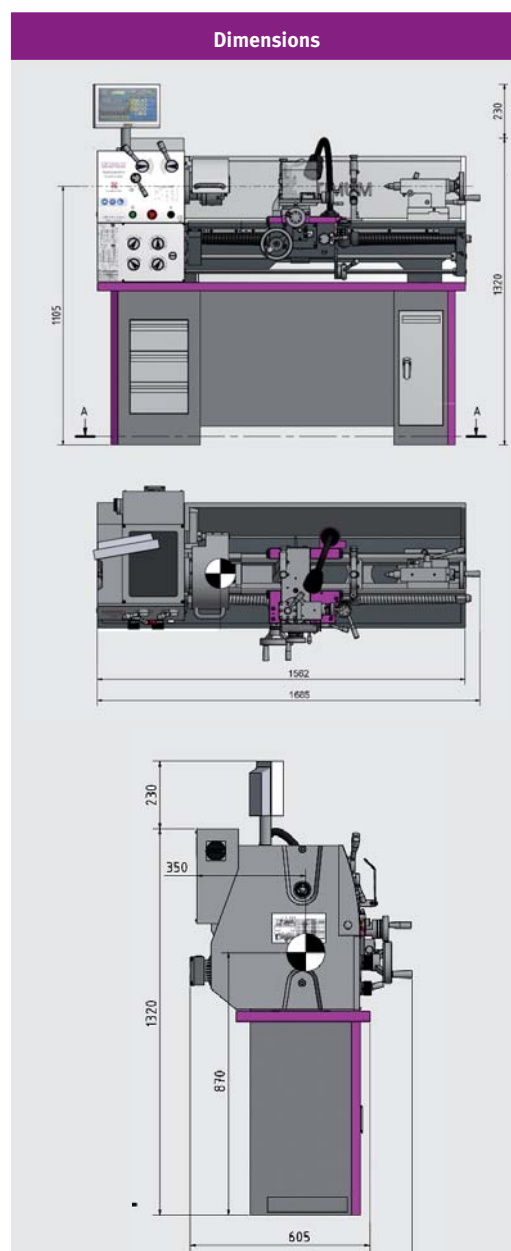
CNC add-on kit
„D 320 x 920 / TU 3209V“
on page 214



Technical data, dimensions and accessories

Model	D 320 x 920
Item No	3400923
DPA - Type	D 320 x 920DPA
Item No	3400923DPA
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Spindle	
Driving motor	1.5 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 38 mm
Quadruple tool holder seat height	12 x 12 mm
Quadruple tool holder seat height with optional SWH	16 x 16 mm
Machine data	
Centre height	160 mm
Centre width	920 mm
Turning Ø over lathe bed	320 mm
Turning Ø over cross slide	190 mm
Turning Ø in the bed bridge	430 mm
Length of bed bridge	230 mm
Bed width	181 mm
Speed range	
Spindle speed	65 - 1'800 min ⁻¹
Number of steps	18 steps
Travels	
Travel top slide	85 mm
Travel cross slide	162 mm
Feed and thread pitch	
Longitudinal feed in the range of	0.052 - 1.392 mm/rev; 32 feeds
Transverse feeds in the range of	0.014 - 0.380 mm/rev; 32 feeds
Pitch - Metric in the range of	0.4 - 7 mm; 26 thread pitches
Pitch - Inch in the range of	56 - 4 Gg/1"; 34 thread pitches
Tailstock	
Tailstock seat	MT 3
Tailstock- sleeve diameter/ sleeve travel	Ø 32 mm / 100 mm
Dimensions	
Length x width x height	1'685 x 750 x 1'320 (DPA 1'550) mm
Weight	410 kg

Accessories	Item No	
Three jaw chuck Camlock cast Ø 200 mm	3442762	
Three jaw chuck CI3P Camlock cast Ø 200 mm	3442045	
Four jaw chuck CI4P Camlock cast Ø 200 mm	3442145	
Three jaw chuck CS3C Camlock steel Ø 200 mm	3442545	
Four jaw chuck CS4C Camlock steel Ø 200 mm	3442645	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441506	
Collet kit 3 - 25 mm, 17 pcs., 5C	3441509	
Quick change tool holder SWH 3-E	3384303	
Workshop assembly SWH	9000400	
Lathe tool kit 16 mm, 11 pcs.	3441508	
Lathe tool kit 16 mm, 5 pcs. „Made in Germany“	3441216	
Position limit stop with fine adjustment	3441522	
Vibration damping machine foot SE 2	3381016	



Standard equipment
<ul style="list-style-type: none"> • Three-jaw lathe chuck Ø 160 mm centrally clamping • Four jaw lathe chuck Ø 200 mm universally adjustable jaws • Face clamping disc Ø 250 mm • Running center MT 3 • Steady rest passage Ø 19 - 70 mm • Follow rest passage Ø 16 - 50 mm • Chip tray • Machine base (not mounted) • Splash board (not mounted) • Lathe chuck protection • Machine lamp • Threading gauge • Quadruple tool holder • Change gear kit • Operating tool

„Accessories for lathes“ on page 97

Note: Machines are delivered without oil

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Completely equipped centre lathe with electronically infinitely variable drive and digital position display DPA 2000 S

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 4
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Chip protection at the top slide
- Protective cover lead screw
- New machine base with drawers

• Digital position display DPA 2000S

- Rotational speed display
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glass scales

Powerful Brushless drive

- Particularly smooth running
- Nearly constant torque over the entire speed range
- High power output



Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quadruplicate tool holder
- All guidings adjustable via V-ledges
- Range of adjustment top slide $\pm 90^\circ$
- Big Chip protection at the top slide

Halogen machine lamp

- Coated articulated arm
- High positioning stability

Prism bed

- Heavily ribbed
- Inductively hardened
- Precision ground

Tailstock

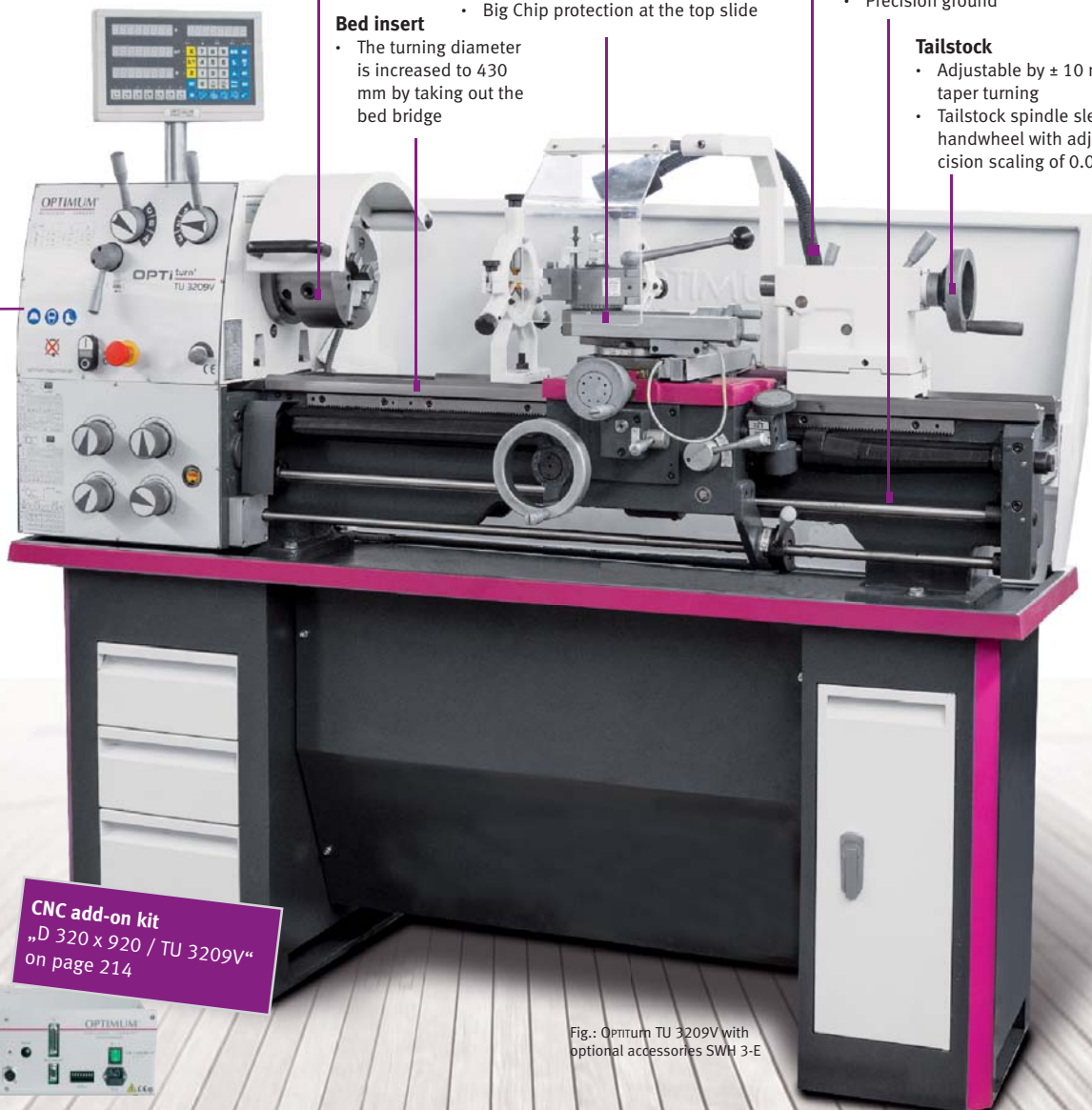
- Adjustable by ± 10 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Main spindle gearwheels smooth running, hardened and ground

Bed insert

- The turning diameter is increased to 430 mm by taking out the bed bridge



CNC add-on kit
„D 320 x 920 / TU 3209V“
on page 214



Fig.: Optimum TU 3209V with optional accessories SWH 3-E

Technical data, dimensions and accessories

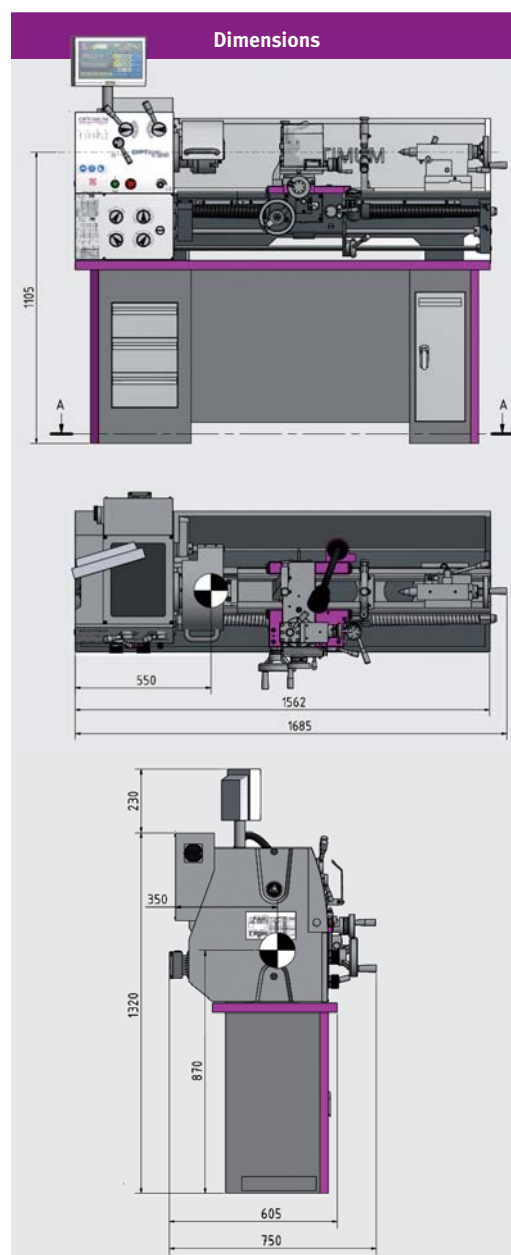
Model	TU 3209V
Item No	3403110
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Spindle	
Driving motor	1.5 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 38 mm
Quadruple tool holder seat height	12 x 12 mm
Quadruple tool holder seat height with optional SWH	16 x 16 mm
Machine data	
Centre height	160 mm
Centre width	920 mm
Turning Ø over lathe bed	320 mm
Turning Ø over cross slide	190 mm
Turning Ø in the bed bridge	430 mm
Length of bed bridge	230 mm
Bed width	181 mm
Speed range	
Spindle speed	12 - 2'250 min ⁻¹
Number of steps	9 steps
Travels	
Travel top slide	85 mm
Travel cross slide	162 mm
Feed and thread pitch	
Longitudinal feed in the range of	0.052 - 1.392 mm/rev; 32 feeds
Transverse feeds in the range of	0.014 - 0.380 mm/rev; 32 feeds
Pitch - Metric in the range of	0,4 - 7 mm; 26 thread pitches
Pitch - Inch in the range of	56 - 4 Gg/1"; 34 thread pitches
Tailstock	
Tailstock seat	MT 3
Tailstock- sleeve diameter/ sleeve travel	Ø 32 mm / 100 mm
Dimensions	
Length x width x height	1'685 x 750 x 1'550 mm
Weight	410 kg

The lathe corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Accessories	Item No	
Three jaw chuck Camlock cast Ø 200 mm	3442762	
Three jaw chuck CI3P Camlock cast Ø 200 mm	3442045	
Four jaw chuck CI4P Camlock cast Ø 200 mm	3442145	
Three jaw chuck CS3C Camlock steel Ø 200 mm	3442545	
Four jaw chuck CS4C Camlock steel Ø 200 mm	3442645	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441506	
Collet kit 3 - 25 mm, 17 pcs., 5C	3441509	
Quick change tool holder SWH 3-E	3384303	
Workshop assembly SWH	9000400	
Lathe tool kit 16 mm, 11 pcs.	3441508	
Lathe tool kit 16 mm, 5 pcs.	3441668	
Lathe tool kit 16 mm, 5 pcs. „Made in Germany“	3441216	
Lathe tool kit 16 mm, 5 pcs.	3441610	

Information to „quick action tool holder/lathe tool“ on page 100

Position limit stop with fine adjustment	3441522	
Vibration damping machine foot SE 2	3381016	



Standard equipment
<ul style="list-style-type: none"> • Three-jaw lathe chuck Ø 160 mm centrally clamping • Four jaw chuck Ø 200 mm universally adjustable jaws • Face clamping disc Ø 250 mm • Running center MT 3 • Steady rest passage Ø 19 - 70 mm • Follow rest passage Ø 16 - 50 mm • Chip tray • Machine base (not mounted) • Splash board (not mounted) • Lathe chuck protection • Machine lamp • Threading gauge • Quadruple tool holder • Change gear kit • Operating tool

Please find further information on „Accessories for lathes“ on page 97
Note: Machines are delivered without oil

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Completely equipped mechanic's lathe including enclosed feed gear for rapid and easy switching over of feed pitches. DPA version with digital position display DPA 2000

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 4
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Hardened and ground toothed wheels and shafts, running in an oil bath on precision bearings
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Protective cover lead screw
- Electrical system with Siemens components
- Foot-operated emergency stop device

DPA machines:

- **Digital position display DPA 2000**
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Glass scales

Main spindle

- Running in an oil bath
- Gearwheels smooth running, hardened and ground

Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Tailstock

- Adjustable by ± 10 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

Bed insert

- The turning diameter is increased to 516 mm by taking out the bed bridge

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quadruplicate tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide $\pm 90^\circ$

Halogen machine lamp

- Coated articulated arm
- High positioning stability

Prism bed

- Heavily ribbed
- Grey cast-iron
- Inductively hardened and precision ground

Substructure

- mounted

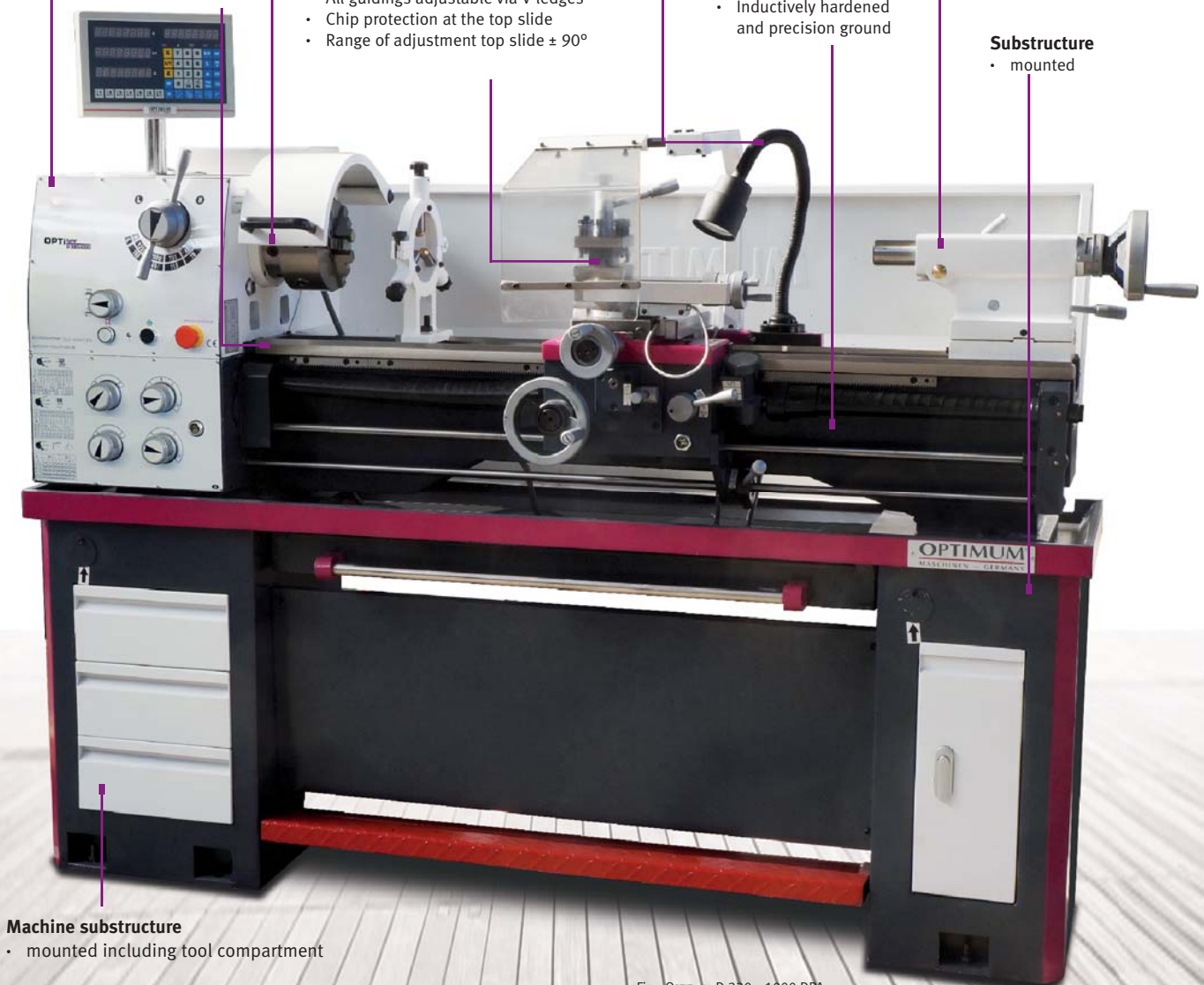
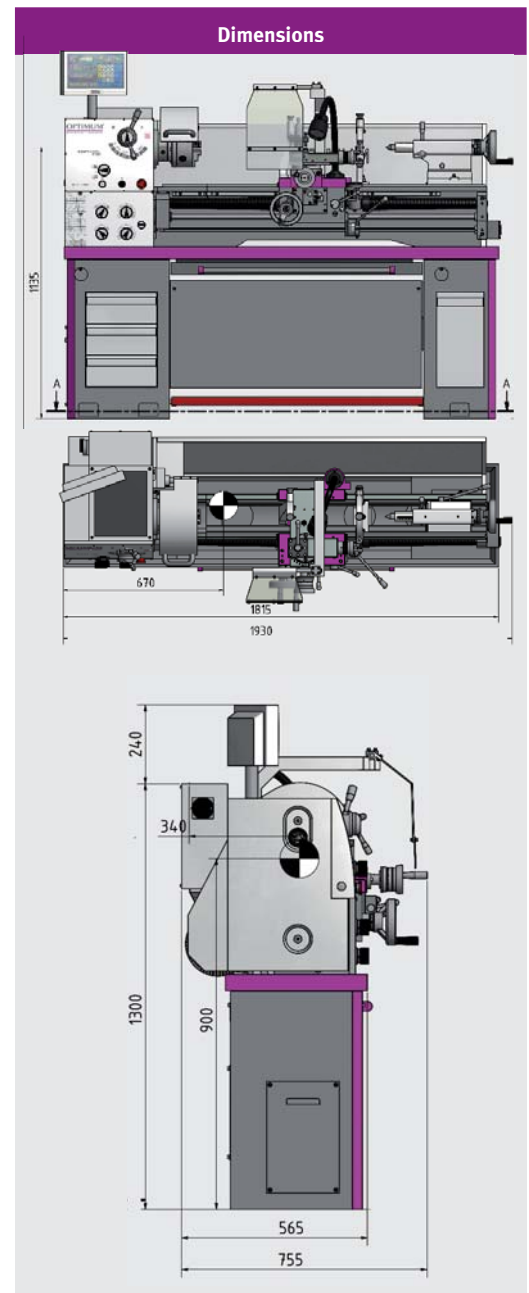


Fig.: OPTIMUM D 330 x 1000 DPA

Technical data, dimensions and accessories

Model	D 330 x 1000
Item No	3401000
Model	D 330 x 1000DPA
Item No	3401000DPA
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Spindle	
Driving motor	1.5 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 38 mm
Quadruple tool holder seat height	max. 16 mm
Machine data	
Centre height	165 mm
Centre width	1'000 mm
Turning Ø over lathe bed	330 mm
Turning Ø over cross slide	198 mm
Turning Ø in the bed bridge	476 mm
Length of bed bridge	210 mm
Bed width	187 mm
Speed range	
Spindle speed	70 - 2'000 min ⁻¹
Number of steps	8 steps
Travels	
Travel top slide	95 mm
Travel cross slide	170 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.052 - 1.392 mm/rev 40 feeds
Transverse feeds in the range of	0.014 - 0.380 mm/rev 40 feeds
Pitch - Metric in the range of	0.4 - 7 mm/rev 32 thread pitches
Pitch - Inch in the range of	56 - 4 Gg/1"; 40 thread pitches
Tailstock	
Tailstock seat	MT 3
Tailstock- sleeve diameter/ sleeve travel	Ø 45 mm / 126 mm
Dimensions	
Length x width x height	1'930 x 755 x 1'300 (DPA 1'550) mm
Net weight	550 kg
Transportation packaging flat rate	(TVP 2)

Accessories	Item No	
Three jaw chuck Camlock cast Ø 200 mm	3442762	
Three jaw chuck CI3P Camlock cast Ø 200 mm	3442045	
Four jaw chuck CI4P Camlock cast Ø 200 mm	3442145	
Three jaw chuck CS3C Camlock steel Ø 200 mm	3442545	
Four jaw chuck CS4C Camlock steel Ø 200 mm	3442645	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441506	
Collet kit 3 - 25 mm, 17 pcs. , 5c	3441509	
Quick change tool holder SWH 3-E	3384303	
Workshop assembly SWH	9000400	
Lathe tool kit 16 mm, 11 pcs.	3441508	
Lathe tool kit 16 mm, 5 pcs. „Made in Germany“	3441216	
Lathe tool kit 16 mm, 5 pcs.	3441610	
Information to „quick change tool holder/lathe tool“ on page 100		
Vibration damping machine foot SE 2	3381016	
Position limit stop with fine adjustment	3441523	



Standard equipment
<ul style="list-style-type: none"> • Three jaw chucks Ø 160 mm centrally clamping • Four jaw lathe chuck Ø 200 mm with universally adjustable jaws • Face clamping disc Ø 250 mm • Reducing bush MT 5/MT 3 • Steady centres MT 3 • Steady centres MT 3, alloyed • Steady rest Passage up to Ø max. 100 mm • Follow rest Passage up to Ø max. 95 mm • Threading gauge • Quadruple tool holder • Machine lamp • Change gear kit • Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

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Completely equipped precision centre lathe including enclosed feed gear for rapid and easy switching over of feed pitches

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 4
- Coolant equipment
- Coolant tank filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Hardened and ground toothed wheels and shafts, running in an oil bath on precision bearings
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Steady rest and follow rest
- Halogen machine lamp
- Protective cover lead screw

- Cable duct in an energy chain
- Foot-operated emergency stop device
- Electrical system with Siemens components
- Adjustable scale of the threading gauge

DPA machines:

- **Digital position display DPA 2000**
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Glass scales

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Main spindle gearwheels smooth running, hardened and ground

Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quadruplicate tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide $\pm 90^\circ$

Tailstock

- Adjustable by ± 6 mm for taper turning
- Tailstock spindle sleeve and hand-wheel with adjustable precision scaling of 0.025 mm

Bed insert

- The turning diameter is increased to 516 mm by taking out the bed bridge

Prism bed

- Heavily ribbed
- Grey cast-iron
- Inductively hardened
- Precision ground

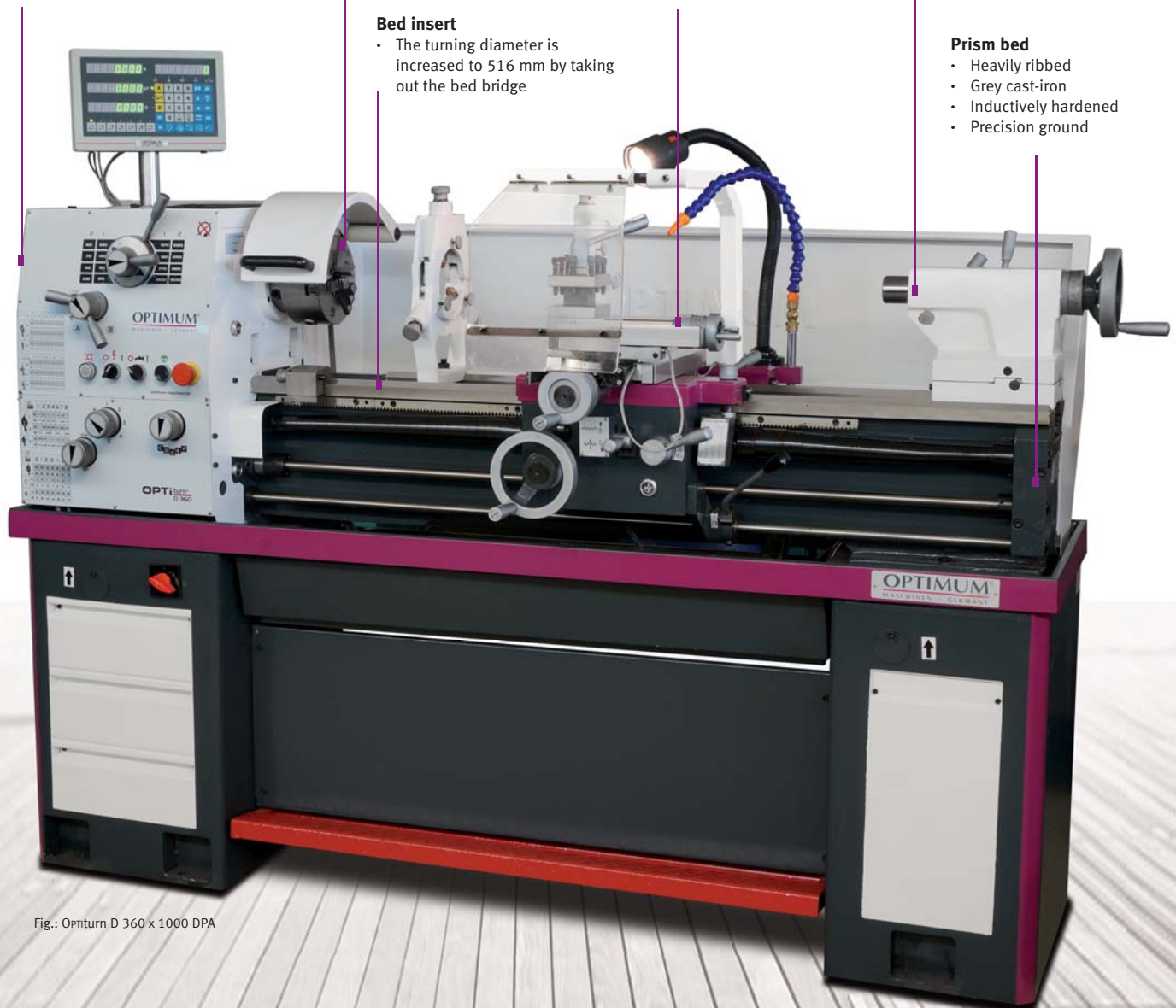


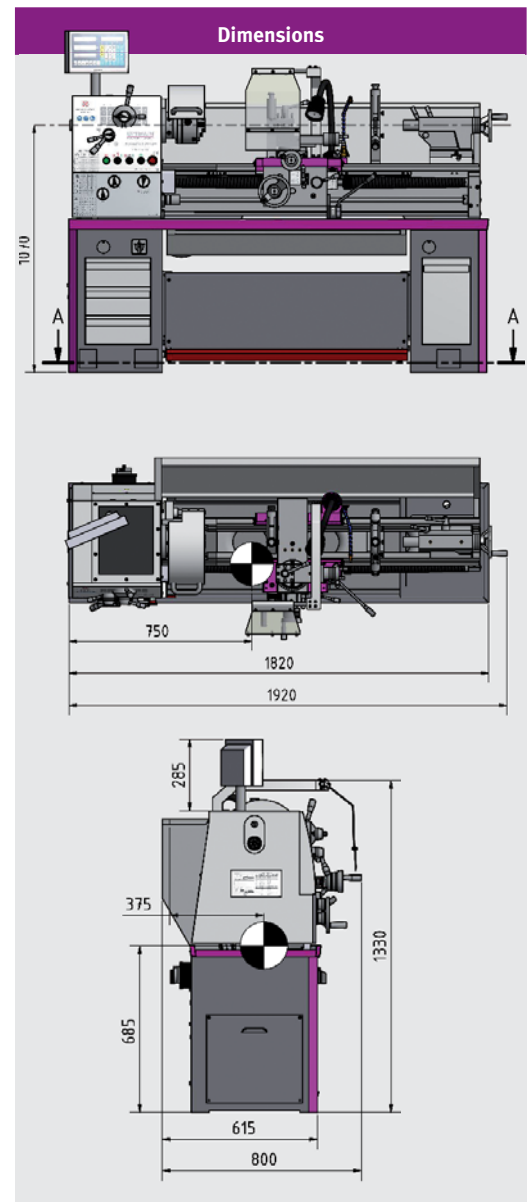
Fig.: Optturn D 360 x 1000 DPA

Technical data, dimensions and accessories

Model	D 360 x 1000
Item No	3401150
Model	D 360 x 1000DPA
Item No	3401150DPA
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Total connected value	2.5 KW
Spindle	
Drive motor, 2 stage	1.5 / 2.4 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 38 mm
Quadruple tool holder seat height	max. 16 mm
Cooling lubricant system	
Power of the coolant pump	40 W
Machine data	
Centre height	180 mm
Centre width	1.000 mm
Turning Ø over lathe bed	356 mm
Turning Ø over cross slide	220 mm
Turning Ø in the bed bridge	516 mm
Length of bed bridge	240 mm
Bed width	205 mm
Speed range	
Spindle speed	45 - 1'800 min ⁻¹
Number of steps	16 steps
Headstock	
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 38 mm
Travels	
Travel top slide	95 mm
Travel cross slide	180 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.043 - 0.653 mm/rev 42 feeds
Transverse feeds in the range of	0.015 - 0.220 mm/rev 42 feeds
Pitch - Metric in the range of	0.45 - 7.5 mm/rev; 37 thread pitches
Pitch - Inch in the range of	112 - 4 Gg/1"; 28 thread pitches
Tailstock	
Tailstock seat	MT 3
Tailstock- sleeve diameter/ sleeve travel	Ø 45 mm / 126 mm
Dimensions	
Length x width x height	1'920 x 800 x 1'250 (DPA 1'490) mm
Net weight	750 kg

Transportation packaging flat rate	(TVP 2) plus VAT
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Accessories	Item No	
Three jaw chuck Camlock cast Ø 200 mm	3442762	
Three jaw chuck CI3P Camlock cast Ø 200 mm	3442045	
Four jaw chuck CI4P Camlock cast Ø 200 mm	3442145	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441506	
Quick change tool holder SWH 3-E	3384303	
Workshop assembly SWH	9000400	
Lathe tool kit 16 mm, 11 pcs.	3441508	
Lathe tool kit 16 mm, 5 pcs. „Made in Germany“	3441216	
Lathe tool kit 16 mm, 5 pcs.	3441610	
Vibration damping machine foot SE 2	3381016	



Standard equipment
<ul style="list-style-type: none"> • Three jaw lathe chuck Ø 160 mm centric clamping • Four jaw lathe chuck Ø 200 mm with universally adjustable jaws • Face clamping disc Ø 320 mm • Reducing bush MT 5/MT 3 • Steady centres MT 3 • Steady centres MT 3, alloyed • Steady rest passage Ø 15 - 100 mm • Follow rest passage Ø 10 - 95 mm • Positioning impact position with fine adjustment • Threading gauge • Quadruple tool holder • Coolant equipment • Machine lamp • Change gear kit • Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

Completely equipped precision centre lathe with Siemens Inverter-Vario-drive and digital position display DPA 2000 S

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 4
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Hardened and ground toothed wheels and shafts, running in an oil bath on precision bearings
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Protective cover lead screw
- New machine base with drawers
- Cable duct in an energy chain
- Foot-operated emergency stop device
- Electrical system with Siemens components
- Adjustable scale of the threading gauge
- Quick action tool holder 3-E
- 1 tool holder 20 x 100 type D for square tools
- Digital position display DPA 2000S
 - Rotational speed display
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Glass scales

Converter SINAMICS G120D



More information: „Converter SINAMICS G120D“ on page 52



Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- High quality GATES driving belts

Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Range of adjustment top slide $\pm 90^\circ$
- Largely dimensioned chip protection with integrated LED light

Bed insert

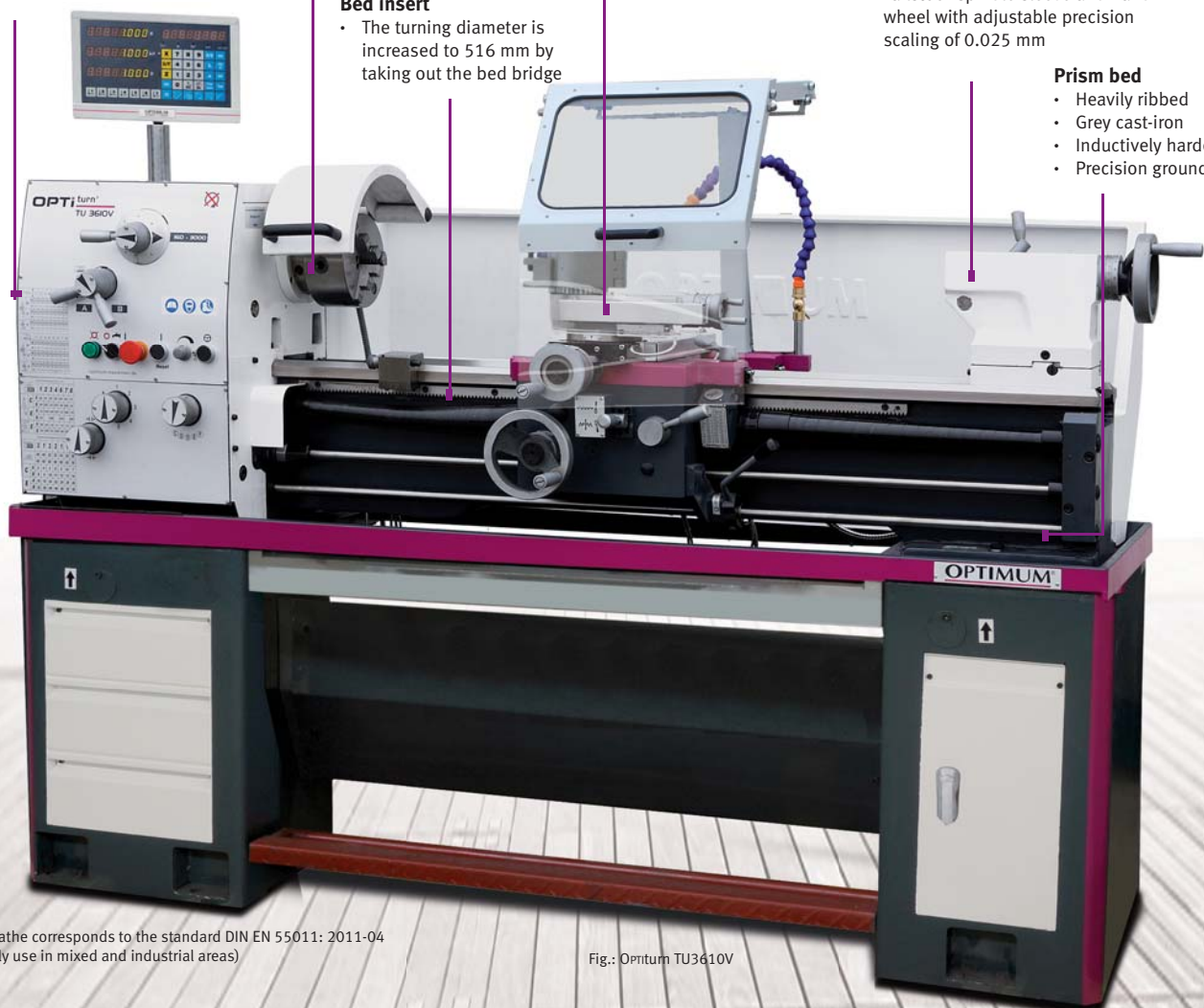
- The turning diameter is increased to 516 mm by taking out the bed bridge

Tailstock

- Adjustable by ± 6 mm for taper turning
- Tailstock spindle sleeve and hand-wheel with adjustable precision scaling of 0.025 mm

Prism bed

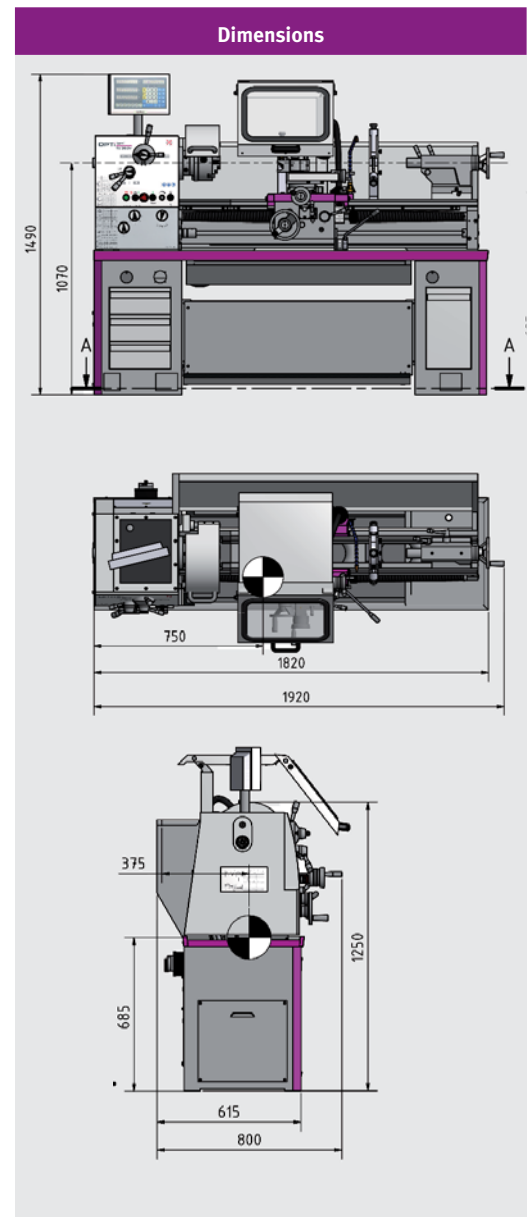
- Heavily ribbed
- Grey cast-iron
- Inductively hardened
- Precision ground



Technical data, dimensions and accessories

Model	TU 3610V
Item No	3403130
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Total connected value	4.1 kW
Spindle	
Driving motor	4 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 No. 4
Spindle hole, rod passage	Ø 38 mm
Quadruple tool holder seat height	max. 16 mm
Cooling lubricant system	
Power of the coolant pump	40 W
Work areas	
Centre height	180 mm
Centre width	1'000 mm
Turning Ø over lathe bed	356 mm
Turning Ø over cross slide	220 mm
Turning Ø in the bed bridge	516 mm
Length of bed bridge	240 mm
Bed width	205 mm
Speed range	
Spindle speed	30 - 550 min ⁻¹ / 160 - 3'000 min ⁻¹ *
Number of steps	2 steps, electrically adjustable speed
Travels	
Travel top slide	95 mm
Travel cross slide	180 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.043 - 0.653 mm/rev 42 feeds
Transverse feeds in the range of	0.015 - 0.220 mm/rev 42 feeds
Pitch - Metric in the range of	0.45 - 7.5 mm/rev; 37 thread pitches
Pitch - Inch in the range of	112 - 4 Gg/1"; 28 thread pitches
Tailstock	
Tailstock seat	MT 3
Tailstock- sleeve diameter/ sleeve travel	Ø 45 mm / 126 mm
Dimensions	
Length x width x height	1'920 x 800 x 1'490 mm
Net weight	750 kg
Transportation packaging flat rate	
(TVP 2)	

Accessories	Item No	
Three jaw chuck Camlock cast Ø 200 mm	3442762	
Three jaw chuck CI3P Camlock cast Ø 200 mm	3442045	
Four jaw chuck CI4P Camlock cast Ø 200 mm	3442145	
Three jaw chuck CS3C Camlock steel Ø 200 mm	3442545	
Four jaw chuck CS4C Camlock steel Ø 200 mm	3442645	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441506	
Collet kit 3 - 25 mm, 17 pcs. , 5c	3441509	
Quick change tool holder SWH 3-E	3384303	
Workshop assembly SWH	9000400	
Spare tool holder 30 x 100 type H for round chisel	3384322	
Lathe tool kit 16 mm, 11 pcs.	3441508	
Lathe tool kit 16 mm, 5 pcs.	3441668	
Lathe tool kit 16 mm, 5 pcs. „Made in Germany“	3441216	
Lathe tool kit 16 mm, 5 pcs.	3441610	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE 2	3381016	



* Speed under reserve

Standard equipment
<ul style="list-style-type: none"> • Three jaw lathe chuck Ø 160 mm centric clamping • Four jaw lathe chuck Ø 200 mm universally adjustable jaws • Face clamping disc Ø 320 mm • Reducing bush MT 5/MT 3 • Steady centres MT 3 • Steady centres MT 3, alloyed • Steady rest passage Ø 15 - 100 mm • Follow rest passage Ø 10 - 95 mm • Positioning impact position with fine adjustment • Threading gauge • Quick action tool holder 3-E • 1 tool holder 20 x 100 type D for square tools • Coolant equipment • Machine lamp • Change gear kit • Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Precise centre lathes. Advanced technology, complete equipment, easy-to-operate. DPA version with digital position display DPA 2000

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 6
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Running in an oil bath, hardened and ground with 2 readjustable precision taper roller bearings
- All metric thread pitch in the range from 0.2 to 14 mm/r and all inch threads in the range from 72 - 2 threads per inch without replacing the change gears by means of gear levers adjustable on the control panel
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Central lubrication at the bed slide
- Base frame and lathe bed made from one-piece meehanite casting
- Protective cover lead screw

- Electrical system with Siemens components
- Foot-operated emergency stop device
- Adjustable scale of the threading gauge
- Halogen machine lamp with articulated arm

DPA machines:

- **Digital position display DPA 2000**
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Glass scales

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Main spindle gearwheel-smooth running, hardened and ground

Fast acting feed gear

- Closed structure
- Hardened and ground toothed wheels and shafts
- Running in an oil bath on precision bearings

Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Turret head

- With fine adjustment as limit stop for table saddle

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quadruplicate tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide $\pm 90^\circ$



Energy chain

- Cable duct in an energy chain

Tailstock

- Adjustable by ± 13 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling

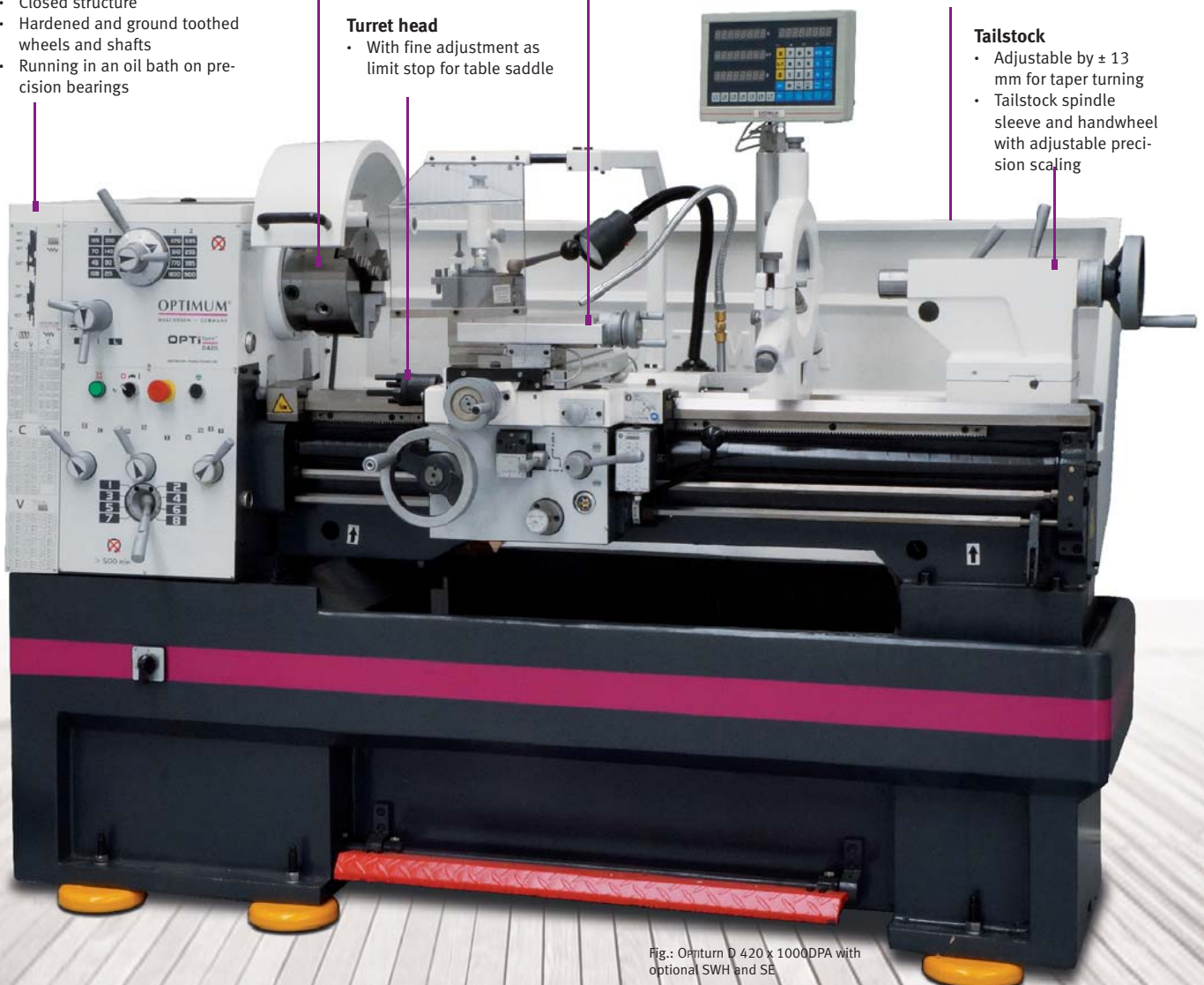


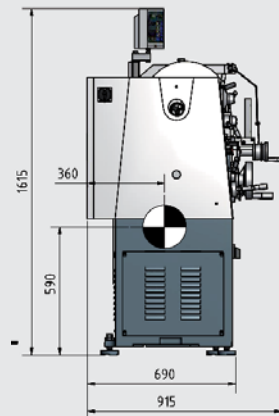
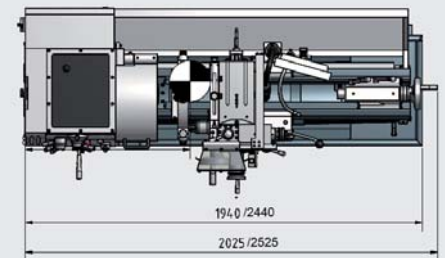
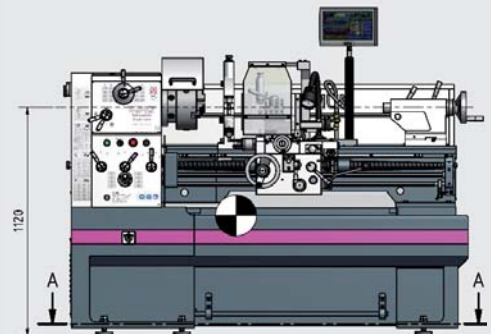
Fig.: OPTi turn D 420 x 1000DPA with optional SWH and SE

Technical data, dimensions and accessories

Model	D 420 x 1000	
Item No	3461160	
Model	D 420 x 1000DPA	D 420 x 1500DPA
Item No	3461160DPA	3461165DPA
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	
Total connected load	4.6 kW	
Spindle		
Driving motor	4.5 kW	
Spindle taper	MT 6	
Spindle seat	Camlock DIN ISO 702-2 No. 6	
Spindle hole, rod passage	Ø 52 mm	
Quadruple tool holder seat height	max. 20 x 20 mm	
Cooling lubricant system		
Power of the coolant pump	100 W	
Machine data		
Centre height	210 mm	
Centre width	1'000 mm	1'500 mm
Turning Ø over lathe bed	420 mm	
Turning Ø over cross slide	250 mm	
Turning Ø in the bed bridge	590 mm	
Length of bed bridge	260 mm	
Bed width	250 mm	
Speed range		
Spindle speed	45 - 1'800 min ⁻¹	
Number of steps	16 steps	
Travels		
Travel top slide	140 mm	
Travel cross slide	230 mm	
Feeds and thread pitches		
Longitudinal feed in the range of	0.05 - 1.7 mm/rev	17 feeds
Transverse feeds in the range of	0.025 - 0.85 mm/rev	17 feeds
Pitch - Metric in the range of	0.2 - 14 mm/rev	39 thread pitches
Pitch - Inch in the range of	72 - 2 Gg/1“;	45 thread pitches
Diametral pitch in the range of	8 - 44	21 trapezoid thread
Modular threads in the range of	0.3 - 3.5	18 modular thread
Tailstock		
Tailstock seat	MT 4	
Tailstock- sleeve diameter/ sleeve travel	Ø 50 mm / 120 mm	
Dimensions		
Length	2'025 mm	2'525 mm
Width x Height	915 x 1,375 (DPA 1'615) mm	
Net weight	1'550 kg	1'800 kg
Transportation packaging flat rate	(TVP 4)	

Accessories	Item No	
Three jaw chuck CI3P Ø 250 mm cast speed 2'000 min ⁻¹	3442055	
Four jaw chuck CI4P Ø 200 mm cast speed 2'500 min ⁻¹	3442150	
Three jaw chuck CS3C CI3P Ø 250 mm steel, speed 3'500 min ⁻¹	3442555	
Four jaw chuck CS4C Ø 250 mm steel, speed 3'500 min ⁻¹	3442655	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Quick action tool holder SWH 5-B	3384305	
Workshop assembly SWH 5-B	9000400	
Lathe tool kit HM 20 mm, 5 pcs.	3441670	
Lathe tool kit HM 20 mm, 5 pcs.	3441617	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE 2	3381016	

Dimensions



Standard equipment

- Three-jaw lathe chuck Ø 200 mm centric clamping
- Four jaw chuck Ø 250 mm universally adjustable jaws
- Face clamping disc Ø 350 mm
- Reducing bush MT 6/MT 4
- Fixed center MT 4
- Running center MT 4
- Steady rest passage Ø 15 - 105 mm
- Follow rest passage Ø 10 - 65 mm
- Positioning impact position with fine adjustment
- Threading gauge
- Quadruple tool holder
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

Completely equipped precision centre lathe with Siemens Inverter-Vario-drive and digital position display DPA 2000 S

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 6
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- All metric thread pitch in the range from 0.2 to 14 mm/r and all inch threads in the range from 72 - 2 threads per inch without replacing the change gears by means of gear levers adjustable on the control panel
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Central lubrication at the bed slide
- Protective cover lead screw
- Foot-operated emergency stop device
- Electrical system with Siemens components
- Adjustable scale of the threading gauge

- **Quick action tool holder SWH 5-B**
- **1 tool holder 25 x 120 type D for square tools**
- **Digital position display DPA 2000S**
 - Rotational speed display
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Glass scales

Converter SINAMICS G120D



More information: „Converter SINAMICS G120D“ on page 52



Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- High quality GATES driving belts

Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Slide

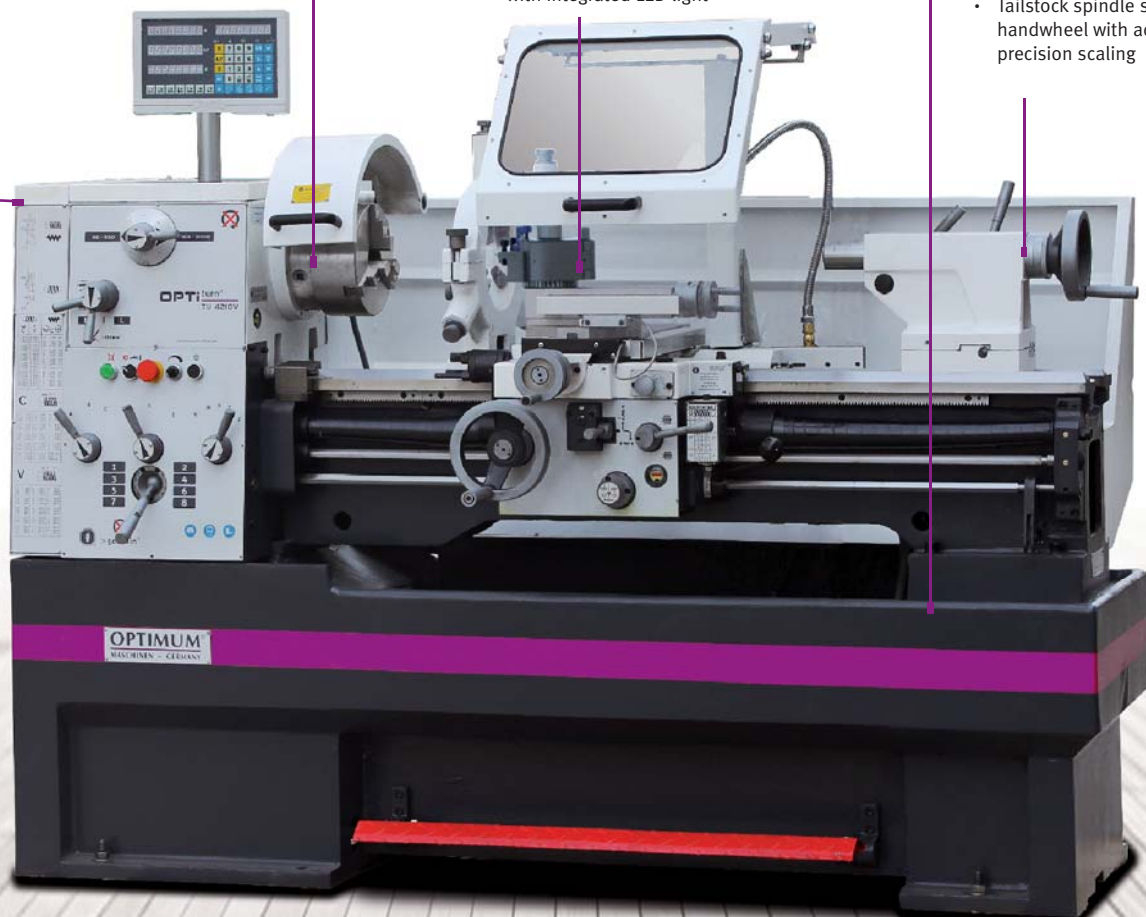
- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quick action tool holder SWH 5-B
- All guidings adjustable via V-ledges
- Range of adjustment top slide $\pm 90^\circ$
- Largely dimensioned chip protection with integrated LED light

Base frame and lathe bed

- Meehanite- cast
- One-piece casting

Tailstock

- Adjustable by ± 13 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling



The Vario lathe (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

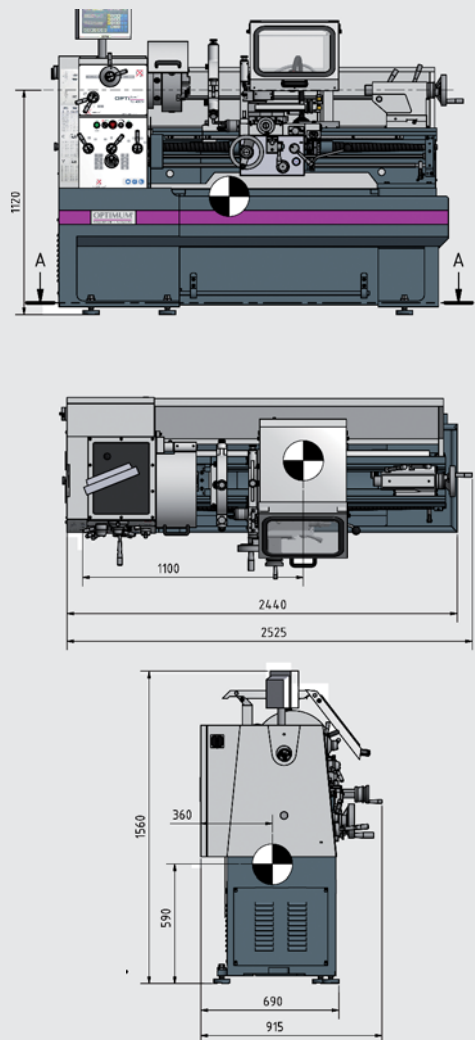
Fig.: Optiturn TU 4210V

Technical data, dimensions and accessories

Model	TU 4210V
Item No	3463150
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Total connected value	5.6 kW
Spindle	
Driving motor	5.5 kW
Spindle taper	MT 6
Spindle seat	Camlock DIN ISO 702-2 No. 6
Spindle hole, rod passage	Ø 52 mm
Quadruple tool holder seat height	max. 20 x 20 mm
Cooling lubricant system	
Power of the coolant pump	100 W
Work areas	
Centre height	210 mm
Centre width	1'000 mm
Turning Ø over lathe bed	420 mm
Turning Ø over cross slide	250 mm
Turning Ø in the bed bridge	590 mm
Length of bed bridge	260 mm
Bed width	250 mm
Speed range	
Spindle speed	30 - 550 min ⁻¹ / 160 - 3'000 min ⁻¹ *
Number of steps	2 steps, electrically adjustable speed
Travels	
Travel top slide	140 mm
Travel cross slide	230 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.05 - 1.7 mm/rev
Transverse feeds in the range of	0.025 - 0.85 mm/rev
Pitch - Metric in the range of	0.2 - 14 mm/rev
Pitch - Inch in the range of	72 - 2 Gg/1";
Diametral pitch in the range of	8 - 44 D.P;
Modular threads in the range of	0.3 - 3.5
Tailstock	
Tailstock seat	MT 4
Tailstock- sleeve diameter/ sleeve travel	Ø 50 mm / 120 mm
Dimensions	
Length x width x height	2'025 mm x 915 x 1'615 mm
Net weight	1'550 kg
Transportation packaging flat rate	(TVP 4)

Accessories	Item No	
Three jaw chuck CS3C Ø 250 mm steel Speed 3'500 min ⁻¹	3442555	
Four jaw chuck CS4C Ø 250 mm steel Speed 3'500 min ⁻¹	3442655	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441507	
Collet kit 3 - 25 mm, 5C, 17 pcs.	3441509	
Spare tool holder 32 x 130 type H for round chisel	3384324	
Lathe tool kit HM 20 mm, 5 pcs.	3441670	
Lathe tool kit HM 20 mm, 5 pcs.	3441617	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE 2	3381016	

Dimensions



* Speed under reserve

Standard equipment

- Three-jaw lathe chuck Ø 200 mm centric clamping
- Four jaw chuck Ø 250 mm universally adjustable jaws
- Face clamping disc Ø 350 mm
- Reducing bush MT 6/MT 4
- Fixed center MT 4
- Running center MT 4
- Steady rest passage Ø 15 - 105 mm
- Follow rest passage Ø 10 - 65 mm
- Positioning impact position with fine adjustment
- Threading gauge
- **Quick action tool holder SWH 5-B**
- **1 tool holder 25 x 120 type D for square tools**
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

New precisions centre lathes - unique in precision and handling. With new digital position display DPA 21

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 6
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
- Protective cover lead screw
- Foot-operated emergency stop device
- Electrical system with Siemens components
- Adjustable scale of the threading gauge
- Central lubrication at the bed slide
- **Quick action tool holder SWH 5-B**
- **1 tool holder 25 x 120 type D for square tools**
- **Digital position display DPA 21**
 - Rotational speed display
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Glass scales

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Gearwheels smooth running, hardened and ground

Fast acting feed gear

- Closed structure
- Hardened and ground toothed wheels and shafts
- Running in an oil bath on precision bearings

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Shafts and wheels running in the oil bath
- Range of adjustment top slide $\pm 90^\circ$

