

# OPTIMUM<sup>®</sup>

MASCHINEN - GERMANY

METAL WORKING MACHINERY  
THE OPTIMUM IN TERMS OF QUALITY, PRICE-PERFORMANCE AND SERVICE



## MAIN CATALOGUE 2021

*OFFER FOR OUR CUSTOMERS WHO ARE ENTREPRENEURS AND NOT CONSUMERS*

# THE OPTIMUM IN TERMS OF QUALITY, PRICE-PERFORMANCE AND SERVICE



Dear Customer,  
Dear Customer,

To support any conceivable metalworking application, we have composed an assortment in our OPTIMUM domain catalogue that covers many areas with suitable machines. Each of our products impresses with its quality, precision, long service life and value stability. OPTIMUM offers the right machine for most tasks – from bench-top drills to CNC lathes.

## Your requirements are our target

For more than 25 years, we have focused on the design, development and production of OPTIMUM machines, and for more than 10 years on CNC machines. – We work unceasingly on continually optimising our machines. One important point here is also production, which is of great importance to us. This is why we made a careful choice of manufacturers to supplement our own production facilities. We set great store by the fact that these manufacturers meet our internal quality requirements. Besides our own manufacturing operations, OPTIMUM exclusively produces with manufacturers who meet our requirements. This means that we can offer you metalworking machines that impress on many scores. OPTIMUM has built up a good reputation in the course of the years on what is a continually changing and developing tool and machine market. We are proud to say that we combine

expertise, experience and a balanced price-performance ratio. Our utmost priority is you as a satisfied customer. With our motivated and expert personnel we strive to complete OPTIMUM's know-how and deliver it to you our customers.



**Kilian Stürmer**  
Managing Director



DISCOVER OUR PRODUCT VIDEOS NOW!

All of our product videos are available for you to watch on our YouTube channel OPTIMUM Maschinen Germany GmbH. **Subscribe to our YouTube channel to make sure you don't miss any of the new videos.**







*Sales and service Germany at Hallstadt / Bamberg*

## Customer Service

Our professional OPTIMUM customer service gives every customer the ability to choose the performance they need from our comprehensive program of services at any time.

Our services can be broken down into the following four modules:

**Inventory and requirements analysis,**  
**System planning and consulting,**  
**Installation and commissioning**  
**Maintenance and repairs**

The OPTIMUM service field force, and our service partners, ensure reliable, nationwide, on-site service for our customers.

## Dealers and service

Thanks to our comprehensive network of specialist dealers, you always have a local partner with OPTIMUM who guarantees the best possible advice, intensive support, and trouble-free after-sales service. And, of course, our expert staff is there to help you at any time. Please don't hesitate to contact our qualified team if you have any questions. We are happy to help.

## On-site for you: in Europe and worldwide

For many years, OPTIMUM Maschinen Germany has been synonymous with the development, design and production of metalworking machines and CNC machines characterised by high quality standards. In the course of the years, we have continually expanded our sales and service network.

In the meantime, the German company OPTIMUM Maschinen Germany GmbH works globally with expert partners from its headquarters in Hallstadt near Bamberg: OPTIMUM is represented all over Europe by retailers with great performance. Our international sales network extends well beyond Germany's borders to many countries all over the world. This helps us to ensure that our customers can rely on the fast, uncomplicated and service-oriented expertise and quality standards of OPTIMUM thanks to our extensive sales organisation. We have established a responsible market position that you can trust in the course of the years!

## Our products

Are you looking for a functional machine that offers a comprehensive feature set at an attractive price? Then you are making the right decision in purchasing an OPTIMUM metalworking machine. Our machines impress with excellent quality, precise manufacturing, and they offer an "OPTIMUM" price-performance ratio. We cater to a comprehensive tool machine and sheet metal working programme and are guaranteed to have the right machine variant for your needs in our assortment. You can rely on OPTIMUM, because we can realise every single one of your requirements in the metalworking environment. This main catalogue will give you an impression of our capabilities and our wide product portfolio.



# OPTIMUM QUALITY



## PRODUCTION

Since 2003, OPTIMUM Maschinen Germany GmbH has produced a large share of its metalworking machines in its own factory in Yangzhou China. The quality here is monitored by German quality management officers and production supervisors. A further major part of our OPTIMUM metalworking machines is exclusively produced for OPTIMUM in line with special requirements within the company group.

## QUALITY

OPTIMUM products are produced under high quality requirements. A price comparison with equivalent and comparable products will give you the assurance that our OPTIMUM machines are always products that stand up to any comparison in terms of operating convenience, equipment level, quality, technology and value for money and are thus always a good buy for you. Check out the robust design and durability for yourself; this is what our machines stand for in a metalworking world.

You can purchase the OPTIMUM brand with confidence, and assure the best possible quality for your operations. There are many products that look identical, or similar, on the market, but which by no means achieve our OPTIMUM quality standards.



Production on our own CNC machines



State-of-the-art 5-axis manufacturing





Optimum plant in Yangzhou, China

**All OPTIMUM products are produced under high quality requirements!**



Milling machine production



Metal-cutting band saw production



Drilling machine production



Lathe production



# GERMAN QUALITY – MADE IN CHINA



## Our production facilities

Optimum Maschinen Germany GmbH commenced production in 2006 in Touqiao Town near Yangzhou in Jiangsu Province, only about three hours by car from Shanghai. A total area of 20,000 m<sup>2</sup> and a building area of 9,000 m<sup>2</sup> are staffed by 180 employees, 40 of whom are technicians.

We now produce our Optimum range of machines in three production plants on a total area of 74,000 m<sup>2</sup> and a building area of 30,000 m<sup>2</sup> with around 230 employees in production.

We permanently meet requirements for precision machining and economic efficiency. We develop and configure the best solutions for our customers and take responsibility for them.

Our factories carry out strict technical process and quality controls based on ISO 9001.

With a team of experienced experts and technicians and advanced production facilities, we produce quality products such as small and medium CNC machining centres, CNC lathes, CNC milling machines, milling and drilling machines and lathes for industrial and home use.





## DIN EN ISO 9001 – excellent quality

Our factory is DIN EN ISO 9001 certified. This means that all company departments and services are subject to strict quality requirements. And this means consistently high quality for you. The objective of high quality is thrilled customers. And achieving this demanding certification is ultimately driven by this approach. The key to the long-term success of our enterprise is also a relationship of trust with customers and suppliers. This explains why it is just as important to us as the sustainable quality of our products.





# QUALITY

**Our standards are high. And we strictly adhere to them!**



**Achieving our  
quality goals is our top  
priority!**

## **CERTIFIED QUALITY IN OUR PRODUCTION FACILITIES**

The excellence and safety of our products are assured by a system of internal processes, based on regular and frequent inspections in our factories and along the logistics chain. In order to ensure compliance with the strict requirements, each production site is regularly inspected.

At Optimum, development and production are in the same hands, and the company sets high standards in all areas.

This is why our customers get what they expect from OPTIMUM: innovative, well thought-out products with high practical suitability and an exceptionally long service life.





## QUALITY CONTROL

Our company has developed a carefully planned quality management system and is certified according to ISO 9001:2008.

This system is an integral part of our operational workflows. No exceptions or compromises are made or entered into with regard to the quality level of the products from production.

Our Quality Assurance department is staffed by skilled employees who ensure that only products of impeccable quality are sold.

The Quality Assurance department consists of experienced technicians who are supervised by our German technicians, and attach great importance to high quality and impeccable product quality. Each production step is checked and compared at all times with the available specifications.

## QUALITY ASSURANCE DEPARTMENT

We want satisfied customers. This explains why our products' compliance with the customer quality requirements described earlier on is our company's top priority.





# PRODUCTION SUPPORT



**Our Engineering department has a well-coordinated team of specialists with excellent engineering qualifications. Their established expertise allows flexible and creative implementation of all requirements posed for our products and services.**

A team of employees directly influences the production process on site through regular training and checks. It is only through this intensive support at the production site that we are in a position to achieve the proverbial OPTIMUM.







### **QUALITY MANAGEMENT, PRODUCTION, INCOMING GOODS INSPECTION**

Besides adhering to delivery deadlines and service, the quality of our products is extremely important to us. Continuous on-site checks by our quality manager ensure our quality. Our comprehensive incoming goods inspection is performed in line with generally accepted technical guidelines.

### **QUALITY MANAGEMENT, INCOMING GOODS INSPECTION**

Our quality managers from Germany are the first contacts for quality compliance on site. They are responsible for the dimensional accuracy of the components, for monitoring and quality assurance of the manufacturing process; they collaborate closely with our Engineering department at head office in Germany, thus ensuring an optimal symbiosis.





# PLANNING



As early as the planning phase our engineering department manages the development of new products, which are manufactured both our facility and facilities operated by our partners. Major advantage: This means that all market influences and customer requirements are immediately incorporated where the course is set for successful product design.

## DEVELOPMENT

Development relies exclusively on state-of-the-art 3D CAD software, which we use to create a virtual model of the machine. Besides ensuring optimum functionality of the machines, our development process also targets re-usability of the data generated during the development phase. These data are not only used for the preparation of manufacturing documents and documentation, but are also used for calculation, for computer-aided manufacturing as well as for visualisation and animations.



## PRACTICAL TESTING

Our engineers combine theory and practice. To avoid leaving anything to chance in terms of product satisfaction, all of our machines and tools go through application engineering tests, and we also consistently involve selected customers in this process. This means that each new product is expected to prove itself in the daily grind before it comes a fixed part of our product range. Engineering analysis helps us to discover and eliminate any remaining weak points.

The clearly engineering oriented approach of our staff – in addition to the premium quality of our products, and our expert service – contribute towards constantly high levels of customer satisfaction. And our focus on technically affine employees ensures our market success – today and looking forward!



## TECHNICAL CUSTOMER SUPPORT

Our customers rightly expect our specialists to use their knowledge and experience to their utmost satisfaction. Our product consultants support users with technical information. To allow this to happen, our customers can use our free telephone hotline and our info email address to request qualified information and solutions at short notice.

## SAFEGUARDING COPYRIGHTS

To secure the rewards of our technical development work for both ourselves and our customers, patent and utility model protection is essential for our in-house developments. This helps us permanently keep the technical lead that OPTIMUM products have.

The entire catalogue is protected by copyright. Additionally, to protect our products, we register our rights to our brands, patents and designs where possible in each individual case. We take strong action against any violation of our intellectual property.

## TECHNICAL DOCUMENTATION AND RISK ANALYSES

Our technical authors again achieve a high standardised level that meets or even exceeds all requirements. These huge efforts exclusively serve the purpose of facilitating the process of familiarisation with the machine for our customers, and ensuring permanent and safe operations.

Risk mitigation measures are developed to compensate for any safety risks identified in the scope of analysis. After implementing the measures, the residual risk is then evaluated.





# SUPPLIER SUPPORT



Regular work meetings between our engineers and suppliers help to transfer our new developments and enhancements into series production at the manufacturing location in a targeted way. This direct support at our production facilities has been indispensable in manufacturing the quality products that our customers have trusted for more than 25 years.



## SALES SUPPORT

The requirements for OPTIMUM machines are equally as diverse as the production requirements of our end customers and the workpieces to be machined. To ensure this, our representatives and retailers have access to the entire application-specific know-how of our engineers in case of queries.

In a qualified and explanatory sales talk, our customers are given the support they need to tune their choice of products to match their needs.



## TRAINING

For employees from Engineering, Service and Sales as well as for our customers: Successful use of our products depends and is driven to a decisive extent by the fact that we pass on our technology know-how to our dealers, their sales and service staff and our customers through training sessions. The major advantage: This qualification offers the opportunity to ensure professionally sound advice and problem solving in every customer contact. In our training centre, we offer practice-oriented product training aimed at conveying specialist knowledge in a particularly vivid way.





## SUPPLY OF SPARE PARTS

We know that rapid availability of spare parts is one of the major preconditions for a working, customer-oriented service solution.

The planning, coordination and provisioning of spare parts is tuned at OPTIMUM Maschinen Germany GmbH so that our customers have the greatest possible benefits in terms of economic efficiency and speed.



## SIEMENS COOPERATION PARTNER FOR CNC TRAINING

Siemens has for many years been the system supplier of the control and drive technology for CNC-controlled lathes and milling machines by OPTIMUM Maschinen Germany GmbH. Due to our long-standing and successful collaboration, a cooperation partnership for CNC training in Bavaria was agreed in June 2012. Target-group specific courses familiarise the participants of the training program with the various Sinumerik controls.



## SERVICE SUPPORT

**... after all, good service is important to us!**

In service cases, our OPTIMUM technicians are available at any time with their experience to support your workshop operations and ensure fast and targeted repairs.

In close cooperation with the service centre and its internal and external staff, weaknesses are analysed and customer needs registered. These weaknesses and needs are then evaluated from an engineering point of view and set out as tangible requirements or action catalogues.



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## Vario conversions

300



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# CLASSIFICATION



HIGHEST QUALITY STANDARD	HIGH QUALITY STANDARD	TRADES WITH INDUSTRIAL REQUIREMENTS	CRAFTSMEN	PROFESSIONAL DO-IT-YOURSELFERS	DO-IT-YOURSELFERS
<ul style="list-style-type: none"> <li>› Industrial quality</li> <li>› Highest quality standard for excellent precision</li> <li>› For the toughest applications</li> <li>› Very long service life</li> <li>› Uncompromising quality for the toughest requirements</li> </ul>	<ul style="list-style-type: none"> <li>› Industrial quality</li> <li>› Excellent quality standard</li> <li>› Long service life</li> <li>› For strict requirements</li> </ul>	<ul style="list-style-type: none"> <li>› Machine tools geared for daily use in trades up to professional deployment</li> <li>› for medium-size series production</li> <li>› Comprehensive accessories</li> </ul>	<ul style="list-style-type: none"> <li>› Machine tools geared for daily use in trades</li> <li>› for small to medium-size series production</li> <li>› Comprehensive accessories</li> </ul>	<ul style="list-style-type: none"> <li>› Machines for do-it-yourselfers with high requirements</li> <li>› Basic machines with better equipment level</li> </ul>	<ul style="list-style-type: none"> <li>› Basic machines</li> <li>› Comprehensive accessories</li> </ul>



# BENCH DRILLS

## V-BELT





# ***DRILLING MACHINES***

## ***COLUMN DRILLING MACHINES***



## Entry level bench-top drilling machines with V-belt drive

### Facts that impress in terms of quality, performance and price

- ▶ Safety electrics in 24 V DC
- ▶ Guaranteed run-out accuracy  $\leq 0.03$  mm measured in the drilling spindle sleeve
- ▶ Drill spindle with precision ball bearings
- ▶ GATES quality belts
- ▶ Separate emergency stop pushbutton
- ▶ Drill depth stop
- ▶ Precise workmanship; stable drilling table with diagonal T-slots and all-around cooling water channel (DQ 18/DQ 22)
- ▶  $\pm 45^\circ$  inclinable and  $360^\circ$  rotatable drilling table
- ▶ One-piece cast aluminium die-cast quill lever with soft-grip handles
- ▶ Premium quick-action drill chuck

- ▶ Generously dimensioned baseplate with T-slots, heavily ribbed on rear

### DQ 22

- ▶ Generously dimensioned, height adjustable protective screen with safety switch

### DQ 22 with 400V

- ▶ Right-/left-hand rotation

### V-belt drive



Fig. Belt drive DQ 22.  
Two belt pulleys for DQ 14/18

- › Best power transmission due to aluminium pulleys in combination with toothed GATES quality V-belt
- › V-belt cover with safety switch

### LED machine lamp



- › Anti-glare LED lighting integrated into the drilling head
- No annoying shadows



Fig.: DQ 14



Fig.: DQ 22





## Technical data and accessories

Model	DQ 14	DQ 18	DQ 22
Article no. (230V)	3191040	3191042	3191044
Article no. (400V)	-	-	3191045
<b>Power</b>			
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V or 400V
Motor power	350 W	450 W	550 W
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 13 mm	Ø 15.9 mm	Ø 16 mm
Continuous drilling performance in steel (S235JR)	Ø 12 mm	Ø 14 mm	Ø 14 mm
<b>Spindle</b>			
Spindle sleeve stroke	52 mm	65 mm	85 mm
Throat	104 mm	127 mm	169 mm
Spindle seat	fixed/B16	MT2	MT2
<b>Rotational speeds</b>			
Spindle speeds	700 - 2 500 rpm	600 - 2 400 rpm	300 - 2 300 rpm
Number of speeds	5 stages	5 stages	12 stages
<b>Drilling table</b>			
Drilling table workspace L x W	170 x 170 mm	200 x 200 mm	270 x 270 mm
T-slot width	14 mm, 2 diagonally	14 mm, 2 diagonally	14 mm, 2 diagonally
Table load capacity	8 kg	12 kg	15 kg
Drill table rotation / tilting sideways	360° / ± 45°	360° / ± 45°	360° / ± 45°
Max. distance spindle - drilling table	250 mm	319 mm	460 mm
<b>Machine base</b>			
Machine base work area L x W	138 x 128 mm	145 x 143 mm	191 x 187 mm
Max. distance spindle - machine base	340 mm	518 mm	639 mm
<b>Dimensions and weight</b>			
Column diameter	Ø 46 mm	Ø 60 mm	Ø 70 mm
Length x width x height	472 x 283 x 634 mm	568 x 319 x 849 mm	700 x 351 x 1006 mm
Net weight	18.5 kg	28.5 kg	41.7 kg

Accessories	Article no.
<b>Hold-down clamp</b> 14 mm/M 12	3352031
<b>Twist drill bits HSS-CO 5%</b> , 1- 13 mm, 25 parts	3201010
<b>Twist drill bits HSS-CO 5%</b> , 1- 6 mm, 51 parts	3201020
<b>Twist drill bits HSS-CO 5%</b> , 6- 10 mm, 41 parts	3201021
<b>Quick-action drill chuck</b> 1 - 8 mm; B16	3050608
<b>Quick-action drill chuck</b> 1 - 10 mm; B16	3050610
<b>Quick-action drill chuck DKC 13</b> , 0 - 13 mm	3050632
<b>Quick-action drill chuck DKC 16</b> , 0 - 16 mm	3050633
<b>Universal coolant unit</b> 230 V	3351999
<b>Coolant mist lubricator</b> MMC 1 with magnetic holder	3356663
<b>Coolant hose</b> KMS 2	3356660
<b>Clamping tool assortment</b> SPW 12	3352017

Accessories DQ 18/DQ 22	Article no.
<b>Direct quick-action drill chuck</b> 1 - 16 mm	3050571
<b>Direct quick-action drill chuck</b> 1 - 13 mm	3050572
<b>Morse taper</b> MT2/B16	3050659
<b>Twist drill bit HSS</b> MT2, 9 parts	3051002
<b>Thread tapping chuck</b> , 7 inserts M3 - M12	3050702

More **accessories** and **information** on accessories from page 86  
For a large selection of **machine vises** see on page 93

### Scope of delivery

<b>DQ 14</b>
› Quick-action drill chuck 1 - 15.9 mm
› T-slot nuts
<b>DQ 18 / DQ 22</b>
› Quick-action drill chuck 1 - 16 mm
› Morse taper MT2/B16
› T-slot nuts

## Bench drill with V-belt drive and infinitely variable speed setting

### Facts that impress in terms of quality, performance and price

- ▶ Safety electrics in 24 V DC
- ▶ Guaranteed run-out accuracy  $\leq 0.03$  mm measured in the drilling spindle
- ▶ User-friendly safety switch with IP 54 degree of protection
- ▶ Drill spindle with precision ball bearings
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ V-belt cover with safety switch
- ▶ Generously dimensioned, height adjustable protective screen with safety switch
- ▶ Precise workmanship; stable drilling table with two diagonal T-slots and all-around cooling water channel
- ▶  $\pm 45^\circ$  inclinable and  $360^\circ$  rotatable drilling table
- ▶ One-piece cast aluminium die-cast quill lever with soft-grip handles
- ▶ OPTIMUM quick-action drill chuck in standard scope of delivery

#### Belt drive



- › Best power transmission due to aluminium pulleys in combination with toothed GATES quality V-belt
- › V-belt cover with safety switch

#### Speed change



- › The infinitely variable V-belt drive is used to position the V-belt to the desired V-belt diameter with the hand lever while the drilling spindle is rotating. This causes the speed to change

#### LED machine lamp



- › Anti-glare LED lighting integrated into the drilling head  
No annoying shadows







## Technical specifications, accessories and dimensions

Model	DQ 20V
Article no.	3191080
<b>Power</b>	
Electrical connection	230 V / 1 Ph
Motor power	0.75 kW
<b>Drilling performance</b>	
Drilling performance in steel (S235JR)	Ø 16 mm
Continuous drilling performance in steel (S235JR)	Ø 14 mm
<b>Spindle</b>	
Spindle sleeve stroke	80 mm
Throat	152 mm
Spindle seat	MT2
<b>Rotational speeds</b>	
Spindle speeds	450 - 2 500 rpm
Infinitely mechanically	adjustable speed
<b>Drilling table</b>	
Workspace length x width	243 x 243 mm
T-slot size	14 mm, 2 diagonally
Table load capacity	15 kg
Drill table rotation / tilting sideways	360° / ± 45°
Max. distance spindle - drilling table	423 mm
<b>Machine base</b>	
Machine base work area L x W	181 x 187 mm
Clearance spindle - machine base	max. 599 mm
<b>Dimensions and weight</b>	
Column diameter	Ø 65 mm
Length x width x height	581 x 397 x 957 mm
Net weight	40.7 kg

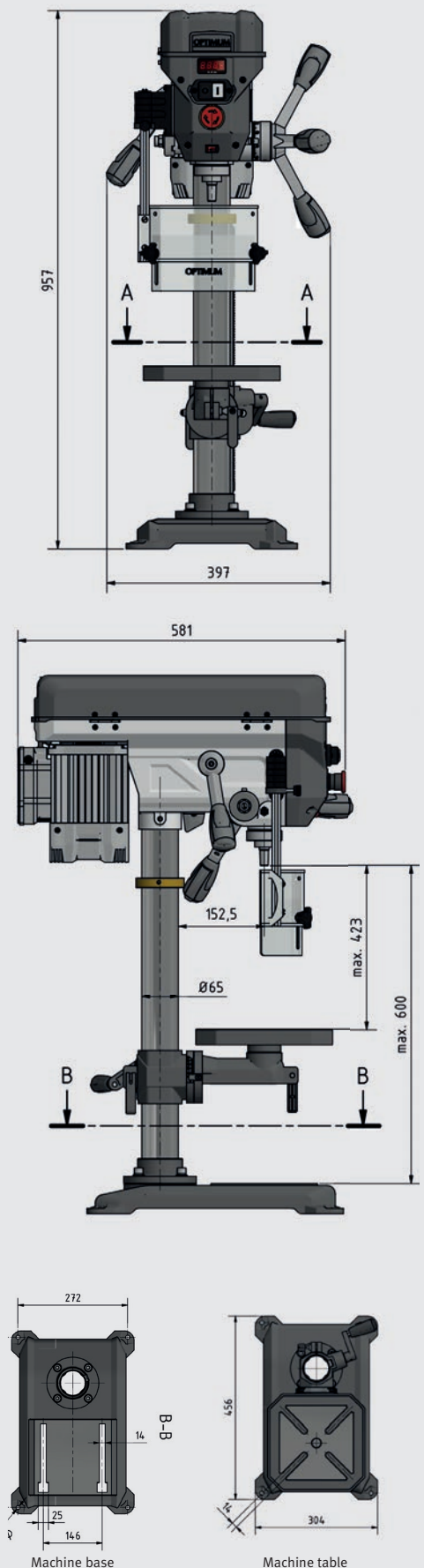
### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT2/B16
- › T-slot nuts

Accessories	Article no.
Direct quick-action drill chuck MT2, 1-16 mm	3050571
Direct quick-action drill chuck MT2, 1-13 mm	3050572
Morse taper MT2/B16	3050659
Twist drill bit HSS MT2, 9 parts	3051002
Assortment of clamping tools SPW 10, 58 parts	3352016
Cone ejector MSP1	3050636
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Universal coolant unit	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660

More **accessories** and **information** on accessories from page 86  
For a large selection of **machine vises** see on page 93

### Dimensions



## Inexpensive post drills with V-belt drive

### Facts that impress in terms of quality, performance and price

- ▶ Guaranteed run-out accuracy  $\leq 0.03$  mm measured in the drilling spindle
- ▶ User-friendly safety switch with IP 54 degree of protection
- ▶ Drilling spindle with precision ball bearings
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Right-/left-hand rotation
- ▶ Ground multi-tooth carrier
- ▶ Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts
- ▶ Belt cover with safety switch
- ▶ Precise workmanship; stable drilling table with diagonal T-slots and all-around cooling water channel
- ▶  $\pm 45^\circ$  inclinable and  $360^\circ$  rotatable drilling table
- ▶ Solid, generously dimensioned baseplate with slots, rear heavily ribbed
- ▶ OPTIMUM quick-action drill chuck in standard scope of delivery

#### Belt drive



- › Best power transmission due to aluminium pulleys in combination with toothed GATES quality V-belt
- › V-belt cover with safety switch



Fig.: DQ 25



Fig.: DQ 32





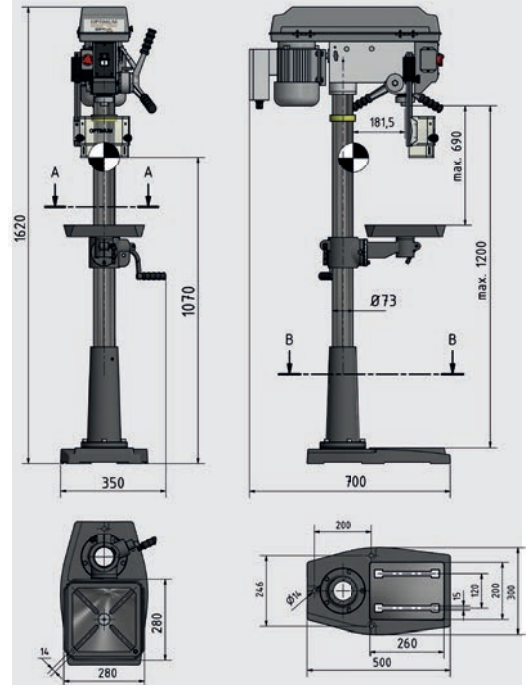
## Technical specifications, accessories and dimensions

Model	DQ 25	DQ 32
Article no.	3191047	3191049
<b>Power</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	750 W	1.1 kW
<b>Drilling performance</b>		
Drilling performance in steel (S235JR)	Ø 25 mm	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 20 mm	Ø 25 mm
<b>Spindle</b>		
Spindle sleeve stroke	80 mm	120 mm
Throat	181 mm	254 mm
Spindle seat	MT3	MT4
<b>Rotational speeds</b>		
Spindle speeds	200 - 2 440 rpm	120 - 1 810 rpm
Number of speeds	12	9
<b>Drilling table</b>		
Drilling table workspace L x W	280 x 280 mm	355 x 355 mm
T-slot size	14 mm 2 diagonal running	14 mm 2 diagonal running
Load bearing capacity	40 kg	55 kg
Drill table rotation / tilting sideways	360° / ± 45°	360° / ± 45°
Max. distance spindle - drilling table	690 mm	640 mm
<b>Machine base</b>		
Machine base L x W	500 x 300 mm	575 x 350 mm
Machine base work area L x W	200 x 260 mm	230 x 295 mm
T-slot size / spacing / count	15 mm / 120 mm / 2	15 mm / 138 mm / 2
Max. distance spindle - machine base	1 200 mm	1 170 mm
<b>Dimensions and weight</b>		
Column diameter	Ø 73 mm	Ø 92 mm
Length x width x height	700 x 350 x 1 620 mm	850 x 390 x 1 660 mm
Net weight	71 kg	120 kg

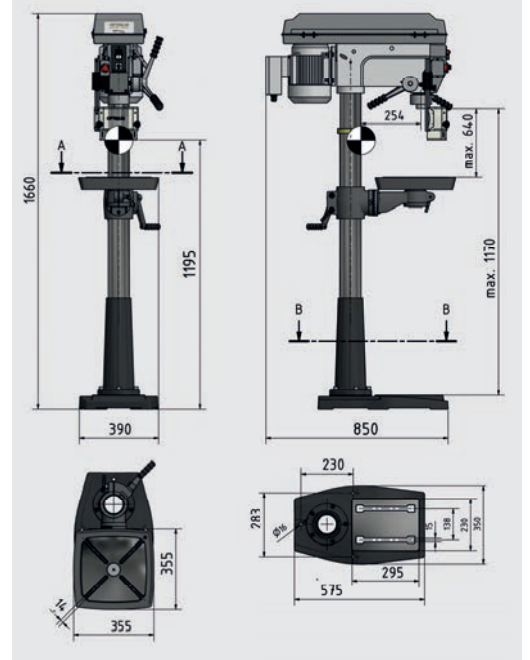
Accessories	Article no.
Hold-down clamp 14 mm/M 12	3352031
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Quick-action drill chuck 1 - 8 mm; B16	3050608
Quick-action drill chuck 1 - 10 mm; B16	3050610
Quick-action drill chuck DKC 13, 0 - 13 mm	3050632
Quick-action drill chuck DKC 16, 0 - 16 mm	3050633
Universal coolant unit 230 V	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660
Clamping tool assortment SPW 12	3352017

More **accessories** and **information** on accessories from page 86  
For a large selection of **machine vises** see on page 93

### Dimensions DQ 25



### Dimensions DQ 32



### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › T-slot nuts
- › Morse taper MT3/B16 (DQ 25)
- › Morse taper MT4/B16 (DQ 32)
- › Push-out tool

## Bench drill with V-belt drive

### Facts that impress in terms of quality, performance and price

- ▶ Guaranteed run-out accuracy  $\leq 0.02$  mm measured in the drilling spindle
- ▶ User-friendly safety switch with IP 54 degree of protection
- ▶ Drill spindle with precision ball bearings
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Precise workmanship; stable drilling table with two diagonal T-slots and all-around cooling water channel
- ▶ V-belt cover with safety switch
- ▶ Premium quick-action drill chuck as standard equipment
- ▶ Foldable drill chuck guard
- ▶ Single-piece, pressure cast aluminium sleeve lever with Softgrip handles

### Belt drive



- › Ground multi-tooth carrier
- › Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts
- › V-belt cover with safety switch







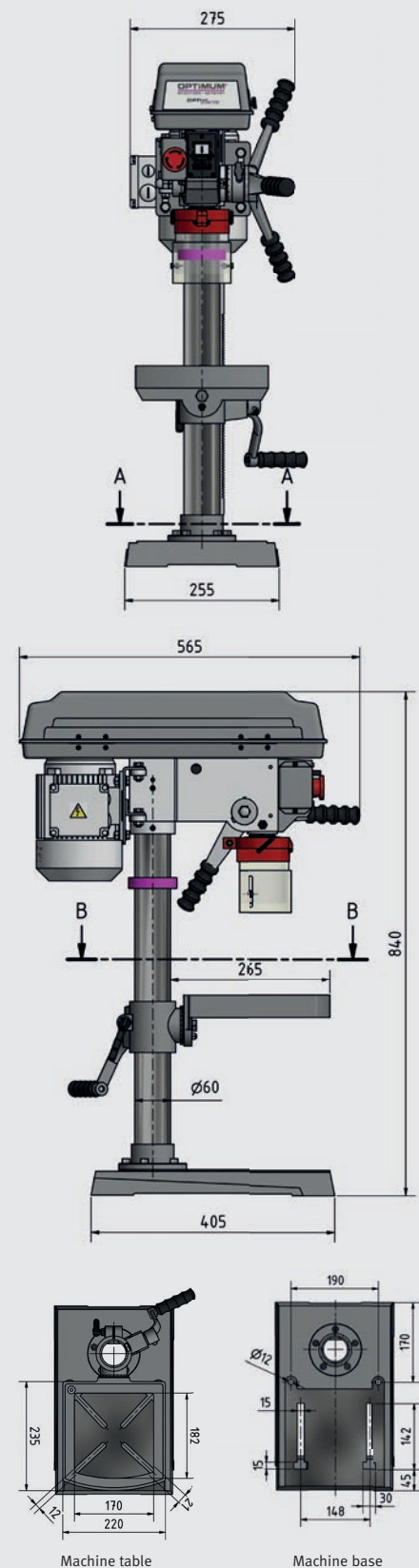
## Technical specifications, accessories and dimensions

Model	B 17Pro basic
Article no.	3003161
<b>Power</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	490 W
<b>Drilling performance</b>	
Drilling performance in steel (S235JR)	Ø 15.5 mm
Continuous drilling performance in steel (S235JR)	Ø 12 mm
<b>Spindle</b>	
Spindle sleeve stroke	65 mm
Spindle seat	MT2
Throat	152 mm
<b>Rotational speeds</b>	
Spindle speeds	680 - 2 700 rpm
Number of speeds	5 stages
<b>Drilling table</b>	
Workspace length x width	235 x 220 mm
T-slot size	12 mm, 2 diagonal running
Table load capacity	18 kg
Drill table rotation / tilting sideways	360° / ± 45°
Max. distance spindle - drilling table	325 mm
<b>Machine base</b>	
Machine base L x W	210 x 215 mm
Machine base work area L x W	170 x 180 mm
T-slot size / spacing / count	14 mm / 148 mm / 2
Max. distance spindle - machine base	530 mm
<b>Dimensions and weight</b>	
Column diameter	Ø 60 mm
Length x width x height	565 x 275 x 840 mm
Net weight	41.5 kg

Accessories	Article no.
<b>Hold-down clamp</b> 14 mm/M 12 (for the machine base)	3352031
<b>Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts</b>	3201010
<b>Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts</b>	3201020
<b>Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts</b>	3201021
<b>Quick-action drill chuck 1 - 8 mm; B16</b>	3050608
<b>Quick-action drill chuck 1 - 10 mm; B16</b>	3050610
<b>Quick-action drill chuck DKC 13, 0 - 13 mm</b>	3050632
<b>Quick-action drill chuck DKC 16, 0 - 16 mm</b>	3050633
<b>Direct quick-action drill chuck 1 - 16 mm</b>	3050571
<b>Direct quick-action drill chuck 1 - 13 mm</b>	3050572
<b>Morse taper MT2/B16</b>	3050659
<b>Twist drill bit HSS MT2, 9 parts</b>	3051002
<b>Clamping tool assortment SPW 10</b>	3352016
<b>Universal coolant unit 230 V</b>	3351999
<b>Coolant mist lubricator MMC 1 with magnetic holder</b>	3356663
<b>Coolant hose KMS 2</b>	3356660

More **accessories** and **information** on accessories from page 86  
For a large selection of **machine vises** see on page 93

### Dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 15.5 mm
- › Morse cone
- › T-slot nuts

## Bench and column drilling machines with V-belt drive and digital drilling depth and speed display

### Facts that impress in terms of quality, performance and price

- ▶ Industrial motor
- ▶ Safety electrics in 24 V DC
- ▶ Guaranteed run-out accuracy  $\leq 0.02$  mm measured in the drilling spindle
- ▶ User-friendly safety switch with IP 54 degree of protection
- ▶ Drill spindle with precision ball bearings
- ▶ Digital drilling depth and speed display integrated in housing
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Precision spindle hole
- ▶ Generously dimensioned, height adjustable protective screen with safety switch
- ▶ Premium quick-action drill chuck as standard equipment
- ▶ Precise workmanship; stable drilling table with two diagonal T-slots and all-around cooling water channel

- ▶ V-belt cover with safety switch
- ▶ Single-piece, pressure cast aluminium sleeve lever with Softgrip handles
- ▶ Heavy duty design of entire machine

### As of D 23 Pro

- ▶ GATES quality belts

### As of D 23 Pro / 400 V

- ▶ Right-/left-hand rotation

### D 33Pro

- ▶ Solid, generously dimensioned baseplate with T-slots, heavily ribbed on rear

### Belt drive



- › Smooth action thanks to ground multi-tooth carrier
- › Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts (as of D 23Pro)



Fig.: D 17Pro



Fig.: D 23Pro



Fig.: D 26Pro



Fig.: D 33Pro





## Technical data and accessories

Model	D 17Pro	D 23Pro	D 26Pro	D 33Pro
Article no. (230V)	3003010	3003015	-	-
Article no. (400V)	-	3003020	3003030	3003040
<b>Power</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 performance</b>				
Drilling performance in steel (S235JR)	Ø 16 mm	Ø 25 mm	Ø 25 mm	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 12 mm	Ø 20 mm	Ø 20 mm	Ø 25 mm
<b>Spindle</b>				
Spindle sleeve stroke	65 mm	80 mm	85 mm	120 mm
Spindle seat	MT2	MT2	MT3	MT4
Throat	152 mm	180 mm	210 mm	254 mm
<b>Rotational speeds</b>				
Spindle speeds	680 - 2 700 rpm	200 - 2 440 rpm	200 - 2 440 rpm	120 - 1 810 rpm
Number of speeds	5 stages	12 stages	12 stages	9 stages
<b>Drilling table</b>				
Workspace length x width	235 x 220 mm	280 x 245 mm	330 x 290 mm	475 x 425 mm
T-slot size	12 mm, 2 diagonally	12 mm, 2 diagonally	14 mm, 2 diagonally	14 mm, 2 diagonally
Table load capacity	18 kg	18 kg	20 kg	25 kg
Drill table rotation / tilting sideways	360° / ± 45°	360° / ± 45°	360° / ± 45°	360° / ± 45°
Max. distance spindle - drilling table	325 mm	425 mm	720 mm	695 mm
<b>Machine base</b>				
Machine base work area L x W	220 x 230 mm	240 x 250 mm	385 x 260 mm	410 x 325 mm
T-slot size / spacing / count	16 mm / 148 mm / 2	16 mm / 170 mm / 2	16 mm / 170 mm / 2	16 mm / 250 mm / 2
Clearance spindle - machine base	max. 530 mm	max. 618 mm	max. 1 230 mm	max. 1 180 mm
<b>Dimensions and weight</b>				
Column diameter	Ø 60 mm	Ø 73 mm	Ø 80 mm	Ø 92 mm
Length x width x height	565 x 275 x 840 mm	615 x 330 x 1015 mm	670 x 355 x 1640 mm	755 x 440 x 1705 mm
Net weight	36.5 kg	58 kg / 63.5 kg	85 kg	132 kg

Accessories	Article no.
<b>Hold-down clamp</b> 14 mm/M 12	3352031
<b>Twist drill bits HSS-CO 5%</b> , 25 parts	3201010
<b>Twist drill bits HSS-CO 5%</b> , 51 parts	3201020
<b>Twist drill bits HSS-CO 5%</b> , 41 parts	3201021
<b>Quick-action drill chuck</b> 1 - 8 mm; B16	3050608
<b>Quick-action drill chuck</b> 1 - 10 mm; B16	3050610
<b>Quick-action drill chuck DKC 13</b> , 0 - 13 mm	3050632
<b>Quick-action drill chuck DKC 16</b> , 0-16 mm	3050633
<b>Universal coolant unit</b> 230 V	3351999
<b>Coolant mist lubricator</b> MMC 1 with magnetic holder	3356663
<b>Coolant hose</b> KMS 2	3356660

More **accessories** and **information** on accessories from page 86  
For a large selection of **machine vises** see on page 93

Scope of delivery
› Quick-action drill chuck 1 - 16 mm
› Morse cone
› T-slot nuts

Accessories D 17Pro / D 23Pro	Article no.
<b>Direct quick-action drill chuck</b> 1 - 16 mm	3050571
<b>Direct quick-action drill chuck</b> 1 - 13 mm	3050572
<b>Morse taper</b> MT2/B16	3050659
<b>Twist drill bit HSS</b> MT2, 9 parts	3051002
<b>Thread tapping chuck</b> , 7 inserts M3-M12	3050702
<b>Clamping tool assortment</b> SPW 10	3352016
<b>Clamping tool assortment</b> SPW 14	3352018

Accessories D 26Pro	Article no.
<b>Direct quick-action drill chuck</b> 1 - 16 mm	3050573
<b>Reduction sleeve</b> MT3 - MT2	3050663
<b>Morse taper</b> MT3/B16	3050660
<b>Twist drill bit HSS</b> MT3, 9 parts	3051003
<b>Cone ejector</b> MSP1	3050636
<b>Clamping tool assortment</b> SPW 12	3352017
<b>Clamping tool assortment</b> SPW 14	3352018

Accessories B 33Pro	Article no.
<b>Direct quick-action drill chuck</b> 1 - 16 mm	3050574
<b>Reduction sleeve</b> MT4 - MT3	3050664
<b>Morse taper</b> MT4/B16	3050661
<b>Cone ejector</b> MSP2	3050637
<b>Clamping tool assortment</b> SPW 12	3352017
<b>Clamping tool assortment</b> SPW 14	3352018

## DP 26T bench drill and DP 26F/DP 33 column drill with V-belt drive in modern design

### Facts that impress in terms of quality, performance and price

- ▶ Industrial motor
- ▶ Slow action spindle thanks to new spindle design
- ▶ Machine operation with safety electrics in 24 V DC voltage
- ▶ Guaranteed run-out accuracy  $\leq 0.02$  mm measured in the drilling spindle
- ▶ Precision spindle hole
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ LED machine lamp integrated in drilling head
- ▶ Precise workmanship; stable drilling table with diagonal T-slots and all-around cooling water channel

- ▶ V-belt cover with safety switch
- ▶ Thick walled steel column for high force absorption and stability
- ▶ Solid, generously dimensioned baseplate with T-slots
- ▶ Heavy duty design of entire machine

### 400 V machines

- ▶ Right-/left-hand rotation

### State-of-the-art operating concept



- › Easily readable digital display for viewing the speed, depth gauge and zero point



Follow this for the video presentation of our Optimum drilling machine DP26

### Belt tension



- › Premium Gates belts
- › The toothed V-belts enable a higher power transmission to the shaft due to their smaller wrap angle at the V-belt pulleys
- › Easy adjustment of the belt tension via excenter (toggle lever)

### Drilling table



- › Precise workmanship
- › Robust with diagonal T-slots
- › Circumferential coolant channel
- ›  $\pm 45^\circ$  sideways tiltable
- ›  $360^\circ$  rotatable



Fig.: DP 26T



Fig.: DP 33





## Technical specifications, accessories and dimensions

Model	DP 26-T	DP 26-F	DP 33
Article no. (230V)	3020620T	3020620F	-
Article no. (400V)	3020625T	3020625F	3020640
<b>Power</b>			
Electrical connection	230 V / 1 Ph ~50 Hz or 400 V / 3 Ph ~50 Hz		400 V / 3 Ph ~50 Hz
Motor power	750 W		1.1 kW
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 25 mm		Ø 30 mm
Cont.w drilling performance in steel (S235JR)	Ø 20 mm		Ø 25 mm
<b>Spindle</b>			
Spindle sleeve stroke	95 mm		125 mm
Spindle seat	MT3		MT4
Throat	209 mm		270 mm
<b>Rotational speeds</b>			
Spindle speeds	200 - 2 440 rpm		120 - 1 810 rpm
Number of speeds	12 stages		9 stages
<b>Drilling table</b>			
Workspace length x width	308 x 308 mm		387 x 387 mm
T-slot size	12 mm, 2 diagonal running		14 mm, 2 diagonal running
Table load capacity	45 kg		65 kg
Drill table sideways tiltable / rotatable	± 45° / 360°		± 45° / 360°
Max. distance spindle - drilling table	400 mm	770 mm	775 mm
<b>Machine base</b>			
Machine base work area L x W	202 x 265 mm		270 x 327 mm
T-slot size / spacing / count	14 mm / 120 mm / 2		16 mm / 150 / 2
Clearance spindle - machine base	max. 592 mm	max. 1 300 mm	max. 1 300 mm
<b>Dimensions and weight</b>			
Column diameter	Ø 80 mm		Ø 92 mm
Length x width x height	748 x 406 x 1 025 mm	748 x 406 x 1 724 mm	945 x 480 x 1 880 mm
Net weight	107 kg	116 kg	186 kg

### Scope of delivery

- › Quick-action drill chuck 0 - 16 mm
- › T-slot nuts
- › Push-out tool
- › Adapter MT
- › Operating tool

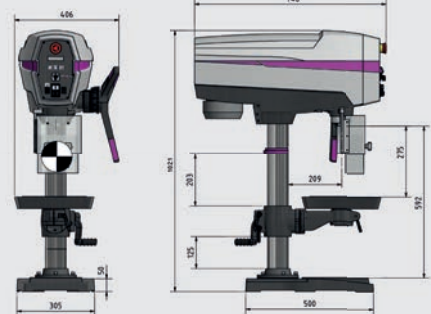
### Accessories

	Article no.
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Quick-action drill chuck DKC 13, 0 - 13 mm	3050632
Quick-action drill chuck DKC 16, 0 - 16 mm	3050633
Morse taper MT3/B16	3050660
Morse taper MT4/B16	3050661
Direct quick-action drill chuck MT3 / 1 - 16 mm	3050573
Direct quick-action drill chuck MT4 / 1 - 16 mm	3050574
Twist drill bit HSS MT3, 9 parts	3051003
Clamping tool assortment SPW 10	3352016
Clamping tool assortment SPW 12	3352017

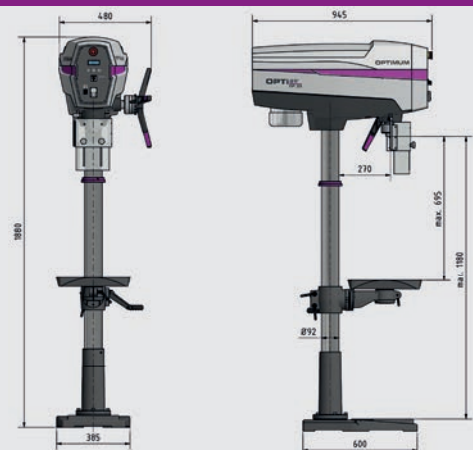
More **accessories** and **information** on accessories from page 86

For a large selection of **machine vises** see on page 93

### Dimensions DP 26-T



### Dimensions DP 33



## Bench drills with infinitely variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Guaranteed run-out accuracy  $\leq 0.03$  mm measured in the drilling spindle
- ▶ Drill spindle with precision ball bearings
- ▶ High-contrast, digital LED speed display integrated in housing, speed control via potentiometer
- ▶ Membrane keyboard, dirt/water-resistant, easy to clean
- ▶ Separate EMERGENCY-STOP push button
- ▶ Premium OPTIMUM quick-action drill chuck as standard
- ▶ Best possible force transmission thanks to aluminium pulleys
- ▶ Height adjustability chuck guard with microswitch
- ▶ Precisely machined robust drilling table with parallel T-slots
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid baseplate with, heavily ribbed on rear
- ▶ EMC filter class C2

#### DX 13V

- ▶ Drill head height adjustable

#### DX 15V

- ▶ Drilling table height-adjustable via rack



Fig.: DX 13V



Fig.: DX 15V





## Technical specifications, accessories and dimensions

Model	DX 13V	DX 15V
Article no.	3020150	3020155
<b>Power</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor power	850 W	
<b>Drilling performance</b>		
Drilling performance in steel (S235JR)	Ø 13 mm	Ø 15 mm
Continuous drilling performance in steel (S235JR)	Ø 11 mm	Ø 12 mm
<b>Spindle</b>		
Spindle sleeve stroke	60 mm	
Spindle seat	B 16	MT2
Throat	235 mm	
<b>Rotational speeds</b>		
Spindle speeds	100 - 3 000 rpm	
Number of speeds	Electronic speed control	
<b>Drilling table</b>		
Workspace length x width	-	290 x 290 mm
T-slot size / spacing / count	-	10 mm / 100 mm / 2
Rotating drilling table	-	360°
Clearance chuck - drilling table	-	98 - 375 mm
<b>Machine base</b>		
Machine base work area L x W	280 x 290 mm	290 x 280 mm
T-slot size / spacing / count	14 mm / 100 mm / 2	
Distance chuck - machine base	92 - 297 mm	290 - 355 mm
<b>Dimensions and weight</b>		
Column diameter	Ø 60 mm	
Length x width x height	325 x 517 x 895 mm	425 x 475 x 980 mm
Net weight	51 kg	66 kg

Accessories	Article no.
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
T-slot nut (individual) M 12 / 14 mm	3353025
Assortment of clamping tools SPW 12, 58 parts	3352017
Hold-down clamp 14 mm/M 12	3352031
Twist drill bit HSS MT2	3051002
Direct quick-action drill chuck MT2 / 1 - 16 mm	3050571
Direct quick-action drill chuck MT2 / 1 - 13 mm	3050572
Morse taper MT2/B16	3050659
T-slot nut (individual) M 8 / 10 mm	3353022
Assortment of clamping tools SPW 8, 58 parts	3352015
Thread tapping chuck, 7 inserts, M3 - M12	3050702
Thermdrill Basic Set	3060004
Universal coolant unit	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660
Machine substructure MSM 1	3353000
Universal machine and tool trolley MSU 3	3352990
Universal machine and tool trolley MSU 4	3352991

More **accessories** and **information** on accessories from page 86

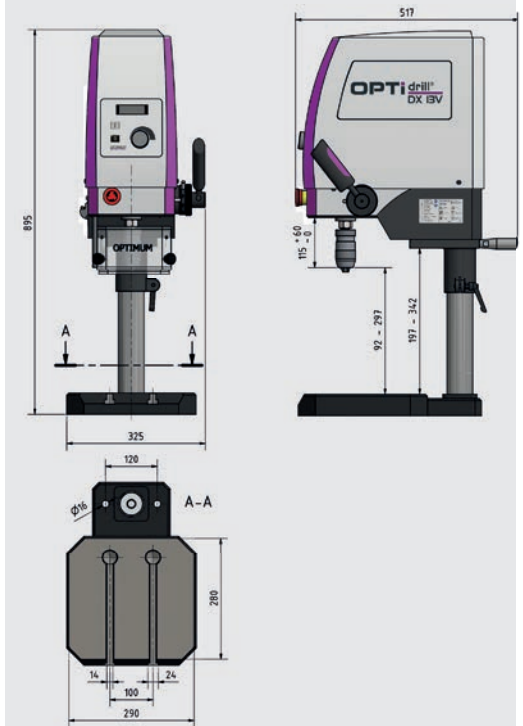
For a large selection of **machine vises** see on page 93

Information on the **machine substructures** from page 153

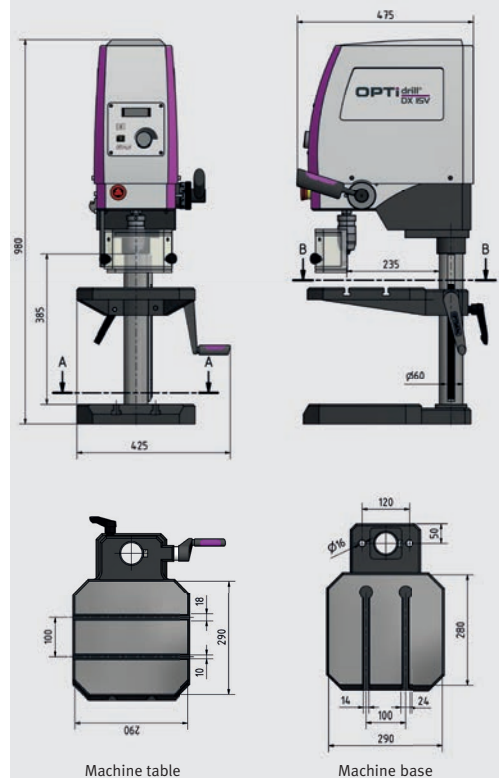
Information on the **universal machine and tool trolley** from page 92

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters, see page 323

DX 13V dimensions



DX 15V dimensions



### Scope of delivery

- > Quick-action drill chuck 1 - 13 mm
- > Adapter MT2-B16

## Table drilling machine for precision mechanics with continuously adjustable speed control. Machine DX 17V highlight - menu-controlled operation of the drilling/thread tapping operation modes.

### Facts that impress in terms of quality, performance and price

- ▶ Guaranteed run-out accuracy  $\leq 0.03$  mm measured in the drilling spindle. Best possible force transmission thanks to aluminium pulleys.
- ▶ Drill spindle with precision ball bearings
- ▶ Dirt/water-resistant, easy-to-clean membrane keyboard
- ▶ Separate EMERGENCY-STOP push button
- ▶ Anti-glare LED lighting on the left and right, integrated into the drilling head. No annoying shadows
- ▶ Height adjustability chuck guard with microswitch for maximum protection
- ▶ Precision drilling table with parallel T-slots, precision surface finish
- ▶ Swivelling drilling table
- ▶ Solid base plate with parallel T-slots
- ▶ High-contrast, digital LCD speed display integrated in housing, speed control via potentiometer

### DX 17V

- ▶ Menu-controlled operation of the drilling/thread tapping operation modes
- ▶ Thread tapping mode
- ▶ Language selection in display field, choice of DE-EN-FR-RU
- ▶ Digital reference point
- ▶ Digital parts counter
- ▶ Audible signal on reaching drilling depth
- ▶ Reduced speed in thread tapping mode

### DX 17E



LCD display DX 17E

- › Spindle speed
- › Depth display (actual)
- › Right-/left-hand rotation
- › Unit of dimension mm / inch
- › Set zero point



SINAMICS V20

- › Energy-efficient and rugged solution with the SINAMICS V20 frequency inverter



### DX 17V operating panel

- › During drill and thread tapping, the machine automatically sets the optimum speed for the tool, after the user enters the drill diameter and material.



### OLED display

- › Spindle speed
- › Depth display (target/actual)
- › Counter
- › Drilling or tapping depth
- › Selected tool and material



Fig.: DX 17E



Fig.: DX 17V





## Technical specifications, accessories and dimensions

Model	DX 17E	DX 17V
Article no.	3020168	3020170
<b>Power</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor power	1.0 kW	
<b>Drilling performance</b>		
Drilling performance in steel (S235JR)	Ø 16 mm	
Continuous drilling performance in steel (S235JR)	Ø 13 mm	
<b>Spindle</b>		
Spindle sleeve stroke	60 mm	
Spindle seat	MT2	
Throat	235 mm	
<b>Rotational speeds</b>		
Spindle speeds	50 - 4 000 rpm	
Number of speeds	Electronic speed control	
<b>Drilling table</b>		
Workspace length x width	290 x 290 mm	
T-slot size / spacing / count	10 mm / 100 mm / 2	
Rotating drilling table	360°	
Clearance chuck - drilling table	98 - 315 mm	
<b>Machine base</b>		
Machine base work area L x W	290 x 280 mm	
T-slot size / spacing / count	14 mm / 100 mm / 2	
Distance chuck - machine base	max. 385 mm	
<b>Dimensions and weight</b>		
Column diameter	Ø 60 mm	
Length x width x height	425 x 481 x 910 mm	
Net weight	73 kg	



Fig.: MSU 3

Accessories	Article no.
Clamping tool assortment SPW 8	3352015
Clamping tool assortment SPW 12	3352017
Direct quick-action drill chuck MT2 / 16 mm	3050571
Direct quick-action drill chuck MT2 / 13 mm	3050572
T-slot nut 10 mm / M 8	3353020
T-slot nut 14 mm / M 12	3353025
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Universal coolant unit	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660
Machine substructure MSM 1	3353000
Universal machine and tool trolley MSU 3	3352990
Universal machine and tool trolley MSU 4	3352991

NEW

More **accessories** and **information** on accessories from page 86

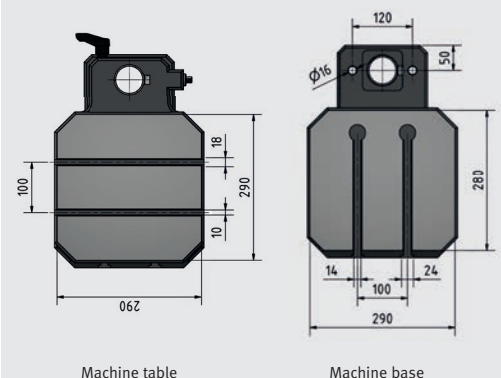
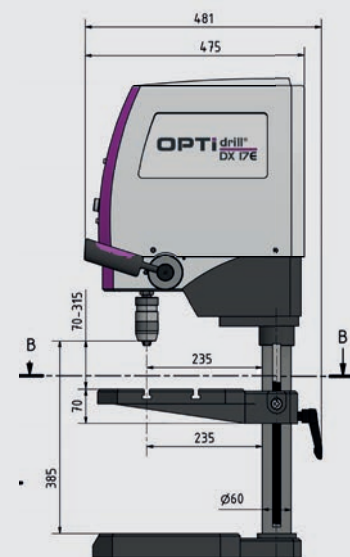
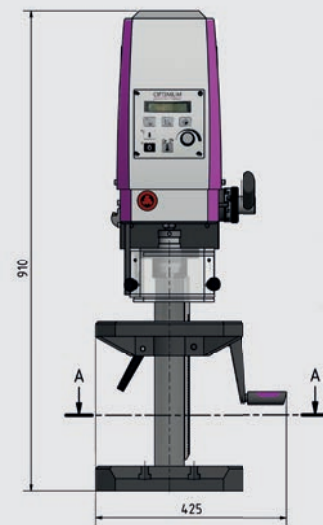
For a large selection of **machine vises** see on page 93

Information on the **machine substructures** from page 153

Information on the **universal machine and tool trolley** from page 92

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters, see page 323

### Dimensions



Machine table

Machine base

### Scope of delivery

- › Quick-action drill chuck 1 - 13 mm
- › Adapter MT2-B16

## Rugged bench/post drills with V-belt drive

### Facts that impress in terms of quality, performance and price

- ▶ Smooth, powerful industrial electric motor
- ▶ Guaranteed run-out accuracy  $\leq 0.015$  mm measured in the drilling spindle
- ▶ Drill spindle with precision ball bearings
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Generously dimensioned, height adjustable protective screen with safety switch
- ▶ Premium Optimum quick-action drill chuck as standard equipment
- ▶ Rugged cast column
- ▶ Precision machined drilling table with two diagonal T-slots and all-around cooling water channel
- ▶ V-belt cover with safety switch
- ▶ V-belt quick tensioning device
- ▶ Solid, generously dimensioned baseplate with T-slots, heavily ribbed on rear
- ▶ The baseplate can be used for particularly high workpieces by swivelling out the drilling table

### Ab B 24H

- ▶ Machine lamp

### As of B 24H/400V

- ▶ Right-/left-hand rotation

### As of B 28H

- ▶ Easy tool changes through integrated push-out tool
- ▶ Sleeve lever made of steel

### B 34H

- ▶ Digital depth sensor
- ▶ Digital speed display



Fig.: B 16H



Fig.: B 24H



Fig.: B 28H



Fig.: B 34H





## Technical data and accessories

Model	B 16H	B 24H	B 28H	B 34H
Article no. (230V)	-	3020241	-	-
Article no. (400V)	3020217	3020243	3020283	3020333
<b>Power</b>				
Electrical connection	400 V / 3 Ph ~50 Hz	230 V/1 Ph - 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 performance</b>				
Drilling performance in steel (S235JR)	Ø 13 mm	Ø 24 mm	Ø 28 mm	Ø 34 mm
Continuous drilling performance in steel (S235JR)	Ø 11 mm	Ø 20 mm	Ø 24 mm	Ø 26 mm
<b>Spindle</b>				
Spindle sleeve stroke	65 mm	85 mm	105 mm	160 mm
Spindle seat	MT2	MT2	MT3	MT4
Throat	130 mm	165 mm	200 mm	285 mm
<b>Rotational speeds</b>				
Spindle speeds	450 - 3 500 rpm	350 - 4 000 rpm	120 - 4 000 rpm	145 - 4 800 rpm
Number of speeds	5 stages	7 stages	16 stages	2 x 9 speeds
<b>Drilling table</b>				
Workspace length x width	230 x 245 mm	280 x 300 mm	340 x 360 mm	420 x 400 mm
T-slot size	12 mm 2 diagonal running	14 mm 2 diagonal running	14 mm 2 diagonal running	14 mm 2 diagonal running
Rotating drilling table	360°	360°	360°	360°
Max. distance spindle - drilling table	370 mm	515 mm	860 mm	790 mm
<b>Machine base</b>				
Machine base work area L x W	200 x 240 mm	280 x 260 mm	320 x 320 mm	390 x 390 mm
T-slot size / spacing / count	12 mm / 80 mm / 2	14 mm / 120 mm / 2	14 mm / 120 mm / 2	14 mm / 150 mm / 2
Clearance spindle - machine base	max. 495 mm	max. 590 mm	max. 1 285 mm	max. 1 275 mm
<b>Dimensions and weight</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 mm
Net weight	54 kg	92 kg	142 kg	260 kg

Accessories	Article no.
Twist drill bits HSS-CO 5%, 25 parts	3201010
Twist drill bits HSS-CO 5%, 51 parts	3201020
Twist drill bits HSS-CO 5%, 41 parts	3201021
Universal coolant unit	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660

More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

Scope of delivery
› Quick-action drill chuck 1 - 13 mm (B 16H)
› Quick-action drill chuck 1 - 16 mm (as of B 24H)
› Morse cone
› T-slot nuts

Accessories B 16H / B 24H	Article no.
Direct quick-action drill chuck, 1-16 mm	3050571
Direct quick-action drill chuck, 1-13 mm	3050572
Morse taper MT2/B16	3050659
Twist drill bit HSS MT2, 9 parts	3051002
Assortment of clamping tools SPW 10, 58 parts	3352016
Cone ejector MSP1	3050636

Accessories B 28H	Article no.
Direct quick-action drill chuck MT3	3050573
Reduction sleeve MT3 - MT2	3050663
Morse taper MT3/B16	3050660
Twist drill bit HSS / MT3, 9 parts	3051003
Assortment of clamping tools SPW 12, 58 parts	3352017
Thread cutting chuck, 7 inserts M3 - M12	3050705
Thread cutting chuck, 7 inserts M8 - M20	3050706

Accessories B 34H	Article no.
Direct quick-action drill chuck MT4	3050574
Morse taper MT4/B16	3050661
Reduction sleeve MT4 - MT3	3050664
Clamping tool assortment SPW 12, 58 parts	3352017
Thread cutting chuck, 7 inserts M3 - M12	3050709
Thread cutting chuck, 7 inserts M8 - M20	3050710

## Rugged bench and column drilling machines with automatic sleeve feed.

### Facts that impress in terms of quality, performance and price

- ▶ Guaranteed run-out accuracy  $\leq 0.015$  mm measured in the drilling spindle
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Right-/left-hand rotation
- ▶ Machine lamp integrated in drilling head
- ▶ Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts
- ▶ Smooth action thanks to ground multi-tooth carrier
- ▶ Premium OPTIMUM quick-action drill chuck as standard
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Precisely machined and stable drilling table with 2 diagonally running T-slots, 360° rotatable and all-round cooling water channel
- ▶ V-belt cover with safety switch
- ▶ V-belt tensioning device
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid baseplate, large dimensions and heavily ribbed on rear

#### Automatic spindle sleeve feed



- › The drilling depth stop is adjustable in the range of 0-85 respectively 105 mm. The feed is automatically switched off after reaching the preset drilling depth and turned back to its original position by the spring force of the return spring

#### V-belt tensioning device Sleeve feed



- › The feed is driven via a belt pulley
- › The feed rate depends on the selected spindle speed
- › Clamp and release the V-belt with a lever

#### Integrated push-out tool



- › for simple tool changes



Fig.: DH 28FT



Fig.: DH 28FS





## Technical data and accessories



Model	DH 24FT	DH 28FT	DH 28FS
Article no.	3020244	3020260	3020284
<b>Power</b>			
Electrical connection	400 V / 3 Ph ~50 Hz		
Motor power	850 W		
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 24 mm	Ø 28 mm	
Continuous drilling performance in steel (S235JR)	Ø 20 mm	Ø 24 mm	
<b>Spindle</b>			
Spindle sleeve stroke	85 mm	105 mm	
Spindle seat	MT2	MT3	
Throat	164 mm	200 mm	
<b>Rotational speeds</b>			
Spindle speeds	350 - 3 000 rpm	120 - 3 000 rpm	
Number of speeds	6 stages	12 stages	
<b>Drilling table</b>			
Workspace length x width	280 x 300 mm	340 x 360 mm	
T-slot size	14 mm, 2 diagonal running	14 mm, 2 diagonal running	
Max. distance spindle - drilling table	445 mm	540 mm	928 mm
<b>Machine base</b>			
Machine base work area L x W	280 x 360 mm	320 x 320 mm	
T-slot size / spacing / count	14 mm	14 mm / 120 mm / 2	
Clearance spindle - machine base	max. 595 mm	max. 700 mm	max. 1,279 mm
<b>Dimensions and weight</b>			
Column diameter	Ø 80 mm	Ø 92 mm	
Length x width x height	665 x 434 x 998 mm	715 x 455 x 1 150 mm	715 x 455 x 1 720 mm
Net weight	92 kg	132 kg	146 kg

Accessories DH 24FT	Article no.
Direct quick-action drill chuck 1 - 16 mm	3050571
Direct quick-action drill chuck 1 - 13 mm	3050572
Collet chuck set MT2/ ER 25	3352052
Morse taper MT2/B16	3050659
Twist drill bit HSS MT2, 9 parts	3051002
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Thread tapping chuck, 7 inserts M3 - M12	3050702

Accessories DH 28FT / DH 28FS	Article no.
Direct quick-action drill chuck 1 - 16 mm	3050573
Reduction sleeve MT3 - MT2	3050663
Morse taper MT3/B16	3050660
Twist drill bit HSS MT3, 9 parts	3051003
Thread cutting chuck, 7 inserts M3 - M12	3050705
Clamping tool assortment SPW 12	3352017
Hold-down clamp 14 mm/M 12	3352031
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021

More **accessories** and information on accessories from page 86  
For a large selection of **machine vises** see on page 93  
**Coolant accessories** from page 320

### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT
- › T-slot nut

## Rugged table drilling machine with powerful OPTIMUM brushless drive.

Machine highlight - menu-controlled operation of the drilling/thread tapping operation modes

### Facts that impress in terms of quality, performance and price

- ▶ Smooth action and powerful brushless drive
- ▶ Guaranteed run-out accuracy  $\leq 0.015$  mm measured in the drilling spindle
- ▶ Drilling spindle with precision ball bearings
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Membrane keyboard, soiling and water resistant, easy to clean
- ▶ Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts
- ▶ Smooth action thanks to ground multi-tooth carrier
- ▶ Premium OPTIMUM quick-action drill chuck as standard
- ▶ Precisely machined drilling table with 2 diagonally running T-slots, 360° rotatable
- ▶ Circumferential coolant channel surrounding the drilling table
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ V-belt cover with safety switch
- ▶ V-belt tensioning device
- ▶ Solid baseplate with, heavily ribbed on rear

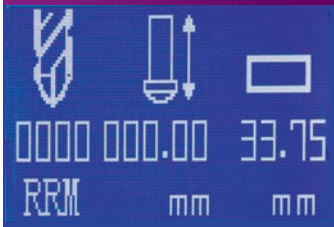
### Powerful brushless drive



- › Particularly smooth action
- › Extremely powerful
- › Virtually constant torque over the entire speed range

### Menu-controlled operation

Operating modes  
Drilling/thread tapping



### OLED display

- › Spindle speed
- › Depth display (target/actual)
- › Drilling
- › Thread tapping
- › Workpiece thickness selection

### Thermdrill



- › Information on page 94



Fig.: DH 18V





## Technical specifications, accessories and dimensions

Model	DH 18V
Article no.	3020220
<b>Power</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1.5 kW
<b>Drilling performance</b>	
Drilling performance in steel (S235JR)	Ø 18 mm
Continuous drilling performance in steel (S235JR)	Ø 16 mm
Thread tapping in steel (S235JR)	M10
<b>Spindle</b>	
Spindle sleeve stroke	65 mm
Spindle seat	MT2
Throat	130 mm
<b>Rotational speeds</b>	
Spindle speeds	100 - 6 000 rpm
Number of speeds	5 stages
	Electronic speed control
<b>Drilling table</b>	
Workspace length x width	230 x 245 mm
T-slot size	12 mm, 2 diagonal running
Rotating drilling table	360°
Max. distance spindle - drilling table	370 mm
<b>Machine base</b>	
Machine base work area L x W	220 x 240 mm
T-slot size / spacing / count	12 mm / 80 mm / 2
Max. distance spindle - machine base	485 mm
<b>Dimensions and weight</b>	
Column diameter	Ø 60 mm
Length x width x height	445 x 552 x 850 mm
Net weight	64 kg

Accessories	Article no.
Direct quick-action drill chuck MT2, 1 - 16 mm	3050571
Direct quick-action drill chuck MT2, 1 - 13 mm	3050572
Morse taper MT2/B16	3050659
Twist drill bit HSS MT2, 9 parts	3051002
Clamping tool assortment SPW 10, 58 parts	3352016
Cone ejector MSP1	3050636
Universal coolant unit 230 V	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Thread cutting chuck, 7 inserts M3 - M12	3050702
Thermdrill Basic Set	3060004
Machine substructure MSM 1	3353000
Universal machine and tool trolley MSU 3	3352990

More **accessories** and **information** on accessories from page 86

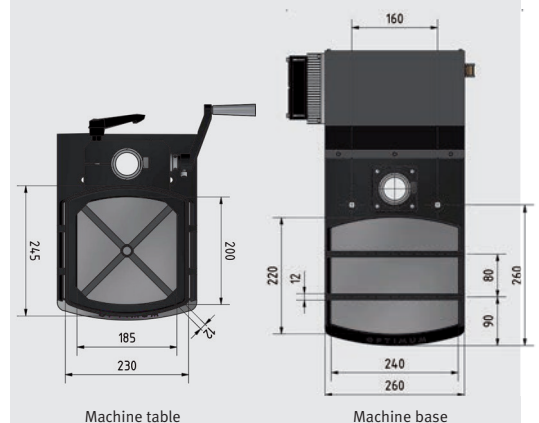
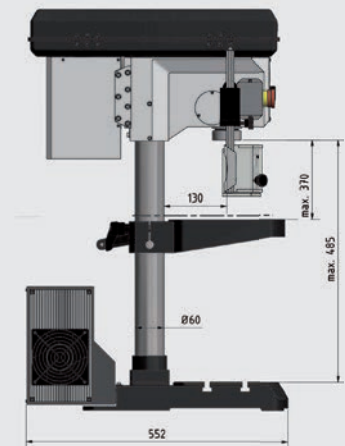
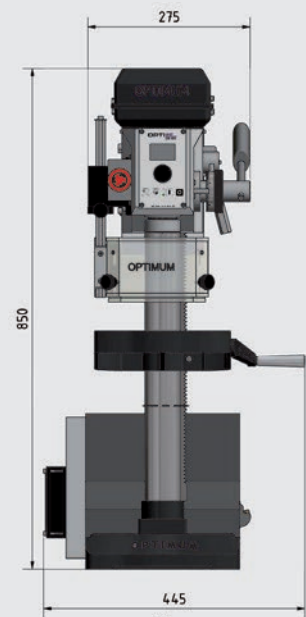
For a large selection of **machine vises** see on page 93

