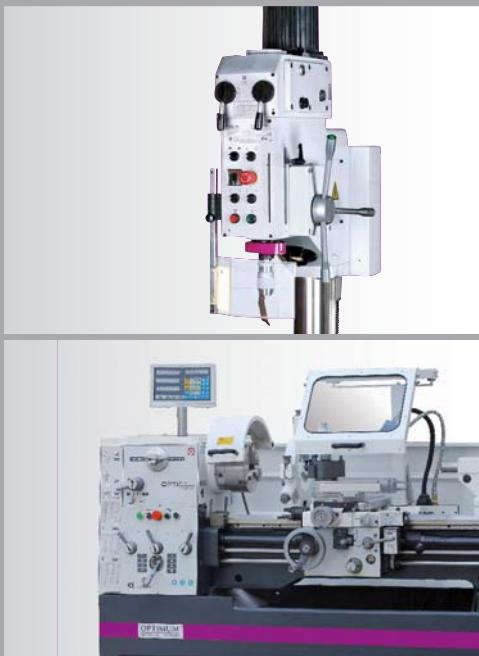




Table drilling machines  
Upright drilling  
Geared upright drills  
Lathes  
Milling machines  
Metal band saws  
Circular metal saws  
Grinding machines  
Polishing machines  
Sheet metal working  
Arbor presses  
Measuring devices  
CNC add-on kits

## Metal working machines

The OPTIMUM in quality, price-performance and service



**OPTI**drill®  
**OPTI**mill®  
**OPTI**turn®  
**OPTI**saw®  
**OPTI**grind®



Headquarters in Hallstadt/Bamberg



## Quality at a cost-efficient price **OPTIMUM metal working machines**

### Your requirements are our target

Since more than 20 years we are dealing with the development, design and production of **OPTIMUM** products. Any one of our products distinguishes itself by quality, accuracy, sustainability and consistent value. We develop our machines ourselves to a large extent. 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're 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 on-site. Another large part of the **OPTIMUM** Metal Working Machinery is manufactured exclusively or in accordance with specific requirements for **OPTIMUM**.



Quality assurance



Outgoing goods inspections



Assembly drilling machines



Assembly lathes



Optimum factory, Yangzhou China

**The OPTIMUM guarantee of quality:  
All OPTIMUM products are produced with high  
quality requirements.**

### Quality

**OPTIMUM** products are produced with high quality standards. There are same or similar products on the market, however, this products do not meet the **OPTIMUM** quality standards: **OPTIMUM** products are often imitated.

### 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.

### After-Sales-Service

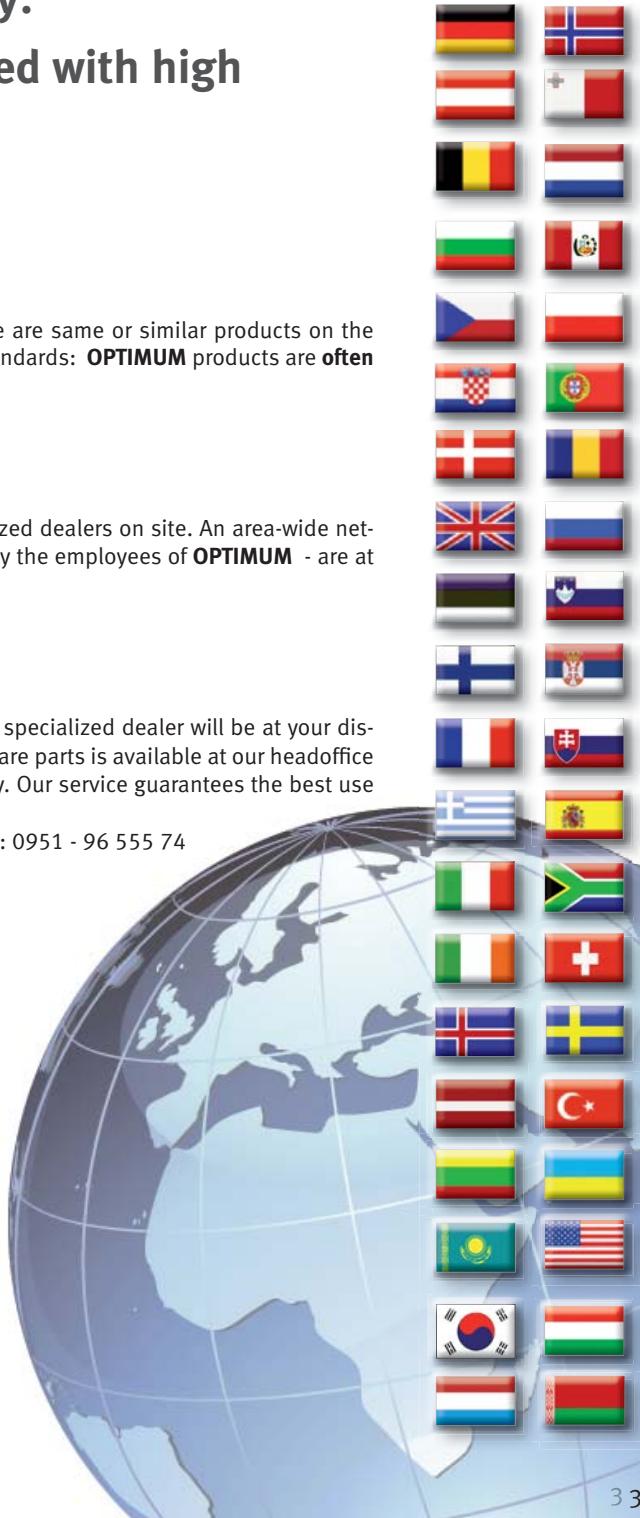
Should you require our after-sales service, we as well as your locally specialized dealer will be at your disposal with an experienced service team. A comprehensive stock of spare parts is available at our headoffice so that we are able to supply spare parts at short notice, if necessary. Our service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

Please use our **free of charge** phone hotline for any further questions: 0951 - 96 555 74

### Worldwide representations

As a German company, **OPTIMUM** is working together with competent partners in lots of countries worldwide from its company headquarters at Hallstadt/Bamberg. The international distribution network of **OPTIMUM** extends worldwide over many countries.

Kilian Stürmer  
Executive Direktor

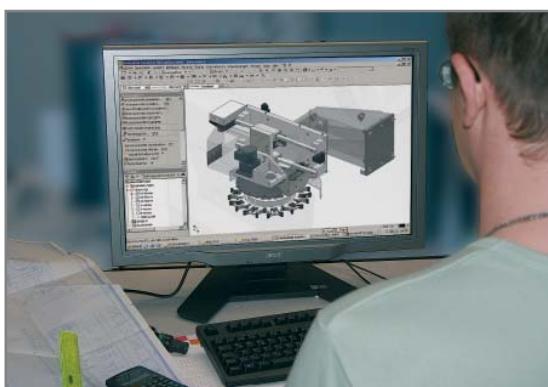




## ■ Planning

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 in our range of products as an inherent part.. 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 informations 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 replacement 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 Machines 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 system supplier of the control and drive technology for the CNC controlled lathes and milling machines of Optimum Machines. For the CNC controlled lathes and milling machines of Optimum Machines Germany GmbH. Due to the long-term and successful cooperation a cooperation partnership for the CNC training was agreed in June 2012



## ■ Supplier support

Regular meetings with our engineers contribute to transfer our new developments and enhancements aimed to serial production. This direct care at our manufacturing facilities is indispensable in order to produce the quality products in which our customers trust since more than 20 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 OPTIMUM machines are not less versatile than the workpieces and manufacturing requirements of our end customers. 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.



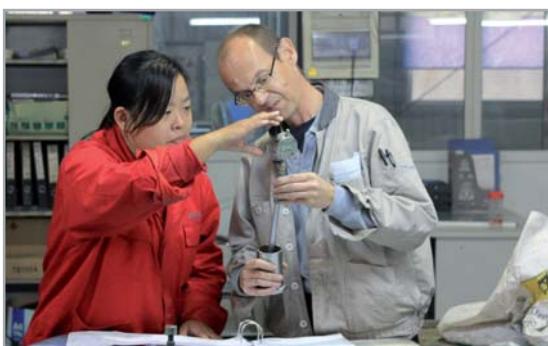
## ■ Sales training and training of staff / customer training

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. This qualification also includes our customers; we are providing workshops at our facility or training courses at the customer's premises.



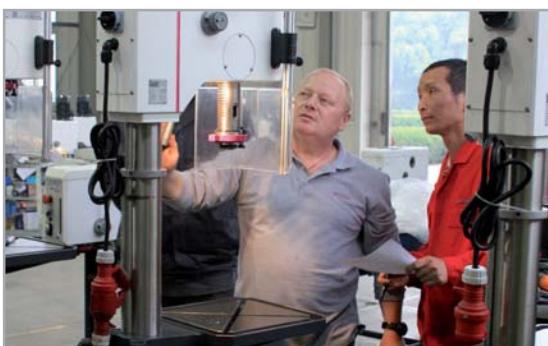
### ■ Production support

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 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 its internal and external employees. These points are evaluated under technical points of view and noted down in specific requirement or measure catalogues.



### ■ 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 working machines for professional craftsmen and the industry.

#### Premium line

- Made in EU
- Refer to the pages 8 to 9





## ■ Premium machines

Our Premium products are manufactured by our ISO certified subcontracted manufacturers in Europe. Beside a qualitatively high production we can also provide a considerably more rapid and flexible order processing. Beside a considerable gain in quality we can also provide technically and optically high quality products of high functional safety. This also includes the use of high quality components which are manufactured in Europe.

**With our premium machines “Made in EU” we offer  
in all areas OPTIMUM performance and reliability.**



## ■ Production

with modern devices using high quality materials. The technical know-how in the stated manufacturing quality already achieved big successes.

All production steps are performed at one production site. This vertical integration ensures a very high quality standard.



## ■ Quality test

Quality production in the mechanical engineering is based on target-oriented development, production with most modern machine technique and a high quality workforce.



### ■ Final assembly

The final assembly and commissioning of our PREMIUM machines provides added value and allows perfect long-term working with the machine.



### ■ Production

Optimum Machines has very intensively examined the question of quality. Therefore, we have chosen a production site for our PREMIUM product line which is certified according to DIN EN ISO.



### ■ Finish

The PREMIUM machines are manufactured for us with in this finish. These are the significant differentiating factors to a pretended "more cost-efficient" offer of our competitors.



### ■ Quality assurance

Coordinate measurement on a 3-D measuring machine. With these comprehensive components of the measuring technique the 3-D scanning of 3-D materials not only provides a complete picture of complex surface geometries but also correlates them meaningfully.



### ■ Supplier support

The best precondition to deliver safe and high quality is a thorough selection of suppliers as well as inspection of all used production materials.

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

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## Technical datas of OPTI<sub>drill</sub> drilling machines for general orientation



	Motor power kw	Drilling capacity in steel max. Ø in mm	Spindle seat	Throat in mm	Speed ranges 1/min	Infinity variable Speed control	Coolant equipment (Series)	Tread cutting (Series)	Autom. feed	Working lamp (Series)	Quickaction drill chuck	230V version available	400V version available	Bench drill	Upright drilling machine	Geardrilling machine	Radial drilling machine
<b>B13</b>	0,3	Ø 13	fixed B16	104	520-2620							●			●		
<b>B14</b>	0,35	Ø 14	fixed B16	104	520-2620						●	●			●		
<b>B16</b>	0,45	Ø 16	MT2	125	660 - 2500						●	●			●		
<b>B20</b>	0,55	Ø 20	MT2	170	210- 2220						●	●			●		
<b>B25</b>	0,55	Ø 20	MT3	170	210- 2220						●	●	●			●	
<b>B 32</b>	1,1	Ø 32	MT4	225	140-2020						●		●			●	
<b>RB 6T</b>	0,75	Ø 16	MT2	115-430	390-3000							●					●
<b>RB 8S</b>	0,75	Ø 16	MT2	115-430	390-3000							●					●
<b>B 17 Pro</b>	0,5	Ø 16	MT2	180	500-2520						●	●			●		
<b>B 23 Pro</b>	0,75	Ø 25	MT2	180	200-2440						●	●	●		●	●	
<b>B 26 Pro</b>	0,75	Ø 25	MT3	10	200-2440						●		●			●	
<b>B 33 Pro</b>	1,1	Ø 30	MT4	254	120-1810						●		●				
<b>B 23 Pro Vario</b>	0,75	Ø 25	MT2	180	30-3500	●					●	●	●		●		
<b>B 26 Pro Vario</b>	0,75	Ø 25	MT3	210	30-3500	●					●	●	●			●	
<b>B 33 Pro Vario</b>	1,5	Ø 30	MT4	254	20-3500	●					●	●	●			●	
<b>B16H</b>	0,55	Ø 13	MT2	130	450-3500						●	●	●		●		
<b>B24 H</b>	0,85	Ø 24	MT2	165	350-4000						●	●	●		●		
<b>B28 H</b>	0,85	Ø 28	MT3	200	120-4000						●	●	●		●		●
<b>B34 H</b>	1,5/2,2	Ø 34	MT4	285	145-4800						●	●	●		●		●
<b>B16 HV</b>	0,55	Ø 16	MT2	130	100-7500	●					●	●	●		●		
<b>B24 HV</b>	0,85	Ø 24	MT2	165	100-5950	●					●	●	●		●		
<b>B28 HV</b>	0,85	Ø 28	MT3	200	35-5600	●	●				●	●	●				●
<b>B34 HV</b>	1,5/2,2	Ø 34	MT4	285	40-5000	●	●				●	●	●				●
<b>B30 BS</b>	2,2	Ø 30	MT3	285	30-3900	●	●	●	●		●	●	●				●
<b>B 30 VGM</b>	2,5	Ø 30	MT3	285	80 - 3000	●	●	●	●		●	●	●			●	
<b>DH 26 GT</b>	0,65	Ø 26	MT3	255	105-2900					auto			●		●		●
<b>DH 28 GS</b>	0,65	Ø 26	MT3	255	105-2900						●	●	●		●		●
<b>DH 32 GS</b>	1,1/1,5	Ø 32	MT4	285	75 -2000						●	●	●		●		●
<b>B40 E</b>	1,1/1,5	Ø 28	MT4	285	95 - 3200	●					●	●	●		●		●
<b>B40 PTE</b>	1,1/1,5	Ø 32	MT4	285	95 - 3200	●				mechan.		●			●		●
<b>B40 GSP</b>	1,5	Ø 35	MT4	350	64 - 3060	●				mechan.		●		●		●	
<b>B40 GSM</b>	1,5	Ø 35	MT4	350	64 - 3060	●				elec mag		●		●		●	
<b>DZ 25</b>	0,8 / 1,2	Ø 25	MT3	250	64 - 3060						●		●		●		●
<b>DZ 35</b>	0,8 / 1,2	Ø 35	MT4	300	75 - 2100						●	●			●		●
<b>DZ 40</b>	1,5	Ø 40	MT4	350	93 - 1420						●	●			●		●
<b>DZ 50</b>	3	Ø 50	MT4	400	45 - 685						●	●			●		●
<b>B50 GSM</b>	3/2,4	Ø 50	MT4	375	54 - 2090					elec mag	●				●		●

# Drilling machines



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

### Convincing arguments: quality, efficiency and price

- Precisely machined working table, can be inclined by  $\pm 45^\circ$  and turnable by  $360^\circ$
- Solid, largely dimensioned base plate with slots, heavily ribbed at the rear side
- 400 volt types equipped with cam switch for right-handed/left-handed rotation
- Millionfold proven quality
- Fully equipped machine, the user can immediately start to work productively from OPTI drill B 14 on
- Smooth running and powerful quality aluminium electrical motor
- Serial T-slots for vice fixture

V-belt



Type	B 13	B 14	B 16	B 20
Item No	300 8131	300 8141	300 8161	300 8201 (230V) 300 8203 (400V)
€ plus VAT	<b>159, 00</b>	<b>209, 00</b>	<b>309, 00</b>	<b>399, 00</b> <b>439, 00</b>
<b>Machine data</b>				
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph or 400 V / 3 Ph
Motor power	300 W	350 W	450 W	0.55 kW
<b>Drilling capacity</b>				
Drilling capacity in steel (S235JR)	Ø 13 mm	Ø 14 mm	Ø 16 mm	Ø 20 mm
Continuous drilling capacity in steel	Ø 12 mm	Ø 12 mm	Ø 15 mm	Ø 18 mm
<b>Spindle seat</b>				
Throat	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
<b>Speeds</b>				
Spindle speeds	520 - 2'620 min <sup>-1</sup>	520 - 2'620 min <sup>-1</sup>	660 - 2'500 min <sup>-1</sup>	210 - 2'220 min <sup>-1</sup>
Number of steps	5 steps	5 steps	5 steps	12 steps
<b>Drilling table</b>				
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/turnable	$\pm 45^\circ / 360^\circ$	$\pm 45^\circ / 360^\circ$	$\pm 45^\circ / 360^\circ$	$\pm 45^\circ / 360^\circ$
Distance spindle - table (max.)	240 mm	330 mm	390 mm	465 mm
Working surface pedestal (L x W)	135 x 175 mm	140 x 180 mm	160 x 170 mm	205 x 200 mm
Distance spindle - stand (max.)	325 mm	440 mm	525 mm	645 mm
<b>Dimensions</b>				
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
<b>Standard equipment</b>				
	Gear rim drill chuck (1 - 13 mm)	Quick-action drill chuck (0 - 13 mm) 2 T-slots	Quick-action drill chuck (0 - 16 mm) Morse taper MT2, 2 T-slots	



Fig.: B 25

Fig.: B 32

Type	B 25	B 32
Item No	300 8253	300 8323
€ plus VAT	<b>499, 00</b>	<b>829, 00</b>
<b>Machine data</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	0.55 kW	1.1 kW
<b>Drilling capacity</b>		
Drilling capacity in steel (S235JR)	Ø 20 mm	Ø 32 mm
Continuous drilling capacity in steel	Ø 18 mm	Ø 28 mm
<b>Spindle seat</b>		
Throat	170 mm	225 mm
Spindle seat	MT 3	MT 4
Spindle stroke	80 mm	125 mm
<b>Speeds</b>		
Spindle speeds	210 - 2'220 min <sup>-1</sup>	140 - 2'020 min <sup>-1</sup>
Number of steps	12 steps	9 steps
<b>Drilling table</b>		
Table size length x width	275 x 275 mm	360 x 360 mm
T-slot size	14 mm	14 mm
Drilling table slewable/turnable	± 45°/360°	± 45° /360°
Distance spindle - table (max.)	760 mm	600 mm
Working surface pedestal	235 x 220 mm	260 x 270 mm
Distance spindle - stand (max.)	1'210 mm	1'170 mm
<b>Dimensions</b>		
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
<b>Standard equipment</b>		
	Quick-action drill chuck (0 - 16 mm), 2 T-slots	Morse taper MT 4
	Morse taper MT 3	

### Convincing arguments...



- 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
- 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



- Long, ergonomic sleeve lever with Softgrip handles for safe working
- Drilling depth stop



- User-friendly switch for IP 54 with undervoltage release,
- Separate EMERGENCY-STOP push button

„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

- 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
- Drilling spindle with precision ball bearings
- OPTIMUM sprocket wheel drill chuck included in the standard scope of delivery

- Optimum price/performance ratio
- Stable value
- Fully equipped machine, the user can immediately start to work productively

V-belt

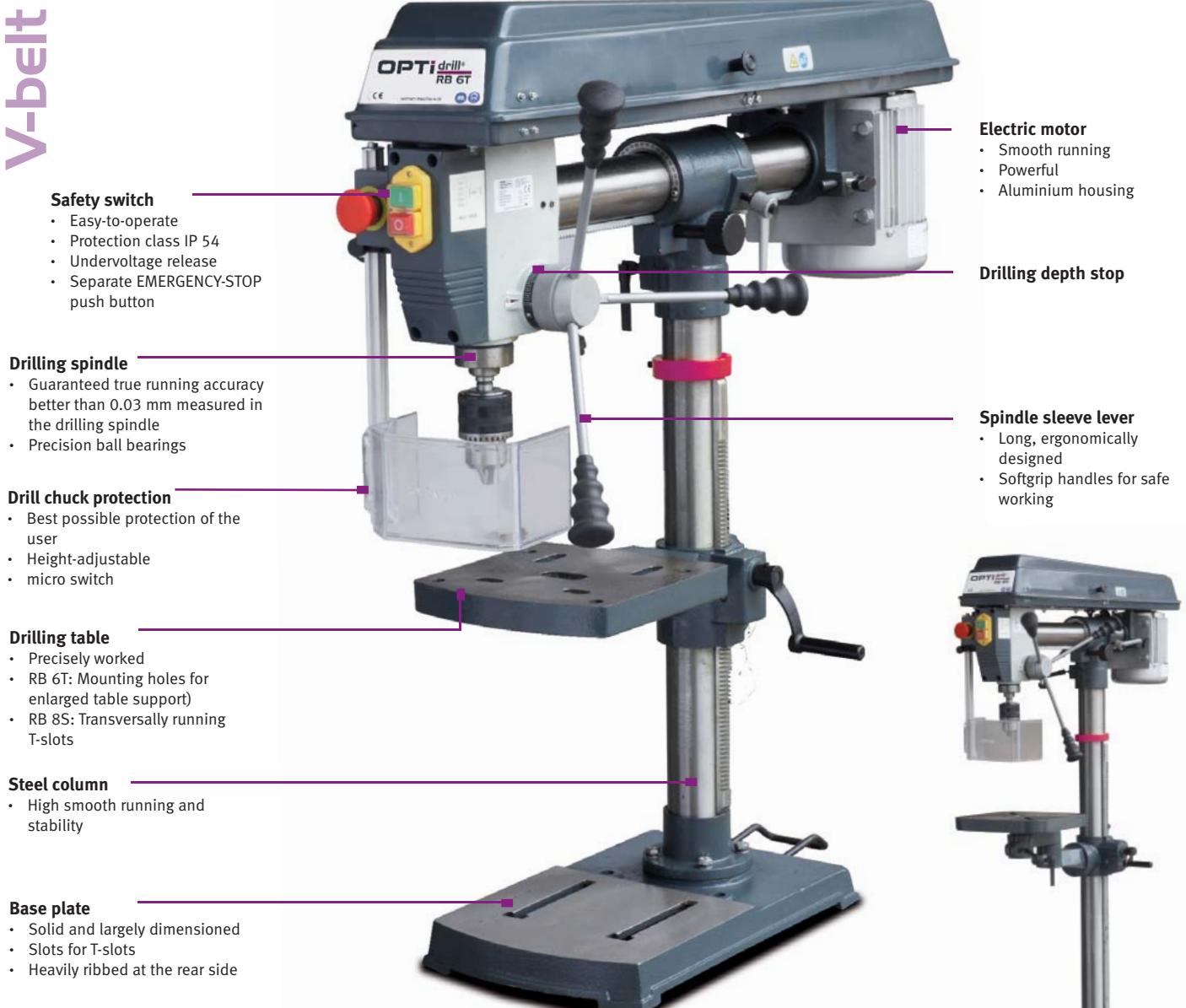


Fig.: Opti drill RB 6T



Fig.: Opti drill RB 8S

## Technical data and accessories

Type	RB 6T	RB 8S
Item No	300 9161	300 9181
€ plus VAT	<b>369, 00</b>	<b>429, 00</b>
<b>Machine data</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor power	750 W	
<b>Drilling capacity</b>		
Drilling capacity in steel (S235JR)	Ø 16 mm	
Continuous drilling capacity in steel (S235JR)	Ø 12 mm	
<b>Spindle seat</b>		
Spindle seat	MT 2	
Throat	115 - 430 mm	
Spindle stroke	80 mm	
<b>Speeds</b>		
Spindle speeds	390 - 3'000 min <sup>-1</sup>	
Number of steps	5 steps	
<b>Drilling table</b>		
Table size length x width	225 x 230 mm	262 x 262 mm
Slot size	14 mm	
Drilling table inclinable	± 45°	
Distance spindle - table (max.)	380 mm	740 mm
Distance spindle - stand (max.)	550 mm	1,250 mm
<b>Dimensions</b>		
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
<b>Standard equipment</b>		Gear rim drill chuck (1-16 mm) B 16 Morse taper MT 2 - B 16

Accessories	Item No	€ plus VAT
<b>Clamping tool kit SPW12</b>	335 2017	<b>85, 00</b>
• T-slots 14 mm . Draw bar thread M 12		
• Metric threads		
<b>Cone drill drift MSP 1</b>	305 0636	<b>25, 00</b>
<b>Twist drill HSS MT 2</b>	305 1002	<b>149, 00</b>
• Right hand cutting . 9-pieces		



Accessories	Item No	€ plus VAT
<b>Twist drill Kit coated with titanium</b>	305 1010	<b>45, 00</b>
• 25 pcs; drill bit sizes 1 -13 mm		
<b>Machine vice MSO 100</b>	300 0100	<b>28, 00</b>
<b>Machine vice MSO 75</b>	300 0075	<b>25, 00</b>
• 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

### Convincing arguments...

- The drill head can be inclined by ± 45°
- Variable throat by shifting the drilling head
- The working table can be inclined by ± 45°



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

### Convincing arguments: quality, efficiency and price

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

V-belt



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



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

## Technical data and accessories

Type	B 17Pro	B 23Pro	B 26Pro	B 33Pro
Item No (230 V)	300 3171	300 3231 (230 V)	-	-
€ plus VAT	<b>349,00</b>	<b>539,00</b>	-	-
Item No (400 V)	-	300 3233 (400 V)	300 3263	300 3333
€ plus VAT	-	<b>549,00</b>	<b>619,00</b>	<b>959,00</b>
<b>Machine data</b>				
Electrical connection	230 V / 1 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	500 W	750 W	750 W	1.1 kW
<b>Drilling capacity</b>				
Drilling capacity in steel (S235JR)	Ø 16 mm	Ø 25 mm	Ø 25 mm	Ø 30 mm
Continuous drilling capacity in steel	Ø 12 mm	Ø 20 mm	Ø 20 mm	Ø 25 mm
<b>Spindle seat</b>				
Spindle stroke	65 mm	80 mm	85 mm	120 mm
Spindle seat	MT 2	MT 2	MT 3	MT 4
Throat	152 mm	180 mm	210 mm	254 mm
<b>Speeds</b>				
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
<b>Drilling table</b>				
Work surface table 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/turnable	± 45° / 360°	± 45° / 360°	± 45° / 360°	± 45° / 360°
Distance spindle - table (max.)	325 mm	425 mm	720 mm	695 mm
Work surface stand length x width	220 x 230 mm	240 x 250 mm	385 x 260 mm	410 x 270 mm
Distance spindle - stand (max.)	530 mm	618 mm	1'230 mm	1'180 mm
<b>Dimensions</b>				
Column diameter	Ø 60 mm	Ø 73 mm	Ø 80 mm	Ø 92 mm
Length x width x height	600 x 260 x 860 mm	654 x 330 x 1'012 mm	700 x 350 x 1'670 mm	860 x 480 x 1'720 mm
Total weight	39 kg	66 kg	82 kg	135 kg
<b>Standard equipment</b>	Morse taper MT 2 - B 16	Morse taper MT 3 - B 16	Morse taper MT 4 - B 16	
	RÖHM Quick-action drill chuck (3 - 16 mm) B16	T-slots		

Accessories Opti drill B 17Pro / B 23Pro	Item No	€ plus VAT
Direct quick-action drill chuck:		
<b>MT 2 / 1 - 16 mm</b>	305 0571	<b>85,00</b>
<b>MT 2 / 1 - 13 mm</b>	305 0572	<b>70,00</b>
<b>Morse taper MT 2 - B16</b>	305 0659	<b>6,00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45,00</b>
<b>Twist drill HSS / MT 2</b>	305 1002	<b>149,00</b>
<b>Clamping tool kit SPW 10</b>	335 2016	<b>75,00</b>
<b>Cone drill drift MSP1</b>	305 0636	<b>25,00</b>
<b>Universal coolant equipment 230 V</b>	335 2002	<b>199,00</b>

Machine vices	Item No	€ plus VAT
<b>BMS 100</b>	300 0010	<b>45,00</b>
<b>BMS 120</b>	300 0012	<b>55,00</b>
<b>BSI 100</b>	300 0210	<b>135,00</b>
<b>BSI 140</b>	300 0214	<b>189,00</b>
<b>BSI-Q 100</b>	300 0230	<b>149,00</b>
<b>BSI-Q 140</b>	300 0234	<b>209,00</b>



Fig.: BMS

Fig.: BSI

Fig.: BSI-Q

Accessories Opti drill B 26Pro	Item No	€ plus VAT
<b>Direct quick-action drill chuck MT3</b>	305 0573	<b>80,00</b>
<b>Reducing bushes MT 3 - MT 2</b>	305 0663	<b>9,00</b>
<b>Morse taper MT 3 - B16</b>	305 0660	<b>9,00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45,00</b>
<b>Twist drill HSS / MT 3</b>	305 1003	<b>149,00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85,00</b>
<b>Cone drill drift MSP1</b>	305 0636	<b>25,00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369,00</b>
<b>Universal coolant equipment 400 V</b>	335 2001	<b>199,00</b>

Accessories Opti drill B 33Pro	Item No	€ plus VAT
<b>Direct quick-action drill chuck MT4</b>	305 0574	<b>85,00</b>
<b>Reducing bushes MT 4 - MT 3</b>	305 0664	<b>15,00</b>
<b>Morse taper MT 4 - B16</b>	305 0661	<b>15,00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45,00</b>
<b>Twist drill HSS / MT 3</b>	305 1003	<b>149,00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85,00</b>
<b>Cone drill drift MSP2</b>	305 0637	<b>28,00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369,00</b>
<b>Universal coolant equipment 400 V</b>	335 2001	<b>199,00</b>

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

## 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
- Drilling depth stop
- Precisely worked working table with diagonally running T-slots
- The working table can be turned by 360°
- V-belt cover with safety switch
- V-belt tensioning device
- Long, ergonomic aluminium die-cast sleeve lever made of one piece with Softgrip handles (Opti drill B 16H / B 24H)
- Sleeve lever made of steel (Opti drill B 28H / B 34H)
- Solid, largely dimensioned base plate with slots, heavily ribbed at the rear side

- Usable as a working surface for extra high workpieces due to the rotatable drill table

**from Opti drill B 24H on:**

- Machine lamp

**from Opti drill B 28H on:**

- Easy tool change due to integrated drill drift

**Opti drill B 34 H:**

- Digital depth gauge
- Digital speed display

V-belt



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 as
- Largely dimensioned, height adjustable protective screen with safety switch

## Technical data and accessories

**NEW**

Type	B 16H	B 24H	B 28H	B 34H
Item No (230 V)	302 0217	302 0241	-	-
Item No (400 V)	-	302 0243	302 0283	302 0333
€ plus VAT	<b>650, 00</b>	<b>1.189, 00</b>	<b>1.419, 00</b>	<b>2.190, 00</b>
<b>Machine datas</b>				
Electrical connection	400V / 3Ph ~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
<b>Drilling capacity</b>				
Drilling capacity in steel (S235JR)	Ø 13 mm	Ø 24 mm	Ø 28 mm	Ø 34 mm
Cont. drilling capacity in steel (S235JR)	Ø 11 mm	Ø 20 mm	Ø 24 mm	Ø 26 mm
<b>Spindle seat</b>				
Spindle stroke	65 mm	85 mm	105 mm	160 mm
Spindle seat	MT 2	MT 2	MT 3	MT 4
Throat	130 mm	165 mm	200 mm	285 mm
<b>Speeds</b>				
Spindle speeds	450 - 3'500 min <sup>-1</sup>	350 - 4'000 min <sup>-1</sup>	120 - 4'000 min <sup>-1</sup>	145 - 4'800 min <sup>-1</sup>
Number of steps	5 steps	7 steps	16 steps	2 x 9 steps
<b>Drilling table</b>				
Work surface table 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
Drilling table turnable	360°	360°	360°	360°
Distance spindle - table (max.)	370 mm	515 mm	860 mm	790 mm
Work surface stand length x width	200 x 240 mm	280 x 260 mm	320 x 320 mm	390 x 390 mm
Distance spindle - stand (max.)	495 mm	681 mm	1'275 mm	1'275 mm
<b>Dimensions</b>				
Column diameter	Ø 60 mm	Ø 80 mm	Ø 92 mm	Ø 115 mm
Length x width x height	549 x 300 x 848 mm	665 x 434 x 998 mm	698 x 449 x 1'721 mm	918 x 585 x 1'895
Total weight	65 kg	84 kg	140 kg	274 kg
<b>Standard equipment</b>	Quick-action drill chuck (1 - 13 mm) Morse taper MT 2 T-slots	Quick-action drill chuck (1 - 16 mm) Morse taper MT 2 T-slots	Quick-action drill chuck (1 - 16 mm) Morse taper MT 3 T-slots	Quick-action drill chuck (1 - 16 mm) Morse taper MT 4 T-slots
<b>Transportation packaging flat rate plus VAT</b>	-	-	<b>TPFR 1 = € 19.00</b>	<b>TPFR 1 = € 19.00</b>

Accessories Opti drill B 16H / B 24H	Item No	€ plus VAT
<b>Direct quick-action drill chuck:</b>		
MT2/ 1 - 16 mm	305 0571	<b>85, 00</b>
MT2/ 1 - 13 mm	305 0572	<b>70, 00</b>
Morse taper MT 2 - B16	305 0659	<b>6, 00</b>
Twist drill kit coated with titanium	305 1010	<b>45, 00</b>
Twist drill HSS / MT 2	305 1002	<b>149, 00</b>
Clamping tool kit SPW 10	335 2016	<b>75, 00</b>
Universal coolant equipment 230 V	335 2002	<b>199, 00</b>
Universal coolant equipment 400 V	335 2001	<b>199, 00</b>

Machine vices	Item No	€ plus VAT
BSI 100	300 0210	<b>135, 00</b>
BSI 140	300 0214	<b>189, 00</b>
BSI-Q 100	300 0230	<b>149, 00</b>
BSI-Q 140	300 0234	<b>209, 00</b>



Fig.: BSI



Fig.: BSI-Q

Accessories Opti drill B 28H	Item No	€ plus VAT
<b>Direct quick-action drill chuck</b>	305 0573	<b>80, 00</b>
MT3/0.3-16 mm		
<b>Reducing bushes</b> MT 3 - MT 2	305 0663	<b>9, 00</b>
Morse taper MT 3 - B16	305 0660	<b>9, 00</b>
Twist drill kit coated with titanium	305 1010	<b>45, 00</b>
Twist drill HSS / MT 3	305 1003	<b>149, 00</b>
Clamping tool kit SPW 12	335 2017	<b>85, 00</b>
Universal coolant equipment 400 V	335 2001	<b>199, 00</b>
Tapping chuck M5-M12	335 2042	<b>369, 00</b>

Accessories Opti drill B 34H	Item No	€ plus VAT
<b>Direct quick-action drill chuck.</b>	305 0574	<b>85, 00</b>
MT4/1-16 mm		
<b>Reducing bushes</b> MT 4 - MT 3	305 0664	<b>15, 00</b>
Morse taper MT 4 - B16	305 0661	<b>15, 00</b>
Twist drill kit coated with titanium	305 1010	<b>45, 00</b>
Clamping tool kit SPW 12	335 2017	<b>85, 00</b>
Universal coolant equipment 400 V	335 2001	<b>199, 00</b>
Tapping chuck M5-M12	335 2042	<b>369, 00</b>

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

## Robust bench drills and upright drilling machines with V-belt drive, electrically adjustable speed for continuous use

### Convincing arguments: quality, efficiency and price

- 12 steps, speed electronically variable on B 23Pro Vario and B 26Pro Vario
- 9 steps, electronically adjustable speed on B 33Pro Vario
- High torque for all speed settings
- Heavy type of the whole machine
- Fully equipped machine, the user can immediately start to work productively

Vario

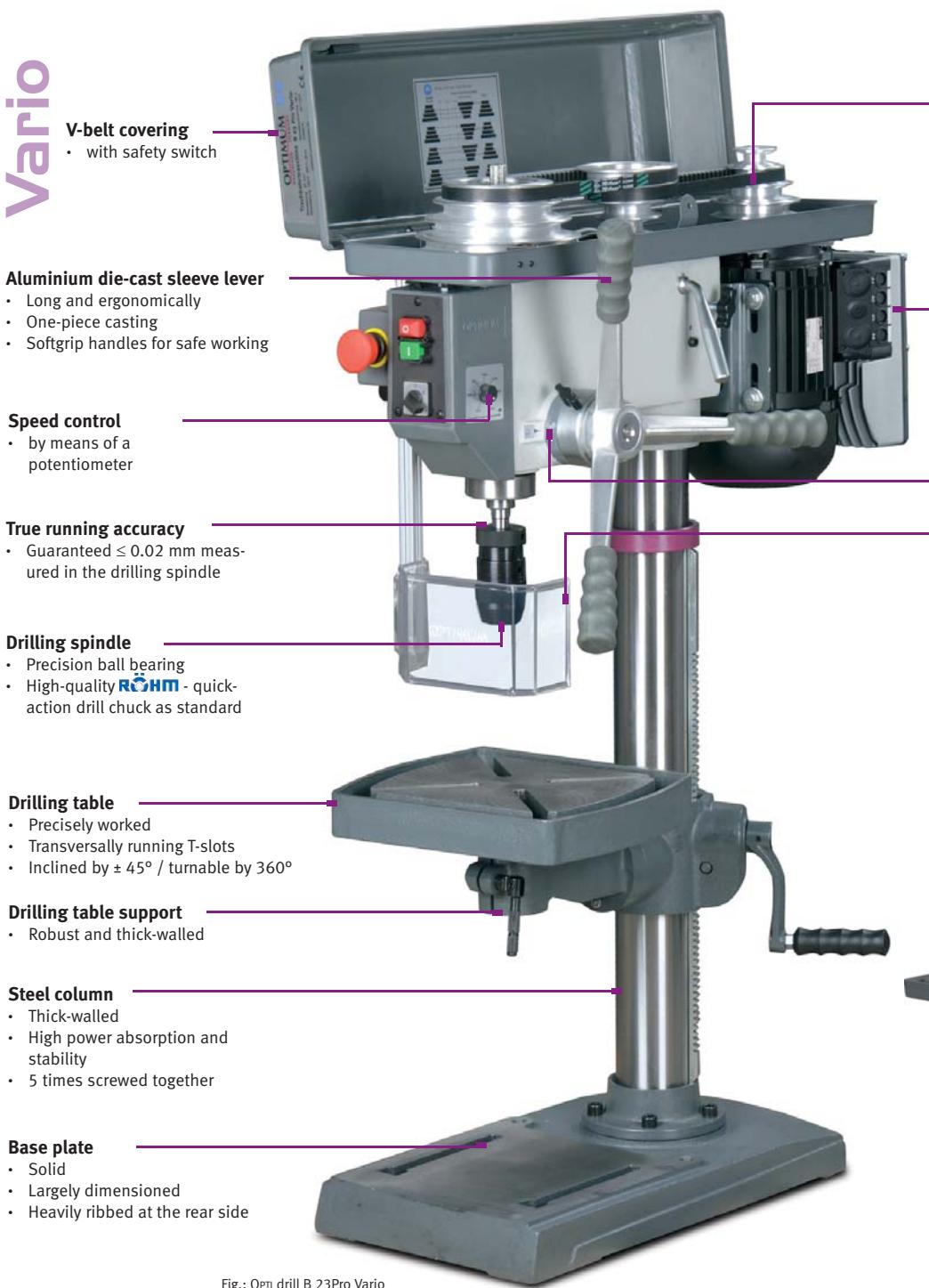


Fig.: Opti drill B 23Pro Vario

### 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

### Industrial motor with frequency converter

#### Made in Germany

- Smooth running
- Durable
- Extreme high-torque



### Drilling depth stop

### Chuck guard

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



Fig.: Opti drill B 33Pro Vario

## Technical data and accessories

Type	B 23Pro Vario	B 26Pro Vario	B 33Pro Vario
Item No	301 1233	301 1263	301 1333
€ plus VAT	<b>1.329, 00</b>	<b>1.429, 00</b>	<b>1.749, 00</b>
<b>Machine data</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	750 W	750 W	1.5 kW
<b>Drilling capacity</b>			
Drilling capacity in steel (S235JR)	Ø 25 mm	Ø 25 mm	Ø 30 mm
Continuous drilling capacity in steel	Ø 20 mm	Ø 20 mm	Ø 25 mm
<b>Spindle seat</b>			
Spindle stroke	80 mm	85 mm	120 mm
Spindle seat	MT 2	MT 3	MT 4
Throat	180 mm	210 mm	254 mm
<b>Speeds</b>			
Spindle speeds	60 - 3'500 min <sup>-1</sup>	60 - 3'500 min <sup>-1</sup>	20 - 3'500 min <sup>-1</sup>
Number of steps	12 steps, electrically adjustable speed	12 steps, electrically adjustable speed	9 steps, electrically adjustable speed
<b>Drilling table</b>			
Work surface table length x width	280 x 245 mm	330 x 290 mm	475 x 425 mm
T-slot size	12 mm	14 mm	14 mm
Drilling table slewable	± 45°	± 45°	± 45°
Drilling table turnable	360°	360°	360°
Distance spindle - table (max.)	425 mm	720 mm	695 mm
Work surface stand length x width	240 x 250 mm	385 x 260 mm	410 x 270 mm
Distance spindle - stand (max.)	610 mm	1'230 mm	1'180 mm
<b>Dimensions</b>			
Column diameter	Ø 73 mm	Ø 80 mm	Ø 92 mm
Length x width x height	660 x 320 x 1'010 mm	710 x 350 x 1'670 mm	870 x 480 x 1'720 mm
Total weight	75 kg	90 kg	140 kg
<b>Standard equipment</b>		Morse taper MT 2 - B 16  Quick-action drill chuck (3 - 16 mm) B16 T-slots	Morse taper MT 3 - B 16 Morse taper MT 4 - B 16

Accessories Opti drill B 23Pro Vario	Item No	€ plus VAT
<b>Direct quick-action drill chuck:</b>		
<b>MT2/ 1 - 16 mm</b>	305 0571	<b>85, 00</b>
<b>MT2/ 1 - 13 mm</b>	305 0572	<b>70, 00</b>
<b>Morse taper MT 2 - B16</b>	305 0659	<b>6, 00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45, 00</b>
<b>Twist drill HSS / MT 2</b>	305 1002	<b>149, 00</b>
<b>Clamping tool kit SPW 10</b>	335 2016	<b>75, 00</b>
<b>Cone drill drift MSP1</b>	305 0636	<b>25, 00</b>
<b>Universal coolant equipment 400 V</b>	335 2001	<b>199, 00</b>

Machine vices	Item No	€ plus VAT
<b>BMS 100</b>	300 0010	<b>45, 00</b>
<b>BMS 120</b>	300 0012	<b>55, 00</b>
<b>BSI 100</b>	300 0210	<b>135, 00</b>
<b>BSI 140</b>	300 0214	<b>189, 00</b>
<b>BSI-Q 100</b>	300 0230	<b>149, 00</b>
<b>BSI-Q 140</b>	300 0240	<b>269, 00</b>



Accessories Opti drill B 26Pro Vario	Item No	€ plus VAT
<b>Direct quick-action drill chuck. MT3</b>	305 0573	<b>80, 00</b>
<b>Reducing bushes MT 3 - MT 2</b>	305 0663	<b>9, 00</b>
<b>Morse taper MT 3 - B16</b>	305 0660	<b>9, 00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45, 00</b>
<b>Twist drill HSS / MT 3</b>	305 1003	<b>149, 00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85, 00</b>
<b>Cone drill drift MSP1</b>	305 0636	<b>25, 00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369, 00</b>
<b>Universal coolant equipment 400 V</b>	335 2001	<b>199, 00</b>

Accessories Opti drill B 33Pro Vario	Item No	€ plus VAT
<b>Direct quick-action drill chuck. MT4</b>	305 0574	<b>85, 00</b>
<b>Reducing bushes MT 4 - MT 3</b>	305 0664	<b>15, 00</b>
<b>Morse taper MT 4 - B16</b>	305 0661	<b>15, 00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45, 00</b>
<b>Twist drill HSS / MT 4</b>	305 1003	<b>149, 00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85, 00</b>
<b>Cone drill drift MSP2</b>	305 0637	<b>28, 00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369, 00</b>
<b>Universal coolant equipment 400 V</b>	335 2001	<b>199, 00</b>

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

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

### Convincing arguments: quality, efficiency and price

- Smooth running and powerful electrical motor
- Easy-to-operate safety switch according to IP 54 with undervoltage release and 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 sleeve lever made of one piece with Softgrip handles (OPTI drill B 16HV / B 24HV)
- Sleeve lever made of steel (OPTI drill B 28HV/ B 34HV)
- Drilling depth stop
- V-belt cover with safety switch

#### from OPTI drill B 24HV on:

- Right-/left handed rotation

#### from OPTI drill B 28HV on:

- Coolant equipment
- New chips filter according to machinery directive
- Easy tool change due to integrated drill drift

#### OPTI drill B 34HV :

- Spindle stroke 160 mm
- Threading function

Vario

#### 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  $\leq 0.015$  mm measured in the drilling spindle

#### Drilling spindle

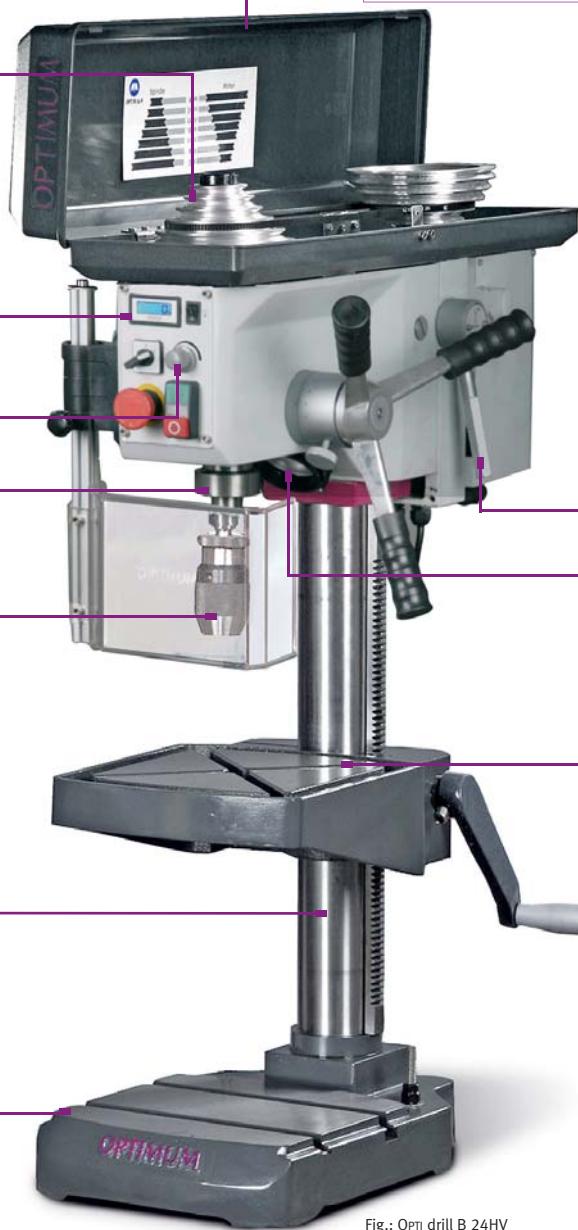
- Precision ball bearing
- High-quality OPTIMUM quick-action drill chuck as standard

#### Casting column

- Thick-walled
- High power absorption and stability

#### Base plate

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



#### OPTI drill B 34 HV

##### Operating mode "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 repeatedly 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 lamp

- Integrated in the drill head
- Halogen lamp

#### Drilling table

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

Fig.: OPTI drill B 24HV

## Technical data and accessories

Type	B 16HV	B 24HV	B 28HV	B 34HV
<b>Item No</b>	302 0218	302 0245	302 0285	302 0335
<b>€ plus VAT</b>	<b>1.499, 00</b>	<b>2.099, 00</b>	<b>2.500, 00</b>	<b>3.090, 00</b>
<b>Machine datas</b>				
Electrical connection	230 V / 1 Ph ~50 Hz			
Motor power	1.5 kW	1.5 kW	1.5 kW	2.2 kW
<b>Drilling capacity</b>				
Drilling capacity in steel (S235JR)	Ø 16 mm	Ø 24 mm	Ø 28 mm	Ø 34 mm
Continuous drilling capacity in steel	Ø 13 mm	Ø 20 mm	Ø 24 mm	Ø 26 mm
<b>Spindle seat</b>				
Spindle stroke	65 mm	85 mm	105 mm	160 mm
Spindle seat	MT 2	MT 2	MT 3	MT 4
Throat	130 mm	165 mm	200 mm	285 mm
<b>Speeds</b>				
Spindle speeds	100 - 6'000 min <sup>-1</sup>	100 - 5'950 min <sup>-1</sup>	35 - 5'600 min <sup>-1</sup>	40 - 5'000 min <sup>-1</sup>
No of speeds, electrically adjustable speed	5 steps	4 steps	12 steps	9 steps
<b>Drilling table</b>				
Work surface table 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
Drilling table turntable	360°	360°	360°	360°
Distance spindle - table (max.)	370 mm	515 mm	860 mm	790 mm
Work surface stand length x width	200 x 240 mm	280 x 260 mm	320 x 320 mm	390 x 390 mm
Distance spindle - stand (max.)	495 mm	681 mm	1'275 mm	1'275 mm
<b>Dimensions</b>				
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	65 kg	85 kg	141 kg	290 kg
<b>Standard equipment</b>	OPTIMUM quality quick-action drill chuck (1 - 13 mm) Morse taper MT 2 T-slots	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
<b>Transportation packaging flat rate plus VAT</b>	-	-	<b>TPFR 1 = € 19,00</b>	<b>TPFR 1 = € 19,00</b>

Accessories Opti drill B 16HV / B 24HV	Item No	€ plus VAT
Direct quick-action drill chuck: <b>MT2/ 1 - 16 mm</b>	305 0571	<b>85, 00</b>
<b>MT2/ 1 - 13 mm</b>	305 0572	<b>70, 00</b>
<b>Morse taper MT 2 - B16</b>	305 0659	<b>6, 00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45, 00</b>
<b>Twist drill HSS / MT 2</b>	305 1002	<b>149, 00</b>
<b>Clamping tool kit SPW 10</b>	335 2016	<b>75, 00</b>

Machine vices	Item No	€ plus VAT
<b>BSI 100</b>	300 0210	<b>135, 00</b>
<b>BSI 140</b>	300 0214	<b>189, 00</b>
<b>BSI-Q 100</b>	300 0230	<b>149, 00</b>
<b>BSI-Q 140</b>	300 0234	<b>209, 00</b>




Fig.: BSI
Fig.: BSI-Q

Accessories Opti drill B 28HV	Item No	€ plus VAT
<b>Direct quick-action drill chuck. MT3</b>	305 0573	<b>80, 00</b>
<b>Reducing bushes MT 3 - MT 2</b>	305 0663	<b>9, 00</b>
<b>Morse taper MT 3 - B16</b>	305 0660	<b>9, 00</b>
<b>Twist drill kit coated with titanium 13mm</b>	305 1010	<b>45, 00</b>
<b>Twist drill HSS / MT 3</b>	305 1003	<b>149, 00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85, 00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369, 00</b>

Accessories Opti drill B 34HV	Item No	€ plus VAT
<b>Direct quick-action drill chuck. MT4</b>	305 0574	<b>85, 00</b>
<b>Reducing bushes MT 4 - MT 3</b>	305 0664	<b>15, 00</b>
<b>Morse taper MT 4 - B16</b>	305 0661	<b>15, 00</b>
<b>Twist drill kit coated with titanium</b>	305 1010	<b>45, 00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85, 00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369, 00</b>

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

## Bench drills and upright drilling machines with infinitely variable mechanical gearbox

### Convincing arguments: quality, efficiency and price

- Smooth running and powerful electrical motor
- Easy-to-operate safety switch according to IP 54 with undervoltage release and separate EMERGENCY-STOP push button
- Long, ergonomic aluminium die-cast sleeve lever made of one piece with Softgrip handles (DH 24BV)
- Sleeve lever made of steel (DH 28BV/ DH 34BV)
- Usable as a working surface for extra high workpieces due to the rotatable drill table
- Right-/left handed rotation
- 2 speed stages
- V-belt cover with safety switch

- Fully equipped machine, the user can immediately start to work productively from Opti drill DH 28BV on
- Easy tool change due to integrated drill drift
- Opti drill DH 34BV
- Digital depth gauge

**Vario**

**VARIO DRIVE**  
made in Germany

**Digital speed display**  

- Easy-to-read
- Integrated in the housing

**True running accuracy**  

- Guaranteed  $\leq 0.015$  mm measured in the drilling spindle

**Chuck guard**  

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



Fig.: Opti drill DH 24BV



Fig.: Opti drill DH 34BV

### Infinitely variable mechanical gearbox

- Extremely reliable due to manual speed regulation
- Powerful smooth running
- Durable V-belt
- Speed modification while the motor is running
- Permanently optimum efficiency degree of the motor



**Machine lamp**  

- 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

Type	DH 24BV	DH 28BV	DH 34BV
Item No	302 0420	302 0430	302 0440
€ plus VAT	<b>1.990,00</b>	<b>2.200,00</b>	<b>2.890,00</b>
<b>Machine datas</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	1.5 / 0.85 kW	1.5 / 0.85 kW	1.5 / 2.2 kW
<b>Drilling capacity</b>			
Drilling capacity in steel (S235JR)	Ø 24 mm	Ø 28 mm	Ø 34 mm
Continuous drilling capacity in steel	Ø 20 mm	Ø 24 mm	Ø 26 mm
<b>Spindle seat</b>			
Spindle stroke	85 mm	105 mm	160 mm
Spindle seat	MT 2	MT 3	MT 4
Throat	165 mm	200 mm	285 mm
<b>Speeds</b>			
Spindle speeds	300 - 4'000 min <sup>-1</sup> 2 steps	300 - 4'000 min <sup>-1</sup> 2 steps	300 - 4'000 min <sup>-1</sup> 2 steps
<b>Drilling table</b>			
Work surface table length x width	280 x 300 mm	340 x 360 mm	420 x 400 mm
T-slot size	14 mm	14 mm	14 mm
Drilling table turnable	360°	360°	360°
Distance spindle - table (max.)	515 mm	860 mm	790 mm
Work surface stand length x width	280 x 260 mm	320 x 320 mm	390 x 390 mm
Distance spindle - stand (max.)	681 mm	1'275 mm	1'025 mm
<b>Dimensions</b>			
Column diameter	Ø 80 mm	Ø 92 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
Total weight	80 kg	160 kg	270 kg
<b>Standard equipment</b>			
	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
<b>Transportation packaging flat rate</b>	-	<b>TPFR 1 = € 19,00 plus VAT</b>	<b>TPFR 1 = € 19,00 plus VAT</b>

Accessories DH 24BV	Item No	€ plus VAT
<b>Direct quick-action drill chuck:</b>		
<b>MT2/ 1 - 16 mm</b>	305 0571	<b>85,00</b>
<b>MT2/ 1 - 13 mm</b>	305 0572	<b>70,00</b>
<b>Morse taper MT 2 - B16</b>	305 0659	<b>6,00</b>
<b>Twist drill kit coated with titanium</b>	305 1010	<b>45,00</b>
<b>Twist drill HSS / MT 2</b>	305 1002	<b>149,00</b>
<b>Clamping tool kit SPW 10</b>	335 2016	<b>75,00</b>
<b>Universal coolant equipment 230 V</b>	335 2002	<b>199,00</b>

Accessories DH 28BV	Item No	€ plus VAT
<b>Direct quick-action drill chuck. MT3</b>		
<b>Reducing bushes MT 3 - MT 2</b>	305 0573	<b>85,00</b>
<b>Morse taper MT 3 - B16</b>	305 0663	<b>9,00</b>
<b>Twist drill kit coated with titanium</b>	305 0660	<b>9,00</b>
<b>Twist drill HSS / MT 3</b>	305 1010	<b>45,00</b>
<b>Clamping tool kit SPW 12</b>	305 1003	<b>149,00</b>
<b>Universal coolant equipment 400 V</b>	335 2017	<b>85,00</b>
<b>Tapping chuck M5-M12</b>	335 2001	<b>199,00</b>
	335 2042	<b>369,00</b>

Machine vices	Item No	€ plus VAT
<b>BSI 100</b>	300 0210	<b>135,00</b>
<b>BSI 140</b>	300 0214	<b>189,00</b>
<b>BSI-Q 100</b>	300 0230	<b>149,00</b>
<b>BSI-Q 140</b>	300 0234	<b>209,00</b>




Fig.: BSI
Fig.: BSI-Q

Accessories DH 34BV	Item No	€ plus VAT
<b>Direct quick-action drill chuck. MT4</b>		
<b>Reducing bushes MT 4 - MT 3</b>	305 0574	<b>85,00</b>
<b>Morse taper MT 4 - B16</b>	305 0664	<b>15,00</b>
<b>Twist drill kit coated with titanium</b>	305 0661	<b>15,00</b>
<b>Clamping tool kit SPW 12</b>	305 1010	<b>45,00</b>
<b>Tapping chuck M5-M12</b>	335 2017	<b>85,00</b>
	335 2042	<b>369,00</b>

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-/left handed rotation
- Triple sleeve lever made of steel
- Adjustable drilling depth stop

**Vario**

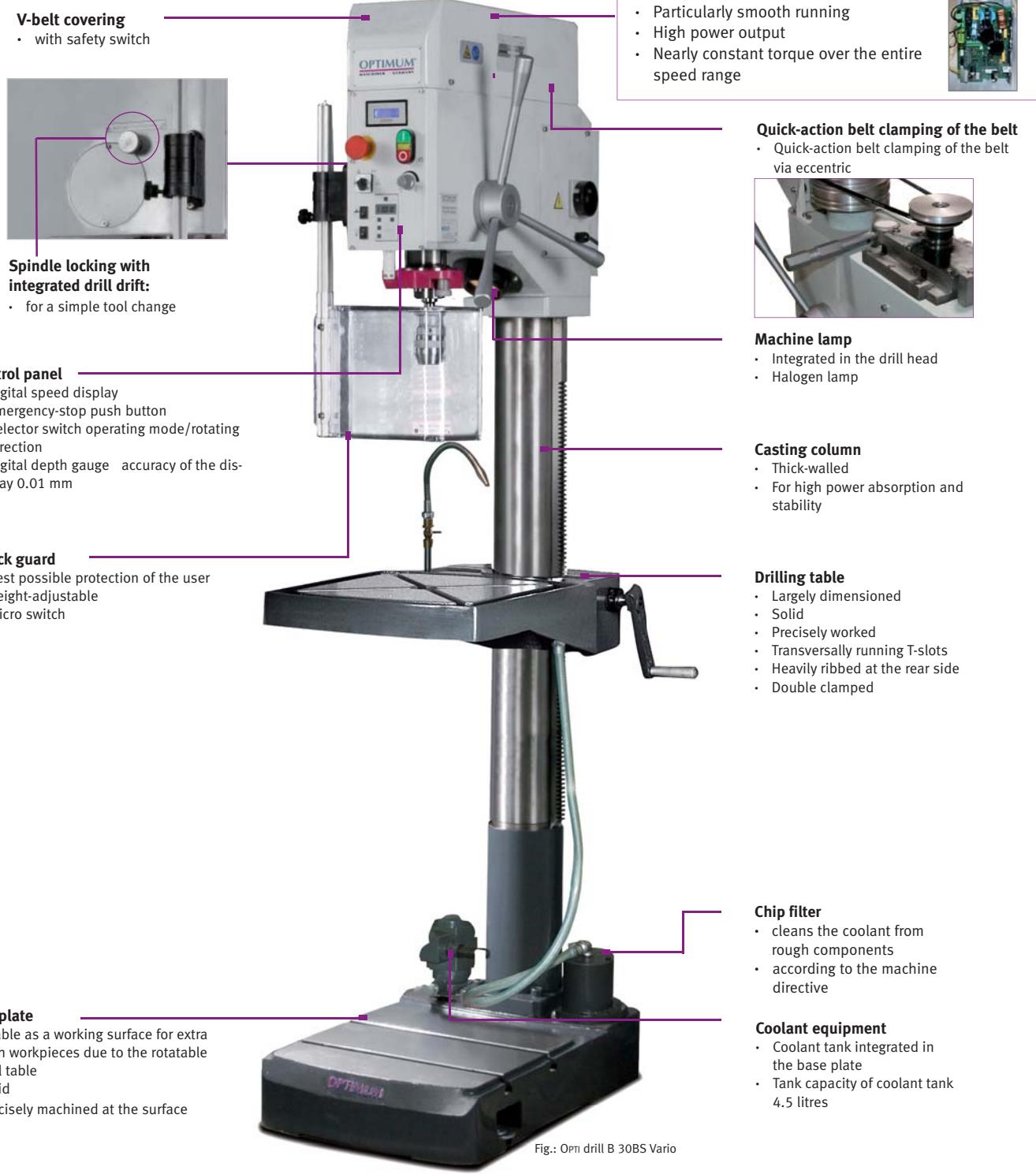
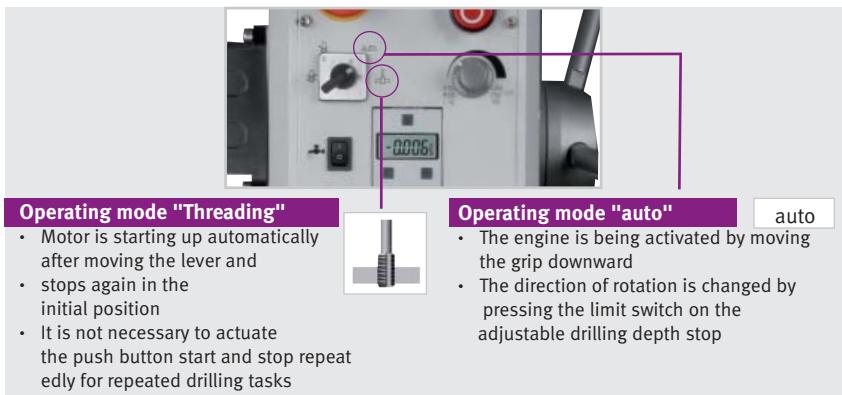


Fig.: Opti drill B 30BS Vario

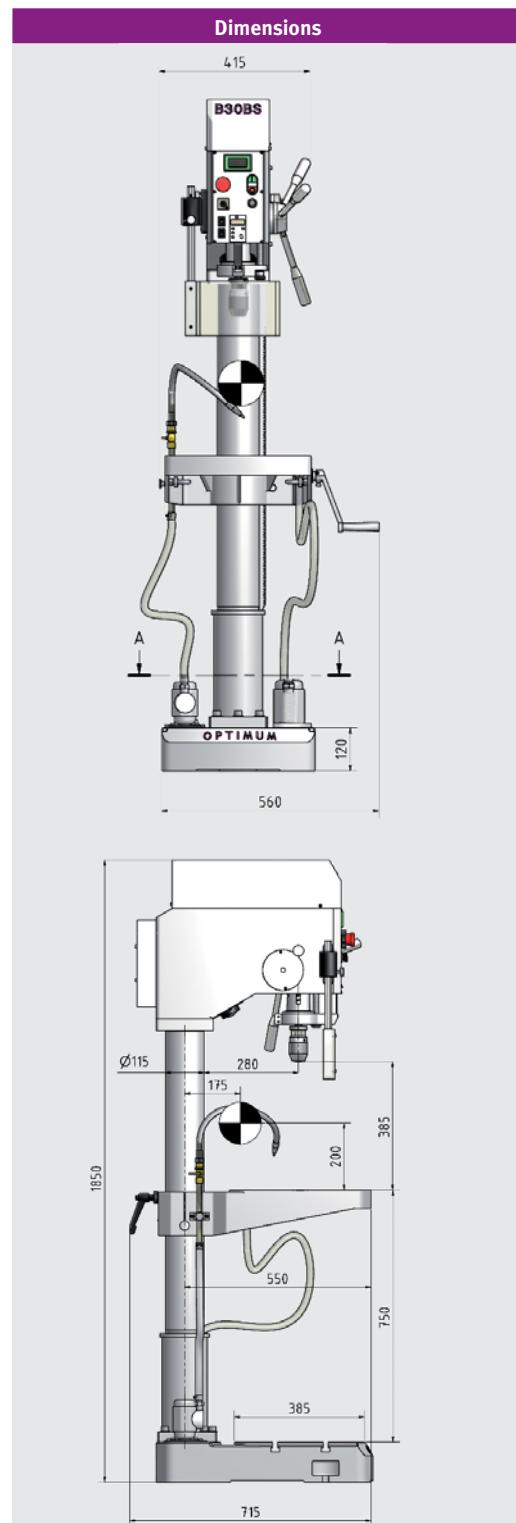
## Technical data and dimensions

Type	B 30BS Vario
Item No	302 1303
€ plus VAT	<b>3.650, 00</b>
<b>Machine data</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Total connected value	2.2 kW
Motor coolant pump	40 W
<b>Drilling capacity</b>	
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 28 mm
Thread cutting in steel (S235JR)	M16
<b>Spindle seat</b>	
Spindle stroke	125 mm
Spindle seat	MT3
Throat	285 mm
<b>Speeds</b>	
Spindle speeds	30 - 3'900 min <sup>-1</sup>
Number of steps	4 steps, electrically adjustable speed
<b>Drilling table</b>	
Work surface table length x width	400 x 500 mm
T-slot size	14 mm
Drilling table turntable	360°
Distance spindle - table (max.)	780 mm
Work surface stand length x width	270 x 390 mm
Distance spindle - stand (max.)	1'230 mm
<b>Dimensions</b>	
Column diameter	Ø 115 mm
Length x width x height	715 x 560 x 1'850 mm
Total weight	280 kg
<b>Standard equipment</b>	
Quick-action drill chuck 0 - 16 mm B16 Morse taper MT 3 - B16 T-slots	
<b>Transportation packaging flat rate</b>	
TPFR 1 = € 19.00 plus VAT	



**Operating mode "auto"** auto

- 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



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

Stage  
Speed  
Torque

1      30 - 300 min<sup>-1</sup>  
100 Nm

2      120 - 1'200 min<sup>-1</sup>  
25 Nm

3      240 - 2'400 min<sup>-1</sup>  
13 Nm

4      390 - 3'900 min<sup>-1</sup>  
6 Nm

„Accessories for drilling machines“ on page 47

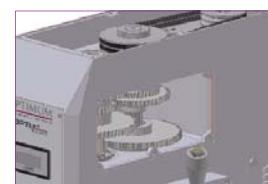
## Gear drilling machine with OPTIMUM Brushless drive and automatic spindle sleeve feed

### 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
- Vario Speed (3 gear stages with electronically adjustable speed)
- Best power transmission due to aluminium belt pulleys in connection with GATES 7 M industrial V-belts
- Electromagnetic coupling for the automatic spindle sleeve feed
- Right-/left handed rotation
- Quadruple steel grip

- Adjustable drilling depth stop
- Digital depth gauge
- Thread cutting mode

Gear



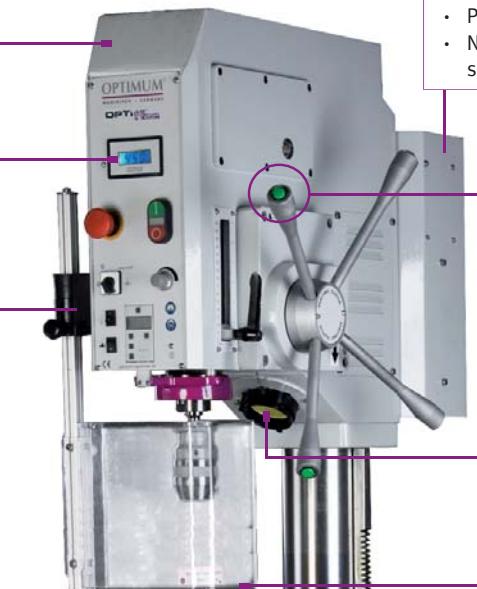
#### V-belts

- with pre transmission gear



#### Digital speed display

- Easy-to-read
- Integrated in the housing



#### Powerful Brushless drive

- New Brushless controller
- Optimized running performance
- Higher power output (2.5 kW)
- Signals are digitally processed
- Particularly smooth running
- Nearly constant torque over the entire speed range



#### Automatic spindle sleeve feed

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

#### Machine lamp

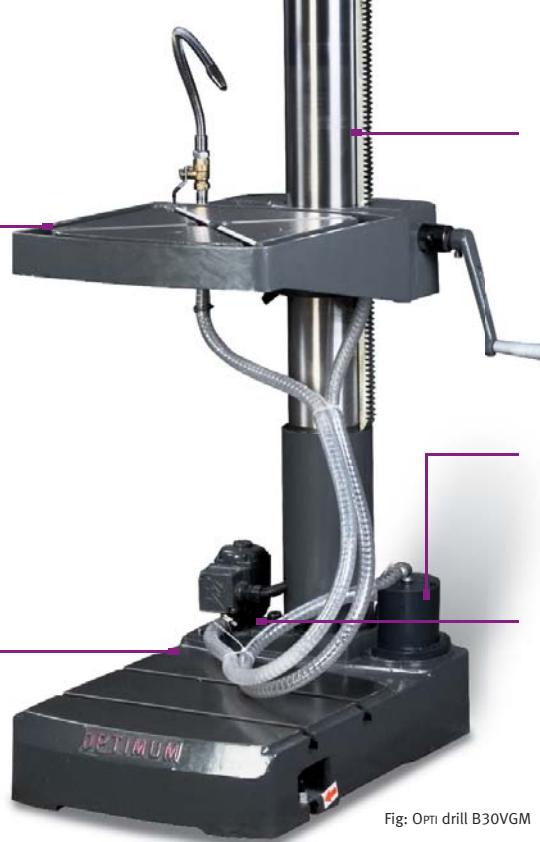
- integrated
- 12 V halogen lamp

#### Chuck guard

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

#### Casting column

- Thick-walled and stable
- for high power absorption



#### Chip filter

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

#### Coolant equipment

- Coolant tank integrated in the base plate

#### Drilling table

- Largely dimensioned, solid and precisely worked
- Transversally running T-slots
- Heavily ribbed at the rear side
- Rotation of 360° about the column

#### Base plate

- Robust with T-slots
- Precisely machined at the surface
- Usable as a working surface for extra high workpieces due to the rotatable drill table

Fig: Opti drill B30VGM

## Technical data, accessories and dimensions

Type	<b>B 30VGM</b>
Item No	303 4303
€ plus VAT	<b>4.250, 00</b>
<b>Machine data</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Total connected value	2.5 kW
Motor coolant pump	40 W
<b>Drilling capacity</b>	
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 24 mm
<b>Spindle seat</b>	
Spindle stroke	125 mm
Spindle seat	MT3
Throat	285 mm
Autom. spindle sleeve feed	1. Step - 0.1 mm/rev up to Ø 30 mm 2. Step - 0.15 mm/rev up to Ø 24 mm 3. Step - 0.2 mm/rev up to Ø 20 mm
<b>Speeds</b>	
Spindle speeds	80 - 3'000 min <sup>-1</sup>
Number of steps	3 steps, electrically adjustable speed
<b>Drilling table</b>	
Work surface table length x width	400 x 500 mm
T-slot size	14 mm
Drilling table turntable	360°
Distance spindle - table (max.)	780 mm
Work surface stand length x width	385 x 385 mm
Distance spindle - stand (max.)	1'320 mm
<b>Dimensions</b>	
Column diameter	Ø 115 mm
Length x width x height	600 x 735 x 1'915 mm
Total weight	305 kg
<b>Standard equipment</b>	Quick-action drill chuck 0 - 16 mm Morse taper MT 3
<b>Transportation packaging flat rate</b>	<b>TPFR 1 = € 19.00 plus VAT</b>

Accessories	Item No	€ plus VAT
Direct quick-action drill chuck MT3/0.3-16 mm	305 0573	<b>80, 00</b>
Reducing bushes MT 3 - MT 2	305 0663	<b>9, 00</b>
Morse taper MT 3 - B16	305 0660	<b>9, 00</b>
Twist drill kit coated with titanium ø 1-13 mm	305 1010	<b>45, 00</b>
Twist drill HSS / MT 3	305 1003	<b>149, 00</b>
Clamping tool kit SPW 12	335 2017	<b>85, 00</b>
Tapping chuck M5-M12	335 2042	<b>369, 00</b>

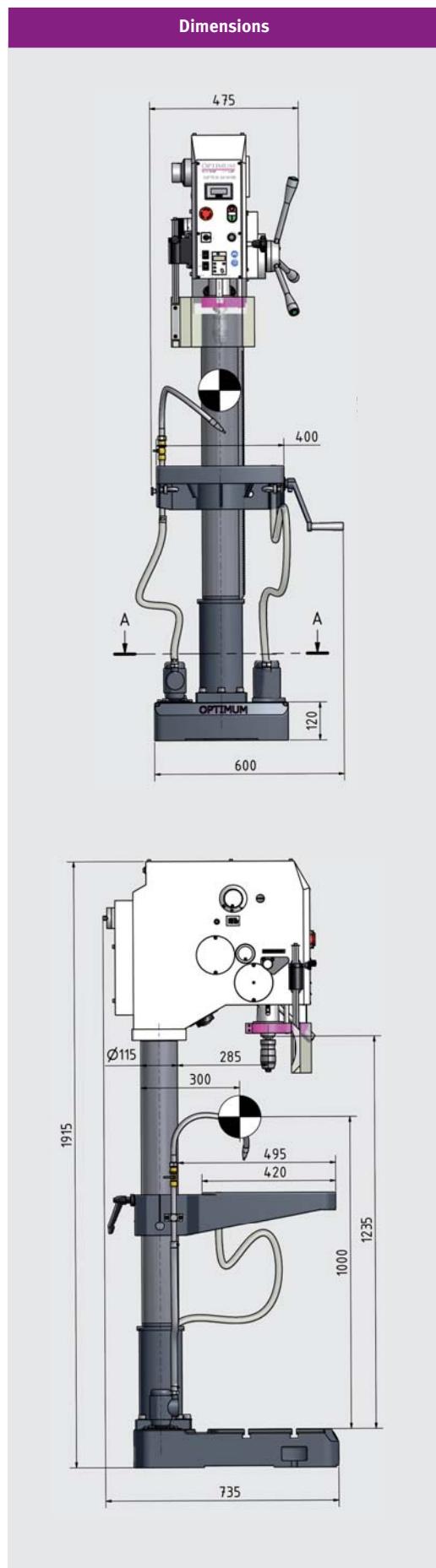
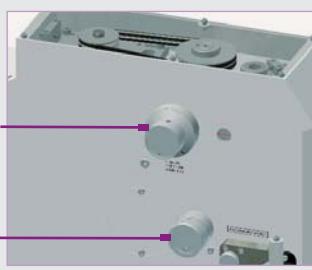
Please find further information on „Accessories for drilling machines“ on page 47

### Combination Belt Drive / Gear

Very smooth and low noise running

Gear stage	L	M	H
Spindle speeds	80	170	400
	-	-	-
	700	1500	3000
Torque	28 Nm	14 Nm	7 Nm

Easy tool change  
due to integrated drill drift





## 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

### OPTI drill DH 32 GS:

- Threading function
- Threading function with Optimum foot switch
- Automatic spindle sleeve feed
- Coolant pump

Gear



#### Gear

- 8 steps  
75 - 2'900 min<sup>-1</sup>



#### Integrated drill drift

- Easy tool change due to ejection mechanism



Fig.: OPTI drill DH 26GT with optional drill chuck



Fig.: OPTI drill DH 32GS with optional drill chuck

#### OPTI drill DH 32 GS 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-/left handed rotation

#### Machine lamp

- 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

#### Base plate

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

## Technical data and dimensions

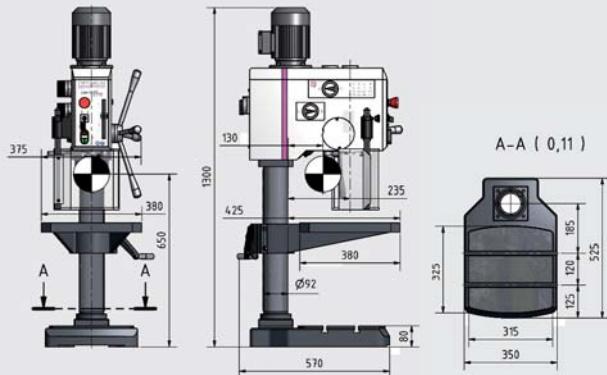
Type	DH 26GT	DH 28GS	DH 32GS
Item No.	303 4220	303 4230	303 4240
€ plus VAT	<b>1.750,00</b>	<b>2.250,00</b>	<b>2.950,00</b>
<b>Machine data</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected value	1.1 / 1.5 kW	1.1 / 1.5 kW	1.5 / 2.2 kW
<b>Drilling capacity</b>			
Drilling capacity in steel (S235JR)	Ø 26 mm	Ø 28 mm	Ø 32 mm
Continuous drilling capacity in steel (S235JR)	Ø 24 mm	Ø 25 mm	Ø 29 mm
<b>Spindle seat</b>			
Spindle stroke	127 mm	127 mm	125 mm
Spindle seat	MT 3	MT 3	MT4
Throat	235 mm	260 mm	285 mm
Automatic spindle sleeve feed	-	-	0,1 / 0,15 / 0,2 mm
<b>Speeds</b>			
Spindle speeds, 8 steps	75 - 2'900 min <sup>-1</sup>	75 - 2'900 min <sup>-1</sup>	75 - 2'000 min <sup>-1</sup>
<b>Drilling table</b>			
Work surface table length x width	380 x 380 mm	376 x 394 mm	400 x 420 mm
T-slot size	14 mm	14 mm	14 mm
Drilling table turntable	360°	360°	360°
Distance spindle - table (max.)	450 mm	875 mm	820 mm
Distance spindle - stand (max.)	610 mm	1'200 mm	1'280 mm
Working surface pedestal	350 x 322 mm	350 x 356 mm	420 x 644 mm
<b>Dimensions</b>			
Column diameter	Ø 92 mm	Ø 92 mm	Ø 115 mm
Dimensions	570 x 375 x 1'300 mm	640 x 375 x 2'080 mm	725 x 450 x 2'200 mm
Total weight	166 kg	184 kg	295 kg

Transportation packaging flat rate

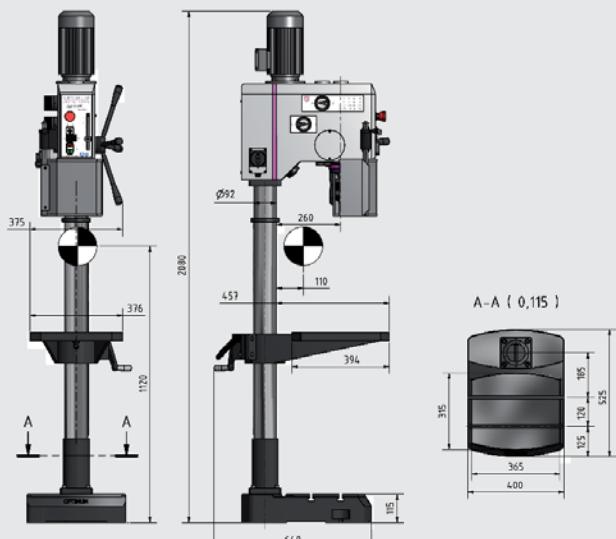
TPFR 1 = € 19.00 plus

TPFR 1 = € 19.00 plus

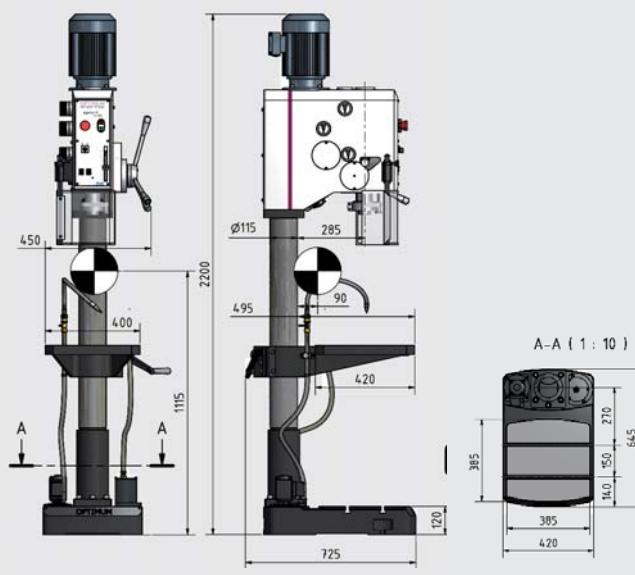
Dimensions DH 26GT



Dimensions DH 28GS



Dimensions DH 32GS



### Standard equipment

- Adapter MT3-B16 (DH 26GT/28GS)
- Adapter MT4-B16 (DH 32GS)



### Accessories

- Threading function with foot switch DH 32 GS
- Switchung from right to left turning

Item No.