Energy chain

- Cable duct in an energy chain

Digital position display

- DPA 21

Chip protection

- Generously dimensioned
- Integrated fluorescent tube

Tailstock

- Adjustable by ± 15 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

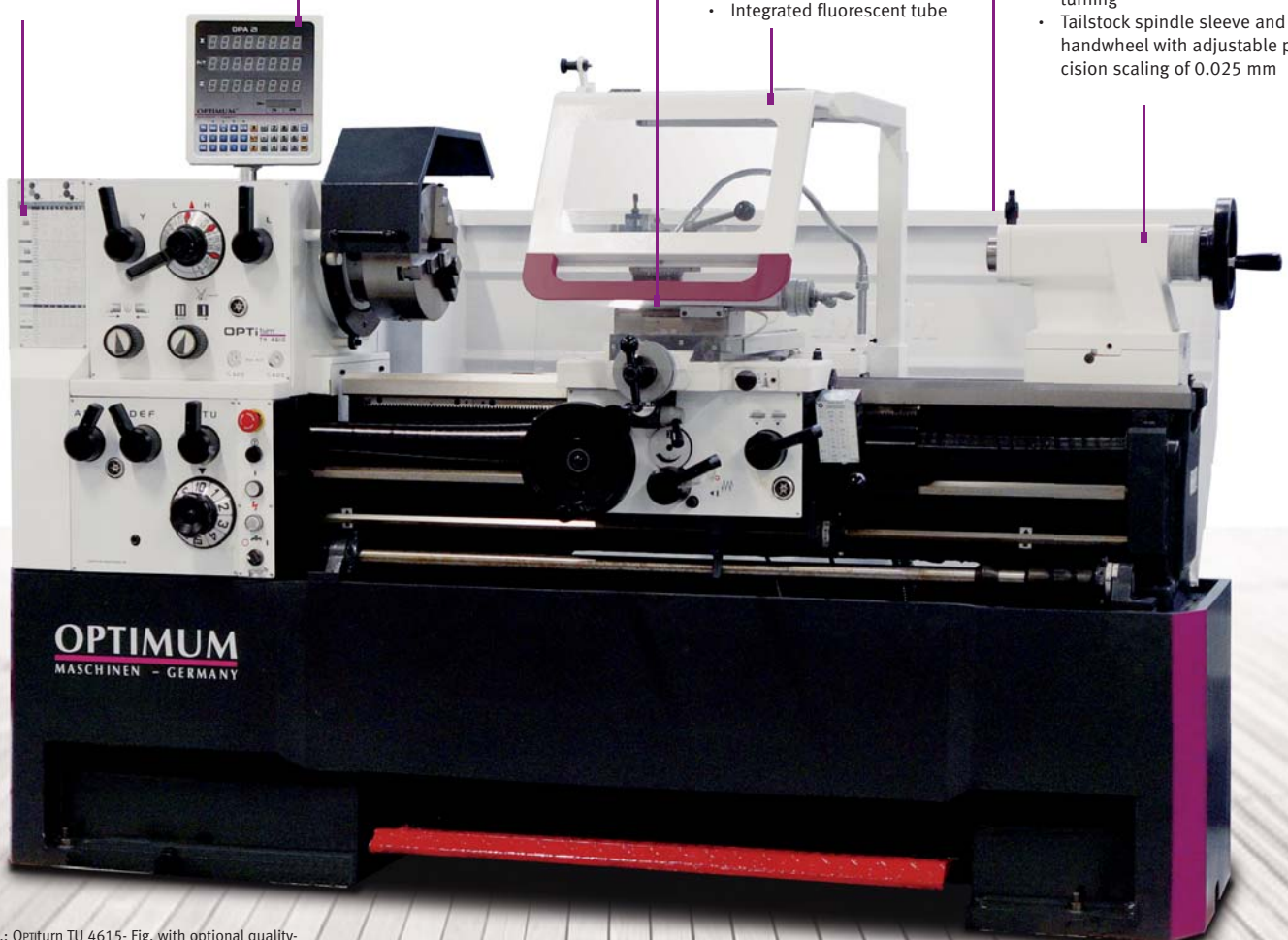


Fig.: OPTi turn TU 4615- Fig. with optional quality-lathe chuck by OPTIMUM

Technical data and accessories

Model	TH 4610	TH 4615	TH 4620
Item No	3462110	3462120	3462130
Electrical connection			
Connection	400 V / 3 Ph ~50 Hz		
Total connected load	5.8 kW		
Spindle			
Driving motor	5.5 KW		
Spindle taper	MT 6		
Spindle seat	Camlock DIN ISO 702-2 No. 6		
Spindle hole, rod passage	Ø 58 mm		
Height of quadruple tool holder	max. 25 x 25 mm		
Cooling lubricant system			
Power of the coolant pump	100 W		
Machine data			
Centre height	230 mm		
Centre width	1'000 mm	1'500 mm	2'000 mm
Turning Ø over lathe bed	465 mm		
Turning Ø over cross slide	270 mm		
Turning Ø in the bed bridge	690 mm		
Length of bed bridge	240 mm		
Bed width	300 mm		
Speed range			
Spindle speed	25 - 2'000 min ⁻¹		
Number of steps	12 steps		
Travels			
Travel top slide	125 mm		
Travel cross slide	285 mm		
Feeds and thread pitches			
Longitudinal feed in the range of	0.031 - 1.7 mm/rev	42 feeds	
Transverse feeds in the range of	0.014 - 0.784 mm/rev	42 feeds	
Pitch - Metric in the range of	0.1 - 14 mm/rev	41 thread pitches	
Pitch - Inch in the range of	112 - 2 Gg/1“;	41 thread pitches	
Diametral pitch in the range of	4 - 112	50 trapezoid thread	
Modular threads in the range of	0.1 - 7	34 modular thread	
Tailstock			
Tailstock seat	MT 4		
Tailstock- sleeve diameter/ sleeve travel	Ø 60 mm / 130 mm		
Dimensions			
Length	2'200 mm	2'750 mm	3'250 mm
Width x Height	1'245 x 1'568 mm		
Net weight	1'645 kg	1'810 kg	1'945 kg
Transportation packaging flat rate	(TVP 4)	(TVP 4)	(TVP 5)

Don't forget
lathe chuck

Accessories	Item No	
Three jaw chuck CI3P Ø 250 mm cast speed 2'000 min ⁻¹	3442055	
Four jaw chuck CI4P Ø 250 mm cast speed 2'500 min ⁻¹	3442155	
Three jaw chuck CS3C CI3P Ø 250 mm steel, speed 3'500 min ⁻¹	3442555	
Four jaw chuck CS4C Ø 250 mm steel, speed 3'500 min ⁻¹	3442655	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441507	
Collet kit 3 - 25 mm, 5C, 17 pcs.	3441509	
Spare tool holder 32 x 130 type H for round chisel	3384324	
Lathe tool kit HM 20 mm, 5 pcs.	3441670	
Lathe tool kit HM 20 mm, 5 pcs.	3441617	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE 3	3381018	

Standard equipment

- Reducing bush MT 6 / MT 4
- Fixed center MT 4
- Steady rest Passage Ø max. 160 mm
- Follow rest Passage Ø max. 100 mm
- **Quick action tool holder SWH 5-B**
- **1 tool holder 25 x 120 type D for square tools**
- Threading gauge
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Heavy centre lathe completely equipped, particularly smooth running and low - vibration with electronically Siemens Inverter Vario drive and new digital position display DPA 21

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 8
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
- Protective cover lead screw
- Foot-operated emergency stop device
- Electrical system with Siemens components
- Adjustable scale of the threading gauge
- Central lubrication at the bed slide

- Quick action tool holder SWH 5-B
- 1 tool holder 25 x 120 type D for square tools
- Digital position display DPA 21
 - Rotational speed display
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Glass scales

Converter SINAMICS G120D



More information: „Converter SINAMICS G120D“ on page 52



Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Gearwheels smooth running, hardened and ground

Fast acting feed gear

- Closed structure
- Hardened and ground toothed wheels and shafts
- Running in an oil bath on precision bearings

Digital position display

- DPA 21

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Shafts and wheels running in the oil bath
- Range of adjustment top slide $\pm 90^\circ$

Chip protection

- Generously dimensioned
- Integrated fluorescent tube

Energy chain

- Cable duct in an energy chain

Tailstock

- Adjustable by ± 15 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

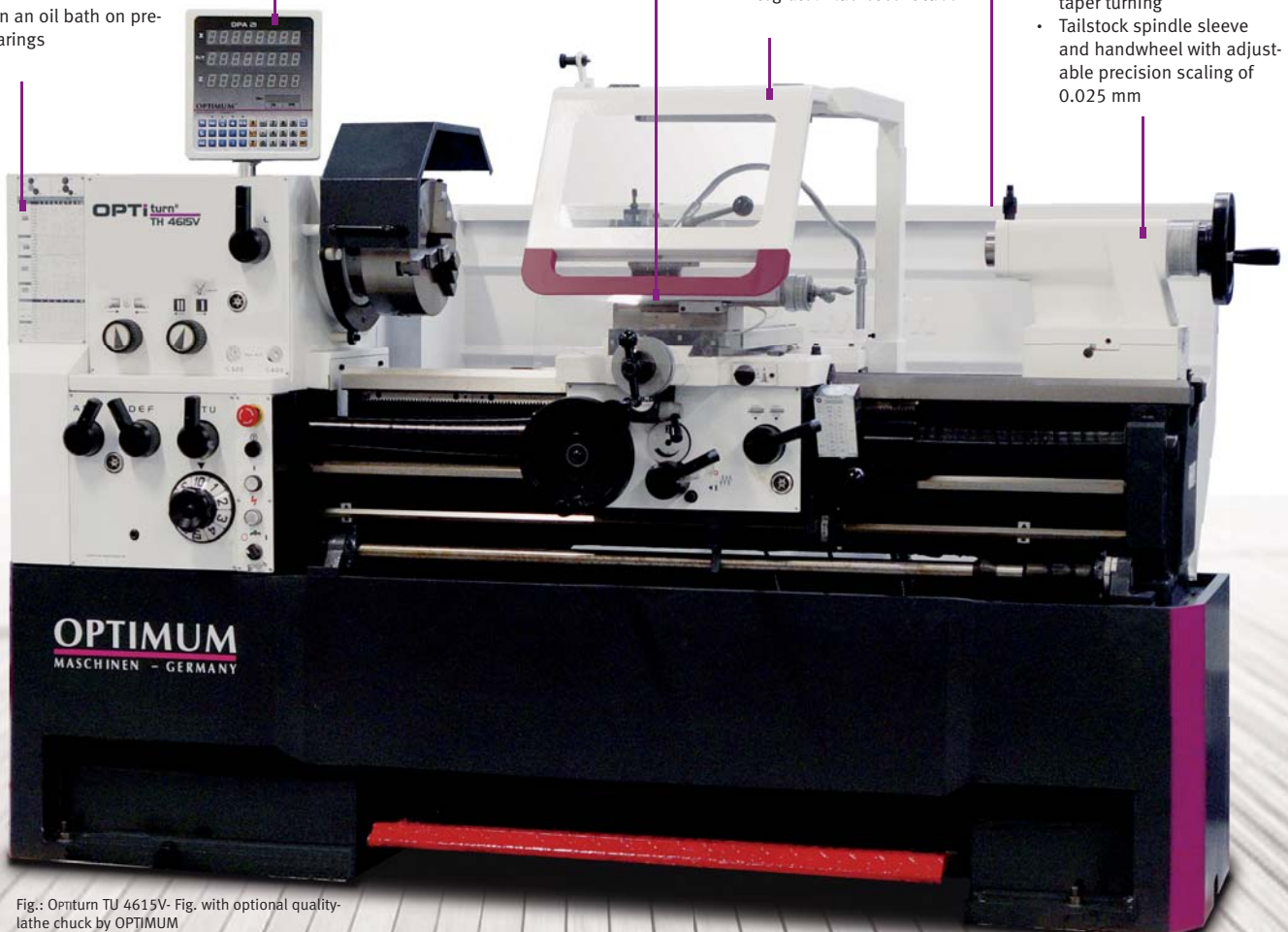


Fig.: Optiturn TU 4615V- Fig. with optional quality-lathe chuck by OPTIMUM

Technical data and accessories

Model	TH 4615V
Item No	3462125
Electrical connection	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected value	8.5 kW
Spindle	
Driving motor	7.5 KW
Spindle taper	MT 7
Spindle seat	Camlock DIN ISO 702-2 No. 8
Spindle hole, rod passage	
Height of quadruple tool holder	Ø 80 mm
	max. 25 x 25 mm
Cooling lubricant system	
Power of the coolant pump	100 W
Machine data	
Centre height	230 mm
Centre width	1'500 mm
Turning Ø over lathe bed	465 mm
Turning Ø over cross slide	270 mm
Turning Ø in the bed bridge	690 mm
Length of bed bridge	240 mm
Bed width	300 mm
Speed range	
Spindle speed	30 - 400 min ⁻¹ / 160 - 2000 min ⁻¹
Number of steps	2 steps, electrically adjustable speed
Travels	
Travel top slide	125 mm
Travel cross slide	285 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.031 - 1.7 mm/rev
Transverse feeds in the range of	0.014 - 0.784 mm/rev
Pitch - Metric in the range of	0.1 - 14 mm/rev
Pitch - Inch in the range of	112 - 2 Gg/1";
Diametral pitch in the range of	4 - 112 D.P.;
Modular threads in the range of	0.1 - 7
Tailstock	
Tailstock seat	MT 4
Tailstock sleeve diameter [mm]	Ø 60 mm / 130 mm
Dimensions	
Length x width x height	2'720 x 1'080 x 1'370 mm
Net weight	2'750 kg
Transportation packaging flat rate	(TVP 4)

**Don't forget
lathe chuck**

Available from May 2015

Accessories	Item No	
Three jaw chuck CI3P Ø 250 mm cast speed 2'000 min ⁻¹	3442055	
Four jaw chuck CI4P Ø 250 mm cast speed 2'500 min ⁻¹	3442155	
Three jaw chuck CS3C CI3P Ø 250 mm steel, speed 3'500 min ⁻¹	3442555	
Four jaw chuck CS4C Ø 250 mm steel, speed 3'500 min ⁻¹	3442655	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Universal collet attachment 5C	3441507	
Collet kit 3 - 25 mm, 5C, 17 pcs.	3441509	
Spare tool holder 32 x 130 type H for round chisel	3384324	
Lathe tool kit HM 20 mm, 5 pcs.	3441670	
Lathe tool kit HM 20 mm, 5 pcs.	3441617	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE 3	3381018	

Standard equipment

- Reducing bush MT 6 / MT 4
- Fixed center MT 4
- Steady rest Passage Ø max. 160 mm
- Follow rest Passage Ø max. 100 mm
- **Quick action tool holder SWH 5-B**
- **1 tool holder 25 x 120 type D for square tools**
- Threading gauge
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Please find further information on „Accessories for lathes“ on page 97

Note: Machines are delivered without oil

The Vario lathe (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

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Heavy centre lathes with digital position display DPA21 precision for a lifetime

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 8
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Clearly arranged gear selector levers to switch the feed speeds
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Central lubrication at the bed slide
- Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
- Protective cover lead screw
- Foot-operated emergency stop device
- Electrical system with Siemens components
- Adjustable scale of the threading gauge
- **Quick action tool holder SWH 7-C**
- **1 tool holder 32 x 150 type D for square tools**
- **Digital position display DPA 21**
 - Rotational speed display
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Glass scales

Fast acting feed gear

- Closed structure
- Hardened and ground toothed wheels and shafts
- Running in an oil bath on precision bearings

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Gearwheels smooth running, hardened and ground

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Shafts and wheels running in the oil bath
- Range of adjustment top slide $\pm 90^\circ$

Energy chain

- Cable duct in an energy chain

Digital position display

- DPA 21

Chip protection

- Generously dimensioned
- Integrated fluorescent tube

Tailstock

- Adjustable by ± 15 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

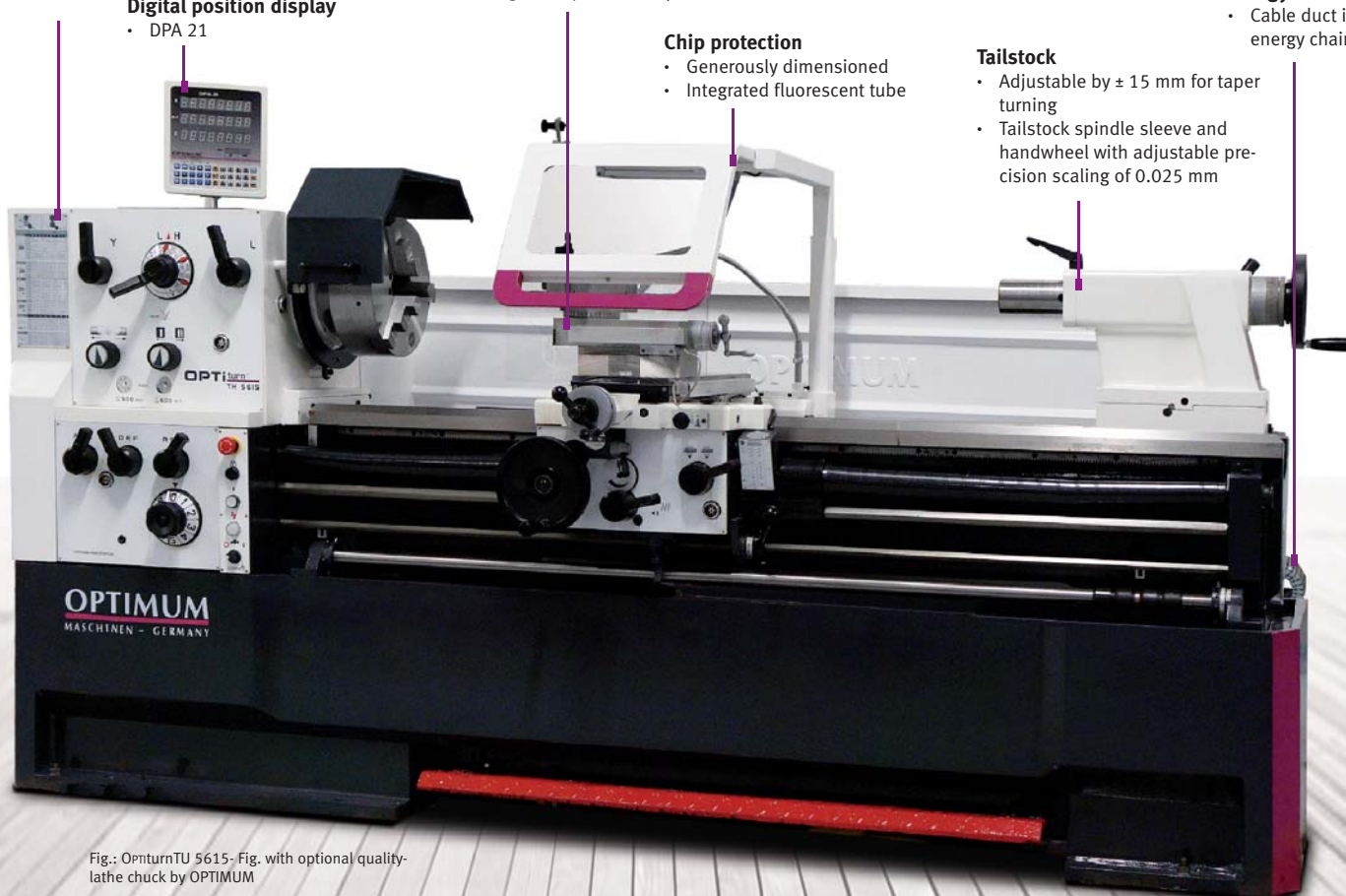


Fig.: Opti turn TH 5615- Fig. with optional quality-lathe chuck by OPTIMUM

Technical data and accessories

Model	TH 5615	TH 5620	TH 5630
Item No	3462160	3462170	3462180
Electrical connection			
Connection	400 V / 3 Ph ~50 Hz		
Total connected load	8.5 KW		
Spindle			
Driving power spindle motor	7.5 kW		
Spindle taper	MT 7		
Spindle seat	Camlock DIN ISO 702-2 No. 8		
Spindle hole, rod passage	Ø 80 mm		
Tool holder seat height max.	25 x 25 mm		
Machine data			
Centre height	280 mm		
Centre width	1'500 mm	2'000 mm	3'000 mm
Turning Ø over lathe bed	560 mm		
Turning Ø over cross slide	355 mm		
Turning Ø in the bed bridge	790 mm		
Length of bed bridge	150 mm		
Bed width	350 mm		
Speed range			
Spindle speed	25 - 1'600 min ⁻¹		
Number of steps	12 steps		
Travels			
Travel top slide	130 mm		
Travel cross slide	310 mm		
Feeds and thread pitches			
Longitudinal feed in the range of	0.059 - 1.646 mm/rev 35 feeds		
Transverse feeds in the range of	0.020 - 0.573 mm/rev 35 feeds		
Pitch - Metric in the range of	0.2 - 14 mm/rev 47 thread pitches		
Pitch - Inch in the range of	112 - 2 Gg/1"; 60 thread pitches		
Diametral pitch in the range of	4 - 112 50 trapezoid thread		
Modular threads in the range of	0.1 - 7 34 modular thread		
Tailstock			
Tailstock seat	MT 5		
Tailstock- sleeve diameter/ sleeve travel	Ø 75 mm / 180 mm		
Dimensions			
Length x width x height	2'840 x 1'150 x 1'460 mm	3'340 x 1'150 x 1'460 mm	4'340 x 1'150 x 1'460 mm
Net weight	2'302 kg	2'720 kg	3'000 kg
Transportation packaging flat rate	(TVP 5)	(TVP 5)	(TVP 6)

Don't forget
lathe chuck

Accessories	Item No	
Three-jaw lathe chuck CS3C Ø 315 mm D1 - 8" steel, Speed 2'800 min ⁻¹	3442565	
Four jaw lathe chuck CS4C Ø 315 mm D1 - 8" steel, Speed 2'800 min ⁻¹	3442665	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Follow rest MT 5	3440705	
Positioning limit stop with fine adjustment	3444023	
Spare tool holder 40 x 160 type H for round chisel	3384326	
Lathe tool kit HM 20 mm, 5 pcs.	3441670	
Lathe tool kit HM 20 mm, 5 pcs.	3441617	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE3	3381018	

Standard equipment

- Reducing bush MT 7 / MT 5
- Fixed center MT 5
- Running center MT 5
- Steady rest Passage Ø max. 165 mm
- Follow rest Passage Ø max. 95 mm
- **Quick action tool holder SWH 7-C**
- **1 tool holder 32 x 150 type D for square tools**
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

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Heavy centre lathe with Siemens Inverter-Vario drive, which distinguishes themselves by high flexibility, precision and economy. With digital position display DPA 21

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 8
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant system with separate coolant tank, Level indicator and oil separator; Easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose better than 0.015 mm
- Clearly arranged gear selector levers to switch the feed speeds
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Central lubrication at the bed slide
- Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
- Protective cover lead screw
- Foot-operated emergency stop device

- Electrical system with Siemens components
- Adjustable scale of the threading gauge
- **Quick action tool holder SWH 7-C**
- **1 tool holder 32 x 150 type D for square tools**
- **Digital position display DPA 21**
 - Rotational speed display
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Glass scales

Fast acting feed gear

- Closed structure
- Hardened and ground toothed wheels and shafts
- Running in an oil bath on precision bearings

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- Gearwheels smooth running, hardened and ground

Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Shafts and wheels running in the oil bath
- Range of adjustment top slide $\pm 90^\circ$

Converter SINAMICS G120D



More information: „Converter SINAMICS G120D“ on page 52



Energy chain

- Cable duct in an energy chain

Digital position display

- DPA 21

Chip protection

- Generously dimensioned
- Integrated fluorescent tube

Tailstock

- Adjustable by ± 15 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm

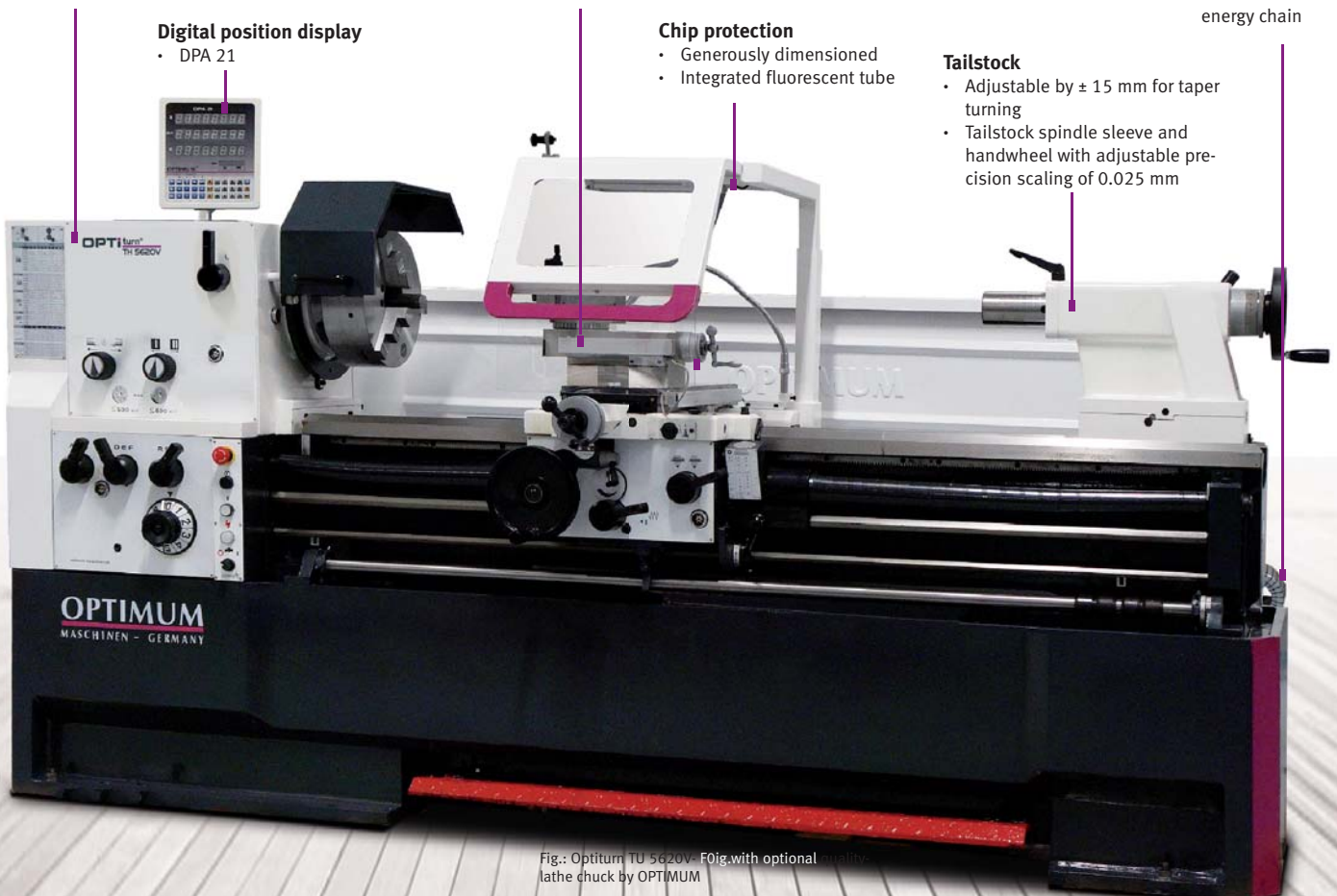


Fig.: Optimum TH 5620V-F01g with optional quality lathe chuck by OPTIMUM

Technical data and accessories

Model	TH 5620V
Item No	3462175
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Total connected load	8.5 kW
Spindle	
Driving motor	7.5 kW
Spindle taper	MT 7
Spindle seat	Camlock DIN ISO 702-2 No. 8
Spindle hole, rod passage	Ø 105 mm
Tool holder seat height max.	25 x 25 mm
Machine data	
Centre height	280 mm
Centre width	2'000 mm
Turning Ø over lathe bed	560 mm
Turning Ø over cross slide	355 mm
Turning Ø in the bed bridge	785 mm
Length of bed bridge	150 mm
Bed width	350 mm
Speed range	
Spindle speed	25 - 200 min ⁻¹ / 200 - 1'600 min ⁻¹
Number of steps	2 steps, electrically adjustable speed
Travels	
Travel top slide	130 mm
Travel cross slide	310 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.059 - 1.646 mm/rev
Transverse feeds in the range of	0.020 - 0.573 mm/rev
Pitch - Metric in the range of	0.2 - 14 mm/rev
Pitch - Inch in the range of	112 - 2 Gg/1";
Diametral pitch in the range of	4 - 112
Modular threads in the range of	0.1 - 7
Tailstock	
Tailstock seat	MT 5
Tailstock- sleeve diameter/ sleeve travel	Ø 75 mm / 180 mm
Dimensions	
Length x width x height	3'340 x 1'150 x 1'460 mm
Net weight	2'985 kg
Transportation packaging flat rate	(TVP 5)

Available from May 2015

**Don't forget
lathe chuck**

Accessories	Item No	
Three-jaw lathe chuck CS3C Ø 315 mm D1 - 8" steel, Speed 2'800 min ⁻¹	3442565	
Four jaw lathe chuck CS4C Ø 315 mm D1 - 8" steel, Speed 2'800 min ⁻¹	3442665	
Please find more lathe chucks and non-rigid block jaws from page 107 on		
Follow rest MT 5	3440705	
Positioning limit stop with fine adjustment	3444023	
Spare tool holder 40 x 160 type H for round chisel	3384326	
Lathe tool kit HM 20 mm, 5 pcs.	3441670	
Lathe tool kit HM 20 mm, 5 pcs.	3441617	
Information to „Lathe tool kits“ on page 102		
Vibration damping machine foot SE3	3381018	

The Vario lathe (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Standard equipment

- Reducing bush MT 7 / MT 5
- Fixed center MT 5
- Running center MT 5
- Steady rest Passage Ø max. 165 mm
- Follow rest Passage Ø max. 95 mm
- **Quick action tool holder SWH 7-C**
- **1 tool holder 32 x 150 type D for square tools**
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Please find further information on
„Accessories for lathes“ on page 97
Note: Machines are delivered without oil

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Centre lathes which are outstanding due to high flexibility, precision and economy

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 8
- Closed fast acting feed gear, hardened and ground toothed wheels and running on precision bearings
- Clearly arranged gear selector levers to switch the feed speeds
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Direction of rotation for camming as well as the switching according to the standard
- Safety limit switch with compulsory opening contacts
- Central lubrication at the bed slide
- Protective cover lead screw
- Halogen machine lamp with articulated arm
- Foot-operated emergency stop device
- With electrical system made by Siemens
- **Quick action tool holder SWH 9-D**
- **1 tool holder 41 x 180 type D for square tools**
- **Digital position display DPA 2000**
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Including it's own outlet. DPA2000 It is switched on and off on the main switch
 - Glass scales

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 3 readjustable precision taper roller bearings
- Gearwheels smooth running, hardened and ground

Energy saving mode

- Machine automatically switches off after a few minutes of idle run.
- Default time can be set

Electrical engine brake

- Rapid emergency stop
- During standard operation rapid stop without follow-up

Clearly arranged switch cabinet



Slide

- Precisely worked
- Top slide can be turned by 360°
- Shafts and wheels running in the oil bath
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quick action tool holder SWH9-D
- All guidings adjustable via V-ledges
- Chip protection at the top slide

Cable guide in an energy chain



Rapid feed

- Push button and selector lever to activate the rapid feed for transverse and longitudinal direction
- For more efficient working
- Does not switch the whole machine, if the limit switch is retracted.



Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability

Coolant tank

- Separate with level indicator and oil separator
- Easy and complete draining and cleaning



Fig.: Optimum D 660 x 3000 DPA

Technical data and accessories

Model	D 660 x 2000DPA		D 660 x 3000DPA	
Item No	3462720DPA		3462730DPA	
Electrical connection				
Connection	400 V / 3 Ph ~50 Hz			
Total connected value	10 kW			
Spindle				
Driving motor	7.5 kW			
Spindle taper	MT 7			
Spindle seat	Camlock DIN ISO 702-2 No. 8			
Spindle hole, rod passage	Ø 105 mm			
Quick change tool holder seat height	max. 32 mm			
Cooling lubricant system				
Power of the coolant pump	150 W			
Machine data				
Centre height	330 mm			
Centre width	2'000 mm		3'000 mm	
Turning Ø over lathe bed	660 mm			
Swing without bed bridge	900mm			
Length of bed bridge	250 mm			
Turning Ø over cross slide	440 mm			
Bed dimension	400 mm			
Speed range				
Spindle speed	25 - 1'600 min ⁻¹			
Number of steps	16 steps			
Travels				
Travel top slide	230 mm			
Travel cross slide	368 mm			
Feeds and thread pitches				
Longitudinal feed in the range of	0.044 - 1.48 mm/rev	25 feeds		
Transverse feeds in the range of	0.022 - 0.74 mm/rev	25 feeds		
Pitch - Metric	0.45 - 120 mm/rev	54 thread pitches		
Pitch - Inch in the range of	80 - 7/16 Gg/1";	60 thread pitches		
Diametral pitch in the range of	7/8 - 160 D.P;	42 trapezoid thread		
Modular threads in the range of	0.25 - 60 M.P ;	46 modular thread		
Tailstock				
Tailstock seat	MT 5			
Tailstock - sleeve travel	235 mm			
Dimensions				
Length x width x height	3'650 x 1'230 x 1'751 mm		4'650 x 1'230 x 1'751 mm	
Net weight	3'345 kg		3'710 kg	
Transport surcharge	(TVP 6)		(TVP 6)	

Tailstock

- Adjustable by ± 13 mm for taper turning
- Tailstock spindle sleeve and hand-wheel with adjustable precision scaling
- Crank to position change
- Tailstock sleeve with two adjustable transmission 1/4 or 1/1 revolution

Standard equipment

- Three-jaw lathe chuck Ø 325 mm / No. 8 centric clamping
- Four-jaw lathe chuck Ø 400 mm / No. 8 universally adjustable jaws
- Face clamping disc Ø 450 mm / No. 8
- Reducing bush MT 7 / MT 5
- Fixed center MT 5
- Fixed center MT 5, alloyed
- Steady rest Passage Ø max. 150 mm
- Follow rest Passage Ø max. 130 mm
- **Quick action tool holder SWH 9-D**
- **1 tool holder 41 x 180 type D for square tools**
- Threading gauge
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Accessories

Accessories	Item No
Follow rest MT 5	3440705
Vibration damping machine foot SE3	3381018
Lathe tool kit HM 25 mm, 5 pcs.	3441672
Lathe tool kit HM 25 mm, 5 pcs.	3441623
NEW Lathe tool kit HM 32 mm, 5 pcs.	3441674

Please find further information on „Accessories for lathes“ on page 97
Note: Machines are delivered without oil

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Centre lathes which are outstanding due to high flexibility, precision and economy

Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Spindle seat Camlock DIN ISO 702-2 No. 8
- Closed fast acting feed gear, hardened and ground toothed wheels and running on precision bearings
- Clearly arranged gear selector levers to switch the feed speeds
- Emergency-stop push button, protective motor switch, lockable main switch
- Right-handed / left-handed rotation on the bed slide switchable via stem
- Direction of rotation for camming as well as the switching according to the standard
- Safety limit switch with compulsory opening contacts
- Central lubrication at the bed slide
- Protective cover lead screw
- Halogen machine lamp with articulated arm
- Foot-operated emergency stop device
- Electrical system with Siemens components
- **Quick action tool holder SWH 9-D**
- **1 tool holder 41 x 180 type D for square tools**
- **Digital position display DPA 2000**
 - Considerable reduction of the manufacturing times
 - High working accuracy
 - Error rate is reduced
 - Clearly-arranged keyboard
 - Including it's own outlet. DPA2000 It is switched on and off on the main switch
 - Glass scales

Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 3 readjustable precision taper roller bearings
- Gearwheels smooth running, hardened and ground

Energy saving mode

- Machine automatically switches off after a few minutes of idle run
- Default time can be set

Electrical engine brake

- Rapid emergency stop
- During standard operation rapid stop without follow-up

Clearly arranged switch cabinet



Slide

- Precisely worked
- Top slide can be turned by 360°
- Shafts and wheels running in the oil bath
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quick action tool holder SWH9-D
- All guidings adjustable via V-ledges
- Chip protection at the top slide

Rapid feed

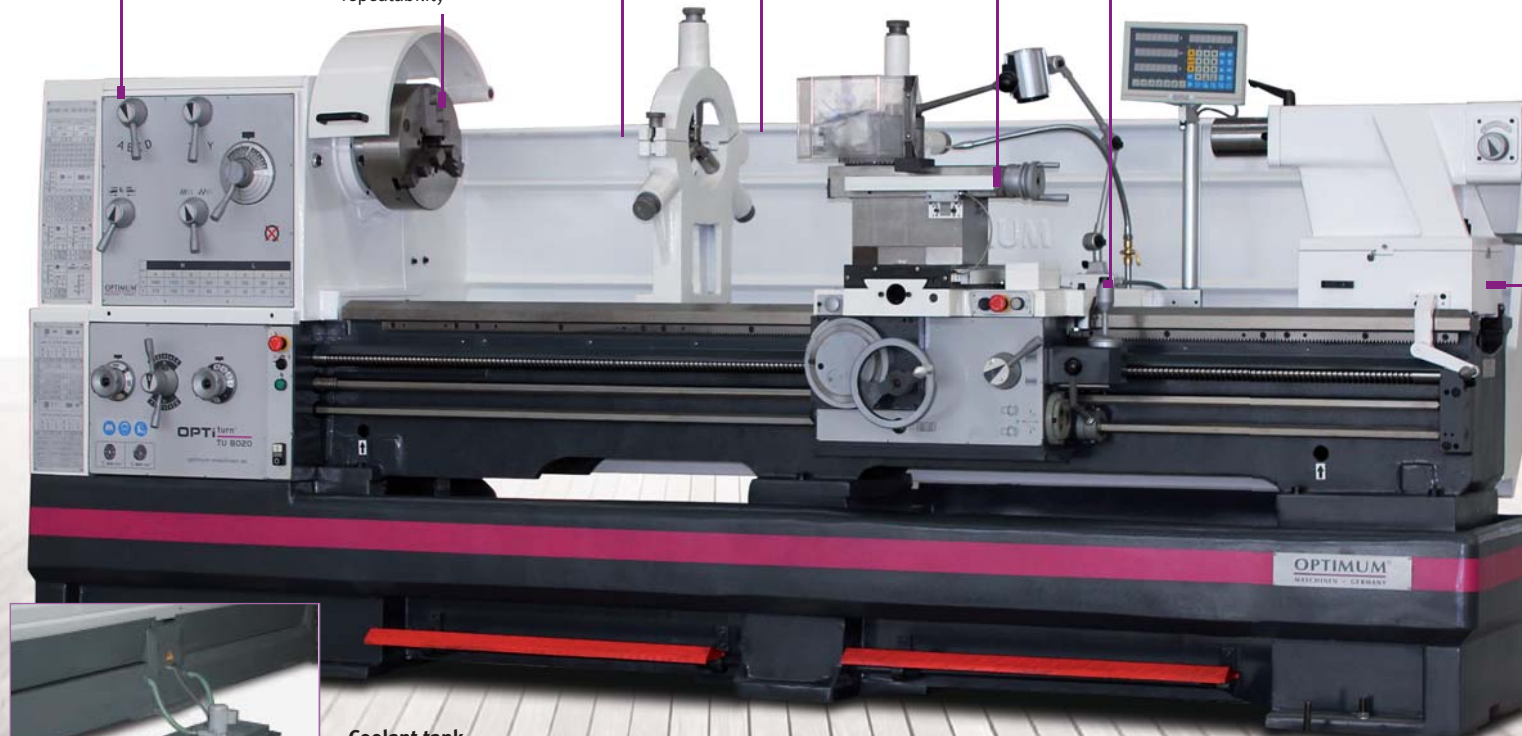
- Push button and selector lever to activate the rapid feed for transverse and longitudinal direction
- For more efficient working
- Does not switch the whole machine, if the limit switch is retracted

Cable guide in an energy chain



Quality lathe chuck

- Precisely
- Higher speed is enabled
- High concentricity and repeatability



Coolant tank

- Separate with level indicator and oil separator
- Easy and complete draining and cleaning

Fig.: OPTIMUM TU 8020

Technical data and accessories

Model	TU 8020	TU 8030
Item No	3462782DPA	3462783DPA
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	
Total connected value	10 kW	
Spindle		
Driving motor	7.5 kW	
Spindle taper	MT 7	
Spindle seat	Camlock DIN ISO 702-2 No. 8	
Spindle hole, rod passage	Ø 105 mm	
Quick change tool holder seat height	max. 32 mm	
Cooling lubricant system		
Power of the coolant pump	40 W	
Machine data		
Centre height	400 mm	
Centre width	2'000 mm	3'000 mm
Turning Ø over lathe bed	800 mm	
Swing without bed bridge	1'035 mm	
Length of bed bridge	250 mm	
Turning Ø over cross slide	570 mm	
Bed dimension	400 mm	
Speed range		
Spindle speed	25 - 1'600 min ⁻¹	
Number of steps	16 steps	
Travels		
Travel top slide	230 mm	
Travel cross slide	420 mm	
Feeds and thread pitches		
Longitudinal feed in the range of	0.044 - 1.48 mm/rev	25 feeds
Transverse feeds in the range of	0.022 - 0.74 mm/rev	25 feeds
Pitch - Metric	0.45 - 120 mm/rev	54 thread pitches
Pitch - Inch in the range of	80 - 7/16 Gg/1"	60 thread pitches
Diametral pitch in the range of	7/8 - 160 D.P.	42 trapezoid thread
Modular threads in the range of	0.25 - 60 M.P.	46 modular thread
Tailstock		
Tailstock seat	MT 5	
Tailstock - sleeve travel	235 mm	
Dimensions		
Length x width x height	3'740 x 1'230 x 1'595 mm	4'707 x 1'230 x 1'595 mm
Net weight	3'455 kg	3'820 kg
Transport surcharge	(TVP 6)	(TVP 6)

Tailstock

- Adjustable by ± 13 mm for taper turning
- Tailstock spindle sleeve and hand-wheel with adjustable precision scaling
- Crank to position change
- Tailstock with two adjustable transmission 1/4 or 1/1 revolution

Standard equipment

- Three-jaw lathe chuck Ø 325 mm / No. 8 centric clamping
- Four-jaw lathe chuck Ø 400 mm / No. 8 universally adjustable jaws
- Face clamping disc Ø 500 mm / No. 8
- Reducing bush MT 7 / MT 5
- Fixed center MT 5
- Fixed center MT 5, alloyed
- Steady rest Passage Ø max. 150 mm
- Follow rest Passage Ø max. 130 mm
- Splash guard
- Lathe chuck protection
- Chip protection at the top slide
- Quick action tool holder SWH 9-D**
- 1 tool holder 41 x 180 type D for square tools**
- Threading gauge
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool

Accessories

Accessories	Item No
Follow rest MT 5	3440705
Vibration damping machine foot SE3	3381018
Lathe tool kit HM 25 mm, 5 pcs.	3441672
Lathe tool kit HM 25 mm, 5 pcs.	3441623
NEW Lathe tool kit HM 32 mm, 5 pcs.	3441674

Please find further information on „Accessories for lathes“ on page 97
Note: Machines are delivered without oil

PREMIUM Centre lathe with digital position display DP700 by Newall

Convincing arguments: quality, efficiency and price

- Machine bed and substructure made of heavily ribbed special cast
 - High stiffness of the headstock housing due to heavily ribbed 25 grey cast
 - Hardened and ground cross slide screw guaranties enormous accuracy and durability
 - It is possible to create finest surfaces and keep to closest tolerances due to high chip removal when roughing.
 - Large range of threads and feeds without having to replace the toothed wheels in the change gear quadrant
 - Bed guideways hardened and precision ground
 - Perfectly running main spindle mounted in precision ball bearings
 - Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
 - Electronic brake of the main spindle
 - All operating elements can be attained (electrically) central
 - Quadruple length stop
- **Quick action tool holder SWH 5-B**
 - **3 tool holder for 25 x 120 type D for square tools**
 - **1 tool holder for 30 x 120 type H for round tools**
 - **Digital position display DP700**
 - 2 Measuring blocks Microsyn
 - 1 Measuring block Spherosyn
 - User interface is intuitive and user-friendly
 - Developed and made in England
 - IP67 Protective
 - Measuring blocks insensitive to impurity in the workshop
 - 5-year warranty on display unit's and reading heads
- (more informations see „NEWALL - DP700“ on page 196)

Feed gear

- All toothed wheels made of steel
- hardened and precision ground
- Shafts on needle bearings
- All components are lubricated in an oil bath



Apron

- Completely sealed housing
- With safety equipment against operation of threading and feed mechanism at the same time



Tailstock

- Hardened and ground sleeves
- Generously dimensioned
- Sleeve with scale



Prism bed

- Heavily ribbed special cast
- High rigidity

Main spindle

- Perfect concentricity
- High loading capacity
- Mounted in precision taper roller bearings

Machine lamp

- Complete illumination of the working space

Quick action tool holder

- Standard



Fig.: TZ 4012

Technical data and accessories

Don't forget
lathe chuck

Model	TZ 4012DP
Item No	3433345
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Total connected value	4.6 KW
Spindle	
Power drive motor	4 kW
Spindle taper	MT 4
Spindle seat	Camlock DIN ISO 702-2 No. 6
Spindle hole, rod passage	Ø 52 mm
Cooling lubricant system	
Power of the coolant pump	60 W
Machine data	
Centre height	200 mm
Centre width	1'150 mm
Turning Ø over lathe bed	400 mm
Turning Ø in the bed bridge	600 mm
Turning Ø over longitudinal carriage	370 mm
Turning Ø over cross slide	210 mm
Length of bed bridge	160 mm
Bed dimension	300 mm
Speed range	
Spindle speed	40 - 2'200 min ⁻¹
Number of steps	12 steps
Speed range Vario machine	
Spindle speed	80 - 2'300 min ⁻¹
Number of steps	3 steps
Travels	
Travel top slide	130 mm
Travel cross slide	300 mm
Feeds and thread pitches	
Longitudinal feed in the range of	0.05 - 0.75 mm/rev
Transverse feeds in the range of	0.025 - 0.375 mm/rev
Pitch - Metric	0.5 - 7.5 mm/rev
Pitch - Inch in the range of	60 - 4 threads/1"
Diametral pitch in the range of	8 - 120 D.P.
Modular threads in the range of	0,25 - 3,75 M.P
Tailstock	
Tailstock seat	MT 4
Tailstock- sleeve diameter/ sleeve travel	Ø 58 mm / 155 mm
Dimensions	
Length x width x height	2'380 x 995 x 1'620 mm
Net weight	1'210 kg
Transport surcharge	(TPZ2000)

Standard equipment

- 2 fixed center MT 4
- Reducing bush MT5 / MT 4
- Threading gauge
- Coolant equipment
- Machine lamp
- Automatic switch-off
- Quadruple length stop
- **Quick action tool holder SWH 5-B**
- **3 tool holder 25 x 120 type D for square tools**
- **1 tool holder 30 x 120 type H for round tools**

Inclusive digital position display DP700
by Newall



Please find further information on
„Accessories for lathes“ on page 97

Note: Machines are delivered without oil

Accessories	Item No	
Three jaw lathe chuck CI3P Ø 200 mm, cast speed 2'500 min ⁻¹	3442050	
Three jaw lathe chuck CS3C Ø 200 mm steel speed 4'000 min ⁻¹	3442550	
Three jaw lathe chuck CS3C Ø 250 mm steel speed 3'500 min ⁻¹	3442555	
Four jaw lathe chuck CI4P Ø 200 mm, cast speed 2'500 min ⁻¹ .	3442150	
Four jaw lathe chuck CS4C Ø 200 mm steel speed 4'000 min ⁻¹	3442650	
Four jaw lathe chuck CS4C Ø 250 mm steel speed 3'500 min ⁻¹	3442655	

Accessories	Item No	
Steady rest Ø 0 - 130 mm with bronze bushes	3438104	
Steady rest Ø 10 - 130 mm with rolls	3438124	
Follow rest 10 - 80 mm with bronze bushes	3438144	
Follow rest Ø 10 - 80 mm with rolls	3438154	
Length stop with metric micrometer	3438172	
Taper rotational direction	3438182	

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PREMIUM Centre lathe with digital position display DP700 by Newall

Convincing arguments: quality, efficiency and price

- Machine bed and substructure made of heavily ribbed special cast
- High stiffness of the headstock housing due to heavily ribbed 25 GG cast
- Hardened and ground cross slide screw guarantees enormous accuracy and durability
- It is possible to create finest surfaces and keep to closest tolerances due to high chip removal when roughing.
- Large range of threads and feeds without having to replace the toothed wheels in the change gear quadrant
- Bed guideways hardened and precision ground
- Perfectly running main spindle mounted in precision ball bearings
- Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
- Electronic brake of the main spindle
- All operating elements can be attained (electrically) central
- Quadruple length stop
- Spindle hole 80mm
- Rapid feed X-and Z axis with automatic end switch in the Z axis
- **Quick action tool holder**
- **3 tool holder for square tools**
- **1 tool holder for round chisel**
- **Digital position display DP700**
 - 2 Measuring blocks Microsyn
 - 1 Measuring block Spherosyn
 - User interface is intuitive and user-friendly
 - Developed and made in England
 - IP67 Protective
 - Measuring blocks insensitive to impurity in the workshop
 - 5-year warranty on display unit's and reading heads

Feed gear

- All toothed wheels made of steel
- hardened and precision ground
- Shafts on needle bearings
- All components are lubricated in an oil bath



Apron

- Completely sealed housing
- With safety equipment against operation of threading and feed mechanism at the same time



Tailstock

- Hardened and ground sleeves
- Generously dimensioned
- Sleeve with scale

Prism bed

- Heavily ribbed special cast
- High rigidity



Main spindle

- Perfect concentricity
- High loading capacity
- Mounted in precision taper roller bearings

Machine lamp

- Complete illumination of the working space

Quick action tool holder

- Standard

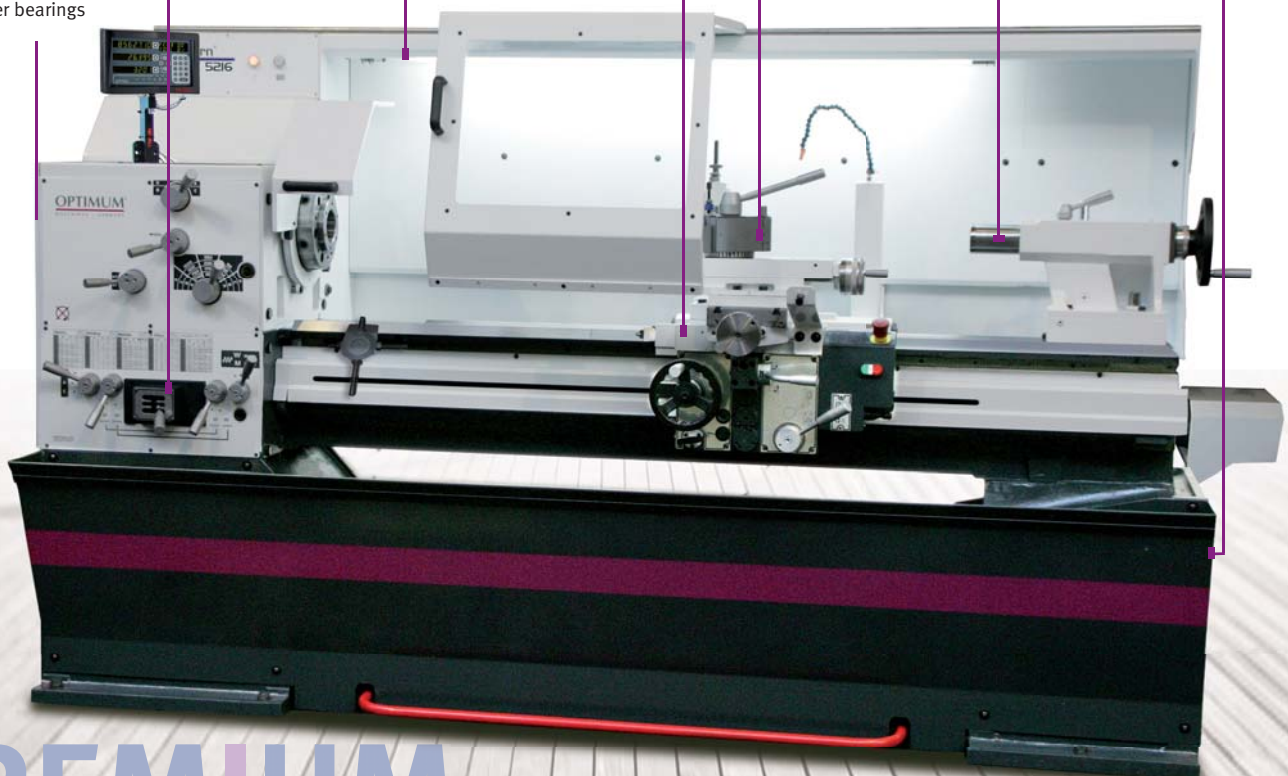


Fig. OPTi turn TZ 5216DP

Technical data and accessories

Model	TZ 5216DP	TZ 6222DP
Item No	3433355	3433365
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	
Total connected value	6.1 kW	8.5 kW
Spindle		
Power drive motor	5.5 kW	7.5 kW
Spindle taper	MT5	
Spindle seat	Camlock DIN ISO 702-2 Nr. 8	Camlock DIN ISO 702-2 Nr. 8
Spindle hole, rod passage	Ø 80 mm	
Cooling lubricant system		
Power of the coolant pump	60 W	
Machine data		
Centre height	260 mm	310 mm
Centre width	1'625 mm	2'225 mm
Turning Ø over lathe bed	530 mm	620 mm
Turning Ø in the bed bridge	780 mm	880 mm
Turning Ø over longitudinal carriage	475 mm	580 mm
Turning Ø over cross slide	325 mm	425 mm
Length of bed bridge	215 mm	200 mm
Bed dimension	350 mm	350 mm
Speed range		
Spindle speed	30 - 1'500 min ⁻¹	
Number of steps	12 steps	
Travels		
Travel top slide	165 mm	
Travel cross slide	355 mm	
Feed and thread pitch		
Longitudinal feed in the range of	0.05 - 1.5 mm/rev	
Transverse feeds in the range of	0.025 - 0.75 mm/rev	
Pitch - Metric	0.5 - 15 mm/rev	
Pitch - Inch in the range of	60 - 2 threads/1"	
Diametral pitch in the range of	4 - 120 D.P.	
Modular threads in the range of	0,25 - 7,5 M.P	
Tailstock		
Tailstock seat	MT 5	
Tailstock- sleeve diameter/ sleeve travel	Ø 72 mm / 180 mm	
Dimensions		
Length	2'980 mm	3'600 mm
Width x Height	1'060 x 1'730 mm	1'060 x 1'830 mm
Net weight	1'795 kg	2'020 kg
Transport surcharge	(TPZ2000)	(TPZ3000)

Standard equipment

- 2 fixed center MT 4
 - Reducing bush MT5 / MT 4
 - Threading gauge
 - Coolant equipment
 - Machine lamp
 - Quadruple length stop
 - Rapid feed X and Z axis
- TZ 5216DP:**
- **Quick action tool holder SWH 5-B**
 - **3 tool holder 25 x 120 type D for square tools**
 - **1 tool holder 30 x 120 type H for round tools**
- TZ 6222DP**
- **Quick action tool holder SWH 7-C**
 - **3 tool holder 32 x 150 type D for square tools**
 - **1 tool holder 32 x 150 type H for round tools**

Inclusive digital position display DP700 by Newall



**Lathe chuck
lathe chuck**

Note: Machines are delivered without oil
Please find further information on „Ac-
cessories for lathes“ on page 97

Accessories	TZ 5216		TZ 6222	
	Item No		Item No	
Three jaw chuck CI3P Ø 315 mm, D1 - 8" cast	3442065		3442065	
Four jaw chuck CI3P Ø 315 mm, D1 - 8" cast	3442165		3442165	
Steady rest Ø 10 - 185 mm bronze bushes	3438107		3438109	
Steady rest Ø 10 - 300 mm; bronze bushes	3438110		3438111	
Steady rest Ø 10 - 185 mm roll	3438127		3438129	
Steady rest Ø 10 - 300 mm roll	3438130		3438131	
Follow rest Ø 15 - 125 mm; bronze bushes	3438147		3438149	
Follow rest Ø 15 - 125 mm roll	3438157		3438159	
Length stop with metric micrometer	3438173		3438173	
Taper rotational direction	3438183		3438183	

Compatibility overview accessories for lathes

Accessories items turning		Item No	TU 1503	TU 2004	TU 2304	TU 2406	TU 2506	TU 2807	TU3008/V	D 320	TU 3209	D 330	D 360	TU 3610V	D420	TU 4210V	TU 42	TU 4210V	TH 46	TH 4615V	TH 56	TH 5620V	TZ 4012DP	TZ 5216DP	TZ 6222DP	D 660	TU8020
Face clamping disc	Ø 170 mm	3440295		●																							
	Ø 240 mm	3441352					●																				
	Ø 240 mm	3440552				●																					
	Ø 265 mm	3441452						●																			
Chuck flange	Ø160 mm Caml. No. 4	3441512								●	●	●	●	●													
	Ø200 mm Caml. No. 4	3441513								●	●	●	●	●													
	Ø200 mm Caml. No. 6	3444012													●	●	●	●	●				●				
	Ø250 mm Caml. No. 6	3444013													●	●			●	●			●				
	Ø315 mm Caml. No. 8	3444041																			●	●		●	●	●	●
	Ø325 mm Caml. No. 8	3444042																			●	●		●	●	●	●
Chuck flange	Ø100 mm cylindrical	3440312		●																							
	Ø125 mm short taper	3441312					●	●																			
	Ø125 mm cylindrical	3440511				●																					
	Ø160 mm short taper	3441413						●																			
	Ø125 mm cylindrical	3440313			●																						
Collet chuck	ER16	3440281	●																								
	ER25	3441305					●	●																			
	ER25	3440305		●	●																						
	ER25	3440505				●																					
	ER32	3441306					●	●																			
	ER32	3440506					●																				
	ER32	3441468							●																		
Collet chuck	5C - Nr. 4	3441554								●	●	●	●	●													
	5C - Nr. 6	3441556													●	●	●	●	●				●				
	5C - Nr. 8	3441558																			●	●		●	●	●	●
	5C - Nr. 8	3441558																									
Revolving centre	MT1	3440701	●																								
	MT2	3440702		●	●	●	●	●																			
	MT3	3440703								●	●	●	●	●													
	MT4	3440704													●	●	●	●	●	●			●				
	MT5	3440705																			●	●		●	●	●	●
	MT6	3440706																									
Revolving centre	MT2	3440732		●	●	●	●	●																			
	MT3	3440733								●	●	●	●	●													
	MT4	3440734															●	●	●	●	●	●					
Collet kit	5C	3441509								●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	ER 16	3440282	●																								
	ER 25	3441109		●	●	●	●	●																			
	ER 32	3441122		●	●	●	●	●																			
Vibration machine foot	SE 1	3381012	●	●	●	●	●																	●	●	●	
	SE 2	3381016						●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●		
	SE 3	3381018																			●	●				●	●
Universal coolant equipment	230 V	3352002	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	400 V	3352001			○	○	○	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Twist drill kit titanium coated		3051010	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Twist drill HSS	MT2	3051002	●	●	●	●	●	●																			
	MT3	3051003								●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
Steady rest		3440211	●																								
		3440231		●																							
		3441415						●																			
		3441315				●																					
		3441461							●																		
Follow rest		3440210	●																								
		3440230		●																							
		3441310				●																					
		3441410						●																			
Collet attachment		3441460							●																		
	5C	3441506								●	●	●	●	●										●	●		
	5C	3441507													●	●	●	●									
	5C	3444006																●	●					●	●		
Position limit stop		3444022																●	●					●	●		
Position limit stop		3444023																		●	●						
Clamping block	Satz 16-05	3440653								●	●	●	●	●													
Clamping block	Satz 20-05	3440654													●	●	●	●	●	●	●	●					
Clamping block	Satz 25-05	3440655																								●	●
Digital measuring system	DRO5	3383975	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	●	○	○	○	○
	DPA 21	3384020									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DPA 22	3384022									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● Recommended ○ Conditionally recommended

This equipment table includes all recommended equipment options.
Depending on the individual case, it might be reasonable to use accessories.