Information on the **machine substructures** from page 153

Information on the **universal machine and tool trolley** from page 92

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters, see page 323

### Dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 13 mm
- › Morse taper MT2
- › T-slot nuts

## Robust bench and column drills with powerful OPTIMUM brushless drive, speed electronically adjustable

### Facts that impress in terms of quality, performance and price

- ▶ Powerful brushless drive with particularly smooth action and high performance with almost constant torque over the entire speed range
- ▶ Guaranteed run-out accuracy  $\leq 0.015$  mm measured in the drilling spindle
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ Right-/left-hand rotation
- ▶ Machine lamp integrated in drilling head
- ▶ Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts
- ▶ Smooth action thanks to ground multi-tooth carrier
- ▶ Premium OPTIMUM quick-action drill chuck as standard
- ▶ Digital speed display integrated in housing
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Single-piece, pressure cast aluminium sleeve lever (B 24HV with Softgrip handles)
- ▶ V-belt cover with safety switch

- ▶ V-belt tensioning device
- ▶ Precisely machined and stable drilling table with 2 diagonally running T-slots, 360° rotatable and all-round cooling water channel
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid baseplate, large dimensions and heavily ribbed on rear

### Ab B 28HV

- ▶ Sleeve lever made of steel
- ▶ Coolant system
- ▶ Chip filter in line with Machinery Directive
- ▶ Easy tool changes through integrated push-out tool

### B 34HV

- ▶ Quill stroke 160 mm
- ▶ Thread tapping function
- ▶ Digital depth sensor



### "auto" operating mode

- › Motor runs automatically after lever movement
- › Stops again in original position
- › Start and stop pushbuttons do not need to be actuated for repetitive drilling tasks

### "Thread tapping" operating mode

- › The motor is activated by moving the handle down
- › The direction of rotation changing is set by a limit switch on the adjustable drill depth stop

### Powerful brushless drive



- › Particularly smooth action
- › Extremely powerful
- › Virtually constant torque over the entire speed range

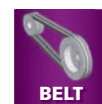


Fig.: B 24HV



Fig.: B 34HV





## Technical data and accessories

Model	B 24HV	B 28HV	B 34HV
Article no.	3020245	3020285	3020335
<b>Power</b>			
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	1.5 kW	1.5 kW	2.2 kW
Coolant pump motor	-	40 W	40 W
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 24 mm	Ø 28 mm	Ø 34 mm
Continuous drilling performance in steel (S235JR)	Ø 20 mm	Ø 24 mm	Ø 26 mm
Thread tapping in steel (S235JR)	-	-	M 16 x 2 mm
<b>Spindle</b>			
Spindle sleeve stroke	85 mm	105 mm	160 mm
Spindle seat	MT2	MT3	MT4
Throat	165 mm	200 mm	285 mm
<b>Rotational speeds</b>			
Spindle speeds	100 - 5 950 rpm	35 - 5 600 rpm	40 - 5 000 rpm
Number of speeds	4 stages Electronic speed control	12 stages Electronic speed control	9 stages Electronic speed control
<b>Drilling table</b>			
Workspace length x width	280 x 300 mm	340 x 360 mm	420 x 400 mm
T-slot size	14 mm, 2 diagonal running	14 mm, 2 diagonal running	14 mm, 2 diagonal running
Table load capacity	50 kg	50 kg	60 kg
Rotating drilling table	360°	360°	360°
Max. distance spindle - drilling table	515 mm	860 mm	790 mm
<b>Machine base</b>			
Machine base work area L x W	280 x 260 mm	320 x 320 mm	390 x 390 mm
T-slot size / spacing / count	14 mm / 120 mm / 2	14 mm / 120 mm / 2	14 mm / 150 mm / 2
Rotating drilling table	360°	360°	360°
Clearance spindle - machine base	max. 590 mm	max. 1 285 mm	max. 1,275 mm
<b>Dimensions and weight</b>			
Column diameter	Ø 80 mm	Ø 92 mm	Ø 115 mm
Length x width x height	665 x 434 x 998 mm	701 x 474 x 1 755 mm	918 x 595 x 1 930 mm
Net weight	96 kg	166 kg	275 kg

Accessories	Article no.
<b>Clamping tool assortment</b> SPW 12	3352017
<b>Hold-down clamp</b> 14 mm/M 12	3352031
<b>Twist drill bits HSS-CO 5%, 25 parts</b>	3201010
<b>Twist drill bits HSS-CO 5%, 51 parts</b>	3201020
<b>Twist drill bits HSS-CO 5%, 41 parts</b>	3201021

More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

### Scope of delivery

› Direct quick-action drill chuck 1 - 16 mm

Accessories B 34HV	Article no.
<b>Reduction sleeve</b> MT4 - MT3	3050664
<b>Thread tapping chuck, 7 inserts, M3 - M12</b>	3050709

Accessories B 28HV	Article no.
<b>Twist drill bit HSS</b> MT2, 9 parts	3051002
<b>Thread tapping chuck, 7 inserts</b> M3 - M12	3050702

Accessories B 24HV	Article no.
<b>Reduction sleeve</b> MT3 - MT2	3050663
<b>Twist drill bit HSS</b> MT3, 9 parts	3051003
<b>Thread tapping chuck, 7 inserts</b> M3 - M12	3050705

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters, see page 323

## Bench and column drilling machines with infinitely variable mechanical belt transmission by OPTIMUM. Quick adjustment of the speed by means of a lever

### Facts that impress in terms of quality, performance and price

- ▶ Smooth action powerful electric motor
- ▶ Two speeds
- ▶ Guaranteed run-out accuracy  $\leq 0.015$  mm measured in the drilling spindle
- ▶ Drilling spindle with precision ball bearings
- ▶ Right-/left-hand rotation
- ▶ Machine lamp integrated in drilling head
- ▶ Digital speed display integrated in housing
- ▶ Precisely machined drilling table with 2 diagonally running T-slots, 360° rotatable with all-round cooling water channel
- ▶ V-belt cover with safety switch
- ▶ Height adjustable chuck guard with micro switch for greatest possible protection of the user

- ▶ Premium quick-action drill chuck as standard
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid base plate, large dimensioned, heavily ribbed on the rear side
- ▶ The baseplate can be used as a workspace for particularly high workpieces by swivelling out the drilling table

### As of DH 28BV

- ▶ Easy tool changes through integrated push-out tool
- ▶ Sleeve lever made of steel

### DH 40BV

- ▶ Digital depth sensor
- ▶ Reduction gearbox enables far higher torque

### Continuous mechanical gearbox



- › Extremely reliable through manual speed control
- › Powerful, smooth action
- › Durable wide groove v-belt
- › Speed change also possible while machine is running
- › Permanent optimal motor efficiency
- › DH 40BV - with reduction gearbox

### Speed setting



- › Quicker speed adjustment using a lever

### Therm drill



- › Information on page 94



Fig.: DH 24BV



Fig.: DH 40BV





## Technical data and accessories

Model	DH 24BV	DH 28BV	DH 40BV
Article no.	3020420	3020430	3020450
<b>Power</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	0.85 / 1.5 kW	0.85 / 1.5 kW	1.5 / 2.2 kW
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 24 mm	Ø 28 mm	Ø 40 mm
Continuous drilling performance in steel (S235JR)	Ø 20 mm	Ø 24 mm	Ø 32 mm
<b>Spindle</b>			
Spindle sleeve stroke	85 mm	105 mm	160 mm
Spindle seat	MT2	MT3	MT4
Throat	165 mm	200 mm	285 mm
<b>Rotational speeds</b>			
Spindle speeds	300 - 4 000 rpm	300 - 4 000 rpm	150 - 2 000 rpm
Number of speeds	2 speed motor, manual	2 speed motor, manual	2 speed motor, manual
<b>Drilling table</b>			
Workspace length x width	280 x 300 mm	340 x 360 mm	420 x 400 mm
T-slot size	14 mm, 2 diagonal running	14 mm, 2 diagonal running	14 mm, 2 diagonal running
Max. distance spindle - drilling table	515 mm	860 mm	790 mm
<b>Machine base</b>			
Machine base work area L x W	280 x 260 mm	320 x 320 mm	390 x 400 mm
T-slot size / spacing / count	14 mm / 120 mm / 2	14 mm / 120 mm / 2	14 mm / 150 mm / 2
Rotating drilling table	360°	360°	360°
Clearance spindle - machine base	max. 681 mm	max. 1 285 mm	max. 1,275 mm
<b>Dimensions and weight</b>			
Column diameter	Ø 80 mm	Ø 92 mm	Ø 115 mm
Length x width x height	675 x 555 x 1 025 mm	755 x 550 x 1 745 mm	920 x 680 x 1 895 mm
Net weight	115 kg	152 kg	275 kg

Accessories	Article no.
Clamping tool assortment SPW 12	3352017
Hold-down clamp 14 mm/M 12	3352031
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Quick-action drill chuck 1 - 8 mm; B16	3050608
Quick-action drill chuck 1 - 10 mm; B16	3050610
Quick-action drill chuck DKC 13, 0 - 13 mm	3050632
Quick-action drill chuck DKC 16, 0 - 16 mm	3050633
Morse taper MT2/B16	3050659
Morse taper MT3/B16	3050660
Morse taper MT4/B16	3050661
Direct quick-action drill chuck MT2/16 mm	3050571
Direct quick-action drill chuck MT2/13 mm	3050572
Direct quick-action drill chuck MT3/16 mm	3050573
Direct quick-action drill chuck MT4/16 mm	3050574
Reduction sleeve MT3 - MT2	3050663
Reduction sleeve MT4 - MT3	3050664

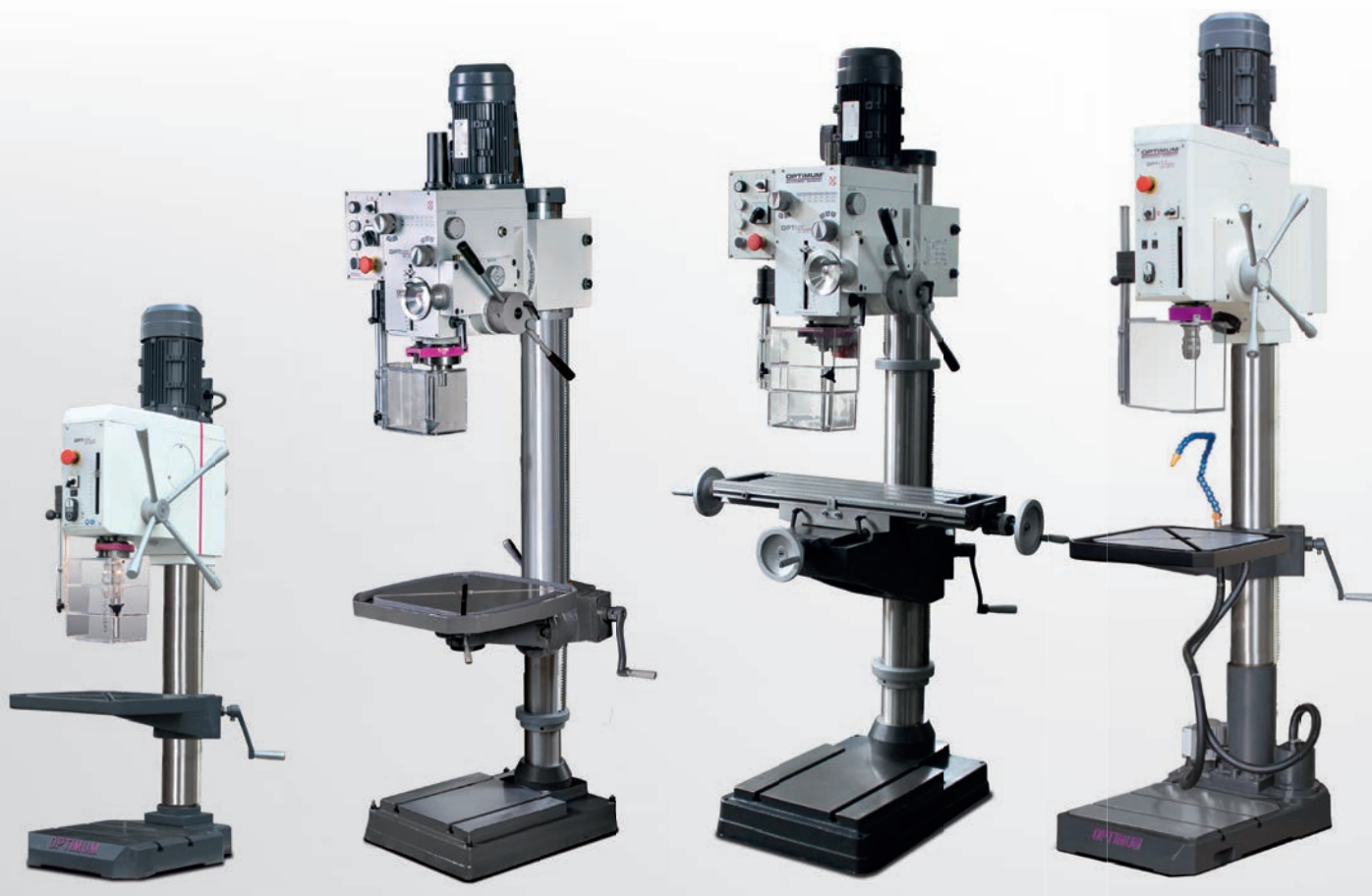
Accessories	Article no.
Twist drill bit HSS MT2, 9 parts	3051002
Twist drill bit HSS MT3, 9 parts	3051003
Thread tapping chuck MT2, 7 inserts M3-12	3050702
Thread cutting chuck MT3, 7 inserts M3-12	3050705
Thread tapping chuck MT3, 7 inserts M8-20	3050706
Thread tapping chuck MT4, 7 inserts M3-12	3050709
Thread cutting chuck MT4, 7 inserts M8-20	3050706
Universal coolant unit	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660

More **accessories** and **information** on accessories from page 86  
For a large selection of **machine vises** see on page 93

### Scope of delivery

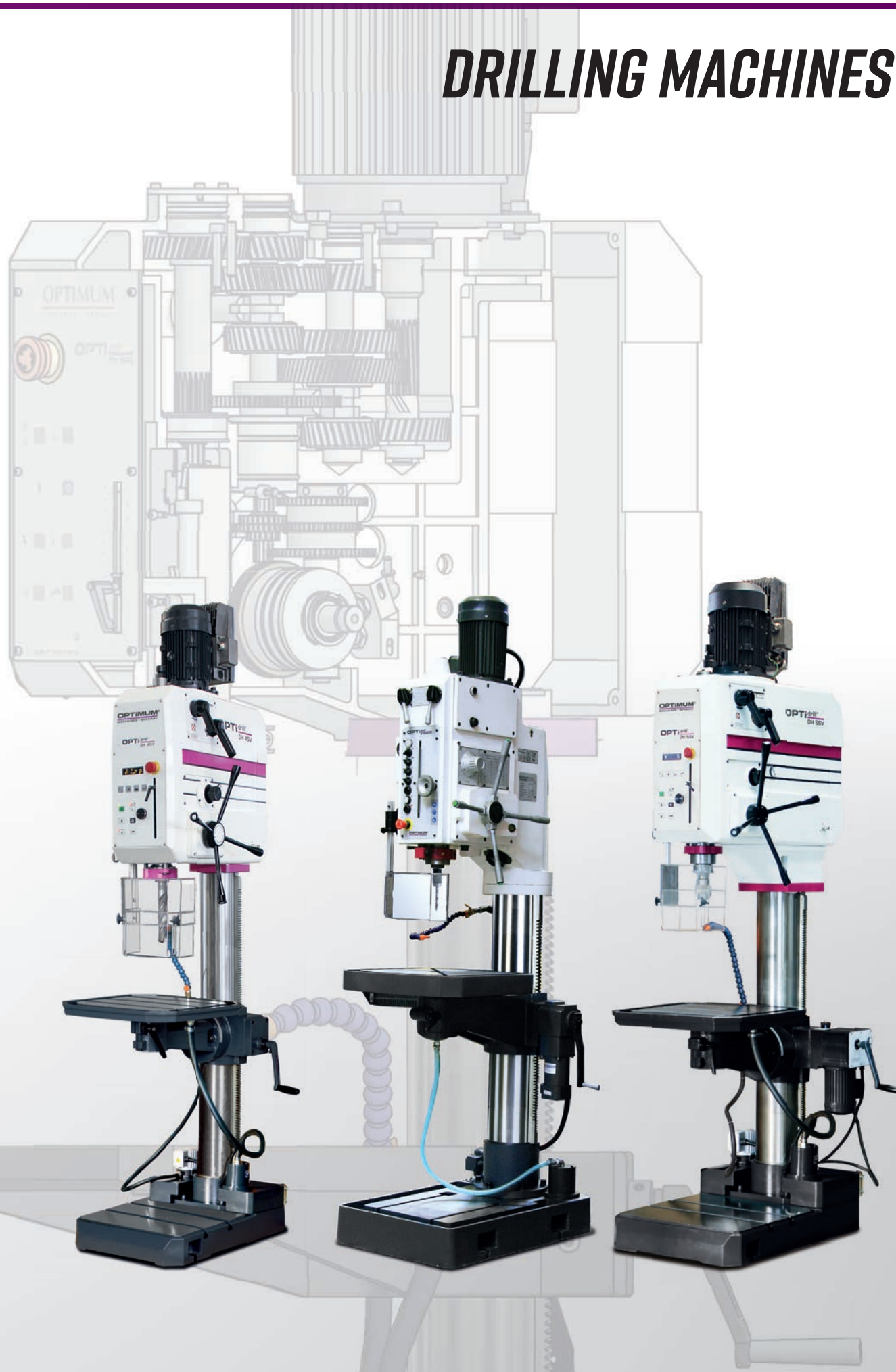
- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT
- › T-slot nuts

# *GEAR DRILLING MACHINES*





# ***DRILLING MACHINES***



## Universal column gearbox drill with 12 speeds for milling and drilling. DH 40GP with automatic spindle sleeve feed

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ Two-stage industrial electric motor
- ▶ Thread tapping function
- ▶ Gear head and table are height adjustable
- ▶ Large speed range from 95 - 3 200 rpm thanks to 12 switchable speeds
- ▶ Generously dimensioned, solid drilling table, precision workmanship, with 2 diagonal T-slots and recirculating coolant duct, heavily ribbed on rear side and double clamping
- ▶ Drill depth stop
- ▶ Height-adjustable chuck protection with micro switch for greatest possible protection of the user
- ▶ Coupling for switching over from manual rough to manual fine feed
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid baseplate with precision surface finish can be used as a workspace for particularly high workpieces by swivelling out the drilling table

### OPTIdrill DH 40GP

- ▶ Automatic and manual sleeve feed

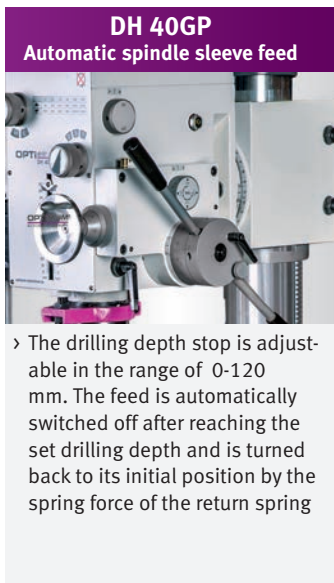


Fig.: DH 40GP



## Technical specifications, accessories and dimensions

Model	DH 40G	DH 40GP
Article no.	3034355	3034360
<b>Power</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	1.1 / 1.5 kW	
<b>Drilling performance</b>		
Drilling performance in steel (S235JR)	Ø 32 mm	
Continuous drilling performance in steel (S235JR)	Ø 25 mm	
Thread tapping in steel (S235JR)	M16	
<b>Spindle</b>		
Spindle sleeve stroke	120 mm	
Spindle sleeve diameter	75 mm	
Spindle seat	MT4	
Throat	280 mm	
Sleeve feed	manual	automatic 0.10   0.18   0.26 mm/ rev
Rotatable and sideways tiltable drill head	± 45° / 360°	
Drilling head height adjustment	265 mm	
<b>Rotational speeds</b>		
Spindle speeds	95 - 3 200 rpm	
Speeds	2 x 6 speeds	
<b>Drilling table</b>		
Length x width	500 x 460 mm	
T-slot size	14 mm, 2 diagonal running	
Cross table load bearing capacity	50 kg	
Rotatable and sideways tiltable drilling table	± 90° / 360°	
Max. distance spindle - drilling table	715 mm	
<b>Machine base</b>		
Machine base work area L x W	650 x 450 mm	
T-slot size / spacing / count	14 mm / 230 mm / 2	
Clearance spindle - machine base	max. 1 180 mm	
<b>Dimensions and weight</b>		
Column diameter	Ø 115 mm	
Length x width x height	595 x 700 x 2 050 mm	
Net weight	320 kg	335 kg

Accessories	Article no.
Clamping tool assortment SPW 12, 58 parts	3352017
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Universal coolant unit	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Direct quick-action drill chuck 1 - 16 mm	3050574
Reduction sleeve MT4 - MT3	3050664
Morse taper MT4/B16	3050661

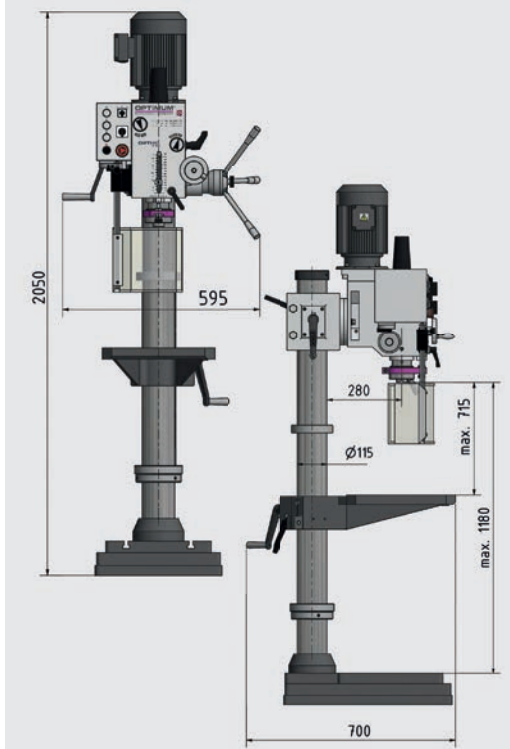
More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

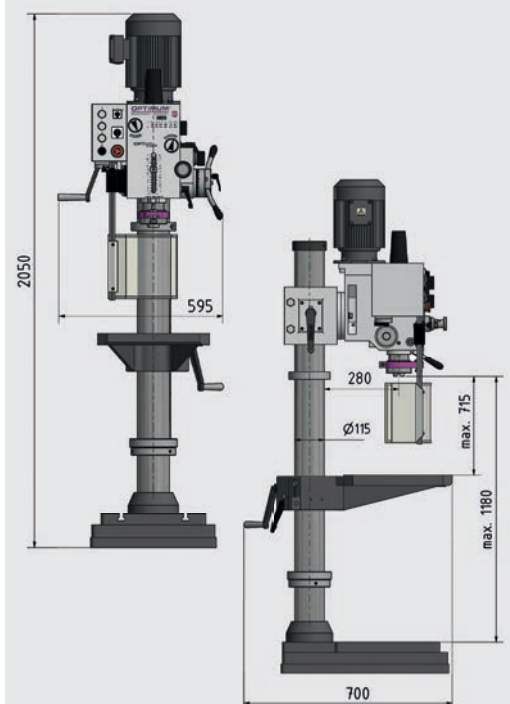
**Coolant accessories** from page 320

\*Explanation of transport packaging flat rate and surcharge, see page 323

### Dimensions



### DH 40GP dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 13 mm
- › Morse taper MT4/B16
- › Draw-in rod M16
- › Adapter MT4 - MT3
- › Operating tool



## Column gear drilling machines with cross table. The versatile machines for milling and drilling. DH 40CTP with automatic spindle sleeve feed

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ Large speed range of 95 - 3 200 rpm
- ▶ Two-stage industrial quality electric motor
- ▶ Generously dimensioned, solid cross table with precision surface finish, adjustable via 3 hand wheels, includes integrated length scale
- ▶ Adjustable end stops on the cross table
- ▶ Gear head and table are height adjustable
- ▶ Table guides are precisely adjustable via adjustable wedge bars
- ▶ Solid baseplate with precision surface finish can be used as a workspace for particularly high workpieces by swivelling out the X/Y table
- ▶ Right-/left-hand rotation
- ▶ Drill depth stop
- ▶ Thread tapping function

### OPTIdrill DH 40CTP

- ▶ Automatic spindle sleeve feed

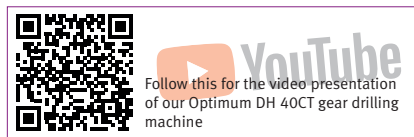
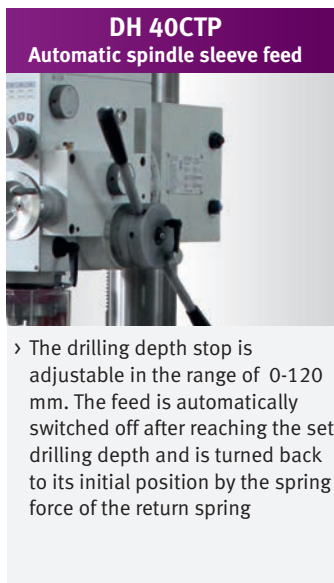


Fig.: DH 40CTP



## Technical specifications, accessories and dimensions

Model	DH 40CT		DH 40CTP	
Article no.	3034350		3034351	
Power				
Electrical connection	400 V / 3 Ph ~50 Hz			
Motor power	1.1 / 1.5 kW			
Drilling/milling power				
Drilling performance in steel (S235JR)	Ø 32 mm			
Continuous drilling performance in steel (S235JR)	Ø 25 mm			
Cutter head size max.	Ø 76 mm			
End mill size max.	Ø 25 mm			
Thread tapping in steel (S235JR)	M16			
Spindle				
Spindle sleeve stroke	120 mm			
Spindle sleeve diameter	75 mm			
Spindle seat	MT4			
Throat	280 mm			
Sleeve feed	manual		automatic 0.10   0.18   0.26 mm/rev	
Drawbar	M16			
Rotatable and sideways tiltable spindle head	± 45° / 360°			
Drilling head height adjustment	260 mm			
Rotational speeds				
Spindle speeds	95 - 3 200 rpm			
Speeds	2 x 6 speeds			
Cross table				
Workspace length x width	730 x 210 mm			
T-slot size / amount / distance	14 mm / 3 / 63 mm			
Cross table load bearing capacity	50 kg			
Clearance spindle to cross table max.	600 mm			
X-axis travel travel manual	480 mm			
Y-axis travel travel manual	180 mm			
Y-axis travel travel manual	560 mm			
Machine base				
Machine base work area L x W	495 x 375 mm			
T-slot size / spacing / count	14 mm / 230 mm / 2			
Clearance spindle - machine base	max. 1 180 mm			
Dimensions and weight				
Column diameter	Ø 115 mm			
Length x width x height	1 060 x 745 x 2 090 mm			
Net weight	370 kg			

Accessories	Article no.
Clamping tool assortment SPW 12, 58 parts	3352017
Hold-down clamp 14 mm/M 12	3352031
Parallel shim set, 20 parts	3354001
Horizontal-vertical rotary indexing table RT 150	3356150
Universal coolant unit	3351999

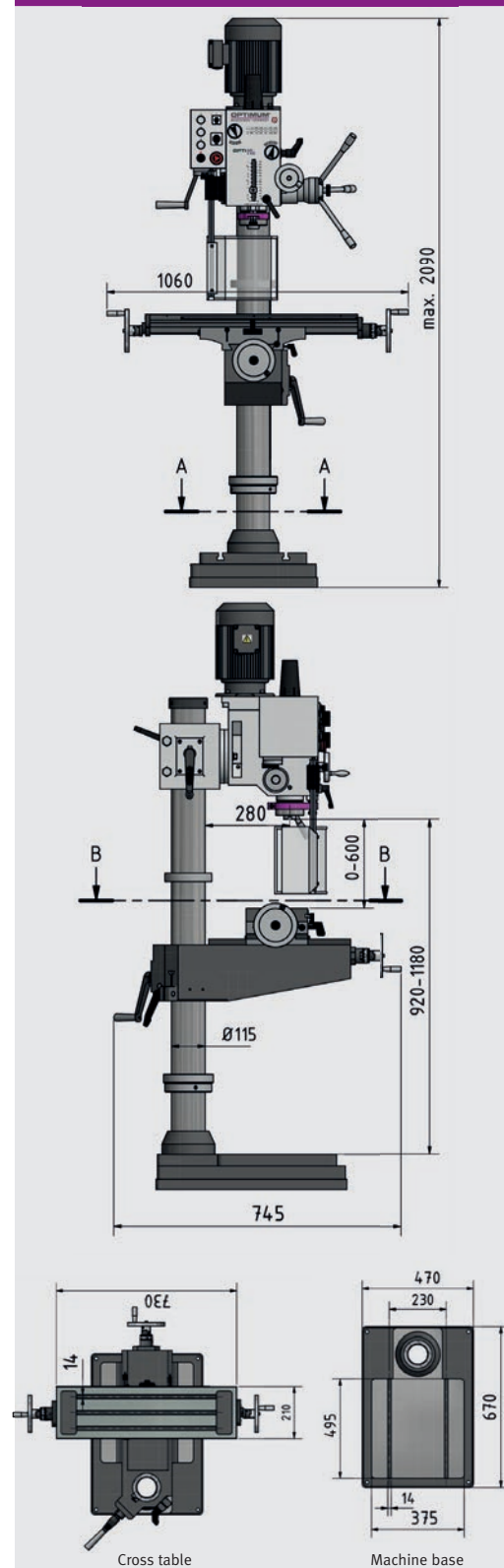
More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** see page 320

\*Explanation of transport packaging flat rate and surcharge,\* see page 323

### Dimensions



### Scope of delivery

- › Key type drill chuck 1 - 13 mm / B18
- › T-slot nuts
- › Reduction sleeve MT4 - MT3
- › Arbor for drill chuck MT4 / B18
- › Operating tool

## Bench and post drills with polyamide gearwheels.

Installation of an optional footswitch possible with DH 32GS

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ Excellent true running accuracy thanks to hardened and ground main spindle
- ▶ Low-maintenance, grease-lubricated gearbox
- ▶ Gearbox with PA6 gearwheels
- ▶ Large speed range
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Adjustable drill depth stop with millimetre scale
- ▶ Right-/left-hand rotation
- ▶ Machine lamp integrated in drilling head
- ▶ Integrated push-out tool for easy tool changes

- ▶ Precision machined drilling table with two diagonal T-slots with all-around cooling water channel
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid baseplate, large dimensions and heavily ribbed on rear

### OPTIdrill DH 32GS

- ▶ Thread tapping function
- ▶ Automatic spindle sleeve feed
- ▶ Coolant system and chip filter in line with Machinery Directive
- ▶ Optional footswitch available for toggling between clockwise/anticlockwise rotation and for thread cutting (Article no. 3050032)

### DH 32GS

#### Automatic spindle sleeve feed



- › Activation by pressure switch in sleeve lever. An electromagnetic clutch provides propulsion. Switching off is done by the drilling depth stop or by pressing the push button in the quill lever again

#### Integrated push-out tool



- › for simple tool change

#### Thermdrill



- › Information on page 94

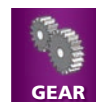


Fig.: DH 26GT with optional drill chuck



Fig.: DH 32GS with optional drill chuck





## Technical data and accessories

Model	DH 26GT	DH 28GS	DH 32GS
Article no.	3034220	3034230	3034240
<b>Power</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	1.1 / 1.5 kW	1.1 / 1.5 kW	1.5 / 2.2 kW
Coolant pump motor	-	-	40 W
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 24 mm	Ø 26 mm	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 21 mm	Ø 23 mm	Ø 26 mm
Thread tapping in steel (S235JR)	-	-	M16 x 2 mm
<b>Spindle</b>			
Spindle sleeve stroke	127 mm	127 mm	125 mm
Spindle seat	MT3	MT3	MT4
Throat	235 mm	260 mm	285 mm
Automatic spindle sleeve feed	-	-	2 stages: 0.05 mm / 0.1 mm
<b>Rotational speeds</b>			
Spindle speeds	75 - 2 900 rpm	75 - 2 900 rpm	75 - 2 000 rpm
Number of speeds	8 stages	8 stages	8 stages
<b>Drilling table</b>			
Drilling table workspace length x width	380 x 380 mm	376 x 394 mm	400 x 420 mm
T-slot size	14 mm, 2 diagonal running	14 mm, 2 diagonal running	14 mm, 2 diagonal running
Drilling table load bearing capacity	80 kg	100 kg	120 kg
Rotating drilling table	360°	360°	360°
Max. distance spindle - drilling table	450 mm	875 mm	820 mm
<b>Machine base</b>			
Machine base work area L x W	350 x 356 mm	350 x 356 mm	450 x 395 mm
T-slot size / spacing / count	14 mm / 120 mm / 2	14 mm / 120 mm / 2	14 mm / 150 mm / 2
Max. distance spindle - machine base	610 mm	1,285 mm	1,270 mm
<b>Dimensions and weight</b>			
Column diameter	Ø 92 mm	Ø 92 mm	Ø 115 mm
Length x width x height	610 x 380 x 1 430 mm	640 x 376 x 2 080 mm	725 x 450 x 2 200 mm
Net weight	158 kg	175 kg	312 kg

Accessories	Article no.
<b>Clamping tool assortment</b> SPW 12, 58 parts	3352017
<b>Quick-action drill chuck</b> 1 - 8 mm; B16	3050608
<b>Quick-action drill chuck</b> 1 - 10 mm; B16	3050610
<b>Quick-action drill chuck DKC 13</b> , 0-13 mm	3050632
<b>Quick-action drill chuck DKC 16</b> , 0-16 mm	3050633
<b>Twist drill bits HSS-CO 5%</b> , 25 parts	3201010
<b>Twist drill bits HSS-CO 5%</b> , 51 parts	3201020
<b>Twist drill bits HSS-CO 5%</b> , 41 parts	3201021
<b>Thermdrill Basic Set</b>	3060004

More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

### Scope of delivery

› Morse taper MT

Accessories DH 26GT / DH 28GS	Article no.
<b>Direct quick-action drill chuck</b> 1-16 mm	3050573
<b>Morse taper</b> MT3/B16	3050660
<b>Reduction sleeve</b> MT3 - MT2	3050663
<b>Twist drill bit HSS</b> MT3	3051003
<b>Thread tapping chuck</b> , 7 inserts M3-M12	3050705
<b>Thread tapping chuck</b> , 7 inserts M8-M20	3050706
<b>Universal coolant unit</b>	3351999

Accessories DH 32GS	Article no.
<b>Direct quick-action drill chuck</b> 1-16 mm	3050574
<b>Morse taper</b> MT4/B16	3050661
<b>Reduction sleeve</b> MT4-MT3	3050664
<b>Reduction sleeve</b> MT4-MT2	3050665
<b>Foot switch</b>	3050032

Functions:

- › Thread tapping
- › Right/left rotation toggling switch



\*Explanation of transport surcharge see page 323

**Column drills with SIEMENS inverter technology and gears made of polyamide.**  
With infinitely variable speed control. Installation of an optional foot switch is possible

## Facts that impress in terms of quality, performance and price


- ▶ Heavy, solid cast design
- ▶ Frequency converter,
- ▶ Thread tapping function
- ▶ Smooth action thanks to ground multi-tooth carrier
- ▶ Excellent true running accuracy thanks to hardened and ground main spindle
- ▶ Low-maintenance, grease-lubricated gearbox
- ▶ Gearbox with PA6 gearwheels
- ▶ Large speed range
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Adjustable drill depth stop with millimetre scale
- ▶ Right-/left-hand rotation
- ▶ Machine lamp integrated in drilling head

- ▶ Integrated push-out tool for easy tool changes
- ▶ Precision machined drilling table with two diagonal T-slots with all-around cooling water channel
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid baseplate, large dimensions and heavily ribbed on rear
- ▶ Optional footswitch available for toggling between clockwise/anticlockwise rotation and for thread cutting (Article no. 3050032)

## OPTIdrill DH 32GSV

- ▶ Automatic spindle sleeve feed
- ▶ Coolant system and chip filter in line with Machinery Directive

### DH 32GSV Automatic spindle sleeve feed



- › Activation by pressure switch in sleeve lever. An electromagnetic clutch provides propulsion. Switching off is done by the drilling depth stop or by pressing the push button in the quill lever again

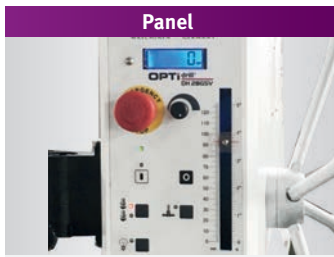
### SIEMENS SINAMICS V20



Made in EU

- › Energy-saving features
- › Advanced cooling
- › Painted electronics assemblies

### Panel



- › Easily readable digital display for speed
- › User-friendly membrane keyboard

### Thermdrill



- › Information on page 94



Fig.: DH 28GSV with optional drill chuck

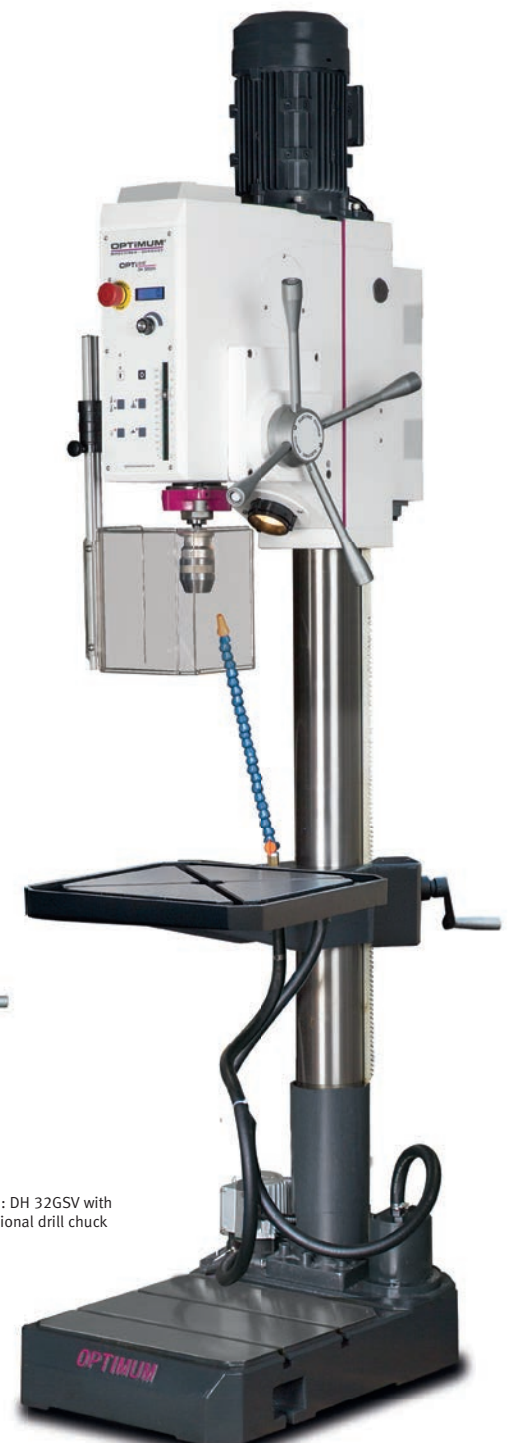


Fig.: DH 32GSV with optional drill chuck



## Technical specifications, accessories and dimensions

Model	DH 28GSV	DH 32GSV
Article no.	3034235	3034245
<b>Power</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	1.5 kW	2.2 kW
Coolant pump motor	-	40 W
<b>Drilling performance</b>		
Drilling performance in steel (S235JR)	Ø 26 mm	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 23 mm	Ø 26 mm
Thread tapping in steel (S235JR)	M 16 x 2 mm	
<b>Spindle</b>		
Spindle sleeve stroke	127 mm	125 mm
Spindle seat	MT3	MT4
Throat	260 mm	285 mm
Automatic spindle sleeve feed	-	0.05 / 0.1 mm
<b>Rotational speeds</b>		
Spindle speeds	45 - 3 200 rpm	40 - 3 000 rpm
Number of speeds	4 stages, electronically regulable	
<b>Drilling table</b>		
Drilling table workspace L x W	376 x 394 mm	400 x 420 mm
T-slot size	14 mm, 2 diagonal running	
Drilling table load bearing capacity	100 kg	120 kg
Rotating drilling table	360°	
Max. distance spindle - drilling table	875 mm	820 mm
<b>Machine base</b>		
Machine base work area L x W	350 x 356 mm	420 x 395 mm
T-slot size / spacing / count	14 mm / 120 mm / 2	14 mm / 150 mm / 2
Clearance spindle - machine base	max. 1 285 mm	max. 1 270 mm
<b>Dimensions and weight</b>		
Column diameter	Ø 92 mm	Ø 115 mm
Length x width x height	690 x 375 x 2 080 mm	820 x 450 x 2 230 mm
Net weight	184 kg	324 kg

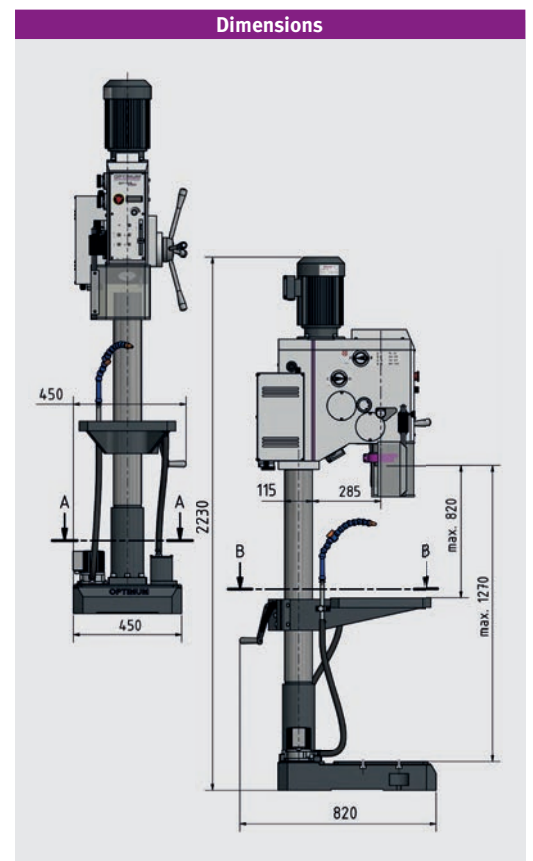
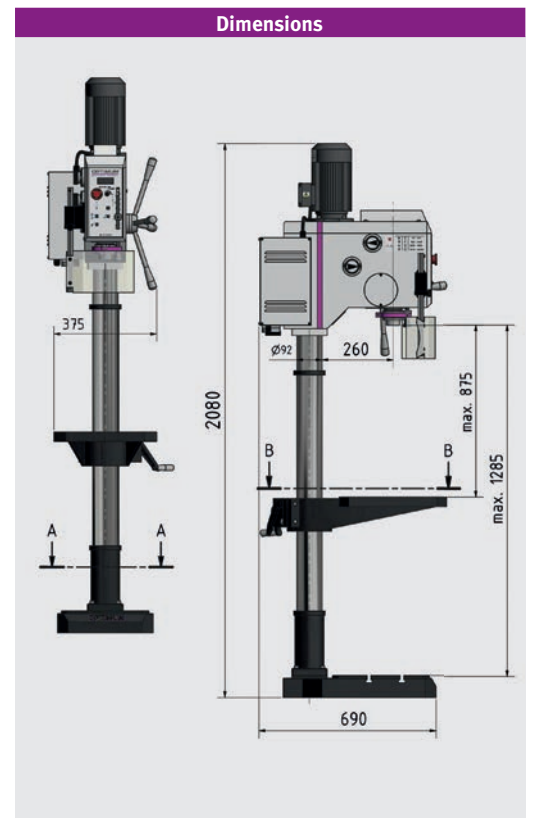
Accessories	Article no.
Clamping tool assortment SPW 12, 58 parts	3352017
Quick-action drill chuck 1 - 8 mm; B16	3050608
Quick-action drill chuck 1 - 10 mm; B16	3050610
Quick-action drill chuck DKC 13, 0 - 13 mm	3050632
Quick-action drill chuck DKC 16, 0 - 16 mm	3050633
Twist drill bits HSS-CO 5%, 1 - 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1 - 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6 - 10 mm, 41 parts	3201021
Thermdrill Basic Set	3060004
Foot switch	3050032



Functions: Thread tapping, Right/left rotation toggling switch

Accessories DH 28GSV	Article no.
Direct quick-action drill chuck 1-16 mm	3050573
Morse taper MT3/B16	3050660
Reduction sleeve MT3 - MT2	3050663
Twist drill bit HSS / MT3	3051003
Universal coolant unit	3351999

Accessories DH 32GSV	Article no.
Direct quick-action drill chuck 1-16 mm	3050574
Morse taper MT4/B16	3050661
Reduction sleeve MT4 - MT3	3050664
Reduction sleeve MT4 - MT2	3050665



### Scope of delivery

> Morse taper MT



## Heavy-duty gearbox drilling machine with thread tapping device. B 40GSM with electric sleeve feed

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ Automatic gearwheel lubrication via oil pump
- ▶ Excellent true running accuracy thanks to hardened and ground main spindle
- ▶ Right-/left-hand rotation
- ▶ Thread tapping device
- ▶ Main switch and motor circuit breaker
- ▶ Adjustable drill depth stop with millimetre scale
- ▶ Integrated push-out tool for easy tool changes
- ▶ Machine lamp integrated in drilling head
- ▶ Precision machined, generously dimensioned drilling table with 2 diagonal T-slots, and recirculating coolant duct
- ▶ Coolant system and chip filter in line with Machinery Directive
- ▶ Thick walled cast column for high force absorption and stability
- ▶ Solid base plate with two parallel T-slots, generously dimensioned and precision surface finish

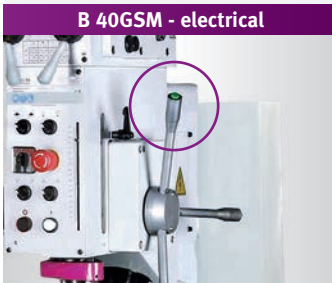
#### OPTIdrill B 40GSM

- ▶ Electrical sleeve feed

#### OPTIdrill B 40GSP

- ▶ Manual sleeve feed

#### Sleeve feed 2 speeds 0.1/0.2 mm/rev



#### B 40GSM - electrical

- › For deep drilling or blind hole drilling, the clutch on the automatic spindle sleeve feed can be released or engaged at any time by pressing the button on the feed handle



#### B 40GSP - manual



#### Control cabinet

- › Clearly-arranged layout
- › Generously dimensioned
- › Certified switches by ABB
- › Certified components by SIEMENS or Schneider

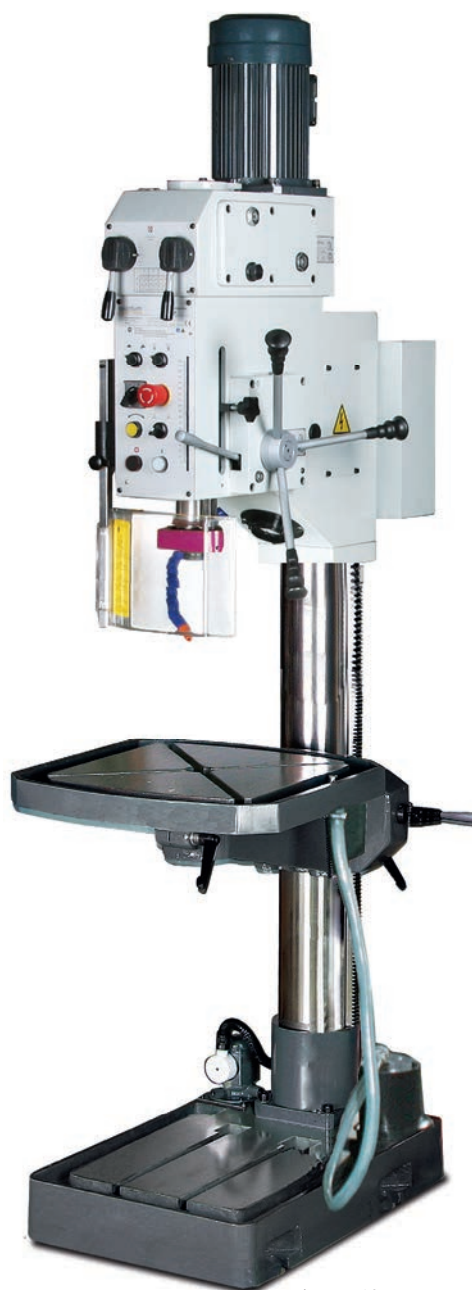


Fig.: B 40GSP



Fig.: B 40GSM



## Technical specifications, accessories and dimensions

Model	B 40GSP		B 40GSM	
Article no.	3034403		3034400	
Power				
Electrical connection	400 V / 3 Ph ~50 Hz			
Total rated value	0.85 / 1.5 kW			
Coolant pump motor	40 W			
Drilling performance				
Drilling performance in steel (S235JR)	Ø 35 mm			
Continuous drilling performance in steel (S235JR)	Ø 30 mm			
Thread tapping in steel (S235JR)	M24			
Spindle seat				
Spindle sleeve stroke	180 mm			
Spindle seat	MT4			
Throat	350 mm			
Sleeve feed	2 stages: 0.1 / 0.2 mm/rev			
Rotational speeds				
Spindle speeds	50 - 1 450 rpm			
Number of speeds	18 stages			
Drilling table				
Drilling table workspace length x width	560 x 560 mm			
T-slot size	18 mm, 2 diagonal running			
Drilling table load bearing capacity	250 kg			
Rotating drilling table	± 90°			
Max. distance spindle - drilling table	780 mm			
Machine base				
Machine base work area L x W	510 x 500 mm			
T-slot size / amount / distance	18 mm / 2 / 150 mm			
Max. distance spindle - machine base	1 320 mm			
Dimensions and weight				
Column diameter	Ø 150 mm			
Length x width x height	935 x 530 x 2 280 mm			
Net weight	465 kg		500 kg	

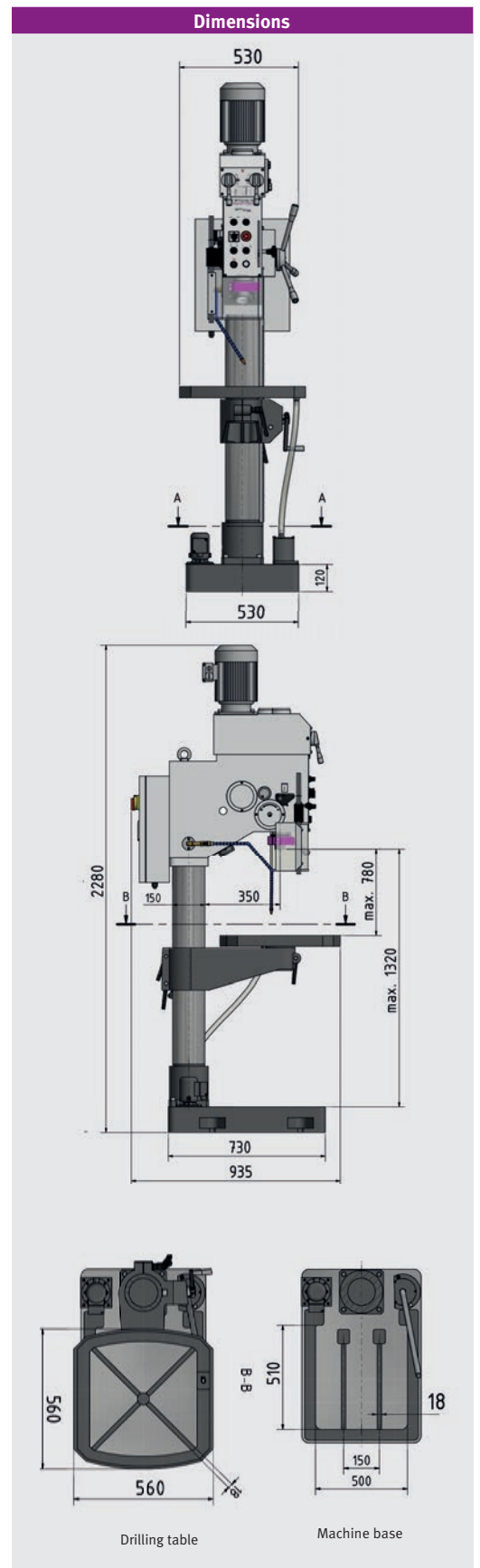
Accessories	Article no.
Clamping tool assortment SPW 16, 58 parts	3352019
Hold-down clamp 14 mm/M 12	3352031
Direct quick-action drill chuck MT4/16 mm	3050574
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Reduction sleeve MT4-MT3	3050664

More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

\*Explanation of transport surcharge see page 323



### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT4/B16

## Gear drilling machine with thread cutting device and electrically operated quill feed. DH 35V with infinitely variable speed control.

### Facts that impress in terms of quality, performance and price

- ▶ Dirt/water-resistant, easy-to-clean membrane keyboard
- ▶ 24V DC Electronics
- ▶ Electrical sleeve feed
- ▶ Drill depth stop
- ▶ Low-maintenance gear unit running in a closed oil sump
- ▶ Thread tapping device
- ▶ Machine lamp integrated in drilling head
- ▶ Main switch
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Generously dimensioned, solid drilling table, precision workmanship, with 2 diagonal T-slots and recirculating coolant duct, heavily ribbed on rear side and double clamping
- ▶ Coolant unit with coolant tank integrated into base plate

- ▶ Chip filter removes coarse components from the coolant
- ▶ Robust, thick-walled cast-iron column for excellent force absorption
- ▶ Solid base plate with parallel T-slots, precision surface finish
- ▶ Optional footswitch available for toggling between clockwise/anticlockwise rotation and for thread cutting (Article no. 3050032)

### OPTIdrill DH 35V

- ▶ Infinitely variable speed
- ▶ Pitch deactivation
- ▶ Easily readable digital display
- ▶ Digitally adjustable drilling and thread depth
- ▶ Digital zero point adjustable

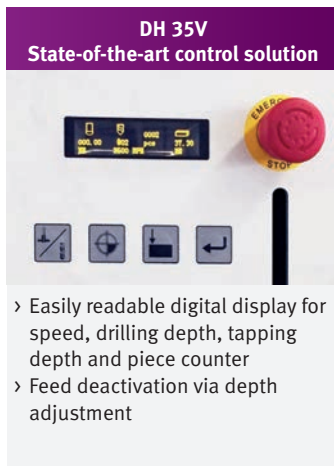


Fig.: DH 35G  
with optional accessories



Fig.: DH 35V  
with optional accessories





## Technical specifications, accessories and dimensions

Model	DH 35G	DH 35V*
Article no.	3034250	3034252
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	1.5 / 2.2 kW	2.2 kW
Coolant pump motor	40 W	
Drilling performance		
Drilling performance in steel (S235JR)	Ø 35 mm	
Continuous drilling performance in steel (S235JR)	Ø 26 mm	
Thread tapping in steel (S235JR)	M24	
Spindle		
Spindle sleeve stroke	125 mm	
Spindle seat	MT4	
Throat	285 mm	
Automatic spindle sleeve feed	3 stages: 0.05 - 0.15 mm/rev	
Rotational speeds		
Spindle speeds	75 - 2 000 rpm	30 - 2 950 rpm
Number of speeds	8 stages	4 stages, Electronically controlled
Drilling table		
Drilling table workspace L x W	400 × 420 mm	
T-slot size	14 mm, 2 diagonal running	
Drilling table load bearing capacity	200 kg	
Drill table rotation / tilting sideways	360° / ± 90°	
Clearance spindle - drilling table	65 - 800 mm	
Machine base		
Machine base work area L x W	420 x 395 mm	
T-slot size / spacing / count	14 mm / 150 mm / 2	
Clearance spindle - machine base	max. 1 217 mm	
Dimensions and weight		
Column diameter	Ø 115 mm	
Length x width x height	860 x 474 x 2 175 mm	
Net weight	350 kg	365 kg

Accessories	Article no.
Clamping tool assortment SPW 12, 58 parts	3352017
Hold-down clamp 14 mm/M 12	3352031
Twist drill bits HSS-CO 5%, 1 - 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1 - 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6 - 10 mm, 41 parts	3201021
Direct quick-action drill chuck 1 - 16 mm	3050574
Reduction sleeve MT4-MT3	3050664
Reduction sleeve MT4-MT2	3050665
Hold-down clamp 14 mm	3352031
Thermdrill Basic Set	3060004
Foot switch	3050032



for thread tapping and toggling right-handed/left-handed rotation

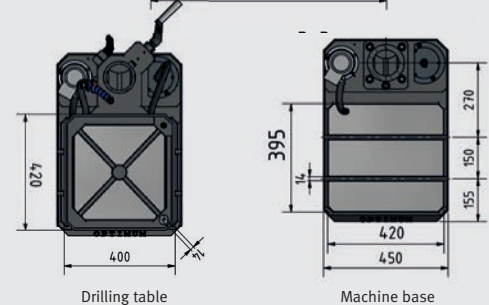
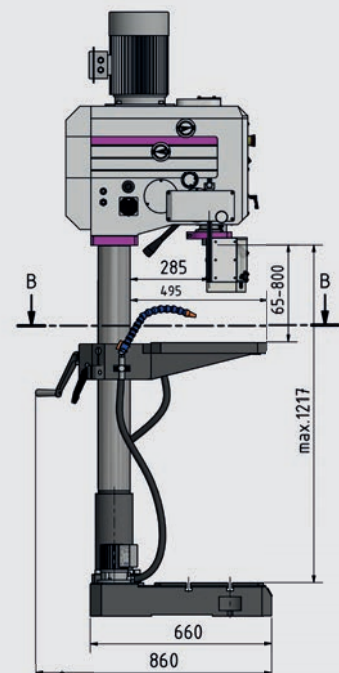
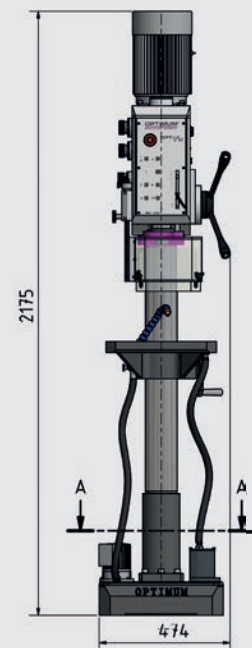
More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters and details of the packaging flat rates see page 323.

### Dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT4/B16

## Heavy-duty gearbox drilling machine with thread tapping device for industrial applications. DH 45V with infinitely variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ Dirt/water-resistant, easy-to-clean membrane keyboard
- ▶ 24V DC Electronics
- ▶ Mechanical sleeve feed
- ▶ Drill depth stop
- ▶ Automatic gearwheel lubrication via oil pump
- ▶ Thread tapping device
- ▶ Machine lamp integrated in drilling head
- ▶ Main switch
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Largely dimensioned, solid drilling table, precisely machined with parallel T-slots and all-round cooling water channel, heavily ribbed on the rear side,  $\pm 90^\circ$  tiltable to the side
- ▶ Cooling unit and coolant tank, can be removed for easier and complete emptying

- ▶ Chip filter in line with Machinery Directive
- ▶ Robust, thick-walled cast-iron column for excellent force absorption
- ▶ Solid base plate with parallel T-slots, precision surface finish
- ▶ Optional footswitch available for toggling between clockwise/anticlockwise rotation and for thread cutting (Article no. 3050032)

### OPTi<sup>®</sup>drill DH 45V

- ▶ Electrically controlled sleeve feed
- ▶ Continuously adjustable speed control
- ▶ Feed deactivation programmable
- ▶ Easily readable digital display
- ▶ Digitally adjustable drilling and thread depth
- ▶ Digital zero point adjustable

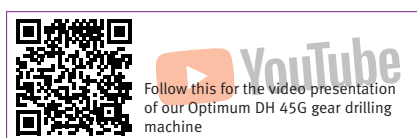
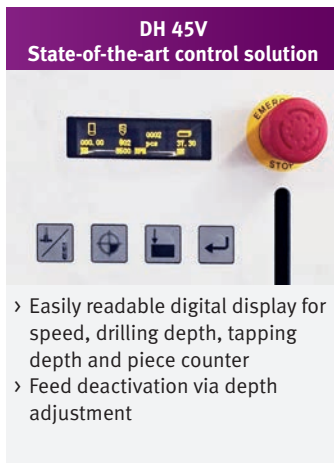
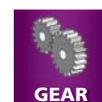


Fig.: DH 45G

Fig.: DH 45V with optional accessories



## Technical specifications, accessories and dimensions

Model	DH 45G	DH 45V*
Article no.	3034255	3034262
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	2.2 kW	
Coolant pump motor	100 W	
Drilling performance		
Drilling performance in steel (S235JR)	Ø 40 mm	
Continuous drilling performance in steel (S235JR)	Ø 35 mm	
Thread tapping in steel (S235JR)	M35	
Spindle		
Spindle sleeve stroke	170 mm	
Spindle seat	MT4	
Throat	350 mm	
Automatic spindle sleeve feed	3 stages: 0.1 / 0.15 / 0.2 mm/rev	
Rotational speeds		
Spindle speeds	90 - 1 520 rpm	30 - 2 430 rpm
Number of speeds	8 stages	4 stages, Electronically controlled
Drilling table		
Drilling table workspace L x W	530 x 530 mm	
T-slot size / spacing / count	18 mm / 125 mm / 3	
Drilling table load bearing capacity	250 kg	
Drill table rotation / tilting sideways	360° / ± 90°	
Clearance spindle - drilling table	100 - 740 mm	
Machine base		
Machine base work area L x W	435 x 445 mm	
T-slot size / spacing / count	18 mm / 150 mm / 2	
Clearance spindle - machine base	max. 1 210 mm	
Dimensions and weight		
Column diameter	Ø 150 mm	
Length x width x height	880 x 595 x 2 445 mm	
Net weight	530 kg	550 kg

Accessories	Article no.
Clamping tool assortment SPW 16, 58 parts	3352019
Assortment of clamping tools SPW 14, 58 parts	3352018
Twist drill bits HSS-CO 5%, 1 - 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1 - 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6 - 10 mm, 41 parts	3201021
Direct quick-action drill chuck 1 - 16 mm	3050574
Reduction sleeve MT4-MT3	3050664
Reduction sleeve MT4-MT2	3050665
Hold-down clamp 14 mm	3352031
Thermdrill Basic Set	3060004
Foot switch	3050032



for thread tapping and toggling right-handed/left-handed rotation

More **accessories** and information on accessories from page 86

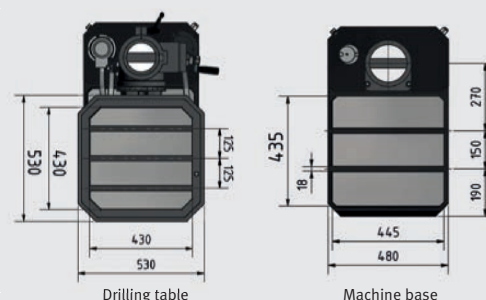
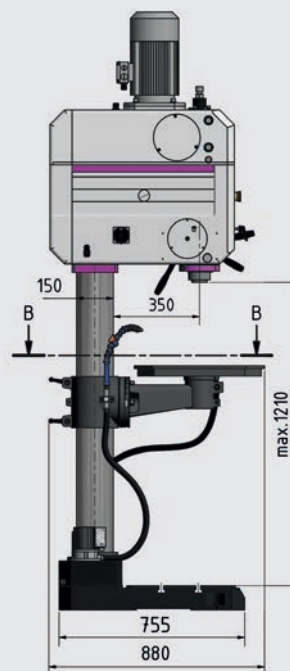
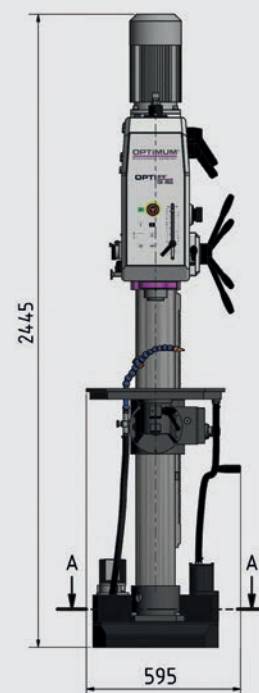
For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2

Important information on operation of machines with frequency converters and details of the packaging flat rates see page 323.

### Dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT4/B16



## Heavy duty gearbox drill for industrial use With coolant and thread tapping device and automatic spindle sleeve feed

### Facts that impress in terms of quality, performance and price

- ▶ Two-stage drive motor
- ▶ Heavy, solid cast design
- ▶ Excellent true running accuracy thanks to hardened and ground main spindle
- ▶ Right-/left-hand rotation
- ▶ Automatic gearwheel lubrication via oil pump
- ▶ Thread tapping device
- ▶ Main switch and motor circuit breaker
- ▶ Machine lamp integrated in drilling head
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Largely dimensioned, solid drilling table, precisely machined with two parallel T-slots and all-round cooling water channel, heavily ribbed on the rear side, 360° rotatable
- ▶ Coolant unit and coolant tank
- ▶ Chip filter in line with Machinery Directive
- ▶ Extremely stable, thick-walled cast column - column diameter 200 mm - for high force absorption
- ▶ Solid base plate with two parallel T-slots, precision surface finish

#### Integrated push-out tool



- › Spindle lock with integrated ejector for easy tool change

#### Automatic spindle sleeve feed

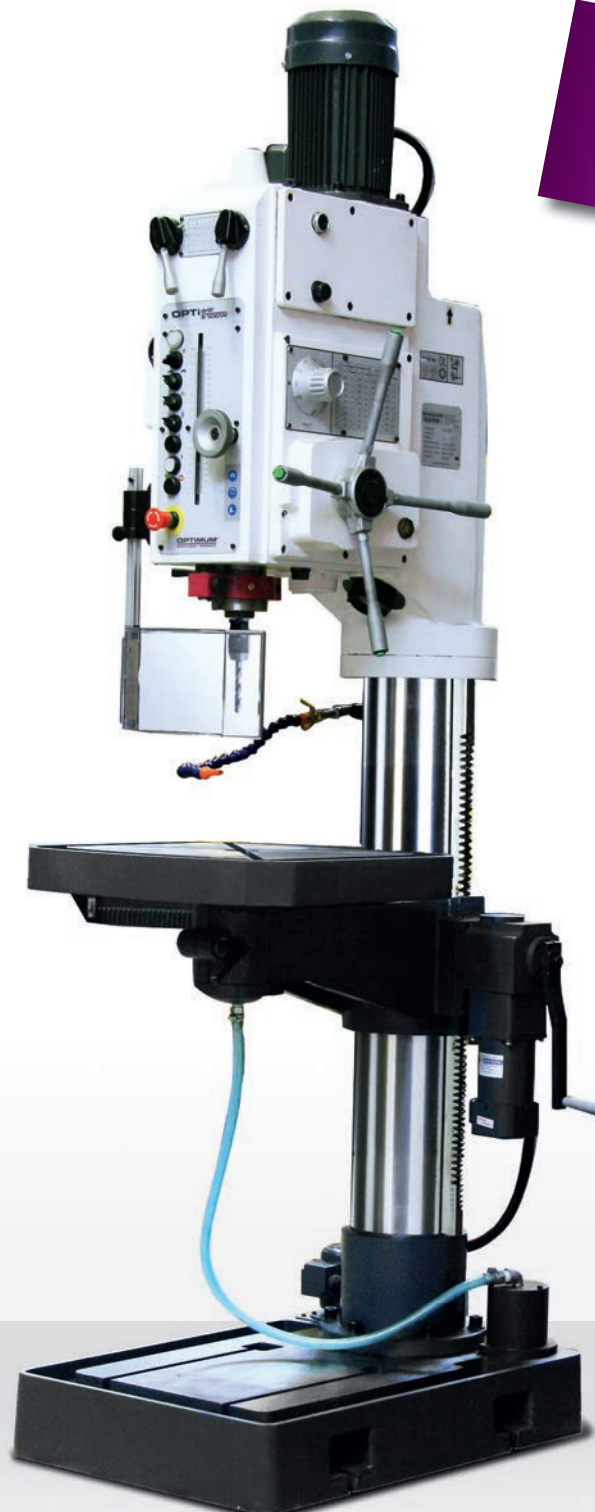


- › For deep drilling or blind hole drilling, the clutch on the automatic spindle sleeve feed can be released or engaged at any time by pressing the button on the feed handle

#### Table height adjustment

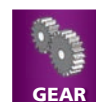


- › motorised or mechanical



Heavy, solid cast design  
**950 kg**  
Smooth action, stable

Fig.: B 50GSM



## Technical specifications, accessories and dimensions

Model	B 50GSM
Article no.	3034500
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	2.4 / 3.0 kW
Coolant pump motor	40 W
<b>Drilling performance</b>	
Drilling performance in steel (S235JR)	Ø 50 mm
Continuous drilling performance in steel (S235JR)	Ø 45 mm
Thread tapping in steel (S235JR)	M42
<b>Spindle seat</b>	
Spindle sleeve stroke	230 mm
Spindle seat	MT4
Throat	375 mm
Automatic spindle sleeve feed	6 stages: 0.05 - 0.3 mm/rev
<b>Rotational speeds</b>	
Spindle speeds	54 - 2 090 rpm
Number of speeds	18 stages
<b>Drilling table</b>	
Drilling table workspace length x width	600 x 600 mm
T-slot size	18 mm, 2 diagonal running
Drilling table load bearing capacity	300 kg
Rotating drilling table	360°
Max. distance spindle - drilling table	800 mm
<b>Machine base</b>	
Machine base workspace length x width	600 x 520 mm
T-slot size / amount / distance	18 mm / 2 / 280 mm
Max. distance spindle - machine base	1,300 mm
<b>Dimensions and weight</b>	
Column diameter	Ø 200 mm
Length x width x height	985 x 775 x 2 460 mm
Net weight	950 kg

Accessories	Article no.
Clamping tool assortment SPW 16, 58 parts	3352019
Hold-down clamp 18 mm/M 16	3352032
Twist drill bits HSS-CO 5%, 1 - 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1 - 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6 - 10 mm, 41 parts	3201021
Direct quick-action drill chuck 1 - 16 mm	3050574
Reduction sleeve MT4-MT3	3050664
Reduction sleeve MT4-MT2	3050665
Thermdrill Basic Set	3060004

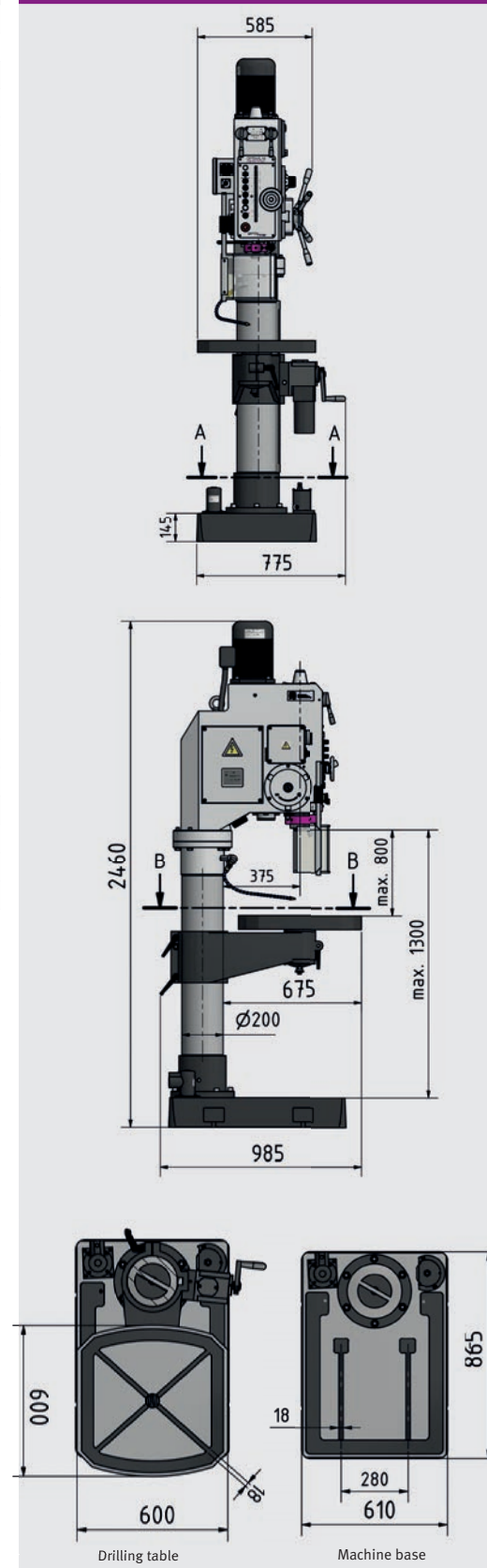
More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

\*Explanation of transport surcharge see page 323

### Dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT4/B16
- › T-slot nuts

## Heavy-duty gear drilling machine with thread tapping device for industrial applications. DH 55V with infinitely variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ Dirt/water-resistant, easy-to-clean membrane keyboard
- ▶ 24V DC Electronics
- ▶ Electrically controlled sleeve feed
- ▶ Drill depth stop
- ▶ Automatic gearwheel lubrication via oil pump
- ▶ Thread tapping device
- ▶ Generously dimensioned, height adjustable protective screen with safety switch for greatest possible user protection
- ▶ Largely dimensioned, solid drilling table, precisely machined with three parallel T-slots and all-round cooling water channel, heavily ribbed on the rear side,  $\pm 90^\circ$  sideways tiltable
- ▶ Cooling unit and coolant tank, can be removed for easier and complete emptying
- ▶ Integrated push-out tool

- ▶ Machine lamp integrated in drilling head
- ▶ Chip filter in line with Machinery Directive
- ▶ Robust, thick-walled cast-iron column for excellent force absorption
- ▶ Solid base plate with two parallel T-slots, precision surface finish
- ▶ Optional footswitch available for toggling between right-handed/left-handed rotation and for thread cutting

### OPTi<sup>®</sup>drill DH 55V

- ▶ Infinitely variable speed
- ▶ Adjustable feed deactivation
- ▶ Easily readable digital display
- ▶ Digitally adjustable drilling and thread depth
- ▶ Digital zero point adjustable

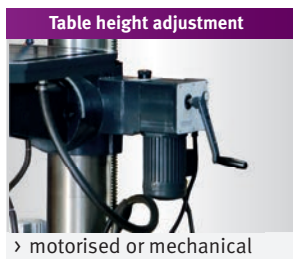
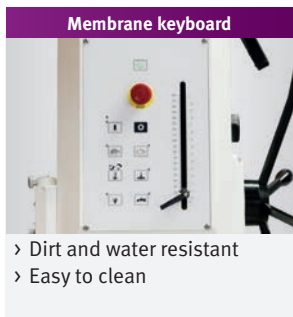


Fig.: DH 55G

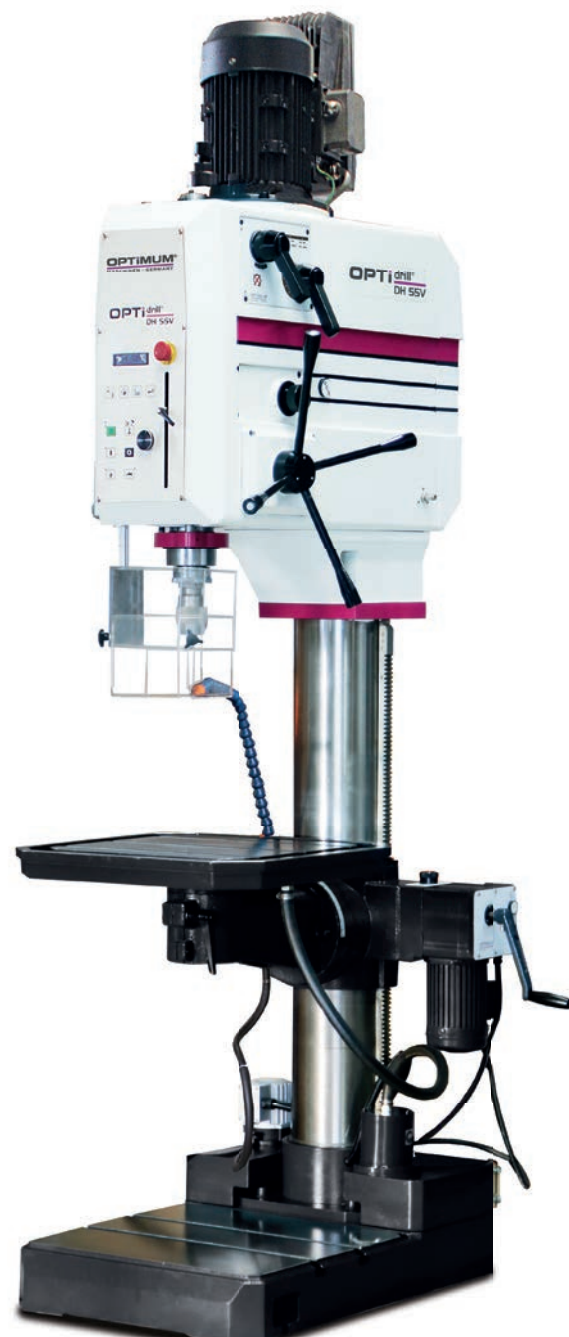
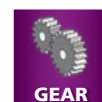


Fig.: DH 55V





## Technical specifications, accessories and dimensions

Model	DH 55G	DH 55V*
Article no.	3034265	3034267
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	2.2 / 2.8 kW	2.8 kW
Coolant pump motor	100 W	
Drilling performance		
Drilling performance in steel (S235JR)	Ø 55 mm	
Continuous drilling performance in steel (S235JR)	Ø 50 mm	
Thread tapping in steel (S235JR)	M42	
Spindle		
Spindle sleeve stroke	200 mm	
Spindle seat	MT4	
Throat	400 mm	
Automatic spindle sleeve feed	3 stages: 0.1 / 0.15 / 0.2 mm/rev	
Rotational speeds		
Spindle speeds	45 - 2 000 rpm	10 - 3 000 rpm
Number of speeds	16 stages	4 speeds; elec. control
Drilling table		
Drilling table workspace L x W	600 x 600 mm	
T-slot size / spacing / count	18 mm / 160 mm / 3	
Drilling table load bearing capacity	350 kg	
Drill table rotation / tilting sideways	360° / ± 90°	
Clearance spindle - drilling table	130 - 725 mm	
Machine base		
Machine base work area L x W	515 x 570 mm	
T-slot size / spacing / count	18 mm / 150 mm / 2	
Clearance spindle - machine base	max. 1 300 mm	
Dimensions and weight		
Column diameter	Ø 200 mm	
Length x width	850 x 1 060 mm	
height	2 500 mm	2 545 mm
Net weight	850 kg	907 kg

Accessories	Article no.
Clamping tool assortment SPW 16, 58 parts	3352019
Twist drill bits HSS-CO 5%, 1 - 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1 - 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6 - 10 mm, 41 parts	3201021
Direct quick-action drill chuck 1 - 16 mm	3050574
Reduction sleeve MT4-MT3	3050664
Reduction sleeve MT4-MT2	3050665
Hold-down clamp 14 mm	3352031
Thermdrill Basic Set	3060004
Foot switch	3050032



for thread tapping and toggling right-handed/left-handed rotation

More **accessories** and information on accessories from page 86

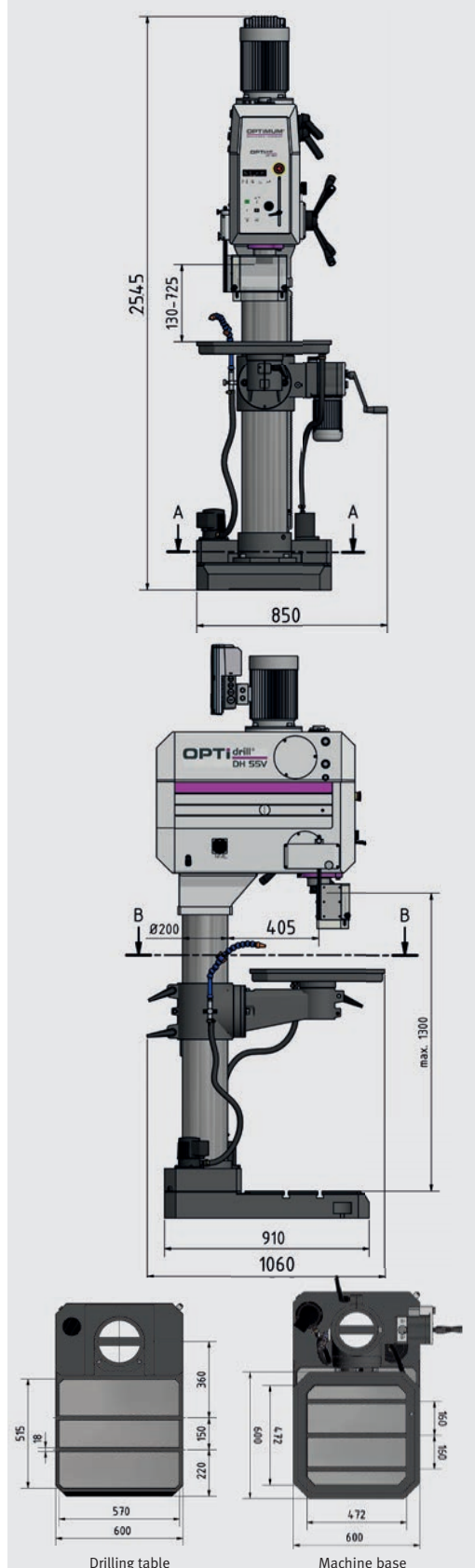
For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2

Important information on operation of machines with frequency converters and details of the packaging flat rates see page 323.

### Dimensions



### Scope of delivery

- › Quick-action drill chuck 1 - 16 mm
- › Morse taper MT4/B16

# *RADIAL DRILLING MACHINES*



Visit our exhibition in Hallstadt/Bamberg

# ***DRILLING MACHINES***





## Lightweight radial drilling machine with long throat for wood, plastics, aluminium

### Facts that impress in terms of quality, performance and price

- ▶ Best possible force transmission thanks to aluminium pulleys in combination with GATES quality toothed belts
- ▶ Guaranteed run-out accuracy of drilling spindle  $\leq 0.03$  mm measured in the drilling spindle
- ▶ Height-adjustable chuck protection with micro switch for best possible user protection
- ▶ Drill spindle with precision ball bearings
- ▶ V-belt cover with safety switch
- ▶ Precision drilling table with fastening holes for extended drilling table support
- ▶ Steel column for extremely smooth action and stability
- ▶ Solid and generously dimensioned baseplate with slots for T slot nuts, rear heavily ribbed
- ▶ User-friendly safety switch with IP 54 degree of protection
- ▶ Separate EMERGENCY-STOP push button
- ▶ Drill depth stop
- ▶ OPTIMUM key type drill chuck in standard scope of delivery
- ▶ Optimal price-performance ratio
- ▶ Lasting value

#### Throat



- › variable from 115 to 430 mm by shifting the drilling head

#### Drilling head



- ›  $\pm 45^\circ$  sideways tiltable

#### Drilling table



- › Precise workmanship
- › Diagonal T-slots
- › Circumferential coolant channel
- ›  $\pm 45^\circ$  sideways tiltable



Fig.: RB 6T

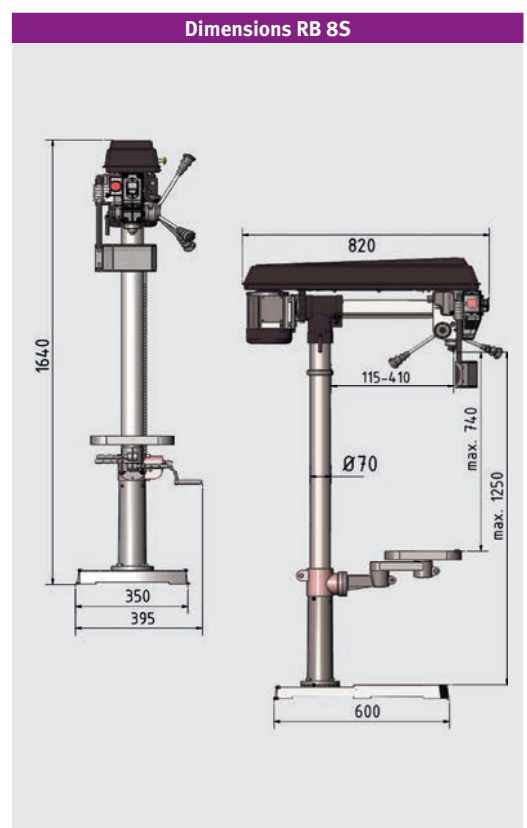
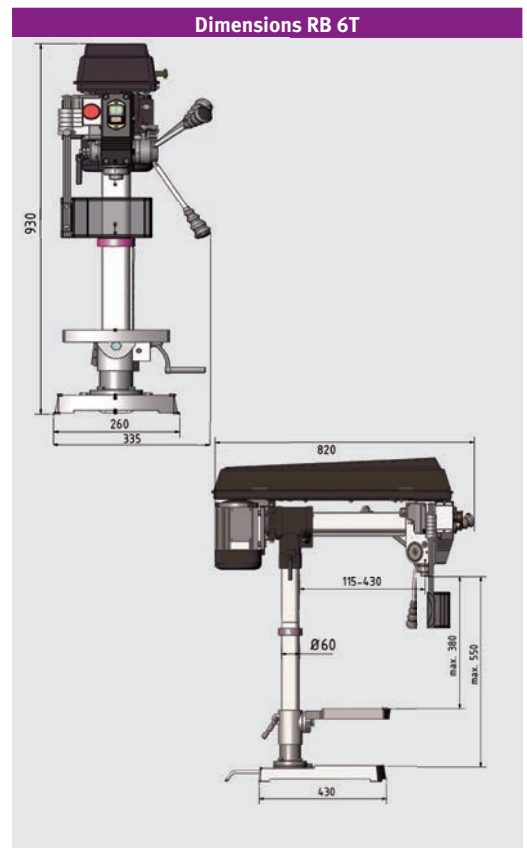


Fig.: RB 8S



## Technical specifications, accessories and dimensions

Model	RB 6T	RB 8S
Article no.	3009161	3009181
<b>Power</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor power	750 W	
<b>Drilling performance</b>		
Drilling performance in steel (S235JR)	Ø 16 mm	
Continuous drilling performance in steel (S235JR)	Ø 12 mm	
<b>Spindle</b>		
Spindle sleeve stroke	80 mm	
Spindle seat	MT2	
Throat	115 - 430 mm	
<b>Rotational speeds</b>		
Spindle speeds	390 - 3 000 rpm	
Number of speeds	5 stages	
<b>Drilling table</b>		
Workspace length x width	225 x 230 mm	262 x 262 mm
T-slot size	-	14 mm diagonal running
Slot size	14 mm	-
Drill table rotation / tilting sideways	360° / ± 45°	
Max. distance spindle - drilling table	380 mm	740 mm
<b>Machine base</b>		
Machine base work area L x W	430 x 260 mm	600 x 350 mm
Slot size / spacing / count	14 mm / 130 mm / 2	14 mm / 220 mm / 2
Clearance spindle - machine base	max. 550 mm	max. 1 250 mm
<b>Dimensions and weight</b>		
Column diameter	Ø 60 mm	Ø 70 mm
Length x width x height	820 x 335 x 930 mm	820 x 395 x 1 640 mm
Net weight	47 kg	60 kg



Accessories	Article no.
Direct quick-action drill chuck MT2 / 1 - 16 mm	3050571
Direct quick-action drill chuck MT2 / 1 - 13 mm	3050572
Morse taper MT2/B16	3050659
Twist drill bit HSS MT2, 9 parts	3051002
Clamping tool assortment SPW 12, 58 parts	3352017
Cone ejector MSP1	3050636
Universal coolant unit 230 V	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660
Twist drill bits HSS-CO 5%, 1 - 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1 - 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6 - 10 mm, 41 parts	3201021

More **accessories** and information on accessories from page 86

For a large selection of **machine vises** see on page 93

**Coolant accessories** from page 320

### Scope of delivery

- › Key type drill chuck 1 - 16 mm B 16
- › Morse taper MT2/B16

## Precision radial drilling machine with standard chassis and clamping table Suitable for machining bulky workpieces

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Powerful premium motor
- ▶ Electrically braked motor
- ▶ Long throat thanks to horizontally adjustable machine head
- ▶ Mechanical head, column and boom clamping
- ▶ Solid grey cast iron ensures stability, smooth action and precision
- ▶ Spindle with precision taper roller bearings
- ▶ Guaranteed run-out accuracy  $\leq 0.015$  mm measured in the drilling spindle
- ▶ Large speed range from 155 - 2 250 rpm thanks to two-speed motor
- ▶ Solid, precision drilling table, generously dimensioned with precision surface finish and parallel T slots
- ▶ Thick-walled steel column ( $\varnothing 115$  mm) ensures smooth running and stability

DC control cabinet



› Complete and clearly-arranged

Pull-out safety switch



› Standards-compliant as per DIN 12717

Control elements



› 24 V DC electrical system



Figure with optional drill chuck





## Technical specifications, accessories and dimensions

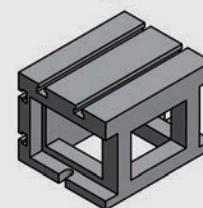
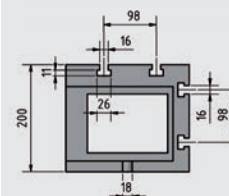
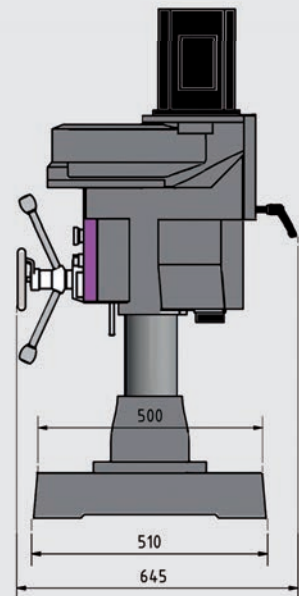
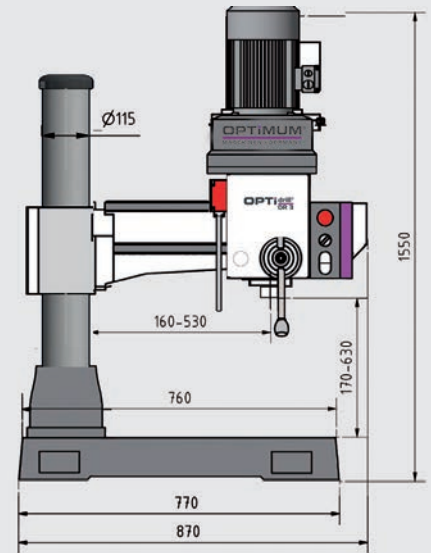
Model	RD 3
Article no.	3049030
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	0.55 / 1.1 kW
<b>Drilling performance</b>	
Drilling performance in steel (S235JR)	Ø 28 mm
Continuous drilling performance in steel (S235JR)	Ø 24 mm
Thread tapping in steel (S235JR)	M12
<b>Spindle</b>	
Spindle sleeve stroke	130 mm
Spindle seat	MT3
Throat	160 - 530 mm
<b>Rotational speeds</b>	
Spindle speeds	155 - 2 250 rpm
Number of speeds	2 x 5 speeds
<b>Drilling table</b>	
Workspace length x width	780 x 520 mm
Usable workpiece mounting surface	500 x 550 mm
T-slot size / spacing / count	16 mm / 100 mm / 3
Drilling table load bearing capacity	200 kg
Clearance spindle - drilling table	170 - 630 mm
<b>Clamping table</b>	
Length x width x height	280 x 230 x 200 mm
T-slot size / spacing / count	16 mm / 98 mm / 2
Max. clearance spindle - clamping table	430 mm
<b>Dimensions and weight</b>	
Column diameter	Ø 115 mm
Length x width x height	870 x 645 x 1 550 mm (substructure 2 150 mm)
Net weight	288 kg

Accessories	Article no.
Direct quick-action drill chuck MT3 / 1 - 16 mm	3050573
Precision quick-action drill chuck 8 mm; B16	3050608
Precision quick-action drill chuck 10 mm; B16	3050610
<b>NEW</b> Quick-action drill chuck DKC 13, 0 - 13 mm	3050632
<b>NEW</b> Quick-action drill chuck DKC 16, 0 - 16 mm	3050633
Reduction sleeve MT3 - MT2	3050663
Morse taper MT3/B16	3050660
Extension adapter MT3 - MT4	3050668
Twist drill bit HSS MT3, 9 parts	3051003
Twist drill bits HSS-CO 5%, 1- 13 mm, 25 parts	3201010
Twist drill bits HSS-CO 5%, 1- 6 mm, 51 parts	3201020
Twist drill bits HSS-CO 5%, 6- 10 mm, 41 parts	3201021
Clamping tool assortment SPW 14, 58 parts	3352018
Universal coolant unit	3351999
Thread cutting chuck, 7 inserts M3 - M12	3050705

More **accessories** and information on accessories from page 86  
For a large selection of **machine vises** see on page 93

\*Explanation of transport packaging flat rate and surcharge see page 323

### Dimensions



### Scope of delivery

- › Machine substructure
- › Clamping table

## Precision, solid radial drilling machines, premium quality

Ideal for versatile deployment in one-off and serial production

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications, such as drilling, reaming, thread tapping
- ▶ Electrically braked motor
- ▶ Operating elements in 24 V DC electronics
- ▶ Heavy, solid, premium quality casting
- ▶ Long throat thanks to horizontally adjustable machine head
- ▶ Clearly-arranged control panel layout
- ▶ Smooth action pivoting and travel axes
- ▶ Swivelling column with sophisticated workmanship and optimised clamping for maximum stability and minimum clamping offset
- ▶ Torsionally stiff boom design, capable of supporting heavy loads
- ▶ Height-adjustment of boom via powerful motorised drive and lifting spindle
- ▶ Drilling head gear box runs in oil sump
- ▶ Boom guideways hardened and precision ground
- ▶ Gear wheels made of chrome-nickel steel, hardened and precision ground for lower noise and smooth action
- ▶ Drilling head and column can be clamped or released separately
- ▶ Right-/left-hand rotation
- ▶ Solid, generously dimensioned precision drilling table
- ▶ Hardened and ground clamping table with parallel T-slots
- ▶ Machine lamp
- ▶ Overload protection
- ▶ Thick-walled cast column ensures very smooth action and stability
- ▶ LED lamp
- ▶ Coolant unit with coolant tank in machine base

### RD 4 / RD 5

- ▶ All axes are clamped manually

### RD 6

- ▶ Column is clamped hydraulically

#### DC control cabinet



- › All contactors and relays by **SIEMENS** and Schneider
- › Complete and clearly arranged

#### Pull-out safety switch



- › Standards-compliant as per DIN 12717



**YouTube**  
Follow this for the video presentation of our OPTIMUM RD 5 radial drilling machine



Fig.: RD 5 with optional accessories



## Technical data and accessories

Model	RD 4	RD 5	RD 6
Article no.	3049040	3049050	3049070
<b>Power</b>			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total rated value	3 kW	4 kW	6.5 kW
Spindle drive motor power	1.5 kW	2.25 kW	4 kW
Boom lift motor drive power	0.75 kW	0.75 kW	1.5 kW
Hydraulic clamping drive	-	-	0.75 kW
Coolant pump motor	90 W	90 W	90 W
<b>Drilling performance</b>			
Drilling performance in steel (S235JR)	Ø 32 mm	Ø 42 mm	Ø 50 mm
Continuous drilling performance in steel (S235JR)	Ø 28 mm	Ø 40 mm	Ø 45 mm
<b>Spindle</b>			
Spindle sleeve stroke	220 mm	230 mm	270 mm
Spindle seat	MT4	MT4	MT 5
Automatic spindle sleeve feed	3 stages: 0.05 - 0.15 mm/rev	3 stages: 0.05 - 0.15 mm/rev	3 stages: 0.06 - 0.2 mm/rev
<b>Cantilever arm</b>			
Rotation angle	± 180°	± 180°	± 180°
Drilling head travel (horizontal)	530 mm	820 mm	1,250 mm
Boom lift travel (vertical)	580 mm	570 mm	680 mm
<b>Rotational speeds</b>			
Spindle speeds	73 - 1 247 rpm	37 - 1 253 rpm	44 - 1 206 rpm
Number of speeds	6	12	12
<b>Drilling table</b>			
Large base L x W	1 260 x 700 mm	1 608 x 745 mm	2 550 x 970 mm
Base work area L x W x H	828 x 522 mm	1 147 x 589 mm	1 800 x 830 mm
T-slot size / spacing / count	19 mm / 171 mm / 3	19 mm / 171 mm / 3	14 mm / 180 mm / 4
Clearance spindle to base	260 - 1 060 mm	470 - 1 270 mm	465 - 1 420 mm
Distance spindle to column	220 - 750 mm	280 - 1 100 mm	350 - 1 600 mm
<b>Clamping table</b>			
Clamping table work area L x W	600 x 445 x 380 mm	635 x 520 x 415 mm	630 x 500 x 500 mm
T-slot size / amount / distance	19 mm / 100 mm / 3	19 mm / 121 mm / 3	22 mm / 150 mm / 3
Distance spindle to clamping table	0 - 675 mm	50 - 850 mm	0 - 910 mm
<b>Dimensions and weight</b>			
Column diameter	210 mm	260 mm	320 mm
Length x width x height max.	1 260 x 700 x 2 180 mm	1 725 x 745 x 2 550 mm	2 670 x 1 120 x 2 760 mm
Net weight	1 120 kg	1 800 kg	3 200 kg

Accessories	Article no.
Precision quick-action drill chuck 1- 8 mm; B16	3050608
Precision quick-action drill chuck 1- 10 mm; B16	3050610
<b>NEW</b> Quick-action drill chuck DKC 13, 0 - 13 mm	3050632
<b>NEW</b> Quick-action drill chuck DKC 16, 0 - 16 mm	3050633
More accessories from page 86	

Accessories RD 4 / RD 5	Article no.
Direct quick-action drill chuck MT4 / 1 - 16 mm	3050574
Reduction sleeve MT4 - MT3	3050664
Twist drill bit HSS MT3	3051003
Morse taper MT4/B16	3050661
Hold-down clamp 18 mm/M 16	3352032
Clamping tool assortment SPW 16, 58 parts	3352019

Accessories RD 6	Article no.
Morse taper MT 5/B16	3050675
Clamping tool assortment SPW 12, 58 parts	3352017

**NEW**

Clamping table	Article no.
for <b>RD 4</b> L x W x H 600 x 445 x 380 mm Net weight: 144 kg	3049204
for <b>RD 5</b> L x W x H 635 x 520 x 415 mm Net weight: 159 kg	3049205
for <b>RD 6</b> L x W x H 630 x 500 x 500 mm Net weight: 250 kg	3049206

**NEW**

Angled table	Article no.
tiltable ± 90°	
<b>Angled table S</b> L x W x H 520 x 510 x 570 mm Net weight: 280 kg	3049210
<b>Angled table L</b> L x W x H 810 x 710 x 610 mm Net weight: 565 kg	3049212





# ***MAGNETIC CORE DRILLING MACHINES***



## Magnetic drilling machines by OPTIMUM - when you need reliability, precision and cost-effective work results

### Facts that impress in terms of quality, performance and price

- ▶ Stable drilling guidance thanks to long and especially deep mounted sleeve holder
- ▶ The devices are earthed and double insulated, hence ideal for building sites
- ▶ Internal self-lubrication function for a longer service life of the gear unit
- ▶ Soft-start is gentle on the motor and prolongs the service life
- ▶ High-quality mechanical design
- ▶ Conversion from core to full drilling in just a few actions
- ▶ Automatic return to starting position



 **YouTube**  
Follow this for the video presentation of our OPTIMUM magnetic drilling machines





#### Panel

- › Ergonomic switch arrangement avoids confusion



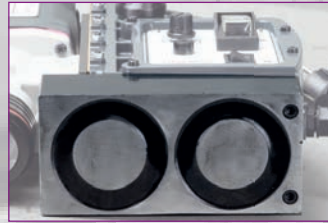
#### Automatic internal lubrication

- › The coolant is routed directly to the tip of the core drill
- › No dry running and overheating of the drill bit
- › No superfluous use of coolant
- › Tool service lives and work results are substantially improved



#### Coolant tank

- › Detachable coolant tank
- › External fastening
- › Well-designed and practical



#### Magnetic base

- › Monitoring of the magnetic force (if there is no enough metal or a failure of the magnets, the machine stops automatically)
- › Wear-resistant design to extend the life of the magnet base and thereby the maximum magnetic holding force



#### Motor

- › Powerful motor with high torque and low-maintenance



#### Transport case

- › For convenient transport and optimum protection
- › Ideal protection of the machines also in tough conditions.

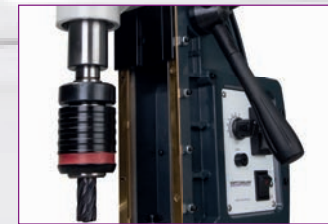
#### Metal case

- › for the DM 35PF and DM 50PM machines



#### Handles

- › Ergonomic and rugged handles for "balanced" holding/fastening of the machine
- › Rugged crank handle



#### Guides

- › Safe guides for stability and precision
- › Vario machines with low-wear brass guides

#### Tapping chuck with 6 inserts



- › MT 2, M3 - M12

Article no. 3050702

#### Adapter for drill chuck




Article no. 3876020

#### Chuck



- › 1.5 - 13 mm
- › Including chuck key

Article no. 3876002

 For drills with quick-change chuck (DM35V/50V/60V/98V/36VT)

#### Quick-action chuck

NEU



- › Due to the surface that clamps the drill, no twisting and no longitudinal movement

**MT 2** Article no. 3072102  
**MT 3** Article no. 3072103

#### HSS-TiAlN 30 core drill set

Article no. 3072010

- › Five HSS core drills and one TiAlN core drill
- › To try out including an 18mm core drill in our highest quality category with TiAlN coating for long service life and excellent cutting properties
- › Set in a practical plastic case
- › Five HSS core drills Ø 12, 14, 16, 20, 22 mm, one TiAlN core drill Ø 18 mm
- › Drilling depth 30 mm, one ejector pin



#### TiAlN 30 core drills set

Article no. 3072020

- › Core bit with hard and smooth TiAlN coating
- › TiAlN coating for a long service life and excellent cutting properties
- › Set in a practical plastic case
- › Six TiAlN core drills Ø 12, 14, 16, 18, 20, 22 mm
- › 30 mm drilling depth
- › One ejector pin



## OPTi drill® DM 35

► Weldon shank



Fig.: with optional accessories



Core drilling	
Drill bit Ø max.	Ø 35 mm
Bit depth max.	35 mm
Twist drilling	
Drill bit Ø max.	Ø 13 mm

## OPTi drill® DM 50

► Weldon shank



Fig.: with optional accessories



Core drilling	
Drill bit Ø max.	Ø 50 mm
Bit depth max.	50 mm
Twist drilling	
Drill bit Ø max.	Ø 13 mm

## OPTi drill® DM 35PF with automatic sleeve feed

► Weldon shank



► Automatic  
► Return side



Fig.: with optional accessories



Core drilling	
Drill bit Ø max.	Ø 35 mm
Bit depth max.	35 mm

Model	DM 35	DM 50	DM 35PF
Article no.	3071035	3071050	3071435
<b>Power</b>			
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	1.6 kW	1.75 kW	1.6 kW
<b>Collets</b>			
Spindle seat	Weldon 3/4"	Weldon 3/4"	Weldon 3/4"
Head travel	210 mm	220 mm	210 mm
<b>Magnetic foot</b>			
Magnetic foot dimensions	166 x 80 mm	166 x 80 mm	166 x 80 mm
Magnetic attraction force	13.8 KN	14.5 KN	16 KN
<b>Rotational speeds</b>			
Speed without load	810 rpm	790 rpm	810 rpm
<b>Dimensions and weight</b>			
Length x width x height	370 x 180 x 580 mm	250 x 220 x 360 mm	350 x 250 x 430 mm
Net weight	10.5 kg	10.6 kg	14 kg

## OPTi drill® DM 35V

- ▶ Infinitely adjustable speed
- ▶ Quick-action chuck
- ▶ Weldon shank
- ▶ Low-wear brass guide



Fig.: with optional accessories



### Core drilling

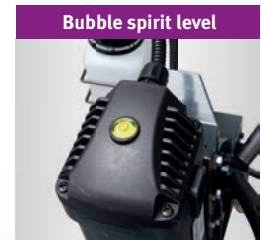
Drill bit Ø max.	Ø 35 mm
Bit depth max.	35 mm

### Twist drilling

Drill bit Ø max.	Ø 13 mm
------------------	---------

## OPTi drill® DM 50V

- ▶ Infinitely adjustable speed
- ▶ Quick-action chuck
- ▶ Weldon shank
- ▶ Low-wear brass guide



> for perfect alignment



Fig.: with optional accessories



### Core drilling

Drill bit Ø max.	Ø 50 mm
Bit depth max.	50 mm

### Twist drilling

Drill bit Ø max.	Ø 13 mm
------------------	---------

Model	DM 35V	DM 50V
Article no.	3071135	3071150
<b>Power</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	1.55 kW	1.7 kW
<b>Collets</b>		
Spindle seat	Weldon 3/4"	Weldon 3/4"
Head travel	120 mm	130 mm
<b>Magnetic foot</b>		
Magnetic foot dimensions	166 x 80 mm	166 x 80 mm
Magnetic attraction force	14.8 KN	15.6 KN
<b>Rotational speeds</b>		
Speed without load	120 - 830 rpm continuous	100 - 810 rpm continuous
<b>Dimensions and weight</b>		
Length x width x height	250 x 220 x 470 mm	250 x 220 x 470 mm
Net weight	10.8 kg	11 kg



## OPTI<sup>®</sup>drill<sup>®</sup> DM 60V

- Infinitely adjustable speed
- Quick-action chuck
- Weldon and MT shank
- Low-wear brass guide



Fig.: with optional accessories



### Core drilling

Drill bit Ø max.	Ø 60 mm
Bit depth max.	50 mm

### Twist drilling

Drill bit Ø max.	Ø 23 mm
------------------	---------

## OPTI<sup>®</sup>drill<sup>®</sup> DM 98V

- Infinitely adjustable speed
- Quick-action chuck
- Weldon and MT shank
- Low-wear brass guide



Fig.: with optional accessories



### Core drilling

Drill bit Ø max.	Ø 98 mm
Bit depth max.	75 mm

### Twist drilling

Drill bit Ø max.	Ø 28 mm
------------------	---------

### Bubble spirit level



> for perfect alignment

Model	DM 60V	DM 98V
Article no.	3071160	3071198
<b>Power</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	1.89 kW	2.18 kW
<b>Collets</b>		
Spindle seat	MT 2	MT 3
Head travel	220 mm	230 mm
<b>Magnetic foot</b>		
Magnetic foot dimensions	202 x 103 mm	202 x 103 mm
Magnetic attraction force	16 kN	17 kN
<b>Rotational speeds</b>		
Speed without load	100 - 490 rpm continuous	160 - 370 rpm continuous
<b>Dimensions and weight</b>		
Length x width x height	330 x 240 x 650 mm	330 x 240 x 650 mm
Net weight	18.3 kg	18.5 kg

## OPTIdrill® DM 36VT

### With thread cutting function

- ▶ Thread tapping device
- ▶ Infinitely adjustable speed
- ▶ Quick-action chuck
- ▶ MT Weldon and MT shank



Fig.: with optional accessories



› Thread tapping



› Twist drilling



› Core drilling



#### Core drilling

Drill bit Ø max.	Ø 36 mm
Bit depth max.	35 mm

#### Twist drilling

Drill bit Ø max.	Ø 18 mm
Thread tapping	M15

Model	DM 36VT
Article no.	3071236
<b>Power</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	1.55 kW
<b>Collets</b>	
Spindle seat	MT 2
Head travel	220 mm
<b>Magnetic foot</b>	
Magnetic foot dimensions	166 x 80 mm
Magnetic attraction force	14.2 kN
<b>Rotational speeds</b>	
Speed without load	15 - 270 / 520 rpm 2 gear steps, infinitely variable
<b>Dimensions and weight</b>	
Length x width x height	250 x 220 x 530 mm
Net weight	12 kg

## OPTi<sup>®</sup>drill<sup>®</sup> DM 38VF for cramped conditions

- Infinitely adjustable speed
- Weldon shank



**Bubble spirit level**

► for perfect alignment



**Pluggable handle**

► can be fitted on the left or right side of the machine as required



Fig.: with optional accessories



### Core drilling

Drill bit Ø max.	Ø 38 mm
Bit depth max.	35 mm

## OPTi<sup>®</sup>drill<sup>®</sup> DM 50PM With permanent magnet

- Infinitely adjustable speed
- MT collet



Fig.: with optional accessories



### Core drilling

Drill bit Ø max.	Ø 50 mm
Bit depth max.	50 mm

### Twist drilling

Drill bit Ø max.	Ø 13 mm
------------------	---------

### Two magnets



- Can be individually switched
- The machine can be moved to check or clean the hole without losing its position on the pipe

### Permanent magnet



- Current-independent permanent magnet 100% safe

Model	DM 38VF	DM 50PM
Article no.	3071338	3071550
<b>Power</b>		
Electrical connection	230 V / 1 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Motor power	1.65 kW	1.7 kW
<b>Collets</b>		
Spindle seat	Weldon 3/4"	Weldon 3/4"
Head travel	45 mm	230 mm
<b>Magnetic foot</b>		
Magnetic foot dimensions	166 x 80 mm	2 pcs. 186 x 40 mm
Magnetic attraction force	14.5 kN	6.5 kN
<b>Rotational speeds</b>		
Speed without load	640 rpm	20 - 280 / 510 rpm 2 gear steps, infinitely variable
<b>Dimensions and weight</b>		
Length x width x height	350 x 150 x 240 mm	340 x 250 x 430 mm
Net weight	8.8 kg	11.7 kg



# ***ACCESSORIES FOR DRILLS***



## Compatibility overview accessories for drills

			Belt drive drilling machines																				Drills with gear units								Radial																
Accessories drilling			DQ 14	DQ 18	DQ 22	DQ 20V	DQ 25	DQ 32	D 17Pro / B 17Pro basic	D 23Pro	D 26Pro	D 33Pro	DP 26T/DP 26F	DP 33	DX 13V	DX 15V	DX 17V/ DX 17E	B 16 H	B 24H / B 24HV	B 28H / B 28HV	B 34H / B 34HV	DH 18V	DH 24FT	DH 28FT / DH 28FS	DH 248V	DH 288V	DH 408V	DH 40CT / DH 40CTP	DH 40G / DH 40GP	DH 28G5 / DH 28G5V	B 40GSP / G5M	DH 35G / DH 35V	DH 45G / DH 45V	B 50G5M	DH 55G / DH 55V	RB 6T	RB 8S	RD 3	RD 4 / RD 5	RD 6							
			B16	MT2	MT2	MT2	MT3	MT4	MT2	MT2	MT3	MT4	MT3	MT4	B 16	MT2	MT2	MT2	MT2	MT3	MT4	MT2	MT2	MT3	MT2	MT3	MT4	MT3	MT4	MT3	MT4	MT3	MT4	MT4	MT4	MT4	MT4	MT2	MT3	MT4	MK5						
Clamping plate		5190015						○				●	○	○								○					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Collets for collet chucks	MT2 / ER 25	3352052		●	●	●			●	●						●	●	●	●				●	●		●													●	●							
	MT2 / ER 32	3352053		●	●	●			●	●						●	●	●	●				●	●		●													●	●							
	MT3/ 32	3352093						●				●		●						●				●			●				●	●										●					
	MT4/ ER 32	3352094							●				●								●						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Tapping chuck B16 (only in combination with adapter B16 / MT...)		3352042	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Tapping chuck with quick-change inserts	MT2 -M3-12	3050702			● 400V					● 400V						●	●	●	●				●	●		●														●	●						
	MT3 M3-12	3050705					●						● 400V						●					●			●				●	●										●					
	MT4 M3-12	3050709						●				●			●					●							●			●	●												●				
	MT3 M8-20	3050706					●				●		● 400V							●				●			●			●	●												●				
	MT4 M8-20	3050710						●				●			●						●								●	●														●			
Quick change adapter B16	small	3050715		●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	large	3050716		●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Thermdrill collet chuck	B16 - ER32	3060007	●												●																																
Quick-action drill chuck (For MT spindle seat only in combination with matching adapter.)	1 - 8 mm	3050608	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	1 - 10 mm	3050610	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DKC13	3050632	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DKC16	3050633	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Direct quick release chuck	MT2	3050571		●	●	●			●	●						●	●	●	●				●	●		●															●	●					
	MT2	3050572		●	●	●			●	●						●	●	●	●				●	●		●																●	●				
	MT3	3050573						●				●								●				●			●				●	●												●			
	MT 4	3050574						●				●									●							●	●	●																●	
Clamping tool assortment	Size 8	3352015														●	●																														
	SPW 10	3352016								●	●								●				●	●																							
	SPW 12	3352017	●	●	●	●	●	●				●	●			●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	SPW 14	3352018																																											●	●	
	SPW 16	3352019																																											●	●	
T-slot nut (individual)	M8 x 10	3353020													●	●																															
	M10 x 12	3353022								●	●								●				●	●																							
	M12 x 14	3353025	●	●	●	●	●	●				●	●			●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	M12 x 16	3353024	●	●	●	●	●	●				●	●			●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	M14 x 16	3353026														●																													●		
	M16 x 18	3353028																																											●	●	
Twist drill HSS	MT2	3051002		●	●	●			●	●						●	●	●	●				●	●		●															●	●					
	in combination with matching reduction sleeve MTx/MT2							●	●			●	●	●	●					●	●			●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	MT3	3051003						●			●		●							●				●			●			●	●													●			
	in combination with matching reduction sleeve MTx/MT3							●				●			●						●							●	●	●															●	●	
Twist drill set	25-part	3201010	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	51-part	3201020	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	41-part	3201021	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Conical counterbore set		3201050	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					

[illegible]

## Machine vices

[illegible]

●Recommended

●\* only for drilling work! For milling work, see milling machine vices!

☐ Recommended - restrictions apply

This equipment table covers all recommended equipment options. Depending on the individual case, use of accessories can be meaningful beyond this.



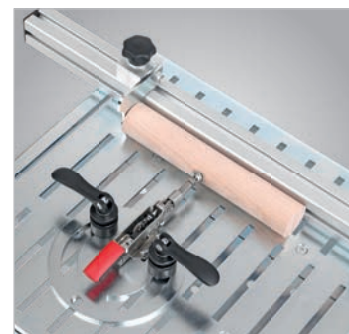
### Clamping plate with 720 mm stop rail, ideal for any drilling table

- › Quickly and easily fitted on the machine tables of drilling or milling machines
- › Clamping elements and stop modules can be freely positioned and clamped without tools

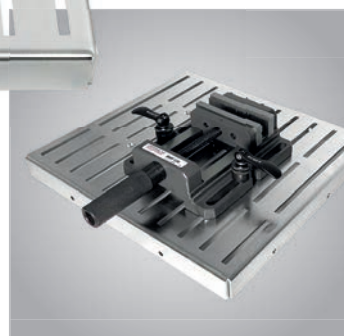
- › The optional table extension is attached to the side mounting rails and extends the clamping plate to the left, right or front



Accessories	Clamping plate	Scope of delivery
Article no.	5190015	› Clamping plate
Dimensions (L x W x H)	450 x 400 x 50 mm	› Mounting support
Net weight	8,9 kg	› 720 mm stop rail
		› Two clamping elements



Adapter platen  
with clamp, horizontal



Machine vice  
clamped



Stop rail

### Accessories



Accessories	Article no.
<b>Collet chuck set</b>	
<b>MT2/ ER 25 - M10</b>	3352052
› Collet chuck holder › 15 collets; sizes Ø 1.5 - Ø 16 mm/DIN ISO 15488 › Hook spanner, aluminium case	
<b>MT2/ ER 32 - M10</b>	3352053
› Collet chuck holder › 18 collets; sizes Ø 2 - Ø 20 mm/DIN ISO 15488 › Hook spanner, aluminium case	
<b>MT2/ ER 32 - M12</b>	3352093
› Collet chuck holder › 18 collets; sizes Ø 2 - Ø 20 mm/DIN ISO 15488 › Hook spanner, aluminium case	
<b>MT4/ ER 32 - M16</b>	3352094
› Collet chuck holder › 18 collets; sizes Ø 2 - Ø 20 mm/DIN ISO 15488 › Hook spanner, aluminium case	



#### OPTIMUM Precision quick-action drill chuck

Concentricity better than 0.06 mm

<b>1 - 8 mm; B16</b>	3050608
<b>1 - 10 mm; B16</b>	3050610



#### OPTIMUM Direct quick-action drill chuck

<b>MT2 1 - 16 mm; up to 6 000 rpm</b>	3050571
<b>MT2 1 - 13 mm; up to 8 000 rpm</b>	3050572
<b>MT3 1 - 16 mm; up to 6 000 rpm</b>	3050573
<b>MT4 1 - 16 mm; up to 6 000 rpm</b>	3050574



Accessories	Article no.
<b>Tapping chuck with quick-change inserts</b>	
Note: The size of the square depends on the shank diameter of the hand tap (DIN standard)	
<b>MT2</b>	3050702
<b>MT3</b>	3050705
<b>MT4</b>	3050709
› 7 inserts: M3 - M12	
<b>MT3</b>	3050706
<b>MT4</b>	3050710
› 7 inserts: M8 - M20	



<b>Therm드릴 collet chuck</b>	3060007
› B16 - ER32	



#### Quick change adapter with B16 collet

<b>Tapping chuck small (M3-M12)</b>	3050715
<b>Tapping chuck large (M8 - M20)</b>	3050716



#### Quick-action drill chuck

<b>DKC13 / 0-13 mm 4 800 rpm</b>	3050632
<b>DKC16 / 0-16 mm 4 000 rpm</b>	3050633



## Accessories for drills

Accessories	Article no.
-------------	-------------

### Clamping tool assortment SPW

- › Metric thread
- › 58-part: 24 pcs. tightening bolts, 6 pcs. T-nuts, 6 pcs. nuts, 4 pcs. extension nuts, 6 pcs. clamping punches, 12 pcs. clamping blocks

<b>Size 8</b>	3352015
---------------	---------

- › T-slot nuts 10 mm; locking thread M 8

<b>SPW 10</b>	3352016
---------------	---------

- › T-slot nuts 12 mm; locking thread M10

<b>SPW 12</b>	3352017
---------------	---------

- › T-slot nuts 14 mm; locking thread M12

<b>SPW 14</b>	3352018
---------------	---------

- › T-slot nuts 16 mm; locking thread M 14

<b>SPW 16</b>	3352019
---------------	---------

- › T-slot nuts 18 mm; locking thread M16



### T-slot nut (individual)

Type	a	E	h	K	
M8 x 10	9.7	15	12	6	3353020
M10 x 12	11.7	18	14	7	3353022
M12 x 14	13.7	22	16	8	3353025
M12 x 16	15.7	25	18	9	3353024
M14 x 16	15.7	25	18	9	3353026
M16 x 18	17.7	28	20	10	3353028



### Twist drill HSS with morse taper

- › 9-part; 14.5/16/18/20/22/24/26/28/30 mm
- › Long service life.
- › Good chip removal
- › Right handed

<b>MT2</b>	3051002
<b>MT3</b>	3051003



Accessories	Article no.
-------------	-------------

### Twist drill set

- › As per DIN 338 HSS-CO 5 %
- › Tetrahedral 135° cross grinding enables excellent self-centring
- › Improved tool service life thanks to alloyed components
- › High speed/feed properties
- › Strong core design optimises the structural strength of the bit and minimises the risk of bit breakage
- › Practical OPTIMUM plastic case

<b>25-part</b>	3201010
----------------	---------

- › 1 - 13 mm

<b>51-part</b>	3201020
----------------	---------

- › 1 - 6 mm (in 0.1 mm increments)

<b>41-part</b>	3201021
----------------	---------

- › 6 - 10 mm (in 0.1 mm increments)



Fig. Spiral drill bit set  
51-part

<b>Conical counterbore set</b>	3201050
--------------------------------	---------

- › As per standard DIN 335C
- › HSS
- › 6-part: 6/8/10/11.5/15/19 mm
- › Premium conical counterbores Burrs are nicely chamfered and removed without causing scratches
- › Compatible with popular battery-powered screwdrivers and drills, including upright drilling machines
- › Practical OPTIMUM plastic case





Accessories	Article no.
<b>Flat countersink set</b>	3201051
<ul style="list-style-type: none"> <li>› As per standard 373</li> <li>› 6-part: for M3 / M4 / M5 / M6 / M8 / M10 mm screws</li> <li>› HSS</li> <li>› Piloted counterbore size 6.5 x 3.2 mm / 8 x 4.3 mm / 10 x 5.3 mm / 11 x 6.4 mm / 15 x 8.54 mm / 18 x 10.5 mm</li> <li>› Fine grade for countersinking screws and nuts as per DIN 74</li> <li>› Practical OPTIMUM plastic case</li> </ul>	



<b>Sheet metal peeler drill set</b>	3201055
<ul style="list-style-type: none"> <li>› 3-part: 3 - 14 mm / 8 - 20 mm / 16 - 30.5 mm</li> <li>› HSS</li> <li>› With sharp tip, no pre-drilling required</li> <li>› Conically rising blades and radially undercut circumference for peeling action</li> <li>› Drilling without burr and chatter marks</li> <li>› Usage: Steel sheet 0.1 - 2 mm, stainless steel (V2A) 0.1 - 1 mm, non-ferrous metals 0.1 - 5 mm, plastics - 10 mm</li> <li>› Practical OPTIMUM plastic case</li> </ul>	



<b>Step drill bit set</b>	3201056
<ul style="list-style-type: none"> <li>› 3-part: 4 - 12 mm / 12 - 20 mm / 20 - 30 mm</li> <li>› HSS</li> <li>› Drilling and deburring cylindrical holes in materials up to 4 or 6mm thickness.</li> <li>› Shank with three clamping surfaces</li> <li>› Drill step increment 1 mm</li> <li>› Practical OPTIMUM plastic case</li> </ul>	



Accessories	Article no.
<b>Thread repair assortment</b>	3202010
<ul style="list-style-type: none"> <li>› 5 pcs. twist drill bit (5.2 mm/6.3 mm/8.3 mm/10.4 mm/12.4 mm)</li> <li>› 5 pcs. thread tap (M5 / M6 / M8 / M10 / M12)</li> <li>› 5 pcs. inserter for threaded inserts</li> <li>› 5 pcs. tang breaker</li> <li>› 100 pcs. threaded inserts: 25 pcs. each M5x0.8 mm / M6x1.0 mm/ M8x1.25 mm/ M10x1.5 mm</li> <li>› 10 pcs. threaded insert: M12x1.75 mm</li> <li>› For repairing defective threads</li> <li>› For reinforcing the thread on materials with a low shear strength</li> <li>› Practical OPTIMUM metal case</li> </ul>	



<b>Drilling and thread tapping set</b>	3202015
<ul style="list-style-type: none"> <li>› Through bore</li> <li>› HSS</li> <li>› 15-part</li> <li>› 7 pcs. thread taps: M3 / M4 / M5 / M6 / M8 / M10 / M12</li> <li>› 7 pcs. spiral bit DIN 338; Ø2.5 mm / Ø3.3 mm / Ø4.2 mm / Ø5.0 mm / Ø6.8 mm / Ø8.5 mm / Ø10.2 mm</li> <li>› Tap wrench DIN 1814 size 1½</li> <li>› Practical OPTIMUM plastic case</li> </ul>	



## Accessories for drills

Accessories	Article no.
-------------	-------------

Reduction sleeve	
MT3 - MT2	3050663
MT4 - MT3	3050664
MT4 - MT2	3050665



Morse taper with adapter	
MT2 - B16	3050659
MT3 - B16	3050660
MT4 - B16	3050661
MT5 - B16	3050675
MT6 - B16	3050676



Extension sleeve	
MT2 - MT3	3050667
MT3 - MT4	3050668



Cone ejector	
MSP 1 for MT1 to MT3	3050636
MSP 2 for MT4 to MT6	3050637



Accessories	Article no.
-------------	-------------

Tapping chuck M5 - M12	3352042
------------------------	---------

- › Quick reverse built-in, immediately effective on changing the feed direction
- › Slip clutch 4-stage adjustable
- › With collet B16

### Scope of delivery:

- › 2 pcs. flexible collet
- › 2 pcs. flat spanner
- › Allen key



Hold-down clamp set of 2	
--------------------------	--

- › Clamping height adjustable
- › Brass plate below clamping arm protects material against damage

Table slot 14 mm/M 12	3352031
-----------------------	---------

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

Table slot 18 mm/M 16	3352032
-----------------------	---------

- › L x W x H: 133 x 50 x 49 mm
- › Height adjustment: 0 - 101 mm




AQUACUT C1	3530030
------------	---------

- › 10 litre canister
- › For mixing emulsions
- › Drilling and cooling emulsion
- › High-pressure resistant and containing mineral oil, for long tool life and clean surfaces
- › Emulsifiable with water, microbe-resistant and kind to the skin



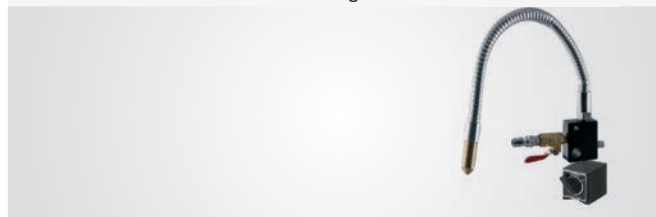
You will find more coolant accessories from page 320

	Designation	Size	Article no.
	<b>Coolant hoses basic equipment</b> <b>1/4" - No. 1</b> <ul style="list-style-type: none"> <li>› 8 pcs. articulated hoses 150 mm</li> <li>› 2 pcs. each round nozzle 1/16" / 1/8" / 1/4",</li> <li>› 2 pcs. NPT connection 1/4" and 1/8",</li> <li>› 1 pc. flat nozzle,</li> <li>› 1 pc. Y-distributor,</li> <li>› 2 pcs. shut-off valve inside and outside,</li> <li>› 2 pcs. shut-off valve inside - 1/4",</li> <li>› 2 pc. NPT extension,</li> <li>› 1 pc. magnetic base, 1 pc. flexible sealing tape</li> </ul>	1/4"	3356704
	<b>Coolant hoses basic equipment</b> <b>1/4" - No. 2</b> <ul style="list-style-type: none"> <li>› 6 pcs. articulated hose 150 mm</li> <li>› 2 pcs. each round nozzle 1/16" / 1/8" / 1/4",</li> <li>› 2 pcs. each NPT connection 1/4" and 1/8",</li> <li>› 5 pcs. flat nozzle,</li> <li>› 4 pcs. 90° nozzle,</li> <li>› 1 pc. Y-distributor,</li> <li>› 1 pc. shut-off valve, inside and outside,</li> <li>› 1 pc. shut-off valve, inside - 1/4"</li> <li>› 1 piece clamping tong</li> </ul>	1/4"	3356705
	<b>Coolant hoses basic equipment</b> <b>1/2" - No. 1</b> <ul style="list-style-type: none"> <li>› 6 pcs. articulated hose 150 mm</li> <li>› 2 pcs. each round nozzle 1/2" / 3/8" / 1/4",</li> <li>› 2 pcs. each NPT connection 1/4" and 1/2",</li> <li>› 1 pc. flat nozzle,</li> <li>› 3 pcs. 90° round nozzle 1/2" / 3/8" / 1/4",</li> <li>› 1 pc. Y-distributor,</li> <li>› 1 pc. shut-off valve, inside and outside,</li> <li>› 1 pc. shut-off valve, inside - 1/2"</li> <li>› 1 piece clamping tong</li> </ul>	1/2"	3356800

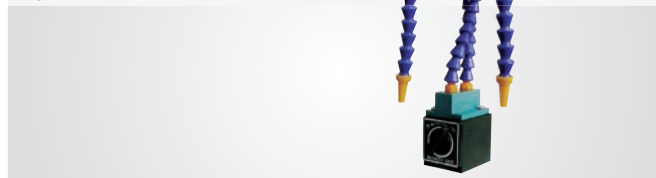
Accessories	Article no.
<b>Universal coolant unit</b>	3351999
› 100W 230 V ~50 Hz connection	
› Delivery height max. 2.5 m	
› Delivery volume 3.5 litres per minute	
› Tank capacity 11 litres	
› Size L x W x H: 375 x 250 x 260	
› Complete with tank, flexible tube, hose and switch/plug combination	
› Magnetic base fastener for coolant hose	



Accessories	Article no.
<b>MMC1 coolant mist lubricator</b>	3356663
› Magnetic base with a holding force of 75 kg	
› Base size L x W x H: 62 x 50 x 55 mm	
› Screw connection for external compressed air supply	
› Flexible and stable hose with a length of 500 mm	



KMS 2 coolant hose	3356660
› Insensitive to most solvents and chemicals	
› Not electrically conductive	
› Magnetic base holding force up to 50 kg	
› Length of coolant hoses each 335 mm	
› 6mm hose connection	
› 1/4" coolant hoses	





## Accessories for drills

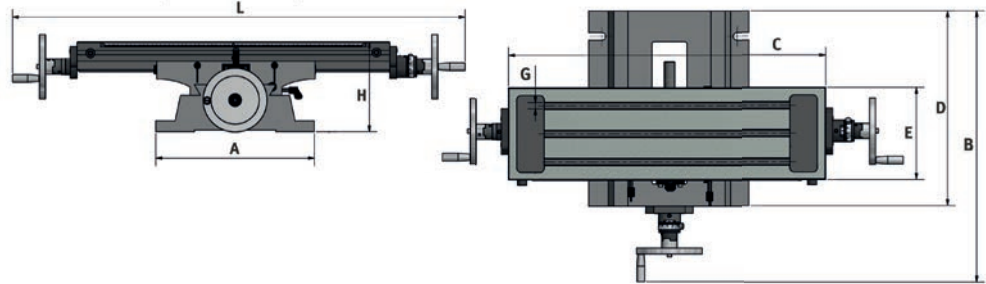
### KT cross tables

#### Facts that impress in terms of quality, performance and price

- ▶ Coolant channel
- ▶ Adjustable dovetail guide
- ▶ Handwheels right, front and left - for model KT 120 only right and front
- ▶ Adjustable handwheel scaling with 0.05 mm scale



Technical data	KT 120	KT 179	KT 180	KT 210
A (Base width)	222 mm	274 mm	274 mm	280 mm
D (base length)	280 mm	340 mm	340 mm	362 mm
C (table length)	400 mm	500 mm	700 mm	730 mm
E (table width)	120 mm	180 mm	180 mm	210 mm
G (T-slot size)	10 mm	12 mm	12 mm	14 mm
L x w x h	506 x 400 x 140 mm	748 x 483 x 155 mm	948 x 483 x 155 mm	1,060 x 538 x 185 mm
Net weight	22 kg	40 kg	52 kg	84 kg
Traverse paths				
X axis	220 mm	287 mm	480 mm	480 mm
Y axis	165 mm	167 mm	170 mm	210 mm
Max. load	40 kg	55 kg	55 kg	80 kg



KT cross tables	Article no.
KT 120	3356595
KT 179	3356596
KT 180	3356591
KT 210	3356600

### Workplace mats – for dry and wet areas

#### Facts that impress in terms of quality, performance and price

- ▶ 14 mm thickness
- ▶ Colour anthracite
- ▶ Temperature resistant -35°C to +95°C
- ▶ Fire-resistant B1 as per DIN 4102
- ▶ Made of polyurethane on polyether basis
- ▶ Surface: nubbed
- ▶ Underside: nubbed for maximum standing comfort and slip resistance
- ▶ 5-year warranty

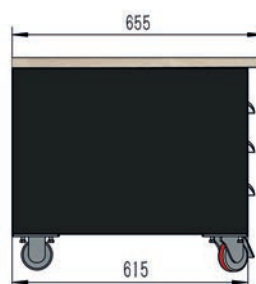
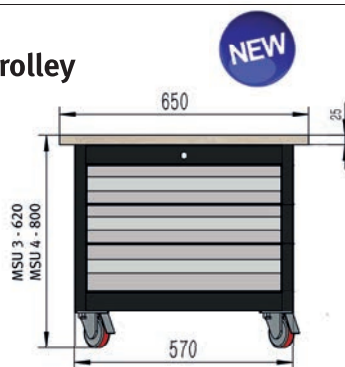


Work mat	Size: 1,840 x 640 mm	Size: 1,840 x 940 mm	Size: 3,040 x 640 mm	Size: 3,040 x 940 mm
Article no.	6800000	6800005	6800001	6800006
Net weight	6 kg	9 kg	10.5 kg	15 kg

### MSU 3 / MSU 4 - Universal machine and tool trolley

#### Facts that impress in terms of quality, performance and price

- ▶ All three ball bearing mounted drawers can be operated with full extension and are equipped with a stop at the end to prevent accidental opening when shunting or transporting
- ▶ Stable design
- ▶ Lockable with cylinder lock



Model	MSU 3	MSU 4
Article no.	3352990	3352991
Load bearing capacity	max. 500 kg	max. 500 kg
Load bearing capacity per drawer	max. 45 kg	max. 45 kg
Dimensions LxWxH	650 x 655 x 620 mm	650 x 655 x 800 mm
Net weight	47 kg	55.5 kg

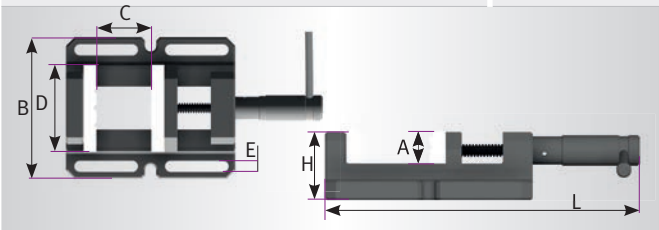


MSU 3

## BME machine vices

- › Smooth action
- › Precise jaw guidance
- › Spindle with rolled trapezoid thread
- › Many assembly options on drill table thanks to slots

<b>BME 85</b>	3052630
<b>BME 100</b>	3052632
<b>BME 120</b>	3052634
<b>BME 150</b>	3052636



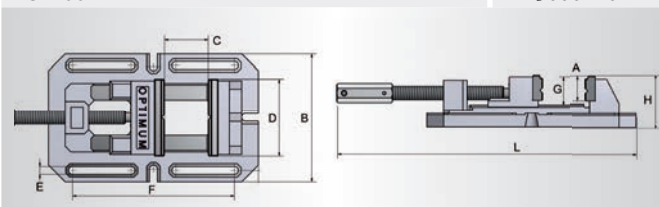
Tech. data		A	C	D	E	L	B	H	kg
BME 85	mm	30	69	85	12	235	132	58	2.8
BME 100	mm	30	100	100	14	288	160	60	4.0
BME 120	mm	30	120	120	14	327	180	63	5.0
BME 150	mm	30	165	150	14	428	220	70	8.0



## BSI machine vices

- › Drill vices in industrial quality
- › Replaceable prism jaws
- › Long guides on moving jaw prevent pivoting
- › Precision ground prism jaws
- › Many assembly options on drill table thanks to slots
- › Premium grey cast
- › Scraped guide surfaces

<b>BSI 100</b>	3000210
<b>BSI 140</b>	3000214
<b>BSI 200</b>	3000220



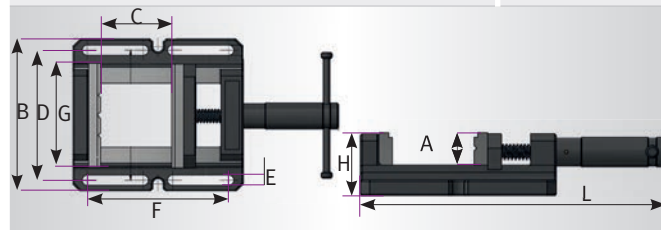
Tech. data		A	C	D	E	F	G	L	B	H	kg
BSI 100	mm	35	110	100	12	216	40	max. 460	170	74	8.7
BSI 140	mm	45	150	140	14	290	50	max. 610	230	93	18
BSI 200	mm	58	200	200	16	406	64	max. 788	290	118	37



## BMP machine vices

- › Smooth action
- › Rugged design with prism jaws
- › Spindle with rolled trapezoid thread
- › Many assembly options on drill table thanks to slots

<b>BMP 100</b>	3052610
<b>BMP 130</b>	3052613
<b>BMP 160</b>	3052616
<b>BMP 200</b>	3052620



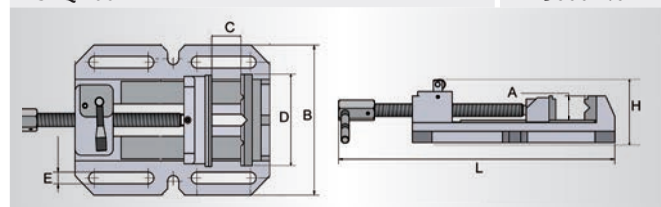
Tech. data		A	G	C	D	E	F	L	B	H	kg
BMP 100	mm	30	100	100	133	13	165	294	162	64	5.6
BMP 130	mm	35	130	120	163	13	177	334	192	69	7.4
BMP 160	mm	40	160	145	205	13	200	420	250	77	13
BMP 200	mm	50	200	195	245	14.5	280	535	290	87	21.6



## BSI-Q machine vices

- › Drill vices in industrial quality
- › Quick clamping thanks to quick release
- › Replaceable prism jaws
- › Long guides on moving jaw prevent pivoting
- › Precision ground prism jaws
- › Many assembly options on drill table thanks to slots
- › Premium grey cast . Scraped guide surfaces

<b>BSI-Q 100</b>	3000230
<b>BSI-Q 140</b>	3000234
<b>BSI-Q 200</b>	3000240



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



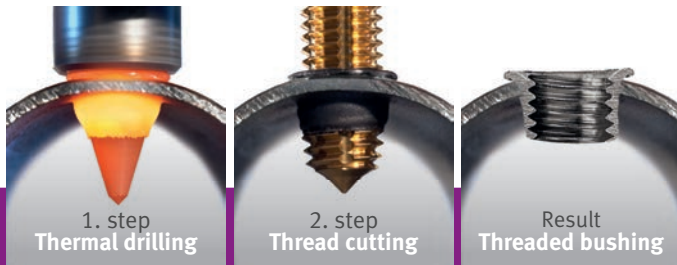
The solution for loose rivet nuts

Secure threaded connection  
for thin wall thicknesses

# THERMDRILL®

Verbindungstechnik – Made in Germany

The Thermdrill® process



MADE IN  
GERMANY



In thermal drilling, the friction heat from the existing material is used to create an anti-twist protected bushing without material removal in which a thread is then tapped.

- For aluminium, brass, copper, steel, stainless steel as of 1.0 mm wall thickness
- For use with milling cutters, CNC systems and post drills

[www.thermdrill.com](http://www.thermdrill.com)

✓ Cost savings

✓ Time savings

✓ Maximum safety

You need

## 1 Thermal drill

**SHAPE**  
For bushes  
with collar



**CUT**  
For bushes  
without collar



► Made of solid carbide with a special polygon grind

Size	Design	Material thickness (max.)	Art. no.	Material thickness (max.)	Art. no.
M4	short	1.5 mm	3060104	2.0 mm	3060164
	long	2.5 mm	3060124	4.0 mm	3060144
M5	short	2.0 mm	3060105	3.0 mm	3060165
	long	3.0 mm	3060125	4.5 mm	3060145
M6	short	2.0 mm	3060106	3.0 mm	3060166
	long	3.5 mm	3060126	5.0 mm	3060146
M8	short	2.5 mm	3060108	4.0 mm	3060168
	long	4.0 mm	3060128	6.0 mm	3060148
M10	short	2.5 mm	3060110	4.0 mm	3060170
	long	4.5 mm	3060130	6.5 mm	3060150
M12	short	2.5 mm	3060112	4.0 mm	3060172
	long	4.5 mm	3060132	6.5 mm	3060152

Other thread sizes available (also in metric fine and pipe threads)

## 2 Thread taper



with TiN coating and lubricant grooves tolerance 6HX form C

► Conventional tool holders can be used

Size	Art. no.
M4 x 0.7	3060184
M5 x 0.8	3060185
M6 x 1.0	3060186
M8 x 1.25	3060188
M10 x 1.25	3060190
M12 x 1.25	3060192

## 3 Basic equipment



**Thermdrill Basic Set** 3060004

- Contents:
- Open-ended spanner and cable spanner
  - MT3 tool holder with cooling ring
  - Adapter MT3 with morse taper B16
  - Adapter MT2 with morse taper B16
  - Collets (Ø 6/8/10/12 mm)
  - Thread cutting oil
  - THERMDRILL Paste
  - Brush
  - Case

Quick change adapter	
small (M3-M12)	3050715
large (M8-M20)	3050716

Quick change adapter with B16 collet for thread cutting collet

Collet chuck B16	
Art. no.	3060007

Thread cutting oil, 1 litre	
Art. no.	3060092


► Including brush  
► High-performance oil specially for thread cutting in aluminium, CU, CUSN, steel, stainless

THERMDRILL Paste, 1 kg	
Art. no.	3060090


► Including brush  
► Protection against excessive wear.