€ plus VAT

3050032

**119,00**

„Accessories for drilling machines“ on page 47

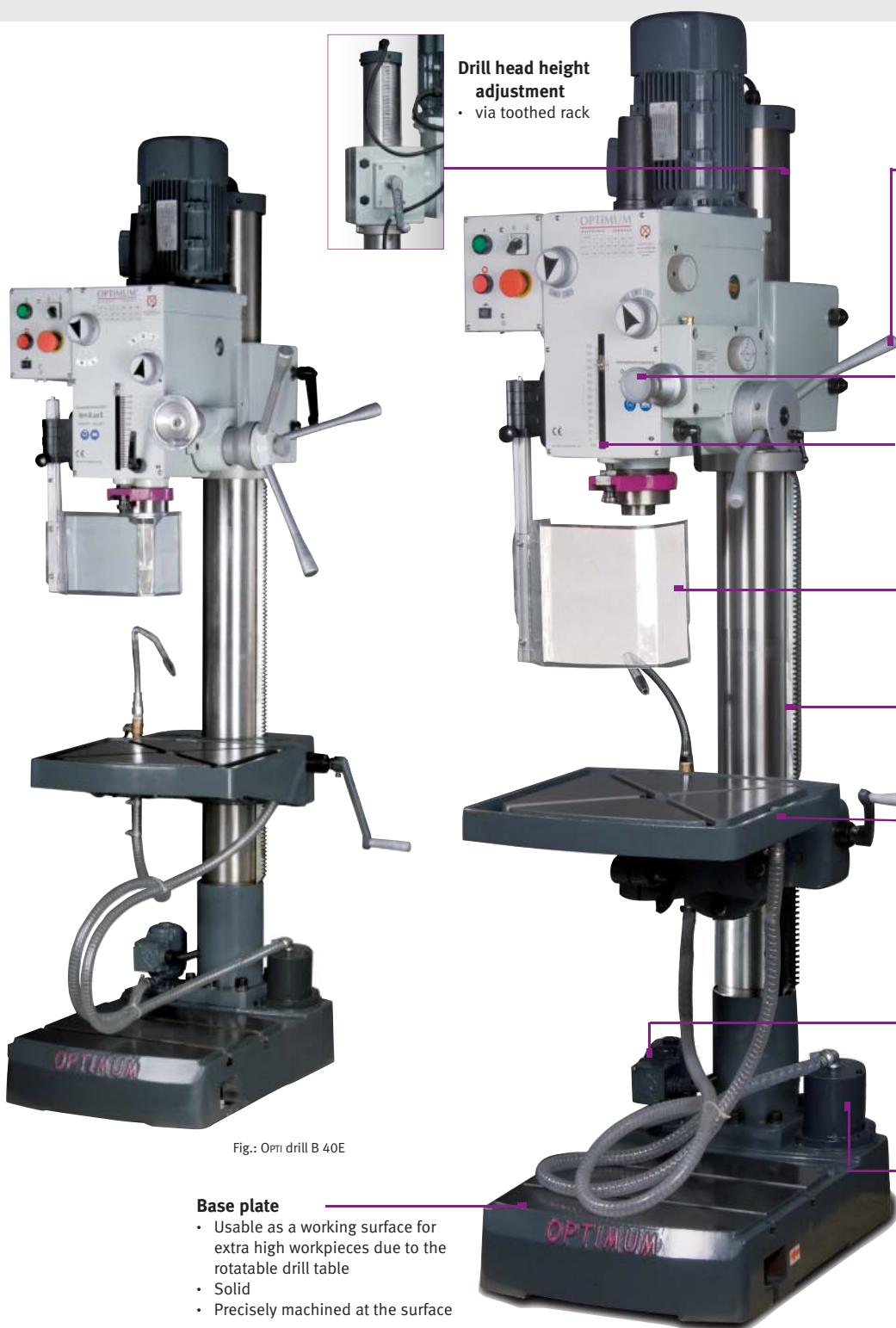
## Universal column gear drilling machines with gearbox and 12 speeds B 40 PTE additionally equipped with automatic feed and slewable drilling table

### Gear 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<sup>-1</sup> due to 12 switchable speeds
- Two-stage quality electrical motor
- Coupling to switch-over from manual rough feed to manual fine feed
- 

### OPTI drill B 40 PTE

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



### OPTI drill 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

Fig.: OPTI drill B 40PTE

## Technical data, accessories and dimensions

Type	B 40E	B 40PTE
Item No	303 4340	303 4345
€ plus VAT	<b>2.890,00</b>	<b>3.290,00</b>

<b>Machine data</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total connected value	1.1 / 1.5 kW	
Motor coolant pump	40 W	
<b>Drilling capacity</b>		
Drilling capacity in steel (S235JR)	Ø 32 mm	
Continuous drilling capacity in steel	Ø 25 mm	
<b>Spindle seat</b>		
Spindle stroke	120 mm	
Spindle sleeve diameter	75 mm	
Spindle seat	MT 4	
Throat	285 mm	
Autom. spindle sleeve feed	-	0.1 / 0.18 / 0.26 mm/rev
Drill head	turnable by 360° slewable by 45°	
<b>Speeds</b>		
Spindle speeds	95 - 3'200 min⁻¹	
Number of steps	2 x 6 steps	
<b>Drilling table</b>		
Table size length x width	425 x 420 mm	400 x 445 mm
T-slot size	14 mm	
Drilling table turnable	360°	
Drilling table slewable	-	180°
Distance spindle - table (max.)	855 mm	
Working surface pedestal L x W	385 x 385 mm	
Distance spindle - stand (max.)	1'215 mm	
<b>Dimensions</b>		
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	322 kg	
<b>Standard equipment</b>		
	Operating tool	
	Quick-action drill chuck (1-16 mm)	

**Transportation packaging flat rate** **TPFR 1 = € 19.00 plus VAT**

Accessories	Item No	€ plus VAT
Quick-action drill chuck MT4/1-16 mm	305 0574	<b>85,00</b>
Reducing bushes MT 4 - MT 3	305 0664	<b>15,00</b>
Morse taper MT 4 - B16	305 0661	<b>15,00</b>
Twist drill kit coated with titanium 13mm	305 1010	<b>45,00</b>
Clamping tool kit SPW 12	335 2017	<b>85,00</b>
Tapping chuck M5-M12	335 2042	<b>369,00</b>



Machine vices	Item No	€ plus VAT
BSI 140	300 0214	<b>189,00</b>
BSI 200	300 0220	<b>239,00</b>

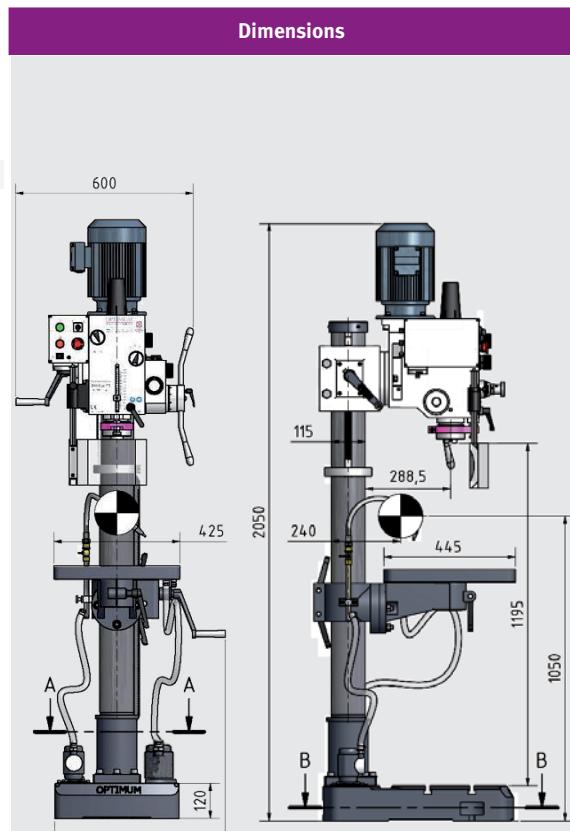


Fig: OPTI drill B 40PTE

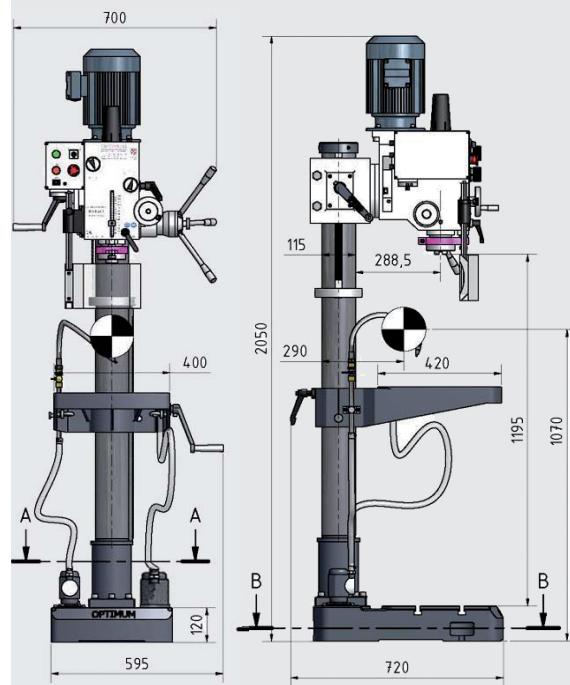


Fig: OPTI drill B 40E

## Heavy geared upright drill with coolant system and threading mechanism. OPTI drill 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
- Two-stage driving motor

### OPTI drill B 40GSP

- mechanic, 2-fold adjustable spindle sleeve feed

### OPTI drill B 40GSM

- Automatic spindle sleeve feed

Gear

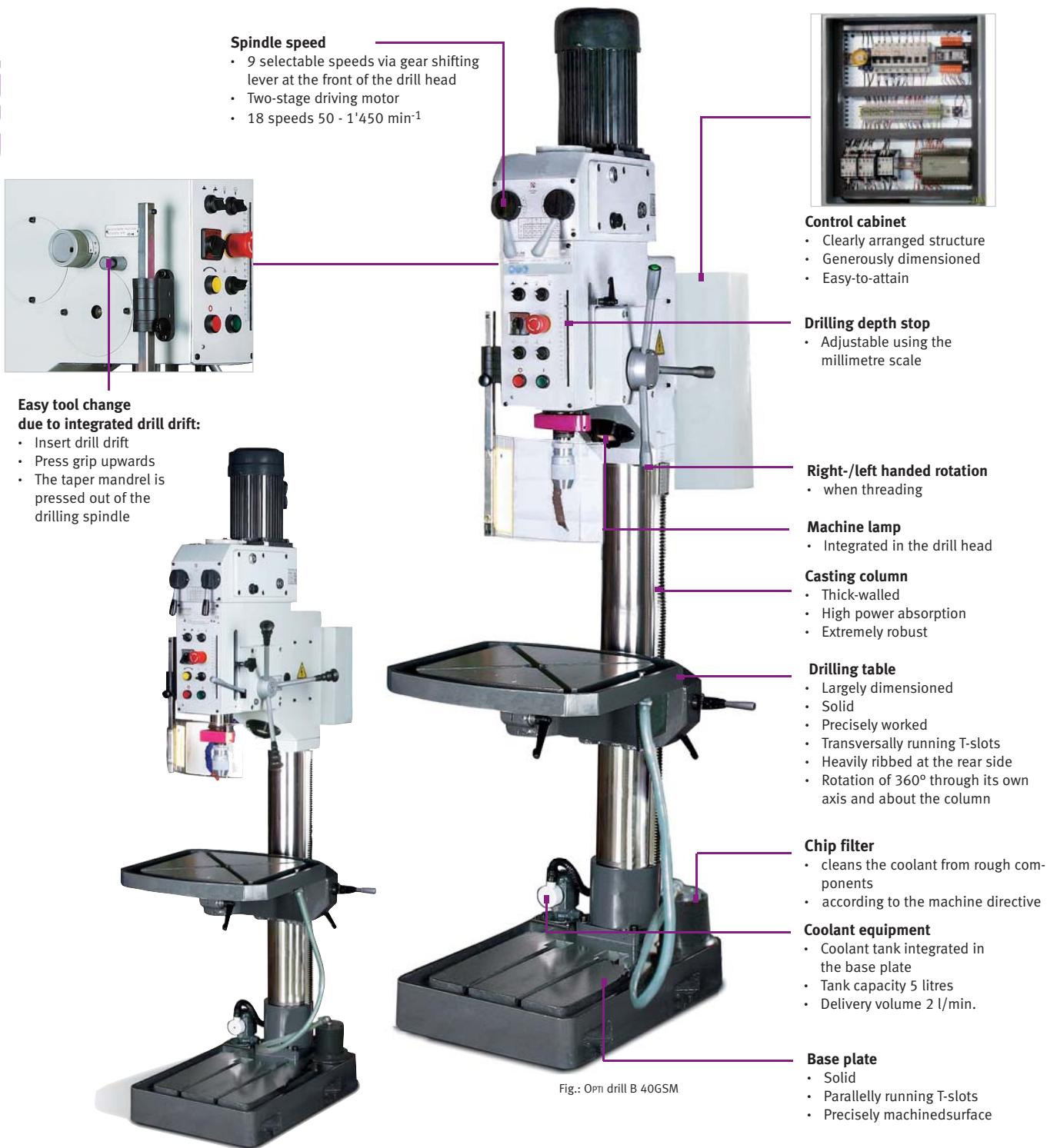


Fig.: OPTI drill B 40GSP

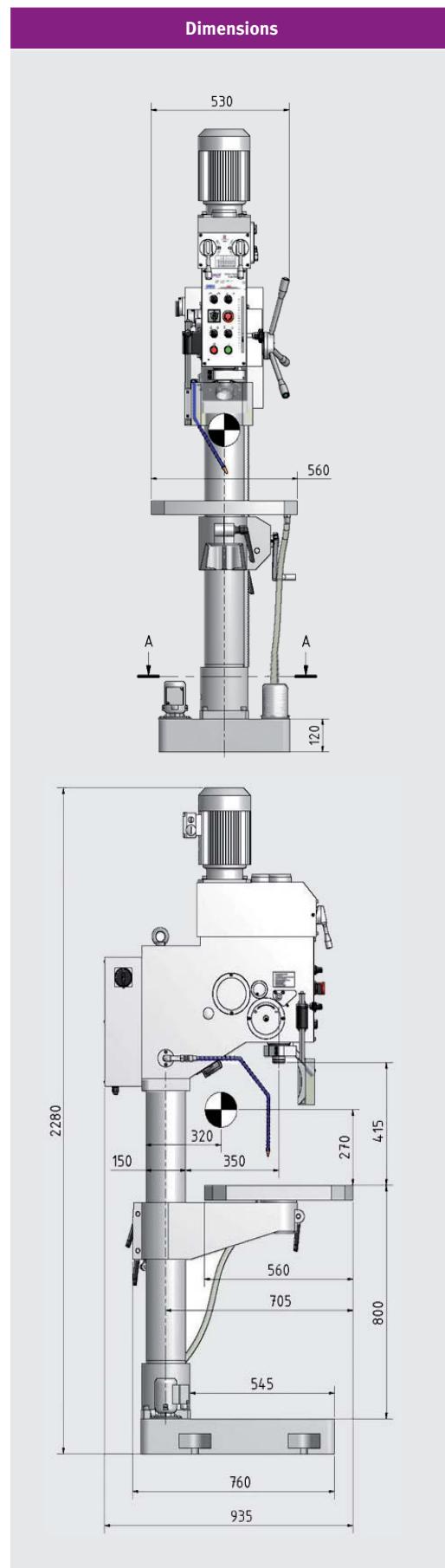
## Technical data, accessories and dimensions

Type	<b>B 40GSP</b>
Item No	303 4403
€ plus VAT	<b>4.250,00</b>
Type	<b>B 40GSM</b>
Item No	303 4400
€ plus VAT	<b>4.500,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected value	1.5 kW
Motor coolant pump	40 W
<b>Drilling capacity</b>	
Drilling capacity in steel (S235JR)	Ø 35 mm
Continuous drilling capacity in steel (S235JR)	Ø 35 mm
Thread cutting in steel (S235JR)	M 24
<b>Spindle seat</b>	
Spindle stroke	180 mm
Spindle seat	MT 4
Throat	350 mm
Autom. spindle sleeve feed	2 steps, 0.1/0.2 mm/rev
<b>Speeds</b>	
Spindle speeds	50 - 1'450 min <sup>-1</sup>
Number of steps	18 steps
<b>Drilling table</b>	
Work surface table length x width	560 x 560 mm
T-slot size	18 mm
Distance spindle - table (max.)	780 mm
Drilling table slewable/turnable	360°/360°
Load bearing capacity of the table	300 kg
Work surface stand length x width	510 x 500 mm
Distance spindle - stand (max.)	1'320 mm
<b>Dimensions</b>	
Column diameter	Ø 150 mm
Length x width x height	935 x 560 x 2'280 mm
Total weight	500 kg
<b>Standard equipment</b>	Quick-action drill chuck 0 - 16 mm Morse taper MT 4
<b>Transportation packaging flat rate</b>	<b>TPFR 1 = € 19.00 plus VAT</b>

Accessories	Item No	€ plus VAT
Quick-action drill chuck MT4/1-16 mm	305 0574	<b>85,00</b>
Reducing bushes MT 4 - MT 3	305 0664	<b>15,00</b>
Morse taper MT 4 - B16	305 0661	<b>15,00</b>
Twist drill kit coated with titanium ø 1-13 mm	305 1010	<b>45,00</b>
Clamping tool kit SPW 16	335 2019	<b>119,00</b>
Tapping chuck M5-M12	335 2042	<b>369,00</b>



Machine vices	Item No	€ plus VAT
MSO 125	300 0125	<b>32,00</b>
MSO 150	300 0150	<b>37,00</b>
BMS 150	300 0015	<b>80,00</b>
BMS 200	300 0020	<b>109,00</b>
BSI 140	300 0214	<b>189,00</b>
BSI 200	300 0220	<b>239,00</b>



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

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

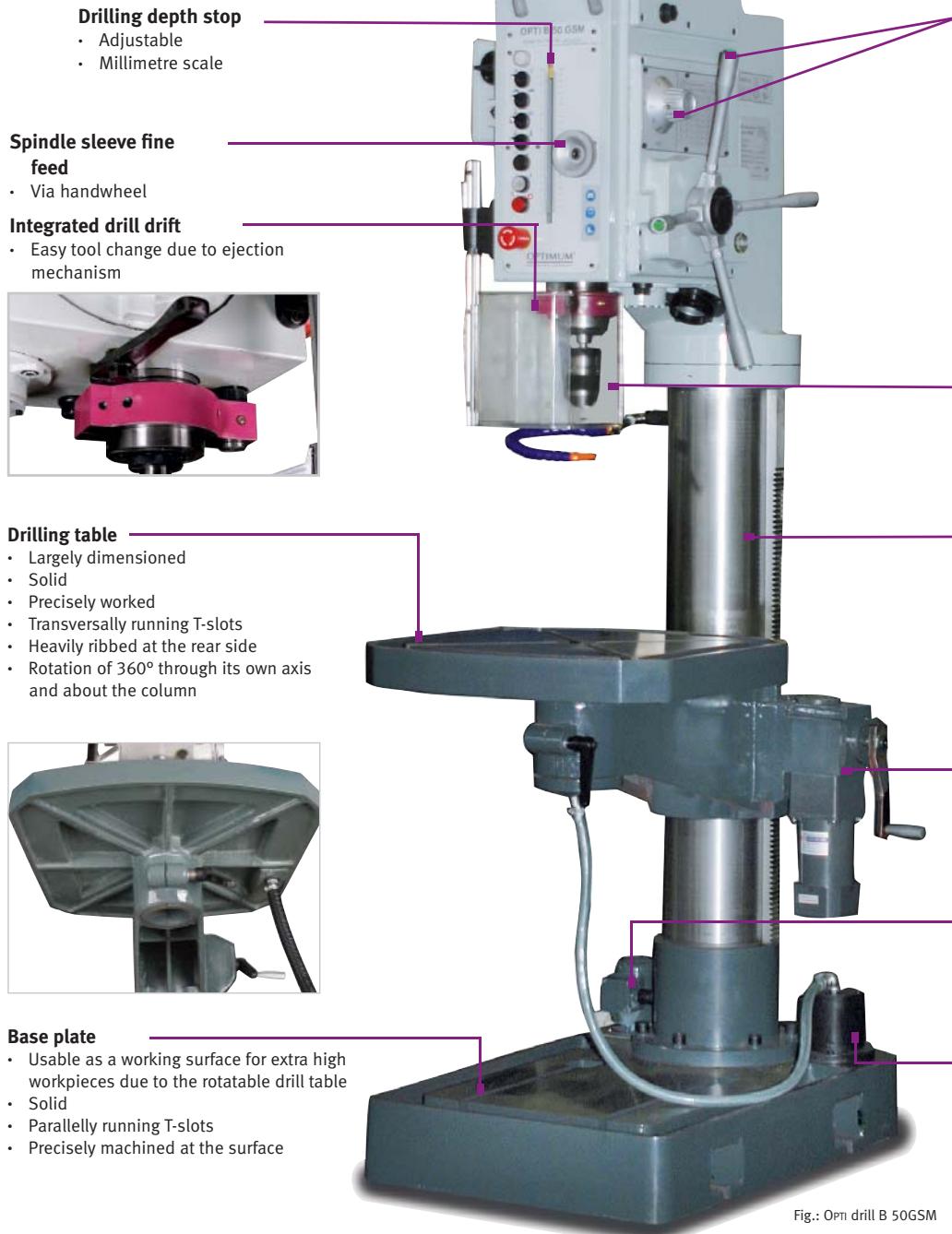
Heavy, solid cast iron construction  
**950 kg**  
 Smooth running and stable

### Convincing arguments: quality, efficiency and price

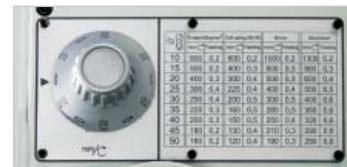
- Heavy, solid cast iron construction
- Very smooth running due to ground oil-quenched gear wheels
- High true running accuracy due to hardened and ground work spindle
- Two-stage driving motor
- Automatic toothed wheel lubrication via oil pump
- Threading unit

- Lockable main switch and motor protection switch
- Machine lamp integrated in the drill head

## Gear



### 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

### 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

### 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.: OPTI drill B 50GSM

## Technical data, accessories and dimensions

Type	B 50GSM
Item No	303 4500
€ plus VAT	<b>7.990,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected value	3.0 / 2.4 kW
Motor coolant pump	40 W
<b>Drilling capacity</b>	
Drilling capacity in steel (S235JR)	Ø 50 mm
Continuous drilling capacity in steel (S235JR)	Ø 45 mm
Thread cutting in steel (S235JR)	M 42
<b>Spindle seat</b>	
Spindle stroke	230 mm
Spindle seat	MT 4
Throat	375 mm
Autom. spindle sleeve feed	6 steps, 0.05/0.3 mm/rev
<b>Speeds</b>	
Spindle speeds	54 - 2'090 min <sup>-1</sup>
Number of steps	18 steps
<b>Drilling table</b>	
Work surface table length x width	600 x 600 mm
T-slot size	18 mm
Load drilling table	400 kg
Drilling table slewable	360°
Drilling table turnable	360°
Distance spindle - table (max.)	800 mm
Work surface stand length x width	600 x 520 mm
Distance spindle - stand (max.)	1'300 mm
<b>Dimensions</b>	
Column diameter	Ø 200 mm
Length x width x height	1'134 x 600 x 2'460 mm
Total weight	950 kg
<b>Standard equipment</b>	
Quick-action drill chuck 0 - 16 mm Morse taper MT 4 T-slots	
<b>Transportation packaging flat rate</b>	<b>TPFR 1 = € 19,00 plus VAT</b>

Accessories	Item No	€ plus VAT
<b>Direct quick-action drill chuck MT4/1-16 mm</b>	305 0574	<b>85,00</b>
		
<b>Reducing bushes MT 4 - MT 3</b>	305 0664	<b>15,00</b>
<b>Twist drill HSS incl. Morse taper MT 3</b>	305 1003	<b>149,00</b>
<b>Morse taper MT 4 - B16</b>	305 0661	<b>15,00</b>
		
<b>Clamping tool kit SPW 16</b>	335 2019	<b>119,00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369,00</b>
		

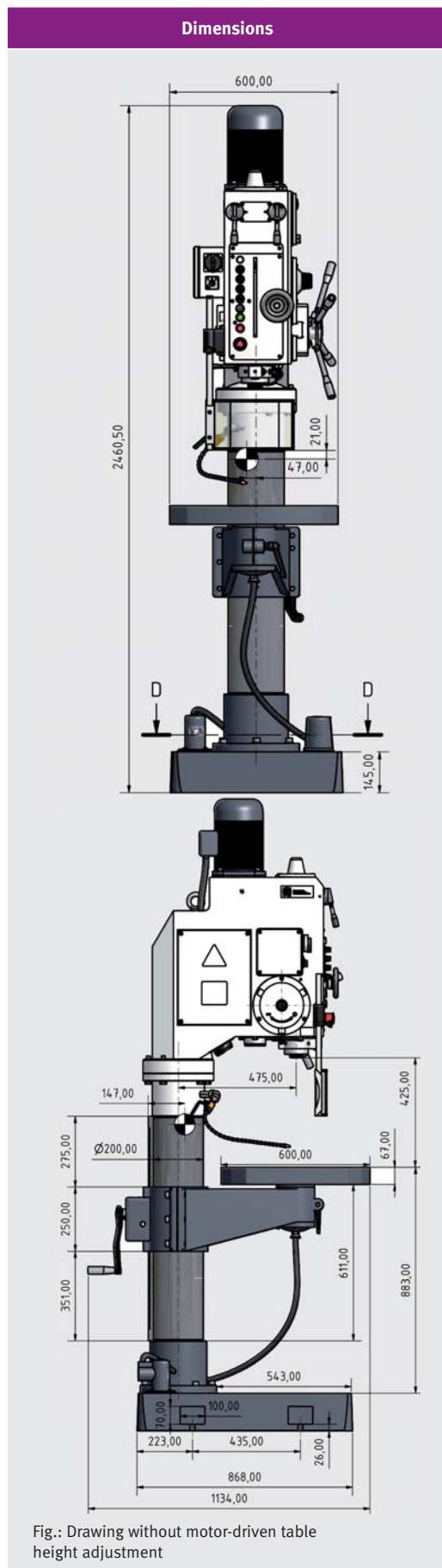


Fig.: Drawing without motor-driven table height adjustment

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

### DZ 35:

- Feed gear
- Coolant equipment
- MT 4 spindle sleeve

**PREMIUM  
line**



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

Gear

PREMIUM



Fig.: Opti drill DZ 25



Fig.: Opti drill DZ 35

### Electrical system

- made by European manufacturers
- Clearly arranged switch cabinet



### Spindle speed

- 8 selectable speeds via gear shifting lever

### Automatic feed

- Integrated drill drift
- Easy tool change

### Machine lamp

- 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
- 360° turnable round the column

### Coolant equipment

- Coolant tank integrated in the base plate

### Base plate

- Solid
- 2 pcs parallelly running T-slots
- Precisely machined surface

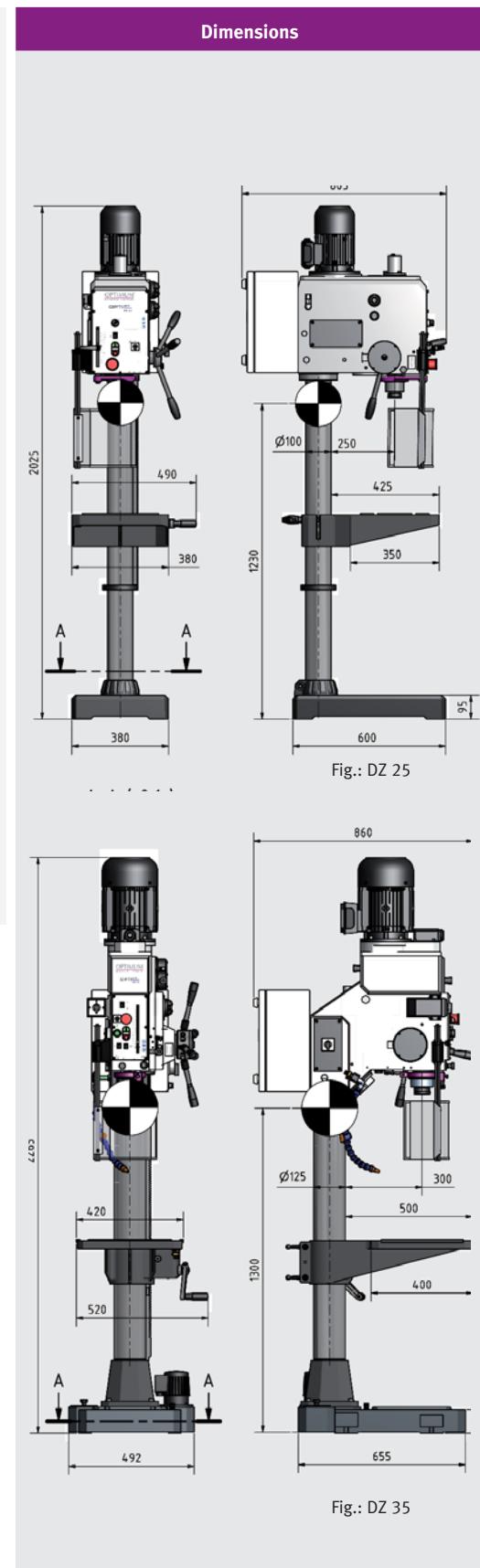
## Technical data, accessories and dimensions

Type	DZ 25	DZ 35
Item No	304 1030	304 1060
€ plus VAT	<b>5.490,00</b>	<b>8.290,00</b>
<b>Machine data</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	0.8 / 1.2 kW	0.9 / 1.5 kW
Motor coolant pump	60 watts	60 watts
<b>Drilling capacity</b>		
Drilling capacity in steel (ST60 - E335)	Ø 25 mm	Ø 35 mm
Continuous drilling capacity in steel (ST60 - E335)	Ø 25 mm	Ø 35 mm
Threading in steel (ST60 - E335)	M 22	M 28
<b>Spindle seat</b>		
Spindle stroke	120 mm	160 mm
Spindle seat	MT 3	MT 4
Throat	250 mm	300 mm
Automatic spindle sleeve feed	-	0.1 / 0.2 / 0.3 mm/rev
<b>Speeds</b>		
Spindle speeds	64 - 3'060 min <sup>-1</sup>	75 - 2'100 min <sup>-1</sup>
Number of steps	8 steps	8 steps
<b>Drilling table</b>		
Work surface table length x width	270 x 300 mm	400 x 420 mm
T-slot size / distance / number	14 mm / 2 / 150 mm	16 mm / 3 / 121 mm
Distance spindle - table (min/max.)	170 / 680 mm	70 / 885 mm
Drilling table turntable	360°	360°
Work surface stand length x width	-	310 x 288 mm
T-slot size / number / distance	-	18 mm / 2 / 180 mm
Distance spindle - stand (max.)	1,185 mm	1,245 mm
<b>Dimensions</b>		
Column diameter	Ø 100 mm	Ø 125 mm
Width x Height	600 x 805 x 2'025 mm	520 x 860 x 2'260 mm
Total weight	260 kg	317 kg
<b>Transport surcharge plus VAT</b>	<b>€ 120,00 (TPZ600)</b>	<b>€ 120,00 (TPZ600)</b>

Accessories	Item No	€ plus VAT
Direct quick-action drill chuck MT3 / 1-16 mm	305 0573	<b>85,00</b>
Direct quick-action drill chuck MT4 / 1-16 mm	305 0574	<b>85,00</b>
		
<b>Reducing bushes MT 4 - MT 3</b>	305 0664	<b>15,00</b>
<b>Reducing bushes MT 3 - MT 2</b>	305 0663	<b>9,00</b>
<b>Twist drill HSS incl. Morse taper MT 3</b>	305 1003	<b>149,00</b>
<b>Morse taper MT 4 - B16</b>	305 0661	<b>15,00</b>
<b>Morse taper MT 3 - B16</b>	305 0660	<b>9,00</b>
<b>Clamping tool kit SPW 12</b>	335 2017	<b>85,00</b>
<b>Clamping tool kit SPW 14</b>	335 2018	<b>109,00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369,00</b>
<b>Machine vice BSI 140</b>	300 0214	<b>189,00</b>
<b>Machine vice BSI 200</b>	300 0220	<b>239,00</b>
<b>Machine vices BSI-Q 140</b>	300 0324	<b>209,00</b>
<b>Machine vices BSI-Q 200</b>	300 0240	<b>269,00</b>



Fig.: BSI 200



„Guaranteed provisions“ on page 225

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

**PREMIUM**  
line



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

Gear



Fig.: Opti drill DZ 40



Fig.: Opti drill DZ 50

#### Spindle speed

- 8 resp. 9 selectable speeds via gear shifting lever

#### Automatic feed

#### Integrated drill drift

- Easy tool change

#### Machine lamp

- 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 parallelly running T-slots
- Precisely machined surface

PREMIUM

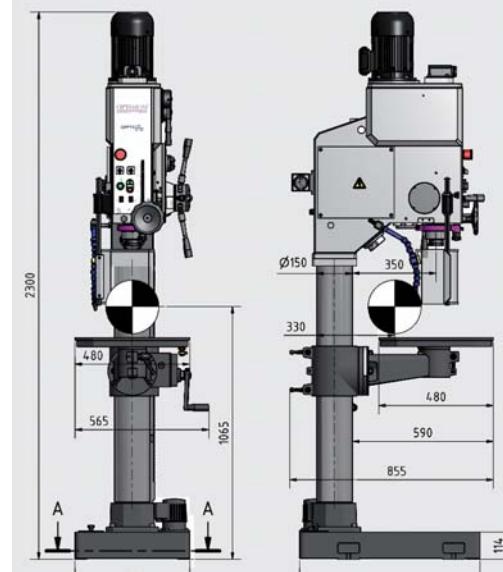
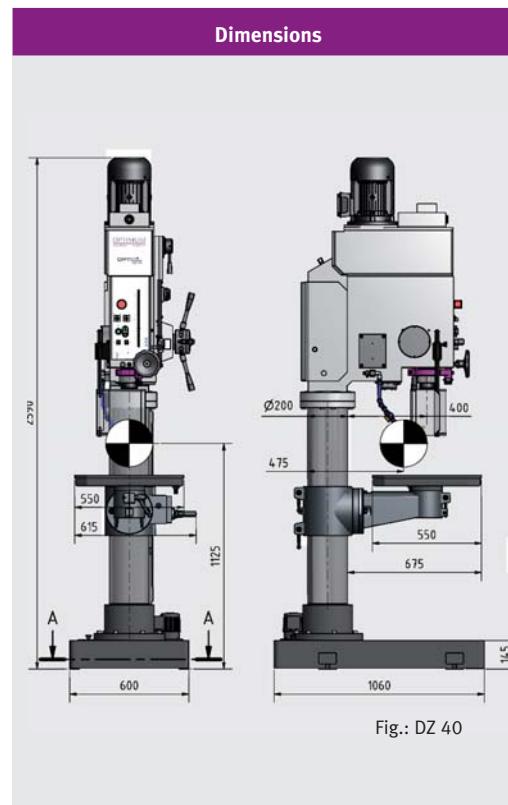
## Technical data, accessories and dimensions

Type	DZ 40	DZ 50
Item No	304 1070	304 1090
€ plus VAT	<b>10.150,00</b>	<b>13.590,00</b>
<b>Machine datas</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW	3 kW
Motor coolant pump	60 watts	60 watts
<b>Drilling capacity</b>		
Drilling capacity in steel (ST60 - E335)	Ø 40 mm	50 mm
Continuous drilling capacity in steel	Ø 40 mm	50 mm
Threading in steel (ST60 - E335)	M 35	M 40
<b>Spindle seat</b>		
Spindle stroke	180 mm	260 mm
Spindle seat	MT 4	MT 4
Throat	350 mm	400 mm
Automatic spindle sleeve feed mm/rev	0.1 / 0.18 / 0.24	0.08/0.16/0.24/0.35
<b>Speeds</b>		
Spindle speeds	93 - 1'420 min <sup>-1</sup>	45 - 1'115 min <sup>-1</sup>
Number of steps	8 steps	9 steps
<b>Drilling table</b>		
Work surface table length x width	480 x 480 mm	430 x 430 mm
T-slot size / number / distance	16 mm / 3 / 125 mm	18 mm / 3 / 160 mm
Distance spindle - table (min/max.)	95 / 865 mm	70 / 800 mm
Drilling table turntable	360°	360°
Work surface stand length x width	356 x 370 mm	500 x 700 mm
T-slot size / number / distance	16 / 2 / 220 mm	16 / 3 / 138 mm
Distance spindle - stand (max.)	1'201 mm	1'270 mm
<b>Dimensions</b>		
Column diameter	Ø 150 mm	Ø 200 mm
Width x Height	820 x 565 x 2'300 mm	1'060 x 615 x 2'590 mm
Total weight	435 kg	850 kg
<b>Transport surcharge plus VAT</b>	<b>€ 120.00 (TPZ600)</b>	<b>€ 150.00 (TPZ1000)</b>

Accessories	Item No	€ plus VAT
Direct quick-action drill chuck MT4/1-16 mm	305 0574	<b>85,00</b>
		
<b>Reducing bushes MT 4 - MT 3</b>	305 0664	<b>15,00</b>
<b>Twist drill HSS incl. Morse taper MT 3</b>	305 1003	<b>149,00</b>
<b>Morse taper MT 4 - B16</b>	305 0661	<b>15,00</b>
<b>Clamping tool kit SPW 16</b>	335 2019	<b>119,00</b>
<b>Clamping tool kit SPW 14</b>	335 2018	<b>109,00</b>
<b>Tapping chuck M5-M12</b>	335 2042	<b>369,00</b>
<b>Machine vice BSI 140</b>	300 0214	<b>189,00</b>
<b>Machine vice BSI 200</b>	300 0220	<b>239,00</b>
<b>Machine vices BSI-Q 140</b>	300 0224	<b>209,00</b>
<b>Machine vices BSI-Q 200</b>	300 0240	<b>269,00</b>



Fig.: BSI 200



„Guarantee provisions“ on page 225

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

## Precise working, solid radial drilling machines ideal for versatile use in the single part and series production

### Convincing arguments: quality, efficiency and price

- Wide range of applications drilling, reaming, threading
- Heavy, solid, high quality castings
- Powerful quality engine
- Working range by horizontally adjustable machine head
- Motorized adjustment of spindle head
- Clearly arranged control panel
- Solid, precise drilling table, dimensioned
- With parallel T-slots
- Durable, rigid construction of the arm
- Height adjustment of the arm is powerful spindle motor drive
- Oil bath gearbox of the arm
- Hardened gears made of chrome-nickel steel and precision-ground, in quiet and smooth running
- Right-/left-hand rotation
- coolant equipment in the machine base with coolant tank
- Arm guideways hardened and precision ground
- Machine lamp
- Thick-walled steel column for and stability
- Adjustable depth stop with millimeter scale
- Drilling head and column can be clamped together or separately or dissolved
- DR4 - All axes are clamped manually
- DR5 - Z column is clamped manually, the arm and the drill head can be clamped hydraulically
- DR6 - All axles are hydraulically clamped

Gear

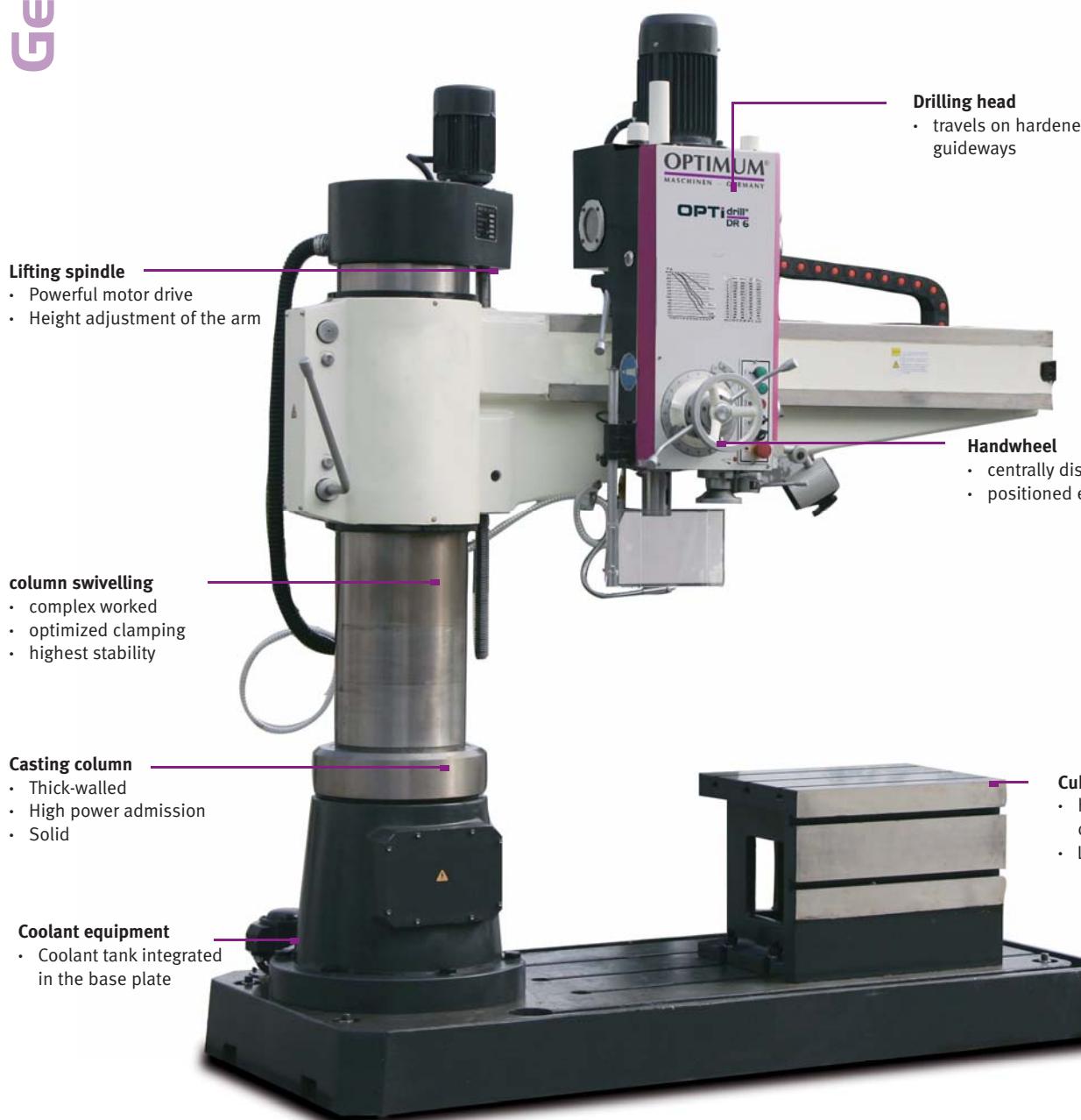
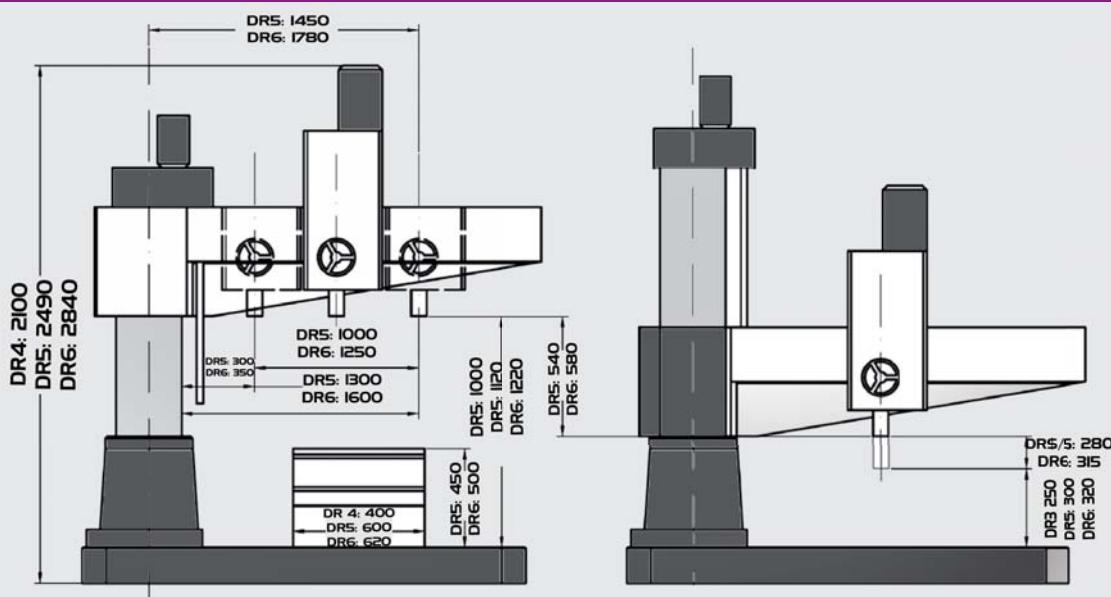


Fig.:DR 5

Model	DR 4	DR 5	DR 6
Item no.	333 5040	333 5050	333 5060
€ (VAT excl.)	<b>8.600,00</b>	<b>13.600,00</b>	<b>17.900,00</b>
<b>Machine datas</b>			
Machine datass	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected value	3 kW	5 kW	7 kW
Power Spindle motor	1,5 kW	3 kW	4 kW
Power Lifting motor Arm	0.75 kW	1.1 kW	1.5 kW
<b>Drilling capacity</b>			
Drilling capacity in steel (S235JR)	40 mm	40 mm	50 mm
Continuous drilling cap. steel (S235JR)	36 mm	36 mm	46 mm
End mill cutter diameter steel (S235JR)	M 30	M 30	M 36
<b>Spindle seat</b>			
Throat	280 mm	280 mm	315 mm
Spindle seat	MK 4	MK 4	MK 5
Spindle sleeve feed	3 steps/0.1 - 0.25 mm/rev	8 steps/ 0.1 - 1.25 mm/rev	16 steps/ 0.04 - 3.2 mm/rev
<b>cantilever arm</b>			
Travelling speed lifting and lowering arm	1,270 mm/min	1,270 mm/min	1,200 mm/min
Turning angle cantilever arm	+ - 180°	+ - 180°	+ - 180°
<b>Speeds</b>			
Spindle speeds	75 - 1'220 rpm	32 - 2'500 rpm	38 - 2'000 rpm
Number of steps	6	16	16
<b>Drilling table</b>			
Working surface table Length x width	1'360 x 687 mm	2'030 x 885 mm	2'380 x 985 mm
Working table cube table	400 x 400 x 350 mm	600 x 450 x 450 mm	620 x 500 x 500 mm
Distance spindle - table (max.)	250 - 1.000 mm	300 - 1'120 mm	320 - 1'220 mm
Distance spindle - column	320 - 1'020 mm	300 - 1'300 mm	350 - 1'600 mm
Travel drilling head (horizontal)	120 - 700 mm	1'000 mm	1'250 mm
Travel of arm (vertical)	510 mm	550 mm	600 mm
<b>Dimensions</b>			
Length x width x height	1'760 x 770 x 2'100 mm	2'100 x 750 x 2'490 mm	2'500 x 1'070 x 2'840 mm
Length x width x height Arm rotated	1'760 x 1'760 x 2'100 mm	2'100 x 2'100 x 2'490 mm	2'500 x 2'500 x 2'840 mm
Total weight	1'230 kg	2'100 kg	3'500 kg
Transport surcharge	€ 250,00 (TPZ2000)	€ 350,00 (TPZ3000)	€ 400,00 (TPZ4000)

### Travel



## Compatibility overview of accessories for drilling machines

Accessory items for drilling		B50 GSM	B40 GSM/GSP	B40 E/B40 PTE	B30 VGM	DH 32GS	DH 28GS	DH 26GT
Direct SSBF MT2/1-16 mm	305 0571	●	●	●	●	●	●	●
Direct SSBF MT2 1-13 mm	305 0572	●	●	●	●	●	●	●
Direct SSBF MT2/0 - 8 mm	305 0582	●	●	●	●	●	●	●
Direct SSBF MT3/0-13 mm	305 0585	●	●	●	●	●	●	●
Direct SSBF MT3/0-16 mm	305 0573	●	●	●	●	●	●	●
Direct SSBF MT4/1-16 mm	305 0574	●	●	●	●	●	●	●
Direct SSBF MT4/0-13 mm	305 0587	●	●	●	●	●	●	●
Precision SSBF 0 - 8 mm	305 0608	●	●	●	●	●	●	●
Precision SSBF 0 - 10 mm	305 0610	●	●	●	●	●	●	●
Precision SSBF 0 - 13 mm	305 0623	●	●	●	●	●	●	●
Precision SSBF 0 - 16 mm	305 0626	●	●	●	●	●	●	●
Röhm SSBF 1 - 13 mm	305 0656	●	●	●	●	●	●	●
Röhm SSBF 3 - 16 mm	305 0657	●	●	●	●	●	●	●
Reducing bushes MT 3-2	305 0663	●	●	●	●	●	●	●
Reducing bushes MT 4-3	305 0664	●	●	●	●	●	●	●
Reducing bushes MT 4-2	305 0665	●	●	●	●	●	●	●
Morse taper MT 2 - B16	305 0659	●	●	●	●	●	●	●
Morse taper MT 3 - B16	305 0660	●	●	●	●	●	●	●
Morse taper MT 4 - B16	305 0661	●	●	●	●	●	●	●
Morse taper MT 5 - B16	305 0675	●	●	●	●	●	●	●
Morse taper MT 6 - B16	305 0676	●	●	●	●	●	●	●
Twist drill kit	305 1010	●	●	●	●	●	●	●
Twist drill HSS/MT 2	305 1002	●	●	●	●	●	●	●
Twist drill HSS/MT 3	305 1003	●	●	●	●	●	●	●
Tapping chuck	335 2042	●	●	●	●	●	●	●
Cone drill drift MSP1	305 0636	●	●	●	●	●	●	●
Cone drill drift MSP2	305 0637	●	●	●	●	●	●	●
SPW 8	335 2015	●	●	●	●	●	●	●
SPW 10	335 2016	●	●	●	●	●	●	●
SPW 12	335 2017	●	●	●	●	●	●	●
SPW 14	335 2018	●	●	●	●	●	●	●
SPW 16	335 2019	●	●	●	●	●	●	●
Coolant equipment 230V	335 2002	●	●	●	●	●	●	●
Coolant equipment 400V	335 2001	●	●	●	●	●	●	●
Coolant lubricant MMC 1	335 6663	●	●	●	●	●	●	●
Cooling hose KMS 2	335 6660	●	●	●	●	●	●	●
Vice MSO 75	300 0075	●	●	●	●	●	●	●
Vice MSO 100	300 0100	●	●	●	●	●	●	●
Vice MSO 125	300 0125	●	●	●	●	●	●	●
Vice MSO 150	300 0150	●	●	●	●	●	●	●
Vice BMS 85	300 0008	●	●	●	●	●	●	●
Vice BMS 100	300 0010	●	●	●	●	●	●	●
Vice BMS 120	300 0012	●	●	●	●	●	●	●
Vice BMS 150	300 0015	●	●	●	●	●	●	●
Vice BMS 200	300 0020	●	●	●	●	●	●	●
Vice BSI 100	300 0210	●	●	●	●	●	●	●
Vice BSI 140	300 0214	●	●	●	●	●	●	●
Vice BSI 200	300 0220	●	●	●	●	●	●	●
Vice BSI-Q 100	300 0230	●	●	●	●	●	●	●
Vice BSI-Q 140	300 0234	●	●	●	●	●	●	●
Vice BSI-Q 200	300 0240	●	●	●	●	●	●	●

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

## Accessories for drilling machines

### OPTIMUM quick-action drill chuck

True running accuracy $\leq 0.06$ mm		
<b>0 - 8 mm; B16</b>	305 0608	<b>32,00</b>
<b>0 - 10 mm; B16</b>	305 0610	<b>35,00</b>
<b>0 - 13 mm; B16</b>	305 0623	<b>40,00</b>
<b>0 - 16 mm; B16</b>	305 0626	<b>45,00</b>



### ROHM Quick-action drill chuck

<b>1 - 13 mm; B16</b>	305 0656	<b>50,00</b>
<b>3 - 16 mm; B16</b>	305 0657	<b>55,00</b>



### OPTIMUM Direct quick-action drill chuck

<b>MT 2 1 - 13 mm</b>	305 0572	<b>70,00</b>
• up to 8'000 min $^{-1}$		
<b>MT 2 1 - 16 mm</b>	305 0571	<b>80,00</b>
• up to 6'000 min $^{-1}$		
<b>MT 3 1 - 16 mm</b>	305 0573	<b>85,00</b>
• up to 6'000 min $^{-1}$		
<b>MT 4 1 - 16 mm</b>	305 0574	<b>85,00</b>
• up to 6'000 min $^{-1}$		



### Reducing bushes

<b>MT 3 - MT 2</b>	305 0663	<b>9,00</b>
<b>MT 4 - MT 3</b>	305 0664	<b>15,00</b>
<b>MT 4 - MT 2</b>	305 0665	<b>16,00</b>



### Morse taper

<b>MT 2 - B16</b>	305 0659	<b>6,00</b>
<b>MT 3 - B16</b>	305 0660	<b>9,00</b>
<b>MT 4 - B16</b>	305 0661	<b>15,00</b>
<b>MT 5 - B16</b>	305 0675	<b>15,00</b>
<b>MT 6 - B16</b>	305 0676	<b>25,00</b>



### Extension bushings

<b>MT 2 - MT 3</b>	305 0667	<b>20,00</b>
<b>MT 3 - MT 4</b>	305 0668	<b>30,00</b>



### Tapping chuck M5 - M12

335 2042	<b>369,00</b>	
• 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		



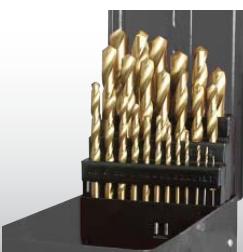
## Accessories for drilling machines

### Twist drill kit 25-pieces

305 1010

**45,00**

- Coated with titanium
- Sizes 1 - 13 mm
- Higher service life and durability
- Higher hardness than hard metal
- More rapid working results
- Lower wear



### Twist drill kit HSS incl. Morse taper

- 9 pieces; Sizes 14,5/16/18/20/22/24/26/28/30 mm

Twist drill MT 2

305 1002

**149,00**

Twist drill MT 3

305 1003

**149,00**



### Clamping tool kit SPW 58 pcs

- |                          |                          |
|--------------------------|--------------------------|
| • Practical wall bracket | • Metric threads         |
| • 24 pcs draw-in bolts   | • 6 pcs T-slots          |
| • 4 pcs elongation nuts  | • 6 pcs nuts             |
| • 6 pcs step blocks      | • 12 pcs clamping blocks |

SPW 8

335 2015

**65,00**

- T-slots 10 mm . Draw bar thread M 8

SPW 10

335 2016

**75,00**

- T-slots 12 mm . Draw bar thread M 10

SPW 12

335 2017

**85,00**

- T-slots 14 mm . Draw bar thread M 12

SPW 14

335 2018

**109,00**

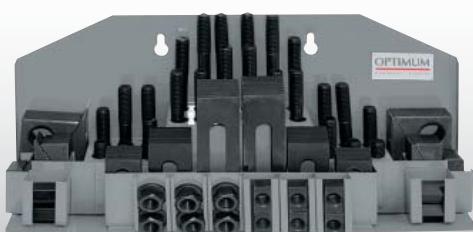
- T-slots 16 mm . Draw bar thread M 14

SPW 16

335 2019

**119,00**

- T-slots 18 mm . Draw bar thread M 16



### 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 anchoring
- For self-assembly

Universal coolant equipment  
230 V/1 Ph

335 2002

**199,00**

Universal coolant equipment  
400 V/3 Ph

335 2001

**199,00**



### Coolant lubricant sprayer MMC1

335 6663

**109,00**

- Magnetic stand
- Foot size L x W x H: 62 x 50 x 55 mm
- Connecting coupling for external compressed air supply
- Magnetic stand holding force 75 kg
- Flexible and rigid hose
- Length of the coolant hose 500 mm



### Coolant hose KMS 2

335 6660

**48,00**

- Two variable coolant hoses made of individual plastic elements
- Not electroconductive
- Magnetic stand holding force up to 50 kg
- Length of the coolant hoses 335 mm
- Flexible and stable
- Resistant against most solvents and chemicals
- Universally applicable on all machine tools



**End mill kit HSS 20 pcs**

338 6200

**119,00**

- 10 milling cutter DIN 327 D
- Short type
- Type with 2 cutting inserts
- DIN 1835 B (3/4/5/6/8/10/12/14/18/20 mm)  
and
- 10 milling cutter DIN 844 B
- Short type
- Type with 4 cutting inserts
- DIN 1835 B (3/4/5/6/8/10/12/14/18/20 mm)



**Cone drill drift**

**MSP 1** for MT 1 - MT 3

305 0636

**25,00**

**MSP 2** for MT 4 - MT 6

305 0637

**28,00**



**LED - Machine lamp 3-500**

335 1010

**149,00**

- 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 4000 - 4500 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

<b>KT 120</b>	335 6595	<b>420,00</b>
<b>KT 179</b>	335 6596	<b>559,00</b>
<b>KT 180</b>	335 6591	<b>669,00</b>
<b>KT 210</b>	335 6600	<b>775,00</b>

Technical data		KT 120	KT 179	KT 180	KT 210
Length	mm	506	748	945	1'065
Width	mm	400	483	483	555
Height	mm	140	148	169	200
T-slot size	mm	10	12	12	14
Table length	mm	400	500	700	730
Table width	mm	120	180	180	210
Load of cross table	kg	40	55	55	80
Pedestal width	mm	220	274	274	280
Pedestal length	mm	280	340	340	362
Travel X axis	mm	220	280	480	480
Travel Y axis	mm	165	175	175	210
Net weight	kg	22	32	49	84



Fig.: KT 180

**Holding down clamp, kit of 2 pcs**

- Adjustable clamping height
- Brass plate under clamping arm protects the material against damages
- Adjustable handwheel scaling with a division of 0.05 mm

<b>Table groove 16 mm/M 12</b>	335 2031	<b>60,00</b>
--------------------------------	----------	--------------

• L x W x H: 115 x 42 x 39 mm · Height adjustment: 0 - 89 mm

<b>Table groove 18 mm/M 16</b>	335 2032	<b>70,00</b>
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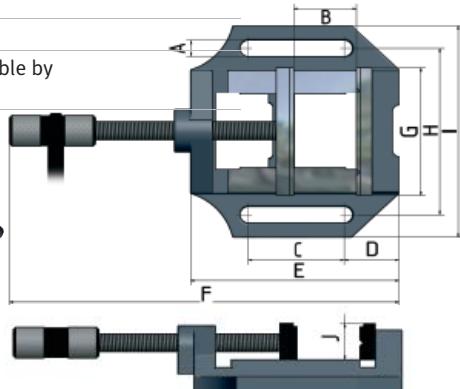
• L x W x H: 133 x 50 x 49 mm · Height adjustment: 0 - 101 mm



## 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

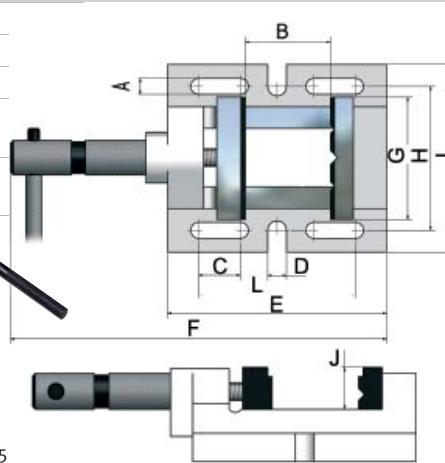


		MSO 75	MSO 100	MSO 125	MSO 150
A	mm	12,5	12,5	12,5	14,5
B	mm	55	90	110	130
C	mm	55	74	80	100
D	mm	30	46	46	56
F	mm	270	350	400	455
G	mm	75	100	125	150
H	mm	100	130	150	170
I	mm	130	165	182	208
J	mm	28	28	30	35
Gewicht	kg	1,7	3,2	4,5	6,2
Item No		300 0075	300 0100	300 0125	300 0150
€ plus VAT		25,00	28,00	32,00	37,00

Fig.: MSO 100

### 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	BMS 100	BMS 120	BMS 150	BMS 200
A	mm	11	12,5	12,5	12,5	12,5
B	mm	70	90	110	130	160
C	mm	29	39	48	82	78
D	mm	13	15	14,5	14,5	13,5
E	mm	152	170	193	228	262
F	mm	260	280	330	375	445
G	mm	109	125	146	180	210
H	mm	100	120	140	170	216
I	mm	130	150	170	200	252
L	mm	100	120	140	172	212
Gewicht	kg	3,5	4	6,5	6,7	8
Item No		300 0008	300 0010	300 0012	300 0015	300 0020
€ plus VAT		35,00	45,00	55,00	80,00	109,00

Fig.: BMS 85

### Machine vices BSI

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

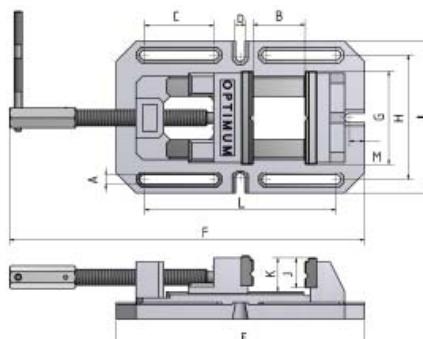
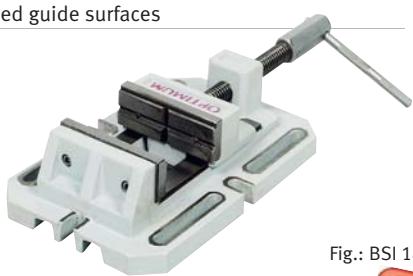


Fig.: BSI 140

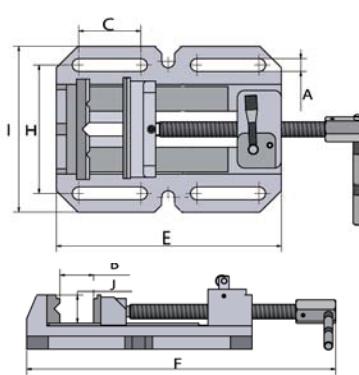
		BSI 100	BSI 140	BSI 200
A	mm	12	14	16
B	mm	110	150	200
C	mm	88	105	163
D	mm	-	14	14
E	mm	288	376	486
F	mm	350 - 460	455 - 610	578 - 788
G	mm	100	140	200
H	mm	136	189	250
I	mm	170	230	290
J	mm	12	14	14
K	mm	72	90	114
L	mm	216	290	406
Gewicht	kg	8,7	18	35
Item No		300 0210	300 0214	300 0220
€ plus VAT		135,00	189,00	239,00

### Machine vices BSI-Q

- 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
- with quick action clamping by means of a quick action closure



Fig.: BSI-Q 100



### Maschinenschraubstöcke BSI-Q

		BSI-Q 100	BSI-Q 140	BSI-Q 200
A	mm	12	14	16
B	mm	105	155	220
C	mm	70	85	120
E	mm	240	310	400
F	mm	335	415	525
H	mm	125	170	235
I	mm	150	200	275
J	mm	30	40	55
Weight	kg	5,5	10,7	16,5
Item No		300 0230	300 0234	300 0240
€ plus VAT		149,00	209,00	269,00

## Threading bushings which are no longer loose!

### No more getting loose or turning

Saves annoying drilling and avoids claims

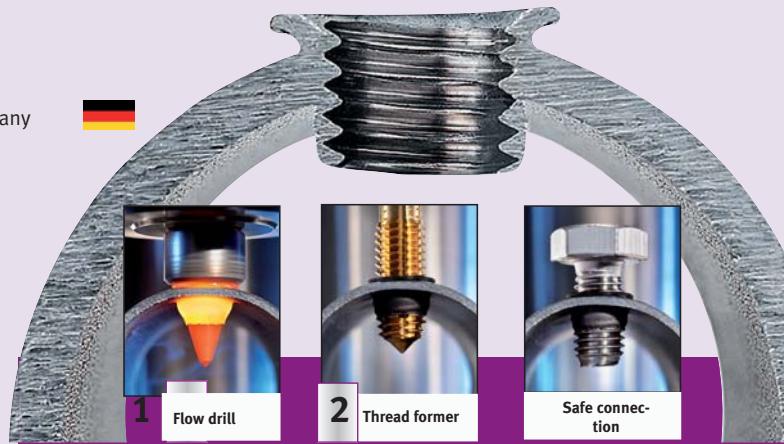
### Easy assembly

On almost any OPTIMUM drill press

### Only 2 working steps



Made in Germany



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

### You need

#### 1 Flow drill

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



##### Type "form"

###### With collar



Size	Item No	€ plus VAT
<b>M 4</b>	306 0104	<b>58,00</b>
<b>M 5</b>	306 0105	<b>61,00</b>
<b>M 6</b>	306 0106	<b>67,00</b>
<b>M 8</b>	306 0108	<b>85,00</b>
<b>M 10</b>	306 0110	<b>95,00</b>
<b>M 12</b>	306 0112	<b>113,00</b>

##### Type "cut"

###### Without collar



Size	Item No	€ plus VAT	Item No	€ plus VAT
<b>M 4</b>	306 0164	<b>72,00</b>	306 0164	<b>72,00</b>
<b>M 5</b>	306 0165	<b>92,00</b>	306 0165	<b>92,00</b>
<b>M 6</b>	306 0166	<b>112,00</b>	306 0166	<b>112,00</b>
<b>M 8</b>	306 0168	<b>126,00</b>	306 0168	<b>126,00</b>
<b>M 10</b>	306 0170	<b>145,00</b>	306 0170	<b>145,00</b>
<b>M 12</b>	306 0172	<b>149,00</b>	306 0172	<b>149,00</b>

#### 2 Thread former

- Prec. for threads with gauge
- For standard fixtures

##### Thread former



Item No	€ plus VAT
306 0184	<b>32,00</b>
306 0185	<b>32,00</b>
306 0186	<b>35,00</b>
306 0188	<b>37,00</b>
306 0190	<b>39,00</b>
306 0192	<b>54,00</b>

#### Basic kit

The basic equipment includes all you need in order to be able to immediately work with the THERMDRILL

##### Basic kit



for  
MT 2  
and  
MT 3

### Tool-kits = flow drill + thread former

#### Type "form"

#### Type "cut"

Size	Item No	€ plus VAT	Item No	€ plus VAT
<b>M 4</b>	306 0024	<b>85,00</b>	306 0044	<b>109,00</b>
<b>M 5</b>	306 0025	<b>89,00</b>	306 0045	<b>128,00</b>
<b>M 6</b>	306 0026	<b>96,00</b>	306 0046	<b>145,00</b>
<b>M 8</b>	306 0028	<b>120,00</b>	306 0048	<b>157,00</b>
<b>M 10</b>	306 0030	<b>138,00</b>	306 0050	<b>174,00</b>
<b>M 12</b>	306 0032	<b>158,00</b>	306 0052	<b>193,00</b>

#### Lubricant

Paste for flow drilling (1 kg) including brush

306 0090 **50,00**



Thread moulder oil (1 litre) including brush

306 0092 **40,00**



### Recommended material thickness and speeds

#### types

##### Max. recommended material thickness [mm] for version "short"

	<b>M 4</b>	<b>M 5</b>	<b>M 6</b>	<b>M 8</b>	<b>M 10</b>	<b>M 12</b>
<b>"form"</b>	1.5	2.0	2.0	2.5	2.5	3.0
<b>"cut"</b>	2.0	3.0	3.0	4.0	4.0	4.5

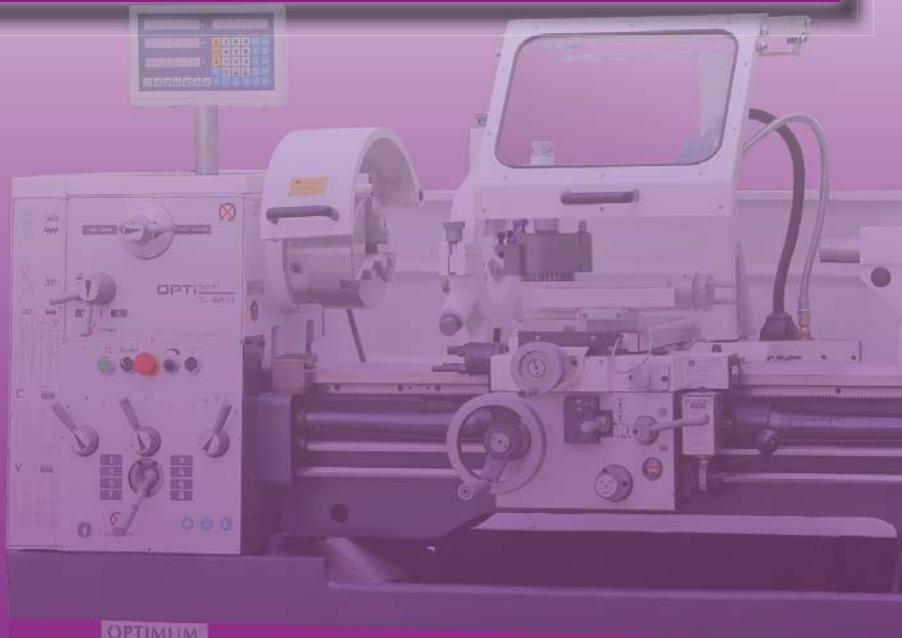


For material which is thicker than indicated chose the Thermdrill version "long". For item No "S" replace by "L"

# Lathes



## Technical data of the OPTIturn® lathes for general orientation



	Motor power kW	Height of centres	Centre width	Turning diameter	Spindle speed 1/min	Spindle seat	3-jaw chuck (Series)	4-jaw chuck (Series)	Vario drive	Digital speed display series	DPA version series	Machine lamp (Series)	230V version available	400V version available
<b>TU 1503V</b>	0,45	70	250	140	120 - 3.000		●		●				●	
<b>TU 2004V</b>	0,6	100	300	200	150 - 2.500	MK 3	●		●	●			●	
<b>TU 2304</b>	0,75	115	450	230	125 - 2.000	MK 3	●						●	
<b>TU 2304V</b>	0,75	115	450	230	150 - 2.200	MK 3	●		●	●			●	
<b>TU 2404</b>	0,75	120	450	250	125 - 2.000	MK 3	●						●	●
<b>TU 2404V</b>	1,1	120	450	250	150 - 2.500	MK 3	●		●	●			●	
<b>TU 2506V</b>	1,1	125	550	250	150 - 2.500	MK 4	●		●	●			●	
<b>TU 2807</b>	0,85	140	700	266	150 - 2.000	MK 4	●						●	●
<b>TU 2807V</b>	1,5	140	700	266	30 - 4.000	MK 4	●		●	●			●	
<b>D 320 x 630</b>	1,5	160	630	320	65 - 1.800	MK 5	●	●				●		●
<b>D 320 x 920</b>	1,5	160	920	320	65 - 1.800	MK 5	●	●				●		●
<b>TU 3209V</b>	1,5	160	920	320	12 - 2'500	MK 5	●	●	●	●		●	●	
<b>D 330 x 1000</b>	1,5	165	1.000	330	70 - 2.000	MK 5	●	●				●		
<b>D 360 x 1000</b>	1,5 / 2,4	180	1.000	356	45 - 1.800	MK 5	●	●			●/-	●		●
<b>TU 3610V</b>	4	180	1.000	356	30 - 3.000	MK 5	●	●	●	●	●	●		
<b>D 420 x 1000/1500</b>	4,5	210	1.000 1.500	420	45 - 1.800	MK 6	●	●			●/-	●		●
<b>TU 4210V</b>	5,5	210	1.000	420	30 - 3.000	MK 6	●	●	●	●	●	●		
<b>D 460 x 1000/1500/2000</b>	5,5	230	1.000 1.500 2.000	465	25 - 2.000	MK 6	●	●			●	●		●
<b>TU 4615V</b>	7,5	230	1.500	465	30-2000	MK 6	●	●	●	●	●	●		
<b>D 560 x 1500/200/3000</b>	7,5	280	1.500 2.000 3.000	560	25 - 1.600	MK 7	●	●			●	●		●
<b>TU 5620V</b>	7,5	280	2.000	560	25 - 1.600	MK 7	●	●	●	●	●	●		
<b>D 660 x 2000/3000</b>	9	330	2.000 3.000	660	25 - 1.600	MK7	●	●			●	●		●
<b>TU 8020 / TU 8030</b>	11	330	2.000 3.000	660	25 - 1.600	MK7	●		●	●		●		●
<b>TZ 4012</b>	4	200	1.150	400	40 - 2.200	MK4			●	●	●	●		●
<b>TZ 5216</b>	5,5	260	1.625	530	30 - 1.500	MK5			●	●	●	●		●
<b>TZ 6222</b>	5,5	310	2.225	620	30 - 1.500	MK5			●	●	●	●		●

**OPTIturn®**

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

**DIN**  
Machines according to  
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 inverter 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

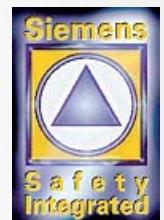
## Energy saving with intelligent drive solutions

### 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.



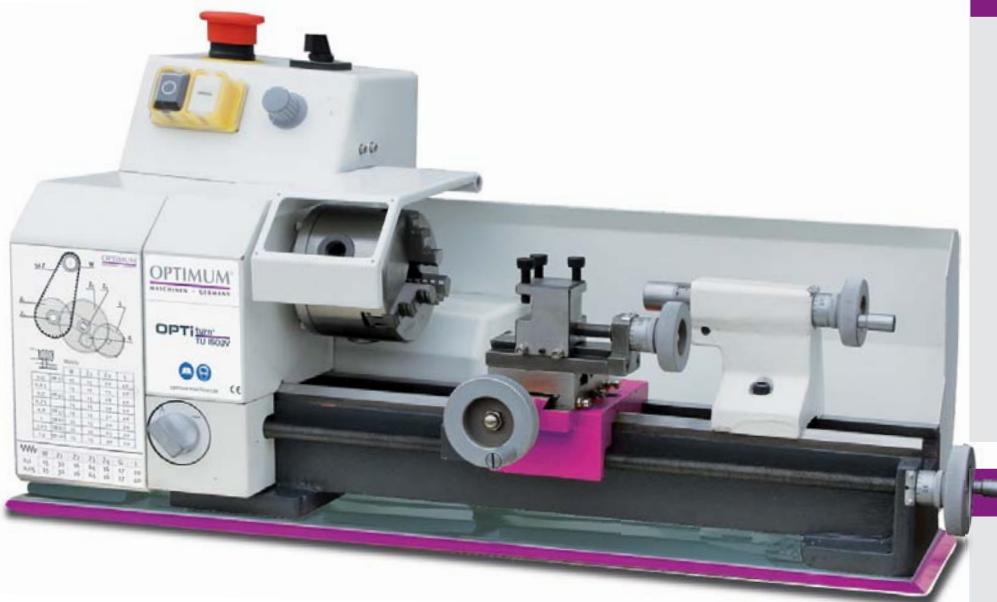
## The new compact lathe with electronically adjustable speed. Perfect for the model maker

### 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 the control panel
- Lathe chuck protection with microswitch
- 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
- Acceptance certificate

**NEW**

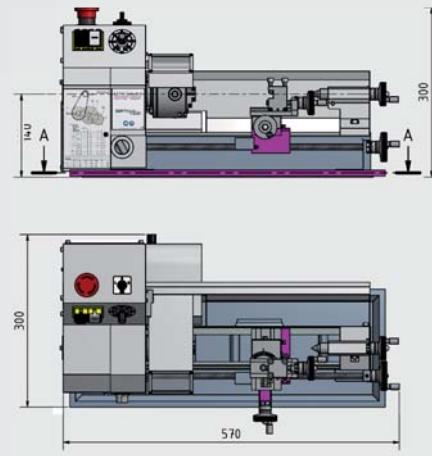


### Convincing arguments...



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

### Dimensions



Type	TU 1503V
Item No	342 0260
€ plus VAT	<b>839,00</b>

Machine data	
Electrical connection	230 V /1 Ph ~50 Hz
Motor power	450 W
Working areas	
Centre height	70 mm
Centre width	250 mm
Turning diameter (max.)	140 mm
Bed width	70 mm
Speeds	120 - 3'000 min <sup>-1</sup>
Number of steps	Electronically adjustable speed
Headstock	
Spindle taper	MT 1
Spindle drilling	Ø 11 mm
Slide	
Travel top slide	40 mm
Travel cross slide	55 mm
Longitudinal feed	0.05 - 0.1 mm/rev
Pitch - Metric (11)	0.5 - 1.5 mm/rev
Tool holder seat height	12 mm
Tailstock	
Tailstock taper	MT 1 shortened
Tailstock - sleeve travel	30 mm
Dimensions L x W x H	560 x 320 x 290 mm
Net weight	22 kg

### Standard equipment

Three jaw lathe chuck Ø 80 mm, fixed centre point MT1, lathe chuck protection, splashback, chip tray, 2-fold tool holder, change gear kit, acceptance certificate

Accessories	Item No	€ plus VAT
Four jaw lathe chuck Ø 80 mm	344 0286	<b>95,00</b>
Follow rest	344 0210	<b>22,00</b>
Steady rest	344 0211	<b>24,00</b>
Revolving centre MT 1	344 0700	<b>40,00</b>
Collet chuck ER 16	344 0281	<b>50,00</b>
Collet chuck kit ER 16, 1 - 10 mm, 12 pcs.	344 0282	<b>189,00</b>
Lathe tool kit 8 mm, 11 pcs	344 1008	<b>65,00</b>
Lathe tool kit HM 8 mm, 7 pcs	344 1011	<b>109,00</b>

Please find more Information „Accessories for lathe“ on page 95

## Lathe with digital speed display and infinitely variable speed control



### 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 of better than 0.009 mm
- Automatic longitudinal/leading spindle drive
- With longitudinal slide, cross slide and top slide
- Right-/left-handed rotation switchable on the control panel
- Emergency-stop push button and low-voltage release
- Lathe chuck protection
- Thrust bearing
- Leading spindle run on two porous bearings
- Large threading range due to set of change gears
- Change gear train
- Acceptance certificate

vario drive

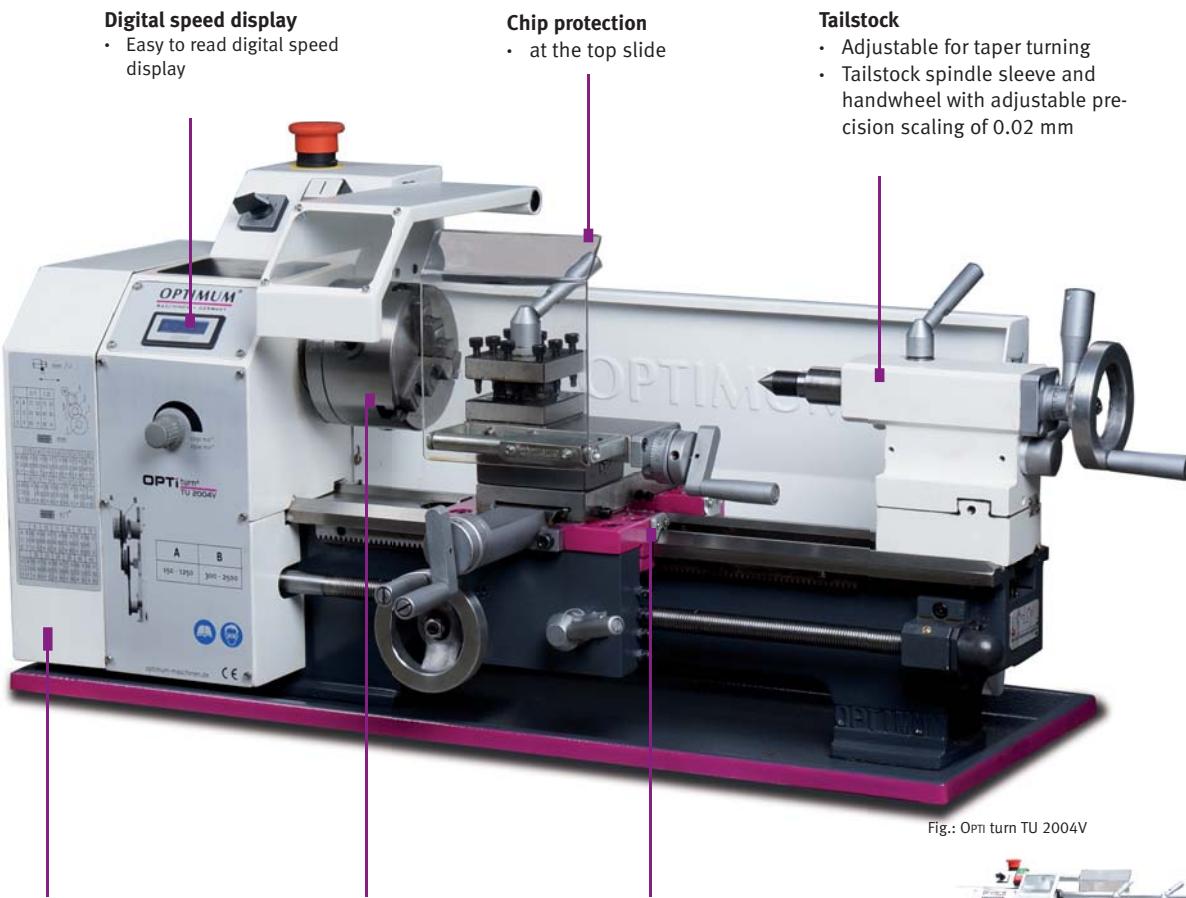


Fig.: Opti turn TU 2004V

### 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 spindle hole of Ø 21 mm

### Lathe chuck

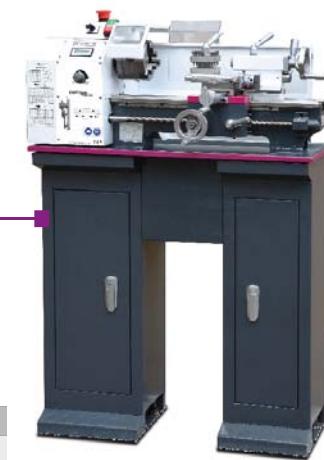
- True running accuracy of better than 0.04 mm

### Quadruple tool holder

- turnable

### Rolled trapezoid thread

- Leading spindle



Accessories	Machine substructure
Item No	344 0409
€ plus VAT	369,00

## Technical data, accessories and dimensions

Type	TU 2004 V
Item No	342 0310
€ plus VAT	<b>1.250,00</b>

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	600 W
Working 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
Speeds	
Spindle speeds	150 - 2'500 min <sup>-1</sup>
Number of steps	2 steps, electrically adjustable speed
Headstock	
Spindle taper	MT 3
Spindle drilling	Ø 21 mm
Passage 3-jaw chuck	20 mm
Slide	
Travel top slide	55 mm
Travel cross slide	75 mm
Longitudinal feed	0.1/0.2 mm/rev
Pitch - Metric (11)	0.5 - 3 mm/rev
Pitch - Inch (8)	44 - 10 threads/1"
Tool holder seat height	Max. 12 mm
Tailstock	
Tailstock taper	MT 2
Tailstock - sleeve travel	65 mm
Dimensions L x H x W	
Net weight	830 x 425 x 360 mm 61 kg

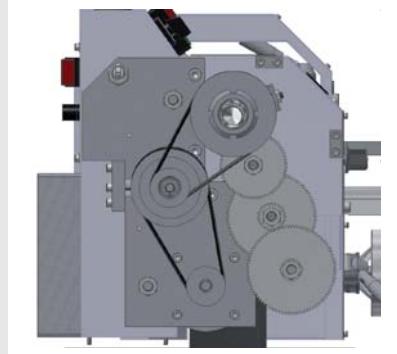
Standard equipment	Three jaw chuck Ø 100 mm Steady centre MT 2 and MT 3 Splash board and Chip tray Quadruple tool holder Change gear kit Operating tool
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Accessories	Item No	€ plus VAT
Four jaw lathe chuck Ø 100 mm (centric) Speed: 3'400 min <sup>-1</sup>	344 2810	<b>135,00</b>
Flange for lathe chucks Ø 100 mm	344 0312	<b>75,00</b>
Face clamping disc Ø 170 mm	344 0295	<b>40,00</b>
Follow rest	344 0230	<b>35,00</b>
Steady rest	344 0231	<b>40,00</b>
Revolving centre MT2	344 0702	<b>50,00</b>
Quick action tool holder SWH-AA	338 4311	<b>260,00</b>
Lathe tool kit HM 10 mm, 7 pcs	344 1111	<b>120,00</b>
Lathe tool kit 10 mm, 11 pcs	344 1108	<b>65,00</b>
Workshop assembly SWH	900 0401	<b>90,00</b>

Type	MPA-4 S
Item No	338 3922
€ plus VAT	<b>789,00</b>
Service	Workshop assembly
Item No	900 0420
€ plus VAT	<b>540,00</b>

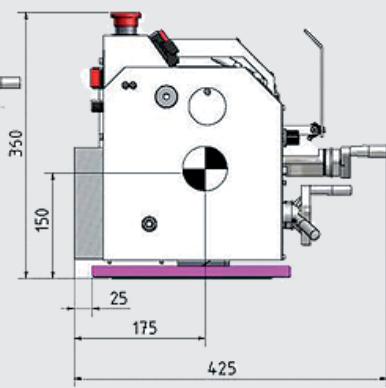
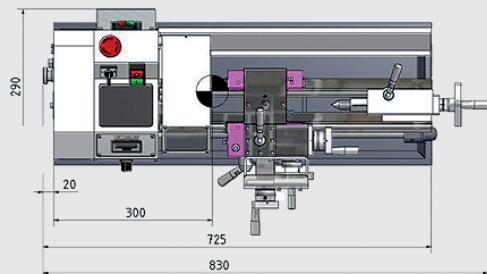
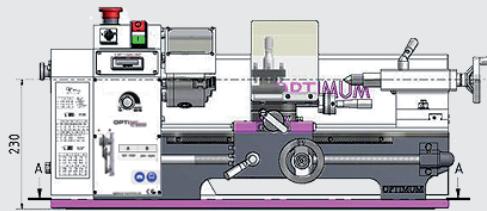


### Convincing arguments...



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

### Abmessungen



Please find more information „Accessories for lathe“ on page 95



**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 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 the control panel
- Rolled trapezoid spindles

- Emergency-stop push button and low-voltage release
- Comprehensive accessory
- Acceptance certificate
- Stable value

**TU 2304 V**

- Powerful motor and mostly constant torque delivery
- Speed change easily adjustable via potentiometer
- Digital speed display

**Conventional/Vario**

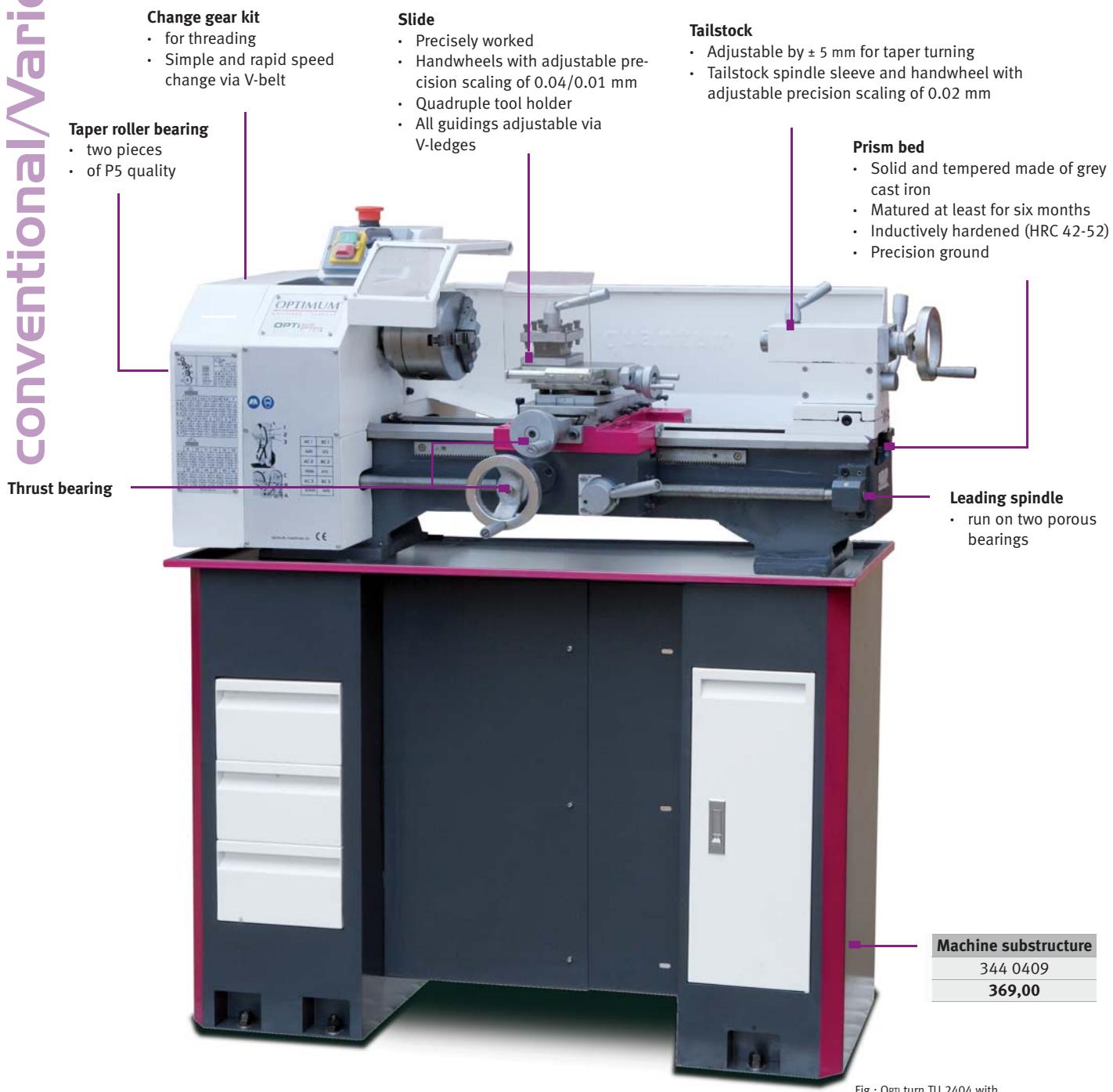
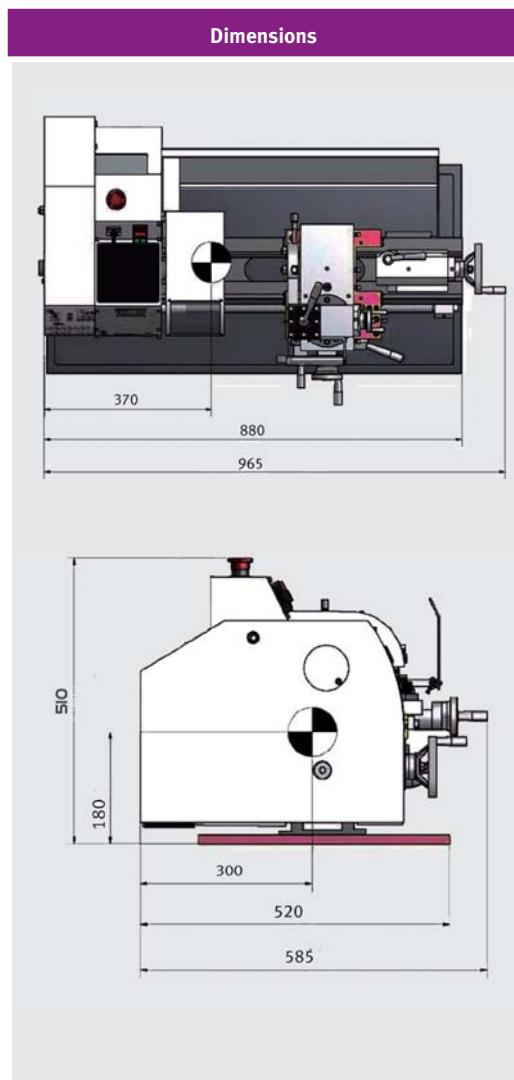


Fig.: OPTIturn TU 2404 with optional machine base

## Technical data, accessories and dimensions

Type	<b>TU 2304</b>
Item No	342 0320
€ plus VAT	<b>1.350,00</b>
Type	<b>TU 2304V</b>
Item No	342 0325
€ plus VAT	<b>1.500,00</b>
<b>Machine data</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	750 W
<b>Working areas</b>	
Centre height	115 mm
Centre width	450 mm
Turning Ø over lathe bed	230 mm
Bed width	135 mm
<b>Speeds</b>	
Spindle seat	Ø 52 mm
Spindle speed	125 - 2'000 min <sup>-1</sup>
Number of steps	6 steps
Spindle speed Vario machines	150 - 2'200 min <sup>-1</sup>
Number of steps Vario machines	2 steps, electronically adjustable speed
<b>Headstock</b>	
Spindle taper	MT 3
Spindle drilling, rod passage	Ø 21 mm
<b>Slide</b>	
Travel top slide	75 mm
Travel cross slide	120 mm
Pitch - Metric in the range of	0.4 - 3.5 mm/rev
Pitch - Inch in the range of	44 - 10 Threads/1"
Quadruple tool holder seat height	14 x 14 mm
<b>Tailstock</b>	
Tailstock seat	MT 2
Tailstock - sleeve travel	70 mm
<b>Dimensions</b>	
Length x width x height	965 x 585 x 510 mm
Net weight	104 kg



Standard equipment	Three jaw chuck Ø 100 mm Steady centre MT 2 Steady centre MT 3 Splash board Chip tray Quadruple tool holder Change gear kit Operating tool
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Accessories	Item No	€ plus VAT
<b>Three jaw chuck Ø 125 mm, Speed 3'000 min<sup>-1</sup></b>	344 2712	<b>115,00</b>
<b>Four jaw chuck Ø 125 mm, Speed 2'750 min<sup>-1</sup></b>	344 2812	<b>140,00</b>
<b>Three jaw chuck CI3P Ø 125 mm cast iron, Speed 3'200 min<sup>-1</sup></b>	344 2020	<b>259,00</b>
<b>Three jaw chuck CS3C Ø 125 mm steel, Speed 4'800 min<sup>-1</sup></b>	344 2520	<b>422,00</b>
<b>Flange for three jaw chuck Ø 125 mm</b>	344 0511	<b>75,00</b>
<b>Flange for four jaw chuck Ø 125 mm</b>	344 0512	<b>75,00</b>
<b>Face clamping disc Ø 200 mm</b>	344 0352	<b>55,00</b>
<b>Revolving centre MT2</b>	344 0702	<b>50,00</b>
<b>Steady rest</b>	344 0361	<b>55,00</b>
<b>Follow rest</b>	344 0360	<b>53,00</b>
<b>Lathe tool kit HM 8 mm, 7 pcs</b>	344 1011	<b>109,00</b>
<b>Lathe tool kit HM 10 mm, 7 pcs</b>	344 1111	<b>120,00</b>
<b>Lathe tool kit 10 mm, 11 pcs</b>	344 1108	<b>65,00</b>
<b>Lathe tool kit HM 12 mm, 9 pcs</b>	344 1211	<b>149,00</b>
<b>Collet chuck kit ER 25, 1 - 16 mm</b>	344 1109	<b>159,00</b>
<b>Collet chuck holder for collet chuck ER 25</b>	344 0505	<b>85,00</b>
<b>Quick change tool holder SWH 1-A</b>	338 4301	<b>439,00</b>
<b>Workshop assembly SWH</b>	900 0401	<b>90,00</b>