Face clamping disc	Item No	
Ø 170 mm for TU 2004V	3440295	
Ø 240 mm for TU 2506	3441352	
Ø 240 mm for TU 2406	3440552	
Ø 265 mm for TU 2807	3441452	



Chuck flange		
• for assembly of the lathe chuck		
Ø 160 mm Camlock DIN ISO 702-2 No. 4	3441512	
• for four-jaw lathe chuck Ø 160 mm combi		
Ø 200 mm Camlock DIN ISO 702-2 No. 4	3441513	
• for four-jaw lathe chuck Ø 200 mm combi		
Ø 200 mm Camlock DIN ISO 702-2 No. 6	3444012	
• for four-jaw lathe chuck Ø 200 mm combi		
Ø 250 mm Camlock DIN ISO 702-2 No. 6	3444013	
• for four-jaw lathe chuck Ø 250 mm combi		
Ø 315 mm Camlock DIN ISO 702-2 No. 8	3444041	
• for three/four-jaw lathe chuck Ø 315 mm		
Ø 325 mm Camlock DIN ISO 702-2 No. 8	3444042	
• for four-jaw lathe chuck Ø 325 mm combi		

Flange for the lathe chuck		
• for assembly of the lathe chuck		
Ø 100 mm	3440312	
• cylindrical for TU 2004V		
Ø 125 mm	3440313	
• cylindrical for TU 2304 for 3-jaw chuck		
Ø 125 mm	3440511	
• cylindrical for TU 2406 for 3-jaw chuck		
Ø 125 mm	3441312	
• short taper for TU 2506 / TU 2807 for three-jaw chuck		
Ø 160 mm	3441413	
• short taper for TU 2807		



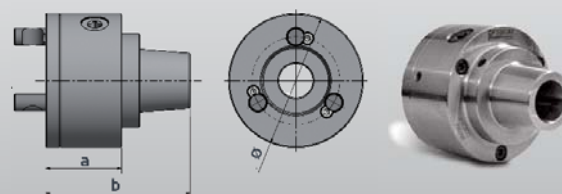
Revolving lathe centre incl. replaceable tips		
• with 7 replaceable tips		
• Body made of hardened and ground tool steel		
• Precision needle roller bearings guarantee high true running accuracy		
MT 2	3440732	
MT 3	3440733	
MT 4	3440734	



collet chuck	Item No	
With short taper mounting		
ER 16 Ø 22 mm	3440281	
• cylindrical for TU 1503V		
ER 25 Ø 40 mm	3440305	
• cylindrical for TU 2004V / TU 2304		
ER 25 Ø 52 mm	3440505	
• cylindrical for TU 2406		
ER 25 Ø 52 mm	3441305	
• cylindrical for TU 2506 / TU 2807		
ER 32 Ø 52 mm	3441306	
• short taper for TU 2506 / TU 2807		
ER 32 Ø 52 mm	3440506	
• cylindrical for TU 2406		



Collet chuck		
• True running accuracy 0,02 mm		
5C - Camlock Nr. 4	3441554	
• a = 135 mm; b = 71 mm / Ø = 126 mm		
5C - Camlock Nr. 6	3441556	
• a = 96 mm; b = 160 mm / Ø = 182 mm		
5C - Camlock Nr. 8	3441558	
• a = 95 mm; b = 163 mm / Ø = 225 mm		



Revolving centre		
max. radial run-out 0.006 mm		
MT 1	3440701	
• Speed max. 5'000 min ⁻¹ ; radial load max. 320 N		
MT 2	3440702	
• Speed max. 5'000 min ⁻¹ ; radial load max. 400 N		
MT 3	3440703	
• Speed max. 4'500 min ⁻¹ ; radial load max. 800 N		
MT 4	3440704	
• Speed max. 3'500 min ⁻¹ ; radial load max. 1'250 N		
MT 5	3440705	
• Speed max. 3'000 min ⁻¹ ; radial load max. 1'500 N		
MT 6	3440706	
• Speed max. 2'500 min ⁻¹ ; radial load max. 1'800 N		

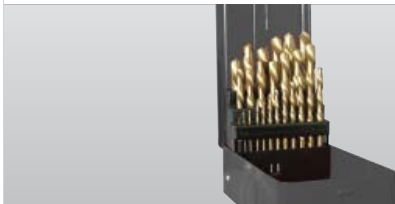


Accessories for lathes

Twist drill kit

3051010

- 25 pcs.; sizes 1 -13 mm
- Coated with titanium
- Higher service life and durability
- Higher hardness than hard metal
- More rapid working results
- Lower wear



Twist drill HSS incl. Morse taper

- 9 pieces; Sizes 14,5/16/18/20/22/24/26/28/30 mm
- Long durability
- Good chip evacuation
- Right hand cutting

MT2

3051002

MT3

3051003



Universal coolant equipment

- Delivery height max. 2.5 m
- Delivery volume 8 l/min. Tank capacity 11 l
- Tank size L x W x H: 370 x 245 x 170 mm
- Complete including tank, flexible tube, hose
- With switch-plug combination
- Magnetic attachment of the coolant hose
- For self-assembly

230 V/1 Ph

3352002

400 V/3 Ph

3352001



Universal collet chucking attachment 5C

for lathe D 320 - D 360

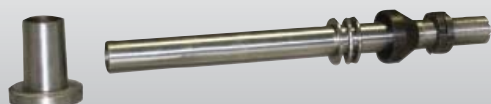
3441506

for lathe D 420

3441507

for lathe D 460

3444006



Clamping block incl. 2 cut-off tool and cutting inserts

Set 16-05

3440653

For lathes : D320 / TU 3209 / D330 / D360 / TU 3610V

- 1 pc. Clamping block SLTBN16-05
- 1 pc. Cutting-off tool SLIH 26-2
- 1 pc. Cutting-off tool SLIH 26-3
- 5 pc. Cutting inserts GTN2 (line width 2.2 mm)
- 5 pc. Cutting inserts GTN3 (line width 3.1 mm)
- Aluminium-box

NEW

Set 20-05

3440654

For lathes : D 420 / TU 4210V / TH 46 / TH 4615V / TH 56 / TH 5620V

- 1 pc. Clamping block SLTBN 20-05
- 1 pc. Cutting-off tool SLIH 26-3
- 1 pc. Cutting-off tool SLIH 26-4
- 5 pcs. Cutting inserts GTN3 (line width 3.1 mm)
- 5 pcs. Cutting inserts GTN3 (line width 4.1 mm)
- Aluminium-box

NEW

Set 25-05

3440655

For lathes: D 660/TU 8020/TU 8030

- 1 pc. Clamping block SLTBN 25-05
- 1 pc. Cutting-off lathe tool SLIH 26-3
- 1 pc. Cutting-off lathe tool SLIH 26-4
- 5 pcs. Cutting inserts GTN3 (line width 3.1 mm)
- 5 pcs. Cutting inserts GTN3 (line width 4.1 mm)
- Aluminium-box

NEW

Cutting inserts set (10 pcs.)

for cutting inserts **GTN 2**

3440663

for cutting inserts **GTN 3**

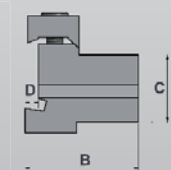
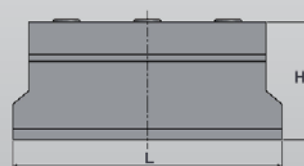
3440664

for cutting inserts **GTN 4**

3440665



Block of cutting inserts
incl. cutting-off lathe tool



Clamping block	16-05	20-05	25-05
L x W x H (mm)	88 x 38 x 42	88 x 38 x 43	100 x 42 x 43.5
C	16 mm	20 mm	25 mm
D	4 mm	5 mm	5 mm

Vibration machine foot

- The machines and equipment can be installed without anchors and precisely levelled using the height adjustment system.
- Effective impact and vibration damping improves the machine capability

SE 1	3381012	
SE 2	3381016	
SE 3	3381018	



Compatibility overview refer to page 96

Charge	SE 1	SE 2	SE 3
Milling machines	340 Kg	460 kg	1' 600 kg
Sawing/ General machinery	570 kg	1' 460 kg	3' 500 kg
thread	M 12	M 16	M 20
Base Ø/Base height	120/32	160/35	185/39

Collet kit SPZ - 5C

3441509

- 17 pcs.; clamping range 3 -13 mm
- Standard 385 E
- for Universal collet chucking attachment



Collet kit

- DIN 6499

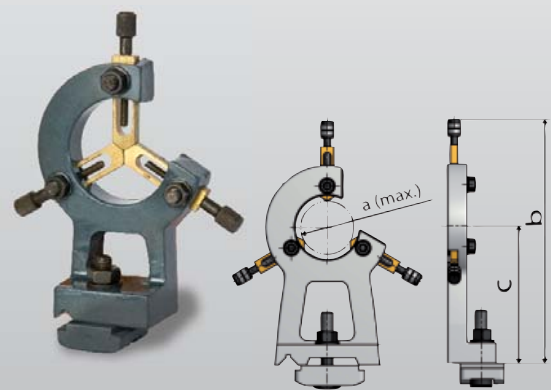
ER 16	3440282	
• 12 pcs.; clamping range Ø 1 - 12 mm		
ER 25	3441109	
• 15 pcs.; clamping range Ø 1 - 16 mm		
ER 32	3441122	
• 18 pcs.; clamping range Ø 3 - 20 mm		



Steady rest

for TU 1503V	3440211	
• a = Ø 40 mm; b = 145 mm; c = 70.5 mm		
for TU 2004V	3440231	
• a = Ø 50 mm; b = 200 mm; c = 100 mm		
for TU 2304 / TU 2304V	3440361	
• a = Ø 55 mm; b = 220 mm; c = 115 mm		
for TU 2506	3441315	
• a = Ø 50 mm; b = 245 mm; c = 125 mm		
for TU 2807	3441415	
• a = Ø 55 mm; b = 250 mm; c = 140 mm		
for TU 3008	3441461	
• a = Ø 55 mm; b = 260 mm; c = 157 mm		

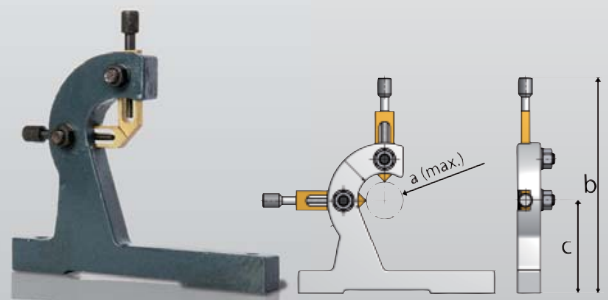
NEW



Follow rest

for TU 1503V	3440210	
• a = Ø 45 mm; b = 155 mm; c = 76 mm		
for TU 2004V	3440230	
• a = Ø 40 mm; b = 195 mm; c = 100 mm		
for TU 2304 / TU 2304V	3440360	
• a = Ø 34 mm; b = 200 mm; c = 97 mm		
for TU 2506 / TU 2406	3441310	
• a = Ø 34 mm; b = 220 mm; c = 107 mm		
for TU 2807	3441410	
• a = Ø 56 mm; b = 250 mm; c = 130 mm		
for TU 3008	3441460	
• a = Ø 55 mm; b = 255 mm; c = 151 mm		

NEW



Compatibility overview for quick action tool holder/lathe tool

Accessory parts for turning		Item No	TU 1503V	TU 2004V	TU 2304	TU 2404	TU 2506	TU 2807	TU 3008V / TU 3008	D 320 / TU 3209V	D 330	D 360 / TU 3610V	D 420 / TU 4210V	TH 46	TH 56	D 660	TU 8020 / TU 8030
SWH	SWH AA	3384311		●													
	SWH 1 - A	3384301			●	●	●	●									
	SWH 3 - E	3384303								●	●	●					
	SWH 5 - B	3384305											●	●			
	SWH 7 - C	3384307													●		
	SWH 9 - D	3384309														●	●
Lathe tool	Lathe tool HM 8 mm	3441662	●	●	●	●	●	●									
	Lathe tool HM 10 mm	3441664		●	●	●	●	●									
	Lathe tool HM 12 mm	3441666			●	●	●	●									
	Lathe tool HM 12 mm	3441212			●	●	●	●									
	Lathe tool HM 16 mm	3441668								●	●	●					
	Lathe tool HM 16 mm	3441216								●	●	●					
	Lathe tool HM 16 mm	3441610								●	●	●					
	Lathe tool HM 20 mm	3441670											●	●	●		
	Lathe tool HM 20 mm	3441617											●	●	●		
	Lathe tool HM 25 mm	3441672														●	●
	Lathe tool HM 25 mm	3441623														●	●
	Lathe tool HM 32 mm	3441674														●	●
	Lathe tool with soldered HM 8 mm	3441008	●	●	●	●	●	●									
	Lathe tool with soldered HM 10 mm	3441108		●	●	●	●	●									
	Lathe tool with soldered HM 16 mm	3441508								●	●	●					
Internal turning tools	Internal turning tools kit 10 mm	3441640		●	●	●	●	●									
	Internal turning tools kit 12 mm	3441641			●	●	●	●									

Quick action tool holder

Quick action tool holder

- Repeat accuracy 0.01 mm · Angle scale on the tool holder head
- 40 different angle settings · Height adjustment by means of a knurled screw
- Tool holder head and tool holder with profile ground toothing
- Clamping of tool holder free of play accurately repeatable
- For self-assembly

Quick action tool holder kit SWHAA

3384311

- 1 tool holder head AA
- 3 tool holder 13 x 50 type D for square tools
- 1 tool holder 13 x 50 type H for round tools

Spare tool holder 12 x 50 type D for square tools

3384312

Spare tool holder seat 10 x 50 type H for round tools

3384320

Quick action tool holder kit SWH 1 - A

3384301

- 1 tool holder head A
- 3 tool holder 20 x 90 type D for square tools
- 1 tool holder 20 x 90 type H for round tools

Spare tool holder 20 x 90 type D for square tools

3384302

Spare tool holder seat 20 x 85 type H for round tools

3384321

Quick action tool holder kit SWH 3 - E

3384303

- 1 tool holder head E
- 3 tool holder 20 x 100 type D for square tools
- 1 tool holder 20 x 100 type H for round tools

Spare tool holder 20 x 100 type D for square tools

3384304

Spare tool holder seat 30 x 100 type H for round tools

3384322

Quick action tool holder kit SWH 5 - B

3384305

- 1 tool holder head B
- 3 tool holder 25 x 120 type D for square tools
- 1 tool holder 30 x 120 type H for round tools

Spare tool holder 25 x 120 type D for square tools

3384306

Spare tool holder seat 32 x 130 type H for round tools

3384324

Quick action tool holder kit SWH 7 - C

3384307

- 1 tool holder head C
- 3 tool holder 32 x 150 type D for square tools
- 1 tool holder 35 x 150 type H for round tools

Spare tool holder 32 x 150 type D for square tools

3384308

Spare tool holder seat 35 x 160 type H for round tools

3384326

Quick action tool holder kit SWH 9 - D

3384309

- 1 tool holder head D
- 3 tool holder 41 x 180 type D for square tools
- 1 tool holder 70 x 180 type H for round tools

Spare tool holder seat 40 x 180 type D for square tools

3384332

Spare tool holder seat 63 x 180 type H for round tools

3384333

Workshop assembly and adaptation SWH

900 0400

- Only when purchasing a new machine



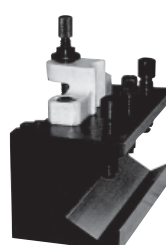
Tool holder head



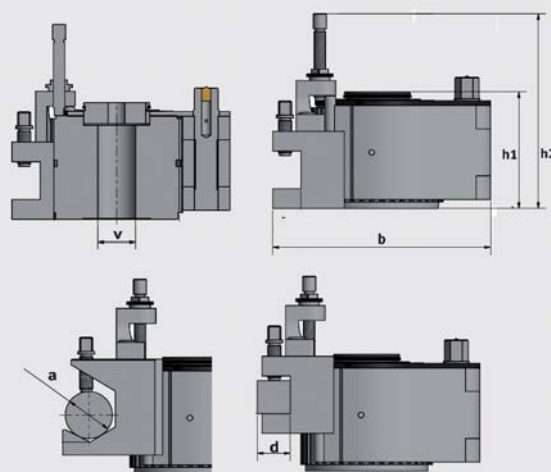
Tool holder type D for square tools
(Scope of delivery 3 pcs..)



Tool holder type H for Round tool
(Scope of delivery 1 pcs..)



Dimensions tool holder head



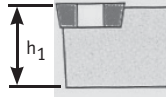
Dimensions tool holder head			AA	A	E	B	C	D
Turning diameter		mm	120 - 220	150 - 300	200 - 400	300 - 500	400 - 700	600 - 800
Motor lathe max.		kW	1	2.2	4.4	6.6	13	13
Rest blade width square tool	d	mm	8 until 12	12 until 20	16 until 22	15 until 27	15 until 27	30 until 35
Diameter round tool max.	a	mm	Ø 10	Ø 19	Ø 26	Ø 28	Ø 30	Ø 56
Hole standard	v	mm	Ø 10.2	Ø 20	Ø 20	Ø 32	Ø 40	Ø 40
Height: Base body/Total	h1/h2	mm	37 / 62	55 / 90	68 / 120	78 / 137	110 / 190	124 / 205
Width: Square/Round tool	b	mm	74 / 37	55 / 106	132 / 142	150 / 155	202 / 210	230 / 260

Lathe tool kits

Lathe tool kit HM 8 mm

Lathe tool kit HM 8 mm 3441662

- 5-pieces
- Incl. HM reversible carbide
- TiN-coated
- Aluminium-box

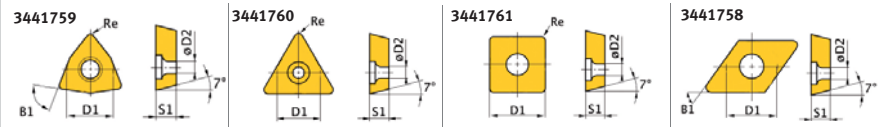


No.	ISO			h1
1	SWGC	L0808	D05	8 mm
2	SSDC	N0808	D06	8 mm
3	SWGC	R0808	D05	8 mm
4	STGC	R0808	D09	8 mm
5	SDJC	R0808	D07	8 mm



NEW

HM spare inserts (each 5 pcs.)

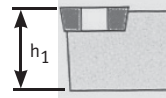


No.	ISO	D1	D2	B1	S1	Re	Item No
1/3	WCMT050308	7.94	3.2	80°	3.18	0.8	3441759
2	SCMT060204	6.35	2.8	90°	2.38	0.4	3441761
4	TCMT090204	5.56	2.5	60°	2.38	0.4	3441760
5	DCMT070204	6.35	2.8	55°	2.38	0.4	3441758

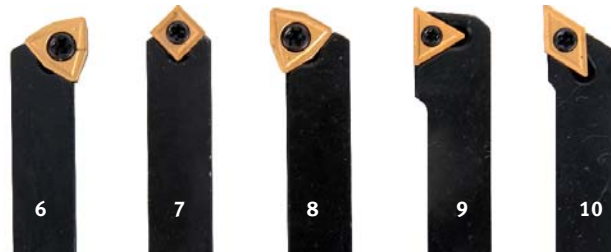
Lathe tool kit HM 10 mm

Lathe tool kit HM 10 mm 3441664

- 5-pieces
- Incl. HM inserts
- TiN-coated
- Aluminium-box

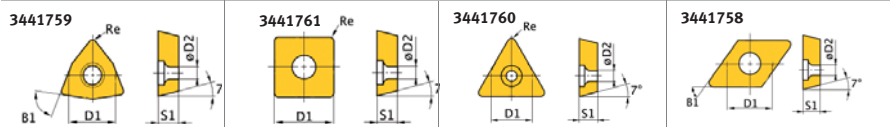


No.	ISO			h1
6	SWGC	L1010	E05	10 mm
7	SSDC	N1010	E06	10 mm
8	SWGC	R1010	E05	10 mm
9	STGC	R1010	E09	10 mm
10	SDJC	R1010	E07	10 mm



NEW

HM spare inserts (each 5 pcs.)

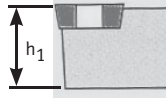


No.	ISO	D1	D2	B1	S1	Re	Item No
6/8	WCMT050308	7.94	3.2	80°	3.18	0.8	3441759
7	SCMT060204	6.35	2.8	90°	2.38	0.4	3441761
9	TCMT090204	5.56	2.5	60°	2.38	0.4	3441760
10	DCMT070204	6.35	2.8	55°	2.38	0.4	3441758

Lathe tool kit HM 12 mm

Lathe tool kit HM 12 mm 3441666

- 5-pieces
- Incl. HM inserts
- TiN-coated
- Aluminium-box

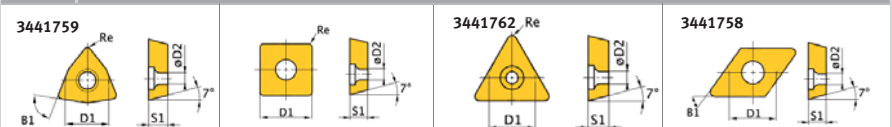


No.	ISO			h1
11	SWGC	L1212	H 05	12 mm
12	SSDC	N1212	H 09	12 mm
13	SWGC	R1212	H 05	12 mm
14	STGC	R1212	H 11	12 mm
15	SDJC	R1212	H 07	12 mm



NEW

HM spare inserts (5 pcs. each)



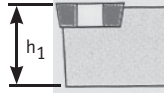
No.	ISO	D1	D2	B1	S1	Re	Item No
11/13	WCMT050308	7.94	3.2	80°	3.18	0.8	3441759
12	SCMT09T304	6.35	2.8	90°	2.38	0.4	3441763
14	TCMT110204	6.35	2.8	60°	2.38	0.4	3441762
15	DCMT070204	6.35	2.8	55°	2.38	0.4	3441758

Lathe tool kit HM 12 mm



Lathe tool kit HM 12mm 3441212

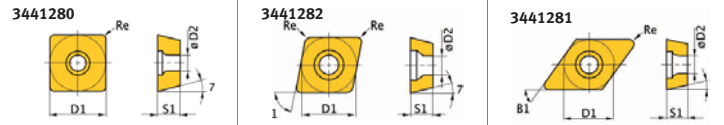
- 5-pieces
- Incl. HM inserts
- TiN-coated



No.	ISO			h1
16	SSSC	R1212	J09	12 mm
17	SCLC	R1212	J09	12 mm
18	SDNC	N1212	J11	12 mm
19	SDJC	R1212	J11	12 mm
20	SDJC	L1212	J11	12 mm



HM spare inserts (each 5 pcs.)



No.	ISO	D1	D2	B1	S1	Re	Item No
16	SCMT09T304	9.525	4.4	90°	3.97	0.4	3441280
17	CCMT09T304	9.525	4.4	80°	3.97	0.4	3441282
18-20	DCMT11T304	9.525	4.4	55°	3.97	0.4	3441281

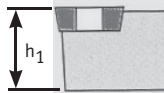
Single lathe tool 12 mm

16	SSSC R1212J09	3441220
17	SCLC R1212J09	3441221
18	SDNC N1212J11	3441222
19	SDJC R1212J11	3441223
20	SDJC L1212J11	3441224

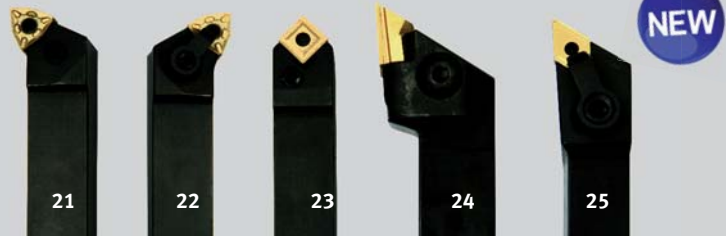
Lathe tool kit HM 16 mm

Lathe tool kit HM 16 mm 3441668 169.00

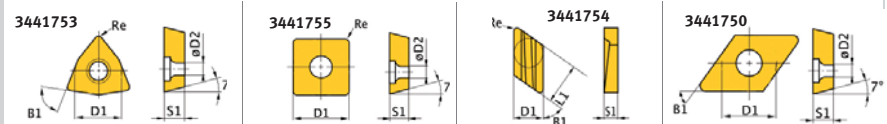
- 5-pieces
- Incl. HM inserts
- TiN-coated
- Aluminium-box



No.	ISO			h1
21	PWLN	R1616	H06	16 mm
22	PWLN	L1616	H06	16 mm
23	PSDNN	1616	H09	16 mm
24	CKJN	R1616	H16	16 mm
25	MDJN	R1616	H11	16 mm



HM spare inserts (each 5 pcs.)



No.	ISO	D1	D2	B1	S1	Re	L1	Item No
21/22	WNMG060408	9.252	3.81	80°	4.76	0.8		3441753
23	SNMG090304	9.252	3.81	90°	3.18	0.4		3441755
24	KNUX160405R	9.252		55°	4.76	0.5	16.15	3441754
25	DNMG110408	9.525	3.81	55°	4.76	0.8		3441750

Lathe tool kit HM 16 mm



Lathe tool kit HM16 mm 3441216 339.00

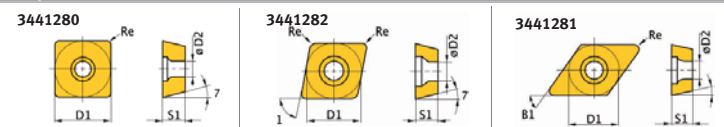
- 5-pieces
- Incl. HM inserts
- TiN-coated



No.	ISO			h1
26	SSSC	R1616	J09	16 mm
27	SCLC	R1616	J09	16 mm
28	SDNC	N1616	J11	16 mm
29	SDJC	R1616	J11	16 mm
30	SDJC	L1616	J11	16 mm



HM spare inserts (each 5 pcs.)



No.	ISO	D1	D2	B1	S1	Re	Item No
26	SCMT09T304	9.525	4.4	90°	3.97	0.4	3441280
27	CCMT09T304	9.525	4.4	80°	3.97	0.4	3441282
28-30	DCMT11T304	9.525	4.4	55°	3.97	0.4	3441281

Single lathe tool 16 mm

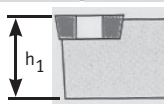
26	SSSC R1616J09	3441230
27	SCLC R1616J09	3441231
28	SDNC N1616J11	3441232
29	SDJC R1616J11	3441233
30	SDJC L1616J11	3441234

Lathe tool kits

Lathe tool kit HM 16 mm

Lathe tool kit HM 16 mm 3441610




- 5-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box



No.	ISO			h1
31	MVJNR	1616	H16	16 mm
32	MVVNN	1616	H16	16 mm
33	PRANN	1616	H10	16 mm
34	PRGNR	1616	H10	16 mm
35	SER	1616	H16	16 mm



HM spare inserts (each 5 pcs.)

3441701		3441702			3441703		
							
No.	ISO	D1	D2	B1	S1	Re	Item No
31/33	VNMG160408	9.525	3.81	35°	4.76	0.8	3441701
32/34	RNMM1003MO	10	3.6	-	3.97		3441702
35	16ER AG60	16	3.95	60°	3.65		3441703

Lathe tool kit HM 20 mm

Lathe tool kit HM 20 mm 3441670

- 5-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box



No.	ISO			h1
36	PWLN	R2020	K08	20 mm
37	PWLN	L2020	K08	20 mm
38	PSDN	N2020	K12	20 mm
39	CKJN	R2020	K16	20 mm
40	MDJN	R2020	K11	20 mm



NEW

HM spare inserts (each 5 pcs.)

3441752		3441756		3441754		3441750			
No.	ISO	D1	D2	B1	S1	Re	L1	Item No	
36/37	WNMG080408	9.252	3.81	80°	4.76	0.8		3441752	
38	SNMG120408	12.7	5.16	90°	4.76	0.8		3441756	
39	KNUX160405R	9.252		55°	4.76	0.5	16.15	3441754	
40	DNMG110408	9.525	3.81	55°	4.76	0.8		3441750	

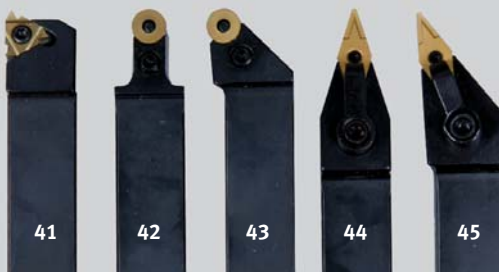
Lathe tool kit HM 20 mm

Lathe tool kit HM 20 mm 3441617

- 5-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box



No.	ISO			h1
41	SER	2020	K16	20 mm
42	PRGNR	2020	K10	20 mm
43	PRANN	2020	K10	20 mm
44	MVVNN	2020	K16	20 mm
45	MVJNR	2020	K16	20 mm



HM spare inserts (each 5 pcs.)

3441703		3441702		3441701			
No.	ISO	D1	D2	B1	S1	Re	Item No
41	16ER AG60	16	3.95	60°	3.65		3441703
42/43	RNMM1003MO	10	3.6	-	3.97		3441702
44/45	VNMG160408	9.525	3.81	35°	4.76	0.8	3441701

Lathe tool kit HM 25 mm

Lathe tool kit HM 25 mm 3441623

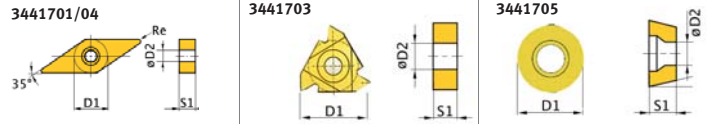
- 5-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box



No.	ISO			h1
46	MVVN	N2525	M16	25 mm
47	SE	R2525	M16	25 mm
48	PRGN	R2525	M12	25 mm
49	PRAN	N2525	M16	25 mm
50	MVJN	R2525	M16	25 mm



HM spare inserts (each 5 pcs.)

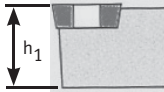


No.	ISO	D1	D2	B1	S1	Re	Item No
46/50	VNMG160408	9.525	3.81	35°	4.76	0.8	3441701
47	16ER AG60	16	3.95	60°	3.65		3441703
48	RNMG1204MO	12	4.75	R	5.1	-	3441705
49	RNMG1605MO	16	5.4	R	6.3	-	3441704

Lathe tool kit HM 25 mm

Lathe tool kit HM 25 mm 3441672

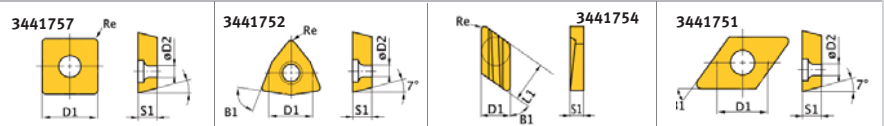
- 5-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box



No.	ISO			h1
51	PWLN	L2525	M08	25 mm
52	PSDN	N2525	M15	25 mm
53	PWLN	R2525	M08	25 mm
54	CKJNR	R2525	M16	25 mm
55	MDJN	R2525	M15	25 mm



HM spare inserts (each 5 pcs.)

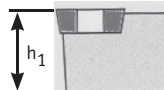


No.	ISO	D1	D2	B1	S1	Re	L1	Item No
51/53	WNMG080408	9.252	3.81	80°	4.76	0.8		3441752
52	PSDNN3232P15	15.875	6.35	90°	6.35	0.8		3441757
54	KNUX160405R	9.252		55°	4.76	0.5	16.15	3441754
55	DNMG150408	12.7	5.16	55°	4.76	0.8		3441751

Lathe tool kit HM 32 mm

Lathe tool kit HM 32 mm 3441674

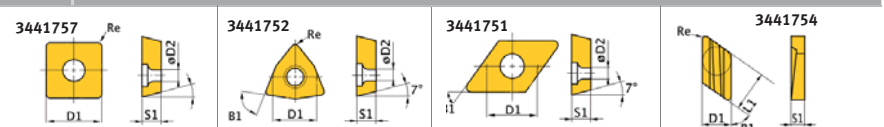
- 5-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box



No.	ISO			h1
56	PWLN	L3232	P08	32 mm
57	PSDN	N3232	P15	32 mm
58	PWLN	R3232	P08	32 mm
59	CKJN	R3232	P16	32 mm
60	MDJN	R3232	P15	32 mm



HM spare inserts (each 5 pcs.)



No.	ISO	D1	D2	B1	S1	Re	L1	Item No
56/58	WNMG080408	9.252	3.81	80°	4.76	0.8		3441752
57	PSDNN3232P15	15.875	6.35	90°	6.35	0.8		3441757
59	KNUX160405R	9.252		55°	4.76	0.5	16.15	3441754
60	DNMG150408	12.7	5.16	55°	4.76	0.8		3441751

Accessories for lathes

Internal turning tools kit 10 mm

3441640

- 3-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box

No.	ISO		
61	S10K	SCFCR	06
62	S10K	SDQCR	07
63	S10K	STFCR	11

Internal turning tool



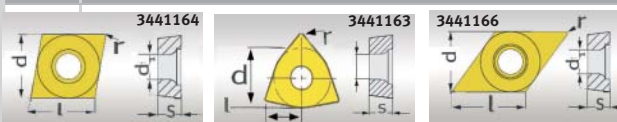
Internal turning tools kit 12 mm

3441641

- 3-pieces
- Incl. HM inserts
- TIN-coated
- Aluminium-box

No.	ISO		
61	S12M	SCFCR	06
62	S12M	SDQCR	07
63	S12M	STFCR	11

HM spare inserts (each 5 pcs.)



for No.	ISO		l	s	r	d	d1	Item No.	
61	CCMT060204	C/80°	6.35	2.60	0.40	6.35	2.70	3441164	
62	TCMT110204	T/60°	10.84	2.53	0.40	9.1	2.70	3441163	
63	DCMT070204	D/55°	7.30	2.53	0.40	6.35	2.70	3441166	



Internal turning tool kit

3441650

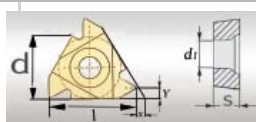
- 5-pieces (8/10/12/16/20 mm)
- Incl. HM inserts
- TIN-coated
- Aluminium-box

No.	ISO			d
64	S10K	SIR 0008	H08	8 mm
65	S10K	SIR 0010	K11	10 mm
66	S10K	SIR 0012	M11	12 mm
67	S10K	SIR 0016	P16	16 mm
68	S10K	SIR 0020	S16	20 mm

Internal turning tool



HM spare inserts



	ISO		l	s	d	d1	max.	Item No.	
64	08IR A60	60° IR	8	2.22	4.76	2.5	M10	3441725	
65/66	11IR A60	60° IR	11	3.22	6.35	3.0	M12	3441726	
67/68	16IR A60	60° IR	16	3.65	9.5	3.95	M16	3441727	

Lathe tool kit 8 mm

3441008

11-pieces . With soldered HM plates

Lathe tool kit 10 mm

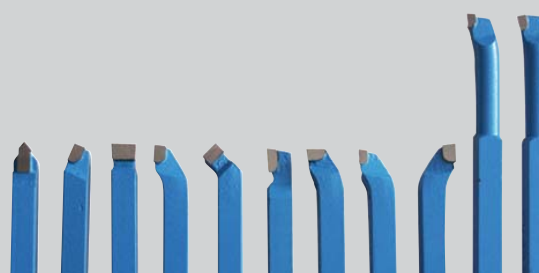
3441108

11-pieces . With soldered HM plates

Lathe tool kit 16 mm

3441508

11-pieces . With soldered HM plates



OPTIMUM Three-jaw lathe chuck centrically clamping

• **Lathe chucks made of cast**

- with cylindrical centre mount according to DIN 6350
- including chuck key
- True running accuracy of less than 0.05 mm
- Flange for lathe chuck required

Ø 80 mm	3440287	
Non-rigid block jaw kit	3442902	
Ø 100 mm	3442710	
Non-rigid block jaw kit	3442904	
Ø 125 mm	3442712	
Non-rigid block jaw kit	3442906	
Ø 160 mm	3442716	
Non-rigid block jaw kit	3442907	

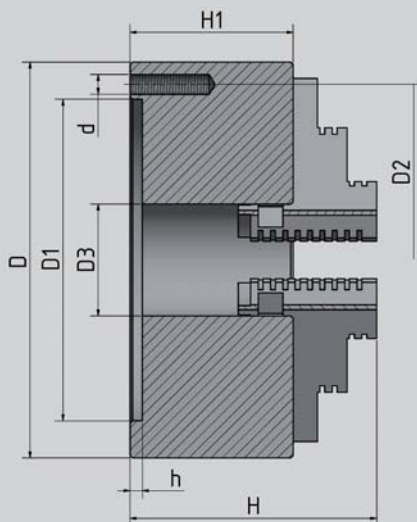
OPTIMUM Three-jaw Camlock lathe chuck, centrically clamping

• **Lathe chucks made of cast**

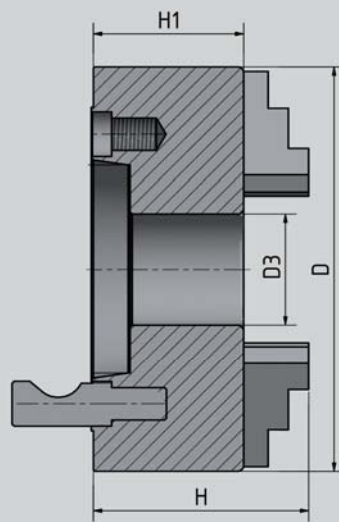
- Camlock direct fixing
- including chuck key
- True running accuracy of less than 0.05 mm

Ø 160 mm Camlock DIN ISO 702-2 No. 4	3442760	
Non-rigid block jaw kit	3442908	
Ø 200 mm Camlock DIN ISO 702-2 No. 4	3442762	
Non-rigid block jaw kit	3442910	
Ø 200 mm Camlock DIN ISO 702-2 No. 6	3442763	
Non-rigid block jaw kit	3442910	
Ø 250 mm Camlock DIN ISO 702-2 No. 6	3442765	
Non-rigid block jaw kit	3442912	
Ø 315 mm Camlock DIN ISO 702-2 No. 8	3442768	
Non-rigid block jaw kit	3442916	

Technical data for three-jaw lathe chucks



Cylindric tool holder



Camlock



Cylindric tool holder

Chuck	Camlock	Art.no.	D	D1	D2	D3	d	H	H1	h	Speed
			mm	mm	mm	mm	mm	mm	mm	mm	min ⁻¹
Ø 80 mm	.	3440287	80	55	66	16	M6	66	50	3.5	4'000
Ø 100 mm	.	3442710	100	72	84	22	M8	74.5	55	3.5	3'500
Ø 125 mm	.	3442712	125	95	108	30	M8	84	58	4	3'000
Ø 160 mm	.	3442716	160	130	142	40	M8	95	65	5	2'150

Chuck	Camlock	Art.no.	D	D3	H	H1	Speed
			mm	mm	mm	mm	min ⁻¹
Ø 160 mm	No. 4	3442760	160	40	100	70	2'150
Ø 200 mm	No. 4	3442762	200	50	120	86	2'000
Ø 200 mm	No. 6	3442763	200	50	128	86	2'000
Ø 250 mm	No. 6	3442765	250	70	140	98	1'600
Ø 315 mm	No. 8	3442768	315	105	180	103.5	1'200

OPTIMUM Four-jaw lathe chuck centrically clamping

• Lathe chucks made of cast

- with cylindrical centre mount according to DIN 6350
- including chuck key
- True running accuracy of less than 0.05 mm
- Flange for lathe chuck required

centric clamping		
Ø 80 mm	3442808	
Non-rigid block jaw kit	3442920	
Ø 100 mm	3442810	
Non-rigid block jaw kit	3442922	
Ø 125 mm	3442812	
Non-rigid block jaw kit	3442924	
Ø 160 mm	3442816	
Non-rigid block jaw kit	3442926	

OPTIMUM Four-jaw lathe chuck individually clamping

Ø 80 mm	3440286	
Ø 100 mm	3442872	
Ø 125 mm	3442874	

OPTIMUM Four-jaw Camlock lathe chuck, centrically clamping

• Lathe chucks made of cast

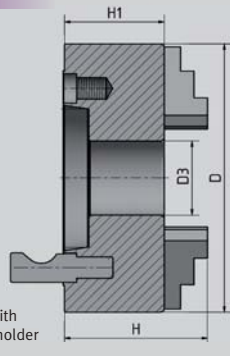
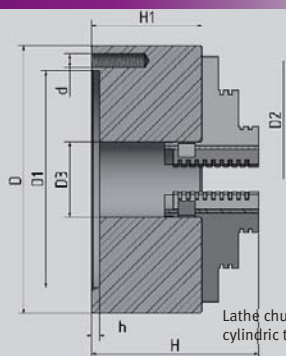
- Camlock direct fixing
- including chuck key
- True running accuracy of less than 0.05 mm

Ø 160 mm Camlock DIN ISO 702-2 No. 4	3442840	
Non-rigid block jaw kit	3442926	
Ø 200 mm Camlock DIN ISO 702-2 No. 4	3442844	
Non-rigid block jaw kit	3442928	
Ø 200 mm Camlock DIN ISO 702-2 No. 6	3442846	
Non-rigid block jaw kit	3442928	
Ø 250 mm Camlock DIN ISO 702-2 No. 6	3442850	
Non-rigid block jaw kit	3442930	
Ø 315 mm Camlock DIN ISO 702-2 No. 8	3442854	
Non-rigid block jaw kit	3442932	

OPTIMUM Four-jaw lathe chuck Camlock individually clamping

Ø 250 mm Camlock DIN ISO 702-2 No. 6	3442884	
Ø 315 mm Camlock DIN ISO 702-2 No. 8	3442888	
Ø 400 mm Camlock DIN ISO 702-2 No. 8	3442890	

Technical data for four-jaw lathe chucks



Non-rigid block jaw kit

Chuck	Camlock	Art.no.	D	D1	D2	D3	d	H	H1	h	Speed
			mm	mm	mm	mm	mm	mm	mm	mm	min ⁻¹
centric clamping											
ø 80 mm	-	3442808	80	55	66	16	M6	66	50	3.5	4'300
Ø 100 mm	-	3442810	100	72	84	22	M8	74.5	55	3.5	3'400
Ø 125 mm	-	3442812	125	95	108	30	M8	84	58	4	2'750
Ø 160 mm	-	3442816	160	130	142	40	M8	95	65	5	2'150
Individually clamping											
Ø 80 mm	-	3440286	80	55	66	22	M6	56	42	3.5	4'800
Ø 100 mm	-	3442872	100	72	84	25	M8	73	54	3.5	3'150
Ø 125 mm	-	3442874	125	95	108	30	M8	78	58	4.5	2'700
Chuck	Camlock	Art.no.	D	D3	H	H1	Speed				
			mm	mm	mm	mm	min ⁻¹				
Camlock centrally clamping											
Ø 160 mm	No. 4	3442840	160	40	95	70	2'150				
Ø 200 mm	No. 4	3442844	200	55	109	86	1'700				
Ø 200 mm	No. 4	3442846	200	65	109	86	1'700				
Ø 250 mm	No. 4	3442850	250	70	120	95	1'375				
Ø 315 mm	No. 8	3442854	315	100	142.5	106	870				
Camlock individually clamping											
Ø 250 mm	No. 4	3442884	250	65	117.5	82	1'500				
ø 315 mm	No. 8	3442888	315	95	134	90	1'100				
ø 400 mm	No. 8	3442890	400	125	143	95	900				

OPTIMUM Three-jaw lathe chuck centrically clamping

- **Lathe chucks made of cast**
- with cylindrical centre mount according to DIN 6350
- including chuck key
- Highest true running accuracy equal / better than DIN 6386
- Flange for lathe chuck required

CI3P ø 125 mm	3442020	
Non-rigid block jaw kit	3442521	
Non-rigid mounting jaws kit, not stepped	3442522	
CI3P ø 160 mm	3442025	
Non-rigid block jaw kit	3442541	
Non-rigid mounting jaws kit, not stepped	3442542	

OPTIMUM Three-jaw lathe chuck centrically clamping

- **Lathe chucks made of steel**
- with cylindrical centre mount according to DIN 6350
- including chuck key
- Highest true running accuracy
- Flange for lathe chuck required

CS3C ø 125 mm	3442520	
Non-rigid block jaw kit	3442521	
Non-rigid mounting jaws kit, not stepped	3442522	

OPTIMUM Four-jaw lathe chuck centrically clamping

- **Lathe chucks made of cast**
- with cylindrical centre mount according to DIN 6350
- including chuck key
- Highest true running accuracy equal / better than DIN 6386
- Flange for lathe chuck required

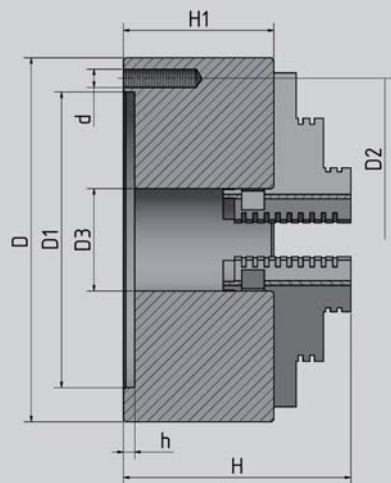
CI4P ø 125 mm	3442120	
Non-rigid mounting jaws kit	3442622	
Non-rigid block jaw kit	3442621	
CI4P ø 160 mm	3442125	
Non-rigid block jaw kit	3442641	

OPTIMUM Four-jaw lathe chuck centrically clamping

- **Lathe chucks made of steel**
- with cylindrical centre mount according to DIN 6350
- including chuck key
- Highest true running accuracy
- Flange for lathe chuck required

CS4C ø 125 mm	3442620	
Non-rigid mounting jaws kit	3442622	
Non-rigid block jaw kit	3442621	

Technical data for PREMIUM three- and four lathe chucks



Non-rigid block jaw kit



Non-rigid mounting jaws kit

Chuck	Art.no.	D	D1	D2	D3	d	H	H1	h	Speed
		mm	mm	mm	mm	mm	mm	mm	mm	min ⁻¹
Three-jaw chuck centrically clamping										
CI3P ø 125 mm	3442020	125	95	108	32	3 x M8	76	56	4	3'200
CI3P ø 160 mm	3442025	160	125	140	42	6 x M10	96.5	64.5	4	3'000
CS3C ø 125 mm	3442520	125	95	108	32	3 x M8	76	56	4	4'800
Chuck	Art.no.	D	D1	D2	D3	d	H	H1	h	Speed
		mm	mm	mm	mm	mm	mm	mm	mm	min ⁻¹
Four-jaw chuck centrically clamping										
CI4P ø 125 mm	3442120	125	95	108	32	3 x M8	76	56	4	3'200
CI4P ø 160 mm	3442125	160	125	140	42	6 x M10	64.5	64.5	4	3'000
CS4C ø 125 mm	3442620	125	95	108	32	3 x M8	56	56	4	4'800

OPTIMUM Three-jaw lathe chuck Camlock centrally clamping

• Lathe chucks made of steel

- Camlock direct fixing DIN 55029
- including chuck key
- Highest true running accuracy

CS3C ø 160 mm Camlock DIN ISO 702-2 No. 4	3442540	
Non-rigid mounting jaws kit, not stepped	3442542	
CS3C ø 200 mm Camlock DIN ISO 702-2 No. 4	3442545	
Non-rigid mounting jaws kit, not stepped	3442552	
CS3C ø 200 mm Camlock DIN ISO 702-2 No. 6	3442550	
Non-rigid mounting jaws kit, not stepped	3442552	
CS3C ø 250 mm Camlock DIN ISO 702-2 No. 6	3442555	
Non-rigid mounting jaws kit, not stepped	3442562	
CS3C ø 250 mm Camlock DIN ISO 702-2 No. 8	3442560	
Non-rigid mounting jaws kit, not stepped	3442562	
CS3C ø 315 mm Camlock DIN ISO 702-2 No. 8	3442565	
Non-rigid mounting jaws kit, not stepped	3442567	
CS3C ø 400 mm Camlock DIN ISO 702-2 No. 8	3442575	
Non-rigid mounting jaws kit, not stepped	3442577	
Non-rigid block jaw kit	3442576	

Guaranteed uniform clamping forces and high true running accuracy (DIN 6386 or higher)

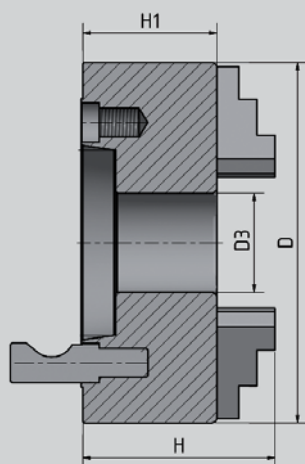
OPTIMUM Four-jaw Camlock lathe chuck, centrally clamping

• Lathe chucks made of cast

- Camlock direct fixing DIN 55029
- including chuck key

CI3P ø 160 mm Camlock DIN ISO 702-2 No. 4	3442040	
Non-rigid block jaw kit	3442541	
CI3P ø 200 mm Camlock DIN ISO 702-2 No. 4	3442045	
Non-rigid block jaw kit	3442551	
CI3P ø 200 mm Camlock DIN ISO 702-2 No. 6	3442050	
Non-rigid block jaw kit	3442551	
CI3P ø 250 mm Camlock DIN ISO 702-2 No. 6	3442055	
Non-rigid block jaw kit	3442561	
CI3P ø 315 mm Camlock DIN ISO 702-2 No. 8	3442065	
Non-rigid block jaw kit	3442566	

Technical data for PREMIUM CAMLOCK Three-jaw chucks



Non-rigid block jaw kit



Non-rigid mounting jaws kit

Chuck	Camlock	Art.no.	D	D3	H	H1	Speed
			mm	mm	mm	mm	min ⁻¹
CI3P ø 160 mm	No. 4	3442040	160	42	125	81.5	3'000
CI3P ø 200 mm	No. 4	3442045	200	55	138	91	2'500
CI3P ø 200 mm	No. 6	3442050	200	55	138	91	2'500
CI3P ø 250 mm	No. 6	3442055	250	76	157.5	103.5	2'000
CI3P ø 315 mm	No. 8	3442065	315	105	181	117.7	1'500
CS3C ø 160 mm	No. 4	3442540	160	42	111.5	68	4'500
CS3C ø 200 mm	No. 4	3442545	200	55	125	78	4'000
CS3C ø 200 mm	No. 6	3442550	200	55	125	78	4'000
CS3C ø 250 mm	No. 6	3442555	250	76	143	89	3'500
CS3C ø 250 mm	No. 8	3442560	250	76	143	89	3'500
CS3C ø 315 mm	No. 8	3442565	315	103	159.5	96.2	2'800
CS3C ø 400 mm	No. 8	3442575	400	136	181	108	2'000

Guaranteed uniform clamping forces
and
high true running accuracy
(DIN 6386 or higher)

OPTIMUM Four-jaw Camlock lathe chuck, centrally clamping

• **Lathe chucks made of steel**

- Camlock direct fixing
- including chuck key
- Highest true running accuracy

CS4C ø 160 mm Camlock DIN ISO 702-2 No. 4	3442640	
Non-rigid mounting jaws kit, not stepped	3442642	
CS4C ø 200 mm Camlock DIN ISO 702-2 No. 4	3442645	
Non-rigid mounting jaws kit, not stepped	3442652	
CS4C ø 200 mm Camlock DIN ISO 702-2 No. 6	3442650	
Non-rigid mounting jaws kit, not stepped	3442652	
CS4C ø 250 mm Camlock DIN ISO 702-2 No. 6	3442655	
Non-rigid mounting jaws kit, not stepped	3442662	
CS4C ø 250 mm Camlock DIN ISO 702-2 No. 8	3442660	
Non-rigid mounting jaws kit, not stepped	3442662	
CS4C ø 315 mm Camlock DIN ISO 702-2 No. 8	3442665	
Non-rigid mounting jaws kit, not stepped	3442667	
CS4C ø 400 mm Camlock DIN ISO 702-2 No. 8	3442675	
Non-rigid block jaw kit	3442676	
Non-rigid top jaws	3442677	

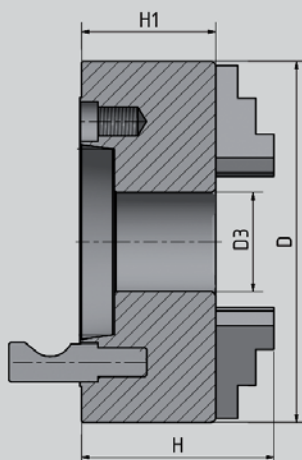
OPTIMUM Four-jaw Camlock lathe chuck, centrally clamping

• **Lathe chucks made of cast**

- Camlock direct fixing
- including chuck key

CI4P ø 160 mm Camlock DIN ISO 702-2 No. 4	3442140	
Non-rigid block jaw kit	3442641	
CI4P ø 200 mm Camlock DIN ISO 702-2 No. 4	3442145	
Non-rigid block jaw kit	3442651	
CI4P ø 200 mm Camlock DIN ISO 702-2 No. 6	3442150	
Non-rigid block jaw kit	3442651	
CI4P ø 250 mm Camlock DIN ISO 702-2 No. 6	3442155	
Non-rigid block jaw kit	3442661	
CI4P ø 315 mm Camlock DIN ISO 702-2 No. 8	3442165	
Non-rigid block jaw kit	3442666	

Technical data for PREMIUM CAMLOCK Four-jaw chucks



Non-rigid block jaw kit

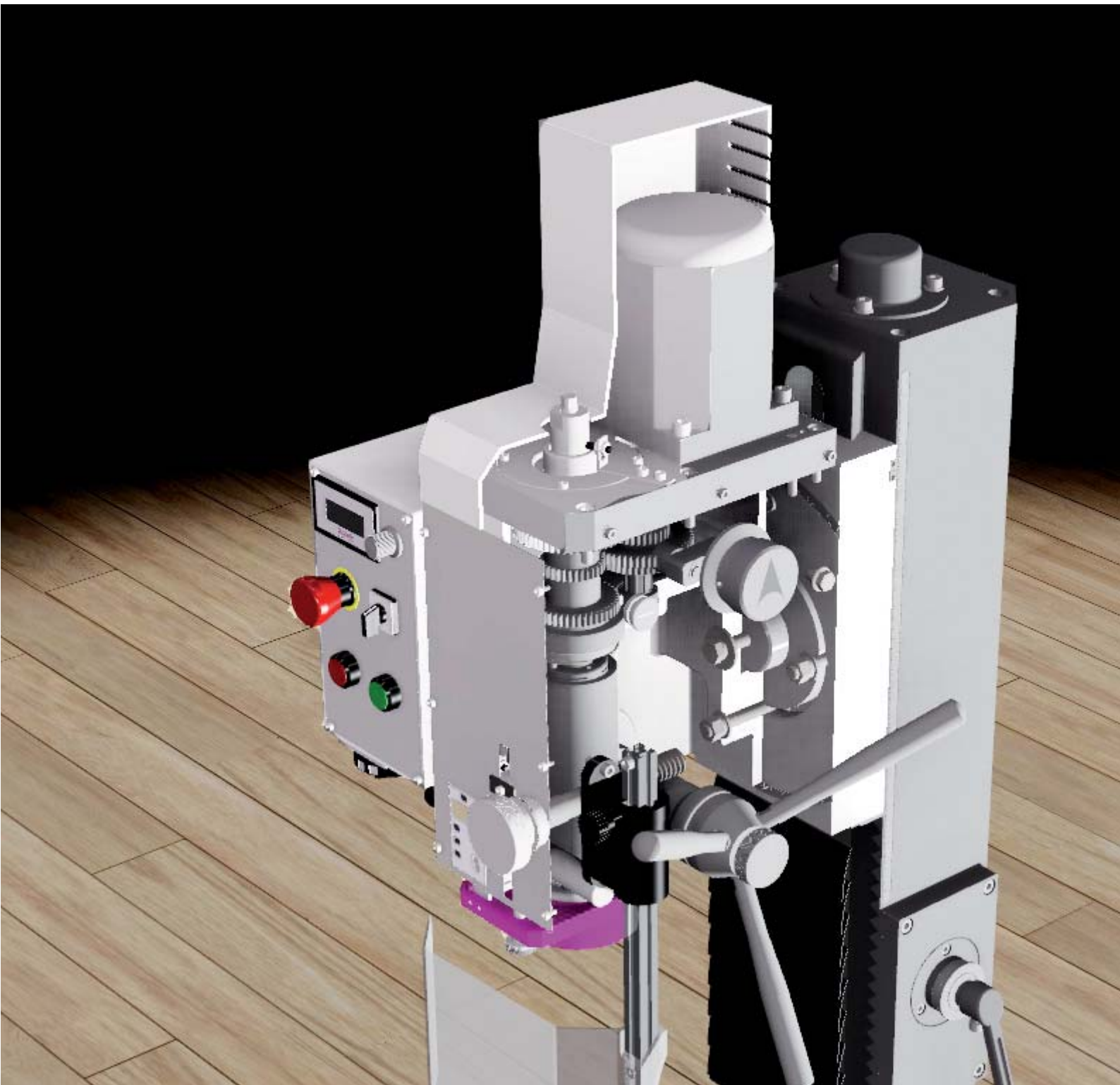


Non-rigid mounting jaws kit

Chuck	Camlock	Art.no.	D	D3	H	H1	Speed
			mm	mm	mm	mm	min ⁻¹
CI4P ø 160 mm	No. 4	3442140	160	42	125	81.5	3'000
CI4P ø 200 mm	No. 4	3442145	200	55	138	91	2'500
CI4P ø 200 mm	No. 6	3442150	200	55	138	91	2'500
CI4P ø 250 mm	No. 6	3442155	250	76	157.5	103.5	2'000
CI4P ø 315 mm	No. 8	3442165	315	105	181	117.7	1'500
CS4C ø 160 mm	No. 4	3442640	160	42	111.5	68	4'500
CS4C ø 200 mm	No. 4	3442645	200	55	125	78	4'000
CS4C ø 200 mm	No. 6	3442650	200	55	125	78	4'000
CS4C ø 250 mm	No. 6	3442655	250	76	143	89	3'500
CS4C ø 250 mm	No. 8	3442660	250	76	143	89	3'500
CS4C ø 315 mm	No. 8	3442665	315	103	159.5	96.2	2'800
CS4C ø 400 mm	No. 8	3442675	400	136	181	108	2'000

Technical data of **OPTImill®** milling machines for general orientation

	Motor power kw	Drilling capacity in steel max. Ø in mm	Spindle seat	Speed range	Travel X axis		Travel Y axis		Travel Z axis		Digital speed display	DPA/DRO 5-Version	Coolant equipment(Series)	Machine lamp (Series)	230V version available	400V version available
BF 16Vario	0.5	Ø 16	MK 2/M 10	100 - 3'000	220	manual	160	manual	210	manual					●	
BF 20Vario	0.85	Ø 16	MK 2/M 10	90 - 3'000	280	manual	175	manual	280	manual	●				●	
BF 20L Vario	0.85	Ø 16	MK 2/M 10	90 - 3'000	480	manual	175	manual	280	manual	●				●	
BF 20LD	0.85	Ø 16	MK 2/M 10	90 - 3'000	480	manual	175	manual	280	manual	●	●			●	
MH 25SV	1.5	-	BT 30	200 - 4'000	400	manual	220	manual	270	manual		●			●	
MH 25V	1.5	-	BT 30	200 - 4'000	400	manual	220	manual	270	manual		●			●	
MB 4	1.1 / 1.5	Ø 32	MT 4	95 - 3'200	450	manual	200	manual	430	manual					●	
MB 4P	1.1 / 1.5	Ø 32	MT 4	95 - 3'200	560	automatic	195	manual	350	manual		●	●			●
MB 4PV	1.5	Ø 24	MT 4	60 - 2'760	560	automatic	195	manual	350	manual	●	●	●		●	
BF 30Vario	2.2	Ø 24	MT 3 or ISO 30	80-3'100	450	manual	200	manual	430	manual	●				●	
BF 46Vario	2.2	Ø 28	ISO 40	115-3'100	500	manual	250	manual	541	manual	●				●	
MF 1Vario	2.2	Ø 30	ISO 40	50 - 6'300	570	manual	210	manual	365	manual	●	●	●		●	
MF 2Vario	1.5	Ø 24	ISO 40	10 - 5'100	800	automatic	400	manual	406	manual	●	●	●			●
MF 4Vario	3.75	Ø 32	ISO 40	9 - 6'750	800	automatic	305	manual	406	automatic	●	●	●			●
MT 50	4.5	Ø 30	ISO 40	115 - 1'750 vertical 58 - 1'355 horizontal	380	automatic	200	automatic	340	manual	●	●	●	●		●
MT 100	3.6	Ø 20	ISO 40	40 - 1'600	600	automatic	270	automatic	380	automatic	●	●	●	●		●
MT 200	9.2	Ø 30	ISO 50	60 - 1'750 vertical 58 - 1'800 horizontal	1'290	automatic	280	automatic	400	automatic	●	●	●	●		●
MT 8	10	Ø 30	ISO 40 vertical ISO 50 horizontal	60 - 4'660 58 - 1'800	980	automatic	300	automatic	450	automatic	●	●	●	●		●
MX 3	5	Ø 32	ISO 40	40 - 2'000	400	automatic	300	automatic	390	automatic	●	●	●	●		●
MX 4	6	Ø 32	ISO 40	40 - 2'000	500	automatic	400	automatic	400	automatic	●	●	●	●		●



MILLING MACHINES

Small drilling-milling machine with electronically infinitely variable drive for the model-maker

Convincing arguments: quality, efficiency and price

- Versatile fields of application
- All guideways are ground and sight scrapped (oil pockets for greasing)
- Column laterally adjustable for extended fields of application
- Tool holder MT2
- EMV filter (to protect sensitive electronics for override mains-borne signals Class B)
- Safety electrical system of 24 volts type
- All travels are readable on scales
- Manufactured with the accuracy of a toolmaker incl. test protocol
- Low-priced and stable value

Control panel

- Easy to operate
- Clearly
- ON/OFF switch
- Potentiometer
- Emergency-stop push button

Speed adjustment

- Infinitely variable from 100 up to 3'000 min⁻¹

High true running accuracy

- due to taper roller bearing
- better than 0.015 mm measured in the spindle sleeve

Safety screen

- Height-adjustable
- Largely dimensioned
- Micro switch

Cross table

- Massive and precisely worked
- T-slots
- Coolant channel
- Adjustable limit stops

Feed spindle

- Clearance of the feed spindle adjustable and re-adjustable

Digital Position Indicator DRO5

Item No. 3383875

Mounting DRO5

Item No. 9000420

Gearing

- Two-stage

Drilling-milling head

- Inclined by $\pm 90^\circ$ on both sides
- for drilling and milling tasks at angular positions as required

Guidings

- Neat milling surface due to individually clampable guideways

Column

- Solid and precisely machined
- Dovetail guide
- Adjustable via V-ledges on all 3 axes

Handwheels

- Exact infeed by positionable scale rings on all handwheels

Length measurement scale

- Integrated in the cross table

Universal machine substructure

- Dimensions L x W x H: 800 x 340 x 420 mm
- Item No. 3353000

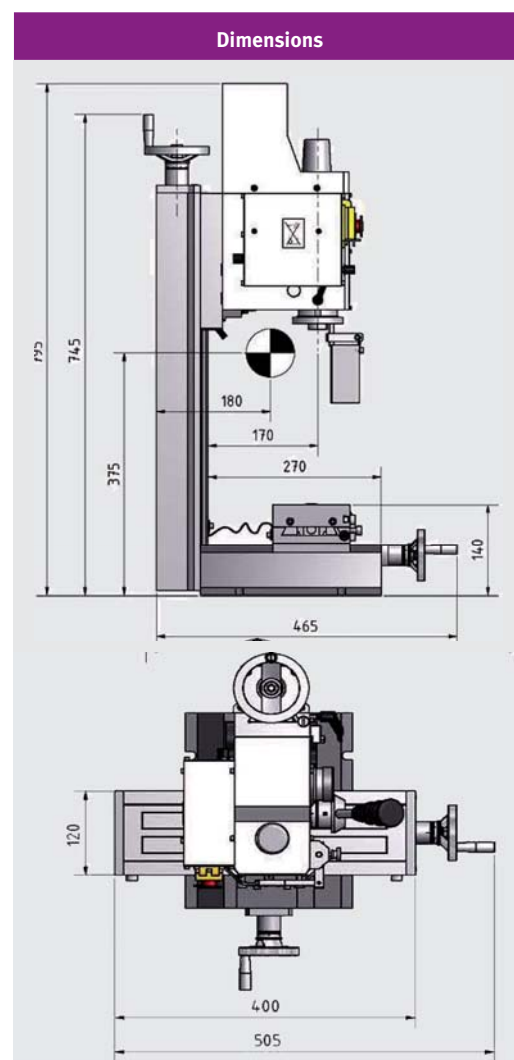
Chip tray

- Dimensions L x W x H: 720 x 470 x 30 mm
- Item No. 3352999

Fig.: OPTImill BF 16Vario with optional accessory



Technical data, accessories and dimensions

Model	BF 16Vario
Item No	3338116
Electrical connection	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	500 W
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 16 mm
Continuous drilling capacity in steel (S235JR)	Ø 12 mm
Milling head dimension max.	Ø 63 mm
End mill dimension max.	Ø 20 mm
Spindle seat	
Spindle stroke	50 mm
Spindle seat	MK 2/M 10
Throat	175 mm
Drilling-milling head	
Swivel range	± 90°
Spindle speeds	100 - 3'000 min ⁻¹
Gear speeds	2 steps, electrically adjustable speed
Cross table	
Table length	400 mm
Table width	120 mm
T - slot size / distance	10 mm / 35 mm
Travels	
X axis	220 mm
Y axis	160 mm
Z axis	210 mm
Dimensions	
Length x width x height	505 x 465 x 795 mm
Total weight	60 kg
Standard equipment	
	Taper mandrel MT2/B16 Operating tool



Accessories	Item No	
Add-on adapter "Lathe"	3356568	
<ul style="list-style-type: none"> To mount columns and milling head onto the machine bed of the lathes: TU 2506 / TU 2807 		
  <p>Fig.: Mounting example OPTImill BF20 Vario combined with TU 2807V by means of an add-on adapter</p>		

Collet kit MT2/M10, directly clamping, 5 pcs	3351980	
Collet kit ER 25, 15 pcs	3441109	
Milling cutter kit HSS TiN-coated	3352113	
<ul style="list-style-type: none"> 6 milling cutters DIN 1835 B short type with 2 cutting edges 6 milling cutters DIN 1835 B long type with 4 cutting edges 		

Accessories	Item No	
Add-on adapter "high speed"	3356567	
<ul style="list-style-type: none"> To mount a high speed motor (up to 26'000 min⁻¹) L x W x H: 120 x 195 x 185 mm; Seat Ø 43 mm (without motor) 		
  <p>Fig. Add-on adapter high speed</p> <p>Fig. Mounting example</p>		
Quick-action drill chuck (0 - 13 mm) B16	3050623	
Clamping tool kit SPW 8	3352015	
Three-axis vice MV3-75	3354175	
Two-axis vice ZAS 50	3354170	

„Accessories for milling machines“ on page 141

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Stable drilling milling machines with powerful, electronically infinitely variable drive and digital speed display. OPTImill BF20L Vario with longer cross table. BF 20 LD with digital position display DRO

Convincing arguments: quality, efficiency and price

- Feed spindles can be adjusted without clearance due to adjustable spindle nuts
- Stable dovetail guiding precision ground and scraped with re-adjustable V-ledges
- EMV filter (to protect sensitive electronics for override mains-borne signals Class B)
- All guideways are ground and sight scrapped (oil pockets for greasing)
- Precisely manufactured
- Two-row angular contact bearings in the axis, can be adjusted free of play
- Safety electrical system of 24 volts type
- Bellow as guide protection
- Right-hand/left-hand rotation
- Drilling milling head tiltable by $\pm 90^\circ$ for milling and drilling works at different angles
- Height-adjustable protective screen with micro switch providing maximum protection of the user against chips and parts flying off at high speed

Control electronics

- Integrated relay control
- Optional CNC Controller can switch the machine on and off
„CNC-Controller VI“ on page 202

CNC MILLING

CNC add-on kit

„Accessories for milling machines“
on page 141

BF 20 LD

Incl. mounted Digital Position Indicator DRO 5 and magnetic tapes in all three axis



Motor

- Two-stage gear ratio for a powerful transmission of the motor power (850 W)
- Powerful DC motor with permanent current control

Speeds

- Large speed adjustable speed range from 90 - 3'000 min⁻¹
- Easy to read digital speed display

Start-stop connection

- for optional CNC Controller

Spindle stroke display

- Digital
- Accuracy of the display 0.01 mm
- Reversible mm/inch

Machine lamp

- Integrated in the drilling-milling head
- Halogen pin base lamp, 12V - 10W

Column

- Relocatable by 30 mm to both sides,
- Longer travels and centric processing of the workpiece is possible when the head is slewn

Limit stops

- Mechanic
- Adjustable

Length measurement scale

- Embedded in the cross table
- Well readable

Z-column and X-axis

- Prepared 9 mm slot for the subsequent assembly of the magnetic bands by simply gluing them in



Taper roller bearing

- High true running accuracy ≤ 0.015 mm measured in the spindle sleeve

Z-column

- Rear side with hole
- Easy oiling of the trapezoid spindle or greasing of the recirculating ball screw

Cross table

- Cross table lengths:
BF 20Vario: 480 mm
BF 20LVario/BF 20 LD: 700 mm
- Solid and precise
- Precisely machined surface
- Including T-slots
- Adjustable V-ledges
- Adjustable via 3 handwheels