Tool set = Thermal drill + thread taper					
Type <b>SHAPE</b>				Type <b>CUT</b>	
Size	Design	Material thickness (max.)	Art. no.	Material thickness (max.)	Art. no.
M4	short	1.5 mm	3060024	2.0 mm	3060044
	long	2.5 mm	3060034	4.0 mm	3060054
M5	short	2.0 mm	3060025	3.0 mm	3060045
	long	3.0 mm	3060035	4.5 mm	3060055
M6	short	2.0 mm	3060026	3.0 mm	3060046
	long	3.5 mm	3060036	5.0 mm	3060056
M8	short	2.5 mm	3060028	4.0 mm	3060048
	long	4.0 mm	3060038	6.0 mm	3060058
M10	short	2.5 mm	3060030	4.0 mm	3060050
	long	4.5 mm	3060040	6.5 mm	3060060
M12	short	2.5 mm	3060032	4.0 mm	3060052
	long	4.5 mm	3060042	6.5 mm	3060062

Other thread sizes available (also in metric fine and pipe threads)



## Product features



The specifications are guide values for applications with steel

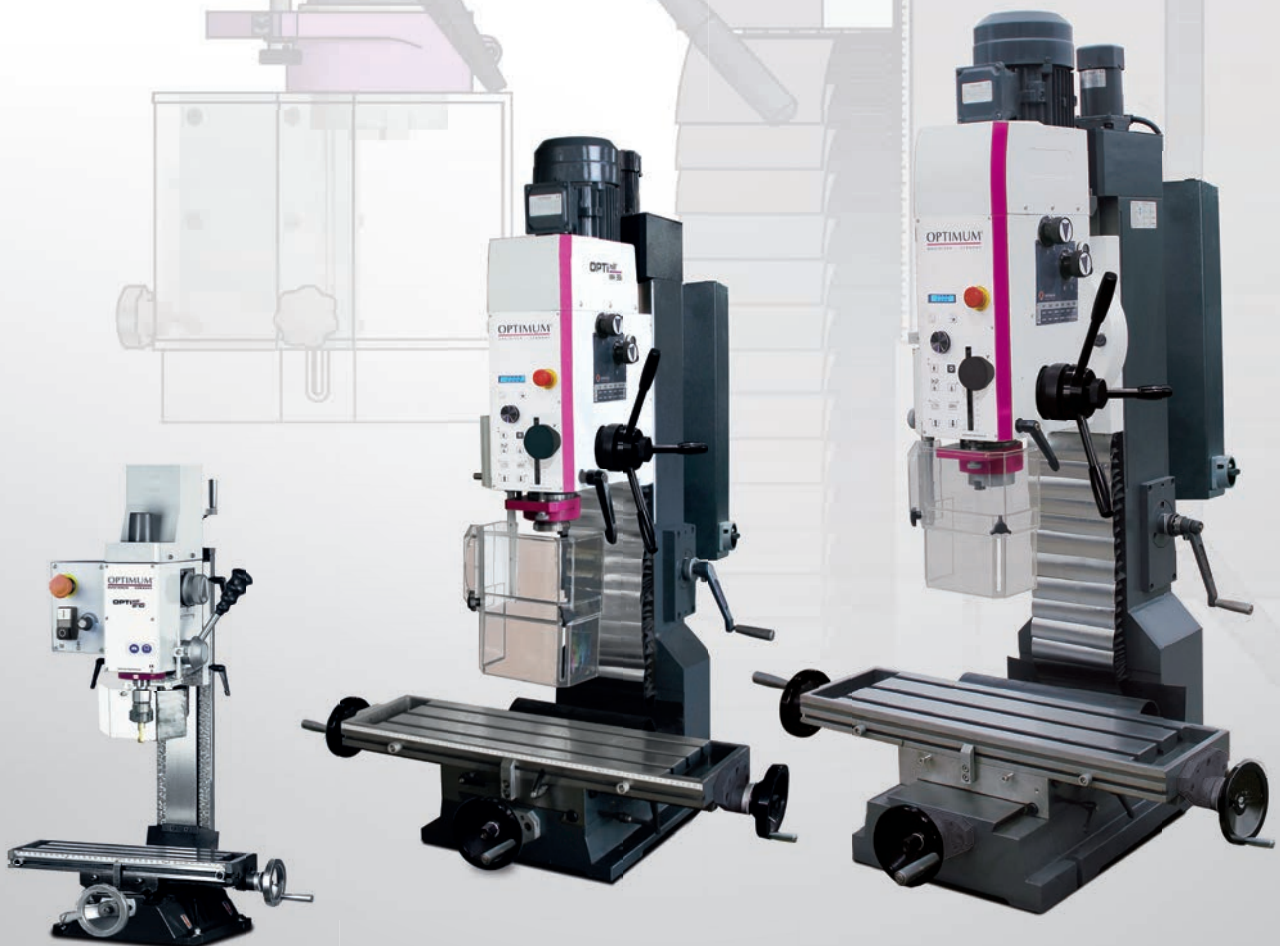
	Speed		Motor power		Speed
Size	min	ideal	mm	kW	
M4	2300	2600	up to 1.5	1.0	1000
			up to 4.0	1.5	
M5	2200	2500	3.0	1.0	800
			4.5	1.5	
M6	2000	2400	4.0	1.5	650
			5.0	2.0	
M8	1600	2200	4.0	1.5	500
			6.0	2.0	
M10	1500	2000	3.0	1.5	400
			5.0	2.0	

Stainless steel speed setting -10%, aluminium +40% (applies to thermal drilling)



# ***MILLING MACHINES***

## ***BENCH MILLING MACHINES***



## Small drilling-milling machine with electronically infinitely variable drive for model makers

### Facts that impress in terms of quality, performance and price

- ▶ Versatile deployment options
- ▶ Excellent concentricity thanks to tapered roller bearings,  $\leq 0.015$  mm measured in the spindle sleeve
- ▶ Two-speed transmission ratio
- ▶ Tool holder MT 2
- ▶ EMC filter class C1
- ▶ Safety electrical system 24-volt version
- ▶ Simple and clearly-arranged operating unit with on/off switch, potentiometer and emergency-stop shock switch
- ▶ Infinitely variable speed from 100 to 3 000 rpm
- ▶ Stable column with dovetail guide, adjustable on all 3 axes via wedge bars
- ▶ Column can be displaced laterally to extend the range of applications
- ▶ Drilling/milling head pivots laterally on both sides through  $\pm 90^\circ$  to allow for drilling and milling work at angles as required
- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out
- ▶ All travel can be read off on scales
- ▶ Neat milling surface thanks to individually clamping guides
- ▶ Precise feed thanks to positioning capable scale rings on all handwheels
- ▶ Inexpensive, lasting value

### Universal machine substructure MSM 1 and chip tray



- › Optionally available
  - › Substructure dimensions  
420 x 340 x 800 mm
  - › Chip tray dimensions  
720 x 470 x 30 mm
- Information on page 153

### Cross table



- › Solid and generously dimensioned cross table with precision surface finish and T-slots
- › Adjustable limit stops
- › Longitudinal scale inset in cross table



Fig.: BF 16 Vario with optional accessories

## Technical specifications, accessories and dimensions

Model	BF 16 Vario
Article no.	3338116
<b>Power</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	500 W
<b>Drilling/milling capacity</b>	
Drilling performance in steel (S235JR)	Ø 16 mm
Continuous drilling performance in steel (S235JR)	Ø 12 mm
Cutter head size max.	Ø 52 mm
End mill size max.	Ø 20 mm
<b>Spindle</b>	
Spindle sleeve stroke	50 mm
Spindle seat	MT 2 / M10
Throat	170 mm
Drawbar	M 10
<b>Drilling/milling head</b>	
Spindle speeds	100 - 3 000 rpm
Gearbox stages	2-speed, electronic speed control
Pivot range	± 90°
<b>Cross table</b>	
Cross table x width	400 x 120 mm
T-slot size / spacing / count	10 mm / 35 mm / 3
Clearance spindle to cross table	275 mm
<b>Traverse paths</b>	
X axis	220 mm
Y axis	160 mm
Z axis	210 mm
<b>Dimensions and weight</b>	
Length x width x height	505 x 465 x 795 mm
Net weight	62 kg

Accessories	Article no.
Digital position display DRO 5	3383975
Factory assembly DRO 5	9000420
Magnetic strip per metre	3383980
Information on the digital position display on page 231	

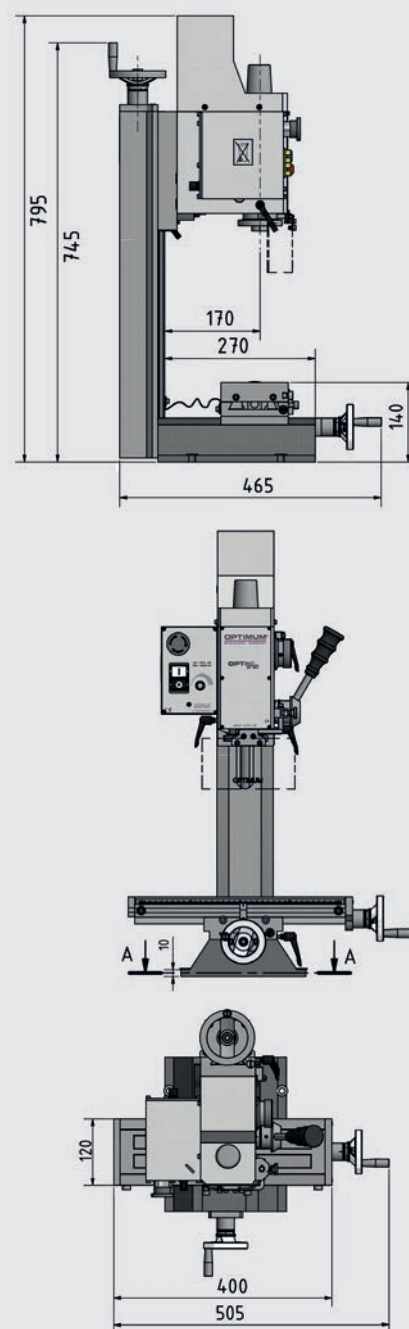
Universal substructure MSM 1	3353000
Chip tray	3352999
Levelling platen SE 1 (4 pcs. required)	3381012
Information on the universal substructure MSM 1 on page 143	

Accessories	Article no.
Collet set MT 2/M10, 5-part direct clamping	3351980
Collet set ER 25, 15-part	3441109
Collet chuck set MT 2/ ER 25	3352052
Collet chuck set MT 2/ ER 32	3352053
HSS cutter set TiN-coated 12-part	3352250
HSS cutter set TiN-coated 20-part	3352255
Quick-action drill chuck DKC 13 / 0-13 mm	3050632
Clamping tool assortment SPW 8	3352015
T-slot nut M 8 / 10 mm	3353020
Universal coolant unit 230 V	3351999
Coolant mist lubricator MMC 1 with magnetic holder	3356663
Coolant hose KMS 2	3356660

More accessories and information on accessories from page 142  
For a large selection of machine vises see from page 139

Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C1  
Important information on operation of machines with frequency converters page 323

### Dimensions



### Scope of delivery

- › Tapered mandrel MT 2/B16
- › Drawbar M10
- › Operating tool



## Sturdy drilling-milling machines with electronically infinitely variable drive and manual spindle sleeve feed.

MH 20VL with longer travel on the X axis.

MH 20VLD with digital position display DRO 5

### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Excellent concentricity thanks to tapered roller bearings  $\leq 0.015$  mm measured in the spindle sleeve
- ▶ Motor with two-speed gear ratio for powerful transmission of motor output
- ▶ Powerful DC motor with permanent current monitoring
- ▶ Air filter for motor
- ▶ New electrics with improved motor protection (extended PCB and PCB for EMC)
- ▶ Safety electrical system 24-volt version
- ▶ Control electronics with integrated relay control
- ▶ Clearly-arranged control panel with user-friendly foil keyboard
- ▶ Easily readable digital display for speed and drilling depth
- ▶ Solid and generously dimensioned cross table with precision surface finish with T-slots and adjustable wedge bars
- ▶ Adjustable limit stops
- ▶ Sturdy dovetail guide with adjustable wedge bars
- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Emergency stop button
- ▶  $\pm 60^\circ$  tiltable drilling/milling head
- ▶ Right-/left-hand rotation
- ▶ Machine lamp
- ▶ Two-row angular contact ball bearings in the axes, adjustable without play
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out
- ▶ Preparation for mounting the DRO5 digital position display on the X and Y axis (slot prepared for retrofitting magnetic strips)
- ▶ Lockable main switch

### MH 20VLD

- ▶ With digital position display DRO 5

#### Energy chain



› cable guidance easy on material

#### Feed



› Manual fine feed

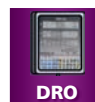
#### Heat sink



› Heat sink for cooling the electronics  
› Good thermal conductivity



Fig.: MH 20VL with optional accessories



## Technical specifications, accessories and dimensions

Model	MH 20V	MH 20VL
Article no.	3338131	3338132
Model		MH 20VLD
Article no.	-	3338133

Power		
Electrical connection	230 V / 1 Ph ~50 Hz	
Motor power	750 W	
Drilling/milling capacity		
Drilling performance in steel (S235JR)	Ø 16 mm	
Continuous drilling performance in steel (S235JR)	Ø 12 mm	
Cutter head size max.	Ø 52 mm	
End mill size max.	Ø 20 mm	
Spindle		
Spindle sleeve stroke	50 mm	
Spindle sleeve diameter	Ø 60 mm	
Spindle seat	MT 2	
Drawbar	M10	
Throat	170 mm	
Drilling/milling head		
Spindle speeds	100 - 3 000 rpm	
Gearbox stages	2-speed, electronic speed control	
Pivot range	± 60°	
Cross table		
Cross table x width	510 x 180 mm	700 x 180 mm
T-slot size / spacing / count	12 mm / 63 mm / 3	
Max. load of cross table	40 kg	50 kg
Clearance spindle to cross table	255 mm	
Traverse paths		
X axis	280 mm	480 mm
Y axis	175 mm	
Z axis	210 mm	
Dimensions and weight		
Length x width x height	750 x 650 x 820 mm	770 x 714 x 917 mm
Net weight	94 kg	99 kg

Accessories	Article no.
Quick-action drill chuck DKC 13 / 0-13 mm	3050632
Collet set MT 2/M10, 5-part direct clamping	3351980
Collet set ER 25, 15-part	3441109
HSS end mill set TiN-coated, 12-part	3352250
HSS end mill set TiN-coated, 20-part	3352255
Collet set ER 25	3441109
Assembly kit for DRO5 on MH20V	3383990
Machine base vibration damper SE 55 (4 pieces required)	3352981
Universal substructure MSM 1	3353000
Chip tray	3352999

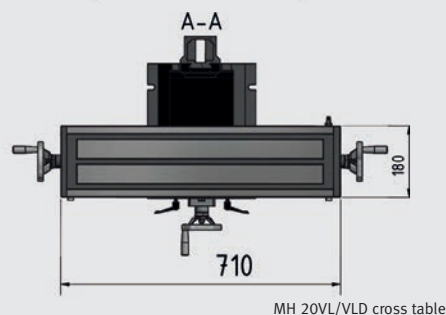
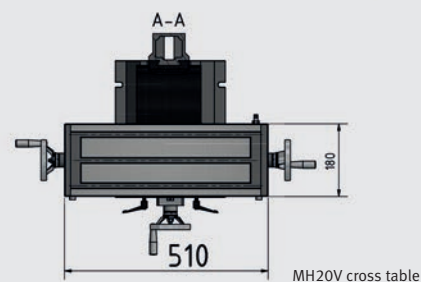
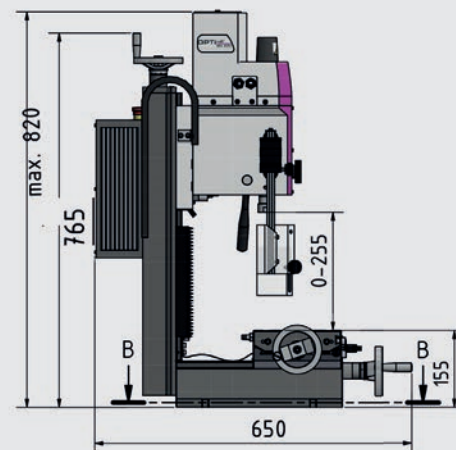
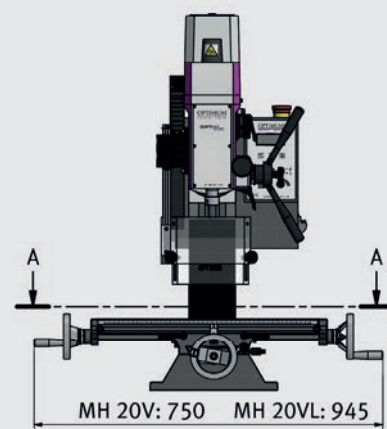
More **accessories** and **information on accessories** from page 142  
Information on the **universal substructure MSM 1** on page 143

Machine vices	Article no.
FMS 100	3354100
FMSN 100	3354110
VMQ 80	3354180
VMQ 100	3354181
MV3-75	3354175
ZAS 50	3354170

For more **information** see from page 139

Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323

### Dimensions



### Scope of delivery

- › Tapered mandrel MT 2/B16
- › Drawbar M10
- › Operating tool

## Sturdy drilling-milling machines with electronically infinitely variable drive. MH 22VD with digital position display DRO 5

### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Excellent concentricity thanks to tapered roller bearings  $\leq 0.015$  mm measured in the spindle sleeve
- ▶ Motor with two-speed gear ratio for powerful transmission of motor output
- ▶ Powerful DC motor with permanent current monitoring
- ▶ Safety electrical system 24-volt version
- ▶ Control electronics with integrated relay control
- ▶ Clearly-arranged control panel with user-friendly foil keyboard
- ▶ Easily readable digital display for speed and drilling depth
- ▶ Solid and generously dimensioned cross table with precision surface finish with T-slots and adjustable wedge bars
- ▶ Adjustable limit stops
- ▶ Sturdy dovetail guide with adjustable wedge bars
- ▶ Fine feed
- ▶ Emergency stop button

- ▶  $\pm 60^\circ$  tiltable drilling/milling head
- ▶ Right-/left-hand rotation
- ▶ Machine lamp
- ▶ Bore for easy oiling of the trapezoidal spindle
- ▶ Two-row angular contact ball bearings in the axes, adjustable without play
- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out
- ▶ X, Y and Z axis with slot prepared for retrofitting of the magnetic strips
- ▶ Gaiter as guide protection
- ▶ Mechanical quick change clamping system

### MH 22VD

- ▶ With digital position display DRO 5



**Mechanical  
quick-change clamping system**

- › Milling head equipped with collet for pull studs BT20x45°
- › Easy to change by unlocking the mechanical safeguard and moving the sleeve lever upward



**Energy chain**

- › cable guidance easy on material



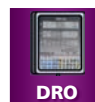
**MH 22VD: DRO 5**

- › Four-line LCD display
- › User-friendly menu navigation



Fig.: MH 22VD with optional accessories





## Technical specifications, accessories and dimensions

Model	MH 22V
Article no.	3338135
Model	MH 22VD
Article no.	3338136

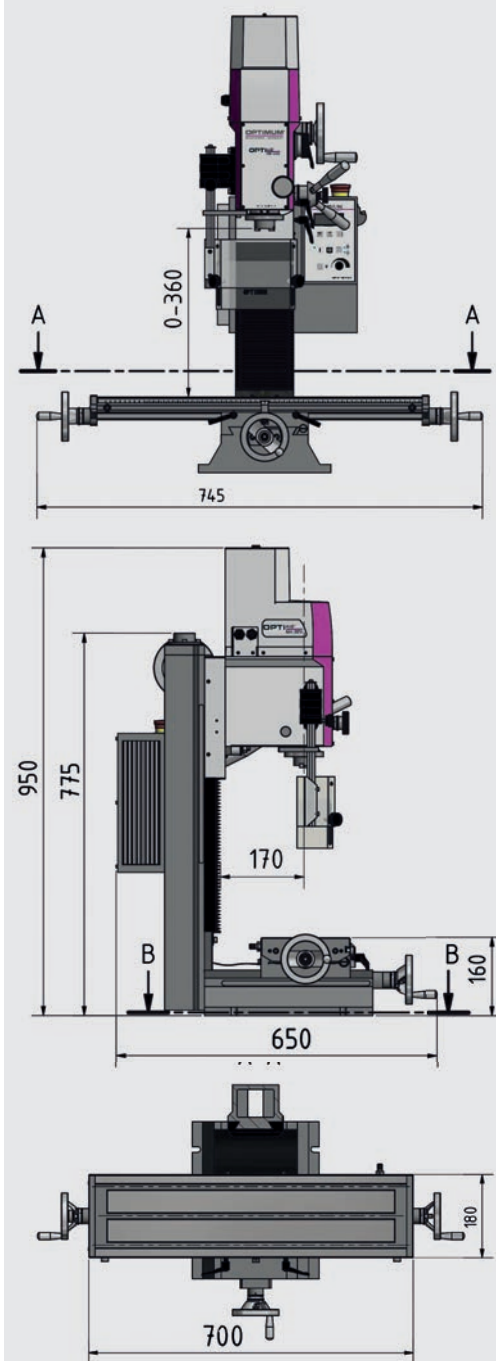
Power	
Electrical connection	230 V / 1 Ph ~50 Hz
Motor power	950 W
Drilling/milling capacity	
Drilling performance in steel (S235JR)	Ø 20 mm
Continuous drilling performance in steel (S235JR)	Ø 16 mm
Cutter head size max.	Ø 52 mm
End mill size max.	Ø 12 mm
Spindle	
Spindle sleeve stroke	45 mm
Spindle sleeve diameter	Ø 60 mm
Spindle seat	BT 20
Throat	170 mm
Drilling/milling head	
Spindle speeds	90 - 3 000 rpm
Gearbox stages	2-speed, electronic speed control
Pivot range	± 60°
Cross table	
Cross table x width	700 x 180 mm
T-slot size / spacing / count	12 mm / 63 mm / 3
Max. load of cross table	50 kg
Clearance spindle to cross table	360 mm
Traverse paths	
X axis	480 mm
Y axis	175 mm
Z axis	270 mm
Dimensions and weight	
Length x width x height	745 x 650 x 950 mm
Net weight	120 kg

Accessories	Article no.
<b>BT20 starter set</b> (Information page 154)	3353281
<b>Cutter head holder</b> Ø 16 mm BT 20	3352728
<b>Drill chuck adapter</b> BT 20 - B16	3352727
<b>Weldon holder</b> Ø 6 mm BT 20	3352732
<b>Weldon holder</b> Ø 8 mm BT 20	3352734
<b>Weldon holder</b> Ø 10 mm BT 20	3352736
<b>Weldon holder</b> Ø 12 mm BT 20	3352738
<b>Collet chuck holder</b> ER16	3352741
<b>Collet chuck spanner</b> ER 16	3352742
<b>Collet set</b> ER 16, 12-part , 1 - 10 mm	3440282
<b>Pull stud</b> Optimum BT 20	3352726
<b>Quick-action drill chuck DKC 13</b> / 0-13 mm	3050632
<b>HSS cutter set</b> TiN-coated	3352250
<b>Assembly kit</b> for DRO5 for MH22V	3383990
Machine base vibration damper SE 55 (4 pieces required)	3352981
<b>Machine substructure</b> MSM 1	3353000
<b>Chip tray</b>	3352999

More **accessories** and **information on accessories** from page 142  
Information on the **universal substructure MSM 1** on page 143

Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323

### Dimensions



### Scope of delivery

> Operating tool

Machine vices	Article no.
<b>FMS 100</b>	3354100
<b>FMSN 100</b>	3354110
<b>VMQ 80</b>	3354180
<b>VMQ 100</b>	3354181
<b>MV3-75</b>	3354175
<b>ZAS 50</b>	3354170

For more information see from page 139

## Sturdy drilling-milling machines with electronically infinitely variable drive. MH 25SV with stepper motors and digital position display DRO 5

### Facts that impress in terms of quality, performance and price

- ▶ Inverter motor
- ▶ Precision workmanship
- ▶ Clearly-arranged control panel with user-friendly foil keyboard
- ▶ Particularly smooth action
- ▶ Counterweight facilitates adjustment of the Z-axis
- ▶ Infinitely variable speed control
- ▶ Easy tool changing thanks to tool quick clamping system
- ▶ Slot prepared for easy retroactive mounting of magnetic strips
- ▶ Feed spindles can be adjusted thanks to adjustable spindle nuts
- ▶ Sturdy dovetail guide, precision ground and shaved with adjustable wedge bars
- ▶ Angular ball bearings on the axes
- ▶  $\pm 45^\circ$  tiltable gear head
- ▶ Right-/left-hand rotation

- ▶ Height-adjustable, large protective screen with micro switch
- ▶ Limit switches for all three axes

### MH 25V:

- ▶ Easily readable speed display in milling head

### MH 25SV:

- ▶ Continuously variable feed on all axes
- ▶ Rapid motion X/Y axis for fast positioning
- ▶ Digital 3-axis position display DRO 5
- ▶ Feed cut-off at end position
- ▶ Transportable control panel
- ▶ The feed switches off when the spindle is stationary

### Operating panel

- › User-friendly membrane keyboard with touch and switch control
- › Easy to clean
- › Excellent operability



- › Control panel MH 25SV
- › High mobility by removing the control panel from the holder



- › MH 25V operating panel

### Energy chain



- › cable guidance easy on material

### SIEMENS inverter



### SINAMICS V20

- › Energy-saving features
- › Advanced cooling
- › Painted electronics assemblies

### Mechanical quick-change clamping system



- › Milling head equipped with collet for pull studs BT30x45°
- › Easy to change by unlocking the mechanical safeguard and moving the sleeve lever upward



Fig.: MH 25SV

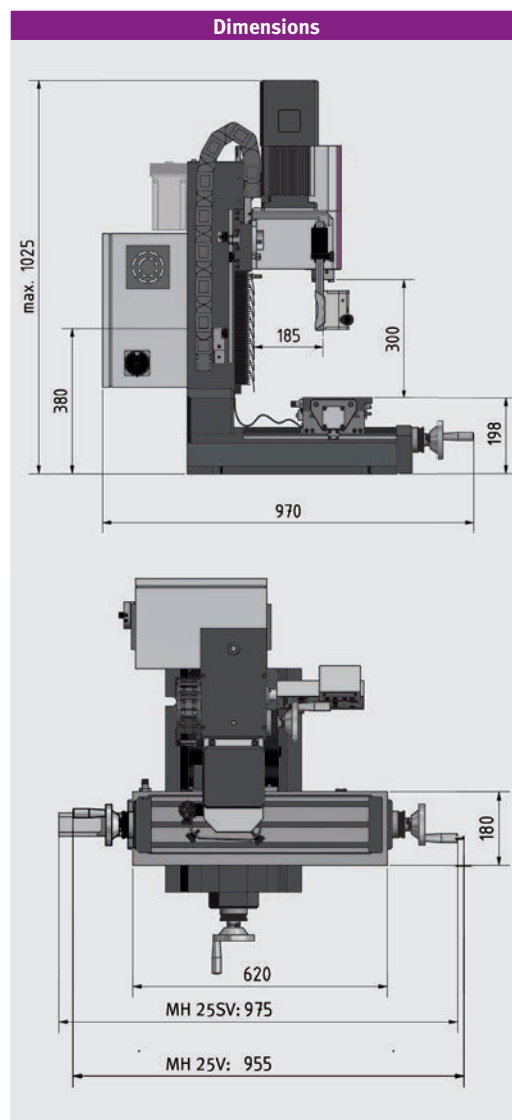
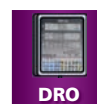
## Technical specifications, accessories and dimensions

Model	MH 25V	MH 25SV
Article no.	3338155	3338160
Power		
Electrical connection	230 V / 1 Ph ~50 Hz	
Total rated value	2 kW	
Milling spindle		
Drive motor	1.5 kW	
Drive motor torque	10 Nm	
Drilling/milling capacity		
Cutter head size max.	Ø 50 mm	
End mill size max.	Ø 25 mm	
Spindle		
Spindle seat	BT 30	
Throat	185 mm	
Drilling/milling head		
Spindle speeds	200 - 4 000 rpm	
Gearbox stages	Electronic speed control	
Pivot range	45°	
Cross table		
Cross table x width	620 x 180 mm	
T-slot size / spacing / count	12 mm / 50 mm / 3	
Max. load of cross table	30 kg	
Clearance spindle to cross table	300 mm	
Traverse paths		
X axis	manual Ø 400 mm	automatic ~380 mm manual Ø 400 mm
Y axis	manual Ø 210 mm	automatic ~130 mm manual Ø 210 mm
Z axis	manual Ø 270 mm	automatic ~190 mm manual Ø 270 mm
Torque		
X/Y/Z axis	-	2.2 / 2.2 / 4.2 Nm
Travel speeds		
X axis	-	150 - 930 mm/min.
Y axis	-	100 - 580 mm/min.
Z axis	-	80 - 450 mm/min.
Dimensions and weight		
Length x height	970 x 1 025 mm	
Width	955 mm	975 mm
Net weight	192 kg	200 kg

Accessories	Article no.
Cutter head holder Ø 22 mm	3353306
Drill chuck 1 - 13 mm	3536303
Weldon holder Ø 6 mm	3353310
Weldon holder Ø 8 mm	3353311
Weldon holder Ø 10 mm	3353312
Weldon holder Ø 12 mm	3353313
Weldon holder Ø 16 mm	3353314
Weldon holder Ø 20 mm	3353315
BT 30 - MT 2 adapter	3353305
Collet chuck holder ER 32	3353304
Collet chuck spanner ER 32	3353307
Collet set ER 32	3441122
Height-adjuster	3536290
Assembly and tool adjustment gauge	3536193
Pull stud 40 x 45° M12	3353302
Pull stud DIN2080 M12	3536177
Clamping tool assortment SPW 10, 58 parts	3352016
Universal substructure MSM2 (Information page 153)	3353009

More accessories and information on accessories from page 142

Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323



Accessories	Article no.
<b>Starter set BT 30</b>	3353282
<ul style="list-style-type: none"> <li>› Cutter head holder Ø 22 mm</li> <li>› Drill chuck 1 - 13 mm</li> <li>› 2 pcs. Weldon Ø 6 mm and 20 mm</li> <li>› 1 pc. each Weldon Ø 8 / 10 / 12 / 16 mm</li> <li>› Adapter sleeve BT 30 / MT 2</li> <li>› 4 pcs. collet chuck holder ER 32</li> <li>› Collet spanner ER 32</li> <li>› 18-part collet set ER 32</li> <li>› Height-adjuster</li> <li>› Assembly and tool adjustment gauge</li> <li>› 14 pcs. pull studs</li> <li>› Taper squeegee</li> </ul>	

Machine vices	Article no.
<b>FMS 100</b>	3354100
<b>VMQ 80</b>	3354180
<b>MV3-75</b>	3354175
<b>ZAS 50</b>	3354170

For more information see from page 139



## Universal precision drilling-milling machine with two-stage drive motor and manual gearbox for optimum power transmission

### Facts that impress in terms of quality, performance and price

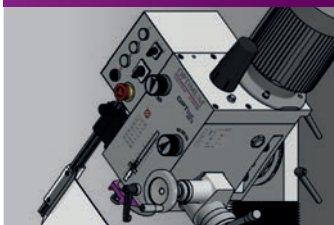
- ▶ Heavy, solid cast design
- ▶ Two-stage industrial quality electric motor
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ Solid and generously dimensioned cross table with precision surface finish with T-slots and adjustable wedge bars
- ▶ Drill depth stop
- ▶ Thread tapping function
- ▶ Manual sleeve feed with fine feed
- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Operation-friendly control panel with emergency stop shock switch
- ▶ Column with hand-honed dovetail guide
- ▶ Height-adjustable, large protective screen with micro switch
- ▶ Large speed range from 95 - 3 200 rpm thanks to 12 switchable speeds

### Thread tapping mode



- › The motor is activated by moving the spindle sleeve down
- › When the set depth is reached, the direction of rotation of the spindle is reversed
- › The machine tap turns out of the workpiece again
- › When the spindle sleeve is completely retracted to the switching point again, the rotation of the spindle is stopped

### Gearhead



- › The drilling/milling head can be tilted 45° to the left and right



Fig.: MB 4 with optional accessories

## Technical specifications, accessories and dimensions

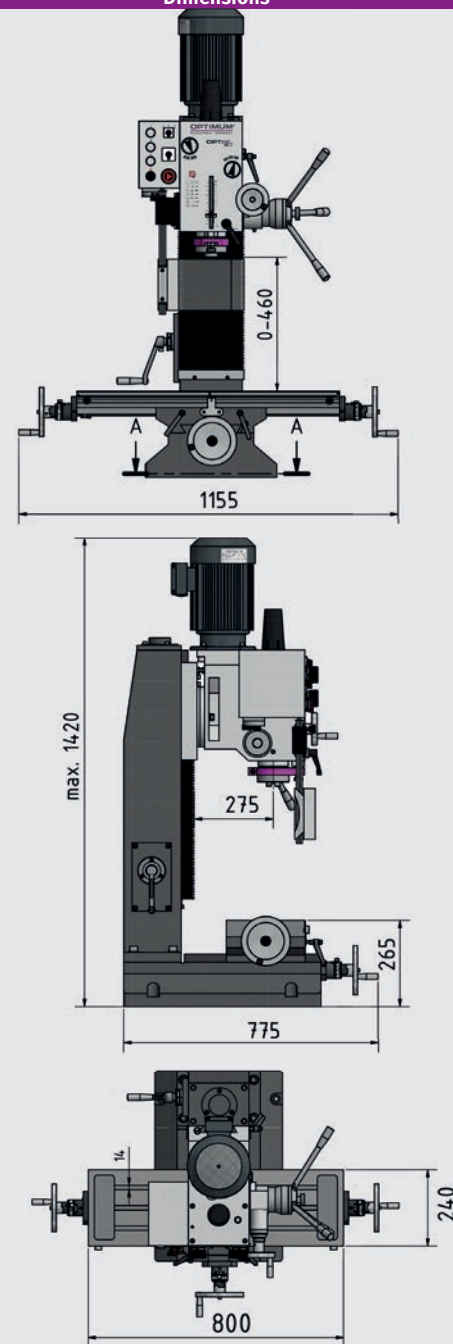
Model	MB 4
Article no.	3338450
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.1 / 1.5 kW
<b>Drilling/milling power</b>	
Drilling performance in steel (S235JR)	Ø 32 mm
Continuous drilling performance in steel (S235JR)	Ø 28 mm
Cutter head size max.	Ø 63 mm
End mill size max.	Ø 28 mm
<b>Spindle</b>	
Spindle sleeve stroke	120 mm
Spindle seat	MT 4
Spindle sleeve diameter	75 mm
Throat	275 mm
Drawbar	M16
<b>Drilling/milling head</b>	
Spindle speeds	95 - 3 200 rpm
Gearbox stages	2 x 6 stages
Tilttable	± 45°
<b>Cross table</b>	
Cross table x width	800 x 240 mm
T-slot size / spacing / count	14 mm / 63 mm / 3
Cross table load bearing capacity	80 kg
Clearance spindle to cross table	460 mm
<b>Traverse paths</b>	
X axis	450 mm
Y axis	195 mm
Z axis	430 mm
<b>Dimensions and weight</b>	
Length x width x height	1 155 x 775 x 1 420 mm
Net weight	320 kg

Accessories	Article no.
<b>Parallel shim set, 18-part</b>	3536191
<b>Horizontal-vertical rotary indexing table RT 100</b>	3356110
<b>Horizontal-vertical rotary indexing table RT 150</b>	3356150
<b>Horizontal-vertical rotary indexing table RTE 165</b>	3356365
<b>Height-adjustable tailstock RST 1</b>	3356155
<b>Clamping tool assortment SPW 12, 58 parts</b>	3352017
<b>T-slot nut M 12 / 14 mm</b>	3353025
<b>Hold-down clamp 14 mm</b>	3352031
<b>HSS cutter set TiN-coated 12-part</b>	3352250
<b>HSS cutter set TiN-coated 20-part</b>	3352255
<b>Copy and face milling cutter MT 4 Ø 63 mm</b>	3350214
<b>Boring head MT 4/B16</b>	3352125
<b>Arbour for drill chuck MT 4/B16</b>	3350304
<b>Collet chuck holder MT 4/M16</b>	3352094
<b>Tapping chuck MT 4/ M3 - M12</b>	3050705
<b>Tapping chuck MT 4/ M8 - M20</b>	3050706
<b>Steel substructure MSM 3</b>	3353014
<b>Machine base vibration damper SE 55 (4 pieces required)</b>	3352981
<b>Universal table feed V 99S (information page 151)</b>	3352021
<b>Assembly kit V 99S - X axis</b>	3352035
<b>Universal coolant unit 230 V</b>	3351999
<b>Coolant mist lubricator MMC 1 with magnetic holder</b>	3356663
<b>Coolant hose KMS 2</b>	3356660

More accessories and information on accessories from page 142

Coolant accessories from page 320

### Dimensions



### Scope of delivery

- › Reduction sleeve MT 4 - MT 3
- › Drawbar M16
- › Operating tool

Machine vices	Article no.
<b>FMS 100</b>	3354100
<b>FMS 125</b>	3354125
<b>FMSN 125</b>	3354120
<b>VMQ 100</b>	3354181
<b>MV3-75</b>	3354175
<b>DAS 100</b>	3355500
<b>ZAS 50</b>	3354170

For more information see from page 139

## Universal precision drilling/milling machines with manual gearbox. MH 35V with electronically controlled drive

### Facts that impress in terms of quality, performance and price

- ▶ High concentricity due to tapered roller bearings  $\leq 0.015$  mm measured in the spindle sleeve
- ▶ Solid and generously dimensioned cross table with precision surface finish and T-slots
- ▶ Control panel with user-friendly dirt and water resistant foil keyboard
- ▶ Easily readable digital display
- ▶ Drill depth stop
- ▶ Right-/left-hand rotation
- ▶ Thread tapping mode
- ▶ Rotary pushbutton on control panel for adjusting the drilling depth, optionally in mm or inches, with zero point
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out
- ▶  $\pm 30^\circ$  tiltable gear head
- ▶ Heavy, stable and solid column made of high-quality grey cast iron, with ground and honed dovetail guide for high stability and precision as well as adjustable wedge bars
- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Z axis with slatted, stainless steel protective cover
- ▶ Optional, solid, heavy steel substructure MSM 3 (Article no.: 3353014) ensures stability

#### MH 35G:

- ▶ Two-speed industrial motor and 6 additional gears

#### MH 35V:

- ▶ 6 gearbox stages, electronically controlled
- ▶ Digital speed display

#### Energy chain



- › cable guidance easy on material

#### MH 35V with SIEMENS inverter



#### SINAMICS V20

- › Energy-saving features
- › Advanced cooling
- › Painted electronics assemblies

#### Mechanical quick-change clamping system



- › The milling head is equipped with a collet for the pull stud BT30x45°
- › Easy to change by unlocking the mechanical safeguard and moving the sleeve lever upward

#### Digital Display



- › Depth selection optionally in mm or inch and zero point freely adjustable via the display
- › Rev counter (MH 35V only)



Fig.: MH 35V



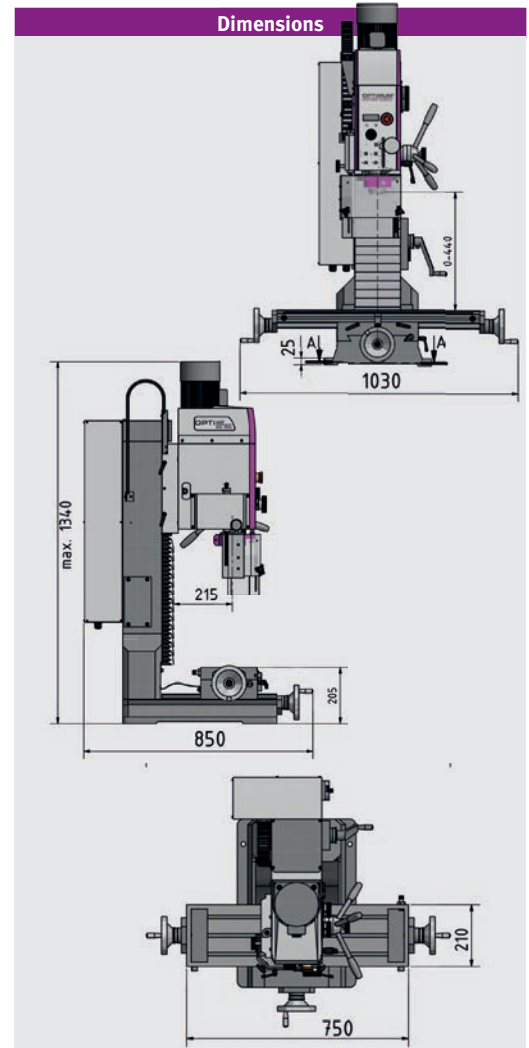
## Technical specifications, accessories and dimensions

Model	MH 35G	MH 35V**
Article no.	3338165	3338170
<b>Power</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	1.1 / 1.5 kW	1.5 kW
<b>Drilling/milling capacity</b>		
Drilling performance in steel (S235JR)	Ø 32 mm	
Continuous drilling performance in steel (S235JR)	Ø 28 mm	
Cutter head size max.	Ø 80 mm	
End mill size max.	Ø 28 mm	
<b>Spindle</b>		
Spindle sleeve stroke	90 mm	
Spindle seat	BT 30	
Spindle sleeve diameter	68 mm	
Throat	215 mm	
<b>Drilling/milling head</b>		
Spindle speeds	220 - 3 100 rpm	50 - 3 260 rpm
Gearbox stages	2 x 6 stages	6 stages electronically controlled
Pivot range	± 30°	
<b>Cross table</b>		
Cross table x width	750 x 210 mm	
T-slot size / spacing / count	12 mm / 63 mm / 3	
Max. load of cross table	170 kg	
Clearance spindle to cross table max.	440 mm	
<b>Traverse paths</b>		
X axis	450 mm	
Y axis	200 mm	
Z axis	460 mm	
<b>Dimensions and weight</b>		
Length x width x height	850 x 1 030 x 1 340 mm	
Net weight	318 kg	

Accessories	Article no.
<b>Drill chuck adapter BT 30/B16</b>	3353308
<b>Cutter head holder BT 30 Ø 22 mm</b>	3353306
<b>Quick-action drill chuck 1 - 13 mm</b>	3536333
<b>Weldon holder Ø 6 mm</b>	3353310
<b>Weldon holder Ø 8 mm</b>	3353311
<b>Weldon holder Ø 10 mm</b>	3353312
<b>Weldon holder Ø 12 mm</b>	3353313
<b>Weldon holder Ø 16 mm</b>	3353314
<b>Weldon holder Ø 20 mm</b>	3353315
<b>BT 30 - MT 2 adapter</b>	3353305
<b>Collet chuck holder ER 32</b>	3353304
<b>Collet chuck spanner ER 32</b>	3353307
<b>Collet set ER 32</b>	3441122
<b>Height-adjuster</b>	3536290
<b>Assembly and tool adjustment gauge</b>	3536193
<b>Taper squeegee</b>	3353301
<b>Pull stud 40 x 45° M12</b>	3353302
<b>Universal table feed V 99S (information page 151)</b>	3352021
<b>Assembly kit V 99S - X axis</b>	3352035
<b>Clamping tool assortment SPW 10, 58 parts</b>	3352016
<b>Steel substructure MSM 3 (information page 153)</b>	3353014
<b>Machine base vibration damper SE 55 (4 pieces required)</b>	3352981

More accessories and information on accessories from page 142

\*\* Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323



### Scope of delivery

› Operating tool

Machine vices	Article no.
<b>FMS 125</b>	3354125
<b>VMQ 100</b>	3354181
<b>MV3-75</b>	3354175
<b>DAS 100</b>	3355500
<b>ZAS 50</b>	3354170

For more information see from page 139

Accessories	Article no.
<b>Starter set BT 30</b>	3353282
› Cutter head holder Ø 22 mm	
› Quick-action drill chuck 1 - 13 mm	
› 2 pcs. each Weldon Ø 6 mm and 20 mm	
› 1 pc. each Weldon Ø 8 / 10 / 12 / 16 mm	
› BT 30 - MT 2 adapter	
› 4 pcs. collet chuck holder ER 32	
› Collet spanner ER 32	
› 18-part collet set ER 32	
› Height-adjuster	
› Assembly and tool adjustment gauge	
› 14 pcs. pull studs	
› Taper squeegee	

## Universal precision drilling-milling machines with manual gearbox and motorised Z-axis height adjustment. MH 50V with electronically controlled drive

### Facts that impress in terms of quality, performance and price

- ▶ High concentricity due to tapered roller bearings  $\leq 0.015$  mm measured in the spindle sleeve
- ▶ Gears in oil bath with ground, hardened gear wheels
- ▶ Control panel with user-friendly dirt and water resistant foil keyboard
- ▶ Rotary pushbutton on control panel for adjusting the drilling depth, optionally in mm or inches, with zero point
- ▶ Easily readable digital display
- ▶ Easily readable sleeve display in milling head
- ▶ Drill depth stop
- ▶ Right-/left-hand rotation
- ▶ Thread tapping mode
- ▶ Electrical milling head height adjustment
- ▶ Manual fine feed
- ▶ Heavy, sturdy and solid columns made of premium cast material with ground and shaven dovetail guide for excellent stability and precision

- ▶  $\pm 30^\circ$  tiltable gear head
- ▶ Z axis with slatted, stainless steel protective cover
- ▶ Adjustable wedge bars
- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out
- ▶ Optional, solid, heavy steel substructure MSM 4 (Article no.: 3353015) ensures stability

### MH 50G:

- ▶ Two-speed industrial motor and 6 additional gears

### MH 50V:

- ▶ 6 gearbox stages, electronically controlled
- ▶ Rev counter

### Energy chain



- › cable guidance easy on material

### MH 50 V with SIEMENS inverter



### SINAMICS V20

- › Energy-saving features
- › Advanced cooling
- › Painted electronics assemblies

### Mechanical quick-change clamping system



- › The milling head is equipped with collet for pull stud BT40x45°
- › Easy to change by unlocking the mechanical safeguard and moving the sleeve lever upward

### Digital Display



- › Depth selection optionally in mm or inch and zero point freely adjustable via the display
- › Rev counter (MH 50V only)



Fig.: MH 50G

## Technical specifications, accessories and dimensions

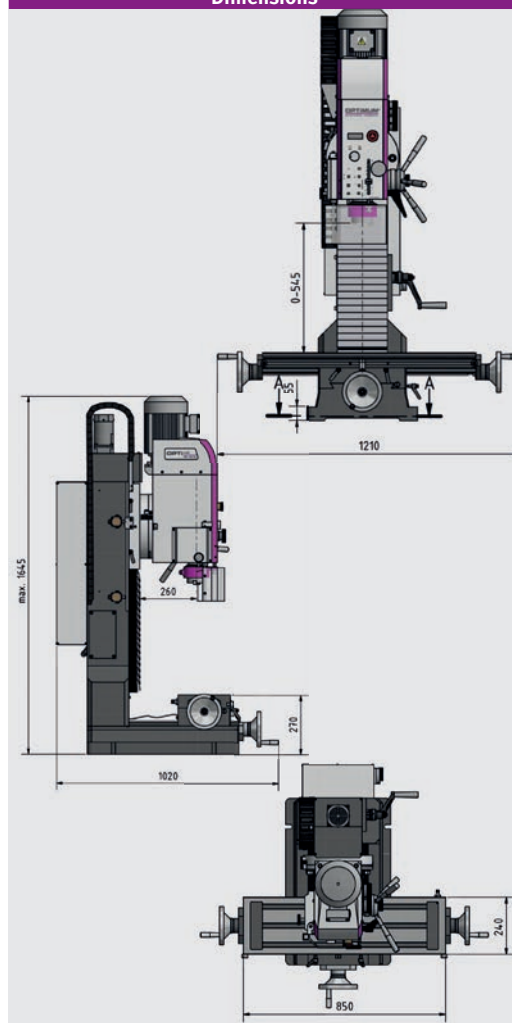
Model	MH 50G	MH 50V**
Article no.	3338180	3338185
<b>Power</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Motor power	1.5 / 2.2 kW	2.2 kW
<b>Drilling/milling capacity</b>		
Drilling performance in steel (S235JR)	Ø 38 mm	
Continuous drilling performance in steel (S235JR)	Ø 32 mm	
Cutter head size max.	Ø 80 mm	
End mill size max.	Ø 32 mm	
<b>Spindle</b>		
Spindle sleeve stroke	115 mm	
Spindle seat	BT 40	
Spindle sleeve diameter	Ø 80 mm	
Throat	260 mm	
<b>Drilling/milling head</b>		
Spindle speeds	225 - 3 260 rpm	50 - 3 260 rpm
Gearbox stages	2 x 6 stages	6 stages electronically controlled
Pivot range	± 30°	
<b>Cross table</b>		
Cross table x width	850 x 240 mm	
T-slot size / amount / distance	18 mm / 3 / 80 mm	
Max. load of cross table	175 kg	
Clearance spindle to cross table max.	545 mm	
<b>Traverse paths</b>		
X axis manual	520 mm	
Y axis manual	260 mm	
Z axis	manual 465 mm / automatic ~385 mm	
<b>Dimensions and weight</b>		
Length x width x height max.	1 210 x 1 020 x 1 645 mm	
Net weight	518 kg	

Accessories	Article no.
Cutter head holder Ø 27 mm	3353336
Quick-action drill chuck 1 - 13 mm	3536303
Weldon holder Ø 6 mm	3353340
Weldon holder Ø 8 mm	3353341
Weldon holder Ø 10 mm	3353342
Weldon holder Ø 12 mm	3353343
Weldon holder Ø 16 mm	3353344
Weldon holder Ø 20 mm	3353345
BT 40 - MT 3 adapter	3353335
Collet chuck holder ER 32	3353334
Collet chuck spanner ER 32	3353307
Collet set ER 32	3441122
Height-adjuster	3536290
Assembly and tool adjustment gauge	3536193
Taper squeegee	3353331
Pull stud 40 x 45° M16	3353332
Universal table feed V 99S (information page 151)	3352021
Assembly kit V 99S - X axis	3352036
Clamping tool assortment SPW 16, 58 parts	3352019
Steel substructure MSM 4 (information page 153)	3353015
Machine base vibration damper SE 55 (4 pieces required)	3352981

More accessories and information on accessories from page 142

\*\* Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
 Important information on operation of machines with frequency converters page 323

### Dimensions



### Scope of delivery

› Operating tool

Accessories	Article no.
<b>BT 40 starter set</b>	3353284
› Cutter head holder Ø 27 mm	
› Quick-action drill chuck 1 - 13 mm	
› 2 pcs. Weldon Ø 6 mm and 20 mm	
› 1 pc. each Weldon Ø 8 / 10 / 12 / 16 mm	
› Adapter sleeve BT 40 / MT 3	
› 4 pcs. collet chuck holder ER 32	
› Collet spanner ER 32	
› 18-part collet set ER 32	
› Height-adjuster	
› Assembly and tool adjustment gauge	
› 14 pcs. pull studs	
› Taper squeegee	

Machine vices	Article no.
<b>FMS 125</b>	3354125
<b>FMSN 125</b>	3354120
<b>VMQ 100</b>	3354181
<b>MV3-75</b>	3354175
<b>DAS 100</b>	3355500
<b>ZAS 50</b>	3354170

For more information see from page 139

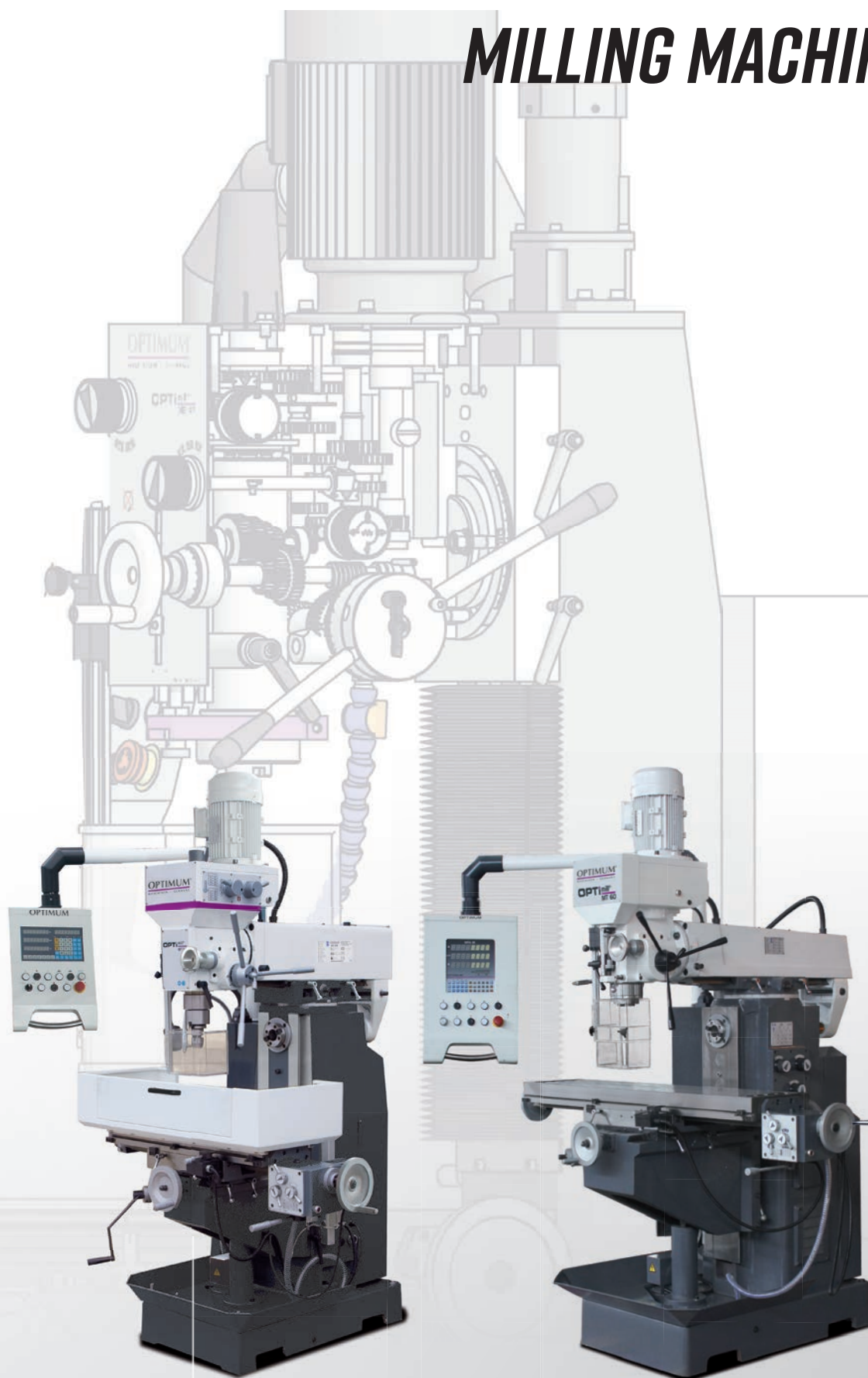


# *UNIVERSAL MILLING MACHINES*



Visit our exhibition in Hallstadt/Bamberg

# ***MILLING MACHINES***



## Universal drilling-milling machines with digital position display DRO 5 and machine base made of cast iron. MB 4PV with continuously variable electronically controlled drive

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ Solid and generously dimensioned cross table with precision surface finish and T-slots
- ▶  $\pm 45^\circ$  tiltable gear head
- ▶ Adjustable wedge bars
- ▶ Drill depth stop
- ▶ Right-/left-hand rotation
- ▶ Drilling/Thread cutting function
- ▶ Automatic sleeve feed with manual fine feed
- ▶ Motorised positioning of the Z axis
- ▶ Coolant system
- ▶ Solid column with hand-scraped dovetail guide for highest stability and greatest possible precision

- ▶ Feed spindle play adjustable and re-adjustable
- ▶ Height-adjustable, large protective screen with micro switch
- ▶ Machine lamp
- ▶ Solid cast machine chassis with chip channel

### MB 4P:

- ▶ Two-stage industrial quality electric motor
- ▶ Large speed range from 95 - 3 200 rpm thanks to 12 switchable speeds

### MB 4PV:

- ▶ Single-stage quality industrial electric motor
- ▶ Wide speed range from 60 - 2 760 rpm due to 2 infinitely variable gearbox stages
- ▶ SINAMICS V20 inverter by [SIEMENS](#)

### Automatic spindle sleeve feed



- › The sleeve moves downwards at the set feed speed and switches off again at the set drilling depth on the scale ring. The sleeve then moves back to its starting position

### Digital position display DRO 5



- › Four-line LCD display
- › User-friendly menu navigation

### SIEMENS inverter



### SINAMICS V20

- › Energy-saving features
- › Advanced cooling
- › Painted electronics assemblies

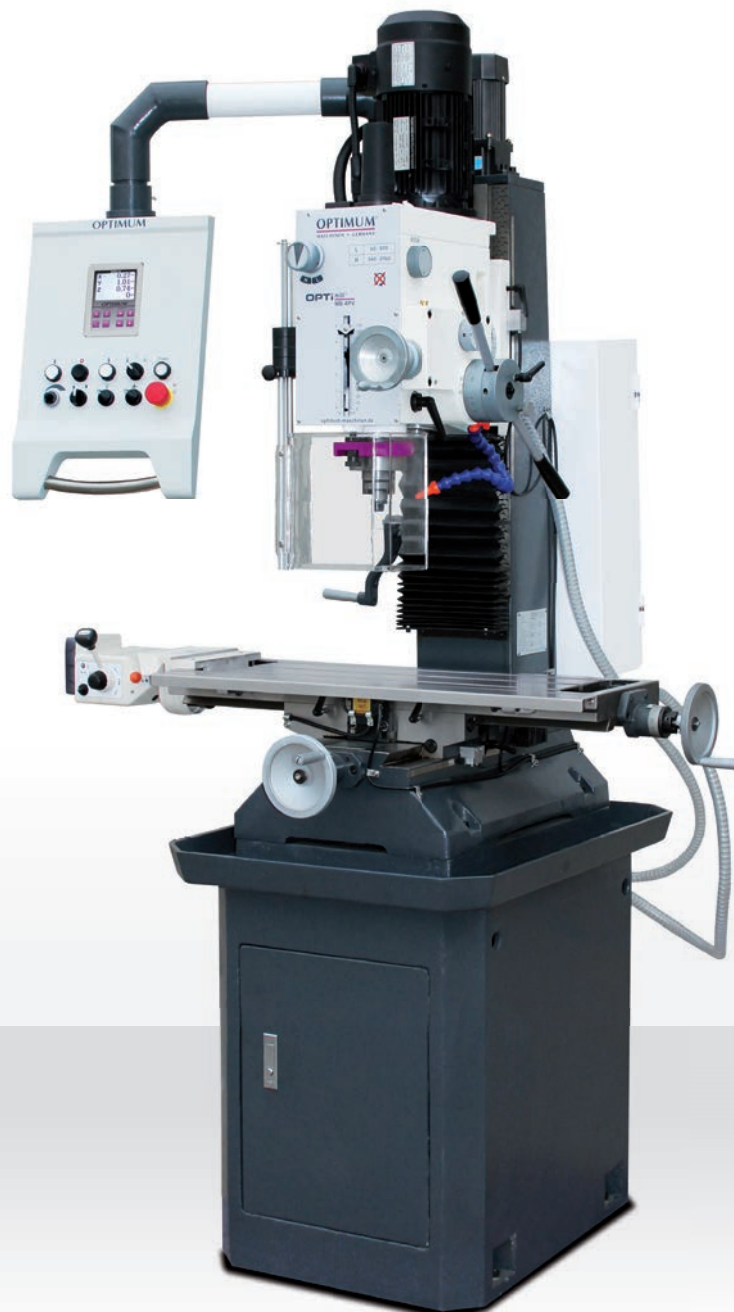
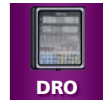


Fig.: MB 4PV





## Technical specifications, accessories and dimensions

Model	MB 4P	MB 4PV**
Article no.	3338460	3338466
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	1.1 / 1.5 kW	1.5 kW
Coolant pump motor	100 W	
Drilling/milling capacity		
Drilling performance in steel (S235JR)	Ø 32 mm	Ø 24 mm
Continuous drilling performance in steel (S235JR)	Ø 28 mm	Ø 20 mm
Cutter head size max.	Ø 63 mm	Ø 63 mm
End mill size max.	Ø 28 mm	Ø 26 mm
Spindle		
Spindle sleeve stroke	120 mm	
Spindle sleeve diameter	75 mm	
Spindle seat	MT 4	
Throat	258 mm	
Drawbar	M16	
Drilling/milling head		
Spindle speeds	95 - 3 200 rpm	60 - 2 760 rpm
Gearbox stages	2 x 6 stages	2 stages, electr. controlled
Pivot range	± 45°	
Cross table		
Clearance spindle to cross table max.	420 mm	
Cross table x width	800 x 240 mm	
T-slot size / spacing / count	14 mm / 80 mm / 3	
Automatic spindle sleeve feed	0.1 / 0.18 / 0.26 mm/rev	
Traverse paths		
X axis	manual 560 mm / automatic ~480 mm	
Y axis manual	195 mm	
Z axis manual	350 mm	
Dimensions and weight		
Length x width x height	1 600 x 930 x 2 110 mm	
Net weight	495 kg	

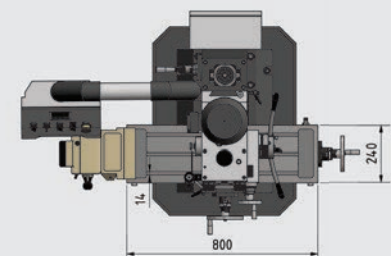
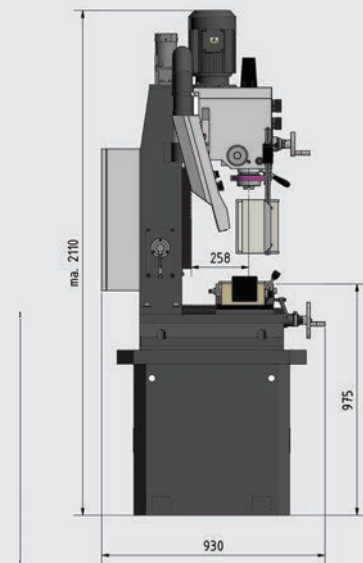
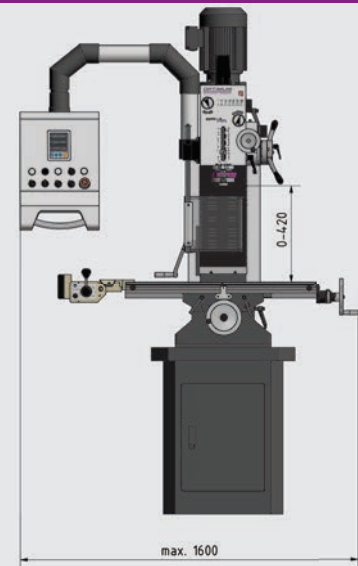
Accessories	Article no.
Parallel shim set, 20-part	3354001
<b>NEW</b> Parallel shim set, 18-part	3536191
Horizontal-vertical rotary indexing table RT 150	3356150
Horizontal-vertical rotary indexing table RTE 165	3356365
Clamping tool assortment SPW 12, 58 parts	3352017
HSS cutter set TiN-coated 12-part	3352250
HSS cutter set TiN-coated 20-part	3352255
Copy and face milling cutter MT 4	3350214
Machine base vibration damper SE 55 (4 pieces required)	3352981
Boring head MT 4	3352125
Arbour for drill chuck MT4	3350304
Collet chuck holder MT 4/M16	3352094
Tapping chuck M3 - M12	3050705
Tapping chuck M8 - M20	3050706

More accessories and information on accessories from page 142

Coolant accessories from page 320

\*\* Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323

### Dimensions



### Scope of delivery

- › Machine substructure
- › Morse taper MT 3/B16
- › Reduction sleeve MT 4 - MT 3
- › Drawbar M16
- › Operating tool

## Universal drilling/milling machine with table feed on X and Y axis

### Facts that impress in terms of quality, performance and price

- ▶ Vibration absorbing cast design
- ▶ Gears in oil bath with ground, hardened gear wheels
- ▶ Coolant system
- ▶ LED lamp
- ▶ Solid and generously dimensioned cross table with precision surface finish with T-slots and adjustable wedge bars
- ▶ Adjustable guide rails
- ▶ Adjustable limit switch cut-off on the X axis
- ▶ Mechanical sleeve feed for drilling via sleeve lever
- ▶ Right-/left-hand rotation
- ▶ Coupling for switching from manual coarse feed to manual fine feed
- ▶ Operation-friendly control panel
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

#### Feed



- › Table feed of the X and Y axis with speed adjustment

#### Cross table



- › The cross table (X axis) can be rotated by  $\pm 45^\circ$

#### Milling head



- › Large throat of the Y axis spindle head support from 250 - 650 mm
- › Inclination range of the spindle head  $\pm 45^\circ$

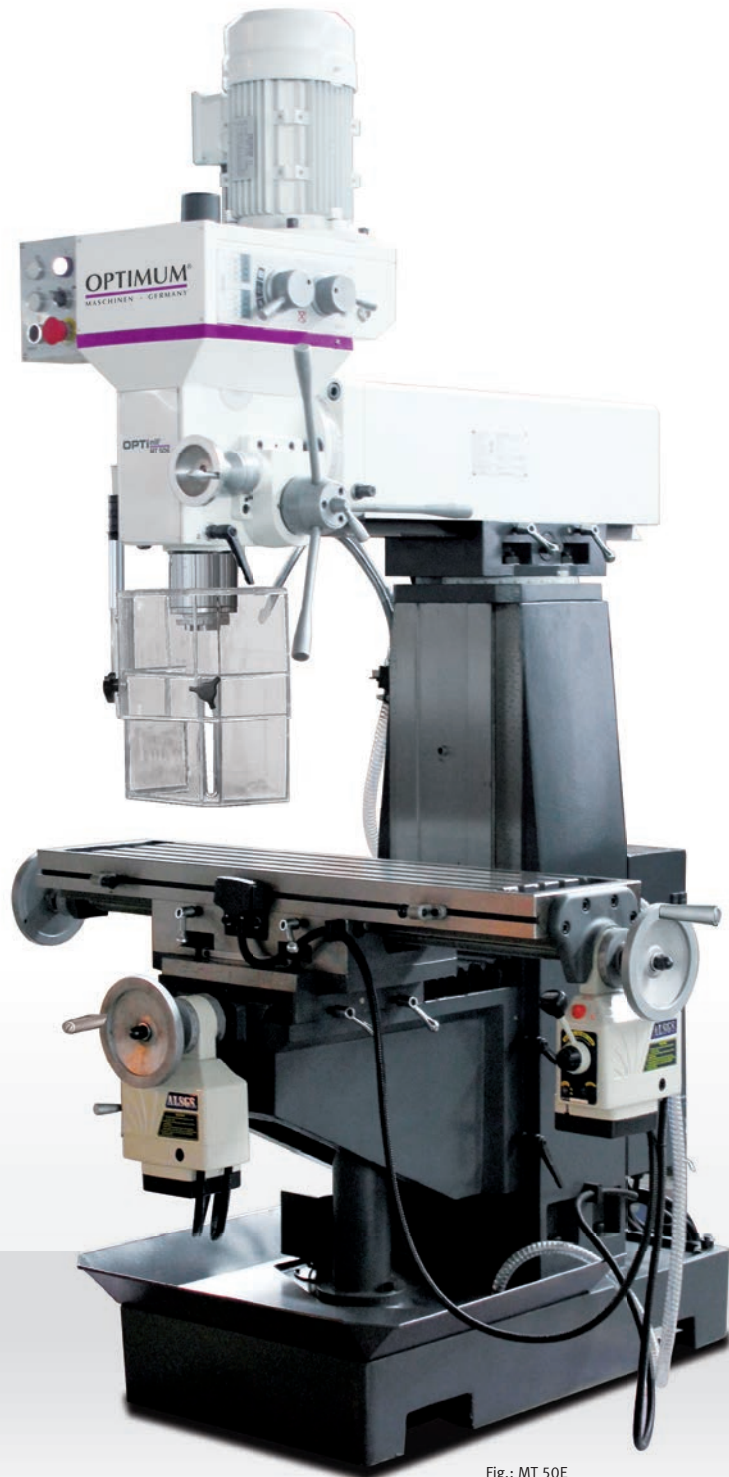


Fig.: MT 50E

## Technical specifications, accessories and dimensions

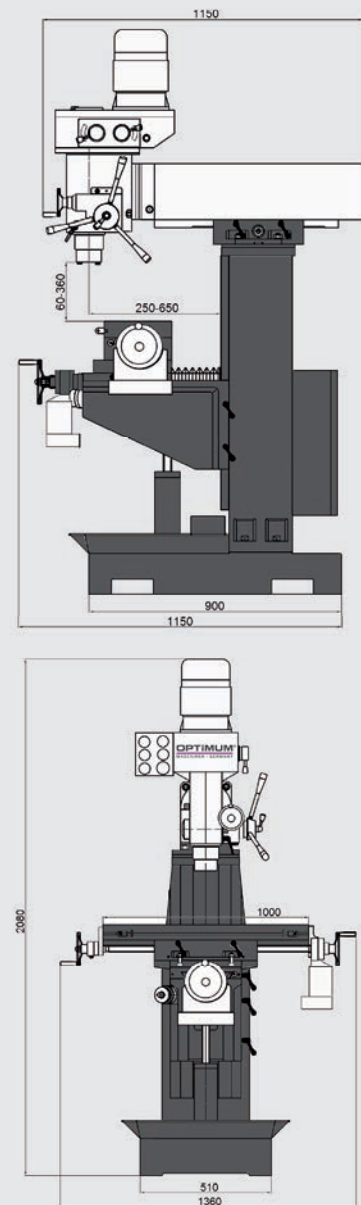
Model	MT 50E
Article no.	3336010
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Drive motor	0.85 / 1.5 kW
Coolant pump motor	40 W
<b>Drilling/milling capacity</b>	
Drilling performance in steel (S235JR)	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 25 mm
Cutter head size max.	Ø 63 mm
End mill size max.	Ø 25 mm
<b>Spindle</b>	
Spindle sleeve stroke	120 mm
Spindle seat	ISO 40 DIN 2080
Clearance spindle to cross table	60 - 360 mm
Throat	250 - 650 mm
Drawbar	M16
<b>Drilling/milling head</b>	
Spindle speeds	115 - 1 750 rpm
Gear / motor stages	4-speed / 2-speed
Milling head pivot range	± 45°
<b>Cross table</b>	
Cross table x width	1 000 x 240 mm
Max. load of cross table	150 kg
T-slot size / quantity	14 mm / 4
Swivel range	± 45°
<b>Traverse paths</b>	
X axis	manual Ø 580 mm automatic ~500 mm
Y axis	manual Ø 230 mm automatic ~150 mm
Z axis manual	320 mm
<b>Dimensions and weight</b>	
Length x width x height	1 360 x 1 150 x 2 080 mm
Net weight	760 kg