<b>Accessories</b>	<b>MPA-4 S</b>
Item No	338 3922
€ plus VAT	<b>789,00</b>
<b>Service</b>	<b>Workshop assembly</b>
Item No	900 0420
€ plus VAT	<b>540,00</b>



Please find more information „Accessories for lathe“ on page 95

**Lathes for the demanding do-it-yourselfer.  
TU 2404V / TU 2406V with electronically infinitely variable drive.**

**Convincing arguments: quality, efficiency and price**

- Precise manufacturing
- Hardened and ground 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 the control panel
- Rolled trapezoid spindles

- Emergency-stop push button and low-voltage release
- Comprehensive accessory
- Acceptance certificate
- Stable value

**TU 2404V / TU 2406V**

- Powerful motor and mostly constant torque delivery
- Speed change easily adjustable via potentiometer
- Digital speed display

**conventional/vario**

Accessories	MPA-4 S
Item No	338 3922
€ plus VAT	<b>789,00</b>
Service	Workshop assembly
Item No	900 0420
€ plus VAT	<b>540,00</b>



**Change gear kit**

- for threading
- Simple and rapid speed change via V-belt

**Taper roller bearing**

- two pieces
- of P5 quality

**Thrust bearing**

**Leading spindle**

- run on two porous bearings



**Prism bed**

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

Accessories	Machine substructure
Item No	344 0409
€ plus VAT	<b>369,00</b>



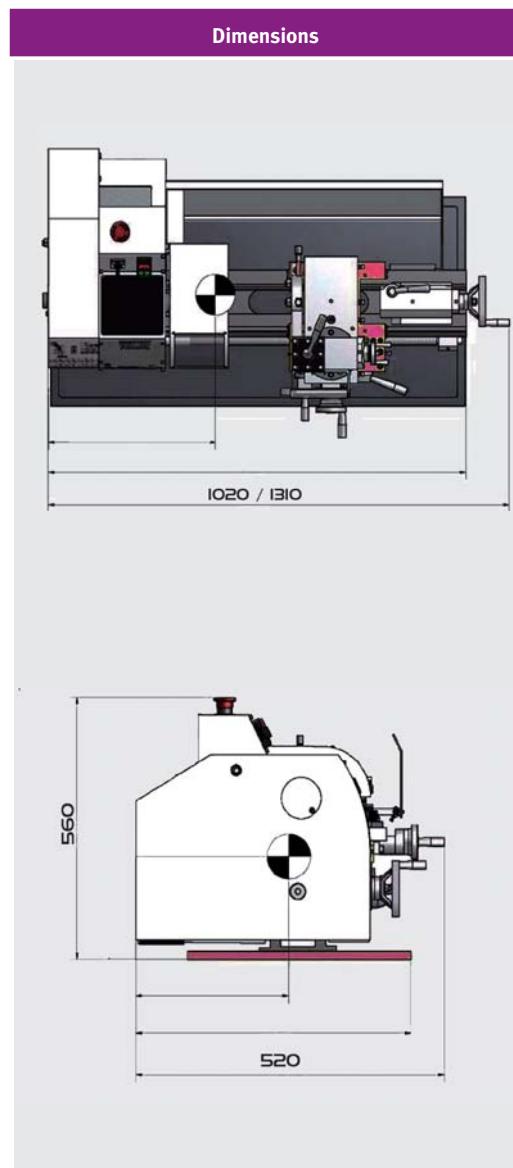
Fig.: Opti turn TU 2404 with optional machine base

## Technical data, accessories and dimensions

Type	TU 2404
Item No (230 V)	342 0330
Item No (400 V)	342 0333
<b>€ plus VAT</b>	<b>1.490,00</b>

Type	TU 2404V	TU 2406V
Item No (230 V)	342 0335	342 0355
<b>€ plus VAT</b>	<b>1.750,00</b>	<b>1.850,00</b>

<b>Machine data</b>		
Electrical connection	230 V or 400 V	-
Motor power	750 W	-
Connection Vario machine	230 V / 1 Ph ~50 Hz	
Motor Vario machine	1.1 kW	
<b>Working areas</b>		
Centre height	125 mm	
Centre width	450 mm	550 mm
Turning Ø over lathe bed	250 mm	
Bed width	135 mm	
<b>Speeds</b>		
Spindle seat	Ø 52 mm	
Spindle speed	125 - 2'000 min <sup>-1</sup>	-
Number of steps	6 steps	-
Spindle speed Vario machines	150 - 2'500 min <sup>-1</sup>	
Number of steps Vario machines	2 steps, electronically adjustable speed	
<b>Headstock</b>		
Spindle taper	MT 3	
Spindle drilling, rod passage	Ø 21 mm	
<b>Slide</b>		
Travel top slide	75 mm	
Travel cross slide	120 mm	
Pitch - Metric in the range of	0.4 - 3.5 mm/rev	
Pitch - Inch in the range of	44 - 10 Threads/1"	
Quadruple tool holder seat	14 x 14 mm	
<b>Tailstock</b>		
Tailstock seat	MT 2	
Tailstock - sleeve travel	70 mm	
<b>Dimensions</b>		
Length x width x height	1'020 x 520 x 560 mm	1.310 x 520 x 560 mm
Net weight	110 kg	125 kg



Standard equipment	Accessories	Item No	€ plus VAT
Three jaw chuck Ø 125 mm	Three jaw chuck Ø 125 mm, Speed 3'000 min <sup>-1</sup>	344 2712	115,00
Steady centre MT 2	Four jaw chuck Ø 125 mm, Speed 2'750 min <sup>-1</sup>	344 2812	140,00
Steady centre MT 3	Three jaw chuck CI3P Ø 125 mm cast iron, Speed 3'200 min <sup>-1</sup>	344 2020	259,00
Splash board	Three jaw chuck CS3C Ø 125 mm steel, Speed 4'800 min <sup>-1</sup>	344 2520	422,00
Chip tray	Flange for three jaw chuck Ø 125 mm	344 0511	75,00
Quadruple tool holder	Flange for four jaw chuck Ø 125 mm	344 0512	75,00
Change gear kit	Face clamping disc Ø 250 mm	344 0552	55,00
Operating tool	Revolving centre MT2	344 0702	50,00
	Steady rest	344 0515	55,00
	Follow rest	344 0510	52,00
	Lathe tool kit HM 8 mm, 7 pcs	344 1011	109,00
	Lathe tool kit HM 10 mm, 7 pcs	344 1111	120,00
	Lathe tool kit 10 mm, 11 pcs	344 1108	65,00
	Lathe tool kit HM 12 mm, 9 pcs	344 1211	149,00
	Collet chuck kit ER 25, 1 - 16 mm	344 1109	159,00
	Collet chuck holder for collet chuck ER 25	344 0505	85,00
	Quick change tool holder SWH 1-A	338 4301	439,00
	Workshop assembly SWH	900 0401	90,00

Please find more information „Accessories for lathe“ on page 95

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

**OPTIMUM  
The original**

### 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 the control panel
- Leading spindle run on two porous bearings

- Handwheels on the slide with adjustable precision scaling of 0.04/0.01 mm
  - With change gear kit for threading
  - Thrust bearing
  - Emergency-stop push button and low-voltage release
  - Acceptance certificate
- 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

## conventional/vario

### Powerful Brushless drive

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

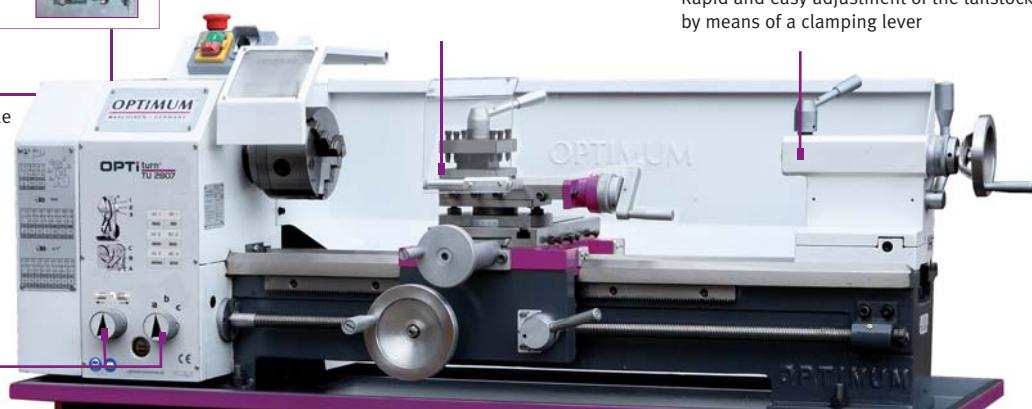


### Main spindle

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

### Feed gear

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



Accessories	Machine substructure
Item No	344 0409
€ plus VAT	369,00



Fig.: OPTIturn TU 2506

Fig.: OPTIturn TU 2807



**CNC add-on kit**  
More Information „TU 2506 / TU 2807“ on page 214

## Technical data and accessories

Type	TU 2506	TU 2807
Item No (230 V)	342 5001	342 7001
Item No (400 V)	342 5003	342 7003
<b>€ plus VAT</b>	<b>1.690,00</b>	<b>2.250,00</b>
Type	TU 2506V	TU 2807V
Item No (230 V)	342 5006	342 7006
<b>€ plus VAT</b>	<b>2.590,00</b>	<b>2.850,00</b>
Machine datas		
Electrical connection	230 V / 1 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor	750 W	850 W
Connection Vario machine	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor Vario machine	1.5 kW	1.5 kW
Working areas		
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
Speeds		
Spindle speed	125 - 2'000 min⁻¹	150 - 2'000 min⁻¹
Number of steps	6 steps	6 steps
Spindle speed Vario machines	30 - 4'000 min⁻¹	30 - 4'000 min⁻¹
Number of steps Vario machines	4 steps, electrically adjustable speed	4 steps, electrically adjustable speed
Headstock		
Spindle taper	MT 4	MT 4
Spindle drilling, rod passage	Ø 26 mm	Ø 26 mm
Slide		
Travel top slide	70 mm	60 mm
Travel cross slide	110 mm	160 mm
Longitudinal feed in the range of	0.07 - 0.2 mm/rev	0.07 - 0.2 mm/rev
Pitch - Metric in the range of	0.2 - 3.5 mm/rev	0.2 - 3.5 mm/rev
Pitch - Inch in the range of	56 - 8 threads/1"	56 - 8 threads/1"
Quadruple tool holder seat height	(max.) 13 mm	(max.) 13.5 mm
Tailstock		
Tailstock seat	MT 2	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 machines	1'250 x 650 x 420 mm	1'370 x 660 x 440 mm
Net weight	125 kg	180 kg
Standard equipment	Three-jaw lathe chuck Ø 125 mm, steady centre MT2 and MT4, splashboard, Chip tray, drill chuck protection, lathe tool made of high speed steel, lathe dog, quadruple tool holder Change gear kit, operating tool, test certificate	

Accessories TU 2506 / TU 2506 V	Item No	€ plus VAT	Accessories TU 2807 / TU 2807 V	Item No	€ plus VAT
<b>Face clamping disc Ø 240 mm</b>	344 1352	<b>55,00</b>	<b>Face clamping disc Ø 265 mm</b>	344 1452	<b>65,00</b>
<b>Steady rest Ø max. 50 mm</b>	344 1315	<b>55,00</b>	<b>Flange for lathe chucks Ø 160 mm</b>	344 1413	<b>85,00</b>
<b>Follow rest Ø max. 34 mm</b>	344 1310	<b>52,00</b>	<b>Steady rest Ø max. 55 mm</b>	344 1415	<b>65,00</b>
<b>Revolving centre MT2</b>	344 0702	<b>50,00</b>	<b>Follow rest Ø max. 56 mm</b>	344 1410	<b>65,00</b>
<b>Lathe tool kit HM 10 mm, 7 pcs</b>	344 1111	<b>120,00</b>	<b>Revolving centre MT2</b>	344 0702	<b>50,00</b>
<b>Lathe tool kit 10 mm, 11 pcs</b>	344 1108	<b>65,00</b>	<b>Lathe tool kit HM 10 mm, 7 pcs</b>	344 1111	<b>120,00</b>
<b>Lathe tool kit HM 12 mm, 9 pcs</b>	344 1211	<b>149,00</b>	<b>Lathe tool kit 10 mm, 11 pcs</b>	344 1108	<b>65,00</b>
<b>Collet chuck kit ER 25, 1 - 16 mm</b>	344 1109	<b>159,00</b>	<b>Lathe tool kit HM 12 mm, 9 pcs</b>	344 1211	<b>149,00</b>
<b>Collet chuck kit ER 32, 3 - 20 mm</b>	344 1122	<b>179,00</b>	<b>Collet chuck kit ER 25, 1 - 16 mm</b>	344 1109	<b>159,00</b>
<b>Collet chuck ER 25</b>	344 1305	<b>99,00</b>	<b>Collet chuck kit ER 32, 3 - 20 mm</b>	344 1122	<b>179,00</b>
<b>Collet chuck ER 32</b>	344 1306	<b>109,00</b>	<b>Collet chuck ER 25</b>	344 1305	<b>99,00</b>
<b>Quick change tool holder SWH 1-A</b>	338 4301	<b>439,00</b>	<b>Collet chuck ER 32</b>	344 1306	<b>109,00</b>
<b>Workshop assembly SWH</b>	900 0401	<b>90,00</b>	<b>Quick change tool holder SWH 1-A</b>	338 4301	<b>439,00</b>
<b>Add-on adaptor column/milling head BF20V</b>	335 6572	<b>109,00</b>	<b>Workshop assembly SWH</b>	900 0401	<b>90,00</b>
<b>Add-on adaptor column/milling head BF16V</b>	335 6568	<b>109,00</b>	<b>Add-on adaptor column/milling head BF20V</b>	335 6572	<b>109,00</b>
<b>BF20AV - milling head and column of a BF20V</b>	333 8129	<b>990,00</b>	<b>Add-on adaptor column/milling head BF16V</b>	335 6568	<b>109,00</b>

Please find more Information „Accessories for lathe“ on page 95

**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
- Camlock spindle seat DIN ISO 702-2 Nr. 4
- Guaranteed true running accuracy of the spindle nose of better than 0.015 mm
- Electrical system with Siemens components
- First filling with high grade Mobil oil
- 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
- Cover for leading spindle
- Machine substructure including tool compartment
- Acceptance certificate

**DPA machines:**

- Digital position display DPA 2000 and glass scales
- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display

Conventional

**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
- First filling with high grade Mobil oil

**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
- Quadruple 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**

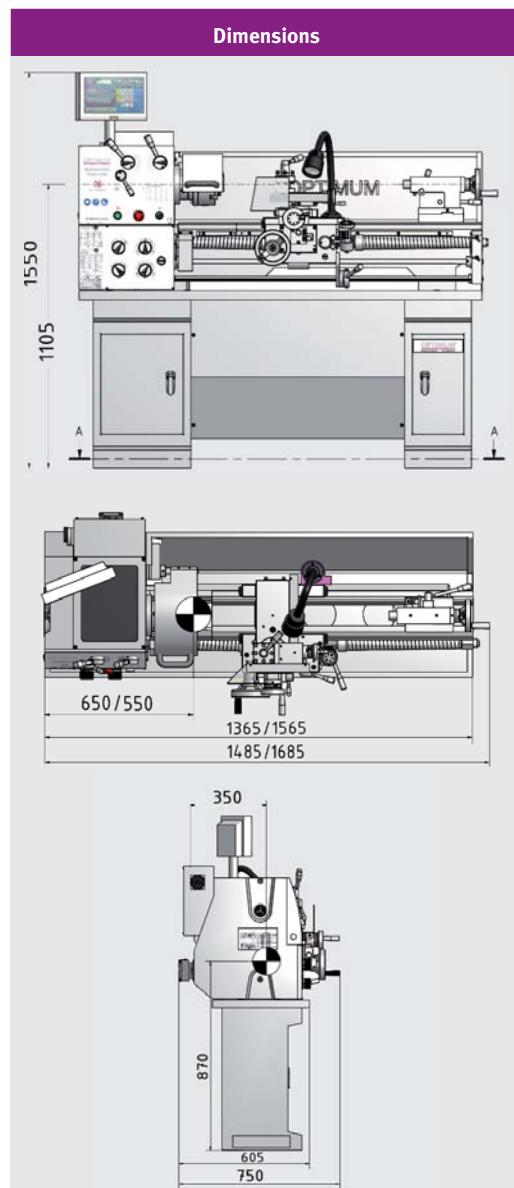
- Adjustable by +/- 10 mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling of 0.025 mm



Fig.: Opti turn D 320 x 920 DPA

## Technical data, accessories and dimensions

Type	D 320 x 630	D 320 x 920
Item No	340 0633	340 0923
€ plus VAT	<b>4.290,00</b>	<b>4.390,00</b>
DPA - type	D 320 x 630 DPA	D 320 x 920 DPA
Item No	340 0633DPA	340 0923DPA
€ plus VAT	<b>5.290,00</b>	<b>5.390,00</b>
Machine data		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	1.5 kW	
Working areas		
Centre height	160 mm	
Centre width	630 mm	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	
Speeds		
Spindle speed	65 - 1'800 min <sup>-1</sup>	
Number of steps	18 steps	
Headstock		
Spindle taper	MT 5	
Spindle seat	Camlock DIN ISO 702-2 Nr. 4	
Spindle drilling, rod passage	Ø 38 mm	
Slide		
Travel top slide	85 mm	
Travel cross slide	162 mm	
Longitudinal feed in the range of	0.052 - 1'392 mm/rev; 32 feeds	
Transverse feed 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 threads/1"; 34 thread pitches	
Quadruple tool holder seat height	16 x 16 mm	
Tailstock		
Tailstock seat	MT 3	
Tailstock - sleeve travel	100 mm	
Dimensions		
Length	1,485 mm	1,685 mm
Width x Height	750 x 1.350 (DPA 1'550) mm	
Weight	400 kg	410 kg



Standard equipment
• Three-jaw lathe chuck Ø 160 mm
• Four jaw lathe chuck Ø 200 mm with universally adjustable jaws
• Face clamping disc Ø 250 mm
• Revolving centre MT3
• Steady rest Passage Ø max. 70 mm
• Follow rest Passage Ø max. 50 mm
• Chip tray
• Machine base (not mounted)
• Splashback (not mounted)
• Lathe chuck protection
• Machine lamp
• Threading gauge
• Quadruple tool holder
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

Accessories	Item No	€ plus VAT
Three jaw chuck Camlock cast iron Ø 200 mm	344 2762	<b>275,00</b>
Three jaw chuck CI3P Camlock cast iron Ø 200 mm	344 2045	<b>479,00</b>
Four jaw chuck CI4P Camlock cast iron Ø 200 mm	344 2145	<b>589,00</b>
Three jaw chuck CS3C Camlock steel Ø 200 mm	344 2545	<b>769,00</b>
Four jaw chuck CS4C Camlock steel Ø 200 mm	344 2645	<b>1.090,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
Lathe tool kit 16 mm, 11 pcs	344 1508	<b>75,00</b>
Lathe tool kit HM 16 mm, 7 pcs	344 1511	<b>139,00</b>
Universal collet attachment 5C	344 1506	<b>240,00</b>
Collet chuck kit 3 - 25 mm, 5c, 17 pcs.	344 1509	<b>320,00</b>
Position limit stop with fine adjustment	344 1524	<b>65,00</b>
Quick change tool holder SWH 3-E	338 4303	<b>499,00</b>
Workshop assembly SWH	900 0400	<b>155,00</b>
Vibration damping machine foot SE 2	338 1016	<b>40,00</b>

Please find more information „Accessories for lathe“ on page 95

## Completely equipped centre lathe with electronically infinitely variable drive

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 Nr. 4
- Guaranteed true running accuracy of the spindle nose of better than 0.015 mm
- First filling with high grade Mobil oil
- 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
- Cover for leading spindle
- New machine base with drawers
- Acceptance certificate

- **Digital position display DPA 2000 S** and glass scales
- Speed display
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Glare-free display

### Powerful Brushless drive

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



### 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
- First filling with high grade Mobil oil

### Slide

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

### Quality lathe chuck

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

### Halogen machine lamp

- Coated articulated arm
- High positioning stability

### Prism bed

- Heavily ribbed
- Inductively hardened
- Precision ground

### Fast acting feed gear

- Closed structure

### Bed bridge

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

### Tailstock

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

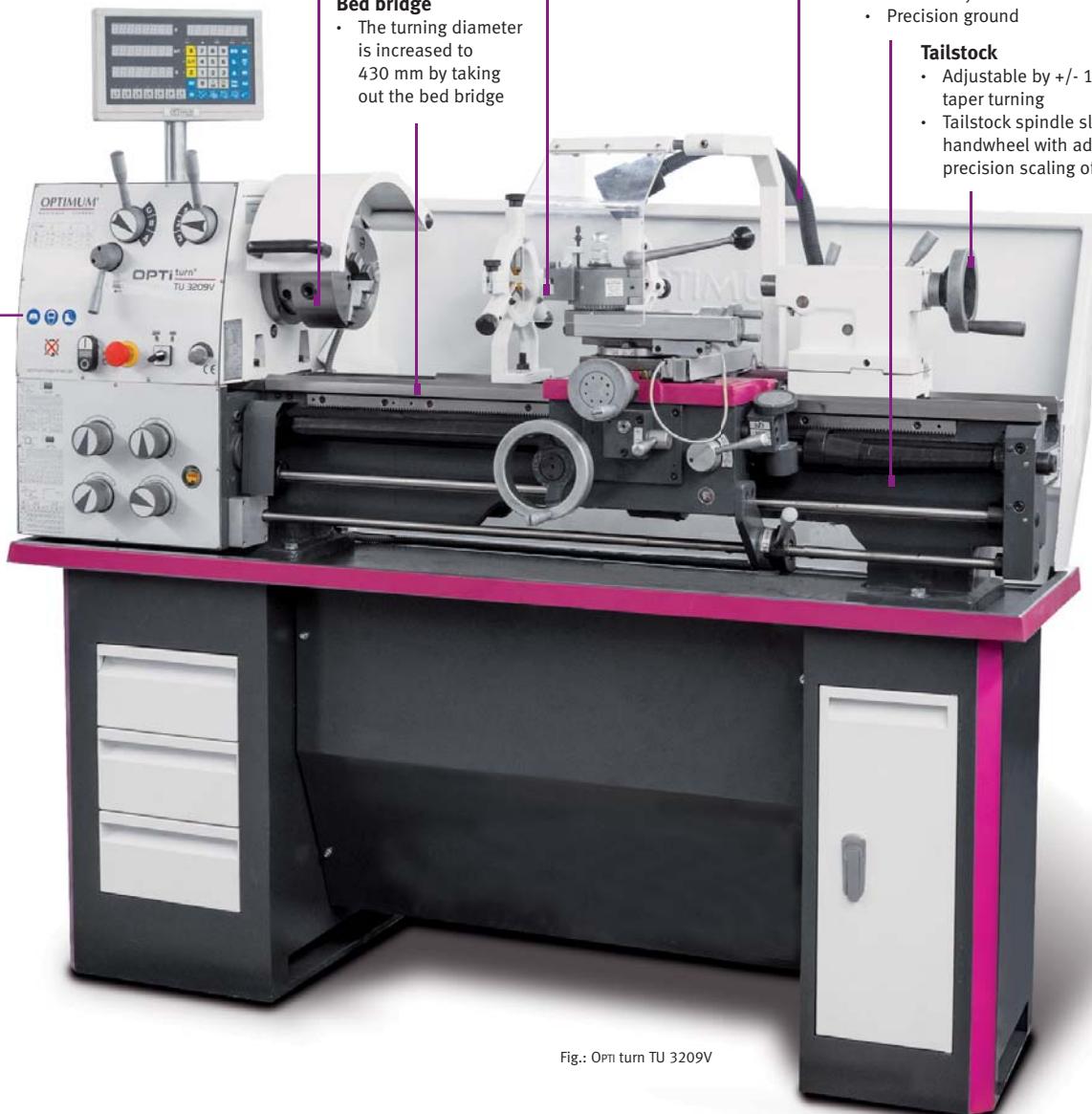
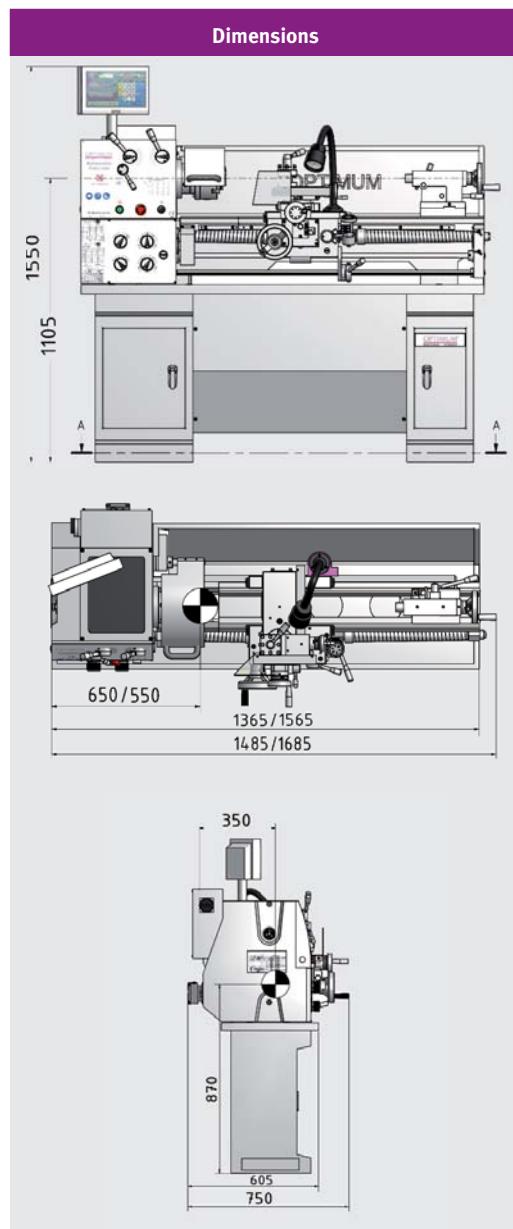


Fig.: Opti turn TU 3209V

## Technical data, accessories and dimensions

Type	TU 3209V
Item No	340 3110
€ plus VAT	<b>6.990,00</b>
<b>Machine data</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1.5 kW
<b>Working areas</b>	
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
<b>Speeds</b>	
Spindle speed	12 - 2'250 min <sup>-1</sup>
Number of steps	9 steps
<b>Headstock</b>	
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 Nr. 4
Spindle drilling, rod passage	Ø 38 mm
<b>Slide</b>	
Travel top slide	85 mm
Travel cross slide	162 mm
Longitudinal feed in the range of	0.052 - 1'392 mm/rev; 32 feeds
Transverse feed 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 threads/1";34 thread pitches
Quadruple tool holder seat height	16 x 16 mm
<b>Tailstock</b>	
Tailstock seat	MT 3
Tailstock - sleeve travel	100 mm
<b>Dimensions</b>	
Length X Width x Height	1'685 x 750 x 1'550 mm
Weight	410 kg



Standard equipment
• Three-jaw lathe chuck Ø 160 mm
• Four jaw lathe chuck Ø 200 mm with universally adjustable jaws
• Face clamping disc Ø 250 mm
• Revolving centre MT3
• Steady rest Passage Ø max. 70 mm
• Follow rest Passage Ø max. 50 mm
• Chip tray
• Machine base (not mounted)
• Splashback (not mounted)
• Lathe chuck protection
• Machine lamp
• Threading gauge
• Quadruple tool holder
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

Accessories	Item No	€ plus VAT
<b>Three jaw chuck</b> Camlock cast iron Ø 200 mm	344 2762	<b>275,00</b>
<b>Three jaw chuck CI3P</b> Camlock cast iron Ø 200 mm	344 2045	<b>479,00</b>
<b>Four jaw chuck CI4P</b> Camlock cast iron Ø 200 mm	344 2145	<b>589,00</b>
<b>Three jaw chuck CS3C</b> Camlock steel Ø 200 mm	344 2545	<b>769,00</b>
<b>Four jaw chuck CS4C</b> Camlock steel Ø 200 mm	344 2645	<b>1.090,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Lathe tool kit</b> 16 mm, 11 pcs	344 1508	<b>75,00</b>
<b>Lathe tool kit</b> HM 16 mm, 7 pcs	344 1511	<b>139,00</b>
<b>Universal collet attachment</b> 5C	344 1506	<b>240,00</b>
<b>Collet chuck kit</b> 3 - 25 mm, 5c, 17 pcs.	344 1509	<b>320,00</b>
<b>Position limit stop</b> with fine adjustment	344 1524	<b>65,00</b>
<b>Quick change tool holder</b> SWH 3-E	338 4303	<b>499,00</b>
<b>Workshop assembly</b> SWH	900 0400	<b>155,00</b>
<b>Vibration damping machine foot</b> SE 2	338 1016	<b>40,00</b>

Please find more information „Accessories for lathe“ on page 95

**Completely equipped mechanic's lathe including enclosed feed mechanism 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
- Camlock DIN ISO 702-2 Nr. 4
- Guaranteed true running accuracy of the spindle nose of 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
- Cover for leading spindle
- Electrical system with Siemens components

- First filling with high grade Mobil oil
- Foot brake
- Acceptance certificate

**DPA machine:**

- **Digital position display DPA 2000** and glass scales
- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display

**Main spindle**

- Running in an oil bath
- Gearwheels smooth running, hardened and ground
- First filling with high grade Mobil oil

**Quality lathe chuck**

- Precisely
- Higher speed is possible
- 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

**Halogen machine lamp**

- Coated articulated arm
- High positioning stability

**Prism bed**

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

**Conventional**

**Bed bridge**

- 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
- Quadruple tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide ± 90°

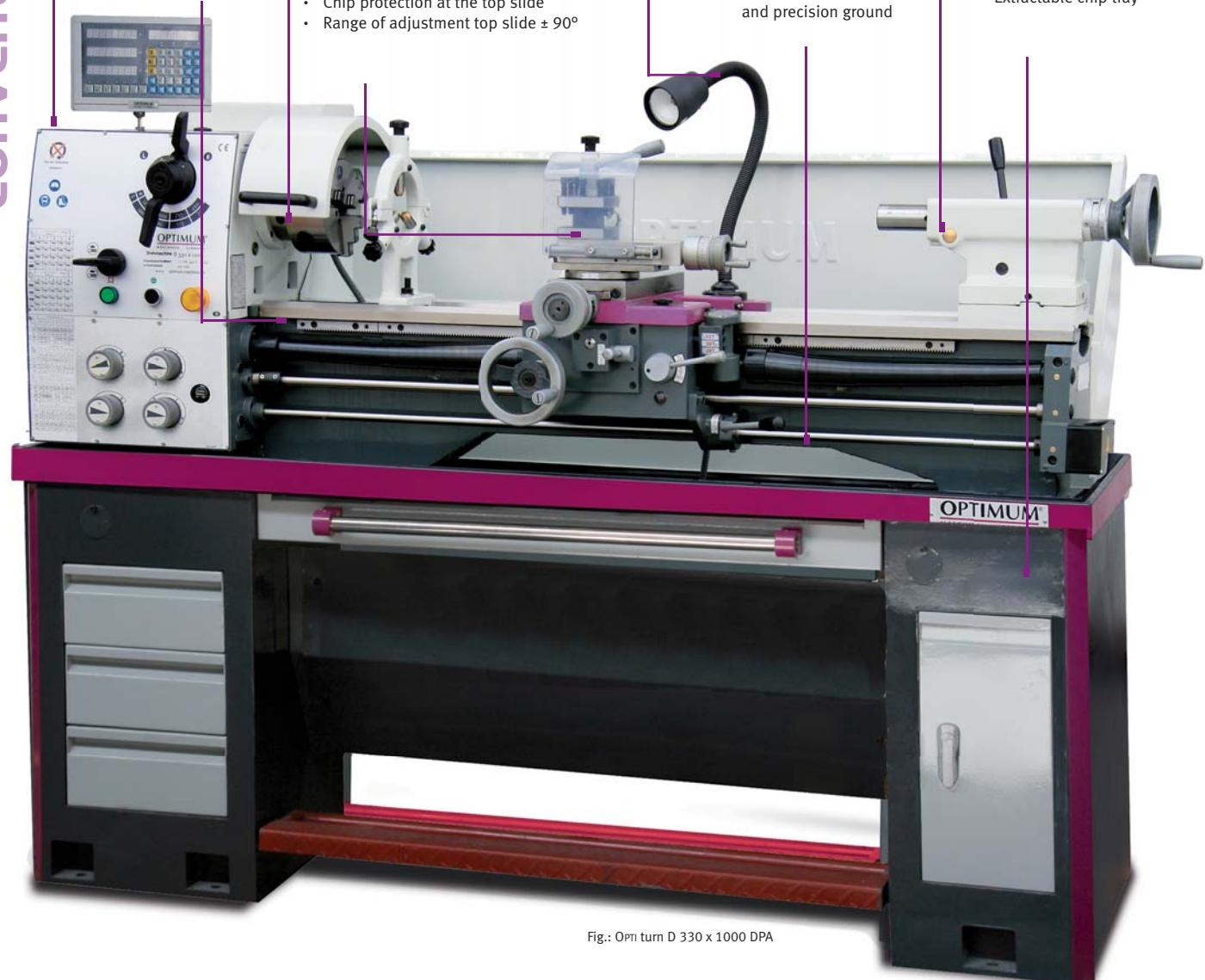
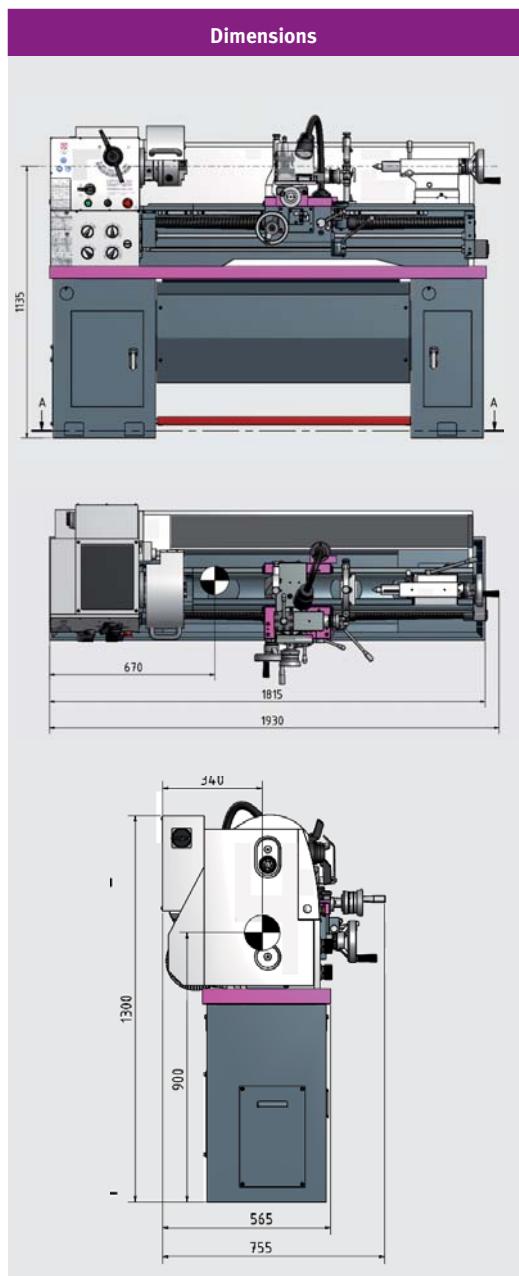


Fig.: OPTIturn D 330 x 1000 DPA

## Technical data, accessories and dimensions

Type	D 330 x 1000
Item No	340 1000
€ plus VAT	<b>5.290,00</b>
Type	D 330 x 1000 DPA
Item No	340 1000DPA
€ plus VAT	<b>6.190,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW
<b>Working areas</b>	
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
<b>Speeds</b>	
Spindle speed	70 - 2'000 min <sup>-1</sup>
Number of steps	8 steps
<b>Headstock</b>	
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 Nr. 4
Spindle drilling, rod passage	Ø 38 mm
<b>Slide</b>	
Travel top slide	95 mm
Travel cross slide	170 mm
Longitudinal feed in the range of	0.052 - 1'392 mm/rev; 40 feeds
Transverse feed in the range of	0.014 - 0.380 mm/rev; 40 feeds
Pitch - Metric in the range of	0.4 - 7 mm/rec; 32 thread pitches
Pitch - Inch in the range of	56 - 4 threads/1"; 40 thread pitches
Quadruple tool holder seat height	max. 16 mm
<b>Tailstock</b>	
Tailstock seat	MT 3
Tailstock - sleeve travel	126 mm
<b>Dimensions</b>	
Length x width x height	1'930 x 755 x 1'300 (DPA 1'550) mm
Net weight	550 kg
<b>Transportation packaging flat rate</b>	<b>€ 39.00 (TPFR 2) plus VAT</b>



<b>Standard equipment</b>
• Three jaw lathe chuck Ø 160 mm centric clamping
• Four jaw lathe chuck Ø 200 mm with universally adjustable jaws
• Face clamping disc Ø 250 mm
• Reducing bush MT 5/MT 3
• 2 steady centres MT 3
• Steady rest Passage up to Ø 100 mm
• Follow rest Passage up to Ø 95 mm
• Chip protection at the top slide
• Position limit stop with fine adjustment
• Lathe chuck protection
• Spindle brake
• Machine substructure mounted including tool compartment
• Splash board mounted
• Threading gauge
• Quadruple tool holder
• Machine lamp
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

<b>Accessories</b>	Item No	€ plus VAT
<b>Three jaw chuck</b> Camlock cast iron Ø 200 mm	344 2762	<b>275,00</b>
<b>Three jaw chuck CI3P</b> Camlock cast iron Ø 200 mm	344 2045	<b>479,00</b>
<b>Four jaw chuck CI4P</b> Camlock cast iron Ø 200 mm	344 2145	<b>589,00</b>
<b>Three jaw chuck CS3C</b> Camlock steel Ø 200 mm	344 2545	<b>769,00</b>
<b>Four jaw chuck CS4C</b> Camlock steel Ø 200 mm	344 2645	<b>1.090,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Lathe tool kit</b> 16 mm, 11 pcs	344 1508	<b>75,00</b>
<b>Lathe tool kit</b> HM 16 mm, 7 pcs	344 1511	<b>139,00</b>
<b>Universal collet attachment</b> 5C	344 1506	<b>240,00</b>
<b>Collet chuck kit</b> 3 - 25 mm, 5c, 17 pcs.	344 1509	<b>320,00</b>
<b>Quick change tool holder</b> SWH 3-E	338 4303	<b>499,00</b>
<b>Workshop assembly</b> SWH	900 0400	<b>155,00</b>
<b>Vibration damping machine foot</b> SE 2	338 1016	<b>40,00</b>

Please find more information „Accessories for lathe“ on page 95

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

**Convincing arguments: quality, efficiency and price**

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 Nr. 4
- Coolant equipment
- Coolant tank with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of 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
- Cover for leading spindle

- Cable duct in an energy chain
- Foot brake
- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Adjustable scale of the threading gauge
- Acceptance certificate

**DPA machine:**

- **Digital position display DPA 2000** and glass scales
- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display

**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
- First filling with high grade Mobil oil

**Quality lathe chuck**

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

**Slide**

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quadruple tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide ± 90°

**Tailstock**

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

conventional

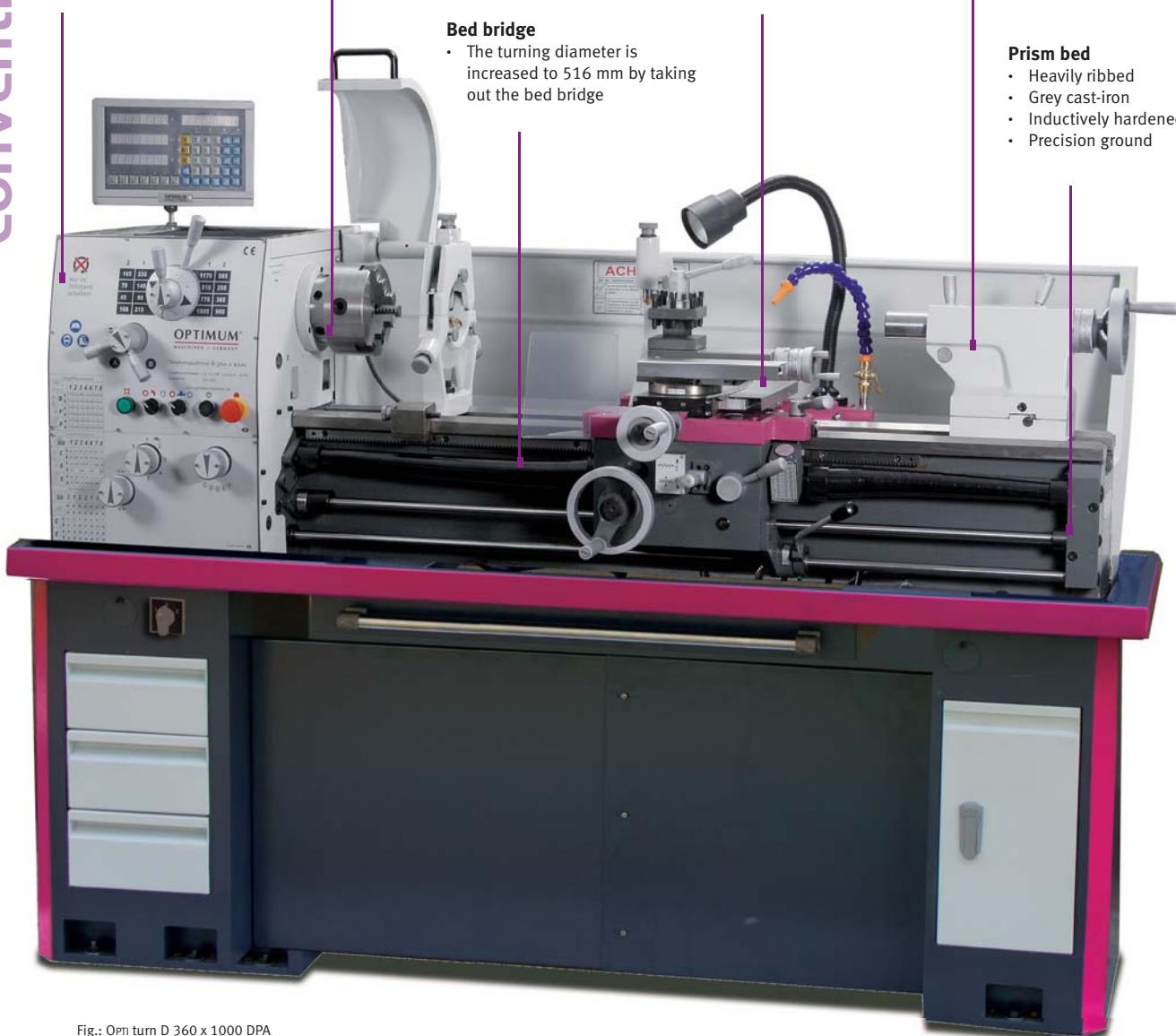


Fig.: Opti turn D 360 x 1000 DPA

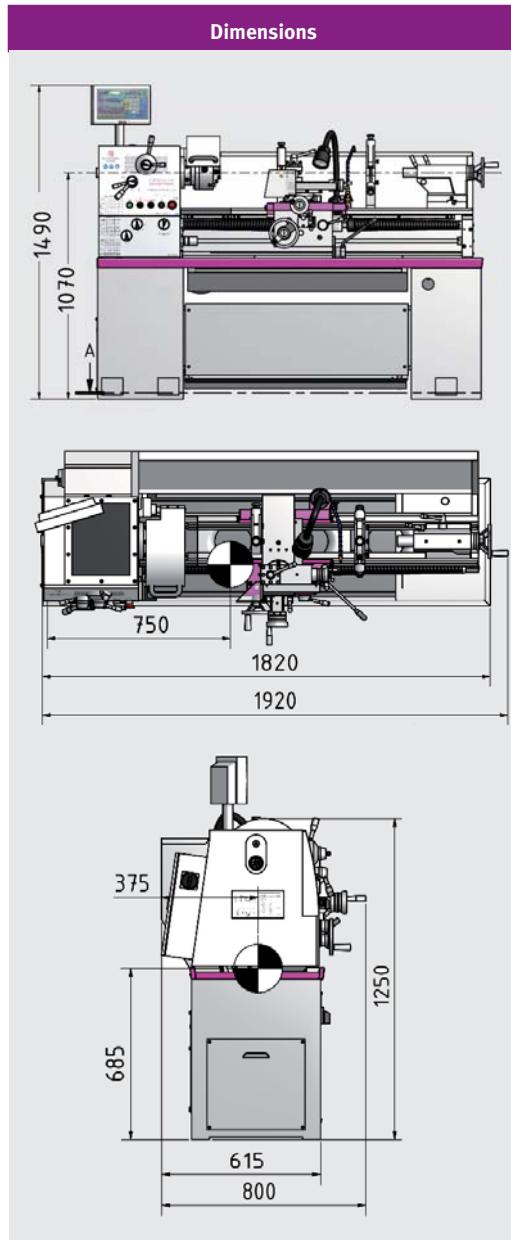
## Technical data, accessories and dimensions

Type	D 360 x 1000
Item No	340 1150
€ plus VAT	<b>7.350,00</b>
Type	D 360 x 1000 DPA
Item No	340 1150DPA
€ plus VAT	<b>8.250,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Main motor power, 2 stages	1.5/2.4 kW
Coolant equipment	40 W
<b>Working areas</b>	
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
<b>Speeds</b>	
Spindle speed	45 - 1'800 min <sup>-1</sup>
Number of steps	16 steps
<b>Headstock</b>	
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 Nr. 4
Spindle drilling, rod passage	Ø 38 mm
<b>Slide</b>	
Travel top slide	95 mm
Travel cross slide	180 mm
Longitudinal feed in the range of	0.043 - 0.653 mm/rev; 42 feeds
Transverse feed 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 threads/1"; 28 thread pitches
Quadruple tool holder seat height	Max. 16 mm
<b>Tailstock</b>	
Tailstock seat	MT 3
Tailstock - sleeve travel	126 mm
<b>Dimensions</b>	
Length x width x height	1'920 x 800 x 1'250 (DPA 1.490) mm
Net weight	850 kg
<b>Transportation packaging flat rate</b>	<b>€ 39.00 (TPFR 2) plus VAT</b>

<b>Standard equipment</b>
• 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
• 2 steady centres MT 3
• Steady rest Passage up to Ø 100 mm
• Follow rest Passage up to Ø 95 mm
• Mounted machine base
• Spindle brake
• Splash board mounted
• Lathe chuck protection
• Threading gauge
• Quadruple tool holder
• Coolant equipment
• Machine lamp
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

<b>Accessories</b>	Item No	€ plus VAT
Three jaw chuck cast iron Ø 200 mm	344 2762	<b>275,00</b>
Three jaw chuck CI3P cast iron Ø 200 mm	344 2045	<b>479,00</b>
Four jaw chuck CI4P cast iron Ø 200 mm	344 2145	<b>589,00</b>
Three jaw chuck CS3C steel Ø 200 mm	344 2545	<b>769,00</b>
Four jaw chuck CS4C steel Ø 200 mm	344 2645	<b>1.090,00</b>
Please find more lathe chucks/non-rigid block jaws from page 104 on		
Lathe tool kit 16 mm, 11 pcs	344 1508	<b>75,00</b>
Lathe tool kit HM 16 mm, 7 pcs	344 1511	<b>139,00</b>
Universal collet attachment 5C	344 1506	<b>240,00</b>
Collet chuck kit 3 - 25 mm, 5c, 17 pcs.	344 1509	<b>320,00</b>
Position limit stop with fine adjustment	344 1524	<b>65,00</b>
Quick change tool holder SWH 3-E	338 4303	<b>499,00</b>
Workshop assembly SWH	900 0400	<b>155,00</b>
Vibration damping machine foot SE 2	338 1016	<b>40,00</b>

Please find more information „Accessories for lathe“ on page 95





## Completely equipped precision centre lathe with electronically infinitely variable drive "power by Siemens" and digital position display DPA 2000 S

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 Nr. 4
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of 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
- Quick action tool holder and tool holder for square tools
- Halogen machine lamp
- Cover for leading spindle
- New machine base with drawers
- Largely dimensioned chip protection
- Cable duct in an energy chain
- Foot brake
- Electrical system with Siemens components
- First filling with high grade Mobil oil

- Adjustable scale of the threading gauge
- Acceptance certificate
- **Digital position display DPA 2000 S** and glass scales
- Speed display
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Glare-free display

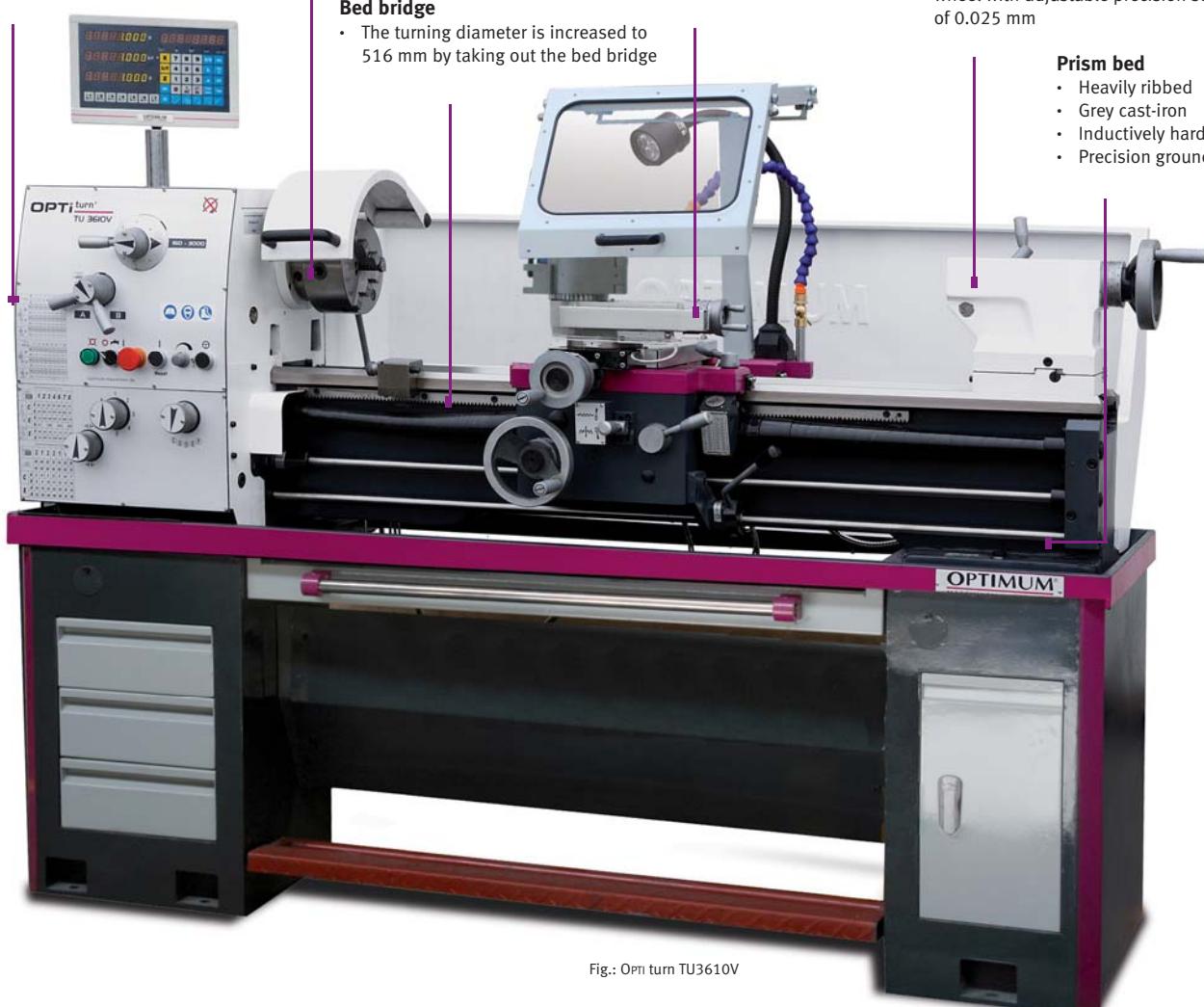
### Converter SINAMICS G120D

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



More Information „Converter SINAMICS G120D“ on page 52

## vario drive



### Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 2 readjustable precision taper roller bearings
- First filling with high grade Mobil oil
- High quality GATES driving belts

### Quality lathe chuck

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

### Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide ± 90°

### Bed bridge

- 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

Fig.: Opti turn TU3610V

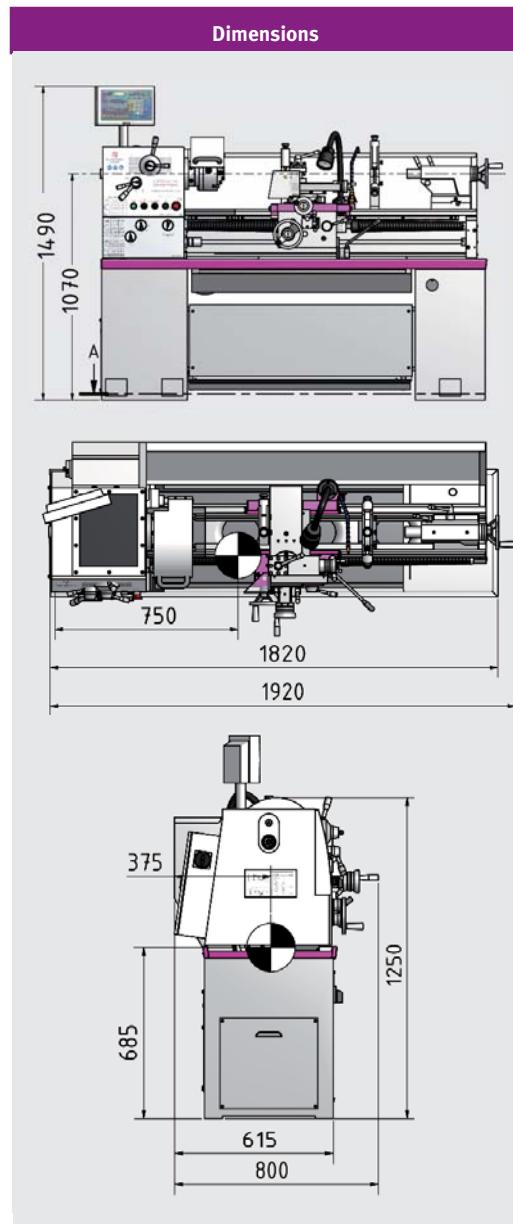
**NEW**

## Technical data, accessories and dimensions

Type	TU 3610 V
Item No	340 3130
€ plus VAT	<b>12.900,00</b>

Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Main motor power	4 kW
Coolant equipment	40 W
Working 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
Speeds	
Spindle speed	30 - 550 min <sup>-1</sup> / 160 - 3000 min <sup>-1</sup> *
Number of steps	2 steps, electrically adjustable speed
Headstock	
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702-2 Nr. 4
Spindle drilling, rod passage	Ø 38 mm
Slide	
Travel top slide	95 mm
Travel cross slide	180 mm
Longitudinal feed in the range of	0.043 - 0.653 mm/rev; 42 feeds
Transverse feed 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 threads/1"; 28 thread pitches
Quadruple tool holder seat height	Max. 16 mm
Tailstock	
Tailstock seat	MT 3
Tailstock - sleeve travel	120 mm
Dimensions	
Length x width x height	1'920 x 800 x 1'250 (DPA 1.490) mm
Net weight	850 kg
Transportation packaging flat rate	
<b>€ 39.00 (TPFR 2) plus VAT</b>	

\* Speed under reserve



Standard equipment
• 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
• 2 steady centres MT 3
• Steady rest Passage up to Ø 100 mm
• Follow rest Passage up to Ø 95 mm
• Mounted machine base
• Splash board mounted
• Lathe chuck protection
• Threading gauge
• Quick action tool holder
• Tool holder for square tools
• Coolant equipment
• Machine lamp
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

Accessories	Item No	€ plus VAT
<b>Three jaw chuck CS3C</b> steel Ø 160 mm Speed 4'500 min <sup>-1</sup>	344 2540	<b>589,00</b>
<b>Three jaw chuck CS3C</b> steel Ø 200 mm Speed 4'000 min <sup>-1</sup>	344 2545	<b>769,00</b>
<b>Four jaw chuck CS4C</b> steel Ø 160 mm Speed 4'500 min <sup>-1</sup>	344 2640	<b>799,00</b>
<b>Four jaw chuck CS4C</b> steel Ø 200 mm Speed 4'000 min <sup>-1</sup>	344 2645	<b>1.090,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Revolving centre</b> MT 3	344 0703	<b>55,00</b>
<b>Lathe tool kit</b> 16 mm, 11 pcs	344 1508	<b>75,00</b>
<b>Lathe tool kit</b> 16 mm, 7 pcs	344 1511	<b>139,00</b>
<b>Collet chuck kit</b> 3 - 25 mm, 5c, 17 pcs.	344 1509	<b>320,00</b>
<b>Workshop assembly</b> SWH	900 0400	<b>155,00</b>
<b>Position limit stop</b> with fine adjustment	344 1524	<b>65,00</b>
<b>Universal collet attachment</b> 5C	344 1506	<b>240,00</b>
<b>Vibration damping machine foot</b> SE 2	338 1016	<b>40,00</b>

Please find more Information „Accessories for lathe“ on page 95

## 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
- Camlock spindle seat DIN ISO 702-2 No. 6
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of better than 0.015 mm
- Main spindle running in an oil bath hardened and ground mounted on 2 adjustable 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
- Cover for leading spindle

- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Foot brake
- Adjustable scale of the threading gauge
- Halogen machine lamp with articulated arm
- Acceptance certificate

### DPA machine:

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

conventional

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

#### Quality lathe chuck

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

#### Turret head

- With fine adjustment as limit stop for table saddle

#### Bed bridge

- The turning diameter is increased to 590 mm by taking out the bed bridge

#### Slide

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

#### Base frame and lathe bed

- Meehanite casting
- One-piece casting



#### Energy chain

- Cable duct in an energy chain

#### Tailstock

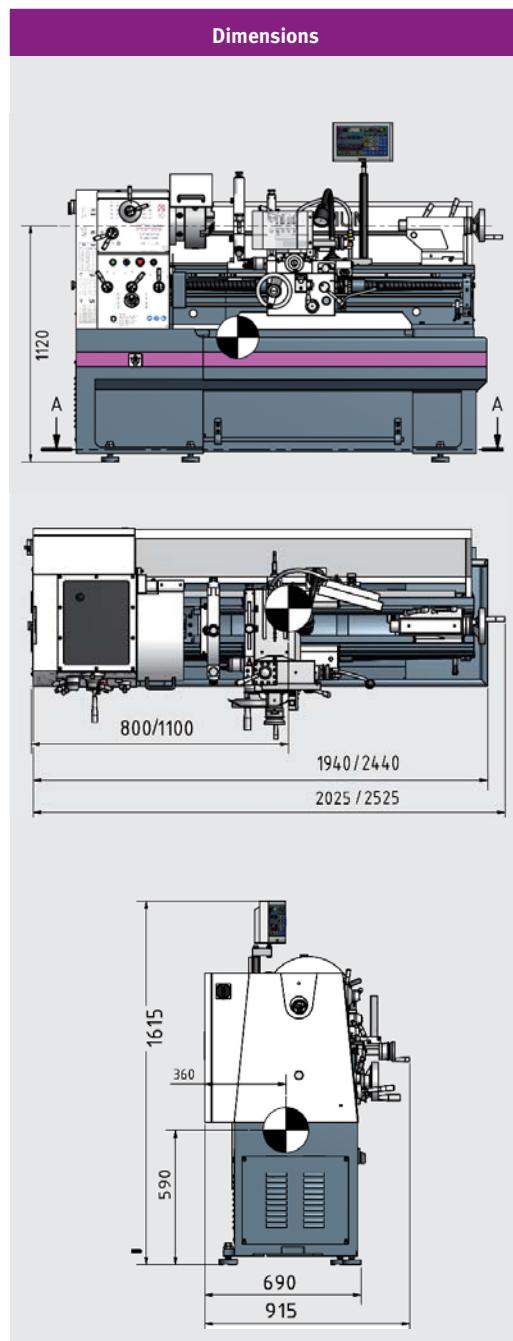
- Adjustable by  $\pm 13$  mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling



Fig.: Opti turn D 420 x 1000

## Technical data, accessories and dimensions

Type	D 420 x 1000	D 420 x 1500
Item No	340 1160	340 1165
€ plus VAT	<b>9.990,00</b>	<b>11.450,00</b>
Type	D 420 x 1000 DPA	D 420 x 1500 DPA
Item No	340 1160DPA	340 1165DPA
€ plus VAT	<b>11.300,00</b>	<b>12.800,00</b>
Machine data		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total connected value	4.5 kW	
Coolant equipment	100 W	
Working areas		
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	
Speeds		
Spindle speed	45 - 1'800 min <sup>-1</sup>	
Number of steps	16 steps	
Headstock		
Spindle taper	MT 6	
Spindle seat	Camlock DIN ISO 702-2 Nr. 6	
Spindle drilling, rod passage	Ø 52 mm	
Slide		
Travel top slide	140 mm	
Travel cross slide	230 mm	
Longitudinal feed in the range of	0.05 - 1.7 mm/rev; 17 feeds	
Transverse feed in the range of	0.025 - 0.85 mm/rev; 17 feeds	
Pitch - Metric in the range of	0.2 - 14 mm/rec; 39 thread pitches	
Pitch - Inch in the range of	72 - 2 threads/1"; 45 thread pitches	
Trapezoid thread in the range of	8 - 44; 21 trapezoid thread	
Modular thread in the range of	0.3 - 3.5; 18 modular thread	
Quadruple tool holder seat height	Max. 20 x 20 mm	
Tailstock		
Tailstock seat	MT 4	
Tailstock - sleeve travel	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	<b>€ 79,00</b> (TPFR 4) plus VAT	



Standard equipment
• Three-jaw lathe chuck Ø 200 mm
• Four jaw lathe chuck Ø 250 mm with universally adjustable jaws
• Face clamping disc Ø 350 mm
• Quick action tool holder
• Tool holder for square tools
• Reducing bush MT 6/MT 4
• 2 steady centres MT 4
• Steady rest Passage Ø max. 145 mm
• Follow rest Passage Ø max. 75 mm

- Machine substructure
- Spindle brake
- Splash board mounted
- Lathe chuck protection
- Chip protection at the top slide
- Turret stop with fine adjustment
- Threading gauge
- Coolant equipment
- Machine lamp
- Change gear kit
- Operating tool
- First filling with high grade Mobil oil

Accessories	Item No	€ plus VAT
<b>Three jaw chuck CI3P</b> Ø 250 mm cast iron Speed 2'000 min <sup>-1</sup>	344 2055	<b>595,00</b>
<b>Four jaw chuck CI4P</b> Ø 200 mm cast iron Speed 2'500 min <sup>-1</sup>	344 2150	<b>589,00</b>
<b>Three jaw chuck CS3C</b> Ø 250 mm steel Speed 3'500 min <sup>-1</sup>	344 2555	<b>1.030,00</b>
<b>Four jaw chuck CS4C</b> Ø 250 mm steel Speed 3'500 min <sup>-1</sup>	344 2655	<b>1.429,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Lathe tool kit</b> HM 20 mm, 7 pcs	344 4011	<b>195,00</b>
<b>Collet chuck kit</b> 3 - 25 mm, 5C, 17 pcs.	344 1509	<b>320,00</b>
<b>Vibration damping machine foot</b> SE 2	338 1016	<b>40,00</b>
<b>Universal collet attachment</b> 5C	344 1507	<b>250,00</b>

Please find more information „Accessories for lathe“ on page 95



## Completely equipped precision centre lathe with electronically infinitely variable drive "power by Siemens" and digital position display DPA 2000 S

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 No. 6
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of better than 0.015 mm
- All metric thread pitch in the range from 0.2 to 14 mm/rev 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
- Halogen machine lamp
- Central lubrication at the bed slide
- Cover for leading spindle
- Largely dimensioned chip protection
- Foot brake
- Electrical system with Siemens components

- First filling with high grade Mobil oil
- Adjustable scale of the threading gauge
- Acceptance certificate
- **Digital position display DPA 2000 S** and glass scales
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Glare-free display

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



More Information „Converter SINAMICS G120D“ on page 52

**vario**  
**drive**

#### 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 possible
- High concentricity and repeatability

#### Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Range of adjustment top slide ± 90°

#### Base frame and lathe bed

- Meehanite casting
- One-piece casting

#### Tailstock

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

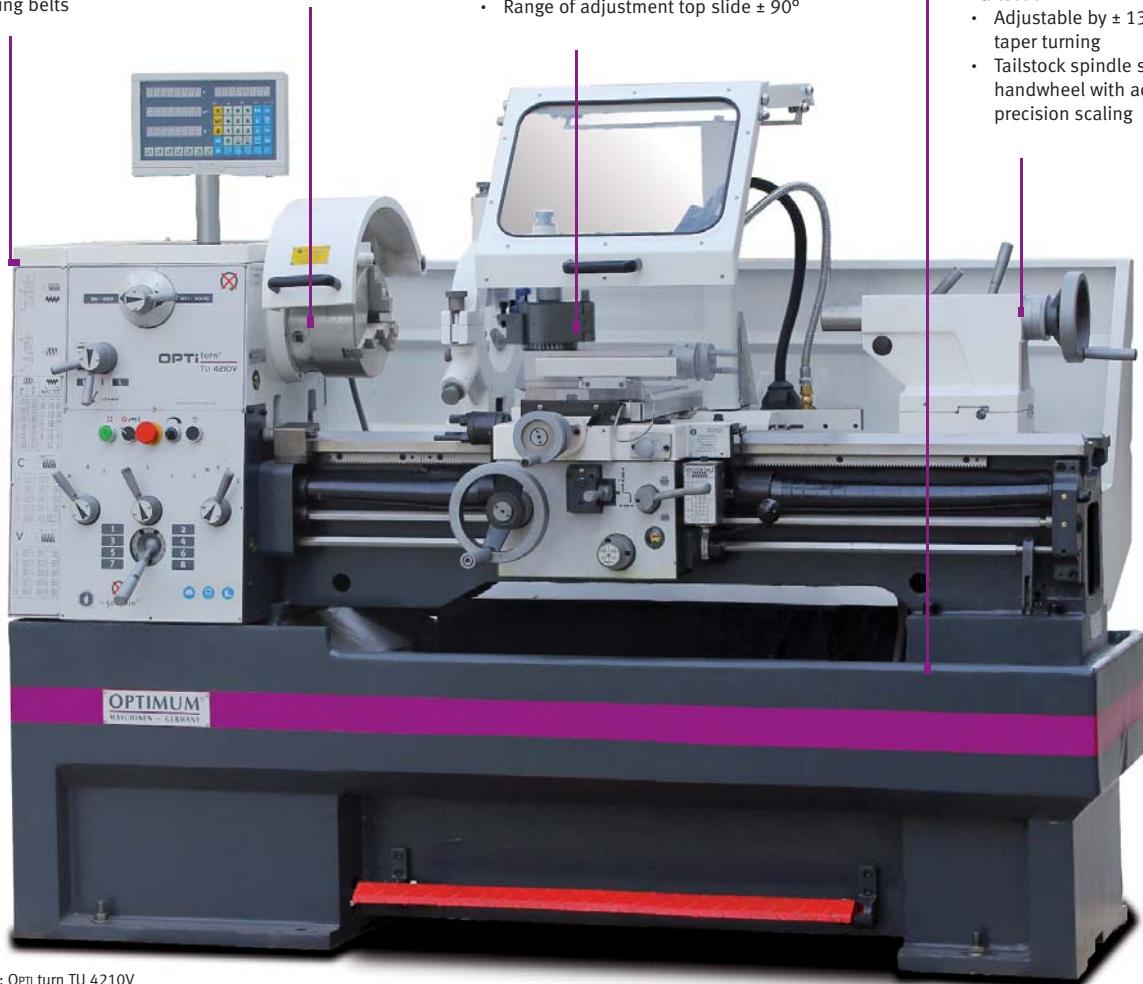


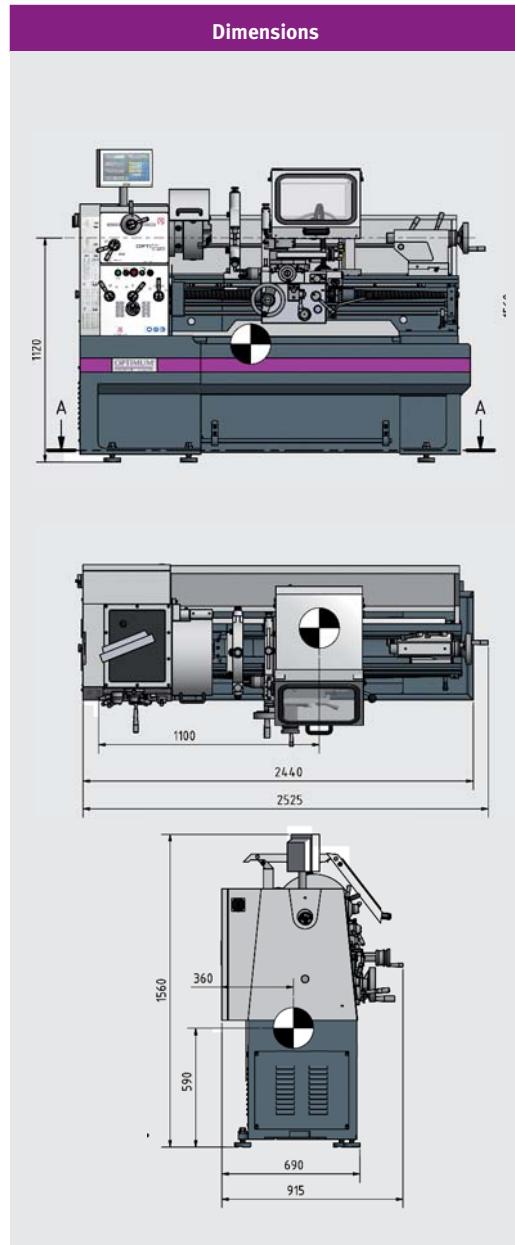
Fig.: Opti turn TU 4210V



## Technical data, accessories and dimensions

Type	TU 4210 V
Item No	340 3150
€ plus VAT	<b>15.900,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected value	5.5 kW
Coolant equipment	100 W
<b>Working areas</b>	
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
<b>Speeds</b>	
Spindle speed	30 - 550 min <sup>-1</sup> / 160 - 3'000 min <sup>-1</sup> *
Number of steps	2 steps, electrically adjustable speed
<b>Headstock</b>	
Spindle taper	MT 6
Spindle seat	Camlock DIN ISO 702-2 Nr. 6
Spindle drilling, rod passage	Ø 52 mm
<b>Slide</b>	
Travel top slide	140 mm
Travel cross slide	230 mm
Longitudinal feed in the range of	0.05 - 1.7 mm/rev;
Transverse feed in the range of	0.025 - 0.85 mm/rev;
Pitch - Metric in the range of	0.2 - 14 mm/rec;
Pitch - Inch in the range of	72 - 2 threads/1";
Trapezoid thread in the range of	8 - 44;
Modular thread in the range of	0.3 - 3.5;
Quadruple tool holder seat height	Max. 20 x 20 mm
<b>Tailstock</b>	
Tailstock seat	MT 4
Tailstock - sleeve travel	120 mm
<b>Dimensions</b>	
Length x width x height	2'025 mm x 915 x 1'615 mm
Net weight	1'550 kg
<b>Transportation packaging flat rate</b>	
€ 79.00 (TPFR 4) plus VAT	

\* Speed under reserve



Standard equipment
• Three-jaw lathe chuck Ø 200 mm
• Four jaw lathe chuck Ø 250 mm with universally adjustable jaws
• Face clamping disc Ø 350 mm
• Reducing bush MT 6/MT 4
• 2 steady centres MT 4
• Steady rest Passage Ø max. 145 mm
• Follow rest Passage Ø max. 75 mm
• Digital position display DPA 2000 S
• Glass scales
• Splash board mounted
• Lathe chuck protection
• Chip protection at the top slide
• Turret stop with fine adjustment
• Threading gauge
• Quick action tool holder
• Tool holder for square tools
• Coolant equipment
• Machine lamp
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

Accessories	Item No	€ plus VAT
<b>Three jaw chuck CS3C</b> steel Ø 200 mm Speed 4'000 min <sup>-1</sup>	344 2550	<b>769,00</b>
<b>Three jaw chuck CS3C</b> steel Ø 250 mm Speed 3'500 min <sup>-1</sup>	344 2555	<b>1.030,00</b>
<b>Four jaw chuck CS4C</b> steel Ø 200 mm Speed 4'000 min <sup>-1</sup>	344 2650	<b>1.090,00</b>
<b>Four jaw chuck CS4C</b> steel Ø 250 mm Speed 3'500 min <sup>-1</sup>	344 2655	<b>1.429,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Revolving centre</b> MT 3	344 0703	<b>55,00</b>
<b>Collet chuck kit</b> 3 - 25 mm, 5c, 17 pcs.	344 1509	<b>320,00</b>
<b>Position limit stop</b> with fine adjustment	344 1524	<b>65,00</b>
<b>Universal collet attachment</b> 5C	344 1506	<b>240,00</b>
<b>Vibration damping machine foot</b> SE 2	338 1016	<b>40,00</b>

Please find more information „Accessories for lathe“ on page 95

**Heavy centre lathe completely equipped, particularly smooth running and low-vibration.  
Substructure and machine bed cast in one piece**

**Convincing arguments: quality, efficiency and price**

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 No. 6
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of 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
- Cover for leading spindle
- Foot brake
- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Adjustable scale of the threading gauge
- Halogen machine lamp with articulated arm
- Quick action tool holder with tool holder for square tools
- Central lubrication at the bed slide
- **Digital position display DPA 2000** and glass scales
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard

**conventional**

**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

**Bed bridge**

- The turning diameter is increased to 690 mm by taking out the bed bridge

**Slide**

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

**Energy chain**

- Cable duct in an energy chain



**Base frame and lathe bed**

- Meehanite casting
- One-piece casting

**Tailstock**

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



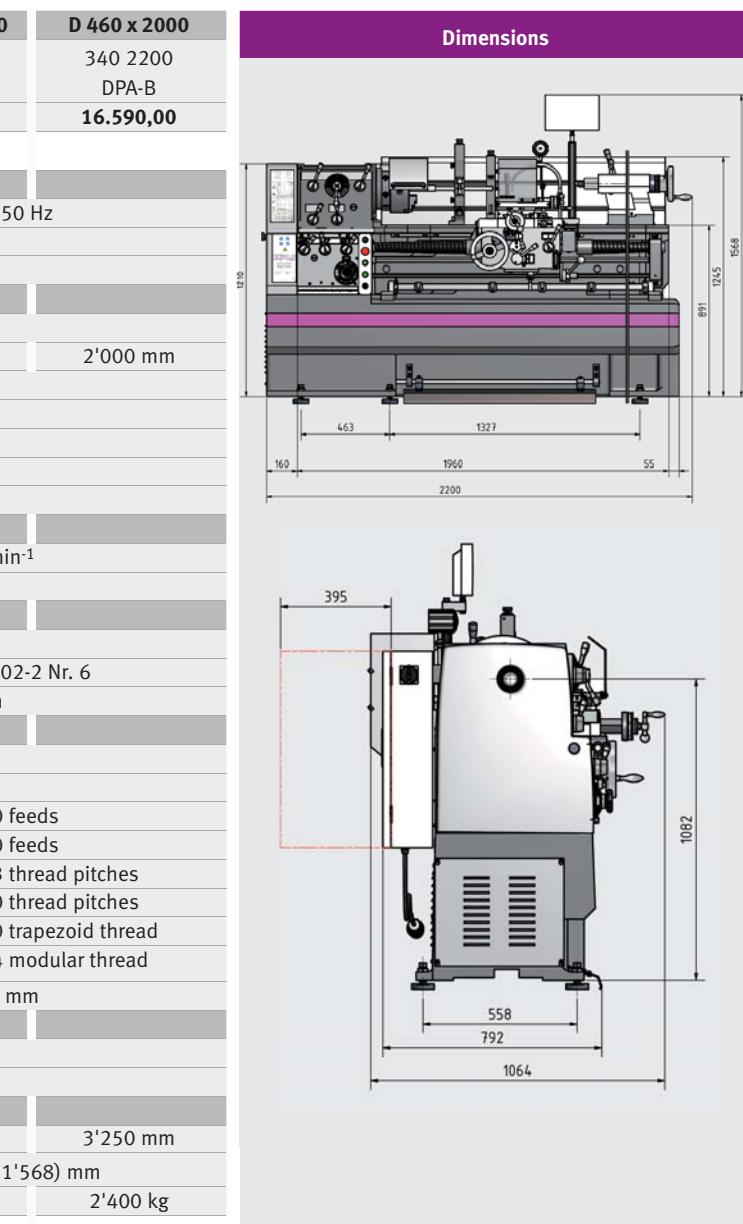
Fig.: Opti turn D 460 x 1500 DPA

## Technical data, accessories and dimensions

Type	D 460 x 1000	D 460 x 1500	D 460 x 2000
Item No	340 2100	340 2150	340 2200
€ plus VAT	<b>13.990,00</b>	<b>15.300,00</b>	<b>16.590,00</b>
<b>Machine data</b>			
Electrical connection	400 V / 3 Ph ~50 Hz		
Total connected value	5.8 kW		
Coolant equipment	100 W		
<b>Machine data</b>			
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		
<b>Speeds</b>			
Spindle speed	25 - 2'000 min <sup>-1</sup>		
Number of steps	12 steps		
<b>Headstock</b>			
Spindle taper	MT 6		
Spindle seat	Camlock DIN ISO 702-2 Nr. 6		
Spindle drilling, rod passage	Ø 58 mm		
<b>Slide</b>			
Travel top slide	128 mm		
Travel cross slide	285 mm		
Longitudinal feed in the range of	0.031 - 1.7 mm/rev; 40 feeds		
Transverse feed in the range of	0.014 - 0.784 mm/rev; 40 feeds		
Pitch - Metric in the range of	0.1 - 14 mm/rec; 53 thread pitches		
Pitch - Inch in the range of	112 - 2 threads/1"; 40 thread pitches		
Trapezoid thread in the range of	4 - 112; 50 trapezoid thread		
Modular thread in the range of	0.1 - 7; 34 modular thread		
Height of quadruple tool holder	max. 25 x 25 mm		
<b>Tailstock</b>			
Tailstock seat	MT 4		
Tailstock - sleeve travel	130 mm		
<b>Dimensions</b>			
Length	2'200 mm	2'750 mm	3'250 mm
Width x Height	1'245 x 1'370 (DPA 1'568) mm		
Net weight	1'720 kg	1'977 kg	2'400 kg

Transportation packaging flat rate **€ 79.00 (TPFR 4)** **€ 79.00 (TPFR 4)** **€ 100.00 (TPFR 5)**

Standard equipment	
• Three-jaw lathe chuck Ø 250 mm	
• Four jaw lathe chuck Ø 300 mm with universally adjustable jaws	
• Face clamping disc Ø 350 mm	
• Reducing bush MT 6/MT 4	
• 2 steady centres MT 4	
• Steady rest Passage up to Ø 160 mm	
• Follow rest Passage up to Ø 100 mm	
• Digital position display DPA 2000	
• Glass scales	
• Machine substructure	
• Spindle brake	
• Splash board mounted	
• Lathe chuck protection	
• Threading gauge	
• Quick action tool holder	
• Tool holder for square tools	
• Coolant equipment	
• Machine lamp	
• Change gear kit	
• Operating tool	
• First filling with	
• high grade Mobil oil	



Accessories	Item No	€ plus VAT
<b>Three jaw chuck CI3P Ø 250 mm cast iron Speed 2'000 min<sup>-1</sup></b>	344 2055	<b>595,00</b>
<b>Four jaw chuck CI4P Ø 250 mm cast iron Speed 2'000 min<sup>-1</sup></b>	344 2155	<b>810,00</b>
<b>Three jaw chuck CS3C Ø 250 mm steel Speed 3'500 min<sup>-1</sup></b>	344 2555	<b>1.030,00</b>
<b>Four jaw chuck CS4C Ø 250 mm steel Speed 3'500 min<sup>-1</sup></b>	344 2655	<b>1.429,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Universal collet attachment 5C</b>	344 4006	<b>279,00</b>
<b>Collet chuck kit 3 - 25 mm, 17-pcs. 5C</b>	344 1509	<b>320,00</b>
<b>Lathe tool kit 20 mm, 7 pcs</b>	344 4011	<b>195,00</b>
<b>Position limit stop</b>	344 4022	<b>95,00</b>
<b>Revolving centre MT 4</b>	344 0704	<b>65,00</b>
<b>Vibration damping machine foot SE 2</b>	338 1016	<b>40,00</b>
<b>Vibration damping machine foot SE 3</b>	338 1018	<b>45,00</b>

Please find more information „Accessories for lathe“ on page 95



## Heavy centre lathe completely equipped, particularly smooth running and low-vibration with electronically infinitely variable drive "power by Siemens" and digital position display DPA 2000 S

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 No. 6
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of 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
- Cover for leading spindle
- Largely dimensioned chip protection
- Cable duct in an energy chain
- Foot brake
- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Adjustable scale of the threading gauge
- Halogen machine lamp with articulated arm
- Quick action tool holder with tool holder for square tools
- Central lubrication at the bed slide

- Digital position display DPA 2000 S and glass scales with speed display
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Glare-free display

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



More Information „Converter SINAMICS G120D“ on page 52

vario drive

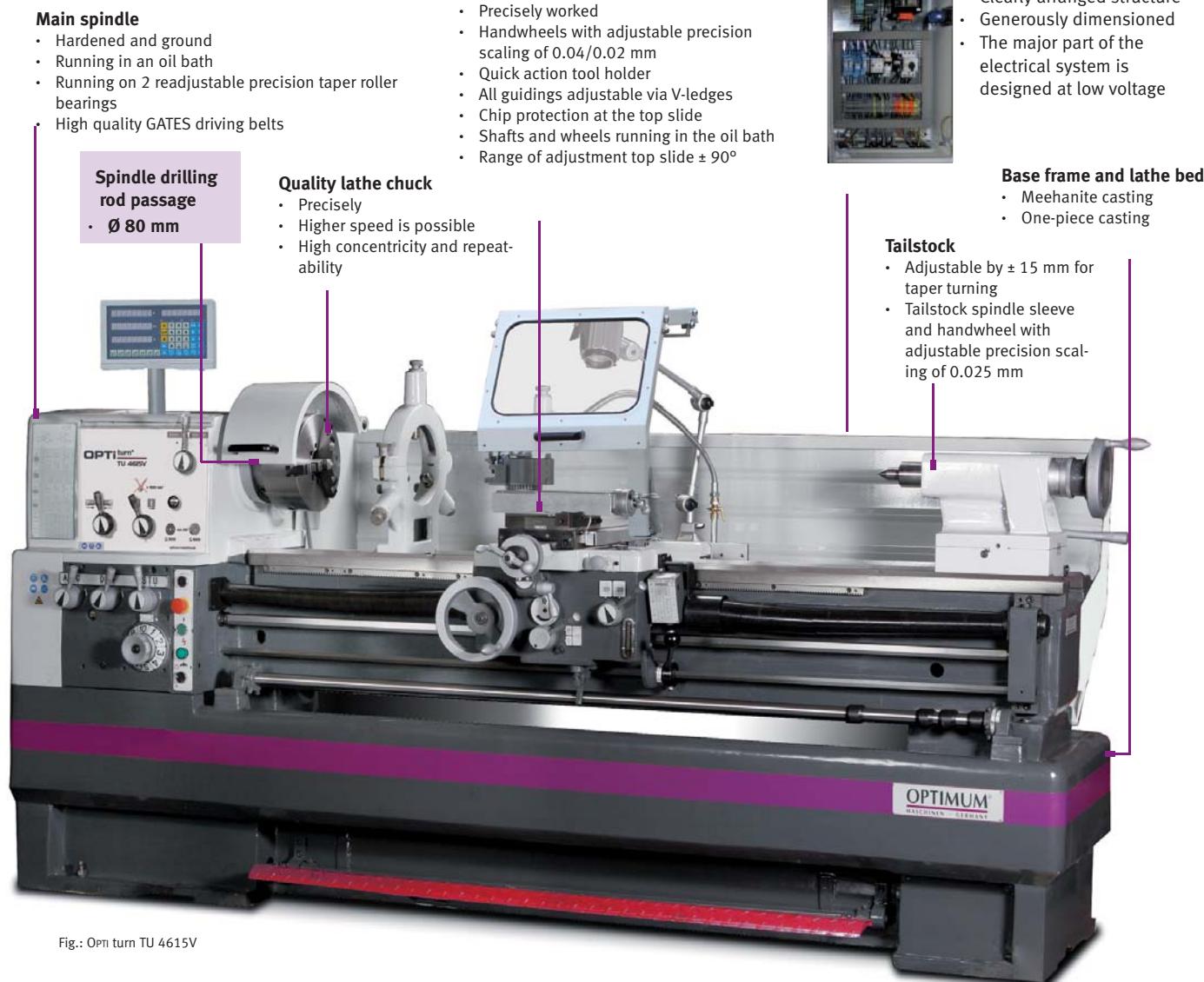
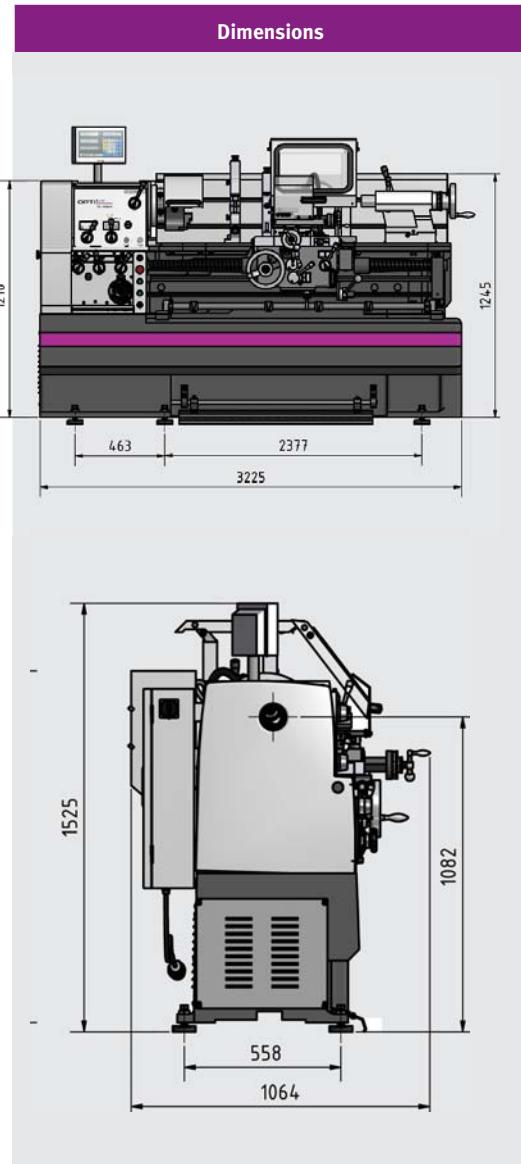