Y axis

- With 2 milled pockets
- The magnetic tape holder can be easily screwed down by means of bushings

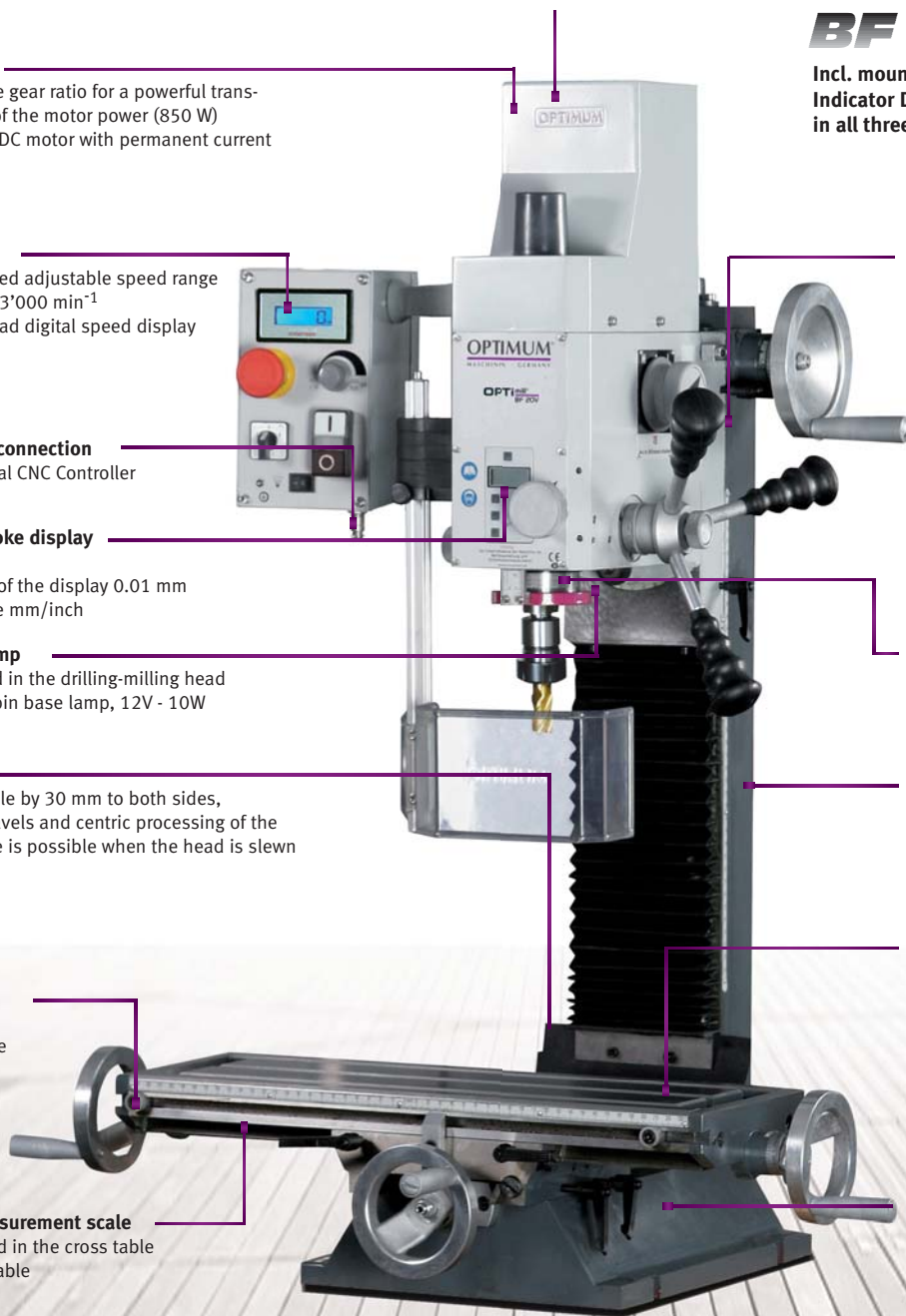
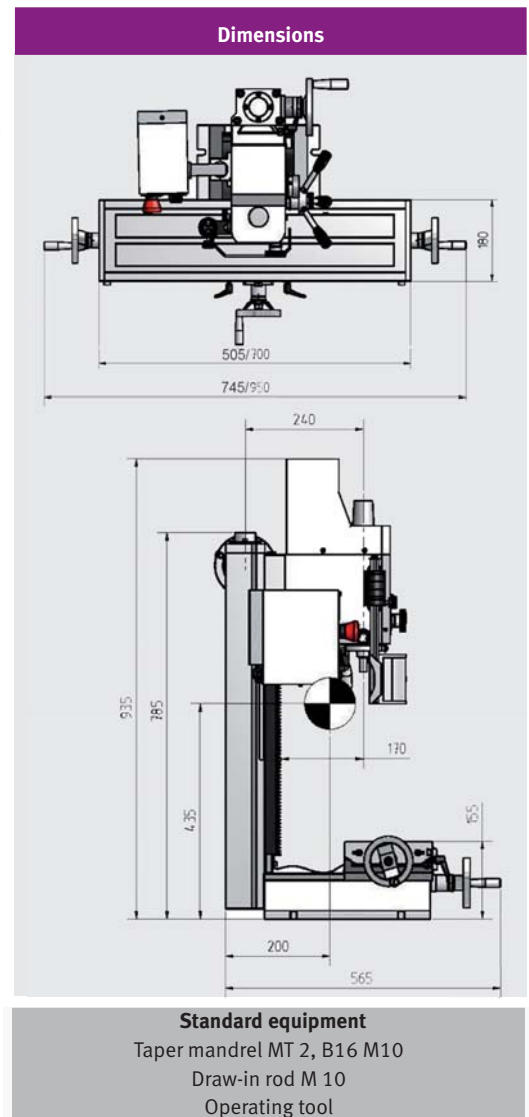


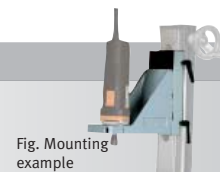
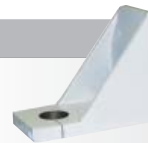
Fig.: OPTImill BF 20Vario with optional accessory

Technical data, accessories and dimensions

Model	BF 20Vario	BF 20LVario
Item No	3338120	3338122
Model		BF 20 LD NEW
Item No	-	3338125
Electrical connection		
Electricalconnection	230 V / 1 Ph ~50 Hz	
Motor power	850 W	
Drilling-milling capacity		
Drilling capacity in steel (S235JR)	Ø 16 mm	
Continuous drilling capacity in steel	Ø 12 mm	
Milling head dimension max.	Ø 63 mm	
End mill dimension max.	Ø 20 mm	
Spindle seat		
Spindle stroke	50 mm	
Spindle seat	MK 2/M 10	
Throat	185 mm	
Drilling-milling head		
Swivel range	± 90°	
Spindle speeds	90 - 1'480 min ⁻¹ / 150 - 3'000 min ⁻¹	
Gear speeds	2 steps, electrically adjustable speed	
Cross table		
Table length	500 mm	700 mm
Table width	180 mm	
T - slot size / distance	12 mm / 63 mm	
Load of cross table max.	55 kg	
Travels		
X axis	280 mm	480 mm
Y axis	175 mm	
Z axis	280 mm	
Dimensions		
Length	745 mm	950 mm
Width x Height max.	565 x 935 mm	
Total weight	103 kg	115 kg



Accessories	Item No	
Add-on adapter "high speed"	3356571	
<ul style="list-style-type: none"> To mount a high speed motor (up to 26'000 min⁻¹) L x W x H: 120 x 195 x 185 mm; Seat Ø 43 mm (without motor) 		



BF 20AV	3338129	
<ul style="list-style-type: none"> Milling head and column of the drilling milling machine for fitting to the lathes TU 2506 and TU 2807 Length x Width x Height max. 470 x 425 x 912 mm Total weight 80 kg 		



Add-on adapter "Lathe"	3356572	
<ul style="list-style-type: none"> To mount columns and milling head onto the machine bed of the lathes: TU 2506/ TU 2807 		



Universal machine substructure	3353000	NEW
<ul style="list-style-type: none"> Dimensions L x W x H: 800 x 340 x 420 mm 		



Chip tray	3352999	
<ul style="list-style-type: none"> Dimensions L x W x H: 720 x 470 x 30 mm 		

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

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CNC

Index

Stable milling machines with powerful, electronically infinitely variable drive. MH 25SV with servomotors and digital speed display DRO 5

Convincing arguments: quality, efficiency and price

- User-friendly membrane key pad
- Counterweight eases the adjustment of the Z axis
- Digital 3 axes position display DRO 5
- Infinitely variable speed control
- Easy tool change by using a rocker arm
- Feed spindles adjustable by readjustable spindle nuts
- All guideways are ground and sight scraped (oil pockets for greasing)
- Precisely manufactured
- Angular contact bearings in the axis, can be adjusted free of play

- Drilling-milling head slewable by $\pm 45^\circ$
- Right-hand/left-hand rotation
- Height-adjustable screening grid with micro switch
- Stable dovetail guiding precision ground and scraped with re-adjustable V-ledges

MH 25SV:

- Infinitely variable feed in all axis
- Rapid feed X-/Y-axis for rapid positioning
- Digital speed display DRO 5



Fig.: OPTImill MH 25V



Fig.: OPTImill MH 25SV

Convincing arguments



Touch panel (Fig. MH 25SV)

- Clearly arranged and easy to operate
- Slight contact pressure with the finger is sufficient to activate the touch function



Energy chain

- Cable guide in an energy chain



End switch

- for all three axis

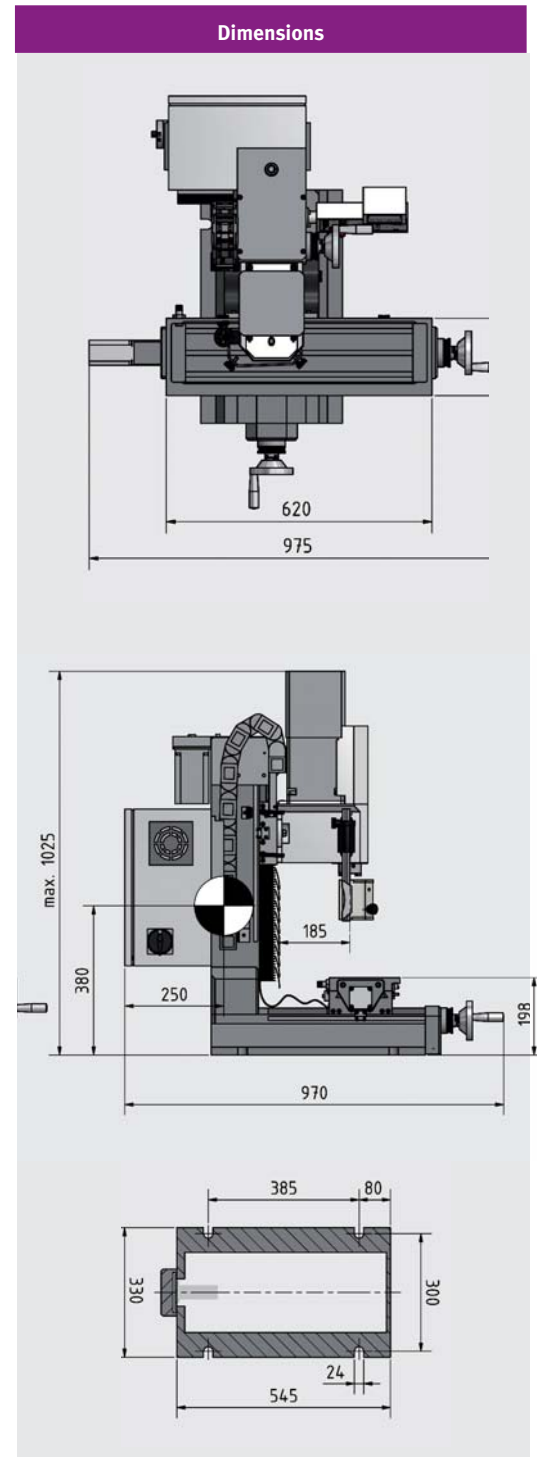
The milling machine (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Technical data, accessories and dimensions

Modell	MH 25V		MH 25SV
Artikel Nr.	3338155		3338160
Electrical connection			
Electrical connection	230 V / 1 Ph ~50 Hz		
Total connected load	2 kW		
Milling spindle			
Driving motor	1.5 kW		
Torque driving motor	10 Nm		
Drilling-milling capacity			
Drilling capacity in steel (S235JR)	Ø 25 mm		
Continuous drilling capacity in steel	Ø 20 mm		
Milling head dimension max.	Ø 50 mm		
End mill dimension max.	Ø 25 mm		
Spindle seat			
Spindle seat	BT 30		
Throat	185 mm		
Drilling-milling head			
Swivel range	45°		
Spindle speeds	200 - 4'000 min ⁻¹		
Gear speeds	Speed electronically adjustable		
Cross table			
Distance spindle - table	305 mm		
Table length x width	620 x 180 mm		
T-slot size / number / distance	12 mm / 3 / 50 mm		
Load (max.)	30 kg		
Travels			
X axis	manual 400 mm	autom. 400 mm*	
Y axis	manual 210 mm	autom. 210 mm*	
Z axis	manual 270 mm	autom. 270 mm*	
Torque driving motor			
X-/Y-/Z axis	-	2,2 / 2,2 / 4,2 Nm	
Verfahrensgeschwindigkeiten			
X axis min./max.	-	150 / 930 mm/min.	
Y axis min./max.	-	100 / 580 mm/min.	
Z axis min./max.	-	80 / 450 mm/min.	
Dimensions			
Length x width x height	914 x 844 x 1'119 mm		
Total weight	192 kg	200 kg	

* manually attainable

Accessories	Item No
Starter kit BT 30	3536107
Holder cutter head	3536306
Drill chuck	3536303
Weldon holder Ø 6 mm	3536310
Weldon holder Ø 8 mm	3536311
Weldon holder Ø 10mm	3536312
Weldon holder Ø 12 mm	3536313
Weldon holder Ø 16 mm	3536314
Weldon holder Ø 20mm	3536315
Adapter	3536305
Collet fixture ER 32	3536304
Collet holder wrench ER 32	3536307
Collet kit ER 32	3441122
Device for height adjustment	3536290
Assembly and tool setting aid	3536193
Cone wiper	3536301
Retention knob	3536302
Universal machine substructure	3353009



Starter kit BT 30

- Holder cutter head, drill chuck
- 2 pieces Weldon 6 mm/20 mm each
- 1 piece Weldon 8 mm / 10 mm / 12 mm / 16 mm each
- adapter BT 30
- collet holder ER 32
- collet wrench ER 32
- 18-pc collet kit ER 32
- height adjustment device
- assembly and setting aid
- retention knob
- cone wiper

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Universal precision drilling milling machine with 12 switchable speeds

Convincing arguments: quality, efficiency and price

- Heavy, solid cast iron construction
- Very smooth running due to ground oil-quenched gear wheels
- Large speed range from 95 - 3'200 min⁻¹ due to 12 switchable speeds
- Two-stage quality electrical motor
- Right-hand/left-hand rotation
- Gear head slewable by $\pm 60^\circ$
- Adjustable V-ledges
- Drilling depth stop

Control panel

- Easy-to-operate
- Emergency-stop push button
- Selector switch rotating direction
- Threading function

Speed change

- Simply by actuating the gear selector switch at the front

Safety screen

- Height-adjustable
- Largely dimensioned
- Micro switch

Cross table

- Adjustable V-ledges
- Including T-slots
- Adjustable via 3 handwheels
- Incorporated length measurement scale
- Adjustable limit stops

Column

- Dovetail guide
- Manually scraped

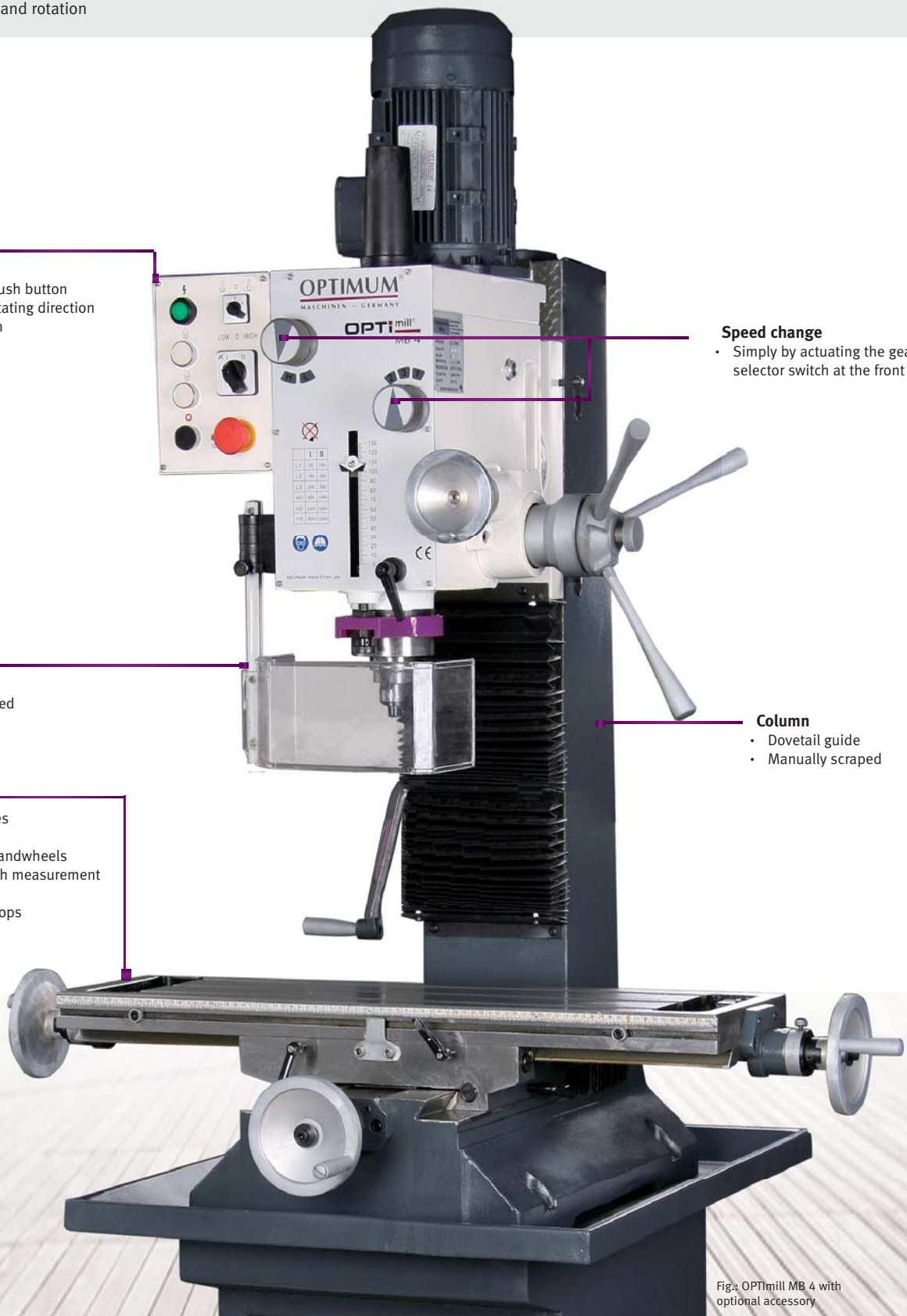


Fig.: OPTImill MB 4 with optional accessory

Technical data and accessories

Convincing arguments ...



Threading function

- Motor is automatically starting up according to a defined path via the drilling depth stop of the sleeve
- Automatically changes the direction of rotation as soon as the preset depth is attained
- Tap pulls out of the workpiece



Manual spindle sleeve feed with fine feed

- Handwheel
- Easy-to-operate

Model	MB 4
Item No	3338450
Electrical connection	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.1 / 1.5 kW
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 32 mm
Continuous drilling capacity in steel (S235JR)	Ø 28 mm
Milling head dimension max.	Ø 63 mm
End mill dimension max.	Ø 28 mm
Spindle seat	
Spindle stroke	120 mm
Spindle seat	MT 4
Spindle sleeve diameter	75 mm
Throat depth	275 mm
Drilling-milling head	
Spindle speeds	95 - 3'200 min ⁻¹
Gear speeds	2 x 6 steps
Swivel range	± 60°
Cross table	
Table length	800 mm
Table width	240 mm
Distance spindle - cross table	460 mm
T - slot size / distance	14 mm / 63 mm
Travels	
X axis	450 mm
Y axis	195 mm
Z axis	430 mm
Dimensions	
Length	1'100 mm
Width	850 mm
Height max.	1'150 mm
Total weight	320 kg
Standard equipment	
Operating tool	

Accessories

Kit of parallel packing-plates, 20 pcs	3354001	
Height adjustable tailstock RST 1	3356155	
Horizontal-vertical circular dividing table RT150	3356150	
Clamping tool kit SPW 12	3352017	

- Metric threads

End mill kit HSS 20-pcs

- 10 milling cutter DIN327 D Type with 2 cutting edges
- 10 milling cutter DIN844 B Type with 4 cutting edges

Precision vice FMS 100

- Pull-down technique with rotary plate
- Hardened and ground jaws



Accessories	Item No	
Steel base frame	3353006	
• Chip tray		
• Dimensions L x W x H: 625 x 415 x 750 mm		
• Weight 54 kg		
Universal coolant equipment	3352001	
• Tank size L x W x H: 370 x 245 x 170 mm		

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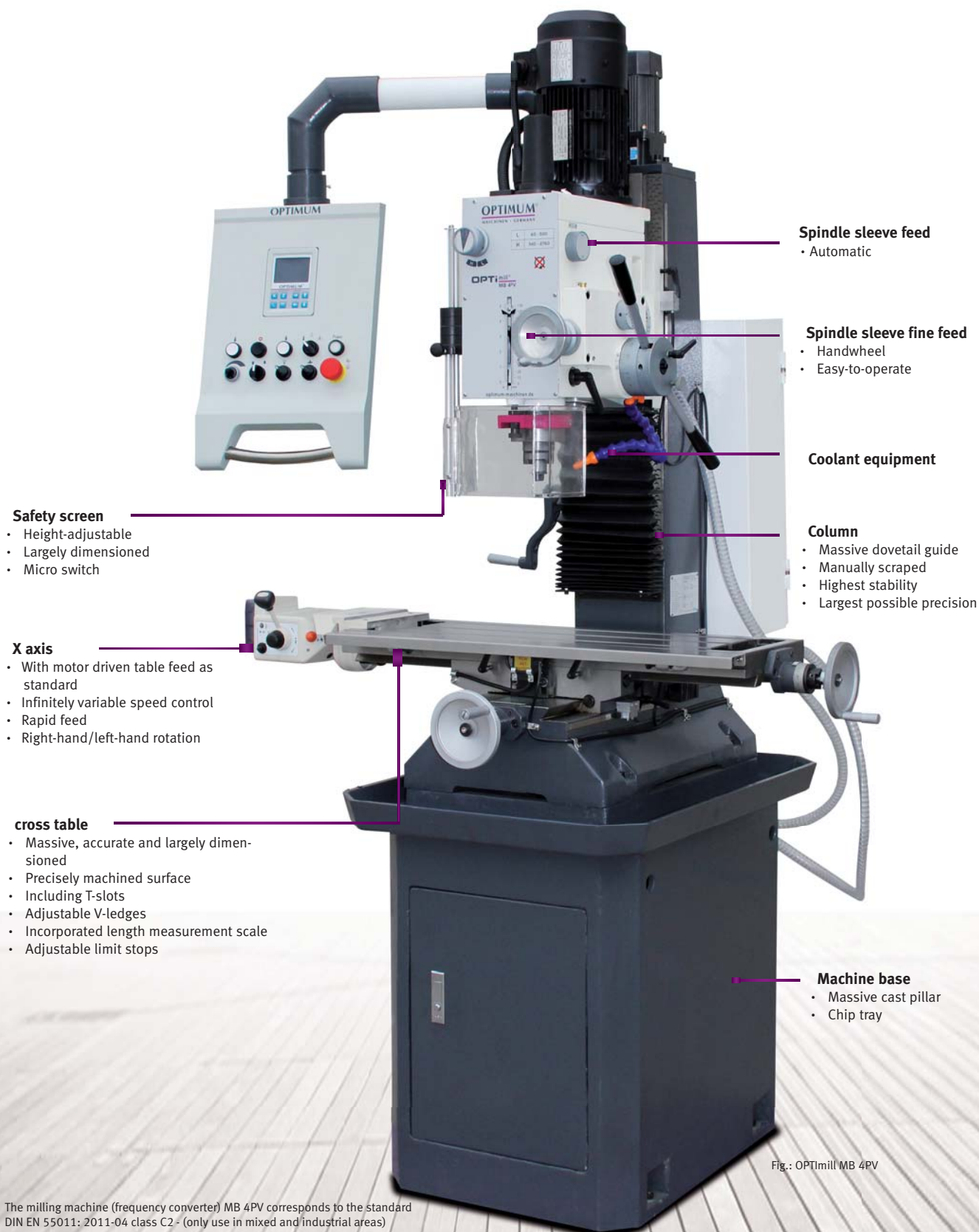
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Universal drilling-milling machine with position display and machine base made of cast iron. MB 4PV with speed adjustable drive

Convincing arguments: quality, efficiency and price

- Very smooth running due to ground oil-quenched gear wheels
- Two-stage quality electrical motor (MB 4P)
- One-stage quality electrical motor (MB 4PV)
- Automatic spindle sleeve feed
- Motor positioning to the Z axis
- Gear head slewable by $\pm 60^\circ$
- Drilling / Thread cutting function



Safety screen

- Height-adjustable
- Largely dimensioned
- Micro switch

X axis

- With motor driven table feed as standard
- Infinitely variable speed control
- Rapid feed
- Right-hand/left-hand rotation

cross table

- Massive, accurate and largely dimensioned
- Precisely machined surface
- Including T-slots
- Adjustable V-ledges
- Incorporated length measurement scale
- Adjustable limit stops

Spindle sleeve feed

- Automatic

Spindle sleeve fine feed

- Handwheel
- Easy-to-operate

Coolant equipment

Column

- Massive dovetail guide
- Manually scraped
- Highest stability
- Largest possible precision

Machine base

- Massive cast pillar
- Chip tray

Fig.: OPTImill MB 4PV

Technical data and accessories

Convincing arguments ...



OPTI Operating panel

- With integrated control panel
- To control:
 - Z axis height adjustment
 - Operating mode milling/ threading
 - Step switch drive
 - Spindle rotation
 - Machine luminaire
 - Cooling pump
 - Emergency-stop push button
- Integrated, compact, digital 3-axis positioning display DRO (X - Y - Z) with user-friendly menu guidance and three- or four-row five-seg-ment display



MB 4P

- with DRO 3



MB 4PV

- with DRO 5
- Incl. speed display

Model	MB 4P	MB 4PV NEW
Item No	3338460	3338465
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor output	1.1 / 1.5 kW	1.5 kW
Drilling-milling capacity		
Drilling capacity in steel (S235JR)	Ø 32 mm	Ø 24 mm
Continuous drilling capacity in steel	Ø 28 mm	Ø 20 mm
Milling head dimension max.	Ø 63 mm	Ø 63 mm
End mill dimension max.	Ø 28 mm	Ø 26 mm
Spindle seat		
Spindle stroke	120 mm	120 mm
Spindle seat	MT 4	MT 4
Spindle sleeve diameter	75 mm	75 mm
Throat depth	258 mm	258 mm
Drilling-milling head		
Spindle speeds	95 - 3'200 min ⁻¹	60 - 2'760 min ⁻¹
Gear speeds	2 x 6 steps	2 steps
Swivel range	± 45°	± 45°
Cross table		
Table length	800 mm	800 mm
Table width	240 mm	240 mm
Distance spindle - cross table	420 mm	420 mm
T-slot size / distance / number	14 mm / 80 mm / 3	14 mm / 80 mm / 3
Automatic spindle sleeve feed	0.1 / 0.18 / 0.26 mm/rev	0.1 / 0.18 / 0.26 mm/rev
Travels		
X axis automatic	560 mm	560 mm
Y axis manual	195 mm	195 mm
Z axis manual	350 mm	350 mm
Dimensions		
Length	1'220 mm	1'250 mm
Width	930 mm	930 mm
Height max.	2'110 mm	2'110 mm
Total weight	495 kg	495 kg

Vices	Item No.
FMS 100	3354100
FMS 125	3354125

- Hardened and ground guide surfaces
- Hardened and ground clamping jaws, replaceable
- With turntable, 360° turnable



Accessories	Item No
Kit of parallel packing-plates , 20 pcs	3354001
Copy and planing cutter head MT 4	3350214
Vibration damper SE1	3381012
Boring drilling head MT 4	3352084
Arbor for lathe chuck MT4	3350304
Collet chuck MT 4/M16	3352094
Tapping chuck M5-M12	3352042
Height adjustable tailstock RST 1	3356155
Clamping tool kit SPW 12	3352017
• Metric threads	
Horizontal-vertical circular dividing table RT150	3356150
End mill kit HSS 20-pcs	3386200
• 10 milling cutter DIN327 D Type with 2 cutting edges	
• 10 milling cutter DIN844 B Type with 4 cutting edges	
Circular dividing table RT 100	3356110
Circular dividing table RTE 165	3356365

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Precision drilling-milling machine with OPTIMUM Brushless drive and infinitely variable speed control

Convincing arguments: quality, efficiency and price

- Heavy, stable and solid column, made of high quality cast iron with ground and scraped dovetail guideway, provides for high stability and optimum precision
- Solid, precise milling table, largely dimensioned and precisely machined surface
- High true running accuracy due to taper roller bearings, better than 0.015 mm measured in the spindle sleeve
- Gear head slewable by $\pm 90^\circ$
- Manual fine feed
- Adjustable V-ledges
- Very wide speed range
- Infinitely variable drive
- CNC prepared (special spindle bearing of the axis and mounting option of the Y-axis housing from the rear side)
- Drilling depth stop
- Height-adjustable protective screen with micro switch providing maximum protection of the user against chips and parts flying off at high speed

Operating mode "auto"

- The motor is starting up automatically after moving the lever
- Stops again in the initial position
- It is not necessary to actuate the push button start and stop repeatedly for repeated drilling tasks

Operating mode "Threading"

- The engine is being activated by moving the spindle sleeve lever downward
- The direction of rotation is changed by pressing the limit switch on the adjustable drilling depth stop

Control panel

- Digital speed display
- Potentiometer
- Emergency-stop push button
- Selector switch operating mode/rotating direction

Digital depth gauge

- Accuracy of the display 0.01 mm
- Reversible mm/inch

Lamella protective cover

- Z column
- Stainless steel

Cross table

- Massive, accurate and largely dimensioned
- Precisely machined surface
- Including T-slots
- Adjustable V-ledges
- Adjustable via 3 handwheels
- Incorporated length measurement scale
- Adjustable limit stops

Powerful Brushless drive

- **New Brushless controller**
- Optimized running performance, especially smooth running
- Higher power output (2.2 kW).
- Signals are digitally processed
- Nearly constant torque over the entire speed range



Gear

- Three stages

Spindle speeds

- Infinitely variable speed setting
- Speeds from 80 up to 3'100 min⁻¹

Spindle sleeve feed

- Via spindle sleeve lever (drilling)
- Coupling to switch-over from manual rough feed to manual fine feed

Column

- Massive dovetail guide
- Highest stability
- Largest possible precision

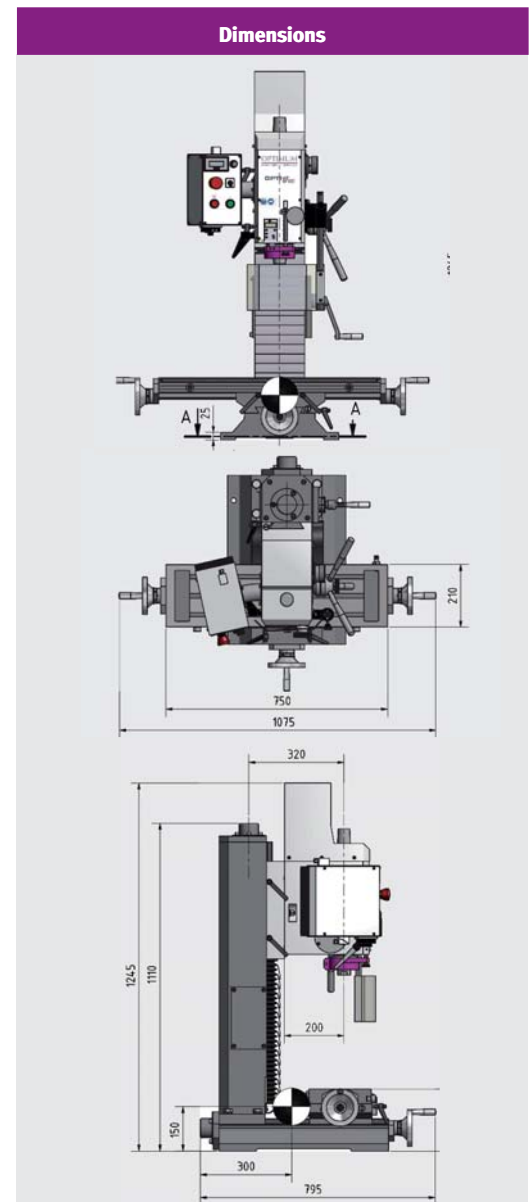
Optional steel base frame

- Figure with switch combination of the optional universal coolant equipment (not included in the scope delivery)
 - Chip plates
 - Dimensions L x W x H:
550 (max. 940) x 650 x 750 mm
- Item No 3353004

Technical data, accessories and dimensions

Model	BF 30Vario
Item No with MT 3 seat	3338430
Item No with ISO 30 seat	3338431
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Motor power	2.2 kW
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 24 mm
Continuous drilling capacity in steel	Ø 20 mm
Milling head dimension max.	Ø 75 mm
End mill dimension max.	Ø 30 mm
Spindle seat	
Spindle stroke	90 mm
Spindle seat	MT 3 or ISO 30
Throat	200 mm
Spindle sleeve diameter	70 mm
Draw-in rod	M12
Drilling-milling head	
Swivel range	± 90°
Spindle speed slow	80 - 1'100 min ⁻¹
Spindle speed average	160 - 1'700 min ⁻¹
Spindle speed rapid	320 - 3'100 min ⁻¹
Gear speeds	3 steps, electrically adjustable speed
Cross table	
Table length	750 mm
Table width	210 mm
T - slot size / distance	12 mm / 63 mm / number 3
Distance spindle - cross table	470 mm
Load of cross table max.	150 kg
Travels	
X axis	450 mm
Y axis	200 mm
Z axis	430 mm
Dimensions	
Length x width x height	1'075 x 795 x 1'245 mm
Total weight	265 kg
Standard equipment	
	Draw-in rod M 12
	Operating tool

Accessories	Item No	
Hydraulic vice HMS 100	3355100	
Precision vice FMS 125	3354125	
Horizontal-vertical circular dividing table RT 150	3356150	
Universal coolant equipment 230V	3352002	
Universal Table feed OPTI V99	3352022	
Assembly kit OPTI V99 - X axis	3352035	
Clamping tool kit SPW 10	3352016	
End mill kit HSS 20 pcs	3386200	
Collet kit 15 pcs ER25	3441109	
Collet kit 6 pcs MT 3	3352014	
Adapter ISO 30 / MT 3	3352068	
Collet chuck ISO 30; ER25	3352046	
Copy and planing cutter head ISO 30	3350215	
Copy and planing cutter head MT3	3350213	
Vibration damper machine foot SE1	3381012	
Measuring system Newall DP700 complete add-on kit	3390330	



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CNC add-on kit

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Universal precision drilling-milling machine with a powerful OPTIMUM Brushless-drive, infinitely variable speed.

Convincing arguments: quality, efficiency and price

- Heavy, stable and solid column, made of high quality cast iron with ground and scraped dovetail guideway, provides for high stability and optimum precision
- High true running accuracy due to taper roller bearings, better than 0.015 mm measured in the spindle sleeve
- Gear head slewable by 90°
- Manual fine feed
- Lamella protective cover of the Z column made of stainless steel
- Infinitely variable drive

- Optional massive, heavy steel base provides for stability
- Drilling depth stop
- Thread cutting mode and automatic mode
- CNC prepared (special spindle bearing of the axis and mounting option of the Y-axis housing from the rear side)
- Height-adjustable protective screen with micro switch providing maximum protection of the user against chips and parts flying off at high speed
- Low-priced and stable value

Operating mode "auto"

- The motor is starting up automatically after moving the lever
- Stops again in the initial position
- It is not necessary to actuate the push button start and stop repeatedly for repeated drilling tasks

Operating mode "Threading"

- The engine is being activated by moving the spindle sleeve lever downward
- The direction of rotation is changed by pressing the limit switch on the adjustable drilling depth stop

Control panel

- Digital speed display
- Emergency-stop push button
- Selector switch operating mode/rotating direction
- Potentiometer

Central lubrication

- for spindle, screw nut and guideways

Powerful Brushless drive

- **New Brushless controller**
- Optimized running performance, especially smooth running
- Higher power output (2.2 kW).
- Signals are digitally processed
- Nearly constant torque over the entire speed range



Depth gauge

- Digital
- Accuracy of the display 0.01 mm
- Reversible mm/inch

Spindle sleeve feed

- Via spindle sleeve lever (drilling)
- Coupling to switch-over from manual rough feed to manual fine feed
- Handwheel for spindle sleeve fine feed

Column

- Massive dovetail guide
- Highest stability and optimum precision

Cross table

- Massive, accurate and largely dimensioned
- Precisely machined surface
- Adjustable V-ledges
- Adjustable via 3 handwheels
- Incorporated length measurement scale
- Adjustable limit stops

Optional steel base frame

- Dimensions L x W x H:
750 (max. 1'235) x 750 x 750 mm
- Item No. 3353005

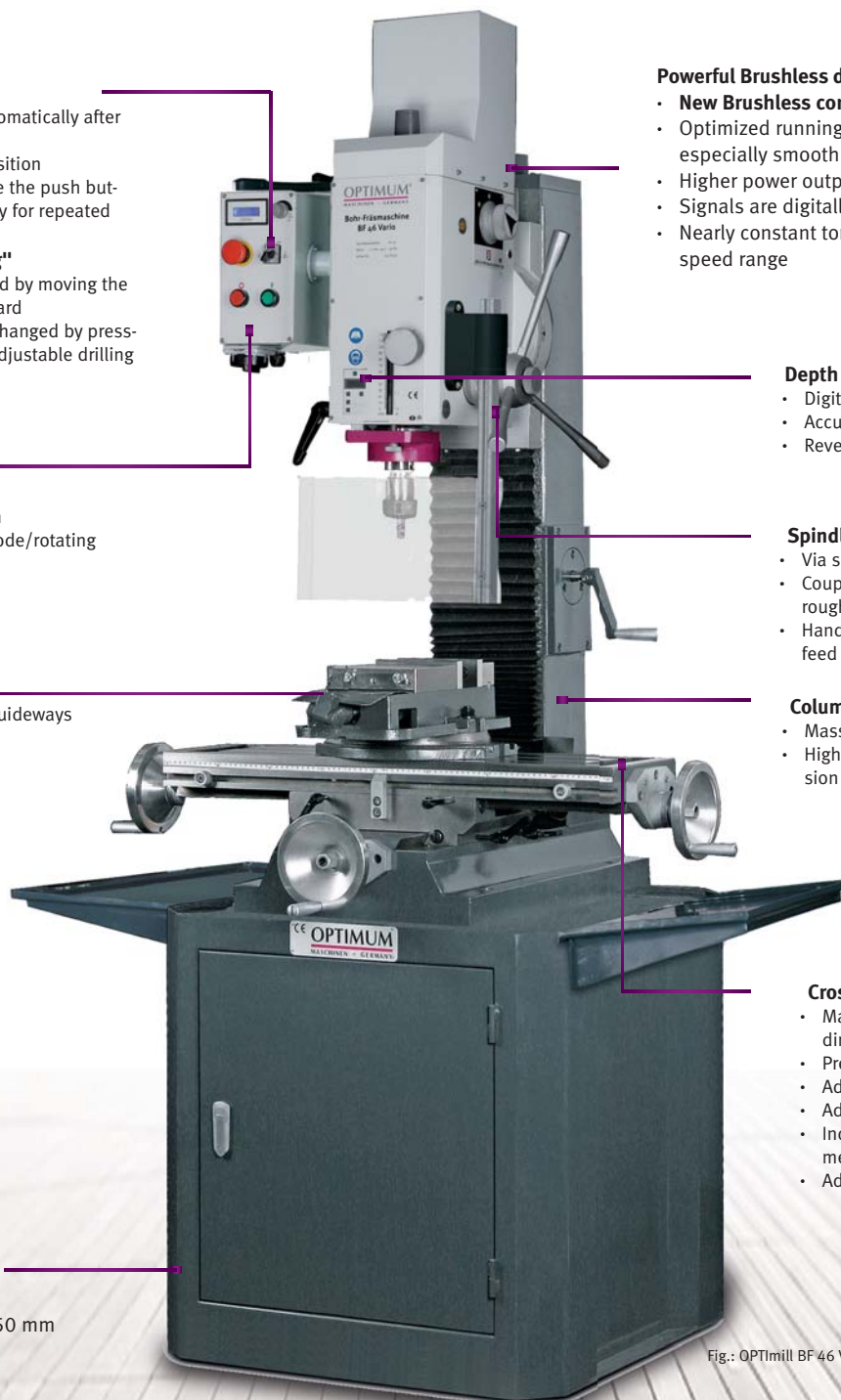


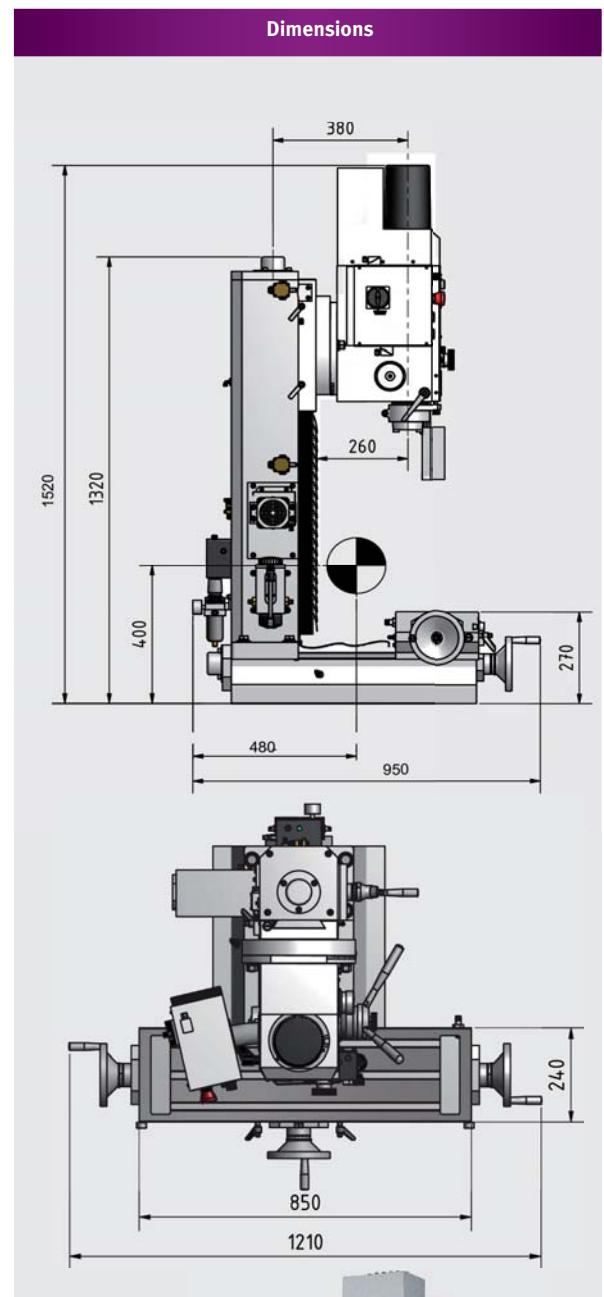
Fig.: OPTImill BF 46 Vario with optional accessory

The milling machine (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Technical data, accessories and dimensions

Model	BF 46Vario
Item No	3338453
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Motor power	2.2 kW
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 28 mm
Continuous drilling capacity in steel	Ø 24 mm
Milling head dimension max.	Ø 80 mm
End mill dimension max.	Ø 32 mm
Spindle seat	
Spindle stroke	115 mm
Spindle seat	ISO 40 DIN 2080
Draw-in rod	M16
Drilling-milling head	
Swivel range	± 90°
Spindle speed slow	115 - 600 min ⁻¹
Spindle speed average	270 - 1'400 min ⁻¹
Spindle speed rapid	590 - 3'100 min ⁻¹
Gear speeds	3 steps, electrically adjustable speed
Cross table	
Table length x width	850 x 240 mm
T - slot size / distance	18 mm / 80 mm / number 3
Distance spindle - cross table	470 mm
Travels	
X axis	500 mm
Y axis	250 mm
Z axis	541 mm
Dimensions	
Length x Width x Height max.	1'210 x 950 x 1'520 mm
Total weight	480 kg
Standard equipment	
	Draw-in rod M 16 Operating tool
Special equipment	
Item No	Spindle MT 4 for replacement 9000439

Accessories	Item No	
Hydraulic vice HMS 125	3355127	
Precision vice FMS 125	3354125	
Universal coolant equipment 230V	3352002	
Clamping tool kit SPW 16	3352019	
Vibration damper machine foot SE1	3381012	
End mill kit HSS 20 pcs	3386200	
Collet chuck kit 18 pcs ISO 40	3352056	
Universal table feed OPTI V 99	3352022	
Assembly kit OPTI V99 - X axis	3352036	
Horizontal-vertical circular dividing table RT 200	3356200	
Arbor for drill chuck	3352070	
Measuring system Newall DP700 complete add-on kit	3390346	



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CNC add-on kit

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Multi-functional drilling-milling machine with OPTIMUM Brushless drive and infinitely variable speed control

Convincing arguments: quality, efficiency and price

- Heavy, solid type made of high-grade Meehanite casting
- All axes with adjustable dovetail guide
- High true running accuracy due to taper roller bearings of less than 0.01 mm measured in the spindle sleeve
- Automatic spindle sleeve feed
- Central lubrication for spindle, screw nut and guideways
- Milling head can be slewed to the left and right by 90°
- Spindle head support slewable by $\pm 90^\circ$

Powerful Brushless drive

- Particularly smooth running
- Nearly constant torque over the entire speed range



Control panel

- Digital speed display
- Right-hand/left-hand rotation
- Emergency-stop push button
- Potentiometer
- Push button stop / start

Drilling depth stop

- Adjustable using the millimetre scale
- Readable at the front

Safety screen

- Height-adjustable
- Largely dimensioned
- Micro switch

Central lubrication

- Cross table and Z-axes



Spindle speeds

- Infinitely variable speed control with frequency converter
- Very wide speed range

Y axis

- Large throat from 132 to 410 mm

Milling head

- Slewable by 90° to the left and to the right

Digital position display DRO

- Compact digital 3-axes position display (X - Y - Z)
- Individually programmable
- Three-row five-segment display

Cross table

- Solid
- Precise
- Largely dimensioned
- Precisely machined surface

X axis

- Adjustable limit stops

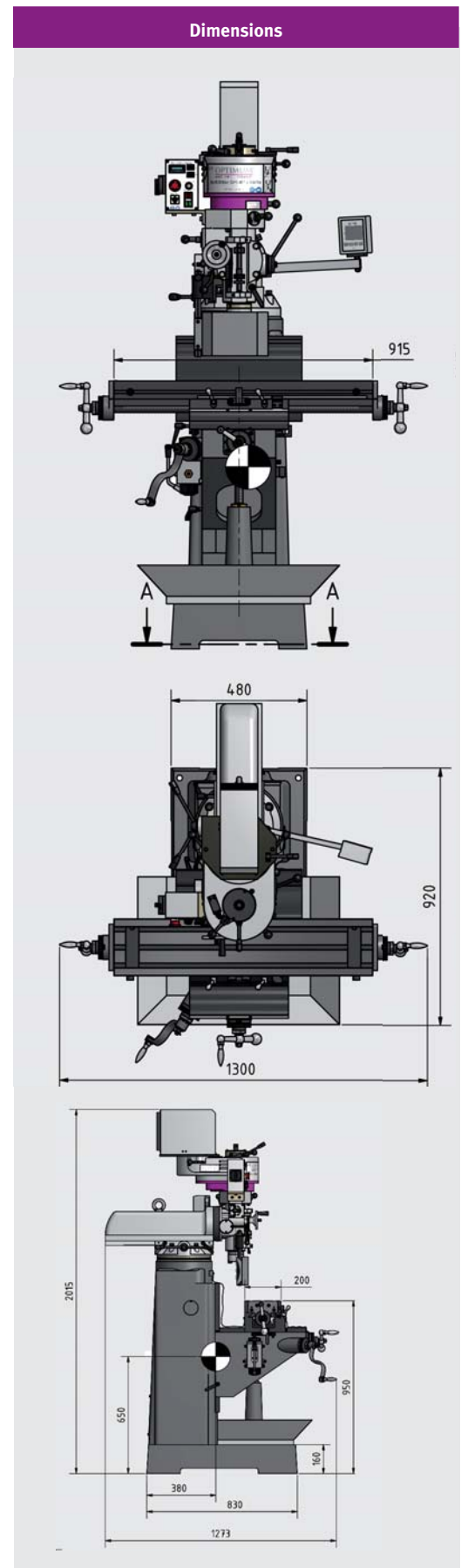
Chip tray

- Removable

Technical data, accessories and dimensions

Model	MF 1 Vario
Item No	3336015
Electrical connection	
Connection	230 V / 1 Ph ~50 Hz
Motor power	2.2 kW
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 21 mm
Milling head dimension max.	Ø 63 mm
End mill dimension max.	Ø 20 mm
Spindle seat	
Spindle stroke	127 mm
Spindle seat	ISO 40 DIN 2080
Drilling-milling head	
Swivel range	± 90°
Inclination of spindle head carrier	± 180°
Spindle speeds	50 - 6'300 min ⁻¹
Gear speeds	6 steps, electrically adjustable speed
Automatic spindle sleeve feed	0.04 / 0.08 / 0.16 mm/rev
Cross table	
Table length x table width	915 x 200 mm
Load of cross table max.	160 kg
T - slot size / distance	16 mm / 64 mm / number 3
Distance spindle-cross table	360 mm
Travels	
X axis	570 mm
Y axis	210 mm
Y axis spindle head support	330 mm
Z axis	365 mm
Dimensions	
Length x width x height	1'350 x 1'050 x 2'015 mm
Total weight	850 kg
Standard equipment	
	Chip tray 3-axes positioned display Operating tool Adapter M12-M16
Transportation packaging flat rate	TPFR 2

Accessories	Item No	
Hydraulic vice HMS 125	3355127	
Precision vice FMS 125	3354125	
Kit of parallel packing plates, 20 pcs	3354001	
Universal cooling equipment 230 V	3352002	
Vibration damper machine foot SE2	3381016	
Clamping tool kit SPW 14	3352018	
Collet chuck kit 18 pcs ISO40	3352056	
Universal table feed OPTI V 250	3352029	
• X-axis for self-assembly • including assembly kit		
Assembly OPTI V 250 - each axis	9000485	
Horizontal-vertical circular dividing table RT200	3356200	
• Hardened and ground screw		
Arbor for drill chuck	3352070	
• Outside cone ISO 40 / B16		



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Multifunctional drilling-milling machine for the professional use. Infinitely variable speed regulation with frequency converter "Made in Germany" and digital 3 axes position display DPA 20000

Convincing arguments: quality, efficiency and price

- Heavy, compact model made of high-grade Meehanite casting
- High true running accuracy due to taper roller bearings of less than 0.01 mm measured in the spindle sleeve
- Automatic spindle sleeve feed
- Right-/left-handed rotation for thread cutting
- Lenze Vario drive
- Solid rectangular guideways of the Z axis
- X and Y axis with readjustable dovetail guiding

- Coolant equipment
- Digital position display DPA 2000, glass scales for three axes and assembly

MF 4Vario DPA:

- Large travel Y-axis of 400 mm
- Automatic table feed Z axis with rapid traverse (Z axis)

Spindle speeds

- Infinitely variable speed control
- Frequency converter "Made in Germany"
- Very wide speed range

Drilling-milling head

- Inclined $\pm 45^\circ$
- Throat
- 215 - 533 mm MF 2Vario DPA
- 200 - 680 mm MF 4Vario DPA

Drilling depth stop

- Adjustable using the millimetre scale
- Readable at the front

Safety screen

- Height-adjustable
- Largely dimensioned



Digital position display DPA 2000

- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display

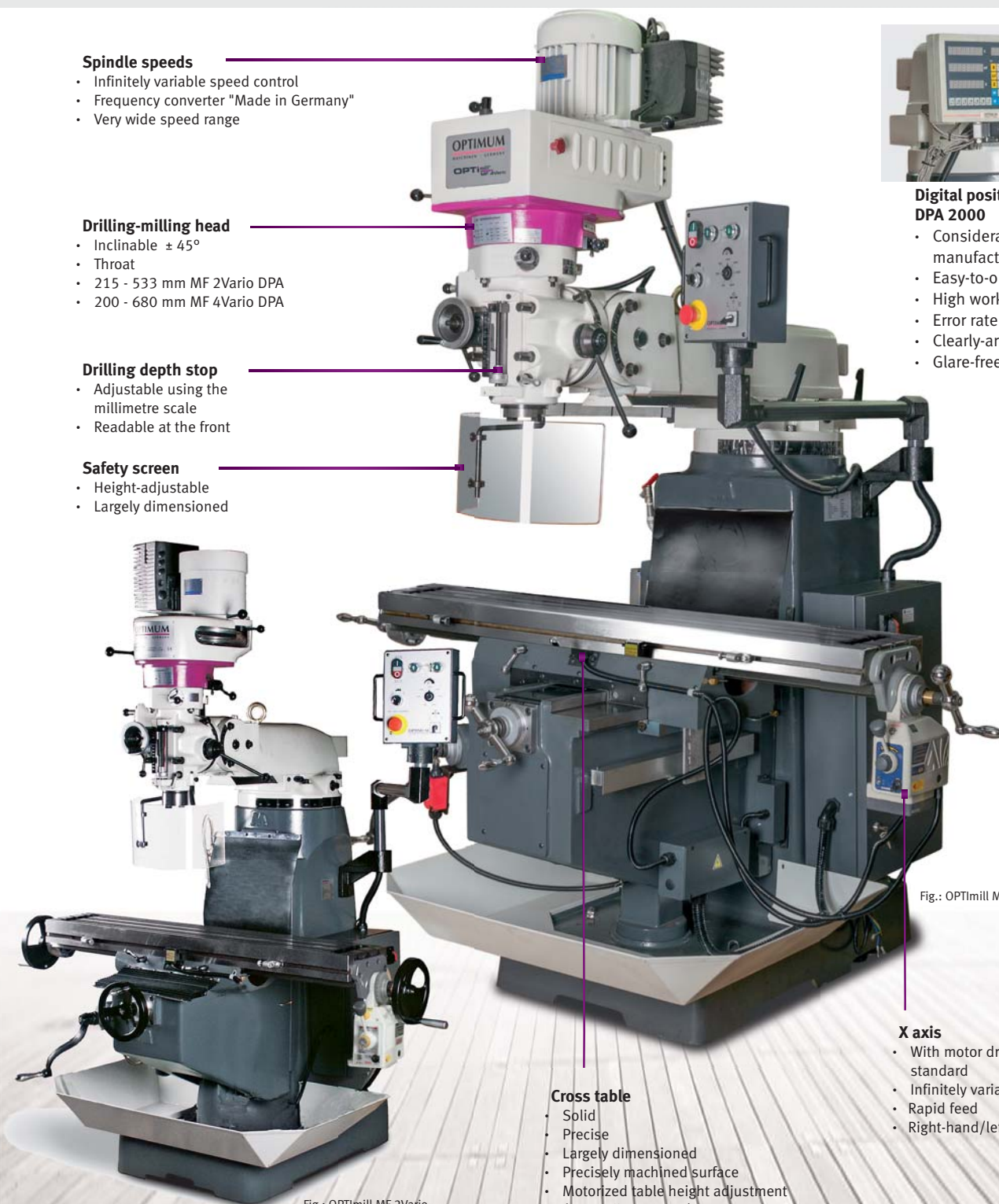


Fig.: OPTImill MF 2Vario

Fig.: OPTImill MF 4Vario

Cross table

- Solid
- Precise
- Largely dimensioned
- Precisely machined surface
- Motorized table height adjustment (OPTImill MF 4Vario)

X axis

- With motor driven table feed as standard
- Infinitely variable speed control
- Rapid feed
- Right-hand/left-hand rotation

The milling machines (with frequency converter) correspond to the standard EN 55011: 2011-04 class C1 - (only use in industrial areas)

Technical data and accessories

Model	MF 2Vario DPA	MF 4Vario DPA
Item No	3336020DPA	3336040DPA
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected load	1.5 kW	3.75 kW
Power of the coolant pump	100 watts	100 watts
Drilling-milling capacity		
Drilling capacity in steel (S235JR)	Ø 24 mm	Ø 32 mm
Continuous drilling capacity in steel (S235JR)	Ø 20 mm	Ø 28 mm
Milling head dimension max.	Ø 76 mm	Ø 100 mm
End mill dimension max.	Ø 18 mm	Ø 20 mm
Spindle seat		
Spindle stroke	127 mm	127 mm
Spindle seat	ISO 40 DIN 2080	ISO 40 DIN 2080
Throat	213 - 533 mm	200 - 680 mm
Drilling-milling head		
Spindle speeds	10 - 5'100 min ⁻¹	9 - 6'750 min ⁻¹
Gear speeds	6 steps, electrically adjustable speed	8 steps, electrically adjustable speed
Inclination of spindle head	± 45°	± 45°
Automatic spindle sleeve feed	0.04/0.08/0.15 mm/rev	0.04/0.08/0.15 mm/rev
Cross table		
Table length x table width	1'244 x 230 mm	1'370 x 254 mm
Load of cross table max.	230 kg	275 kg
T - slot size / distance	16 mm/63 mm/number 3	16 mm/63 mm/number 3
Distance spindle-cross table	57 - 463 mm	40 - 446 mm
Travels		
X axis automatic	800 mm	780 mm
Y axis manual	305mm	400 mm
Z axis	manual 406 mm	automatic 406 mm
Dimensions		
Length x width x height	1'400 x 1'450 x 2'150 mm	1'500 x 1'450 x 2'200 mm
Total weight	950 kg	1'150 kg
Standard equipment	Coolant equipment Chip tray Operating tool	
Transportation packaging flat rate	TPFR 2	TPFR 2

Accessories	Item No
Hydraulic vice HMS 150	3355150
Precision vice FMS 150	3354150
Kit of parallel packing plates, 20 pcs	3354001
Vibration damper machine foot SE2	3381016
Clamping tool kit SPW 14	3352018
Collet chuck kit 18 pcs ISO40	3352056
Arbor for drill chuck	3352070



Accessories	Item No
Universal table feed V250	3352025

- Infinitely variable speed adjustment of the Y-axes
- Rapid traverse including assembly kit



Assembly V 250	9000489
Tool clamping system ISO40	3352394

- Short change times
- One-hand operation
- High achievable vacuum

(Order without assembly: adjustment works might be required)

Assembly ISO40	9000490
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Universal milling machine for horizontal and vertical milling tasks with digital 3 axes position display DPA 2000

Convincing arguments: quality, efficiency and price

- Heavy, solid type made of high-grade vibration-absorbent grey cast iron
- Spindle sleeve feed via spindle sleeve lever or by means of the fine feed handwheel
- It is possible to adjust the X-axis either by means of the handwheel or by means of the feed equipment
- Vertical position for working for e.g. drilling, slant drilling
- It is possible to turn the spindle head carrier by 180°

OPTI Operating panel

- Integrated control panel
- Integrated position display
- Easy-to-operate
- Considerable reduction of the manufacturing times
- Turnable round the own axis

Coolant equipment

- Dosing and stop valve
- Flexible metal hose

Cross table

- Solid
- Precise
- Largely dimensioned
- Precisely machined surface

Cooling pump

Milling head

- may be swivelled by 90° to the right and to the left

Spindle head carrier

- can be moved backwards and forwards

OPTIMUM

LED machine lamp

- concentrated halogen light
- Anodized, semi-wide radiating round reflector

**Longer cross table
1000 x 240 mm**

Fig.: OPTImill MT 50

Technical data and accessories

Convincing arguments ...