Accessories	Article no.
Parallel shim set, 20-part	3354001
<b>NEW</b> Parallel shim set, 18-part	3536191
Horizontal-vertical rotary indexing table RT 150	3356150
Horizontal-vertical rotary indexing table RT 200	3356200
Horizontal-vertical rotary indexing table RTE 165	3356365
Horizontal-vertical rotary indexing table RTU 165	3354165
Clamping tool assortment SPW 12, 58 parts	3352017
HSS cutter set TiN-coated 12-part	3352250
HSS cutter set TiN-coated 20-part	3352255
Workpiece support WPS-4	3354264
Precision machine shoe SEU1 (4 pieces are required)	3352985
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
Collet chuck set 18-part ISO 40	3352056
Copy and face milling cutter ISO 40 DIN 2080	3350216
Precision boring head ISO 40	3352128
Hold-down clamp set of 2	3352031

More accessories and information on accessories from page 142

Coolant accessories from page 320

### Dimensions



### Scope of delivery

- › Key type drill chuck 3 - 16 mm / B18
- › Arbor for drill chuck ISO 40 / B18
- › T-slot nuts
- › Push-out tool
- › Adapter sleeve ISO 40 / MT 3
- › Reduction sleeve MT 3 - MT 2
- › Operating tool

Machine vices	Article no.
FMS 125	3354125
FMSN 125	3354120
VMQ 100	3354181
MV3-75	3354175
DAS 100	3355500
ZAS 50	3354170

For more information see from page 139



## Universal precision drilling/milling machine for horizontal and vertical milling work. With digital 3-axis position display DPA 2000

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid design using premium vibration-absorbing grey cast material
- ▶ Gears in oil bath with ground, hardened gear wheels
- ▶ Coolant system
- ▶ Halogen machine lamp with tight beam
- ▶ Solid and generously dimensioned cross table with precision surface finish with T-slots and adjustable wedge bars
- ▶ Cross table can be rotated  $\pm 45^\circ$  on both sides
- ▶  $\pm 45^\circ$  tiltable gear head
- ▶ Right-/left-hand rotation
- ▶ X axis can be moved optionally with the hand wheel or the table feed unit
- ▶ Automatic end position cut-off on X axis
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

### Horizontal milling position



- › With arrester and collet for disc milling cutter
- › Rotate through  $\pm 180^\circ$  for horizontal milling

### OPTi Operating panel



- › Integrated switch panel
- › Integrated digital position display DPA 2000
- › Pivots to left and right side of machine

### Cross table housing



- › Fold-up type
- › Removable

### Cross table



- › can be rotated  $\pm 45^\circ$  on both sides



Fig.: MT 50



## Technical specifications, accessories and dimensions

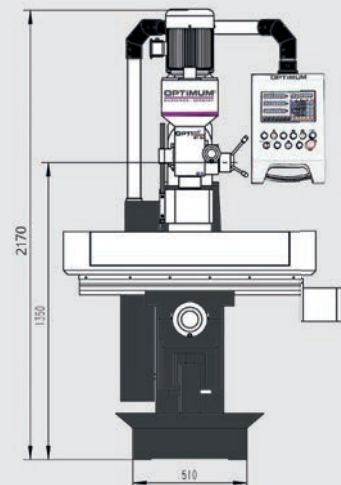
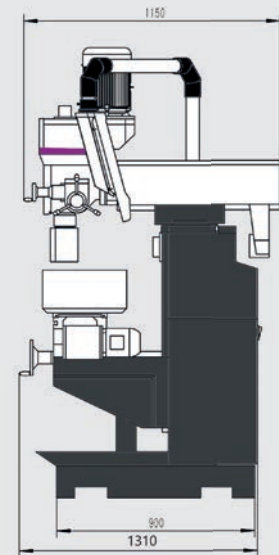
Model	MT 50
Article no.	3336005
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	4.5 kW
Vertical drive motor	1.1 / 2.2 kW
Horizontal drive motor	1.5 kW
Coolant pump motor	40 W
<b>Drilling/milling capacity</b>	
Drilling performance in steel (S235JR)	Ø 30 mm
Cont. drilling performance steel (S235JR)	Ø 25 mm
Cutter head size max.	Ø 100 mm
End mill size max.	Ø 25 mm
<b>Spindle</b>	
Spindle sleeve stroke	120 mm
Spindle seat	ISO 40 DIN 2080
Clearance spindle to cross table	60 - 390 mm
<b>Vertical</b>	
Spindle speeds	115 - 1 750 rpm
Gearbox stages	8 stages
Swivel range milling head	± 45°
Throat	240 - 650 mm
<b>Horizontal</b>	
Spindle speeds	60 - 1 350 rpm
Gearbox stages	9 stages
Throat	0 - 185 mm
<b>Cross table</b>	
Cross table x width	1 000 x 240 mm
Max. load of cross table	160 kg
T-slot size / quantity	14 mm / 4
Rotating cross table	± 45°
<b>Traverse paths</b>	
X axis	manual 580 mm / automatic ~500 mm
Table feed X axis (8 stages)	24 - 720 mm/min
Y axis manual	200 mm
Z axis manual	340 mm
<b>Dimensions and weight</b>	
Length x width x height	1 290 x 1 090 x 2 170 mm
Net weight	820 kg

Accessories	Article no.
<b>Milling table feed</b> V250 for the Y axis	3352030
<b>Factory assembly</b> V250	9000489
<b>Horizontal-vertical rotary indexing table</b> RT 150	3356150
<b>Horizontal-vertical rotary indexing table</b> RT 200	3356200
<b>Horizontal-vertical rotary indexing table</b> RTE 165	3356365
<b>Horizontal-vertical rotary indexing table</b> RTU 165	3354165
<b>Clamping tool assortment</b> SPW 12, 58 parts	3352017
<b>HSS cutter set</b> TiN-coated <b>12-part</b>	3352250
<b>HSS cutter set</b> TiN-coated <b>20-part</b>	3352255
<b>Workpiece support</b> WPS-4	3354264
<b>Precision machine shoe</b> SEU1 (4 pieces are required)	3352985
<b>Collet chuck set</b> 18-part ISO 40	3352056
<b>Copy and face milling cutter</b> ISO 40 DIN 2080	3350216
<b>Precision boring head</b> ISO 40	3352128

More accessories and information on accessories from page 142

Coolant accessories from page 320

### Dimensions



### Scope of delivery

- › Key type drill chuck 1 - 16 mm / B18
- › Arbor for drill chuck ISO 40 / B18
- › Horizontal milling spindle Ø 22 mm / Ø 27 mm
- › Adapter sleeve ISO 40 / MT 3
- › Adapter sleeve ISO 40 / MT 2
- › Tie rod vertical and horizontal
- › T-slot nuts
- › Push-out tool
- › Operating tool

Machine vices	Article no.
<b>FMS 125</b>	3354125
<b>FMSN 125</b>	3354120
<b>VMQ 100</b>	3354181
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>DAS 100</b>	3355500
<b>ZAS 50</b>	3354170

For more information see from page 139

## Universal milling machine for horizontal and vertical milling work. With digital 3-axis position display DPA 21

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid design using premium vibration-absorbing grey cast material
- ▶ Coolant system
- ▶ Solid and generously dimensioned cross table with precision surface finish with T-slots and adjustable wedge bars
- ▶ Right-/left-hand rotation
- ▶ Switch on automatic sleeve feed (drilling) via the sleeve feed lever or manual feed of the sleeve with the fine feed handwheel
- ▶ X axis can be moved optionally with the hand wheel or the table feed unit
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

### Horizontal milling position



- › With arrester and collet for disc milling cutter
- › Rotate through  $\pm 180^\circ$  for horizontal milling

### Milling head



- › Spindle head carrier moves to front and rear
- › Throat of Y-axis spindle head carrier 200 - 550 mm
- › Inclination range of the spindle head  $\pm 45^\circ$

### Digital position display DPA 21



- › User-friendly membrane keyboard, splash water protected, sealed and dazzle free
- › Greater operation accuracy
- › Reduction of error quota
- › Clearly-arranged keyboard layout

### OPTi Operating panel

- › Integrated switch panel
- › Integrated digital position display
- › Pivots and swivels



Fig.: MT 60





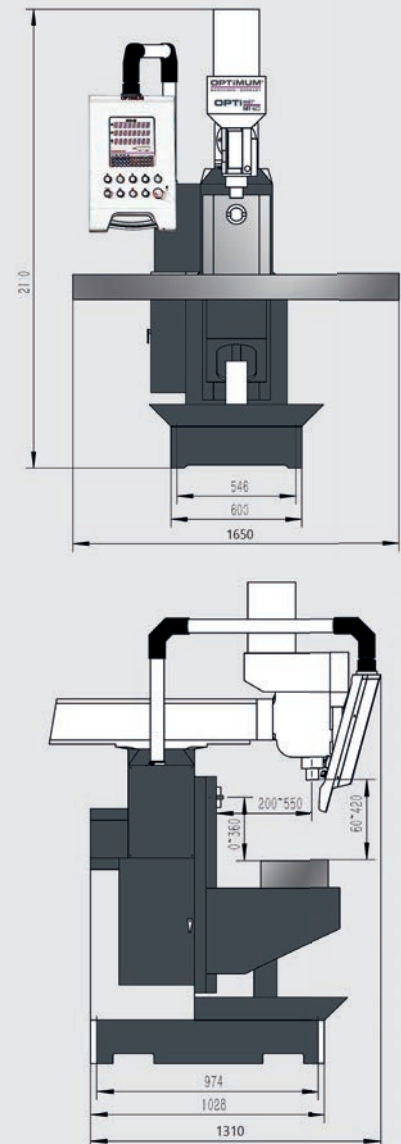
## Technical specifications, accessories and dimensions

Model	MT 60
Article no.	3336090
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	5 kW
Horizontal and vertical drive motor	2.2 kW
Coolant pump motor	40 W
<b>Drilling/milling capacity</b>	
Drilling performance in steel (S235JR)	Ø 30 mm
Cont. drilling performance steel (S235JR)	Ø 25 mm
Cutter head size max.	Ø 100 mm
End mill size max.	Ø 25 mm
<b>Spindle</b>	
Spindle sleeve stroke	120 mm
Spindle sleeve diameter	Ø 90 mm
Spindle seat	ISO 40 DIN 2080
Clearance spindle to cross table	60 - 420 mm
Drawbar	M16
<b>Vertical</b>	
Spindle speeds	90 - 2 000 rpm
Gearbox stages	8 stages
Milling head pivot range	± 45°
Throat	220 - 550 mm
Automatic spindle sleeve feed	3 stages: 0.08 / 0.25 / 1 mm/rev
<b>Horizontal</b>	
Spindle speeds	40 - 1 300 rpm
Gearbox stages	9 stages
Throat	35 - 370 mm
<b>Cross table</b>	
Cross table x width	1 270 x 280 mm
Max. load of cross table	150 kg
T-slot size / spacing / count	14 mm / 50 mm / 4
<b>Traverse paths</b>	
X axis	manual 750 mm / automatic ~680 mm
Y axis manual	230 mm
Z axis manual	360 mm
<b>Dimensions and weight</b>	
Length x width x height	1 650 x 1 310 x 2 160 mm
Net weight	1 300 kg

Accessories	Article no.
<b>Milling table feed</b> V 250 for the Y axis	3352030
<b>Factory assembly</b> V 250	9000489
<b>Horizontal-vertical rotary indexing table</b> RT 150	3356150
<b>Horizontal-vertical rotary indexing table</b> RT 200	3356200
<b>Horizontal-vertical rotary indexing table</b> RTE 165	3356365
<b>Horizontal-vertical rotary indexing table</b> RTU 165	3354165
<b>Clamping tool assortment</b> SPW 12, 58 parts	3352017
<b>HSS cutter set</b> TiN-coated 20-part	3352255
<b>Precision machine shoe</b> SEU1 (4 pieces are required)	3352985
<b>Drill chuck holder (arbour)</b> ISO 40/M16 / B16	3352070
<b>Collet chuck set</b> 18-part ISO 40	3352056
<b>Copy and face milling cutter</b> ISO 40 DIN 2080	3350216
<b>Precision boring head</b> ISO 40	3352128

More accessories and information on accessories from page 142

### Dimensions



### Scope of delivery

- › Key type drill chuck Ø 3 - 16 mm / B18
- › Tapered shank for drill chuck ISO 40 / B18
- › Adapter sleeve ISO 40 / MT 3
- › Reduction sleeve MT 3 - MT 2
- › Arbour with counter-bearing ISO40 Ø 22 mm
- › Arbour with counter-bearing ISO40 Ø 27 mm
- › Drawbar horizontal and vertical
- › Operating tool

Machine vices	Article no.
<b>FMS 125</b>	3354125
<b>FMSN 125</b>	3354120
<b>VMQ 100</b>	3354181
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>DAS 100</b>	3355500
<b>ZAS 50</b>	3354170

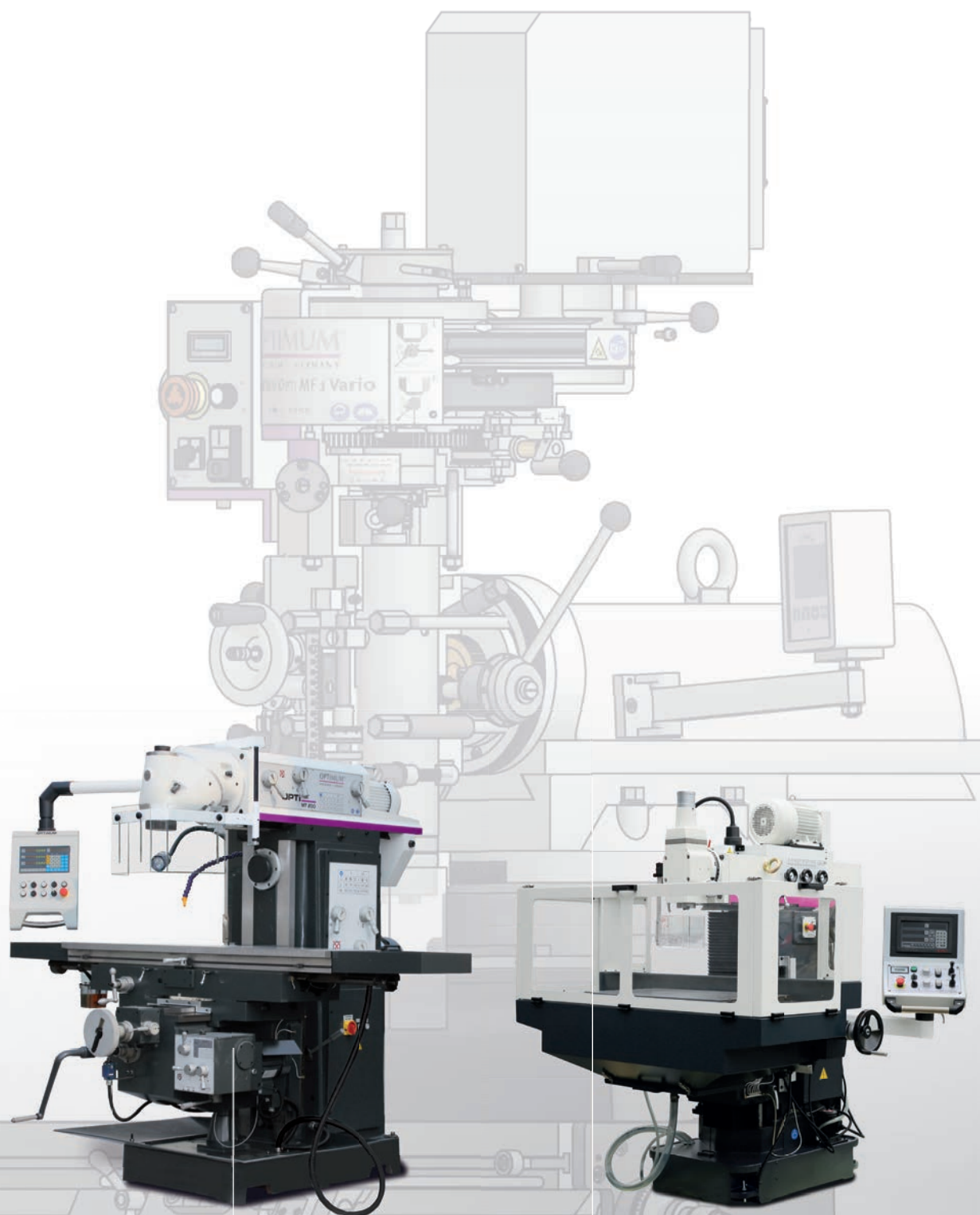
For more information see from page 139

# *MULTIFUNCTIONAL MILLING MACHINES*



Visit our exhibition in Hallstadt/Bamberg

# ***MILLING MACHINES***





## Multifunctional drilling-milling machines with mechanically infinitely variable drive. With digital 3-axis position display DPA 2000

### Facts that impress in terms of quality, performance and price

- ▶ Solid design using premium cast meehanite
- ▶ High concentricity due to tapered roller bearings  $\leq 0.01$  mm measured in the spindle sleeve
- ▶ X and Y axis with adjustable 55° dovetail guide
- ▶ Y axis with adjustable flat guide
- ▶ Coolant system
- ▶ Digital position display DPA 2000
- ▶ Solid and generously dimensioned cross table with precision surface finish and adjustable stops
- ▶  $\pm 45^\circ$  tiltable drilling-milling head
- ▶ 3-stage automatic spindle sleeve feed, 0.04 - 0.15 mm/rev
- ▶ Precision micro feed
- ▶ Adjustable drilling depth stop with millimetre scale, can be read off on front
- ▶ Right-/left-hand rotation
- ▶ Continuously variable speed control
- ▶ Milling spindle with precision bearing
- ▶ Mechanical spindle brake
- ▶ Central lubrication
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

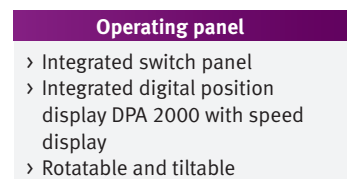
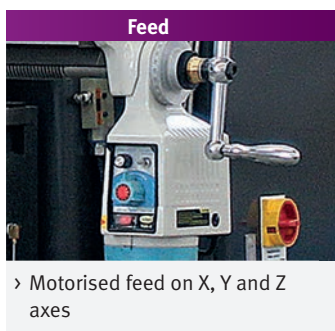


Fig.: MF 4-B



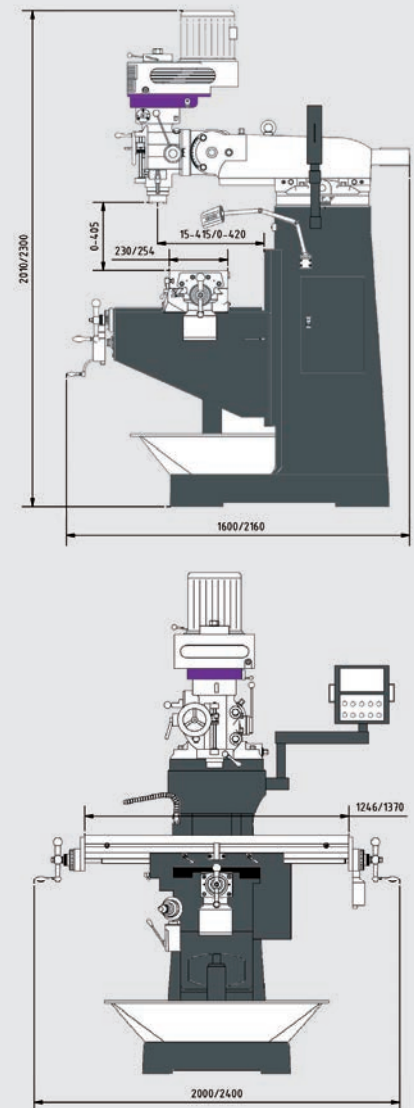
## Technical specifications, accessories and dimensions

Model	MF 2-B		MF 4-B	
Article no.	3348330		3348340	
Power				
Electrical connection	400 V / 3 Ph ~50 Hz			
Total rated value	3 kW			
Drive motor	2.2 kW			
Coolant pump motor	90 W			
Drilling/milling capacity				
Drilling performance in steel	Ø 24 mm			
Cont. drilling performance steel	Ø 20 mm			
Cutter head size max.	Ø 76 mm			
End mill size max.	Ø 25 mm			
Spindle				
Spindle sleeve stroke	127 mm			
Spindle sleeve diameter	86 mm			
Spindle seat	ISO 40 DIN 2080			
Clearance spindle to cross table	405 mm			
Throat	15 - 415 mm		0 - 420 mm	
Drilling/milling head				
Spindle speeds	60 - 4 200 rpm			
Gearbox stages	2 stages, mechanically infinitely variable			
Milling head traverse path	312 mm		470 mm	
Horizontal swivel range	± 90°			
Vertical pivot range	± 45°			
Automatic spindle sleeve feed	3 stages: 0.038 / 0.076 / 0.152 mm/rev			
Cross table				
Cross table x width	1 246 x 230 mm		1 370 x 254 mm	
Max. load of cross table	200 kg		300 kg	
T-slot size / spacing / count	16 mm / 63 mm / 3			
Traverse paths	manual	autom.	manual	autom.
X axis (Cross table)	690 mm	~610 mm	820 mm	~740 mm
Y axis (Cross table)	310 mm	~230 mm	410 mm	~330 mm
Z-axis (Cross table mount)	390 mm	~310 mm	400 mm	~320 mm
Dimensions and weight				
Length x width x height	2 000 x 1 600 x 2 010 mm		2 400 x 2 160 x 2 300 mm	
Net weight	1 000 kg		1 260 kg	

Accessories	Article no.
<b>Parallel shim set, 18-part</b>	3536191
<b>Horizontal-vertical rotary indexing table RT 150</b>	3356150
<b>Horizontal-vertical rotary indexing table RT 200</b>	3356200
<b>Horizontal-vertical rotary indexing table RTE 165</b>	3356365
<b>Horizontal-vertical rotary indexing table RTU 165</b>	3354165
<b>Clamping tool assortment SPW 14, 58 parts</b>	3352018
<b>HSS cutter set TiN-coated 12-part</b>	3352250
<b>HSS cutter set TiN-coated 20-part</b>	3352255
<b>Precision machine shoe SEU1 (4 pieces are required)</b>	3352985
<b>Precision quick-action drill chuck 1 - 10 mm; B16</b>	3050610
<b>Drill chuck holder (arbour) ISO 40/ M16 / B16</b>	3352070
<b>Collet chuck set 18-part ISO 40</b>	3352056
<b>Copy and face milling cutter ISO 40 DIN 2080</b>	3350216
<b>Precision boring head ISO 40</b>	3352128
<b>Compressed air tool clamping system ISO 40 (see page 150)</b>	3352394
<b>Factory assembly compressed air tool clamping system ISO 40</b>	9000490
(Order without assembly: Adjustment work may occur)	

More accessories and information on accessories from page 142

### Dimensions



### Scope of delivery

- › Chip tray
- › Toolbox with operating tools

Machine vices	Article no.
<b>ZAS 50</b>	3354170
<b>HMS 125</b>	3355127
<b>FMS 125 (MF 2-B)</b>	3354125
<b>FMS 150 (MF 4-B)</b>	3354150
<b>FMSN 125 (MF 2-B)</b>	3354120
<b>FMSN 150 (MF 4-B)</b>	3354130
<b>VMQ 125 (MF 2-B)</b>	3354182
<b>VMQ 150 (MF 4-B)</b>	3354183
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>DAS 100</b>	3355500

For more information see from page 139

## Multifunctional drilling-milling machines for professional deployment.

Electronically infinitely variable drive with frequency inverter "made in EU" and digital 3-axis position display DPA 21

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid design using premium cast meehanite
- ▶ High concentricity due to tapered roller bearings  $\leq 0.01$  mm measured in the spindle sleeve
- ▶ X and Z axis with adjustable dovetail guide
- ▶ Coolant system
- ▶ Digital position display DPA 21
- ▶ Solid and generously dimensioned cross table with precision surface finish and adjustable stops
- ▶ Spindle head:  $\pm 45^\circ$  up/down tiltable and  $\pm 90^\circ$  left/right tiltable.
- ▶ Automatic spindle sleeve feed
- ▶ Adjustable drilling depth stop with millimetre scale, can be read off on front

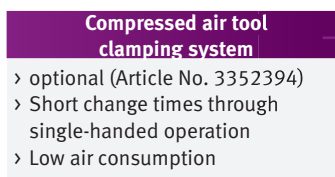
- ▶ Clockwise/anti-clockwise rotation for thread cutting
- ▶ Central lubrication
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

#### MF 2V:

- ▶ Y axis with adjustable dovetail guide

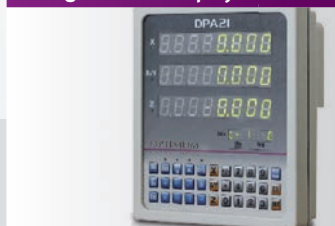
#### MF 4V:

- ▶ Y axis with flat guide
- ▶ Large Y axis travel of 400 mm
- ▶ Motorised table height adjustment (Z axis)



- ▶ Motorised table feed
- ▶ Continuously variable speed control
- ▶ Rapid traverse
- ▶ Right-/left-hand rotation

### Dig. Position display DPA 21



- ▶ User-friendly membrane keyboard, splash water protected, sealed and dazzle free

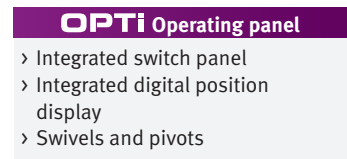
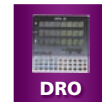


Fig.: MF 4V with optional compressed air changer



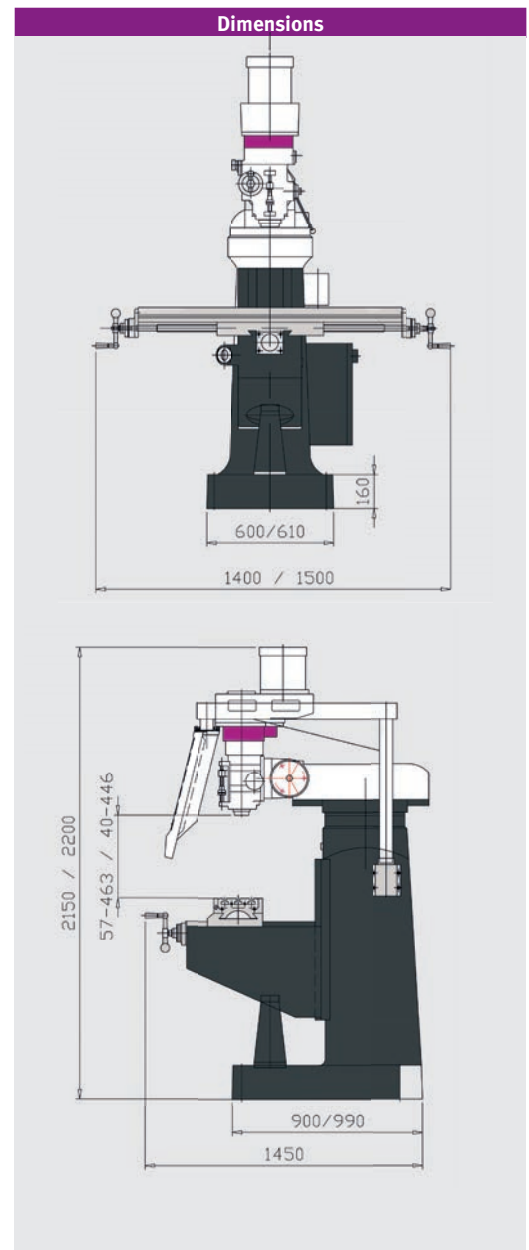


## Technical specifications, accessories and dimensions

Model	MF 2V	MF 4V
Article no.	3336030	3336050
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	2.2 kW	4.5 kW
Drive motor	1.5 kW	3 kW
Coolant pump motor	100 Watts	
Drilling/milling capacity		
Drilling performance in steel (S235JR)	Ø 24 mm	Ø 32 mm
Cont. drilling performance steel	Ø 20 mm	Ø 28 mm
Cutter head size max.	Ø 76 mm	Ø 100 mm
End mill size max.	Ø 18 mm	Ø 20 mm
Spindle		
Spindle sleeve stroke	127 mm	
Spindle seat	ISO 40 DIN 2080	
Clearance spindle to cross table	57 - 463 mm	40 - 446 mm
Throat	213 - 533 mm	200 - 680 mm
Drilling/milling head		
Spindle speeds	10 - 5 100 rpm	9 - 6 750 rpm
Gearbox stages	6 stages, Electronically controlled	8 stages, Electronically controlled
Tilt range / swivel range	± 45° / ± 90°	
Automatic spindle sleeve feed	3 stages: 0.038 / 0.076 / 0.152 mm/rev	
Cross table		
Cross table mounting surface L x W	1 245 x 230 mm	1 370 x 254 mm
Max. load of cross table	230 kg	275 kg
T-slot size / spacing / count	16 mm / 63 mm / 3	
Traverse paths		
X axis (cross table)	manual Ø 800 mm / automatic ~730 mm	manual Ø 900 mm / automatic ~800 mm
Y axis (cross table)	manual Ø 305 mm	manual Ø 320 mm
Y axis (milling head)	manual Ø 320 mm	manual Ø 480 mm
Z axis (cross table)	manual Ø 406 mm	manual Ø 400 mm / automatic ~365 mm
Dimensions and weight		
Length x width x height	1 400 x 1 450 x 2 150 mm	1 500 x 1 450 x 2 200 mm
Net weight	950 kg	1 150 kg

Accessories	Article no.
<b>Parallel shim set, 18-part</b>	3536191
<b>Horizontal-vertical rotary indexing table RT 150</b>	3356150
<b>Horizontal-vertical rotary indexing table RT 200</b>	3356200
<b>Horizontal-vertical rotary indexing table RTE 165</b>	3356365
<b>Clamping tool assortment SPW 14, 58 parts</b>	3352018
<b>HSS cutter set TiN-coated 12-part</b>	3352250
<b>HSS cutter set TiN-coated 20-part</b>	3352255
<b>Precision machine shoe SEU1 (4 pieces are required)</b>	3352985
<b>Drill chuck holder (arbour) ISO 40/ M16 / B16</b>	3352070
<b>Collet chuck set 18-part ISO 40</b>	3352056
<b>Copy and face milling cutter ISO 40 DIN 2080</b>	3350216
<b>Precision boring head ISO 40</b>	3352128
<b>Universal table feed V250S ( see page 151)</b>	3352025
<b>Factory assembly universal table feed V250S</b>	9000489
<b>Compressed air tool clamping system ISO 40 (see page 150)</b>	3352394
<b>Factory assembly compressed air tool clamping system ISO 40</b>	9000490

More accessories and information on accessories from page 142



### Scope of delivery

- › Chip tray
- › Operating tool

Machine vices	Article no.
<b>ZAS 50</b>	3354170
<b>HMS 125</b>	3355127
<b>FMS 125 (MF 2-B)</b>	3354125
<b>FMS 150 (MF 4-B)</b>	3354150
<b>FMSN 125 (MF 2-B)</b>	3354120
<b>FMSN 150 (MF 4-B)</b>	3354130
<b>VMQ 125 (MF 2-B)</b>	3354182
<b>VMQ 150 (MF 4-B)</b>	3354183
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>DAS 100</b>	3355500
<b>HCV 105</b>	3536210
<b>HCV 125</b>	3536214

For more information see from page 139

## Versatile and easy retooling.

The universal milling machine for workshops

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Rugged machine construction
- ▶ Heavy, solid design using premium cast meehanite
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ Rugged adjustable flat bed guide on the Y and Z axis
- ▶ Central lubrication
- ▶ Generously dimensioned, decoupled hand wheels with scales
- ▶ LED machine lamp
- ▶ Coolant system
- ▶ Digital position display DPA 2000
- ▶ Easy operation of the switching elements
- ▶ X and Y axis table feed
- ▶ Z axis with electrical table height adjustment
- ▶ Solid and generously dimensioned cross table with precision surface finish with re-adjustable wedge bars and adjustable stops
- ▶ Vertical and horizontal milling position
- ▶ Milling head with two axes of rotation, thus pivots and rotates to any spatial angle
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

### Horizontal milling position



- › With arrester and collet for disc milling cutter
- › Adjustable plain bearing

### OPTi Operating panel

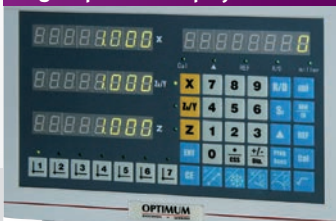
- › Integrated switch panel
- › Integrated digital position display
- › Rotates about its own axis

### Milling head



- › The milling head has two rotary axes
- › By turning the rear and the front part of the milling head, a certain angle can be set in the vertical position of the milling head to the feed axis of the cross table

### Digital position display DPA 2000



- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota
- › Clearly-arranged keyboard layout

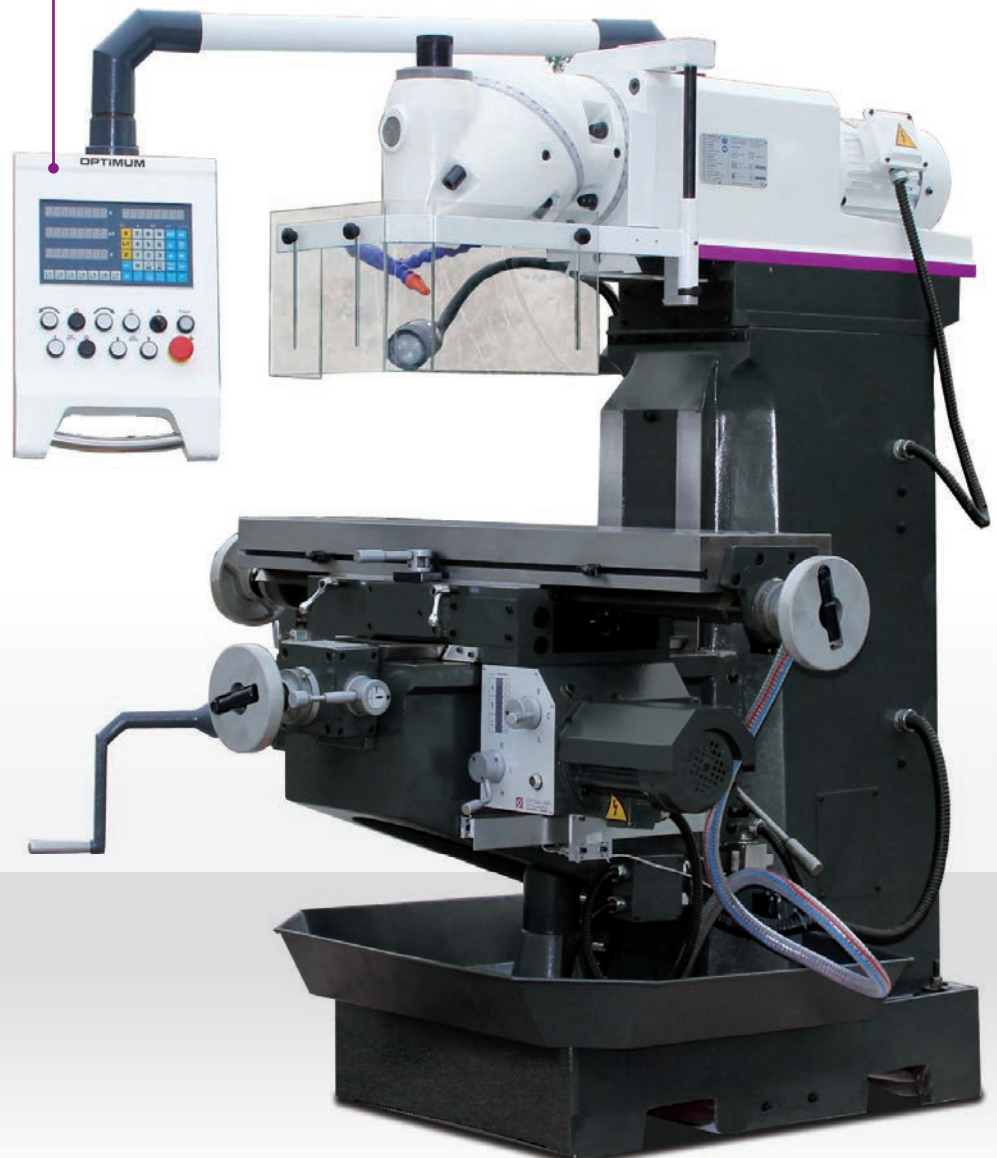
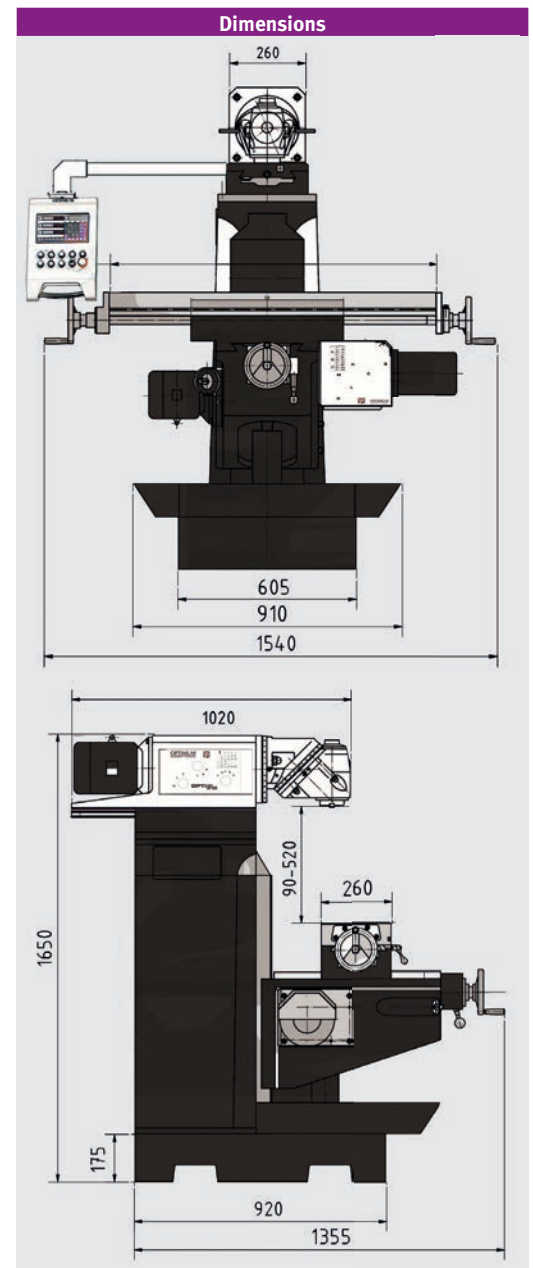


Fig.: MT 100



## Technical specifications, accessories and dimensions

Model	MT 100
Article no.	3336110
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	3.36 kW
Drive motor	2.2 kW
Feed motor output X-Y axis	370 Watts
Feed motor output Z-axis	750 Watts
Coolant pump motor	40 Watts
<b>Drilling/milling capacity</b>	
Cutter head size max.	Ø 85 mm
End mill size max.	Ø 20 mm
<b>Spindle</b>	
Spindle seat	ISO 40 DIN 2080
Drawbar	M16
Clearance spindle to cross table	90 - 520 mm
Throat	60 - 500 mm
<b>Vertical</b>	
Spindle speeds	45 - 1 600 rpm
Gearbox stages	11 stages
Milling head forward tilt	90°
Rotation of milling head	360°
<b>Cross table</b>	
Cross table x width	1 120 x 260 mm
Max. load of cross table	350 kg
T-slot size / spacing / count	14 mm / 63 mm / 3
<b>X axis (cross table)</b>	
Travel	manual 600 mm / automatic ~480 mm
Table feed automatic	24 - 402 mm/min
<b>Y axis (cross table)</b>	
Travel	manual Ø 270 mm
<b>Z axis (cross table)</b>	
Travel	manual 380 mm / automatic ~340 mm
Table feed automatic	24 - 402 mm/min
<b>Dimensions and weight</b>	
Length x width x height	1 540 x 1 355 x 1 650 mm
Net weight	1 300 kg



### Scope of delivery

- › Horizontal milling spindle Ø 32 mm
- › Ø 32 mm milling arbor
- › Operating tool

### Machine vices

Machine vices	Article no.
<b>HMS 125</b>	3355127
<b>FMS 150</b>	3354150
<b>FMSN 150</b>	3354130
<b>VMQ 125</b>	3354182
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>DAS 100</b>	3355500
<b>HCV 105</b>	3536210
<b>HCV 125</b>	3536214

For more information see from page 139

### Accessories

Accessories	Article no.
<b>Parallel shim set, 18 parts</b>	3536191
<b>Horizontal-vertical rotary indexing table RT 200</b>	3356200
<b>Horizontal-vertical rotary indexing table RTE 165</b>	3356365
<b>Horizontal-vertical rotary indexing table RTU 165</b>	3354165
<b>Universal dividing head TA 125</b>	3356125
<b>HSS cutter set TiN-coated 12-part</b>	3352250
<b>HSS cutter set TiN-coated 20-part</b>	3352255
<b>Clamping tool assortment SPW 12, 58 parts</b>	3352017
<b>Precision machine shoe SEU1 (4 pieces are required)</b>	3352985
<b>Precision quick-action drill chuck 1 - 10 mm; B16</b>	3050610
<b>Drill chuck holder (arbour) ISO 40/ M16 / B16</b>	3352070
<b>Collet chuck set 18-part ISO 40</b>	3352056
<b>Precision boring head ISO 40</b>	3352128
<b>Copy and face milling cutter ISO 40 DIN 2080</b>	3350216

More accessories and information on accessories from page 142

Coolant accessories from page 320



## Versatile and easy retooling.

The universal milling machine with servo-motorised feed.

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Rugged machine construction
- ▶ Heavy, solid design using premium cast meehanite
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ All guides hardened and adjustable using wedge bars
- ▶ Rugged flat bed guide on the Y and Z axis
- ▶ Central lubrication
- ▶ Generously dimensioned, decoupled hand wheels with scales
- ▶ LED machine lamp
- ▶ Coolant system
- ▶ Easy operation of the switching elements
- ▶ X, Y and Z axis table feed
- ▶ Feed system controllable by servomotor in fixed steps
- ▶ Solid and generously dimensioned cross table with precision surface finish with re-adjustable wedge bars and adjustable stops
- ▶ Vertical and horizontal milling position
- ▶ Milling head with two axes of rotation, thus pivots and rotates to any spatial angle
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

### Horizontal milling position



- › With arrester and collet for disc milling cutter
- › Adjustable plain bearing

### OPTi Operating panel

- › Integrated switch panel
- › Integrated digital position display
- › Rotates about its own axis



Follow this for the video presentation of our Optimum milling machine MT 130S

### Milling head



- › The milling head has two rotary axes
- › By turning the rear and the front part of the milling head, a certain angle can be set in the vertical position of the milling head to the feed axis of the cross table.

### Dig. Position display DPA 21



- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota



Fig.: MT 130S



## Technical specifications, accessories and dimensions

Model	MT 130S
Article no.	3344110
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	6 kW
Drive motor	3 kW
Feed motor output	3 kW
Coolant pump motor	60 Watts
<b>Milling capacity</b>	
Cutter head size max.	Ø 100 mm
End mill size max.	Ø 20 mm
<b>Spindle</b>	
Spindle seat	ISO 40 DIN 2080
Drawbar	M16
Clearance spindle to cross table	100 - 500 mm
Throat	150 - 550 mm
<b>Vertical</b>	
Spindle speeds	45 - 1 660 rpm
Gearbox stages	11 stages
Milling head forward tilt	90°
Rotation of milling head	360°
<b>Cross table</b>	
Cross table x width	1 270 x 300 mm
Max. load of cross table	200 kg
T-slot size / spacing / count	14 mm / 80 mm / 3
<b>X axis (cross table)</b>	
Travel	manual 720 mm / automatic ~650 mm
Table feed automatic	30 - 830 mm/min
Rapid traverse	1 335 mm/min
<b>Y axis (cross table)</b>	
Travel	manual 300 mm / automatic ~220 mm
Table feed automatic	30 - 830 mm/min
Rapid traverse	1 335 mm/min
<b>Z axis (cross table)</b>	
Travel	manual 400 mm / automatic ~320 mm
Table feed automatic	23 - 625 mm/min
Rapid traverse	1 000 mm/min
<b>Dimensions and weight</b>	
Length x width x height	1 760 x 1 550 x 1 700 mm
Net weight	1 450 kg

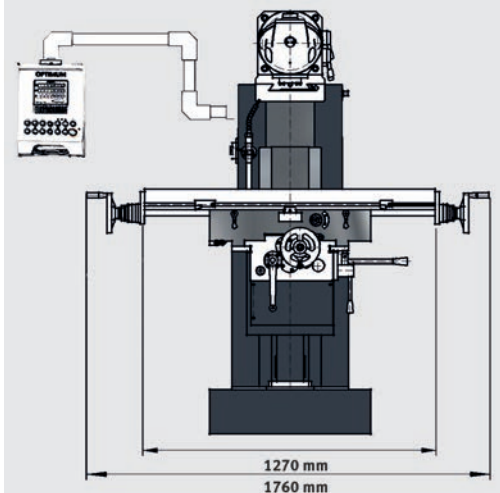
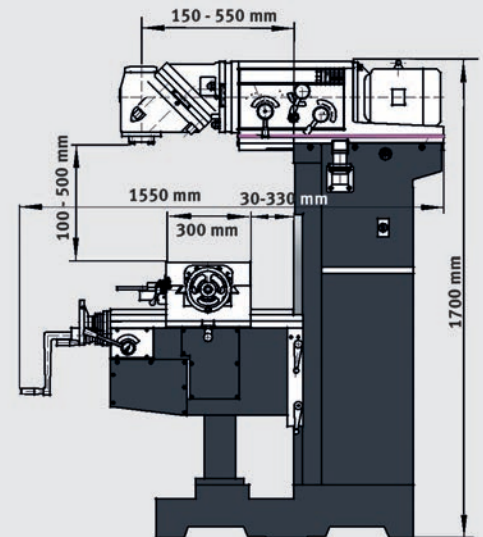
Accessories	Article no.
Horizontal-vertical rotary indexing table RT 150	3356150
Horizontal-vertical rotary indexing table RT 200	3356200
Horizontal-vertical rotary indexing table RTE 165	3356365
Horizontal-vertical rotary indexing table RTU 165	3354165
Clamping tool assortment SPW 12, 58 parts	3352017
HSS cutter set TiN-coated 12-part	3352250
HSS cutter set TiN-coated 20-part	3352255
Precision machine shoe SEU1 (4 pieces are required)	3352985
Precision quick-action drill chuck 1 - 10 mm; B16	3050610
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
Collet chuck set 18-part ISO 40	3352056

More accessories and information on accessories from page 142

Coolant accessories from page 320

\*\* Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323

### Dimensions



### Scope of delivery

- › ISO 40 tapered shank with counter-bearing for horizontal milling
- › Ø 32 mm milling arbor
- › Operating tool

Machine vices	Article no.
HMS 125	3355127
FMS 150	3354150
FMSN 150	3354130
VMQ 125	3354182
MV3-75	3354175
MV3-125	3354178
DAS 100	3355500
HCV 105	3536210
HCV 125	3536214

For more information see from page 139

## Versatile and easy retooling

the universal milling machine for workshops with digital 3-axis position display

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Rugged machine construction
- ▶ Heavy, solid design using premium cast meehanite
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ All guides hardened and adjustable using wedge bars
- ▶ Rugged flat bed guide on the Y and Z axis
- ▶ Central lubrication
- ▶ Generously dimensioned, decoupled hand wheels with scales
- ▶ LED machine lamp
- ▶ Coolant system
- ▶ Easy operation of the switching elements
- ▶ X and Y axis table feed
- ▶ Z axis with electrical table height adjustment
- ▶ Solid and generously dimensioned cross table with precision surface finish with re-adjustable wedge bars and adjustable stops
- ▶ Vertical and horizontal milling position
- ▶ Milling head with two axes of rotation, thus pivots and rotates to any spatial angle
- ▶ Counterholder for horizontal milling mounted within easy reach on the rear of the machine
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out
- ▶ Feed motor with fixed speeds

### Horizontal milling position



- › With arrester and collet for disc milling cutter
- › Adjustable plain bearing

### Milling head



- › The milling head has two rotary axes
- › By turning the rear and the front part of the milling head, a certain angle can be set in the vertical position of the milling head to the feed axis of the cross table.

### Digital position display DPA 2000



- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota
- › Clearly-arranged keyboard layout

### OPTi Operating panel

- › Integrated switch panel
- › Integrated digital position display
- › Rotates about its own axis



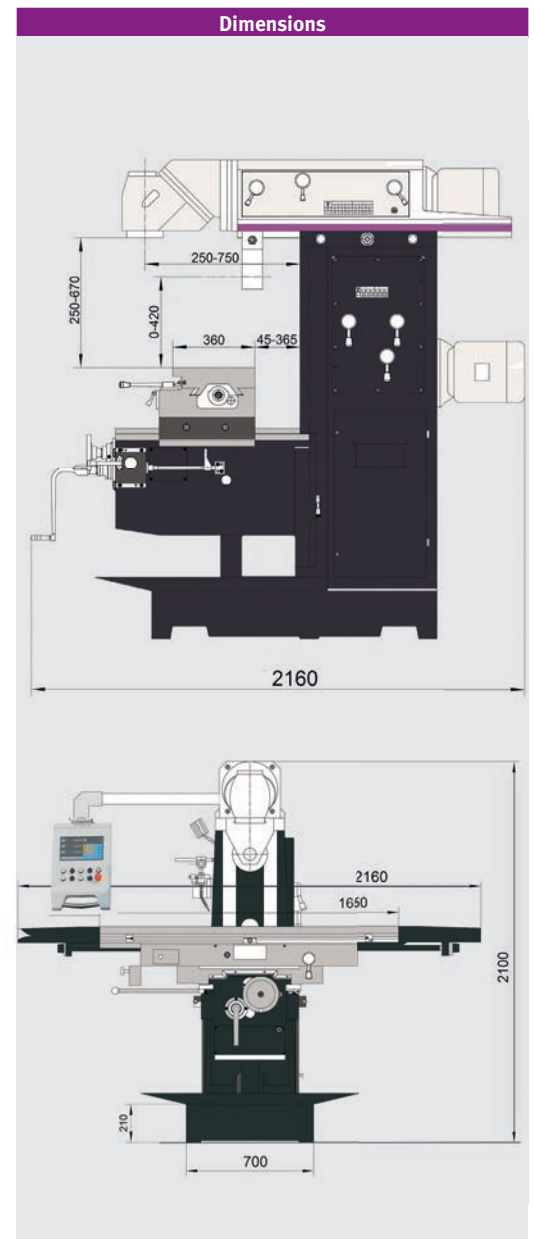
Fig.: MT 200





## Technical specifications, accessories and dimensions

Model	MT 200
Article no.	3336120
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	9.2 kW
Drive motor horizontal/vertical	4 kW
Feed motor output	1.1 kW
Coolant pump motor	90 Watts
<b>Milling capacity</b>	
Cutter head size max.	Ø 100 mm
End mill size max.	Ø 20 mm
<b>Spindle</b>	
Horizontal and vertical spindle seat	ISO 50 DIN 2080
Drawbar	M24
<b>Vertical</b>	
Clearance spindle to cross table	250 - 670 mm
Throat	250 - 750 mm
Spindle speeds	60 - 1 750 rpm
Gearbox stages	12 stages
Milling head forward tilt	90°
Rotation of milling head	360°
<b>Horizontal</b>	
Clearance spindle to cross table	0 - 400 mm
Spindle speeds	58 - 1 800 rpm
Gearbox stages	12 stages
<b>Cross table</b>	
Cross table x width	1 650 x 360 mm
Max. load of cross table	450 kg
T-slot size / spacing / count	14 mm / 95 mm / 3
Rotating cross table	35°
<b>X axis (cross table)</b>	
Travel	manual 1 290 mm / autom. ~1 210 mm
Table feed automatic	22 - 380 mm/min.
Table feed, stages	8 stages
Table feed rapid motion	1 290 mm/min.
<b>Y axis (cross table)</b>	
Cross table travel	manual 280 mm / automatic ~200 mm
Table feed automatic	20 - 380 mm/min.
Table feed, stages	8 stages
Table feed rapid motion	1 290 mm/min
<b>Z axis (cross table)</b>	
Travel	manual 400 mm / automatic ~320 mm
Table feed automatic	7 - 127 mm/min.
Table feed, stages	8 stages
Table feed rapid motion	342 mm/min.
<b>Dimensions and weight</b>	
Length x width x height	2 160 x 2 160 x 2 100 mm
Net weight	2 220 kg



### Scope of delivery

- › Horizontal milling spindle ISO 50 Ø 32 mm
- › Horizontal milling spindle ISO 50 Ø 27 mm
- › Holder for cutter head ISO 50 Ø 32 mm
- › Collet chuck ISO 50 Ø 4 - Ø 26 mm
- › Operating tool

Machine vices	Article no.
<b>HMS 125</b>	3355127
<b>FMS 150</b>	3354150
<b>FMSN 150</b>	3354130
<b>VMQ 125</b>	3354182
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>DAS 100</b>	3355500
<b>HCV 105</b>	3536210
<b>HCV 125</b>	3536214

For more information see from page 139

Accessories	Article no.
<b>Parallel shim</b> set, 18 parts	3536191
<b>Clamping tool assortment SPW 12</b> , 58 parts	3352017
<b>Hold-down clamp set</b> of 2 14 mm/M 12	3352031
<b>Precision machine shoe</b> SEU1 (4 pieces are required)	3352985
<b>Morse cone</b> ISO50 B18 DIN2080	3352067

More accessories and information on accessories from page 142

## Versatile and easy retooling

the universal milling machine for workshops with digital 3-axis position display

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Rugged machine construction
- ▶ Heavy, solid design using premium cast meehanite
- ▶ High running smoothness due to ground gear wheels running in an oil bath
- ▶ All guides hardened and adjustable using wedge bars
- ▶ Rugged flat bed guide on the Y and Z axis
- ▶ Central lubrication
- ▶ Generously dimensioned, decoupled hand wheels with scales
- ▶ LED machine lamp
- ▶ Decoupled hand wheels
- ▶ Coolant system
- ▶ Digital position display DPA 21
- ▶ Easy operation of the switching elements

- ▶ Table feed X, Y and Z axis
- ▶ Feed system controllable by servomotor in fixed steps
- ▶ Solid and generously dimensioned cross table with precision surface finish with re-adjustable wedge bars and adjustable stops
- ▶ Horizontal milling position
- ▶ Horizontal milling counterholder, attached to rear of machine for easy access
- ▶ Milling head with two axes of rotation, thus pivots and rotates to any spatial angle
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out

### OPTi Operating panel

- › Integrated switch panel
- › Integrated digital position display
- › Rotates about its own axis

### Horizontal milling position



- › With arrester and collet for disc milling cutter
- › Adjustable plain bearing

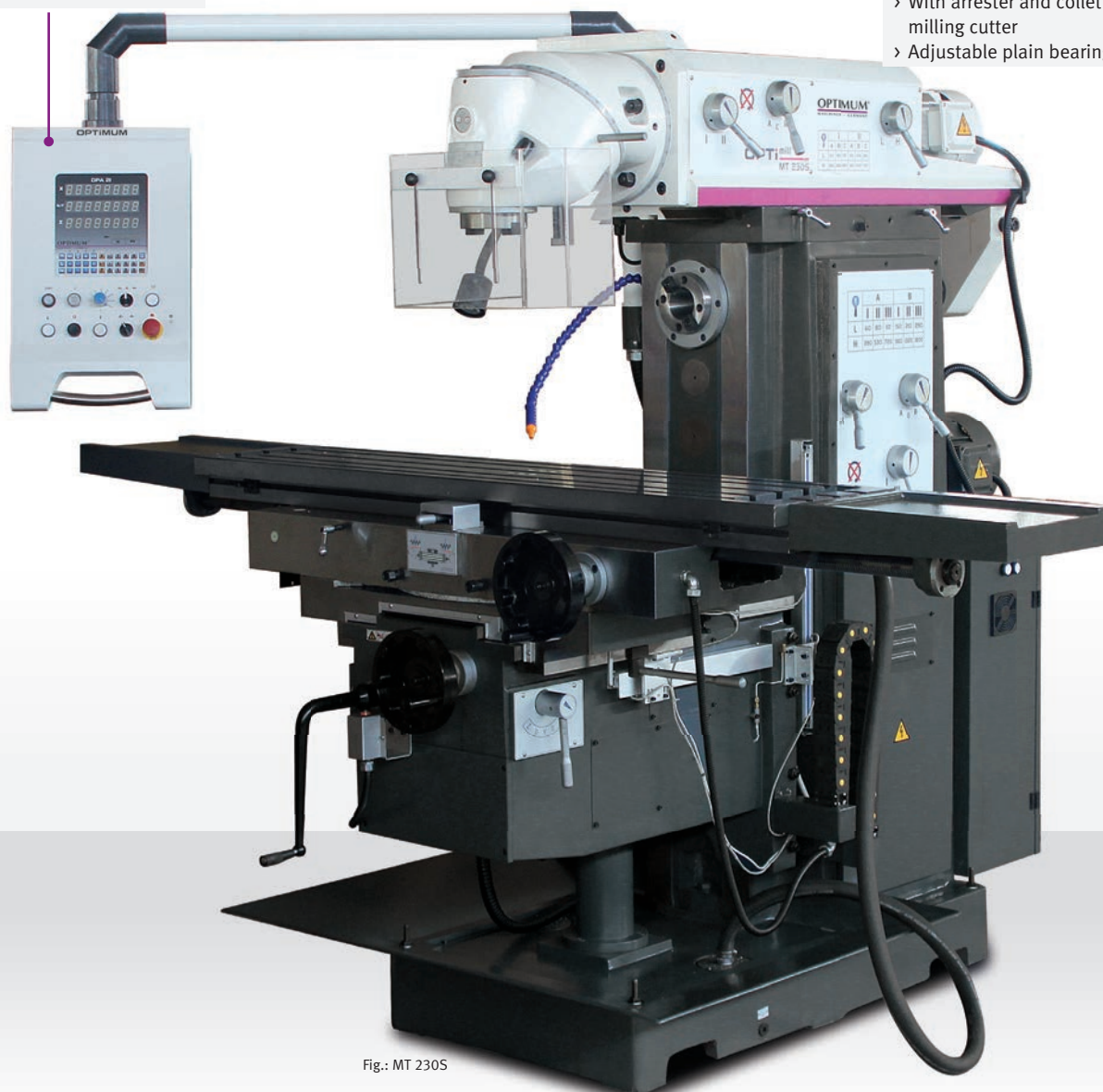


Fig.: MT 230S

## Technical specifications, accessories and dimensions

Model	MT 230S
Article no.	3344125
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	12 kW
Vertical drive motor	4 kW
Horizontal drive motor	5.5 kW
Coolant pump motor	90 Watts
<b>Milling capacity</b>	
Cutter head size max.	Ø 160 mm
End mill size max.	Ø 25 mm
<b>Spindle</b>	
Spindle seat	ISO 50 DIN 2080
Drawbar	M24
<b>Vertical</b>	
Clearance spindle to cross table	190 - 590 mm
Throat	260 - 810 mm
Spindle speeds	60 - 1 750 rpm
Gearbox stages	12 stages
Milling head forward tilt	90°
Rotation of milling head	360°
<b>Horizontal</b>	
Clearance spindle to cross table	10 - 410 mm
Spindle speeds	60 - 1 800 rpm
Gearbox stages	12 stages
<b>Cross table</b>	
Table length x width	1 650 x 360 mm
Max. load of cross table	400 kg
T-slot size / amount / distance	18 mm / 3 / 80 mm
Rotating cross table	35°
<b>X axis (cross table)</b>	
Travel	manual 1 300 mm / autom. ~1 210 mm
Table feed automatic	30 - 750 mm/min.
Table feed rapid motion	1 200 mm/min
<b>Y axis (cross table)</b>	
Travel	manual 300 mm / automatic ~220 mm
Table feed automatic	20 - 500 mm/min.
Table feed rapid motion	800 mm/min
<b>Z axis (cross table)</b>	
Travel	manual 400 mm / automatic ~320 mm
Table feed automatic	15 - 375 mm/min.
Table feed rapid motion	600 mm/min
<b>Dimensions and weight</b>	
Length x width x height	2 550 x 2 160 x 2 005 mm
Net weight	2 800 kg

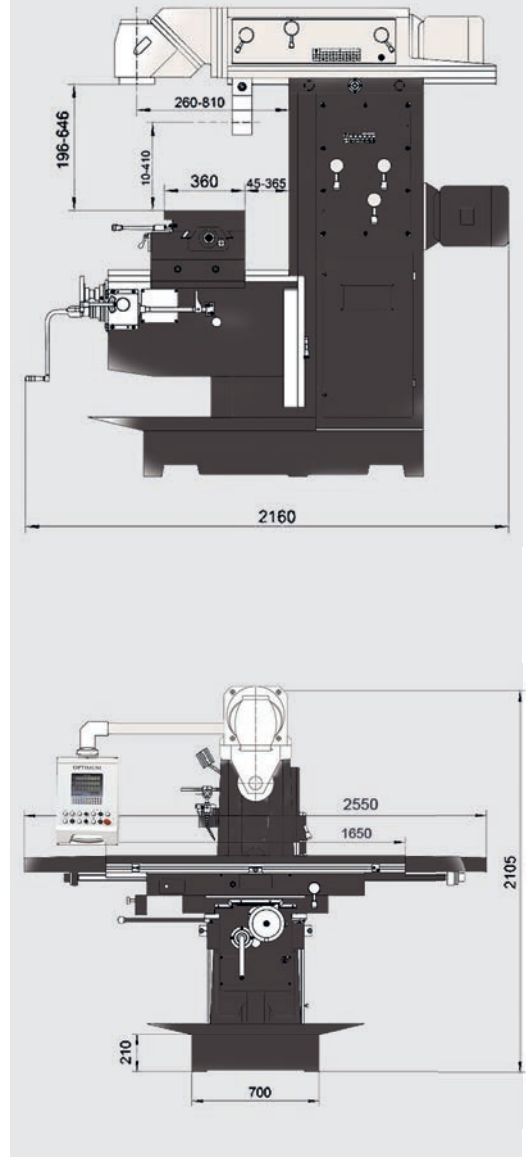
Accessories	Article no.
<b>Parallel shim set</b> , 18-part	3536191
<b>Clamping tool assortment</b> SPW 16, 58 parts	3352017
<b>Collet chuck set</b> ISO 50/ER32	3352065
<b>Precision machine shoe</b> SEU1 (4 pieces are required)	3352985
<b>Hold-down clamp set</b> of 2 18 mm/M 16	3352032
<b>Morse cone</b> ISO50 B18 DIN2080	3352067
<b>Precision boring head</b> ISO 50	3352129

More accessories and information on accessories from page 142

\*\* Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters page 323



### Dimensions



### Scope of delivery

- › Horizontal milling spindle ISO 50 Ø 22 mm
- › Horizontal milling spindle ISO 50 Ø 27 mm
- › Adapter sleeve ISO 50 (7:24) / MT4
- › Drawbar horizontal and vertical M24
- › Operating tool

Machine vices	Article no.
<b>FMS 200</b>	3354200
<b>HMS 125</b>	3355127
<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178
<b>ZAS 50</b>	3354170
<b>DAS 100</b>	3355500
<b>HCV 105</b>	3536210
<b>HCV 125</b>	3536214

For more information see from page 139

Preface

Drilling

Milling

Turning

Measuring

Saws

Grinding

Polishing

Lighting



## Tool milling machines with digital 3-axis position display DP 700 from **NEWALL**. With inverter drive on feed axes controllable via control panel.

### Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Excellent damping characteristics and stability of machine mobile chassis
- ▶ All guides hardened, precision ground, and adjustable using wedge bars
- ▶ Automatic feed on X, Y and Z axis, continuously adjustable via an electronic joystick on the control panel
- ▶ Electrical feed limit shut-off
- ▶ Central and clearly arranged control panel with integrated digital position and speed display
- ▶ Solid cross table, generously dimensioned with precision surface finish
- ▶ Coolant system

- ▶ Generously dimensioned hand wheels with scales
- ▶ Machine lamp
- ▶ Smooth action

#### MZ 2S:

- ▶ Manual centralised lubrication system

#### MZ 4S:

- ▶ Automatic centralised lubrication



Control cabinet

- › With components from **SIEMENS**



Follow this for the video presentation of our Optimum milling machine MZ 4S



OPTi Operating panel

- › Pivotal, central and clearly arranged overview
- › Automatic feed on X, Y and Z axis, continuously adjustable via an electronic joystick on the control panel
- › Operating panel integrated digital position display DP 700



Ball screw

- › on all axes
- › Higher precision
- › Lower reversing play

### Cross table housing

- › Supplied pre-assembled on the machine
- › Protection against chips and splash water
- › Folds away to allow optimal access to the workspace



Fig.: MZ4S



Fig.: MZ 4S



## Technical data and accessories

Model	MZ 2S	MZ 4S
Article no.	3346235	3346245
<b>Power</b>		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	4 kW	5.4 kW
Drive motor	2.2 kW	3.75 kW
Motor rapid motion/feed	0.375 kW	0.75 kW
Coolant pump motor	95 W	
<b>Drilling/milling capacity</b>		
Drilling performance in steel (S235JR)	Ø 30 mm	Ø 32 mm
Continuous drilling performance in steel (S235JR)	Ø 26 mm	Ø 28 mm
Cutter head size max.	Ø 100 mm	Ø 100 mm
End mill size max.	Ø 25 mm	Ø 25 mm
<b>Spindle</b>		
Spindle sleeve stroke	120 mm	
Spindle seat	ISO 40 DIN 2080	
Drawbar	M16	
<b>Speed range</b>		
Spindle speeds	50 - 1 890 rpm	30 - 2 250 rpm
Gearbox stages	12 stages	18 stages
<b>Speed range after optional Vario conversion with SIEMENS inverter (to page 136)</b>		
spindle speeds	-	48 - 3 045 rpm
Gearbox stages	-	2 x 6 stages
<b>Vertical</b>		
Vertical rotation area	± 90°	
Distance between spindle nose - cross table	75 - 410 mm	70 - 400 mm
max. throat	100 mm	185 mm
Vertical cross table x width	830 x 250 mm	1 200 x 250 mm
Max. load	1 100 Nm	1 800 Nm
T-slot size / spacing / count	14 mm / 63 mm / 2	14 mm / 63 mm / 3
<b>Horizontal</b>		
Clearance horizontal spindle to cross table	70 - 400 mm	130 - 390 mm
Horizontal cross table x width	750 x 320 mm	900 x 500 mm
Maximum payload	285 kg	360 kg
T-slot size / spacing / count	14 mm / 63 mm / 5	14 mm / 63 mm / 7
<b>Travel during feed</b>		
X axis (Cross table)	manual 400 mm / automatic ~310 mm	manual 600 mm / automatic ~510 mm
Y axis (milling head)	manual 200 mm / automatic ~160 mm	manual 480 mm / automatic ~440 mm
Z axis (Cross table)	manual 335 mm / automatic ~295 mm	manual 390 mm / automatic ~345 mm
Drive speed feed/rapid motion	50 - 450 rpm / 700 rpm	50 - 450 rpm / 780 rpm
Feed speed	10 - 600 mm/min	10 - 600 mm/min
<b>Dimensions and weight</b>		
Length x width x height	1 239 x 1 168 x 1 900 mm	1 610 x 1 825 x 1 885 mm
Net weight	1 400 kg	1 890 kg

Accessories	Article no.
Hydraulic clamping device DIN 69871ex works	3346226
Compressed air tool changer incl. mounting adapter and assembly costs	3346225
Machine base vibration damper SE 55 (4 pieces required)	3352981

More accessories and information on accessories from page 142

Angled table	3346221
> Table length x width 375 x 660 mm . Maximum payload 150 kg > T-slot size / amount / distance: 12 mm / 8 / 45 mm > Dimensions 895 x 433 x 354 mm > Weight 140 kg	



Vario conversion can be found on page 136



### Scope of delivery

- > Adapter ISO 40 / MT 3
- > MT 1 and MT 2 shank
- > Arbour ISO 40 with counter-bearing 27 mm outer diameter
- > Operating tool

NEW

## Vario conversion for MZ 4S milling machine

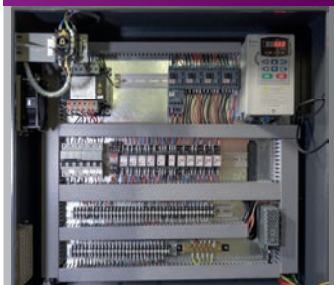


### Vario drive with **SIEMENS** Sinamics G 110M inverter drive

- › With integrated EMC filter
- › Low-noise motor operation thanks to high pulse frequency
- › Fast current limitation (FCL) for trouble-free operation in case of sudden load peaks



Control cabinet



› Clearly-arranged

Vario conversion for MZ 4S milling machine

3491120

- › with **SIEMENS** G 110M inverter
- › 4 kW motor power
- › Speeds 48 - 3 045 rpm 6 gear stages



# ***MILLING MACHINES ACCESSORIES***



## Vises compatibility overview

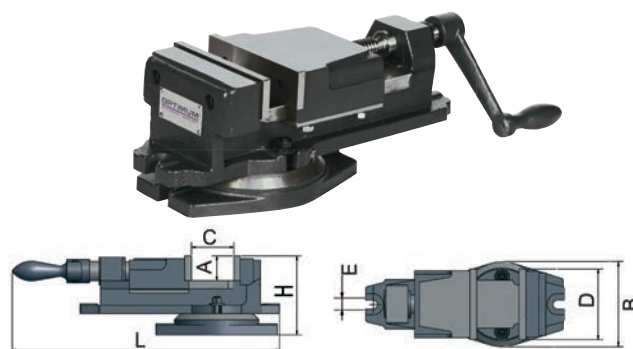
Accessories		Article No.	BF 16V	MH 20	MH 22	MH 25	MB 4	MH 35 / V	MH 50 / V	MB 4P	MB 4PV	MT 50E	MT 50	MT 60	MF 2-B	MF 4-B	MF 2V	MF 4V	MT 130S	MT 100	MT 200	MT 230S	MZ 2S	MZ 4S
Machine vices FMS	100	3354100	●	●	●	●	●			●	●													
	125	3354125					●	●	●	●	●	●	●	●	●		●						●	●
	150	3354150														●		●	●	●			●	●
	200	3354200																			●	●		
Machine vices HMS	100	3355100					●	●		●	●													
	125	3355127													●	●	●	●	●	●	●	●	●	●
	150	3355150																						●
	200	3355200																					●	●
Machine vices FMSN	100	3354110	●	●	●	●																		
	125	3354120					●	●	●	●	●	●	●	●	●		●						●	●
	150	3354130														●		●	●	●			●	●
Machine vices VMQ	80	3354180	●	●	●	●																		
	100	3354181	●	●	●		●	●	●	●	●	●	●	●	●		●						●	●
	125	3354182														●		●	●	●			●	●
	150	3354183																					●	●
Three-axis vices MV3	75	3354175	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	125	3354178											●	●	●	●	●	●	●	●	●	●	●	●
Two-axis vice ZAS	50	3354170	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Three-axis vice DAS	100	3355500					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Machine vice HCV	105	3536210															●	●	●	●	●	●	●	●
	125	3536214															●	●	●	●	●	●	●	●
Machine vice MVSP	150 x 200	3530104																					●	●
	150 x 200	3530108																					●	●

**Precision machine vices FMS**

- › Robust design for milling, drilling and grinding
- › Vice body made of premium cast material
- › Guide surfaces tempered and polished
- › Hardened and ground clamping jaws, replaceable
- › With turntable, rotating through 360°

Vice	Article no.
<b>FMS 100</b>	3354100
<b>FMS 125</b>	3354125
<b>FMS 150</b>	3354150
<b>FMS 200</b>	3354200

Prism jaws	Article no.
<b>for FMS 100</b>	3354102
<b>for FMS 125</b>	3354127
<b>for FMS 150</b>	3354152
<b>for FMS 200</b>	3354202



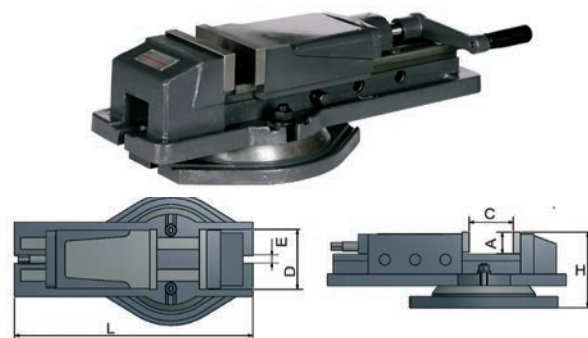
Dimensions		A	C	D	E	L	B	H	kg
<b>FMS 100</b>	mm	30	62	100	13	295	124	100	11
<b>FMS 125</b>	mm	37	85	125	13	370	148	128	17
<b>FMS 150</b>	mm	40	114	150	13	462	180	145	28
<b>FMS 200</b>	mm	58	150	200	16.5	620	237	202	58

**Hydraulic Precision machine vices HMS**

- › Robust design for milling, drilling and grinding
- › Vice body made of premium cast material
- › Guide surfaces tempered and polished
- › Booster system: requires little force, high pressure build-up during clamping
- › Large clamping range due to lock bolts with various hole spacings
- › With turntable, rotating through 360°. Protected spindle

Vice	Article no.
<b>HMS 100</b>	3355100
<b>HMS 125</b>	3355127
<b>HMS 150</b>	3355150
<b>HMS 200</b>	3355200

Prism jaws	Article no.
<b>for HMS 100</b>	3355102
<b>for HMS 125</b>	3355129
<b>for HMS 150</b>	3355152
<b>for HMS 200</b>	3355202



Dimensions		A	D	E	L	B	H	kg
<b>HMS 100</b>	mm	36	100	15	525	Ø 270	122	27
<b>HMS 125</b>	mm	46	127	16	670	Ø 290	151	46
<b>HMS 150</b>	mm	51	150	17	800	Ø 328	169	64
<b>HMS 200</b>	mm	65	200	19	710	Ø 358	158	100

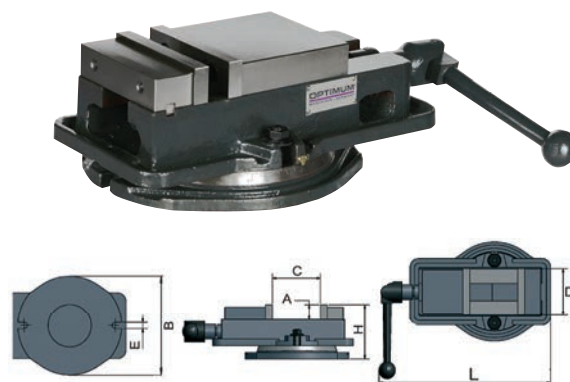
C	Span		Clamping pressure	
<b>HMS 100</b>	0-60 mm	57-115 mm	110-170 mm	2 500 kg 24.5 kN
<b>HMS 125</b>	0-76 mm	72-150 mm	146-224 mm	4 000 kg 39.25 kN
<b>HMS 150</b>	0-100 mm	98-200 mm	195-300 mm	4 500 kg 44.1 kN
<b>HMS 200</b>	0-100 mm	98-200 mm	195-300 mm	7 500 kg 73.6 kN

**Precision machine vices FMSN**

- › Vice body made of premium cast material
- › Guide surfaces tempered and polished
- › Hardened and ground clamping jaws, replaceable
- › Protected spindle
- › Clamping outward by repositioning the clamping jaws
- › With turntable, rotating through 360°

Vice	Article no.
<b>FMSN 100</b>	3354110
<b>FMSN 125</b>	3354120
<b>FMSN 150</b>	3354130

Prism jaws	Article no.
<b>for FMSN 100</b>	3354112
<b>for FMSN 125</b>	3354122
<b>for FMSN 150</b>	3354132



Dimensions		A	C	D	E	L	B	H	kg
<b>FMSN 100</b>	mm	36	101	100	14.5	319	Ø 240	319	19
<b>FMSN 125</b>	mm	36	108	135	16.5	369	Ø 278	369	29
<b>FMSN 150</b>	mm	46	146	155	18.5	425	Ø 332	425	36



## Machine vices

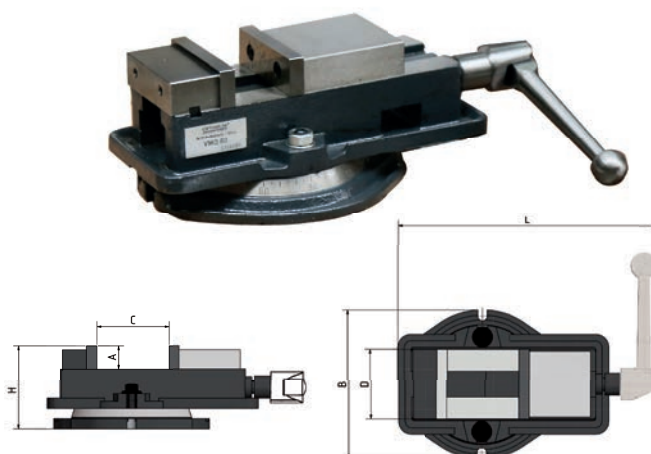
### Milling machine vices

Article no.

- › Robust design for milling, drilling and grinding
- › Vice body made of premium cast material
- › Guide surfaces tempered and polished
- › Hardened and ground clamping jaws
- › With turntable, rotating through 360°

<b>VMQ 80</b>	3354180
<b>VMQ 100</b>	3354181
<b>VMQ 125</b>	3354182
<b>VMQ 150</b>	3354183

Technical data		A	C	D	L	B	H	kg
VMQ 80	mm	26	80	80	305	160	100	9.5
VMQ 100	mm	34	105	105	385	222	126	21
VMQ 125	mm	36	130	134	430	247	135	30
VMQ 150	mm	46	145	158	488	290	162	39



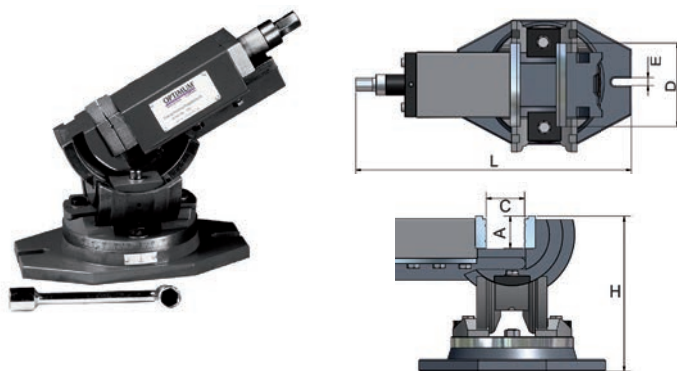
### Three-axis vice

Article no.

- › Horizontal swivel movement up to 90°
- › Vertical swivel movement up to  $\pm 45^\circ$
- › Hardened and ground clamping jaws
- › With turntable, rotating through 360°

<b>MV3-75</b>	3354175
<b>MV3-125</b>	3354178

Technical data		A	C	D	E	L	B	H	kg
MV3-75	mm	34	82	75.5	12	380	139	150	11
MV3-125	mm	45	97	125	12	290	185	206	26

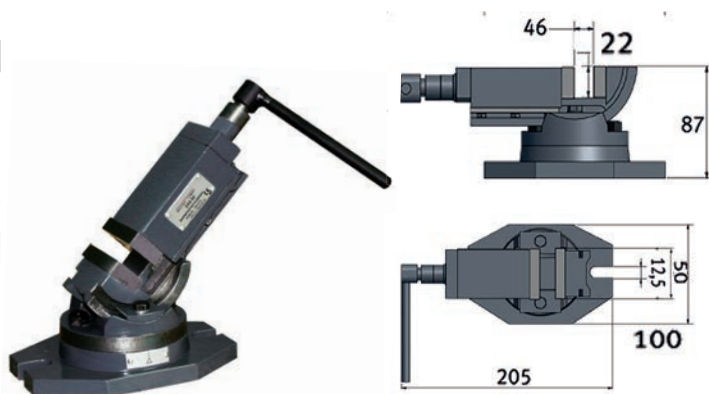


### Two-axis vice

Article no.

- › Tiltable up to -90°
- › Hardened and ground clamping jaws
- › Easily readable scales for both axes
- › With turntable, rotating through 360°
- › Weight 3.4 kg

<b>ZAS 50</b>	3354170
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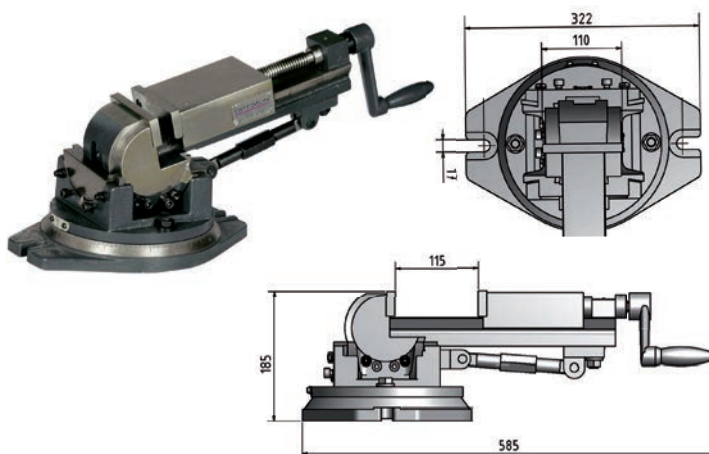


### Three-axis vice

Article no.

- › Premium cast material
- › Guide surfaces tempered and polished
- › With turntable, rotating through 360°
- › Horizontal swivel movement up to 90°
- › Vertical swivel movement up to  $\pm 45^\circ$  above thread spindle
- › Net weight 32 kg

<b>DAS 100</b>	3355500
<b>Prism jaws</b>	3355502



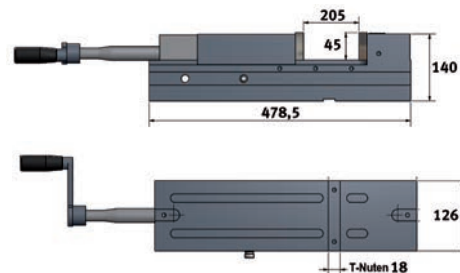
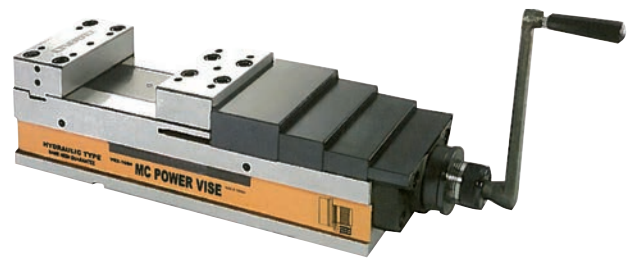
### Hydraulic milling machine vise

Article no.

- › High precision and repeating accuracy for series production and batch-size-one machining on CNC milling machines
- › Robust design for milling
- › Guide surfaces tempered and polished
- › Booster system: requires little force, high pressure build-up during clamping
- › Large clamping range due to lock bolts with various hole spacings
- › Made of premium grade stainless steel

<b>HCV 125</b>	3536214
<b>Soft jaws</b> 2 pcs.	3536221
<b>L jaws</b> 2 pcs.	3536222

Span	Clamping pressure	Weight
0 - 205 mm	4 000 kg 39.2 kN	35.4 kg



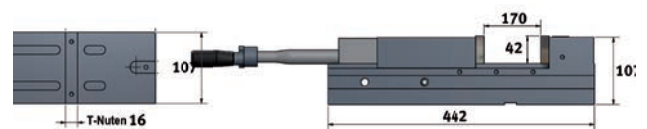
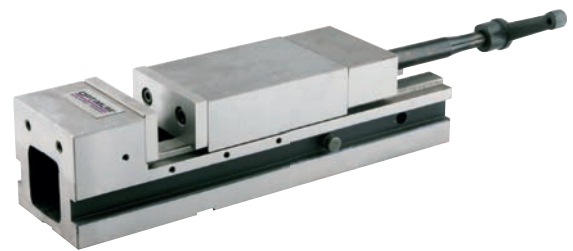
### Hydraulic milling machine vise

Article no.

- › High precision and repeating accuracy for series production and batch-size-one machining on CNC milling machines and machining centres
- › Robust design for milling
- › Guide surfaces tempered and polished
- › Booster system: requires little force, high pressure build-up during clamping
- › Large clamping range due to lock bolts with various hole spacings
- › Made of premium grade stainless steel
- › Long service life thanks to high quality
- › High clamping force

<b>HCV 105</b>	3536210
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C	Span	Clamping pressure	Weight
0 - 85 mm	85 - 170 mm	2 500 kg 24.5 kN	22 kg



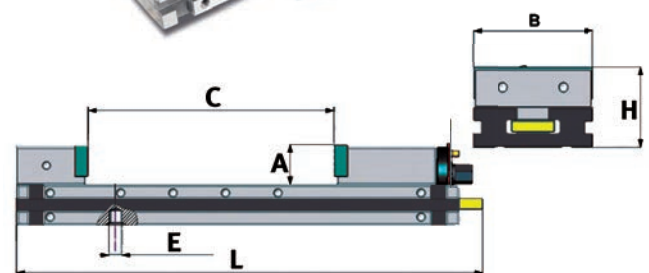
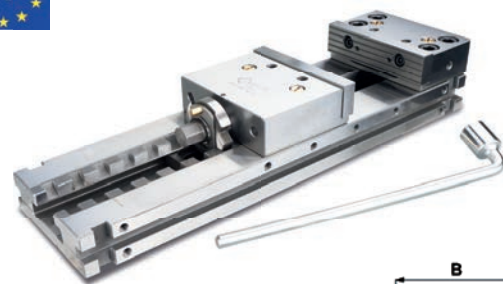
### Modular milling machine vise

Article no.

- › hydraulic
- › High precision and repeating accuracy for series production and batch-size-one machining on CNC milling machines and machining centres
- › Robust design for milling
- › Completely made of steel NiCrMo with hardness HRC60, tolerance 0.0015 mm
- › Mobile jaws with extra long guides to prevent lift-off and slingshot risk
- › Guide surfaces tempered and polished
- › Large clamping range due to lock bolts with various hole spacings
- › Long service life thanks to high quality
- › Includes spanner
- › Model MVSP with fixed jaws

<b>MVSP 150 x 200</b>	3530104
<b>MVSP 150 x 300</b>	3530108

Technical data		A	C	E	L	B	H	kg
MVSP 150 x 200	mm	50	205	16	480	149	100	34
MVSP 150 x 300	mm	50	305	16	580	149	100	38.6



## Compatibility overview accessories for milling machines

Accessories		Article No.	BF 16	MH 20	MH 22	MH 25	MB 4	MH 35 /V/G	MH 50 /V	MB 4P	MB 4PV	MT 50E	MT 50	MT 60	MT 2-B	MT 4-B	MT 2V	MT 4V	MT 130S	MT 100	MT 200	MT 230S	MZ 25	MZ 45
			MK 2	MT 2	BT 20	BT 30	MT 4	BT 30	BT 40	MT 4	MT 4	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 50	ISO 50	ISO 40	ISO 40
Horizontal-vertical indexing table	RT 100	3356110	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○
	RT 150	3356150					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	RT 200	3356200										●	●	●	●	●	●	●	●	●	●	●	●	●
Horizontal-vertical indexing table	RTE 165	3356365					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	RTU 165	3354165					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Universal dividing head	TA 125	3356125					○	○	○	○	○	○	●	●	○	○	○	○	●	●	●	●	●	●
End mill set HSS	12-part	3352250	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	20-part	3352255	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Twist drill HSS	MT 3	3051003					○	○		○	○						●	●	●	●			●	●
Twist drill set	25-part	3201010	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	51-part	3201020	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	41-part	3201021	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Milling cutter set HM	Hard metal	3352118	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Radius	3352116	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Assortment of clamping tools	SPW 8	3352015	●																					
	SPW 10	3352016		●	●	●		●																
	SPW 12	3352017					●			●	●	●	●	●					●	●	●		●	●
	SPW 14	3352018													●	●	●	●						
	SPW 16	3352019							●													●		
Edge sensor		3351171	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●
Quick-action drill chuck	1 - 8 mm B16	3050608	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	●
	1 - 10 mm B16	3050610	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	●
	0 - 13 mm B16	3050632	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	●
	0 - 16 mm B16	3050633	●	●	●	○	●	○	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	●
Morse cone	SK50 B18	3352067																			●	●		
Reduction sleeve	MT3 - MT2	3350313															●	●	●	●			●	●
	MT4 - MT3	3350314					●			●	●													
Arbor for B16 drill chuck	MT 2	3050670	●	●																				
	MT 4	3350304					●			●	●													
	ISO 40	3352070										●	●	●	●	●	●	●	●	●			●	●
Cutter head holder	MT 2	3352102	●	●																				
Copying and facing cutter head	BT 20	3350202			●																			
	BT 30	3350203				●		●																
	MT 2/M10	3350212	●	●																				
	BT 40	3350204							●															
	MT 4/M16	3350214					●			●	●													
	ISO 40	3350216										●	●	●	●	●	●	●	●	●			●	●
Pull stud	BT 20	3352726			●																			
	BT 30	3536302				●		●																
	BT 40	3536332							●															
Precision Bore head set	ISO 40	3352128										●	●	●	●	●	●	●	●	●			●	●
	ISO 50	3352129																			●	●		
Bore head set	MT 4	3352125					●			●	●													



Accessories		Article No.	BF 16	MH 20	MH 22	MH 25	MB 4	MH 35 / V / G	MH 50 / V	MB 4P	MB 4PV	MT 50E	MT 50	MT 60	MF 2-B	MF 4-B	MF 2V	MF 4V	MT 130S	MT 100	MT 200	MT 230S	MZ 25	MZ 45
			MK 2	MT 2	BT 20	BT 30	MT 4	BT 30	BT 40	MT 4	MT 4	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 40	ISO 50	ISO 50	ISO 40	ISO 40
Collet chuck holder Set	MT 2/ER25	3352052	●	●																				
	MT 2/ER32	3352053	●	●																				
	MT 4/M16	3352094					●			●	●													
	ISO 30	3352054																						
	ISO 40	3352056										●	●	●	●	●	●	●	●	●			●	●
	ISO 50	3352065																			●	●		
Collet set	ER 16	3440282			●																			
	ER 25	3441109	●	●	●																			
	ER 32	3441122	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Collet chuck set, direct	MT 2	3351980	●	●																				
Levelling platen	SE1	3381012	●	●	●	●	●	●	●	●	●													
	SE2	3381016										○	○	○*	○*	○*	○*	○*	○*	○*	○*	○*		
Vibration damping machine base	SE 55	3352981	●	●	●	●	●	●	●	●	●												●	●
	SE 85	3352982										●	●	●	●	●	●	●						
Precision machine shoe	SEU1	3352985										●	●	●	●	●	●	●	●	●	●	●		
Try square	90°	3385052				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Prism elbow	WP 30	3352195	●	●	●	●	●	●	●	●	●													
Table feed	V 99S	3352021					●	●	●															
	Mounting kit required	3352036							●															
		3352035					●	●																
	V 250S	3352025															●	●						
Tool clamping system	ISO 40	3352394															●	●						
Thread tapper	M5-M12	3352042	●	●	●	●	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●
Workpiece support	WPS-1	3354261	●	●	●	●	●	●	●	●	●													
	WPS-2	3354262	●	●	●	●																		
	WPS-3	3354263					●	●	●	●	●													
	WPS-4	3354264					○	○	○	○	○	●	●	●										
T-slot nut	M 8 -10mm	3353020	●																					
	M10 -12mm	3353022		●	●	●		●																
	M12 -14mm	3353025					●			●	●	●	●	●					●	●	●		●	●
	M14 -16mm	3353026													●	●	●	●						
	M16 -18mm	3353028							●													●		
Hold-down clamp	14 mm	3352031					●			●	●	●	●	●										
	18 mm	3352032							●															
Parallel spacer kit		3354001	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Coolant system	230V	3351999	○*	○*	○*	○*	●	●	●															
Coolant hose	KMS 2	3356660	●	●	●	●	●	●	●															
Coolant mist lubricator	MMC 1	3356663	●	●	●	●	●	●	●															
Starter set	BT 20	3353281			●																			
	BT 30	3353282				●		●																
	BT 40	3353284							●															
Chassis	MSM 1	3353000	●	●	●																			
	Chip tray	3352999	●	●	●																			
	MSM 2	3353009				●																		
	MSM 3	3353014					●	●																
	MSM 4	3353015							●															

○\* only in combination with substructure (Article No. 3353000) and chip tray (Article No. 3352999)

## Accessories for milling machines

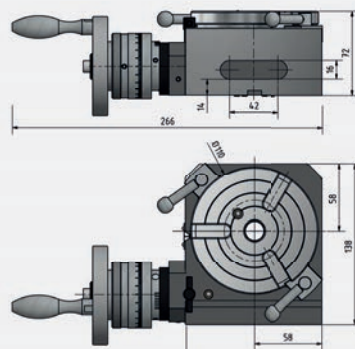
### Horizontal-vertical rotary indexing tables

- › Quality rotary indexing tables made of premium cast meehanite
- › Work table with 360° scale
- › Precision bearing
- › 1 revolution of handwheel 4° rotation
- › Stability also under high load
- › Scale division on handwheel 2°
- › Large spindle hole for clamping longer workpieces
- › Indexing via handwheel with vernier scale possible
- › Worm gear hardened and ground

- › 3356110 - RT 100- Angle degree dividing over 360 degree angle scale, slot 11 mm (M10), indirect indexing discs not supported
- › 3356150 - RT 150- Angle degree dividing over 360 degree angle scale, slot 11 mm (M10), large number of indirect divisions possible with optional indexing discs
- › 3356200 - RT 200- Angle degree dividing over 360 degree angle scale, slot 16 mm (M16), large number of indirect divisions possible with optional indexing discs

Technical data		RT 100	RT 150	RT 200
Centring taper		MT 2	MT 2	MT 3
Transmission ratio		90:1	90:1	90:1
Mounting surface diameter	mm	110	150	200
Height x length x width	mm	72 x 138 x 118	79 x 204 x 156	104 x 265 x 199
Centre height	mm	80	102	133
Slot width/count	mm	11/3	11/3	16/3
Net weight	kg	5	10	25

### Horizontal-vertical rotary indexing table RT 100



#### Rotary indexing table RT 100

- › 2 clamping blocks
- › Centring taper MT 2

#### Three-jaw lathe chuck Ø 85 mm

#### Tailstock Rst 1

- › Centre height 72 - 108 mm



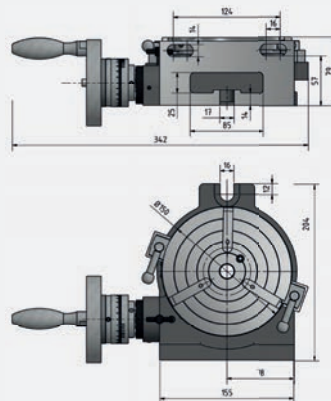
#### Article no.

3356110

3356111

3356155

### Horizontal-vertical rotary indexing table RT 150



#### Rotary indexing table RT 150

- › 2 clamping blocks
- › Centring taper MT 2

#### Chuck flange

#### Three-jaw lathe chuck Ø 125 mm centrally clamping

#### Indirect indexer IT 150

- › 3 Indexing disks
- › Sector arm
- › Angle shears with spring plate



#### Tailstock Rst 1

- › Centre height 72 - 108 mm



#### Article no.

3356150

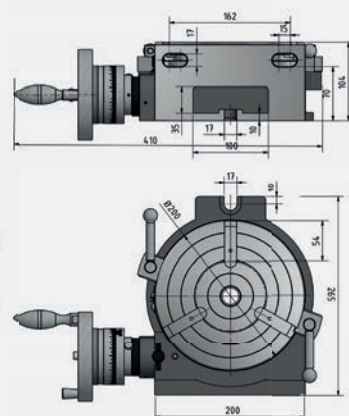
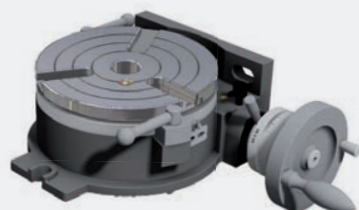
3356154

3356100

3356152

3356155

### Horizontal-vertical rotary indexing table RT 200



#### Rotary indexing table RT 200

- › 2 clamping blocks
- › Centring taper MT 3

#### Chuck flange including 3 slot nuts

#### Three-jaw lathe chuck Ø 165 mm

#### Indirect indexer IT 200

- › 2 Indexing disks
- › Sector arm
- › Angle shears with spring plate



#### Tailstock Rst 2

- › Centre height 110 - 145 mm



#### Article no.

3356200

3356254

3356225

3356205

3356157

### Horizontal-vertical rotary indexing table with 3-jaw chuck

- › Quality rotary indexing tables made of premium cast meehanite
- › Precision taper roller bearing
- › Stability also under high load
- › 24 positions (15° indexing)
- › Large spindle hole for clamping longer workpieces
- › Three-jaw chuck
- › Direct indexing via serrated locking plates for higher production speeds for mass-produced parts
- › Including clamping disc with 3 slots

- › 3354165 - RTU 165 – 24 divisions with direct indexing disc and angular degree divisions over 360 degree angle scale - no slot, three-jaw chuck mounted, large number of indirect divisions possible with optional indexing discs
- › Degree indexing via 360° scale with crank and vernier scale
- › 3356365 - RTE 165- 24 divisions with direct indexing disc and angular degree divisions over 360 degree angle scale - no slot, three-jaw chuck mounted, no indirect
- › 7 serrated locking plates for 2/3/4/6/8/12/24x divisions
- › Degree divisions via 360° scale

Technical data		RTE 165	RTU 165
Mounting surface diameter	mm	165	165
Closed height x width x length	mm	200 x 260 x 218	221 x 250 x 235
Centre height	mm	130	130
Clamping disc	mm	203	203
Passageway	mm	36	36
Net weight	kg	32.5	48

Technical data		RTE 165	RTU 165
Direct indexing disc		24x division (= 15°)	
Indirect indexing disc		2, 3, 4, 6, 8 and 12x division	
Indexing precision of direct indexer		45'	
Clamping options		Horizontal and vertical	
Clamping surface		With scale 360°	

### Horizontal-vertical rotary indexing table RTE 165



#### Rotary indexing table RTE 165

- › 3-jaw chuck (mounted)
- › Clamping disc
- › Main indexing disk (24x division, mounted)
- › 6 Indexing disks

#### Tailstock Rst 2

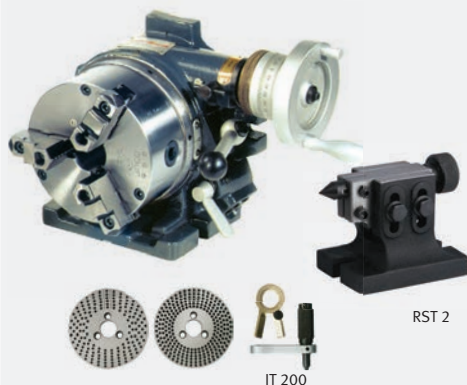
- › Centre height 110 - 145 mm

#### Article no.

3356365

3356157

### Horizontal-vertical rotary indexing table RTU 165



#### Rotary indexing table RTU 165

- › 3-jaw chuck (mounted)
- › Clamping disc
- › Main indexing disk (24x division, mounted)
- › 6 Indexing disks
- › Grips for handwheel

#### Indirect indexer IT 200

- › 3 Indexing disks
- › Sector arm
- › Angle shears with spring plate

#### Tailstock Rst 2

- › Centre height 110 - 145 mm 72 - 108 mm

#### Article no.

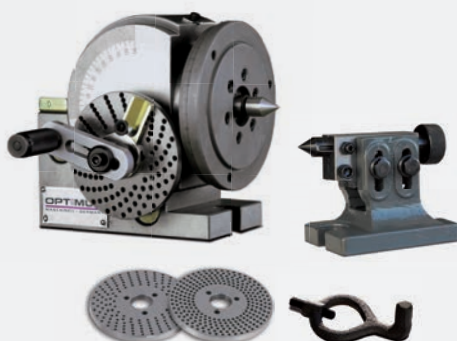
3354165

3356205

3356157

### Universal dividing head TA 125

- › Pivotal from -10° to +90°
- › Hardened and ground worm gear
- › Precision taper roller bearing
- › Hardened and ground main indexing disc (24x division), to index directly at 15°
- › Up to 300 indexing options possible with indirect indexing discs



#### Scope of delivery

- › Tailstock Rst1 (centre height 72 - 108 mm)
- › Centre point 60° / MT 2
- › Lathe dog (tang)
- › Chuck flange (Ø 140 mm, t = 12 mm) for driving pin or lathe chuck mounting
- › 3 pcs. Indirect indexing discs

Technical data	
Transmission ratio	40:1
Overall height x width with centre point x length	175 x 205 x 230 mm
Centre height	100 mm
Bore hole in the pick-up shaft (passage)	18 mm
Slot width	16 mm
Direct indexing disc (Pitch)	15° / Ø 110 mm
Indirect indexing disc (Bore on reference 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



## Accessories for milling machines

Accessories	Article no.
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### End mill set HSS

- › Titanium coated
- › Improved hardness and stability with 2x to 5x service life
- › Twice the machining performance
- › Improved workpiece finish
- › Cylindrical shank and lateral lugs
- › Version with 2 cutting edges for milling keyways/fixing slots and milling out the workpiece centre
- › Vertical or lateral milling possible
- › Version with 4 cutting edges and 30° right-hand twist for good chip removal in normal to hard materials

<b>12-part</b>	3352250
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› 6 end mills, short version · Version with 2 cutting edges.  
DIN 1835 B (Ø12x73, Ø10x63, Ø8x61, Ø6x52, Ø5x52, Ø4x51 mm)

› 6 end mills, short version · Version with 4 cutting edges.  
DIN 1835 B (Ø12x83, Ø10x73, Ø8x61, Ø6x57, Ø5x57, Ø4x55 mm)

<b>20-part</b>	3352255
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› 10 end mills DIN 327 D · Short version · 2 cutting edges  
DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)

› 10 milling cutter DIN 844 B · Short version · 4 cutting edges  
DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm)



<b>Carbide end mill set</b>	3352118
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- › 18-part; 3 each in the sizes 3/4/6/8/10 and 12 mm
- › 4-cutting edge version
- › Coated solid carbide end mill (TiAlN)
- › Centre cut for plunging
- › Chip angle 35 °



<b>Radius end mill set</b>	3352116
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- › 9-part; 3 each in the sizes 4 mm / 6 mm / 8 mm
- › 2-cutting edge version
- › Coated solid carbide end mill (TiAlN)
- › Face cutting geometry for plunging
- › Chip angle 30 °



Accessories	Article no.
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### Twist drill HSS with morse taper

- › 9-part; sizes 14.5/16/18/20/22/24/26/28/30 mm
- › Long service life
- › Good chip removal
- › Right handed

<b>MT 2</b>	3051002
<b>MT 3</b>	3051003



### Twist drill set

- › DIN 338 HSS-CO 5%
- › Tetrahedral 135° cross grinding enables excellent self-centring
- › Improved tool service life thanks to alloyed components
- › High speed/feed properties
- › Strong core design optimises the structural strength of the bit and minimises the risk of bit breakage
- › Practical OPTIMUM plastic case

<b>25-part</b>	3201010
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- › 1- 13 mm

<b>51-part</b>	3201020
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- › 1 - 6 mm (in 0.1 mm increments)

<b>41-part</b>	3201021
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- › 6 - 10 mm (in 0.1 mm increments)



<b>Edge finder</b>	3351171
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- › Rotating spindle
- › 10 mm shaft
- › Probe Ø 10 mm



Accessories	Article no.
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#### Precision quick-action drill chuck

Concentricity  $\leq 0,06$  mm

<b>1 - 8 mm; B16</b>	3050608
<b>1 - 10 mm; B16</b>	3050610
<b>1 - 16 mm; B18</b>	3050630



#### Optimum Precision quick-action drill chuck

<b>DKC 13</b> / 0-13 mm; B16 up to 4 800 rpm	3050632
<b>DKC 16</b> / 0-16 mm; B16 up to 4 000 rpm	3050633



#### OPTIMUM Direct quick-action drill chuck

<b>MT 2</b> 1 - 16 mm; up to 6 000 rpm	3050571
<b>MT 2</b> 1 - 13 mm; up to 8 000 rpm	3050572
<b>MT 3</b> 1 - 16 mm; up to 6 000 rpm	3050573
<b>MT 4</b> 1 - 16 mm; up to 6 000 rpm	3050574



MT 3

#### Extension sleeves

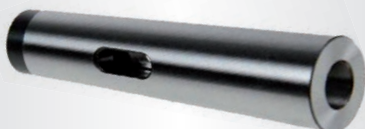
<b>MT 2 - MT 3</b>	3050667
<b>MT 3 - MT 4</b>	3050668



MT 2-MT 3

#### Reduction sleeve

<b>MT 3 - MT 2 / M12</b>	3350313
<b>MT 4 - MT 3 / M16</b>	3350314

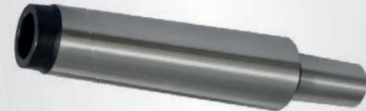


MT 3-MT 2

Accessories	Article no.
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#### Milling cutter arbor

External taper <b>MT 2 / M10 / B16</b>	3050670
External taper <b>MT 3 / M12 / B16</b>	3350303
External taper <b>MT 4 / M16 / B16</b>	3350304



MT 3

#### Drill chuck holder (arbour)

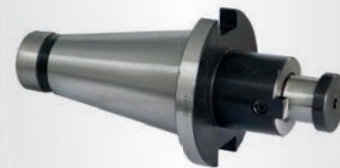
External taper <b>ISO 30 / M12 / B16</b>	3352069
External taper <b>ISO 40 / M16 / B16</b>	3352070



#### Holder for cutterhead SK50

3352066

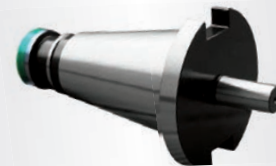
› External taper  $\varnothing 27$  mm DIN2080



#### Morse cone SK50

3352067

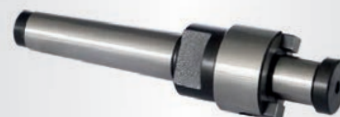
B18 DIN2080



#### Holder for cutterhead MT 2

3352102

› External taper MT 2 / milling cutter holder  $\varnothing 16$  mm



#### Adapter

<b>ISO 30 / MT 3</b>	3352068
<b>BT 30 / MT 3</b>	3536316



## Accessories for milling machines

Accessories	Article no.
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### Copy and face milling cutter

- › Universally deployable for machining all steels and NF metals
- › For facing and copying
- › Made of special steel - highly quenched and hardened
- › Excellent planarity and true running accuracy
- › Milling body with asymmetrical division for extremely smooth action and uniform cutting
- › Body and clamping shank form a unit for a short projection length and stable clamping
- › No additional end mill mandrel used
- › Special geometry for high-speed milling
- › Economical because, in case of a blunt cutting edge, the plate can simply be rotated further (can be used up to twelve times)
- › Indexable inserts  $\varnothing$  10 mm
- › Includes five turning plates RDET 1003 MOSN 8026
- › Includes Torx TX15

MADE IN GERMANY

<b>Tool holder shank BT 20</b>	3350202
<b>Pull stud Optimum BT 20</b>	3352726



- › External  $\varnothing$ : 52 mm
- › ISO designation RD X 1003 D52/R5

<b>Tool holder shank BT 30</b>	3350203
<b>Pull stud BT 30</b>	3536302



- › External  $\varnothing$ : 52 mm
- › ISO designation: RD X 1003 D52/R5

<b>Tool holder shank BT 40</b>	3350204
<b>Pull stud BT 40</b>	3536332



- › External  $\varnothing$ : 63 mm
- › ISO designation: RD X 1003 D63/R5

<b>Tool holder shank ISO 30/DIN 2080</b>	3350215
<b>Tool holder shank ISO 40/DIN 2080</b>	3350216



- › External  $\varnothing$ :  
52 mm (ISO 30)  
63 mm (ISO 40)
- › ISO designation:  
RD X 1003 D52/R5 (ISO 30)  
RD X 1003 D63/R5 (ISO 40)

<b>Tool holder shank MT 2/M10</b>	3350212
<b>Tool holder shank MT 3/M12</b>	3350213
<b>Tool holder shank MT 4/M16</b>	3350214



- › External  $\varnothing$ :  
52 mm (MT 2/MT 3)  
63 mm (MT 4)
- › ISO designation:  
RD X 1003 D52/R5 (MT 2/3)  
RD X 1003 D63/R5 (MT 4)

### HM indexable inserts

<b>RDET 1003 MOSN8026</b>	3350220
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- › 5 pcs.
- › Positive cutting geometry
- › PVD coated
- › For machining steel up to 900 N/mm<sup>2</sup>, stainless steel, aluminium, non-ferrous metal, cast iron

<b>RDHT 1003 MO-FA HF7</b>	3350221
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- › 5 pcs.
- › Extremely positive cutting geometry
- › Polished
- › For machining AL alloys, copper alloys, plastics

Accessories	Article no.
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### Precision boring head set

<b>ISO 30/ER32 - M12/BT 30</b>	3352127
<b>ISO 40/ER32 - M16/BT 40</b>	3352128
<b>ISO 50/ER32 - M24/BT 50</b>	3352129

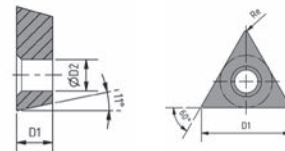


- › 8 pcs. boring bars: BJ2008-32L/BJ2010-40L/BJ2014-53L/BJ2016-68L/BJ2020-83L/BJ2025-96L/BJ2030-115L/BJ20-L20-100L
- › Setting range 8 - 280 mm
- › Including boring bars, studs, circle extension, tools, case
- › Without indexable inserts

### Indexable inserts set (10 pcs.)



For steel					
for boring bar No. 1-4					3352136
for boring bar No. 5, 6					3352137
For drill rod No. 7, 8					3352138
For aluminium					
for boring bar No. 1-4					3352141
for boring bar No. 5, 6					3352142
For drill rod No. 7, 8					3352143
Article no.	ISO	D1	D2	S1	right



3352136	TPGT110304L-FY-EH10	11	3.4	3.18	0.4
3352141	TBGT060104L-W-T1200A	11	3.4	3.18	0.4
3352137	TPGT090204L-FY-EH10	9.6	2.8	2.38	0.4
3352142	TPGT090204L-W-T1200A	9.6	2.8	2.38	0.4
3352138	TBGT060104L-W-H1	6.9	2.2	1.59	0.4
3352143	TBGT060104L-W-T1200A	6.9	2.2	1.59	0.4

Cutting depth 0.2 - 0.6 - 1.0 mm, feed 0.05 - 0.15 - 0.25 mm, speed 100 - 250 - 400 mm

### Boring head set

- › For external and vertical machining
- › Scope of delivery: Boring head, 9 pcs. Boring bars with soldered HSS plate, Allen key

<b>Spindle holder MT 3</b>	3352124
<b>Spindle holder MT 4</b>	3352125





Accessories	Article no.
<b>Collet chuck set</b>	
<b>MT 2/ ER 25 - M10</b>	3352052
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 15 collets; sizes Ø 1.5 - Ø 16 mm/DIN ISO 15488</li> <li>› Hook wrench Aluminium case</li> </ul>	
<b>MT 2/ ER 32 - M10</b>	3352053
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 18 collets; sizes Ø 2 - Ø 20 mm/DIN ISO 15488</li> <li>› Hook wrench Aluminium case</li> </ul>	
<b>MT 3/ ER 32 - M12</b>	3352093
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 18 collets; sizes Ø 2 - Ø 20 mm/DIN ISO 15488</li> <li>› Hook wrench Aluminium case</li> </ul>	
<b>MT 4/ER 32 - M16</b>	3352094
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 18 collets; sizes Ø 2 - Ø 20 mm/DIN ISO 15488</li> <li>› Hook wrench Aluminium case</li> </ul>	
<b>ISO 30/ER32 - M12/BT 30</b>	3352054
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 18 collets sizes Ø 2 - Ø 20 mm/ DIN ISO 15488</li> <li>› Pull stud M12/M12 and pull stud BT 30</li> <li>› Hook wrench Aluminium case</li> </ul>	
<b>ISO 40/ER32 - M16/BT40</b>	3352056
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 18 collets sizes Ø 2 - Ø 20 mm/ DIN ISO 15488</li> <li>› Pull stud M16/M16 and pull stud BT 40</li> <li>› Hook wrench Aluminium case</li> </ul>	
<b>ISO 50/ER32 - M24/BT50</b>	3352065
<ul style="list-style-type: none"> <li>› Collet chuck holder</li> <li>› 18 collets sizes Ø 2 - Ø 20 mm/ DIN ISO 15488</li> </ul>	



<b>Collet chuck ISO 30/ER25</b>	3352046
<ul style="list-style-type: none"> <li>› Hook wrench</li> </ul>	



Accessories	Article no.
<b>Collet ER32 (individual)</b>	
Ø 6 mm	3441126
Ø 8 mm	3441128
Ø 10 mm	3441130
Ø 12 mm	3441132



<b>Collet (individual)</b>	
› MT 3 direct-clamping / M12	
Ø 4 mm	3352004
Ø 6 mm	3352006
Ø 8 mm	3352008
Ø 10 mm	3352010
Ø 12 mm	3352012
Ø 16 mm	3352013



<b>Collet set</b>	
<b>MT 2 direct-clamping / M10</b>	3351980
› 5-part; sizes Ø4 / Ø6 / Ø8 / Ø10 / Ø12 mm	
<b>MT 3 direct-clamping / M12</b>	3352014
› 6-part; sizes Ø4 / Ø6 / Ø8 / Ø10 / Ø12 / Ø16 mm	



<b>Collet set</b>	
<b>ER 16</b>	3440282
› 12 collets sizes Ø 1 - Ø 10 mm	
<b>ER 25</b>	3441109
› 15 collets sizes Ø 1 - Ø 16 mm / DIN ISO 15488	
<b>ER 32</b>	3441122
› 18 collets sizes Ø 3 - Ø 20 mm / DIN ISO 15488	



ER25

## Accessories for milling machines

Accessories	Article no.
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### Clamping tool assortment SPW

- › 58-part, in practical wall-mount holder
- › Metric thread
- › 24 pcs. pull studs
- › 6 pcs. T-slot nuts
- › 6 pcs. nuts
- › 4 pcs. extension nuts
- › 6 pcs. step blocks
- › 12 pcs. step blocks

<b>Size 8</b>	3352015
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- › T-slot nuts 10 mm; locking thread M 8

<b>SPW 10</b>	3352016
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- › T-slot nuts 12 mm; locking thread M10

<b>SPW 12</b>	3352017
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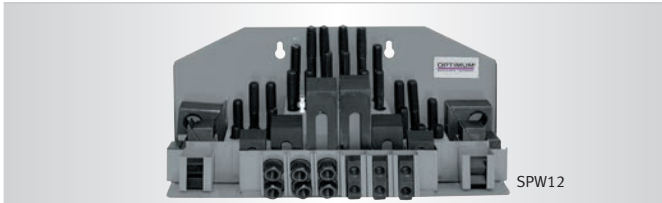
- › T-slot nuts 14 mm; locking thread M12

<b>SPW 14</b>	3352018
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- › T-slot nuts 16 mm; locking thread M 14

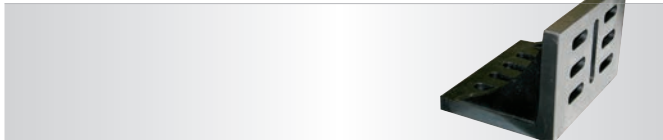
<b>SPW 16</b>	3352019
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- › T-slot nuts 18 mm; locking thread M16



<b>Try square 90°</b>	3385052
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- › For clamping in case of mechanical processing of workpieces, checking and scribing work
- › Precision: Parallelism and perpendicularity 0.01 to 100 mm
- › Lateral reinforcing ribs
- › Dimensions L x W x H: 202 x 126 x 150 mm . Weight 7 kg



### Universal compressed air tool clamping system

- › Including tool clamp, cover cap, maintenance unit, key type, drawbar, control cabinet, operating element
- › High negative pressure achievable
- › Short change times through single-handed operation
- › Low effort thanks to optimised structure
- › Safe locking through toggle lever principle
- › Precise guiding thanks to optimised geometry
- › Low air consumption

<b>ISO 40</b>	3352394
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- › for OPTImill MF 2V / MF 4V

<b>Factory assembly clamping system</b>	9000490
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(Note: Adjustment work may be necessary if ordered without factory assembly).

Accessories	Article no.
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### Vibration damping machine base

- › Effective vibration and structure-borne noise insulation and noise reduction

MADE IN GERMANY

- › Eliminates floor unevenness up to 5°

- › Fast and technically easy precision levelling by means of a regular threaded screw

<b>SE 55</b>	3352981
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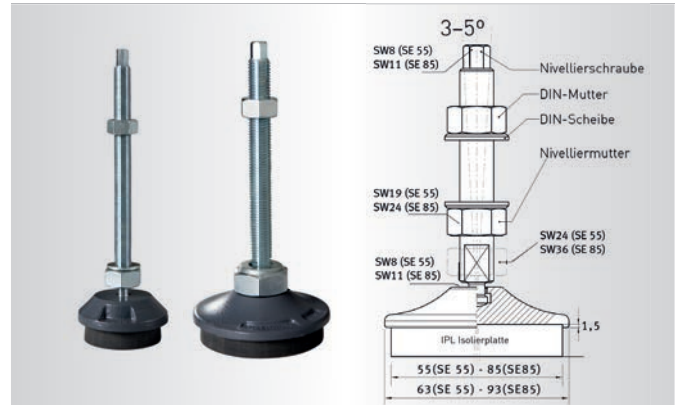
- › Jackscrew M12 x 1 x 150

- › Maximum load: 600 kg

<b>SE 85</b>	3352982
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- › Levelling screw M16 x 150

- › Maximum load: 1 500 kg



<b>Precision machine shoe SEU1</b>	3352985
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- › Patented double spindle bearing

- › With slip-protection plate at top

- › Maximum load 60 kN

- › Suitable for M16 threaded rod

- › Vibration-insulation plate for particularly loads. Good structure-borne noise insulation

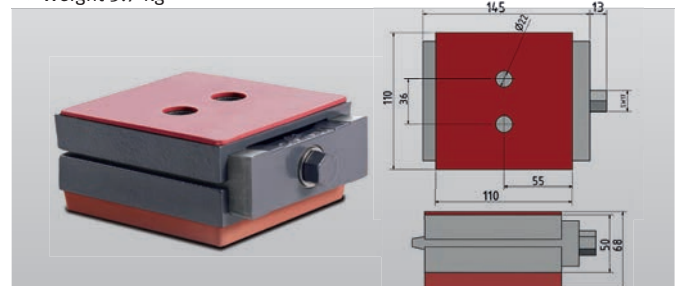
- › Adjustment range +5 / -4 mm

- › High-precision, jerk-free levelling even of heavy machines

- › Installation time savings of up to 50 % thanks to precision levelling and freedom of installation.

- › Improves the dynamic behaviour of machines while reducing noise

- › Weight 3.7 kg



### Levelling platen

- › The machines and equipment can be installed without anchors and precisely levelled using the height adjustment system

- › non-slip rubberised

<b>SE 1</b>	3381012
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<b>SE 2</b>	3381016
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<b>SE 3</b>	3381018
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	Load	SE 1	SE 2	SE 3
Milling machines		340 kg	460 kg	1 600 kg
gen. Machine		570 kg	1 460 kg	3 500 kg
Thread		M12	M16	M20
Base Ø/Base height		120/32	160/35	185/39



**Accessories**

**Article no.**

**Universal milling table feed**

- › Emergency stop shutdown, no restart
- › Continuous speed control and rapid motion \*
- › Right-/left-hand rotation
- › Overload protection and limit stop switch
- › For self-assembly

NEW

**Milling table feed V 99S**

3352021

- › Horizontal assembly
- › Motor: 90 W 230V ~50Hz

**MH 35V assembly kit** for the X axis

3352035

**MH 50V assembly kit** for the X axis

3352036

NEW

**Milling table feed V 250S**

3352030

- › Vertical assembly
- › Motor: 130 W 230V ~50Hz

**Milling table feed V 250**

3352025

- › Motor: 130 W 110V ~50Hz
- › For the Y axis of MF 2V / MF 4V
- › Includes assembly kit



\*only possible if the feed is integrated into the emergency stop circuit.

**Workpiece support**

- › Material S 45C

<b>WPS-1</b>	3354261
<b>WPS-2</b>	3354262
<b>WPS-3</b>	3354263
<b>WPS-4</b>	3354264



**Prism WP 30**

3352195

- › Robust design for use on tool machines.
- › High-precision design
- › Adjustable from 0° to 60° and from 0° to -30°
- › Hardened and ground carbon steel
- › Precision squareness 0.005 mm
- › Angle tolerance 0.01°
- › Dimensions L x W x H: 75 x 25 x 32 mm



**Accessories**

**Article no.**

**KT cross tables**

- › Coolant channel
- › Adjustable dovetail guide
- › Adjustable handwheel scaling with 0.05 mm scale

**KT 120**

3356595

**KT 179**

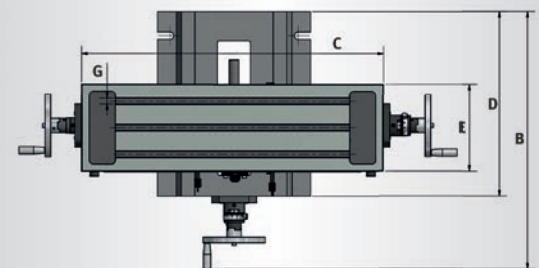
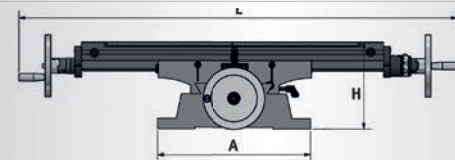
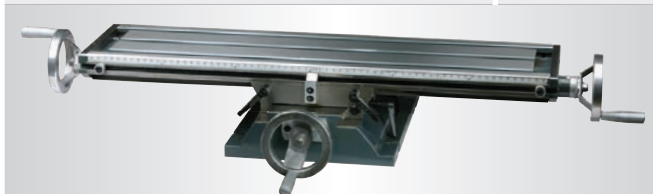
3356596

**KT 180**

3356591

**KT 210**

3356600



Technical data	KT120	KT179	KT 180	KT210
A (Base width)	222 mm	274 mm	274 mm	370 mm
D (base length)	280 mm	340 mm	340 mm	445 mm
C (table length)	400 mm	500 mm	700 mm	730 mm
E (table width)	120 mm	180 mm	180 mm	210 mm
G (T-slot size)	10 mm	12 mm	12 mm	14 mm
L x W x H (mm)	506 x 400 x 140	748 x 483 x 155	948 x 483 x 155	1060 x 620 x 210
Weight	22 kg	46 kg	54 kg	84 kg
Traverse paths				
X axis	220 mm	287 mm	480 mm	480 mm
Y axis	165 mm	167 mm	170 mm	210 mm
Max. load	40 kg	55 kg	55 kg	80 kg

**Hold-down clamp set of 2**

- › Clamping height adjustable
- › Brass plate below the clamping arm protects material against damage

**Table slot 14 mm/M 12**

3352031

- › L x W x H: 115 x 42 x 39 mm . Height adjustment: 0 - 89 mm

**Table slot 18 mm/M 16**

3352032


- › L x W x H: 133 x 50 x 49 mm . Height adjustment: 0 - 101 mm






## Accessories for milling machines

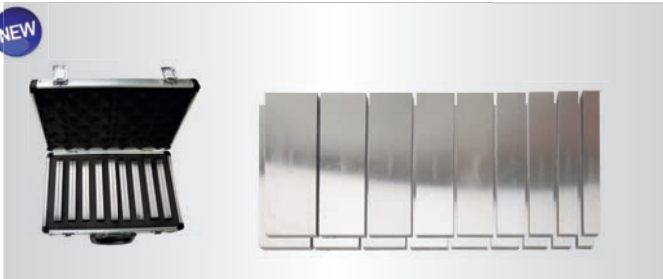
Accessories	Article no.
<b>T-slot nut(individual)</b>	
M 8 / 10 mm	3353020
M 10 / 12 mm	3353022
M 12 / 14 mm	3353025
M 14 / 16 mm	3353026
M 16 / 18 mm	3353028



<b>Universal coolant unit</b>	3351999
› Connection 230V / 1 Ph › Max. delivery height 2.5 m / delivery rate 8 l/min › Tank capacity 11 litres / Size L x W x H: 370 x 245 x 170 mm › Complete with tank, flexible tube, hose and switch/plug combination › Magnetic base fastener for coolant hose	



<b>Parallel shim set 18-part</b>	3356191
› For precision work for parallel mounting of workpieces in machines, vices on scoring boards or tool machines › Finely ground to an accuracy of 0.01 mm › Length 150 mm x width 8.5 mm › 2 pc. each: 14 mm; 16 mm; 20 mm; 24 mm; 30 mm; 32 mm; 36 mm; 40 mm; 44 mm	



<b>Parallel shim set 20-part</b>	3354001
› For precision work for parallel mounting of workpieces in machines, vices on scoring boards or tool machines › Finely ground to an accuracy of 0.01 mm › Length 150 mm x width 3 mm › 2 pc. each: 8 mm; 13 mm; 16 mm; 19 mm; 22 mm; 25 mm; 31 mm; 35 mm; 38 mm; 41 mm	



<b>Accessories</b>	Article no.
<b>Thread cutting device M5 - M12/B16</b>	3352042
› Quick reverse built-in, immediately effective on changing the feed direction › Slip clutch 4-stage adjustable	
<b>Scope of delivery:</b>	
› Two flexible collets › Two open-ended spanners › Hand grip › Allen key	



<b>Technical data</b>	
Self-release path	4 mm
Freewheel	1.5 mm
Length compensation tensioned	8.5 mm
Max. speed	1 000 rpm
Transmission ratio forward and reverse	1 : 1.75
Cutting range	M5 - M12
Clamping range	3.5 - 10
Length	B16 DIN 238
Length compensation compressed	156 mm
Shank holder	5 mm

<b>AQUACUT C1</b>	3530030
10 litre cannister	
For mixing emulsions	
Drilling and cooling emulsion	
High-pressure resistant and containing mineral oil, for long tool life and clean surfaces	
Emulsifiable with water, microbe-resistant and kind to the skin	



<b>KMS 2 coolant hose</b>	3356660
› Two flexible and stable coolant hoses made of individual plastic elements › Not electrically conductive › Magnetic base holding force up to 50 kg › Length of coolant hoses each 335 mm › Insensitive to most solvents and chemicals › Universally deployable on all tool machines	

<b>MMC1 coolant mist lubricator</b>	3356663
› Magnetic base with a holding force of 75 kg › Base size L x W x H: 62 x 50 x 55 mm › Screw connection for external compressed air supply › Flexible and stable hose with a length of 500 mm	

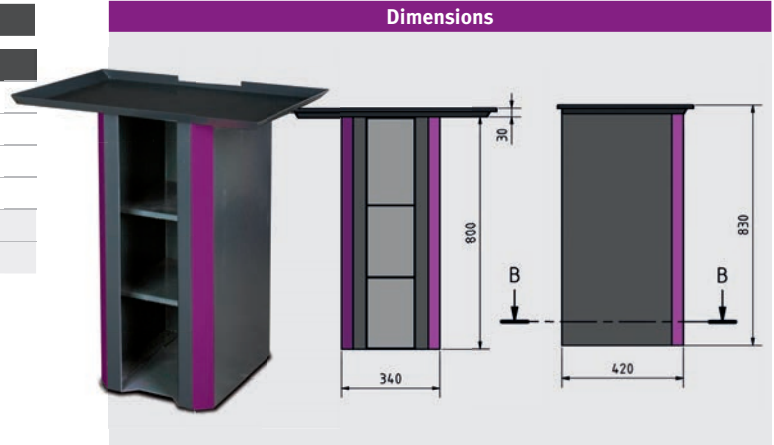


KMS 2

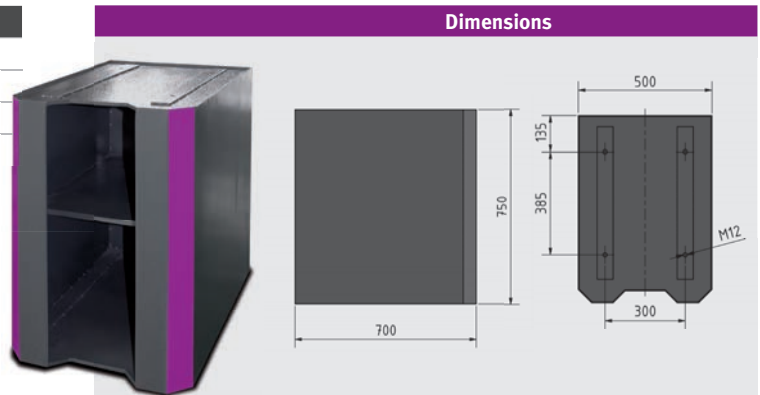


MMC1

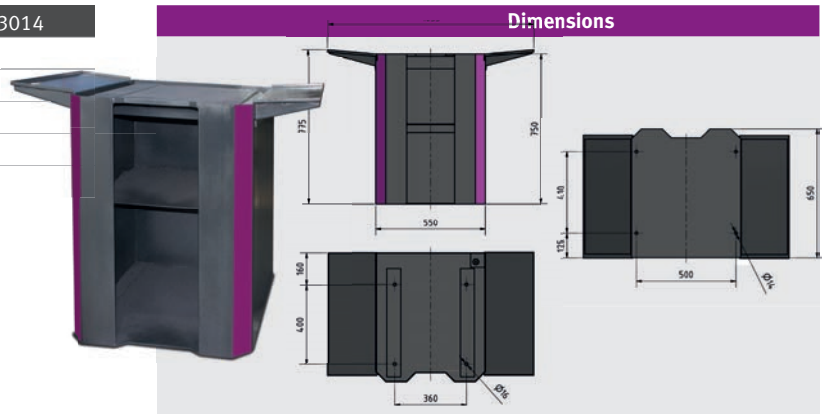
Accessories	Article no.
<b>Universal machine substructure MSM 1 and chip tray</b>	
› for milling machine models BF16 / MH20 / MH22	
› Substructure dimensions 420 x 340 x 800 mm	
› Chip tray dimensions 720 x 470 x 30 mm	
› Substructure net weight 28 kg	
<b>Universal machine substructure MSM 1</b>	3353000
<b>Chip tray</b>	3352999



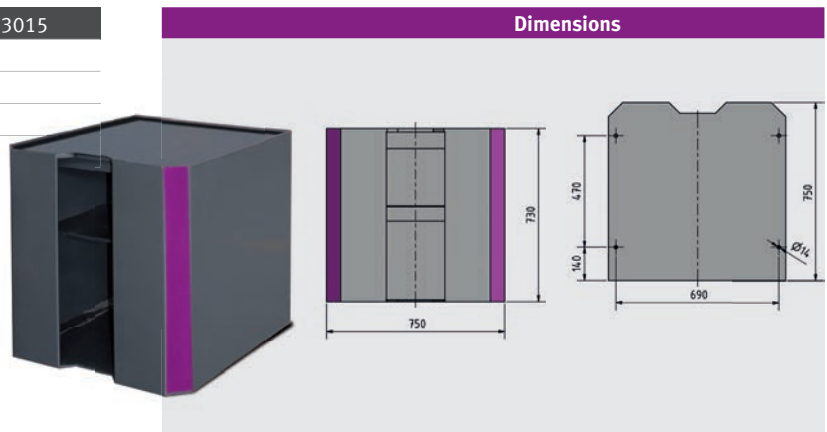
<b>Machine substructure MSM 2</b>	3353009
› for milling machine models MH 25V / MH 25SV	
› Solid design and weight ensure stability	
› Net weight 51 kg	
› Dimensions 500 x 700 x 750 mm	



<b>Machine substructure MSM 3</b>	3353014
› for milling machine models MH 35G / MH 35V / MB 4	
› Solid design and weight ensure stability	
› Net weight 86.5 kg	
› Dimensions 680 x 570 x 910 mm	
The rear mounting holes must be drilled by the customer	



<b>Machine substructure MSM 4</b>	3353015
› for the milling machine MH 50G / MH 50V	
› Solid design and weight ensure stability	
› Net weight 134 kg	
› Dimensions 650 x 550 x 750 mm	



Accessories	Article no.
<b>Starter set BT 20</b>	3353281
<b>Comprises:</b>	
1 pc. cutterhead holder Ø 16 mm	
2 pcs. Weldon holder Ø 6 mm	
2 pcs. Weldon holder Ø 8 mm	
1 pcs. Weldon holder Ø 10 mm	
1 pcs. Weldon holder Ø 12 mm	
1 pc. tool holder BT20/B16	
11 units pull studs	
1 pc. quick-action drill chuck 1 - 13 mm	
1 pc. copy and face milling cutter	
2 pcs. collet chuck ER 25	
1 pcs. collet spanner ER 25	
12-part collet set ER 25	

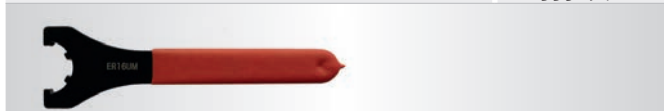
Milling head holder	3352728
	
	› Ø 16 mm seat

Weldon holder	
Ø 6 mm	3352732
Ø 8 mm	3352734
Ø 10 mm	3352736
Ø 12 mm	3352738



Tool holder	3352727
	
	› BT 20/B16

Collet chuck spanner	
ER 16	3352742




ER 25	3352745
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Accessories	Article no.
<b>Optimum Precision quick-action drill chuck</b>	
DKC 13 / 0-13 mm; B16 up to 4 800 rpm	3050632
DKC 16 / 0-16 mm; B16 up to 4 000 rpm	3050633



Copy and face milling cutter	335202
	
	<ul style="list-style-type: none"> <li>› Universally deployable for machining all steels and NF metals</li> <li>› For facing and copying</li> <li>› Made of special steel - highly quenched and hardened</li> <li>› Excellent planarity and true running accuracy</li> <li>› Includes Torx TX15</li> <li>› 52 mm outer diameter</li> <li>› ISO: RD X 1003 D52/R5</li> </ul>

Assembly and tool adjustment gauge	3352731
	
	<ul style="list-style-type: none"> <li>› For easy and precise adjustment of tools</li> <li>› Vertical and horizontal collet for tools with a steep-angle taper</li> </ul>

Collet chuck holder	
ER 16	3352741
ER 25	3352744
	


Pull stud Optimum	3352726
	
	› Optimum custom build (no standard BT 20 bolts)


Collet chuck set	
ER 16, 12-part Ø 1-10 mm	3440282
ER 25, 15-part Ø 1-16 mm	3441109






Accessories	Article no.
<b>Starter set BT 30</b>	3353282
<b>Comprises:</b>	
1 pc. cutterhead holder Ø 22 mm	
1 pc. chuck 1 - 13 mm	
2 pcs. Weldon 6 mm	
1 pc. Weldon 8 mm	
1 pc. Weldon 10 mm	
1 pc. Weldon 12 mm	
1 pc. Weldon 16 mm	
2 pcs. Weldon 20 mm	
1 pc. adapter BT 30 to MT 2	
4 pcs. collet chuck holder ER 32	
1 pc. spring collet spanner ER 32	
18-part spring collet set ER 32	
1 pc. height adjuster	
1 pc. assembly and tool setting aid	
14 pcs. pull studs	
1 pc. taper squeegee	

Milling head holder	3353306
	
› Ø 22 mm seat	

Drill chuck	3353303
	
› Clamping range 1.5-16 mm	


Weldon holder	
Ø 6 mm	3353310
Ø 8 mm	3353311
Ø 10 mm	3353312
Ø 12 mm	3353313
Ø 16 mm	3353314
Ø 20 mm	3353315

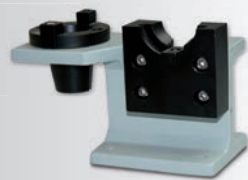
	
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Adapter	
Ø BT 30 to MT 2	3353305
Ø BT 30 to MT 3	3353316



	
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Accessories	Article no.
<b>Collet chuck holder ER 32</b>	3353304
	
<b>Drill chuck adapter BT 30 - B16</b>	3353308
	
<b>Collet chuck spanner ER 32</b>	3353307
	

Height-adjuster	3536290
	
› Analogue version › For fast and easy determination of the reference point on the Z axis and/or for adjusting tools "to zero" (e.g., for milling or drilling) without damaging the workpiece › Housing height 50 mm	

Assembly and tool adjustment gauge	3536193
	
› For easy and precise adjustment of tools › Vertical and horizontal collet for tools with a steep-angle taper	

Taper squeegee	3353301
	

Pull stud BT 30	3353302
	
DIN 2080 M12/M12	3536177
	

Collet set ER 32	3441122
	

Accessories	Article no.
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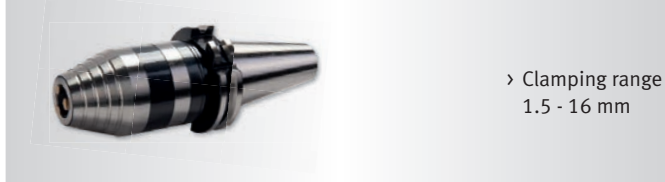
<b>Starter set BT 40</b>	3353284
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<b>Comprises:</b>	
1 pc. cutterhead holder Ø 27 mm	
1 pc. chuck 1 - 13 mm	
2 pcs. Weldon 6 mm	
1 pc. Weldon 8 mm	
1 pc. Weldon 10 mm	
1 pc. Weldon 12 mm	
1 pc. Weldon 16 mm	
2 pcs. Weldon 20 mm	
1 pc. adapter BT 40 to MT 3	
4 pcs. collet chuck holder ER 32	
1 pc. collet spanner ER 32	
18-part spring collet set ER 32	
1 pc. height adjuster	
1 pc. assembly and tool setting aid	
14 pcs. pull studs	
1 pc. taper squeegee	

<b>Milling head holder</b>	3353336
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<b>Drill chuck</b>	3536333
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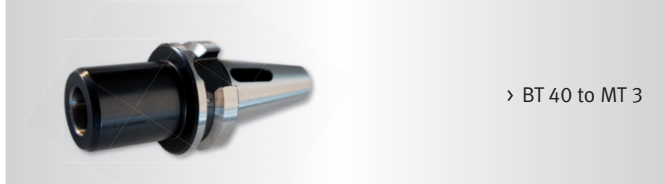


<b>Weldon holder</b>	
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Ø 6 mm	3353340
Ø 8 mm	3353341
Ø 10 mm	3353342
Ø 12 mm	3353343
Ø 16 mm	3353344
Ø 20 mm	3353345