Fig.: Opti turn TU 4615V



## Technical data, accessories and dimensions

Type	TU 4615 V
Item No	340 3170
€ plus VAT	<b>20.900,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connection	7.5 kW
<b>Machine data</b>	
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
<b>Speeds</b>	
Spindle speed	30 - 400 min <sup>-1</sup> / 160 - 2000 min <sup>-1</sup>
Number of steps	2 steps; electrically adjustable speed
<b>Headstock</b>	
Spindle taper	MT 6
Spindle seat	Camlock DIN ISO 702-2 Nr. 8
<b>Spindle drilling, rod passage</b>	
	Ø 80 mm
<b>Slide</b>	
Travel top slide	128 mm
Travel cross slide	285 mm
Longitudinal feed in the range of	0.031 - 1.7 mm/rev;
Transverse feed in the range of	0.014 - 0.784 mm/rev;
Pitch - Metric in the range of	0.1 - 14 mm/rec;
Pitch - Inch in the range of	112 - 2 threads/1";
Trapezoid thread in the range of	4 - 112;
Modular thread in the range of	0.1 - 7;
Height of quadruple tool holder	max. 25 x 25 mm
<b>Tailstock</b>	
Tailstock seat	MT 4
Tailstock - sleeve travel	130 mm
<b>Dimensions</b>	
Length x width x height	2'200 x 1'245 x 1'568 mm
Net weight	1'980 kg
Transportation packaging flat rate	<b>€ 79.00 (TPFR 4) plus VAT</b>



<b>Standard equipment</b>
• Three-jaw lathe chuck Ø 250 mm
• Four jaw lathe chuck Ø 300 mm with universally adjustable jaws
• Face clamping disc Ø 350 mm
• Reducing bush MT 6/MT 4
• 2 steady centres MT 4
• Steady rest Passage up to Ø 160 mm
• Follow rest Passage up to Ø 100 mm
• Digital position display DPA 2000 S
• Glass scales
• Splash board mounted
• Lathe chuck protection
• Threading gauge
• Quick action tool holder
• Tool holder for square tools
• Coolant equipment
• Machine lamp
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

<b>Accessories</b>	Item No	€ plus VAT
<b>Three jaw chuck CS3C Ø 250 mm steel</b> Speed 3'500 min <sup>-1</sup>	344 2560	<b>1.030,00</b>
<b>Three jaw chuck CS3C Ø 315 mm steel</b> Speed 2'800 min <sup>-1</sup>	344 2565	<b>1.590,00</b>
<b>Four jaw chuck CS4C Ø 250 mm steel</b> Speed 3'500 min <sup>-1</sup>	344 2655	<b>1.429,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Universal collet attachment 5C</b>	344 4006	<b>279,00</b>
<b>Collet chuck kit 3 - 25 mm, 17-pcs. 5C</b>	344 1509	<b>320,00</b>
<b>Lathe tool kit 20 mm, 7 pcs</b>	344 4011	<b>195,00</b>
<b>Position limit stop</b>	344 4022	<b>95,00</b>
<b>Revolving centre MT 4</b>	344 0704	<b>65,00</b>
<b>Vibration damping machine foot SE 2</b>	338 1016	<b>40,00</b>
<b>Vibration damping machine foot SE 3</b>	338 1018	<b>45,00</b>

Please find more information „Accessories for lathe“ on page 95

## Heavily centre lathes which are outstanding due to high flexibility, precision and economy

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 No. 8
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of 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
- Cover for leading spindle
- Foot brake
- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Adjustable scale of the threading gauge
- Quick action tool holder with tool holder for square tools
- Optimum products are cost-efficient and of stable value
- **Digital position display DPA 2000** and glass scales
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard

## conventional

### Main spindle

- Hardened and ground
- Running in an oil bath
- Running on 3 readjustable precision taper roller bearings
- Main spindle 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
- Quick action tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Shafts and wheels running in the oil bath
- Range of adjustment top slide  $\pm 90^\circ$

### Quality lathe chuck

- Precisely
- Higher speed is possible
- High concentricity and repeatable clamping accuracy



Fig.: Opti turn D 560 x 1500 DPA



### Energy chain

- Cable duct in an energy chain

### Tailstock

- Adjustable by  $\pm 15$  mm for taper turning
- Tailstock spindle sleeve and handwheel with adjustable precision scaling

## Technical data and accessories

Type	D 560 x 1500 DPA	D 560 x 2000 DPA	D 560 x 3000 DPA
Item No	340 2615DPA-C	340 2620DPA-C	340 2630DPA-C
€ plus VAT	<b>17.690,00</b>	<b>19.390,00</b>	<b>23.990,00</b>
<b>Machine datas</b>			
Electrical connection		400 V / 3 Ph ~50 Hz	
Total connected value		8.5 kW	
Driving power spindle motor		7.5 kW	
Coolant equipment		100 W	
<b>Working areas</b>			
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		270 mm	
Bed width		350 mm	
<b>Speeds</b>			
Spindle speed		25 - 1'600 min <sup>-1</sup>	
Number of steps		12 steps	
<b>Headstock</b>			
Spindle taper		MT 7	
Spindle seat		Camlock DIN ISO 702-2 Nr. 8	
Spindle drilling, rod passage		Ø 80 mm	
<b>Slide</b>			
Travel top slide		130 mm	
Travel cross slide		316 mm	
Longitudinal feed in the range of		0.059 - 1'646 mm/rev; 35 feeds	
Transverse feed in the range of		0.020 - 0.573 mm/rev; 35 feeds	
Pitch - Metric in the range of		0.2 - 14 mm/rec; 47 thread pitches	
Pitch - Inch in the range of		112 - 2 threads/1"; 60 thread pitches	
Trapezoid thread in the range of		4 - 112; 50 trapezoid thread	
Modular thread in the range of		0.1 - 7; 34 modular thread	
Tool holder seat height (max.)		25 x 25 mm	
<b>Tailstock</b>			
Tailstock seat		MT 5	
Tailstock - sleeve travel		180 mm	
<b>Dimensions</b>			
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
<b>Transportation packaging flat rate</b>	<b>€ 100,00 (TPFR 5) plus VAT</b>	<b>€ 100,00 (TPFR 5) plus VAT</b>	<b>€ 200,00 (TPFR 6) plus VAT</b>

Standard equipment
• Digital position display DPA 2000
• Glass scales
• Three-jaw lathe chuck Ø 315 mm
• Four jaw lathe chuck with universally adjustable jaws
• Face clamping disc Ø 450 mm
• 2 steady centres MT 5
• Steady rest Passage up to Ø max. 165 mm
• Follow rest Passage up to Ø max. 95 mm
• Reducing bush MT 7/MT 5
• Machine substructure
• Spindle brake
• Splash board
• Lathe chuck protection
• Threading gauge
• Quick action tool holder
• Tool holder for square tools
• Coolant equipment
• Machine lamp
• Change gear kit
• Operating tool
• First filling with high grade Mobil oil

Accessories	Item No	€ plus VAT
Three-jaw lathe chuck CI3P Ø 315 mm, Camlock No. 8 cast iron Speed 1.500 min <sup>-1</sup>	344 2065	<b>889,00</b>
Three-jaw lathe chuck CS3C Ø 315 mm, Camlock No. 8 Steel Speed 2.800 min <sup>-1</sup>	344 2565	<b>1.590,00</b>
Four jaw lathe chuck CI3P Ø 315 mm, Camlock No. 8 cast iron Speed 1.500 min <sup>-1</sup>	344 2165	<b>1.090,00</b>
Four jaw lathe chuck CS4C Ø 315 mm, Camlock No. 8 Steel Speed 2.800 min <sup>-1</sup>	344 2665	<b>2.170,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
Revolving centre MT 5	344 0705	<b>85,00</b>
Position limit stop 4 times adjustable	344 4023	<b>109,00</b>
Lathe tool kit HM 20 mm, 7 pcs	344 4011	<b>195,00</b>
Vibration damping machine foot SE3	338 1018	<b>45,00</b>
Spare tool holder Type D for SWH 9	338 4332	<b>319,00</b>
Spare tool holder Type D for SWH 9	338 4333	<b>469,00</b>

Please find more information „Accessories for lathe“ on page 95



**Heavy centre lathe with electronically infinitely variable drive "power by Siemens" which distinguishes themselves by high flexibility, precision and economy. With digital position display DPA 2000 S.**

#### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat DIN ISO 702-2 No. 8
- Speed monitoring according to machine directive
- EMC filter also for the use in mixed-use areas
- Coolant equipment with separate coolant tank separately with filling level display and oil separator; easy and complete draining and cleaning according to DIN
- Guaranteed true running accuracy of the spindle nose of 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
- Quick action tool holder and tool holder for square tools
- Halogen machine lamp
- Central lubrication at the bed slide
- Mechanic longitudinal feed switch-off of the bed slide with four adjustable eccentric
- Cover for leading spindle
- Foot brake

- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Adjustable scale of the threading gauge
- Acceptance certificate
- **Digital position display DPA 2000 S** and glass scales
- with speed display
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Glare-free display

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

More Information „Converter SINAMICS G120D“ on page 52

## vario drive

### Main spindle

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

**Spindle drilling rod passage**  
• Ø 105 mm

### Quality lathe chuck

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

### Slide

- Precisely worked
- Handwheels with adjustable precision scaling of 0.04/0.02 mm
- Quick action tool holder
- All guidings adjustable via V-ledges
- Chip protection at the top slide
- Shafts and wheels running in the oil bath
- Range of adjustment top slide ± 90°

### Tailstock

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

### Base frame and lathe bed

- Meehanite casting
- One-piece casting

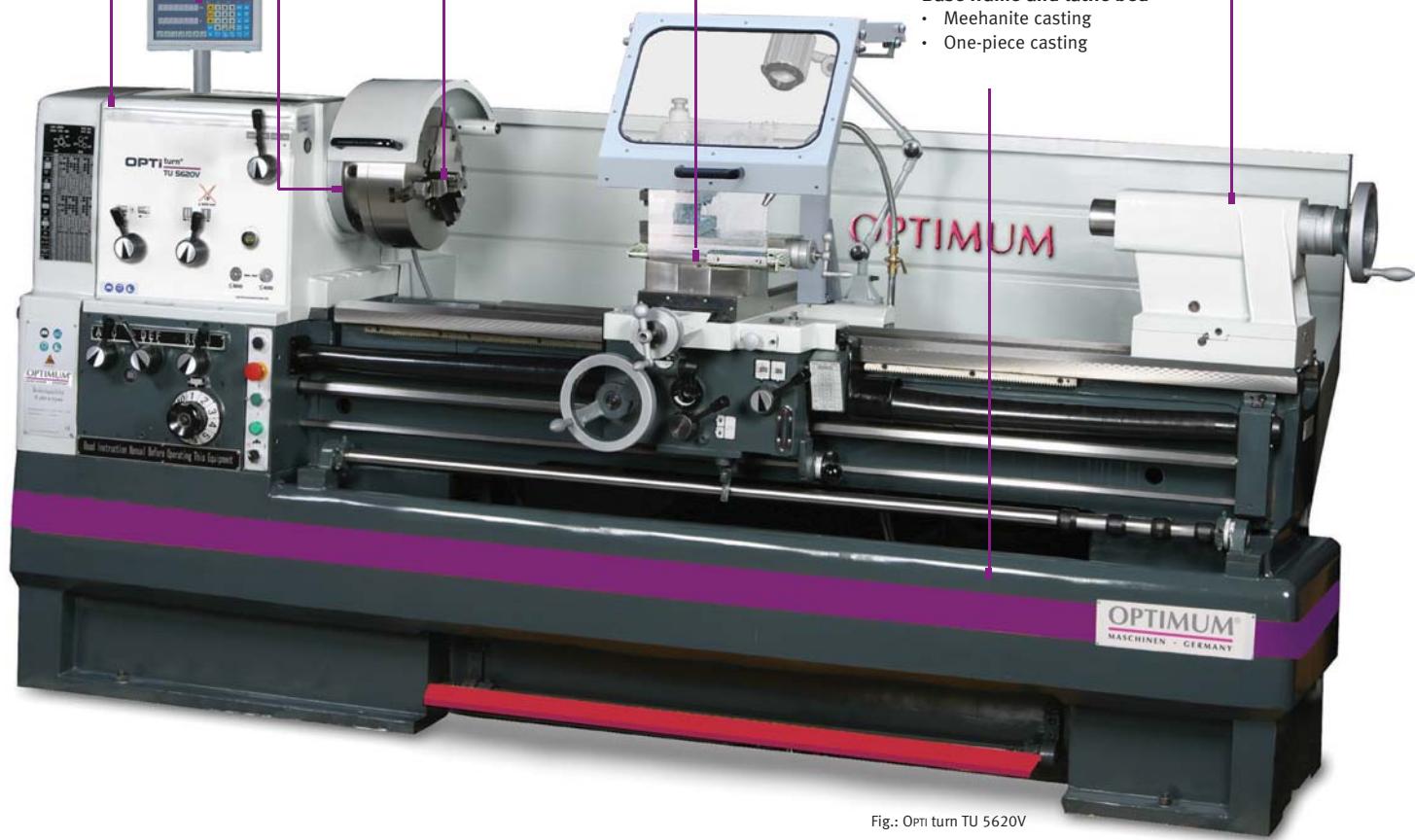


Fig.: Opti turn TU 5620V

## Technical data and accessories

Type	<b>TU 5620 V</b>
Item No	340 3210
€ plus VAT	<b>25.900,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connection	7.5 kW
Coolant equipment	100 W
<b>Working areas</b>	
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	170 mm
Bed width	350 mm
<b>Speeds</b>	
Spindle speed	25 - 200 min <sup>-1</sup> / 200 - 1600 min <sup>-1</sup> 2 steps; electrically adjustable speed
<b>Headstock</b>	
Spindle taper	MT 7
Spindle seat	Camlock DIN ISO 702-2 Nr. 8
Spindle drilling, rod passage	Ø 105 mm
<b>Slide</b>	
Travel top slide	130 mm
Travel cross slide	316 mm
Longitudinal feed in the range of	0.059 - 1.646 mm/rev;
Transverse feed in the range of	0.020 - 0.573 mm/rev;
Pitch - Metric in the range of	0.2 - 14 mm/rec;
Pitch - Inch in the range of	112 - 2 threads/1";
Trapezoid thread in the range of	4 - 112;
Modular thread in the range of	0.1 - 7;
Tool holder seat height (max.)	25 x 25 mm
<b>Tailstock</b>	
Tailstock seat	MT 5
Tailstock - sleeve travel	180 mm
<b>Dimensions</b>	
Length x width x height	3'340 x 1'150 x 1'460 mm
Net weight	2'985 kg
Transportation packaging flat rate	<b>€ 100.00 (TPFR 5) plus VAT</b>

<b>Standard equipment</b>	
• Digital position display DPA 2000 S	• Reducing bush MT 7/MT 5
• Glass scales	• Splash board
• Three-jaw lathe chuck Ø 315 mm	• Lathe chuck protection
• Four jaw lathe chuck with universally adjustable jaws	• Threading gauge
• Face clamping disc Ø 450 mm	• Quick action tool holder
• 2 steady centres MT 5	• Tool holder for square tools
• Steady rest Passage up to Ø max. 165 mm	• Coolant equipment
• Follow rest Passage up to Ø max. 95 mm	• Machine lamp

<b>Accessories</b>	<b>Item No</b>	<b>€ plus VAT</b>
<b>Three-jaw lathe chuck CI3P Ø 315 mm, Camlock No. 8 cast iron Speed 1.500 min<sup>-1</sup></b>	344 2065	<b>889,00</b>
<b>Three-jaw lathe chuck CS3C Ø 315 mm, Camlock No. 8 Steel Speed 2.800 min<sup>-1</sup></b>	344 2565	<b>1.590,00</b>
<b>Four jaw lathe chuck CI3P Ø 315 mm, Camlock No. 8 cast iron Speed 1.500 min<sup>-1</sup></b>	344 2165	<b>1.090,00</b>
<b>Four jaw lathe chuck CS4C Ø 315 mm, Camlock No. 8 Steel Speed 2.800 min<sup>-1</sup></b>	344 2665	<b>2.170,00</b>
Please find more lathe chucks and non-rigid block jaws from page 104 on		
<b>Revolving centre MT 5</b>	344 0705	<b>85,00</b>
<b>Position limit stop</b> 4 times adjustable	344 4023	<b>109,00</b>
<b>Lathe tool kit HM 20 mm, 7 pcs</b>	344 4011	<b>195,00</b>
<b>Vibration damping machine foot SE3</b>	338 1018	<b>45,00</b>
<b>Spare tool holder Type D for SWH 9</b>	338 4332	<b>319,00</b>
<b>Spare tool holder Type D for SWH 9</b>	338 4333	<b>469,00</b>

Please find more information „Accessories for lathe“ on page 95

## Heavily centre lathes which are outstanding due to high flexibility, precision and economy

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat 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
- The lines are guided via an energy chain
- Central lubrication at the bed slide
- Cover for leading spindle
- First filling with high grade Mobil oil
- Halogen machine lamp with articulated arm
- Foot brake
- With electrical system made by Siemens
- Quick action tool holder SWH 9 with tool holder for square tools
- Acceptance certificate
- **Digital position display DPA 2000** and glass scales
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Including its own outlet. DPA2000 It is switched on and off on the main switch

## conventional

### 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

### Quality lathe chuck

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



### Energy chain

- Cable duct in an energy chain

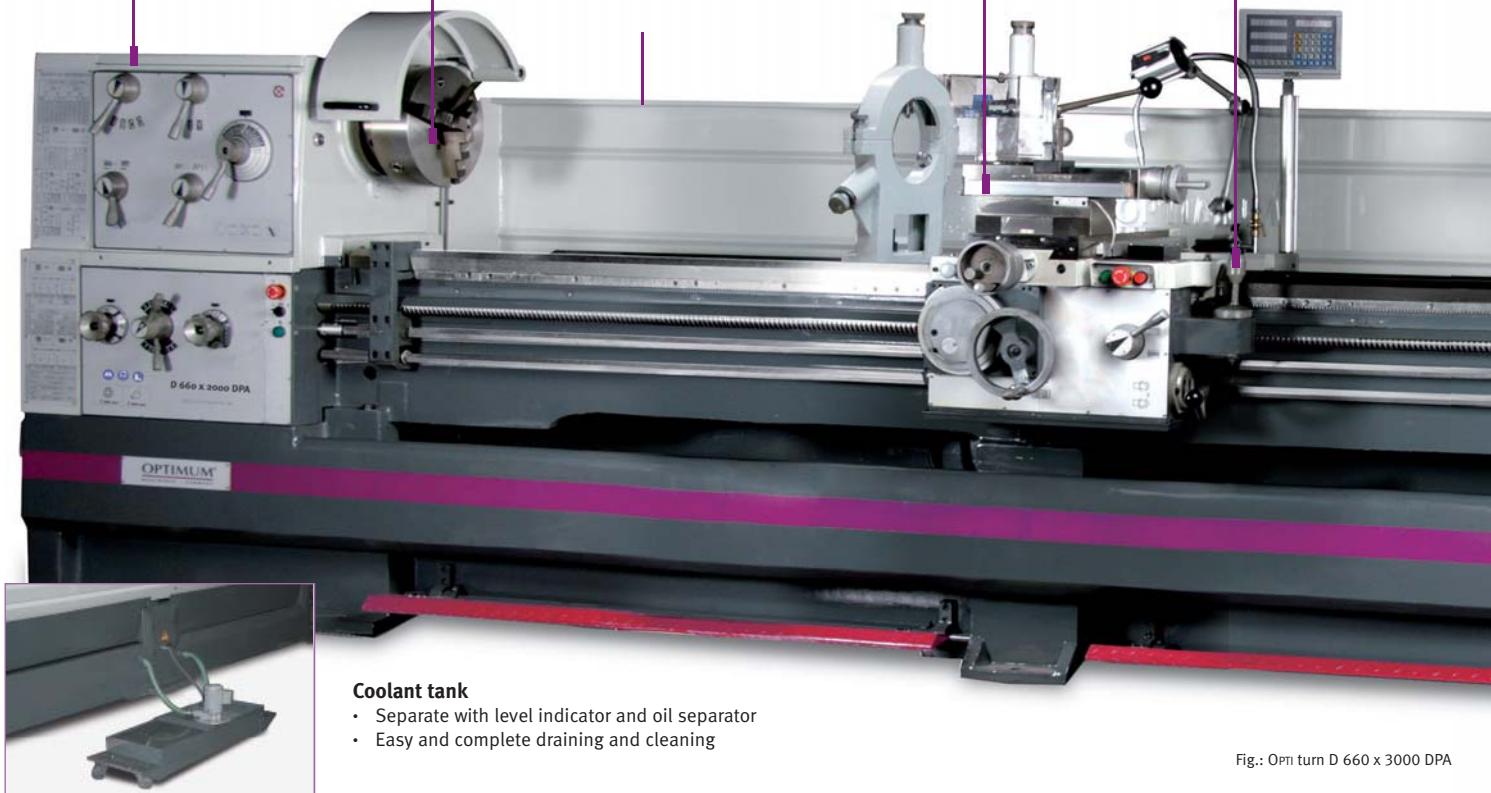
### Slide

- 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
- 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.



### Coolant tank

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

Fig.: Opti turn D 660 x 3000 DPA

## Technical data and accessories

Type	D 660 x 2000 DPA	D 660 x 3000 DPA
Item No	340 2720 DPA	340 2730 DPA
€ plus VAT	<b>27.500,00</b>	<b>29.900,00</b>
<b>Machine datas</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Driving power spindle motor	9 kW	
<b>Working areas</b>		
Centre height	330 mm	
Centre width	2'000 mm	3'000 mm
Turning Ø over lathe bed	660 mm	
Swing without bed bridge	900 mm	
Length of bed bridge	250 mm	
Turning Ø over cross slide	440 mm	
Bed width	400 mm	
<b>Speeds</b>		
Spindle speed	25 - 1'600 min <sup>-1</sup>	
Number of steps	16 steps	
<b>Headstock</b>		
Spindle taper	MT7	
Spindle seat	Camlock DIN ISO 702-2 Nr. 8	
Spindle drilling, rod passage	Ø 105 mm	
Top slide travel	230 mm	
Cross slide travel	368 mm	
Longitudinal feed in the range of	0.044 - 1.48 mm/rev; 25 feeds	
Transverse feed in the range of	0.022 - 0.74 mm/rev; 25 feeds	
Thread pitch - Metric	0.45 - 120 mm/rev; 54 thread pitches	
Pitch - Inch in the range of	80 - 7/16 threads/1"; 60 thread pitches	
Trapezoid thread in the range of	7/8 - 160 D.P.; 42 trapezoid thread	
Modular thread in the range of	0.25 - 60 M.P.; 46 modular thread	
Quick change tool holder seat height	max. 32 mm	
<b>Slide</b>		
Tailstock taper	MT 5	
Tailstock - sleeve travel	235 mm	
<b>Dimensions</b>		
Length	3'650 mm	4'650 mm
Width x Height	1'230 x 1'595 mm	
Net weight	3'345 kg	3'710 kg
<b>Transport surcharge</b>	<b>€ 200,00 (TPFR 6) plus VAT</b>	<b>€ 200,00 (TPFR 6) plus VAT</b>



### Tailstock

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

### Standard equipment

- Three jaw lathe chuck Ø 325 mm / D1-8
- Four jaw lathe chuck Ø 400 mm / D1-8
- Surface disc Ø 450 mm / D1-8
- Reducing bush MT 7/MT 5
- 2 steady centres MT 5
- Steady rest Passage up to Ø max. 150 mm
- Spindle brake
- Follow rest Passage up to Ø max. 80 mm
- Machine substructure
- Splash board
- Coolant equipment
- Machine lamp
- Operating tool
- Change gear kit
- First filling with high grade Mobil oil
- Quick action tool holder SWH 9

### Accessories

	Item No	€ plus VAT
Spare tool holder type D for SWH 9	338 4332	<b>319,00</b>
Spare tool holder Type H for SWH 9	338 4333	<b>469,00</b>
Revolving centre MT 5	344 0705	<b>85,00</b>
Position limit stop 4 times adjustable	344 4023	<b>109,00</b>
Lathe tool kit HM 20 mm, 7 pcs	344 4011	<b>195,00</b>
Vibration damping machine foot SE3	338 1018	<b>45,00</b>

Please find more information „Accessories for lathe“ on page 95

## Heavily centre lathes which are outstanding due to high flexibility, precision and economy

### Convincing arguments: quality, efficiency and price

- Hardened and ground bed guideways
- Camlock spindle seat 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
- The lines are guided via an energy chain
- Central lubrication at the bed slide
- Cover for leading spindle
- Halogen machine lamp with articulated arm
- Foot brake
- Electrical system with Siemens components
- First filling with high grade Mobil oil
- Quick action tool holder SWH 9 with tool holder for square tools
- Acceptance certificate
- **Digital position display DPA 2000** and glass scales
- Considerable reduction of the manufacturing times
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Including its own outlet. DPA2000 It is switched on and off on the main switch

## conventional

### 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

### Quality lathe chuck

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

### 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
- All guidings adjustable via V-ledges
- Chip protection at the top slide



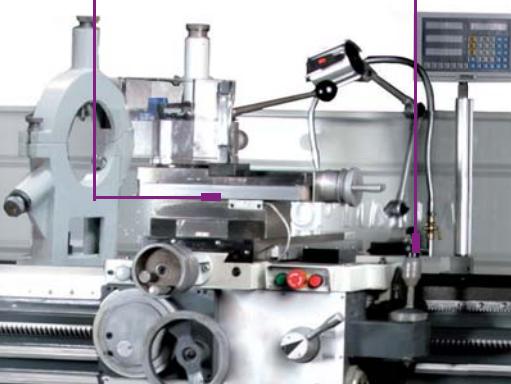
### Rapid feed

- 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.



### Energy chain

- Cable duct in an energy chain



### Coolant tank

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

## Technical data and accessories

Type	TU 8020	TU 8030
Item No	340 2782 DPA	340 2783 DPA
€ plus VAT	<b>29.500,00</b>	<b>32.600,00</b>
<b>Machine data</b>		
Electrical connection		
Driving power spindle motor		
<b>Working areas</b>		
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 width	400 mm	
<b>Speeds</b>		
Spindle speed	25 - 1'600 min <sup>-1</sup>	
Number of steps	16 steps	
<b>Headstock</b>		
Spindle taper	MT7	
Spindle seat	Camlock DIN ISO 702-2 Nr. 8	
Spindle drilling, rod passage	Ø 105 mm	
Top slide travel	230 mm	
Cross slide travel	420 mm	
Longitudinal feed in the range of	0.044 - 1.48 mm/rev; 25 feeds	
Transverse feed in the range of	0.022 - 0.74 mm/rev; 25 feeds	
Thread pitch - Metric	0.45 - 120 mm/rev; 54 thread pitches	
Pitch - Inch in the range of	80 - 7/16 threads/1"; 60 thread pitches	
Trapezoid thread in the range of	7/8 - 160 D.P.; 42 trapezoid thread	
Modular thread in the range of	0.25 - 60 M.P.; 46 modular thread	
Quick change tool holder seat height	max. 32 mm	
<b>Slide</b>		
Tailstock taper	MT 5	
Tailstock - sleeve travel	235 mm	
<b>Dimensions</b>		
Length	3'740 mm	4'707 mm
Width x Height	1'230 x 1'595 mm	
Net weight	3'505 kg	3'710 kg

### Transport surcharge

€ 200.00 (TPFR 6) plus VAT

€ 200.00 (TPFR 6) plus VAT



#### Tailstock

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

#### Standard equipment

- Three jaw lathe chuck Ø 325 mm / D1-8
- Four jaw lathe chuck Ø 400 mm / D1-8
- Surface disc Ø 450 mm / D1-8
- Reducing bush MT 7/MT 5
- 2 steady centres MT 5
- Steady rest Passage up to Ø max. 150 mm
- Spindle brake

- Follow rest Passage up to Ø max. 80 mm
- Machine substructure
- Splash board
- Coolant equipment
- Machine lamp
- Operating tool
- Change gear kit
- First filling with high grade Mobil oil
- Quick action tool holder SWH 9

#### Accessories

	Item No	€ plus VAT
Spare tool holder type D for SWH 9	338 4332	<b>319,00</b>
Spare tool holder Type H for SWH 9	338 4333	<b>469,00</b>
Revolving centre MT 5	344 0705	<b>85,00</b>
Position limit stop 4 times adjustable	344 4023	<b>109,00</b>
Lathe tool kit HM 20 mm, 7 pcs	344 4011	<b>195,00</b>
Vibration damping machine foot SE3	338 1018	<b>45,00</b>

## PREMIUM centre lathe



### Convincing arguments: quality, efficiency and price

- Machine bed and substructure made of heavily ribbed special cast iron
- High stiffness of the headstock housing due to heavily ribbed 25 grey cast iron
- 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
- Quick-action tool holder kit with 3 tool holders for square tools and 1 tool holder for round tool
- Quadruple length stop

PREMIUM  
conventional

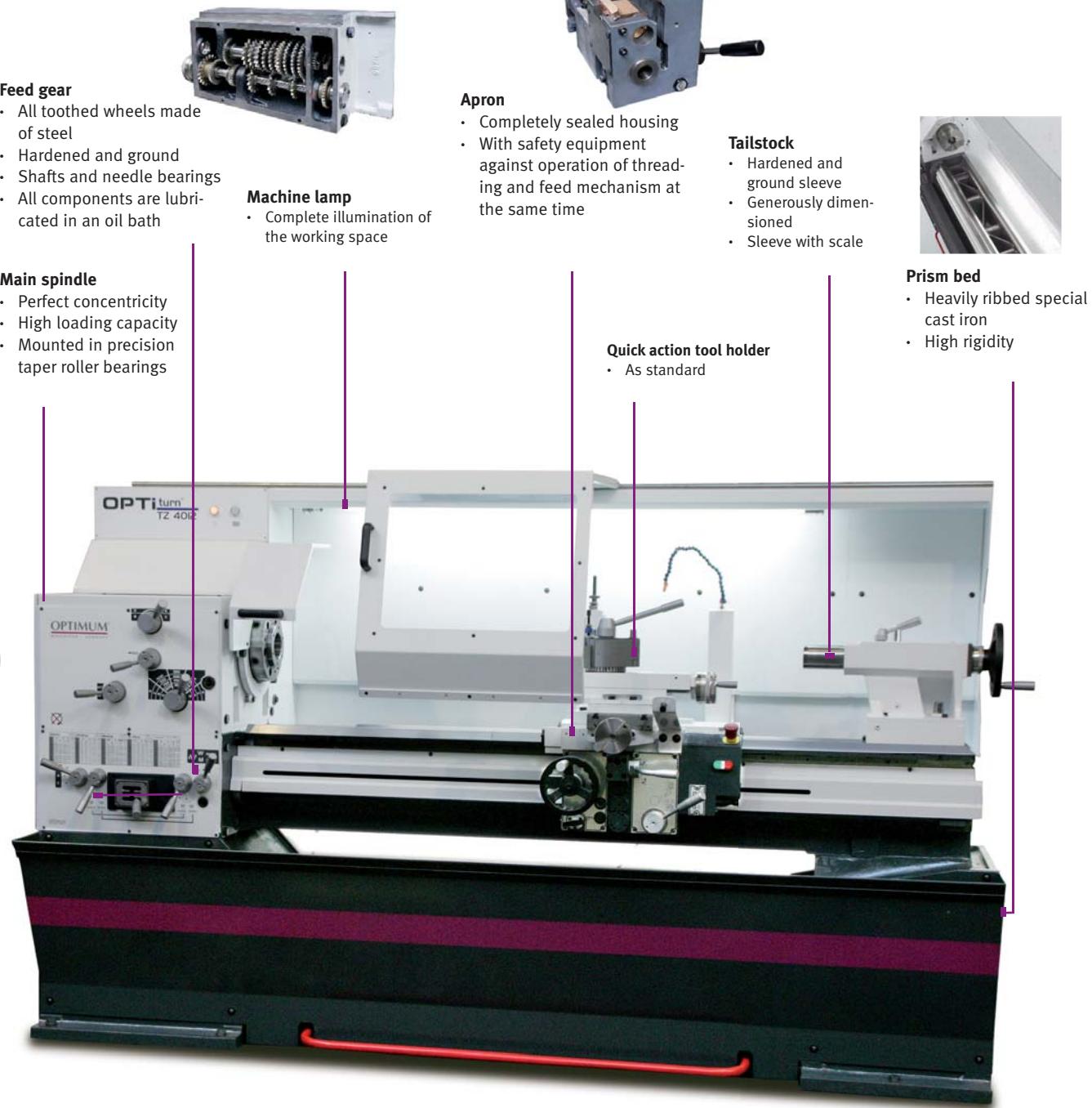


Fig.: TZ 4012



## Technical data, accessories and dimensions

Type	<b>TZ 4012</b>
Item No	343 3340
€ plus VAT	<b>20.900,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Main motor power	4 kW
Coolant equipment	60 W
<b>Working areas</b>	
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 width	300 mm
<b>Speeds</b>	
Spindle speed	40 - 2'200 min <sup>-1</sup>
Number of steps	12 steps
<b>Headstock</b>	
Spindle taper	MT4
Spindle seat	Camlock DIN ISO 702-2 No. 6
Spindle drilling, rod passage	52 mm
<b>Slide</b>	
Top slide travel	130 mm
Cross slide travel	300 mm
Longitudinal feed in the range of	0.05 - 0.75 mm/rev
Transverse feed in the range of	0.025 - 0.375 mm/rev
Thread pitch - Metric	0.5 - 7.5 mm/rev
Pitch - Inch in the range of	60 - 4 threads/1"
Trapezoid thread in the range of	8 - 120 D.P.
Modular thread in the range of	0.25 - 3.75 M.P
Quadruple tool holder seat height	25 x 25 mm
<b>Tailstock</b>	
Tailstock taper	MT 4
Tailstock - sleeve travel	155 mm
<b>Dimensions</b>	
Dimensions length	2'380 mm
Width x Height	995 x 1'380 mm
Net weight	1'210 kg
Transport surcharge plus VAT	<b>€ 260,00 (TPZ2000)</b>

**Standard equipment**

- 2 steady centres MT 4
- Reducing bush MT5 / MT
- Spindle brake
- Splash board
- Lathe chuck protection
- Threading gauge
- Quick action tool holder
- 3 tool holder for square tools
- 1 tool holder for round tools
- Coolant equipment

- Machine lamp
- Automatic switch-off
- Quadruple length stop



Accessories	Item No	€ plus VAT
<b>Steady rest</b> 0 - 130 mm with bronze bushings	343 8104	<b>345,00</b>
<b>Steady rest</b> 10 - 130 mm with rolls	343 8124	<b>790,00</b>
<b>Follow rest</b> 10 - 80 mm with bronze bushings	343 8144	<b>285,00</b>
<b>Follow rest</b> 10 - 80 mm with rolls	343 8154	<b>690,00</b>
<b>Three jaw lathe chuck CI3P</b> Ø 200 mm, Cast iron Speed 2'500 min <sup>-1</sup>	344 2050	<b>489,00</b>
<b>Three jaw lathe chuck CS3C</b> Ø 200 mm, Steel Speed 4'000 min <sup>-1</sup>	344 2550	<b>769,00</b>
<b>Three jaw lathe chuck CS3C</b> Ø 250 mm, Steel Speed 3'500 min <sup>-1</sup>	344 2555	<b>1.030,00</b>
<b>Four jaw lathe chuck CI4P</b> Ø 200 mm, Cast iron Speed 2'500 min <sup>-1</sup>	344 2150	<b>589,00</b>
<b>Four jaw lathe chuck CS4C</b> Ø 200 mm, Steel Speed 4'000 min <sup>-1</sup>	344 2650	<b>1.090,00</b>
<b>Four jaw lathe chuck CS4C</b> Ø 250 mm, Steel Speed 3'500 min <sup>-1</sup>	344 2655	<b>1.429,00</b>
<b>Length stop</b> with metric micrometer	343 8172	<b>460,00</b>
<b>Taper barring gear</b>	343 8182	<b>1'240,00</b>



Accessories	Item No	€ plus VAT
<b>DPA 700 kit</b>	339 0940	<b>2.599,00</b>
• 3 axes		
• Digital position display DPA 700		
• 2 pcs. Measuring blocks Microsyn		
• 1 pc. Measuring blocks Spherosyn		
• Display holder, attachment parts		

<b>Workshop assembly</b>	900 0423	<b>500,00</b>
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Please find further information on mMore Information „Accessories for lathe“ on page 95

## PREMIUM Centre lathes

### Convincing arguments: quality, efficiency and price

- Machine bed and substructure made of heavily ribbed special cast iron
- High stiffness of the headstock housing due to heavily ribbed 25 grey cast iron
- 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
- Quick-action tool holder kit with 3 tool holders for square tools and 1 tool holder for round tool
- Quadruple length stop
- Spindle drilling 80 mm
- Rapid feed X and Z axis with automatic limit stop in the Z axis

# PREMIUM

# conventional

### Feed gear

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



### Main spindle

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

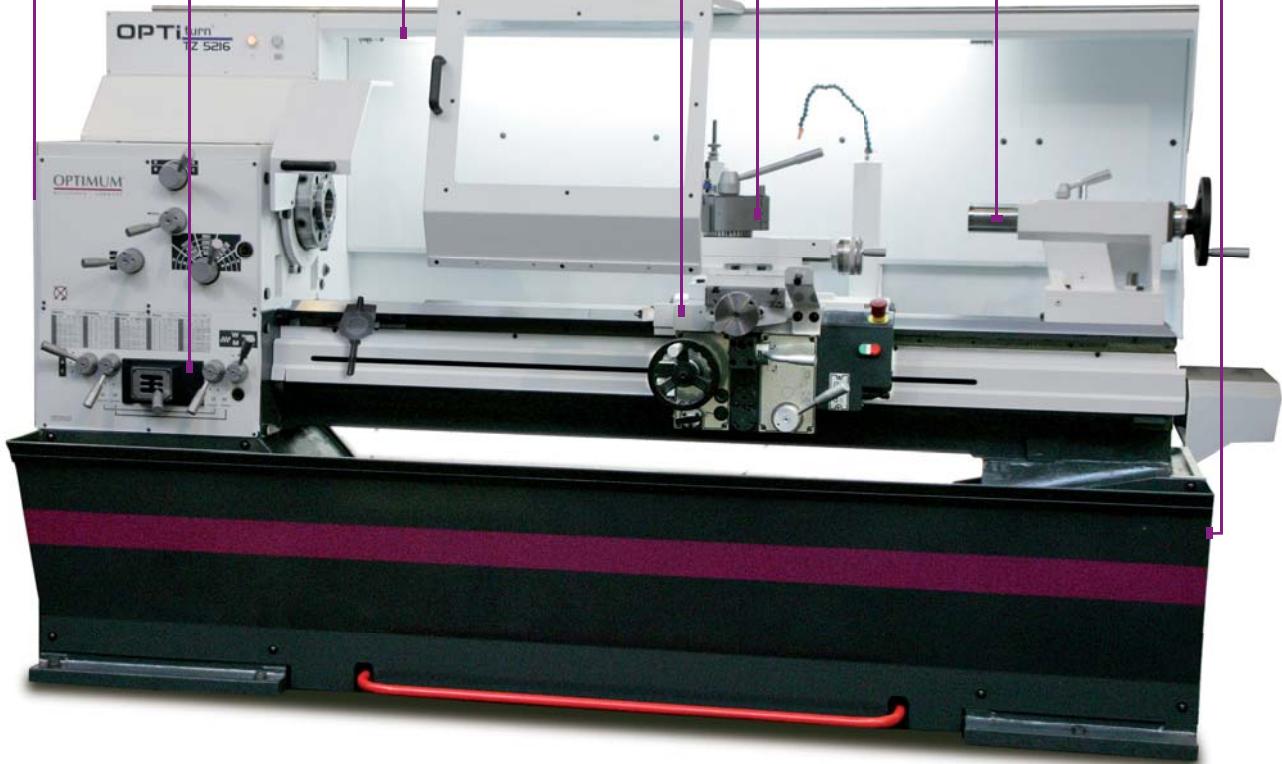


Fig.: Opti turn TZ 5216

### Apron

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



### Tailstock

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

### Prism bed

- Heavily ribbed special cast iron
- High rigidity

### Quick action tool holder

- As standard



## Technical data, accessories and dimensions

Type	TZ 5216	TZ 6222	DPA 700 kit	Item No	€ plus VAT
Item No	343 3350	343 3360	for TZ5216	339 0950	<b>2.990,00</b>
<b>€ plus VAT</b>	<b>28.900,00</b>	<b>30.900,00</b>	for TZ6222	339 0960	<b>3.450,00</b>
<b>Machine datas</b>					
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	• 3 axes		
Main motor power	5.5 kW	5.5 kW	• Digital position display DPA 700		
Coolant equipment	60 W	60 W	• 2 pcs. Measuring blocks Microsyn		
<b>Working areas</b>			• 1 pc. Measuring blocks Spherosyn		
Centre height	260 mm	310 mm	• Display holder, attachment parts		
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 width	350 mm	350 mm			
<b>Speeds</b>					
Spindle speed	30 - 1'500 min <sup>-1</sup>	30 - 1'500 min <sup>-1</sup>			
Number of steps	12 steps	12 steps			
<b>Headstock</b>					
Spindle taper	MT5	MT5			
Spindle seat	Camlock DIN ISO 702-2 Nr. 6	Camlock DIN ISO 702-2 Nr. 8			
Spindle drilling, rod passage	80 mm	80 mm			
<b>Slide</b>					
Top slide travel	165 mm	165 mm			
Cross slide travel	355 mm	365 mm			
Longitudinal feed in the range of	0.05 - 1.5 mm/rev	0.05 - 1.5 mm/rev			
Transverse feed in the range of	0.025 - 0.75 mm/rev	0.025 - 0.75 mm/rev			
Thread pitch - Metric	0.5 - 15 mm/rev	0.5 - 15 mm/rev			
Pitch - Inch in the range of	60 - 2 threads/1"	60 - 2 threads/1"			
Trapezoid thread in the range of	4 - 120 D.P.	4 - 120 D.P.			
Modular thread in the range of	0.25 - 7.5 M.P	0.25 - 7.5 M.P			
Quadruple tool holder seat height	25 x 25 mm	25 x 25 mm			
<b>Tailstock</b>					
Tailstock taper	MT 4	MT 4			
Tailstock - sleeve travel	180	180			
<b>Dimensions</b>					
Dimensions length	2'980 mm	3'600 mm			
Width x Height	1'050 x 1'730 mm	1'050 x 1'845 mm			
Net weight	1'985 kg	2'020 kg			
<b>Transport surcharge plus VAT</b>	<b>€ 260,00 (TPZ2000)</b>	<b>€ 350,00 (TPZ3000)</b>			

Workshop assembly 900 0423 **500,00**



Note to self:  
Jaw lathe chuck

Standard equipment	
• 2 steady centres MT 4	
• Reducing bush MT5 / MT 4	
• Spindle brake	
• Splash board	
• Lathe chuck protection	
• Threading gauge	
• Quick action tool holder	
• 3 tool holder for square tools	
• 1 tool holder for round tools	
• Coolant equipment	
• Machine lamp	

Accessories	Ex works	TZ5216		TZ6222	
		Item No	€ plus VAT	Item No	€ plus VAT
<b>Steady rest 10 - 185 mm bronze bushings</b>	343 8107	<b>445,00</b>	343 8109	<b>525,00</b>	
<b>Steady rest 300 mm with bronze bushings</b>	343 8110	<b>1.830,00</b>	343 8111	<b>2.070,00</b>	
<b>Steady rest 10 - 185 mm with rolls</b>	343 8127	<b>890,00</b>	343 8129	<b>950,00</b>	
<b>Steady rest 300 mm with rolls</b>	343 8130	<b>2.180,00</b>	343 8131	<b>2.530,00</b>	
<b>Follow rest 15 - 125 mm bronze bushings</b>	343 8147	<b>420,00</b>	343 8149	<b>490,00</b>	
<b>Follow rest 15 - 125 mm with rolls</b>	343 8157	<b>810,00</b>	343 8159	<b>870,00</b>	
<b>Three-jaw lathe chuck CI3P Ø 315 mm, Camlock No. 8 cast iron; Speed 1'500 min<sup>-1</sup></b>	344 2065	<b>889,00</b>	344 2065	<b>889,00</b>	
<b>Three-jaw lathe chuck CS3C Ø 315 mm, Camlock No. 8 steel; Speed 2'800 min<sup>-1</sup></b>	344 2565	<b>1.590,00</b>	344 2565	<b>1.590,00</b>	
<b>Four jaw lathe chuck CI4P Ø 315 mm, Camlock No. 8 cast iron; Speed 1'500 min<sup>-1</sup></b>	344 2165	<b>1.090,00</b>	344 2165	<b>1.090,00</b>	
<b>Four jaw lathe chuck CS4C Ø 315 mm, Camlock No. 8 steel; Speed 2'800 min<sup>-1</sup></b>	344 2665	<b>2.170,00</b>	344 2665	<b>2.170,00</b>	
<b>Longitudinal stop with metric micrometer</b>	343 8173	<b>460,00</b>	343 8173	<b>460,00</b>	
<b>Taper turning attachment</b>	343 8183	<b>1.440,00</b>	343 8183	<b>1.440,00</b>	

## Compatibility overview of accessories for lathe

Accessory parts for turning	Item No	TU 1503	TU 2004	TU 2304	TU 2404	TU 2506	TU 2807	D 320	D 330	D 360	TU 3209	TU 3610V	TZ 4012	D 420	TU 4210V	D 460	TU 4615V	D 560	TZ 5216	TZ 6222	TU 5620	D 660	TU 8020				
Face clamping disc Ø 170 mm	344 0295		●																								
Face clamping disc Ø 240 mm	344 1352			●	●																						
Face clamping disc Ø 250 mm	344 0552					●																					
Face clamping disc Ø 265 mm	344 1452						●																				
Flange for lathe chucks Ø160 mm Camlock No. 4	344 1512							●	●	●	●	●															
Flange for lathe chucks Ø200 mm Camlock No. 4	344 1513							●	●	●	●	●															
Flange for lathe chucks Ø200 mm Camlock No. 6	344 4012																	●	●	●	●	●	●				
Flange for lathe chucks Ø250 mm Camlock No. 6	344 4013																●		●	●							
Flange for lathe chucks Ø315 mm Camlock No. 8	344 4041																					●	●	●	●		
Flange for lathe chucks Ø325 mm Camlock No. 8	344 4042																		●	●	●	●	●	●	●		
Flange for lathe chucks Ø100 mm	344 0312		●																								
Flange for lathe chucks Ø125 mm	344 1311			●	●	●																					
Flange for lathe chucks Ø125 mm	344 0511						●																				
Flange for lathe chucks Ø160 mm	344 1413							●																			
Collet chuck ER16	344 0281	●																									
Collet chuck ER25	344 1305		●	●	●																						
Collet chuck ER25	344 0305	●																									
Collet chuck ER25	344 0505					●																					
Collet chuck ER32	344 1306		●	●	●																						
Collet chuck ER32	344 0506						●																				
Collet chuck 5C - No. 4	344 1554								●	●	●	●	●														
Collet chuck 5C - No. 6	344 1556																●	●	●	●	●	●	●	●			
Collet chuck 5C - No. 8	344 1558																		●	●	●	●	●	●	●		
Röhm revolving lathe centre MT2	344 1003	●	●	●	●	●	●																				
Röhm revolving lathe centre MT3	344 1503								●	●	●	●	●														
Röhm revolving lathe centre MT4	344 4003																	●	●	●	●	●	●	●			
Revolving centre MT1	344 0701																										
Revolving centre MT2	344 0702	●	●	●	●	●	●																				
Revolving centre MT3	344 0703								●	●	●	●	●														
Revolving centre MT4	344 0704																	●	●	●	●	●	●	●			
Revolving centre MT5	344 0705																					●	●	●	●	●	
Revolving centre MT6	344 0706																										
Revolving centre MT2 spare part	344 0732	●	●	●	●	●	●																				
Revolving centre MT3 spare part	344 0733								●	●	●	●	●														
Revolving centre MT4 spare part	344 0734																		●	●	●	●	●	●	●		
Collet chuck kit 5C	344 1509								●	●	●	●	●						●	●	●	●	●	●	●		
Collet chuck kit ER 16	344 0282	●																									
Collet chuck kit ER 25	344 1109	●	●	●	●	●	●																				
Collet chuck kit ER 32	344 1122	●	●	●	●	●	●																				
Vibration damper SE 1	338 1012	●	●	●	●	●	●																				
Vibration damper SE 2	338 1016								●	●	●	●	●						●	●	●	●	●	●	●		
Vibration damper SE 3	338 1018																		●	●	●	●	●	●	●		
Universal coolant system 230 V	335 2002	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Universal coolant system 400 V	335 2001								○	○	○	○	○														
Twist drill kit coated with titanium	305 1010	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Twist drill HSS MT2	305 1002	●	●	●	●	●	●	●	●	●	●	●	●														
Twist drill HSS MT3	305 1003													●	●	●	●	●	●	●	●	●	●	●	●		
Clamping block CB1 / Cutting-off blade CH1	344 0680-5													○	○	○	○	○	○	○	○	○	○	○	○		
Steady rest	344 0211	●																									
Steady rest	344 0231		●																								
Steady rest	344 1415								●																		
Steady rest	344 1315									●																	
Follow rest	344 0210	●																									
Follow rest	344 0230		●																								
Follow rest	344 1310							●																			
Follow rest	344 1410								●																		
Universal collet attachment 5C	344 1506									●	●	●	●	●	●							●	●				
Universal collet attachment 5C	344 1507																										
Universal collet attachment 5C	344 4006																										
Position limit stop with fine adjustment	344 1524									●	●	●	●	●	●												
Position limit stop 4-fold	344 4022																			●	●	●	●				
Position limit stop 4-fold	344 4023																										
Digital measuring system MPA4 S	338 3922	●	●	●	●	●	●	●	●									○	○	○	○	○	○	○	○		
Digital measuring system MPA4 L	338 3924									●	●	●	●	●	●	●											

● Recommended   ○ Conditionally recommended   — Not recommended

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

## Accessories for lathe

Face clamping disc	Item No	€ plus VAT
ø 170 mm for lathe TU 2004V	344 0295	40,00
ø 240 mm for lathe TU 2506	344 1352	55,00
ø 250 mm for lathe TU 2404/TU2406	344 0552	55,00
ø 265 mm for lathe TU 2807	344 1452	65,00



### Flange

• for assembly of lathe chucks		
<b>Ø 160 mm Camlock No. 4</b>	344 1512	90,00
• for four-jaw lathe chuck ø 160 mm combined		
<b>Ø 200 mm Camlock No. 4</b>	344 1513	109,00
• for four-jaw lathe chuck ø 200 mm combined		
<b>Ø 200 mm Camlock No. 6</b>	344 4012	152,00
• for four-jaw lathe chuck ø 200 mm combined		
<b>Ø 250 mm Camlock No. 6</b>	344 4013	162,00
• for four-jaw lathe chuck ø 250 mm combined		
<b>Ø 315 mm Camlock No. 8</b>	344 4041	183,00
• for three-jaw lathe chuck ø 315 mm		
• for four-jaw lathe chuck ø 315 mm		
<b>Ø 325 mm Camlock No. 8</b>	344 4042	193,00
• for four-jaw lathe chuck ø 325 mm combined		

### Flange for lathe chucks

• For assembly of the lathe chuck		
<b>Ø 100 mm</b>	344 0312	75,00
• Cylindrical for TU 2004V		
<b>Ø 125 mm</b>	344 1312	70,00
• Short taper for TU 2506/TU 2807 for 3-jaw chuck		
<b>Ø 125 mm</b>	344 0511	75,00
• Cylindrical for TU 2404/TU 2406/ TU 2304 for 3-jaw chuck		
<b>Ø 125 mm</b>	344 0511	75,00
• Cylindrical for TU 2404/TU 2406/ TU 2304 for 4-jaw chuck		
<b>Ø 160 mm</b>	344 1413	85,00
• Short taper for TU 2807		
<b>Ø 160 mm</b>	344 1414	85,00
• TU 2807 for 4-jaw chuck		



### Revolving lathe centre incl. replaceable tips

- With 7 replaceable lathe centres
- Body made of hardened and ground tool steel
- Precision needle roller bearings guarantee high true running accuracy

<b>MT 2</b>	344 0732	130,00
<b>MT 3</b>	344 0733	150,00
<b>MT 4</b>	344 0734	160,00



Collet chuck	Item No	€ plus VAT
Including short taper clamping		
<b>ER 16</b>	344 0281	50,00
• Cylindrical for TU 1503V		
<b>ER 25</b>	344 1305	99,00
• Short taper for TU 2506 /TU 2807		
<b>ER 25</b>	344 0305	75,00
• Cylindrical for TU 2004V		
<b>ER 25</b>	344 0505	85,00
• Cylindrical for TU 2404/TU 2406/ TU 2304		
<b>ER 32</b>	344 1306	109,00
• Short taper for TU 2506 /TU 2807		
<b>ER 32</b>	344 0506	95,00
• Cylindrical for TU 2404/TU2406		



### Collet chuck

• True running accuracy 0,02 mm		
<b>5C - No. 4</b>	344 1554	559,00
<b>5C - No. 6</b>	344 1556	589,00
<b>5C - No. 8</b>	344 1558	629,00



### RÖHM revolving lathe centre

<b>MT 2</b>	344 1003	80,00
<b>MT 3</b>	344 1503	85,00
<b>MT 4</b>	344 4003	109,00

### Revolving lathe centre

Max. out-of-round	0.006 mm	
<b>MT 1</b>	344 0701	40,00
• Speed max. 5'000 min⁻¹; Radial load max. 320 N		
<b>MT 2</b>	344 0702	50,00
• Speed max. 5'000 min⁻¹; Radial load max. 400 N		
<b>MT 3</b>	344 0703	55,00
• Speed max. 4'500 min⁻¹; Radial load max. 800 N		
<b>MT 4</b>	344 0704	65,00
• Speed max. 3'500 min⁻¹; Radial load max. 1'250 N		
<b>MT 5</b>	344 0705	85,00
• Speed max. 3'000 min⁻¹; Radial load max. 1'500 N		
<b>MT 6</b>	344 0706	189,00
• Speed max. 2'500 min⁻¹; Radial load max. 1'800 N		



## Accessories for lathe

Position limit stop with fine adjustment	Item No	€ plus VAT
• for lathes D 320 - D360	344 1524	65,00
with fine adjustment	Item No	€ plus VAT
• for lathe D 460	344 4022	95,00
with fine adjustment	Item No	€ plus VAT
• for lathe D 560	344 4023	109,00



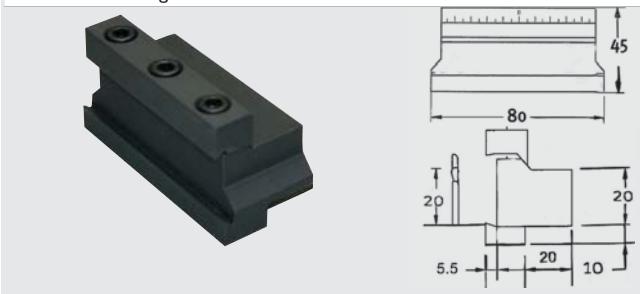
Kit of titanium coated twist drills	Item No	€ plus VAT
<ul style="list-style-type: none"> <li>Titanium coating</li> <li>Higher service life and durability</li> <li>Higher hardness than hard metal</li> <li>More rapid working results</li> <li>Low wear</li> <li>25 pcs; Sizes 1 - 13 mm</li> <li>Metal box</li> </ul>	305 1010	45,00



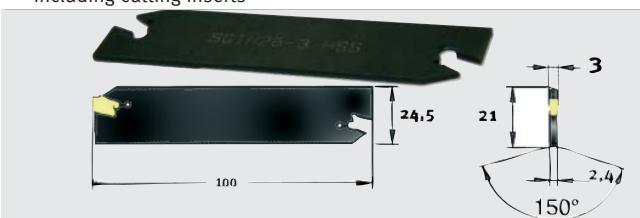
Twist drill HSS incl. Morse taper	Item No	€ plus VAT
• 9- pieces; sizes 14,5/16/18/20/22/24/26/28/30 mm		
• Long service life		
• Good chip removal		
• Right hand cutting		
<b>MT 2</b>	305 1002	149,00
<b>MT 3</b>	305 1003	149,00



Cutting insert block CB1	Item No	€ plus VAT
<ul style="list-style-type: none"> <li>for cutting chisel CH1</li> <li>Without SWH from lathe D 420 on</li> <li>With SWH from lathe D 320 on</li> <li>Complete clamping block</li> <li>Without cutting chisel</li> </ul>	344 0680	60,00



Cutting chisel CH1	Item No	€ plus VAT
<ul style="list-style-type: none"> <li>up to 75 mm</li> <li>Including cutting inserts</li> </ul>	344 0685	65,00



Spare cutting inserts for CH1	Item No	€ plus VAT
• 10 pcs	344 0686	119,00

Universal coolant equipment	Item No	€ plus VAT
• 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 anchoring		
• For self-assembly		
<b>230 V / 1 Ph</b>	335 2002	199,00
<b>400 V / 3 Ph</b>	335 2001	199,00



Direct-quick action drill chuck	Item No	€ plus VAT
• True running accuracy of better than 0.05 mm		
<b>0 - 8 mm</b> with direct tool holder MT 2	305 0582	85,00
<b>0 - 13 mm</b> with direct tool holder MT 3	305 0585	110,00
<b>0 - 13 mm</b> with direct tool holder MT 4	305 0587	120,00



**Vibration damping machine foot**

- Machines and devices can be installed without anchoring and exactly levelled per height adjustment
- Machine capability is improved by efficient impact and vibration damping

	Item No	€ plus VAT
<b>SE 1</b>	338 1012	<b>30,00</b>
<b>SE 2</b>	338 1016	<b>40,00</b>
<b>SE 3</b>	338 1018	<b>45,00</b>

Charge	SE 1	SE 2	SE 3
Milling machines	340 Kg	460 kg	1'600 kg
Sawing/ general machines	570 kg	1'460 kg	3'500 kg
Thread	M12	M 16	M 20
Base Ø/Base height	120/32	160/35	185/39



**Collet kit SPZ - 5C**

- For universal collet attachment
- Standard 385 E
- 17-pcs; clamping range 3 - 25 mm



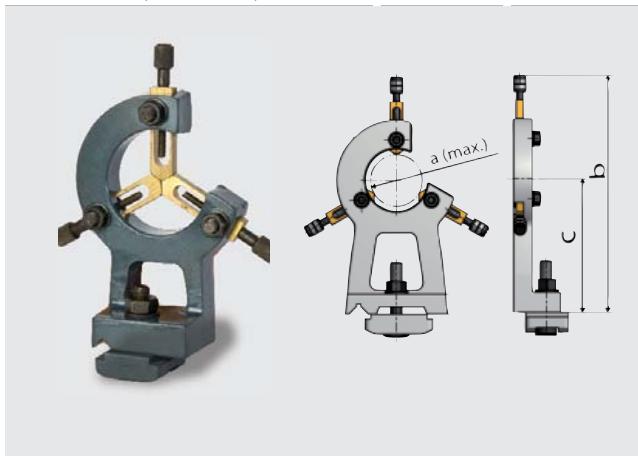
**Collet kit**

- DIN 6499
- ER 16** 344 0282 **189,00**
- 12-pcs; clamping range ø 1 - 12 mm
- ER 25** 344 1109 **159,00**
- 15-pcs; clamping range ø 1 - 16 mm
- ER 32** 344 1122 **179,00**
- 18-pcs; clamping range ø 3 - 20 mm



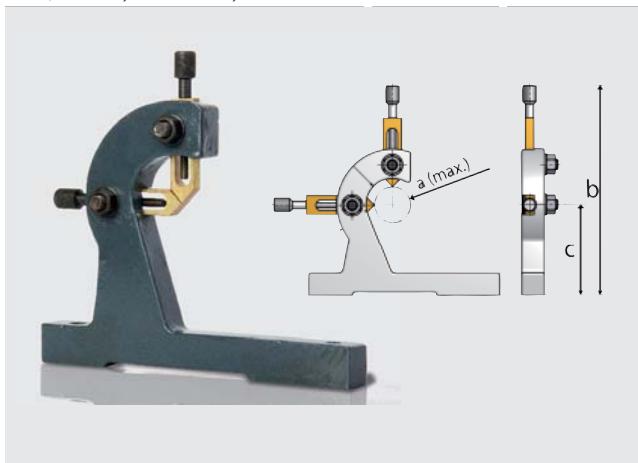
**Steady rest**

	Item No	€ plus VAT
<b>for TU 1503V</b>	344 0211	<b>24,00</b>
<b>for TU 2004V</b>	344 0231	<b>40,00</b>
<b>for TU 2304 / TU 2304V</b>	344 0361	<b>55,00</b>
<b>for TU 2506 / TU 2404 / TU 2406</b>	344 1315	<b>55,00</b>
• a = Ø 50 mm; b = 245 mm; c = 125 mm		
<b>for TU 2807</b>	344 1415	<b>65,00</b>
• a = Ø 55 mm; b = 250 mm; c = 140 mm		



**Follow rest**

	Item No	€ plus VAT
<b>for TU 1503V</b>	344 0210	<b>22,00</b>
<b>for TU 2004V</b>	344 0230	<b>35,00</b>
<b>for TU 2304 / TU 2304V</b>	344 0360	<b>52,00</b>
<b>for TU 2506 / TU 2404 / TU 2406</b>	344 1310	<b>52,00</b>
a = Ø 34 mm; b = 220 mm; c = 107 mm		
<b>for TU 2807</b>	344 1410	<b>65,00</b>
a = Ø 56 mm; b = 250 mm; c = 130 mm		



**Universal collet attachment 5C**

for lathes D320 - D360	344 1506	<b>240,00</b>
for lathe D420	344 1507	<b>250,00</b>
for lathe D460	344 4006	<b>279,00</b>



## Quick action tool holder

Quick action tool holder	Item No	€ plus VAT
• For current listing of the compatibility refer to „Accessories for lathe“ on page 98		
• 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		

Quick action tool holder kit SWH AA	338 4311	260,00
• 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 . For self-assembly		
Spare tool holder 13 x 50 type D for square tools	338 4312	70,00
Spare tool holder 12 x 50 type H for round tools	338 4320	70,00



Tool holder head

Quick action tool holder kit SWH 1 - A	338 4301	439,00
• 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 . For self-assembly		
Spare tool holder 20 x 90 type D for square tools	338 4302	75,00
Spare tool holder 20 x 85 type H for round tools	338 4321	80,00



Tool holder type D for square tools 3 pieces



Rear view of tool holder type D for square tools

Quick action tool holder kit SWH 3 - E	338 4303	499,00
• 1 tool holder head E		
• 3 tool holder 20 x 100 type D for square tools		
• 1 tool holder 30 x 100 type H for round tools . For self-assembly		
Spare tool holder 20 x 100 type D for square tools	338 4304	90,00
Spare tool holder 30 x 100 type H for round tools	338 4322	109,00



Tool holder type H for round tools 1 piece



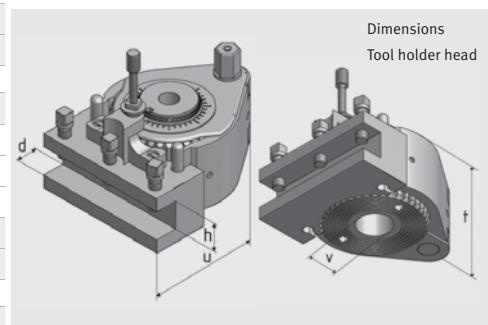
Rear view of tool holder type H for round tools

Quick action tool holder kit SWH 5 - B	338 4305	589,00
• 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 . For self-assembly		
Spare tool holder 25 x 120 type D for square tools	338 4306	95,00
Spare tool holder 32 x 130 type H for round tools	338 4324	109,00

Quick action tool holder kit SWH 7 - C	338 4307	990,00
• 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 . For self-assembly		
Spare tool holder 32 x 150 type D for square tools	338 4308	155,00
Spare tool holder 40 x 160 type H for round tools	338 4326	195,00

Quick action tool holder kit SWH 9 - D	338 4309	2.450,00
• 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 . For self-assembly		
Spare tool holder 41 x 180 type D for square tools	338 4332	319,00
Spare tool holder 70 x 180 type H for round tools	338 4333	469,00

Workshop assembly and adaptation SWH	900 0400	155,00
• Only when purchasing a new machine		



Dimensions tool holder head	AA	A	E	B	C
Turning diameter	120 - 220 mm	150 - 300 mm	200 - 400 mm	300 - 500 mm	400 - 700 mm
Motor lathe max.	1 kW	2.2 kW	4.4 kW	6.6 kW	13 kW
Support width for tool	d mm	10	14	20	20/30
Tool max.	h mm	12	20	25	32
Hole standard	v mm	10.2	20	32	40
Depth of hole max.	mm	12	31	51	70
Total width- height	u/t mm	74/37	106/55	132 / 142 h:68	150 / 155 h:78
Depth hole max.	t. max mm	30	35	45	90

# Compatibility overview of accessories for quick action tool holder/lathe tool

**OPTIMUM®**  
MASCHINEN - GERMANY

Accessory parts for turning		Item No	D 140	TU 2004V	D 210	TU 2506	TU 2404	TU 2807	D 3209	D 3200/TU	D 3610V	D 3600/TU	D 4210V	D 420/TU	D 4615V	D 5620V	D 5600/TU	D 660	TU 8030D
SWH	SWH AA	338 4311		●															
	SWH 1 - A	338 4301			●	●	●	●											
	SWH 3 - E	338 4303								●	●	●							
	SWH 5 - B	338 4305											●	●					
	SWH 7 - C	338 4307													●				
	SWH 9 - D	338 4305														●	●		
Lathe tool	Lathe tool HM 8 mm	344 1011	●	●	●	●	●	●	●	●									
	Lathe tool HM 10 mm	344 1111		●	●	●	●	●	●	●									
	Lathe tool HM 12 mm	344 1211			●	●	●	●	●	●									
	Lathe tool HM 12 mm	344 1212			●	●	●	●	●	●									
	Lathe tool HM 16 mm	344 1511									●	●	●						
	Lathe tool HM 16 mm	344 1216									●	●	●						
	Lathe tool HM 16 mm	344 1610								●	●	●							
	Lathe tool HM 20 mm	344 4011											●	●	●				
	Lathe tool HM 20 mm	344 1617											●	●	●				
	Lathe tool HM 25 mm	344 1623														●	●		
Internal turning tools	Lathe tool with soldered HM 8 mm	344 1008	●	●	●	●	●	●	●	●									
	Lathe tool with soldered HM 10 mm	344 1108		●	●	●	●	●	●	●									
	Lathe tool with soldered HM 16 mm	344 1508									●	●	●						
Internal turning tools	Internal turning tools kit 10 mm	344 1640		●	●	●	●	●	●	●									
	Internal turning tools kit 12 mm	344 1641			●	●	●	●	●	●									

**Lathe tool kit 8 mm** 344 1008 **65,90**

11-pieces . With soldered HM plates

**Lathe tool kit 10 mm** 344 1108 **65,90**

11-pieces . With soldered HM plates

**Lathe tool kit 16 mm** 344 1508 **75,00**

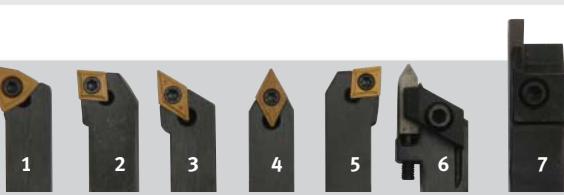
11-pieces . With soldered HM plates



## Lathe tool kits

### Lathe tool kit HM 8 mm

Lathe tool kit HM 8 mm				344 1011	109,00
<ul style="list-style-type: none"> <li>• 7 pieces</li> <li>• With HM inserts</li> <li>• TiN-coated (1-5)</li> </ul>					



HM- spare inserts							
for No	ISO		l	s	r	d	d1
	b	l	fb				
1	WCMX050308F	W/80°	5.2	3.35	0.8	6.5	3.15
2	CCMT060204	C/80°	6.35	2.6	0.4	6.35	2.7
3	DCMT070204	D/55°	7.3	2.53	0.4	6.35	2.7
4	DCMT070204	D/55°	7.3	2.53	0.4	6.35	2.7
5	CCMT060204	C/80°	6.35	2.6	0.4	6.35	2.7
6	Tread cutting	60°	3.0	15.0	3.0	-	344 1162
7	Cutting off-inserts	-	3.50	12.14	0.5	-	344 1161
							€ plus VAT
							59.00
							55.00
							69.00
							69.00
							55.00
							10.90
							8.90

### Lathe tool kit HM 10 mm

Lathe tool kit HM 10 mm				344 1111	120,00
<ul style="list-style-type: none"> <li>• 7 pieces</li> <li>• With HM inserts</li> <li>• TiN-coated (8-12)</li> </ul>					



HM- spare inserts							
for No	ISO		l	s	r	d	d1
	b	l	fb				
8	WCMX050308F	W/80°	5.2	3.35	0.8	6.5	3.15
9	CCMT060204	C/80°	6.35	2.6	0.4	6.35	2.7
10	DCMT070204	D/55°	7.3	2.53	0.4	6.35	2.7
11	DCMT070204	D/55°	7.3	2.53	0.4	6.35	2.7
12	CCMT060204	C/80°	6.35	2.6	0.4	6.35	2.7
13	Tread cutting	60°	3.0	15.0	3.0	-	344 1162
14	Cutting off-inserts	-	3.50	12.14	0.5	-	344 1161
							€ plus VAT
							59.00
							55.00
							69.00
							69.00
							55.00
							10.90
							8.90

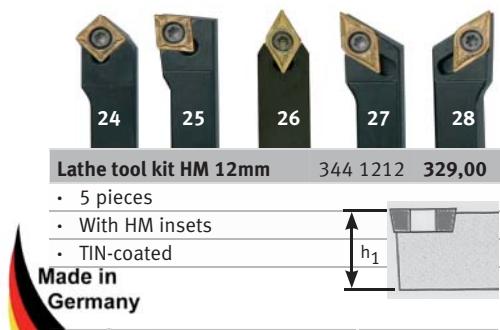
### Lathe tool kit HM 12 mm

Lathe tool kit HM 12 mm				344 1211	149,00
<ul style="list-style-type: none"> <li>• 9 pieces</li> <li>• With HM inserts</li> </ul>					



HM- spare inserts							
for No	ISO		l	s	r	d	d1
	b	l	fb				
15	WAUM06T300FL	W/80°	6.2	3.55	0.10	10.35	4.10
16	WAUM06T300FL	W/80°	6.2	3.55	0.10	10.35	4.10
17	SAUM09T300FL	S/90°	5.4	3.55	0.10	10.00	4.10
18	SAUM09T300F	S/90°	10.0	3.55	0.10	10.00	5.16
19	SAUM09T300F	S/90°	10.0	3.55	0.10	10.00	5.16
20	WAUM06T300FR	W/80°	6.20	3.55	0.10	10.35	4.10
21	Tread cutting	60°	4.70	20.00	5.00	-	344 1263
22	Cutting off-inserts	-	4.00	14.00	0.50	-	344 1261
23	Tread cutting	60°	3.0	15.0	3.0	-	344 1162
							€ plus VAT
							12.90
							12.90
							12.90
							12.90
							18.90
							7.90
							10.90

### Lathe tool kit HM 12 mm

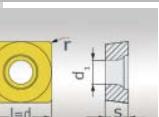


Made in  
Germany

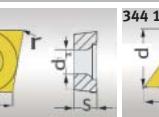
No	ISO			h1
24	SSSC	R1212	J09	12 mm
25	SCLC	R1212	J09	12 mm
26	SDNC	N1212	J09	12 mm
27	SDJC	R1212	J11	12 mm
28	SDJC	L1212	J11	12 mm

### HM- spare inserts

344 1280



344 1282



344 1281



for No	ISO	l	s	r	d	d1	Item No	€ plus VAT	
24	SCMT09T304	S/90°	9.52	4.10	0.40	9.52	4.35	344 1280	42.00
25	CCMT09T304	C/80°	9.70	3.97	0.40	9.53	4.40	344 1282	45.00
26	DCMT11T304	C/55°	11.60	3.97	0.40	9.53	4.40	344 1281	42.00
27	DCMT11T304	C/55°	11.60	3.97	0.40	9.53	4.40	344 1281	42.00
28	DCMT11T304	C/55°	11.60	3.97	0.40	9.53	4.40	344 1281	42.00

### Single lathe tool 12 mm

24



344 1220

69.00

25



344 1221

69.00

26



344 1222

69.00

27



344 1223

69.00

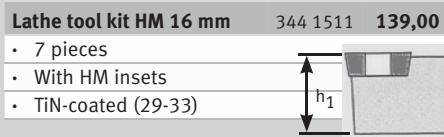
28



344 1224

69.00

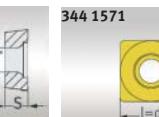
### Lathe tool kit HM 16 mm



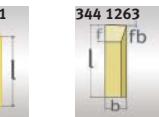
No	ISO			h1
29	SCLCR	1616	K06	16 mm
30	SSRRC	1616	H09	16 mm
31	SSRRC	1616	H06	16 mm
32	SCGCR	1616	H06	16 mm
33	SCGCL	1616	H06	16 mm
34	LW	1616R	R04	16 mm
35	QA	1622R	L03	22 mm

### HM- spare inserts

344 1164/72



344 1261



344 1571



b fb

No	ISO	l	s	r	d	d1	Item No	€ plus	
29	CCMT060204	C/80°	6.35	2.60	0.40	6.35	2.70	344 1164	55.00
30	SCMT09T304	S/90°	9.52	4.10	0.40	9.52	4.35	344 1571	62.00
31	SCMT09T304	S/90°	9.52	4.10	0.40	9.52	4.35	344 1571	62.00
32	CCMT09T304	C/80°	9.50	4.00	0.40	9.50	4.40	344 1572	62.00
33	CCMT09T304	C/80°	9.50	4.00	0.40	9.50	4.40	344 1572	62.00
		b	l	fb					
34	Tread cutting	60°	4.70	20.00	5.00	-	344 1263	18.90	
35	Cutting off-inserts	-	4.00	14.00	0.50	-	344 1261	7.90	

### Lathe tool kit HM 16 mm

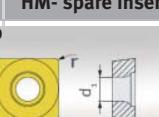


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Germany

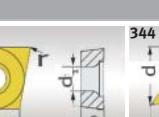
No	ISO			h1
36	SSSC	R1616	J09	16 mm
37	SCLC	R1616	J09	16 mm
38	SDNC	N1616	J09	16 mm
39	SDJC	R1616	J11	16 mm
40	SDJC	L1616	J11	16 mm

### HM- spare inserts

344 1280



344 1282



344 1281



344 1281

for No	ISO	l	s	r	d	d1	Item No	€ plus VAT	
36	SCMT09T304	S/90°	9.52	4.10	0.40	9.52	4.35	344 1280	42.00
37	CCMT09T30	C/80°	9.70	3.97	0.40	9.53	4.40	344 1282	45.00
38	DCMT11T304	C/55°	11.60	3.97	0.40	9.53	4.40	344 1281	42.00
39	DCMT11T304	C/55°	11.60	3.97	0.40	9.53	4.40	344 1281	42.00
40	DCMT11T304	C/55°	11.60	3.97	0.40	9.53	4.40	344 1281	42.00

### Single lathe tool 16 mm

36



344 1230

69.00

37



344 1231

69.00

38



344 1232

69.00

39



344 1233

69.00

40



344 1234

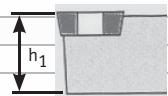
69.00

## Accessories for lathe

### Lathe tool kit HM 16 mm

**Lathe tool kit HM 16 mm** 344 1610 **139,00**

- 5 pieces
- With HM insets
- TiN-coated
- Aluminium case



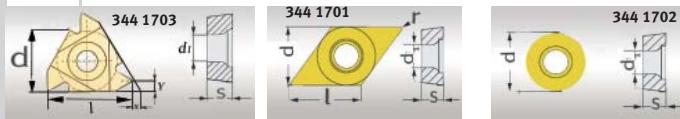
No	ISO			h1
41	MVJNR	1616	H16	16 mm
42	MVVNN	1616	H16	16 mm
43	PRANN	1616	H10	16 mm
44	PRGNR	1616	H10	16 mm
45	SER	1616	H16	16 mm

**41 42 43 44 45**

**NEW**



### HM- spare inserts (each 5 pcs.)

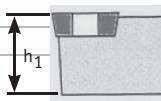


for No	ISO	l	s	r	d	d1	Item No	€ plus
41	VNMG 160408	V/35°	15	5.1	0.4	9.5	3.8	344 1701 <b>35,00</b>
42	RNMM1003MO	R	10	3.97	-	10	3.6	344 1702 <b>29,00</b>
43	VNMG 160408	V/35°	15	5.1	0.4	9.5	3.8	344 1701 <b>35,00</b>
44	RNMM1003MO	R	10	3.97	-	10	3.6	344 1702 <b>29,00</b>
45	16ER AG60	60° AR	16	3.65	-	9.5	3.95	344 1703 <b>49,00</b>

### Lathe tool kit HM 20 mm

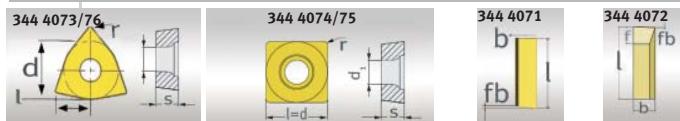
**Lathe tool kit HM 20 mm** 344 4011 **209,00**

- 7 pieces
- With HM insets



No	ISO			h1
46	PWUNR	L1518	M08	16 mm
47	PSSNR	L1518	M12	16 mm
48	PSSNR	L2020	12	22 mm
49	PWGN	R2020	08	22 mm
50	PSRNR	L2020	12	22 mm
51	LW	2020	R08	22 mm
52	QA	2027R	L04	22 mm

### HM- spare inserts (each 5 pcs.)



for No	ISO	l	s	r	d	d1	Item No	€ plus
46	WNUM060400FL	W/80°	8.60	4.50	0.10	13.35	5.16	344 4073 <b>24,00</b>
47	SAUM120400FL	S/90°	13.10	4.50	0.10	13.10	5.16	344 4074 <b>24,00</b>
48	SAUM120404F	S/90°	13.10	4.50	0.10	13.10	5.16	344 4075 <b>24,00</b>
49	WNUM060400FR	W/80°	8.60	4.50	0.10	13.35	5.19	344 4076 <b>24,00</b>
50	SAUM120404F	S/90°	13.10	4.50	0.10	13.10	5.16	344 4075 <b>24,00</b>
51	Tread cutting	60°	7.50	25.00	0.50	-	-	344 4072 <b>24,00</b>
52	Cutting off-inserts	-	4.00	16.00	1.00	-	-	344 4071 <b>24,00</b>

### Lathe tool kit HM 20 mm

**Lathe tool kit HM 20 mm** 344 1617 **159,00**

- 5 pieces
- With HM insets
- TiN-coated
- Aluminium case



No	ISO			h1
53	SER	2020	K16	20 mm
54	PRGNR	2020	K10	20 mm
55	PRANN	2020	K10	20 mm
56	MVVNN	2020	K16	20 mm
57	MVJNR	2020	K16	20 mm

### HM- spare inserts (each 5 pcs.)



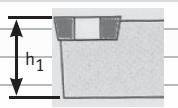
for No	ISO	l	s	r	d	d1	Item No	€ plus
53	16ER AG60	60° AR	16	3.65	-	9.5	3.95	344 1703 <b>49,00</b>
54	RNMM1003MO	R	10	3.97	-	10	3.6	344 1702 <b>29,00</b>
55	RNMM1003MO	R	10	3.97	-	10	3.6	344 1702 <b>29,00</b>
56	VNMG 160408	V/35°	15	5.1	0.4	9.5	3.8	344 1701 <b>35,00</b>
57	VNMG 160408	V/35°	15	5.1	0.4	9.5	3.8	344 1701 <b>35,00</b>

NEW

### Lathe tool kit HM 25 mm

#### Lathe tool kit HM 25 mm 344 1623 209,00

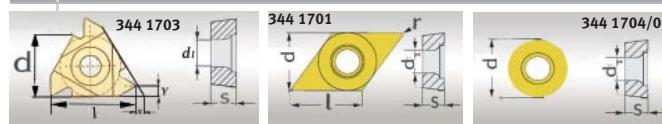
- 5 pieces
- With HM insets
- TIN-coated
- Aluminium case



No	ISO			h1
58	MVVNN	2525	M16	25 mm
59	SER	2525	M16	25 mm
60	PRGNR	2525	M12	25 mm
61	PRANN	2525	M16	25 mm
62	MVJNR	2525	M16	25 mm



#### HM- spare inserts (each 5 pcs.)



No	ISO	l	s	r	d	d1	Item No	€ plus
58	VNMG 160408	V/35°	15	5.1	0.4	9.5	3.8	344 1701 <b>35,00</b>
59	16ER AG60	60° AR	16	3.65	-	9.5	3.95	344 1703 <b>49,00</b>
60	RNMG1204MO	R	12	4.75	-	12	5.1	344 1705 <b>29,00</b>
61	RNMG1605MO	R	16	5.4	-	16	6.3	344 1704 <b>49,00</b>
62	VNMG 160408	V/35°	15	5.1	0.4	9.5	3.8	344 1701 <b>35,00</b>

### Internal turning tool

NEW

#### Internal turning tools kit 10 mm 344 1640 65,00

- 3 pieces
- With HM insets
- TIN-coated
- Aluminium case

No	ISO		
63	S10K	SCFCR	06
64	S10K	SDQCR	07
65	S10K	STFCR	11

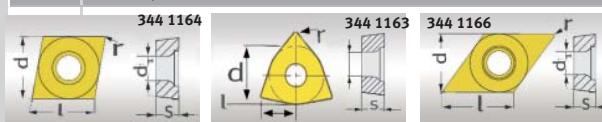


#### Internal turning tools kit 12 mm 344 1641 75,00

- 3 pieces
- With HM insets
- TIN-coated
- Aluminium case

No	ISO		
63	S12M	SCFCR	06
64	S12M	SDQCR	07
65	S12M	STFCR	11

#### HM- spare inserts (each 5 pcs.)



No	ISO	l	s	r	d	d1	Item No	€ plus
63	CCMT060204	C/80°	6.35	2.60	0.40	6.35	2.70	344 1164 <b>55,00</b>
64	TCMT110204	T/60°	10.84	2.53	0.40	9.1	2.70	344 1163 <b>49,00</b>
65	DCMT070204	D/55°	7.30	2.53	0.40	6.35	2.70	344 1166 <b>69,00</b>

### Internal turning tool

NEW

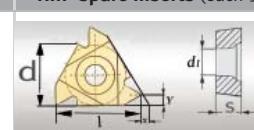


#### Internal turning tools kit 344 1650 159,00

- 5-pieces (8/10/12/16/20 mm)
- With HM insets
- TIN-coated
- Aluminium case

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

#### HM- spare inserts (each 5 pcs.)



No	ISO	l	s	d	d1	Max.	Item No	€ plus
66	08IR A60	60° IR	8	2,22	4,76	2,5	M10	344 1725 <b>69,00</b>
67	11IR A60	60° IR	11	3,22	6,35	3,0	M12	344 1726 <b>45,00</b>
68	11IR A60	60° IR	11	3,22	6,35	3,0	M12	344 1726 <b>45,00</b>
69	16IR A60	60° IR	16	3,65	9,5	3,95	M16	344 1727 <b>45,00</b>
70	16IR A60	60° IR	16	3,65	9,5	3,95	M16	344 1727 <b>45,00</b>

## OPTIMUM® Three-jaw lathe chuck centrically clamping

- Lathe chuck made of cast

- With cylindrical centre mount according to DIN 6350

- Including chuck key

- True running accuracy of better than 0.05 mm

- Flange for lathe chucks required

<b>Ø 80 mm</b>	344 0287	<b>85,00</b>
Non-rigid block jaw kit	344 2902	<b>55,00</b>
<b>Ø 100 mm</b>	344 2710	<b>105,00</b>
Non-rigid block jaw kit	344 2904	<b>65,00</b>
<b>Ø 125 mm</b>	344 2712	<b>115,00</b>
Non-rigid block jaw kit	344 2906	<b>75,00</b>
<b>Ø 160 mm</b>	344 2716	<b>169,00</b>
Non-rigid block jaw kit	344 2908	<b>85,00</b>

## OPTIMUM® Three-jaw lathe chuck Camlock centrically clamping

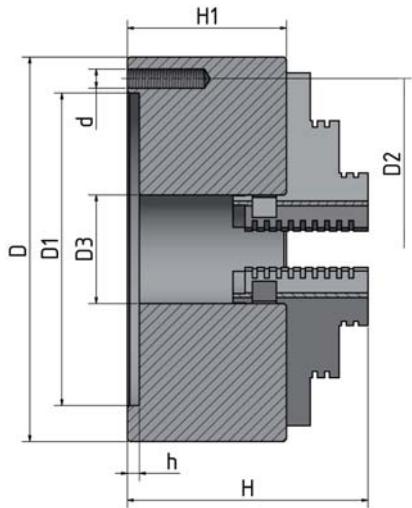
- Lathe chuck made of cast

- Camlock direct tool holder

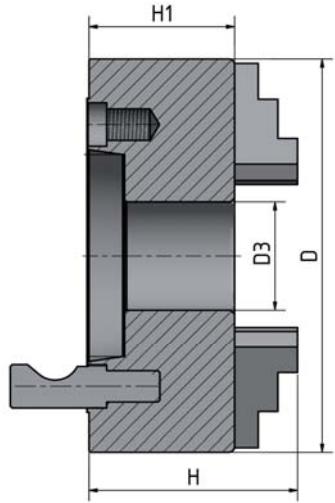
- Including chuck key

- True running accuracy of better than 0.05 mm

<b>Ø 160 mm Camlock No. 4</b>	344 2760	<b>215,00</b>
Non-rigid block jaw kit	344 2908	<b>85,00</b>
<b>Ø 200 mm Camlock No. 4</b>	344 2762	<b>275,00</b>
Non-rigid block jaw kit	344 2910	<b>109,00</b>
<b>Ø 200 mm Camlock No. 6</b>	344 2763	<b>285,00</b>
Non-rigid block jaw kit	344 2910	<b>109,00</b>
<b>Ø 250 mm Camlock No. 6</b>	344 2765	<b>365,00</b>
Non-rigid block jaw kit	344 2912	<b>129,00</b>
<b>Ø 315 mm Camlock No. 8</b>	344 2768	<b>769,00</b>
Non-rigid block jaw kit	344 2916	<b>239,00</b>



Lathe chuck with cylindric tool holder



Camlock lathe chuck



Non-rigid block jaw kit

Chuck	Camlock	Item No	D	D1	D2	D3	d	H	H1	h	Speed
Three-jaw chuck centrically clamping											
Ø 80 mm	-	344 0287	80	55	66	16	M6	66	50	3.5	4'000
Ø 100 mm	-	344 2710	100	72	84	22	M8	74.5	55	3.5	3'500
Ø 125 mm	-	344 2712	125	95	108	30	M8	84	58	4	3'000
Ø 160 mm	-	344 2716	160	130	142	40	M8	95	65	5	2'150

Chuck	Camlock	Item No	D	D3	H	H1	Speed
Three-jaw chuck Camlock centrically clamping							
Ø 160 mm	No. 4	344 2760	160	40	100	70	2'150
Ø 200 mm	No. 4	344 2762	200	50	120	86	2'000
Ø 200 mm	No. 6	344 2763	200	50	128	86	2'000
Ø 250 mm	No. 6	344 2765	250	70	140	98	1'600
Ø 315 mm	No. 8	344 2768	315	105	180	103.5	1'200

## OPTIMUM® Four-jaw lathe chuck individually and centrically clamping

### • Lathe chuck made of cast

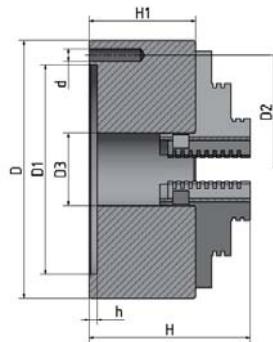
- With cylindrical centre mount according to DIN 6350
- Including chuck key
- True running accuracy of better than 0.05 mm
- Flange for lathe chucks required

centric clamping

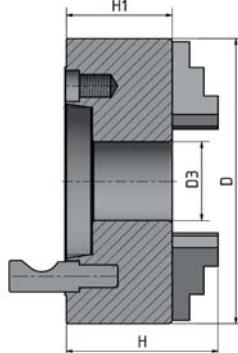
<b>ø 80 mm</b>	344 2808	<b>115,00</b>
Non-rigid block jaw kit 1 piece	344 2920	<b>75,00</b>
<b>ø 100 mm</b>	344 2810	<b>135,00</b>
Non-rigid block jaw kit 1 piece	344 2922	<b>85,00</b>
<b>ø 125 mm</b>	344 2812	<b>145,00</b>
Non-rigid block jaw kit 1 piece	344 2924	<b>95,00</b>
<b>ø 160 mm</b>	344 2816	<b>205,00</b>
Non-rigid block jaw kit 1 piece	344 2926	<b>109,00</b>