Horizontal milling position

- For operations in horizontal milling position with counter support and support for side milling cutters



Operating panel

- Slewable to the left and right side of the machine

Digital position display DPA 2000

- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display



Table feed

- Motor-driven table height adjustment
- Motor with gear - table infeed X axis



Cross table housing

- Foldable
- Removable

Model	MT 50
Item No	3336005
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Overall connected load	4.5 kW
Power of the coolant pump	40 W
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 25 mm
Vertical spindle	
Driving motor	1.1 / 2.2 kW
Spindle seat	ISO 40 DIN 2080
Spindle stroke	120 mm
Throat depth	240 - 650 mm
Spindle speeds	115 - 1'750 min ⁻¹
Gear speeds	8 gear stage
Horizontal spindle	
Driving motor	1.5 kW
Spindle seat	ISO 40 DIN 2080
Throat	0 - 185 mm
Spindle speeds	60 - 1'350 min ⁻¹
Gear speeds	9 gear stage
Cross table	
Table length x width	1'000 x 240 mm
Load of cross table max.	160 kg
T-slot size / number	14 mm / 4
Travels	
X axis automatic	380 mm
Table feed X-axis (8 steps)	24 - 720 mm/min
Y axis manual	200 mm
Z axis manual	340 mm
Dimensions	
Length x width x height	2'270 x 1'500 x 2'100 mm
Total weight	900 kg

Standard equipment

OPTIMUM gear rim drill chuck
Ø 1 - 16 mm / B18
Arbor for drilling chuck ISO40 / B18
Adapter ISO40 / MT3
Adapter ISO40 / MT2
Horizontal spindle
Milling cutter chucks Ø 4 - Ø 16 mm
Operating tool
Coolant pump
Machine lamp
Digital 3 axes positioned display

Transportation packaging flat rate

(TPFR2)

Accessories	Item No	
Hydraulic vice HMS 150	3355150	
Precision vice FMS 150	3354150	
Kit of parallel packing plates, 20 pcs	3354001	
Clamping tool kit SPW 12	3352017	
Horizontal-vertical circular dividing table RT200	3356200	

- Hardened and ground screw
- Transmission ratio 90 : 1
- Scaling on the handwheel 2`

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Versatility and easy retrofitting - the universal milling machines for workshops - with the digital 3-axis position display DPA 2000

Convincing arguments: quality, efficiency and price

- Multi-purpose range of application
- Robust machine construction
- Very smooth running due to ground oil-quenched gear wheels
- Heavy, compact model made of high-grade Meehanite casting
- All guideways hardened and adjustable via V-ledges
- Central lubrication
- Largely dimensioned handwheels with scale
- OPTIMUM LED machine lamp
- Coolant equipment
- Easy operation of the switching elements for the speed alternation
- Solid rectangular guideways of the Y-and Z-axis

OPTI Operating panel

- Integrated control panel
- Integrated position display
- Turnable round the own axis

Milling head

- Two turning axes
- Scales
- Rotatable and slewable to any three-dimensional angle

Cross table

- Solid
- Precise
- Largely dimensioned
- Precisely machined surface
- T-slots
- Adjustable V-ledges

Table feed

- Automatic in the X- Y and Z-axis

Fig.: OPTImill MT 200

Horizontal milling position (MT 200)

- For operations in horizontal milling position with counter support and support for side milling cutters
- Adjustable slide bearing

Table feed

- Automatic in the X- and Y-axis
- Z-axis with positioning feed

Fig.: OPTImill MT 100

Technical data

Model	MT 100	MT 200
Item No	3336110	3336120
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Overall connected load	3.6 kW	9.2 kW
Power of the coolant pump	40 watts	90 watts
Drilling-milling capacity		
Drilling capacity in steel (S235JR)	Ø 20 mm	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 18 mm	Ø 28 mm
Milling head dimension max.	Ø 85 mm	Ø 100 mm
End mill dimension max.	Ø 16 mm	Ø 20 mm
Vertical spindle		
Driving motor	2.2 kW	4 kW
Spindle seat	ISO 40 DIN 2080	ISO 50 DIN 2080
Draw-in rod	M16	M24
Spindle speeds	40 - 1'600 min ⁻¹	60 - 1'750 min ⁻¹
Gear speeds	11 gear stage	12 gear stage
Distance spindle - cross table	90 - 520 mm	140 - 540 mm
Slewing-/turning range	360°	360°
Horizontal spindle		
Driving motor	-	4 kW
Spindle seat	-	ISO 50 DIN 2080
Distance spindle - cross table	-	0 - 400 mm
Spindle speeds	-	58 - 1'800 min ⁻¹
Gear speeds	-	12 steps
Cross table		
Table length x width	1'120 x 260 mm	1'600 x 360 mm
Table feed (9 steps)	18 - 310 mm/min	22 - 420 mm/min
Load of cross table max.	350 kg	450 kg
T-slot size / distance / number	14 mm / 63 mm / 3	14 mm / 95 mm / 3
Cross table turnable	-	35°
X axis		
Travel	600 mm	1'290 mm
Table feed	automatic 24 - 402 mm/min	automatic 22 - 420 mm/min
Table feed rapid traverse	402 mm/min	1'290 mm/min
Power feed motor	0.37 kW	1.1 kW
Y axis		
Travel	270 mm	280 mm
Table feed	automatic 24 - 402 mm/min	automatic 22 - 393 mm/min
Table feed rapid traverse	402 mm/min	1'205 mm/min
Power feed motor	0.37 kW	1.1 kW
Z axis		
Travel	380 mm	400 mm
Table feed	-	automatic 10 - 168 mm/min
Table feed rapid traverse	402 mm/min	513 mm/min
Power feed motor	0.75 kW	1.1 kW
Dimensions		
Length x width x height	2'500 x 2'300 x 1'850 mm	3'340 x 2'200 x 1'920 mm
Total weight	1'300 kg	2'220 kg
Transportation packaging flat rate	(TPFR3)	(TPFR5)

Standard equipment

- Seat for side milling cutter Ø 22 mm
- Collet chuck Ø 4 - Ø 16 mm
- Seat of milling cutter ISO40/ Ø32 mm
- Operating tool

- 2 seats for side milling cutters ISO 50 Ø 22 mm and Ø 27 mm
- Seat of milling cutter ISO 50 Ø32 mm
- Collet chuck Ø 4 - Ø 26 mm

Multifunctional drilling milling machine with tool clamping system and digital 3 axes position display DPA 2000 for the professional use

Convincing arguments: quality, efficiency and price

- Heavy, compact model made of high-grade Meehanite casting
- Very smooth running due to ground oil-quenched gear wheels
- 20 switchable speeds by two-stage motor in connection with 5 belt stages and intermediate gear
- Solid rectangular guideways of the Y and Z axis
- Solid, precise milling table, largely dimensioned and precisely machined surface
- All axes in the guideways are adjustable by V-ledges
- High true running accuracy due to taper roller bearings, better than 0.01 mm measured in the spindle sleeve
- Coolant equipment
- Adjustable drill depth stop using the millimetre scale, readable at the front
- OPTIMUM LED machine lamp
- Chip tray
- Siemens electrical system
- Right-/left-handed rotation for thread cutting

OPTI Operating panel

- Integrated control panel
- Integrated position display
- Turnable round the own axis

Digital position display DPA 2000

- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display

Safety screen

- Height-adjustable
- Largely dimensioned

Cross table

- Solid
- Precise
- Largely dimensioned
- Precisely machined surface
- Electrically height adjustable

Cross table housing

- Protection against chips and coolants
- Removable

Table feed

- Motor with gear - table feed X, Y and Z axis

Compressed air tool clamping system

- Short change times
- Little weight due to optimised structure
- Precise guiding due to optimised geometry
- Least air consumption

Drilling-milling head

- Powerful motor

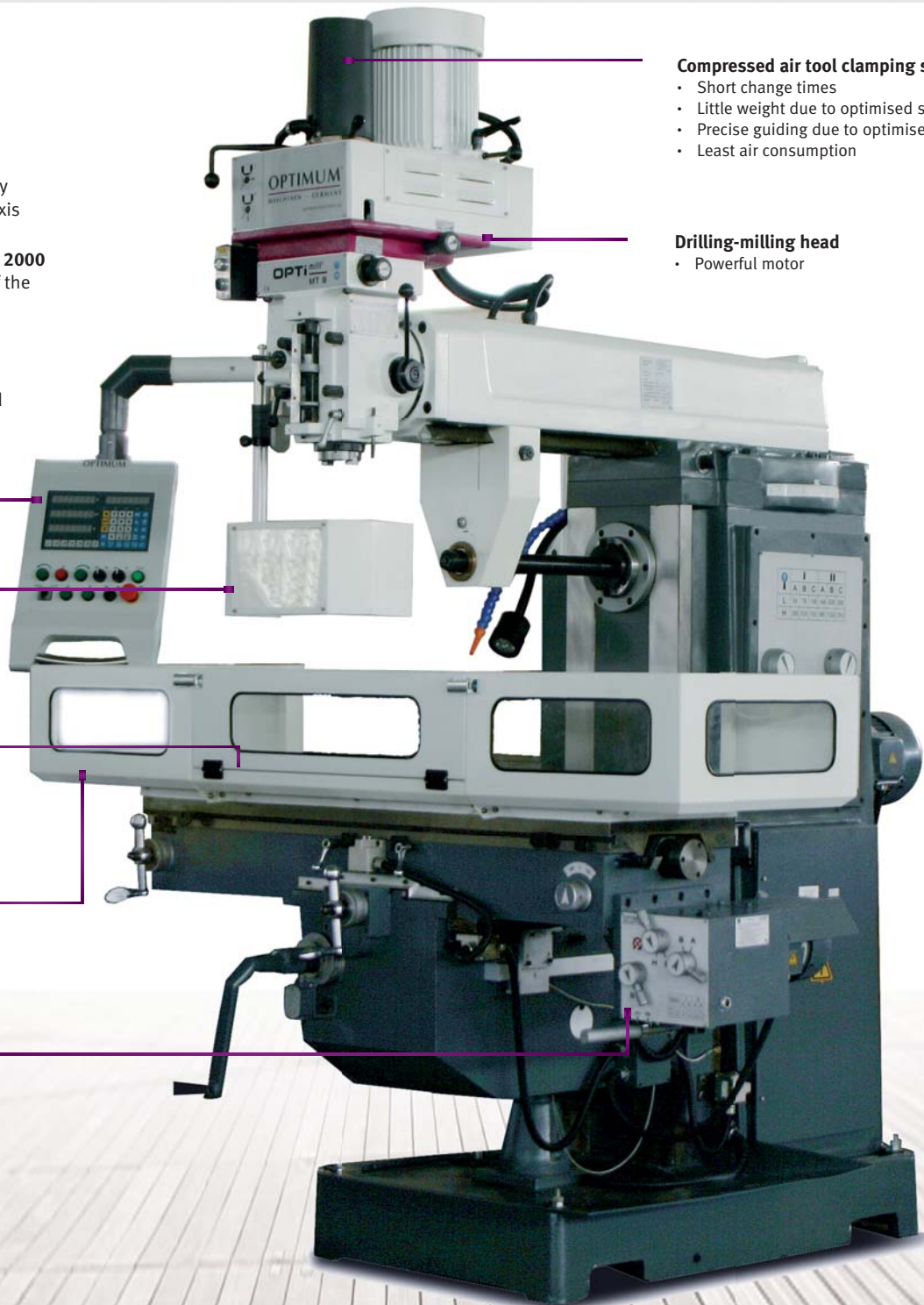


Fig.: OPTImill MT 8 with horizontal and vertical milling position

Technical data and accessories

Convincing arguments ...



Horizontal milling position

- For operations in horizontal milling position with counter support and support for side milling cutters
- Adjustable slide bearing



Table feed

- Motor-driven table height adjustment
- Motor with gear - table feed X, Y and Z-axis



Horizontal milling

- Clearly-arranged control lever
- 58 - 1'800 min⁻¹



Spindle sleeve feed

- can be performed manually or automatically

Model	MT 8
Item No	3336088
Electrical connection	
Connection	400 V / 3 Ph ~50 Hz
Overall connected load	7.2 kW
Power of the coolant pump	90 W
Connected value for compressed air	minimum of 6 bar
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 21 mm
Milling head dimension max.	Ø 80 mm
End mill dimension max.	Ø 25 mm
Vertical spindle	
Driving motor	5.5 kW
Spindle seat	ISO 40 DIN 2080
Spindle speeds	60 - 4'660 min ⁻¹
Gear speeds	20 gear stage
Spindle stroke	140 mm
Spindle sleeve feed	0.086/0.045/0.142 mm
Slewing range milling head	± 45°
Horizontal spindle	
Driving motor	4 kW
Spindle seat	ISO 50 DIN 2080
Spindle speeds	58 - 1'800 min ⁻¹
Gear speeds	12 gear stage
Cross table	
Table length x width	1'320 x 360 mm
Table feed (9 steps)	15 - 370 mm/min
Load of cross table max.	350 kg
T-slot size / distance / number	18 mm/80 mm/3
X axis	
Travel X-axis automatic	980 mm
Table feed	15 - 370 mm/min
Y axis	
Travel X-axis automatic	300 mm
Table feed	15 - 370 mm/min
Slewing range for arm	± 30°
Z axis	
Travel X-axis automatic	450 mm
Dimensions	
Length x width x height	2'220 x 2'060 x 2'550 mm
Total weight	2'500 kg

Standard equipment

Drill chuck Ø 1 - 16mm / B18
Milling mandrel 7:24 ISO 50
Holding mandrel 7:24 ISO 40 / B18
Operating tool
Milling spindle horizontal milling
Coolant collection tray

Transportation packaging flat rate

(TPFR5)

Accessories	Item No	
Hydraulic vice HMS 150	3355150	
Kit of parallel packing plates, 20 pcs	3354001	
Vibration damping machine foot SE3	3381018	
Clamping tool kit SPW 16	3352019	
Morse taper SK50	3352067	
Holder for cutter head	3352066	

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The milling machines with digital 3 axes position display DPA 2000

Convincing arguments: quality, efficiency and price

- Multi-purpose range of application
- With automatic table feed in X-Y and Z-axis as standard
- Precise surface-treated working tables for horizontal and vertical position with T-slots
- Easy operation of the switching elements for the speed alternation
- Robust machine construction
- Heavy, solid type made of high-grade ribbed grey cast iron

- All guideways hardened and adjustable via V-ledges
- Central lubrication
- Largely dimensioned handwheels with scale
- OPTIMUM LED machine lamp
- Coolant equipment
- Chip collection tray
- Spindle head slewable by $\pm 90^\circ$
- Large spindle stroke 80 mm

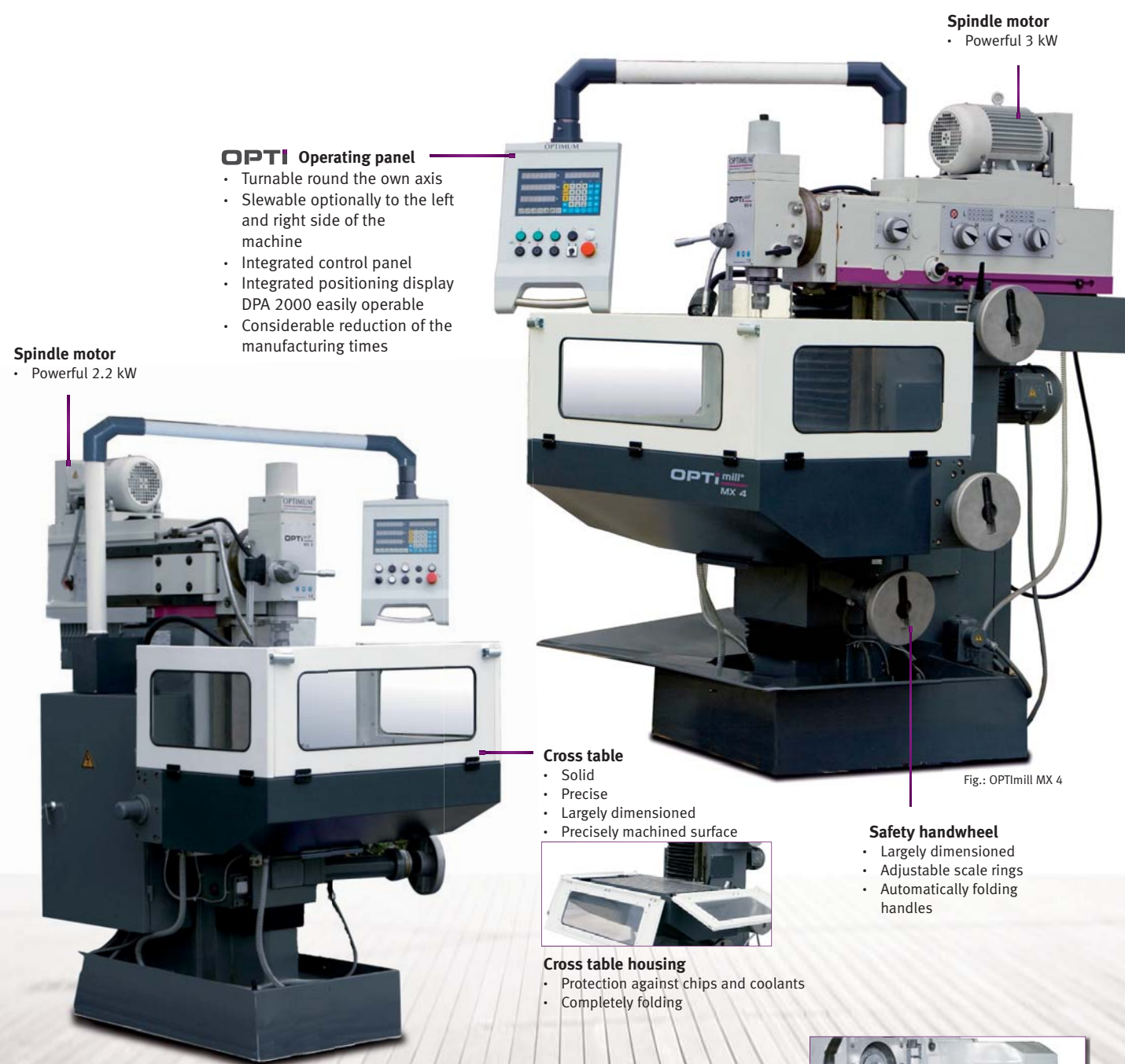


Fig.: OPTImill MX 3

Fig.: OPTImill MX 4

OPTI Operating panel

- Turnable round the own axis
- Slewable optionally to the left and right side of the machine
- Integrated control panel
- Integrated positioning display DPA 2000 easily operable
- Considerable reduction of the manufacturing times

Spindle motor

- Powerful 2.2 kW

Spindle motor

- Powerful 3 kW

Cross table

- Solid
- Precise
- Largely dimensioned
- Precisely machined surface



Cross table housing

- Protection against chips and coolants
- Completely folding

Safety handwheel

- Largely dimensioned
- Adjustable scale rings
- Automatically folding handles

Horizontal milling position

- For working in horizontal milling position
- With counterholder and seat for side milling cutters
- Adjustable slide bearing
- Foldable vertical head



Technical data and accessories

Model	MX 3	MX 4
Item No	3346130	3346140
Electrical connection		
Connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Overall connected load	5 kW	6 kW
Feed motor	0.75 kW	1.1 kW
Motor rapid traverse	0.55 kW	0.75 kW
Drilling-milling capacity		
Drilling capacity in steel (S235JR)	Ø 32 mm	Ø 32 mm
Continuous drilling capacity in steel (S235JR)	Ø 28 mm	Ø 28 mm
Vertical spindle		
Driving motor	2.2 kW	3 kW
Spindle seat	ISO 40 DIN 2080	ISO 40 DIN 2080
Spindle speeds	40 - 2'000 min ⁻¹	40 - 2'000 min ⁻¹
Gear speeds	18 gear stage	18 gear stage
Distance spindle - cross table (min/max.)	50 (113) - 410 (473) mm	55 (118) - 445 (508) mm
Vertical spindle slewable	+/- 45°	+/- 45°
Spindle stroke	80 mm	80 mm
Throat max.	425 mm	540 mm
Horizontal spindle		
Driving motor	2.2 kW	3 kW
Spindle seat	ISO 40 DIN 2080	ISO 40 DIN 2080
Spindle speeds	40 - 2'000 min ⁻¹	40 - 2'000 min ⁻¹
Gear speeds	18 gear stage	18 gear stage
Distance spindle - cross table (min/max.)	85 (148) - 445 (508) mm	95 (158) - 475 (538) mm
Travel milling head Z- axis	300 mm	400 mm
Cross table		
Table length x width Horizontal table	750 x 320 mm	800 x 400 mm
T-slot size / distance / number	14 mm / 63 mm / 5	14 mm / 63 mm / 6
Table length x width Vertical table	830 x 225 mm	1'060 x 250 mm
T-slot size / distance / number	14 mm / 63 mm / 3	14 mm / 63 mm / 3
Load of cross table max.	300 kg	300 kg
X axis		
Travel with feed	400 mm	450 mm
Table feed / rapid traverse	10 - 380 / 1'200 mm/min	10 - 380 / 1'200 mm/min
Y axis		
Travel with feed	300 mm	400 mm
Table feed / rapid traverse	10 - 380 / 1'200 mm/min	10 - 380 / 1'200 mm/min
Dimensions		
Length (DPA arm left / right side)	1'880 / 1'340 mm	2'190 / 1'500 mm
Width x Height	1'400 x 1'820 mm	1'650 x 1'850 mm
Total weight	1'300 kg	1'400 kg
Standard equipment	Adapter ISO 40 / MT1 - MT2 - MT3 Horizontal spindle Milling	
Transportation packaging flat rate	(TPFR5)	(TPFR6)

Accessories	Item No	
Collet chuck ISO 40	3352056	
Clamping tool kit SPW 12	3352017	
Copy and planing cutter head ISO 40	3350216	
Horizontal-vertical circular dividing table RT200	3356200	
Milling cutter kit hard metal 18-pc	3352118	
Twist drill coated with titanium	3051010	

Vices	Item No	
FMS 125	3354125	
FMS 150	3354150	
HMS 125	3355127	
HMS 150	3355150	



Fig.: FMS 100



Fig.: HMS 100

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Accessories		Item No	BF16	BF20/L	MH28V	MB4 MB4P	MH25V	BF30 MK3	BF30 ISO30	BF46 ISO40	BF46 MK4	MF1	MF2	MF4	MT 50	MT100	MT 200	MT 8	MX 3	MX 4
Copy and planing cutter	MT 2	3350212	●	●																
	MT 3	3350213			●			●		○	○	○								
	MT 4	3350214				●					●									
	ISO 30	3350215							●											
	ISO 40	3350216								●		●	●	●	●	●	●	●	●	●
Quick-action drill chuck	B16	s Seite 141	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●
Direct quick-action drill chuck	MT 2	3050571/2			○			○	○											
	MT 3	3050573						●		○	○	○	○	○		○				
	MT 4	3050574				●				○	●	○								
Arbor for drill chuck	MT 2	3050670	●	●																
	MT 3	3350303			●			●												
	MT 4	3350304	●			●					●									
	ISO 30	3352069							●											
	ISO 40	3352070								●		●	●	●	●	●	●	●	●	●
Extension bushings	MK 2 - MK 3	3050667	●	●																
	MK 3 - MK 4	3050668			●			●												
Adapter	ISO50	3352068															●	●		
Morse taper	SK50	3352067															●	●		
Reducing bushings	MT 3 - MT 2	3350313			●			●												
	MT 4 - MT 3	3350314	●			●														
End mill kit	HSS 12 pcs	3352113	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	HSS 20 pcs	3386200	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Spiral drill	Titanium coated	3051010	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●
	HSS MK 2	3051002					○			○	○	○	○	○		○				
	HSS MK 3	3051003			●	●		●		○	○	○	○	○		○				
Milling cutter kit	Hard metal	3352118	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Radius	3352116	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Aufnahme Messerkopf	MK 2	3352102	●	●																
	SK 50	3352066															●	●		
Coolant pump	230 V	3352002	●	●	●	●	○	●	●	○	○	○	○	○		○				
	400 V	3352001	○	○	○	●		○	○	●	●	●	●	●		●				
Coolant hose	KMS2	3356660	●	●	●	●	●	●	●	●	●	●	●	●		●				
Coolant lubricant sprayer	MMC1	3356663	●	●	●	●	●	●	●	●	●	●	●	●		●				
Table feed	V 99	3352022			●			●	●	●	●									
	V 250	3352029											●	●						
Holding down clamp	14 mm	3352031											●	●	●	●				
	18 mm	3352032								●	●	●				●	●	●		
Vibration dampers	SE1	3381012	●	●	●	●	●	●	●	●	●	●				○	○	○	○	
	SE2	3381016										●	●	●		●				
	SE3	3381018																●		
Parallel spacer kit		3354001	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Boring drilling head	ISO 30	3352127					●				●									
	ISO 40	3352128								●		●	●	●	●	●	●	●	●	●
	ISO 50	3352129														●	●			
Collet chuck set	ISO 30	3352054					●				●									
	ISO 40	3352056								●		●	●	●	●	●	●	●	●	●
	ISO 50	3352065														●	●			
	MT 2/ER25	3352052	●	●																
	MT 2/ER32	3352053	●	●																
	MT 3/ER32	3352093						●												
	MT 4/M16	3352094				●					●									
Collet chuck	ISO 30	3352046					●				●									
Collet kit	ER 25	3441109	●	●			○													
	ER 32	3441122		●		●	●			●	●	●	●	●	●	●	●	●	●	●
Collet chuck set	MK 2 direct	3351980	●	●																
	MK 3 direct	3352014			●	●		●												
Clamping tool	SPW 8	3352015	●																	
	SPW 10	3352016		●			●	●	●											
	SPW 12	3352017			●	●									●	●	●	●	●	●
	SPW 14	3352018											●	●						
	SPW 16	3352019								●	●	●								
Tool clamping system	ISO 40	3352394								●/—	●/—	●	●	●						
	ISO 30	3352393					●													
Stop bracket	90°	3385052			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Prism angle	WP30	3352195	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tapping chuck	M5-M12	3352042	●	●	●	●	●	●	●	●	●	●	●	●		●				
Edge finder		3351171	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Universal indexing head	TA 125	3356125	●	●	●	●	●	●	●	●	●	●	●	●		●				
Circular dividing table	RT 100	3356110	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	RT 150	3356150	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	RT 200	3356200			●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
	RTE 165	3356365		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	RTU 165	3354165			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

OPTIMUM Precision quick-action drill chuck

True running accuracy of better than 0.06 mm

0 - 8 mm; B16	3050608	
0 - 10 mm; B16	3050610	
0 - 13 mm; B16	3050623	
0 - 16 mm; B16	3050626	
0 - 16 mm; B18	3050630	



0-16 mm

Morse taper SK50

3352067

B18 DIN2080



OPTIMUM Direct quick-action drill chuck

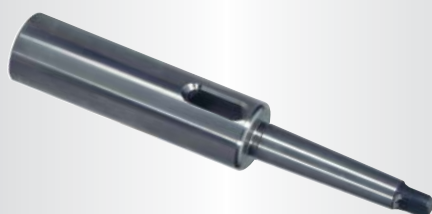
MT 2 1 - 16 mm; up to 6.000 min ⁻¹	3050571	
MT 2 1 - 13 mm; up to 8.000 min ⁻¹	3050572	
MT 3 1 - 16 mm; up to 6.000 min ⁻¹	3050573	
MT 4 1 - 16 mm; up to 6.000 min ⁻¹	3050574	



MT 3

Extension bushings

MT 2 - MT 3	3050667	
MT 3 - MT 4	3050668	



MT 2-MT 3

Arbor for drill chuck

Cone external MT 2 / M10 / B16	3050670	
Cone external MT 3 / M12 / B16	3350303	
Cone external MT 4 / M16 / B16	3350304	
Cone external ISO 30 / M12 / B16	3352069	
Cone external ISO 40 / M16 / B16	3352070	



ISO 40

Holder for cutter head

MT 2	3352102	
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- Cone external MT 2 / end mill holder Ø 16 mm

SK50	3352066	
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- Cone external Ø 27 mm DIN2080



Taper SK 50

Adapter ISO 30 / MT 3

3352068



Reducing bushes

MT 3 - MT 2 / M12	3350313	
MT 4 - MT 3 / M16	3350314	



MT 3-MT 2

NEW

Accessories for milling machines

End mill kit HSS

- Coated with titanium
- Higher hardness and stability with 2 - to 5-times longer durability
- Double cutting capacity
- Better workpiece surface
- With cylindrical shank and Weldon flats
- Type with 2 cutting edges for milling keyways and slots as well as cut-outs from the workpiece centre
- Vertical or lateral milling operations are possible
- Type with 4 cutting edges with 30 ° right-handed helix for good chip removal for normal to resistant materials
- Wooden box

12 pieces

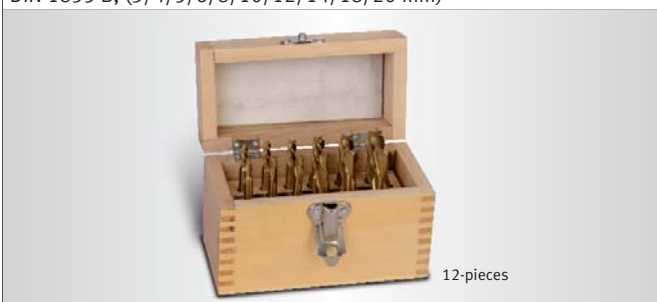
3352113

- 6 milling cutters, short type · Type with 2 cutting edges.
DIN 1835 B (Ø12x73, Ø10 x 63, Ø8 x 61, Ø6 x 52, Ø5 x 52, Ø4 x 51 mm)
- 6 milling cutters, short type · Type with 4 cutting edges.
DIN 1835 B (Ø12 x 83, Ø10 x 73, Ø8 x 6, Ø6 x 57, Ø5 x 57, Ø4 x 55 mm)

20-pieces

3386200

- 10 milling cutters DIN 327 D · short type · 2 cutting edges
DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)
- 10 milling cutters DIN 844 B · short type · 4 cutting edges
DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)



Hard-metal milling cutter kit

3352118

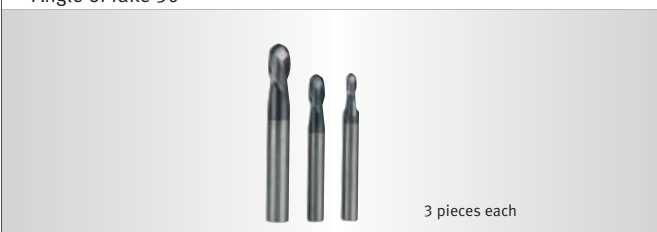
- 18 pcs; 3 pcs. each of the sizes 3/4/6/8/10 and 12 mm
- Type with 4 cutting edges
- Coated full hard metal milling cutter (TiALN)
- Central cut for plunging
- Angle of rake 35°



Milling cutter kit radius

3352116

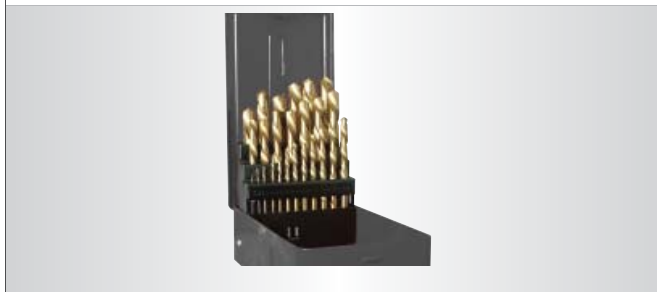
- 9 pcs; 3 pcs. each of the sizes 4 mm / 6 mm / 8 mm
- Type with 2 cutting edges
- Coated full hard metal milling cutter (TiALN)
- Face cutting edge geometry for plunging
- Angle of rake 30°



Twist drill kit

3051010

- 25 pcs; sizes 1 -13 mm
- Coated with titanium
- Higher service life and durability
- More rapid working results
- Lower wear



Twist drill HSS incl. Morse taper

- 9 pieces; Sizes 14,5/16/18/20/22/24/26/28/30 mm
- Long durability
- Good chip evacuation
- Right hand cutting

MT 2

3051002

MT 3

3051003



Vibration machine foot

- The machines and equipment can be installed without anchors and precisely aligned using the height adjustment system.
- Effective impact and vibration damping improves the machine, smooth action

SE 1

3381012

SE 2

3381016

SE 3

3381018



Compatibility overview refer to page 140

Charge	SE 1	SE 2	SE 3
Milling machines	340 Kg	460 kg	1,600 kg
Sawing/ General machinery	570 kg	1.460 kg	3.500 kg
thread	M12	M 16	M 20
Base Ø/Base height	120/32	160/35	185/39

Copy and planing cutter head "Made in Germany"

- Universal used to machining at all steel and non-ferrous metals
- For surface and copy milling
- Made of special steel - highly annealed
- High plan and true running accuracy
- Milling body with irregular partition for very smooth running and regular cuts
- Base body and clamping shaft are forming a unit, thus short protruding length and stable tension
- No additional milling abors are used
- Special geometries for milling at high speed
- Ergonomic since the plate can be easily turned on when the cutting edge is getting blunt (it can be used up to 12 times)
- Including 5 cutting inserts RDET 1003 MOSN 8026
- Including Torx TX15
- 5 cutting edges
- Outside diameter 52 mm
- Cutting inserts Ø 10 mm
- ISO designation RDX. 1003 D52/R5



Seat shaft MT 2/M10	3350212	
Seat shaft MT 3/M12	3350213	
Seat shaft MT 4	3350214	
Seat shaft ISO 30	3350215	

- Outside diameter 63 mm
- ISO designation RDX. 1003 D63/R5

Seat shaft ISO 40	3350216	
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HM inserts 5 pcs

- RDET 1003 MOSN8026
- Positive cutting edge geometry
- PVD coated
- To machine steel of up to 900N/mm², stainless steel, aluminium, non-ferrous metal, cast iron

RDET	3350220	
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- RDHT 1003 MO-FA HF7
- Highly positive cutting edge geometry
- Polished
- To machine AL alloys, copper alloys, plastic materials

RDHT	3350221	
------	---------	--



Precision boring drilling head kit

- 8 pcs. Drill rods: BJ2008-32L/BJ2010-40L/BJ2014-53L/BJ2016-68L/BJ2020-83L/BJ2025-96L/BJ2030-115L/BJ20-L20-100L
- Incl. drill rods, bolts, circle extension, tool, case
- Without cutting inserts

ISO 30	3352127	
ISO 40	3352128	
ISO 50	3352129	



Cutting insert



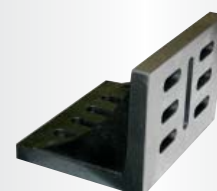
Kit of cutting inserts (10 pcs.)

for steel (for drill rod No 8 and 7)	3352136	
for aluminium (for drill rod No 8 and 7)	3352141	
for steel (for drill rod No 6 and 5)	3352137	
for aluminium (for drill rod No 6 and 5)	3352142	
for steel (for drill rod No 4, 3, 2 and 1)	3352138	
for aluminium (for drill rod No 4, 3, 2 and 1)	3352143	

Bracket 90°

3385052

- For clamping purposes when performing mechanic machining of workpieces control and marking off works
- Precision: Parallelism and angularity of 0.01 on 100 mm
- Lateral stiffening ribs
- Dimensions L x W x H: 202 x 126 x 150 mm
- Weight 7 kg



Accessories for milling machines

Collet chuck kit

MT 2/ ER 25 - M10

3352052

- Collet chuck
- 15 collets; Sizes Ø 1.5 - Ø 16 mm/DIN ISO 15488
- Sickel spanner · Aluminium case

MT 2/ ER 32 - M10

3352053

- Collet chuck
- 18 collets; Sizes Ø 2 - Ø 20 mm/DIN ISO 15488
- Sickel spanner · Aluminium case

MT 3/ ER 32 - M12

3352093

- Collet chuck
- 18 collets; Sizes Ø 2 - Ø 20 mm/DIN ISO 15488
- Sickel spanner · Aluminium case

MT 4/ ER 32 - M16

3352094

- Collet chuck
- 18 collets; Sizes Ø 2 - Ø 20 mm/DIN ISO 15488
- Sickel spanner · Aluminium case

ISO 30/ER32 - M12/BT 30

3352054

- Collet chuck
- 18 collets Sizes Ø 2 - 20 mm/ DIN ISO 15488
- Draw-in bolt M12/M12 and draw-in bolt BT 30
- Sickel spanner · Aluminium case

ISO 40/ER32 - M16/BT 40

3352056

- Collet chuck
- 18 collets Sizes Ø 2 - Ø 20 mm/ DIN ISO 15488
- Draw-in bolt M16/M16 and draw-in bolt BT 40
- Sickel spanner · Aluminium case

ISO 50/ER32 - M24/BT 50

3352065

- Collet chuck
- 18 collets sizes Ø 2 - Ø 20 mm/DIN ISO 15488



Collet chuck ISO 30/ER25

3352046

- Sickel spanner



Collet kit

ER 25

3441109

- 15 collets Sizes Ø 1 - 16 mm / DIN ISO 15488

ER 32

3441122

- 18 collets Sizes Ø 3 - 20 mm / DIN ISO 15488



Collet ER32 (single)

Ø 6 mm

3441126

Ø 8 mm

3441128

Ø 10 mm

3441130

Ø 12 mm

3441132

Collet MT 3 directly clamping / M 12 (single)

Ø 4 mm

3352004

Ø 6 mm

3352006

Ø 8 mm

3352008

Ø 10 mm

3352010

Ø 12 mm

3352012

Ø 16 mm

3352013

Collet kit

MT 2 directly clamping / M 10

3351980

- 5-pieces; sizes Ø4 / Ø6 / Ø8 / Ø10 / Ø12 mm
- Wooden box

MT 3 directly clamping / M 12

3352014

- 6-pieces; sizes Ø4 / Ø6 / Ø8 / Ø10 / Ø12 / Ø16 mm
- Wooden box



Clamping tool kit SPW

- 58 pieces, in practical tool holder
- Metric threads
- 24 pcs. draw-in bolts
- 6 pcs. T-slots
- 6 pcs. nuts
- 4 pcs. elongation nuts
- 6 pcs. step blocks
- 12 pcs. step blocks

SPW 8

3352015

- T-slots 10 mm; Draw bar thread M 8

SPW 10

3352016

- T-slots 12 mm; Draw bar thread M 10

SPW 12

3352017

- T-slots 14 mm; Draw bar thread M 12

SPW 14

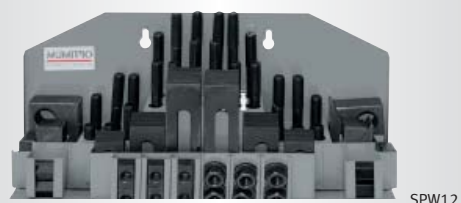
3352018

- T-slots 16 mm; Draw bar thread M 14

SPW 16

3352019

- T-slots 18 mm; Draw bar thread M 16



Horizontal-vertical circular dividing tables with 3-jaw chuck

- Quality circular dividing tables made of high-quality Meehanite cast
- Precision taper roller bearing
- Stability even under heavy load
- Large spindle hole to clamp longer workpieces
- Direct dividing via locking discs for higher manufacturing speed for mass parts
- Degree division on a scale of 360° (RTE 165)
- 7 locking disks for 2/3/4/6/8/12/24 divisions (RTE 165)
- Degree division on a scale of 360° with crank and vernier (RTU 165)
- Direct dividing via locking disc
- 24 positions (15° division)
- Three jaw chuck
- Including clamping disk with 3 grooves

RTE 165

3356365

Tailstock RST 2

3356157

- Height of centres 110 - 145 mm



Rst 2

RTU 165

3354165

Indirect indexing device IT 200

3356205

- 2 pcs. Indexing plates Sector arm
- Angle shear with spring steel plate

Tailstock RST 2

3356157

- Height of centres 110 - 145 mm



Rst 2

IT 200

Technical data

		RTE 165	RTU 165
Table diameter	mm	165	165
Construction height x width x length	mm	200 x 260 x 218	221 x 250 x 235
Centre height	mm	130	130
Clamping disks	mm	203	203
Passage	mm	36	36
Weight	kg	32.5	48
Direct indexing plate		Spacing of 24 (≅ 15°)	
Indirect indexing plate		Spacing of 2, 3, 4, 6, 8 and 12	
Spacing accuracy of the direct part setting		45'	
Clamping option		Horizontal and vertical	
clamping surface		With scale of 360°	

Horizontal-vertical circular dividing tables

- Quality circular dividing tables made of high-quality Meehanite cast
- Precision bearing
- Stability even under heavy load
- Large spindle hole to clamp longer workpieces
- Quick-action dividing via locking discs for higher manufacturing speed for mass parts
- Hardened and ground screw
- Working table with 360° scaling
- 1 turn of the handwheel 4° rotation
- Scaling on the handwheel 2'
- Possible division via scaled handwheel with vernier
- Up to 150 pcs. (RT 150) and 400 pcs. (RT 200) different divisions with indirect dividing plates are available

Optional:
"CNC add-on kit's MK
RT1 and MK RT2 to
control the horizontal
vertical circular dividing
tables" on page 217

RT 100

Circular dividing table

3356110

Three jaw chuck Ø 75 mm

3356111

Tailstock Rst 1

3356155

- Height of centres 72 - 108 mm



RST 1

RT 150

Circular dividing table

3356150

Chuck flange

3356154

Three jaw chuck Ø 130 mm centrally

3356100

Indirect indexing device IT 150

3356152

- 3 pcs. Indexing plates · Sector arm · Angle shear with spring steel plate

Tailstock Rst 1

3356155

- Height of centres 72 - 108 mm

RT 200

Circular dividing table

3356200

Chuck flange

3356254

Three jaw chuck Ø 165 mm

3356225

Indirect indexing device IT 200

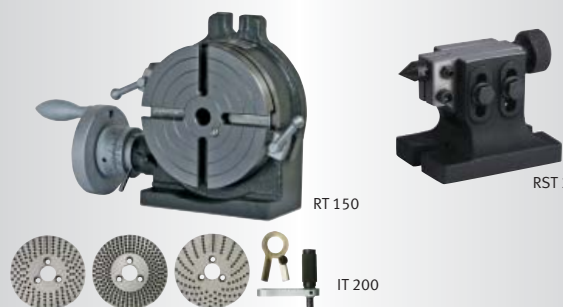
3356205

- 2 pcs. Indexing plates · Sector arm · Angle shear with spring steel plate

Tailstock Rst 2

3356157

- Height of centres 110 - 145 mm



RT 150

RST 2

IT 200

Technical data

		RT 100	RT 150	RT 200
Centring cone		MT 2	MT 2	MT 3
Transmission ratio		90:1	90:1	90:1
Disk size	mm	110	150	210
Construction h x W x L	mm	72 x 138 x 118	79 x 204 x 156	104 x 265 x 199
Centre height	mm	80	102	133
Slot width/no of slots	mm	11/3	11/4	16/4
Net weight	kg	9	12	30

Universal compressed air tool clamping system

- Incl. tool clamping device, cover, maintenance unit, crown gear, draw-in rod, switch cabinet, control element
- High achievable vacuum
- Short change times by one-hand
- Little weight due to optimised structure
- Safe locking due to toggle principle
- Precise guiding due to optimised geometry
- Low air consumption

ISO 30 3352393

- For OPTImill BF30 Vario

Adapter plate 3352391

- For OPTImill BF30 Vario

ISO 40 3352394

- For OPTImill MF 2 Vario / OPTI MF 4 Vario / BF 46 Vario

Adapter plate 3352392

- For OPTImill BF 46 Vario

Factory assembly of clamping system 9000490



(Note: When ordering without workshop assembly: adjustment works might be required)



Adapter plate

Prism WP 30 3352195

- Robust type to be used on machine tools
- Highly precise type
- Adjustable from 0° to 60° and from 0° to -30°
- Hardened and ground carbons steel
- Precision perpendicularity 0.005 mm
- Angular tolerance 0.01°
- Dimensions L x W x H: 75 x 25 x 32 mm



Thread cutting device M5 - M12/B16

3352042

- Integrated quick return, immediately effective when changing the feed direction
- Sliding clutch 4-stage adjustable

Scope of delivery:

- 2 flexible collets
- 2 open-end wrenches
- Handle
- Allen key



Technical data

Notching path	4 mm
Free wheel	1.5 mm
Length compensation to tension	8.5 mm
Max. speed	1'000 min ⁻¹
Transmission ration forward and return	1:1.75
Cutting area	M5 - M12
Clamping range	3.5-10
Length	B16 DIN 238
Length compensation to pressure	156 mm
Shaft seat	5 mm

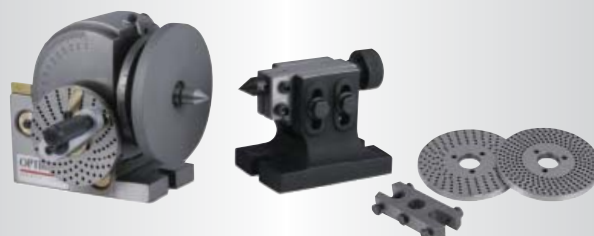
Universal dividing head TA 125

3356125

- Slewable from -10° to +90°
- Hardened and ground screw
- Precision taper roller bearing
- Hardened and ground main dividing plate (spacing of), in order to exactly divide to 15°
- Up to 300 different divisions with indirect dividing plates are available

Scope of delivery

- Height adjustable tailstock Rst1
- Centre point 60° / MT 2
- Top part of follower
- Flange (Ø 140 mm, t = 12 mm) for carrier pin or lathe chuck assembly



Technical data

Transmission	40:1
Construction h x w of centring point x length	175 x 205 x 230 mm
Centre height	100 mm
Hole in the seat shaft (passage)	18 mm
Slot width	16 mm
Direct indexing plate (division)	15° / Ø 110 mm
Indirect indexing plates (Hole on the pitch circle)	15; 16; 17; 18; 19; 20; 21; 23; 27; 29; 31; 33; 37; 39; 41; 43; 47
True running accuracy	0.015 mm
Net weight	12 kg

Universal table feed

- Infinitely speed adjustment and rapid traverse
- Right-/left handed rotation
- 230 volts, Overload protection and limit stop switch
- For self-assembly

Opti V 99

3352022

- Horizontal assembly



Opti V 250

3352029

- Vertical assembly



Kit of parallel packing plates 20-pcs.

3354001

- For precision works for parallel mounting of workpieces on the machine, vices, on marking-on plates or machine tools
- Ground to very high precision of 0.01 mm
- Thickness 3 mm
- Length 150 mm
- Sizes 2 pcs. 13 mm/2 pcs. 16 mm/2 pcs. 19 mm/2 pcs. 22 mm/2 pcs. 25 mm/2 pcs. 8 mm/2 pcs. 31 mm/ 2 pcs. 35 mm/ 2 pcs. 38 mm/2 pcs. 41 mm



Universal coolant equipment

- Delivery height max. 2.5 m
- Delivery volume 8 l/min
- Tank capacity 11 l
- Tank size L x W x H: 370 x 245 x 170 mm
- Complete including tank, flexible tube, hose
- With switch-plug combination
- Magnetic attachment of the coolant hose
- For self-assembly

Universal coolant equipment 230 V/1 Ph

3352002

Universal coolant equipment 400 V/3 Ph

3352001



Coolant lubricant sprayer with magnetic stand MMC1

3356663

- Foot size L x W x H: 62 x 50 x 55.5 mm
- Magnetic stand holding force 75 kg
- Flexible hose
- Length of the coolant hose 500 mm



Coolant hoses with magnetic stand KMS 2

3356660

- Two variable coolant hoses made of individual plastic elements
- Not electro conductive
- Magnetic stand holding force up to 50 kg
- Length of the coolant hoses 295 mm
- Flexible and stable
- Resistant against most solvents and chemicals



Edge finder

3351171

- With rotating spindle
- Scanning Ø 10 mm



Preamble

Drilling

Turning

Accessories

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

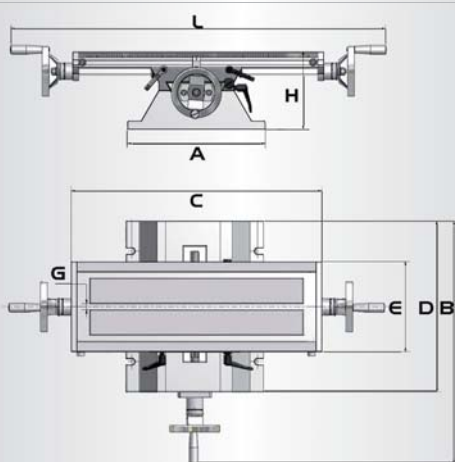
Index

Accessories for milling machines

Cross table KT

- Coolant channel
- Adjustable dovetail guide
- Adjustable handwheel scaling with a division of 0.05 mm

KT 120	3356595
KT 179	3356596
KT 180	3356591
KT 210	3356600



Technical data	KT 120	KT 179	KT 180	KT 210
A (Pedestal width)	222 mm	274 mm	274 mm	280 mm
Pedestal length	280 mm	340 mm	340 mm	362 mm
C (table length)	400 mm	500 mm	700 mm	730 mm
E (table width)	120 mm	180 mm	180 mm	210 mm
G (t-slot size)	10 mm	12 mm	12 mm	14 mm
L x B x H (mm)	506 x 400 x 140	748 x 483 x 155	948 x 483 x 155	1060 x 538 x 185
Net weight	22 kg	32 kg	49 kg	84 kg
Travels				
X axis	220 mm	287 mm	480 mm	480 mm
Y axis	165 mm	167 mm	170 mm	210 mm
Load max.	40 kg	55 kg	55 kg	80 kg

Holding down clamp, kit of 2 pcs

- Adjustable clamping height
- Brass plate under the clamping arm protects the material against damages

Table groove 14 mm/M 12	3352031
• L x W x H: 115 x 42 x 39 mm; . Height adjustment: 0 - 89 mm	
Table groove 18 mm/M 16	3352032
• L x W x H: 133 x 50 x 49 mm . Height adjustment: 0 - 101 mm	



Universal base BF 16/BF 20

3353000

- Dimensions L x W x H: 340 x 420 x 800 mm

Chip tray BF 16/BF 20

3352999

- Dimensions L x W x H: 720 x 470 x 30 mm



NEW

Steel base MB 4

3353006

- Chip tray
- Solidity and weightiness provide for stability
- Dimensions L x W x H: 625 x 415 x 750 mm
- Weight 54 kg



Steel base BF 30Vario / F 40E

3353004

- Chip plates
- Solidity and weightiness provide for stability
- Dimensions L x W x H: 550 (max. 940) x 650 x 750 mm
- Weight 85 kg



Steel base BF 46Vario

3353005

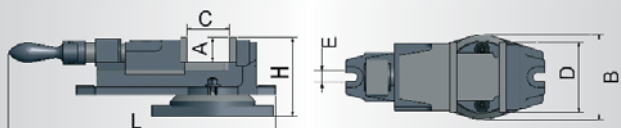
- Chip plates
- Solidity and weightiness provide for stability
- Dimensions L x W x H: 750 (max. 1235) x 750 x 750 mm
- Weight 142 kg



OPTIMUM Precision machine vices FMS

- Solid structure for milling, drilling and grinding
- Vice body made of high quality casting
- Hardened and ground guide surfaces
- Hardened and ground clamping jaws, replaceable
- With turntable, 360° turnable

FMS 100	3354100
Prism jaw for FMS 100	3354102
FMS 125	3354125
Prism jaw for FMS 125	3354127
FMS 150	3354150
Prism jaw for FMS 150	3354152
FMS 200	3354200
Prism jaw for FMS 200	3354202

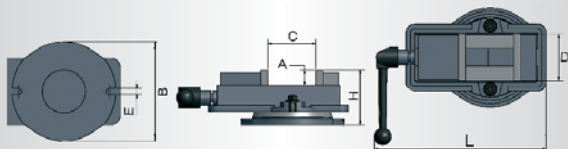


Techn. data	A	C	D	E	L	B	H	kg
FMS 100 mm	30	62	100	13	295	124	100	11
FMS 125 mm	37	85	125	13	370	148	128	17
FMS 150 mm	40	114	150	13	462	180	145	28
FMS 200 mm	58	150	200	16.5	620	237	202	58


OPTIMUM Precision machine vices FMSN

- Pull-down mechanism for safe clamping of the workpiece
- Vice body made of high quality casting
- Hardened and ground guide surfaces
- Hardened and ground clamping jaws, replaceable
- Protected spindle
- By transferring the clamping jaws they can also be used for external clamping
- With turntable, 360° turnable

FMSN 100	3354110
Prism jaw for FMSN 100	3354112
FMSN 125	3354120
Prism jaw for FMSN 125	3354122
FMSN 150	3354130
Prism jaw for FMSN 150	3354132

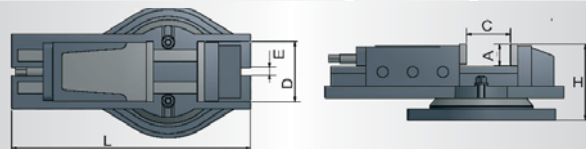


Techn. data	A	C	D	E	L	B	H	kg
FMSN 100 mm	36	101	100	14.5	319	Ø 240	319	19
FMSN 125 mm	36	108	135	16.5	369	Ø 278	369	29
FMSN 150 mm	46	146	155	18.5	425	Ø 332	425	36


OPTIMUM Hydraulic machine vices HMS

- Solid structure for milling, drilling and grinding
- Vice body made of high quality casting
- Hardened and ground guide surfaces
- Hardened and ground clamping jaws, replaceable
- Booster system, little effort, high pressing power when clamping
- Protected spindle
- Large clamping range due to locking bolts with different hole spacings
- With turntable, 360° turnable
- Protected spindle

HMS 100	3355100
Prism jaw for HMS 100	3355102
HMS 125	3355127
Prism jaw for HMS 125	3355129
HMS 150	3355150
Prism jaw for HMS 150	3355152
HMS 200	3355200
Prism jaw for HMS 200	3355202



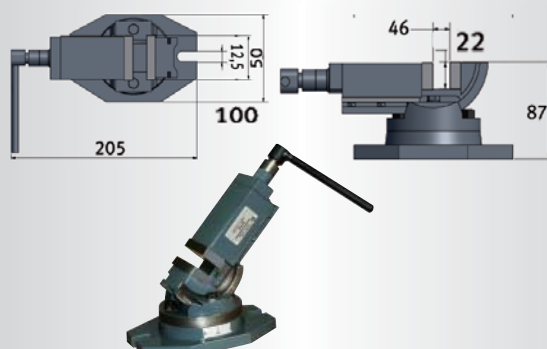
	A	D	E	L	B	H	kg
HMS 100 mm	36	100	15	525	Ø 270	122	27
HMS 125 mm	46	127	16	670	Ø 290	151	46
HMS 150 mm	51	150	17	800	Ø 328	169	64
HMS 200 mm	65	200	19	710	Ø 358	158	100

C	Span width	Clamping pressure
HMS 100	0-60 mm 57-115 mm 110-170 mm	2'500 kg 24.5 kN
HMS 125	0-76 mm 72-150 mm 146-224 mm	4'000 kg 39.25 kN
HMS 150	0-100 mm 98-200 mm 195-300 mm	4'500 kg 44.1 kN
HMS 200	0-100 mm 98-200 mm 195-300 mm	7'500 kg 73.6 kN


Two-axis vice ZAS

- Inclined up to -90°
- Hardened and ground clamping jaws, replaceable
- Well readable scales for all two axes
- With turntable, 360° turnable
- Net weight 3.4 kg

ZAS 50	3354170
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Accessories for milling machines

OPTIMUM Three-axis vice DAS 100

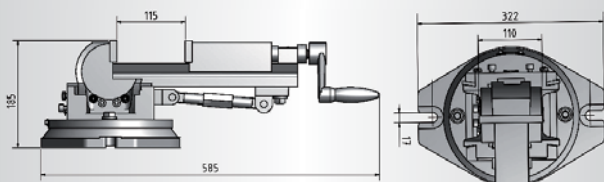
- High quality casting
- Hardened and ground guide surfaces
- Hardened and ground clamping jaws, replaceable
- With turntable, 360° turnable
- Horizontal swing movement up to 90°
- Vertical swing movement up to $\pm 45^\circ$ via threaded spindle
- Well readable scales for all three axes
- Weight 32 kg

DAS 100

3355500

Prism jaws

3355502



Prism jaws

OPTIMUM Three-axis vices MV3

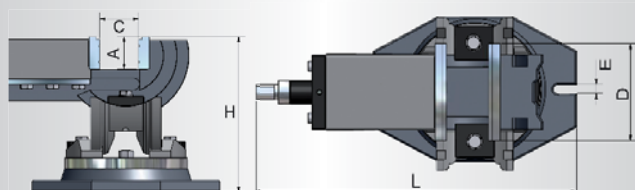
- Horizontal swing movement up to 90°
- Vertical swing movement up to $\pm 45^\circ$
- Well readable scales for all three axes
- Hardened and ground clamping jaws, replaceable
- With turntable, 360° turnable

MV3-75

3354175

MV3-125

3354178



MV3-75

Technical data		A	C	D	E	L	B	H	kg
MV3-75	mm	34	82	75.5	12	380	139	150	11
MV3-125	mm	45	97	125	12	290	185	206	26

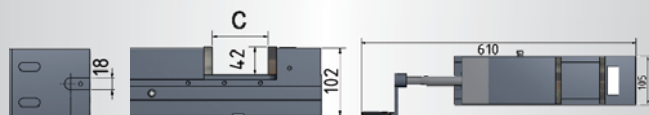


Hydraulic machine vice HCV 105

- Modular - machine vice of high accuracy and repeatability for standard and individual manufacturing on CNC milling machines and machining centres
- Solid structure for milling
- Hardened and ground guide surfaces
- Booster system, little effort, high pressing power when clamping
- Large clamping range due to locking bolts with different hole spacings
- Manufactured of high-quality stainless steel
- Long service life due to high quality type
- High clamping force

HCV 105

3536210



C	Span width	Clamping pressure	Weight
0 - 85 mm	85 - 170 mm	2'500 kg 24.5 kN	22 kg



Hydraulic machine vice HCV 125

- Modular - machine vice of high accuracy and repeatability for standard and individual manufacturing on CNC milling machines and machining centres
- Solid structure for milling
- Hardened and ground guide surfaces
- Booster system, little effort, high pressing power when clamping
- Large clamping range due to locking bolts with different hole spacings
- Manufactured of high-quality stainless steel
- Long service life due to high quality type
- High clamping force

HCV 125

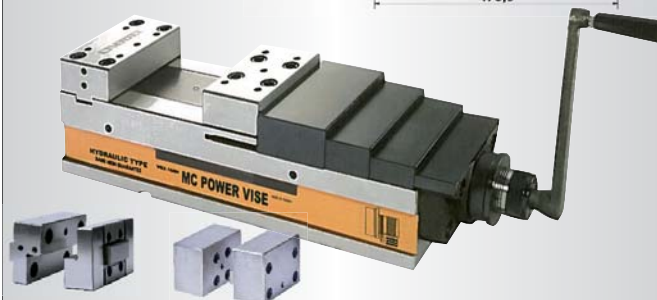
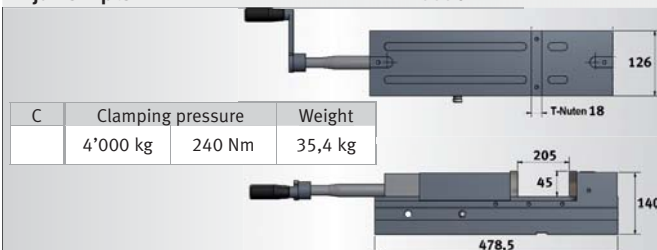
3536214

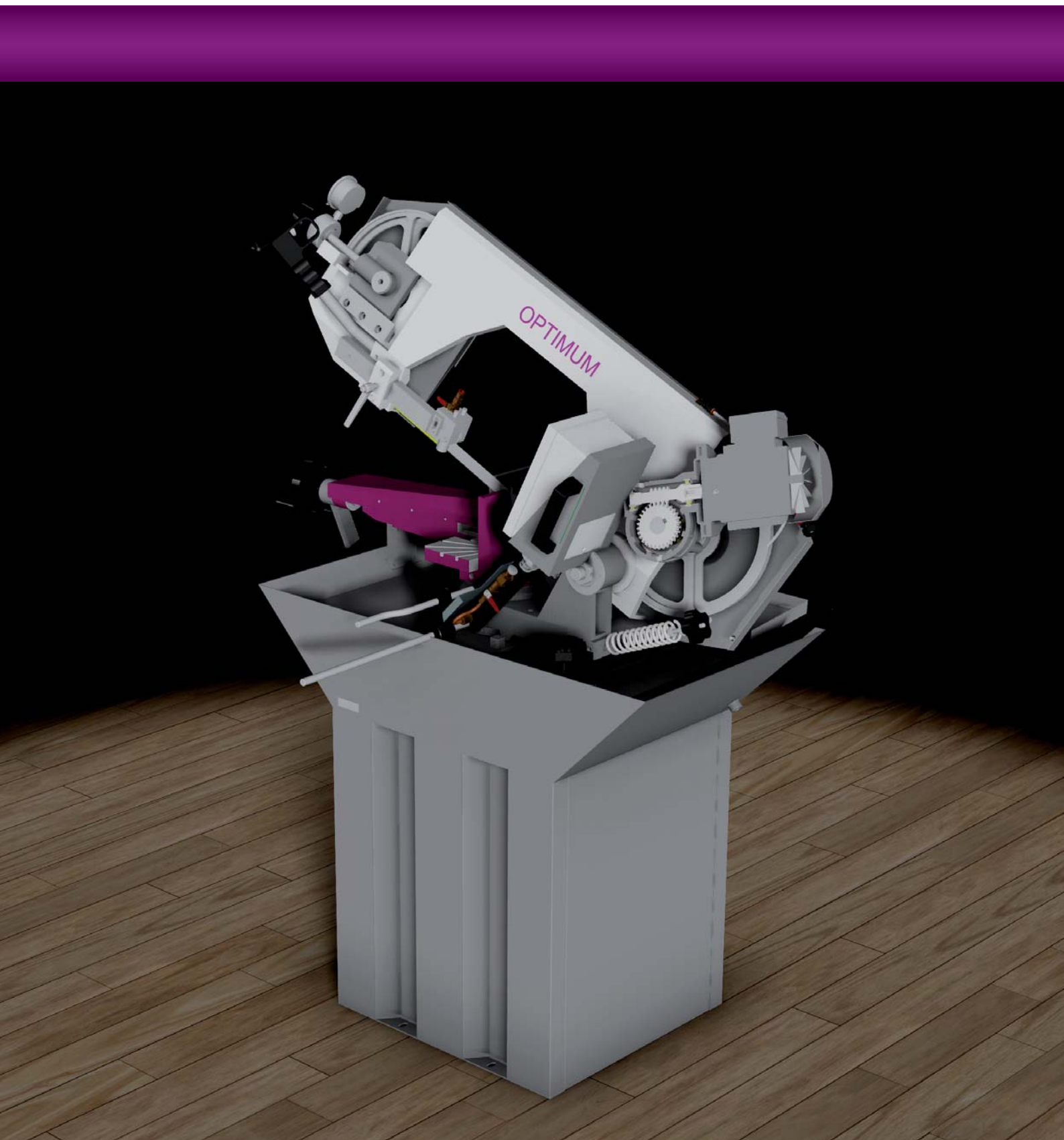
Non-rigid jaws 2 pcs.

3536221

L-jaws 2 pcs

3536222





METAL BAND SAWS

Transportable mitre belt saw with high cutting precision, particularly low-noise and infinitely variable saw belt speed



Convincing arguments: quality, efficiency and price

- Ball bearing mounted saw band guiding providing outstanding band run and thus optimum cutting results
- Sawing arc slewable from 0° to +60° thus allowing angular saw cuts
- With high-grade bimetallic saw band supplied as standard
- Adjustable material stop for series productions
- Base plate equipped with anti-skid feet
- Low vibration and low wear due to special gearbox with two large toothed wheels made of hardened steel
- DC drive motor with low speed and carbon brushes for an up to 10 times higher durability



Fig.: OPTIsaw SP13V

Optional accessories Machine pedestal

- L x W x H: 500 x 470 x 780mm
- Item No. 3630000



Convincing arguments...



Mitre angle

- Easy to read scale for angle adjustment



Saw band guiding

- Ball bearing; for outstanding belt run and thus optimum cutting results



Vario drive

- Infinitely adjustable saw band speed from 30 to 80 m/min.

Model	SP 13V
Item No	3300075
Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1 kW
General information	
Saw band speed	30 - 80 m/min
Saw band dimension	1'440 x 13 x 0.65 mm
Cutting angle	0° - 60°
Dimensions	
Length	720 mm
Width without / with material stop	300 / 650 mm
Height bottom / upper stop position of saw bow	420 / 680 mm
Net weight	19.5 kg
Standard equipment	
	Bi-metal saw band
	Material stop

The saw corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Cutting ranges

Cutting range 0°
Ø 125 mm



Cutting range 0°
125 x 125 mm



Cutting range 45°
Ø 85 mm



Cutting range 45°
85 x 85 mm



Cutting range 60°
Ø 45 mm



Cutting range 60°
45 x 50 mm



„General information about saw bands“ on page 173

Saw bands HSS bi-metal M 42

6 - 10 tpi	0°	3351546	
10 - 14 tpi	0°	3351547	

Light and handy metal band saw Perfect for the universal use on building sites, for assembly, for car services, in the shop, in the hobby room and in agriculture.

Convincing arguments: quality, efficiency and price

- Ball bearing mounted 3 point saw band guiding providing outstanding
- Quick-action vice for rapid workpiece clamping
- Sawing arc slewable from 0° to 45° thus allowing angular saw cuts
- Scale good read for angle adjustment
- Micro switch for automatic limit stop
- Automatic lowering of the saw bow via three-stage adjustable saw bow lowering pressure
- With high-grade bimetallic saw band supplied as standard
- Large, ergonomic handle and little weight allowing easy transportation to the construction site
- Adjustable material stop for series productions
- Fully equipped machine, the user can immediately start to work productively
- Transportation lock

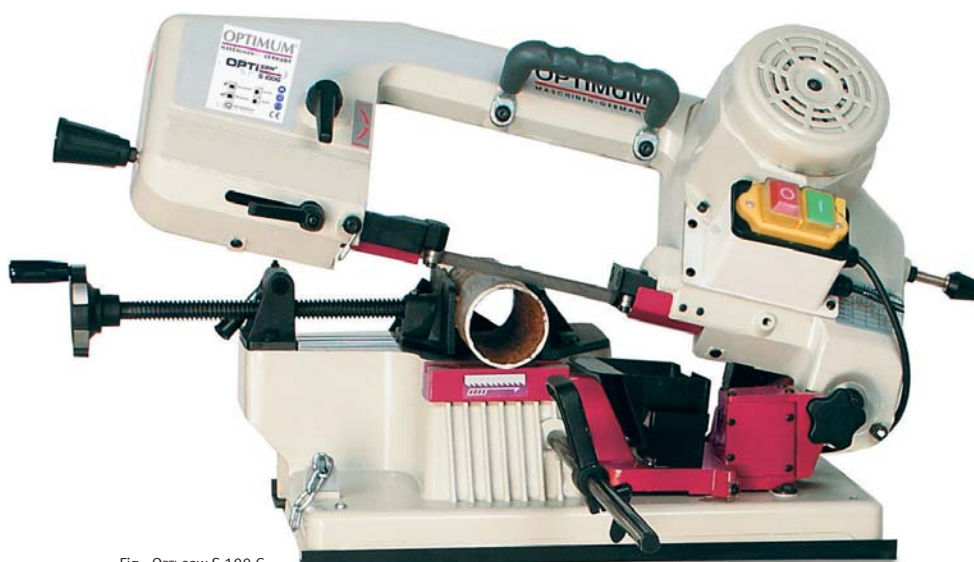


Fig.: OPTI saw S 100 G

Machine frame

- Robust, space-saving, can be collapsed, easy to transport
- Dimensions L x W x H:
500 x 470 x 780 mm

Item No. 3630000

Convincing arguments...