<b>Adapter</b>	3353335
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<b>Holder BT 40/B16</b>	3353338
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Accessories	Article no.
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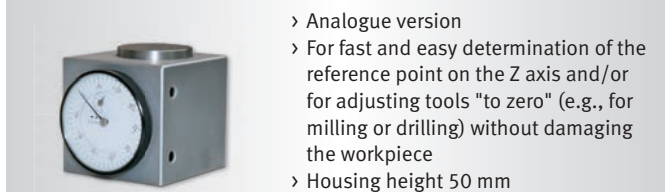
<b>Collet chuck holder ER 32</b>	3353334
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<b>Collet chuck spanner ER 32</b>	3353307
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<b>Height-adjuster</b>	3536290
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<b>Assembly and tool adjustment gauge</b>	3536204
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<b>Taper squeegee</b>	3353331
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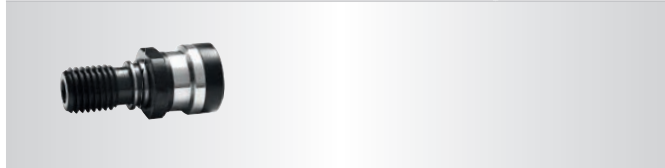


<b>Pull stud</b>	
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<b>BT 40</b>	3353332
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<b>DIN 2080 M16/M16</b>	3536179
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<b>Collet set ER 32</b>	3441122
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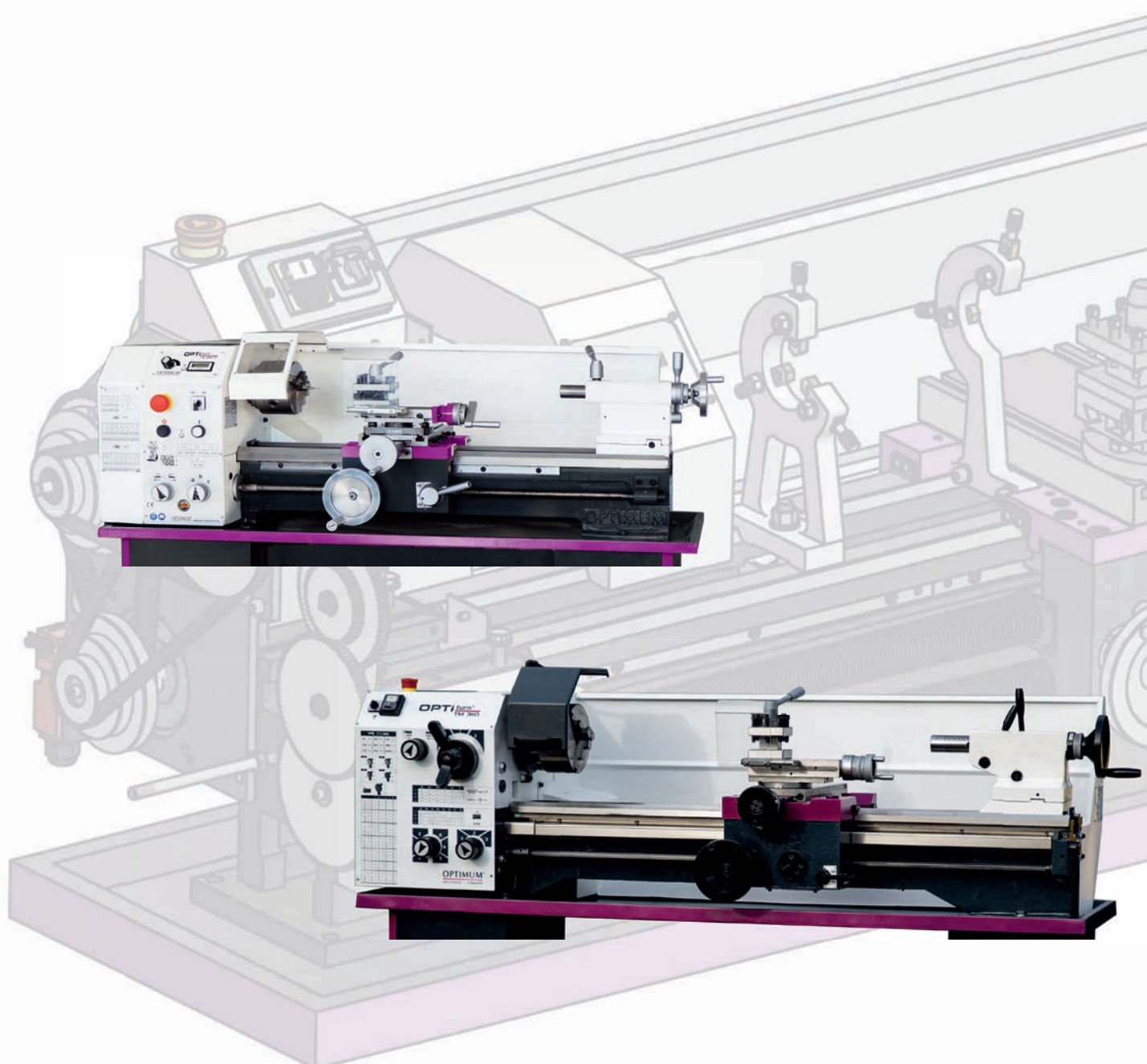


# *BENCH LATHES*



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# ***LATHES***

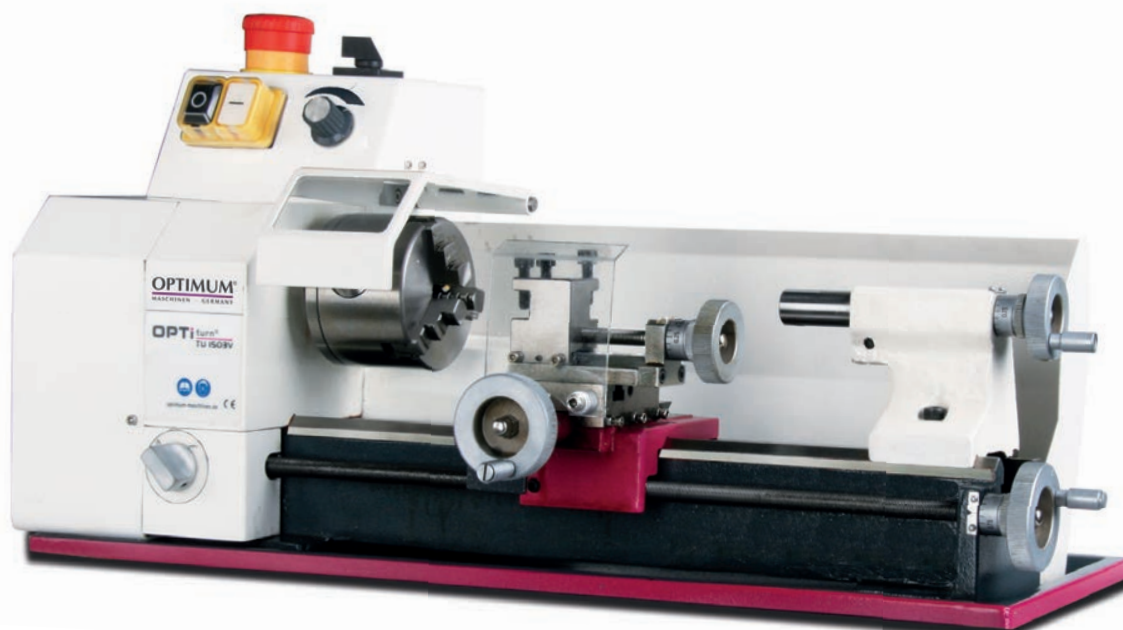




## The small-scale lathe with electronically controllable speed

### Facts that impress in terms of quality, performance and price

- ▶ Direct current motor
- ▶ Low-voltage electronics
- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.15$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.05$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Longitudinal, cross and top slide
- ▶ Automatic longitudinal/lead screw drive
- ▶ Clockwise/Anti-clockwise rotation switchable via control panel
- ▶ All guides adjustable without play using V-ledges
- ▶ Sturdy metal handwheels with adjustable fine scaling 0.04 / 0.01 mm
- ▶ Ribbed grey cast prism bed, induction hardened and scraped
- ▶ Fast and easy speed change through V-belt
- ▶ Safety switch in cover
- ▶ Emergency stop button
- ▶ Chuck protection with microswitch
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Large thread cutting area thanks to interchangeable gear set included in standard scope of delivery
- ▶ EMC filter class C1



Model	TU 1503V
Article no.	3420260
<b>Power</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Drive motor S6-60% operation	450 W
<b>Spindle</b>	
Spindle taper	MT 1
Spindle bore	$\varnothing 11$ mm
Spindle seat	Cylindrical $\varnothing 22$ mm
Dual tool holder chuck height	12 mm
<b>Work areas</b>	
Centre height	75 mm
Centre width	265 mm
Swing $\varnothing$ above machine bed*	150 mm*
Bed width	70 mm
<b>Speed range</b>	120 - 3 000 rpm
Number of speeds	Electronic speed control
<b>Traverse paths</b>	
Top slide travel	40 mm
Cross slide travel	55 mm
<b>Feed and pitch</b>	
Longitudinal feed within the range	0.05 - 0.1 mm/rev (2 feeds)
Metric pitch	0.5 - 1.5 mm/rev (8 pitches)
<b>Tailstock</b>	
Tailstock seat	MT 1 short
Tailstock - quill stroke	30 mm
<b>Dimensions L x W x H</b>	570 x 340 x 300 mm
Net weight	23 kg

### Scope of delivery

- › Three-jaw lathe chuck  $\varnothing 80$  mm, centre clamping
- › Non-revolving centre tip MT1
- › Dual tool holder
- › Splashguard
- › Chip tray
- › Interchangeable gear set
- › Operating tool

Lathe chuck	Article no.
Three-jaw lathe chuck, $\varnothing 80$ mm, individually clamping	3440287
Four-jaw lathe chuck, $\varnothing 80$ mm, individually clamping	3440286
Four-jaw lathe chuck, $\varnothing 80$ mm, centre clamping	3442808

### Information on lathe chuck from page 218

Accessories	Article no.
Lathe tool set 8 mm, 5-part	3441662
Lathe tool set 8 mm, 11-part	3441601
Follower rest passage max. $\varnothing 45$ mm	3440210
Steady rest passage max. $\varnothing 40$ mm	3440211
Revolving tailstock centre MT 1	3440700
Collet chuck ER 16, $\varnothing 22$ mm, cylindrical	3440281
Collet set ER 16, 1 - 10 mm	3440282

### More accessories and information on accessories from page 214

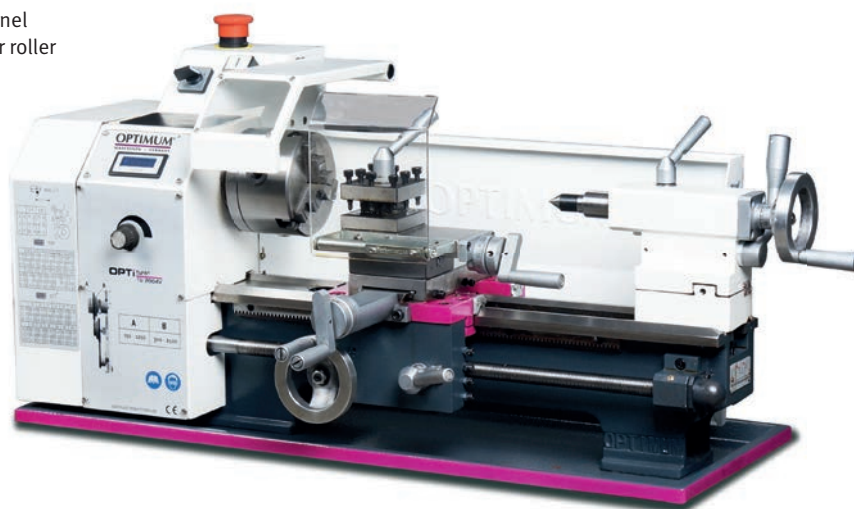


## Modelbuilding lathe with electronic speed control and digital speed display



### Facts that impress in terms of quality, performance and price

- Precision workmanship
- Ribbed cast steel prism bed heavily ribbed, induction hardened and precision ground
- Hardened and ground z-axis guideway
- Hardened spindle nose (DIN 6350)
- Guaranteed true running accuracy of spindle nose better than 0.009 mm
- Automatic longitudinal/lead screw drive
- Roll-milled trapezoidal thread on lead screw
- Thrust bearings
- Lead screw borne on two sintered bearings
- Longitudinal, cross and top slides
- Clockwise/Anti-clockwise rotation switchable via control panel
- Hardened main spindle borne on adjustable precision taper roller bearings
- Tapered roller bearings in P5 quality
- Cylindrical centring mount
- Hardened spindle nose with Ø 21 mm spindle bore
- Adjustable tailstock for taper turning
- Tailstock quill and handwheel with adjustable fine scaling 0.02 mm; fast, easy adjustment without tools thanks to clamping lever
- Gearbox with interchangeable gearwheels
- Emergency stop button
- Quadruple tool holder, rotating
- Lathe chuck true running accuracy better than 0.04 mm
- Chuck protection with microswitch
- Three-jaw lathe chuck included in standard scope of delivery
- Interchangeable gear set as standard enables large thread cutting area
- EMC filter class C1



Model	TU 2004V
Article no.	3420310
<b>Power</b>	
Electrical connection	230 V / 1 Ph ~50 Hz
Drive motor	600 W
<b>Spindle</b>	
Spindle taper	MT 3
Spindle bore	Ø 21 mm
Spindle seat	cylindrical Ø 72 mm
Three-jaw lathe chuck passage	Ø 20 mm
Quadruple tool holder mounting height	10 mm
<b>Work areas</b>	
Centre height	100 mm
Centre width	300 mm
Swing Ø above machine bed*	200 mm*
Swing Ø above cross slide	110 mm
Bed width	100 mm
<b>Speed range</b>	150 - 2 500 rpm
Number of speeds	2 stages, Electronic speed control
<b>Traverse paths</b>	
Top slide travel	55 mm
Cross slide travel	75 mm
<b>Feed and pitches</b>	
Longitudinal feed within the range	0.1 / 0.2 mm/rev (2 feeds)
Pitch - metric in range	0.25 - 3 mm/rev (14 pitches)
Pitch - inch in range	44 - 8 turns/inch (12 pitches)
<b>Tailstock</b>	
Tailstock seat	MT 2
Tailstock - quill stroke	65 mm
<b>Dimensions L x H x W</b>	830 x 425 x 360 mm
Net weight	65 kg

### Scope of delivery

- › Three-jaw lathe chuck, Ø 100 mm, centre clamping
- › Two non-running centres MT2 and MT 3
- › Quadruple tool holder
- › Splashguard
- › Chip tray
- › Interchangeable gear set
- › Operating tool

Lathe chuck	Art. no.
<b>Four-jaw lathe chuck</b> , Ø 100 mm, centric (chuck flange 3440312 is required)	3442810
<b>Four-jaw lathe chuck</b> , Ø 100 mm, individually (Chuck flange 3440312 required)	3442872
<b>Lathe chuck flange</b> , Ø 100 mm (for lathe chuck 3442810/3442872)	3440312
<b>Clamping disk</b> Ø 170 mm	3440295

### Information on lathe chuck from page 218

Accessories	Art. no.
<b>Quick change tool holder</b> SWH-AA	3384311
<b>SWH-AA factory assembly</b>	9000401
<b>Spare tool holder</b> 12 x 50 type D for square chisels	3384312
<b>Spare tool holder</b> 12 x 50 type H for round chisels	3384320
<b>Lathe tool set</b> 10 mm, 11-part	3441602
<b>Lathe tool set</b> 10 mm, 5-part	3441664
<b>Follower rest</b> passage max. Ø 40 mm	3440230
<b>Steady rest</b> passage max. Ø 50 mm	3440231
<b>Collet chuck</b> ER 25 Ø 72 mm	3440305

### More accessories and information on accessories from page 214



## Lathes for DIY.

### TU 2304V with electronic speed control

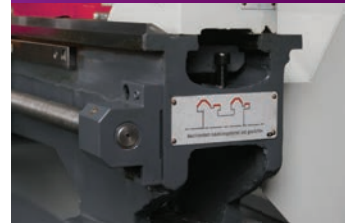
#### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.009$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.05$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Clockwise/Anti-clockwise rotation switchable via control panel
- ▶ Roll-milled trapezoidal spindles
- ▶ Thrust bearings
- ▶ Precision slide
- ▶ Lead screw borne on two sintered bearings
- ▶ All guides adjustable using wedge bars
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.01 mm
- ▶ Tailstock adjustable  $\pm 5$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.02 mm
- ▶ Fast, easy adjustment of tailstock without tools thanks to clamping lever
- ▶ Emergency stop button
- ▶ Quadruple tool holder
- ▶ Chuck protection
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Interchangeable gear set for thread cutting in standard scope of delivery
- ▶ Comprehensive accessories
- ▶ Lasting value

#### TU 2304V

- ▶ High-torque motor with constant torque curve to a great extent
- ▶ Speed change easily adjustable via potentiometer
- ▶ Digital speed display
- ▶ EMC filter class C1

#### Machine bed



- › Grey cast iron prism bed heavily ribbed, aged for at least six months, induction hardened and precision ground

#### TU 2304V with digital speed display



- › Electronically adjustable 2-step spindle speed 150 - 2 200 rpm



Accessories  
**Machine base MST1**  
Art no. 3440409

Fig. similar: TU 2304V with optional machine base



## Technical specifications, accessories and dimensions

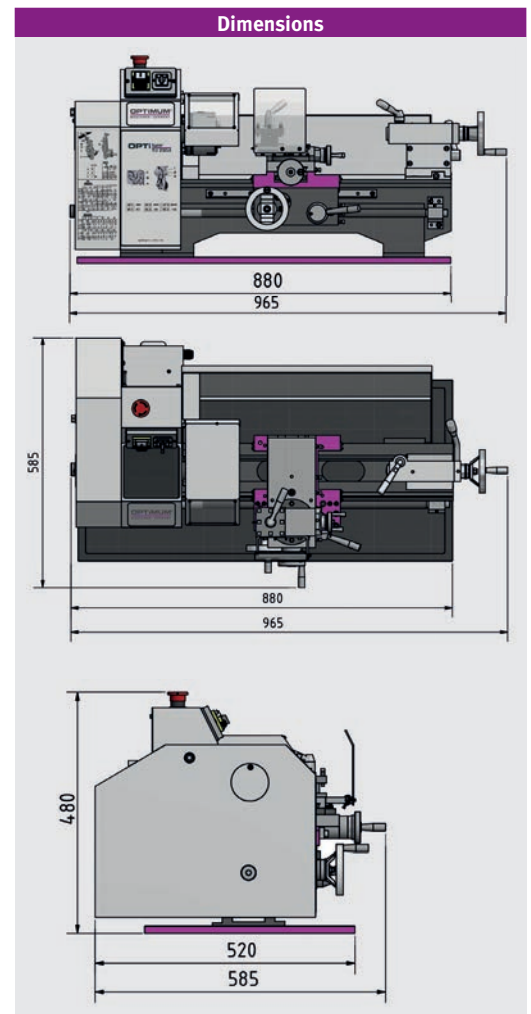
Model	TU 2304		TU 2304V*
Article no.	3420320		3420325
Power			
Electrical connection	230 V / 1 Ph ~50 Hz		
Drive motor	750 W		
Spindle			
Spindle taper	MT 3		
Spindle seat	cylindrical Ø 72 mm		
Spindle bore, bar passage diameter	Ø 20 mm		
Quadruple tool holder mounting height	12 mm		
Work area			
Centre height	115 mm		
Centre width	450 mm		
Swing Ø above machine bed*	230 mm		
Swing Ø above cross slide	128 mm		
Bed width	133 mm		
Speed range			
Spindle speed	125 - 2 000 rpm	150 - 2 200 rpm	
Number of speeds	6 stages	2 stages, Electr. controlled	
Traverse paths			
Top slide travel	75 mm		
Cross slide travel	120 mm		
Pitches			
Pitch - metric in range	0.4 - 3.5 mm/rev (14 pitches)		
Pitch - inch in range	44 - 8 turns/inch (14 pitches)		
Tailstock			
Tailstock seat	MT 2		
Tailstock - quill stroke	70 mm		
Dimensions and weight			
Length x width x height	965 x 585 x 510 mm		
Net weight	111 kg	114 kg	

Lathe chucks and accessories	Art no.
<b>Three-jaw lathe chuck</b> , Ø 125 mm, centre clamping (Chuck flange 3440313 required)	3442712
<b>Four-jaw lathe chuck</b> , Ø 125 mm, centre clamping (Chuck flange 3440313 required)	3442812
<b>Four-jaw lathe chuck</b> , Ø 125 mm, individual clamping (Chuck flange 3440313 required)	3442874
<b>Chuck flange</b> for lathe chuck Ø 125 mm	3440313

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 1-A	3384301
<b>SWH 1-A factory assembly</b>	9000401
<b>Spare tool holder</b> 20 x 90 type D for square chisels	3384302
<b>Spare tool holder</b> 20 x 85 type H for round chisels	3384321
<b>Lathe tool set</b> 10 mm, 11-part	3441602
<b>Lathe tool set</b> 12 mm, 11-part	3441603
<b>Lathe tool set</b> 12 mm, 5-part "Made in Germany"	3441212
<b>Steady rest passage</b> max. Ø 55 mm	3440361
<b>Follow steady passage</b> max. Ø 34 mm	3440360
<b>Revolving tailstock centre</b> MT 2	3440702
<b>Clamping disk</b> Ø 170 mm	3440295
<b>Machine base</b> MST1	3440409
<b>Levelling platen</b> SE 1 (if the MST1 base is used, 6 units are required)	3381012

More accessories and information on accessories from page 214



### Scope of delivery

- › Three-jaw lathe chuck, Ø 100 mm, centric
- › Non-running centres MT2 and MT 3
- › Quadruple tool holder
- › Splashguard
- › Chip tray
- › Interchangeable gear set
- › Operating tool

Accessories	Art no.
<b>Digital position display</b> DRO 5 incl. 3 magnetic sensors	3383975
<b>Magnetic strip</b> length 1 100 mm	3383978
<b>Factory assembly</b>	9000420

Information see page 231

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C1  
Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323





## Lathes for DIY.

### TU 2406V with electronic speed control

#### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.009$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.05$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Clockwise/Anti-clockwise rotation switchable via control panel
- ▶ Roll-milled trapezoidal spindles
- ▶ Thrust bearings
- ▶ Precision slide
- ▶ Two tapered roller bearings in P5 quality
- ▶ Lead screw borne on two sintered bearings
- ▶ All guides adjustable using wedge bars
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.01 mm
- ▶ Tailstock adjustable  $\pm 5$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.02 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Emergency stop button
- ▶ Quadruple tool holder
- ▶ Interchangeable gears in standard scope of delivery
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Comprehensive accessories
- ▶ Lasting value

#### TU 2406V

- ▶ High-torque motor with constant torque curve to a great extent
- ▶ Speed change easily adjustable via potentiometer
- ▶ Digital speed display
- ▶ EMC filter class C1

#### Machine bed



› induction hardened and ground

#### TU 2406V with digital speed display



› Electronically adjustable 2-step spindle speed 150 - 2 500 rpm

#### Accessories

##### Machine base MST1

Art. no. 3440409



Fig.: TU 2406

Fig.: TU 2406V with optional machine base



## Technical specifications, accessories and dimensions

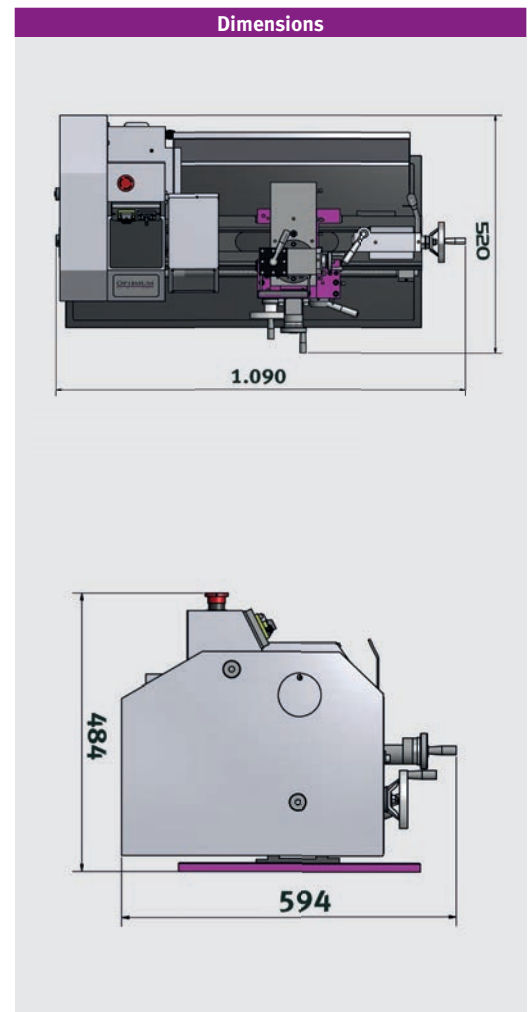
Model	TU 2406		TU 2406V*
Article no. (230V)	3420350		3420355
Article no. (400V)	3420353		-
Power			
Electrical connection	230 V / 1 Ph ~50 Hz 400 V / 3 Ph ~50 Hz	230 V / 1 Ph ~50 Hz	
Drive motor	750 W	1.1 kW	
Spindle			
Spindle taper	MT 3		
Spindle seat	cylindrical Ø 52 mm		
Spindle bore, bar passage diameter	Ø 21 mm		
Quadruple tool holder mounting height	12 mm		
Work area			
Centre height	125 mm		
Centre width	550 mm		
Swing Ø above machine bed*	250 mm		
Swing Ø above cross slide	148 mm		
Bed width	133 mm		
Speed range			
Spindle speed	125 - 2 000 rpm	150 - 2 500 rpm	
Number of speeds	6 stages	2-speed, electronic speed control	
Traverse paths			
Top slide travel	75 mm		
Cross slide travel	120 mm		
Pitches			
Pitch - metric in range	0.4 - 3.5 mm/rev (14 pitches)		
Pitch - inch in range	44 - 10 turns/inch (12 pitches)		
Tailstock			
Tailstock seat	MT 2		
Tailstock - quill stroke	70 mm		
Dimensions and weight			
Length x width x height	1 090 x 594 x 484 mm		
Net weight	127 kg	125 kg	

Lathe chucks and accessories	Art no.
<b>Four-jaw lathe chuck</b> , Ø 125 mm, centre clamping (Chuck flange 3440511 required)	3442812
<b>Four-jaw lathe chuck</b> , Ø 125 mm, individual clamping (Chuck flange 3440511 required)	3442874
<b>Lathe chuck flange</b> for lathe chuck Ø 125 mm (Lathe chuck 3442812/3442874)	3440511
<b>Clamping disk</b> Ø 240 mm	3440552

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 1-A	3384301
<b>SWH 1-A factory assembly</b>	9000401
<b>Spare tool holder</b> 20 x 90 type D for square chisels	3384302
<b>Spare tool holder</b> 20 x 85 type H for round chisels	3384321
<b>Lathe tool set</b> 10 mm, 11-part	3441602
<b>Lathe tool set</b> 12 mm, 11-part	3441603
<b>Lathe tool set</b> 12 mm, 5-part	3441666
<b>Lathe tool set</b> 12 mm, 5-part "Made in Germany"	3441212
<b>Steady rest</b> passage max. Ø 50 mm	3441315
<b>Follower rest</b> passage max. Ø 34 mm	3441310
<b>Collet chuck</b> ER 32, short taper	3440506
<b>Machine base</b> MST1	3440409
<b>Levelling platen</b> SE 1 (if the MST1 base is used, 6 units are required)	3381012

More accessories and information on accessories from page 214



### Scope of delivery

- › Three-jaw lathe chuck Ø 125 mm, centre clamping
- › Two fixed centres MT2 and MT 3
- › Quadruple tool holder
- › Splashguard
- › Chip tray
- › Interchangeable gear set
- › Operating tool

Accessories	Art no.
<b>Digital position display DRO 5</b> incl. 3 magnetic sensors	3383975
<b>Magnetic strip</b> length 1 100 mm	3383978
<b>Factory assembly</b>	9000420

Information see page 231

## Lead screw lathes with feed gear for demanding users.

TU 2506V with brushless motor for continuously variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Powerful motor, low-maintenance motor
- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.009$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.04$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Lead screw borne on two sintered bearings
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/Anti-clockwise rotation switchable via control panel
- ▶ Roll-milled trapezoidal spindles
- ▶ Thrust bearings
- ▶ Tapered roller bearings in P5 quality
- ▶ Hardened main spindle borne on adjustable, precision taper roller bearings
- ▶ Hardened spindle nose with  $\varnothing 26$  mm spindle bore
- ▶ Handwheels on slides with adjustable fine scaling  $0.04 / 0.01$  mm
- ▶ Top slide displaceable on cross slide
- ▶ Chip guard on top slide
- ▶ Ribbed grey cast steel prism bed heavily ribbed, induction hardened and precision ground

- ▶ Tailstock adjustable  $\pm 5$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling  $0.02$  mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Emergency stop button
- ▶ Quadruple tool holder
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Interchangeable gears in standard scope of delivery for thread cutting
- ▶ Fully equipped; the user can immediately start productive work after commissioning

### TU 2506V

- ▶ Smooth action, powerful, brushless DC drive with excellent control characteristics
- ▶ High-precision steel chuck for higher speeds
- ▶ Easily adjustable speed change via potentiometer
- ▶ Digital speed display

### TU 2506V Powerful brushless drive



- › Particularly smooth action
- › Virtually constant torque over the entire speed range
- › Extremely powerful

Accessories  
**Machine base MST1**  
Art. no. 3440409

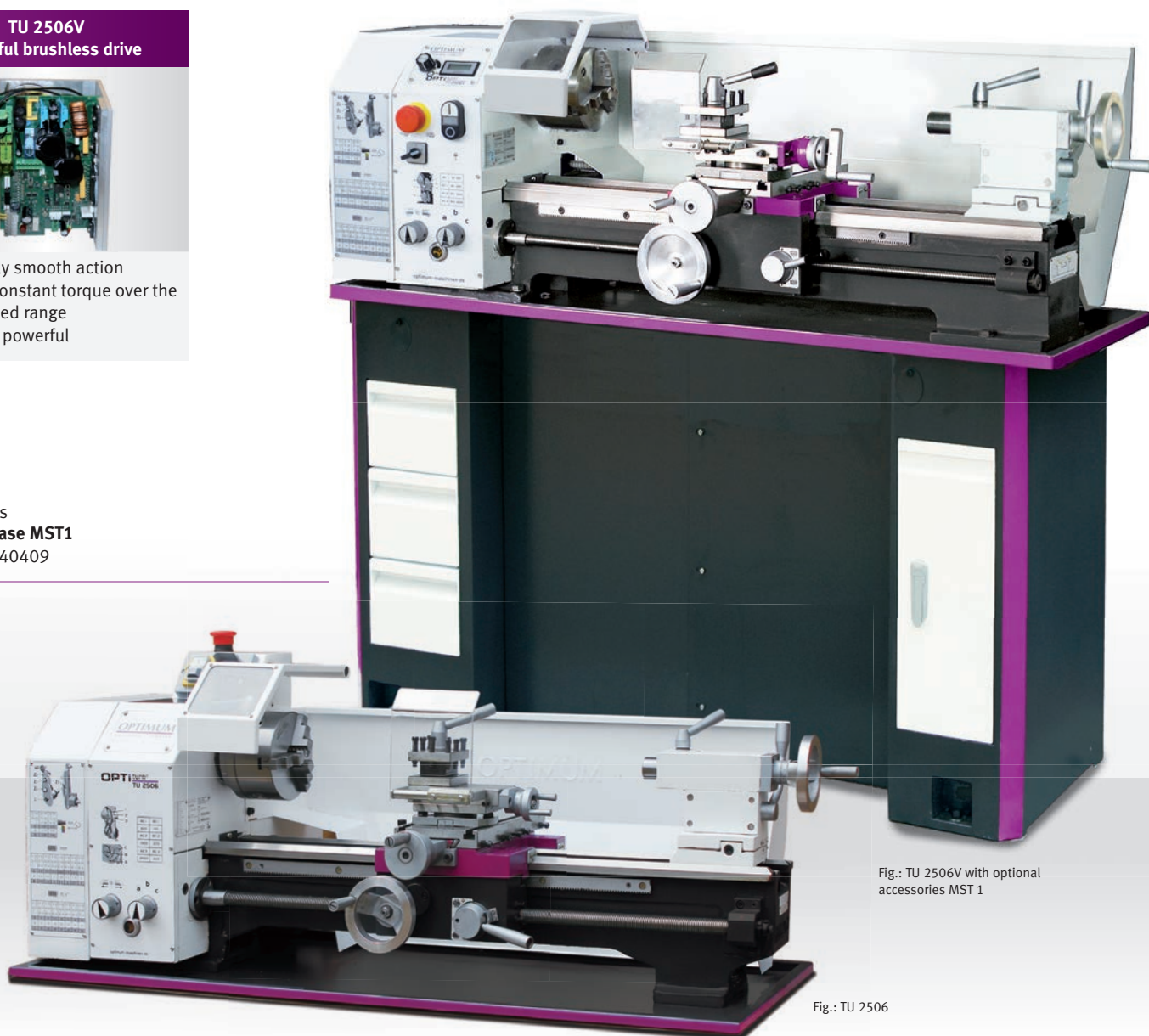


Fig.: TU 2506V with optional accessories MST 1

Fig.: TU 2506





## Technical specifications, accessories and dimensions

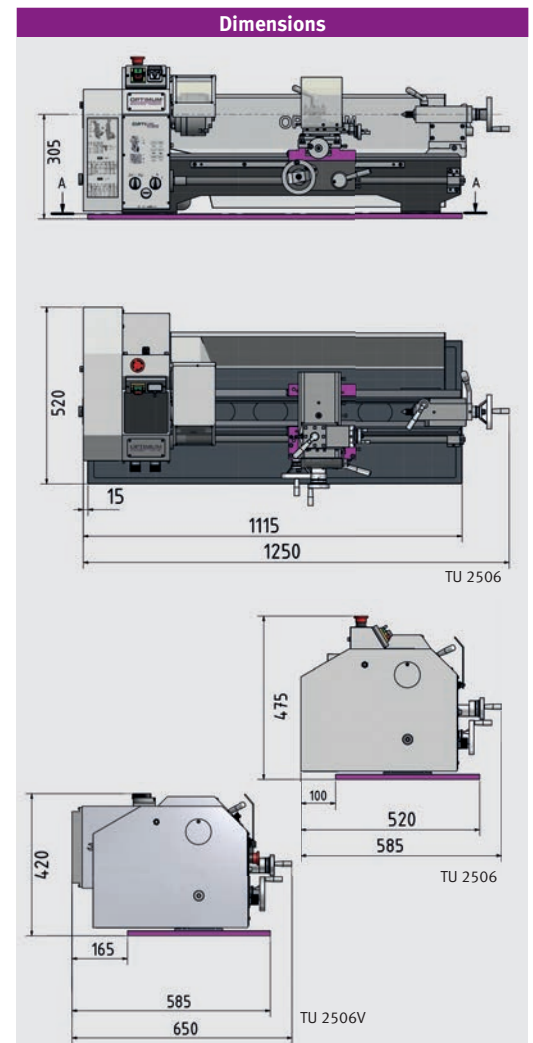
Model	TU 2506	TU 2506V*
Article no. (230V)	3425001	3425006
Article no. (400V)	3425003	-
Power		
Electrical connection	230 V / 1 Ph ~50 Hz 400 V / 3 Ph ~50 Hz	230 V / 1 Ph ~50 Hz
Drive motor	750 W	1.5 kW
Spindle		
Spindle taper	MT 4	
Spindle seat	Short taper	
Spindle bore, bar passage diameter	Ø 26 mm	
Quadruple tool holder mounting height	12 mm	
Work area		
Centre height	125 mm	
Centre width	550 mm	
Swing Ø above machine bed*	246 mm	
Swing Ø above cross slide	149 mm	
Bed width	134 mm	
Speed range		
Spindle speed	125 - 2 000 rpm	30 - 4 000 rpm
Number of speeds	6 stages	4 stages, Electr. controlled
Traverse paths		
Top slide travel	70 mm	
Cross slide travel	110 mm	
Feeds and pitches		
Longitudinal feed within the range	0.07 - 0.4 mm/rev (6 feeds)	
Pitch - metric in range	0.2 - 4 mm/rev (21 pitches)	
Pitch - inch in range	56 - 8 turns/inch (21 pitches)	
Tailstock		
Tailstock seat	MT 2	
Tailstock quill diameter/travel	30 mm / 65 mm	
Dimensions and weight		
Length x width x height ( mm)	1250 x 585 x 475	1250 x 650 x 420
Net weight	138 kg	132 kg

Lathe chucks and accessories	Art no.
<b>Four-jaw lathe chuck</b> , Ø 125 mm, individual clamping (Lathe chuck flange 3441312 is required) max. speed 3 000 rpm	3442874
<b>Four-jaw lathe chuck</b> , Ø 125 mm, centre clamping (Lathe chuck flange 3441312 is required) max. speed 2 750 rpm	3442812
<b>Lathe chuck flange</b> for lathe chuck Ø 125 mm (Lathe chuck 3442874/3442812)	3441312
<b>Face clamping disk</b> Ø 240 mm	3441352

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 1-A	3384301
<b>SWH 1-A factory assembly</b>	9000401
<b>Spare tool holder</b> 20 x 90 type D for square chisels	3384302
<b>Spare tool holder</b> 20 x 85 type H for round chisels	3384321
<b>Lathe tool set</b> 10 mm, 11-part	3441602
<b>Lathe tool set</b> 12 mm, 11-part	3441603
<b>Lathe tool set</b> 12 mm, 5-part "Made in Germany"	3441212
<b>Steady rest</b> max. passage Ø 50 mm	3441315
<b>Follower rest</b> max. passage Ø 34 mm	3441310
<b>Collet set</b> ER 32, 3 - 20 mm	3441122
<b>Collet chuck</b> ER 32, short taper	3441306
<b>Machine base</b> MST1	3440409
<b>Levelling platen</b> SE 1 (if the MST1 base is used, 6 units are required)	3381012

More accessories and information on accessories from page 214



### Scope of delivery

- Three-jaw lathe chuck Ø 125 mm, centre clamping
- Two fixed centres MT2 and MT 4
- Quadruple tool holder
- HSS lathe tools
- Splashguard
- Chip tray
- Interchangeable gear set
- Operating tool

Accessories	Art no.
<b>Digital position display DRO 5</b> incl. 3 magnetic sensors	3383975
<b>Magnetic strip</b> length 1 100 mm	3383978
<b>Factory assembly</b>	9000420

Information see page 231

## Lead screw lathes with feed gear for demanding users.

TU 2807V with brushless motor for continuously variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Powerful motor, low-maintenance motor
- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.009$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.04$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Automatic longitudinal/lead screw drive
- ▶ Lead screw borne on two sintered bearings
- ▶ Free moving feed gear with rounded gear wheels running in an oil bath
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/Anti-clockwise rotation switchable via control panel
- ▶ Roll-milled trapezoidal spindles
- ▶ Thrust bearings
- ▶ Tapered roller bearings in P5 quality
- ▶ Hardened main spindle borne on adjustable, precision taper roller bearings
- ▶ Hardened spindle nose with  $\varnothing 26$  mm spindle bore
- ▶ Handwheels on slides with adjustable fine scaling 0.04 / 0.01 mm
- ▶ Top slide displaceable on cross slide
- ▶ Chip guard on top slide

- ▶ Ribbed grey cast steel prism bed heavily ribbed, induction hardened and precision ground
- ▶ Tailstock adjustable  $\pm 5$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.02 mm
- ▶ Fast, easy adjustment of tailstock without tools thanks to clamping lever
- ▶ Quadruple tool holder
- ▶ Emergency stop button
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Interchangeable gears in standard scope of delivery for thread cutting
- ▶ Fully equipped; the user can immediately start productive work after commissioning

### TU 2807V

- ▶ Smooth action, powerful, brushless DC drive with excellent control characteristics
- ▶ High-precision steel chuck for higher speeds
- ▶ Easily adjustable speed change via potentiometer
- ▶ Digital speed display

### TU 2807V Powerful brushless drive



- > Particularly smooth action
- > Virtually constant torque over the entire speed range
- > Extremely powerful

### Accessories

#### Machine base MST1

Art. no. 3440409

#### Levelling platen SE 1

(6 units needed)

Art. no. 3381012

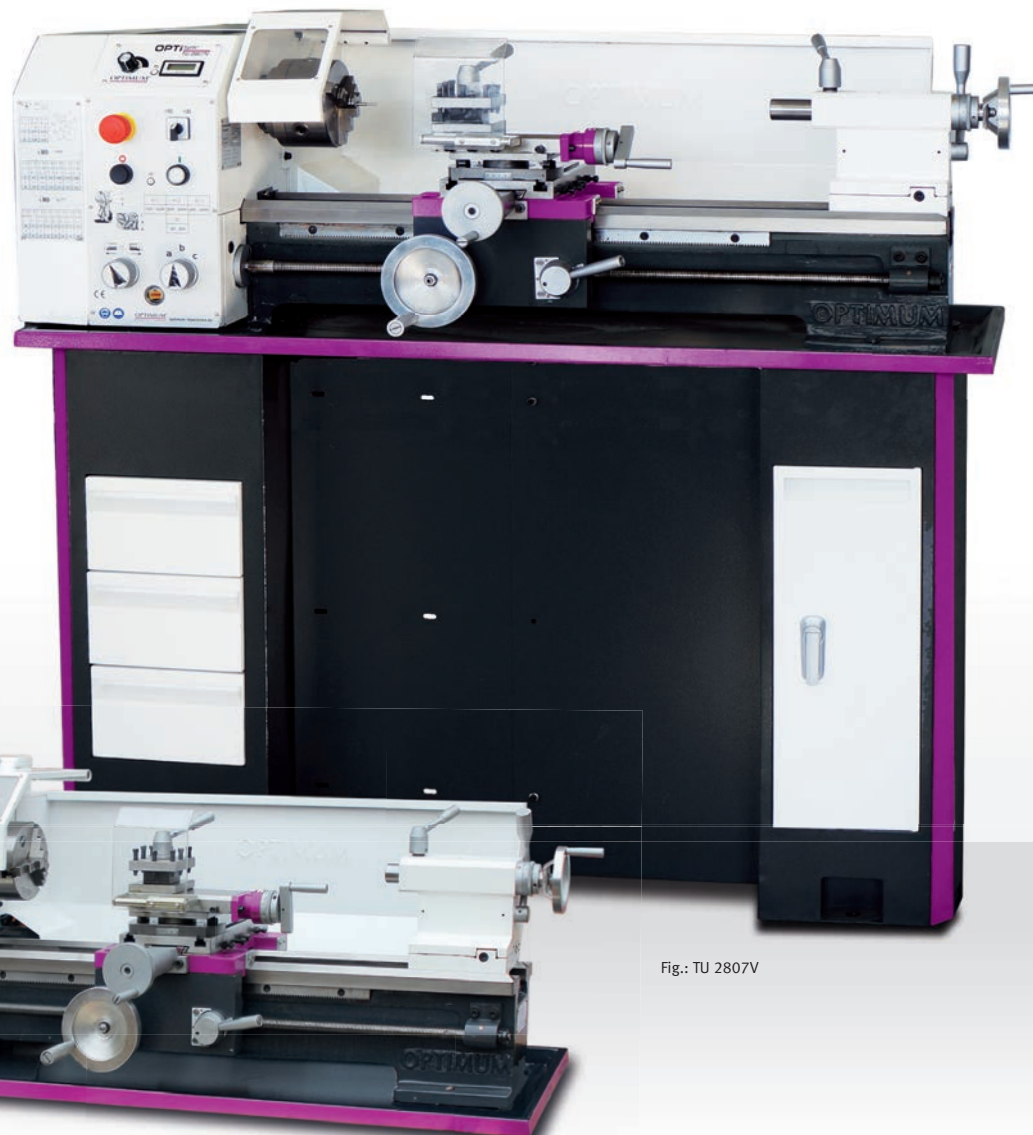


Fig.: TU 2807V

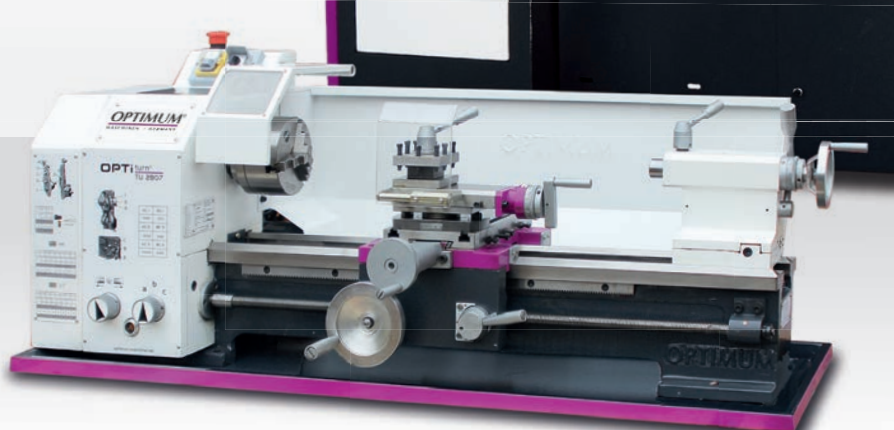


Fig.: TU 2807



## Technical specifications, accessories and dimensions

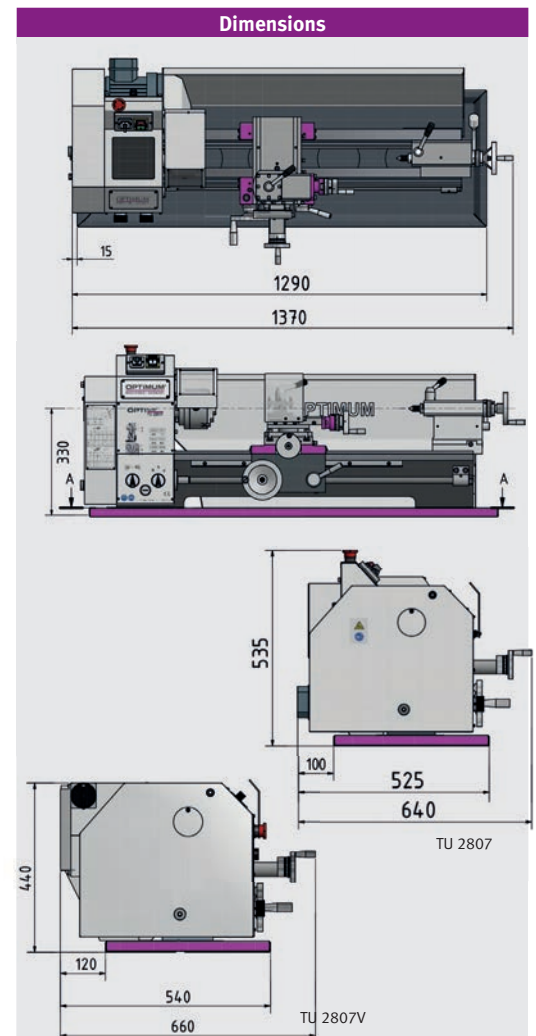
Model	TU 2807	TU 2807V*
Article no. (230V)	3427001	3427006
Article no. (400V)	3427003	-
Power		
Electrical connection	230 V or 400V	230 V / 1 Ph ~50 Hz
Drive motor	850 W	1.5 kW
Spindle		
Spindle taper	MT 4	
Spindle seat	Short taper	
Spindle bore, bar passage diameter	Ø 26 mm	
Quadruple tool holder height max.	12 mm	
Work area		
Centre height	140 mm	
Centre width	700 mm	
Swing Ø above machine bed*	266 mm	
Swing Ø above cross slide	170 mm	
Bed width	180 mm	
Speed range		
Spindle speed	150 - 2 000 rpm	30 - 4 000 rpm
Number of speeds	6 stages	4 stages, electr. controlled
Traverse paths		
Top slide travel	60 mm	
Cross slide travel	160 mm	
Feeds and pitches		
Longitudinal feed within the range	0.07 - 0.4 mm/rev (6 feeds)	
Pitch - metric in range	0.2 - 3.5 mm/rev (18 pitches)	
Pitch - inch in range	56 - 8 turns/inch (21 pitches)	
Tailstock		
Tailstock seat	MT 2	
Tailstock quill diameter/travel	30 mm / 85 mm	
Dimensions and weight		
Length x width x height	1 370 x 640 x 535 mm	1 370 x 660 x 440 mm
Net weight	196 kg	187 kg

Lathe chucks and accessories	Art no.
<b>Four-jaw lathe chuck</b> , Ø 125 mm, individual clamping (Lathe chuck flange 3441312 is required) speed 3 000 rpm	3442874
<b>Four-jaw lathe chuck</b> , Ø 125 mm, centre clamping (Lathe chuck flange 3441312 is required) speed 2 750 rpm	3442812
<b>Lathe chuck flange</b> for lathe chuck Ø 125 mm (3442874/3442812)	3441312
<b>Three-jaw lathe chuck</b> , Ø 160 mm, centre clamping (Lathe chuck flange 3441413 is required) speed 3 000 rpm	3442716
<b>Four-jaw lathe chuck</b> , Ø 160 mm, centre clamping (Lathe chuck flange 3441413 is required) speed 2 150 rpm	3442816
<b>Lathe chuck flange</b> for lathe chuck Ø 160 mm (3442716/3442816)	3441413

### Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 1-A	3384301
<b>SWH 1-A factory assembly</b>	9000401
<b>Spare tool holder</b> 20 x 90 type D for square chisels	3384302
<b>Spare tool holder</b> 20 x 85 type H for round chisels	3384321
<b>Lathe tool set</b> 10 mm, 11-part	3441602
<b>Lathe tool set</b> 12 mm, 11-part	3441603
<b>Lathe tool set</b> 12 mm, 5-part "Made in Germany"	3441212
<b>Steady rest</b> max. passage Ø 55 mm	3441415
<b>Follower rest</b> max. passage Ø 56 mm	3441410
<b>Collet set</b> ER 32, 3 - 20 mm	3441122
<b>Collet chuck</b> ER 25, cylindrical	3441305
<b>Collet chuck</b> ER 32, short taper	3441306

### More accessories and information on accessories from page 214



### Scope of delivery

- › Three-jaw lathe chuck Ø 125 mm, centre clamping
- › Two fixed centres MT2 and MT 4
- › Quadruple tool holder
- › HSS lathe tools
- › Splashguard
- › Chip tray
- › Interchangeable gear set
- › Operating tool

Accessories	Art no.
<b>Digital position display DRO 5</b> incl. 3 magnetic sensors	3383975
<b>Magnetic strip</b> length 1 100 mm	3383978
<b>Factory assembly</b>	9000420

### Information see page 231





## Feed and lead screw lathes with longitudinal and cross feed.

TU 3008G with gearbox.

TU 3008V with brushless motor for continuously variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Hardened and ground z-axis guideway
- ▶ Free moving feed gear with rounded gear wheels running in an oil bath
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.009$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.04$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Automatic longitudinal/cross feeds
- ▶ Lead screw and feed rod borne on two sintered bearings
- ▶ Feed and lead screw cover
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/Anti-clockwise rotation switchable via control panel
- ▶ Tapered roller bearings in P5 quality
- ▶ Hardened main spindle borne on adjustable precision taper roller bearings
- ▶ Hardened spindle nose with large  $\varnothing 38$  mm spindle bore
- ▶ Handwheels on slides with adjustable fine scaling 0.04 / 0.01 mm
- ▶ Ribbed grey cast steel prism bed heavily ribbed, induction hardened and precision ground
- ▶ Tailstock adjustable  $\pm 5$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.02 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Quadruple tool holder
- ▶ Emergency stop button
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Interchangeable gears in standard scope of delivery for thread cutting

### TU 3008

- ▶ Driven by V-belt

### TU 3008G

- ▶ Gear drive

### TU 3008V

- ▶ V-belt and brushless drive
- ▶ Smooth action, powerful, brushless DC drive with excellent control characteristics
- ▶ High-precision steel chuck for higher speeds
- ▶ Digital speed display

### TU 3008V Powerful brushless drive



- › Particularly smooth action
- › Virtually constant torque over the entire speed range
- › Extremely powerful

### Prepared for a measuring system



- › Prepared for measuring system installation on the X, Z and Z0 axis



### Accessories

#### Machine base MST1

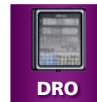
Fig.: TU 3008V with optional machine base MST 1



BELT



GEAR



DRO



VARIO

## Technical specifications, accessories and dimensions

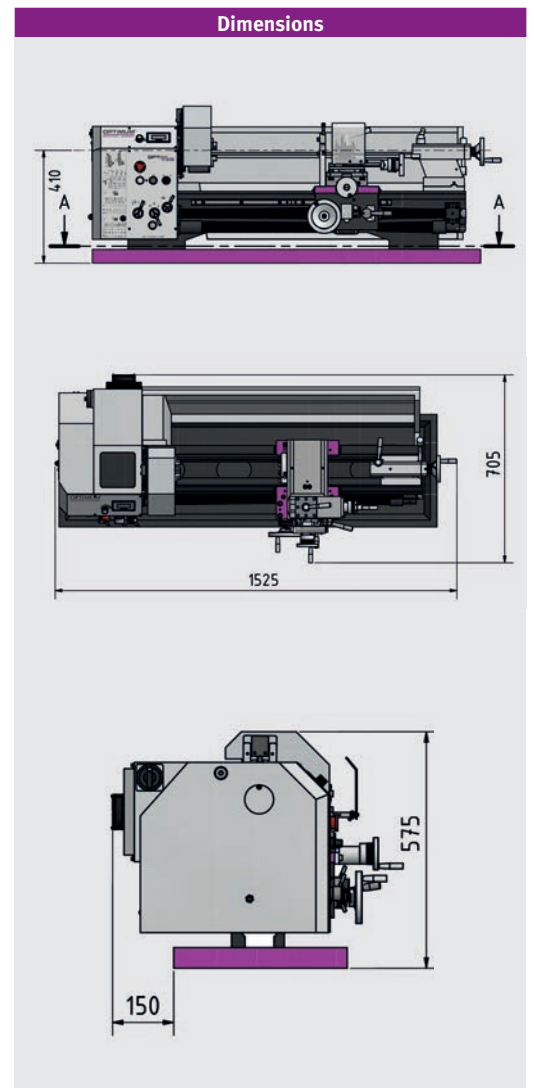
Model	TU 3008	TU 3008G	TU 3008V*
Article no.	3427200	3427210	3427205
Power			
Electrical connection	400 V / 3 Ph ~50 Hz		230 V / 1 Ph
Drive motor	1.1 kW		
Spindle			
Spindle taper	MT 5		
Spindle seat	Camlock DIN ISO 702- 2 No. 4		
Spindle bore, bar passage diameter	Ø 38 mm		
Quadruple tool holder mounting height	25 mm		
Work area			
Centre height	158 mm		
Centre width	800 mm	720 mm	800 mm
Swing Ø above machine bed*	310 mm		
Swing Ø above cross slide	190 mm		
Bed width	180 mm		
Speed range			
Spindle speed /stages TU 3008	150 - 2 000 rpm / 6 speeds		
Spindle speed /stages TU 3008G	165 - 2 400 rpm / 6 speeds		
Spindle speed /stages TU 3008V	30 - 3 000 rpm / 5 speeds, electr. adjustable		
Traverse paths			
Top slide travel	65 mm		
Cross slide travel	150 mm		
Feeds and pitches			
Longitudinal feed within the range	0.085 - 0.832 mm/rev (9 feed rates)		
Cross feed within	0.01 - 0.1 mm/rev (9 feed rates)		
Pitch - metric in range	0.2 - 3.5 mm/rev (18 pitches)		
Pitch - inch in range	56 - 8 turns/inch (21 pitches)		
Tailstock			
Tailstock seat	MT 3		
Tailstock quill diameter/travel	Ø 38 mm / 70 mm		
Dimensions and weight			
Length x width x height	1 525 x 705 x 575 mm		
Net weight	226 kg	261 kg	243 kg

Lathe chuck, Ø 160 mm No. 4	Art no.
<b>OPTIMUM Four-jaw lathe chuck</b> , centric clamping Speed: 2 150 rpm	3442840
<b>BISON Four-jaw lathe chuck</b> , centric clamping Speed: 3 600 rpm	3450355

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 1-A	3384301
<b>SWH 1-A factory assembly</b>	9000401
<b>Spare tool holder 20 x 90 type D for square chisels</b>	3384302
<b>Spare tool holder 20 x 85 type H for round chisels</b>	3384321
<b>Lathe tool set 16 mm, 11-part</b>	3441604
<b>Lathe tool set 16 mm, 5-part</b>	3441668
<b>Lathe tool set 16 mm, 5-part</b>	3441610
<b>Lathe tool set 16 mm, 5-part "Made in Germany"</b>	3441216
<b>Follower rest</b> passage Ø 6 - 55 mm	3441460
<b>Steady rest</b> passage Ø 6 - 60 mm	3441461
<b>Micro position stop</b>	3441475
<b>Collet set 3 - 25 mm, 5C, 17-part</b>	3441509
<b>Collet chuck 5C - Camlock no. 4</b>	3441554
<b>Machine base</b> MST1	3440409
<b>Levelling platen</b> SE 1 (if the MST1 base is used, 6 units are required)	3381012

More accessories and information on accessories from page 214



### Scope of delivery

- › Three-jaw lathe chuck Ø 160 mm, centre clamping
- › Revolving tailstock centre MT 3 and MT 5
- › Quadruple tool holder 25 mm
- › Splashguard
- › Chip tray
- › Interchangeable gear set
- › Operating tool

Accessories	Art no.
<b>Digital position display</b> DRO 5 incl. 3 magnetic sensors	3383975
<b>Magnetic strip</b> length 1 100 mm	3383978
<b>Assembly kit</b> (holders for the X / Y and Z0 axis/set of screws)	3383985
<b>Factory assembly</b>	9000420

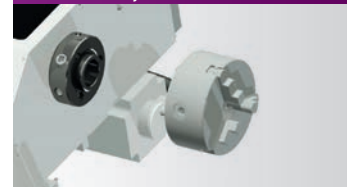
Information see page 231

## Feed and lead screw lathe that convinces through easy handling.

### Facts that impress in terms of quality, performance and price

- ▶ Precision workmanship
- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Running accuracy at the lathe chuck  $\leq 0.04$  mm
- ▶ Lead screw for thread cutting or automatic longitudinal turning
- ▶ Lead screw and feed rod borne on two sintered bearings
- ▶ All guides adjustable using wedge bars
- ▶ Free moving feed gear with rounded gear wheels running in an oil bath
- ▶ Switch rod on the bed slide for selection of longitudinal or cross feed
- ▶ Hardened main spindle borne on adjustable, precision taper roller bearings
- ▶ Hardened spindle nose
- ▶ Handwheels on slides with adjustable fine scaling 0.04 / 0.01 mm
- ▶ Ribbed grey cast steel prism bed heavily ribbed, induction hardened and precision ground
- ▶ Tailstock adjustable  $\pm 5$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.02 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Quadruple tool holder
- ▶ Emergency stop button
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Interchangeable gears in standard scope of delivery for thread cutting

### Spindle seat



- › The spindle is designed as Camlock DIN ISO 702- 2 no.4 seat

### Longitudinal/cross feeds



- › Automatic longitudinal/cross feeds
- › Switch rod enables longitudinal or cross feed. The engagement lever activates the feed with the feed rod



Accessories  
Machine base MST1

Fig.: TH 3110 - Shown with an optional machine base MST 1





## Technical specifications, accessories and dimensions

Model	TM 3110
Article no.	3403010
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
<b>Spindle</b>	
Drive motor	1.1 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702- 2 No. 4
Spindle bore, bar passage diameter	Ø 38 mm
Quadruple tool holder mounting height	16 mm
<b>Work areas</b>	
Centre height	155 mm
Centre width	1 000 mm
Swing Ø above machine bed*	323 mm
Swing Ø above cross slide	216 mm
Bed width	190 mm
<b>Speed range</b>	
Spindle speeds	65 - 2 000 rpm
Number of speeds	9 stages
<b>Traverse paths</b>	
Top slide travel	90 mm
Cross slide travel	168 mm
<b>Feed and pitches</b>	
Longitudinal feed within the range	0.02 - 0.4 mm/rev (24 feeds)
Cross feed within	0.01 - 0.2 mm/rev (32 feeds)
Pitch - metric in range	0.4 - 10 mm/rev (29 pitches)
Pitch - inch in range	56 - 4 turns/inch (34 pitches)
<b>Tailstock</b>	
Tailstock seat	MT 3
Sleeve diameter / travel	Ø 38 mm / 100 mm
<b>Dimensions and weight</b>	
Length x width x height	1 749 x 740 x 566 mm
Net weight	360 kg

<b>Lathe chuck, Ø 160 mm No. 4</b>	Art no.
<b>OPTIMUM Four-jaw lathe chuck</b> , centric clamping Speed: 2 150 rpm	3442840
<b>BISON Four-jaw lathe chuck</b> , centric clamping Speed: 3 600 rpm	3450355

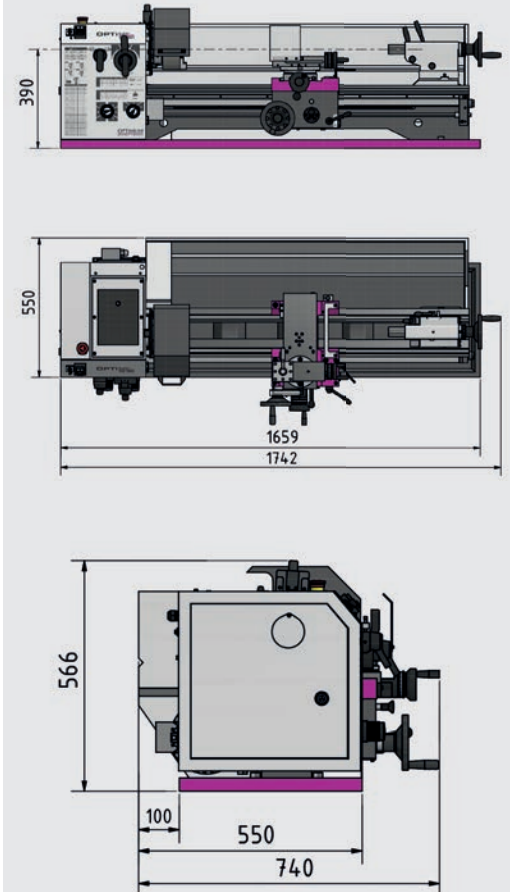
Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder SWH 3-E</b>	3384303
<b>SWH 3-E factory assembly</b>	9000400
<b>Lathe tool set</b> 16 mm, 11-part	3441604
<b>Lathe tool set</b> 16 mm, 5-part	3441668
<b>Lathe tool set</b> 16 mm, 5-part "Made in Germany"	3441216
<b>Lathe tool set</b> 16 mm, 5-part	3441610
<b>Follower rest</b> passage Ø 10 - Ø 70 mm	3441465
<b>Steady rest</b> passage Ø 10 - Ø 70 mm	3441466
<b>Micro position stop</b>	3441475
<b>Machine base MST1</b>	3440409
<b>Levelling platen SE 1</b> (if the MST1 base is used, 6 units are required)	3381012

More accessories and information on accessories from page 214

\* Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323

### Dimensions



### Scope of delivery

- › Three-jaw lathe chuck, Ø 160 mm, No. 4
- › Reduction sleeve MT 5 - MT 3
- › Two fixed centres MT 3
- › Quadruple tool holder
- › Interchangeable gear set
- › Machine initially filled with premium grade oil
- › Operating tool

Accessories	Art no.
<b>Digital position display DRO 5 incl.</b> 3 magnetic sensors	3383975
<b>Magnetic strip</b> length 1 100 mm	3383978
<b>Factory assembly</b>	9000420

Information see page 231

Preface

Drilling

Milling

Turning

Measuring

Saws

Grinding

Polishing

Lighting

# TWO-PART WITH STEEL BASE

Visit our exhibition in Hallstadt/Bamberg

## SIEMENS SINAMICS G 120D Frequency inverter

### Information on the Vario lathe TH 4010V

#### SINAMICS G120D

##### Brief overview of benefits

##### Highlights at a glance

Advanced safety function (STO, SLS)

**STO - safe torque off as per EN 61800- 5**

**SLS - Safely limited speed as per EN 61800- 5**

- ▶ Regenerative power supply, low mains feedback
- ▶ Energy savings up to 20 %
- ▶ No brake resistors required
- ▶ Fast and easy diagnostic capability through LEDs
- ▶ Standardised plug connections throughout
- ▶ Rugged and flat design (IP65)
- ▶ EMC class C3 as per EN 61800- 3
- ▶ Safety Integrated without encoder!
- ▶ More direct switch-over
- ▶ Faster braking
- ▶ Resilient to high overload



Siemens  
**SAFETY INTEGRATED**

# DIN

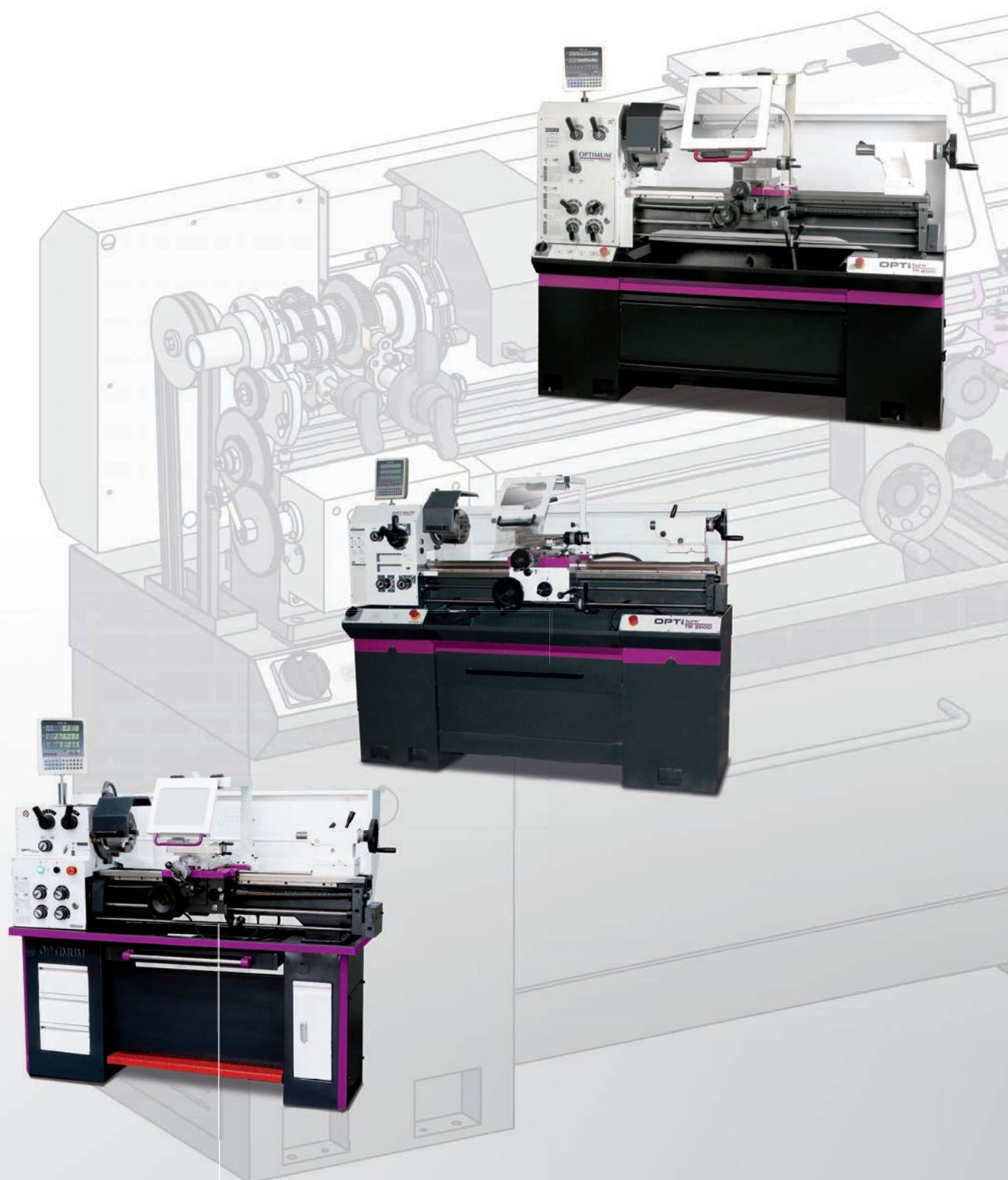
Machines as per  
standard EN  
61800

- ▶ A comprehensive safety package that helps to protect both persons and machines. And in an extremely efficient and economic way thanks to complete integration of the safety functions in the control and drive technology.. In addition, it ensures safe and practical operation of your machine under all required operating conditions. . The safety functions meet the requirements of DIN EN 61508 for use up to and including SIL (Safety Integrity Level) 2 and categories 3 and PL (Performance Level) d as per DIN EN ISO 13849.