## Four jaw lathe chuck individually clamping

<b>ø 80 mm</b>	344 0286	<b>95,00</b>
<b>ø 100 mm</b>	344 2872	<b>100,00</b>
<b>ø 125 mm</b>	344 2874	<b>115,00</b>



Lathe chuck with cylindric tool holder



Camlock lathe chuck

## OPTIMUM® Four-jaw lathe chuck Camlock centrically clamping

### • Lathe chuck made of cast

- Camlock direct tool holder
- Including chuck key
- True running accuracy of better than 0.05 mm

<b>ø 160 mm Camlock No. 4</b>	344 2840	<b>255,00</b>
Non-rigid block jaw kit 1 piece	344 2926	<b>109,00</b>
<b>ø 200 mm Camlock No. 4</b>	344 2844	<b>339,00</b>
Non-rigid block jaw kit 1 piece	344 2928	<b>149,00</b>
<b>ø 200 mm Camlock No. 6</b>	344 2846	<b>349,00</b>
Non-rigid block jaw kit 1 piece	344 2928	<b>149,00</b>
<b>ø 250 mm Camlock No. 6</b>	344 2850	<b>429,00</b>
Non-rigid block jaw kit 1 piece	344 2930	<b>179,00</b>
<b>ø 315 mm Camlock ASA D1 - 8"</b>	344 2854	<b>769,00</b>
Non-rigid block jaw kit 1 piece	344 2932	<b>349,00</b>

## OPTIMUM® Four-jaw lathe chuck Camlock individually clamping

<b>ø 250 mm Camlock No. 6</b>	344 2884	<b>265,00</b>
<b>ø 315 mm Camlock ASA D1 - 8"</b>	344 2888	<b>389,00</b>
<b>ø 400 mm Camlock ASA D1 - 8"</b>	344 2890	<b>539,00</b>



Non-rigid block jaw kit

Chuck	Camlock	Item No	D	D1	D2	D3	d	H	H1	h	Speed
Four-jaw chuck centrically clamping											
<b>ø 80 mm</b>	-	344 2808	80	55	66	16	M6	66	50	3.5	4'300
<b>ø 100 mm</b>	-	344 2810	100	72	84	22	M8	74.5	55	3.5	3'400
<b>ø 125 mm</b>	-	344 2812	125	95	108	30	M8	84	58	4	2'750
<b>ø 160 mm</b>	-	344 2816	160	130	142	40	M8	95	65	5	2'150

Four-jaw chuck individually clamping											
Chuck	Camlock	Item No	D	D3	H	H1	Speed				
<b>ø 80 mm</b>	-	344 0286	80	55	66	22	M6	56	42	3.5	
<b>ø 100 mm</b>	-	344 2872	100	72	84	25	M8	73	54	3.5	
<b>ø 125 mm</b>	-	344 2874	125	95	108	30	M8	78	58	4.5	

Chuck	Camlock	Item No	D	D3	H	H1	Speed
Four-jaw chuck Camlock centrically clamping							
<b>ø 160 mm</b>	<b>No. 4</b>	344 2840	160	40	95	70	2'150
<b>ø 200 mm</b>	<b>No. 4</b>	344 2844	200	50	109	86	1'700
<b>ø 200 mm</b>	<b>No. 6</b>	344 2846	200	50	109	86	1'700
<b>ø 250 mm</b>	<b>No. 6</b>	344 2850	250	70	120	95	1'375
<b>ø 315 mm</b>	<b>No. 8</b>	344 2854	315	100	142.5	106	1'200
Four-jaw chuck Camlock individually clamping							
<b>ø 200 mm</b>	<b>No. 4</b>	344 2878	200	50	110	75	
<b>ø 250 mm</b>	<b>No. 6</b>	344 2884	250	65	117.5	82	
<b>ø 315 mm</b>	<b>No. 8</b>	344 2888	315	95	134	90	
<b>ø 400 mm</b>	<b>No. 8</b>	344 2890	400	125	143	95	

## High precision three-jaw lathe chuck

### OPTIMUM® Three-jaw lathe chuck centrically clamping

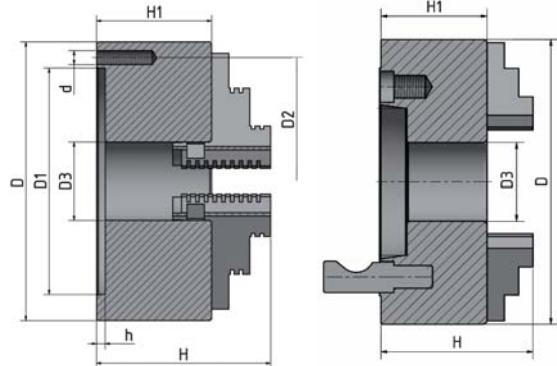
- Lathe chuck made of cast
- With cylindrical centre mount according to DIN 6350
- Including chuck key
- Highest true running accuracy same/better than DIN 6386
- Flange for lathe chucks required

<b>CI3P ø 125 mm</b>	344 2020	<b>259,00</b>
<b>Non-rigid top jaw</b>	344 2522	<b>50,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2521	<b>75,00</b>
<b>CI3P ø 160 mm</b>	344 2025	<b>315,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2541	<b>95,00</b>

### OPTIMUM® Three-jaw lathe chuck centrically clamping

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

<b>CS3C ø 125 mm</b>	344 2520	<b>439,00</b>
<b>Non-rigid top jaw</b>	344 2522	<b>50,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2521	<b>75,00</b>



Lathe chuck with cylindric tool holder

Camlock lathe chuck

Chuck	Camlock	Item No	D	D1	D2	D3	d	H	H1	h	Speed
Three-jaw chuck centrically clamping											
<b>CI3P ø 125 mm</b>	-	344 2020	125	95	108	32	3 x M8	76	56	4	3'200
<b>CI3P ø 160 mm</b>	-	344 2025	160	125	140	42	6 x M10	96.5	64.5	4	3'000
<b>CS3C ø 125 mm</b>	-	344 2520	125	95	108	32	3 x M8	76	56	4	4'800

Chuck	Camlock	Item No	D	D3	H	H1	Speed
Three-jaw chuck Camlock centrically clamping							
<b>CI3P ø 160 mm</b>	No. 4	344 2040	160	42	125	81.5	3'000
<b>CI3P ø 200 mm</b>	No. 4	344 2045	200	55	138	91	2'500
<b>CI3P ø 200 mm</b>	No. 6	344 2050	200	55	138	91	2'500
<b>CI3P ø 250 mm</b>	No. 6	344 2055	250	76	157.5	103.5	2'000
<b>CI3P ø 315 mm</b>	No. 8	344 2065	315	105	181	117.7	1'500
<b>CS3C ø 160 mm</b>	No. 4	344 2540	160	42	111.5	68	4'500
<b>CS3C ø 200 mm</b>	No. 4	344 2545	200	55	125	78	4'000
<b>CS3C ø 200 mm</b>	No. 6	344 2550	200	55	125	78	4'000
<b>CS3C ø 250 mm</b>	No. 6	344 2555	250	76	143	89	3'500
<b>CS3C ø 250 mm</b>	No. 8	344 2560	250	76	143	89	3'500
<b>CS3C ø 315 mm</b>	No. 8	344 2565	315	103	159.5	96.2	2'800
<b>CS3C ø 400 mm</b>	No. 8	344 2575	400	136	181	108	2'000



Non-rigid block jaw kit

## High precision CAMLOCK three-jaw lathe chuck

### OPTIMUM® Three-jaw lathe chuck Camlock centrically clamping

- Lathe chuck made of cast

• Camlock direct tool holder DIN 55029

• Including chuck key

<b>CI3P ø 160 mm Camlock No. 4</b>	344 2040	<b>359,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2541	<b>95,00</b>
<b>CI3P ø 200 mm Camlock No. 4</b>	344 2045	<b>479,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2551	<b>129,00</b>
<b>CI3P ø 200 mm Camlock No. 6</b>	344 2050	<b>489,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2551	<b>129,00</b>
<b>CI3P ø 250 mm Camlock No. 6</b>	344 2055	<b>619,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2561	<b>179,00</b>
<b>CI3P ø 315 mm Camlock No. 8</b>	344 2065	<b>889,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2566	<b>249,00</b>

### OPTIMUM® Three-jaw lathe chuck Camlock centrically clamping

- Lathe chuck made of steel

• Camlock direct tool holder DIN 55029

• Including chuck key

• Highest true running accuracy

<b>CS3C ø 160 mm Camlock No. 4</b>	344 2540	<b>589,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2542	<b>60,00</b>
<b>CS3C ø 200 mm Camlock No. 4</b>	344 2545	<b>769,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2552	<b>75,00</b>
<b>CS3C ø 200 mm Camlock No. 6</b>	344 2550	<b>769,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2552	<b>75,00</b>
<b>CS3C ø 250 mm Camlock No. 6</b>	344 2555	<b>1.030,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2562	<b>105,00</b>
<b>CS3C ø 250 mm Camlock ASA D1 - 8"</b>	344 2560	<b>1.030,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2562	<b>105,00</b>
<b>CS3C ø 315 mm Camlock No. 8</b>	344 2565	<b>1.590,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2567	<b>149,00</b>
<b>CS3C ø 400 mm Camlock No. 8</b>	344 2575	<b>2.270,00</b>
<b>Non-rigid top jaw</b>	344 2577	<b>229,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2576	<b>369,00</b>

## High precision four-jaw lathe chuck



**PREMIUM**  
**DIN 6386 and higher**

### OPTIMUM® Four-jaw lathe chuck centrically clamping

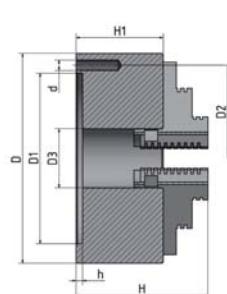
- Lathe chuck made of cast
- With cylindrical centre mount according to DIN 6350
- Including chuck key
- Highest true running accuracy same/better than DIN 6386
- Flange for lathe chucks required

<b>CI4P ø 125 mm</b>	344 2120	<b>319,00</b>
<b>Non-rigid top jaw</b>	344 2622	<b>65,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2621	<b>109,00</b>
<b>CI4P ø 160 mm</b>	344 2125	<b>369,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2641	<b>129,00</b>

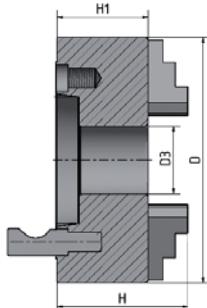
### OPTIMUM® Four-jaw lathe chuck centrically clamping

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

<b>CS4C ø 125 mm</b>	344 2620	<b>529,00</b>
<b>Non-rigid top jaw</b>	344 2622	<b>65,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2621	<b>109,00</b>



Lathe chuck with cylindric tool holder



Camlock lathe chuck

## High precision CAMLOCK four-jaw lathe chuck

### OPTIMUM® Four-jaw lathe chuck Camlock centrically clamping

- Lathe chuck made of cast
- Camlock direct tool holder
- Including chuck key

<b>CI4P ø 160 mm Camlock No. 4</b>	344 2140	<b>489,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2641	<b>129,00</b>
<b>CI4P ø 200 mm Camlock No. 4</b>	344 2145	<b>589,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2651	<b>165,00</b>
<b>CI4P ø 200 mm Camlock No. 6</b>	344 2150	<b>589,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2651	<b>165,00</b>
<b>CI4P ø 250 mm Camlock No. 6</b>	344 2155	<b>810,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2661	<b>229,00</b>
<b>CI4P ø 315 mm Camlock No. 8</b>	344 2165	<b>1.090,00</b>
<b>Non-rigid block jaw kit 1 piece</b>	344 2666	<b>329,00</b>

### OPTIMUM® Four-jaw lathe chuck Camlock centrically clamping

- Lathe chuck made of steel
- Camlock direct tool holder
- Including chuck key
- Highest true running accuracy

<b>CS4C ø 160 mm Camlock No. 4</b>	344 2640	<b>799,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2642	<b>85,00</b>
<b>CS4C ø 200 mm Camlock No. 4</b>	344 2645	<b>1.090,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2652	<b>105,00</b>
<b>CS4C ø 200 mm Camlock No. 6</b>	344 2650	<b>1.090,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2652	<b>105,00</b>
<b>CS4C ø 250 mm Camlock No. 6</b>	344 2655	<b>1.429,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2662	<b>139,00</b>
<b>CS4C ø 250 mm Camlock ASA D1 - 8"</b>	344 2660	<b>1.429,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2662	<b>139,00</b>
<b>CS4C ø 315 mm Camlock No. 8</b>	344 2665	<b>2.170,00</b>
<b>Non-rigid block jaw kit v</b>	344 2667	<b>199,00</b>
<b>CS4C ø 400 mm Camlock No. 8</b>	344 2675	<b>3.150,00</b>
<b>Non-rigid block jaw kit 1 piece (mounting jaw)</b>	344 2676	<b>519,00</b>
<b>Non-rigid top jaw</b>	344 2677	<b>309,00</b>

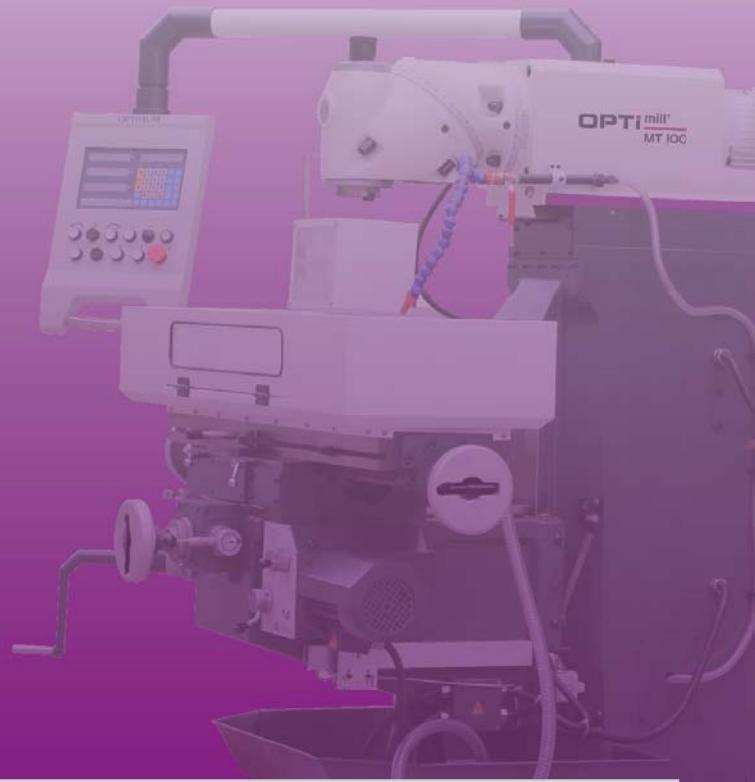
Chuck	Camlock	Item No	D	D1	D2	D3	d	H	H1	h	Speed
Four-jaw chuck centrically clamping											
<b>CI4P ø 125 mm</b>	-	344 2120	125	95	108	32	3 x M8	76	56	4	3'200
<b>CI4P ø 160 mm</b>	-	344 2125	160	125	140	42	6 x M10	64.5	64.5	4	3'000
<b>CS4C ø 125 mm</b>	-	344 2620	125	95	108	32	3 x M8	56	56	4	4'800

Chuck	Camlock	Item No	D	D3	H	H1	Speed
Four-jaw chuck Camlock centrically clamping							
<b>CI4P ø 160 mm</b>	No. 4	344 2140	160	42	125	81.5	3'000
<b>CI4P ø 200 mm</b>	No. 4	344 2145	200	55	138	91	2'500
<b>CI4P ø 200 mm</b>	No. 6	344 2150	200	55	138	91	2'500
<b>CI4P ø 250 mm</b>	No. 6	344 2155	250	76	157.5	103.5	2'000
<b>CI4P ø 315 mm</b>	No. 8	344 2165	315	105	181	117.7	1'500
<b>CS4C ø 160 mm</b>	No. 4	344 2640	160	42	111.5	68	4'500
<b>CS4C ø 200 mm</b>	No. 4	344 2645	200	55	125	78	4'000
<b>CS4C ø 200 mm</b>	No. 6	344 2650	200	55	125	78	4'000
<b>CS4C ø 250 mm</b>	No. 6	344 2655	250	76	143	89	3'500
<b>CS4C ø 250 mm</b>	No. 8	344 2660	250	76	143	89	3'500
<b>CS4C ø 315 mm</b>	No. 8	344 2665	315	103	159.5	96.2	2'800
<b>CS4C ø 400 mm</b>	No. 8	344 2675	400	136	181	108	2'000



Non-rigid block jaw kit

# OPTI mill®



	Motor power kW	Drilling capacity in steel max. Ø in mm	Spindle seat	Speed ranges	Travel X axis	Travel Y axis	Travel Z axis	Digital speed display series	DPA/MPA-version series	Coolant equipment (Series)	Machine lamp (Series)	230V version available	400V version available
<b>BF 16 Vario</b>	0,5	Ø 16	MT 2/M 10	100-3000	220	manual	160	manual	210	manual		●	
<b>BF 20 Vario</b>	0,85	Ø 16	MT 2/M 10	90 - 3000	280	manual	175	manual	280	manual	●	●	
<b>BF 20L Vario</b>	0,85	Ø 16	MT 2/M 10	90 - 3000	480	manual	175	manual	280	manual	●	●	
<b>MB 4</b>	1,1 / 1,5	Ø 32	MT 4	95 - 3.200	450	manual	200	manual	430	manual		●	
<b>MB 4P</b>	1,1 / 1,5	Ø 32	MT 4	95 - 3.200	560	automatic	230	manual	350	manual		●	
<b>MH28 V</b>	1,1	Ø 20	MT 3 / M12	100 - 2500	440	manual	190	manual	380	manual	●	●	●
<b>F 40 E</b>	1,1 / 1,5	Ø 32	MT 3	390-3000	450	manual	200	manual	430	manual	●		●
<b>BF 30 Vario</b>	2,2	Ø 24	MT 3 or ISO 30	80-3100	450	manual	200	manual	430	manual	●		●
<b>BF 46 TC</b>	2,2	Ø 28	ISO 40	115-3.100	500	automatic	250	manual	541	manual	●		●
<b>BF 46 Vario</b>	2,2	Ø 28	ISO 40	115-3.100	500	manual	250	manual	541	manual	●		●
<b>MF 1 Vario</b>	2,2	Ø 30	ISO 40	50 - 6.300	570	manual	210	manual	365	manual	●	●	●
<b>MF 2 Vario</b>	1,5	Ø 24	ISO 40	10 - 5.100	800	automatic	400	manual	406	manual	●	●	●
<b>MF 4 Vario</b>	3,75	Ø 32	ISO 40	9 - 6.750	800	automatic	305	manual	406	automatic	●	●	●
<b>MT 50</b>	4,5	Ø 30	ISO 40	115 - 1.750 vertical 58 - 1.355 horizontal	380	automatic	200	automatic	340	manual	●	●	●
<b>MT 100</b>	3,6	Ø 20	ISO 40	40 - 1.600	600	automatic	270	automatic	380	automatic	●	●	●
<b>MT 200</b>	9,2	Ø 30	ISO 50	60 - 1.750 vertical 58 - 1.800 horizontal	1.290	automatic	280	automatic	400	automatic	●	●	●
<b>MT 8</b>	10	Ø 30	ISO 40 vertical ISO 50 horizontal	60 - 4.660 58 - 1.800	980	automatic	300	automatic	450	automatic	●	●	●
<b>MX 2</b>	4	Ø 32	ISO 40	40 - 1.600	405	automatic	200	automatic	390 mm	automatic	●	●	●
<b>MX 3</b>	5	Ø 32	ISO 40	40 - 2.000	400	automatic	300	automatic	390 mm	automatic	●	●	●
<b>MX 4</b>	6	Ø 32	ISO 40	40 - 2.000	500	automatic	400	automatic	400	automatic	●	●	●

# Drilling 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)
- 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

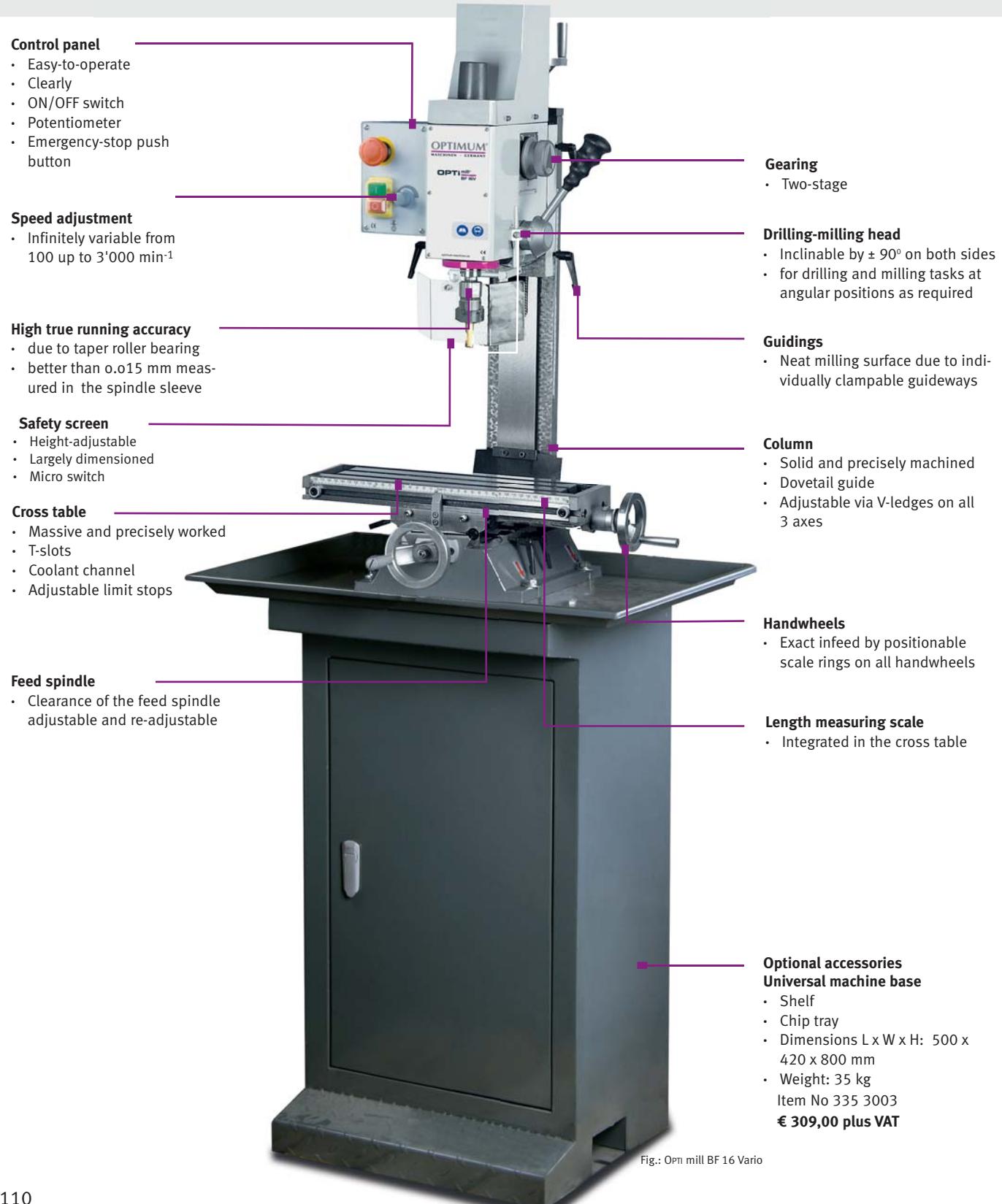


Fig.: OPTI mill BF 16 Vario

## Technical data, accessories and dimensions

Type	<b>BF 16 Vario</b>
Item No	333 8116
€ plus VAT	<b>1.079,00</b>

<b>Machine datas</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor	500 W
<b>Drilling-milling capacity</b>	
Drilling capacity in steel (S235JR)	Ø 16 mm
Continuous drilling capacity in steel (S235JR)	Ø 12 mm
<b>Spindle seat</b>	
Spindle seat	MT 2/M 10
Milling head dimension max.	Ø 63 mm
End mill dimension max.	Ø 20 mm
Spindle stroke	50 mm
Throat	175 mm
<b>Drilling-milling head</b>	
Swivel range	± 90°
Gear stage slow	100 - 1'500 min <sup>-1</sup>
Gear stage rapid	200 - 3'000 min <sup>-1</sup>
<b>Cross table</b>	
Table length	400 mm
Table width	120 mm
T-slot size / distance	10 mm/35 mm
<b>Travels</b>	
Travel X axis	220 mm
Travel Y axis	160 mm
Travel Z axis	210 mm
<b>Dimensions</b>	
Length	505 mm
Width	465 mm
Height max.	795 mm
Total weight	60 kg

<b>Standard equipment</b>	Taper mandrel MT2/B16 Operating tool	
<b>Accessories</b>	<b>Item No</b>	<b>€ plus VAT</b>
Collet kit MT2/M10, 5-pcs	335 1980	<b>95,00</b>
Collet kit 15-pcs ER 25/DIN ISO 15488	344 1109	<b>159,00</b>
Milling cutter kit coated with TiN, 12-pcs	335 2113	<b>65,00</b>
Quick-action drill chuck (0-13 mm) B16	305 0623	<b>40,00</b>
Clamping tool kit SPW 8	335 2015	<b>65,00</b>
Three-axis vice MV3-75	335 4175	<b>219,00</b>
Two-axis vice ZAS 50	335 4170	<b>125,00</b>
Add-on adapter "high speed"	335 6567	<b>109,00</b>

- To mount a high speed motor (up to 26.000 min<sup>-1</sup>)
- L x W x H: 120 x 195 x 185 mm
- Seat: Ø 43 mm (without motor)

<b>Add-on adapter "Lathe"</b>	335 6568	<b>110,00</b>
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- To mount columns and milling head onto the machine bed of the lathes: TU 2506 / TU 2807 / TU 2506



Fig. Mounting example



Fig. Add-on adapter high speed



Fig. Add-on adapter lathe

<b>Digital magnetic measuring system MPA 4-S</b>	338 3923	<b>789,00</b>
<b>Workshop assembly MPA-4</b>	900 0420	<b>420,00</b>

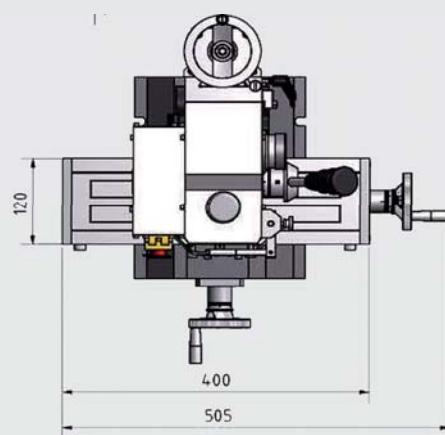
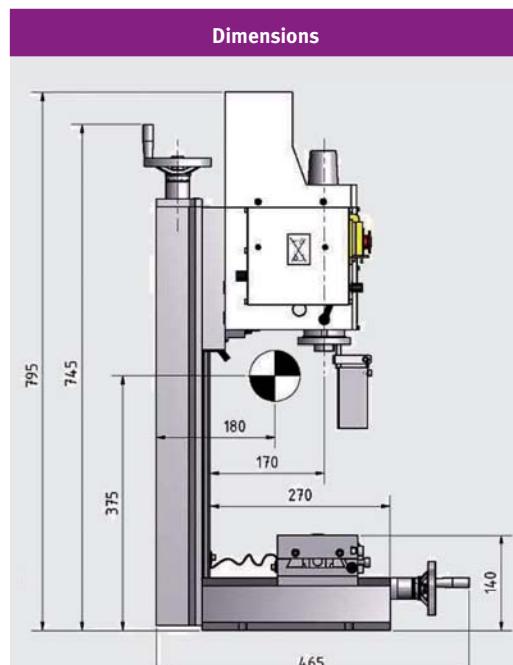


Fig.: Mounting example Opti mill BF20 Vario combined with TU 2807V by means of an add-on adapter

## Stable drilling milling machines with powerful, electronically infinitely variable drive and digital speed display. OPTI mill BF20L Vario with longer cross table

### 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 readjustable V-ledges without clearance
- EMC filter (to protect sensitive electronics for override mains-borne signals)
- 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

- Bellows as guide protection
- Right-/left handed 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



#### Motor

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

#### Optional accessories MPA-4

Item No 338 3922  
€ 789,00 plus VAT



#### Control electronics

- Integrated relay control
  - Optional CNC Controller can switch the machine on and off
- „CNC Controller III / CNC Controller VI“ on page 204

#### Speeds

- Large speed adjustable speed range from  $90 - 3'000 \text{ min}^{-1}$
- 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 slewed

#### Limit stops

- Mechanic
- Adjustable

#### Length measuring scale

- Embedded in the cross table
- Well readable

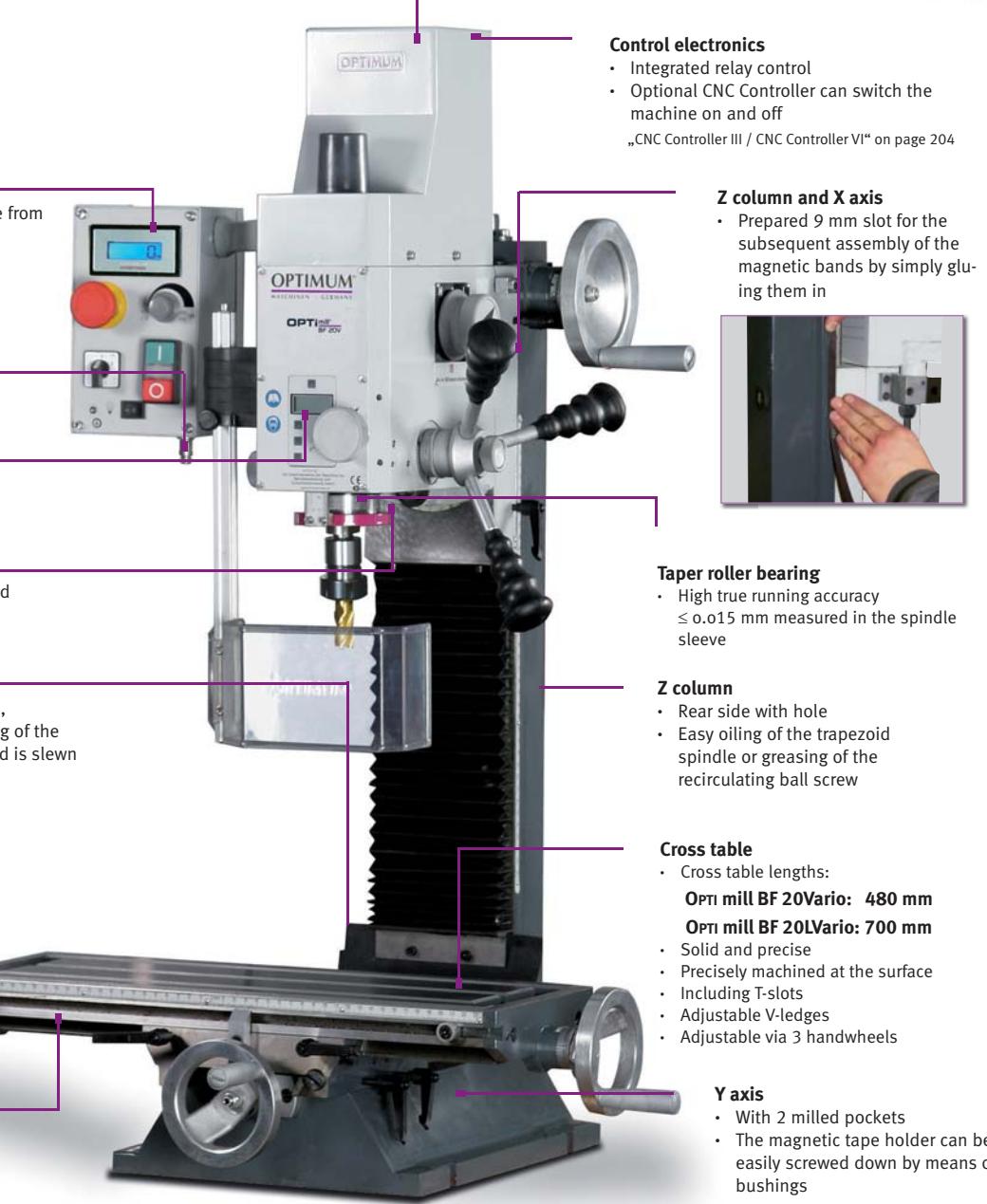


Fig.: OPTI mill BF 20Vario with optional accessory

## Technical data, accessories and dimensions

Type	BF 20Vario	BF 20LVario
Item No	333 8120	333 8122
€ plus VAT	<b>1.450,00</b>	<b>1.550,00</b>
<b>Machine data</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor	850 W	
<b>Drilling-milling capacity</b>		
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	
<b>Spindle seat</b>		
Spindle stroke	50 mm	
Spindle seat	MT 2/M 10	
Throat	185 mm	
<b>Drilling-milling head</b>		
Swivel range	± 90°	
Spindle speeds	90 - 1'480 min <sup>-1</sup> / 150 - 3'000 min <sup>-1</sup>	
Gear stages Vario	2 steps, electrically adjustable speed	
<b>Cross table</b>		
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	
<b>Travels</b>		
Travel X axis	280 mm	480 mm
Travel Y axis	175 mm	
Travel Z axis	280 mm	
<b>Dimensions</b>		
Length	745 mm	950 mm
Width x Height max.	565 x 935 mm	
Total weight	103 kg	115 kg
<b>Standard equipment</b>		
	Taper mandrel MT 2, B16 M10 Draw-in rod M 10 Operating tool	

Accessories	Item No	€ plus VAT
Copy and planing cutter head MT 2	335 0212	<b>205,00</b>
Clamping tool kit SPW 10	335 2016	<b>75,00</b>
Collet kit MT 2/M10/ ER 25/DIN ISO 15488	335 1980	<b>95,00</b>

<b>BF 20AV</b>	<b>NEW</b>	333 8129	<b>990,00</b>
• Milling head and column of the drilling-milling machine BF 20 Vario to be mounted on the lathes TU 2506 and TU 2807			
• Length x Width x Height max. 470 x 425 x 912 mm			
• Total weight 80 kg			

<b>Add-on adapter "high speed"</b>	335 6572	<b>109,00</b>
• To mount a high speed motor (up to 26.000 min <sup>-1</sup> )		
• L x W x H: 120 x 195 x 185 mm, seat: Ø 43 mm		



<b>Add-on adapter "Lathe"</b>	335 6571	<b>109,00</b>
• To mount columns/milling head onto machine bed of the lathes: TU2404 / TU 2506 / TU 2807		



<b>Universal machine base</b>	335 3003	<b>309,00</b>
• Shelf and chip tray • L x W x H: 500 x 420 x 800 mm . Weight: 35 kg		

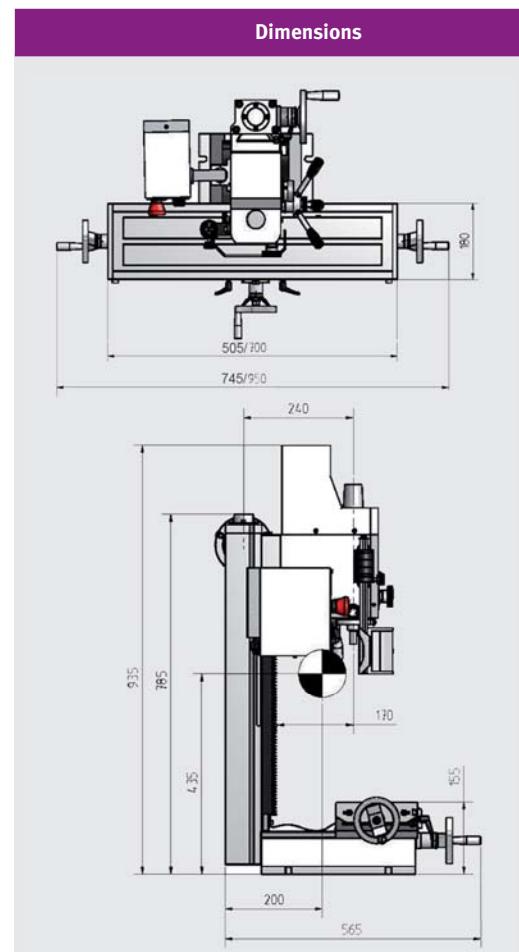


Fig.:  
**CNC add-on kit**  
on page 208



Fig.: Mounting example Opti mill BF20 Vario combined with TU 2807V by means of an add-on adapter

„Accessories for milling machines“ on page 139

## Drilling milling machines with powerful, electronically infinitely variable drive and digital speed display

### Convincing arguments: quality, efficiency and price

- Feed spindles adjustable by readjustable spindle nuts
- 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 electronic of 24 volts type
- Drilling-milling head slewable by  $\pm 90^\circ$
- Right-/left handed rotation

- Height-adjustable screening grid with micro switch
- Stable dovetail guiding precision ground and scraped with readjustable V-ledges without clearance

### Motor

- Two-stage gear ratio for a powerful transmission of the motor power (1.1 kW)
- Powerful DC motor with permanent current control

### Speeds

- Large speed adjustable speed range from  $100 - 2'500 \text{ min}^{-1}$
- Easy to read digital speed display
- Right-/left handed rotation

### Machine lamp

- Integrated in the drilling-milling head
- Halogen pin base lamp

### Limit stops

- Mechanic
- Adjustable

### Length measuring scale

- Embedded in the cross table
- Well readable

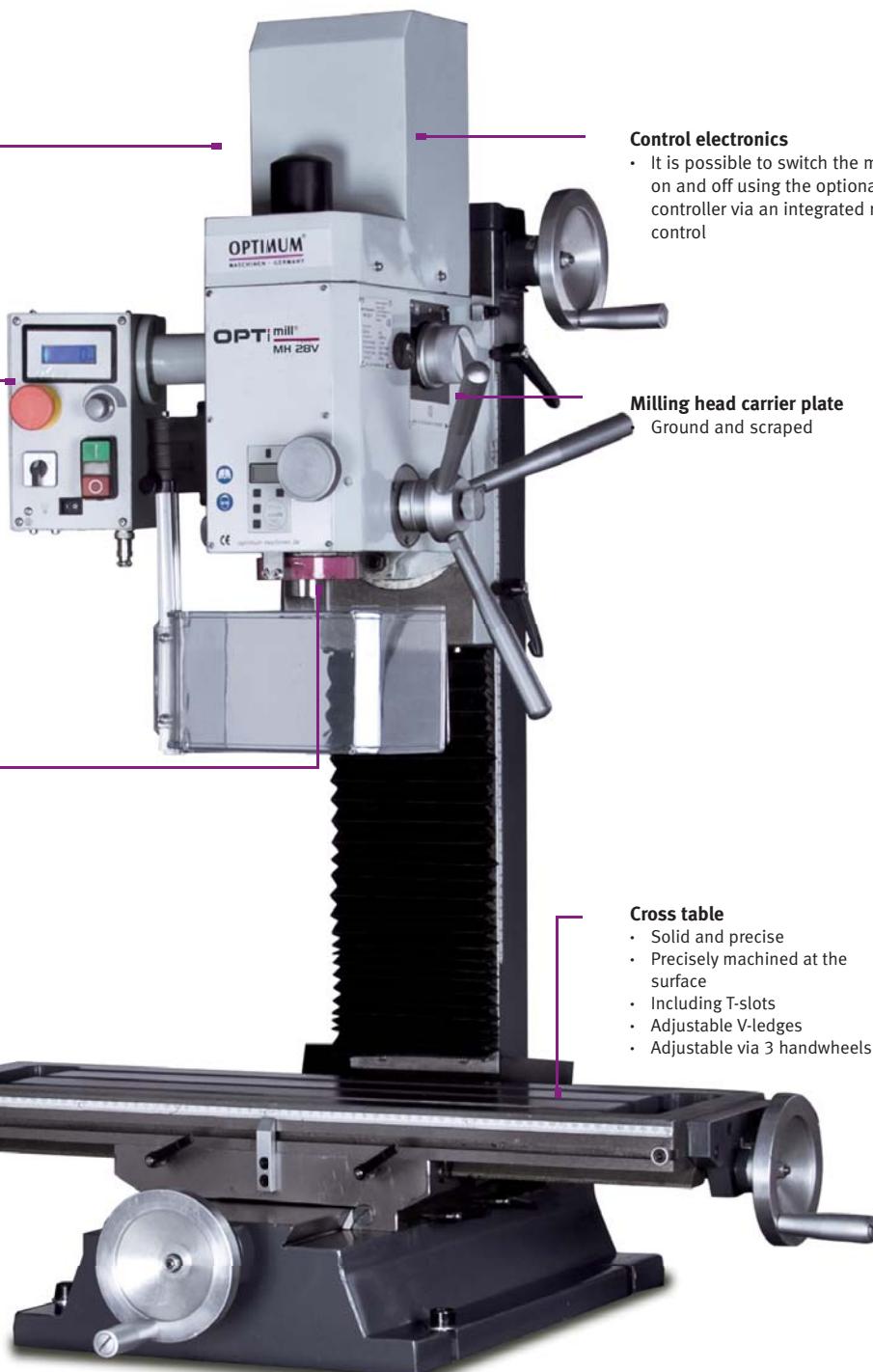


Fig.: Opti mill MH 28 V

## Technical data and accessories

### Convincing arguments ...



#### Z column and X axis

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



#### Rear side of the control panel

- Main switch ON/OFF
- Micro-fuses



#### Spindle stroke display

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

**Optional accessories**  
**MPA-4**  
Item No 338 3922  
€ 789,00 plus VAT



Type	<b>MH 28V</b>
Item No	333 8130
€ plus VAT	<b>2.190,00</b>
<b>Machine datas</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor	1.1 kW
<b>Drilling-milling capacity</b>	
Drilling capacity in steel (S235JR)	20 mm
Continuous drilling capacity in steel (S235JR)	16 mm
Milling head dimension max.	70 mm
End mill dimension max.	28 mm
<b>Spindle seat</b>	
Spindle stroke	70 mm
Spindle seat	MT 3 / M12
<b>Drilling-milling head</b>	
Swivel range	± 90°
Spindle speeds	100 - 2'500 min. <sup>-1</sup>
<b>Cross table</b>	
Table length	730 mm
Table width	210 mm
T-slot size / distance	14 mm
<b>Travels</b>	
Travel X axis	440 mm
Travel Y axis	190 mm
Travel Z axis	380 mm
<b>Dimensions</b>	
Length x Width x Height max.	870 x 630 x 1'000 mm
Total weight	205 kg



Fig. similar

#### Optional accessories: Steel base frame

- Chip tray
- Dimensions L x W x H: 625 x 415 x 750 mm
- Weight 54 kg
- Item No 335 3006 € 289,00 plus VAT

#### Universal coolant equipment

- Tank size L x W x H: 370 x 245 x 170 mm
- Item No 335 2001 € 199,00 plus VAT

## 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<sup>-1</sup> due to 12 switchable speeds
- Two-stage quality electrical motor
- Right-/left handed rotation
- Gear head slewable by ± 60°
- Adjustable V-ledges
- Drilling depth stop

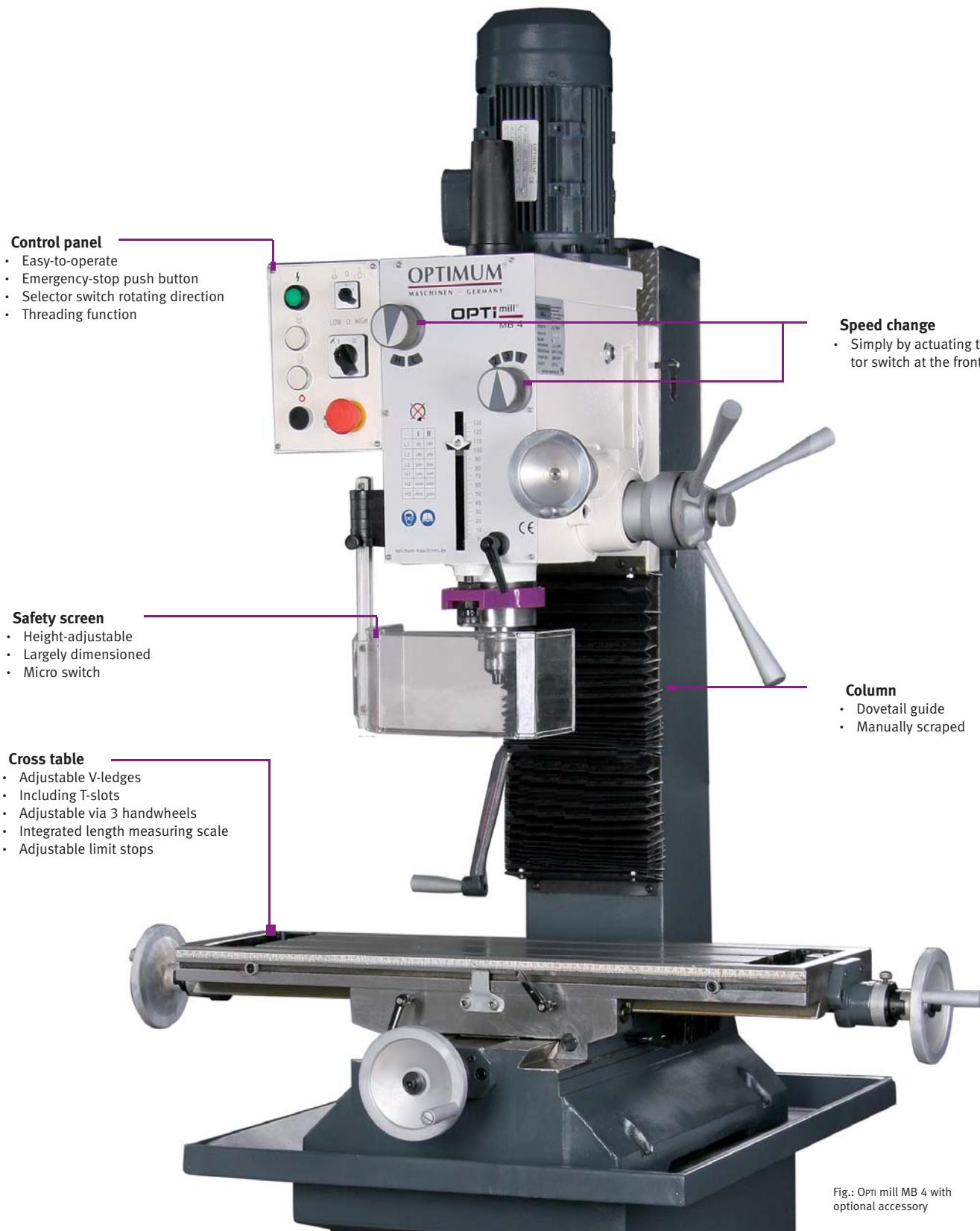


Fig.: Opti mill MB 4 with optional accessory

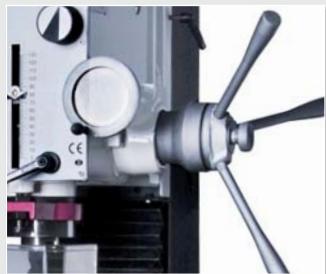
## Technical data and accessories

### 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

Type	MB 4
Item No	333 8450
€ plus VAT	<b>2.250,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor	1.1 / 1.5 kW
<b>Drilling-milling capacity</b>	
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
<b>Spindle seat</b>	
Spindle stroke	120 mm
Spindle seat	MT 4
Throat	275 mm
<b>Drilling-milling head</b>	
Spindle speed	95 - 3'200 min⁻¹
Gear stages	2 x 6 steps
Swivel range	± 45°
<b>Cross table</b>	
Table length	800 mm
Table width	240 mm
T-slot size / distance	14 mm / 63 mm
<b>Travels</b>	
Travel X axis	450 mm
Travel Y axis	200 mm
Travel Z axis	430 mm
<b>Dimensions</b>	
Length	760 mm
Width	850 mm
Height max.	1'150 mm
Total weight	320 kg
<b>Standard equipment</b>	Operating tool

### Accessories

	Item No	€ plus VAT
Hydraulic vice HMS 125	335 5127	<b>519,00</b>
Kit of parallel packing plates, 18-pcs.	335 4000	<b>185,00</b>
Kit of parallel packing plates, 20-pcs.	335 4001	<b>125,00</b>
Height adjustable tailstock RST 1	335 6155	<b>109,00</b>
Horizontal-vertical circular dividing table RT150	335 6150	<b>265,00</b>
End mill kit HSS 20-pcs	338 6200	<b>119,00</b>

- 10 milling cutter DIN 327 D Type with 2 cutting edges
- 10 milling cutter DIN 844 B Type with 4 cutting edges

### Precision vice FMSN 125

Precision vice FMSN 125	335 4120	<b>289,00</b>
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- Pull-down technique with rotary plate
- Hardened and ground jaws



### Clamping tool kit SPW 12

Clamping tool kit SPW 12	335 2017	<b>85,00</b>
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- Metric threads



### Optional accessories:

#### Steel base frame

- Chip channel
- Item No 335 3006 **€ 289,00 plus VAT**

#### Universal coolant equipment

- Tank size L x W x H: 370 x 245 x 170 mm
- Item No 335 2001 **€ 199,00 plus VAT**

„Accessories for milling machines“ on page 139

## Universal drilling-milling machine with position display and machine base made of cast iron

### Convincing arguments: quality, efficiency and price

- Very smooth running due to ground oil-quenched gear wheels
- Large speed range from 95 - 3'200 min<sup>-1</sup> due to 12 switchable speeds
- Two-stage quality electrical motor
- Manual spindle sleeve feed with manual fine feed
- Automatic spindle sleeve feed
- Motor positioning to the Z axis
- Gear head slewable by ± 60°
- Drilling / Thread cutting function

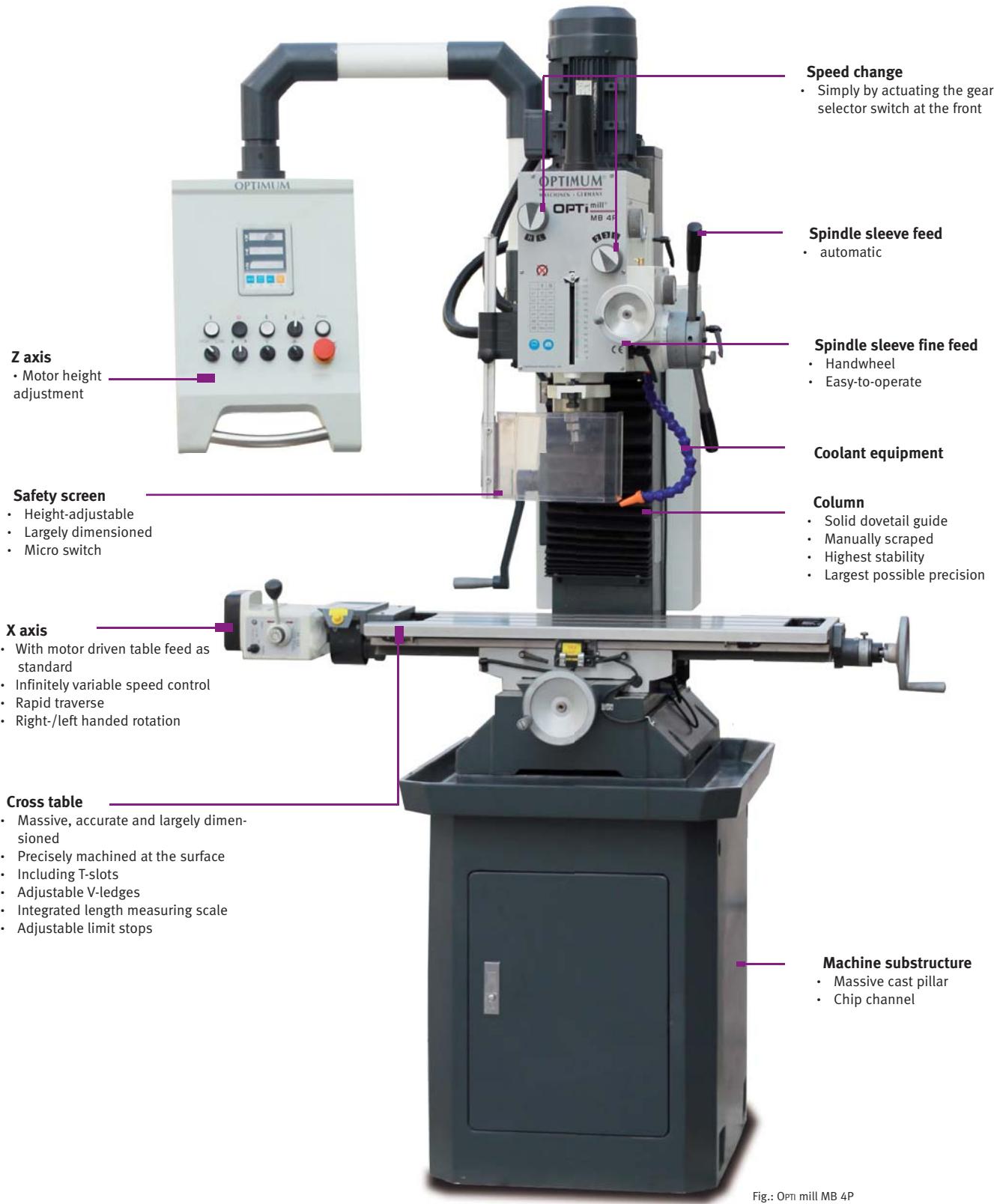


Fig.: OPTI mill MB 4P

## Technical data and accessories

### Convincing arguments ...



#### OPTIMUM Operating panel

- Integrated control panel
- Integrated compact, digital 3-axes position display DRO (X - Y - Z)
- User friendly menu navigation
- Three-row five-segment display

<b>Type</b>	<b>MB 4P</b>
Item No	333 8460
<b>€ plus VAT</b>	<b>5.190,00</b>
<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.1 / 1.5 kW
<b>Drilling-milling capacity</b>	
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
<b>Spindle seat</b>	
Spindle stroke	120 mm
Spindle seat	MT 4
Throat	258 mm
<b>Drilling-milling head</b>	
Spindle speed	95 - 3'200 min⁻¹
Gear stages	2 x 6 steps
Swivel range	± 45°
<b>Cross table</b>	
Table length	800 mm
Table width	240 mm
T-slot size / distance / number	14 mm / 80 mm / 3
Automatic spindle sleeve feed	0,1 / 0,18 / 0,26 mm/U
<b>Travels</b>	
Travel X axis automatic	560 mm
Travel Y axis manual	230 mm
Travel Z axis manual	350 mm
<b>Dimensions</b>	
Length	1'250 mm
Width	945 mm
Height max.	1'920 mm
Total weight	515 kg

### Standard equipment

### Operating tool

Accessories	Item No	€ plus VAT
<b>Hydraulic vice HMS 125</b>	335 5127	<b>519,00</b>
<b>Kit of parallel packing plates, 18-pcs.</b>	335 4000	<b>185,00</b>
<b>Kit of parallel packing plates, 20-pcs.</b>	335 4001	<b>125,00</b>
<b>Height adjustable tailstock RST 1</b>	335 6155	<b>109,00</b>
<b>Horizontal-vertical circular dividing table RT150</b>	335 6150	<b>265,00</b>
<b>Collet chuck kit MT 4/M12</b>	335 2094	<b>329,00</b>
<b>End mill kit HSS 20-pcs</b>	338 6200	<b>119,00</b>

- 10 milling cutter DIN 327 D Type with 2 cutting edges
- 10 milling cutter DIN 844 B Type with 4 cutting edges

**Precision vice FMSN 125** 335 4120 **289,00**

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



<b>Clamping tool kit SPW 12</b>	335 2017	<b>85,00</b>
• Metric threads		

„Accessories for milling machines“ on page 139

## Drilling milling machine manufactured in high quality with gearbox and 12 speeds

### Convincing arguments: quality, efficiency and price

- Heavy, solid cast iron construction
- Adjustable V-ledges
- Very wide speed range from 95 - 3'200 min<sup>-1</sup>
- 12 switchable speeds due to two-stage motor
- Very smooth running due to ground oil-quenched gear wheels
- Right-/left handed rotation
- Gear head slewable by 60°

- Emergency-stop push button
- Solid grey cast iron pedestal provides for stability and absorbs vibrations
- Drilling depth stop

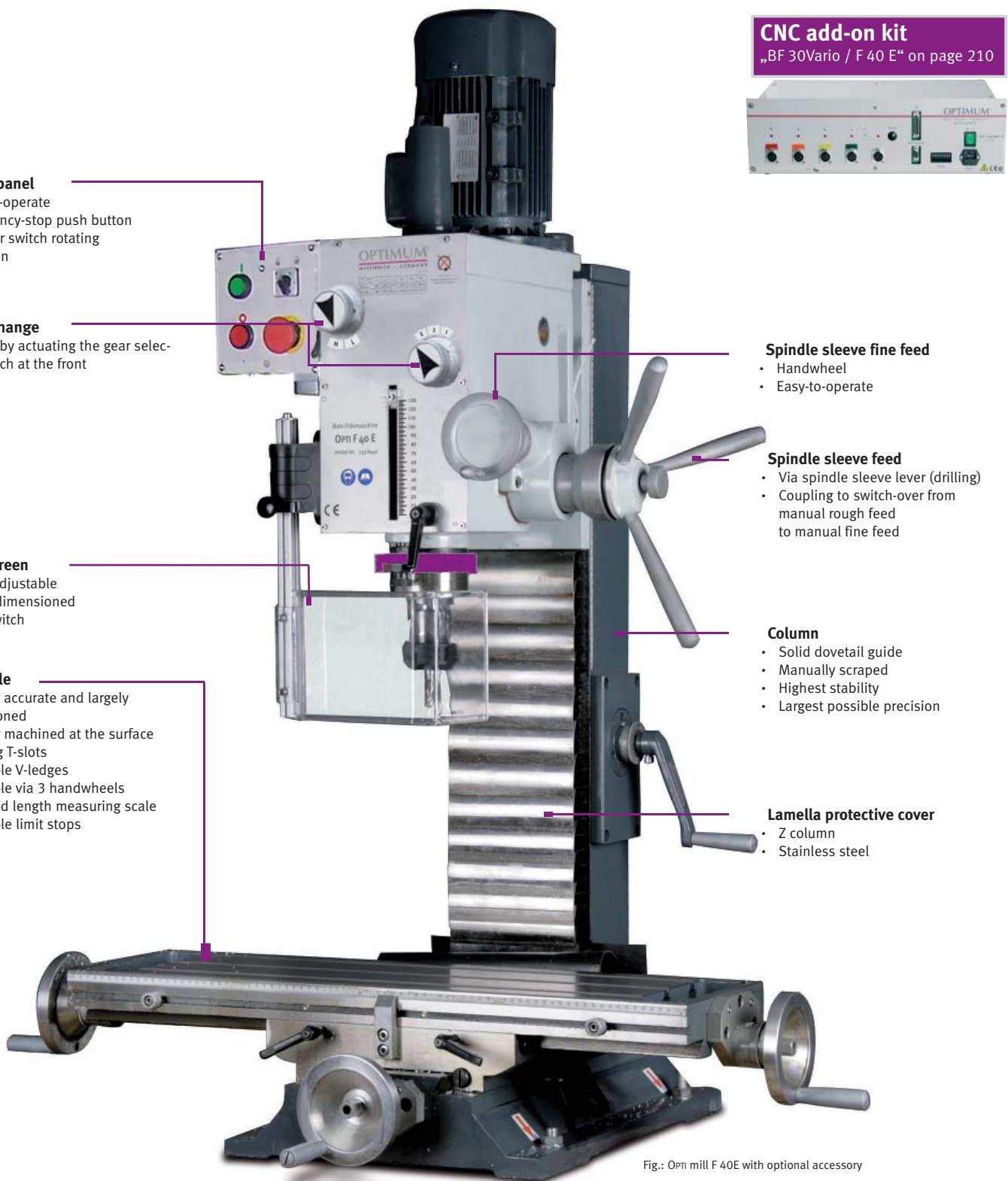


Fig.: Opti mill F 40E with optional accessory

## Technical data, accessories and dimensions

Type	F 40E
Item No	333 8440
€ plus VAT	<b>2.850,00</b>

Machine data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor	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	100 mm
Spindle seat	MT 3
Throat	275 mm
Drilling-milling head	
Spindle speed	95 - 3'200 min <sup>-1</sup>
Gear stages	2 x 6 steps
Swivel range	± 60°
Cross table	
Table length	750 mm
Table width	210 mm
T-slot size /distance	12 mm / 63 mm
Travels	
Travel X axis	450 mm
Travel Y axis	200 mm
Travel Z axis	430 mm
Dimensions	
Length	1'075 mm
Width	795 mm
Height max.	1'365 mm
Total weight	350 kg

Standard equipment	Operating tool
<b>Accessories</b>	
<b>Hydraulic vice HMS 125</b>	335 5127 <b>519,00</b>
<b>Kit of parallel packing plates, 18-pcs.</b>	335 4000 <b>185,00</b>
<b>Kit of parallel packing plates, 20-pcs.</b>	335 4001 <b>125,00</b>
<b>Height adjustable tailstock RST 1</b>	335 6155 <b>109,00</b>
<b>Horizontal-vertical circular dividing table RT150</b>	335 6150 <b>265,00</b>
<b>Collet kit MT 3/M12, 4-16 mm, 6-pcs</b>	335 2014 <b>99,00</b>
<b>End mill kit HSS 20-pcs</b>	338 6200 <b>119,00</b>

- 10 milling cutter DIN 327 D Type with 2 cutting edges
- 10 milling cutter DIN 844 B Type with 4 cutting edges

<b>Precision vice FMSN 125</b>	335 4120	<b>289,00</b>
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- Pull-down technique with rotary plate
- Hardened and ground jaws

<b>Clamping tool kit SPW 10</b>	335 2016	<b>75,00</b>
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- Metric threads

<b>Copy and planing cutter head MT 3</b>	335 0213	<b>225,00</b>
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<b>Universal table feed Opti V99</b>	335 2022	<b>379,00</b>
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- Infinitely variable speed adjustment
- Rapid traverse . Voltage 230 V

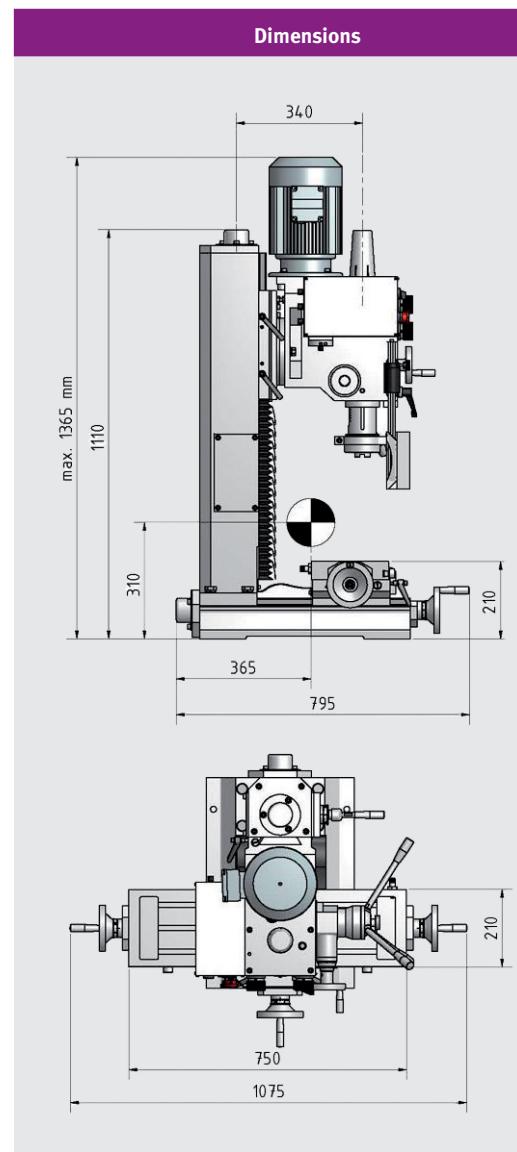


Fig. similar

### Optional accessories:

#### Steel base frame

- Chip tray
- Dimensions L x W x H: 940 x 650 x 815 mm
- Weight 54 kg
- Item No 335 3004 **€ 569,00 plus VAT**



### Universal coolant equipment

- Tank size L x W x H: 370 x 245 x 170 mm
- Item No 335 2001 **€ 199,00 plus VAT**

„Accessories for milling machines“ on page 139

## 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 cross 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

### Powerful Brushless drive

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



### 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 at the surface
- Including T-slots
- Adjustable V-ledges
- Adjustable via 3 handwheels
- Integrated length measuring scale
- Adjustable limit stops



### Gear

- Three stages

### Spindle speeds

- Infinitely variable speed setting
- Speeds from 80 up to 3'100 min<sup>-1</sup>

### Spindle sleeve feed

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

### Column

- Solid dovetail guide
- Highest stability

### Optional steel base frame

- Figure with switch combination of the optional universal coolant equipment (not included in the scope of delivery)
- Chip plates
- Dimensions L x W x H: 940 x 647 x 780 mm

Item No 335 3004

€ 549.00 plus VAT

Fig.: Opti mill BF 30 Vario with optional accessory

## Technical data, accessories and dimensions

Type	BF 30Vario
Item No with <b>MT 3 seat</b>	333 8430
Item No with <b>ISO 30 seat</b>	333 8431
<b>€ plus VAT</b>	<b>3.690,00</b>
<b>Machine data</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor	2.2 kW
<b>Drilling-milling capacity</b>	
Drilling capacity in steel (S235JR)	Ø 24 mm
Continuous drilling capacity in steel (S235JR)	Ø 20 mm
Milling head dimension max.	Ø 75 mm
End mill dimension max.	Ø 30 mm
<b>Spindle seat</b>	
Spindle stroke	90 mm
Spindle seat	MT 3 or ISO 30
Throat	200 mm
Spindle sleeve diameter	70 mm
Draw-in rod	M12
<b>Drilling-milling head</b>	
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 stages Vario	3 steps, electrically adjustable speed
<b>Cross table</b>	
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
<b>Travels</b>	
Travel X axis	450 mm
Travel Y axis	200 mm
Travel Z axis	430 mm
<b>Dimensions</b>	
Length x Width x Height max.	1'075 x 795 x 1'245 mm
Total weight	265 kg
<b>Standard equipment</b>	
	Draw-in rod M 12
	Operating tool

Accessories	Item No	€ plus VAT
<b>Hydraulic vice HMS 100</b>	335 5100	<b>489,00</b>
<b>Precision vice FMS 125</b>	335 4125	<b>175,00</b>
<b>Kit of parallel packing plates, 18-pcs.</b>	335 4000	<b>185,00</b>
<b>Universal coolant equipment 230V</b>	335 2002	<b>199,00</b>
<b>Clamping tool kit SPW 10</b>	335 2016	<b>75,00</b>
<b>Vibration damper machine foot SE1</b>	338 1012	<b>28,00</b>
<b>End mill kit HSS 20 pcs.</b>	338 6200	<b>119,00</b>
<b>Adapter ISO 30 / MT 3</b>	335 2068	<b>60,00</b>
<b>Collet chuck ISO 30; ER25</b>	335 2046	<b>129,00</b>
<b>Collet kit 15-pcs. ER25</b>	344 1109	<b>159,00</b>
<b>Collet kit 6-pcs. MT 3</b>	335 2014	<b>99,00</b>
<b>Universal table feed OPTI V99</b>	335 2022	<b>379,00</b>
<b>Assembly kit OPTI V99 - X axis</b>	335 2035	<b>75,00</b>
<b>Copy and planing cutter head MT3</b>	335 0213	<b>225,00</b>
<b>Copy and planing cutter head ISO 30</b>	335 0215	<b>269,00</b>
<b>Precision boring drilling head MT3</b>	335 2083	<b>289,00</b>
<b>Precision boring drilling head ISO30</b>	335 2085	<b>299,00</b>

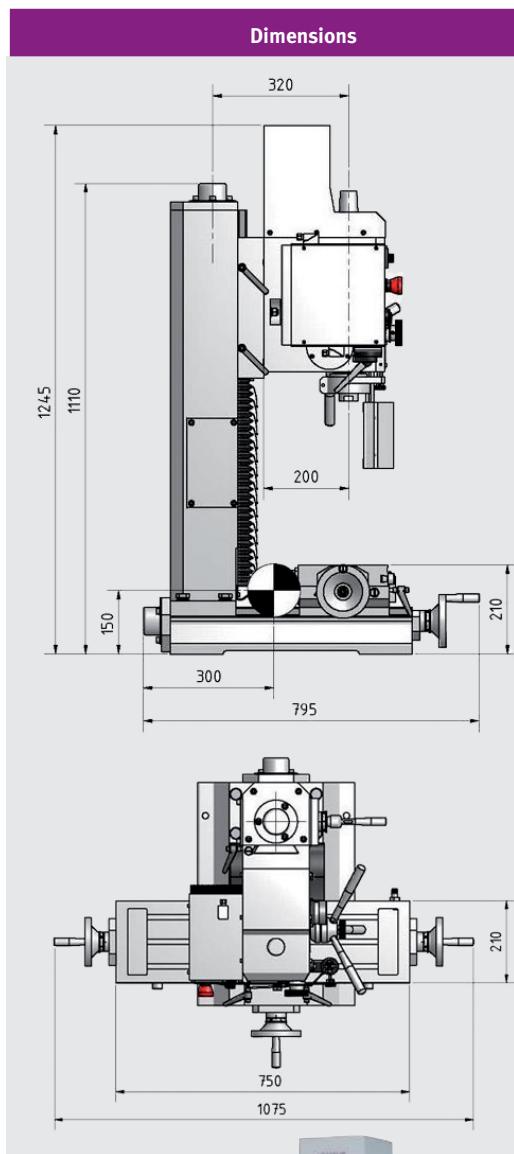


Fig.: **CNC add-on kit**  
„BF 30Vario / F 40 E“ on page 210

„Accessories for milling machines“ on page 139

## Universal precision drilling-milling machines with a powerful OPTIMUM Brushless-drive, infinitely variable speed. BF 46 TC additionally equipped with Z-axis feed and pneumatic tool changer

### 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
- OPTI mill BF 46Vario - 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"

-  auto
- The motor is starting up automatically after moving the lever and
  - stops again in the initial position
  - It is not necessary to actuate the push button start and stop repeatedly start and stop repeatedly

#### 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
- Z axis feed (BF 46TC)

#### Depth gauge

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

#### BF 46TC with Z axis feed

- Motor infeed of the Z axis



Fig.: OPTI mill BF 46TC

#### Optional steel base frame

- Dimensions L x W x H:  
1'200 x 750 x 860 mm
- Item No 335 3005 €929,00 plus VAT

Fig.: OPTI mill BF 46 Vario with optional accessory

#### Powerful Brushless drive

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

#### BF 46TC with pneumatic tool changer

- Short change times by one-hand operation
- Little weight due to optimised structure
- Safe locking due to toggle principle
- Precise guiding due to optimised geometry
- Least air consumption

#### 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

- Solid dovetail guide
- Highest stability and optimum precision

#### Central lubricating

- for spindle, screw nut and guideways

#### Cross table

- Massive, accurate and largely dimensioned
- Precisely machined at the surface
- Adjustable V-ledges
- Adjustable via 3 handwheels
- Integrated length measuring scale
- Adjustable limit stops

## Technical data, accessories and dimensions

Type	<b>BF 46Vario</b>
Item No	333 8453
€ plus VAT	<b>4.890,00</b>

Type	<b>BF 46TC</b>
Item No	333 8456
€ plus VAT	<b>6.190,00</b>

<b>Machine datas</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor	2.2 kW
Drilling-milling capacity	
Drilling capacity in steel (S235JR)	Ø 28 mm
Continuous drilling capacity in steel (S235JR)	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, DIN 69871)
Draw-in rod	M16
Drilling-milling head	
Swivel range	± 90°
Spindle speed slow	115 - 600 min <sup>-1</sup>
Spindle speed average	270 - 1'400 min <sup>-1</sup>
Spindle speed rapid	590 - 3'100 min <sup>-1</sup>
Gear stages Vario	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
Central lubrication pump BF 46 TC	Delivery volume 6.3 ml (per cycle)
Travels	
Travel X axis	500 mm
Travel Y axis	250 mm
Travel 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	<b>Spindle MT 4 for replacement</b>
Item No	900 0439
€ plus VAT	<b>150,00</b>

Accessories	Item No	€ plus VAT
Hydraulic vice HMS 125	335 5127	<b>519,00</b>
Precision vice FMS 125	335 4125	<b>175,00</b>
Universal coolant equipment 230V	335 2002	<b>199,00</b>
Clamping tool kit SPW 16	335 2019	<b>119,00</b>
Vibration damper machine foot SE1	338 1012	<b>28,00</b>
End mill kit HSS 20 pcs.	338 6200	<b>119,00</b>
Collet chuck kit 18-pcs. ISO 40	335 2056	<b>299,00</b>
Universal table feed OPTI V 99	335 2022	<b>379,00</b>
Assembly kit OPTI V99 - X axis	335 2036	<b>85,00</b>
Horizontal-vertical circular dividing table RT 200	335 6200	<b>409,00</b>
Arbor for drill chuck	335 2070	<b>38,00</b>
Arbor for milling cutter	335 2071	<b>60,00</b>

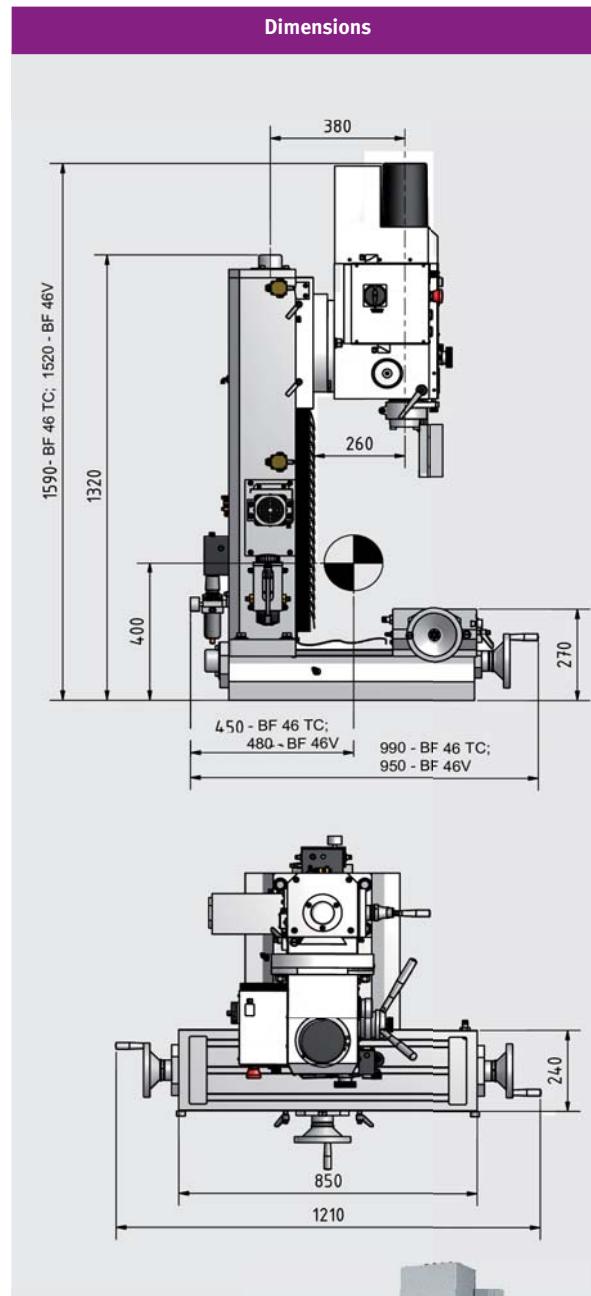


Fig.: CNC add-on kit  
„BF 46Vario“ on page 212

„Accessories for milling machines“ on page 139

## 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 lubricating for spindle, screw nut and guideways
- Milling head can be slewed to the left and right by 90°
- Spindle head support slewable by ± 90°

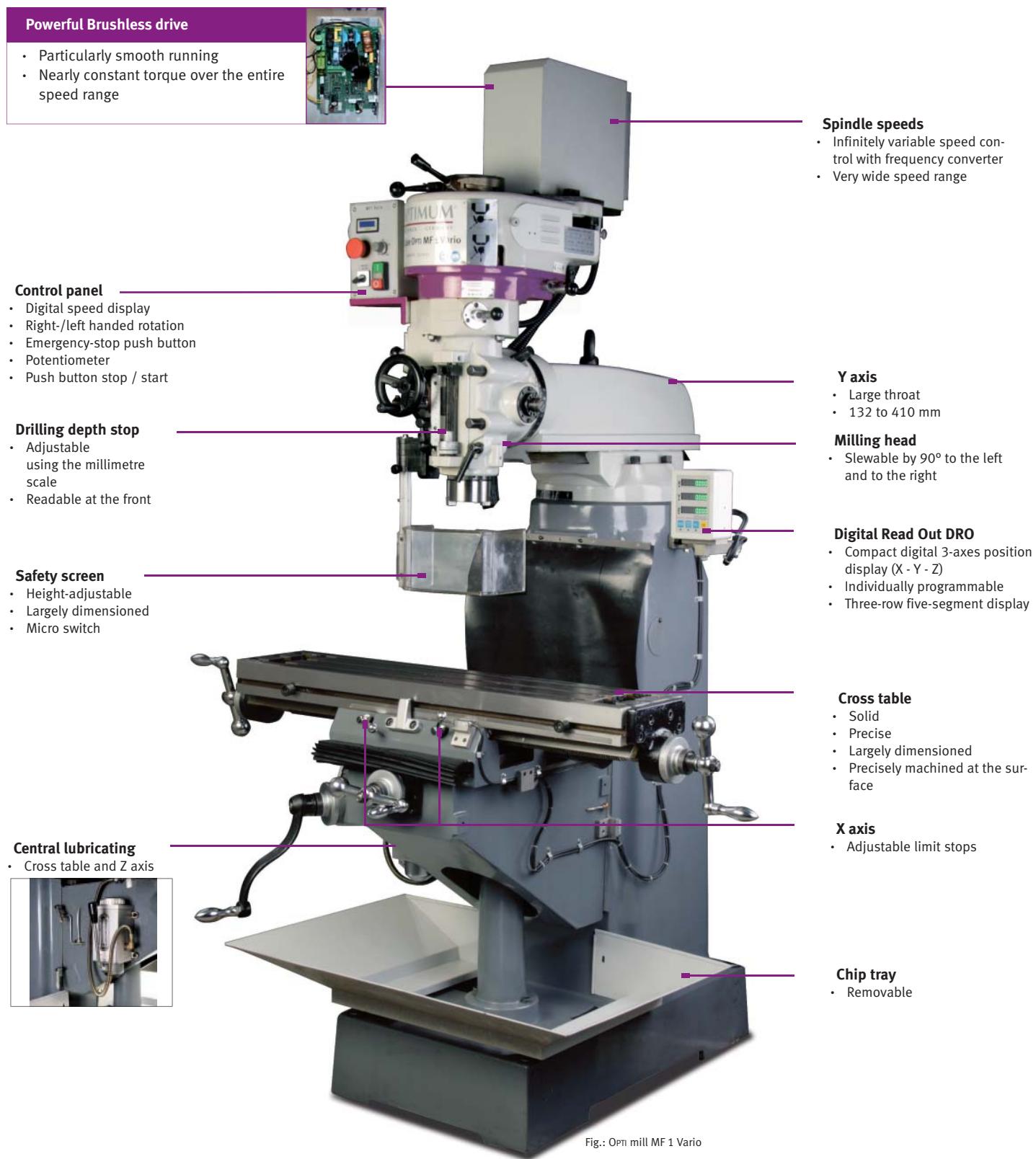


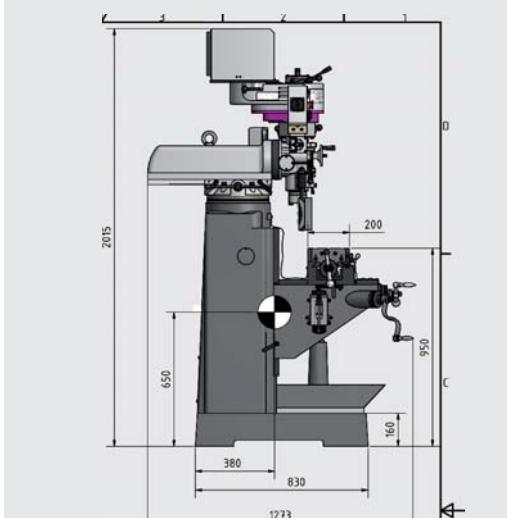
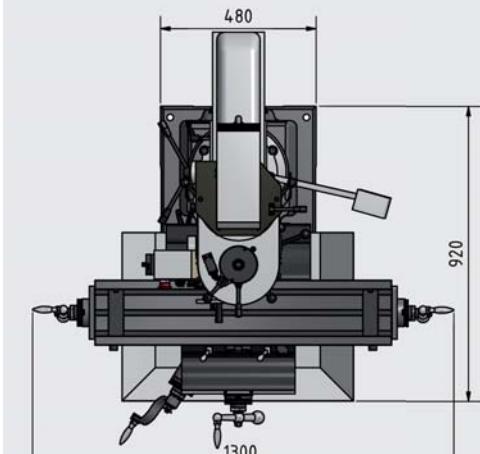
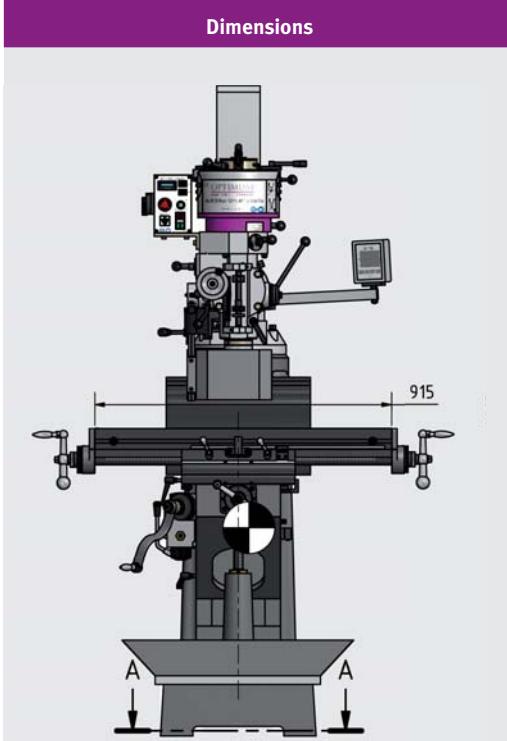
Fig.: Opti mill MF 1 Vario

#### **Technical data, accessories and dimensions**

Type	MF 1 Vario
Item No	333 6015
€ plus VAT	<b>7.950,00</b>
<b>Machine datas</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor	2.2 kW
<b>Drilling-milling capacity</b>	
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
<b>Spindle seat</b>	
Spindle stroke	127 mm
Spindle seat	ISO 40 DIN 2080
Throat	
<b>Drilling-milling head</b>	
Swivel range	± 90°
Inclination of spindle head carrier	± 180°
Spindle speed	50 - 6'300 min <sup>-1</sup>
Gear stages Vario	6 steps, electrically adjustable speed
Automatic spindle sleeve feed	0.04 / 0.08 / 0.16 mm/rev
<b>Cross table</b>	
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
<b>Travels</b>	
Travel X axis	570 mm
Travel Y axis	210 mm
Travel Y axis spindle head support	330 mm
Travel Z axis	365 mm
<b>Dimensions</b>	
Length x width x height	1'350 x 1'050 x 2'015 mm
Total weight	850 kg
<b>Standard equipment</b>	
Chip tray	
3-axes positioning display	
Operating tool	

Transportation packaging flat rate		TPFR 2 = € 39.00 plus VAT
Accessories	Item No	€ plus VAT
<b>Hydraulic vice</b> HMS 125	335 5127	<b>519,00</b>
<b>Precision vice</b> FMS 125	335 4125	<b>175,00</b>
<b>Kit of parallel packing plates, 18 pcs</b>	335 4000	<b>185,00</b>
<b>Universal coolant equipment</b> 230 V	335 2002	<b>199,00</b>
<b>Vibration damper machine foot</b> SE2	338 1016	<b>40,00</b>
<b>Clamping tool kit</b> SPW 14	335 2018	<b>109,00</b>
<b>Collet chuck kit</b> 18 pcs. ISO40	335 2056	<b>299,00</b>
<b>Universal table feed</b> Opti V 250	335 2029	<b>419,00</b>
<ul style="list-style-type: none"> <li>• X axis for self-assembly</li> <li>• including assembly kit 230 V connection</li> </ul>		
<b>Assembly</b> Opti V 250 - each axis	900 0485	<b>220,00</b>
<b>Horizontal-vertical circular dividing table</b> RT200	335 6200	<b>409,00</b>
<ul style="list-style-type: none"> <li>• Hardened and ground screw</li> <li>• Transmission ratio 90 : 1</li> </ul>		
<b>Arbor</b> for drill chuck	335 2070	<b>38,00</b>
<ul style="list-style-type: none"> <li>• Outside cone ISO 40 / B16</li> </ul>		
<b>Arbor</b> for milling cutter	335 2071	<b>60,00</b>
<ul style="list-style-type: none"> <li>• Outside cone ISO 40</li> <li>• Seat for milling cutter Ø 22 mm</li> </ul>		

## Dimensions



„Accessories for milling machines“ on page 139

## Multifunctional drilling-milling machines for the professional use Infinitely variable speed regulation with frequency converter "Made in Germany" and digital position display DPA 2000

### 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 axis and assembly

### MF 4 Vario:

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

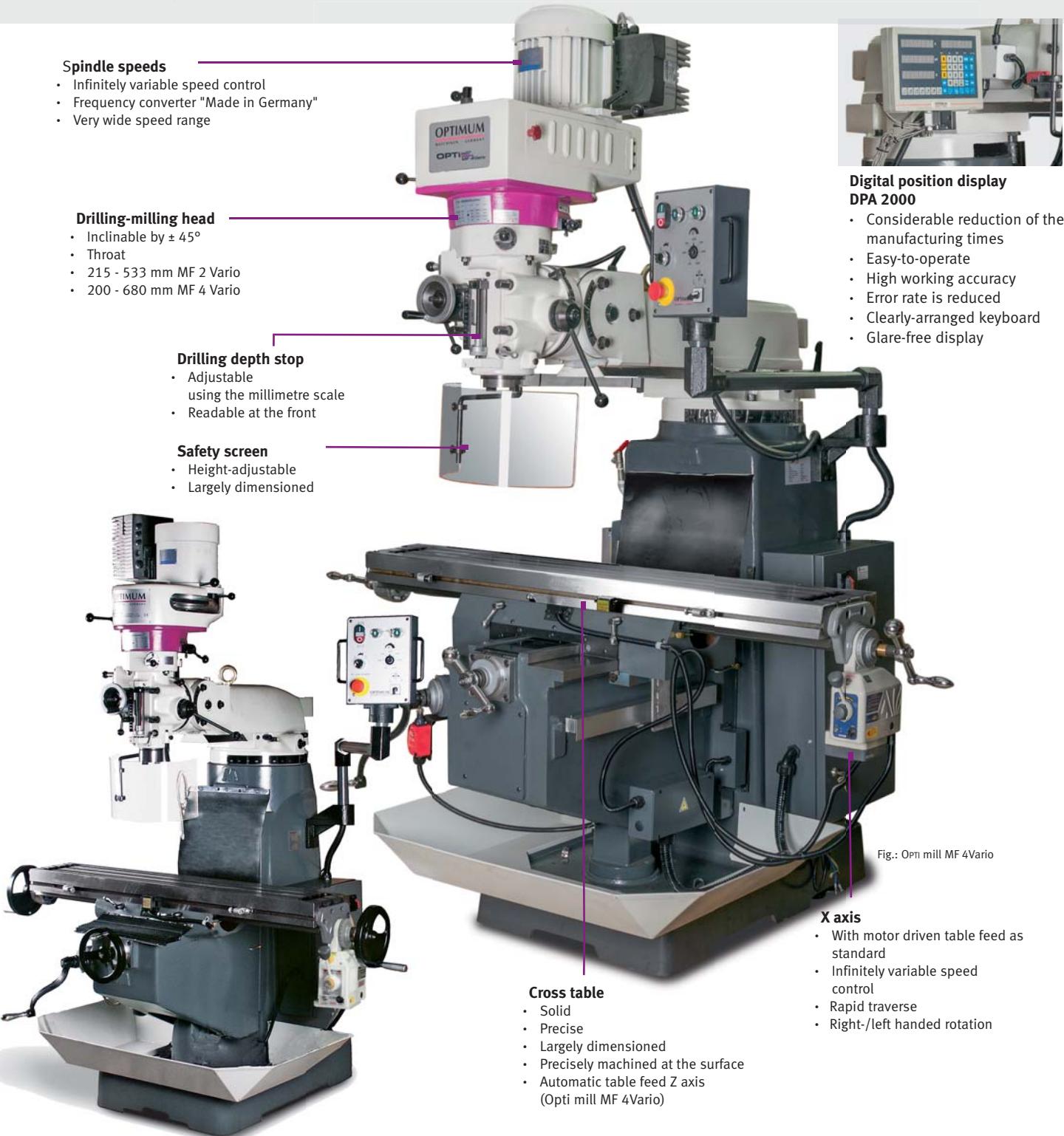


Fig.: Opti mill MF 2Vario



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.: Opti mill MF 4Vario



- Cross table**
- Solid
  - Precise
  - Largely dimensioned
  - Precisely machined at the surface
  - Automatic table feed Z axis (Opti mill MF 4Vario)