Automatic limit stop

- Switching off the saw band drive at the bottom limit of travel



Saw band guiding

- Ball bearing; for outstanding belt run and thus optimum cutting results



Model	S 100G
Item No	3300100
Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	370 W
General information	
Saw band speed	45 m/min
Saw band dimension	1'470 x 13 x 0.65 mm
Cutting angle	from 0° to 45°
Dimensions	
Length vice open/closed	950 / 850 mm
Width without / with material stop	300 / 660 mm
Height bottom / upper stop position of saw bow	680 / 820 mm
Net weight	23 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Operating tool

Cutting ranges

Cutting range 0°
Ø 100 mm

Cutting range 0°
100 x 150 mm

Cutting range 45°
Ø 65 mm

Cutting range 45°
100 x 60 mm

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
10 - 14 tpi	0°	3351110	
6 tpi	10°	3351109	

Saw band kit

3351100

- 1 x Saw band HSS bi-metal 10 - 14 tpi; 0°
- 2 x Saw band HSS bi-metal 6 tpi; 10°

Band saw for metal working with mitre-swivelling saw bow and infinitely variable saw band speeds

Convincing arguments: quality, efficiency and price

- Low-noise running
- Base plate and saw bow made of grey cast iron
- Stable saw bow, thus silent and vibration-free running
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Saw band tension at the front adjustable handwheel
- Adjustable material stop for series productions
- Rapid clamping of the workpiece with quick action vice
- Fully equipped machine, the user can immediately start to work productively

Push button "Manual saw band running"

- Switches the running of the saw band on and off



Saw band guiding

- Ball bearing
- Outstanding band run and thus optimum cutting results

Machine substructure

- Robust



Convincing arguments...



Control panel

- Largely dimensioned
- Emergency-stop push button
- Switch coolant pump
- Potentiometer
- CE conformity of the electric system
- EMC filter

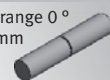


Vario drive

- continuously adjustable saw band speeds

Cutting ranges

Cutting range 0°
Ø 150 mm



Cutting range 0°
150 x 160 mm



Cutting range 45°
Ø 125 mm



Cutting range 45°
115 x 125 mm



Cutting range 60°
Ø 70 mm



Cutting range 60°
70 x 90 mm



Model	S 150G Vario
Item No	3300150

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1.1 kW
Motor coolant pump	50 W

General information	
Infeed	manual
Saw band speed	20 - 65 m/min
Number of steps	infinitely variable
Saw band dimension	1'735 x 12.7 x 0.9 mm
Cutting angle	from 0° to 60°

Dimensions	
Length vice open/closed	1'120 / 930 mm
Width without / with material stop	510 / 720 mm
Height bottom / upper stop position of saw bow	1'240 / 1'590 mm
Net weight	100 kg

Standard equipment	
	Bi-metal saw band
	Machine substructure
	Coolant equipment
	Material stop

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
6 tpi	10°	3351521	
6 - 10 tpi	0°	3351522	
10 - 14 tpi	0°	3351538	

„General information about saw bands“ on page 173

Saw band kit

3351501

- Saw band HSS bi-metal 6 TPI
- Saw band HSS bi-metal 6 - 10 TPI
- Saw band HSS bi-metal 10 - 14 TPI

The saw corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Metal band saw for easy sawing Mitre saws from -45° to +60° via slewable saw bow

Convincing arguments: quality, efficiency and price

- Protector switch for saw band saw belt off and for belt housing
- Separate EMERGENCY-STOP push button
- Low voltage electronics 24 V
- Low-noise running
- Saw band guiding via ball bearing
- Three speed stages for a broad choice of materials
- Micro switch for automatic limit stop
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Saw belt tension at the front adjustable via handwheel
- Adjustable material stop for series productions
- Quick-action vice for rapid workpiece clamping
- Switch for saw band saw belt off and for belt housing



Saw bow

- Grey cast-iron
- Slewable on both sides from -45° to +60°

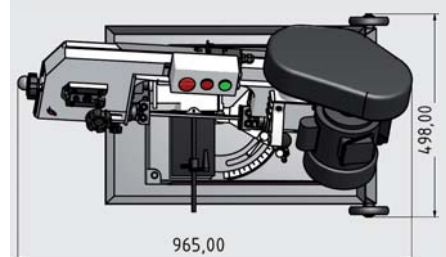
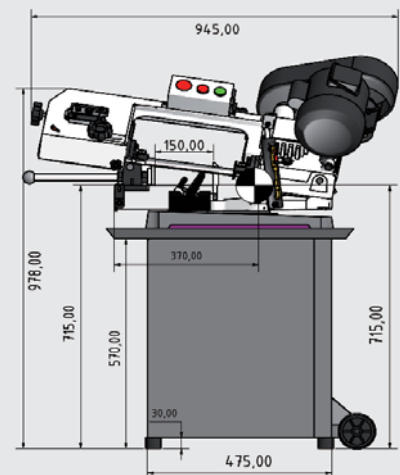
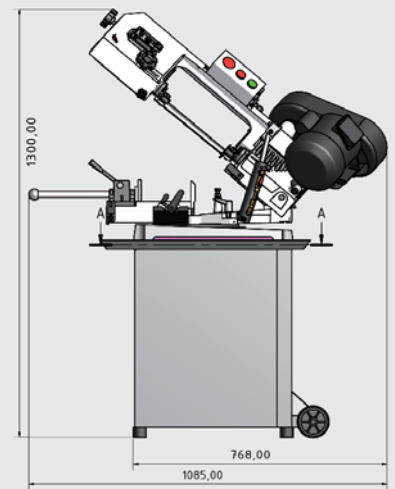


Fig.: Optisaw S 131GH

Machine substructure

- Mobile

Dimensions



Cutting ranges

Cutting range 0° Ø 128 mm	Cutting range 0° 100 x 150 mm
Cutting range 45° Ø 94 mm	Cutting range 45° 94 x 68 mm
Cutting range 60° Ø 56 mm	Cutting range 60° 56 x 56 mm

Model	S 131GH
Item No	3300131

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1.1 kW
General information	
Lifting the saw bow	manual
Infeed	continuously variable
Saw band speed	22 / 31 / 55 m/min
Saw band dimension	1'638 x 13 x 0.65 mm
Cutting angle	from -45° to +60°
Net weight	81 kg
Standard equipment	
	Bi-metal saw band
	Machine substructure

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
6 - 10 tpi	0°	3351512	
10 - 14 tpi	0°	3351518	
6 tpi	10°	3351511	

„General information about saw bands“ on page 173

Saw band kit

3351500

- 1 x Saw band HSS bi-metal 10 - 14 tpi; 0°
- 1 x Saw band HSS bi-metal 6 tpi; 10°
- 1 x Saw band HSS bi-metal 6 - 10 tpi; 6°

The metal band saw for demanding sawing with driving belts and 4 sawing speeds

Convincing arguments: quality, efficiency and price

- Low-noise running
- Stable casting type
- Lowering of the saw bow by means of the hydraulic cylinder with infinitely variable throttle valve
- Micro switch for automatic limit stop
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Saw belt tension at the front adjustable via handwheel
- Adjustable material stop for series productions
- Protective switch for the belt cover
- Fully equipped machine, the user can immediately start to work productively



Saw band guiding

- Saw band guiding via ball bearing
- Outstanding band run and thus optimum cutting results
- Chip brush

Machine substructure

- Robust
- Large wheels and handy transport strap allow trouble-free position change



Fig.: OPTI[®]saw S 181

Convincing arguments...



Four speeds

- Adjustable by changing the V-belt position



Quick-action vice

- Clamping jaws adjustable from 0° to 45° for mitre cuts



Coolant equipment

- Integrated in the base
- Tank capacity 11 litres

Model	S 181
Item No	3300181

Electrical connection	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	750 W

General information	
Lifting the saw bow	manual
Infeed	continuously variable
Saw band speed	21/33,5/45/50 m/min
Saw band dimension	2'362 x 19 x 0.9 mm
Cutting angle	from 0° to 45°

Dimensions	
Length	1'295 mm
Width without machine stop	450 mm
with material stop	600 mm
Height	
bottom stop position of saw bow	1'060 mm
upper stop position of saw bow	1'550 mm
Net weight	130 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure

Cutting ranges

Cutting range 0°
Ø 180 mm

Cutting range 0°
180 x 240 mm
50 x 300 mm

Cutting range 45°
Ø 110 mm

Cutting range 45°
170 x 110 mm

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357522	
6 - 10 tpi	0°	3357521	
5 - 8 tpi	6°	3357516	

„General information about saw bands“ on page 173

Saw band kit	3357500	
<ul style="list-style-type: none"> • Saw band HSS bi-metal 6 - 10 tpi; 0° • Saw band HSS bi-metal 5 - 8 tpi; 0° • Saw band HSS bi-metal 5 - 8 tpi; 6° 		

The metal band saw for demanding sawing with gearbox and 3 sawing speeds

Convincing arguments: quality, efficiency and price

- Low-noise running
- Stable casting type
- Lowering of the saw bow by means of the hydraulic cylinder with infinitely variable throttle valve
- Micro switch for automatic limit stop
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Saw belt tension at the front adjustable via handwheel
- Adjustable material stop for series productions
- Fully equipped machine, the user can immediately start to work productively



Fig.: OPTISAW S 181G

Saw band guiding

- Saw band guiding via ball bearing
- Outstanding band run and thus optimum cutting results
- Chip brush

Machine substructure

- Robust
- Large wheels and handy transport strap allow trouble-free position change

Convincing arguments...



Three speeds

- Switchable by means of the gearbox



Quick-action vice

- Clamping jaws adjustable from 0° to 45° for mitre cuts



Coolant equipment

- Integrated in the base
- Tank capacity 11 litres

Cutting ranges

Cutting range 0°
Ø 180 mm

Cutting range 0°
180 x 240 mm
65 x 300 mm

Cutting range 45°
Ø 110 mm

Cutting range 45°
170 x 110 mm

Model	S 181G
Item No	3300182

Electrical connection	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	750 W

General information	
Lifting the saw bow	manual
Infeed	continuously variable
Saw band speed	45/67/77 m/min
Saw band dimension	2'362 x 19 x 0.9 mm
Cutting angle	from 0° to 45°

Dimensions	
Length	1'200 mm
Width without machine stop	450 mm
with material stop	720 mm
Height	
bottom stop position of saw bow	1'050 mm
upper stop position of saw bow	1'600 mm
Net weight	130 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357522	
6 - 10 tpi	0°	3357521	
5 - 8 tpi	6°	3357516	

„General information about saw bands“ on page 173

Saw band kit	3357500	
<ul style="list-style-type: none"> • Saw band HSS bi-metal 6 - 10 tpi; 0° • Saw band HSS bi-metal 5 - 8 tpi; 0° • Saw band HSS bi-metal 5 - 8 tpi; 6° 		

Metal band saw with slewable saw bow and 2 saw band speeds

Convincing arguments: quality, efficiency and price

- Low-noise running
- Stable casting type
- High cutting accuracy due to vibration-free running
- Two switchable speeds
- Lowering of the saw bow by means of the hydraulic cylinder with infinitely variable throttle valve
- Micro switch for automatic limit stop
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Adjustable material stop for series productions
- Fully equipped machine, the user can immediately start to work productively

Saw band guiding

- Saw band guiding via ball bearing
- Outstanding band run and thus optimum cutting results
- Chip brush

Quick-action vice

- Adjustable via handwheel
- Clamping the workpiece by means of the handy quick action lever

Machine substructure

- Robust

Control panel

- Clearly-arranged keyboard for simple operation
- Emergency-stop push button
- Switch coolant pump
- Speed selector switch
- For Vario: Potentiometer

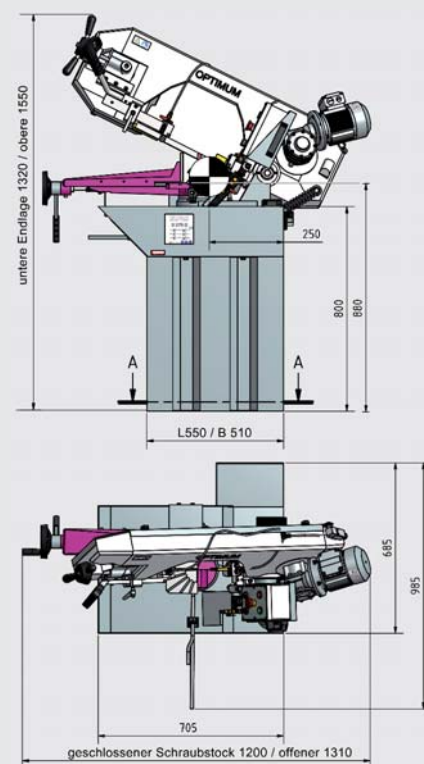
EMC filter

- EMC Directive



Fig.: Optisaw S 210

Dimensions



Cutting ranges

0°			
Ø 170 mm		210 x 140 mm 245 x 180 mm	
45°			
Ø 125 mm		125 x 100 mm 160 x 160 mm	

Model	S 210G
Item No	3300210

Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	750 W
General information	
Lifting the saw bow	manual
Infeed	continuously variable
Saw band speed	40/80 m/min
Saw band dimension	2'080 x 20 x 0.9 mm
Cutting angle	from 0° to 45°
Net weight	152 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure

S 210 G Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357503	
6 - 10 tpi	0°	3357514	
5 - 8 tpi	6°	3357505	

„General information about saw bands“ on page 173

Saw band kit	3357502	
<ul style="list-style-type: none"> • Saw band HSS bi-metal 5 - 8 tpi; 0° • Saw band HSS bi-metal 6 - 10 tpi; 0° • Saw band HSS bi-metal 5 - 8 tpi; 6° 		



Metal band saws with slewable saw bow and 2 saw band speeds. OPTISAW S 275NV with infinitely variable saw band speed

Convincing arguments: quality, efficiency and price

- Low-noise running
- Stable casting type
- High cutting accuracy due to vibration-free running
- Two switchable speeds
- Lowering of the saw bow by means of the hydraulic cylinder with infinitely variable throttle valve
- Micro switch for automatic limit stop
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Adjustable material stop for series productions
- Fully equipped machine, the user can immediately start to work productively

S 275NV

- Infinitely variable saw belt speeds 20 - 90 m/min.
- It is easily possible to change the speed during operation

Saw band guiding

- Saw band guiding via ball bearing
- Outstanding band run and thus optimum cutting results
- Chip brush

Quick-action vice

- Adjustable via handwheel
- Clamping the workpiece by means of the handy quick action lever

Machine substructure

- Robust

EMC filter

- EMC Directive

Control panel

- Clearly-arranged keyboard for simple operation
- Emergency-stop push button
- Switch coolant pump
- Speed selector switch
- For Vario: Potentiometer

Coolant equipment

- Powerful

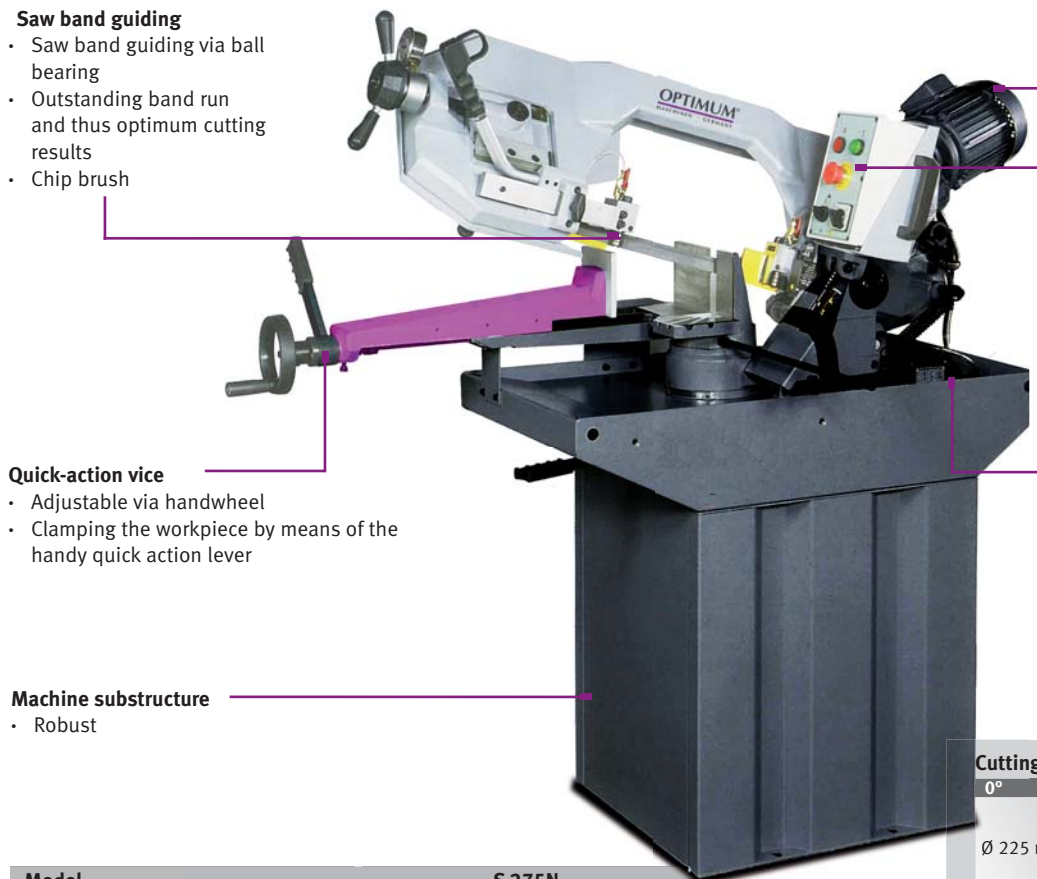


Fig.: OPTISAW S 275N

Cutting ranges

0°			
Ø 225 mm		235 x 150 mm	
45°			
Ø 155 mm		210 x 155 mm	
60°			
Ø 90 mm		120 x 90 mm	

„General information about saw bands“ on page 173

Model	S 275N
Item No	3300260
Model	S 275NV
Item No	3300265

Machine data	
Electrical connection S275N	400 V / 3 Ph ~50 Hz
Motor power S275N	1.1 kW
Electrical connection S275NV	230 V / 1 Ph ~50 Hz
Motor power S275NV	1.5 kW
General information	
Lifting the saw bow	manual
Infeed	continuously variable
Saw band speed	45 / 90 m/min
Saw band speed Vario	20 - 90 m/min
Saw band dimension	2'480 x 27 x 0.9 mm
Cutting angle	from 0° to 60°
Net weight	185 / 200 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357511	
6 - 10 tpi	0°	3357524	
5 - 8 tpi	6°	3357512	

Saw band kit

3357504

- Saw band HSS bi-metal 5 - 8 tpi; 0°
- Saw band HSS bi-metal 6 - 10 tpi; 0°
- Saw band HSS bi-metal 5 - 8 tpi; 6°

The saw corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Metal band saw with slewable saw bow for economic and precise working

Convincing arguments: quality, efficiency and price

- Low-noise running
- Heavy casting type
- High cutting accuracy due to vibration-free running
- Two switchable speeds 45/90 m/min.
- Mitre adjustment from -45° up to +60° by slewing the whole saw bow
- Ball bearing mounted saw band guiding providing outstanding band run and thus optimum cutting results
- Chip brush
- Automatic switch-off of the saw after termination of cutting
- With high-grade bimetallic saw band supplied as standard
- Material stop with scaling
- Limit stops exactly adjustable within an accuracy of a degree

- EMC filter (electromagnetic compatibility)
- Fully equipped machine, the user can immediately start to work productively

Control panel

- Largely dimensioned
- Emergency-stop push button
- Switch coolant pump
- Saw band speed

Roller support

- To support long materials

Quick-action vice

- Adjustable via handwheel
- High tensioning force by quick action lever

Clamping lever saw bow

- Saw cuts in the range from 45° up to 60° are infinitely variable

Machine substructure

- Stable

Fig.: OPTISAW S 285DG

Model	S 285DG
Item No	3300285
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.1 kW
Motor coolant pump	100 W
General information	
Infeed	continuously variable
Saw band speed	45 / 90 m/min
Saw band dimension	2'480 x 27 x 0.9 mm
Cutting angle	from -60° to +45°
Dimensions	
Length	1'400 mm
Width without / with material stop	870 / 1'270 mm
Height bottom / upper stop position of saw bow	1'280/1'800 mm
Net weight	295 kg
Standard equipment	
	Bi-metal saw band
	Material stop

Convincing arguments...



Pressure gauge

- Simple and correct control of the saw band tension



Coolant pump

- Powerful 100 W

Cutting ranges

0°	
Ø 200 mm	245 x 150 mm
+ 45°	
Ø 150 mm	145 x 215 mm
-45°	
Ø 130 mm	100 x 140 mm
-60°	
Ø 90 mm	90 x 110 mm

„General information about saw bands“ on page 173

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357511	
6 - 10 tpi	0°	3357524	
5 - 8 tpi	6°	3357512	

Saw band kit

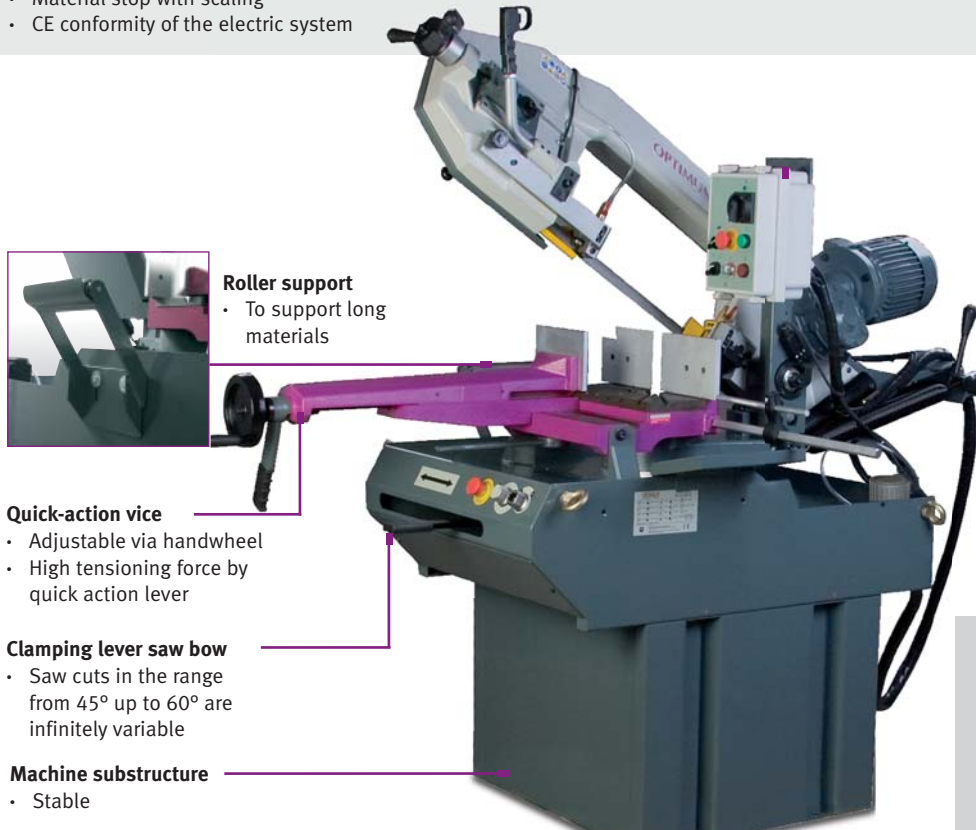
3357504

- Saw band HSS bi-metal 5 - 8 tpi; 0°
- Saw band HSS bi-metal 6 - 10 tpi; 0°
- Saw band HSS bi-metal 5 - 8 tpi; 6°

Band saw for metalworking with slewable saw bow. OPTISAW S 300 DG Vario with infinitely variable saw band speed

Convincing arguments: quality, efficiency and price

- Low-noise running
- Heavy casting type
- High cutting accuracy due to vibration-free running
- Ball bearing mounted saw band guiding providing outstanding band run and thus optimum cutting results
- Chip brush
- Micro switch for automatic limit stop
- Material stop with scaling
- CE conformity of the electric system
- Push button "Manual saw band running" on the hand lever switches the running of the saw band on and off
- With high-grade bimetallic saw band supplied as standard
- Limit stops exactly adjustable within an accuracy of a degree
- EMC filter (electromagnetic compatibility)



Roller support

- To support long materials

Quick-action vice

- Adjustable via handwheel
- High tensioning force by quick action lever

Clamping lever saw bow

- Saw cuts in the range from 45° up to 60° are infinitely variable

Machine substructure

- Stable

Model	S 300DG
Item No	3290290
Model	S 300DG Vario
Item No	3290295

Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW
Motor coolant pump	100 W

General information	
Infeed	continuously variable
Saw band speed	35 / 70 m/min.
Saw band speed Vario	20 - 90 m/min
Saw band dimension	2'750 x 27 x 0.9 mm
Cutting angle	from -60° to +45°

Dimensions	
Length	1'680 mm
Width without / with material stop	700 / 1'300 mm
Height bottom / upper stop position of saw bow	1'600 / 1'850 mm
Net weight	335 kg

Standard equipment	Bi-metal saw band Material stop
---------------------------	------------------------------------

Fig.: OPTISAW S 300DG

Convincing arguments...



Pressure gauge

- Simple and correct control of the saw band tension



Coolant pump

- Powerful 100 W

Cutting ranges

0°		310 x 210 mm
+45°		220 x 200 mm
-45°		170 x 170 mm
-60°		135 x 135 mm

„General information about saw bands“ on page 173

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357751	
6 - 10 tpi	0°	3357753	
5 - 8 tpi	6°	3357752	

Saw band kit	3357700
<ul style="list-style-type: none"> • Saw band HSS bi-metal 5 - 8 tpi; 0° • Saw band HSS bi-metal 6 - 10 tpi; 0° • Saw band HSS bi-metal 5 - 8 tpi; 6° 	

The saw (frequency converter) corresponds to the standard DIN EN 55011: 2011-04 class C2 - (only use in mixed and industrial areas)

Metal band saw with turntable and slewable saw bow for economic and precise working

Convincing arguments: quality, efficiency and price

- Low-noise running
- Heavy casting type
- High cutting accuracy due to vibration-free running
- High motor power also at low speeds
- Micro switch for automatic limit stop
- Precise and durable saw band guiding, re-adjustable
- With high-grade bimetallic saw band supplied as standard
- Limit stops exactly adjustable within an accuracy of a degree
- Chip brush
- Rapid and safe clamping of the workpiece by means of quick-action vice with additional lever, shiftable to produce large materials
- Fully equipped machine, the user can immediately start to work productively



Hard metal guide
• Prevent rapid wear

Control panel

- main switch
- Control light for operation
- Emergency-stop push button
- Switch coolant pump
- Potentiometer
- Rotary selector switch Manual saw band run/
Automatic saw band run

Vario drive

- Via frequency converter
- Infinitely variable saw band speed
- Professional inverter technique

- CE conformity of the electric system
- EMC filter (electromagnetic compatibility)

Material stop
• With scale

Coolant pump

Machine substructure
• Robust

Lowering speed

- Simple adjustment via feed gear control valve on the control panel
- Emergency-stop push button

Fig.: OPTISAW S 310DG Vario

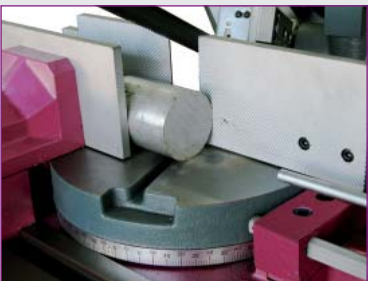
Technical data and accessories

Convincing arguments...



Pressure gauge

- Simple and correct control of the saw band tension



Rotary table

- Every angle between -60° and +45° can be cut, because the kerf migrates with the saw arm
- Well readable angle scale



Roller support

- To support long materials



Fig.: Extension



Fig.: PVC

Model	S 310DG Vario
Item No	3290335
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW
Motor coolant pump	100 W
General information	
Infeed	continuously variable
Saw band speed	20 - 90 m/min
Saw band dimension	2.750 x 27 x 0.9 mm
Cutting angle	from -60° to +45°
Dimensions	
Length	1,680 mm
Width without / with material stop	700 / 1'330 mm
Height bottom / upper stop position of saw bow	1'600 / 2'000 mm
Net weight	380 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure
	Coolant equipment

Cutting ranges

0°		-45°	
Ø 255 mm	315 x 230 mm	Ø 195 mm	195 x 230 mm
+45°		-60°	
Ø 160 mm	160 x 160 mm	Ø 115 mm	195 x 230 mm



Fig.: MSR 7H

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357751	
6 - 10 tpi	0°	3357753	
5 - 8 tpi	6°	3357752	

Saw band kit

Item No	
3357700	
<ul style="list-style-type: none"> Saw band HSS bi-metal 5 - 8 tpi; 0° Saw band HSS bi-metal 6 - 10 tpi; 0° Saw band HSS bi-metal 5 - 8 tpi; 10° 	

Material stand

	Item No	
NEW MSR 4H	L x W 1'000 x 440 mm H. 650 - 1'050 mm	3357001
NEW MSR 7H	L x W 2'000 x 440 mm H. 650 - 1'050 mm	3357002
NEW MSR 10H	L x W 3'000 x 440 mm H. 650 - 1'050 mm	3357003
NEW Table extension MSR1		3357004
PVC rolls for MSR		3357609

Metal band saw with double mitre of heavy type

Convincing arguments: quality, efficiency and price

- Heavy industrial type
- Low-noise running
- High cutting accuracy due to vibration-free running
- Two switchable speeds 36/72 m/min.
- Mitre adjustment to -60° by slewing the whole saw bow
- Combinable and individually adjustable hard metal and ball bearing guidings of the saw band
- With high-grade bimetallic saw band supplied as standard
- Limit stops exactly adjustable within an accuracy of a degree
- Chip brush
- Micro switch for automatic limit stop
- Roller support adjustable for long and heavy workpieces
- Fully equipped machine, the user can immediately start to work productively



Saw band tension

- Simple and correct setting of the saw band tension by means of a manometer



Robust quick-action vice

- Generously dimensioned
- Adjustable via handwheel
- Clamping the workpiece by means of the handy quick action lever
- Shiftable for large materials

Control panel

- main switch
- Control light for operation
- Emergency-stop push button
- Switch coolant pump
- Speed selector switch

Hydraulic cylinder

- Precise, infinitely variable saw bow movement

Saw band guiding

- Ball bearing with hard metal plates for optimum cutting results

Material stop

- with scale

Lowering speed

- Simple adjustment via feed gear control valve on the control panel
- Emergency-stop push button

Coolant pump

- CE conformity of the electric system
- EMC filter (electromagnetic compatibility)

Machine substructure

- Robust

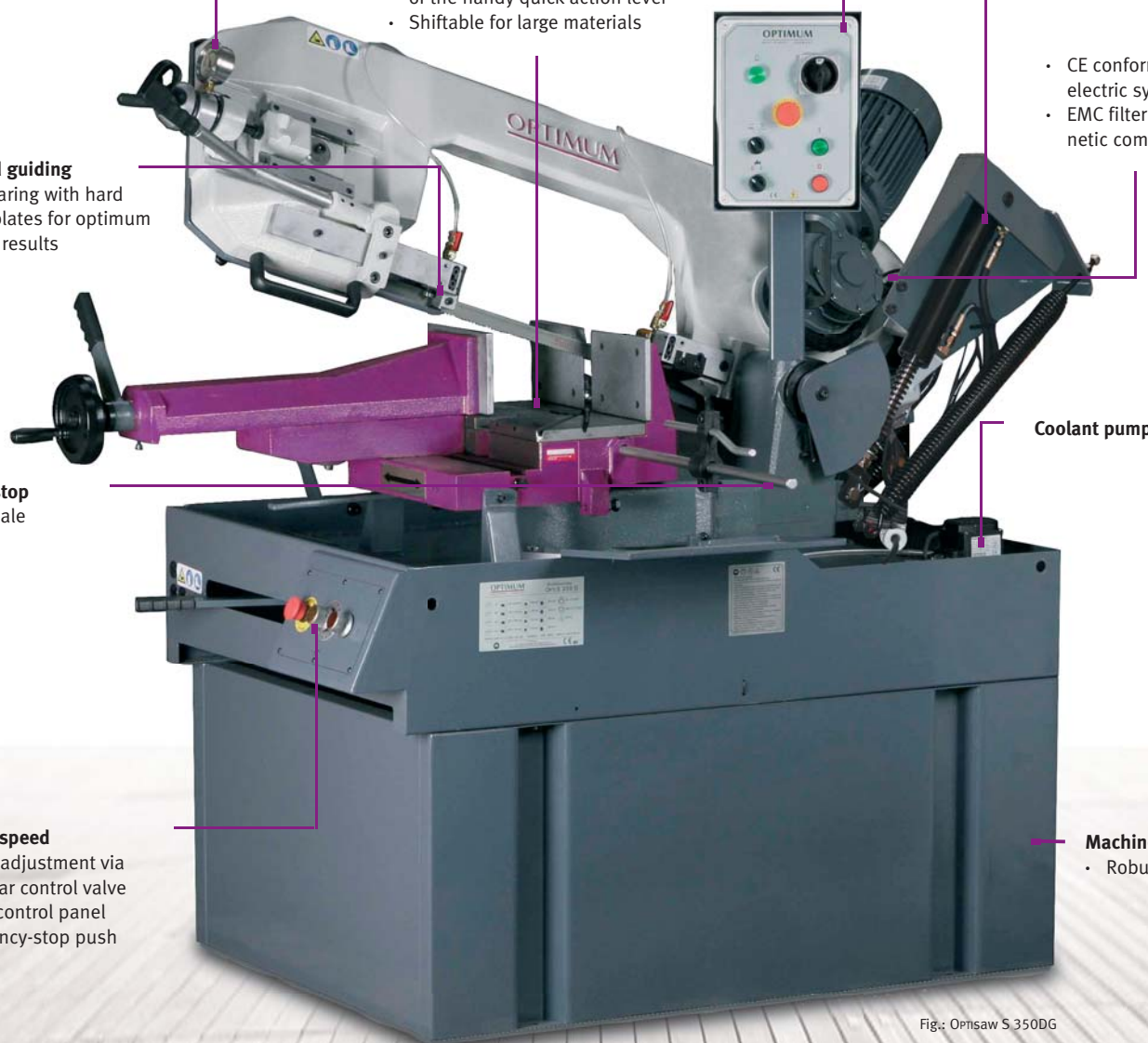


Fig.: Optisaw S 350DG

Technical data, dimensions and accessories

Model	S 350DG
Item No	3290350
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	2.2 kW
Motor coolant pump	50 W
General information	
Lifting the saw bow	manual
Infeed	continuously variable
Saw band speed	36/72 m/min
Saw band dimension	2'925 x 27 x 0.9 mm
Cutting angle	from -60° to +45°
Dimensions	
Length	1'750 mm
Width without / with material stop	1'075 / 1'415 mm
Height bottom / upper stop position of saw bow	1'420 / 2'000 mm
Net weight	550 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure

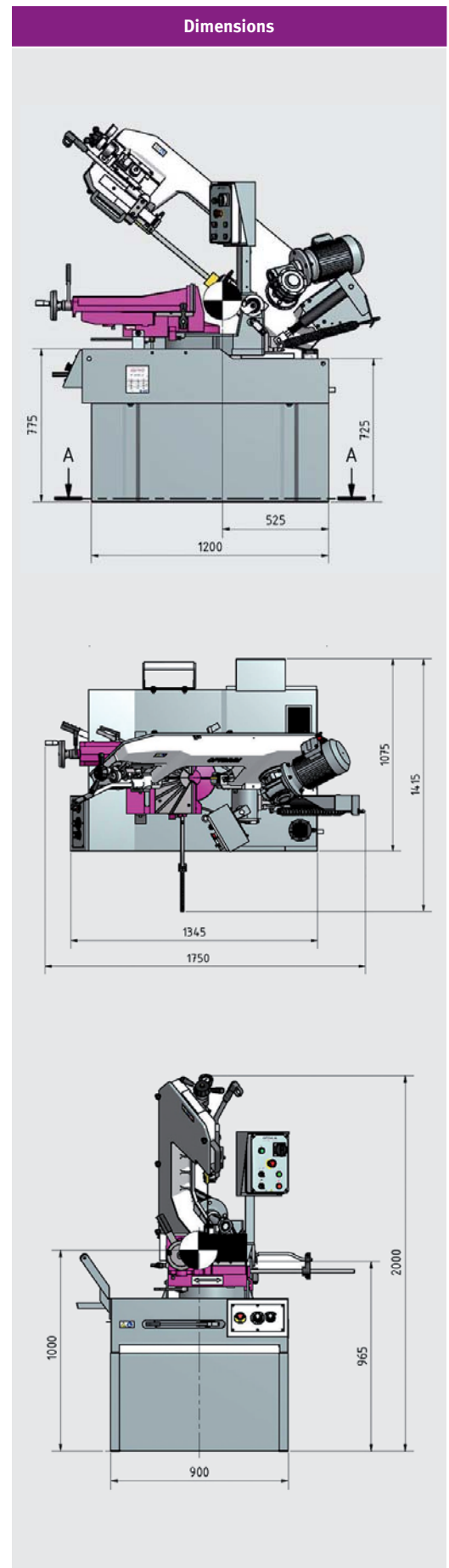
Cutting ranges	
0°	
Ø 270 mm	350 x 240 mm
+ 45°	
Ø 230 mm	230 x 150 mm
-45°	
Ø 200 mm	200 x 140 mm
-60°	
Ø 140 mm	140 x 140 mm

„General information about saw bands“ on page 173

Saw bands HSS bi-metal M 42			
Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357541	
6 - 10 tpi	0°	3357542	
4 - 6 tpi	6°	3357540	

Saw band kit	3357501
<ul style="list-style-type: none"> Saw band HSS bi-metal 5 - 8 tpi; 0° Saw band HSS bi-metal 6 - 10 tpi; 0° Saw band HSS bi-metal 4 - 6 tpi; 6° 	

Material stand	Item No	
MSR 4H L x W 1'000 x 440 mm	3357001	
MSR 7H L x W 2'000 x 440 mm	3357002	
MSR 10H L x W 3'000 x 440 mm	3357003	
Table extension MSR1	3357004	
PVC rolls for MSR	3357609	



Semi-automatic double mitre metal band saw with inverter Vario drive

Convincing arguments: quality, efficiency and price

- Heavy industrial type
- Low-noise running
- Manual or semi-automatic operation
- Infinitely variable saw belt speed of 0-80 m/min.
- High cutting accuracy due to vibration-free running
- Mitre adjustment to -60° by slewing the whole saw bow
- Combinable and individually adjustable hard metal and ball bearing guidings of the saw band
- With high-grade bimetallic saw band supplied as standard
- Limit stops exactly adjustable within an accuracy of a degree
- Chip brush

- Micro switch for automatic limit stop
- Roller support adjustable for long and heavy workpieces
- Fully equipped machine, the user can immediately start to work productively

Function semi-automatic operation

- Closing the vice and activation of the motor
- Lowering the saw bow for cutting
- Stopping the motor and return of the saw bow in the initial position



Saw band tension

- Simple and correct setting of the saw band tension by means of a manometer

Robust quick-action vice

- Generously dimensioned
- Hydraulic
- Self-locking
- Shiftable for large cross sections
- Saw cuts in the range from -45° up to +60° are infinitely variable
- Angle adjustment readable via scale



Saw band guiding

- Ball bearing with hard metal plates for optimum cutting results

Material stop

- With scale

Lowering speed

- Simple adjustment via feed gear control valve on the control panel
- Emergency-stop push button

Control panel

- Clearly arranged
- Sleuable

Hydraulic cylinder

- Infinitely variable saw bow movement

- CE conformity of the electric system
- EMC filter (electromagnetic compatibility)

Coolant pump

Machine substructure

- Robust

Technical data, dimensions and accessories

Model	SD 350AV
Item No	3292355
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected load	3.8 kW
Saw motor	2.2 kW
Hydraulic pump	1.4 kW
Motor coolant pump	50 W
General information	
Lifting the saw bow	Hydraulic mode by push button automatic
• Manual operation	
• Semi-automatic mode	
Infeed	continuously variable
Saw band speed	0 - 80 m/min
Saw band dimension	2'925 x 27 x 0.9 mm
Cutting angle	from -60° to +45°
Dimensions	
Length	1'750 mm
Width without / with material stop	1'075 / 1'415 mm
Height bottom / upper stop position of saw bow	1'420 / 2'000 mm
Net weight	600 kg
Standard equipment	
	Bi-metal saw band
	Material stop
	Machine substructure

Cutting ranges

0°		
Ø 270 mm		350 x 240 mm
+ 45°		
Ø 230 mm		230 x 150 mm
-45°		
Ø 200 mm		200 x 140 mm
-60°		
Ø 140 mm		140 x 140 mm

Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Item No	
5 - 8 tpi	0°	3357541	
6 - 10 tpi	0°	3357542	
4 - 6 tpi	6°	3357540	

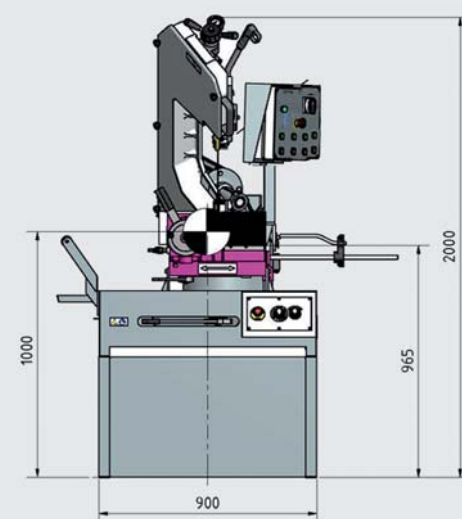
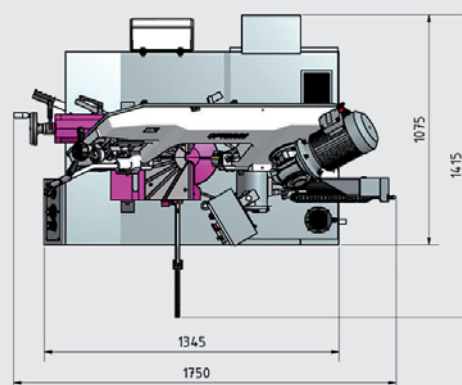
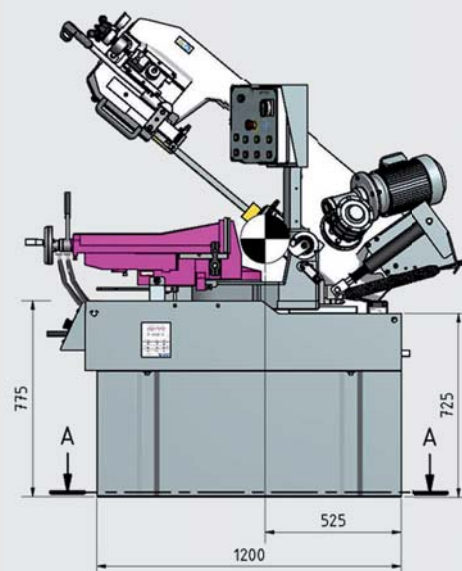
„General information about saw bands“ on page 173

Saw band kit

3357501

- Saw band HSS bi-metal 5 - 8 tpi; 0°
- Saw band HSS bi-metal 6 - 10 tpi; 0°
- Saw band HSS bi-metal 4 - 6 tpi; 6°

Dimensions



Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Manual circular metal saws for steel, iron, light metals, solid material and profiles

Convincing arguments: quality, efficiency and price

- Slewing range of ± 45°
- Easy readable angle scale allows precise working
- Adjustment of the mitre in a matter of seconds
- Protected vice spindle
- Solid machine base with holes on both sides for the installation of the material stand MSR
- Machine base sizes:
 - CS 275 - 460 x 515 x 775 mm and
 - CS 315 - 546 x 620 x 801 mm
- The saw is delivered without circular saw blade (saw blade pitch freely selectable)

Protective equipment

- Functional
- All-surrounding
- Mobile
- Rapid opening mechanism provides for optimum safety when cutting

Vice

- Centric clamping
- 4-time guided
- Individually adjustable jaws
- Cut is always performed in an optimum position to the workpiece
- 4-lever clamping system
- Protected vice spindle

Machine substructure

- Solid
- Lockable door

Coolant pump

- Detachable coolant tank
- Integrated powerful pump

Long handle

- Allows sawing without large efforts
- Integrated push button (On/Off)
- Automatic switching on of the coolant pump when sawing



Fig.: CS 315














Material stand	Item No	
MSR 4	3357610	
NEW MSR 4H	3357001	
MSR 7	3357611	
NEW MSR 7H	3357002	
MSR 10	3357613	
NEW MSR 10H	3357603	

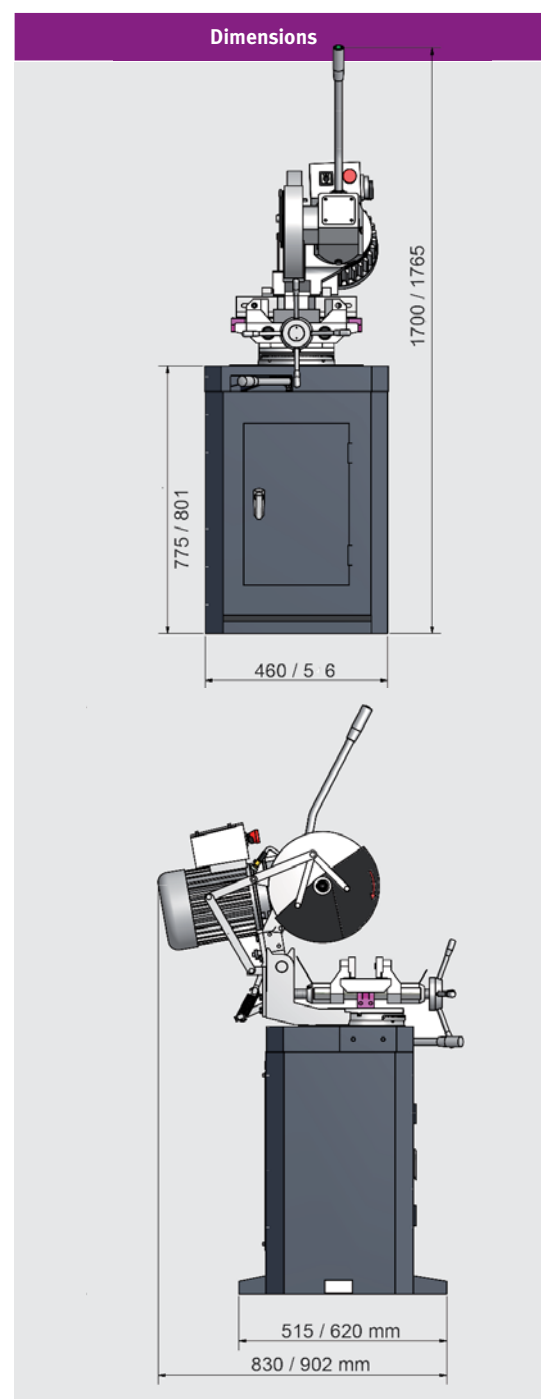
Information „MSR 4 / MSR 7 / MSR 10“ on page 170

Technical data, dimensions and accessories

Model	CS 275	CS 315
Item No	3302275	3302300
Machine data		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	2.0/1.4 kW	1.5/0.75 kW
Motor coolant pump	40 W	
General information		
Cutting angle	-45° up to +45°	
Cutting angle adjustment	by means of a rotatable bearing block	
Infeed	manual	
Cutting speed	41 / 82 min. ⁻¹	19 / 38 min. ⁻¹
Saw blade diameter	Ø 275 mm; Inner-Ø 40 mm	Ø 315 mm; Inner-Ø 40 mm
Jaw width of the vice	110 mm	135 mm
Dimensions		
Length	460 mm	560 mm
Width	830 mm	902 mm
Height	1'700 mm	1'765 mm
Net weight	175 kg	235 kg
Standard equipment	Coolant equipment	
	Machine substructure	
	without circular saw blade	

Cutting ranges		
CS 275 CS 315	0°	
	Ø 60 mm	100 x 60 mm
	Ø 85 mm	130 x 70 mm
CS 275 CS 315	+ 45°	
	Ø 60 mm	70 x 60 mm
	Ø 85 mm	90 x 70 mm

Information on circular saw blades	
4 mm/T:	   Tube/profile (wall thickness)
• up to 1 mm:	Aluminium / Bronze / Copper / Brass
• up to 1.5 mm:	Steels up to 1,500 N/m²Stainless steels
• up to 2 mm:	Steels up to 1,200 N/m²
6 mm/T:	   Tube/profile (wall thickness)
• up to 1.5 mm:	Aluminium / Bronze / Copper / Brass
• from 3 mm on:	Steels up to 1,800 N/m²
6 mm/T:	  Solid (cross section)
• 10-20 mm:	Aluminium / Bronze / Copper / Brass
• 20-40 mm:	Steels up to 1,800 N/m²Stainless steels
8 mm/T:	   Tube/profile (wall thickness)
• from 3 mm on:	Aluminium / Bronze / Copper / Brass
8 mm/T:	  Solid (cross section)
• 20-40 mm:	Steels up to 1'800 N/m² Aluminium/Bronze/Copper
• 40-60 mm:	Steels up to 1,200 N/m² Stainless steels



Metal circular saw blade CS 275

Teeth / per mm	Teeth	Blade thickness	Item No
4 mm/T	220 teeth	2.5 mm	3357444
6 mm/T	140 teeth	2.5 mm	3357446
8 mm/T	110 teeth	2.5 mm	3357448

CS 315

4 mm/T	Teeth	Blade thickness	Item No
4 mm/T	240 teeth	2.5 mm	3357454
6 mm/T	150 teeth	2.5 mm	3357456
8 mm/T	120 teeth	2.5 mm	3357458

Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

Measuring

CNC

Index

Height adjustable material stand MSR as manual aid for supporting and moving the workpieces for metal saws. H version variably adjustable up to 1'050 mm

Convincing arguments: quality, efficiency and price

- Optimum aids to support long and heavy workpieces
- Universally applicable for e.g. metal band saws, circular saws, etc.
- Roller support infinitely variable height-adjustable
- Safe workpiece support due to steel rollers which are massive high capable of bearing
- Infinitely extendable
- Mounting option of the distance measuring system LMS



Fig.: MSR 10

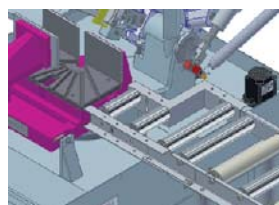
Fig.: MSR 7

Fig.: MSR 4

Model	MSR 4	MSR 7	MSR 10
Item No	3357610	3357611	3357613

Model	MSR 4H NEW	MSR 7H NEW	MSR 10H NEW
Item No	3357001	3357002	3357003

Technical data			
Diameter of support rollers	60 mm	60 mm	60 mm
Width of support rollers	360 mm	360 mm	360 mm
Static table load	500 kg	700 kg	700 kg
Dimensions			
Length x width	1'000 x 440 mm	2'000 x 440 mm	3'000 x 440 mm
Height	650 - 950 mm	650 - 950 mm	650 - 950 mm
Height H version	660 - 1'050 mm	660 - 1'050 mm	660 - 1'050 mm
Net weight	30 / 33 kg	58 / 61 kg	78 kg
Standard equipment	Fixing material for elongation		



Accessory	PVC rolls 3 pieces	Table extension MSR 1
Item No	3357609	3357004

Convincing arguments...



Frame

- Stable type
- Solid special profile

Load-bearing rollers

- Steel
- Ball bearings on both sides



Layer height

- Variably adjustable from
- 650 - 950 mm
- H type up to 1'050 mm



Accessories PVC rolls

- Additionally mountable
- Made of anti-skid PVC
- To avoid scratches
- Simply mount rolls into the existing mounting brackets
- In practical wall bracket

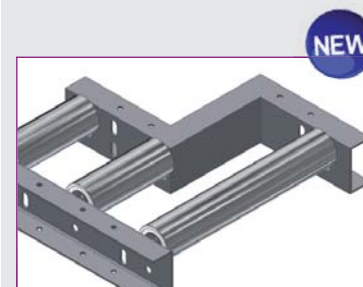


Table extension MSR 1

- Additionally mountable
- Can be mounted in both directions

Distance measuring system to be attached to the OPTIMUM material stand MSR for perfect distance measurement and exact positioning

Convincing arguments: quality, efficiency and price

- Magnetic measuring system with magnetic tape
- For recurring measuring tasks with high precision of 0.05 mm
- Automatic switching on of the display
- During longer standstills the measuring system switches off and keeps the last measurement saved
- Measuring accuracy: $\pm(0.025 + 0.02 \times \text{measuring length [m]})$
- Battery life of up to 10 years



- Display LCD
- Switching functions:
- Zeroing display
- Reset
- Direction indicator \pm
- Absolute measurement and chain measurement function
- Right end/left end stop



Fig.: Material stand MSR 4 with distance measuring system LMS 10

Model	LMS 10	LMS 20	LMS 30	LMS 40
Item No	3383851	3383852	3383853	3383854
Technical data				
Rail length	1'000 mm	2'000 mm	3'000 mm	4'000 mm
Travel	830 mm	1'830 mm	2'830 mm	3'830 mm

other lengths upon request

Convincing arguments...



Material stop

- For large diameters
- Stop for small pieces with elongation



Slide

- Easily moveable
- Precisely guided
- Replaceable durable dry bearing
- Easy installation by the client



Positioning slide

- Right end/left end stop
- Folding upwards

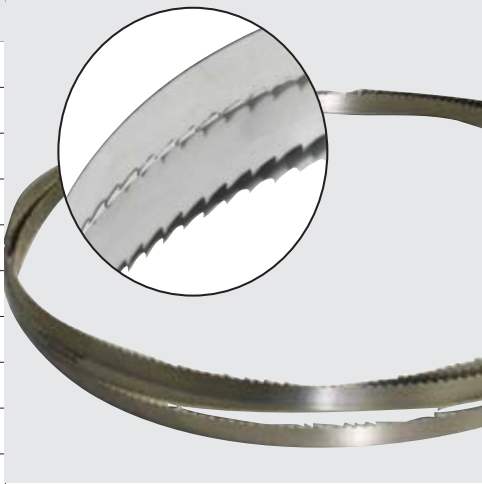


Linear guiding rails

- Lubricant-free
- Very smooth running
- Wear resistant
- Corrosion-resistant
- Little friction values
- High static bearing capacity

Bi metal saw belts

The feedstock is a two-component material (bi-metal) attained by electrode welding. The band which is manufactured from this material has a hard curable, hard-wearing high speed steel whereas the band body is manufactured from alloyed hard-torn and fatigue resistant quenched and tempered steel. The applications for materials which can be sawn range from non-ferrous materials up to materials which are difficult to machine.

Saw bands HSS bi-metal M 42				Saw bands suitable for:
Saw band size	No of teeth	Tooth angle	Item No	
1'300 x 12.7 x 0.5 mm	10 - 14 tpi	0°	3351509	
1'470 x 13 x 0.65 mm	10 - 14 tpi	0°	3351110	
1'638 x 13 x 0.65 mm	6 - 10 tpi	0°	3351512	
1'638 x 13 x 0.65 mm	10 - 14 tpi	0°	3351518	
1'735 x 13 x 0.9 mm	6 - 10 tpi	0°	3351522	
1'735 x 13 x 0.9 mm	10 - 14 tpi	0°	3351538	
2'362 x 19 x 0.9 mm	5 - 8 tpi	0°	3357522	
2'362 x 19 x 0.9 mm	6 - 10 tpi	0°	3357521	
2'080 x 20 x 0.9 mm	5 - 8 tpi	0°	3357503	
2'080 x 20 x 0.9 mm	6 - 10 tpi	0°	3357514	
2'480 x 27 x 0.9 mm	5 - 8 tpi	0°	3357511	
2'480 x 27 x 0.9 mm	6 - 10 tpi	0°	3357524	
2'750 x 27 x 0.9 mm	5 - 8 tpi	0°	3357751	
2'750 x 27 x 0.9 mm	6 - 10 tpi	0°	3357753	
2'925 x 27 x 0.9 mm	5 - 8 tpi	0°	3357541	
2'925 x 27 x 0.9 mm	6 - 10 tpi	0°	3357542	
2'480 x 27 x 0.9 mm	5 - 8 tpi	6°	3357512	<ul style="list-style-type: none"> • Construction steel • Deep-drawing steel • Machining steel • Quenched and tempered steels • Case hardening steels/ • Cast iron
2'362 x 19 x 0.9 mm	5 - 8 tpi	6°	3357516	
2'080 x 20 x 0.9 mm	5 - 8 tpi	6°	3357505	
2'925 x 27 x 0.9 mm	4 - 6 tpi	6°	3357540	
2'750 x 27 x 0.9 mm	5 - 8 tpi	10°	3357752	<ul style="list-style-type: none"> • Construction steel • Deep-drawing steel • Quenched and tempered steels • Case hardening steels/ • Corrosion- and acid-resistant steel
1'470 x 13 x 0.65 mm	6 tpi	10°	3351109	
1'638 x 13 x 0.65 mm	6 tpi	10°	3351511	
1'735 x 12.7 x 0.9 mm	6 tpi	10°	3351521	



Metal band saw

Regularly check:

- Function of the chip brush
- Function and concentration of the coolant
- Wear and parallelism of the saw band guidings
- Band tension
- Band speed



Coolant & Cutting fluid

- The coolant lubricates, cools down and transports the chips from the cutting channel. It is important:
- To use the recommended cutting liquid.
- To ensure that the cutting liquid is perfectly fed with the correct pressure.



Workpiece

- Make sure that the workpiece which needs to be machined is firmly fit in and can neither vibrate nor turn around.
- Do not use any damaged, twisted or heavily deformed workpieces.
- The cut is more accurate the nearer the saw band guideways are fixed on the workpiece.



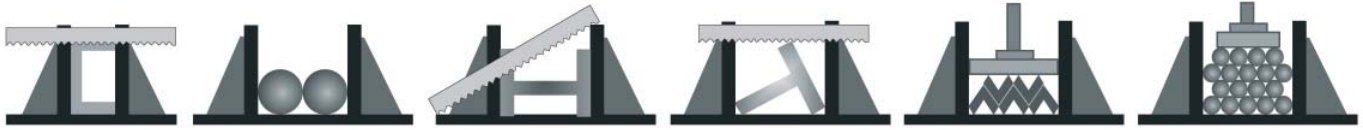
Optimum chip formation

- Very fine powdery chips show too little cutting pressure.
- Thick, heavily pressed chips turning blue indicate an overload of the saw band.
- Loosely rolled chips are an indicator for optimum cutting conditions.

General information about saw bands

Workpiece

The workpiece to be processed must be firmly clamped so that it can neither vibrate nor turn around. Do not use any damaged, twisted or heavily deformed workpieces. The cut is more accurate the nearer the saw band guideways are fixed on the workpiece.



Tooth pitch (toothing)

The tooth pitch describes the number of teeth on one inch (25.4 mm).

As general rule it applies:

The shorter the cutting length (e.g. profile) the finer is the selected toothing. The more the teeth cam in the material (e.g. solid) the rougher is the used toothing.

If the tooth pitch is too large, it will cause cut deviations since the chips clog the cutting catches and the saw band is forced to leave its cutting line. If the tooth pitch is too small, it will cause tooth brakes, since the cutting pressure on the individual tooth is becoming too large. At least 3 teeth should cam in, in order to attain an economic result.

Retracting saw bands

- If the saw bands are correctly retracted, a long durability is guaranteed.
- Sharp cutting edges with extremely small edge radii are the condition for high cutting capacity of the saw bands.
- In order to attain the optimum lifetime, we recommend to cam in the saw band accordingly
- Determine the correct cutting speed (m/min) and the feed (mm/min) depending on the material and the dimensions of your cutting material.
- It is important that the new saw band is only used with about 50% of the determined feed. Thus it is possible to avoid that the extremely sharp tooth edges are damaged by micro split-off at large chip thicknesses.
- At the beginning new saw bands might tend to vibrations and vibration noises. If this occurs, slightly reduce the cutting speed. In case of small workpiece dimensions about 300 - 500 cm² of the material to be cut should be machined when starting machining.
- If it is necessary to machine large workpiece, we recommend to start machining over a period of time of about 15 min. After starting machining, slowly increase the feed to the initially determined target value.

Materials	Cutting speed (M42)
Construction steel/Machining steel	80 - 90 m/min
Case hardening steels/quenched and tempered steels	45 - 75 m/min
Unalloyed tool steels/roller bearing steels	40 - 60 m/min
Alloyed tool steels/high-speed steels	30 - 40 m/min
Stainless steels	20 - 35 m/min
Heat resistant steels/high-temperature alloys	15 - 25 m/min

Optimum chip formation

- Sawdust is the best indicator for the correctly preset feed and saw band speed. Take a look at the produced chips and correctly adjust the feed.

Thin chips looking like powder

- Increase the feed or reduce the saw band speeds



Burnt, heavy chips

- Reduce the feed and/or the saw band speed



Rippled, silver and warm chips

- Optimum feed and saw band speed



Toothing when using high speed steel bi-metal bands

Standard toothing		Combined toothing		Sawing of tubes and profiles						
Profile-cross section	Number of teeth per inch	Profile-cross section	Number of teeth per inch	Diameter	Ø 40	Ø 80	Ø 100	Ø 150	Ø 200	Ø 300
				Wall thickness	Tooth pitch teeth (tpi)					
< 12 mm	14 tpi	< 25 mm	10 - 14 tpi	3 mm	8 - 12	8 - 12	8 - 12	8 - 12	6 - 10	6 - 10
12 - 30 mm	10 tpi	20 - 40 mm	8 - 12 tpi	8 mm	8 - 12	6 - 10	6 - 10	5 - 8	4 - 6	4 - 6
30 - 50 mm	8 tpi	25 - 70 mm	6 - 10 tpi	12 mm	6 - 10	5 - 8	5 - 8	4 - 6	4 - 6	4 - 6
50 - 80 mm	6 tpi	35 - 90 mm	5 - 8 tpi	15 mm	5 - 8	4 - 6	4 - 6	4 - 6	3 - 4	3 - 4
80 - 100 mm	4 tpi	50 - 100 mm	4 - 6 tpi	20 mm	-	4 - 6	4 - 6	4 - 5	4 - 5	4 - 5

Technical data of OPTI^{grind}® grinding machines for general orientation

	Motor power	Speed	Grinding capacity drill	Length	Width	Height	Weight	230 V available	400 V available
Drill bit grinder									
GQ-D13	80 W	4'200	Ø 3 mm - 13 mm	220	200	160	2.5	●	
DG 20	600 W	7.600	Ø 3 mm - 20 mm	490	270	235	26	●	
GH 10 T	180 W	5.000	Ø 2 mm - 13 mm	310	180	190	9.5	●	
GH 15 T	450 W	5.000	Ø 3 mm - 30 mm	450	240	270	33	●	
GH 20 T	370 W	5.000	Ø 1 mm - 16 mm	350	450	350	45		●

	Motor power	Speed	Dimension grinding belt	Dimension grinding disk	Dimension grinding wheel	Length	Width	Height	Weight	230 V available	400 V available
Grinding machines											
DBS 75	1.1 kW	1'410	75 x 1'180	150	-	665	560	405	62		●
GU 15	450 W	2'850	-	-	150 x 20 Ø16 mm	200	410	295	12	●	
GU 18	450 W	2'850	-	-	175 x 25 Ø32 mm	456	220	291	14	●	
GU 20	600 W	2'850	-	-	200 x 30 Ø32 mm	461	246	310	16	●	●
GU 25	1.5 kW	2'850	-	-	250 x 40 Ø32 mm	542	304	365	37		●
GU 20S	600 W	2'850	75 x 762		200 x 30 Ø 32 mm	461	246	310	16	●	●
GU 25S	1.5 kW	2'850	75 x 1'016		250 x 40 Ø 32 mm	542	304	365	39		●
GZ 20D/DD	750 W	2'800			200 x 25 Ø20 mm	550	290	360	25		●
GZ 25D/DD	1.1 kW	1'400			250 x 30 Ø25 mm	670	340	410	44.8		●
GZ 30D/DD	1.8 kW	1'400			300 x 35 Ø30 mm	810	420	560	64.5		●
GZ 20		2'800			200 x 25 Ø20 mm	650	300	360	26.5		●
GZ 25		1'400			250 x 30 Ø25 mm	850	340	410	40.7		●
TS 305	900 W	1'420	-	350	-	440	445	365	30	●	
BSM 75	3 kW	3'000	75 x 2'000	-	-	456	995	1025	102		●
BSM 150	4 kW	3'000	150 x 2'000	-	-	300	995	1025	125		●



GRINDING MACHINES
POLISHING MACHINES

The handy drill grinding machine - for easy re-sharpening of twist drills from 3 mm to 13 mm diameter



Convincing arguments: quality, efficiency and price

- Easy operation for precise and cost-efficient grinding of two-edged spiral drills
- Drill bit grinding without previous knowledge - neatly, rapidly and well
- Easy to transport
- Easy replacement of the grinding wheel
- Robust plastic housing with non-slip feet
- Diamond grinding stone with long durability for perfect grinding
- The edges of the drill bit are fixed in the collect chuck holder by means of the adjustment aid in a defined position and inserted in the grinding openings in a predetermined sequence in order to grind the edges with short rotating movements of the collet chuck holder.