## Technical data and accessories

Type	MF 2Vario DPA	MF 4Vario DPA
Item No	333 6020DPA	333 6040DPA
€ plus VAT	<b>11.900,00</b>	<b>14.900,00</b>

Machine data	MF 2Vario DPA	MF 4Vario DPA
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected value	1.5 kW	3.75 kW
Coolant pump	100 W	100 W
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 speed	10 - 5'100 min⁻¹	9 - 6'750 min⁻¹
Gear stages; electronically adjustable speed	4 steps	8 steps
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		
Travel X axis automatic	800 mm	800 mm
Travel Y axis manual	305 mm	400 mm
Travel 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
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Transportation packaging flat rate	TPFR 2 = € 39,00 plus VAT	TPFR 2 = € 39,00 plus VAT
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Accessories	Item No	€ plus VAT
<b>Hydraulic vice HMS 150</b>	335 5150	<b>529,00</b>
<b>Precision vice FMS 150</b>	335 4150	<b>209,00</b>
<b>Kit of parallel packing plates, 18 pcs.</b>	335 4000	<b>185,00</b>
<b>Kit of parallel packing plates, 20 pcs.</b>	335 4001	<b>125,00</b>
<b>Vibration damper machine foot SE2</b>	338 1016	<b>40,00</b>
<b>Clamping tool kit SPW 14</b>	335 2018	<b>109,00</b>
<b>Collet chuck kit 18-pcs. ISO40</b>	335 2056	<b>299,00</b>
<b>Arbor for milling cutter</b>	335 2071	<b>60,00</b>

	Arbor for drill chuck	335 2070	<b>38,00</b>
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Accessories	Item No	€ plus VAT
<b>Universal table feed V250</b>	335 2025	<b>489,00</b>

- Infinitely variable speed adjustment of the Y axis
- Rapid feed, including assembly kit

	Assembly V 250	900 0489	<b>230,00</b>
	Tool clamping system ISO40	335 2394	<b>739,00</b>

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

	Assembly ISO40	900 0490	<b>380,00</b>
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„Accessories for milling machines“ on page 139



**Universal milling machine for horizontal and vertical milling tasks with digital 3 axes position display**

#### 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

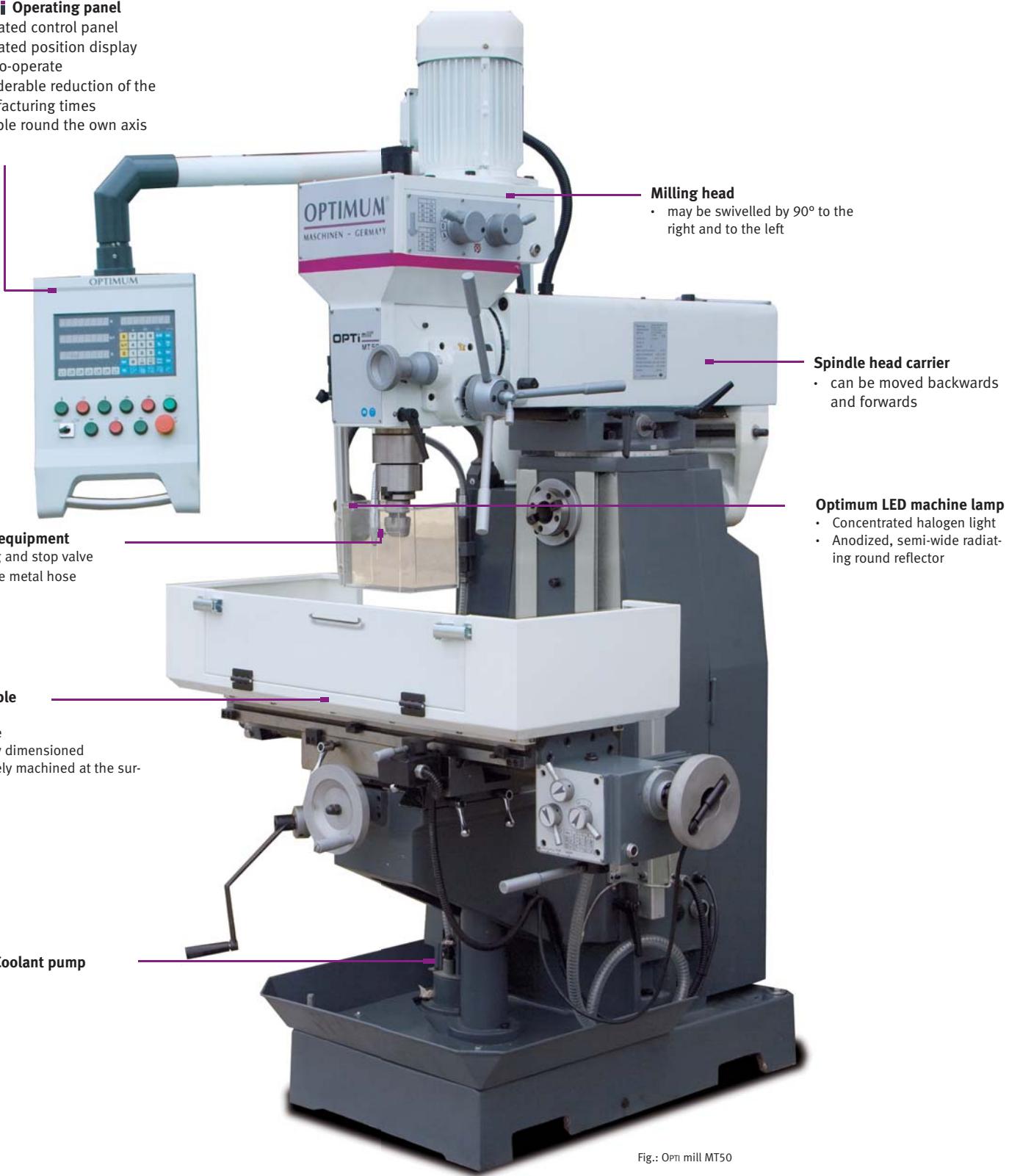


Fig.: Opti mill MT50

## 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

<b>Type</b>	<b>MT 50</b>
Item No	333 6005
<b>€ plus VAT</b>	<b>7.950,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected load	4.5 kW
Motor vertical spindle	1.1 / 2.2 kW
Motor horizontal spindle	1.5 kW
Coolant equipment	40 W
Motor table infeed	370 W
<b>Spindle seat vertical</b>	
Spindle seat	ISO 40 DIN 2080
Spindle stroke	120 mm
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 25 mm
Throat	240 - 650 mm
Spindle speed	115 - 1'750 min⁻¹
Gear stages	8 steps
<b>Spindle seat horizontal</b>	
Spindle seat	ISO 40 DIN 2080
Drilling capacity in steel (S235JR)	Ø 30 mm
Continuous drilling capacity in steel (S235JR)	Ø 25 mm
Throat	0 - 185 mm
Spindle speed	58 - 1'355 min⁻¹
Gear stages	9 steps
<b>Cross table</b>	
Table length x width	800 x 240 mm
Load of cross table (max.)	160 kg
T-slot size / number	14 mm / 4
<b>Travel</b>	
Travel X-axis automatic	380 mm
Table feed X-axis (8 steps)	24 - 720 mm/min
Travel Y-axis manual	200 mm
Travel Z-axis manual	340 mm
<b>Dimensions</b>	
Length x Width x Height	2'270 x 1'500 x 2'100 mm
Total weight	900 kg

#### Standard equipment

- Optimum Precision quick-action drill chuck Ø 1 - 16mm / B18
- Adapter ISO40 / MT3
- Adapter ISO40 / MT2
- Milling spindle horizontal milling
- Operating tool
- Coolant pump
- Machine lamp
- Digital 3 axes position display

#### Transportation packaging flat rate

**€ 39.00 (TPFR2)**

<b>Accessories</b>	<b>Item No</b>	<b>€ plus VAT</b>
<b>Hydraulic vice HMS 150</b>	335 5150	<b>529,00</b>
<b>Precision vice FMS 150</b>	335 4150	<b>209,00</b>
<b>Kit of parallel packing plates, 18 pcs</b>	335 4000	<b>185,00</b>
<b>Vibration damper machine foot SE2</b>	338 1016	<b>40,00</b>
<b>Clamping tool kit SPW 14</b>	335 2018	<b>109,00</b>
<b>Horizontal-vertical circular dividing table RT200</b>	335 6200	<b>409,00</b>

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

„Accessories for milling machines“ on page 139



## Versatility and easy retrofitting - the universal milling machines for workshops - with digital 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-ledge
- Central lubricating
- 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

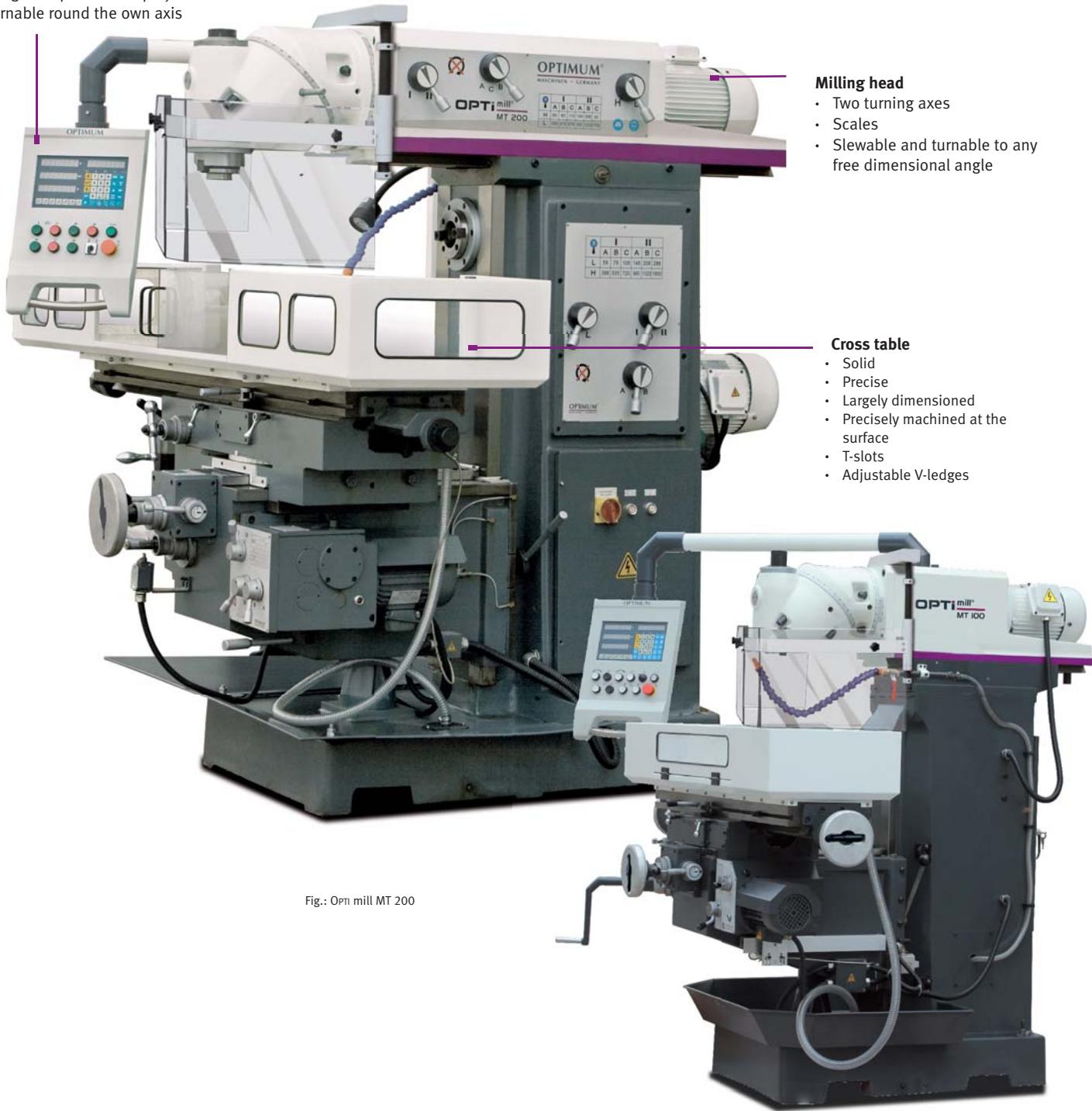
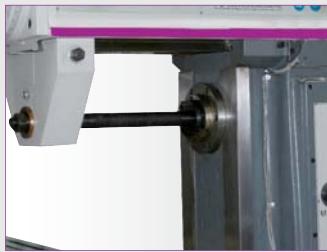


Fig.: Opti mill MT 200

Fig.: Opti mill MT100

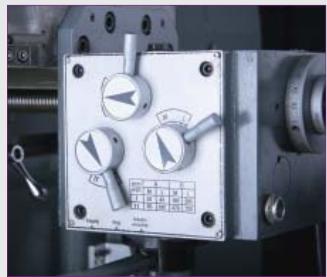
## Technical data and accessories

### Convincing arguments ...



#### 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
- Table feed in X Y and Z 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



#### Cross table housing

- Protection against chips and coolants
- Removable

Type	MT 100	MT 200
Item No	333 6110	333 6120
€ plus VAT	<b>11.950,00</b>	<b>19.500,00</b>
<b>Machine datas</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected load	3.6 kW	9.2 kW
Motor vertical spindle	2.2 kW	4 kW
Motor horizontal spindle	-	4 kW
<b>Spindle seat</b>		
Spindle seat	ISO 40 DIN 2080	ISO 50 DIN 2080
Draw-in rod	M16	M24
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
<b>Spindle seat vertical</b>		
Spindle speed	40 - 1'600 min <sup>-1</sup>	60 - 1'750 min <sup>-1</sup>
Gear stages	11 steps	12 steps
Distance spindle - cross table	90 - 520 mm	140 - 540 mm
Slewing-/turning range	360°	360°
<b>Spindle seat horizontal</b>		
Distance spindle - cross table	-	0 - 400 mm
Spindle speed	-	58 - 1'800 min <sup>-1</sup>
Gear stages	-	12 steps
<b>Cross table</b>		
Table length x width	1'120 x 260 mm	1'320 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
Turnable cross table	-	35°
<b>X axis</b>		
Travel	600 mm	1,290 mm
Table feed	24 - 402 mm/min	22 - 420 mm/min
Table feed rapid feed	402 mm/min	1'290 mm/min
Power feed motor	370 W	1.1 kW
<b>Y axis</b>		
Travel	270 mm	280 mm
Table feed	24 - 402 mm/min	22 - 393 mm/min
Table feed rapid feed	402 mm/min	1'205 mm/min
Power feed motor	370 W	1.1 kW
<b>Z axis</b>		
Travel	380 mm	400 mm
Table feed automatic	-	10 - 168 mm/min
Table feed rapid feed	402 mm/min	513 mm/min
Power feed motor	750 W	1.1 kW
<b>Coolant pump</b>		
Pump capacity	40 watts	90 watts
<b>Dimensions</b>		
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		<b>€ 59.00 (TPFR3) plus VAT</b>
		<b>€ 100.00 (TPFR5) plusVAT</b>

#### Standard equipment

- Seat for side milling cutter as standard Ø 22 mm and Ø 27 mm
- Collet chuck Ø 4 - Ø 16 mm
- Seat of milling cutter ISO 50 / Ø 32 mm
- Adapter ISO 50 / MT4
- Collet chuck Ø 4 - Ø 26 mm

## Multifunctional drilling milling machine with tool clamping system and digital 3 axes position display 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 cross 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 at the surface
- Electrically height adjustable

### Cross table housing

- Protection against chips and coolants
- Removable

### Table feed

- Motor with gear - table feed X and Y 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

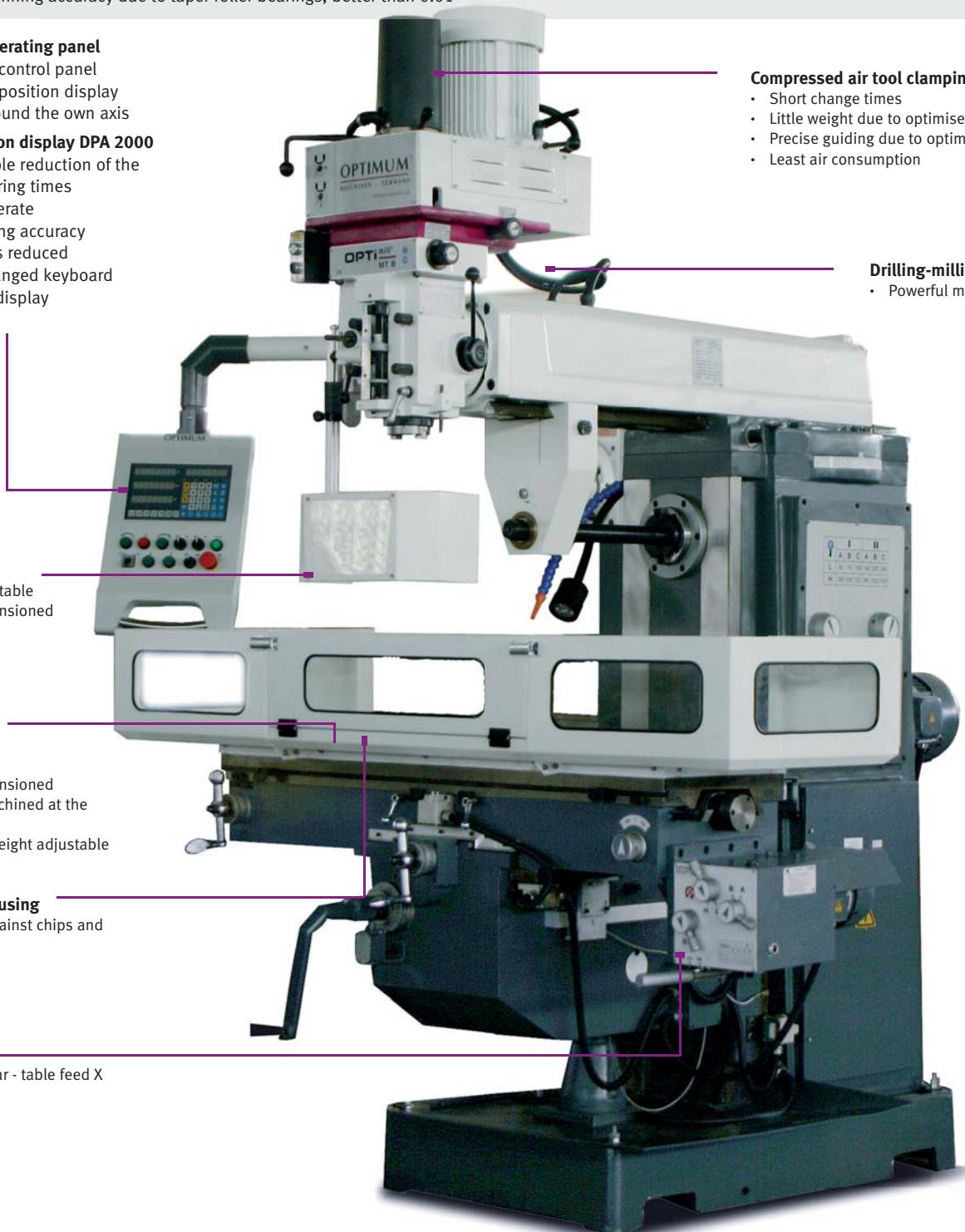


Fig.: Opti mill MT 8 with horizontal and vertical milling position

## Technical data

### 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<sup>-1</sup>



#### Spindle sleeve feed

- can be performed manually or automatically

<b>Type</b>	<b>MT 8</b>
Item No	333 6088
<b>€ plus VAT</b>	<b>21.500,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total connected load	10 kW
Motor vertical spindle	5.5 kW
Motor horizontal spindle	4 kW
Coolant equipment	90 W
Connected value for compressed air	min. 6 bars
<b>Spindle seat</b>	
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
Spindle stroke	140 mm
Spindle sleeve feed	0.086/0.045/0,142 mm
Slewing range milling head	± 45°
<b>Spindle seat vertical</b>	
Spindle seat	ISO 40 DIN 2080
Spindle speed	60 - 4'660 min <sup>-1</sup>
Gear stages	20 steps
<b>Spindle seat horizontal</b>	
Spindle seat	ISO 50 DIN 2080
Spindle speed	58 - 1'800 min <sup>-1</sup>
Gear stages	12 steps
<b>Cross table</b>	
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
<b>X axis</b>	
Travel automatic	980 mm
Table feed	15 - 370 mm/min
<b>Y axis</b>	
Travel automatic	300 mm
Table feed	15 - 370 mm/min
Slewing range for arm	± 30°
<b>Z axis</b>	
Travel automatic	450 mm
<b>Dimensions</b>	
Length x Width x Height	2'950 x 2'100 x 2'550 mm
Total weight	2'200 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

**€ 100,00 (TPFR5) plus VAT**

Accessories	Item No	€ plus VAT
Hydraulic vice HMS 150	335 5150	<b>529,00</b>
Kit of parallel packing plates, 18 pcs	335 4000	<b>185,00</b>
Vibration damper machine foot SE2	338 1016	<b>40,00</b>
Clamping tool kit SPW 16	335 2019	<b>119,00</b>

„Accessories for milling machines“ on page 139

**Quality due to precision. The milling machines with digital 3 axes position display**

**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-ledge
- Central lubricating
- 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

- OPTI Operating panel**
- Integrated control panel
  - Integrated position display
  - Easy-to-operate
  - Considerable reduction of the manufacturing times
  - Turnable round the own axis
  - Slewable to the left and right side of the machine

- Cross table**
- Solid
  - Precise
  - Largely dimensioned
  - Precisely machined at the surface



**Cross table housing**

- Protection against chips and coolants
- Completely folding

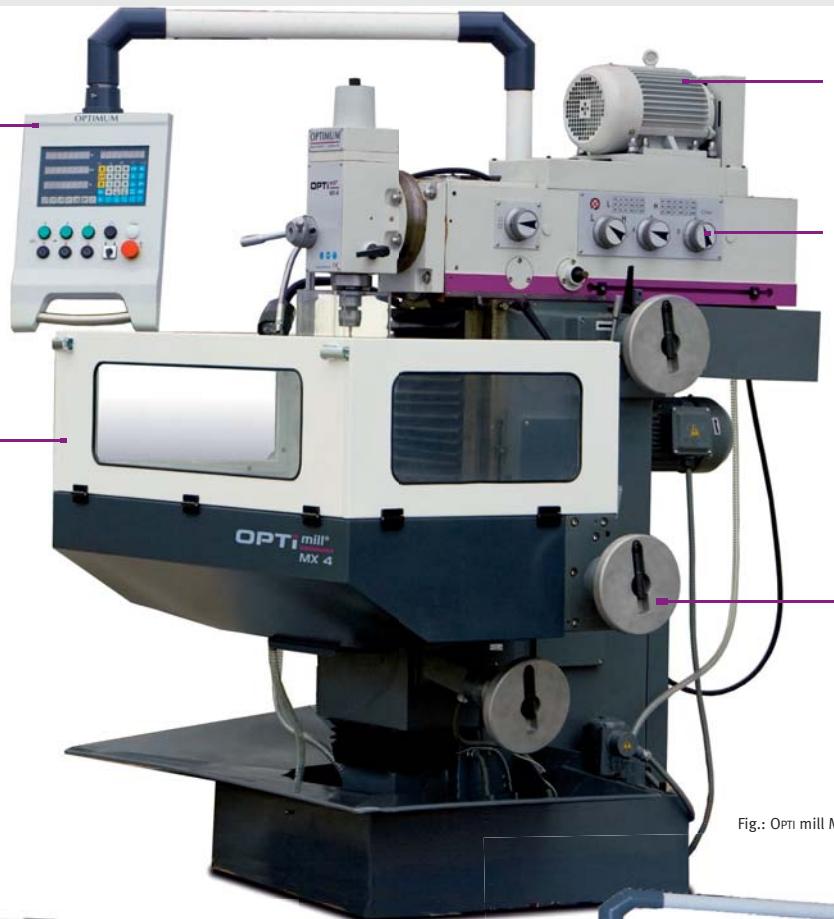


Fig.: OPTI mill MX 4

**Spindle motor**

- Powerful
- 2.2 kW at MX2/3 and 3 kW at MX4

**Speeds**

- Easily switchable
- 12 stages MX2 and 18 stages MX3/4

**Safety handwheel**

- Largely dimensioned
- Adjustable scale rings
- According to standard



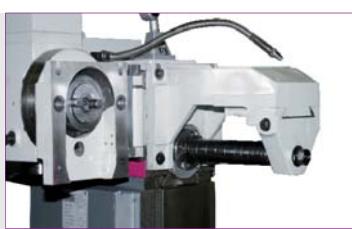
Fig.: OPTI mill MX 2



Fig.: OPTI mill MX 3

## Technical data

Type	MX 2	MX 3	MX 4
Item No	334 6120	334 6130	334 6140
€ plus VAT	<b>22.900,00</b>	<b>24.900,00</b>	<b>28.500,00</b>
<b>Machine datas</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total connected load	2.2 kW	2.2 kW	3 kW
Feed motor	750 W	750 W	1.1 kW
Power coolant pump	140 W	90 W	90 W
<b>Spindle seat</b>			
Spindle seat	ISO 40 DIN 2080	ISO 40 DIN 2080	ISO 40 DIN 2080
Drilling capacity in steel (S235JR)	Ø 32 mm	Ø 32 mm	Ø 32 mm
Continuous drilling capacity in steel (S235JR)	Ø 28 mm	Ø 28 mm	Ø 28 mm
Spindle stroke	80 mm	80 mm	80 mm
Throat max.	680 mm	425 mm	540 mm
<b>Spindle vertical</b>			
Spindle speed	40 - 1'600 min <sup>-1</sup>	40 - 2'000 min <sup>-1</sup>	40 - 2'000 min <sup>-1</sup>
Gear stages	12 steps	18 steps	18 steps
Distance spindle - cross table min/max	60 - 440 mm	50 (113) - 410 (473) mm	55 (118) - 445 (508) mm
<b>Spindle horizontal</b>			
Spindle speed	40 - 1'600 min <sup>-1</sup>	40 - 2'000 min <sup>-1</sup>	40 - 2'000 min <sup>-1</sup>
Gear stages	12 steps	18 steps	18 steps
Distance spindle - cross table min/max	35 - 415 mm	85 (148) - 445 (508) mm	95 (158) - 475 (538) mm
<b>Cross table</b>			
Table length x width Horizontal table	750 x 320 mm	750 x 320 mm	800 x 400 mm
T-slot size / distance / number	14 mm / 63 mm / 5	14 mm / 63 mm / 5	14 mm / 63 mm / 6
Table length x width Vertical table	830 x 225 mm	830 x 225 mm	1,060 x 250 mm
T-slot size / distance / number	14 mm / 126 mm / 2	14 mm / 63 mm / 3	14 mm / 63 mm / 3
Load of cross table (max.)	300 kg	300 kg	300 kg
<b>X axis</b>			
Travel automatic	405 mm	400 mm	500 mm
Table feed (18 steps)	10 - 380 min <sup>-1</sup>	10 - 380 min <sup>-1</sup>	10 - 380 min <sup>-1</sup>
Table feed rapid feed	1'200 min <sup>-1</sup>	1'200 min <sup>-1</sup>	1'200 min <sup>-1</sup>
<b>Y axis</b>			
Travel automatic	200 mm	300 mm	400 mm
Table feed (18 steps)	10 - 380 min <sup>-1</sup>	10 - 380 min <sup>-1</sup>	10 - 380 min <sup>-1</sup>
Table feed rapid feed	1'200 min <sup>-1</sup>	1'200 min <sup>-1</sup>	1'200 min <sup>-1</sup>
<b>Z axis</b>			
Travel automatic	390 mm	390 mm	400 mm
Table feed (18 steps)	10 - 380 min <sup>-1</sup>	10 - 380 min <sup>-1</sup>	10 - 380 min <sup>-1</sup>
Table feed rapid feed	1'200 min <sup>-1</sup>	1'200 min <sup>-1</sup>	1'200 min <sup>-1</sup>
<b>Dimensions</b>			
Length (DPA arm left / right side)	max. 1'880 / 1'340 mm	1'880 / 1'340 mm	2'190 / 1'500 mm
Width x Height	2'200 x 1'950 mm	2'200 x 1'920 mm	2'400 x 1'950 mm
Total weight	950 kg	1'150 kg	1'250 kg
<b>Standard equipment</b>		Adapter ISO 40 / MT1 Adapter ISO 40 / MT2 Adapter ISO 40 / MT3 Milling spindle horizontal milling	
Transportation packaging flat rate	€ 100.00 (TPFR5) plus VAT	€ 100.00 (TPFR5) plus VAT	€ 200.00 (TPFR6) plus VAT



### Horizontal milling position

- For working operations in horizontal milling position
- With counterholder and seat for side milling cutters
- Adjustable slide bearing
- Foldable vertical head



### 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

# Accessories for milling machines

## Compatibility overview of accessories for milling machines

Accessories	Item No.	BF16	BF20/L	MB4	F40E	BF30 MT3	BF30 ISO30	BF46 ISO40	BF46 MT4	MF1	MT 50	MT 2BV	MF2	MF4	MT100	MT 200	MT 8	MX 2	MX 3	MX 4	MT8
Copy and planing cutter head MT 2	335 0212	●	●																		
Copy and planing cutter head MT 3	335 0213			●	●	●	●														
Copy and planing cutter head ISO 30	335 0215						●														
Copy and planing cutter head ISO 40	335 0216							●			●	●	●	●	●	●	●	●	●	●	●
Quick-action drill chuck B16	S. s. 28	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Röhm quick-action drill chuck B16	S. s. 28	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Direct quick-action drill chuck MT 2	305 0571		○	○	○	○	○														
Direct quick-action drill chuck MT 3	305 0573							○	○	○						○	○	○			
Direct quick-action drill chuck MT 4	305 0574							○	●	○											
Arbor for lathe chuck MT 2	305 0670	●	●																		
End mill kit HSS	335 2113	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
End mill kit HSS	338 6200	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Twist drill coated with titanium	305 1010	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Twist drill HSS MT 2	305 1002							○	○	○						○	○	○			
Twist drill HSS MT 3	305 1003		●	●	●	●	●	○	○	○						○	○	○			
Hard-metal milling cutter kit	335 2118	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Radius milling cutter kit	335 2116	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Milling arbor MT 2	335 2102	●	●																		
Coolant pump 230 V	335 2002	●	●	●	●	●	●	●	○	○	○	○				○	○	○			
Coolant pump 400 V	335 2001	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Coolant hose KMS2	335 6660	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Coolant lubricant sprayer MMC1	335 6663	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Table feed V 99	335 2022			●	●	●	●	●	●	●	●										
Table feed V 250	335 2029																				
Holding down clamp 14 mm	335 2031									●						●	●	●			
Holding down clamp 18 mm	335 2032									●	●	●	●	●	●	●	●	●	●	●	●
Vibration damper SE1	338 1012	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
Vibration damper SE2	338 1016										●	●	●	●	●	●	●	●	●	●	●
Parallel spacer kit	335 4000-01	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Boring drilling head MT 3	335 2083			●	●	●															
Boring drilling head MT 4	335 2084								●												
Boring drilling head ISO30	335 2085									●											
Boring drilling head ISO40	335 2086										●	●	●	●	●	●	●	●	●	●	●
Boring drilling head MT 3	335 2073			●	●	●	●														
Boring drilling head ISO40	335 2074									●		●	●	●	●	●	●	●	●	●	●
Arbor for milling cutter ISO 40	335 2071									●		●	●	●	●	●	●	●	●	●	●
Arbor for lathe chuck MT2	305 0670	●	●																		
Arbor for lathe chuck MT4	335 0304										●										
Arbor for milling cutter ISO 30	335 2069							●													
Morse taper taper mandrel ISO 40	335 2070								●		●	●	●	●	●	●	●	●	●	●	●
Collet chuck ISO 30	335 2046	●									●	●	●	●	●	●	●	●	●	●	●
Collet chuck ISO 40	335 2056										●	●	●	●	●	●	●	●	●	●	●
Collets ER 25 DIN ISO 15488	344 1109			●																	
Collets ER 32 DIN ISO 15488	344 1122			●	●	●	●				●	●	●	●	●	●	●	●	●	●	●
Collet chuck MT 2/ER25	335 2052	●	●																		
Collet chuck MT 2/ER32	335 2053	●	●																		
Collet chuck MT 4/M16	335 2094									●											
Collet kit MT 2 direct	335 1980	●	●																		
Collet kit MT 3 direct	335 2014			●	●	●	●														
Clamping tool kit SPW 8	335 2015	●																			
Clamping tool kit SPW 10	335 2016		●					●	●												
Clamping tool kit SPW 12	335 2017			●	●																
Clamping tool kit SPW 14	335 2018										●	●	●	●	●	●	●	●	●	●	●
Clamping tool kit SPW 16	335 2019										●	●	●	●	●	●	●	●	●	●	●
Tool clamping system ISO 40	335 2394										●	—	●	—	●	●	●	●	●	●	●
Bracket 90°	338 5052										●	●	●	●	●	●	●	●	●	●	●
Prism angle WP30	335 2195	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tapping chuck M5-M12	335 2042	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Universal indexing head TA 125	335 6125	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tailstock Rst 1	335 6155	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Tailstock Rst 2	335 6157		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Circular dividing table RT 100	335 6110	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Circular dividing table RT 150	335 6150	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Circular dividing table RT 200	335 6200			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Circular dividing table RTE 165	335 6365		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Circular dividing table RTU 165	335 4165			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

## Accessories for milling machines

### OPTIMUM Precision quick-action drill chuck

True running accuracy of better than 0.06 mm

<b>0 - 8 mm; B16</b>	305 0608	<b>32,00</b>
<b>0 - 10 mm; B16</b>	305 0610	<b>35,00</b>
<b>0 - 13 mm; B16</b>	305 0623	<b>40,00</b>
<b>0 - 16 mm; B16</b>	305 0626	<b>45,00</b>
<b>0 - 16 mm; B18</b>	305 0630	<b>45,00</b>



### RÖHM Quick-action drill chuck

<b>1 - 13 mm; B16</b>	305 0656	<b>50,00</b>
<b>3 - 16 mm; B16</b>	305 0657	<b>55,00</b>



### OPTIMUM Direct quick-action drill chuck

<b>MT 2</b> 0.3 - 16 mm; up to 6'000 min <sup>-1</sup>	305 0571	<b>85,00</b>
<b>MT 2</b> 0.3 - 13 mm; up to 8'000 min <sup>-1</sup>	305 0572	<b>70,00</b>
<b>MT 3</b> 0.3 - 16 mm; up to 6'000 min <sup>-1</sup>	305 0573	<b>80,00</b>
<b>MT 4</b> 0.3 - 16 mm; up to 6'000 min <sup>-1</sup>	305 0574	<b>85,00</b>



### Extension bushings

<b>MT 2 - MT 3</b>	305 0667	<b>20,00</b>
<b>MT 3 - MT 4</b>	305 0668	<b>30,00</b>



### Arbor for drill chuck

Outside cone <b>MT 2 / M10</b>	305 0670	<b>10,00</b>
Outside cone <b>MT 4 / B16</b>	335 0304	<b>21,00</b>
Outside cone <b>ISO 30 / B16</b>	335 2069	<b>30,00</b>
Outside cone <b>ISO 40 / B16</b>	335 2070	<b>38,00</b>



### Arbor for milling cutter MK2

- Outside cone MK2
- Seat for milling cutter Ø 16 mm

### Arbor for milling cutter SK50

Outside cone 27 mm DIN2080

### Arbor for milling cutter ISO 40

- Outside cone ISO 40
- Seat for milling cutter Ø 22 mm



Fig.: ISO 40

### Morse taper SK50

B18 DIN2080

### Vibration damping machine foot

- Machines and devices can be installed without anchoring and exactly levelled per height adjustment
- Machine capability is improved by efficient impact and vibration damping

<b>SE 1</b>	338 1012	<b>28,00</b>
<b>SE 2</b>	338 1016	<b>40,00</b>
<b>SE 3</b>	338 1018	<b>45,00</b>

Charge	<b>SE 1</b>	<b>SE 2</b>	<b>SE 3</b>
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



## Accessories for milling machines

### End mill kit

- Coated with titanium
- Higher durability and stability with 2 to 5 times longer service life
- Double chipping performance
- Better workpiece surface
- With cylindrical shaft and lateral pulling faces
- Type with 2 cutting edges for milling of keyways / drilling slots as well as milling grooves in the centre of the workpiece
- Vertical or lateral milling processes can be performed
- Type with 4 cutting edges with 30° right-handed helix for good chip removal for standard to rigid materials
- Wooden box

### End mill kit HSS 12 pcs

335 2113 65,00

- 6 milling cutter, short type • Type with 2 cutting edges.
- DIN 1835 B (Ø12x73, Ø10x63, Ø8x61, Ø6x52, Ø5x52, Ø4x51 mm)

- 6 milling cutter, short type • Type with 4 cutting edges.
- DIN 1835 B (Ø12x83, Ø10x73, Ø8x6, Ø6x57, Ø5x57, Ø4x55 mm)

### End mill kit HSS 20 pcs

338 6200 119,00

- 10 milling cutter DIN 327 D - short type • 2 cutting edges

DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)

- 10 milling cutter 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

335 2118 519,00

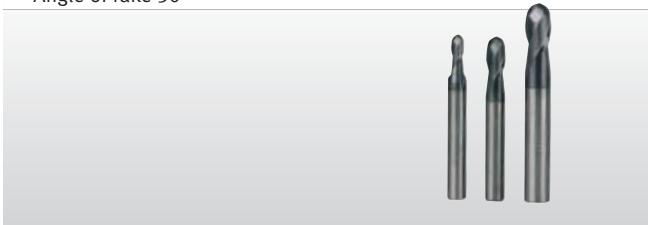
- 18 pcs; 3 pcs each of the sizes 3/4/6/8/10 and 12 mm
- Type with 4 cutting inserts
- Coated full hard metal milling cutter (TiALN)
- Central cut for plunging
- Angle of rake 35°



### Milling cutter kit radius

335 2116 225,00

- 9-pieces; Sizes 3 x 4 mm/3 x 6 mm/3 x 8 mm
- Type with 2 cutting inserts
- Coated full hard metal milling cutter (TiALN)
- Face cutting edge geometry for plunging
- Angle of rake 30°



### Precision modular vices

305 1010

45,00

- Coated with titanium

- Higher service life and durability
- Higher hardness than hard metal
- More rapid working results
- Lower wear
- 25 pcs; Sizes 1 - 13 mm
- Metal box



### Twist drill HSS incl. Morse taper

- 9 pieces; sizes 14,5/16/18/20/22/24/26/28/30 mm

Wooden box

- Long service life

- Good chip removal

- Right hand cutting

MT2

305 1002

149,00

MT3

305 1003

149,00



### Button kit 2 pcs short/long

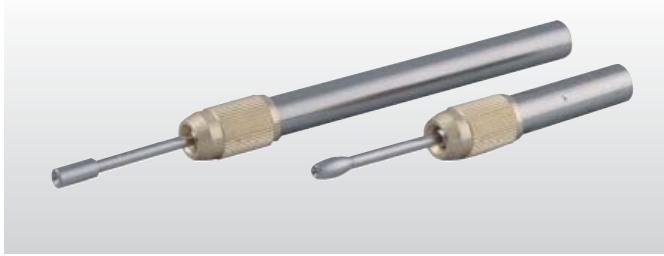
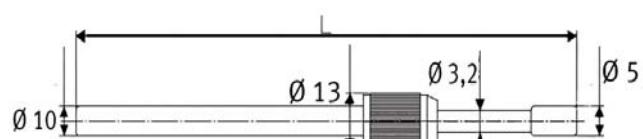
335 1170

80,00

- Material: CV steel

- Accuracy 0.003 mm

- Length: 145 mm resp. 93 mm



#### Copy and planing cutter head "Made in Germany"

- Universal insert to treat all steel and NE 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 arbors are used
- Special geometries for milling at high speed
- Economic 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

Made in  
Germany

- 5 cutting edges
- Outside diameter 52 mm
- Cutting inserts Ø 10 mm
- ISO designation RDX. 1003 D52/R5

Seat shaft **MT 2/M10**

335 0212      **205,00**

Seat shaft **MT 3/M12**

335 0213      **225,00**

Seat shaft **MT 4**

335 0214      **309,00**

Seat shaft **ISO 30**

335 0215      **269,00**



Fig.: MT 2

- 5 cutting edges
- Outside diameter 63 mm
- Cutting inserts Ø 10 mm
- ISO designation RDX. 1003 D63/R5

Seat shaft **ISO 40**

335 0216      **309,00**



Fig.: ISO40

#### HM cutting inserts 5 pcs

- RDET 1003 MOSN8026
- Positive cutting edge geometry
- PVD coated
- To machine steel of up to 900 N/mm<sup>2</sup>, stainless steel, aluminium, non-ferrous metal, cast iron

**RDET**

335 0220      **50,00**

- RDHT 1003 MO-FA HF7
- Highly positive cutting edge geometry
- Polished
- To machine AL alloys, copper alloys, plastic materials

**RDHT**

335 0221      **50,00**



Fig.: RDET



Fig.: RDHT

#### Precision boring drilling head kit

- Tool kit for universal use for drilling/turning tasks to produce fit drills, clearance grooves, internal threads, etc.
- Also suitable for outside and vertical machining
- Field of application from Ø 10 mm to Ø 220 mm
- Made of high quality steel, hardened and precision ground
- Including boring cutters, shafts, clamp sleeves, socket spanners
- Case

<b>MT 3</b>	335 2083	<b>289,00</b>
<b>MT 4</b>	335 2084	<b>289,00</b>
<b>ISO 30</b>	335 2085	<b>299,00</b>
<b>ISO 40</b>	335 2086	<b>289,00</b>



#### Precision boring drilling head kit

- Tool kit for universal use for drilling/turning tasks to produce fit drills, clearance grooves, internal threads, etc.
- Also suitable for outside and vertical machining
- Field of application from Ø 5 mm to Ø 250 mm
- Made of high quality steel, hardened and precision ground
- Including boring cutters, shafts, clamp sleeves, socket spanners
- Case

<b>MT 3</b>	335 2073	<b>1.120,00</b>
<b>ISO 30</b>	335 2072	<b>1.120,00</b>
<b>ISO 40</b>	335 2074	<b>1.120,00</b>



## Accessories for milling machines

### Collet chuck kit

• Collet chuck		
• Sickle spanner		
<b>MT 2/M10/ER 25</b>	335 2052	<b>289,00</b>
• 15 collets; sizes Ø 2 - Ø 16 mm / DIN ISO 15488		
<b>MT 2/M10/ER 32</b>	335 2053	<b>309,00</b>
• 18 collets; sizes Ø 3 - Ø 20 mm / DIN ISO 15488		
<b>MT 3/M12/ER 32</b>	335 2093	<b>319,00</b>
• Collets; sizes Ø 3 - Ø 20 mm / DIN ISO 15488		
<b>MT 4/M12/ER 32</b>	335 2094	<b>329,00</b>
• Collets; sizes Ø 3 - Ø 20 mm / DIN ISO 15488		
<b>ISO 30/ER32/DIN 2080</b>	335 2054	<b>279,00</b>
• Collet chuck		
• 18 collets, sizes Ø 2 - 20 mm / DIN ISO 15488		
• Draw-in bolt M12/M12 and draw-in bolt BT 30		
• Sickle spanner		
• Metal case		
<b>ISO 40/ER32/DIN 2080</b>	335 2056	<b>299,00</b>
• Collet chuck		
• 18 collets, sizes Ø 2 - Ø 20 mm / DIN ISO 15488		
• Draw-in bolt M16/M16 and draw-in bolt BT 40		
• Sickle spanner		
• Metal case		
<b>SK 50/ER32/DIN 2080</b>	335 2065	<b>299,00</b>
• Collet chuck		
• 18 collets, sizes Ø 2 - Ø 20 mm / DIN ISO 15488		



Fig. ISO 40

### Collet chuck ISO 30/ER25

335 2046	<b>129,00</b>
• Sickle spanner	



### Collet kit

<b>ER 25</b>	344 1109	<b>159,00</b>
• 15 collets, sizes Ø 1 - 16 mm / DIN ISO 15488		
<b>ER 32</b>	344 1122	<b>179,00</b>
• 18 collets, sizes Ø 3 - 20 mm / DIN ISO 15488		



### Adapter ISO 30 / MT 3

344 2068	<b>60,00</b>
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### Collets MT 3 directly clamping / M 12 (single)

<b>Ø 4 mm</b>	335 2004	<b>17,00</b>
<b>Ø 6 mm</b>	335 2006	<b>17,00</b>
<b>Ø 8 mm</b>	335 2008	<b>17,00</b>
<b>Ø 10 mm</b>	335 2010	<b>17,00</b>
<b>Ø 12 mm</b>	335 2012	<b>17,00</b>
<b>Ø 16 mm</b>	335 2013	<b>17,00</b>

### Collet kit

<b>MT 2 directly clamping / M 10</b>	335 1980	<b>95,00</b>
• 5-pieces; sizes Ø4 / Ø6 / Ø8 / Ø10 / Ø12 mm		
<b>MT 3 directly clamping / M 12</b>	335 2014	<b>99,00</b>
• 6-pieces; sizes Ø4 / Ø6 / Ø8 / Ø10 / Ø12 / Ø16 mm		
• Wooden box		



### Clamping tool kit SPW 58 pcs

• Metric threads		
• 24 pcs draw-in bolts		
• 6 pcs T-slots		
• 6 pcs nuts		
• 4 pcs elongation nuts		
• 6 pcs step blocks		
• 12 pcs clamping blocks		
• Practical wall bracket		
<b>SPW 8</b>	335 2015	<b>65,00</b>
• T-slots 10 mm; draw bar thread M 8		
<b>SPW 10</b>	335 2016	<b>75,00</b>
• T-slots 12 mm; draw bar thread M 10		
<b>SPW 12</b>	335 2017	<b>85,00</b>
• T-slots 14 mm; draw bar thread M 12		
<b>SPW 14</b>	335 2018	<b>109,00</b>
• T-slots 16 mm; draw bar thread M 14		
<b>SPW 16</b>	335 2019	<b>119,00</b>
• T-slots 18 mm; draw bar thread M 16		



### Bracket 90°

• 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		
• Neat processing of outsides		
• Dimensions L x W x H: 202 x 126 x 150 mm		
• Weight 7 kg		



#### Horizontal-vertical circular dividing tables including 3-jaw chuck

- Quality circular dividing tables made of high quality Meehanite cast
- Reliable and precise
- 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)
- Degree division on a scale of 360° with crank and nonius (RTU 165)
- Direct dividing via locking disc
- 24 positions (15° division)
- Three jaw chuck
- 7 locking disks for 2/3/4/6/8/12/24 divisions
- Including clamping disk with 3 grooves

RTE 165	335 6365	629,00
RTU 165	335 4165	849,00

Technical data		RTE 165	RTU 165
Table diameter	mm	165	165
Construction height	mm	200	221
Width	mm	260	250
Length	mm	218	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 (= 150)	
Indirect indexing plate		Spacing of 2, 3, 4, 6, 8 and 12	
Spacing accuracy of the direct dividing equipment		45°	
Clamping option		Horizontal and vertical	
clamping surface		With scale of 360°	



Fig.: RTE 165



Fig.: RTU 165

#### Horizontal-vertical circular dividing tables

- Quality circular dividing tables made of high quality Meehanite cast
- Reliable and precise
- 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

#### RT 100

Circular dividing table	335 6110	275,00
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#### RT 150

Circular dividing table	335 6150	265,00
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#### Flange for lathe chucks

Flange for lathe chucks	335 6154	75,00
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#### Three jaw chuck Ø 130 mm centric

Three jaw chuck Ø 130 mm centric	335 6100	245,00
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#### RT 200

Circular dividing table	335 6200	409,00
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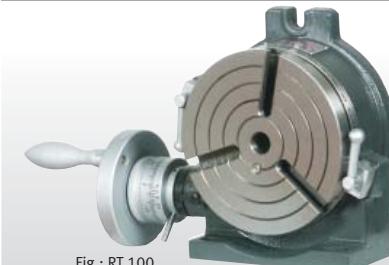
#### Flange for lathe chucks

Flange for lathe chucks	335 6254	85,00
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#### Three jaw chuck Ø 165 mm

Three jaw chuck Ø 165 mm	335 6225	265,00
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Technical data	RT 100	RT 150	RT 200
Centring cone	MT2	MT2	MT3
Transmission ratio	90:1	90:1	90:1
Disk size	Ø 110	Ø 150	Ø 210
Construction height	72	79	104
Length	138	204	265
Width	118	156	199
Centre height	80	102	133
Slot width	11	11	16
Number of grooves	3	4	4
Indirect dividing equipment	No	Yes	Yes
Net weight	kg	9	12



Optional:  
„CNC add-on kits  
MK RT1 and MK  
RT to control the  
horizontal vertical  
circular dividing  
tables“ on page  
**219**

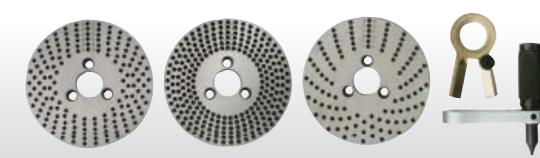
#### Indirect dividing equipment

IT 150	335 6152	85,00
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- 3 pcs. Indexing plates . Sector arm
- Angle shear with spring steel plate
- Suitable for RT 100/RT 150

IT 200	335 6205	109,00
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- 2 pcs. Indexing plates . Sector arm
- Angle shear with spring steel plate
- Suitable for RT 200/RTU 165



## Accessories for milling machines

### Height adjustable tailstock

**Tailstock Rst 1** 335 6155 **109,00**

- Height of centres 72 - 108 mm
- suitable for RT 100, RT 150

**Tailstock Rst 2** 335 6157 **109,00**

- Height of centres 110 - 145 mm
- suitable for RT 200, RTE 165, RTU 165



### 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 operation
- Little weight due to optimised structure
- Safe locking due to toggle principle
- Precise guiding due to optimised geometry
- Little air consumption

**ISO 30** 335 2393 **739,00**

- For OPTI MILL BF30 Vario

**ISO 40** 335 2394 **739,00**

- For OPTI MILL MF 2 Vario / OPTI MILL MF 4 Vario / OPTI MILL BF 46 Vario

**Factory assembly of clamping system** 900 0490 **380,00**



### Adapter plate to mount the tool changer

**BF 30 Vario** 335 2391 **65,00**

**BF 46 Vario** 335 2392 **89,00**



Fig.: Add-on example BF 46 Vario

### Thread cutting device M5 - M12/B16

335 2042 **369,00**

- 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	1000 min <sup>-1</sup>
Transmission ration forward and return	1:1.75
Cutting range	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

335 6125 **419,00**

- Slewable from -10° to +90°
- Hardened and ground screw
- Precision taper roller bearing
- Hardened and ground main dividing plate (spacing of 24), 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° / MT2
- Carrier attachment
- Flange (Ø 140 mm, t = 12 mm) for carrier pin or lathe chuck assembly

#### Technical data

Transmission	40:1
Construction height	175 mm
Width with centre point	205 mm
Length	230 mm
Centre height	100 mm
Hole in the seat shaft (passage)	18 mm
Slot width	16 mm
Direct indexing plate (division)	15°
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

- Milling table feed
- Horizontal assembly (V99)
- Vertical assembly (V250)
- Infinitely variable speed adjustment and rapid feed
- Right-/left handed rotation
- 230 v, Overload protection and limit stop switch
- For self-assembly

<b>OPTI V 99</b>	335 2022	<b>379,00</b>
<b>OPTI V 250</b>	335 2029	<b>419,00</b>



Fig.: V 99



Fig.: V 250

#### Cross table KT

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

<b>KT 120</b>	335 6595	<b>420,00</b>
<b>KT 179</b>	335 6596	<b>559,00</b>
<b>KT 180</b>	335 6591	<b>669,00</b>
<b>KT 210</b>	335 6600	<b>775,00</b>

Technical data	KT120	KT179	KT 180	KT210
Length mm	506	748	945	1065
Width mm	400	483	483	555
Height mm	140	148	169	200
T-slot size mm	10	12	12	14
Table length mm	400	500	700	730
Table width mm	120	180	180	210
Load of cross table kg	40	55	55	80
Pedestal width mm	220	274	274	280
Pedestal length mm	280	340	340	362
Travel X axis mm	220	280	480	480
Travel Y axis mm	165	175	175	210
Net weight kg	22	32	49	84



Fig.: KT 180

#### Holding down clamp, kit of 2 pcs

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

<b>Table groove 14 mm/M 12</b>	335 2031	<b>60,00</b>
• L x W x H: 115 x 42 x 39 mm;		
• Height adjustment: 0 - 89 mm		

<b>Table groove 18 mm/M 16</b>	335 2032	<b>70,00</b>
• L x W x H: 133 x 50 x 49 mm		
• Height adjustment: 0 - 101 mm		



#### Kit of parallel packing plates 20-pcs

335 4001 **125,00**

- 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 x 13 mm/2 x 16 mm/2 x 19 mm/2 x 22 mm/2 x 25 mm/2 x 28 mm/2 x 31 mm/2 x 35 mm/2 x 38 mm/2 x 41 mm



#### Kit of parallel packing plates

335 4000 **185,00**

- Hardness HRC 50 - 55
- Ground to very high precision of 0.01 mm
- 18-pieces; sizes from 5 x 16 x 100 up to 22 x 62 x 150
- Plastic case



#### Prism WP 30

335 2195 **95,00**

- 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



## Accessories for milling machines

### 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 anchoring
- For self-assembly

**Universal coolant equipment 230 V/1 Ph**

335 2002 **199,00**

**Universal coolant equipment 400 V/3 Ph**

335 2001 **199,00**



### Coolant lubricant sprayer with magnetic base MMC1

335 6663 **109,00**

- 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 hose KMS 2

335 6660 **48,00**

- Two variable coolant hoses made of individual plastic elements
- Not electroconductive
- Magnetic stand holding force up to 50 kg
- Length of the coolant hoses 335 mm
- Flexible and stable
- Resistant against most solvents and chemicals
- Universally applicable on all machine tools



### Universal machine base BF 16/BF20

335 3003

**309,00**

- Shelf and chip tray

• Dimensions L x W x H: 500 x 420 x 800 mm

• Weight: 35 kg



### Steel base frame BF30 Vario / F40 E

335 3004

**569,00**

- Chip plates

• Solidity and weightiness provide for stability

• Dimensions L x W x H: 940 x 650 x 815 mm

• Weight: 85 kg

### Steel base frame BF46 Vario/ BF46 TC

335 3005

**929,00**

- Chip plates

• Solidity and weightiness provide for stability

• Dimensions L x W x H: 765 x 765 x 860 mm

• Weight: 142 kg



### Steel base MB 4 / MH28V

335 3006

**289,00**

- Chip plates

• Solidity and weightiness provide for stability

• Dimensions L x W x H: 625 x 415 x 750 mm

• Weight: 54 kg



## Compatibility overview for vices



Fig.: FMS

	Item No.	MX 4	MX 3	MX 2	MT 8	MT 200	MT 100	MF 4 Vario	MF 2 Vario	MF 1 Vario	BF 4/6 Vario	MB 4 P	MH 28 V	F 40 E	BF 20 (U) Vario	BF 16 Vario	FMS 200	FMS 150	FMS 125	FMS 100
<b>Precision machine vice</b>																				
FMS 100	335 4100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FMS 125	335 4125			●	●	●	●	●	●	●							●	●	●	●
FMS 150	335 4150				○			○			●						●	●	●	●
FMS 200	335 4200										●	●	●	●	●	●	●	●	●	●



Fig.: FMSN

FMSN 100	335 4110	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FMSN 125	335 4120			○	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●
FMSN 150	335 4130							○	●	●	●	●	●	●	●	●	●	●	●	●



Fig.: HMS

HMS 100	335 5100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
HMS 125	335 5127			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
HMS 150	335 5150				○					●	●	●	●	●	●	●	●	●	●	●
HMS 200	335 5200									○	○	●	●	●	●	●	●	●	●	●



Fig.: DAS

DAS 100	335 5500	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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Fig.: MV3

MV3-75	335 4175	●	●	○	○	○	○	○	○	○	○						●	○	○	○
MV3-125	335 4178			○	○	○	○	○	○	○	○						●	○	○	○



Fig.: ZAS 50

ZAS 50	335 4170	●	●	○	●	○	●	○	●	●	●	○					●	○		
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Recommended

Conditionally recommended

Not recommended

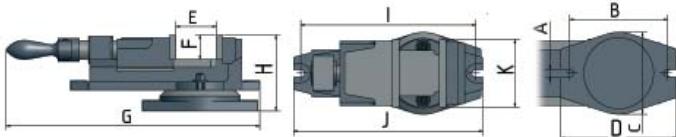
## Machine vices

### 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

<b>FMS 100</b>	335 4100	<b>139,00</b>
<b>Prism jaw for FMS 100</b>	335 4102	<b>35,00</b>
<b>FMS 125</b>	335 4125	<b>175,00</b>
<b>Prism jaw for FMS 125</b>	335 4127	<b>45,00</b>
<b>FMS 150</b>	335 4150	<b>209,00</b>
<b>Prism jaw for FMS 150</b>	335 4152	<b>50,00</b>
<b>FMS 200</b>	335 4200	<b>359,00</b>
<b>Prism jaw for FMS 200</b>	335 4202	<b>65,00</b>

Technical data	A	B	C	D	E	F	G	H	I	J	K	kg	
FMS 100	mm	13	150	124	178	62	30	295	100	270	292	100	11
FMS 125	mm	13	176	148	210	85	37	370	128	332	365	125	17
FMS 150	mm	13	210	180	258	114	40	462	145	400	445	150	28
FMS 200	mm	16.5	295	237	355	150	58	620	202	530	580	200	58

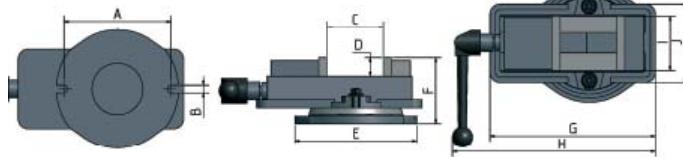


### OPTIMUM Precision machine vices FMSN

- 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

<b>FMSN 100</b>	335 4110	<b>255,00</b>
<b>Prism jaw for FMSN 100</b>	335 4112	<b>45,00</b>
<b>FMSN 125</b>	335 4120	<b>289,00</b>
<b>Prism jaw for FMSN 125</b>	335 4122	<b>50,00</b>
<b>FMSN 150</b>	335 4130	<b>315,00</b>
<b>Prism jaw for FMSN 150</b>	335 4132	<b>55,00</b>

Technical data	A	B	C	D	E	F	G	H	I	J	kg	
FMSN 100	mm	220	14,5	100	34	260	119	325	319	100	145	19
FMSN 125	mm	248	16,5	108	36	278	128	355	369	135	185	29
FMSN 150	mm	288	18,5	146	46	332	149	415	425	155	210	36



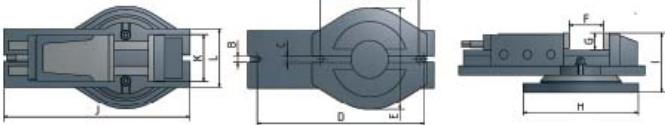
### OPTIMUM Hydraulic machine vices HMS

- 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

<b>HMS 100</b>	335 5100	<b>489,00</b>
<b>Prism jaw for HMS 100</b>	335 5102	<b>45,00</b>
<b>HMS 125</b>	335 5127	<b>519,00</b>
<b>Prism jaw for HMS 125</b>	335 5129	<b>50,00</b>
<b>HMS 150</b>	335 5150	<b>529,00</b>
<b>Prism jaw for HMS 150</b>	335 5152	<b>60,00</b>
<b>HMS 200</b>	335 5200	<b>989,00</b>
<b>Prism jaw for HMS 200</b>	335 5202	<b>90,00</b>

	A	B	C	D	E	G	H	I	J	K	L	kg	
HMS 100	mm	230	15	15	390	240	36	270	122	525	100	118	26
HMS 125	mm	254	16	18	500	265	46	290	151	670	127	130	52
HMS 150	mm	298	17	17	580	303	51	328	169	800	150	180	74
HMS 200	mm	373	19	19	630	280	65	358	158	710	165	213	125

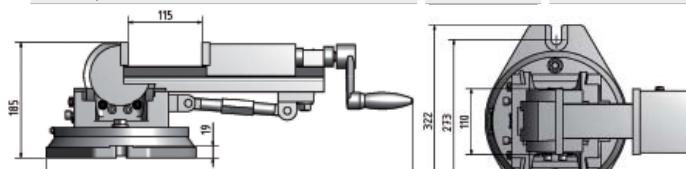
	Span width	Span width	Span width	pressure	pressure
HMS 100	0-60 mm	57-115 mm	110-170 mm	2500 kg	24.5 kN
HMS 125	0-76 mm	72-150 mm	146-224 mm	4000 kg	39.25 kN
HMS 150	0-100 mm	98-200 mm	195-300 mm	4500 kg	44.1 kN
HMS 200	0-100 mm	98-200 mm	195-300 mm	7500 kg	73.6 kN



### 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 ± 45° via threaded spindle
- Well readable scales for all three axes

<b>DAS 100</b>	335 5500	<b>449,00</b>
<b>Prism jaws</b>	335 5502	<b>50,00</b>



#### Hydraulic machine vices HCV 105

- Modular - Machine vice with high accuracy and repeatability for serial and single part machining on CNC milling machines and machining centres
- Robust 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
- High clamping force

**HCV 105**

353 6210

**790,00**

Technical data		L	B	C	j	a	Pressure	Force	kg
HCV 105	mm	442	107	170	42	107	16	24.5 KN	2'500 kg

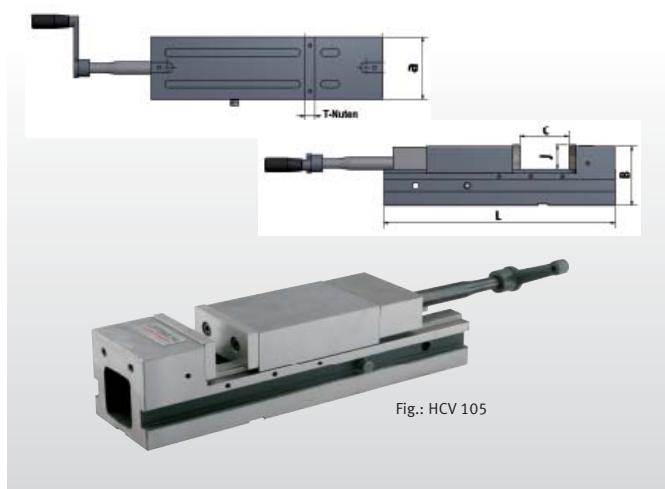


Fig.: HCV 105

#### Hydraulic machine vices HCV 125

- Modular - Machine vice with high accuracy and repeatability for serial and single part machining on CNC milling machines and machining centres
- Robust 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
- High clamping force

**HCV 125**

353 6214

**1.450,00**

**Non-rigid jaws 2 pcs for HCV125**

353 6221

**429,00**

**L-jaws 2 pcs for HCV125**

353 6222

**429,00**

Technical data		L	B	C	j	a	Pressure	Force	kg
HCV 125	mm	478.5	140	205	45	126	18	40 KN	4'000 kg

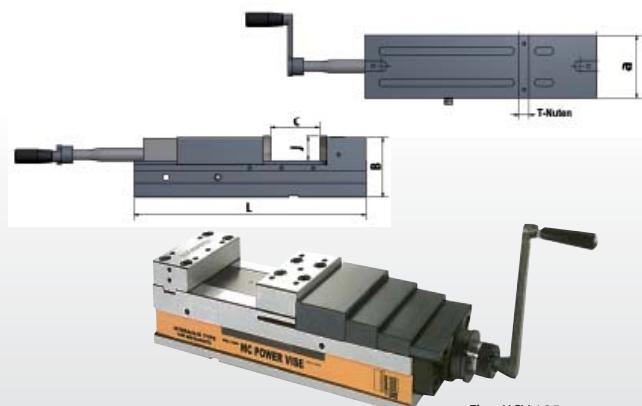


Fig.: HCV 125



Fig.: Non-rigid jaws



Fig.: L-jaws

#### OPTIMUM Three-axis vices MV3

- Horizontal swing movement up to 90°
- Vertical swing movement up to ± 45°
- Well readable scales for all three axes
- Hardened and ground clamping jaws, replaceable

**MV3-75**

335 4175

**219,00**

**MV3-125**

335 4178

**275,00**

Technical data		A	B	C	D	E	F	G	H	I	kg
MV3-75	mm	166	195	12	139	82	34	150	195	75.5	11
MV3-125	mm	212	260	12	185	97	45	206	290	125	26

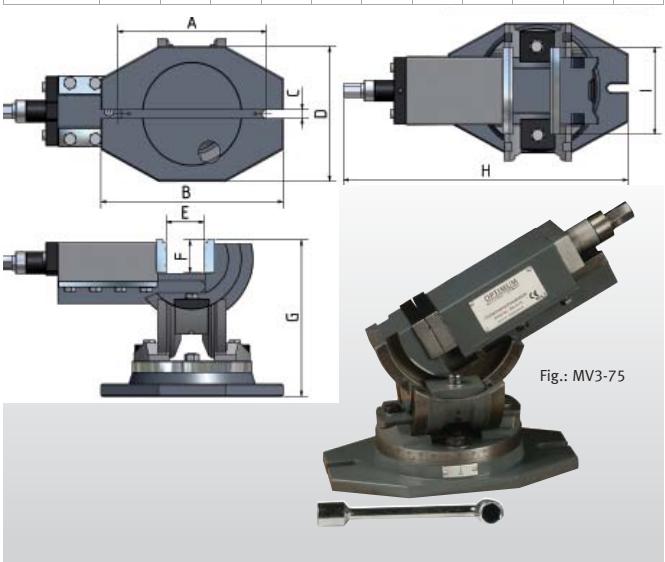
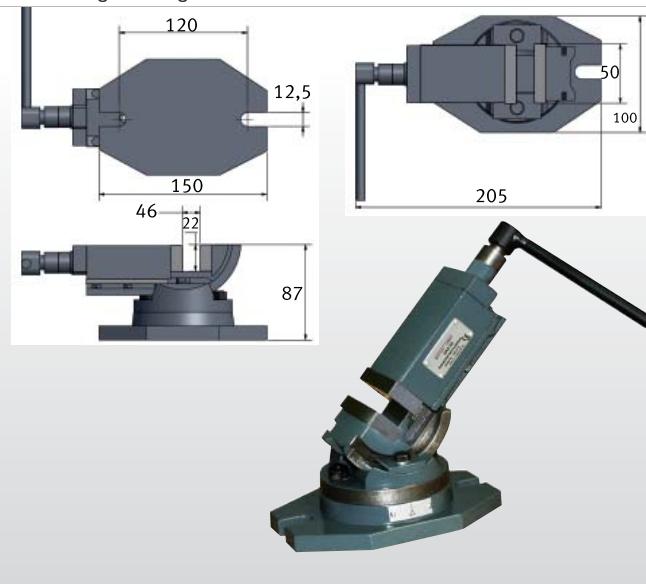


Fig.: MV3-75

#### Two-axis vice ZAS 50

- Inclinable 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



## Metal band saws



## Technical data of the OPTIsaw® metal band saws for general orientation



	Motor power	Double mitre	Cutting range 0° round (mm)	Scutting range 0° rectangle (mm)	Cutting range 60° round (mm)	Cutting range 60° rectangle (mm)	Cutting range + 45° round (mm)	Cutting range + 45° rectangle (mm)	Cutting range - 45° round (mm)	Cutting range - 45° rectangle (mm)	Saw band speed (m/min)	Infinitely variable	Coolant pump	Manometer	230V version available	400V version available
<b>S 100 G</b>	370 W		Ø 100	100 x 150	-	-	Ø 65	100 x 60	-	-	45	-	-	-	●	
<b>S 131 GH</b>	550 W		Ø 130	128 x 150	Ø 45	56 x 45	Ø 94	94 x 68	-	-	22/31/55	-	-	-	●	
<b>S 91 G</b>	400 W		Ø 90	90 x 130	-	-	Ø 65	65 x 50	-	-	20/29/50	-	-	-	●	
<b>S 121 G</b>	550 W		Ø 115	100 x 150	-	-	Ø 100	85 x 65	-	-	21/31/54	-	-	-	●	
<b>S 150 G Vario</b>	1,1 kW		Ø 150	150 x 180	Ø 70	70 x 90	Ø 125	115 x 125	-	-	20 - 65	●	●	-	●	
<b>S 181 G</b>	750 W		Ø 180	180 x 240	-	-	Ø 110	170 x 110	-	-	39/66/82	-	-	-		●
<b>S 181</b>	750 W		Ø 180	180 x 240	-	-	Ø 110	170 x 110	-	-	21/33,5 / 45/50	-	●	-		●
<b>S 210 G</b>	750 W		Ø 170	210 x 140	-	-	Ø 125	125 x 100	-	-	40/80	-	●	-		●
<b>S 275 G</b>	1,1 kW		Ø 225	245 x 180	Ø 100	100 x 100	Ø 160	160 x 160	-	-	45/90	-	●	●	●	●
<b>S 275 G Vario</b>	1,5 kW		Ø 225	245 x 180	Ø 100	100 x 100	Ø 160	160 x 160	-	-	20 - 90	●	●	●	●	
<b>S 285 DG</b>	1,1 kW	●	Ø 200	245 x 150	Ø 90	90 x 110	Ø 150	145 x 215	Ø 130	100 x 140	45 / 90	-	●	●	●	●
<b>S 300 DG</b>	1,5 kW	●	Ø 255	310 x 210	Ø 135	135 x 135	Ø 220	220 x 200	Ø 170	170 x 170	35 / 70	-	●	●	●	●
<b>S 300 DG Vario</b>	1,5 kW	●	Ø 255	310 x 210	Ø 135	135 x 135	Ø 220	220 x 200	Ø 170	170 x 170	20 - 90	●	●	●	●	●
<b>S 310 DG Vario</b>	1,5 kW	●	Ø 255	315 x 230	Ø 115	115 x 160	Ø 160	160 x 160	Ø 195	195 x 230	20 - 90	●	●	●	●	●
<b>S 350 DG</b>	2,2 kW	●	Ø 270	350 x 240	Ø 140	140 x 140	Ø 230	230 x 150	Ø 200	200 x 140	36/72	-	●	●		
<b>SD 350 AV</b>	2,2 kW	●	Ø 270	350 x 240	Ø 140	140 x 140	Ø 230	230 x 150	Ø 200	200 x 140	36/72	-	●	●	●	●

## Light-weighted band saws for metal machining with slewable saw arc for mitre cuts

### Convincing arguments: quality, efficiency and price

- Ball bearing mounted 3 point saw band guiding providing outstanding band run and thus optimum cutting results
- Three speed stages for a broad choice of materials
- Micro switch for automatic limit stop
- Sawing arc slewable from 0° to 45° thus allowing angular saw cuts
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Feed adjustable by means of a spring
- Saw band tension at the front adjustable via handwheel
- Adjustable material stop for series productions
- Protective switch for the belt cover
- Base plate equipped with anti-skid feet
- Transportation lock
- Fully equipped machine,  
the user can immediately start to work productively

### OPTI saw S 122 G

- Quick action vice as standard
- Practical base



Fig.: OPTI saw S 122 G

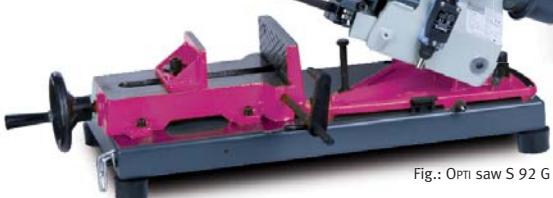


Fig.: OPTI saw S 92 G

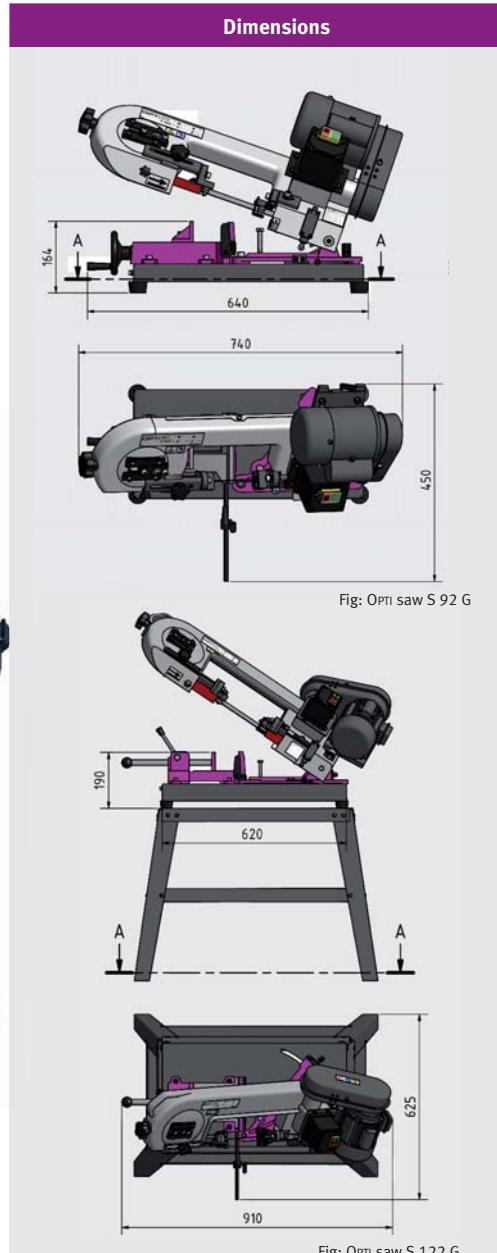
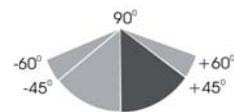


Fig.: OPTI saw S 92 G

Fig.: OPTI saw S 122 G

Type	S 92G	S 122G
Item No	330 0092	330 0122
€ plus VAT	<b>349.00</b>	<b>469,00</b>
<b>Machine data</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	400 W	550 W
<b>General information</b>		
Lifting the saw bow	Manual Lowering by means of a spring	Manual Lowering by means of a spring
Feed	a spring	a spring
Saw band speed	20/29/50 m/min	21/31/54 m/min
Saw band dimensions	1'300 x 12.7 x 0.5 mm	1'638 x 13 x 0.65 mm
Cutting angle	0° - 45°	0° - 45°
<b>Dimensions</b>		
Length	730 mm	950 mm
Width without / with material stop	270 / 430 mm	550 / 620 mm
Height		
bottom stop position of saw bow	450 mm	1'060 mm
upper stop position saw bow	650 mm	1'430 mm
Net weight	26 kg	56 kg
<b>Standard equipment</b>		
	Bi-metal saw band Material stop	Pedestal
	-	

Cutting range S 92 G				
0°		Ø 90 mm		90 x 130 mm
45°		Ø 65 mm		65 x 50 mm

Cutting range S 122 G				
0°		Ø 115 mm		100 x 150 mm
45°		Ø 100 mm		85 x 65 mm

Saw band HSS bi-metal M 42 for S 92 G			
No of teeth	Tooth angle	Item No	€ plus VAT
<b>10 - 14 tpi</b>	<b>0°</b>	335 1509	<b>19,00</b>
<b>Saw bands HSS bi-metal M 42 for S 122 G</b>			
<b>10 - 14 tpi</b>	<b>0°</b>	335 1518	<b>19,00</b>
<b>6 - 10 tpi</b>	<b>0°</b>	335 1512	<b>19,00</b>
<b>6 tpi</b>	<b>10°</b>	335 1511	<b>19,00</b>

Information „Saw band information“ on page 172

**Light-weighted 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 band run and thus optimum cutting results
- 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
- Transportation lock

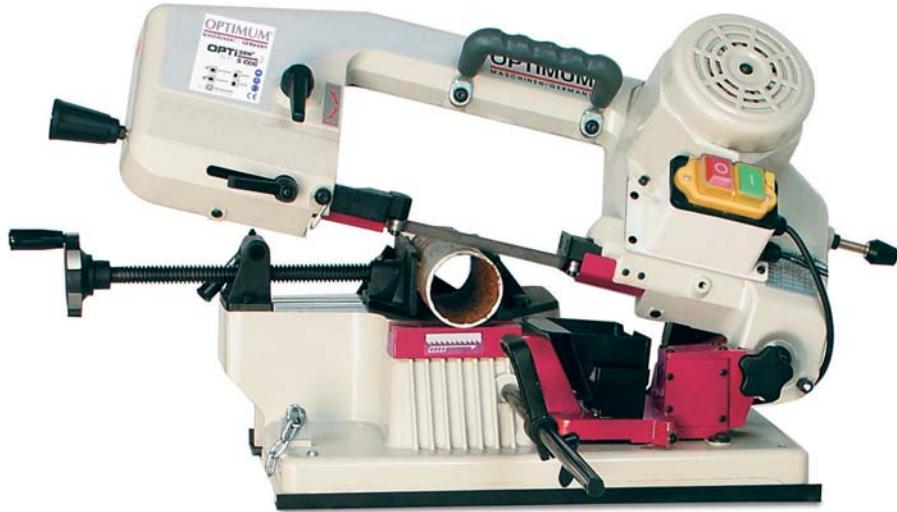


Fig.: Opti saw S 100 G

#### Machine pedestal

- Stable
- Space saving
- Collapsible
- Easy-to-transport
- Dimensions L x W x H: 500 x 470 x 780 mm

Item No 335 1490

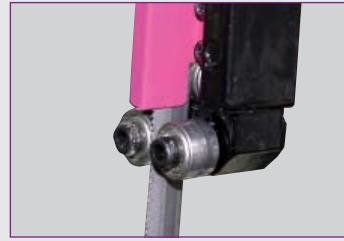
€ plus VAT 85,00

#### Convincing arguments...



##### Automatic limit stop

- Switching off the saw band drive at the bottom limit of travel

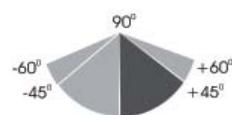


##### Saw band guiding

- Ball bearing; for outstanding belt run and thus optimum cutting results



Type	S 100G
Item No	330 0100
€ plus VAT	569,00
<b>Machine data</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	370 W
<b>General information</b>	
Saw band speed	45 m/min
Saw band dimensions	1'470 x 13 x 0.65 mm
Cutting angle	0° - 45°
<b>Dimensions</b>	
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
<b>Standard equipment</b>	
Bi-metal saw band	
Material stop	
Operating tool	



#### Cutting range

0°		Ø 100 mm		100 x 150 mm
45°		Ø 65 mm		100 x 60 mm

#### Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
10 - 14 tpi	0°	335 1110	18,00
6 tpi	10°	335 1109	18,00

#### Saw band kit

335 1100	55,00
• 1 x Saw bands HSS bi-metal HSS 10 - 14 tpi; 0°	
• 2 x Saw bands HSS bi-metal HSS 6 tpi; 10°	

Information „Saw band information“ on page 172

## Metal band saw for easy sawing Mitre saws from -45° to +60° via slewable saw bow

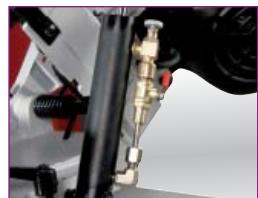
### Convincing arguments: quality, efficiency and price

- Protective switch for the belt cover and Saw blade cover in low-voltage version
- Separate emergency stop
- Low voltage electronics 24 V
- Low-noise running
- Ball bearing mounted 3 point saw band guiding
- 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 band 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

- made of grey cast iron
- Slewable on both sides from -45° to +60°



#### Hydraulic cylinder

- Precise, infinitely variable lowering by means of a hydraulic cylinder and a throttle valve



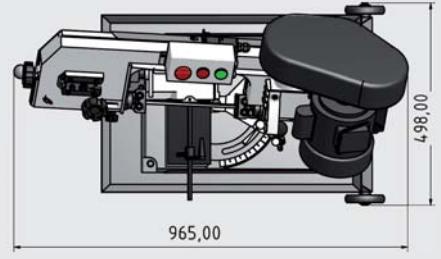
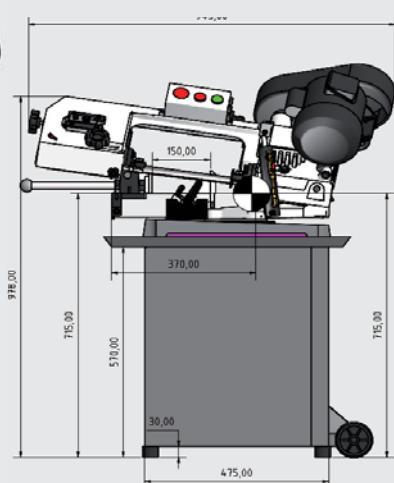
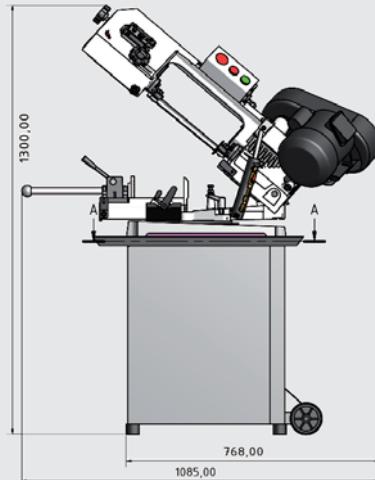
Fig.: Opti saw S 131 GH

Type	S 131 GH
Item No	330 0131
€ plus VAT	<b>719,00</b>

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	550 W
General information	
Lifting the saw bow	Manual
Feed	continuously adjustable
Saw band speed	22 / 31 / 55 m/min
Saw band dimensions	1'638 x 13 x 0.65 mm
Cutting angle	-45° - 60°
Net weight	81 kg
Standard equipment	
	Bi-metal saw band
	Machine substructure

Cutting range				
0°		Ø 128 mm		100 x 150 mm
45°		Ø 94 mm		94 x 68 mm
60°		Ø 56 mm		56 x 56 mm

### Dimensions



### Saw bands HSS bi-metal M 42

No of teeth	Tooth angle	Item No	€ plus VAT
6 - 10 tpi	0°	335 1512	<b>19,00</b>
10 - 14 tpi	0°	335 1518	<b>19,00</b>
6 tpi	10°	335 1511	<b>19,00</b>

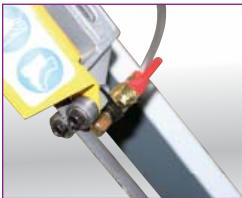
Information „Saw band information“ on page 172

Saw band kit	335 1500	55,00
<ul style="list-style-type: none"> <li>• 1 x Saw bands HSS bi-metal HSS 10 - 14 tpi; 0°</li> <li>• 1 x Saw bands HSS bi-metal HSS 6 tpi; 10°</li> <li>• 1 x Saw bands HSS bi-metal HSS 6 - 10 tpi; 6°</li> </ul>		

## 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
- Automatic switch-off of the saw after termination of cutting
- Scale good read for angle adjustment
- With high-grade bimetallic saw band supplied as standard
- Saw band tension at the front adjustable via handwheel
- Adjustable material stop for series productions
- Rapid clamping of the workpiece with quick action vice



#### Saw band guiding

- Ball bearing
- 3 point guiding
- Outstanding band run and thus optimum cutting results

#### Push button

#### "Manual saw band running"

- Switches the running of the saw band on and off

### 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

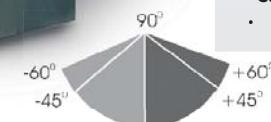


#### Coolant pump

- Standard equipment

Type	S 150G Vario
Item No	330 0150
€ plus VAT	<b>1.040,00</b>

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1.1 kW
Motor coolant pump	50 W
General information	
Feed	Manual
Saw band speed	20 - 65 m/min
Number of steps	Continuously variable
Saw band dimensions	1'735 x 12.7 x 0.9 mm
Cutting angle	0° - 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 limit stop



### Cutting range

0°		Ø 150 mm		150 x 160 mm
45°		Ø 125 mm		115 x 125 mm
60°		Ø 70 mm		70 x 90 mm

### Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
6 tpi	10°	335 1521	<b>21,00</b>
6 - 10 tpi	0°	335 1522	<b>21,00</b>
10 - 14 tpi	0°	335 1538	<b>21,00</b>

„Saw band information“ on page 172

Saw band kit	335 1501	65,00
<ul style="list-style-type: none"> <li>• Saw band HSS bi-metal 6 TPI</li> <li>• Saw band HSS bi-metal 6 - 10 TPI</li> <li>• Saw band HSS bi-metal 10 - 14 TPI</li> </ul>		

## Solid band saw for metal working with infinitely variable, hydraulic lowering

### Convincing arguments: quality, efficiency and price

- Low-noise running
- Solid 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 band 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

### 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



#### Saw band guiding

- Ball bearing 3-point saw band guiding
- Outstanding band run and thus optimum cutting results
- Chip brush

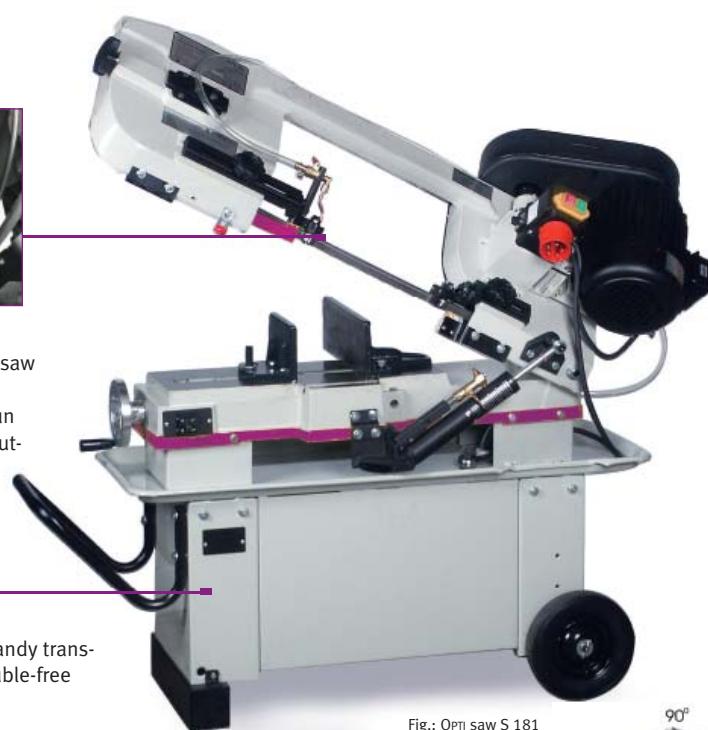
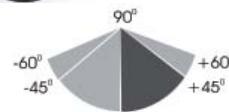