Fig.: Optigrind GQ-D13

Three steps to a ground drill



Adjustment of twist drill

- Twist drill is aligned in the overhang and in the appropriate angle



Regrind twist drill

- by slight rotation from stop to stop



Reducing the chisel edge

- also by slight rotation from stop to stop

Model	GQ-D13
Item no.	3140020
Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	80 W
Technical data	
Speed infinitely variable	4'200 min ⁻¹
Grinding wheel	Ø 78 mm
Grinding capacity drill	Ø 3 mm - Ø 13 mm
Dimensions	
Length	220 mm
Width	200 mm
Height	160 mm
Net weight	2.5 kg
Standard equipment	
Diamond grinding wheel Collet attachment	

Accessories	Item No	
Spare diamond grinding wheel	3140021	

Drill bit grinder with infinitely variable speed adjustment and exact repeatability

Convincing arguments: quality, efficiency and price

- Solid cast iron base plate with high dead weight provides for low-vibration running
- Balanced rotor with quality ball bearings ensures long service life and very smooth running
- Magnetic switch with lockable emergency-stop push button
- Exact repeatability via prism-guided feed
- Infinitely variable speed regulation for different materials
- Angle setting for all spiral drill types is possible
- Prism fixture for exact centring of the workpiece
- Rubber cover cap to protect against dust and water
- Cooling water tray and cup wheel in the basic equipment as standard



DG20
in operation

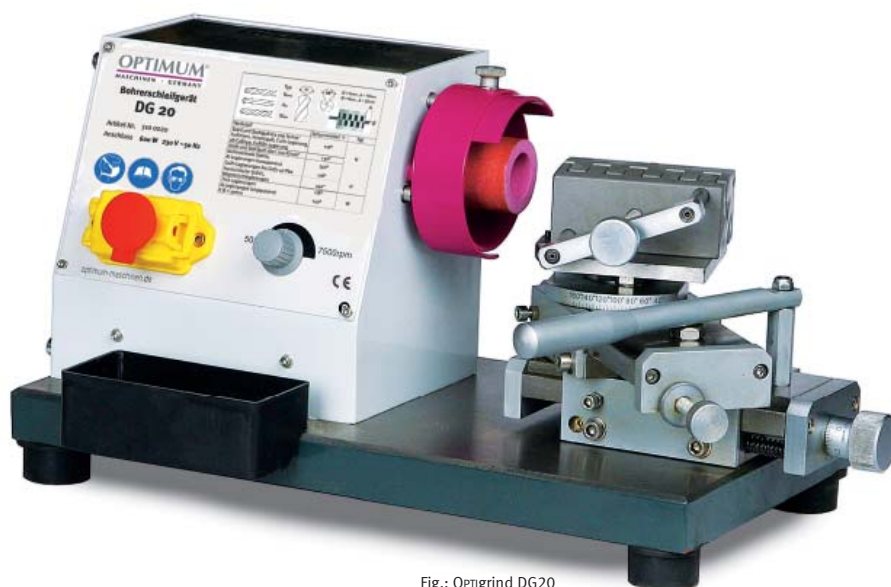
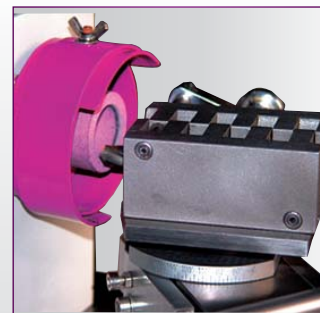


Fig.: OPTIgrind DG20

Convincing arguments...

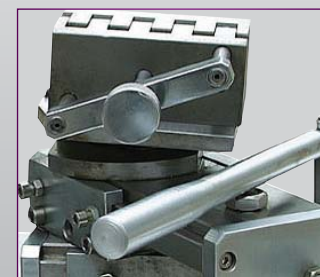


Large grinding area

- Twist drill from 3 to 20 mm

Cup wheel

- Self-dressing
- No pulling off required



Prism support

- Stable
- For exact centring and safe retaining

Accessories

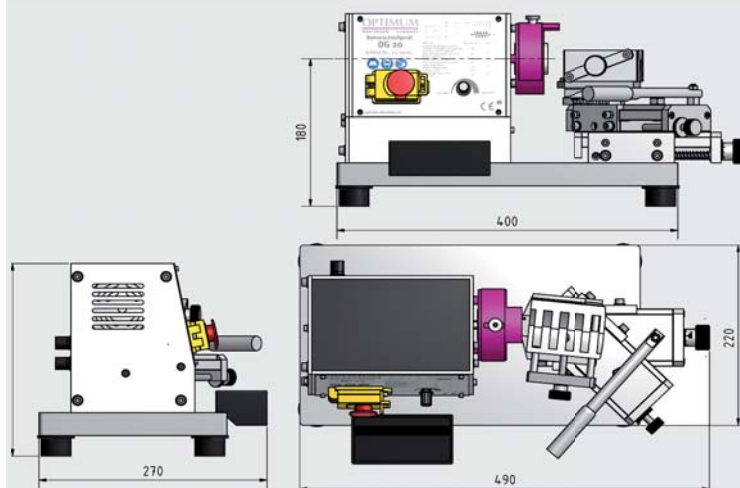
Accessories	Item No
Cup wheel red	3107120
Cup wheel green for hard metals	3107121



Model	DG 20
Item No	3100020

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	600 W
Technical data	
Speed infinitely variable	1'400 - 7'600 min ⁻¹
Grinding speed	16 m/s
Grinding capacity drill	Ø 3 mm - Ø 20 mm
Angle of the tip sharpening	90° - 150°
Cup wheel	
Outer Ø	40 mm
Inner Ø	26 mm
Thread Ø	M 10
Depth of the cup wheel	22 mm
Dimensions	
Length	490 mm
Width	270 mm
Height	235 mm
Net weight	26 kg
Standard equipment	
Cooling water tray Cup wheel	

Dimensions



The handy drill grinder - perfect to grind spiral drills made of HSS or hard metal

Convincing arguments: quality, efficiency and price

- Easy operation for precise and cost-efficient grinding of two-edged spiral drills
- Drill bit grinding without previous knowledge - neatly, rapidly and well
- Easy to transport
- Diamond grinding stone with long durability for perfect grinding
- Complete equipment with ER collet chucks in the interior of the machine
- The edges of the drill bit are fixed in the collet holder by means of the adjustment aid in a defined position and inserted in the grinding openings in a predetermined sequence in order to grind the edges with short rotating movements of the collet holder.



Fig.: Optigrind GH15T



Fig.: Optigrind GH10T

Model	GH10T	GH15 T
Item No	3100110	3100115
Machine data		
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	180 W	450 W
Technical data		
Speed infinitely variable	5'300 min ⁻¹	5'000 min ⁻¹
Angle of the tip sharpening	90° - 135°	90° - 145°
Grinding capacity drill	Ø 2 mm - Ø 13 mm	Ø 3 mm - Ø 30 mm
Dimensions		
Length	310mm	450 mm
Width	180 mm	240 mm
Height	190 mm	270 mm
Net weight	9.5 kg	33 kg

Drill bit



- with blunt cutting edges



- ground and pointed

Comprehensive scope of delivery with complete range of collets



GH 15T

- 6 pcs. Collets ER 20
Sizes Ø 3 - 8 mm
- 22 pcs. Collets ER 40
Sizes Ø 8 - 30 mm



GH 10T

- 11 pcs. Collets ER 20
Sizes Ø 2 - 13 mm

Accessories	Item No	
Spare diamond grinding wheel GH10T	3100126	
Spare diamond grinding wheel GH15T	3100127	

Versatilely usable grinding machine for burins and tools for different tool geometries

Convincing arguments: quality, efficiency and price

- Universally applicable by versatile slewing and setting options
- Lots of slewing and setting options to manufacture gravers (cylindrical, centric, conical)
- To grind stamps, twist drills, electrodes, lathe tools, centring tips, etc.
- High precision due to robust machine body and vibration-free driven precision grinding spindle
- Easy handling and operation
- Index head with 24 locking positions
- Including 5 pcs. of collets 5c
- Adjustable extractor device



Spare grinding wheel	Item No	€ plus
Corundum	3100128	27.00
Diamond	3100129	55.00



Model	GH20T
Item No	3100125
Machine data	
Electrical connection	400 V / 3 Ph ~50Hz
Motor power	370 W
Speeds	
Speed grinding wheel, diamond	5'000 min ⁻¹
Grinding speed	max. 35 m/s
Speed motor	2'750 min ⁻¹
Travels	
Travel tool holder	140 mm
Fine adjustment tool holder	18 mm
Fine adjustment length axis	6 mm
Adjustable angle	
Vertical / rear	0° - 40°
Horizontal / taper grinding	0° - 180°
Negative angle	0° - 52°
Locking position turning angle	15° 180°
Collet attachment	
Clamping range	Ø 1 - 16 mm
Collet type	385E (5C) , DIN 6341
Dimensions	
Length x width x height	350 x 450 x 350 mm
Net weight	45 kg



GH 20T in use

Standard equipment



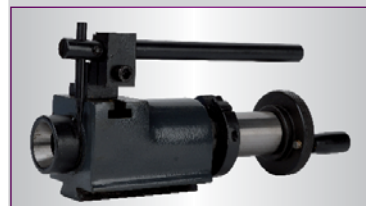
- Collets type 385E D=28mm, L = 89mm ; 20° DIN 6341
- Sizes 4 / 6 / 8 / 10 / 12 mm



- Corundum cup wheel Ø 100 x 50 x Ø 20 mm
- Diamond cup wheel Ø 100 x 50 x Ø 20 mm (mounted on the machine when delivered)



- Device to regrind turning tools



- Device to regrind end mills



- Device to regrind twist drills



- Operating tool

Band grinding machines of heavy and robust industrial type for rough, fine and form grinding of different materials for the continuous use

Convincing arguments: quality, efficiency and price

- Time-saving deburring of edges/cleaning of welding seams
- Solid and vibration-free construction
- Powerful motor
- Grinding table inclinable by 15° - 30°
- Continuously adjustable limit stop at the top allows rapid and comfortable start grinding of workpieces
- Large surface grinding surface, adjustable limit stops for universal use
- Operating tool in the handy holder
- Additional safety equipment



Rollers

- Rubberised
- Quiet running
- No slipping of the band

Spark protection



High belt running speed

- 33 m/sec.
- Thus quick material removal

Workpiece support

- Adjustable inclination
- Allows grinding in a suitable angle



Emergency stop push button

- Switch plug combination 400V
- Hexagon socket key to clamp the grinding belt ready-to-hand

Band run setting

- Without tools - only adjustable by means of the knurled screw



Plane grinding surface

- End-to-end and opened to the rear
- Also best suitable to machine longer workpieces

Suction nozzle

- Front and rear
- To be connected to a suction unit



Fig.: OPTi grind BSM 150

Fig.: OPTi grind BSM 75
with optional workpiece support

Technical data and dimensions

Model	BSM 75	BSM 150
Item No	3321075	3321150
Features		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	3 kW	4 kW
Technical data		
Speed	3'000 min ⁻¹	3'000 min ⁻¹
High belt running speed	33 m/sec.	33 m/sec.
Grinding belt	Ø 32 mm	Ø 32 mm
Dimension grinding belt	75 x 2'000 mm	150 x 2'000 mm
Dimensions		
Nominal size suction nozzle inside	Ø 57 mm	Ø 57 mm
Nominal size suction nozzle outside	Ø 60 mm	Ø 60 mm
Dimensions length x width	500 x 995 mm	575 x 995 mm
Height: Pivot bearing bottom	1'045 mm	1'045 mm
Height: Pivot bearing top	1'135 mm	1'135 mm
Net weight	102 kg	125 kg
Standard equipment	Grinding belts 60 Hexagon wrench	

Workpiece support	Item No	
• Continuously adjustable; allows rapid start grinding of the workpieces		
For BSM 75	3357881	
For BSM 150	3357891	

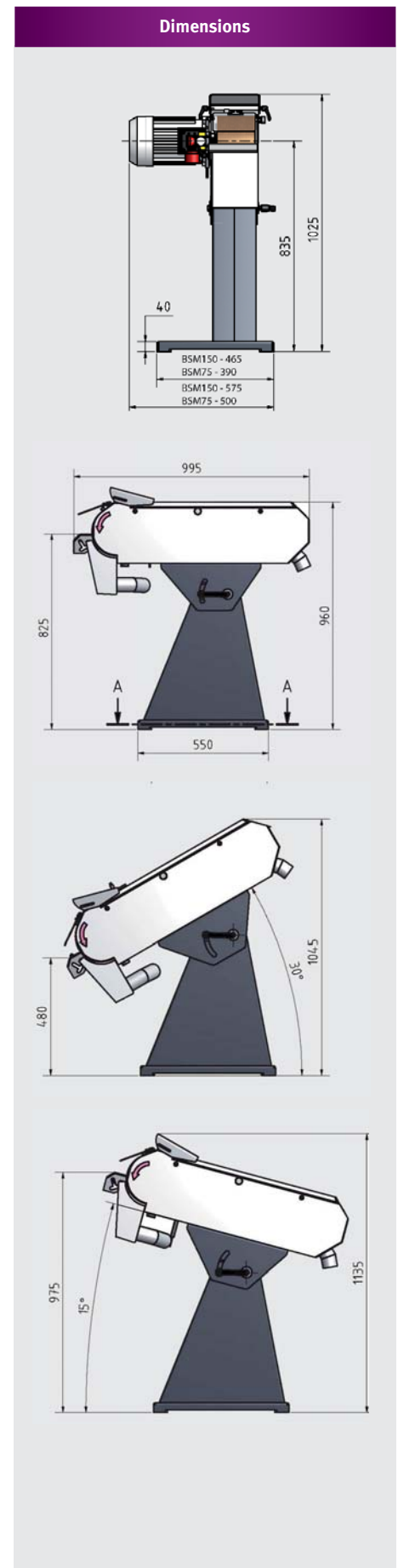


Grinding belts BSM 75*	Item No	
Grain 40	3357642	
Grain 60	3357644	
Grain 80	3357646	
Grain 120	3357648	

Grinding belts BSM 150*	Item No	
Grain 40	3357672	
Grain 60	3357674	
Grain 80	3357676	
Grain 120	3357678	



* Packing and price unit 5 pcs



Premium bench grinders.

GZ - DD models with substructure and integrated suction system



Convincing arguments: quality, efficiency and price

• 10 Year OPTIMUM-warranty*

- Heavy-duty industrial grinder absorbed due to high weight the already low vibration
- Also suitable for very strong shear forces on the grinding wheels
- Maintenance-free, long lasting induction motor with quiet operation
- Double-sided machined grinding wheel clamping flanges
- Housing made of cast iron
- Spark protection
- Solid, adjustable workpiece support

GZ-DD model:

- Integrated suction system with a fan made of aluminium and self-cleaning vanes
- Dust bag made of self-extinguishing fabric
- Robust substructure with a water bowl



Fig.: GZ 25DD with optional grinding wheel

BASE (without suction)	
GZ 20D	3091120
• L x W x H: 400 x 370 x 760 mm	
• Weight 33 kg	
GZ 25D	3091122
• L x W x H: 460 x 430 x 760 mm	
• Weight 40 kg	
GZ 30D	3091124
• L x W x H: 460 x 430 x 760 mm	
Weight 52 kg	

GRINDING WHEEL	
Corundum grinding wheel	
Hardness M - white	
Made in Germany	
GRINDING WHEEL GZ 20D/DD	
K 36	3098021
K 60	3098023
K 80	3098025
GRINDING WHEEL GZ 25D/DD	
K 36	3098031
K 60	3098033
K 80	3098035
GRINDING WHEEL GZ 30D/DD	
K 36	3098041
K 60	3098043
K 80	3098045

ELECTRONICAL BRAKE	
	3091099
• Controlled stop	
• Including factory assembly	



„Guarantee provisions“ on page 219

Model	GZ 20D	GZ 25D	GZ 30D
Item no.	3091010	3091015	3091020
Model	GZ 20DD	GZ 25DD	GZ 30DD
Item no.	3091040	3091045	3091050
Machine data			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	750 W	1.1 kW	1.8 kW
Grinding wheels			
Dimensions	Ø 200 x 25 Ø 20 mm	Ø 250 x 30 Ø 25 mm	Ø 300 x 35 Ø 30 mm
Speeds	2'800 min ⁻¹	1'400 min ⁻¹	1'400 min ⁻¹
Dimensions			
L x W x H GZ types	550 x 290 x 360 mm	670 x 340 x 410 mm	810 x 420 x 560 mm
L x W x H GZ-DD types	800 x 710 x 1'300 mm	800 x 710 x 1'300 mm	800 x 1'200 x 1'300 mm
Net weight GZ types	25 kg	44.8 kg	64.5 kg
Net weight GZ-DD types	63.7 kg	91 kg	124 kg

Premium combined grinding machines for workshops, steel construction companies

Convincing arguments: quality, efficiency and price

• 10 Year OPTIMUM-warranty*

- Heavy-duty industrial combi grinder absorbed due to high weight the already low vibration
- Also suitable for very strong shear forces on the grinding wheel and the brush
- Maintenance-free, long lasting induction motor with quiet operation
- Housing made of cast iron
- Solid, adjustable workpiece support

PREMIUM
line



Fig.: GZ 20C with optional grinding wheel and brush

- Multi-purpose wire brush made of high strength steel wire in the accessory available in different strengths
- Pivoting brush housing with extraction nozzle to connect an extraction device

"Warranty terms" on page 219

Model	GZ20C	GZ25C
Item no.	3091070	3091075
Machine data		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	750 W	1.1 kW
Grinding wheels		
Dimensions	Ø 200 x 25 Ø 20 mm	Ø 250 x 30 Ø 25 mm
Speeds	2'800 min ⁻¹	1'400 min ⁻¹
Dimensions		
Length x width x height	650 x 300 x 360 mm	850 x 340 x 410 mm
Net weight	26.5 kg	40.7 kg

NEW

BASE (without suction)

GZ 20C	3091120
• L x W x H: 400 x 370 x 760 mm	
• Weight 33 kg	
GZ 25C	3091122
• L x W x H: 460 x 430 x 760 mm	
• Weight 40 kg	



GRINDING WHEEL

- Corundum grinding wheel
- Hardness M - white
- Made in Germany

GRINDING WHEEL GZ 20C

K 36	3098021
K 60	3098023
K 80	3098025

GRINDING WHEEL GZ 25C

K 36	3098031
K 60	3098033
K 80	3098035

CIRCULAR BRUSH

- High-tensile steel wire
- Made in Germany

GZ 20C

0.35 mm	3098081
0.5 mm	3098082

GZ 25C

0.3 mm	3098086
0.5 mm	3098087

ELECTRONIC BRAKE

- | |
|---------|
| 3091099 |
|---------|
- Controlled stop
 - Including factory assembly



Preamble

Drilling

Turning

Milling

Sawing

Grinding

Polishing

Lamps

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Bench grinder made by OPTIMUM - a quality product for crafts and industry



Convincing arguments: quality, efficiency and price

- Heavy long-life industrial type with maintenance-free motor for permanent use
- Housing made of aluminium continuous casting
- Balanced rotor with quality ball bearings ensures long service life and very smooth running
- Spark protection on each grinding wheel reduces flying sparks
- Solid, adjustable workpiece support
- Inspection glasses made of break-proof material
- Vibration-absorbing rubber feet
- Two universal corundum grinding wheels



Grinding wheels

Regular corundum rough K 36

Ø 150 x 20 Ø 16 mm	3107150
Ø 175 x 25 Ø 32 mm	3107180
Ø 200 x 30 Ø 32 mm	3107210
Ø 250 x 40 Ø 32 mm	3107250
Ø 300 x 50 Ø 75 mm	3107270

Grinding wheels

Regular corundum fine K 80

Ø 150 x 20 Ø 16 mm	3107155
Ø 175 x 25 Ø 32 mm	3107185
Ø 200 x 30 Ø 32 mm	3107215
Ø 250 x 40 Ø 32 mm	3107255
Ø 300 x 50 Ø 75 mm	3107275

Grinding tool SL



SL-1 for GU 20	3107010
SL-2 for GU 25	3107011

available from July

Model	GU 15	GU 18	GU 20	GU 25
Item No	3101505	3101510	3101515 (230 V)	-
Item No	-	-	3101520 (400 V)	3101525
Machine data				
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V or 400V	400 V / 3 Ph ~50 Hz
Motor power	450 W	450 W	600 W	1.5 kW
Grinding wheels				
Dimensions	Ø 150 x 20 Ø 16 mm	Ø 175 x 25 Ø 32 mm	Ø 200 x 30 Ø 32 mm	Ø 250 x 40 Ø 32 mm
Speeds	2'850 min ⁻¹	2'850 min ⁻¹	2'850 min ⁻¹	2'850 min ⁻¹
Dimensions				
Length x width x height	465 x 316 x 302 mm	456 x 316 x 302 mm	510 x 354 x 332 mm	661 x 391 x 382 mm
Net weight	10,7 kg	12,3 kg	18,5 kg	32,5 kg
Equipment				
	1 grinding wheel regular corundum rough K 36 and one fine K80			

Universal grinding machines with grinding tool made by OPTIMUM speak for functionality

Convincing arguments: quality, efficiency and price

- Robust and stable universal grinders with sanding belt and grinding wheel or a variety of materials
- Heavy long-life industrial type with maintenance- free motor for permanent use
- Heavy type of aluminium continuous casting
- Large, heavy fixing flanges and thus high true running accuracy of the discs
- Graphite support avoiding friction and heat
- Limit stop at the top allows rapid and comfortable start grinding of the workpieces
- Belt running setting without tools - simply adjustable with a knurled screw
- With standard Suction nozzle on grinding wheel and grinding tool, for connected to a suction unit

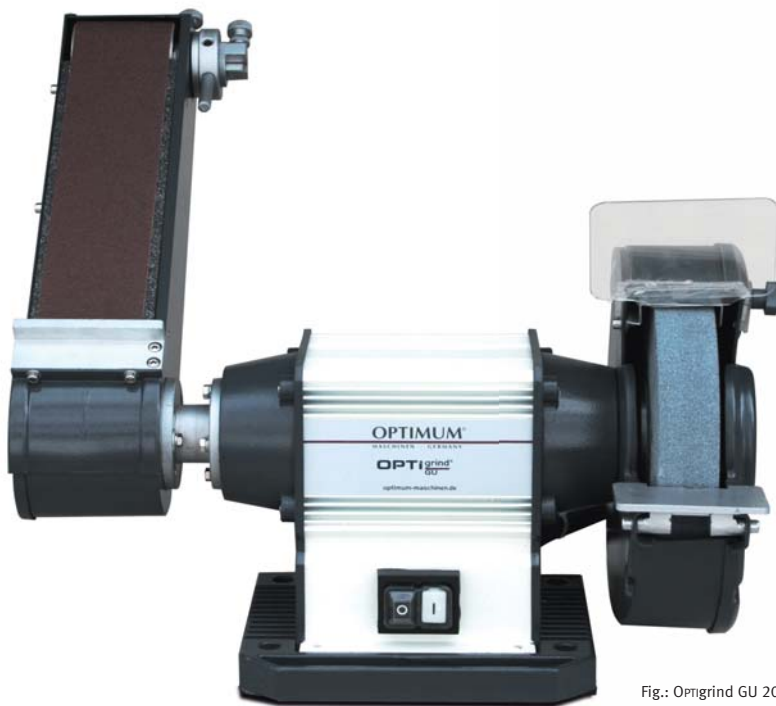


Fig.: Optigrind GU 20S

available from July

Model	GU 20S	GU 25S
Item No	3101570 (230 V)	-
Item No	3101575 (400 V)	310 1580

Features		
Electrical connection	230 V/1 Ph or 400V/3Ph	400 V / 3 Ph ~50 Hz
Motor power	600 W	1.5 KW
Grinding wheels		
Grinding wheel size	Ø 200 x 30 x Ø 32 mm	Ø 250 x 40 x Ø 32 mm
Grinding tool		
Grinding belt length x width	75 x 762 mm	75 x 1'016 mm
Slewing range for grinding tool	90°	90°
Nominal size suction nozzle	Ø 32 mm	Ø 32 mm
Support plate	87 x 180 mm	87 x 305 mm
Speed	2'850 min. ⁻¹	2'850 min. ⁻¹
Dimensions L x W x H:	665 x 577 x 382 mm	665 x 577 x 382 mm
Net weight	20,7 kg	31,5 kg
Standard equipment	Grinding wheel regular corundum Grinding belt K80	



Wall unit	3107050
• for GU20 - GU 25	
• Cooling water tray	
• L x W x H: 332x 300 x 230 mm	



Machine bases	
SM	3107100
• for GU20 - GU 25	
• L x W x H: 320 x 270 x 820 mm	



SSM	3107101
• for GU20 - GU 25	
• Shelf and cooling water tray	
• L x W x H: 345 x 300 x 785 mm	



Grinding belt for SL-1/GU 20S (75 x 762 mm)		
Grain 40	3357612	
Grain 60	3357614	
Grain 80	3357616	
Grain 120	3357618	

Grinding belt for SL-1/GU 25S (75 x 1016 mm)		
Grain 40	3357682	
Grain 60	3357684	
Grain 80	3357686	
Grain 120	3357688	

Preamble

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Disc wheel grinder for surface treatment of metals

Convincing arguments: quality, efficiency and price

- Versatile fields of application
- For rough, fine and form grinding
- Solid and stable machine body
- Balanced aluminium disc plate for smooth running
- Powerful motor
- A glued-on grinding disk is included in the original equipment



Fig.: OPTi grind TS 305

Convincing arguments...



- Serial suction nozzle with two diameters to be connected to a suction unit
- Nominal sizes outside $\pm 30/38$ mm



- Mitre gauge as standard slewable to $\pm 60^\circ$
- Grinding table inclinable to $\pm 45^\circ$



- Velcro supports included in the accessory and grinding wheels of very good adhesion can be easily replaced

Model	TS 305
Item No	3310305

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	900 W
General information	
Grinding disk diameter	305 mm
Speed	1'420 min ⁻¹
Table support	155 x 440 mm
Adjusting the angular stop	$\pm 60^\circ$
Grinding table (inclinable)	$\pm 45^\circ$
Dimensions	
Length x width x height	440 x 445 x 365 mm
Net weight	30 kg
Standard equipment	
	Adjustable angular stop
	Grinding wheel glued on grinding disk

Velcro support



Pack of 5 pieces

Accessories	Item No	
Velcro support	3357801	
Grinding wheels - Velcro*		
Grain 40	3357854	
Grain 60	3357856	
Grain 80	3357858	
Grain 100	3357860	
Grain 120	3357862	
Grain 150	3357865	

* Packing and price unit 5 pcs.

Universally usable belt and disc grinding machine with slewable grinding arm to deburr and to grind surfaces and contours

Convincing arguments: quality, efficiency and price

- Manually adjustable grinding belt tension
- Grinding belt easily replaceable
- Fine adjustment for parallel belt running
- Slewable grinding table adjustable via clamping lever
- Easy-to-operate safety switch according to IP 54 with lockable emergency stop push button
- Powerful motor
- With suction nozzles as standard
- Grinding wheels with Velcro support have very good adhesion and can be easily replaced



Fig.: Opti grind DBS 75

Model	DBS 75
Item No	3311075
Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.1 kW
Speed	1'410 min ⁻¹
Belt running speed	11 m/sec.
Grinding belt	
Dimension grinding belt	75 x 1'180 mm
Grinding disc	
Dimension grinding disk	Ø 150 mm
Dimensions	
Nominal size suction nozzle inside	Ø 47 mm
Nominal size suction nozzle outside	Ø 50 mm
Support plate	85 x 215 mm
Swivel range belt grinding table	90°
Length x width x height	665 x 560 x 405 (765) mm
Net weight	62 kg
Standard equipment	
	Grinding belts 60
	Grinding disc 60

Grinding belts*

Size 75 x 1'180 mm

Grain 40	3357622	
Grain 60	3357624	
Grain 80	3357626	
Grain 120	3357628	



Grinding disc*

Ø 150 mm

Grain 40	3357832	
Grain 60	3357834	
Grain 80	3357836	
Grain 120	3357838	

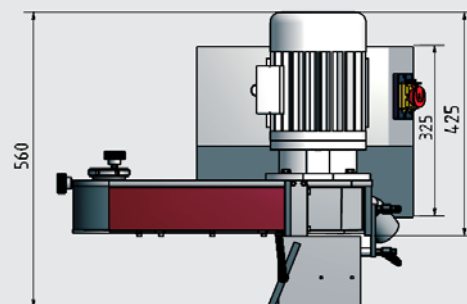
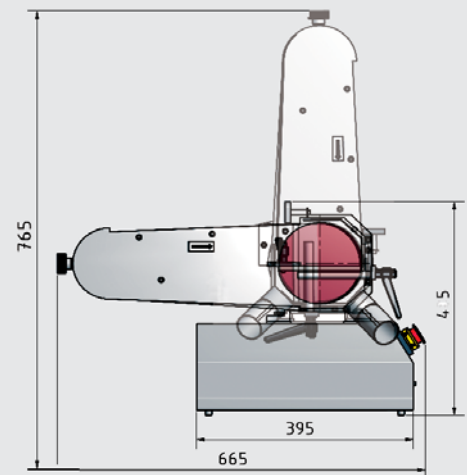


Velcro cup 3357802

for grinding disk

* Packing and price unit 5 pcs.

Dimensions



Polishing machines for the finest surface treatment of metal workpieces

Convincing arguments: quality, efficiency and price

- Heavy, long-life industrial type with maintenance-free motor
- Housing made of aluminium continuous casting
- Balanced rotor with quality ball bearings ensures long service life and very smooth running
- Vibration-absorbing rubber feet
- Two wide polishing wheels

Balanced rotor

- Long service life
- High smooth running
- Quality ball bearing

Standard equipment

- Polishing wheel smooth
- Polishing wheel hard



Fig.: GU 20P

Model	GU 20P	GU 25P
Item No (230 V)	3101540	-
Item No (400 V)	3101545	3101550

Machine data		
Electrical connection	230 V/1 Ph or 400V/3Ph	400 V / 3 Ph ~50 Hz
Motor power	600 W	1,5 kW
Technical data		
Speed	2'850 min ⁻¹	2'850 min ⁻¹
Dim. polishing wheel	Ø 200 x 20 x Ø 16 mm	Ø 250 x 25 x Ø 20 mm
Dimensions		
Length	591 mm	591 mm
Width	230 mm	326 mm
Height	292 mm	280 mm
Weight	10,6 kg	17,4 kg
Standard equipment		
	Polishing wheel smooth Polishing wheel hard	

Wall unit	3107050
-----------	---------

- Cooling water tray
- Dimensions L x W x H: 332 x 300 x 230 mm



Machine substructure	3107100
----------------------	---------

- Dimensions L x W x H: 320 x 270 x 820 mm



Machine substructure SSM	3107101
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- Shelf and cooling water tray
- Dimensions L x W x H: 345 x 300 x 785 mm



Polishing wheels hard

Ø 200 x 20 Ø 16 mm	3107321
Ø 250 x 25 Ø 20 mm	3107331



Polishing wheel smooth

Ø 200 x 20 Ø 16 mm	3107320
Ø 250 x 25 Ø 20 mm	3107330



Folding machine FP 30 - Universally applicable

Convincing arguments: quality, efficiency and price

- Folding machine FP 30 to bend and fold steel sheets
- Removable bending jaw segments
- Convenient slewing movement of the bending jaw by means of a lever hold
- High quality bending jaw
- To be used on a vice



- Bending segment pieces 150 mm / 75 mm / 50 mm and 25 mm extractable

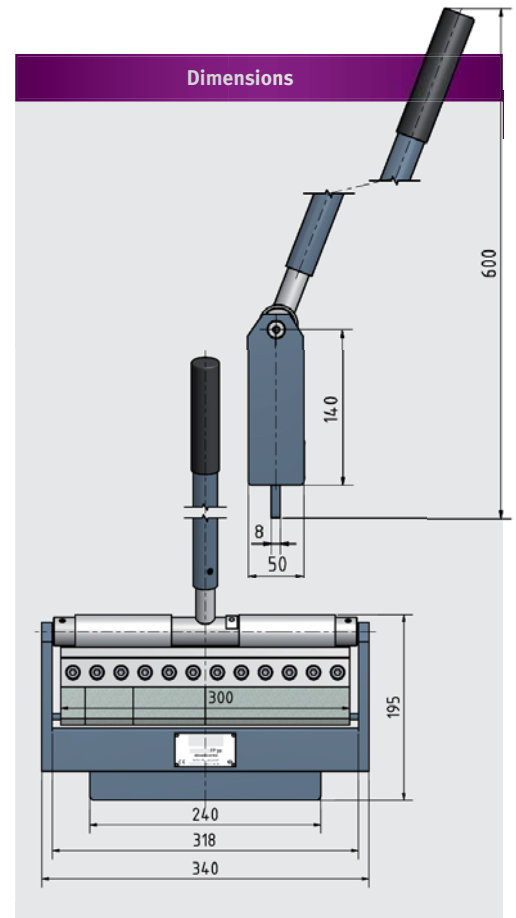
Fig.: Folding machine FP 30

Model	FP 30
Item No	3244028

Features	
Material width max.	320 mm
Sheet thickness max.	2.5 mm

Folding capacity max. at 90°

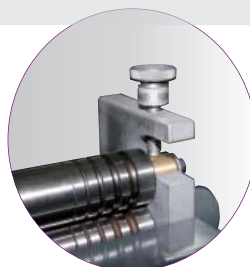
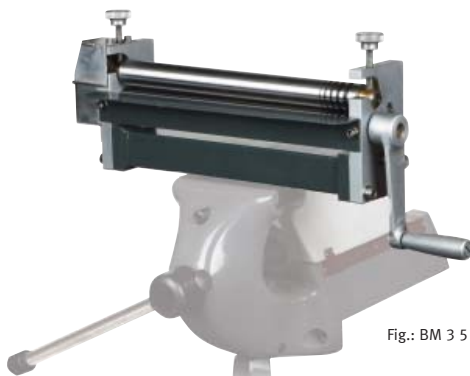
Aluminium/Copper	300 x 2 mm
Steel sheet	300 x 1 mm
Net weight	10 kg



Three cylinder round bending machine BM 3 - Universally applicable

Convincing arguments: quality, efficiency and price

- Bending and rolling of wires, tubes and steel sheets
- Ground bending rollers
- Lateral steel jaws running on bearings (self-lubricating)
- Two removable unwinding cylinders
- Separate setting options for material thickness and rolling radius
- To be used on a vice
- Stable support surface



- Wire insertion grooves Ø 1 - 2 - 3 - 4 - 5 mm

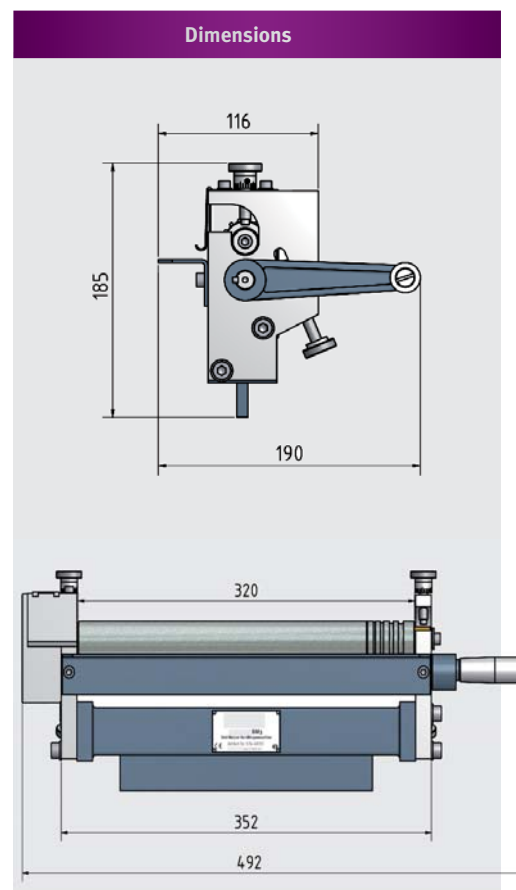
Fig.: BM 3 5

Model	BM 3
Item No	3244030

Features	
Material width max.	310 mm
Bending Ø (min.)	35 mm
Bending Ø max.	unlimited
Net weight	10 kg

Sheeting thickness max.

Steel sheet metal St. 37	1 mm
Stainless steel	1 mm
Aluminium/Copper	2 mm
Brass	1 mm
Gold/Silver/Tin plate	2 mm
Small widths	3 mm
Round material	1 - 5 mm
Unwinding cylinders	Ø 30 mm



Steel sheet processing machine 3 in 1. Round bending, folding and cutting. Perfect for the demanding user

Convincing arguments: quality, efficiency and price

- Modern structural shape of stable steel structure
- High design flexibility due to segmented bending rail
- Segments removable from the folding jaw
- Operation via two laterally placed levers
- Long support surface
- Extractable support arm for safe positioning of large format steel sheets
- Scissor table with embedded measuring tapes and right-angled stop on both sides
- Easy to adjust top -, rear and bottom cylinder
- Large, adjustable and easy to operate lever arms
- Extractable rear stop and front material support for safe positioning



Fig.: SAR 1000

Round bending

- Adjusting screws for the material thickness with scaling
- Ground bending rollers with wire insertion grooves on the bottom and front cylinder



Folding

- High quality folding jaws
- Holding-down device with spring
- Folding machine subdivided in segments
- Segments removable from the folding jaw 40 mm/ 50 mm/65 mm/100 mm/180 mm/255 mm/ 380 mm for folding of cartridges


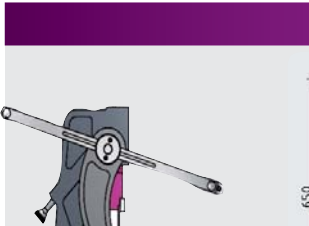


Cutting

- Neat and burr-free cutting by means of top and bottom knife made of quality steel



Model	SAR 1000	Accessories	Substructure
Item No	3242100	Item No	3242107

Technical data		Dimensions	
Material width max.	700 mm	L x W x H:	1'185 x 500 x 700 mm
Round bending			
Round bending (min.)	Ø 48 mm		
Round bending max.	Ø unlimited		
Steel sheet metal (S235JR)	up to 1 mm		
Stainless steel	up to 0.5 mm		
Aluminium/Copper	up to 1.5 mm		
Brass	up to 1 mm		
Gold/Silver/Tin plate	up to 1.5 mm		
Unwinding cylinders Ø	48 mm		
Folding			
Sheet thickness max.	2.5 mm*		
Aluminium/Copper	up to 1.5 mm		
Steel sheet metal (S235JR)	up to 1 mm		
Number of segments	7		
Cutting			
Cutting capacity max.	up to 1 mm		
Net weight	290 kg		

Standard equipment
Adjustment rear stop
Front material support
Tool

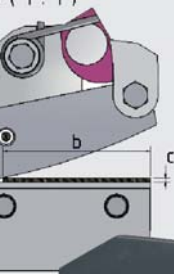
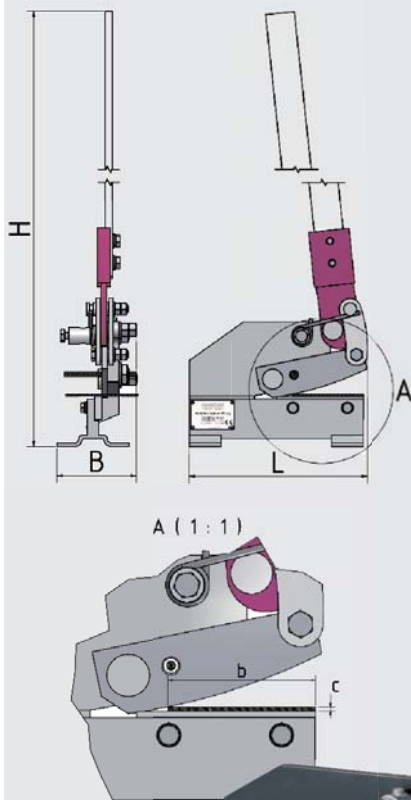
*cannot be realized over the whole processing width

Lever sheet shears - a quality product for crafts

Convincing arguments: quality, efficiency and price

- To cut metal plates, steel sheets, round and flat steels
- Stable shears body
- Ergonomic good cutting geometry
- Easy, effortless cutting over the whole cutting length
- Robust handle ensures a good grip
- High-quality blades
- The workpiece which needs to be cut is held in the horizontal position by the holding down clamp
- Safe stand and holes for stationary fixing

Dimensions



A (1:1)

b

c

Fig.: Ps 125

Fig.: Ps 300

Convincing arguments...



- High quality knife with long service life
- Holding down clamp avoiding steel sheet torsion when cutting
- Powerful spring avoids automatic closing of the shears



Spare blade	Item No	
• 2 pieces		
for PS 125	3241025	
for PS 150	3241026	
for PS 300	3241028	

Model	Ps 125	Ps 150	Ps 300
Item No	3241006	3241007	3241012
Cutting capacity			
Cutting length max. (b)	95 mm	115 mm	235 mm
Steel sheet thickness max. (c)	3 mm*	4 mm*	4 mm*
Dimensions L x W x H	245 x 110 x 935 mm	325 x 120 x 960 mm	490 x 155 x 1'340 mm
Net weight	8.7 kg	10.7 kg	23 kg

*not on the total length - material steel (S235J)R, Stainless steel up to 1 mm

- For pressing-in and grouting of bearings, arbors, connectors, spindles, pins
- Solid construction
- Body made of high quality grey cast iron
- Variably adjustable lever rod
- Quadruple positionable base plate
- To be fixed on a workbench
- 4 different types



Fig.: DDP20

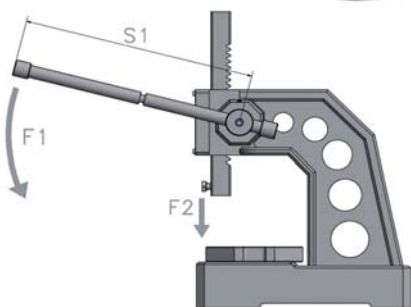
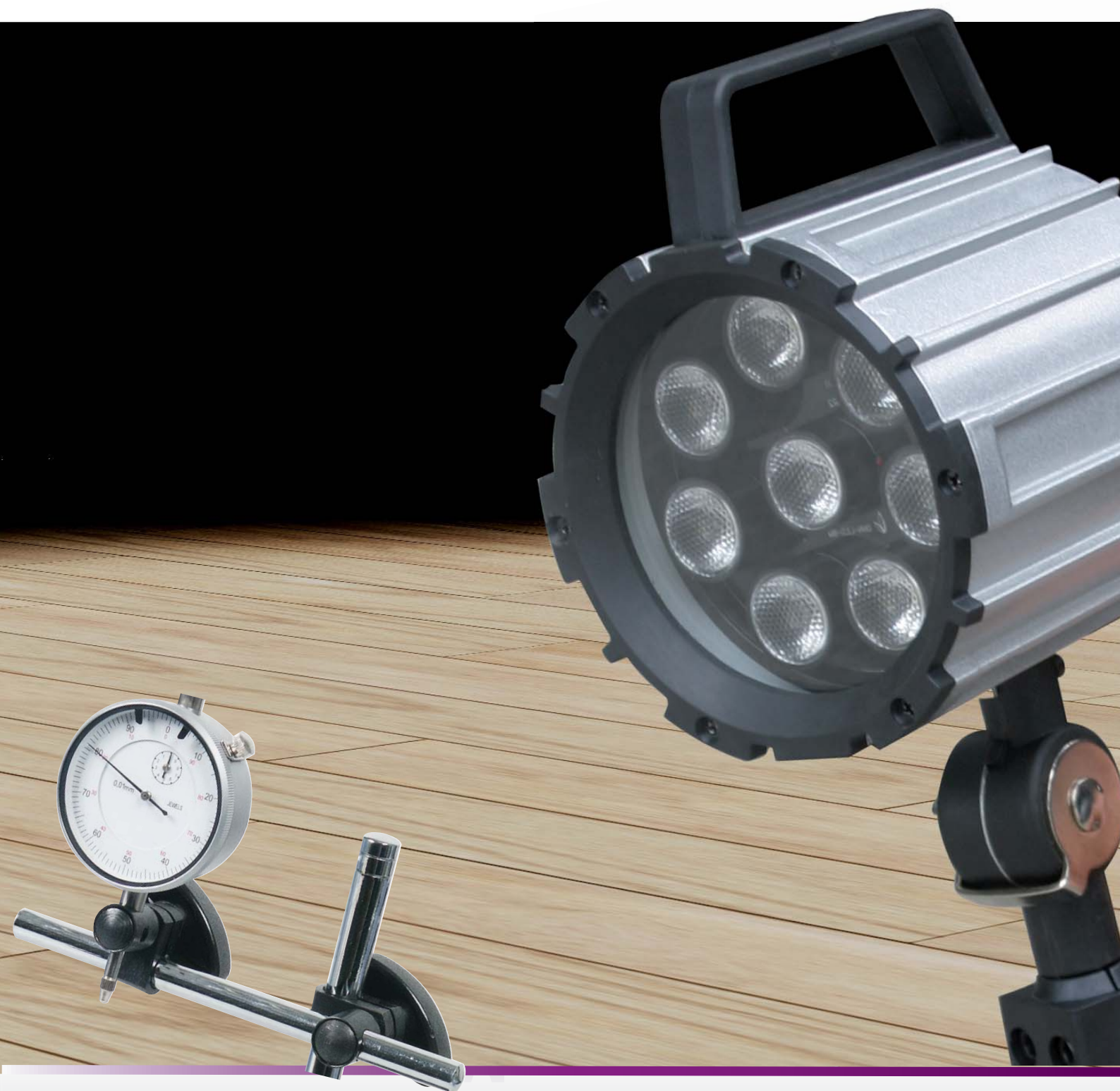


Fig.: DDP20

Model	DDP 10	DDP 20	DDP 30	DDP 50
Item No	3359011	3359012	3359013	3359015
Technical data				
Height of workpiece max.	123 mm	195 mm	310mm	459 mm
Throat depth	95 mm	120 mm	150 mm	226 mm
Dimensions				
Length x Width x Height max	270 x 180 x 410 mm	430 x 235 x 680mm	455 x 260 x 850 mm	650 x 350 x 785 mm
Ram dimensions (L x W x H)	25 x 25 x 240 mm	32 x 32 x 345 mm	38 x 38 x 455 mm	50 x 50 x 647 mm
Weight	14 kg	33 kg	55 kg	140 kg
Standard equipment	Quadruple positionable plate			

Force effect		DDP 10		DDP 20		DDP 30		DDP 50	
Manual force	F1	392.4 N	589 N	392.4 N	589 N	392.4 N	589 N	392.4 N	589 N
		(40 kg)	(60 Kg)	(40 kg)	(60 Kg)	(40 kg)	(60 Kg)	(40 kg)	(60 Kg)
Length of lever arm	S1	340 mm		450 mm		600 mm		850 mm	
Force effect	F2	7'480 N	11'220 N	8'364 N	12'555 N	7'705 N	11'566 N	10'251 N	15'372 N
		(763 Kg)	(1'143 kg)	(853 kg)	(1'280 kg)	(786 kg)	(1'179 kg)	(1'045 kg)	(1'567 kg)



MEASURING TOOLS MACHINE LAMPS

Machine lamps

Robust machine lamps for the individual use

Model	LED machine lamp AL 12
Item No	3351131

Energy-saving and durable machine luminaire

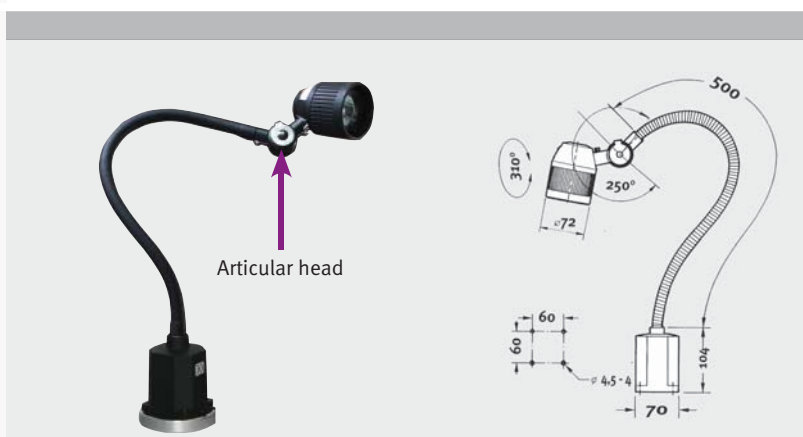
- Optimum mobility of the articulated arm
- High positioning stability
- Jacketed stable flexible hose arm 400 mm
- Magnetic base and assembly plate
- Shield diameter Ø 35 mm
- Intensity of illumination 250 - 330 lux
- Integrated transformer
- Colour black
- 1.95 W / 230 V-connection



Model	Halogen- machine lamp AL 25
Item No	3351145

Brilliant light

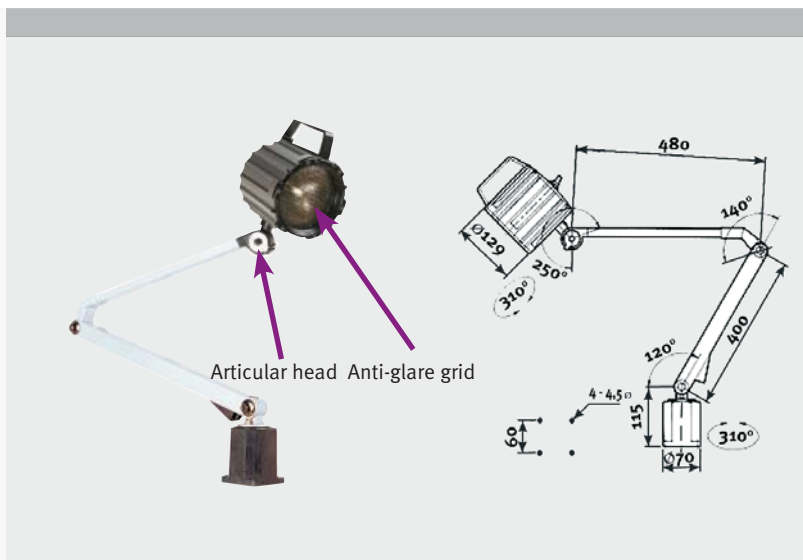
- Coated articulated arm for optimum mobility
- High positioning stability
- Articular head
- Impact-proof, easy-to-clean plastic housing
- Magnetic base and assembly plate
- Arm length 500 mm
- Protection class IP20
- Integrated transformer
- Colour black
- 20 W / 230 V-connection



Model	Halogen- machine lamp AL 35
Item No	3351152

concentrated halogen light

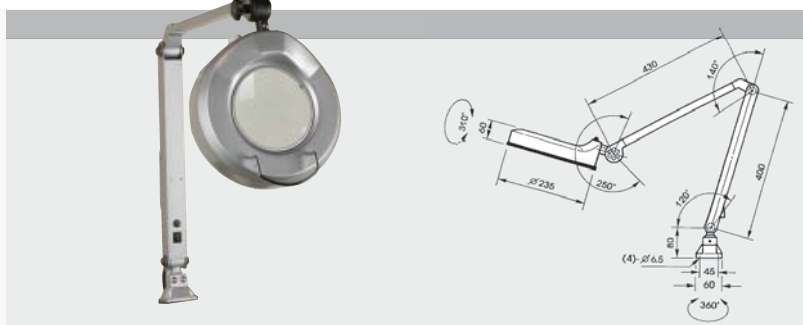
- Anodized, semi-wide radiating round reflector
- Assembly plate
- Ribbed stable aluminium luminaire head to protect against water, oil, dust and impacts
- Convenient low outside temperature
- Articular head
- Articulated arm length 880 mm
- Handle on the luminaire head
- Anti-glare grid for glare-free working
- Protection class IP65 (lamp head)
- 12 V illuminant
- Integrated transformer
- Colour aluminium silver/black/white
- 55 W / 230 V-connection



Model	Magnifying lamp ALM 3
Item No	3351160

Enlarging lamp with 1.5 x optical zoom

- Size of the magnifying glass: diameter 127 mm
- Joint can be easily adj. and fixed by means of thumb screw
- Comfortable, glare-free light due to round fluorescent tube
- Articulated arm length 830 mm
- Protection class IP20
- 22 W / 230 V-connection



Robust LED machine lamps for the individual use

Model	LED lamp 3-500
Item No	3351010

Energy-saving and durable machine luminaire

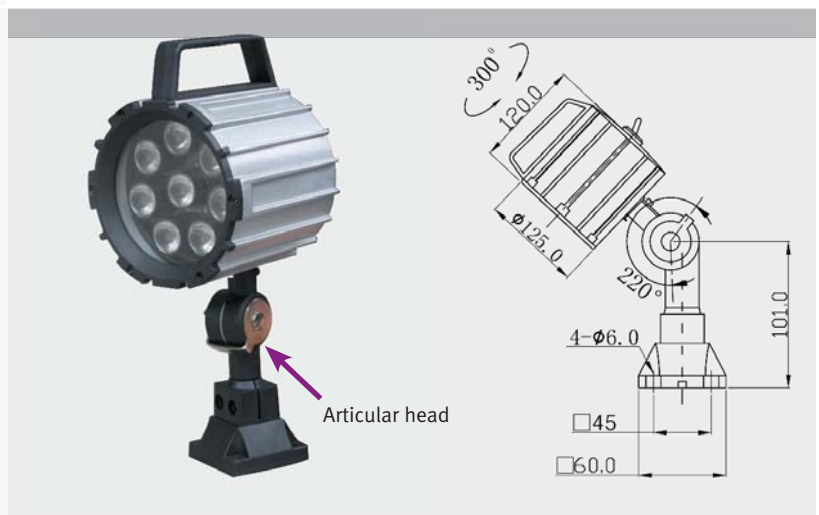
- Equipped with high performance LEDs
- Little outside temperature so that lubricants and coolants cannot burn in
- Made of robust oil-resistant and impact-proof plastic material
- No impairment of the service life due to vibrations or shocks
- High positioning stability
- Jacketed stable flexible hose arm 530 mm
- Optimum mobility of the articulated arm
- With protection class IP64 (dust and splash water protected)
- Service life 60,000 operating hours
- Colour temperature 4000 - 4500 K
- Supply cable about 1.2 m
- Colour black
- Lamp: 3 x 1 W LED / 230 V ~ 50 Hz



Model	LED lamp 8-100
Item No	3351021

Robust and bright machine anglepoise

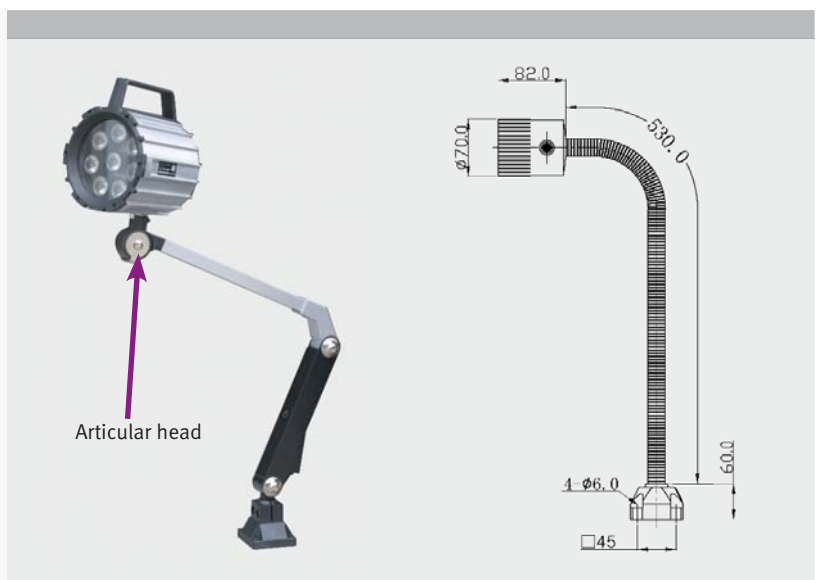
- Highly modern LED technique
- Little outside temperature so that lubricants and coolants cannot burn in
- Articular head
- Light distribution: medium-width, asymmetric, angle of refraction 25°
- Lamp cover made of safety glass resistant to temperature change
- Protection class IP65 (lamp head)
- Colour temperature 4000 - 4500 K
- Supply cable about 1.2 m
- Colour aluminium silver/black
- Lamp: 8 x 1 W LED / 230 V ~ 50 Hz



Model	LED lamp 8-600	LED lamp 8-720
Item No	3351026	3351027

Robust and bright machine anglepoise

- Highly modern LED technique
- Little outside temperature so that lubricants and coolants cannot burn in
- Articular head
- Light distribution: medium-width, asymmetric, angle of refraction 25°
- Lamp cover made of safety glass resistant to temperature change
- Protection class IP65 (lamp head)
- Hinge arm length LED 8-600: 505 mm and 8-720: 720 mm
- Colour temperature 4000 - 4500 K
- Supply cable about 1.2 m
- Colour aluminium silver/black
- Lamp: 8 x 1 W LED / 230 V ~ 50 Hz
- Weight 3.6 kg



NEWALL - DP700

Digital position display DP700 for precise measuring of the travels and positioning on the machine and drives



Digital position display DP700

3390073

Add-on milling kit Spherosyn

3390220

- Digital position display DP700
- Display holder
- Mounting parts for installation measuring blocks 3 axis Spherosyn

Add-on milling kit Microsyn

3390230

- Digital position display DP700
- Display holder
- Mounting parts for installation measuring blocks 3 axis Microsyn

Add-on turning kit 1

3390405

- Digital position display DP700
- Display holder
- Mounting parts for installation measuring blocks 1 axis Spherosyn and 1 axis Microsyn greater than 300 mm



Add-on turning kit 2

3390406

- Digital position display DP700
- Display holder
- Mounting parts for installation measuring blocks 1 axis Spherosyn and 1 axis Microsyn smaller than 300 mm



Complete add-on kit BF 30 Vario

3390330

- Digital position display DP700
- 3 pcs. Measuring blocks Microsyn
- Display holder Mounting parts for installation measuring blocks

Complete add-on kit BF46 Vario

3390346

- Digital position display DP700
- 3 pcs. Measuring blocks Microsyn
- Display holder Mounting parts for installation measuring blocks

Complete add-on kit D 320 x 920

3390420

- Digital position display DP700
- 2 pcs. Measuring blocks Microsyn 1 pc Measuring block Spherosyn
- Display holder Mounting parts for installation measuring blocks

Complete add-on kit D 330 / D 360

3390430

- Digital position display DP700
- 2 pcs. Measuring blocks Microsyn 1 pc. Measuring block Spherosyn
- Display holder Mounting parts for installation measuring blocks

Digital position display DP700

- Powerful DP display provided with lots of functions
- Ergonomically shaped, slim aluminium housing
- showing all necessary functions for machining applications
- The operator is working on an intuitive and user-friendly user interface
- Developed and made in England
- The IP67 encoding units can be used with highest accuracy under hardest environmental conditions.
- 5-year warranty on display unit's and reading heads
- The linear encoding units are resistant against impurities in the workshop such as e.g. coolant, water, dust, chips, shocks and vibrations
- No repair works required
- Rapid and easy installation

Possible functions

Number of axes	2 or 3 axes	
	Milling machine	Lathe
Undoing	•	•
Digfind (position search function)	•	•
Centrefind	•	•
Radius/diameter	•	•
Absolutely/gradually	•	•
mm/inch	•	•
Axis pre-setting/zeroing	•	•
Zero approximation	•	•
Tool magazine		•
Cone		•
Axis summation		•
PCD/pitch circle	•	
Arc path control	•	
Polar coordinates	•	
Hole line	•	
Input mode/Sub-date	•	•
Feed function	•	•
RS232 output	•	•
Linear error compensation	•	•
Segmental error compensation	•	•
Protection classes	IP 40 (digital display)	
	IP 54 (front panel)	
Languages	DE, GB, FR, ES, IT TU, TR, CZ, RU, PT, DK	

Accessories	Item No	
Extension cable 1 metre	3393601	
Extension cable 2 metres	3393602	
Extension cable 3.5 metres	3393603	
Extension cable 5 metres	3393604	
Extension cable 10 metres	3393605	

Analogue measuring systems (Spherosyn & Microsyn)

The distance measuring systems Spherosyn and Microsyn are specially designed for the requirements in the hard environment of a workshop. The measuring transducers represent a completely unique construction in which all components are sealed and protected. You will obtain exact and reliable measuring values even if the measuring systems are submerged in coolant, oil, water or lubricant.



The advantages

- Light-weighted type - little material costs
- Protection class IP67 - completely immersible
- Impermeable to coolant, oil, dust, chips and almost all workshop influences
- No more broken or scratched glass
- Tolerant towards oscillations and magnetic disturbances
- No regular maintenance or cleaning required
- No mechanic wear
- Lifelong warranty for the scale

Worldwide more than 400'000 Spherosyn and Microsyn transmitters are offering the highest degree of reliability.

Spherosyn and Microsyn can not only be used for the digital position display DP 700 but can also be integrated in a number of feedback applications such as CNC systems and SPS.

How does it work?

The Spherosyn and Microsyn scales are based on the principle of the electric magnetism and are consisting of a stainless steel or carbon fibre tube which is filled with individual classified highly accurate steel balls. The balls are pre-tensed and calibrated in the tube within a temperature-controlled environment.

The reading head consists of six coils which are wound around a composite fibre coil. The coils and the necessary electronic switching are sealed inside the reading head by means of a special cast process. By applying a tension on the coil an electromagnetic field is generated in the reading head. Due to the curve of the balls inside the tube the output signal is varying depending on the position of the coils above the balls. If the reading head is passing the scale corresponding signals are generated due to the relative axial movement which are induced on each exploring coil.