Fig.: Opti saw S 181



#### Cutting range

<b>0°</b>		<b>Ø 180 mm</b>		<b>180 x 240 mm</b>
<b>45°</b>		<b>Ø 110 mm</b>		<b>170 x 110 mm</b>

#### Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
<b>5 - 8 tpi</b>	<b>0°</b>	335 7522	<b>28,00</b>
<b>6 - 10 tpi</b>	<b>0°</b>	335 7521	<b>28,00</b>
<b>5 - 8 tpi</b>	<b>6°</b>	335 7516	<b>28,00</b>

Information „Saw band information“ on page 172

Saw band kit	335 7500	84,00
<ul style="list-style-type: none"> <li>• Saw band HSS bi-metal 6 - 10 TPI; 0°</li> <li>• Saw band HSS bi-metal 5 - 8 TPI; 0°</li> <li>• Saw band HSS bi-metal 5 - 8 TPI; 6°</li> </ul>		

## The metal belt saw for demanding sawing with gearbox and 3 sawing speeds

### Convincing arguments: quality, efficiency and price

- Low-noise running
- Solid 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 band tension at the front adjustable via handwheel
- Adjustable material stop for series productions

### Convincing arguments...



#### Three speeds

- Switchable by means of the gearbox



#### Quick-action vice

- Clamping jaws adjustable from 0° to 45° for mitre cuts

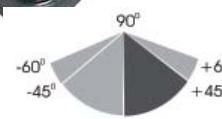


#### Coolant equipment

- Integrated in the base
- Tank capacity 11 litres



Fig.: OPTI saw S 181G



### Machine base

- Robust
- Large wheels and handy transport strap allow trouble-free position change

Type	S 181G
Item No	330 0182
€ plus VAT	<b>1.320,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	750 W
<b>General information</b>	
Lifting the saw bow	Manual
Feed	continuously adjustable
Saw band speed	39/66/82 m/min
Saw band dimensions	2'362 x 19 x 0.9 mm
Cutting angle	0° - 45°
<b>Dimensions</b>	
Length	1'200 mm
Width	450 mm
with material stop	720 mm
Height	1,050 mm
bottom stop position of saw bow	1,600 mm
upper stop position saw bow	130 kg
<b>Standard equipment</b>	
	Bi-metal saw band Material stop Machine substructure

### Cutting range

<b>0°</b>		<b>Ø 180 mm</b>		<b>180 x 240 mm 65 x 300 mm</b>
<b>45°</b>		<b>Ø 110 mm</b>		<b>170 x 110 mm</b>

### Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
<b>5 - 8 tpi</b>	<b>0°</b>	335 7522	<b>28,00</b>
<b>6 - 10 tpi</b>	<b>0°</b>	335 7521	<b>28,00</b>
<b>5 - 8 tpi</b>	<b>6°</b>	335 7516	<b>28,00</b>

„Saw band information“ on page 172

Saw band kit	335 7500	84,00
<ul style="list-style-type: none"> <li>• Saw band HSS bi-metal 6 - 10 TPI; 0°</li> <li>• Saw band HSS bi-metal 5 - 8 TPI; 0°</li> <li>• Saw band HSS bi-metal 5 - 8 TPI; 6°</li> </ul>		

**Metal band saws with slewable saw bow and 2 saw band speeds.  
OPTI SAW S 275G Vario with infinitely variable speed control**

**Convincing arguments: quality, efficiency and price**

- Low-noise running
- Solid 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 275G**

- Easy saw bow adjustment for mitre cutting by 60°

**S 275 G Vario:**

- Infinitely variable saw band speed 20 - 90 m/min.
- It is easily possible to change the speed during operation



**Manometer for S 275G / S 275G Vario**

- Simple and correct control of the saw band tension



**Control panel**

- Clearly-arranged keyboard for simple operation
- Emergency-stop push button
- Switch coolant pump
- Speed selector switch
- for Vario: Potentiometer

**Saw band guiding**

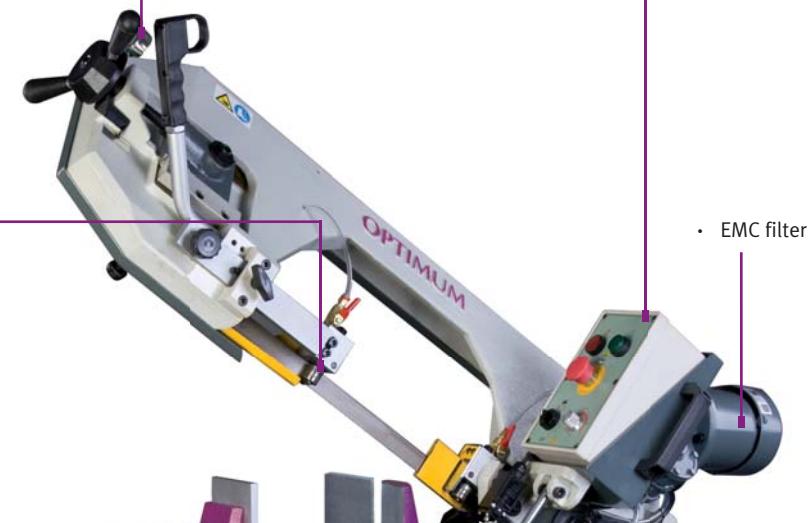
- Ball bearing 5-point saw band guiding
- Outstanding band run and thus optimum cutting results
- Chip brush

**Quick-action vice**

- Adjustable via handwheel
- Clamping the workpiece by means of the handy quick action lever



Fig.: OPTI saw S 210G



**Coolant pump**

**Machine base**

- Robust

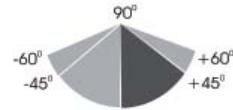
Fig.: OPTI saw S 275G Vario

## Technical data, dimensions and accessories

Type	S 210G	S 275G
Item No	330 0210	330 0275
€ plus VAT	<b>1.650,00</b>	<b>1.890,00</b>
Type	-	S 275G Vario
Item No	-	330 0278
€ plus VAT	-	<b>1.990,00</b>
Machine data		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	750 W	1.1 kW
Electrical connection Vario		230 V / 1 Ph ~50 Hz
Motor power Vario	-	1.5 kW
Motor coolant pump/Vario	40 W	40 W/50 W
General information		
Lifting the saw bow	Manual	Manual
Feed	continuously adjustable	continuously adjustable
Saw band speed	40/80 m/min	45/90 m/min
Saw band speed Vario	-	20 - 90 m/min
Saw band dimensions	2'080 x 20 x 0.9 mm	2'480 x 27 x 0.9 mm
Cutting angle	0° - 45°	0° - 60°
Net weight	152 kg	185 / 200 kg
Standard equipment		
	Bi-metal saw band	
	Material stop	
	Machine substructure	

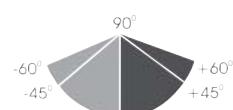
### Cutting range S 210G

0°		Ø 170 mm		210 x 140 mm
45°		Ø 125 mm		125 x 100 mm



### Cutting range S 275G / S 275G Vario

0°		Ø 225 mm		245 x 180 mm
45°		Ø 160 mm		160 x 160 mm
60°		Ø 100 mm		100 x 100 mm



### S 210G Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
5 - 8 tpi	0°	335 7503	<b>28,00</b>
6 - 10 tpi	0°	335 7514	<b>28,00</b>
5 - 8 tpi	6°	335 7505	<b>28,00</b>

### S 275G / S 275G Vario Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
5 - 8 tpi	0°	335 7511	<b>32,00</b>
6 - 10 tpi	0°	335 7524	<b>32,00</b>
5 - 8 tpi	6°	335 7512	<b>32,00</b>

„Saw band information“ on page 172

### Saw band kit

- 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°

S 210 G	335 7502	<b>84,00</b>
S 275G / S 275G Vario	335 7504	<b>96,00</b>

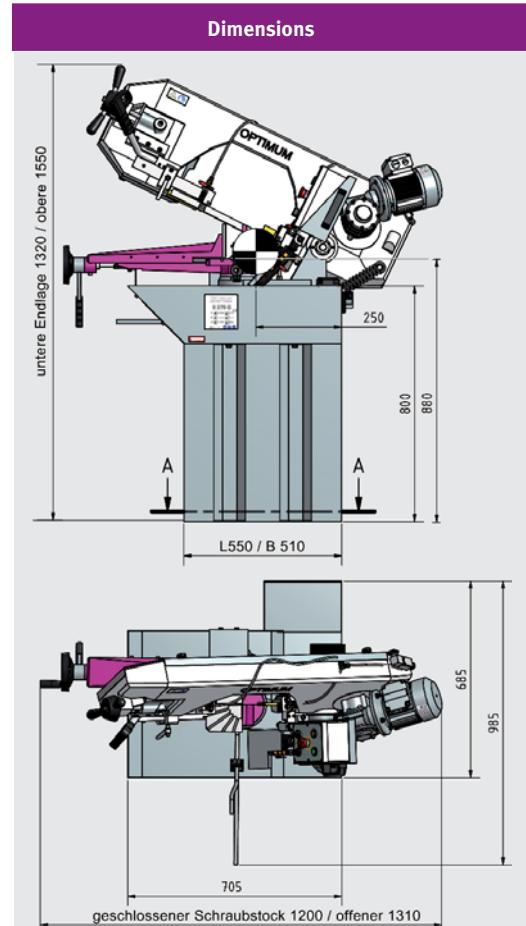


Fig: OPTI saw S 210G

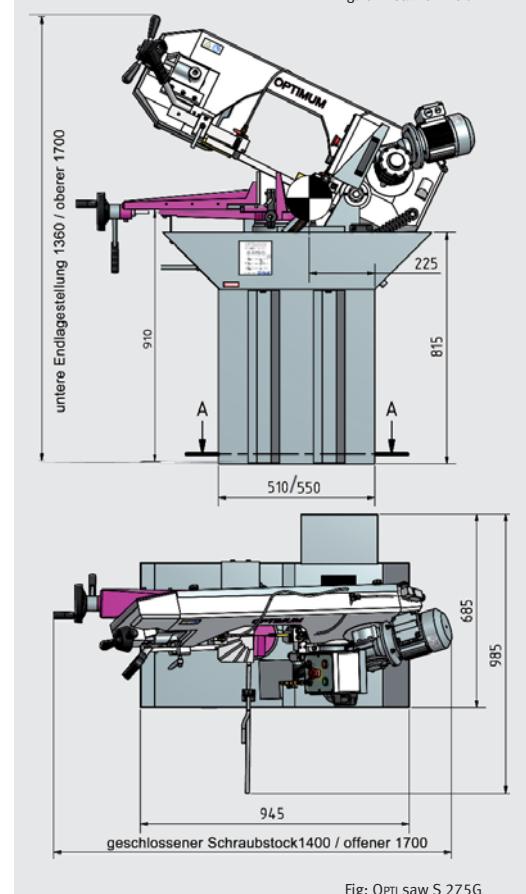


Fig: OPTI saw S 275G

## 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
- 3 point 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

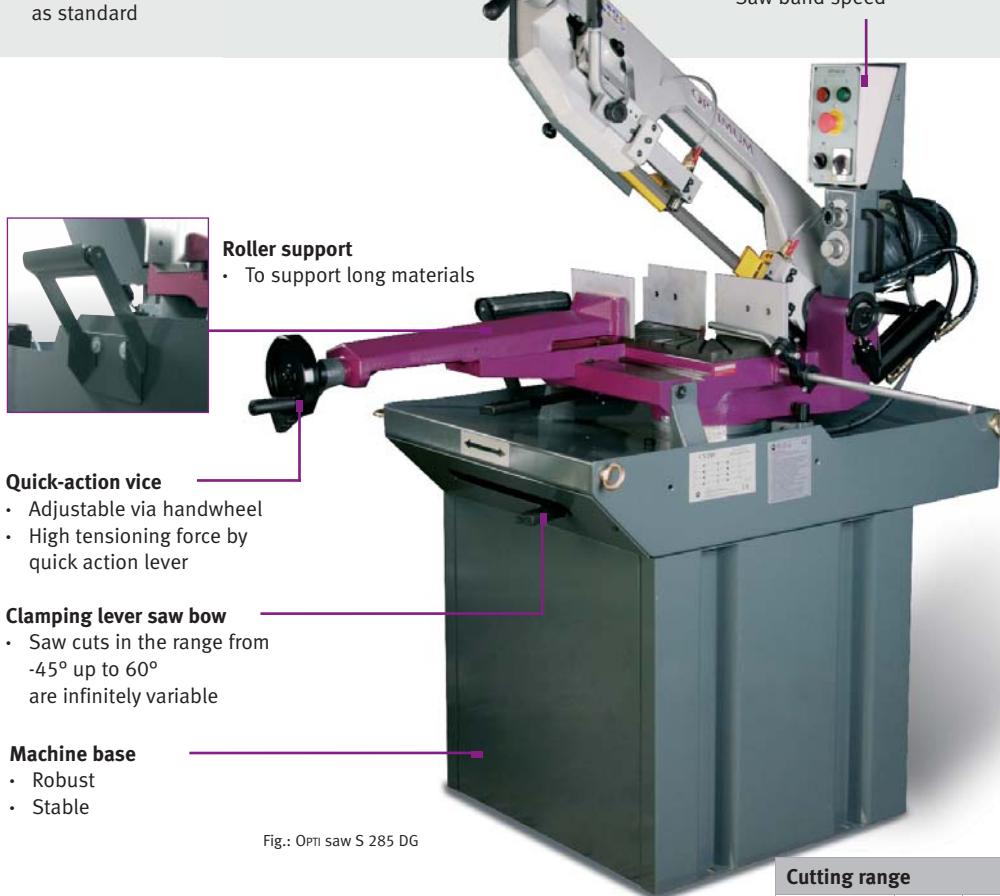


Fig.: OPTI saw S 285 DG

### Control panel

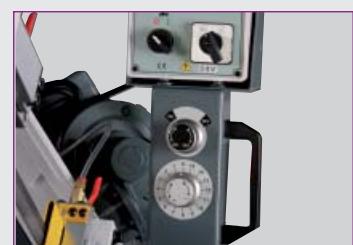
- Largely dimensioned
- Emergency-stop push button
- Switch coolant pump
- Saw band speed

### Convincing arguments...



#### Manometer

- Simple and correct control of the saw band tension



#### Lowering speed

- Simple adjustment via feed gear control valve on the control panel



#### Coolant pump

- Powerful 100 W



### Cutting range

0°		Ø 200 mm		245 x 150 mm
- 60°		Ø 90 mm		90 x 110 mm
+ 45°		Ø 150 mm		145 x 215 mm
- 45°		Ø 130 mm		100 x 140 mm

### Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
5 - 8 tpi	0°	335 7511	32,00
6 - 10 tpi	0°	335 7524	32,00
5 - 8 tpi	6°	335 7512	32,00

„Saw band information“ on page 172

### Saw band kit

335 7504

96,00

- 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 metal working with slewable saw bow. OPTI saw S 300 DG Vario with infinitely variable cutting speed

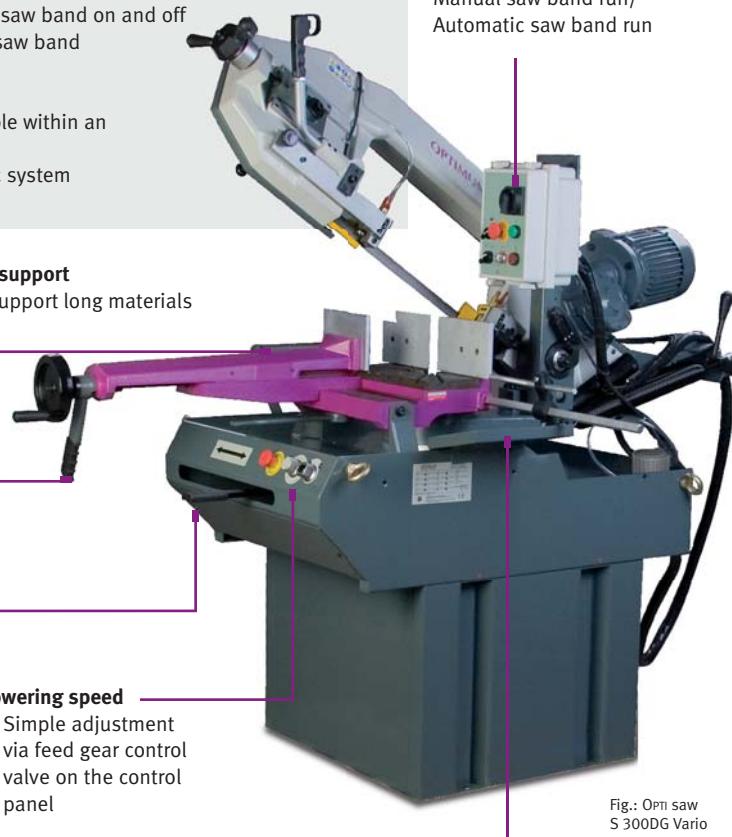
### Convincing arguments: quality, efficiency and price

- Low-noise running
- Heavy casting type
- High cutting accuracy due to vibration-free running
- 3 point saw band guiding providing outstanding band run and thus optimum cutting results
- Chip brush
- Micro switch for automatic limit stop
- 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
- Material stop with scaling
- Limit stops exactly adjustable within an accuracy of a degree
- CE conformity of the electric system
- EMC filter



#### 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

#### Lowering speed

- Simple adjustment via feed gear control valve on the control panel

### Control panel

- Main switch
- Operating indicator lamp
- Emergency-stop push button
- Switch coolant pump
- Potentiometer
- Rotary selector switch
- Manual saw band run/ Automatic saw band run

### Convincing arguments...



#### Manometer

- Simple and correct control of the saw band tension



#### Speed

- S 300 DG with 2 saw band speeds 35 / 70 m/min
- Vario type with infinitely variable saw band speed 20 - 90 m/min
- Professional inventor technique



#### Coolant pump

- Powerful 100 W

Type	S 300DG
Item No	329 0290
€ plus VAT	<b>3.390,00</b>

Type	S 300DG Vario
Item No	329 0295
€ plus VAT	<b>3.890,00</b>

#### Machine data

Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW
Motor coolant pump	100 W

#### General information

Feed	continuously adjustable
Saw band speed	35 / 70 m/min.
Saw band speed Vario	20 - 90 m/min
Saw band dimensions	2'750 x 27 x 0.9 mm
Cutting angle	-45° - 60°
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 limit stop

#### The collecting tray

- collects the coolant draining off the work-piece

#### Cutting range

0°		Ø 255 mm		310 x 210 mm
- 60°		Ø 135 mm		135 x 135 mm
+ 45°		Ø 220 mm		220 x 200 mm
- 45°		Ø 170 mm		170 x 170 mm

#### Saw bands HSS bi-metal M 42

Number of teeth	Tooth angle	Item No	€ plus VAT
5 - 8 tpi	0°	335 7751	<b>40,00</b>
6 - 10 tpi	0°	335 7753	<b>40,00</b>
5 - 8 tpi	10°	335 7752	<b>40,00</b>

„Saw band information“ on page 172

#### Saw band kit

335 7700	<b>120,00</b>
• Saw bands HSS bi-metal HSS 5 - 8 tpi; 0° • Saw bands HSS bi-metal HSS 6 - 10 tpi; 0° • Saw bands HSS bi-metal HSS 5 - 8 tpi; 10°	

## 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

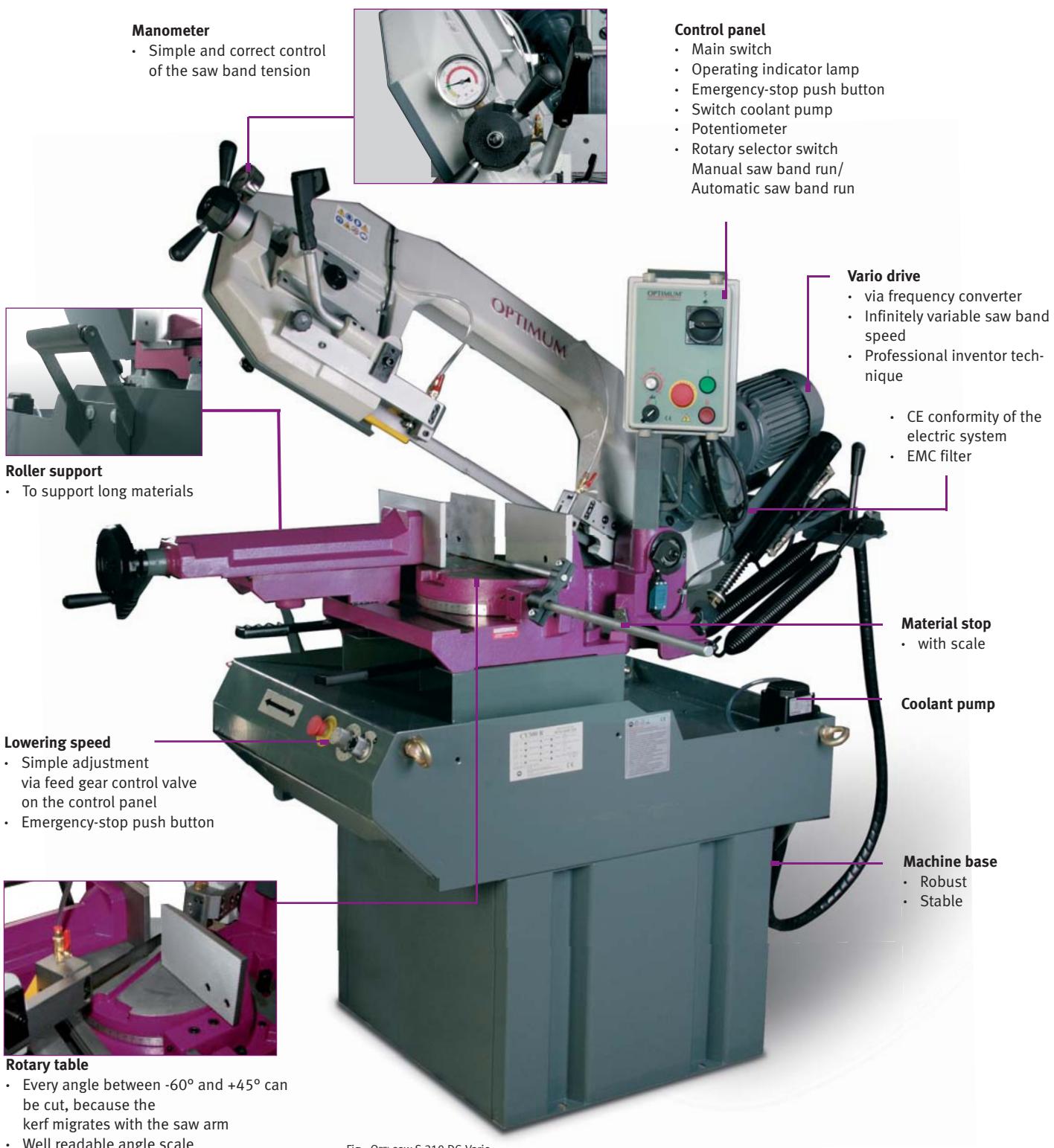
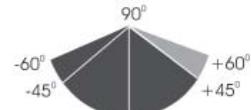


Fig.: OPTI saw S 310 DG Vario

## Technical data and accessories

Type	<b>S 310DG Vario</b>
Item No	329 0335
€ plus VAT	<b>4.390,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW
Motor coolant pump	100 W
<b>General information</b>	
Feed	continuously adjustable
Saw band speed	20 - 90 m/min
Saw band dimensions	2'750 x 27 x 0.9 mm
Cutting angle	-60° - 45°
<b>Dimensions</b>	
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
<b>Standard equipment</b>	
	Bi-metal saw band
	Material stop
	Machine substructure
	Coolant equipment

Cutting range				
0°		Ø 255 mm		315 x 230 mm
- 60°		Ø 115 mm		115 x 160 mm
+ 45°		Ø 160 mm		160 x 160 mm
- 45°		Ø 195 mm		195 x 230 mm



Saw bands HSS bi-metal M 42			
Number of teeth	Tooth angle	Item No	€ plus VAT
5 - 8 tpi	0°	335 7751	<b>40,00</b>
6 - 10 tpi	0°	335 7753	<b>40,00</b>
5 - 8 tpi	6°	335 7752	<b>40,00</b>

„Saw band information“ on page 172

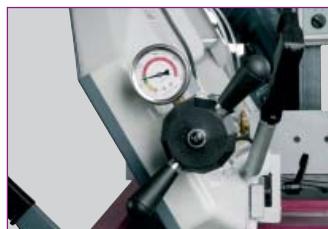
<b>Saw band kit</b>	335 7700	<b>120,00</b>
<ul style="list-style-type: none"> <li>Saw bands HSS bi-metal HSS 5 - 8 tpi; 0°</li> <li>Saw bands HSS bi-metal HSS 6 - 10 tpi; 0°</li> <li>Saw bands HSS bi-metal HSS 5 - 8 tpi; 10°</li> </ul>		

## Metal band saw with double mitre of heavy type

### Convincing arguments: quality, efficiency and price

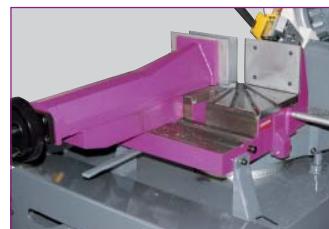
- Heavy industrial type
- Low-noise running
- High cutting accuracy due to vibration-free running
- Two switchable speeds 36/72 m/min.
- Mitre adjustment to 60° by slewing the whole saw bow
- Combinable and individually adjustable hard metal and ball bearing guidings of the saw band

- 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



**Saw band tension**

- Simple and correct setting of the saw band tension by means of a manometer



**Robust quick-action vice**

- Largely dimensioned
- Adjustable via handwheel
- Clamping the workpiece by means of the handy quick action lever
- Shiftable for large materials

**Control panel**

- Main switch
- Operating indicator lamp
- Emergency-stop push button
- Switch coolant pump
- Speed selector switch

**Hydraulic cylinder**

- Precise, infinitely variable saw bow movement

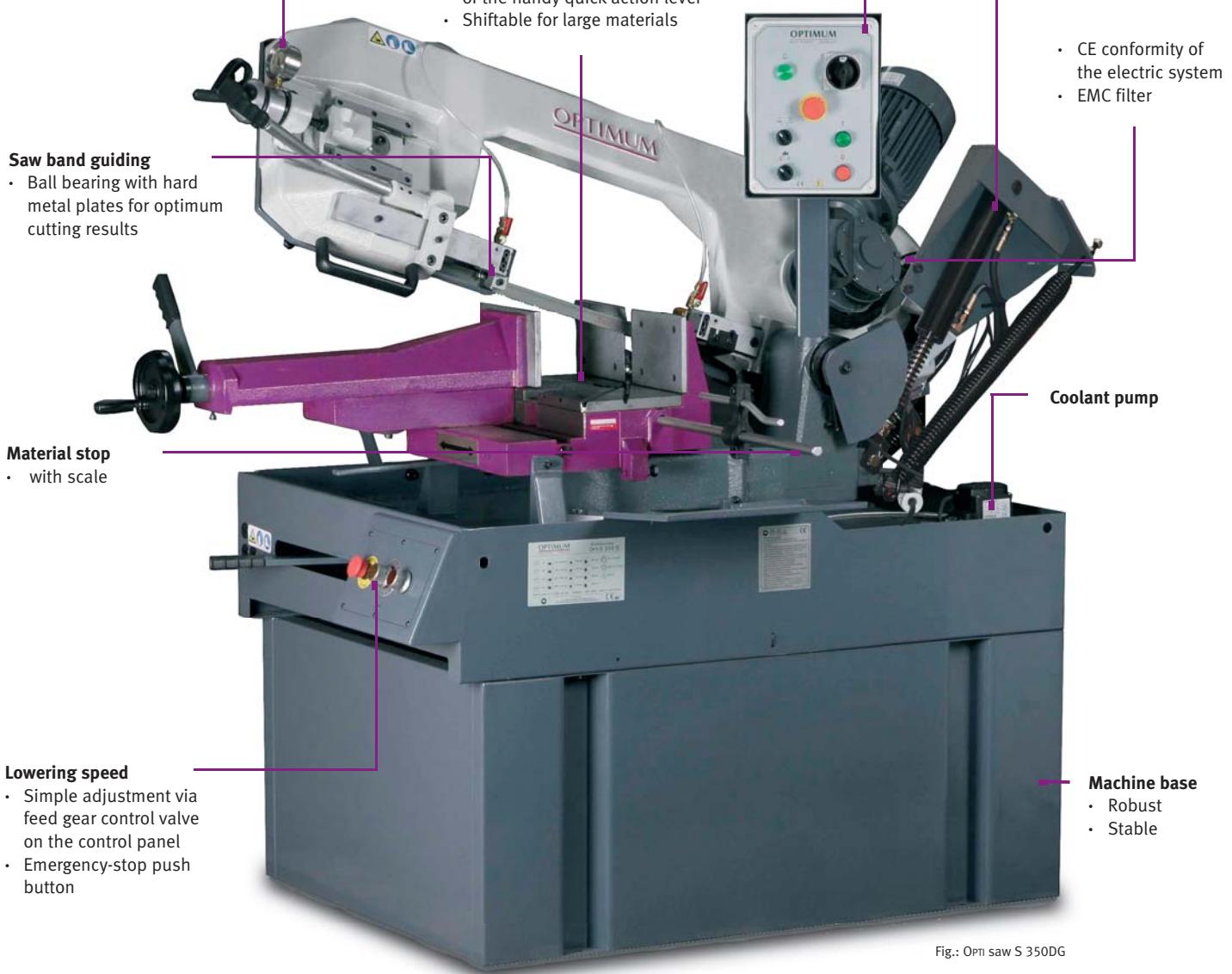
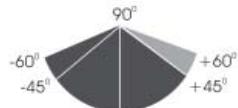


Fig.: Opti saw S 350DG

## Technical data, dimensions and accessories

Type	S 350DG
Item No	329 0350
€ plus VAT	<b>4.990,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	2.2 kW
Motor coolant pump	50 W
<b>General information</b>	
Lifting the saw bow	Manual
Feed	continuously adjustable
Saw band speed	36/72 m/min
Saw band dimensions	2'925 x 27 x 0.9 mm
Cutting angle	-60° - 45°
<b>Dimensions</b>	
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
<b>Standard equipment</b>	
	Bi-metal saw band
	Material stop
	Machine substructure

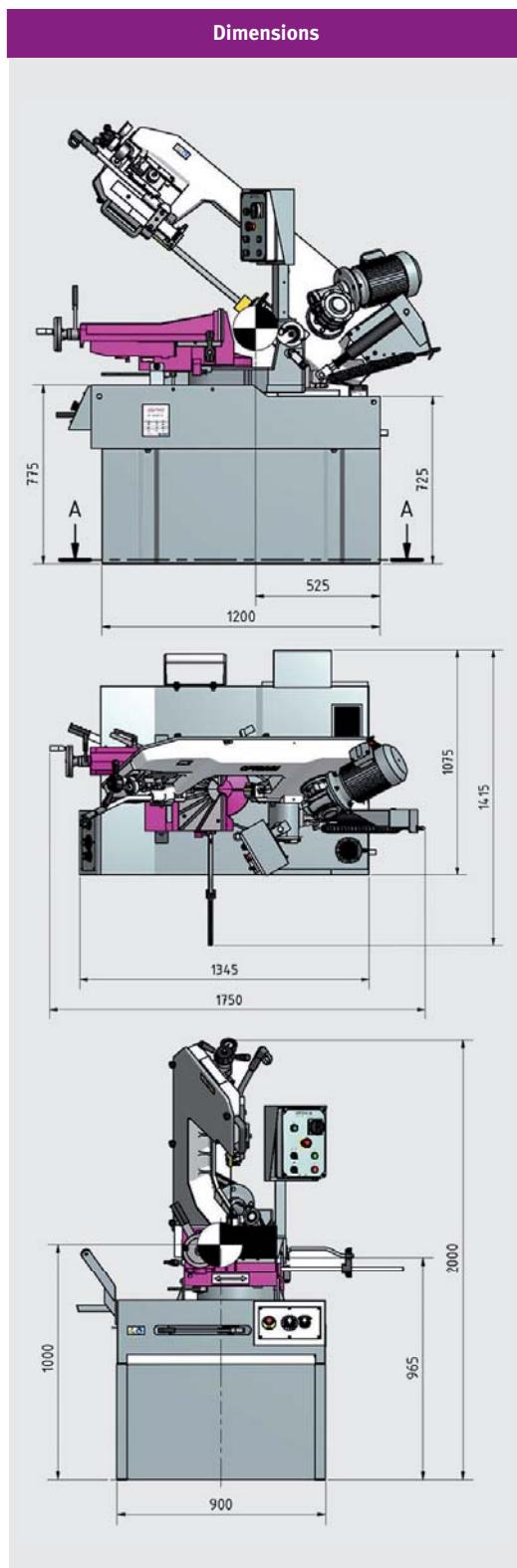


Cutting range				
0°		Ø 270 mm		350 x 240 mm
- 60°		Ø 140 mm		140 x 140 mm
+ 45°		Ø 230 mm		230 x 150 mm
- 45°		Ø 200 mm		200 x 140 mm

Saw bands HSS bi-metal M 42			
Number of teeth	Tooth angle	Item No	€ plus VAT
5 - 8 tpi	0°	335 7541	<b>40,00</b>
6 - 10 tpi	0°	335 7542	<b>40,00</b>
4 - 6 tpi	6°	335 7540	<b>40,00</b>

„Saw band information“ on page 172

Saw band kit	335 7501	120,00
<ul style="list-style-type: none"> <li>Saw band HSS bi-metal, 5 - 8 TPI; 0°</li> <li>Saw band HSS bi-metal, 6 - 10 TPI; 0°</li> <li>Saw band HSS bi-metal, 4 - 6 TPI; 6</li> </ul>		



## 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 band speed from 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

### Function semi-automatic operation

- Closing vice and activating 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

- Largely 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



#### Control panel

- Clearly arranged
- Slewable

#### Hydraulic cylinder

- Infinitely variable saw bow movement

#### Saw band guiding

- Ball bearing with hard metal plates for optimum cutting results



#### Material stop

- with scale

#### Coolant pump

#### Lowering speed

- Simple adjustment via feed gear control valve on the control panel
- Emergency-stop push button

#### Machine base

- Robust
- Stable

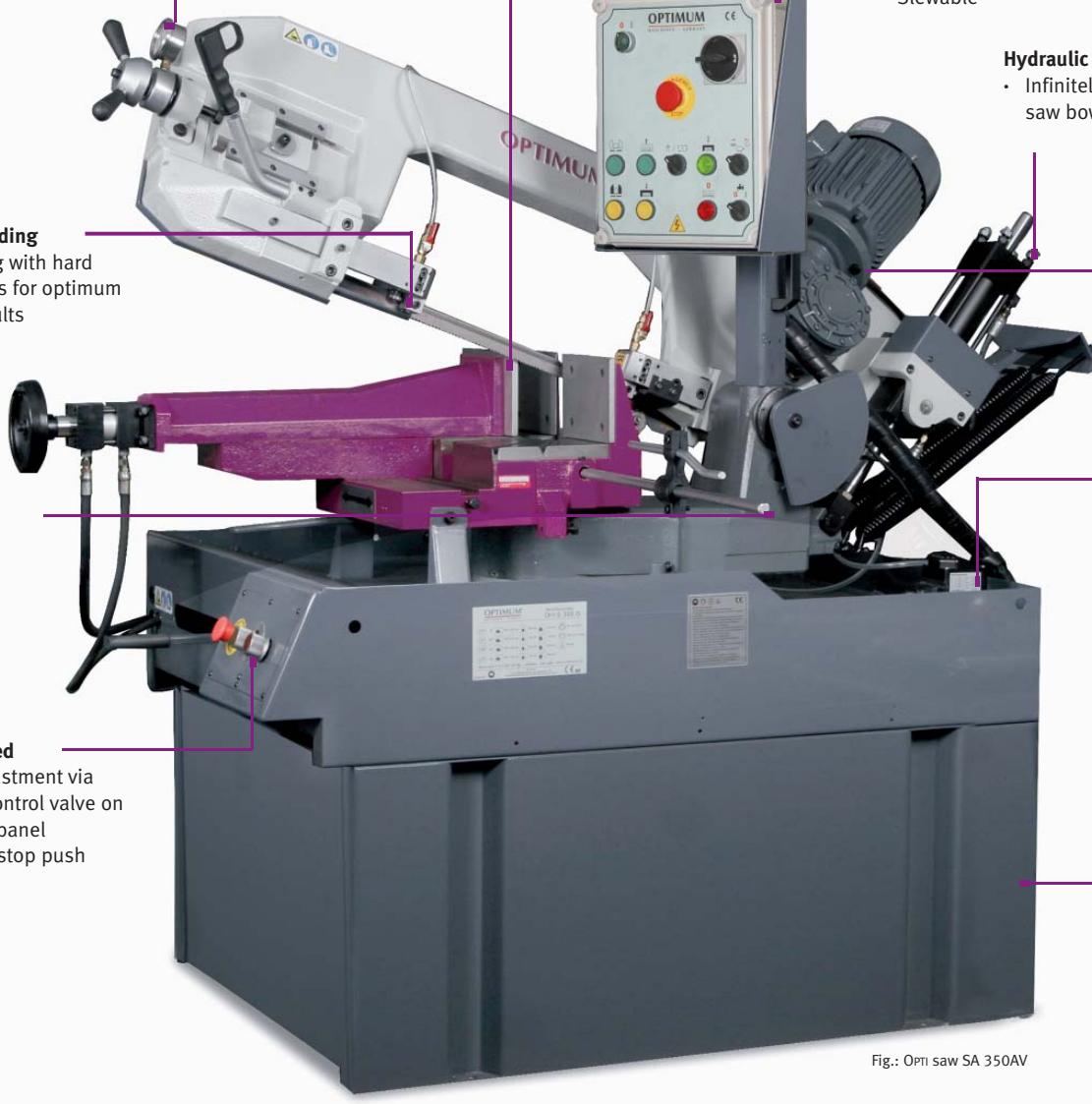
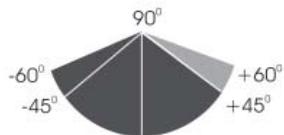


Fig.: Opti saw SA 350AV

## Technical data, dimensions and accessories

Type	<b>SD 350AV</b>
Item No	329 2355
€ plus VAT	<b>6.990,00</b>
<b>Machine datas</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	2.2 kW
Motor coolant pump	100 W
Hydraulic pump	750 W
<b>General information</b>	
Lifting the saw bow	Hydraulic mode by push button
• Manual operation	Automatic
• Semi-automatic mode	continuously adjustable
feed	0 - 80 m/min
Saw band speed	2'925 x 27 x 0.9 mm
Saw band dimensions	-60° - 45°
Cutting angle	
<b>Dimensions</b>	
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
<b>Standard equipment</b>	
	Bi-metal saw band
	Material stop
	Machine substructure

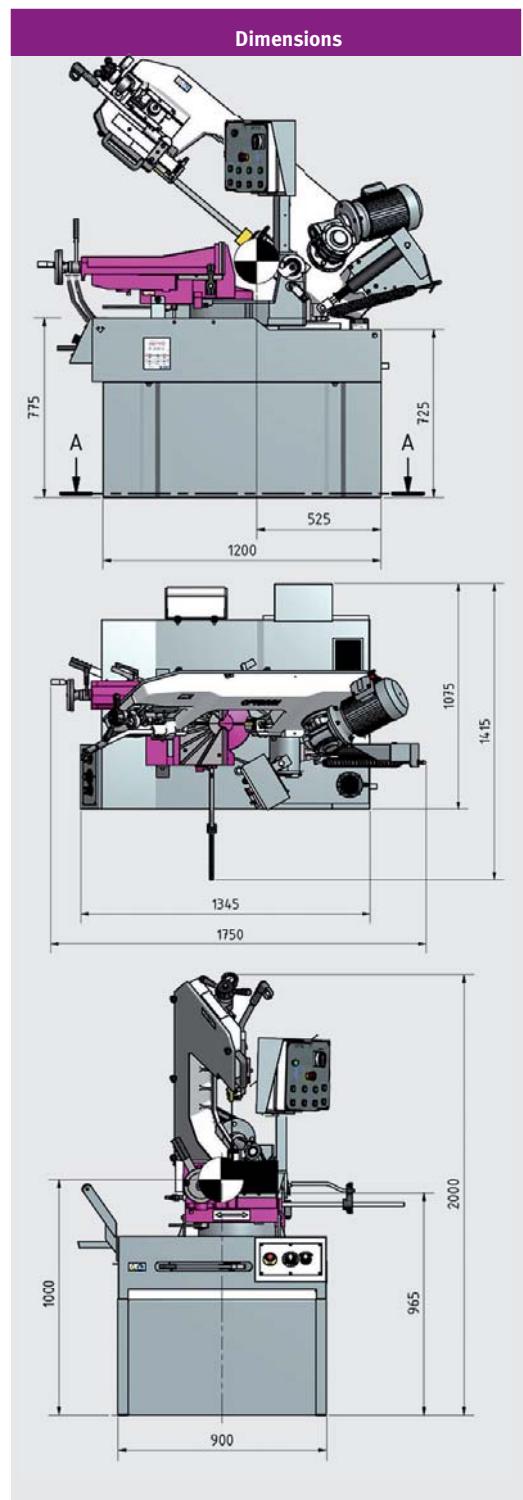


Cutting range				
0°	↙	Ø 270 mm	↖	350 x 240 mm
- 60°	↙	Ø 140 mm	↖	140 x 140 mm
+ 45°	↙	Ø 230 mm	↖	230 x 150 mm
- 45°	↙	Ø 200 mm	↖	200 x 140 mm

Saw bands HSS bi-metal M 42			
Number of teeth	Tooth angle	Item No	€ plus VAT
<b>5 - 8 tpi</b>	<b>0°</b>	335 7541	<b>40,00</b>
<b>6 - 10 tpi</b>	<b>0°</b>	335 7542	<b>40,00</b>
<b>4 - 6 tpi</b>	<b>6°</b>	335 7540	<b>40,00</b>

„Saw band information“ on page 172

Saw band kit	335 7501	120,00
• 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°		



## Manual circular metal saws for steel, iron, light metals, solid material and profiles

### Convincing arguments: quality, efficiency and price

- Slewing range of  $\pm 45^\circ$
- 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 base

- Solid
- Lockable door

### Coolant pump

- Detachable coolant tank
- Integrated powerful pump



Fig.: CS 315

Material stand	Item No	€ plus VAT
MSR 4	335 7610	169,00
MSR 7	335 7611	269,00
MSR 10	335 7613	499,00

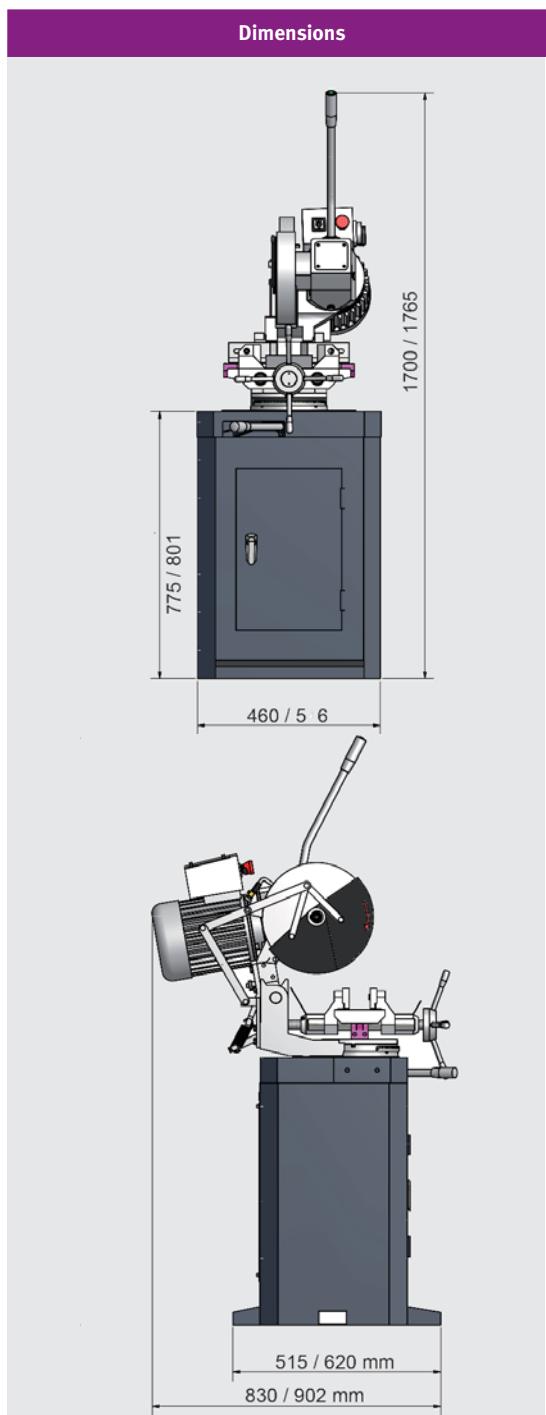
„MSR 4 / MSR 7 / MSR 10“ on page 170

## Technical data, dimensions and accessories

Type	CS 275	CS 315
Item No	330 2275	330 2300
€ plus VAT	<b>1.595,00</b>	<b>1.990,00</b>
<b>Machine datas</b>		
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
<b>General information</b>		
Cutting angle	from -45° up to +45°	
Cutting angle adjustment	by means of a rotatable bearing block	
Feed	Manual	
Cutting speed	41 / 82 min. <sup>-1</sup>	19 / 38 min. <sup>-1</sup>
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
<b>Dimensions</b>		
Length	460 mm	560 mm
Width	830 mm	902 mm
Height	1,700 mm	1,765 mm
Net weight	175 kg	235 kg
<b>Standard equipment</b>		
	Coolant equipment Machine base without circular saw blade	

Cutting range CS 275						
0°		Ø 60 mm		100 x 60 mm		60 mm
45°		Ø 60 mm		70 x 60 mm		60 mm
Cutting range CS 315						
0°		Ø 85 mm		130 x 70 mm		70 mm
45°		Ø 85 mm		90 x 70 mm		70 mm

Information on circular saw blades			
<b>4 T/mm:</b>			Tube/profile (wall thickness)
• up to 1 mm: Aluminium / Bronze / Copper / Brass			
• up to 1.5 mm: Steels up to 1'500 N/m <sup>2</sup> / Stainless steels			
• up to 2 mm: Steels up to 1'200 N/m <sup>2</sup>			
<b>6 T/mm:</b>			Tube/profile (wall thickness)
• up to 1.5 mm: Aluminium / Bronze / Copper / Brass			
• from 3 mm on: Steels up to 1'800 N/m <sup>2</sup>			
<b>6 T/mm:</b>			Solid (cross section)
• 10-20 mm: Aluminium / Bronze / Copper / Brass			
• 20-40 mm: Steels up to 1'800 N/m <sup>2</sup> / Stainless steels			
<b>8 T/mm:</b>			Tube/profile (wall thickness)
• from 3 mm on: Aluminium / Bronze / Copper / Brass			
<b>8 T/mm:</b>			Solid (cross section)
• 20-40 mm: Steels up to 1'800 N/m <sup>2</sup> Aluminium/Bronze/Copper			
• 40-60 mm: Steels up to 1'200 N/m <sup>2</sup> Stainless steels			



Metal circular saw blade CS 275			
Teeth/per mm	Number of teeth	Item No	€ plus VAT
<b>4 T/mm:</b>	220 teeth	335 7444	<b>99,00</b>
<b>6 T/mm:</b>	140 teeth	335 7446	<b>99,00</b>
<b>8 T/mm:</b>	110 teeth	335 7448	<b>99,00</b>
CS 315			
<b>4 T/mm:</b>	240 teeth	335 7454	<b>129,00</b>
<b>6 T/mm:</b>	150 teeth	335 7456	<b>129,00</b>
<b>8 T/mm:</b>	120 teeth	335 7458	<b>129,00</b>

## MSR 4 / MSR 7 / MSR 10

### Height adjustable material stand MSR as manual aid for supporting and moving the workpieces for metal saws

#### 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.
- Easy and efficient material transportation for the supply and removal of workpieces
- Roller support infinitely height adjustable and can be clamped
- Safe workpiece support due to steel rollers which are massive high-capable of bearing
- Infinitely extendable
- Mounting option of the distance measuring system LMS

#### Convincing arguments...



##### Frame

- Stable type
- Solid special profile

##### Load-bearing rollers

- Steel
- Ball bearings on both sides



##### Layer height

- Infinitely variable from 650 to 950 mm



##### Accessories PVC rolls

- Additionally mountable
- Made of anti-skid PVC
- To avoid scratches
- Simply mount rolls into the existing mounting brackets



Fig.: MSR 10

Fig.: MSR 7

Fig.: MSR 4

Type	MSR 4	MSR 7	MSR 10
Item No	335 7610	335 7611	335 7613
€ plus VAT	169,00	<b>269,00</b>	<b>499,00</b>

Technical data	MSR 4	MSR 7	MSR 10
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	1'000 mm	2'000 mm	3'000 mm
Width	440 mm	440 mm	440 mm
Height	650 - 950 mm	650 - 950 mm	650 - 950 mm
Net weight	30 kg	58 kg	79 kg
Standard equipment	Fixing material for elongation		

Accessories	PVC rolls 3 pieces
Item No	335 7609
€ plus VAT	<b>109,00</b>
Standard equipment	Wall holder Add-on kit



Fig.: PVC rolls  
in practical wall bracket

**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 0.1 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

**Convincing arguments...**



**Slide**

- Easily moveable
- Precisely guided
- Replaceable durable dry bearings



- Display: LCD
- Switching functions:
- Zeroing display
- Reset
- Direction indicator  $\pm$
- Measuring unit 0.01 mm
- Absolute measurement and chain measurement function
- Right end/left end stop



**Positioning slide**

- Folding upwards



Fig.: Material stand MSR 7 with distance measuring system LMS 2



**Material stop**

- For large diameters
- Easy installation by the client



**Linear guide rails**

- Lubricant-free
- Very smooth running
- Wear resistant
- Corrosion-resistant
- Little friction values
- High static bearing capacity

Type	LMS 1	LMS 2	LMS 3	LMS 4
Item No	338 3881	338 3882	338 3883	338 3884
€ plus VAT	<b>599,00</b>	<b>689,00</b>	<b>815,00</b>	<b>965,00</b>
<b>Technical data</b>				
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

## Bi-metal saw bands

The feedstock is a two-component material (bi-metal) attained by electrode welding. The band which is manufactured from this material has a hard durable, 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	Number of teeth	Tooth angle	Item No	€ plus VAT	
1'300 x 12.7 x 0.5 mm	<b>10 - 14 tpi</b>	<b>0°</b>	335 1509	<b>19,00</b>	
1'470 x 13 x 0.65 mm	<b>10 - 14 tpi</b>	<b>0°</b>	335 1110	<b>19,00</b>	
1'638 x 13 x 0.65 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 1512	<b>19,00</b>	
1'638 x 13 x 0.65 mm	<b>10 - 14 tpi</b>	<b>0°</b>	335 1518	<b>19,00</b>	
1'735 x 12.7 x 0.9 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 1522	<b>21,00</b>	
1'735 x 13 x 0.9 mm	<b>10 - 14 tpi</b>	<b>0°</b>	335 1538	<b>21,00</b>	
2'362 x 19 x 0.9 mm	<b>5 - 8 tpi</b>	<b>0°</b>	335 7522	<b>28,00</b>	
2'362 x 19 x 0.9 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 7521	<b>28,00</b>	
2'080 x 20 x 0.9 mm	<b>5 - 8 tpi</b>	<b>0°</b>	335 7503	<b>28,00</b>	
2'080 x 20 x 0.9 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 7514	<b>28,00</b>	
2'480 x 27 x 0.9 mm	<b>5 - 8 tpi</b>	<b>0°</b>	335 7511	<b>32,00</b>	
2'480 x 27 x 0.9 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 7524	<b>32,00</b>	
2'750 x 27 x 0.9 mm	<b>5 - 8 tpi</b>	<b>0°</b>	335 7751	<b>40,00</b>	
2'750 x 27 x 0.9 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 7753	<b>40,00</b>	
2'925 x 27 x 0.9 mm	<b>5 - 8 tpi</b>	<b>0°</b>	335 7541	<b>40,00</b>	
2'925 x 27 x 0.9 mm	<b>6 - 10 tpi</b>	<b>0°</b>	335 7542	<b>40,00</b>	
2'480 x 27 x 0.9 mm	<b>5 - 8 tpi</b>	<b>6°</b>	335 7512	<b>32,00</b>	
2'362 x 19 x 0.9 mm	<b>5 - 8 tpi</b>	<b>6°</b>	335 7516	<b>28,00</b>	
2'080 x 20 x 0.9 mm	<b>5 - 8 tpi</b>	<b>6°</b>	335 7505	<b>28,00</b>	
2'925 x 27 x 0.9 mm	<b>4 - 6 tpi</b>	<b>6°</b>	335 7540	<b>40,00</b>	
2'750 x 27 x 0.9 mm	<b>5 - 8 tpi</b>	<b>10°</b>	335 7752	<b>40,00</b>	
1'470 x 13 x 0.65 mm	<b>6 tpi</b>	<b>10°</b>	335 1109	<b>19,00</b>	
1'638 x 13 x 0.65 mm	<b>6 tpi</b>	<b>10°</b>	335 1511	<b>19,00</b>	
1'735 x 12.7 x 0.9 mm	<b>6 tpi</b>	<b>10°</b>	335 1521	<b>21,00</b>	



### 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 cm<sup>2</sup> 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

Clear grey tooth pitch is not available

## Technische Daten der OPTI Schleif- und Poliermaschinen zur groben Orientierung



Motor	Speed	Dimensions Grind belt	Dimensions grinding disc	Dimensions sanding belt	Length	Width	Height	Weight	230 V	400 V
<b>Drill bit grinder</b>										
<b>GH 10 T</b>	180 W	5.000	-	-	310	180	190	9,5	■	
<b>GH 15 T</b>	450 W	5.000 m	-	-	450	240	270	33	■	
<b>GH 20 T</b>	370 W	5.000	-	-	350	450	350	45		■
<b>DG 20</b>	600 W	7.600	-	-	490	270	235	26	■	
<b>Grinding machines</b>										
<b>DBS 75</b>	1,1 kW	1410	75 x 1180	150	-	665	560	405	62	■
<b>QSM 150</b>	450 W	2850	-	-	150 x 20 x 16	200	410	295	12	■
<b>QSM 175</b>	450 W	2850	-	-	175 x 20 x 32	220	420	300	14	■
<b>QSM 200</b>	450 W	2850	-	-	200 x 25 x 32	245	330	330	16	■
<b>SM 175</b>	450 W	2850	-	-	175 x 25 x 32	456	220	291	14	■
<b>SM 200</b>	600 W	2850	-	-	200 x 30 x 32	461	246	310	16	■ ■
<b>SM 250</b>	1,5 kW	2850	-	-	250 x 40 x 32	542	304	365	37	■
<b>SM 300</b>	2,2 kW	1450	-	-	300 x 50 x 75	736	365	407	84	■
<b>TS 305</b>	900 W	1420	-	350	-	440	445	365	30	■
<b>BSM 75</b>	3 kW	3000	75 x 2000	-	-	456	995	1025	102	■
<b>BSM 150</b>	4 kW	3000	150 x 2000	-	-	300	995	1025	125	■

# Grinding and polishing machines



## 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 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.

**Comprehensive scope of delivery**  
with complete range of collets



Fig.: Opti grind GH10T



Fig.: Opti grind GH15T

### Drill bit ...



- ... with blunt cutting edges



Fig.: Opti grind GH10T



Video - Drill bit grinder  
in operation  
or  
[www.optimum-maschinen.de](http://www.optimum-maschinen.de)



- ... ground and pointed

Type	GH10T	GH15 T
Item No	310 0110	310 0115
€ plus VAT	<b>499,00</b>	<b>1.389,00</b>

Machine data	GH10T	GH15 T
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 <sup>-1</sup>	5'000 min <sup>-1</sup>
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	310 mm	450 mm
Width	180 mm	240 mm
Height	190 mm	270 mm
Net weight	9.5 kg	33 kg

### Spare grinding wheel

Diamant GH10T	310 0126	<b>89,00</b>
Diamant GH15T	310 0127	<b>193,00</b>

### Scope of delivery GH10T

Collet chucks Ø 2 - 13 mm

### Scope of delivery GH15T

Collet chucks ER 20 and ER 40 Ø 3 - 30 mm

Collect chuck seat

## 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
- 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  
GH20TB: 355E S20X2 buttress thread  
GH20T: 5C
- Adjustable extractor device
- Lots of slewing and setting options to manufacture gravers (cylindrical, centric, conical)
- Including halogen light



Video - Machine  
in operation  
or  
[www.optimum-machines.com](http://www.optimum-machines.com)



Fig.: OPTI grind GH20T

Type	GH20TB	GH20T
Item No	310 0121	310 0125
€ plus VAT	<b>1.040,00</b>	<b>1.340,00</b>

<b>Machine datas</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power ~50 Hz	250 W	370 W
<b>Speeds</b>		
Speed grinding wheel, diamond	5'000 min <sup>-1</sup>	
Grinding speed	max. 35 m/s	
Speed motor	2'750 min <sup>-1</sup>	
<b>Travels</b>		
Travel tool holder	140 mm	
Fine adjustment tool holder	18 mm	
Fine adjustment length axis	6 mm	
<b>Adjustable angle</b>		
Vertical / rear	0° - 40°	
Horizontal / taper grinding	0° - 180°	
Negative angle	0° - 52°	
Locking position turning angle	15° 180°	
<b>Collect chuck seat</b>		
Clamping range	Ø 1 - 12 mm	Ø 1 - 16 mm
Collet type	355E S20X2	5C
<b>Dimensions</b>		
Length x width x height	350 x 450 x 350 mm	
Net weight	45 kg	

### Spare grinding wheel

Corundum	310 0128	<b>29,00</b>
Diamond	310 0129	<b>52,00</b>

### Scope of delivery

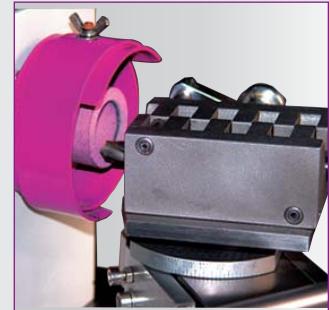
- 5 pcs. Collets (Ø 4, Ø 6, Ø 8, Ø 10, Ø 12 mm)
- Corundum cup grinding wheel Ø 100 x 50 x Ø 20 mm
- Diamond cup grinding wheel Ø 100 x 50 x Ø 20 mm
- Driving belt
- Dressing diamond
- Operating tools

## 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

### Convincing arguments...

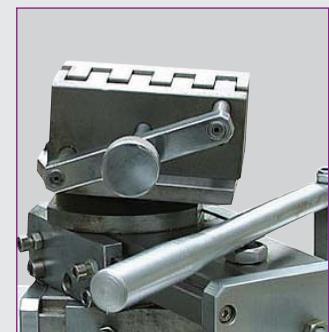


#### Large grinding area

- Twist drill from 3 to 20 mm

#### Cup wheel

- Self-dressing
- No pulling off required



#### Prism support

- Stable
- For exact centring and safe retaining

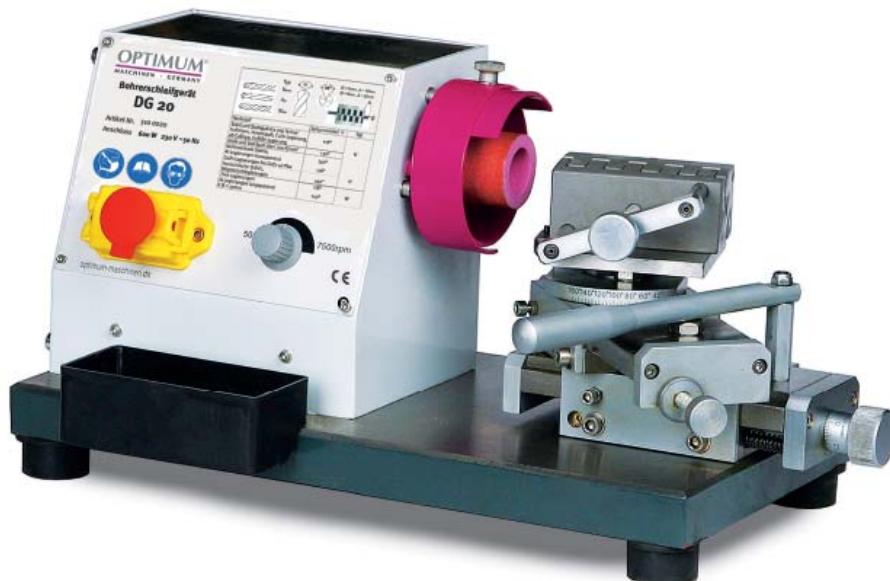


Fig.: Opti grind DG20

**Cup wheel red**

310 7120

**15.00**

**Cup wheel green**

310 7121

**9.90**



#### Type

Item No

**€ plus VAT**

#### DG 20

310 0020

**669.00**



Video of the drill bit grinder  
in operation

#### Machine datas

Electrical connection

230 V / 1 Ph ~50 Hz

Motor power

600 W

#### Technical data

Speed infinitely variable

1400 - 7'600 min<sup>-1</sup>

Grinding speed

16 m/s

Grinding capacity drill

3 - 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

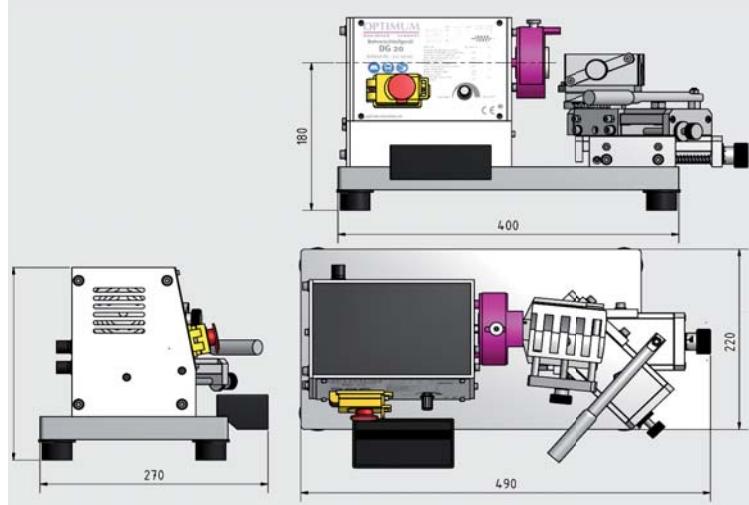
Net weight

26 kg

#### Standard equipment

Cooling water tray  
Cup wheel

#### Dimensions



**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**

- Grinding belt clamping manually adjustable
- Grinding belt easily replaceable
- Fine adjustment for parallel belt operation
- 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

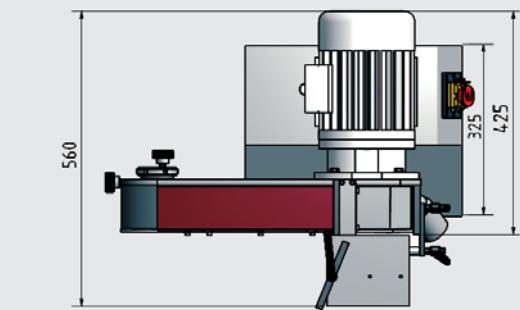
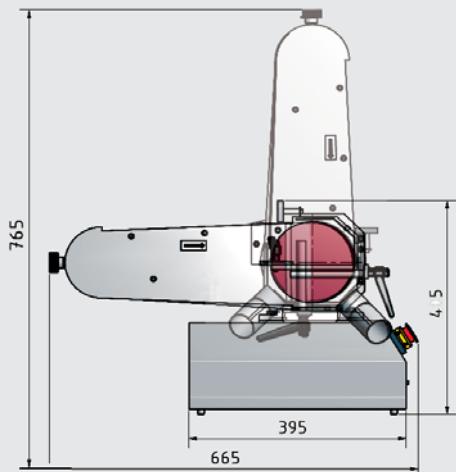


Fig.: Opti grind DBS75

Type	DBS 75
Item No	331 1075
€ plus VAT	699,00

<b>Machine data</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.1 kW
<b>Speed</b>	1'410 min <sup>-1</sup>
Belt running speed	11 m/sec.
<b>Grinding belt</b>	
Dimension sanding belt	75 x 1'180 mm
<b>Grinding disc</b>	
Dimension grinding disc	Ø 150 mm
<b>Dimensions</b>	
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
<b>Standard equipment</b>	
	Grinding belt Grain 60
	Grinding disc Grain 60

**Dimensions**



**Grinding belts\***

Size: 75 x 1'180 mm

<b>Grain 40</b>	335 7622	<b>25,00</b>
<b>Grain 60</b>	335 7624	<b>25,00</b>
<b>Grain 80</b>	335 7626	<b>25,00</b>
<b>Grain 120</b>	335 7628	<b>25,00</b>



**Grinding disc\***

Ø 150 mm

<b>Grain 40</b>	335 7832	<b>4,00</b>
<b>Grain 60</b>	335 7834	<b>4,00</b>
<b>Grain 80</b>	335 7836	<b>4,00</b>
<b>Grain 120</b>	335 7838	<b>4,00</b>



<b>Velcro cup</b>	335 7802	<b>6,00</b>
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for grinding disc

\* Packing and price unit 5 pcs.

## Robust double grinding machines to process metals

### Convincing arguments: quality, efficiency and price

- Heavy long-life industrial type with maintenance-free motor for permanent use
- Housing made of aluminium die 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 QSM 150 / QSM 175: Width 20 mm  
QSM 200: 25 mm



Fig.: OPTIgrind QSM 200

Type	QSM 150	QSM 175	QSM 200
Item No	310 1815	310 1817	310 1820
€ plus VAT	<b>125,00</b>	<b>139,00</b>	<b>149,00</b>

Machine data	QSM 150	QSM 175	QSM 200
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	450 W	450 W	450 W
Grinding wheels			
Dimensions	Ø 150 x 20 Ø 16 mm	Ø 175 x 20 Ø 32 mm	Ø 200 x 25 Ø 32 mm
Speed	2850 min <sup>-1</sup>	2850 min <sup>-1</sup>	2850 min <sup>-1</sup>
Dimensions			
Height x Length x Width	200 x 410 x 295 mm	220 x 420 x 300 mm	245 x 450 x 330 mm
Net weight	12 kg	14 kg	16 kg
Standard equipment	Grinding wheel regular corundum fine K80 Grinding wheel regular corundum rough K36		

Wall unit	310 7050	<b>35,00</b>
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- Cooling water tray
- Dimensions L x W x H: 332x300x230 mm



Machine substructure	310 7100	<b>79,00</b>
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- Dimensions L x W x H: 320x270x820 mm



Machine substructure SSM	310 7101	<b>265,00</b>
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- Shelf and cooling water tray
- Dimensions L x W x H: 345x300x785 mm



Grinding wheels	Regular corundum rough K 36	
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Ø 150 x 20 Ø 16 mm	310 7150	<b>8,00</b>
Ø 175 x 20 Ø 32 mm	310 7170	<b>12,00</b>
Ø 200 x 25 Ø 32 mm	310 7200	<b>15,00</b>



K 36

Grinding wheels	Regular corundum fine K 80	
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Ø 150 x 20 Ø 16 mm	310 7155	<b>8,00</b>
Ø 175 x 20 Ø 32 mm	310 7175	<b>12,00</b>
Ø 200 x 25 Ø 32 mm	310 7205	<b>15,00</b>



K 80

## Double grinding machines made by OPTIMUM - a quality product for crafts and industry. "Vario" type with frequency converter "Made in EU"

### Convincing arguments: quality, efficiency and price

- Heavy long-life industrial type with maintenance-free motor for permanent use
- Housing made of aluminium die 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  
SM 175: Width 25 mm  
SM 200: Width 30 mm  
SM 250: Width 40 mm  
SM 300: Width 50 mm

### OPTI Suction adapter ADC1/ADC2

• Nominal sizes inside: Ø 27 mm		
• Nominal sizes outside: Ø 31/35/40/50 mm		
<b>ADC1</b>	310 7105	<b>55,00</b>
for SM 200		
<b>ADC2</b>	310 7106	<b>55,00</b>
for SM 250		



Fig.: OPTI grind SM 300



Fig.: OPTI grind SM 250 with optional base

### Grinding wheels Regular corundum rough K 36

Ø 175 x 25 Ø 32 mm	310 7180	12,00
Ø 200 x 30 Ø 32mm	310 7210	15,00
Ø 250 x 40 Ø 32mm	310 7250	23,00
Ø 300 x 50 Ø 75mm	310 7270	49,00

### Grinding wheels Regular corundum fine K 80

Ø 175 x 25 Ø 32 mm	310 7185	12,00
Ø 200 x 30 Ø 32mm	310 7215	15,00
Ø 250 x 40 Ø 32mm	310 7255	23,00
Ø 300 x 50 Ø 75mm	310 7275	49,00



Type	OPTI SM 175	OPTI SM 200	OPTI SM 250	OPTI SM 300
Item No	310 1175	310 1200 (230 V)	-	-
<b>€ plus VAT</b>	<b>152,00</b>	<b>162,00</b>		
Item No	-	310 1203 (400 V)	310 1253	310 1303
<b>€ plus VAT</b>	-	<b>183,00</b>	<b>275,00</b>	<b>795,00</b>

Type		OPTI SM 200 Vario*	OPTI SM 250 Vario*	
Item No	-	301 0220 (400 V)	301 0225	-
<b>€ plus VAT</b>	-	<b>889,00</b>	<b>1.250,00</b>	-

Machine datas	230 V / 1 Ph ~50 Hz	230 V/1 Ph or 400V/3Ph	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Electrical connection	230 V / 1 Ph ~50 Hz	230 V/1 Ph or 400V/3Ph	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	450 W	600 W	1.5 kW	2.2 kW
Grinding wheels	Ø 175 x 25 Ø32 mm	Ø 200 x 30 Ø32 mm	Ø 250 x 40 Ø32 mm	Ø 300 x 50 Ø75 mm
Dimensions	Ø 175 x 25 Ø32 mm	Ø 200 x 30 Ø32 mm	Ø 250 x 40 Ø32 mm	Ø 300 x 50 Ø75 mm
Speeds	2'850 min <sup>-1</sup>	2'850 min <sup>-1</sup>	2'850 min <sup>-1</sup>	1'450 min <sup>-1</sup>
Speeds Vario	-	800 - 2'850 min <sup>-1</sup>	800 - 2'850 min <sup>-1</sup>	-
Dimensions	456 x 220 x 291 mm	461 x 246 x 310 mm	542 x 304 x 365 mm	736 x 365 x 407 mm
Length x width x height	456 x 220 x 291 mm	461 x 246 x 310 mm	542 x 304 x 365 mm	736 x 365 x 407 mm
Net weight	14 kg	16 kg	37 kg	84 kg
Net weight Vario	-	21 kg	45 kg	-
Standard equipment	Grinding wheel regular corundum rough K 36			
	Grinding wheel regular corundum fine K 80			

\* An optional base for the electronic is required for Vario types

## 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 can be used for a variety of materials
- Heavy long-life industrial type with maintenance-free motor for permanent use
- Heavy type of die-cast aluminium housing
- 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



Fig.: Opti grind SM200SL

Type	SM 200SL	SM 250SL
Item No	310 1210 (230 V)	-
€ plus VAT	<b>245,00</b>	-
Item No	310 1213 (400 V)	310 1260
€ plus VAT	<b>265,00</b>	<b>349,00</b>

Machine data		
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 Ø 32 mm	Ø 250 x 40 Ø 32 mm
Grinding tool		
Grinding belt length x width	75 x 762 mm	75 x 1016 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 180 mm
Speed	2'850 min. <sup>-1</sup>	2'850 min. <sup>-1</sup>
Dimensions L x W x H	461 x 246 x 310 mm	542 x 304 x 365 mm
Net weight	16 kg	39 kg
Standard equipment	Grinding wheel regular corundum	Grinding belt

### Optional grinding tool SL for double grinder SM 200/SM 250

Type	SL-1 for SM 200	SL-2 for SM 250
Item No	310 7010	310 7011
€ plus VAT	<b>119,00</b>	<b>129,00</b>
Net weight	5.6 kg	7.2 kg
Standard equipment	Grinding belt	

Wall unit	310 7050	<b>40,00</b>
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Machine substructures for SM	310 7100	<b>85,00</b>
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SM	310 7100	<b>85,00</b>
• for QSM 150 to SM 250		
• L x W x H: 320 x 270 x 820 mm		

SSM	310 7101	<b>275,00</b>
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• for SM 150 to SM 250		
• Shelf and cooling water tray		
• L x W x H: 345 x 300 x 785 mm		

SM 300	310 7103	<b>219,00</b>
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• for double grinder up to SM 300		
• Shelf and cooling water tray		
• L x W x H: 505 x 600 x 790 mm		



Fig.: SM



Fig.: SSM



Fig.: SM 300

Grinding tool SL		
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Fig.: SL-1

Grinding belt for SL-1/SM 200SL	(75 x 762 mm)	
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Grain 40	335 7612	<b>5,00</b>
Grain 60	335 7614	<b>5,00</b>
Grain 80	335 7616	<b>5,00</b>
Grain 120	335 7618	<b>5,00</b>

Grinding belt for SL-2/SM 250SL	(75 x 1016 mm)	
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Grain 40	335 7682	<b>7,00</b>
Grain 60	335 7684	<b>7,00</b>
Grain 80	335 7686	<b>7,00</b>
Grain 120	335 7688	<b>7,00</b>

## 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 disc 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 ± 30/38 mm



- Mitre gauge slewable by ± 60°
- Grinding table inclinable by ± 45°



- Velcro supports included in the accessory and grinding wheels of very good adhesion can be easily replaced

Type	TS 305
Item No	331 0305
€ plus VAT	<b>219,00</b>

Machine data	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	900 W
General information	
Grinding wheel diameter	305 mm
Speed	1'420 min⁻¹
Table support	155 x 440 mm
Adjusting the angular stop	± 60°
Grinding table (inclinable)	± 45°
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 disc

Velcro support	Item No	€ plus VAT
	335 7801	<b>20,00</b>
Grinding wheels - Velcro*		
Grain 40	335 7854	<b>15,00</b>
Grain 60	335 7856	<b>15,00</b>
Grain 80	335 7858	<b>15,00</b>
Grain 100	335 7860	<b>15,00</b>
Grain 120	335 7862	<b>15,00</b>
Grain 150	335 7865	<b>15,00</b>

\*Packing and price unit 5 pcs.

## Band grinding machines of heavy and robust industrial type for rough, fine and form grinding of different materials for the hard 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



#### Rolls

- Rubberised
- Quiet running
- No slipping of the band

#### 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

#### Spark protection

- reduces flying off sparks



#### 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



Fig.: Opti grind BSM 150



Fig.: Opti grind BSM 75  
with optional workpiece support

## Technical data and dimensions

Type	OPTI BSM 75	OPTI BSM 150	Dimensions
Item No	332 1075	332 1150	
€ plus VAT	<b>1.219,00</b>	<b>1.479,00</b>	
<b>Machine datas</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	
Motor power	3 kW	4 kW	
<b>Technical data</b>			
Speed	3'000 min <sup>-1</sup>	3'000 min <sup>-1</sup>	
Belt rotation speed	33 m/sec.	33 m/sec.	
<b>Grinding belt</b>	ø 32 mm	ø 32 mm	
Dimension sanding belt	75 x 2'000 mm	150 x 2'000 mm	
<b>Dimensions</b>			
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	
<b>Standard equipment</b>	Grinding belt Grain 60 Hexagon wrench		

Workpiece support	Item No	€ plus VAT
• Continuously adjustable; allows rapid start grinding of the workpieces		
For BSM 75	335 7881	<b>24,00</b>
For BSM 150	335 7891	<b>28,00</b>

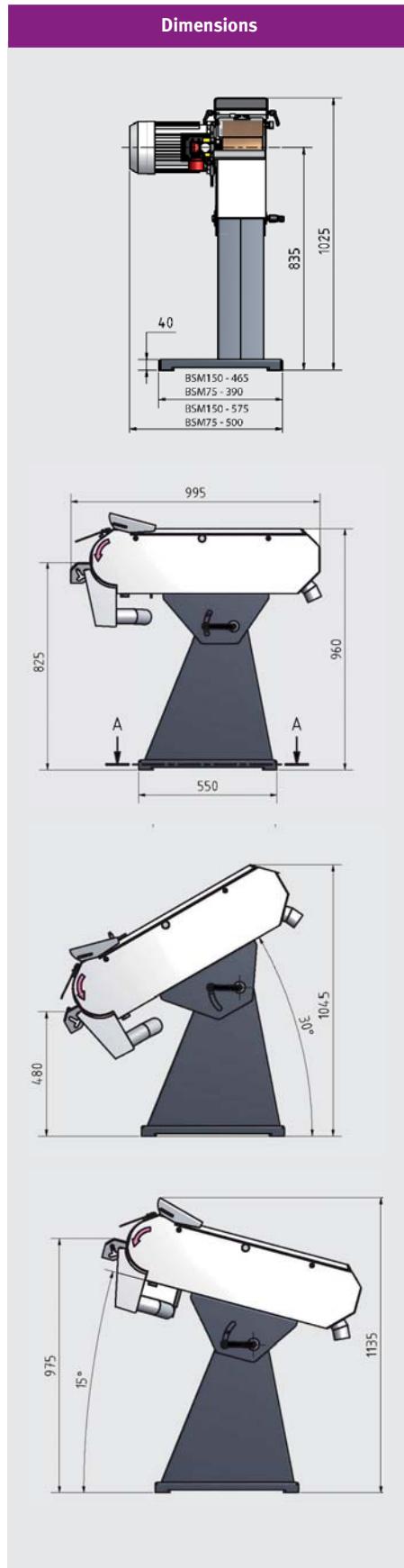


Grinding belts BSM 75*	Item No	€ plus VAT
Grain 40	335 7642	<b>40,00</b>
Grain 60	335 7644	<b>40,00</b>
Grain 80	335 7646	<b>40,00</b>
Grain 120	335 7648	<b>40,00</b>

Grinding belts BSM 150 *	Item No	€ plus VAT
Grain 40	335 7672	<b>65,00</b>
Grain 60	335 7674	<b>65,00</b>
Grain 80	335 7676	<b>65,00</b>
Grain 120	335 7678	<b>65,00</b>



\*Packing and price unit 5 pcs.



# PSM 200 / PSM 250

## 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 die casting
- Balanced rotor with quality ball bearings ensures long service life and very smooth running
- Vibration-absorbing rubber feet
- Two wide polishing discs
- Built according to CE standard



#### Balanced rotor

- Long service life
- High smooth running
- Quality ball bearings



#### Standard equipment

- Polishing wheel smooth
- Polishing wheel hard



Fig.: PSM 200

Type	OPTI PSM 200	OPTI PSM 250
Item No (230 V)	310 1320	-
<b>€ plus VAT</b>	<b>199,00</b>	-
Item No (400 V)	310 1323	310 1325
<b>€ plus VAT</b>	<b>209,00</b>	<b>269,00</b>

Machine data
Electrical connection
Motor power
Technical data
Speed
Dim. polishing disc
Dimensions
Length
Width
Height
Weight
Standard equipment

230 V/1 Ph or 400V/3Ph	400 V / 3 Ph ~50 Hz
600 W	1.5 kW
2'850 min <sup>-1</sup>	2'850 min <sup>-1</sup>
Ø 200 x 20 Ø 16 mm	Ø 250 x 25 Ø 20 mm
200 mm	250 mm
550 mm	630 mm
260 mm	320 mm
14 kg	23 kg
Polishing wheel smooth	
Polishing wheel hard	

Wall unit	310 7050	40,00
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- Cooling water tray
- Dimensions LxWxH: 332 x 300 x 230 mm



Machine substructure	310 7100	85,00
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- Dimensions LxWxH: 320 x 270 x 820 mm



Machine substructure SSM	310 7101	275,00
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- Shelf and cooling water tray
- Dimensions LxWxH: 345 x 300 x 785 mm



Polishing wheels hard
Ø 200 x 20 Ø16 mm
310 7321

Ø 250 x 25 Ø20 mm	310 7331	22,00
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Polishing wheels smooth
Ø 200 x 20 Ø16 mm
310 7320

Ø 250 x 25 Ø20 mm	310 7330	22,00
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# Steel sheet processing machines/Vice/Alligator shears



## Folding machine FP 30 - Universally applicable

### Convincing arguments: quality, efficiency and price

- Folding machine quantum 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

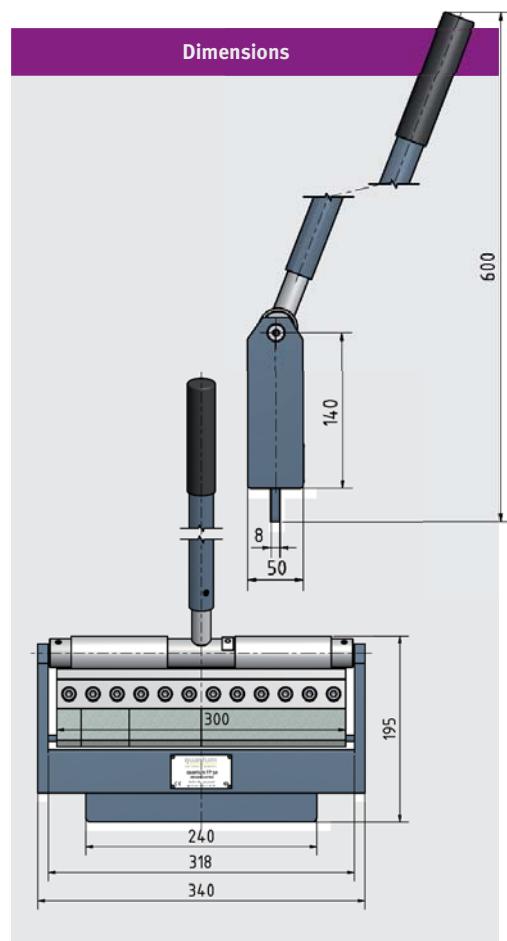


- Bending segment pieces  
150 mm / 75 mm / 50 mm  
and 25 mm extractable

Fig.: Folding machine FP 30  
on optional WBS 135

Type	FP 30
Item No	324 4028
€ plus VAT	149,00

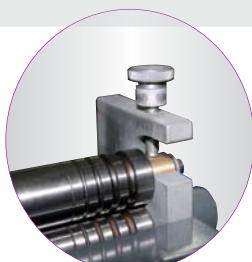
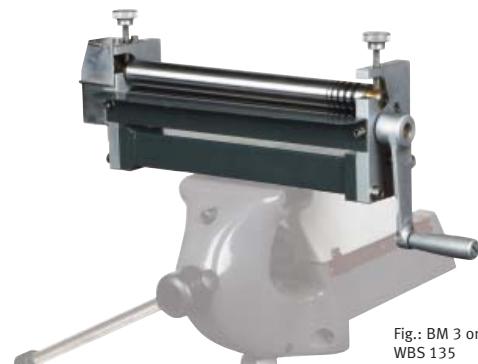
Folding capacity (max.) bei 90°	
Aluminium/Copper	300 x 2 mm
Steel sheet	300 x 1 mm
Net weight	10 kg



## 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 rolls
- 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

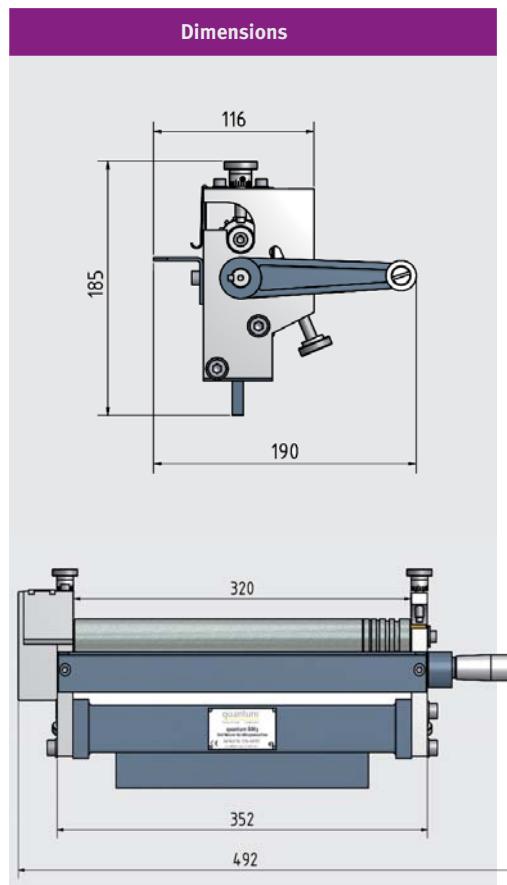


- Wire insertion grooves  
Ø 1 - 2 - 3 - 4 - 5 mm

Fig.: BM 3 on optional  
WBS 135

Type	BM 3
Item No	324 4030
€ plus VAT	165,00

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



## SAR 1000

### 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

Type	SAR 1000
Item No	324 2100
€ plus VAT	<b>1.799,00</b>

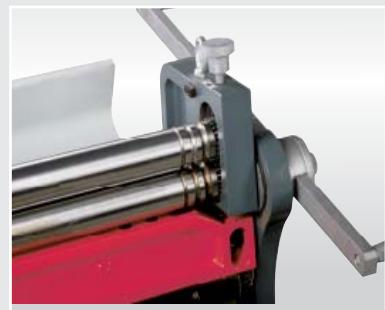
Technical data	
Material width (max.)	700 mm
Round bending	
Round bending (min.)	Ø 48 mm
Round bending (max.)	Ø unlimited
Steel sheet metal St. 37	up to 1 mm
Stainless steel	up to 0.5 mm
Aluminium/Copper	up to 1.5 mm
Brass	up to 1 mm
Gold/Silver/Tin plate	up to 1.5 mm
Unwinding cylinders Ø	48 mm
Folding	
Steel sheet thickness (max.)	2.5 mm*
Aluminium/Copper	up to 1.5 mm
Steel sheet metal St. 37	up to 1 mm
Number of segments	7
Cutting	
Cutting capacity (max.)	up to 1 mm
Net weight	290 kg

Standard equipment
Adjustable rear stop
Front material support
Tool

\*cannot be realized over the whole processing width

#### Round bending

- Adjusting screws for the material thickness with scaling
- Ground bending rolls with wire insertion grooves at the bottom and front roll for bending and rolling of wires, tubes and steel sheets



#### 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

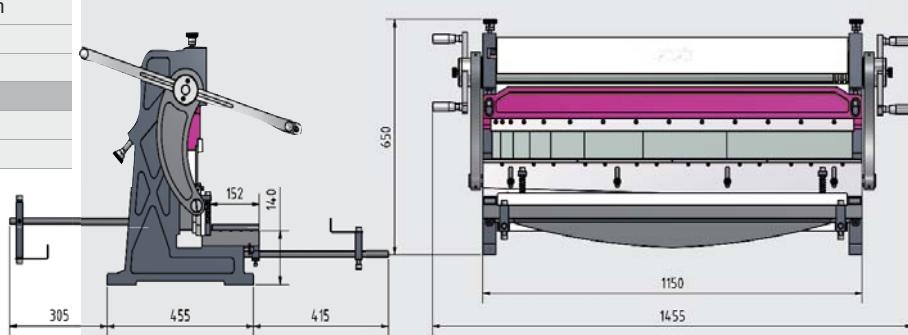


#### Cutting

- Neat and burr-free cutting by means of top and bottom knife made of quality steel



#### Dimensions



## 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

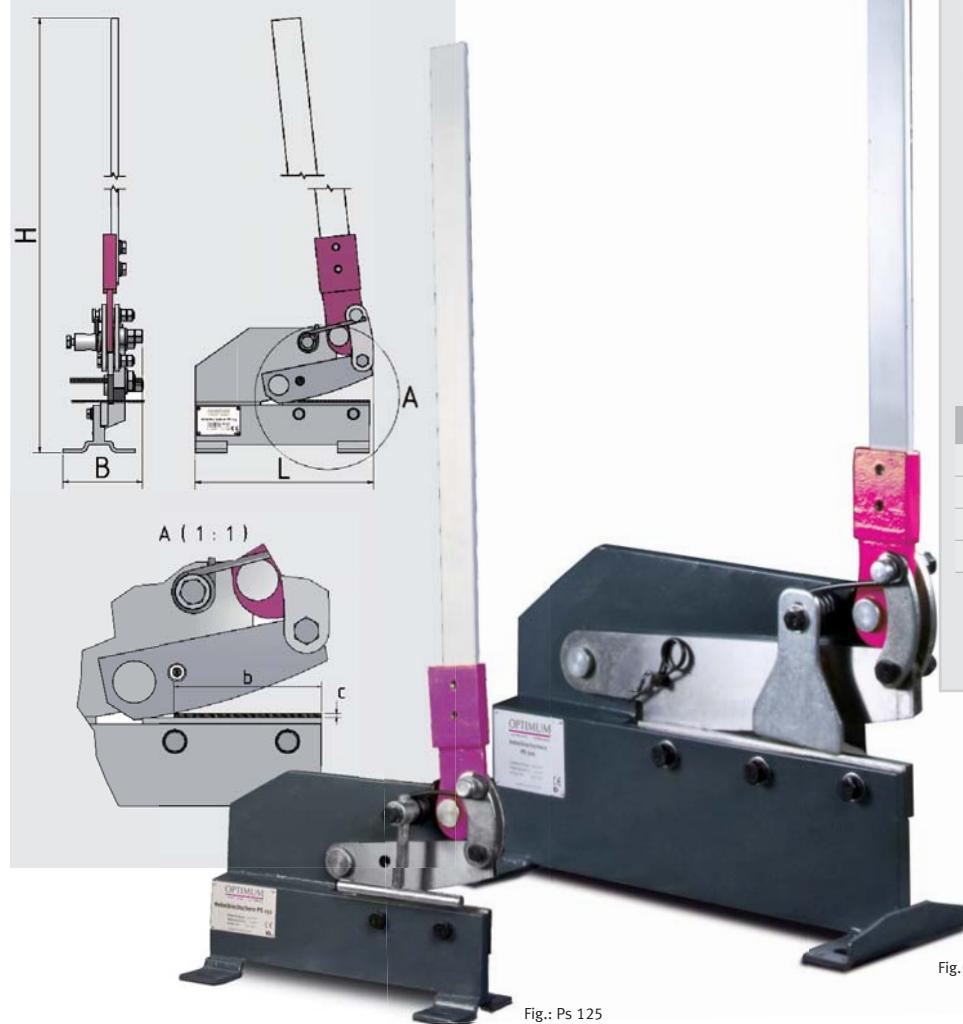


Fig.: Ps 125

Type	PS 125	PS 150	PS 300
Item No	324 1006	324 1007	324 1012
€ plus VAT	<b>109,00</b>	<b>149,00</b>	<b>209,00</b>

### 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	10 kg	12 kg	25 kg

### 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	€ plus VAT
• 2-pieces		
for PS 125	324 1025	<b>42,00</b>
for PS 150	324 1026	<b>52,00</b>
for PS 300	324 1028	<b>110,00</b>

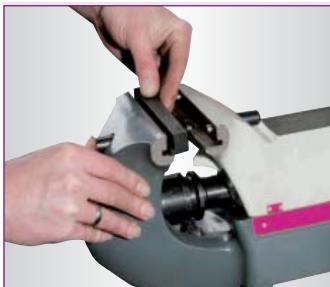
Fig.: Ps 300

## WBS 135

### The qualitatively high-grade bench-type vice with pedal for safe and fast clamping

#### Convincing arguments: quality, efficiency and price

- Outstanding quality, versatile equipment as well as practical handling are making the WBS 135 a multi-talent in each shop
- Bench-type vice opens backward
- Adjustable dovetail guide ensures maximum parallelism
- for a long time
- Safe guiding of the workpiece even if it is wide open
- Vice with integrated scale
- Very long service life due to spherical casting with a strength of 500 Nm/mm<sup>2</sup>
- By using the clamping jaws supplied as standard it is possible to clamp any kind of workpiece and material correctly, securely and gently



- This system allows you rapid and easy replacement of individually required clamping and tool jaws



- The workpiece can be held with the hands.
- The workpiece is pre-stressed by means of the foot pedal

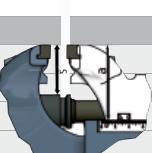


Fig.: WBS 135

Type	WBS 135
Item No	300 0513
€ plus VAT	<b>395,00</b>

#### Technical data

Jaw width	135 mm
Jaw depth to bottom part (a)	110 mm
Jaw depth to spindle bushing (s)	72 mm
Tool weight (max.)	50 kg
Clamping path foot pedal (max.)	45 mm
Span width	195 mm
Working plate thickness (max.)	40 mm
Net weight	26 kg



WBS 135

300 0513  
**395,00**

#### Accessory clamping jaws



Fig.: smooth jaws



Fig.: grooved jaws



Fig.: Protection jaws made of aluminum



Fig.: Prism jaw 0° / 90°

#### Additional jaws

Sheet shear . Bending jaws	300 0518	175,00
Tube jaws . Canting jaws . Angular stop		

#### Sheet shear

- Material can either be cut using the pedal or using the clamping lever
- Width of cut 60 mm
- Thickness of cut (steel sheet) 1.5 mm



#### Canting jaws

- Material can be folded up to a steel sheet width of max. 200 mm
- Leg length is unlimited to the top.
- Leg length is limited to the top by the body edges of the vice and of the spindle



#### Bending jaws

- Kit of accessories bending jaws can bend solids of up to 5 mm or unhardened copper tubes with a diameter of 6 - 12 mm



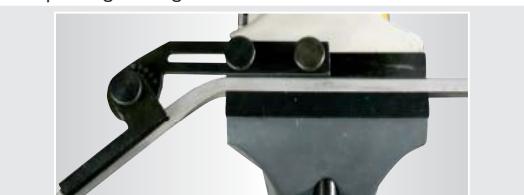
#### Tube jaws

- Laterally elongated tubular jaws allow easy clamping of bars and tubes in vertical position
- Lateral protrusion 30 mm



#### Angular stop

- Adjusting options from 30° to 90°
- Angular stop as saw guide particularly appropriate for repeating sawing.



**Precision lathe mandrel of robust and solid type. For mechanic shops and repair companies**

**NEW**

**Convincing arguments: quality, efficiency and price**

- 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.: DDP 20

Type	DDP 10	DDP 20	DDP 30	DDP 5
Item No	335 9011	335 9012	335 9013	335 9005
€ plus VAT	<b>95,00</b>	<b>169,00</b>	<b>299,00</b>	<b>789,00</b>

Technical data		Dimensions		Standard equipment	
Height of workpiece max.		123 mm	195 mm	310 mm	485 mm
Throat		95 mm	120 mm	150 mm	226 mm
Length x width x height		270 x 180 x 410 mm	430 x 235 x 680mm	455 x 260 x 850 mm	645 x 370 x 815 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 646 mm
Weight		14 kg	33 kg	55 kg	154 kg
Standard equipment		Quadruple positionable plate			

Force effect		DDP 1		DDP 2		DDP 3		DDP 5	
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	305 mm		405 mm		540 mm		850 mm	
Force effect	F2	7480 N	11220 N	8364 N	12555 N	7705 N	11566 N	10251	15372
		(763 Kg)	(1143 kg)	(853 kg)	(1280 kg)	(786 kg)	(1179 kg)	(1045 kg)	(1567 kg)

## Machine lamps



## Measuring devices



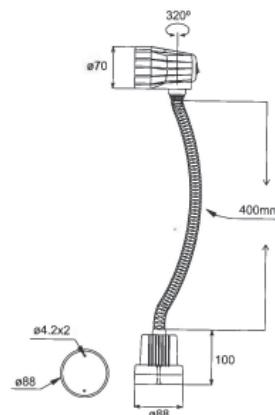
# MACHINE LAMPS

## Robust machine lamps for the individual use

Type	LED lamp AL 12
Item No	335 1131
€ plus VAT	55,00

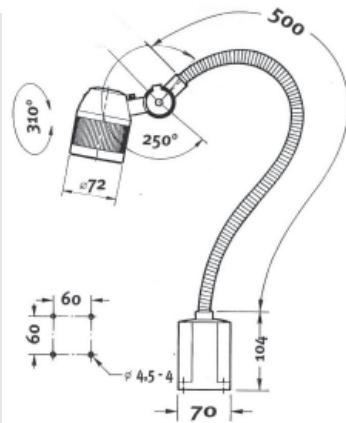
### Energy-saving durable machine lamp

- Optimum mobility of the articulated arm
- High positioning stability
- Jacketed stable flexible hose arm 400 mm magnetic base and mounting plate
- Intensity of illumination 250 - 330 lux
- Integrated transformer
- Colour black
- 1.95 W/230 V-connection



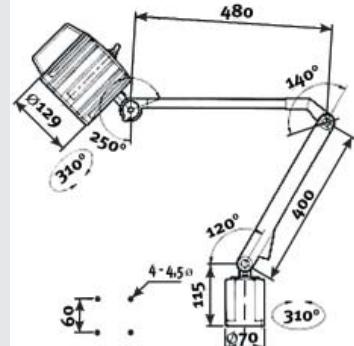
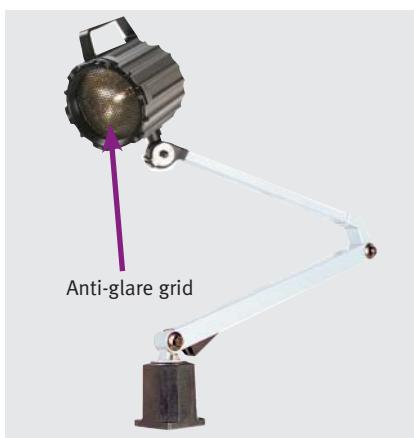
Type	Halogen lamp AL 25
Item No	335 1145
€ plus VAT	89,00

- Coated articulated arm for optimum mobility of the head
- 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



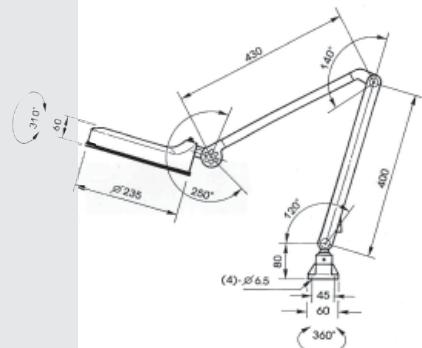
Type	Halogen lamp AL 35
Item No	335 1152
€ plus VAT	109,00

- Concentrated halogen light due to 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



Type	Magnifying lamp ALM 3
Item No	335 1160
€ plus VAT	129,00

- With 1.5 times optical magnification
- Size of the magnifying glass: diameter 127 mm
- Joint can be easily adjusted 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

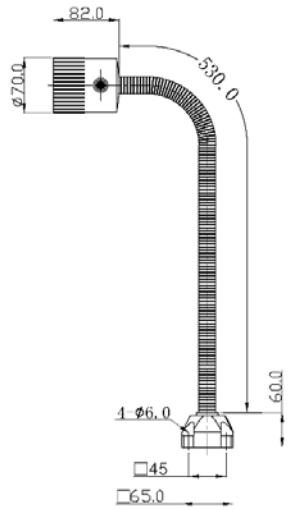


## Robust LED machine lamps for the individual use

Type	LED 3-500
Item No	335 1010
€ plus VAT	139,00

### Energy-saving durable machine lamp

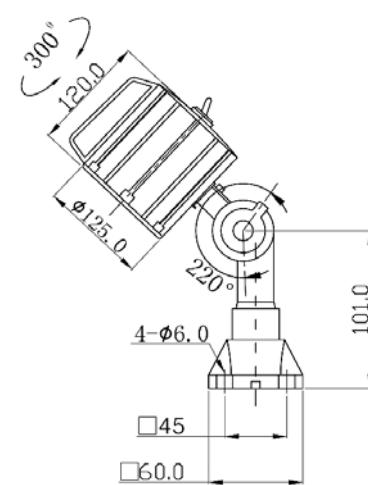
- Equipped with high performance LEDs
- With protection class IP64 (dust and splash water protected)
- Service life 60'000 operating hours
- Little outside temperature so that lubricants and coolants cannot burn in
- Made of robust oil-resistant and impact-proof plastic material
- No impairment of the service life due to vibrations or shocks
- High positioning stability
- Jacketed stable flexible hose arm 530 mm
- Optimum mobility of the articulated arm
- Colour temperature 4000 - 4500 K
- Cable length 1.2 m
- Maintenance-free
- Colour black
- Lamp: 3 x 1 W LED
- 230 V ~50 Hz



Type	LED 8-100
Item No	335 1021
€ plus VAT	149,00

### Robust and bright machine anglepoise

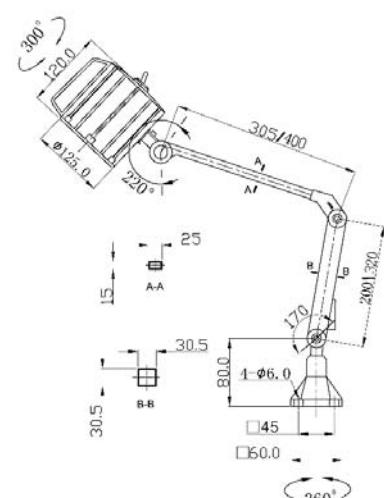
- Highly modern LED technique
- Little outside temperature so that lubricants and coolants cannot burn in
- Dust tight and jet water protected
- Articular head
- Light distribution: medium-width, asymmetric, angle of refraction 25°
- Lamp cover made of safety glass resistant to temperature change
- Protection 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



Type	LED 8-600	LED 8-720
Item No	335 1026	335 1027
€ plus VAT	159,00	169,00

### Robust and bright machine anglepoise

- Highly modern LED technique
- Little outside temperature so that lubricants and coolants cannot burn in
- Dust tight and jet water protected
- Articular head
- Light distribution: medium-width, asymmetric, angle of refraction 25°
- Lamp cover made of safety glass resistant to temperature change
- Articulated arm length 505 mm (LED 8-600) 720 mm (LED 8-720)
- 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
- Weight: 3.6 kg



## Measuring

<b>Machine spirit level</b>	338 5064	93,00
<ul style="list-style-type: none"> <li>With prism bottom to adjust horizontal surfaces and shafts</li> <li>Accuracy 0.02 mm/m</li> <li>Length 200 mm</li> <li>The compact stress-free installation of the longitudinal bubble guarantees uniform accuracy</li> <li>No time consuming adjustment</li> <li>Including transverse bubble and heat protected handle</li> <li>Wooden box</li> </ul>		



<b>Dial gauge</b>	338 5090	23,00
<ul style="list-style-type: none"> <li>Accuracy according to DIN 878</li> <li>Matt chrome metal housing</li> <li>Clamping shaft 8 mm</li> <li>Pitch 0.01 mm</li> <li>Measuring range 10 mm</li> <li>Outside ring with two adjustable marks</li> <li>Scale is turnable via the outside ring for easy zeroing</li> </ul>		

<b>Precision magnetic gauge stand</b>	335 6650	25,00
<ul style="list-style-type: none"> <li>Gauging cylinder ø 12 mm x 181 mm</li> <li>Swivel arm ø 10 mm x 160 mm</li> <li>Magnetic base L x W x H: 50 x 62 x 55 mm</li> <li>Holding force 50 kg</li> <li>Dial gauge holder with seat hole for dial gauges, indicating calliper, electrical length measuring probe</li> </ul>		



Fig.: Dial gauge and gauge stand

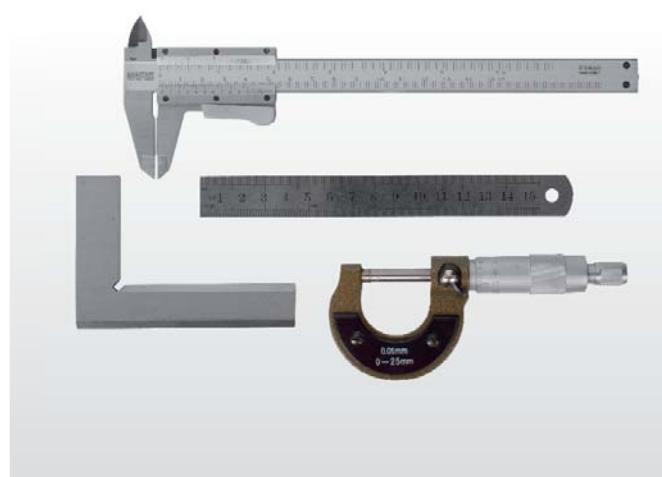
<b>Measuring slab and reference plate</b>	338 5060	249,00
<ul style="list-style-type: none"> <li>Dimensions L x W x H: 630 x 400 x 100 mm</li> <li>Accuracy 7 µ</li> <li>Granite</li> <li>Thermally and dynamically stable</li> <li>Compressive strength 250-260 N/mm<sup>2</sup></li> <li>DIN 876/0</li> <li>Corrosion-free</li> </ul>		



<b>Kit of outside micrometers</b>	338 5100	155,00
<ul style="list-style-type: none"> <li>6 pieces</li> <li>Measuring range 0 - 25 mm, 25 - 50 mm, 50 - 75 mm, 75 - 100 mm, 100 - 125 mm, 125 - 150 mm</li> <li>From 25 mm measuring range with adjusting measurement on</li> <li>Accuracy according to DIN 863</li> <li>Reading 0.01 mm</li> <li>Scale matt chromed</li> <li>Measuring spindle Ø 6.35 mm</li> <li>Measuring surface made of hard metal</li> <li>Bracket with hand guard</li> <li>Micrometer drum Ø 17 mm</li> <li>Including ratchet</li> <li>Spindle pitch 0.5 mm</li> <li>Wooden box</li> </ul>		



<b>Range of precision measuring tools MS 4</b>	338 5030	55,00
<ul style="list-style-type: none"> <li>5-pieces</li> <li>Made of stainless steel</li> <li>Vernier calliper 150 mm x 0.05 mm</li> <li>Bevelled steel square DIN 875/110 mm x 70 mm</li> <li>Ruler 150 mm</li> <li>Outside micrometer 0 - 25 x 0.01 mm</li> <li>Plastic cartridge</li> </ul>		



All prices plus valid VAT

## MPA-4

Compact digital 3 axes positioning magnetic measuring system for milling machines and lathes with speed display

### Digital magnetic measuring system MPA 4

Artikel Nr. 338 3921

€ zzgl. Mwst. 480,00

- Compact digital 3-axes position display for milling machines (X - Y - Z) and lathes (X, Z, Z<sub>0</sub>)
- To measure positions
- Speed display
- 3 incremental inputs
- Four row LCD display
- Front programming keys
- User friendly menu navigation

### Scope of delivery

- Magnetic measuring system
- 3 pcs. Magnetic sensors
- Bracket with two hinges and a magnetic plate
- Power supply unit
- Magnetic band with steel protecting strip

Type	MPA-4 S
Item No	338 3922
€ plus VAT	789,00

### Scope of delivery

- Length of the magnetic band **1.100 mm**
- Magnetic measuring system
- 3 pcs. Magnetic sensors
- Bracket with two hinges and a magnetic plate
- Power supply unit
- for e.g. OPTI BF 20 (L) Vario; TU2807

Type	MPA-4 L
Item No	338 3924
€ plus VAT	839,00

### Scope of delivery

- Length of the magnetic band **2.000 mm**
- Magnetic measuring system
- 3 pcs. Magnetic sensors
- Bracket with two hinges and a magnetic plate
- Power supply unit
- for e.g. OPTI BF 46 Vario; D 360

Service	Workshop assembly
Item No	900 0420
€ plus VAT	540,00



Fig.: TU 2506 V with MPA-4



# DPA 2000

## Digital position display DPA 2000 for precise measuring of the travels and positioning on the machine and drives

Digital position display DPA 2000

338 4001

369,00



Fig.: DPA 2000

- Considerable reduction of the manufacturing times
- Easy-to-operate
- High working accuracy
- Error rate is reduced
- Clearly-arranged keyboard
- Glare-free display
- LED display with eight digits including sign
- Permanent memory even in case of a power failure
- Splash water protected, enclosed keypad
- High quality aluminium housing
- Switchable for milling machine and lathe with freely selectable resolution
- Display: X, Y/Z0, Z axis with 8-digit LED display each (the sign is the first digit)
- Three evaluable measuring inputs with seven correction memories for tools each
- Electrical connection 230 V ~50 Hz
- Dimensions L x W x H: 280 x 70 x 190 mm
- Weight: 2.6 kg

### Possible functions

- Calculator
- Absolute/incremental operation
- Axis coupling (sum Z)
- Sub D plugs sockets
- Optionally display of the values in inch or millimetres
- Pitch circle calculator (chain dimension)
- Coordinates in the circle (pitch circle)
- Holes in the circle (pitch circle)
- Selection of the direction of counting
- Linear error compensation of the axes
- Display of the values for Z and Z0 as sum is enabled
- Optionally display of the values radius or diameter

### Scope of delivery

- Wall holder
- Operating instructions
- Connection cable 230 V

### Measuring blocks for DPA 2000/DPA 2000 S

- 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 a 3 of 4 m long connection cable (from ML 620 on - 4 m)
- Without assembly

<b>ML 80 mm</b>	338 4108	<b>200,00</b>
<b>ML 100 mm</b>	338 4110	<b>200,00</b>
<b>ML 120 mm</b>	338 4112	<b>200,00</b>
<b>ML 170 mm</b>	338 4117	<b>205,00</b>
<b>ML 220 mm</b>	338 4122	<b>210,00</b>
<b>ML 270 mm</b>	338 4127	<b>210,00</b>
<b>ML 320 mm</b>	338 4132	<b>210,00</b>
<b>ML 370 mm</b>	338 4137	<b>220,00</b>
<b>ML 420 mm</b>	338 4142	<b>240,00</b>
<b>ML 470 mm</b>	338 4147	<b>245,00</b>
<b>ML 520 mm</b>	338 4152	<b>265,00</b>
<b>ML 570 mm</b>	338 4157	<b>270,00</b>
<b>ML 620 mm</b>	338 4162	<b>275,00</b>
<b>ML 670 mm</b>	338 4167	<b>280,00</b>
<b>ML 720 mm</b>	338 4172	<b>285,00</b>
<b>ML 770 mm</b>	338 4177	<b>290,00</b>
<b>ML 820 mm</b>	338 4182	<b>290,00</b>
<b>ML 870 mm</b>	338 4187	<b>295,00</b>
<b>ML 920 mm</b>	338 4192	<b>300,00</b>
<b>ML 970 mm</b>	338 4197	<b>305,00</b>
<b>ML 1020 mm</b>	338 4202	<b>330,00</b>
<b>ML 1250 mm</b>	338 4225	<b>505,00</b>
<b>ML 1400 mm</b>	338 4240	<b>630,00</b>
<b>ML 1520 mm</b>	338 4252	<b>675,00</b>
<b>ML 1670 mm</b>	338 4267	<b>710,00</b>
<b>ML 1940 mm</b>	338 4294	<b>850,00</b>
<b>ML 2010 mm</b>	338 4295	<b>930,00</b>
<b>ML 3000 mm</b>	338 4300	<b>1.540,00</b>

### Factory assembly ML

900 0410 **350,00**

- Per measuring block



Fig.: ML 670 mm

## DPA 2000 S

**Digital position display DPA 2000 S with speed display  
for precise measuring of the travels and positioning on the machine and drives**



### Digital position display DPA 2000 S

338 4010

**510,00**

- 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
- Magnetic tape to be mounted on machines on which there is not sufficient space for magnetic measuring rods
- Sensors to capture the spindle speed are included in the delivery
- High working accuracy
- Considerable reduction of the manufacturing times
- Error rate is reduced
- Easy-to-operate
- Clearly-arranged keyboard
- Splash water protected, closed, glare-free membrane keyboard
- High quality aluminium housing
- Display: X, Y/Z, Z axis with 8-digit LED display each (the sign is the first digit)
- Three evaluable measuring inputs with seven correction memories for tools each
- Electrical connection 230 V ~50 Hz
- Dimensions L x W x H: 280 x 70 x 185 mm
- Weight: 2.6 kg

### Magnetic tape MB 100

338 3941

**0,80**

- Price per 1 cm
- With steel protecting strip

### Workshop assembly magnetic tape

900 0412

**230,00**

- Each axis

### Reading head activated

338 3932

**210,00**

- for magnetic tape

### Perforated disc

338 3926

**19,00**

- for speed sensor
- Lathe D 320 up to D 360

### Perforated disc

338 3927

**23,00**

- for speed sensor
- Lathe D 420 up to D 660

### Possible functions

- Calculator
- Speed display
- Axis coupling (sum Z)
- Sub D plugs 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
- 7 tool memories

### Scope of delivery

- Speed sensor
- Wall holder
- Operating instructions
- Connection cable 230 V



Fig.: Magnetic tape MB 100



Fig.: Perforated disc



Fig.: Reading head activated

## NEWALL - DPA 700

Digital position display DPA 700  
for precise measuring of the travels and positioning on the machine and drives



### Digital position display DPA 700

- Powerful DPA 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 manufactured in England
- The IP67 encoding units can be used with highest accuracy under hardest environmental conditions.
- 5-year warranty on display units 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

**Digital position display DPA 700** | 339 0073 | **879,00**

**DPA 700 - Turning Spherodyn** | 339 0220 | **1.269,00**

- Digital position display DPA 700
- Display holder, attachment parts

**DPA 700 - Milling Microsyn** | 339 0230 | **1.349,00**

- Digital position display DPA 700
- Display holder, attachment parts

**Add-on kit BF30 Vario** | 339 0330 | **2.470,00**

- Digital position display DPA 700
- 3 pcs. Measuring blocks Microsyn
- Display holder, attachment parts

**Add-on kit BF46 Vario** | 339 0346 | **2.490,00**

- Digital position display DPA 700
- 3 pcs. Measuring blocks Microsyn
- Display holder, attachment parts

**Add-on kit D320 x 920** | 339 0420 | **2.280,00**

- Digital position display DPA 700
- 2 pcs. Measuring blocks Microsyn
- 1 pc. Measuring blocks Spherodyn
- Display holder, attachment parts

**Add-on kit D330 x 1000 /D360 x 1000** | 339 0430 | **2.290,00**

- Digital position display DPA 700
- 2 pcs. Measuring blocks Microsyn
- 1 pc. Measuring blocks Spherodyn
- Display holder, attachment parts

Accessories	Item No	€ plus VAT
Extension cable 1 meter	339 3601	<b>85,00</b>
Extension cable 2 meter	339 3602	<b>99,00</b>
Extension cable 3.5 meter	339 3603	<b>109,00</b>
Extension cable 5 meter	339 3604	<b>125,00</b>
Extension cable 10 meters	339 3605	<b>145,00</b>

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 presetting/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)	
Length measurement systems	SpherodynTM and MicrosynTM	
Languages	English, French, German, Spanish, Italian, Turkish, Czech, Russian, Portuguese, Danish	

## Analogue measuring systems (Spherosyn & Microsyn)

The distance measuring systems Spherosyn and Microsyn are specially designed for the requirements in the harsh 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. Standard fixtures are included in the scope of delivery allowing easy and rapid assembly.



### 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 DPA 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 pretensioned 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 switchings 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)

	<b>Spherosyn</b>	<b>Microsyn</b>
Measuring length	51 mm up to 2945 mm	30 mm up to 1000 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 +/-0.5 rms, 1kHz phase analogue, 360 degrees per 5.0mm

## Measuring blocks

### Analogue measuring systems (Spherosyn & Microsyn)

Measuring blocks spherodyn	Item No	€ plus VAT
MS S2G - 51 mm	339 1005	369,00
MS S2G - 102 mm	339 1010	369,00
MS S2G - 152 mm	339 1015	369,00
MS S2G - 178 mm	339 1018	369,00
MS S2G - 203 mm	339 1020	369,00
MS S2G - 229 mm	339 1023	369,00
MS S2G - 254 mm	339 1025	369,00
MS S2G - 305 mm	339 1030	379,00
MS S2G - 356 mm	339 1035	379,00
MS S2G - 406 mm	339 1040	389,00
MS S2G - 457 mm	339 1046	399,00
MS S2G - 508 mm	339 1051	399,00
MS S2G - 559 mm	339 1056	409,00
MS S2G - 610 mm	339 1061	429,00
MS S2G - 660 mm	339 1066	439,00
MS S2G - 711 mm	339 1071	459,00
MS S2G - 762 mm	339 1076	469,00
MS S2G - 813 mm	339 1081	479,00
MS S2G - 864 mm	339 1086	489,00
MS S2G - 914 mm	339 1091	499,00
MS S2G - 965 mm	339 1097	509,00
MS S2G - 1016 mm	339 1101	519,00
MS S2G - 1118 mm	339 1111	549,00
MS S2G - 1168 mm	339 1117	569,00
MS S2G - 1219 mm	339 1121	579,00
MS S2G - 1270 mm	339 1127	589,00
MS S2G - 1321 mm	339 1132	609,00
MS S2G - 1372 mm	339 1137	629,00
MS S2G - 1422 mm	339 1142	659,00
MS S2G - 1473 mm	339 1147	679,00
MS S2G - 1524 mm	339 1152	710,00
MS S2G - 1626 mm	339 1162	759,00
MS S2G - 1727 mm	339 1172	789,00
MS S2G - 1829 mm	339 1182	849,00
MS S2G - 1930 mm	339 1193	919,00
MS S2G - 2032 mm	339 1203	1.029,00
MS S2G - 2134 mm	339 1213	1'090,00
MS S2G - 2235 mm	339 1223	1'180,00
MS S2G - 2337 mm	339 1233	1'280,00
MS S2G - 2438 mm	339 1243	1'350,00
MS S2G - 2540 mm	339 1254	1'450,00
MS S2G - 2642 mm	339 1264	1'550,00
MS S2G - 2743 mm	339 1274	1'630,00
MS S2G - 2845 mm	339 1284	1'720,00
MS S2G - 2946 mm	339 1294	1'820,00

Measuring blocks microsyn	Item No	€ plus VAT
MS M2G - 30 mm	339 2003	389,00
MS M2G - 50 mm	339 2005	389,00
MS M2G - 75 mm	339 2007	389,00
MS M2G - 100 mm	339 2010	389,00
MS M2G - 125 mm	339 2012	389,00
MS M2G - 150 mm	339 2015	389,00
MS M2G - 175 mm	339 2017	389,00
MS M2G - 180 mm	339 2018	389,00
MS M2G - 200 mm	339 2020	389,00
MS M2G - 225 mm	339 2022	389,00
MS M2G - 250 mm	339 2025	389,00
MS M2G - 275 mm	339 2027	395,00
MS M2G - 300 mm	339 2030	399,00
MS M2G - 325 mm	339 2032	405,00
MS M2G - 350 mm	339 2035	409,00
MS M2G - 400 mm	339 2040	415,00
MS M2G - 450 mm	339 2045	429,00
MS M2G - 500 mm	339 2050	429,00
MS M2G - 550 mm	339 2055	449,00
MS M2G - 600 mm	339 2060	469,00
MS M2G - 650 mm	339 2065	479,00
MS M2G - 700 mm	339 2070	489,00
MS M2G - 750 mm	339 2075	499,00
MS M2G - 800 mm	339 2080	519,00
MS M2G - 850 mm	339 2085	529,00
MS M2G - 900 mm	339 2090	539,00
MS M2G - 950 mm	339 2095	549,00
MS M2G - 1000 mm	339 2100	569,00



Fig.: Microsyn



Fig.: Spherosyn

# CNC Complete and add-on kits



## CNC Controller III / CNC Controller VI

the complete control for the step motor combines all necessary components for automation in one CNC machine tool within one device

### CNC - Controller III



#### Connecting plug step motor

- For maximum three slots
- Optical axis control by LED's of different colours

#### 25-pole D-Sub plug

- Connection to the PC for one machine

#### Mains plug

- with fuse at the front

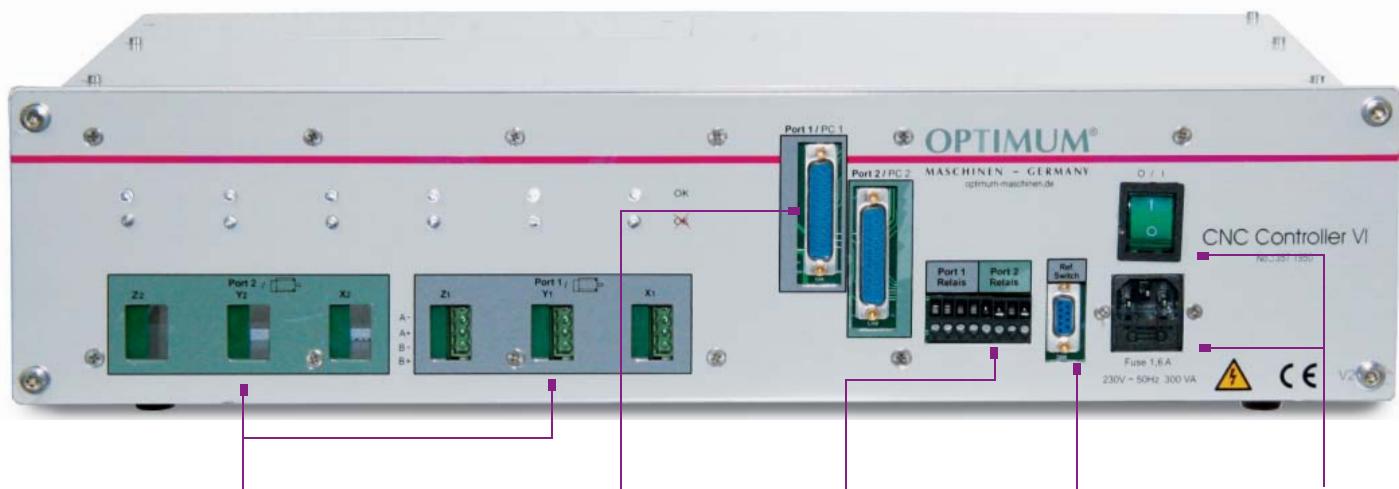
#### ON/OFF-switch

- easily operable from the front side

### Reference switch

- with Adapter cable (Item No. 357 1985)  
Connection for reference switch

### CNC - Controller VI



#### 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

#### 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
- 4 separately switchable, potential-free relay outputs in the power section (CNC Controller VI)
- 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
- The CNC Controller is working in half step operation
- Signal processing (multi-signal, single-signal)
- Mains cable
- LPT port adaptor plug multi signal / single signal
- LPT connection cable

#### Differences:

- Connection for reference switch 3 axis (only for port 1) (Controller VI)
- 4. Controllable axis (e.g. circular dividing table) (Controller VI)

CNC Controller III	40 V
Item No	357 1951
€ plus VAT	<b>279,00</b>

Features	
Card slots	3
Connection	300 VA 230 V / 1 Ph ~50 Hz
Dimensions L x W x H:	295 x 230 x 145 mm

CNC Controller VI	40 V
Item No	357 1950
€ plus VAT	<b>489,00</b>

Features	
Card slots	6
Relay outputs	4 potential-free
Connection	Input for universal reference switch
Dimensions L x W x H:	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	357 1960
€ plus VAT	<b>129,00</b>

- X-, Y- or Z axis
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque



Adapter cable for reference switch	
Allows the use of reference switch on Controller III	

Artikel Nr.	357 1985
€ zzgl. Mwst.	<b>35,00</b>



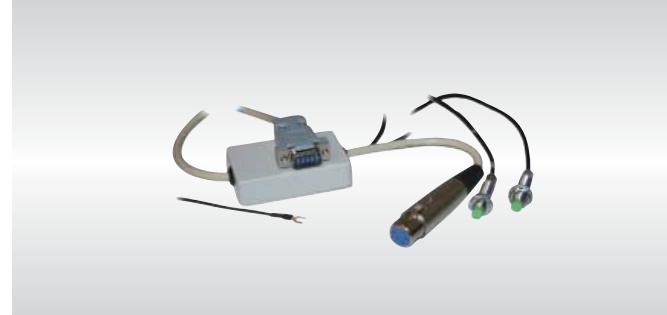
Universal reference switch kit milling	
Item No	357 1980
€ plus VAT	<b>139,00</b>

- 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	357 1966
€ plus VAT	<b>139,00</b>

- 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

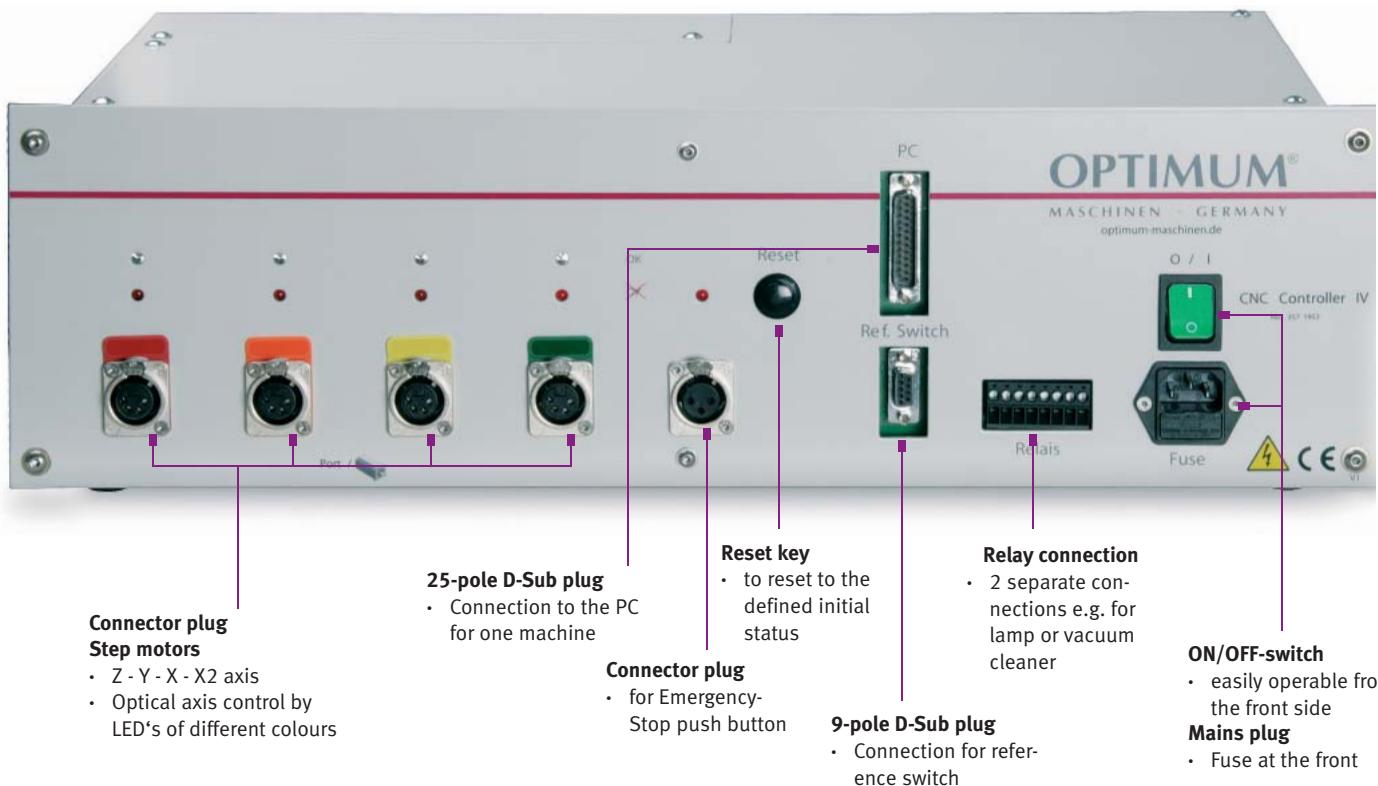


Factory assembly reference switch kit (for new orders)	900 0506	<b>160,00</b>
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**Modern powerful microprocessor control combines all necessary components for automation in a large CNC machine tool within one device**

### 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 up to 130 volts 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



- Easy to assemble CNC control card
- Simply open the insertion slot and insert the CNC control card into the slot

**CNC - Controller IV incl. 3 CNC control cards**

Item No	357 1955
<b>€ plus VAT</b>	<b>1.690,00</b>

**Features**

Card slots	4
Relay outputs	4 potential-free, max. 10 A per relay
	Input for external emergency stop
	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



**CNC control card**

Item No	357 1959
<b>€ plus VAT</b>	<b>315,00</b>

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque



**Universal reference switch kit milling**

Item No	357 1980
<b>€ plus VAT</b>	<b>139,00</b>

- 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	357 1967
<b>€ plus VAT</b>	<b>139,00</b>

- For CNC Controller IV
- 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



**Workshop assembly reference switch kit (for new orders)**

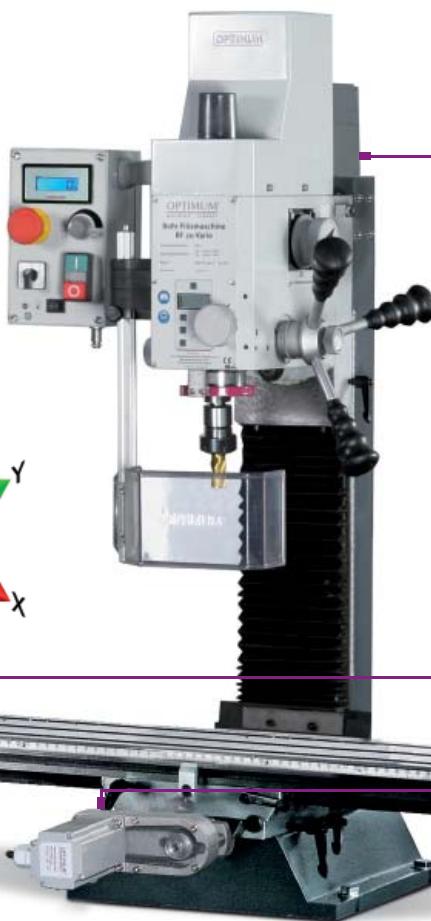
Item No	900 0506
<b>€ plus VAT</b>	<b>160,00</b>

## 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

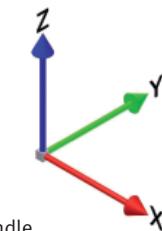


Fig.: OPTI BF20L Vario-CNC

Description BF 20 Vario / BF 20 L Vario on page 112

### CNC complete add-on kit for BF 20 Vario/BF 20 L Vario

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 <b>without</b> workshop assembly	357 0024	<b>1.690,00</b>
Add-on kit <b>with</b> workshop assembly*	353 9020	<b>1.990,00</b>

**Transportation packaging flat rate**  
for workshop assembly

**€ 59,00** (TPFR 3) plus VAT

### \*Important notes:

- The speeds were determined with the software "NC-Drive" and the current OPTI BF20 Vario 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.



**Software recommendations on  
page 222**

### Complete kit ball screws

Item No

€ plus VAT

Consisting of:

- 3 x ball screws with spindle nut
- Prepared for the installation

BF20 Vario - <b>without</b> workshop assembly	357 4450	<b>850,00</b>
BF20 Vario - <b>with</b> workshop assembly	353 9220	<b>1.430,00</b>
BF20L Vario - <b>without</b> workshop assembly	357 4451	<b>870,00</b>
BF20L Vario - <b>with</b> workshop assembly	353 9221	<b>1.450,00</b>

### Ball screws individual

- with spindle nut

X axis for OPTI BF20 Vario (586 mm)	357 4303	<b>289,00</b>
X axis for OPTI BF20L Vario (788 mm)	357 4304	<b>309,00</b>
Y axis (350 mm)	357 4301	<b>269,00</b>
Z axis (458 mm)	357 4302	<b>309,00</b>

### Factory assembly ball screw

900 0504

**270,00**

- Each axis



## CNC add-on kit and accessories

### CNC add-on kit MK F20DP

357 0020

660,00

- 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

900 0500

460,00

- "Step motors" for all 3 axis



### CNC - Controller III 40V

357 1951

279,00

- For 3 card slots
- without CNC control cards
- Compact, elaborated housing, including a high-performance power supply unit, line filter and powerful forced air circulation
- The CNC Controller is working in half step operation



### Adapter cable for reference switch

357 1985

35,00

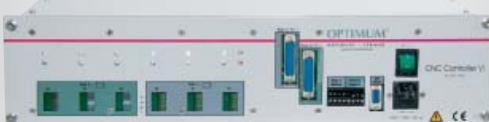
- Für Controller III

### Controller VI 40V

357 1950

499,00

- 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

357 1960

129,00

- 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 OPTI MILL BF20 Vario

353 9091

990,00

#### SHC 2 for OPTI MILL BF20L Vario

353 9092

1.090,00



Fig.: SHC 1

### Safety pack "Safety kit"

353 9085

2.790,00

- 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

357 1980

139,00

- 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

900 0506

160,00



### CNC briefing in the house

900 0510

750,00

- 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**

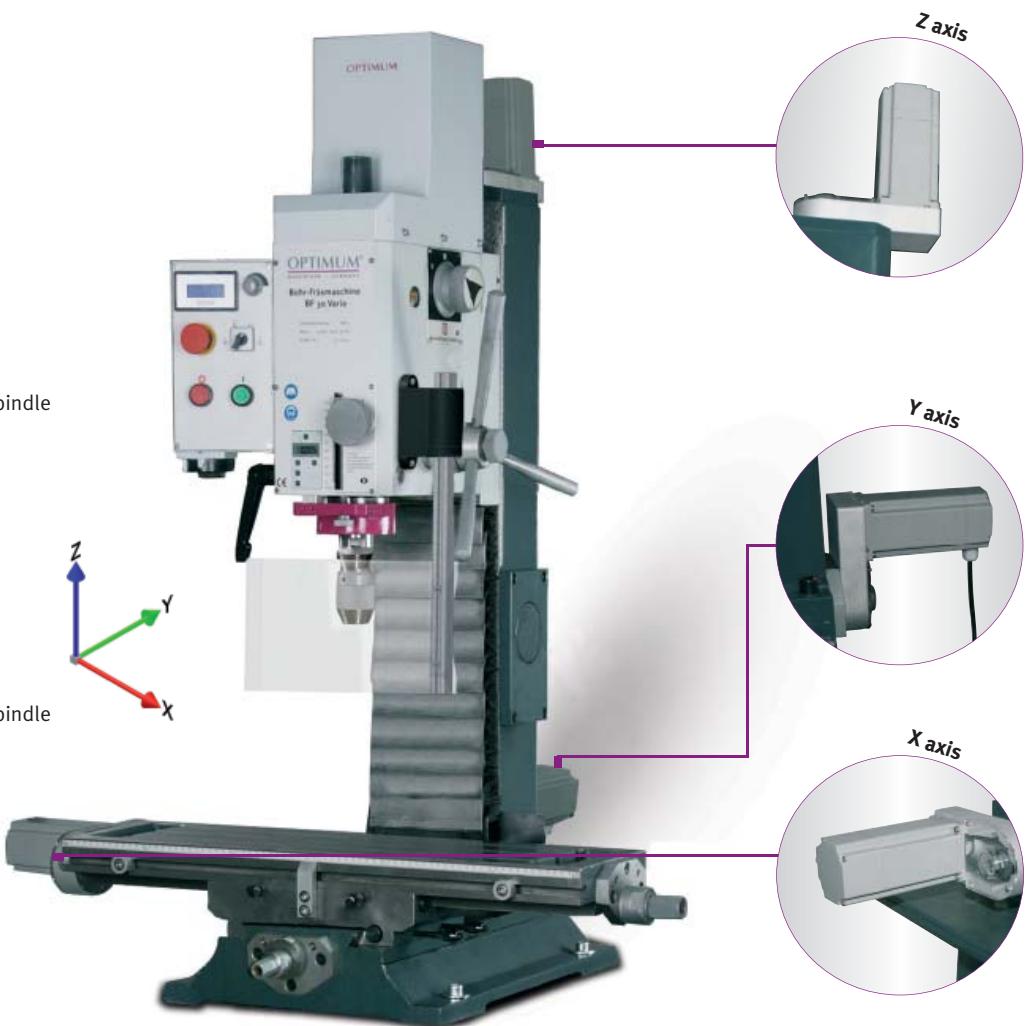
### Travel speed\*

- max. **14** mm/sec. with trapezoid spindle
- max. **18** mm/sec. with ball screw

Torque **11.6 Nm**  
on the spindle **X- and Y axis**

### Travel speed\*

- max. **16** mm/sec. with trapezoid spindle
- max. **20** mm/sec. with ball screw



Description „BF 30Vario“ on page 123

### 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 F30DP

- 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

357 0034

**2.790,00**

Add-on kit **with** workshop assembly\*

353 9023

**3.290,00**

### Complete kit ball screws

Item No

€ plus VAT

for BF 30 Vario (not possible for F 40 E)

Consisting of:

- 3 x ball screws with spindle nut
- Ball screws for three axes

**Without** workshop assembly

357 4455

**900,00**

**With** workshop assembly

353 9223

**1.690,00**

### Ball screws individual

for BF 30 Vario (not possible for F 40 E)

• with spindle nut

**X axis Ø 20 mm**

357 4311

**319,00**

**Y axis Ø 20 mm**

357 4312

**309,00**

**Z axis Ø 25 mm**

357 4313

**309,00**

### Factory assembly ball screw

900 0523

**380,00**

- Each axis



## CNC add-on kit and accessories

### CNC add-on kit MK F30DP

357 0030 | 1.050,00

- 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

900 0603 | 550,00

- "Step motors" for all 3 axis



### CNC - Controller IV

357 1955 | 1.690,00

- 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

357 1959 | 315,00

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque



### Flexible keypad

357 1945 | 22,00

Water, chip and dust tight, hard-wearing, easy-to-clean, connection and power supply via PS/2



### Housing SHC 3

353 9093 | 2.490,00

- 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"

353 9085 | 2.790,00

- 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

357 1980 | 139,00

- 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

900 0506 | 160,00



### CNC briefing in the house

900 0510 | 750,00

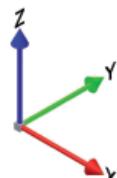
- One-day instruction
- Complete cabling and configuration of the control hardware
- Instruction in company headquarters Hallstadt/Bamberg
- Briefing on site plus travel cost accommodation cost, if required

## CNC complete add-on kit

Torque **17.4 Nm**  
on the spindle **Z axis**

### Travel speed\*

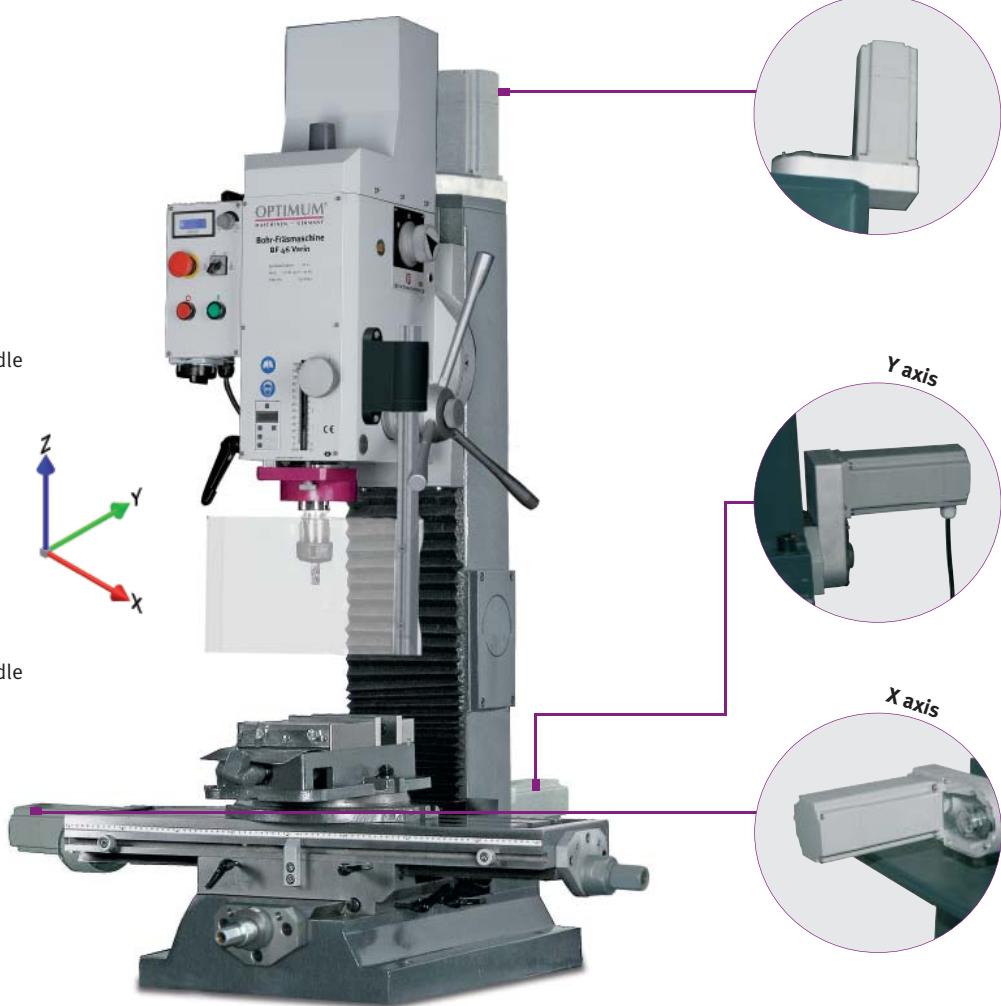
- max. **14** mm/sec. with trapezoid spindle
- max. **18** mm/sec. with ball screw



Torque **17.4 Nm**  
on the spindle **X- and Y axis**

### Travel speed\*

- max. **16** mm/sec. with trapezoid spindle
- max. **20** mm/sec. with ball screw



Description „BF 46Vario“ 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 F46DP

### Scope of delivery: Add-on kit MK F46DP

- 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

357 0044

**3.100,00**

Add-on kit **with** workshop assembly\*

353 9024

**3.500,00**

### Complete kit ball screws

Item No

€ plus VAT

Consisting of:

- 3 x ball screws with spindle nut
- Ball screws for three axes

**Without workshop assembly**

357 4456

**900,00**

**With workshop assembly**

353 9225

**1.790,00**

### Ball screws individual

- with spindle nut

**X axis Ø 20 mm**

357 4321

**339,00**

**Y axis Ø 20 mm**

357 4322

**319,00**

**Z axis Ø 25 mm**

357 4323

**269,00**

### Factory assembly ball screw

900 0524

**410,00**

- Each axis



## CNC add-on kit and accessories

### CNC add-on kit MK F46DP

357 0046 | 1.290,00

- 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

900 0605 | 550,00

- "Step motors" for all 3 axis



### CNC - Controller IV

357 1955 | 1.690,00

#### 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

357 1959 | 315,00

- For all axis universal (one card is required per axis)
- Pluggable CNC control card with largely dimensioned coolant body
- Adjustable current and holding torque



### Flexible keypad

357 1945 | 22,00

Water, chip and dust tight, hard-wearing, easy-to-clean, connection and power supply via PS/2



### Housing SHC 3

353 9093 | 2.490,00

- 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"

353 9085 | 2.790,00

- 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

357 1980 | 139,00

- 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

900 0506 | 160,00



### CNC briefing in the house

900 0510 | 750,00

- 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

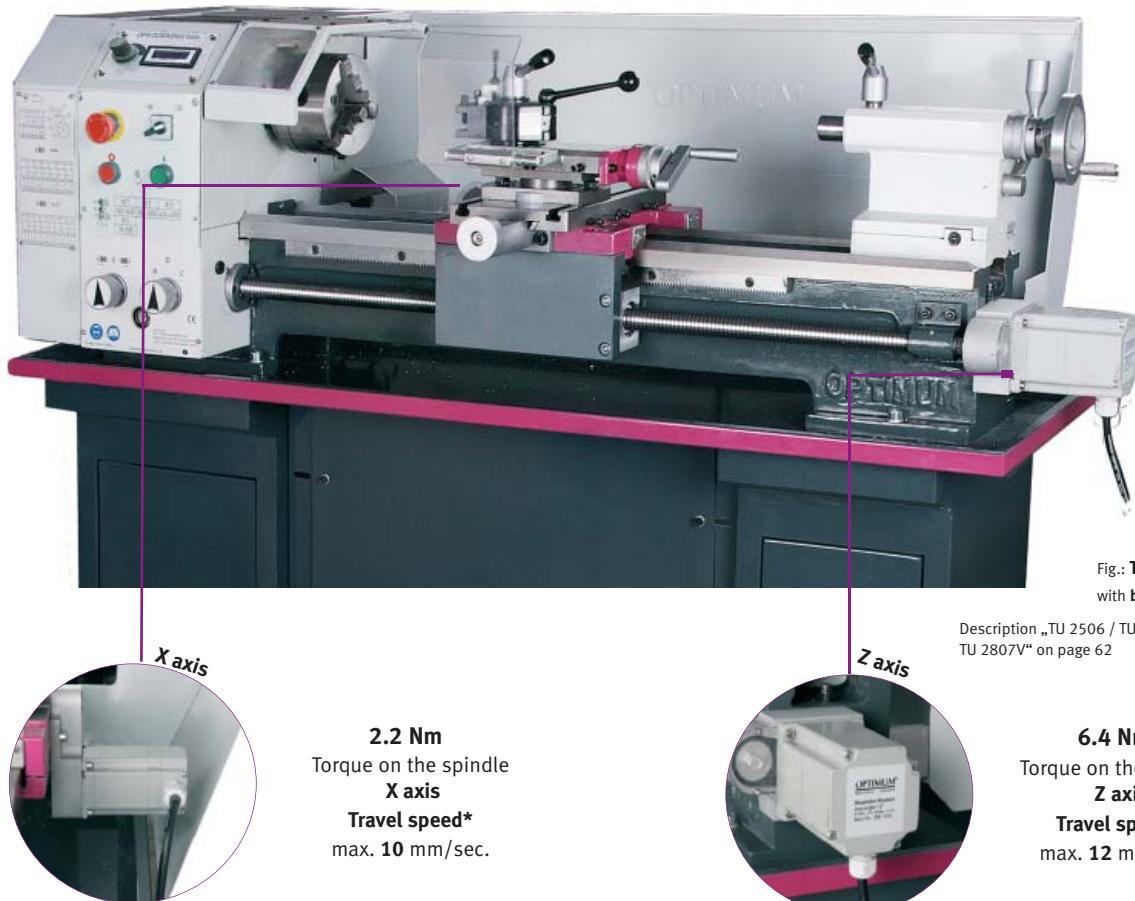


Fig.: TU2807-CNC  
with ball screw

Description „TU 2506 / TU 2506V / TU 2807 / TU 2807V“ on page 62

### CNC complete add-on kit

for OPTITURN TU 2506 without ball screws  
for OPTITURN TU 2807 without ball screws

Consisting of:

- 1 x CNC Controller III
- 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
- Two assembly housings incl. lid
- 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 357 0244 **1.390,00**

Add-on kit **with** workshop assembly\* 353 9033 **1.690,00**

**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. **12 mm/sec.**

### CNC complete add-on kit

for OPTITURN TU 2807 when using ball screws

Consisting of:

- 1 x CNC Controller III
- 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
- Two assembly housings incl. lid
- 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\* 353 9031 **1.790,00**

**Transportation packaging flat rate** **€ 59,00** (TPFR 3) plus VAT

#### Ball screws for TU 2807

for the <b>X axis</b>	357 4421	<b>269,00</b>
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for the <b>Z axis</b>	357 4422	<b>289,00</b>
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<b>Assembly kit</b> For both axis	357 4425	<b>195,00</b>
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<b>Workshop assembly</b>	900 0532	<b>249,00</b>
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- Each axis

<b>Complete kit</b>	353 9310	<b>1'090,00</b>
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- 2 x ball screws, assembly kit for both axis

- Including factory assembly



**Software recommendations**  
on page 222

## CNC add-on kit and accessories

### 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, a 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

357 0210 **650,00**

- for TU 2807 when using ball screws

### MK D24DP

357 0240 **700,00**

- for TU 2506 / TU 2807 without ball screws

### Workshop assembly

900 0500 **460,00**



### CNC - Controller

- For 3 card slots
- without CNC control cards

### Controller III

357 1951 **279,00**



### Adapter cable for reference switch

357 1985 **35,00**

- Für Controller III



### CNC - control card

357 1960 **129,00**

- is required on one card per axis

### CNC encoder kit

357 1963 **569,00**

- for the software PC Dreh
- Hardware for thread cutting
- Aluminium flange to be installed in the gearbox
- Toothed belt wheel for the encoder and for the main spindle
- Toothed belt, set of screws
- Max. shaft load axial = 40 N, radial = 60 N
- Diameter of the shaft 8 mm
- Light metal housing, black powder-coated
- Principle: LED with slotted glass pane
- Protected according to IP54



### Housing SHC 6

353 9096 **1.090,00**

- 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"

353 9085 **2.790,00**

- 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

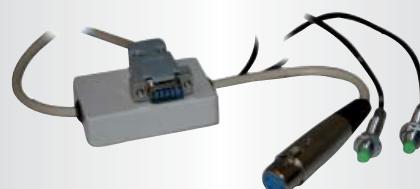
### Universal reference switch kit turning

357 1966 **139,00**

- 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

900 0506 **160,00**



### CNC - briefing

900 0510 **750,00**

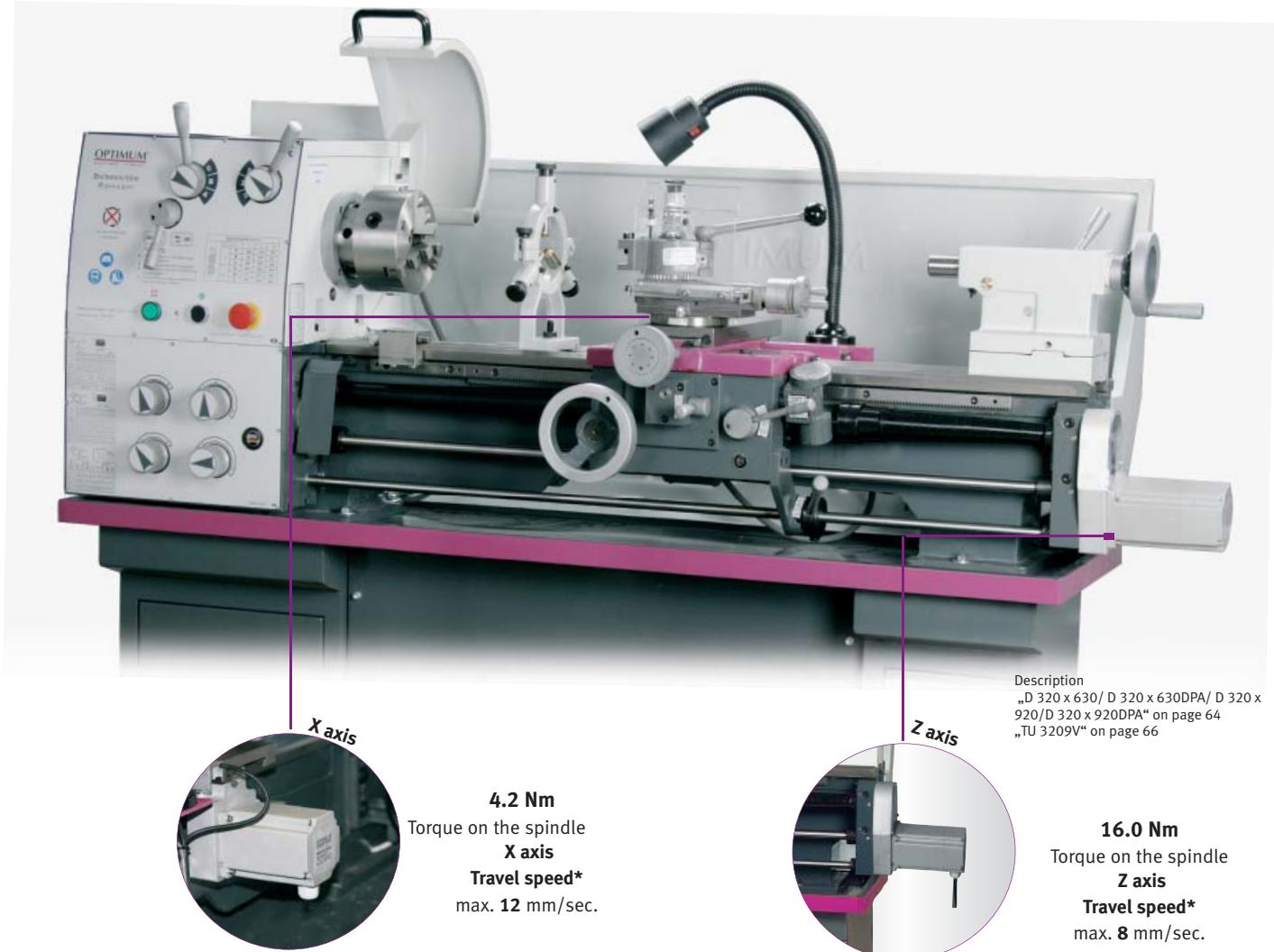
- One-day instruction
- „One-day instruction“ on page 213
- Briefing on site plus travel cost accommodation cost, if required

### Flexible keypad

357 1945 **22,00**

Water, chip and dust tight, hard-wearing, easy-to-clean, connection and power supply via PS/2

**CNC complete add-on kit**



**CNC complete add-on kit**

for OPTI TURN D320 x 630 / OPTI D320 x 920

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
- 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

Add-on kit **with workshop assembly\*** 353 9036 **2.790,00**

**Transportation packaging flat rate** € 79,00 (TPFR 4) plus VAT  
for workshop assembly

**Ball screws with nut**

for the X axis	357 4427	<b>319,00</b>
for the Z axis D 320 x 630	357 4428	<b>409,00</b>
for the Z axis D 320 x 920	357 4429	<b>419,00</b>
<b>Mounting set</b>	357 4430	<b>205,00</b>

- For both axes

**Workshop assembly** 900 0530 **750,00**

- Each axis



\* Important notes:

- The indicated speeds represent a nominal value which was determined on the current OPTI 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.



**Software recommendations**  
on page 222

## CNC add-on kit and accessories

### CNC add-on kit MK D32DP

357 0285

745,00

- 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

900 0632

500,00

- "Step motor" for both axis



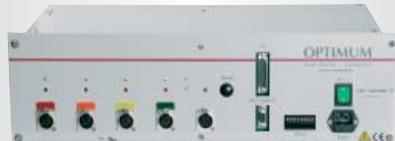
### CNC - Controller IV

357 1955

1.690,00

#### 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

357 1959

315,00

- "Step motors" for all 3 axis



### Flexible keypad

357 1945

22,00

Water, chip and dust tight, hard-wearing, easy-to-clean, connection and power supply via PS/2



### Housing SHC 7

353 9097

1.190,00

- 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.
- Furthermore, the feed and the speed can be set from the outside.
- The compact housing is suitable for the corresponding standard base of the lathe, but can also be mounted on a workbench.



Fig.: similar

### Safety pack "Safety kit"

353 9085

2.790,00

- 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

357 1966

139,00

- For CNC Controller IV
- 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

900 0506

160,00

### CNC encoder kit

357 1964

569,00

#### for the software PC Dreh

#### Hardware for thread cutting

- Aluminium flange to be installed in the gearbox
- Toothed belt wheel for the encoder and for the main spindle
- Toothed belt, set of screws
- Max. shaft load axial = 40 N, radial = 60 N
- Diameter of the shaft 8 mm
- Light metal housing, black powder-coated
- Principle: LED with slotted glass pane
- Protected according to IP54



### CNC - briefing

900 0510

750,00

- One-day instruction
- „CNC briefing in the house“ on page 219
- Briefing on site plus travel cost accommodation cost, if required

## Housings SHC

### SHC 1 and 2 for CNC milling machines OPTI mill BF 20 Vario / OPTI BF 20 L 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 OPTI BF 20 CNC-Vario

Item No	353 9091
€ plus VAT	<b>990,00</b>
Dimensions L x W x H	1'295 x 1'000 x 1'770 mm
Net weight	200 kg



Fig.: SHC 1

#### Housing SHC 2 for OPTI BF 20 L CNC-Vario

Item No	353 9092
€ plus VAT	<b>1.090,00</b>
Dimensions L x W x H	1'295 x 1'200 x 1'770 mm
Net weight	220 kg

### SHC 3 for CNC milling machines OPTI mill BF 30 Vario / OPTI mill BF 46 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 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 OPTI BF 30 CNC-Vario/ BF 46 CNC-Vario

Item No	353 9093
€ plus VAT	<b>2.490,00</b>
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 lathes OPTI turn 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.



Fig.: SHC 6 with optional chip tray

#### Housing SHC 6 for OPTITURN TU 2506 / TU 2807

Item No	353 9096
€ plus VAT	<b>1.090,00</b>

#### Housing SHC 7 for OPTI D320 x 630/ D320 x 920

Item No	353 9097
€ plus VAT	<b>1.190,00</b>

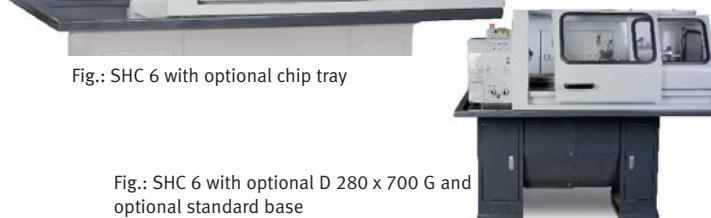


Fig.: SHC 6 with optional D 280 x 700 G and optional standard base

#### Safety pack "Safety kit"

353 9085 **2.790,00**

- 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

#### 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 I - 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
- Stepless 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 BF20 Vario

### Power Drive 1

Item No	357 1941
€ plus VAT	<b>239,00</b>

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 machine OPTI BF20 (L)

### Convincing arguments: quality, efficiency and price

- Step motors with integrated terminal board
- Especially smooth running due to 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	357 0015
€ plus VAT	<b>229,00</b>

### 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 kits MK RT1 and MK RT2 to control the horizontal vertical circular dividing tables

### CNC add-on kit MK RT 1

Item No	357 0510
€ plus VAT	<b>229,00</b>

- for horizontal vertical circular dividing table RT100
- for horizontal vertical circular dividing table RT150



Fig.: RT150-CNC

### Scope of delivery:

- Housing
- Coupling
- Step motor 2.2 Nm, 3A
- Screwing
- Cable 4 x 0,75 mm<sup>2</sup>



Description „Horizontal-vertical circular dividing tables“ on page 143

### CNC add-on kit MK RT 2

Item No	357 0514
€ plus VAT	<b>319,00</b>

- for horizontal vertical circular dividing table RT200

## CNC briefing - Information

### CNC briefing in the house

Item No	900 0510
€ plus VAT	<b>750,00</b>

### 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.



## Overview of our CNC milling machines



MEHR INFORMATION ÜBER DIESE  
CNC-MASCHINEN FINDEN SIE IM  
CNC KATALOG ODER UNTER  
[WWW.OPTIMUM-MASCHINEN.DE](http://WWW.OPTIMUM-MASCHINEN.DE)

Type	OPTI mill® M 2LS	OPTI mill® M 4HS	OPTI mill® F 4	OPTI mill® F 80
Control	Sinumerik 808 D	Sinumerik 802S	Sinumerik 808 D	Sinumerik 808 D
Item No	350 0123	350 0140	351 0430	351 1080
Total connection ~50 Hz	230 V/1Ph	400 V / 3 Ph	400 V / 3 Ph	400 V / 3 Ph
Motor	1,0 kW	3,1 kW	2,5 kW	9,5 kW
Driving motor	850 W	3 kW	2,2 kW	2,2 kW
Torque driving motor	-	4,7 Nm	-	-
Spindle seat	MK 2/M 10	ER 32	ISO 30/BT 30	ISO 30/BT 30
Milling head dimension	Ø 52 mm	Ø 13 mm	Ø 65 mm	Ø 65 mm
End mill dimension max.	Ø 16 mm	Ø 11 mm	Ø 30 mm	Ø 30 mm
Repeating accuracy	-	-	± 0,01 mm	± 0,015 mm
Positioning accuracy	-	-	± 0,01 mm	± 0,015 mm
Disc type	-	-	6 Werkzeuge	10 Werkzeuge
Travel X axis	480 mm	500 mm	310 mm	400 mm
Travel Y axis	155 mm	240 mm	200 mm	250 mm
Travel Z axis	280 mm	530 mm	300 mm	400 mm
Speeds	90 - 3.000 min <sup>-1</sup>	150 - 8.600 min <sup>-1</sup>	50 - 6.000 min <sup>-1</sup>	50 - 8.000 min <sup>-1</sup>
Distance spindle - table	-	-	90 - 390 mm	75 - 475 mm
Table length x width	700 x 180 mm	750 x 210 mm	690 x 210 mm	800 x 260 mm
T-slots/number/distance	12 mm / 3 / 63 mm	18 mm / 3 / 80 mm	16 mm / 3 / 63 mm	16 mm / 5 / 50 mm
Length x width x height	1620x895x2.085mm	1900x1185x2.175mm	1800x1720x200 mm	1925x1600x2070
Total weight	380 kg	800 kg	1.800 kg	1.800 kg

## Übersicht über unser CNC-Drehmaschinen



Type	OPTI turn® L 28	OPTI turn® L 33	OPTI turn® L 44	OPTI turn® L 440
Control	Sinumerik 802S	Sinumerik 802S	Siemens 828 D Basic T	Siemens 828 D Basic T
Item No	350 4110	350 4115	351 4330	351 4410
Total connection ~50 Hz	230 V ~50 Hz	400 V/3Ph	400 V/3Ph	400 V/3Ph
Motor	2,7 kW	3,5 kW	18,5 kW	20 kW
Driving motor	-	-	8 kW (S1 Betrieb 7kW)	12 kW
Torque drive	-	-	31 Nm	70 Nm
Hydraulic motor power	-	-	750 W	750 W
Centre height	140 mm	165 mm	223 mm	235 mm
Centre width	700 mm	750 mm	850 mm	1.000 mm
Spindle speed min <sup>-1</sup>	30 - 4.000 min <sup>-1</sup>	80 - 3.000 min <sup>-1</sup>	10 - 3.500 min <sup>-1</sup>	100 - 4.500 min <sup>-1</sup>
Repeating accuracy	-	-	0,005 mm	0,005 mm
Positioning accuracy	-	-	± 0,005 mm	± 0,005 mm
Travel X axis	180 mm	165 mm	250 mm	260 mm
Travel Z axis	465 mm	600 mm	760 mm	1.150 mm
Feed X axis mm/min.	3.000 mm/min.	2.000 mm/min.	15.000 mm/min	15.000 mm/min
Feed Z axis mm/min.	2.500 mm/min.	2.000 mm/min.	15.000 mm/min	15.000 mm/min
Torque X axis		8,4 Nm	6 Nm	6 Nm
Torque Z axis		10 Nm	8,5 Nm	16 Nm
Length x width x height (open) mm	1.885 x 805 x 1685	1.860 x 1.160 x 1.580	2.230 x 1.580 x 1.795	3.030 x 1.952 x 2.022
Total weight	420 kg	1.000 kg	2.100 kg	3.000 kg



<b>OPTI mill® F 105</b>	
<b>Sinumerik 808 D</b>	
351 1105	
400 V / 3 Ph	
10 kW	
5,5 kW	
-	
ISO 40 BT40	
Ø 75 mm	
Ø 35 mm	
± 0,01 mm	
± 0,01 mm	
12 Werkzeuge	
550 mm	
340 mm	
460 mm	
10 - 8.000 min <sup>-1</sup>	
100 - 600 mm	
800 x 320 mm	
14 mm / 3 / 100	
2.164x1.810x2.200	
2.800 kg	

<b>OPTI mill® F 150</b>	
<b>Sinumerik 828 D</b>	
351 1210	
400 V/3Ph	
25 kW	
12 kW	
57 Nm	
ISO 40 DIN 69871	
Ø 63 mm	
Ø 32 mm	
0,005 mm	
± 0,005 mm	
16 Werkzeuge	
760 mm	
430 mm	
460 mm	
10 - 10.000 min <sup>-1</sup>	
102 - 562 mm	
900 x 410 mm	
16 mm / 4 / 102	
3000x2050 x 2420	
3.520 kg	

<b>OPTI mill® F 310</b>	
<b>Sinumerik 828 D</b>	
351 1230	
400 V/3Ph	
25 kW	
13 kW	
70 Nm	
ISO 40 DIN 69871	
Ø 63 mm	
Ø 32 mm	
0,005 mm	
± 0,005 mm	
24 Werkzeuge	
1.000 mm	
600 mm	
680 mm	
10 - 10.000 min <sup>-1</sup>	
50 - 600 mm	
1.200 x 528 mm	
16 mm / 5 / 80 mm	
4080x2600x 3.130	
4.760 kg	

<b>OPTI mill® F 410</b>	
<b>Sinumerik 828 D</b>	
351 1240	
400 V/3Ph	
35 kW	
13 kW	
70 Nm	
ISO 40 DIN 69871	
Ø 63 mm	
Ø 32 mm	
0,005 mm	
± 0,005 mm	
24 Werkzeuge	
1.300 mm	
680 mm	
730 mm	
10 - 10.000 min <sup>-1</sup>	
100 - 830 mm	
1.700 x 600 mm	
18 mm /5/ 100mm	
4080x2600x 3.130	
6.600 kg	



<b>OPTI turn® L 460</b>	
<b>Siemens 828 D Basic T</b>	
351 4420	351 4430
400 V/3Ph	400 V/3Ph
20 kW	20 kW
12 kW	12 kW
70 Nm	115 Nm
750 W	750 W
235 mm	235 mm
1.500 mm	2.000 mm
100 – 4.500 min <sup>-1</sup>	80 – 3.500 min <sup>-1</sup>
0,005 mm	0,005 mm
± 0,005 mm	± 0,005 mm
260 mm	345 mm
1.680 mm	2.150 mm
15.000 mm/min	15.000 mm/min
15.000 mm/min	15.000 mm/min
6 Nm	11 Nm
16 Nm	20 Nm
3.530 x 1.952 x 2.022	4.190 x 2.245 x 2.050
3.450 kg	4.900 kg

<b>OPTI turn® L 500</b>	
<b>Siemens 828 D Basic T</b>	
351 4440	351 5060
400 V/3Ph	400 V/3Ph
30 kW	25 kW
17,5 kW	12 kW
115 Nm	115 Nm
750 W	1,5 kW
235 mm	460 mm
3.000 mm	990 mm
80 – 3.500 min <sup>-1</sup>	10 - 4.000 min <sup>-1</sup>
0,005 mm	0,005 mm
± 0,005 mm	± 0,005 mm
345 mm	215 mm
3.150 mm	520 mm
30.000 mm/min	24.000 mm/min
30.000 mm/min	24.000 mm/min
11 Nm	11 Nm
20 Nm	20 Nm
5.190 x 2.245 x 2.050	2.322 x 1.948 x 1.930
7.500 kg	3.200 kg

<b>OPTI turn® S 600</b>	
<b>Siemens 828 D Basic T</b>	
351 5150	351 5170
400 V/3Ph	400 V/3Ph
40 kW	50 kW
17 kW	30 kW
162 Nm	186 Nm
750 W	750 W
-	-
750 mm	750 mm
990 mm	1.250 mm
10 - 4.500 min <sup>-1</sup>	10 - 2.500 min <sup>-1</sup>
0,005 mm	0,005 mm
± 0,005 mm	± 0,005 mm
215 mm	305 mm
520 mm	750 mm
24.000 mm/min	24.000 mm/min
24.000 mm/min	24.000 mm/min
11 Nm	11 Nm
27 Nm	27 Nm
3.015x1.856x2.016	3.515x1.856x2.016
5.700 kg	7.200 kg

<b>OPTI turn® S 500</b>	
<b>Siemens 828 D</b>	
351 5150	351 5170
400 V/3Ph	400 V/3Ph
40 kW	50 kW
17 kW	30 kW
162 Nm	186 Nm
750 W	750 W
-	-
750 mm	750 mm
990 mm	1.250 mm
10 - 4.500 min <sup>-1</sup>	10 - 2.500 min <sup>-1</sup>
0,005 mm	0,005 mm
± 0,005 mm	± 0,005 mm
215 mm	305 mm
520 mm	750 mm
24.000 mm/min	24.000 mm/min
24.000 mm/min	24.000 mm/min
11 Nm	11 Nm
27 Nm	27 Nm
3.015x1.856x2.016	3.515x1.856x2.016
5.700 kg	7.200 kg

<b>OPTI turn® S 750</b>	
<b>Siemens 828 D</b>	
351 5170	351 5170
400 V/3Ph	400 V/3Ph
50 kW	50 kW
30 kW	30 kW
186 Nm	186 Nm
750 W	750 W
-	-
750 mm	1.250 mm
990 mm	1.250 mm
10 - 4.500 min <sup>-1</sup>	10 - 2.500 min <sup>-1</sup>
0,005 mm	0,005 mm
± 0,005 mm	± 0,005 mm
215 mm	305 mm
520 mm	750 mm
24.000 mm/min	24.000 mm/min
24.000 mm/min	24.000 mm/min
11 Nm	11 Nm
27 Nm	27 Nm
3.515x1.856x2.016	3.515x1.856x2.016
7.200 kg	7.200 kg



## The universal 4-axis step motor control

NCdrive is an innovative PC based CNC control for step motor output stages for up to 4 axes. The potential of your control electronics and mechanic system is perfectly bailed out via numerous features such as e.g. the preview of the tool path.

NCdrive consequently uses the high performance of modern hardware and of the Windows operating system. Thus a scope of service is realized which can be compared against the high-end CNC controls of the upscale machine tools.

NCdrive processes NC programs (DIN 66025, others via optional pre-processors) in the same way as the high-end CNC controls, it supports numerous additional NC commands and geometry cycles and allows the operation of the machine in the setting mode and automatic mode. Furthermore, comprehensive functions for the direct milling of contours and pockets are available as innovative peculiarity - by easy entry of parameters and it is not necessary to create NC programs for these features.

NCdrive uses the PC processor for the user interface and all CPU-intensive operations. The high dynamic control of the NC drive motors in real-time is assumed by a special controller which is included in the scope of delivery of the Software. It is connected via the USB interface.

Due to the modular structure of the NCdrive Software different options for the operation of the existing machine are available. The bandwidth from comprehensive manual operation with integrated operating macros and DIN program import and interpretation up to the complete 2D/3D-CAD/CAM suite is available.

NCdrive is compatible with step motor output stages which are triggered with the cycle and direction signals (PCNC compatible).

### NCdrive eco-Controller

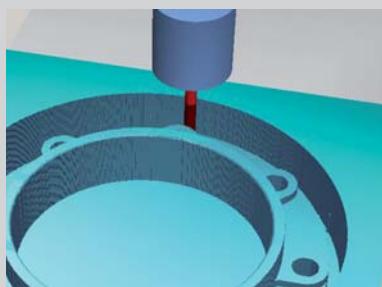
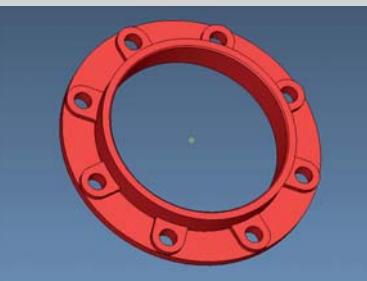
- modern RISC processor architecture

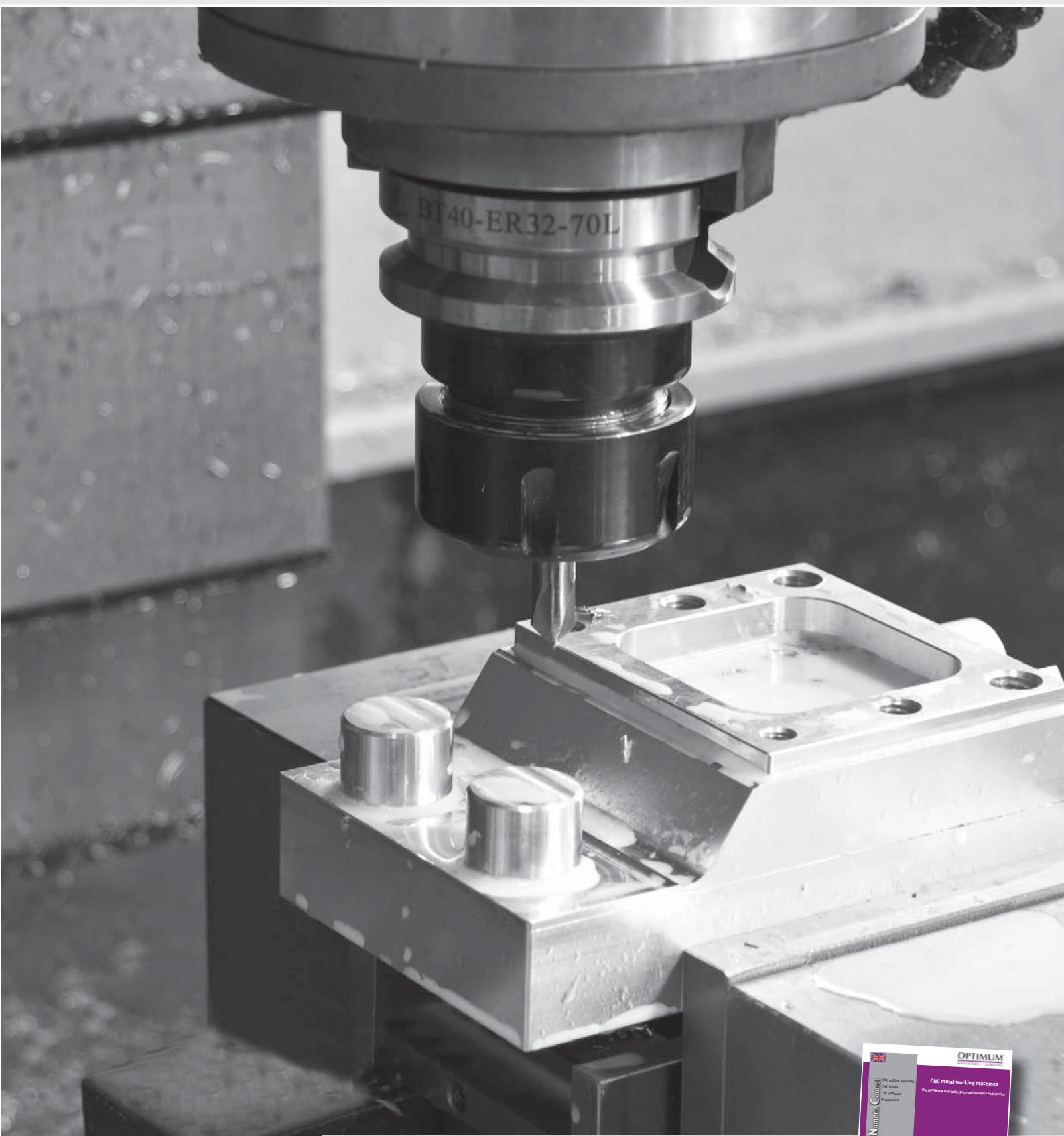
### NCdrive Software

- Manual operation and automatic mode
- Control of three linear axes and the 4<sup>th</sup> linear or turning axis
- Import of programs according to DIN 66025
- for each axis independent configurations for feeds, transmissions, reverse clearance and ramps
- Unlimited preview of the tool path
- Override for speeds and feed
- Routines for comfortable determination of the zero point
- Geometry cycles for manual operation of contours and pockets
- Management of the zero point
- Taking the reverse clearance into consideration
- Maximum number of axes: 4 (simultaneously interpolated)
- Step frequency: 8, 16 or 32 kHz
- Step motor outputs: 4 x cycle/direction, Boost, current reduction (TTL)
- Analogue output: 0 - 5 V DC, created from PWM
- PC interface: USB
- Power supply: Via USB
- Available Software interfaces: Programs according to DIN 66025, MegaNC
- System requirements: Intel or AMD-CPU from about 2000 MHz on
- Min. WindowsXP
- USB interface
- Scope of delivery: NCdriveeco-Controller NCdrive-Software (Manual operation and DIN import) USB cable 1.8m

If interested, please contact:

MegaCAD Competence Center 4CAM GmbH  
Hauptstr. 18 - 86756 Reimlingen  
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