Analogue measuring systems (Spherosyn & Microsyn)		
	Spherosyn	Microsyn
Measuring length	51 mm to 2'945 mm	30 mm to 1'000 mm
Scale diameter/-material	15.25 mm (0.601") /stainless steel	6.5 mm (0.257") /carbon fibre
Scale length, total	Measuring length + 250 mm	Measuring length + 175 mm
Reading head dimensions	51 mm x 131 mm x 28 mm	35 mm x 75 mm x 20 mm
Output cable length	3.5 meters stainless steel reinforced (Extension cable in the accessory)	
Maximum feed	2.0 meters per second	0.75 meters per second
Accuracy	+/- 10 microns	+/- 10 microns
Repeating accuracy	Within a scale interval	Within a scale interval
Drive input	85mA +/-5mA	85mA +/-5mA
Output	2.0V +/-0.5 rms, 1kHz phase analogue, 360 degrees per 12.7 mm	2.0V +/-0.5rms, 1kHz phase analogue, 360 degrees per 5.0mm

Measuring blocks

Analogue measuring systems (Spherosyn & Microsyn)

Measuring blocks spherosyn	Item No	
MS S2G - 51 mm	3391005	
MS S2G - 102 mm	3391010	
MS S2G - 152 mm	3391015	
MS S2G - 178 mm	3391018	
MS S2G - 203 mm	3391020	
MS S2G - 229 mm	3391023	
MS S2G - 254 mm	3391025	
MS S2G - 305 mm	3391030	
MS S2G - 356 mm	3391035	
MS S2G - 406 mm	3391040	
MS S2G - 457 mm	3391046	
MS S2G - 508 mm	3391051	
MS S2G - 559 mm	3391056	
MS S2G - 610 mm	3391061	
MS S2G - 660 mm	3391066	
MS S2G - 711 mm	3391071	
MS S2G - 762 mm	3391076	
MS S2G - 813 mm	3391081	
MS S2G - 864 mm	3391086	
MS S2G - 914 mm	3391091	
MS S2G - 965 mm	3391097	
MS S2G - 1'016 mm	3391101	
MS S2G - 1'118 mm	3391111	
MS S2G - 1'168 mm	3391117	
MS S2G - 1'219 mm	3391121	
MS S2G - 1'270 mm	3391127	
MS S2G - 1'321 mm	3391132	
MS S2G - 1'372 mm	3391137	
MS S2G - 1'422 mm	3391142	
MS S2G - 1'473 mm	3391147	
MS S2G - 1'524 mm	3391152	
MS S2G - 1'626 mm	3391162	
MS S2G - 1'727 mm	3391172	
MS S2G - 1'829 mm	3391182	
MS S2G - 1'930 mm	3391193	
MS S2G - 2'032 mm	3391203	
MS S2G - 2'134 mm	3391213	
MS S2G - 2'235 mm	3391223	
MS S2G - 2'337 mm	3391233	
MS S2G - 2'438 mm	3391243	
MS S2G - 2'540 mm	3391254	
MS S2G - 2'642 mm	3391264	
MS S2G - 2'743 mm	3391274	
MS S2G - 2'845 mm	3391284	
MS S2G - 2'946 mm	3391294	

Measuring blocks Microsyn	Item No	
MS M2G - 30 mm	3392003	
MS M2G - 50 mm	3392005	
MS M2G - 75 mm	3392007	
MS M2G - 100 mm	3392010	
MS M2G - 125 mm	3392012	
MS M2G - 150 mm	3392015	
MS M2G - 175 mm	3392017	
MS M2G - 180 mm	3392018	
MS M2G - 200 mm	3392020	
MS M2G - 225 mm	3392022	
MS M2G - 250 mm	3392025	
MS M2G - 275 mm	3392027	
MS M2G - 300 mm	3392030	
MS M2G - 325 mm	3392032	
MS M2G - 350 mm	3392035	
MS M2G - 400 mm	3392040	
MS M2G - 450 mm	3392045	
MS M2G - 500 mm	3392050	
MS M2G - 550 mm	3392055	
MS M2G - 600 mm	3392060	
MS M2G - 650 mm	3392065	
MS M2G - 700 mm	3392070	
MS M2G - 750 mm	3392075	
MS M2G - 800 mm	3392080	
MS M2G - 850 mm	3392085	
MS M2G - 900 mm	3392090	
MS M2G - 950 mm	3392095	
MS M2G - 1'000 mm	3392100	

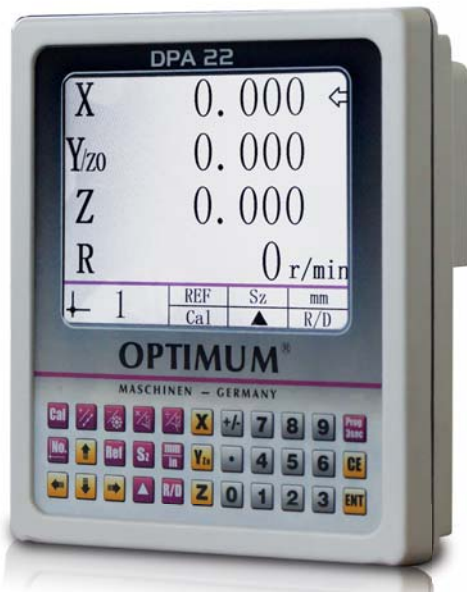


Fig.: Microsyn with optional fixing



Fig.: Spherosyn with optional fixing

The versatilely usable three-axis digital positioning display with speed display.
 High-quality technique and durable industrial quality

NEW


DPA 22 with
LCD display



DPA 21 with
LED display

Digital position display

DPA 21 (LED display)	3384020	
DPA 22 (LCD display)	3384022	
<ul style="list-style-type: none"> User friendly membrane key pad , water protected, concluded and glare free Switchable for milling machines and lathes, freely selectable input signal (sine/rectangle) to be used e.g. for glass measuring rods and/or magnetic tape systems High working accuracy Considerable reduction of the manufacturing times Error rate is reduced X, Y/Z0, Z axis with 8-digit display each Sensors to capture the spindle speed are included in the delivery Graphic input for cycle programming (DPA22) Three evaluable measuring inputs with seven correction memories for tools each Dimensions L x W x H: 230 x 80 x 260 mm; Weight 2 kg 		

Possible functions

- Calculator, speed display, axis coupling (sum Z), Sub D plug sockets, absolute/incremental operation, conversion inch/metric thread, pitch circle calculator (chain dimension), coordinates in the circle (pitch circle), holes in the circle (pitch circle), measured values radius/diameter can be switched over, zeroing/data pre-setting, self-diagnosis, reference point, linear error correction, 99 tool magazine

Scope of delivery

- Speed sensor
- Fixture
- Power supply 24V



Magnetic tape

<ul style="list-style-type: none"> Magnetic tape to be mounted on machines on which there is not sufficient space for magnetic measuring rods 9-pole plug 		
Length 1'100 mm	3383978	
Length 2'000 mm	3383979	
Reading head activated	3383934	
<ul style="list-style-type: none"> For the magnetic tape 		

Measuring blocks

- Fully enclosed path measuring systems with highly precise glass measuring rod
- Accuracy 5 µm
- Scanning carriage with miniature ball bearings guided and connected via a coupling in the mounting stand
- Protected against dust, chips and splash water by a rubber sealing lip
- Flexible metal protection hose protects the 3 meters - from ML 620 - connection cable with a length of 4 meters
- Without assembly

ML 80 mm	3384108	
ML 100 mm	3384110	
ML 120 mm	3384112	
ML 170 mm	3384117	
ML 220 mm	3384122	
ML 270 mm	3384127	
ML 320 mm	3384132	
ML 370 mm	3384137	
ML 420 mm	3384142	
ML 470 mm	3384147	
ML 520 mm	3384152	
ML 570 mm	3384157	
ML 620 mm	3384162	
ML 670 mm	3384167	
ML 720 mm	3384172	
ML 770 mm	3384177	
ML 820 mm	3384182	
ML 870 mm	3384187	
ML 920 mm	3384192	
ML 970 mm	3384197	
ML 1'020 mm	3384202	
ML 1'250 mm	3384225	
ML 1'400 mm	3384240	
ML 1'520 mm	3384252	
ML 1'670 mm	3384267	
ML 1'940 mm	3384294	
ML 2'010 mm	3384295	
ML 3'000 mm	3384300	
Factory assembly ML	9000410	

- Per measuring block

Digital 3 axes position display for milling machines and lathes with speed display

Digital 3 axes position display DRO 5

Item No	3383975
---------	---------

- Digital 3-axes position display for milling machines (X - Y - Z) and lathes (X, Z, Z₀)
- Stable aluminium housing
- To measure positions
- rotation speed indicator
- 3 inputs
- Four row LCD display
- Front programming
- Power supply unit

Magnetic tape length 1'100 mm	3383978	
Magnetic tape length 2'000 mm	3383979	

Workshop assembly for three axis 9000420



Measurement accessories

Dial gauge

3385090

- Accuracy according to DIN 878
- Matt chrome metal housing
- Clamping shaft 8 mm
- Pitch 0.01 mm
- Measuring range 10 mm
- Outside ring with two adjustable marks
- Scale is turnable via the outside ring for easy zeroing



Precision magnetic gauge stand

3356650

- Gauging cylinder \varnothing 12 mm x 181 mm
- Swivel arm \varnothing 10 mm x 160 mm
- Magnetic base L x W x H: 50 x 62 x 55 mm 50 x 62 x 55 mm,
- Holding force 50 kg
- Dial gauge holder with seat hole for dial gauges, indicating calliper, electrical length measuring probe



Fig.: Dial gauge and gauge stand

All prices plus valid VAT

Machine spirit level

3385064

- With prism bottom to adjust horizontal surfaces and shafts
- The compact stress-free installation of the longitudinal bubble guarantees uniform accuracy
- Accuracy 0.02 mm/m
- Longitudinal bubble and transverse bubble according to DIN 2276 Form B
- No time consuming adjustment
- Heat protection grip
- Dimensions: 200 mm x 46 mm x 46 mm



Measuring slab and reference plate

3385060

- Dimensions L x W x H: 630 x 400 x 100 mm
- Accuracy 7 μ
- Granite
- Thermally and dynamically stable
- Compressive strength 250 - 260N/mm²
- DIN 876/0
- Corrosion-free





CNC ADD-ON KITS AND ACCESSORIES

the complete control for the step motor combines all necessary components for automation in one CNC machine tool within one device

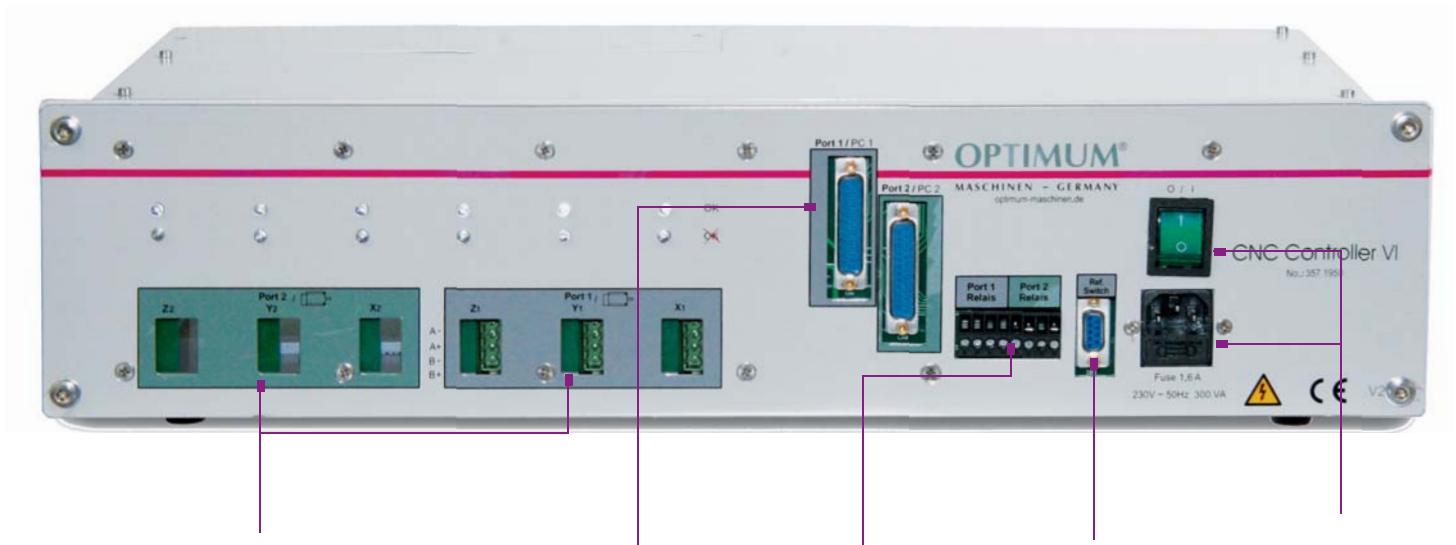
Convincing arguments: quality, efficiency and price

- Compact, elaborated housing, including a high-performance power supply unit, line filter and powerful forced air circulation
- Simple upgrading of the controller VI for up to 6 CNC control cards for the operation of two separate machines
- Perfectly suitable for the software Pcdreh®, Mach 3 and MegaNC and also compatible to similar software
- Optical axis control by LED's of different colours
- All connections plug-in connections and service points are implemented at the front thus it is easy to install it into another housing
- High-grade signal processing for trouble-free operation
- Monitoring of all control cards by integrated control
- Easy assembly of the CNC control card only by opening an insertion slot
- Plug & Play CNC control cards
- Operating current and holding current are separately adjustable for the corresponding step motor

- All outputs to step motors are of short-circuit-proof type
- Integrated switch-off in case of a malfunction of a control card for all three axes
- Largely dimensioned ventilator, little heat development
- Works in half step mode
- Signal processing (multi-signal, single-signal)
- Mains cable
- LPT port adaptor plug multi signal / single signal
- LPT connection cable

Additional function controller VI

- **Connection for reference switch 3 axis (only for port 1)**
- **4. Controllable axis (e.g. circular dividing table)**
- **4 separately switchable, potential-free relay outputs in the power section**



Connecting plug step motor

- Two separate ports with three slots each
- Optical axis control by LED's of different colours

25-pole D-Sub plugs

- Two separate connections on the PC for two different machines

Relay connections

- Two separate connections
- (Connection e.g. for lamp or vacuum cleaner)

9-pole D-Sub plug

- Connection for reference switch

ON/OFF switch

- easily operable from the front side
- Mains plug
- Fuse at the front

CNC Controller VI	40 V
Item No	3571950

- 6 Card slots
- 4 potential-free relay outputs
- Input for universal reference switch
- Connection: 300 VA 230 V / 1 Ph ~50 Hz
- Dimensions L x W x H: 540 x 275 x 125 mm

CNC control card	
Item No	3571960

- X-, Y- or Z-axis
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque



USB adapter RS232	
Item No	3571969

- For computers without RS232 connection



Universal reference switch kit milling	
Item No	3571980

- For CNC Controller VI/CNC Controller IV
- With universal add-on parts
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65



Universal reference switch kit turning	
Item No	3571966

- For CNC Controller VI
- Including connection for incremental position encoder
- With universal add-on parts
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65



Factory assembly reference switch kit (for new orders)	9000506	
---	---------	--

Modern powerful microprocessor control combines all necessary components for automation in a large CNC machine tool within one device

Convincing arguments: quality, efficiency and price

- Compact, elaborated housing, including a high-performance power supply unit, line filter and powerful forced air circulation
- Perfectly suitable for the software pcdreh®, mach3 and MegaNC and also compatible to similar software
- 4 separately switchable, potential-free relay outputs in the power section
- Optical axis control by LED's of different colours
- All connections plug-in connections and service points are implemented at the front thus it is easy to install it into another housing
- High-grade signal processing for trouble-free operation
- Monitoring of all control cards by integrated control
- Performance values selective up to 40 volts or 80 volt and 8A operating current
- Plug & Play CNC control cards
- Operating current and holding current are separately adjustable for the corresponding step motor
- All outputs to step motors are of short-circuit-proof type
- Integrated switch-off in case of a malfunction of a CNC control card for all four axis
- Largely dimensioned ventilator, little heat development
- Connection for reference switch (3-axis)
- The CNC controller is working in the half, quarter and sixteenth step mode
- Signal processing (multi-signal, single-signal)
- It is possible to connect an Emergency-Stop push button



Connecting plug Stepping motors

- Z - Y - X - X2 - axis
- Optical axis control by LED's of different colours

25-pole D-Sub plug

- Connection to the PC for one machine

Connecting plug

- for Emergency Stop push button

Reset key

- to reset to the defined initial status

9-pole D-Sub plug

- Connection for reference switch

Relay connection

- 2 separate connections e.g. for lamp or vacuum cleaner

ON/OFF switch

- easily operable from the front side

Mains plug

- Fuse at the front



Fan

- Largely dimensioned
- Little heat development

4 CNC control card slots

- Easy to assemble CNC control card
- Simply open the insertion slot and insert the CNC control card into the slot

CNC - Controller IV - 40 V - i incl. 3 CNC control cards



Item No	3571954
for milling machines up to BF 20Vario and lathe up to TU2807	

CNC - Controller IV - 80 V - i incl. 3 CNC control cards

Item No	3571955
for milling machines up to BF 30Vario and lathe up to D320	

Features

- 4 Card slots
- 4 potential-free, relay outputs, max. 10 A per relay
- Input for external Emergency stop input
- Input for universal reference switch
- Connection: 300 VA 230 V / 1 Ph ~50 Hz
- Dimensions L x W x H: 545 x 270 x 165 mm

Scope of delivery

- CNC - Controller IV
- 3 CNC control cards
- Mains cable
- LPT port adaptor plug multi signal / single signal
- LPT connection cable



USB adapter RS232

Item No	3571969
---------	---------

- For computers without RS232 connection
- for Siemens



Universal reference switch kit milling

Item No	3571980
---------	---------

- For CNC Controller VI/CNC Controller IV
- With universal add-on parts
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65



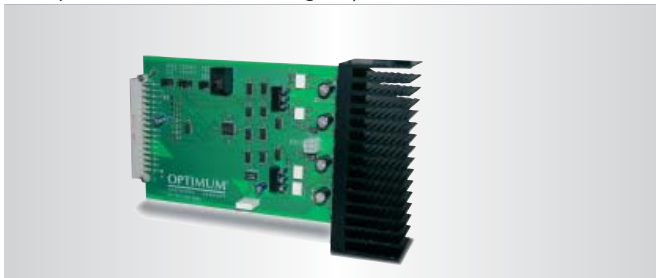
Factory assembly reference switch kit (for new orders)

Item No	9000506
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CNC control card

Item No	3571959
---------	---------

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque



CNC complete add-on kit

Torque **4.4 Nm**
on the spindle Z-axis

Travel speed*

- max. **12 mm/sec.** with trapezoid spindle
- max. **24 mm/sec.** with ball screw
- max. **14 mm/sec.** with trapezoid spindle
- max. **24 mm/sec.** with ball screw

Torque **2.75 Nm**
on the spindle X- and Y-axis

Travel speed*

- max. **14 mm/sec.** with trapezoid spindle
- max. **25 mm/sec.** with ball screw

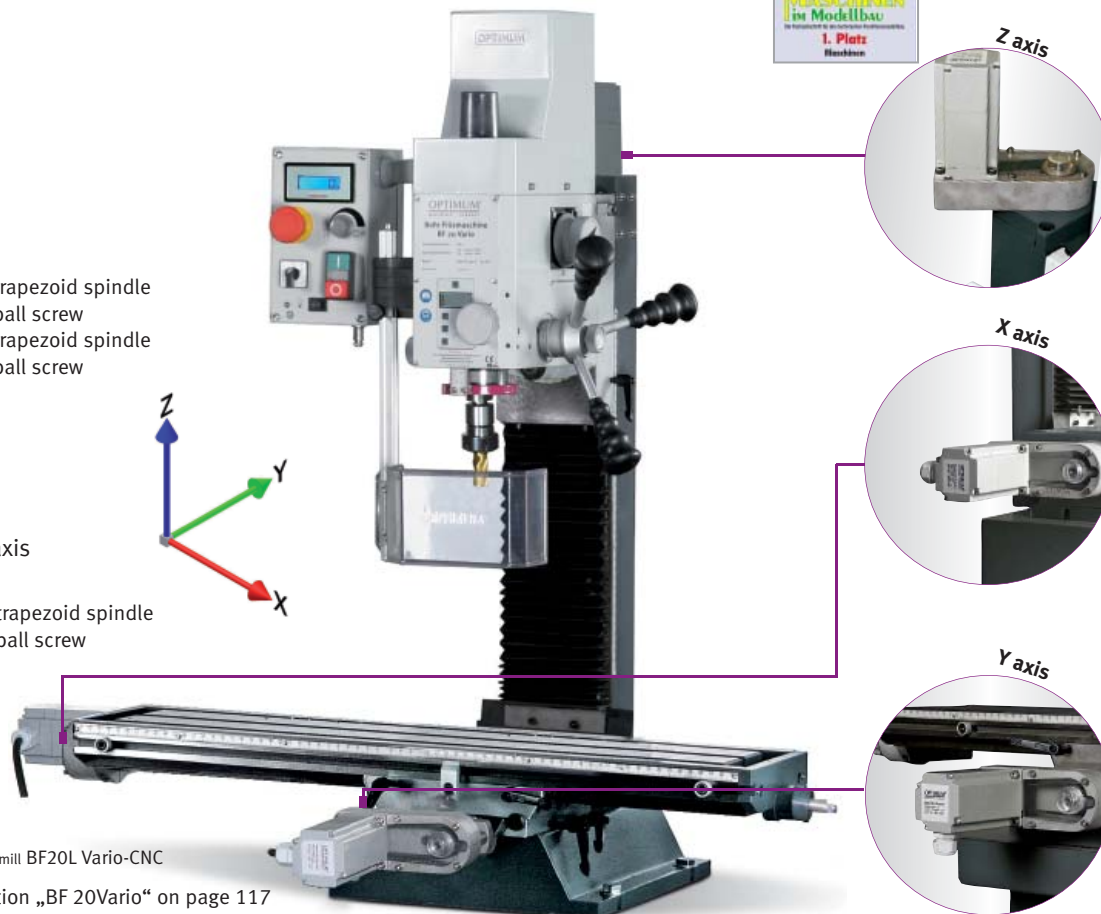


Fig.: OPTImill BF20L Vario-CNC

Information „BF 20Vario“ on page 117

CNC complete add-on kit for BF 20Vario / BF 20 LVario/ BF 20 LD

Consisting of:

- 1 x CNC-Controller VI
- 3 x CNC control cards 40 V
- 1 x reference switch kit milling
- 1 x CNC add-on kit MK F20DP

Scope of delivery: Add-on kit MK F20DP

- 3 x step motors 2.2 Nm, 3A (bipolar)
- 3 x assembly housing incl. lid
- 3 x driving belts
- 6 x toothed belt pulleys
- 2 x spacers
- 1 x assembly ring X axis
- 7 meters shielded cable
- Set of screws

Add-on kit **without** workshop assembly 3570024

Add on kit **with** workshop assembly* 3539020

Transportation packaging flat rate
for workshop assembly

(TPFR 3)

Complete kit ball screws

Consisting of:

- 3 x ball screws with spindle nut
- Prepared for the installation

BF 20Vario - without workshop assembly	3574450
BF 20Vario - with workshop assembly	3539220
BF 20L Vario - without workshop assembly	3574451
BF 20L Vario - with workshop assembly	3539221

Ball screws individual

- with spindle nut

X axis for BF 20Vario (586 mm)	3574303
X axis for BF 20L Vario (788 mm)	3574304
Y axis (350 mm)	3574301
Z axis (458 mm)	3574302

Factory assembly ball screw

9000504

- Each axis



* Important notes:

- The speeds were determined with the software "NC-Drive" and the current OPTImill BF 20Vario and can deviate up and down depending on the used software system and the operating mode of the motor
- The indicated travels can change when using ball screws.
- The EU Directive EN2006/42 EC is complied with only with the housing SHC, the electronic kit and a workshop assembly in an authorised workshop.
- Without the SHC and the safety kit the machine is incomplete in the CNC equipment, thus the CE directive is not complied with.
- We imperatively recommend the briefing performed by our specialists.

CNC add-on kit MK F20DP

3570020

- Step motors with integrated terminal board
- Especially smooth running due to little self-resonance
- Protection class IP 54-encapsulated motor protected against water/chips
- Extended axle shaft
- 400 steps per rotation
- Toothed belt of HTD type (High Tork Drive) by Gates

Scope of delivery:

- Three step motors 2.2 Nm 3A bipolar, three assembly housings incl. lid, six toothed belt pulleys, two nuts, three toothed belts, one bushing, one distance ring, set of screws, 15 meters shielded cable, assembly instructions

Workshop assembly

9000500

- "Step motors" for all 3 axis

**CNC - Controller IV 40V**

3571954

- 4 Card slots
- 4 potential-free, relay outputs, max. 10 A per relay
- Input for external Emergency stop input
- Input for universal reference switch
- Connection: 300 VA 230 V / 1 Ph ~50 Hz
- Dimensions L x W x H: 545 x 270 x 165 mm

CNC - Controller VI 40V

3571950

- 6 Card slots
- without CNC control cards
- Compact, elaborated housing, including a high-performance power supply unit, line filter and powerful forced air circulation
- Simple upgrading up to 6 CNC control cards for the operation of two separate machines
- The CNC Controller is working in half step operation

CNC - control card

3571960

- X, Y or Z-axis: one card each
- is required on one card per axis
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque

**Housing SHC**

- The design captivates by compactness and operating comfort
- Housing can be removed from the top
- Complete unit mobile
- Clear Makrolon panes
- Base as cabinet e.g. for CNC controller or computer with cable bushing

SHC 1 for Optimill BF 20Vario

3539091

SHC 2 for Optimill BF 20L Vario

3539092



Fig.: SHC 1

Safety pack "Safety kit"

3539085

- Protects the operator and the machine
- With the optional housing SHC it complies with the EU Directive EN2006/42 EC
- Including factory assembly
- Safety PLC
- Safety switch

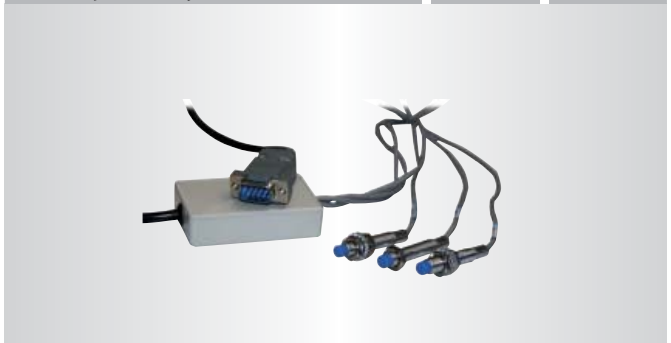
Universal reference switch kit

3571980

- For CNC Controller VI/CNC Controller IV
- With universal add-on parts
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65

Workshop assembly

9000506

**CNC briefing in the house**

9000510

- One-day instruction
- Complete cabling and configuration of the control hardware
- Instruction in company headquarters Hallstadt/Bamberg
- Briefing on site plus travel cost accommodation cost, if required

CNC complete add-on kit

Torque **11.6 Nm**
on the spindle Z-axis

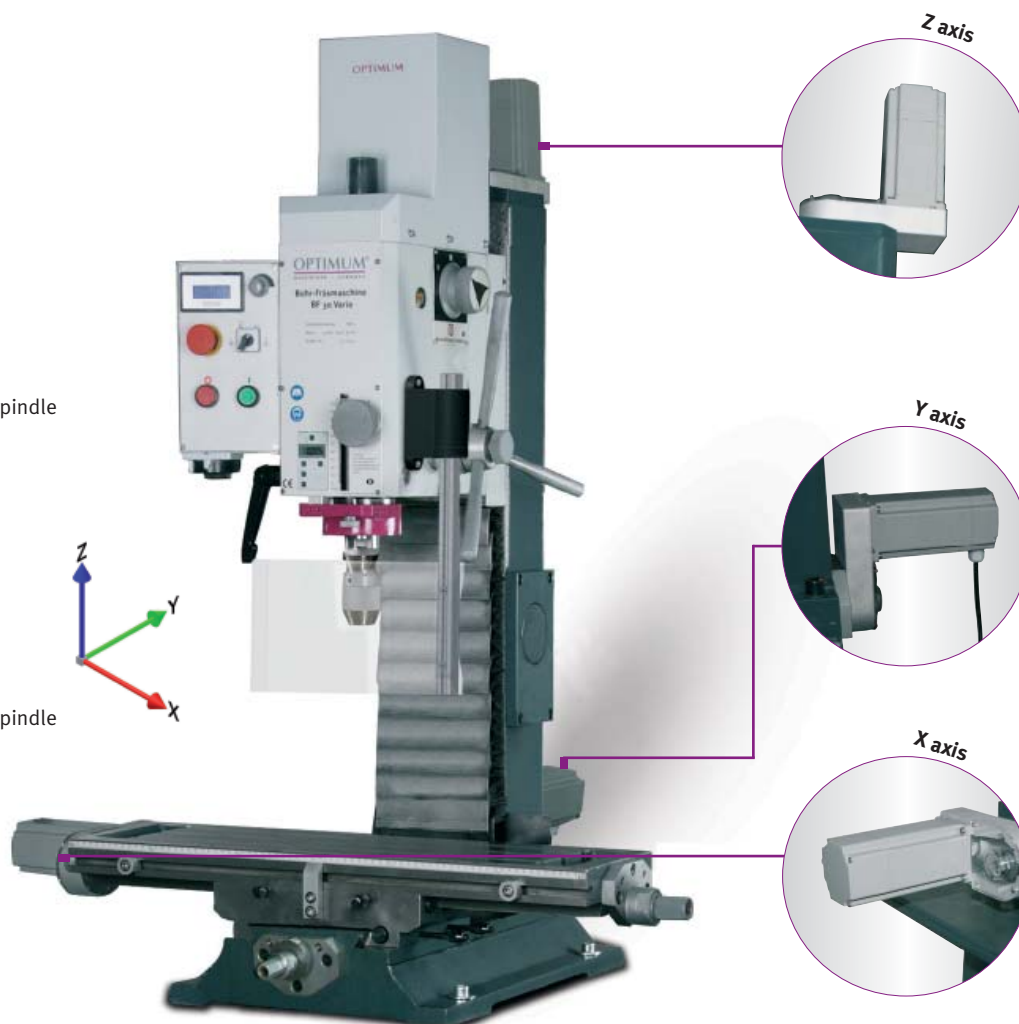
Travel speed*

- max. **14** mm/sec. with trapezoid spindle
- max. **24** mm/sec. with ball screw

Torque **11.6 Nm**
on the spindle X- and Y-axis

Travel speed*

- max. **12** mm/sec. with trapezoid spindle
- max. **24** mm/sec. with ball screw



Description „BF 30Vario“ on page 125

CNC complete add-on kit*

Consisting of:

- 1 x CNC Controller IV
- 3 x CNC control cards
- 1 x reference switch kit milling
- 1 x CNC add-on kit MK F30DP

Scope of delivery: Add-on kit MK F20DP

- 3 x step motors 8 Nm
- 3 x assembly housing incl. lid
- 3 x toothed belts
- 6 x toothed belt pulleys
- 1 x distance ring
- 2 x nuts
- 1 x bushing
- 15 meters shielded cable
- Set of screws

Add-on kit **without** workshop assembly 3570034

Add-on kit **with** workshop assembly* 3539023

Transportation packaging flat rate
for workshop assembly

(TPFR 3)

*

- Important notes:
- The indicated speeds represent a nominal value which was determined on the current BF30 Vario. They can deviate up and down depending on the used software system and on the operating mode resp. the load of the motor.
 - The indicated travels can change when using ball screws.
 - The EU Directive EN2006/42 EC is complied with only with the housing SHC, the electronic kit and a workshop assembly in an authorised workshop.
 - Without the SHC and the safety kit the machine is incomplete in the CNC equipment, thus the CE directive is not complied with.
 - We imperatively recommend the briefing performed by our specialists.

Complete kit ball screws

Item No

Consisting of:

- 3 x ball screws with spindle nut
- Ball screws for three axes

Without workshop assembly

3574455

With workshop assembly

3539223

Ball screws individual

- with spindle nut

X axis Ø 20 mm

3574311

Y axis Ø 20 mm

3574312

Z axis Ø 25 mm

3574313

Factory assembly ball screw

9000523

- Each axis



CNC add-on kit MK F30DP

3570030

- Step motors with integrated terminal board
- Especially smooth running due to little self-resonance
- Protection class IP 54-encapsulated motor protected against water/chips
- Extended axle shaft
- 400 steps per rotation
- Toothed belt of HTD type (High Tork Drive) by Gates

Scope of delivery:

- Three step motors 8 Nm, three assembly housings incl. lid, six toothed belt pulleys, three toothed belts, one bushing, one distance ring, two nuts, a set of screws, 15 meters shielded cable, assembly instructions

Workshop assembly

9000603

- "Step motors" for all 3 axis

**CNC - Controller IV 80V**

3571955

- **including 3 CNC control cards**
- CNC Controller for 4 card slots
- 4 potential-free relay outputs
- External Emergency-Stop entry
- Input for universal reference switch
- Connection 230 V ~50 Hz, 300 VA
- Dimensions L x W x H: 545 x 270 x 165 mm

**CNC - control card**

3571959

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque

**Housing SHC 3**

3539093

- Mounting option to deposit a laptop
- The working area can be easily viewed from three sides through clear mounted Makrolon panes
- Base designed on two sides
- Base as cabinet e.g. for controller or computer with cable bushing
- Lateral parts of housing are collapsible thus easy access to the machine
- Rear opening for cable duct
- The design captivates by compactness and operating comfort

**Safety pack "Safety kit"**

3539085

- Protects the operator and the machine
- With the optional housing SHC it complies with the EU Directive EN2006/42 EC
- Including factory assembly
- Safety PLC
- Safety switch

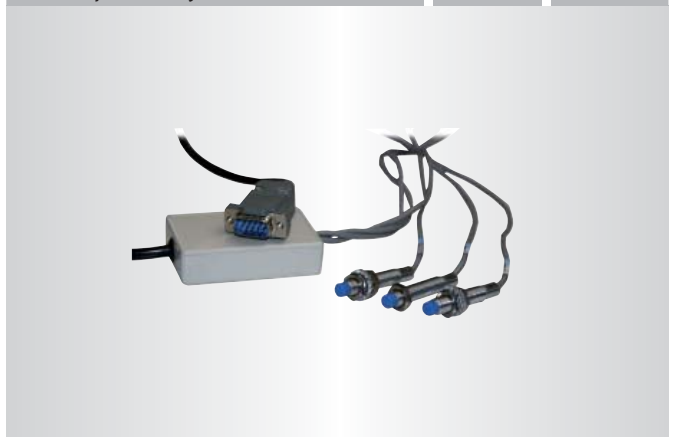
Universal reference switch kit milling

3571980

- For CNC Controller VI/CNC Controller IV
- With universal add-on parts
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65

Workshop assembly

9000506

**CNC briefing in the house**

9000510

- One-day instruction
- Complete cabling and configuration of the control hardware
- Instruction in company headquarters Hallstadt/Bamberg
- Briefing on site plus travel cost accommodation cost, if required

CNC complete add-on kit

Torque **17.4 Nm**
on the spindle Z-axis

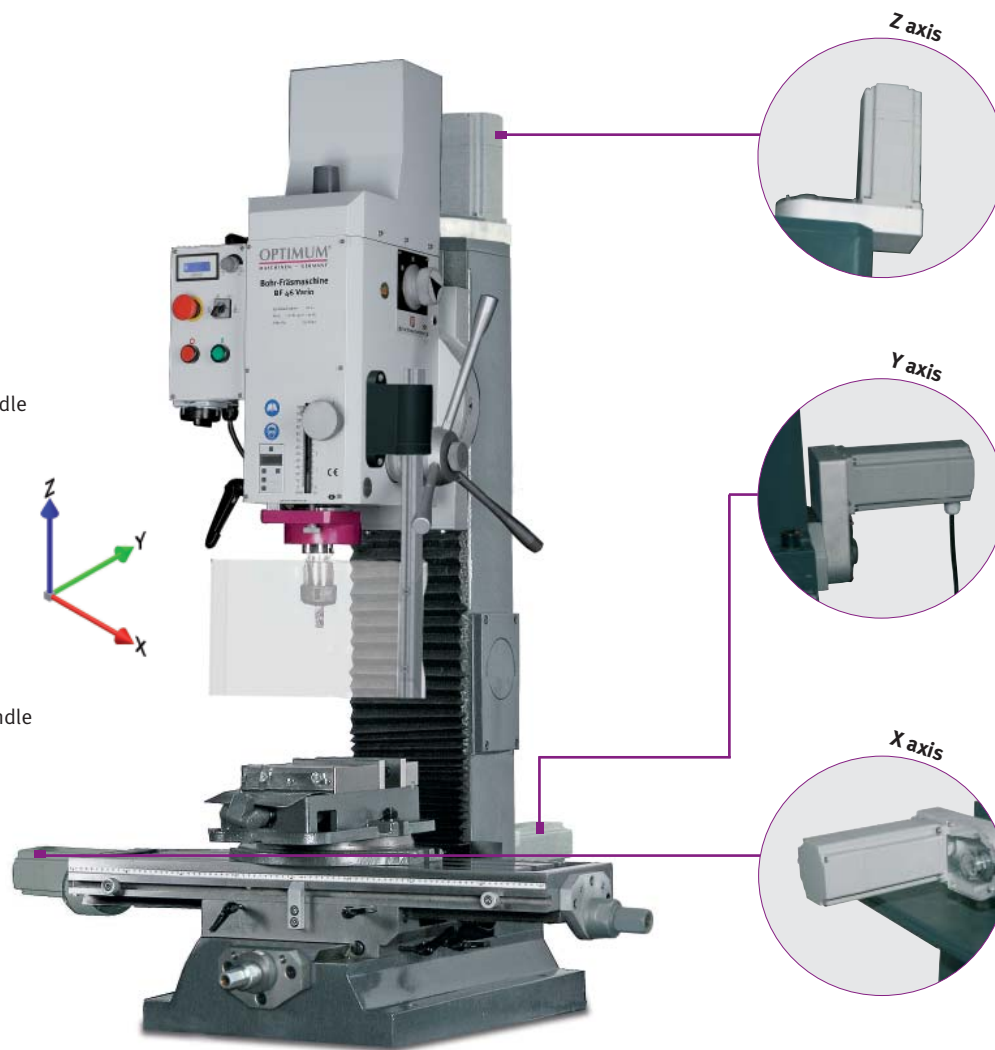
Travel speed*

- max. **14** mm/sec. with trapezoid spindle
- max. **24** mm/sec. with ball screw

Torque **17.4 Nm**
on the spindle X- and Y-axis

Travel speed*

- max. **12** mm/sec. with trapezoid spindle
- max. **24** mm/sec. with ball screw



Description „BF 46Vario“ on page 127

CNC-Complete add-on kit

Consisting of:

- 1 x CNC Controller IV
- 3 x CNC control cards
- 1 x reference switch kit milling
- 1 x CNC add-on kit MK F46DP

Scope of delivery: Add-on kit MK F46DP

- 3 x step motors 12 Nm
- 3 x assembly housing incl. lid
- 3 x toothed belts
- 6 x toothed belt pulleys
- 1 x distance ring
- 2 x nuts
- 1 x bushing
- 15 meters shielded cable
- Set of screws

Add-on kit **without** workshop assembly 3570044

Add on kit **with** workshop assembly* 3539024

Transportation packaging flat rate
for workshop assembly

(TPFR 3)

*Important notes:

- The indicated speeds represent a nominal value which was determined on the current Optmill BF46 Vario. They can deviate up and down depending on the used software system and on the operating mode resp. the load of the motor.
- The indicated travels can change when using ball screws.
- The EU Directive EN2006/42 EC is complied with only with the housing SHC, the electronic kit and a workshop assembly in an authorised workshop.
- Without the SHC and the safety kit the machine is incomplete in the CNC equipment, thus the CE directive is not complied with.
- We imperatively recommend the briefing performed by our specialists.

Complete kit ball screw

Item No

Consisting of:

- 3 x ball screws with spindle nut
- Ball screws for three axes

Without workshop assembly

3574456

With workshop assembly

3539225

Ball screws individual

- with spindle nut

X axis Ø 20 mm

3574321

Y axis Ø 20 mm

3574322

Z axis Ø 25 mm

3574323

Factory assembly ball screw

9000524

- Each axis



CNC add-on kit MK F46DP

3570046

- Step motors with integrated terminal board
- Especially smooth running due to little self-resonance
- Protection class IP 54-encapsulated motor protected against water/chips
- Extended axle shaft
- 400 steps per rotation
- Toothed belt of HTD type (High Tork Drive) by Gates

Scope of delivery:

- Three step motors 12 Nm. Three assembly housings incl. lid, six toothed belt pulleys, three toothed belts, one bushing, one distance ring, two nuts, a set of screws, 15 meters shielded cable, assembly instructions

Workshop assembly

9000605

- "Step motors" for all 3 axis

**CNC - Controller IV 80V**

3571955

- including 3 CNC control cards
- CNC Controller for 4 card slots
- 4 potential-free relay outputs
- External Emergency-Stop entry
- Input for universal reference switch
- Connection 230 V ~50 Hz, 300 VA
- Dimensions L x W x H: 545 x 270 x 165 mm

**CNC - control card**

3571959

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque

**Housing SHC 33**

3539093

- Mounting option to deposit a laptop
- The working area can be easily viewed from three sides through clear mounted Makrolon panes
- Base designed on two sides
- Base as cabinet e.g. for controller or computer with cable bushing
- Lateral parts of housing are collapsible thus easy access to the machine
- Rear opening for cable duct
- The design captivates by compactness and operating comfort

**Safety pack "Safety kit"**

3539085

- Protects the operator and the machine
- With the optional housing SHC it complies with the EU Directive EN2006/42 EC
- Including factory assembly
- Safety PLC
- Safety switch

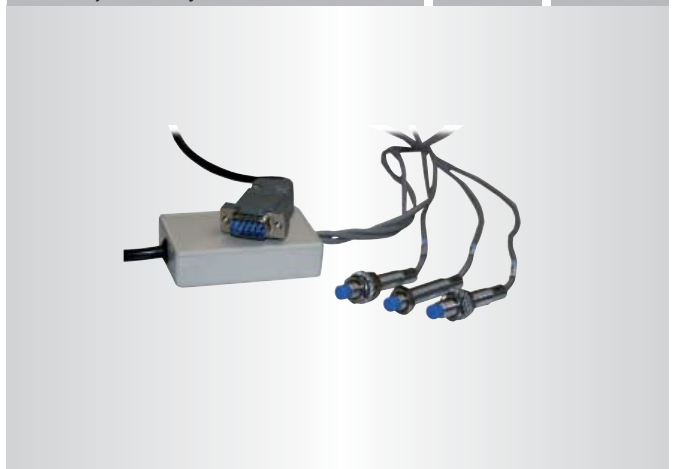
Universal reference switch kit milling

3571980

- For CNC Controller VI / CNC Controller IV
- With universal add-on parts
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65

Workshop assembly

9000506

**CNC briefing in the house**

9000510

- One-day instruction
- Complete cabling and configuration of the control hardware
- Instruction in company headquarters Hallstadt/Bamberg
- Briefing on site plus travel cost accommodation cost, if required

CNC complete add-on kit



Fig.: **TU2807-CNC**
with ball screw

Description
„TU 2506“ on page 63
„TU 2807V“ on page 63



2.2 Nm
Torque on the spindle
X axis
Travel speed*
max. 10 mm/sec.



6.4 Nm
Torque on the spindle
Z axis
Travel speed*
max. 10 mm/sec.

CNC complete add-on kit
for OPTi turn TU 2506 without ball screws
for OPTi turn TU 2807 turn without ball screws

Consisting of:		
• 1 x CNC Controller IV		
• 2 x CNC control cards		
• 1 x reference switch kit turning		
• 1 x CNC add-on kit MK D24DP		
• 1 x CNC - adapter for reference switch		
Scope of delivery: Add-on kit MK D24DP		
• Step motor bipolar X-axis 2.2 Nm and Z-axis 4.2 Nm		
• 2 x ball screws, assembly kit for both axis		
• Two driving belts and four toothed belt pulleys		
• One shaft elongation and one shaft seal		
• 5 meters shielded cable		
• Set of screws and assembly instructions		
Add-on kit without workshop assembly	3570244	
Add on kit with workshop assembly*	3539033	

Transportation packaging flat rate for workshop assembly	(TPFR 3)
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- Important notes:
- The indicated speeds represent a nominal value which was determined on the current OPTi turn TU 2807. They can deviate up and down depending on the used software system and on the operating mode resp. the load of the motor.
 - The indicated travels can change when using ball screws.
 - The EU Directive EN2006/42 EC is complied with only with the housing SHC, the electronic kit and a workshop assembly in an authorised workshop.
 - Without the SHC and the safety kit the machine is incomplete in the CNC equipment, thus the CE directive is not complied with.
 - We imperatively recommend the briefing performed by our specialists.

CNC complete add-on kit
for OPTi turn TU 2807 when using ball screws

Consisting of:		
• 1 x CNC Controller IV		
• 2 x CNC control cards		
• 1 x reference switch kit turning		
• 1 x CNC add-on kit MK D21DP		
• 1 x CNC - adapter for reference switch		
Scope of delivery: Add-on kit MK D21DP		
• Step motor bipolar X-axis 2.2 Nm and Z-axis 4.2 Nm		
• 2 x ball screws, assembly kit for both axis		
• Two driving belts and four toothed belt pulleys		
• One shaft elongation and one shaft seal		
• 5 meters shielded cable		
• Set of screws and assembly instructions		
Add on kit with workshop assembly*	3539031	

Transportation packaging flat rate plus VAT	(TPFR 3)
--	----------

Ball screws for TU 2807		
for the X axis	3574421	
for the Z-axis	3574422	
Assembly kit for both axis	3574425	

Factory assembly ball screw	9000524	
• Each axis		

Complete kit	3539310	
• 2 x ball screws, assembly kit for both axis		
• Including factory assembly		

CNC add-on kit

- Step motors with integrated terminal board
- Especially smooth running due to little self-resonance
- Protection class IP 54-encapsulated motor protected against water/chips
- Extended axle shaft
- 400 steps per rotation
- Toothed belt of HTD type (High Tork Drive) by Gates

Scope of delivery:

- in the step motor bipolar X axis 2.2 Nm, one step motor bipolar Z axis 4.2 Nm, two assembly housings incl. lid, two driving belts, four toothed belt pulleys, one shaft elongation, one shaft seal, 5 meters shielded cable, set of screws, assembly instructions

MK D21DP

3570210

- for TU 2807 when using ball screws

MK D24DP

3570240

- for TU 2506 / TU 2807 without ball screws

Workshop assembly

9000500

**CNC - Controller IV 80V**

3571954

- **including 3 CNC control cards**
- CNC Controller for 4 card slots
- 4 potential-free relay outputs
- External Emergency-Stop entry
- Input for universal reference switch
- Connection 230 V ~50 Hz, 300 VA
- Dimensions L x W x H: 545 x 270 x 165 mm

CNC - Controller VI 40V

3571950

- For 6 card slots
- without CNC control cards
- Compact, elaborated housing, including a high-performance power supply unit, line filter and powerful forced air circulation
- Simple upgrading up to 6 CNC control cards for the operation of two separate machines
- The CNC Controller is working in half step operation

CNC - control card

3571960

- X, Y or Z-axis: one card each
- is required on one card per axis
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque

**Housing SHC 6**

3539096

- User-friendly protective housing with front sliding door and a lateral door as well as a rear access flap for maintenance purposes.
- The working range is well visible through clear resistant Makrolon panes.
- No shifting of the control elements required (Emergency-Stop, ON-OFF switch) since the complete control of the machine is located outside the working range.
- It is possible to set the feed and the speed from the outside
- Suitable for the corresponding standard base of the lathe, but can also be mounted on a workbench.

**Safety pack "Safety kit"**

3539085

- Protects the operator and the machine
- With the optional housing SHC it complies with the EU Directive EN2006/42 EC
- Including factory assembly
- Safety PLC
- Safety switch

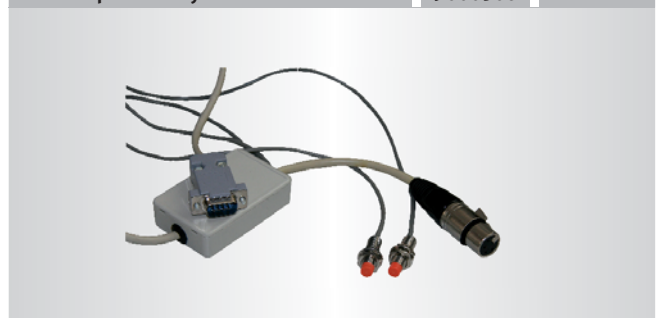
Universal reference switch kit turning

3571966

- For CNC Controller VI
- Including connection for incremental position encoder
- With universal add-on parts for two axis
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65

Workshop assembly reference switch kit

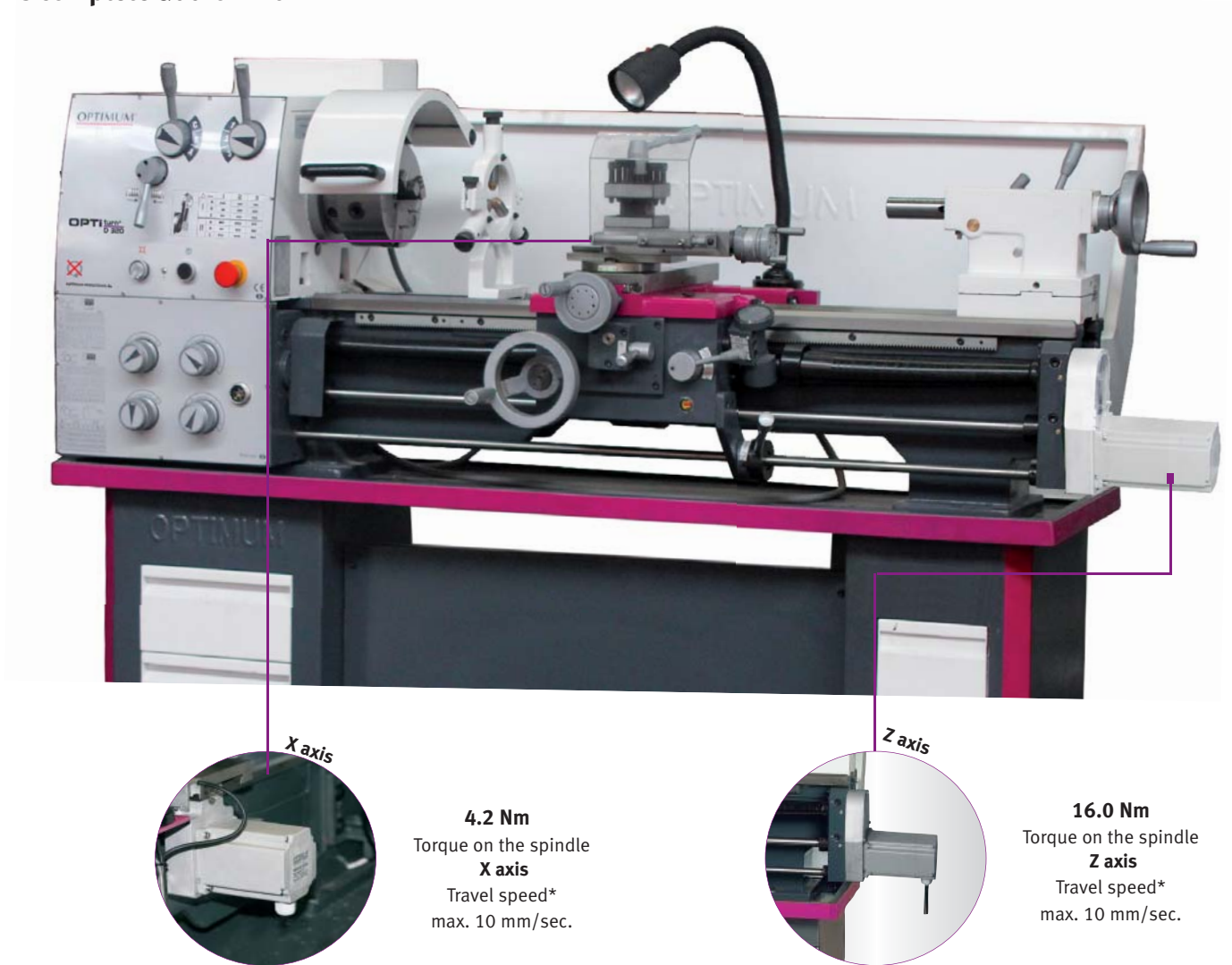
9000506

**CNC - briefing**

9000510

- „One-day instruction“ on page 211217
- Briefing on site plus travel cost accommodation cost, if required

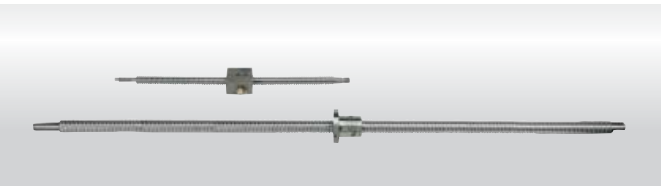
CNC complete add-on kit



Description
„TU 3209V“ on page 69
„D 320 x 920“ on page 67

CNC-Complete add-on kit		
Consisting of:		
• 1 x CNC Controller IV		
• 2 x CNC control cards		
• 1 x reference switch kit turning		
• 1 x CNC add-on kit MK D32DP		
Scope of delivery: Add-on kit MK D32DP		
• Step motor bipolar X axis 4.2 Nm		
• Step motor bipolar Z axis 8 Nm		
• 2 x ball screws, assembly kit for both axis		
• Two driving belts		
• Four toothed belt pulleys		
• One shaft elongation		
• One shaft seal		
• 5 meters shielded cable		
• Set of screws		
• Assembly instructions		
Add on kit with workshop assembly*	3539036	
Transportation packaging flat rate for workshop assembly		
	(TPFR 4)	

Ball screws with nut		
for the X axis	3574427	
for the Z-axis	3574429	
Assembly kit	3574430	
• for both axis		
Workshop assembly	9000530	
• Each axis		



* Important notes:

- The indicated speeds represent a nominal value which was determined on the current Optimum D320. They can deviate up and down depending on the used software system and on the operating mode resp. the load of the motor.
- The indicated travels can change when using ball screws.
- The EU Directive EN2006/42 EC is complied with only with the housing SHC, the electronic kit and a workshop assembly in an authorised workshop.
- Without the SHC and the safety kit the machine is incomplete in the CNC equipment, thus the CE directive is not complied with.
- We imperatively recommend the briefing performed by our specialists'

CNC add-on kit MK D32DP

3570285

- Step motors with integrated terminal board
- Especially smooth running due to little self-resonance
- Protection class IP 54-encapsulated motor protected against water/chips
- Extended axle shaft
- 400 steps per rotation
- Toothed belt of HTD type (High Tork Drive) by Gates

Scope of delivery:

- A step motor bipolar X axis 4.2 Nm, a step motor bipolar Z axis 8 Nm, two assembly housings incl. lid, two driving belts, four toothed belt pulleys, one shaft elongation, one shaft seal, 5 meters shielded cable, set of screws, assembly instructions

Workshop assembly

9000632

- "Step motor" for both axis

**CNC - Controller IV 80V**

3571955

- including 3 CNC control cards
- CNC Controller for 4 card slots
- 4 potential-free relay outputs
- External Emergency-Stop entry
- Input for universal reference switch
- Connection 230 V ~50 Hz, 300 VA
- Dimensions L x W x H: 545 x 270 x 165 mm

**CNC - control card**

3571959

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque

**Housing SHC 7**

3539097

- User-friendly protective housing with front sliding door and a lateral door as well as a rear access flap for maintenance purposes.
- The working range is well visible through clear resistant Makrolon panes.
- No shifting of the control elements required (Emergency-Stop, ON-OFF switch) since the complete control of the machine is located outside the working range.
- It is possible to set the feed and the speed from the outside
- Suitable for the corresponding standard base of the lathe, but can also be mounted on a workbench.
- Dimensions L x W x H: 1.800 x 1.000 x 850 mm
- Weight 191 kg



Fig. similar

Safety pack "Safety kit"

3539085

- Protects the operator and the machine
- With the optional housing SHC it complies with the EU Directive EN2006/42 EC
- Including factory assembly
- Safety PLC
- Safety switch

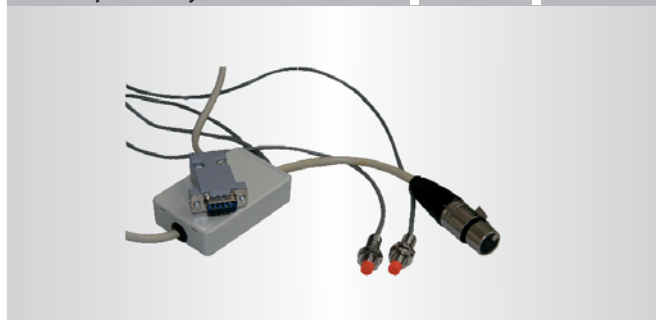
Universal reference switch kit turning

3571967

- For CNC Controller VI
- Including connection for incremental position encoder
- With universal add-on parts for two axis
- High repeat accuracy
- Contactless
- To add on a machine, machine datum
- Protection class IP 65

Workshop assembly reference switch kit

9000506

**CNC - briefing**

9000510

- One-day instruction
- „CNC briefing in the house“ on page 217
- Briefing on site plus travel cost accommodation cost, if required

SHC 1 and 2 for CNC milling machines OPTIMILL BF 20Vario / OPTIMILL BF 20L Vario

Convincing arguments: quality, efficiency and price

- Mounting option to deposit a laptop
- The working area can be easily viewed from three sides through clear mounted Makrolon panes
- Base as cabinet e.g. for controller or computer with cable bushing

- Housing can be removed from the top
- Complete unit mobile
- Rear opening for cable duct
- The design captivates by compactness and operating comfort

Housing SHC 1 for OPTIMILL BF 20 L CNC-Vario

Item No	3539091
Dimensions L x W x H	1'100 x 750 x 1'770 mm
Net weight	200 kg

Housing SHC 2 for OPTIMILL BF 20 L CNC-Vario

Item No	3539092
Dimensions L x W x H	1'300 x 750 x 1'770 mm
Net weight	220 kg



Fig.: SHC 1

SHC 3 for CNC milling machines OPTIMILL BF 30Vario / OPTIMILL BF 46Vario

Convincing arguments: quality, efficiency and price

- Mounting option to deposit a laptop
- The working area can be easily viewed from three sides through clear mounted Makrolon panes
- Base designed on two sides

- Base as cabinet e.g. for controller or computer with cable bushing
- Lateral parts of housing are collapsible thus easy access to the machine
- Rear opening for cable duct
- The design captivates by compactness and operating comfort

Housing SHC 3 for OPTIMILL BF 30Vario-CNC/ BF 46Vario-CNC

Item No	3539093
Dimensions L x W x H	1'895 x 1'490 x 1'695 mm
Net weight	300 kg



Fig.: SHC 3

SHC 6 and SHC 7 for CNC lathe OPTITURN TU 2506 / TU 2807 / D 320 / TU 3209V

Convincing arguments: quality, efficiency and price

- The user-friendly protective housing is equipped with a front sliding door and a lateral door as well as a rear access flap for maintenance purposes.
- The working range is well visible through clear resistant Makrolon panes.
- No shifting of the control elements required (Emergency-Stop, ON-OFF switch) since the complete control of the machine is located outside the working range.

- It is possible to set the feed and the speed from the outside
- The compact housing is suitable for the corresponding standard base of the lathe, but can also be mounted on a workbench.

Housing SHC 6 for OPTITURN TU 2506 / TU 2807

Item No	3539096
---------	---------

Housing SHC 7 for OPTITURN D320 x 920 / TU 3209V

Item No	3539097
---------	---------

Safety pack "Safety kit"

3539085

- Protects the operator and the machine
- Complies with the EU Directive EN2006/42 EC with the optional housing SHC
- Including factory assembly
- Safety PLC
- Safety switch



Fig.: SHC 6 with optional chip tray

Fig.: SHC 6 with optional TU2807 and optional standard base

1

Important notes:

- The EU Directive EN2006/42 EC is complied with only with the housing SHC, the electronic kit and a workshop assembly in an authorised workshop.
- Without the SHC and the safety kit the machine is incomplete in the CNC equipment, thus the CE directive is not complied with.

Power-Drive 1 - the step motor control; the compact solution to control a separate machine axis which is driven by a step motor

Convincing arguments: quality, efficiency and price

- Control to drive a step motor with max. 3 A without CNC controller
- Step motor control is working in the half stepping mode
- Integrated control card is secured against any type of short circuit
- Malfunctions are indicated by the red LED which lights up
- Step less feed speed
- Reference switch for monitoring of the stop position
- Right-/left handed rotation
- Emergency stop function
- Cooling element
- Application example as feed unit of the X-axis of a BF 20Vario

Power Drive 1	
Item No	3571941
Used tension/current	
24 V 3.5A	
Dimensions L x W x H:	115 x 128 x 62 mm



Scope of delivery

- Power supply
- Reference switch

CNC add-on kit MK F20X to control the X axis of the drilling milling machines BF 20

Convincing arguments: quality, efficiency and price

- Step motors with integrated terminal board
- Especially smooth running on the basis of little self-resonance
- IP 54 - encapsulated motor protected against water, chips
- Extended axle shaft
- 400 steps per rotation
- Toothed belt of HTD type (High Tork Drive) by Gates



Application example as feed unit of the X axis

CNC add-on kit MK F20X	
Item No	3570015

Scope of delivery

- Step motor 2.2 Nm, 3A (bipolar)
- Assembly housing incl. lid
- Driving belt
- Two toothed belt pulleys
- Spacer
- Assembly ring X-axis
- Shielded cable
- Set of screws
- Assembly instructions

CNC add-on kit's MK RT 1 and MK RT 2 to control the horizontal vertical circular dividing tables

CNC add-on kit MK RT 1	
Item No	3570510

- for horizontal vertical circular dividing table RT100
- for horizontal vertical circular dividing table RT150

CNC add-on kit MK RT 2	
Item No	3570514
• for horizontal vertical circular dividing table RT200	



Fig.: RT150-CNC

Scope of delivery:

- Housing
- Coupling
- Step motor 2.2 Nm, 3A
- Screwing
- Cable 4 x 0.75 mm2



Description „Horizontal-vertical circular dividing tables with 3-jaw chuck“ on page 145

CNC-briefing- information

CNC briefing in the house	
Item No	9000510
Briefing on site plus travel cost / accommodation cost, if required	

When purchasing a CNC complete kit including shop assembly, we recommend the instructions in our company headquarters in Hallstadt/Bamberg to our customers. In the frame of a one-day instruction on his machine, the customer obtains the complete cabling and configuration of the control hardware. If required lump-sum operating cost for the optional shipment of the ready confectioned, ready-for-connection CNC machine is invoiced for the increased packaging costs.

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Please note

- Any existing price lists will become void at the moment of publication of this catalogue.
- We do not take any liability for misprints, errors or incorrect presentation.
- Technical and optical modifications are reserved.
- Illustrations partially including optional accessories.
- The delivery is performed exclusively according to our terms of delivery and payment.
- The machines are delivered partially disassembled for transport-technical reasons.
- The products are sold by specialized trade.
- The products remain our property until they are completely paid.
- Our ownership reservation shall remain valid upon third-party resale.
- In the commercial sector, the legal terms of warranty shall apply.
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- Please observe that the prices of some machines in this brochure are plus transport packaging flat rate for transportation unit's resp. packaging and packaging cost.

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General notes regarding the operation of our machines:

- Generally, our machines have to be operated only under supervision. However, if you leave the machine during operation you are acting grossly negligent.
- Please find the indications regarding the accuracy of the machines in the technical data on the catalogue pages. If you cannot find the corresponding values there, please do not hesitate to contact info@optimum-maschinen.de in order to obtain more detailed information.
- The indicated accuracies are achieved under standard conditions (proper installation of the machine and environmental temperatures of 20°C). The machines are not designed for continuous operation.

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