##### The feature scope includes, for example:

- ▶ Functions for safe monitoring of speed and standstill
- ▶ Direct connection of all safety-related signals and their internal logical links

# LATHES





## Fully equipped lead screw and feed rod lathes.

TH 3309D / TH 3309V with DPA 21 digital position display,  
TH 3309V with infinitely variable speed control

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Precision slide
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 4
- ▶ Lead screw cover
- ▶ All guides adjustable using V-ledges
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide
- ▶ Two-channel safety electronics
- ▶ DC 24-Volt electric system with two-channel safety circuit as per EN 23125
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Gearwheels smooth action, hardened and scraped
- ▶ Main spindle runs in oil bath
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ LED machine lamp integrated in chip guard
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Safety hand wheels with release function in the X and Z axis
- ▶ Prism bed heavily ribbed, induction hardened and precision ground
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.02 mm
- ▶ Fast, easy adjustment without tools thanks to clamping lever
- ▶ Machine base with tool compartment on right-hand side (left side with 3 covers (no compartments))
- ▶ Pull-out chip drawer with guide rails
- ▶ Lockable main switch
- ▶ Quadruple tool holder
- ▶ Emergency stop device with foot pedal
- ▶ Chuck protection approved in line with EN 23125
- ▶ Interchangeable gears in standard scope of delivery

### TH 3309V SIEMENS inverter



### SINAMICS G110M

- › Premium quality
- › Highest energy efficiency
- › Speed change easily adjustable via potentiometer

### TH 3309D / TH 3309V Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota



Fig.: TH 3309D - Shown with optional lathe chuck

## Technical specifications, accessories and dimensions

Model	TH 3309	TH 3309 D	TH 3309V
Article no.	3402030	3402040	3402046
Power			
Electrical connection	400 V / 3 Ph ~50 Hz		
Drive motor	1.5 kW		
Spindle			
Spindle taper	MT 5		
Spindle seat	Camlock DIN ISO 702- 2 No. 4		
Spindle bore, bar passage diameter	Ø 38 mm		
Quadruple tool holder mounting height	16 mm		
Work area			
Centre height	165 mm		
Centre width	830 mm		
Swing Ø above machine bed*	330 mm		
Swing Ø above cross slide	208 mm		
Bed width	181 mm		
Speed range			
Spindle speed	70 - 2 000 rpm	15 - 2 500 rpm	
Number of speeds	16 stages	8 stages, electr. adjustable	
Traverse paths			
Top slide travel	98 mm		
Cross slide travel	164 mm		
Feeds and pitches			
Longitudinal feed within the range	0.052 - 1.392 mm/rev (32 feeds)		
Cross feed within	0.014 - 0.38 mm/rev (32 feeds)		
Pitch - metric in range	0.4 - 7 mm (26 pitches)		
Pitch - inch in range	56 - 4 hel./inch		
Tailstock			
Tailstock seat	MT 3		
Tailstock sleeve diameter/travel	Ø 32 mm / 110 mm		
Dimensions and weight			
Length x width x height	1 685 x 745 x 1 320 (DPA 1 590) mm		
Net weight	510 kg	512 kg	510 kg

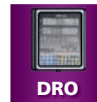
Lathe chuck no. 4	Art no.
OPTIMUM Three-jaw lathe chuck, Ø 200 mm, centric	3442762
OPTIMUM Four-jaw lathe chuck, Ø 200 mm, centric	3442843
OPTIMUM Four-jaw lathe chuck, Ø 200 mm, individually	3442879
BISON Three-jaw lathe chuck, Ø 160 mm, centric	3450305
BISON Three-jaw lathe chuck, Ø 200 mm, centric	3450310
BISON Four-jaw lathe chuck, Ø 160 mm, centric	3450355
BISON Four-jaw lathe chuck, Ø 200 mm, centric	3450360

Information on lathe chuck from page 218

Accessories	Art no.
Vibration-damper machine foot SE 55 (8 units required)	3352981
Quick change tool holder SWH 3-E	3384303
SWH 3-E factory assembly	9000400
Lathe tool set 16 mm, 11-part	3441604
Lathe tool set 16 mm, 5-part	3441668
Lathe tool set 16 mm, 5-part "Made in Germany"	3441216
Lathe tool set 16 mm, 5-part	3441610

More accessories and information on accessories from page 214

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2  
Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323



### Dimensions

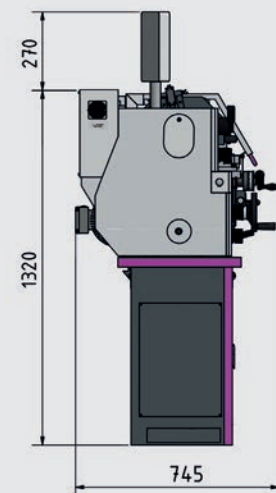
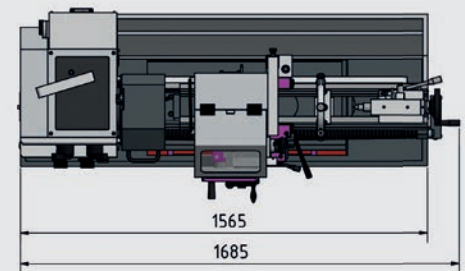
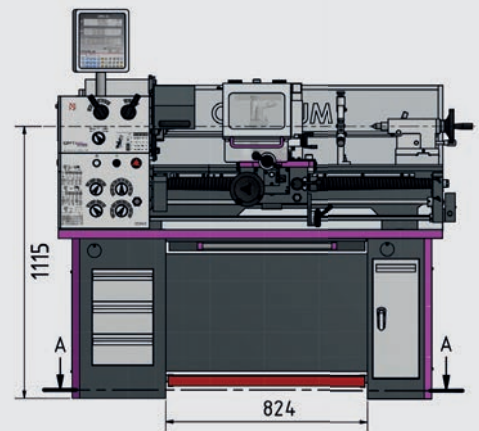


Fig.: TH 3309D

**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 6 - Ø 50 mm
- › Follower rest passage Ø 8 - Ø 30 mm
- › LED machine lamp
- › Reduction sleeve MT 5 - MT 3
- › Two fixed centres MT 3
- › Quadruple tool holder
- › Interchangeable gear set
- › Machine base
- › Machine initially filled with premium grade oil
- › Operating tool

## The feed and lead screw lathes impress with their rugged design and simple handling. TM 3310D with DPA 31 digital position display

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Precision slide
- ▶ DC 24 Volt electrical system
- ▶ Motor circuit switch
- ▶ Main motor electrically braked
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Free moving feed gear with rounded gear wheels running in an oil bath
- ▶ Hardened main spindle borne on adjustable, precision taper roller bearings
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide
- ▶ Two-channel safety electronics
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Switch rod on the bed slide for selection of longitudinal or cross feed
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Machine base with rugged steel design
- ▶ Quadruple tool holder
- ▶ Emergency stop button right and left on machine base
- ▶ Three-jaw lathe chuck included in standard scope of delivery

### TM 3310D - Digital position display DPA 31

#### Display:

- › User-friendly membrane keyboard, splash water protected, dazzle free and easy to clean

#### Measuring system:

- › Magnetic belt on X and Z0 axis
- › Scale on Z axis
- › The electronic measuring components of the scale are protected and sealed in the housing
- › Provides accurate and reliable measurement results even if the measuring system is operated in oil or coolant
- › Tolerant towards vibration and magnetic interference

NEW



### User-friendly membrane keyboard



- › Lockable main switch
- › Control on
- › Direct run spindle
- › EMERGENCY-STOP push button

### Spindle seat



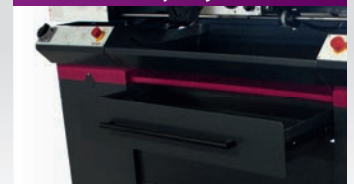
- › The spindle is designed as Camlock DIN ISO 702-2 no.4 seat

### LED machine lamp



- › Dazzle-free, integrated into chip guard

### Chip tray

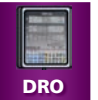


- › Pull-out chip drawer with guide rails



Fig.: TM 3310D





## Technical specifications, accessories and dimensions

Model	TM 3310
Article no.	3403020
Model	TM 3310D
Article no.	3403025
Power	
Electrical connection	400 V / 3 Ph ~50 Hz
Spindle	
Drive motor	1.5 kW
Spindle taper	MT 5
Spindle seat	Camlock DIN ISO 702- 2 No. 4
Spindle bore, bar passage diameter	Ø 38 mm
Quadruple tool holder mounting height	max. 16 mm
Work areas	
Centre height	165 mm
Centre width	1 000 mm
Swing Ø above machine bed*	330 mm
Swing Ø above cross slide	216 mm
Speed range	
Spindle speeds	65 - 2 000 rpm
Number of speeds	9 stages
Traverse paths	
Top slide travel	90 mm
Cross slide travel	168 mm
Feed and pitches	
Longitudinal feed within the range	0.02 - 0.4 mm/rev (24 feeds)
Cross feed within	0.01 - 0.2 mm/rev (32 feeds)
Pitch - metric in range	0.4 - 10 mm/rev (29 pitches)
Pitch - inch in range	56 - 4 hel./inch
Tailstock	
Tailstock seat	MT 3
Sleeve diameter / travel	Ø 38 mm / 100 mm
Dimensions and weight	
Length x width x height	1 760 x 745 x 1 320 (DPA 1 590) mm
Net weight	469 kg/471 kg

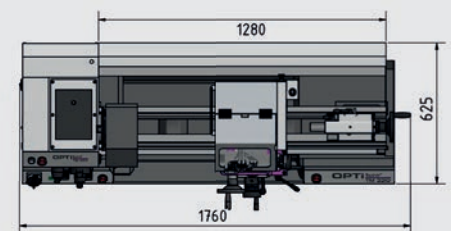
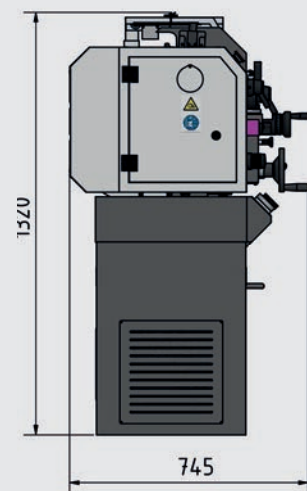
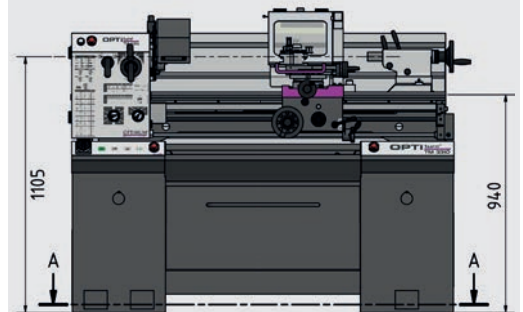
Lathe chuck	Art no.
OPTIMUM three-jaw lathe chuck, Ø 200 mm no. 4, centric	3442762
OPTIMUM Four-jaw lathe chuck, Ø 200 mm no. 4, individually	3442879
BISON three-jaw lathe chuck, Ø 200 mm no. 4, centric	3450310
BISON Four-jaw lathe chuck, Ø 200 mm Nr. 4, centric	3450360

Information on lathe chuck from page 218

Accessories	Art no.
Follower rest passage Ø 10 - Ø 70 mm	3441469
Steady rest passage Ø 10 - Ø 70 mm	3441470
Vibration-damper machine foot SE 55 (6 units required)	3352981
Micro position stop	3441475
Quick change tool holder SWH 3-E	3384303
SWH 3-E factory assembly	9000400
Lathe tool set 16 mm, 11-part	3441604
Lathe tool set 16 mm, 5-part	3441668
Lathe tool set 16 mm, 5-part "Made in Germany"	3441216
Lathe tool set 16 mm, 5-part	3441610

More accessories and information on accessories from page 214

### Dimensions



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



### Scope of delivery

- › Three-jaw lathe chuck, Ø 160 mm , No. 4
- › LED machine lamp
- › Reduction sleeve MT 5 - MT 3
- › Non-revolving centre tip MT 3
- › Quadruple tool holder
- › Interchangeable gear set
- › Machine base
- › Machine initially filled with premium grade oil
- › Operating tool

## Fully equipped lathes for mechanics.

TH 3610D with DPA 21 digital position display

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Precision slide
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 5
- ▶ Lead screw cover
- ▶ All guides adjustable using V-ledges
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide
- ▶ Two-channel safety electronics
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Gearwheels smooth action, hardened and scraped
- ▶ Main spindle runs in oil bath
- ▶ Fast, easy adjustment without tools thanks to clamping lever
- ▶ Gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Safety hand wheels with release function in the X and Z axis
- ▶ Prism bed heavily ribbed, induction hardened and precision ground
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm
- ▶ Machine base with tool compartments on both sides
- ▶ Pull-out chip drawer with guide rails
- ▶ Motor circuit breaker, lockable main switch
- ▶ Quadruple tool holder
- ▶ Emergency stop device with foot pedal
- ▶ LED machine lamp integrated in chip guard

### Control cabinet



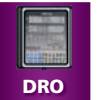
- › 24 Volt DC power supply
- › All contactors and relays by **SIEMENS** or **Schneider**

### TH 3610D Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota
- › Glass scales



Fig.: TH 3610D - Shown with optional lathe chuck



## Technical specifications, accessories and dimensions

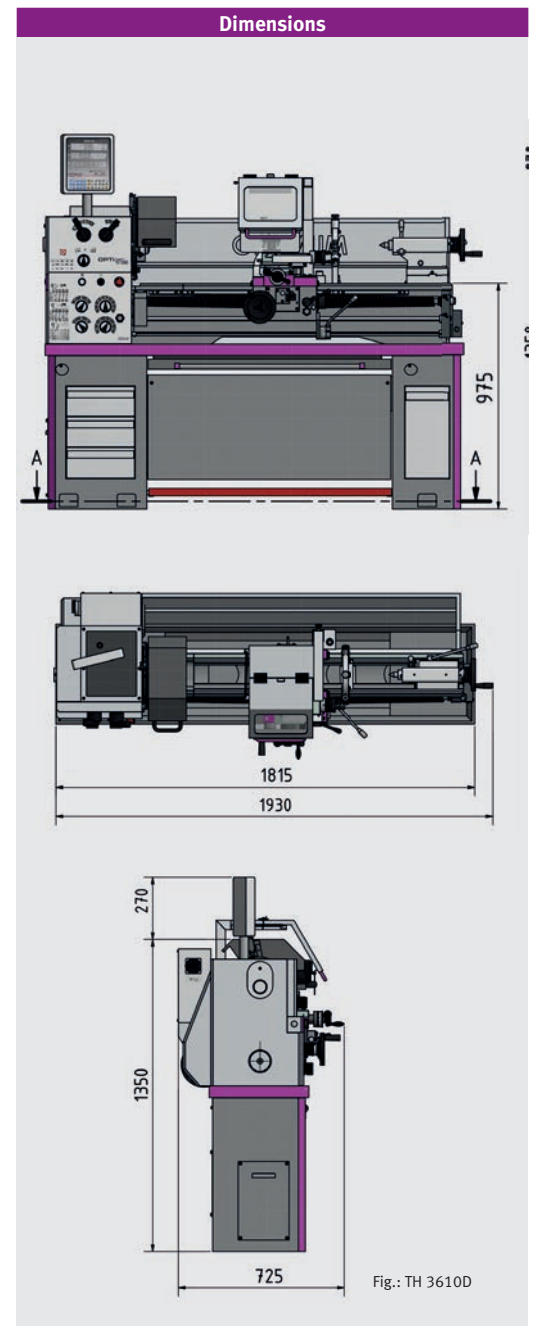
Model	TH 3610	TH 3610D
Article no.	3402050	3402060
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Drive motor	1.5 kW	
Spindle		
Spindle taper	MT 6	
Spindle seat	Camlock DIN ISO 702- 2 No. 5	
Spindle bore, bar passage diameter	Ø 52 mm	
Quadruple tool holder mounting height	max. 16 mm	
Work area		
Centre height	180 mm	
Centre width	980 mm	
Swing Ø above machine bed*	356 mm	
Swing Ø above cross slide	225 mm	
Bed width	187 mm	
Speed range		
Spindle speed	70 - 2 000 rpm	
Number of speeds	8 stages	
Traverse paths		
Top slide travel	100 mm	
Cross slide travel	170 mm	
Feeds and pitches		
Longitudinal feed within the range	0.052 - 1.392 mm/rev (32 feeds)	
Cross feed within	0.014 - 0.38 mm/rev (32 feeds)	
Pitch - metric in range	0.4 - 7 mm/rev (26 pitches)	
Pitch - inch in range	56 - 4 turns/inch (34 pitches)	
Tailstock		
Tailstock seat	MT 3	
Tailstock sleeve diameter / travel	Ø 42 mm / 120 mm	
Dimensions and weight		
Length x width x height	1 930 x 725 x 1 350 / 1 620 mm	
Net weight	570 kg	572 kg

Lathe chuck	Art no.
<b>OPTIMUM Four-jaw lathe chuc</b> Ø 200 mm no. 5, centric	3442845
<b>OPTIMUM Four-jaw lathe chuck</b> , Ø 200 mm no. 5, individually	3442880
<b>BISON Three-jaw lathe chuck</b> , Ø 200 mm no. 5, centric	3450315
<b>BISON Four-jaw lathe chuck</b> , Ø 200 mm no. 5, centric	3450365

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 3-E	3384303
<b>SWH 3-E factory assembly</b>	9000400
<b>Spare tool holder</b> 20 x 100 type D <b>for square chisels</b>	3384304
<b>Spare tool holder</b> 30 x 100 type H <b>for round chisels</b>	3384322
<b>Lathe tool set</b> 16 mm, 11-part	3441604
<b>Lathe tool set</b> 16 mm, 5-part	3441668
<b>Lathe tool set</b> 16 mm, 5-part extension kit	3441610
<b>Collet chuck holder</b> 5C	3441555
<b>Vibration-damper machine foot</b> SE 55 (6 units required)	3352981
<b>Position stop</b> with fine adjustment	3441523

More accessories and information on accessories from page 214



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 10 - Ø 70 mm
- › Follower rest passage Ø 10 - Ø 60 mm
- › LED machine lamp
- › Reduction sleeve MT 6 - MT 3
- › Non-revolving centre tip MT 3
- › Non-revolving, but temperature resistant centre MT 3
- › Quadruple tool holder
- › Interchangeable gear set
- › Machine base
- › Machine initially filled with premium grade oil
- › Operating tool



**Fully equipped lathes for mechanics. Impressive precision and performance** TH 4010D with DPA 21 digital position display, TH 4010V additionally with **SIEMENS** inverter Vario drive

#### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Precision slide
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 5
- ▶ DC 24 Volt electrical system
- ▶ All guides adjustable using V-ledges
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide
- ▶ Two-channel safety electronics
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Gearwheels smooth action, hardened and scraped
- ▶ Main spindle runs in oil bath
- ▶ Fast, easy adjustment without tools thanks to clamping lever
- ▶ Gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN 23125 in the X and Z axis
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning

- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ Pull-out chip drawer with guide rails
- ▶ Lockable main switch
- ▶ Emergency stop device with foot pedal
- ▶ Machine base with 3 covers (no compartments)
- ▶ Coolant system
- ▶ LED machine lamp in chip guard

#### TH 4010 / TH 4010D:

- ▶ Motor circuit switch

#### TH 4010V:

- ▶ Rev counter
- ▶ Speed monitoring in line with Machinery Directive
- ▶ Two speeds
- ▶ Quick change tool holder 3-E
- ▶ Tool holder 20 x 100 type D for square chisels

#### TH 4010V SIEMENS inverter

Made in EU



#### SINAMICS G120D

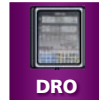
- › For more information see page 186
- › Safety Integrated

#### TH 4010D / TH 4010V Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota



Fig.: TH 4010D - Shown with optional lathe chuck



## Technical specifications, accessories and dimensions

Model	TH 4010		
Article no.	3402070		
Model	TH 4010D	TH 4010V*	
Article no.	3402080	3402085	
Power			
Electrical connection	400 V / 3 Ph ~50 Hz		
Drive motor	1.5 / 2.4 kW	4 kW	
Spindle			
Spindle taper	MT 6		
Spindle seat	Camlock DIN ISO 702- 2 No. 5		
Spindle bore, bar passage diameter	Ø 52 mm		
Quadruple tool holder mounting height	20 mm		
Technical data			
Centre height	205 mm		
Centre width	1 000 mm		
Swing Ø above machine bed*	410 mm		
Swing Ø above cross slide	255 mm		
Bed width	206 mm		
Swing Ø without bed bridge	540 mm		
Turning length in bed bridge	165 mm		
Speed range			
Spindle speed	45 - 1 800 rpm	30 - 3 000 rpm	
stages	16 stages	2 stages, Electr. regulable	
Traverse paths			
Top slide travel	100 mm		
Cross slide travel	195 mm		
Feeds and pitches			
Longitudinal feed within the range	0.043 - 0.653 mm/rev (48 feeds)		
Cross feed within	0.015 - 0.206 mm/rev (48 feeds)		
Pitch - metric in range	0.4 - 7 mm/rev (42 pitches)		
Pitch - inch in range	70 - 4 turns/inch (42 pitches)		
Tailstock			
Tailstock seat	MT 3		
Tailstock sleeve diameter/travel	Ø 45 mm / 130 mm		
Dimensions and weight			
Length x width x height	1 920 x 740 x 1 222 (DPA 1 555) mm		
Net weight	735 kg	737 kg	780 kg

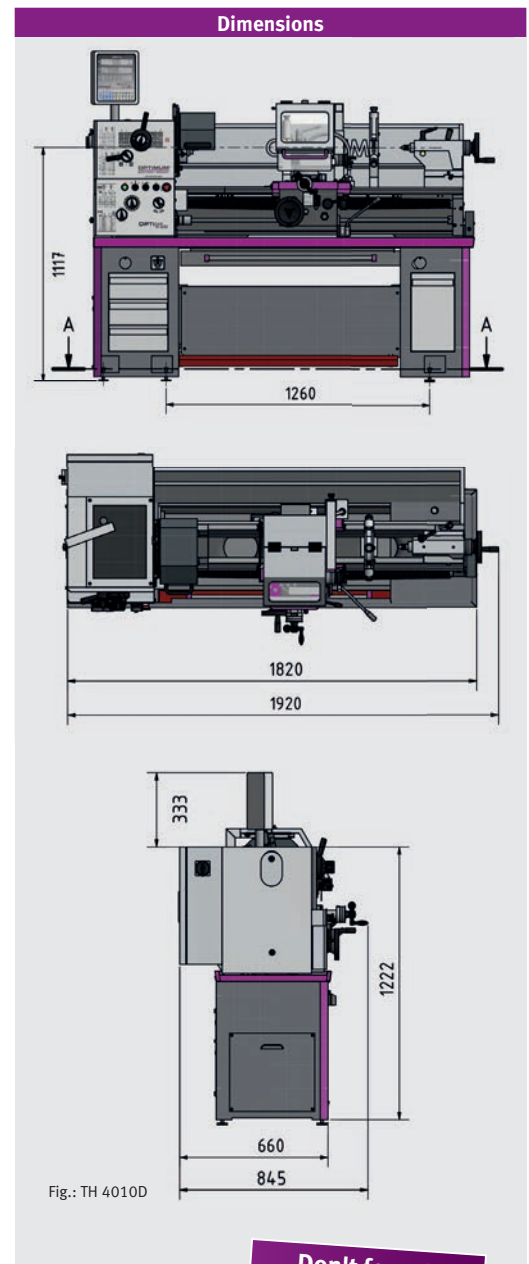


Fig.: TH 4010D

Lathe chuck ,Ø 200 mm No. 5	Art no.
<b>OPTIMUM Four-jaw lathe chuck</b> centric, speed 3 000 rpm	3442845
<b>OPTIMUM Four-jaw lathe chuck</b> individually, speed 2 100 rpm	3442880
<b>BISON Three-jaw lathe chuck</b> centric, speed 3 000 rpm	3450315
<b>BISON Four-jaw lathe chuck</b> centric, speed 3 000 rpm	3450365

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder</b> SWH 3-E	3384303
<b>SWH 3-E factory assembly</b>	9000400
<b>Spare tool holder</b> 20 x 100 type D for square chisels	3384304
<b>Spare tool holder</b> 30 x 100 type H for round chisels	3384322
<b>Lathe tool set</b> HM 20 mm, 5-part	3441670
<b>Lathe tool set</b> HM 20 mm, 5-part, extension kit	3441617
<b>Levelling platen</b> SE 2(6 units required)	3381016

More accessories and information on accessories from page 214

### Scope of delivery

- › Steady rest passage Ø 10 - Ø 100 mm
- › Follower rest passage Ø 10 - Ø 80 mm
- › LED machine lamp
- › Reduction sleeve MT 6 - MT 3
- › Non-revolving centre tip MT 3
- › Non-revolving, but temperature resistant centre MT 3
- › Change gear kit
- › Machine initially filled with premium grade oil
- › Operating tool

### TH 4010 / TH 4010D

- › Quadruple tool holder 16 mm

### TH 4010V

- › Quick change tool holder 3-E
- › Tool holder 20 x 100 type D for square chisels

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C2

Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323

## Feed and lead screw lathes that impress with their rugged design and simple handling.

### TM 4010D with DPA 21 digital position display

#### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 4
- ▶ Motor circuit switch
- ▶ Main motor electrically braked
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide
- ▶ Two-channel safety electronics
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Perfectly concentric main spindle guarantees high load capacity thanks to use of precision taper roller bearings
- ▶ With safety device to prevent simultaneous operation of thread cutting and pitch mechanism
- ▶ Safety hand wheels with release function in the X and Z axis
- ▶ All pitch gears made of steel, hardened and ground, shafts on needle bearings, all components lubricated in an oil bath
- ▶ Coolant pump with coolant tank and fill level display Tank removable for easy cleaning
- ▶ LED machine lamp in machine housing
- ▶ Machine base with rugged steel design
- ▶ Emergency stop button right and left
- ▶ Lockable main switch
- ▶ Three-jaw lathe chuck included in standard scope of delivery

#### TM 4010D with DPA 21 digital position display

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Greater operation accuracy
- › Reduction of error quota
- › Glass scales



Follow this for the video presentation of our OPTIMUM lathe TM 4010D

#### Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by SIEMENS or Schneider

#### Membrane keyboard



- › User-friendly membrane keyboard with the functions: Machine on, coolant pump, light and direct run

#### Chip drawer



- › Fold-up type
- › Easy chip cleaning from front



Fig.: TM 4010D





## Technical specifications, accessories and dimensions

Model	TM 4010	TM 4010D
Article no.	3403040	3403045
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	3 kW	
Coolant pump motor	100 Watts	
Spindle		
Drive motor	2.2 kW	
Spindle taper	MT 6	
Spindle seat	Camlock DIN ISO 702- 2 No. 5	
Spindle bore, bar passage diameter	Ø 53 mm	
Quick change tool holder	SWH 3-E	
Work areas		
Centre height	200 mm	
Centre width	1 000 mm	
Swing Ø above machine bed*	400 mm	
Swing Ø above cross slide (1)	250 mm	
Bed width	203 mm	
Speed range		
Spindle speeds	70 - 2 000 rpm	
Number of speeds	8 stages	
Traverse paths		
Top slide travel	98 mm	
Cross slide travel	185 mm	
Feed and pitches		
Longitudinal feed within the range	0.014 - 0.38 mm/rev (26 feeds)	
Cross feed within	0.052 - 1.392 mm/rev (32 feeds)	
Pitch - metric in range	0.4 - 7 mm/rev (32 pitches)	
Pitch - inch in range	56 - 4 turns/inch (31 pitches)	
Tailstock		
Tailstock seat	MT 4	
Sleeve diameter / travel	Ø 50 mm / 110 mm	
Dimensions and weight		
Length x width x height	1 935 x 780 x 1 740 mm	
Net weight	765 kg	767 kg

Lathe chuck, Ø 200 mm No. 5	Art no.
<b>OPTIMUM Four-jaw lathe chuck</b> centric Speed 3 000 rpm	3442845
<b>OPTIMUM Four-jaw lathe chuck</b> , individually Speed 2 100 rpm	3442880
<b>BISON Three-jaw lathe chuck</b> , centric Speed 3 000 rpm	3450315
<b>BISON Four-jaw lathe chuck</b> , centric Speed 3 000 rpm	3450365

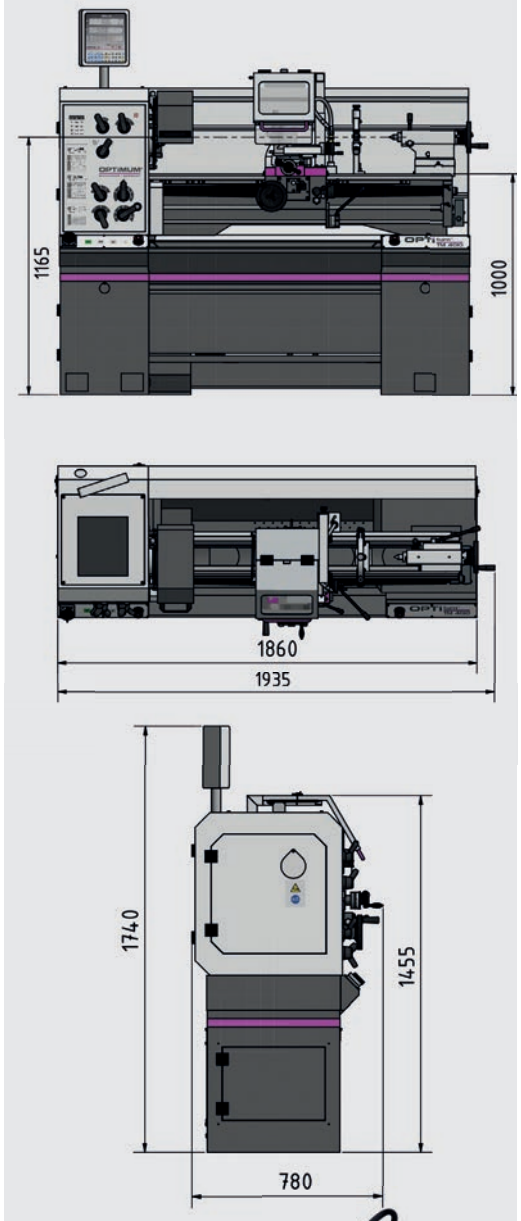
Information on lathe chuck from page 218

Accessories	Article no.
<b>Spare tool holder</b> 20 x 100 type D for <b>square chisels</b>	3384304
<b>Spare tool holder</b> 30 x 100 type H for <b>round chisels</b>	3384322
<b>Lathe tool set</b> 16 mm, 11-part	3441604
<b>Lathe tool set</b> 16 mm, 5-part	3441668
<b>Lathe tool set</b> 16 mm, 5-part "Made in Germany"	3441216
<b>Lathe tool set</b> 16 mm, 5-part	3441610
<b>Clamping disc</b> Ø 320 mm No. 5	3442979
<b>Micro position stop</b>	3441475
<b>Vibration-damper machine foot</b> SE 55 (6 units required)	3352981

**More accessories and information** on accessories from page 214

\*Important general information on the operation of our machines see page 323 - (1) Please note that operators are required to make conversions in the event of installing third-party chucks or face plates to reach the stated, technically possible rotating diameter.

### Dimensions



### Our recommendation

**cleancraft®**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



### Scope of delivery

- › Three-jaw lathe chuck, Ø 200 mm , No. 5
- › Steady rest Ø 7 - Ø 102 mm
- › Follow steady rest Ø 10 - Ø 60 mm
- › LED machine lamp
- › Reduction sleeve MT 6 / MT 4
- › Non-revolving centre tip MT 4
- › Quick change tool holder 3-E
- › Tool holder 20 x 100 type D for square chisels 18 mm
- › Initial machine filling with quality oil
- › Operating tool

# WITH STEEL/CAST IRON CHASSIS

Visit our exhibition in Hallstadt/Bamberg

## SIEMENS SINAMICS G 120D Frequency inverter

Information on the Vario lathes

TH 4210V / TH 4615V / TH 5620V / TX 5216V / TZ4V

### SINAMICS G120D

#### Brief overview of benefits

##### Highlights at a glance

Advanced safety function (STO, SLS)

**STO - safe torque off as per EN 61800- 5**

**SLS - Safely limited speed as per EN 61800- 5**

- ▶ Regenerative power supply, low mains feedback
- ▶ Energy savings up to 20 %
- ▶ No brake resistors required
- ▶ Fast and easy diagnostic capability through LEDs
- ▶ Standardised plug connections throughout
- ▶ Rugged and flat design (IP65)
- ▶ EMC class C3 as per EN 61800- 3
- ▶ Safety Integrated without encoder!
- ▶ More direct switch-over
- ▶ Faster braking
- ▶ Resilient to high overload



# DIN

Machines as per  
standard EN  
61800

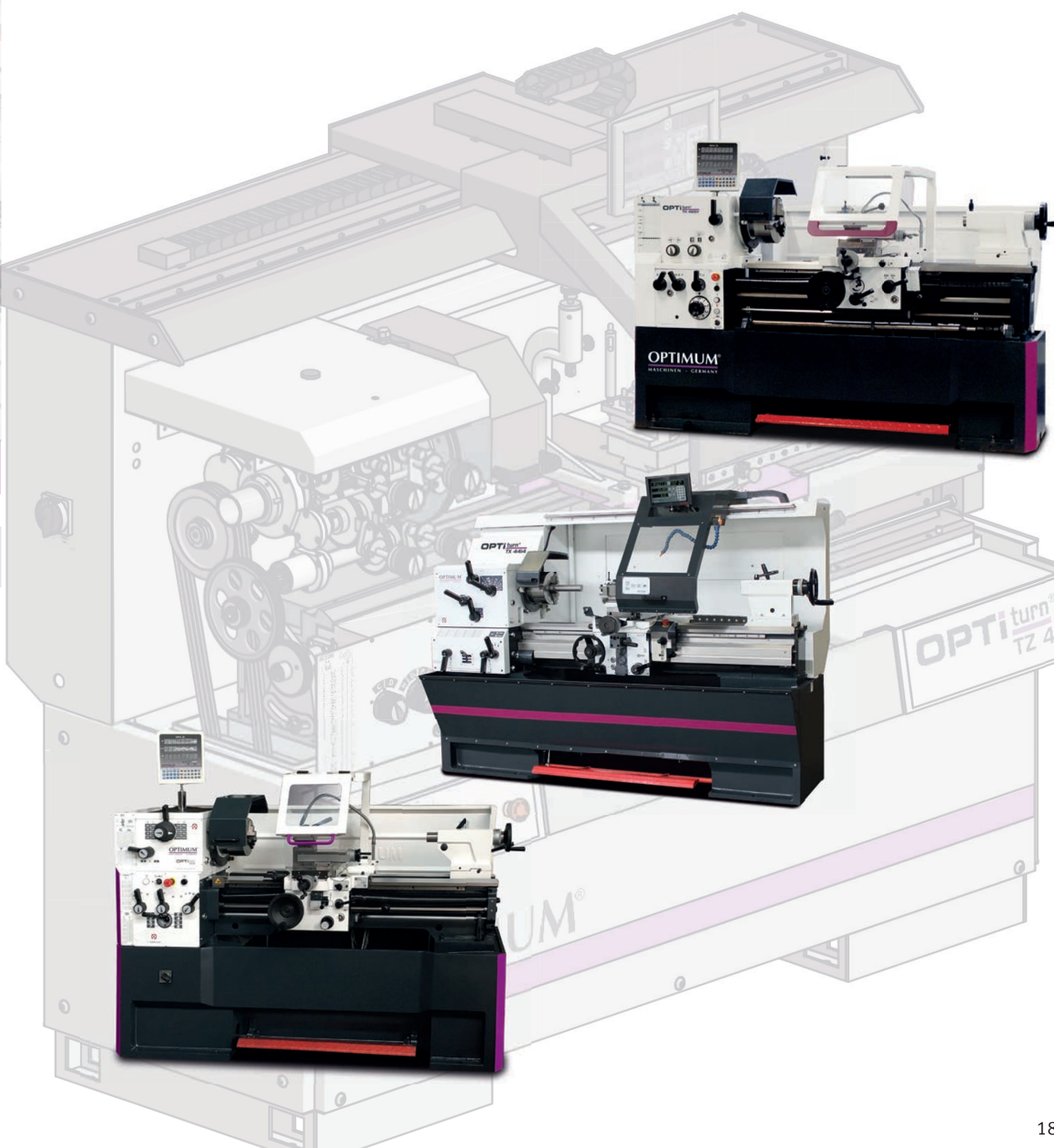
Siemens  
**SAFETY INTEGRATED**

- ▶ A comprehensive safety package that helps to protect both persons and machines. And in an extremely efficient and economic way thanks to complete integration of the safety functions in the control and drive technology.. In addition, it ensures safe and practical operation of your machine under all required operating conditions. . The safety functions meet the requirements of DIN EN 61508 for use up to and including SIL (Safety Integrity Level) 2 and categories 3 and PL (Performance Level) d as per DIN EN ISO 13849.

#### The feature scope includes, for example:

- ▶ Functions for safe monitoring of speed and standstill
- ▶ Direct connection of all safety-related signals and their internal logical links

# LATHES





## Precision feed and lead screw lathes with digital position display **NEWALL** DP 700 and quick change tool holder


### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Motor circuit switch
- ▶ Control cabinet with 24-V DC power supply
- ▶ Partly clad with travelling, generously dimensioned chip guard
- ▶ Travelling swarf guard with integrated position display, coolant hose and additional control panel
- ▶ Two-channel safety electronics
- ▶ Plane und top slide spindle hardened and scraped, adjustable via split spindle nut
- ▶ Feed and lead screw cover
- ▶ Granular feed and tapping range
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ The default gear wheels for metric thread pitches and modular threads are already mounted in the machine.
- ▶ Interchangeable gears available as option for imperial and D.P threads
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Decoupled hand wheels approved in line with EN 23125
- ▶ Safety hand wheels with release function in the X and Z axis
- ▶ Chip tray pulls out to front
- ▶ Coolant system
- ▶ Quick change tool holder SWH 5-B
- ▶ Tool holder 25 x 120 type D for square chisels 20 mm
- ▶ LED machine light for complete elimination of the workspace

### Digital position display DP700

- › Intuitive and user-friendly user interface
- › Durable foil keyboard
- › Information see page 234



 **YouTube**  
Follow this for the video presentation of our OPTIMUM lathe TZ 4

### Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by **SIEMENS** or **Schneider**

### Touch panel



### Centralised control

- › For switching lighting and coolant
- › switching for two-stage motor
- › Membrane keypad, easily cleanable

### Bed geometry



- › Flat angle
- › Higher force absorption



Fig.: TZ 4 - Shown with optional lathe chuck



## Technical specifications, accessories and dimensions

Model	TZ 4
Article no.	3432240
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	5 kW
Coolant pump motor	125 Watts
<b>Spindle</b>	
Drive motor	3 kW/4.5 kW
Spindle taper	MT 6
Spindle seat	DIN ISO 702-1 no. 5 form A2
Spindle bore, bar passage diameter	Ø 52 mm
Quick change tool holder	SWH 5-B
<b>Work area</b>	
Centre height	200 mm
Centre width	800 mm
Swing Ø above machine bed*	400 mm
Swing Ø above cross slide	245 mm
Bed width	260 mm
<b>Speed range</b>	
Spindle speed	45 - 1 800 rpm
Number of speeds	16 stages
<b>Traverse paths</b>	
Top slide travel	112 mm
Cross slide travel	212 mm
<b>Feeds and pitches</b>	
Longitudinal feed within the range	0.026 - 1.84 mm/rev (48 feeds)
Cross feed within	0.013 - 0.93 mm/rev (48 feeds)
Pitch - metric in range	0.2 - 14 mm/rev (26 pitches)
Pitch - inch in range (Interchangeable gear set accessory art. no. 3444160)	80 - 1 turns/inch (42 pitches)
Modular thread in range	0.1 - 7 mm x π(44 threads)
Diametral pitch in range (Interchangeable gear set accessory art. no. 3444160)	3 - 200 turns/ π(33 pitches)
<b>Tailstock</b>	
Tailstock seat	MT 3
Sleeve diameter / travel	Ø 50 mm / 110 mm
<b>Dimensions and weight</b>	
Length x width x height	1 960 x 1 060 x 1 690 mm
Net weight	1 250 kg

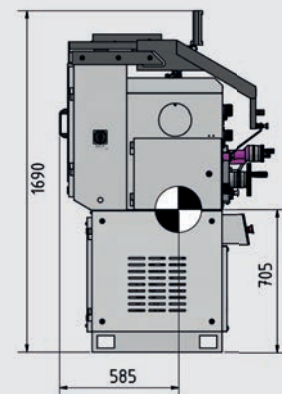
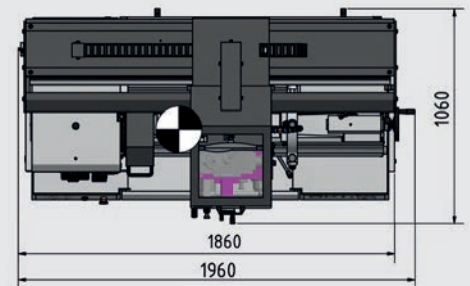
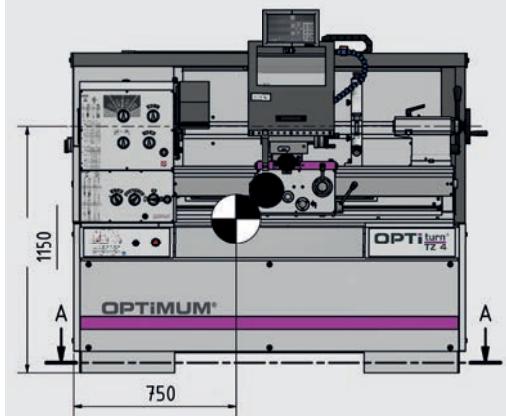
Lathe chuck	Article no.
<b>BISON four-jaw lathe chuck</b> Ø 250 mm no. 5 cast centric clamping (chuck flange 3450218 required)	3450216
<b>Chuck flange for lathe chuck</b> Ø 250 mm no. 5 (for lathe chuck 3450216)	3450218
<b>BISON Three-jaw lathe chuck</b> Ø 200 mm no. 5 cast centric clamping (chuck flange 3450212 required)	3450210
<b>Chuck flange for lathe chuck</b> Ø 200 mm no. 5 (lathe chuck 3450210)	3450212

Information on lathe chuck from page 218

Accessories	Article no.
<b>Clamping disc</b> Ø 320 mm no. 5	3442979
<b>BISON chuck flange for lathe chuck</b> Ø 160 mm (Szf 3450245)	3450246
<b>BISON Collet chuck 16C</b> - Ø 160 mm (requires chuck flange 3450246)	3450245
<b>Lathe tool set</b> HM 20 mm, 5-part (see page 226)	3441617
<b>Interchangeable gear set</b> for imperial and D.P thread	3444160
<b>Levelling platen</b> SE 1 (8 units required)	3381012

More accessories and information on accessories from page 214

### Dimensions



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 10 - Ø 130 mm
- › Follower rest passage Ø 10 - Ø 100 mm
- › Reduction sleeve MT 6 - MT 3
- › Non-revolving centre tip MT 3
- › Non-revolving, but temperature resistant centre MT 3
- › Quick change tool holder 5-B
- › Tool holder 25 x 120 type D for square chisels 20 mm
- › Machine initially filled with premium grade oil
- › Operating tool

## Precision feed and lead screw lathe with electronically controlled drive and digital position display **NEWall DP 700**

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Motor circuit switch
- ▶ Control cabinet with 24-V DC power supply
- ▶ Partly clad with travelling, generously dimensioned chip guard
- ▶ Travelling swarf guard with integrated position display, coolant hose and additional control panel
- ▶ Two-channel safety electronics
- ▶ Safety hand wheels with release function in the X and Z axis
- ▶ Plane and top slide spindle hardened and scraped, adjustable via split spindle nut
- ▶ Feed and lead screw cover
- ▶ Granular feed and tapping range
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ The default gear wheels for metric thread pitches and modular threads are already mounted in the machine.  
Interchangeable gears available as option for imperial and D.P threads
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Decoupled hand wheels approved in line with EN 23125
- ▶ Reduction of the main spindle braking time thanks to energy recuperation
- ▶ Chip tray pulls out to front
- ▶ Coolant system
- ▶ Quick change tool holder SWH 5-B
- ▶ Tool holder 25 x 120 type D for square chisels 20 mm
- ▶ LED machine light for complete elimination of the workspace

### Digital position display DP700

- › Intuitive and user-friendly user interface
- › Durable foil keyboard
- › Information see page 234

### Siemens inverter

Made in EU



### › SINAMICS G120D

- › For more information see page 186

### Touch panel



### Centralised control

- › For switching lighting and coolant
- › Foil keypad, easily cleanable

### Bed geometry



- › Flat angle
- › Higher force absorption



Fig.: TZ 4 - Shown with optional lathe chuck





## Technical specifications, accessories and dimensions

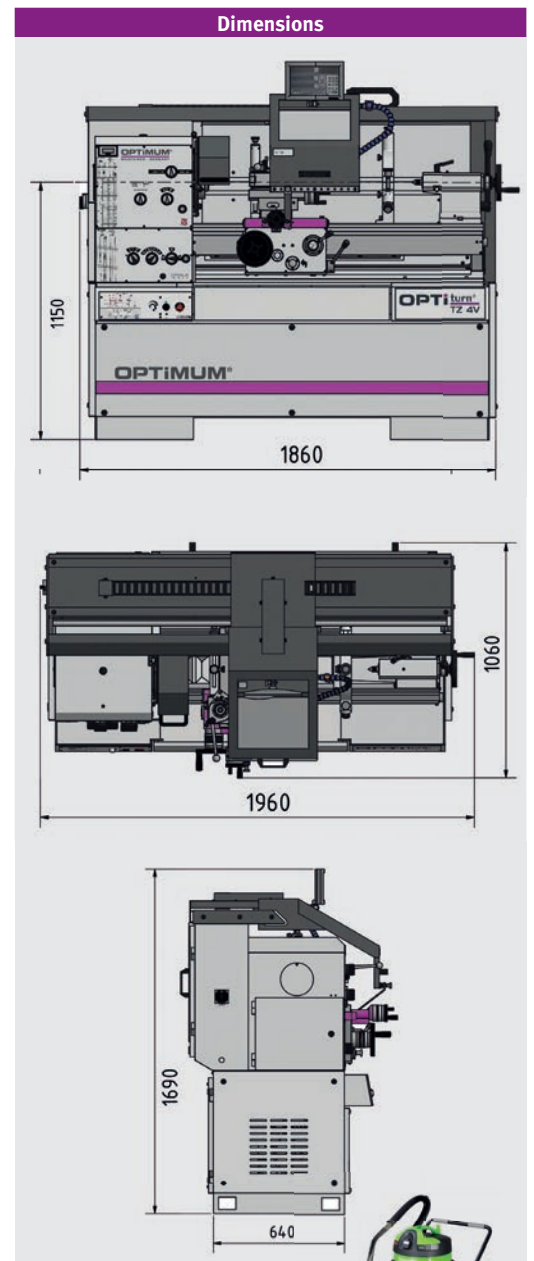
Model	TZ 4V
Article no.	3432245
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	6 kW
Coolant pump motor	125 Watts
<b>Spindle</b>	
Drive motor	5.5 kW
Spindle taper	MT 6
Spindle seat	DIN ISO 702-1 no. 5 form A2
Spindle bore, bar passage diameter	Ø 52 mm
Quick change tool holder	SWH 5-B
<b>Work area</b>	
Centre height	200 mm
Centre width	800 mm
Swing Ø above machine bed*	400 mm
Swing Ø above cross slide	245 mm
Bed width	260 mm
<b>Speed range</b>	
Spindle speed	50 - 3 000 rpm
Number of speeds	2 speed, electrically controlled
<b>Traverse paths</b>	
Top slide travel	112 mm
Cross slide travel	212 mm
<b>Feeds and pitches</b>	
Longitudinal feed within the range	0.0263 - 1.8416 mm/rev (48 feeds)
Cross feed within	0.0133 - 0.9321 mm/rev (48 feeds)
Pitch - metric in range	0.2 - 14 mm/rev (26 pitches)
Pitch - inch in range (Interchangeable gear set accessory art. no. 3444160)	80 - 1 turns/inch (42 pitches)
Modular thread in range	0.1 - 7 mm x π(44 threads)
Diametral pitch in range (Interchangeable gear set accessory art. no. 3444160)	3 - 200 turns/π(33 pitches)
<b>Tailstock</b>	
Tailstock seat	MT 3
Sleeve diameter / travel	Ø 50 mm / 110 mm
<b>Dimensions and weight</b>	
Length x width x height	1 960 x 1 060 x 1 690 mm
Net weight	1 250 kg

Lathe chuck	Article no.
<b>BISON four-jaw lathe chuck</b> Ø 250 mm no. 5, steel centric clamping (chuck flange 3450218 required)	3450217
<b>Chuck flange</b> for lathe chuck Ø 250 mm no. 5 (for lathe chuck 3450218)	3450218
<b>BISON Three-jaw lathe chuck</b> Ø 200 mm no. 5 cast centric clamping (chuck flange 3450212 required)	3450210
<b>Chuck flange</b> for lathe chuck Ø 200 mm no. 5 (lathe chuck 3450210)	3450212

Information on lathe chuck from page 218

Accessories	Article no.
<b>Clamping disc Ø 320 mm No. 5</b>	3442979
<b>BISON chuck flange for lathe chuck</b> Ø 160 mm (Szf 3450245)	3450246
<b>BISON Collet chuck</b> 16C - Ø 160 mm (requires chuck flange 3450246)	3450245
<b>Lathe tool set</b> HM 20 mm, 5-part (see page 226)	3441617
<b>Interchangeable gear set</b> for imperial and D.P thread	3444160
<b>Levelling platen</b> SE 1 (8 units required)	3381012

More accessories and information on accessories from page 214



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 10 - Ø 130 mm
- › Follower rest passage Ø 10 - Ø 100 mm
- › Reduction sleeve MT 6 - MT 3
- › Non-revolving centre tip MT 3
- › Non-revolving, but temperature resistant centre MT 3
- › Quick change tool holder 5-B
- › Tool holder 25 x 120 type D for square chisels 20 mm
- › Machine initially filled with premium grade oil
- › Operating tool

## Precision feed and lead screw lathes, mature technology, fully equipped, easy to operate.

TH 4210D / TH 4215D with DPA 21 digital position display

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 6
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Main spindle runs in oil bath
- ▶ Gearwheels smooth action, hardened and scraped borne on 2 re-adjustable precision taper rollers
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ All metric pitches in range from 0.2 to 14 mm/rev and all inch pitches in range of 72 - 2 turns per inch configurable on control panel without replacing the interchangeable gear wheels thanks to gear shift
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ LED machine lamp in chip guard
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Chassis and machine bed single-piece cast meehanite
- ▶ Emergency stop device with foot pedal
- ▶ Quadruple tool holder

### Control cabinet



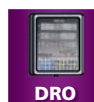
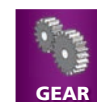
- › 24 Volt DC power supply
- › All contactors and relays by **SIEMENS** or **Schneider**

### TH 4210D / TH 4215D Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Sensor supplied for acquiring spindle speeds



Fig.: TH 4210D - Shown with optional lathe chuck



## Technical specifications, accessories and dimensions

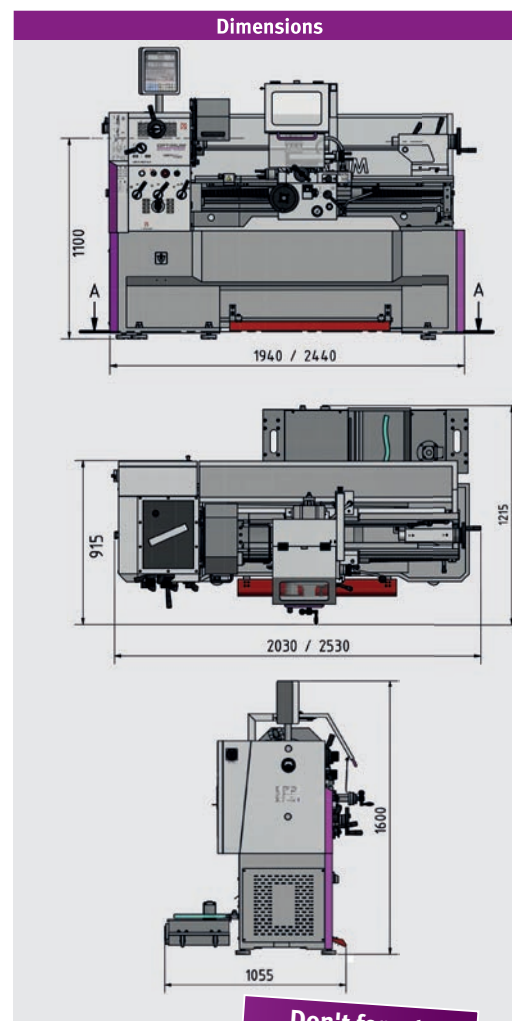
Model	TH 4210	
Article no.	3462050	
Model	TH 4210D	TH 4215D
Article no.	3462055	3462070
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	4.6 kW	
Coolant pump motor	100 W	
Spindle		
Drive motor	3 kW/4.5 kW	
Spindle taper	MT 6	
Spindle seat	Camlock DIN ISO 702- 2 No. 6	
Spindle bore, bar passage diameter	Ø 52 mm	
Quick change tool holder height	20 mm	
Work area		
Centre height	210 mm	
Centre width	1 000 mm	1 500 mm
Swing Ø above machine bed*	420 mm	
Swing Ø above cross slide	250 mm	
Bed width	250 mm	
Swing Ø without bed bridge	590 mm	
Turning length in bed bridge	260 mm	
Speed range		
Spindle speed	45 - 1 800 rpm	
Number of speeds	16 stages	
Traverse paths		
Top slide travel	140 mm	
Cross slide travel	230 mm	
Feeds and pitches		
Longitudinal feed within the range	0.05 - 1.7 mm/rev (17 feeds)	
Cross feed within	0.025 - 0.85 mm/rev (17 feeds)	
Pitch - metric in range	0.2 - 14 mm/rev (39 pitches)	
Pitch - inch in range	72 - 2 turns/inch (45 pitches)	
Diametral pitch in range	8 - 44 turns/π (21 pitches)	
Modular thread in range	0.3 - 3.5 mm x π (18 threads)	
Tailstock		
Tailstock seat	MT 4	
Tailstock sleeve diameter / travel	Ø 50 mm / 120 mm	
Dimensions and weight		
Length	1 940 mm	2 440 mm
Width x height	915 x 1 375 (DPA 1 600) mm	
Net weight	1 160 kg	1 340 kg
Net weight with DPA 21	1 162 kg	

Lathe chuck	Art no.
<b>OPTIMUM lathe chucks, cast iron, Ø 250 mm no. 6</b>	
Three-jaw lathe chuck centric	3442765
Four-jaw lathe chuck, centric	3442852
Four-jaw lathe chuck, individually	3442884
<b>BISON lathe chucks Ø 250 mm no. 6</b>	
Three-jaw lathe chuck ,cast, centric	3450330
Four-jaw lathe chuck, cast, centric	3450380
Three-jaw lathe chuck, steel, centric	3450530
Four-jaw lathe chuck, steel, centric	3450580

Information on lathe chuck from page 218

Accessories	Art no.
<b>Quick change tool holder SWH 5-B</b>	3384305
<b>SWH 5-B factory assembly</b>	9000400
<b>Spare tool holder 25 x 120 type D for square chisels</b>	3384306
<b>Spare tool holder 32 x 130 type H for round chisels</b>	3384324
<b>Lathe tool set HM 20 mm, 5-part</b>	3441670
<b>Lathe tool set HM 20 mm, 5-part</b>	3441617
<b>Vibration-damper machine foot SE 85 (6 pcs. required)</b>	3352982
<b>Universal collet chuck device 5C</b>	3441507

More accessories and information on accessories from page 214



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 10 - Ø 130 mm
- › Follower rest passage Ø 10 - Ø 100 mm
- › LED machine lamp
- › Reduction sleeve MT 6 - MT 4
- › Non-revolving centre tip MT 4
- › Non-revolving, but temperature resistant centre MT 4
- › Quadruple tool holder max. 20 mm
- › Interchangeable gear set
- › Gear wheels for threading gauge (metric)
- › Machine initially filled with premium grade oil
- › Operating tool



## Precision feed and lead screw spindle lathes, mature technology, fully equipped, easy to operate. Featuring Siemens inverter Vario drive

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 6
- ▶ Speed monitoring in line with Machinery Directive
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Main spindle runs in oil bath
- ▶ Gearwheels smooth action, hardened and scraped borne on 2 re-adjustable precision taper rollers
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ All metric pitches in range from 0.2 to 14 mm/rev and all inch pitches in range of 72 - 2 turns per inch configurable on control panel without replacing the interchangeable gear wheels thanks to gear shift
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ LED machine lamp in chip guard
- ▶ Chassis and machine bed single-piece cast meehanite
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ Emergency stop device with foot pedal
- ▶ Quick change tool holder 5-B included in standard scope of delivery
- ▶ Tool holder 25 x 120 type D for square chisels 20 mm included in standard scope of delivery

### SIEMENS inverter

Made in EU



### > SINAMICS G120D

For more information see page 186

### Control cabinet



- > 24 Volt DC power supply
- > All contactors and relays by **SIEMENS** or **Schneider**

### Digital position display DPA 21

- > User-friendly membrane keyboard, splash water protected, sealed and dazzle free
  - > Rev counter
- Information see page 232

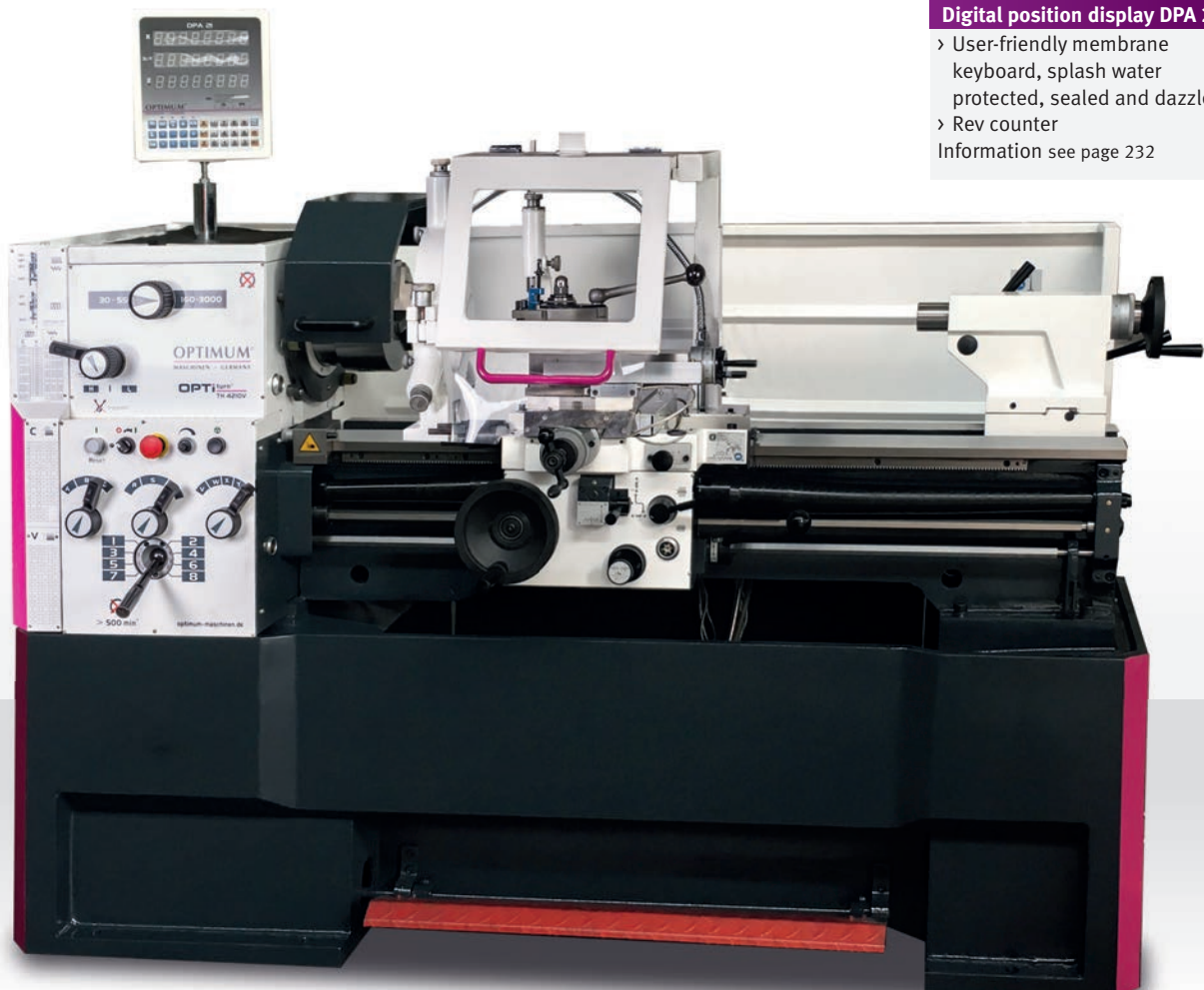


Fig.: TH 4210V - Shown with optional lathe chuck

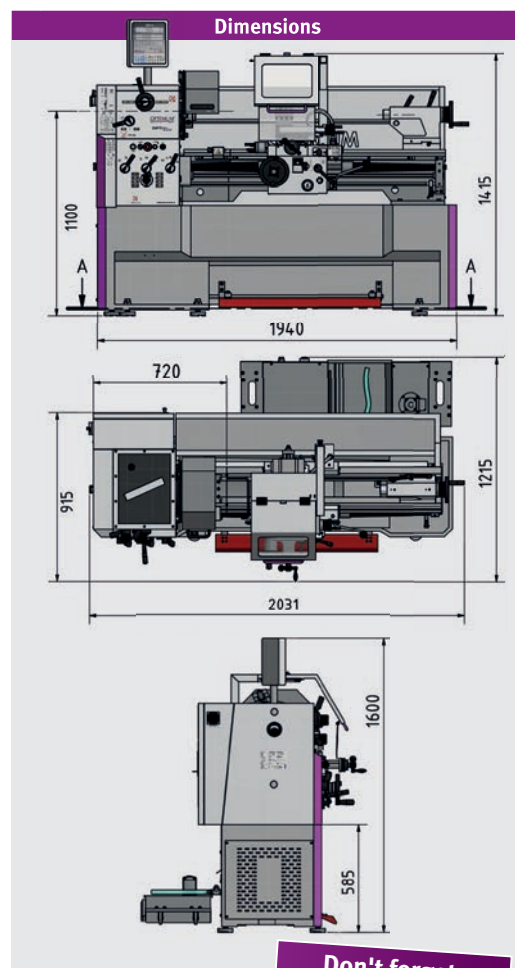
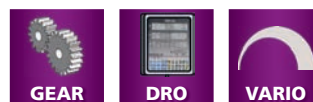
## Technical specifications, accessories and dimensions

Model	TH 4210V
Article no.	3462060
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	5.6 kW
Coolant pump motor	100 W
<b>Spindle</b>	
Drive motor	5.5 kW
Spindle taper	MT 6
Spindle seat	Camlock DIN ISO 702- 2 No. 6
Spindle bore, bar passage diameter	Ø 52 mm
Quick change tool holder	SWH 5-B
Quick change tool holder height	25 mm
<b>Work area</b>	
Centre height	210 mm
Centre width	1 000 mm
Swing Ø above machine bed*	420 mm
Swing Ø above cross slide	250 mm
Bed width	250 mm
Swing Ø without bed bridge	590 mm
Turning length in bed bridge	260 mm
<b>Speed range</b>	
Spindle speed	30 - 3 000 rpm
Number of speeds	2 stages, Electronically controlled
<b>Traverse paths</b>	
Top slide travel	140 mm
Cross slide travel	230 mm
<b>Feeds and pitches</b>	
Longitudinal feed within the range	0.05 - 1.7 mm/rev (17 feeds)
Cross feed within	0.025 - 0.85 mm/rev (17 feeds)
Pitch - metric in range	0.2 - 14 mm/rev (39 pitches)
Pitch - inch in range	72 - 2 turns/inch (45 pitches)
Diametral pitch in range	8 - 44 turns/π (21 pitches)
Modular thread in range	0.3 - 3.5 mm x π (18 threads)
<b>Tailstock</b>	
Tailstock seat	MT 4
Tailstock sleeve diameter / travel	Ø 50 mm / 120 mm
<b>Dimensions and weight</b>	
Length x width x height	2 031 x 915 (coolant tank 1 215) x 1 415 (DPA 1 600) mm
Net weight	1 162 kg

Accessories	Art no.
<b>Quick change tool holder SWH 5-B</b>	3384305
<b>SWH 5-B factory assembly</b>	9000400
<b>Spare tool holder 25 x 120 type D for square chisels</b>	3384306
<b>Spare tool holder 32 x 130 type H for round chisels</b>	3384324
<b>Lathe tool set HM 25 mm, 5-part</b>	3441672
<b>Lathe tool set HM 25 mm, 5-part, extension kit</b>	3441623
<b>Lathe tool set HM 20 mm, 5-part</b>	3441670
<b>Lathe tool set HM 20 mm, 5-part, extension kit</b>	3441617
<b>Vibration-damper machine foot SE 85 (6 pieces required)</b>	3352982
<b>Clamping block set 20-05</b>	3440654

**More accessories and information** on accessories from page 214

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C3  
Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 10 - Ø 130 mm
- › Follower rest passage Ø 10 - Ø 100 mm
- › LED machine lamp
- › Reduction sleeve MT 6 - MT 4
- › Non-revolving centre tip MT 4
- › Quick change tool holder 5-B
- › Tool holder 25 x 120 type D for square chisels 20 mm
- › Interchangeable gear set
- › Machine initially filled with premium grade oil
- › Operating tool

Lathe chuck	Art no.
<b>OPTIMUM lathe chuck Ø 250 mm No. 6</b>	
<b>Three-jaw lathe chuck, centric</b> max. speed 2 400 rpm	3442765
<b>Four-jaw lathe chuck, centric</b> max. speed 2 400 rpm	3442852
<b>Four-jaw lathe chuck, individually</b> max. speed 1 600 rpm	3442884
<b>BISON lathe chuck Ø 250 mm No. 6</b>	
<b>Three-jaw lathe chuck, centric</b> max. speed 2 500 rpm	3450330
<b>Four-jaw lathe chuck, centric</b> max. speed 2 500 rpm	3450380
<b>Three-jaw lathe chuck, steel</b>	3450530
<b>Four-jaw lathe chuck, steel</b>	3450580

**Information on lathe chuck** from page 218

Preface

Drilling

Milling

Turning

Measuring

Saws

Grinding

Polishing

Lighting

## Lead screw and feed rod lathe that meets the highest requirements in technical equipment and precision. With digital position display **NEWALL** DP 700

### Facts that impress in terms of quality, performance and price

- ▶ Machine bed made of heavily ribbed cast material
- ▶ One-piece steel machine base
- ▶ High degrees of rigidity of the spindle bar housing thanks to heavily ribbed 25GG cast material
- ▶ Precision slide
- ▶ shafts on needle bearings, all components lubricated in oil bath
- ▶ Hardened and ground bed guides
- ▶ All electronic controls centrally accessible
- ▶ All feed gearwheels made of steel, hardened and ground
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Two-channel safety electronics
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Complete feed and lead screw cover
- ▶ Working area completely illuminated
- ▶ Easy to service thanks to removable rear panel
- ▶ Hardened and ground spindle guarantees high degrees of accuracy and durability
- ▶ The powerful machining performance means that a high level of chip removal during roughing work is no problem
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ Lockable chip guard moves with the bed slide with integrated position indicator and coolant hose, manually adjustable
- ▶ No interchangeable gears required
- ▶ With safety device to prevent simultaneous operation of thread cutting and pitch mechanism
- ▶ Electronically braked motor
- ▶ Electronic feed shut-off of Z axis
- ▶ Electrical position shut-off with quadruple positioning stop
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Quick change tool holder SWH 5-B included in standard scope of delivery

### Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by **SIEMENS** or **Schneider**

### Touch panel



### Centralised control

- › Machine lamp
- › Coolant
- › Feed bar drive

### Digital position display DP700

- › Intuitive and user-friendly user interface
  - › Durable foil keyboard
- Information see page 234

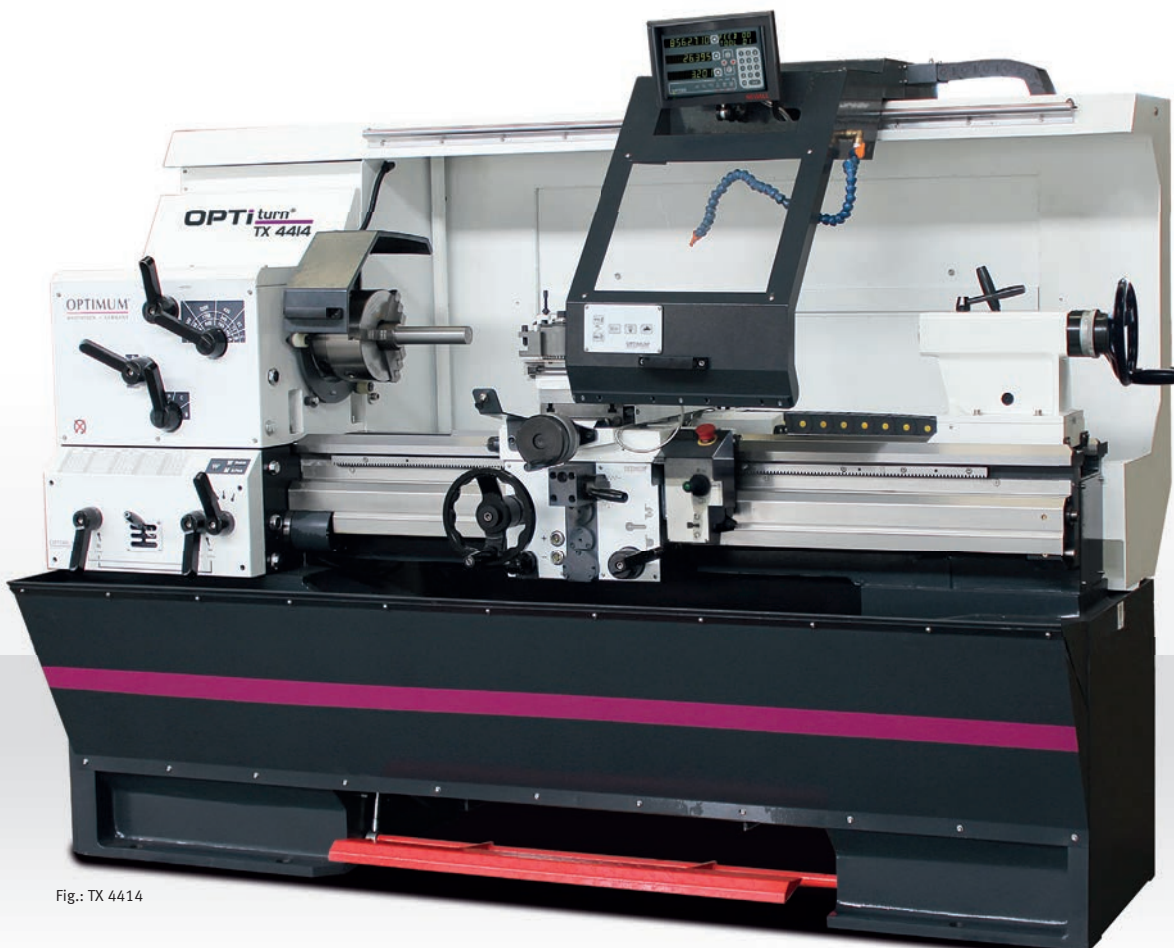


Fig.: TX 4414





## Technical specifications, accessories and dimensions

Model	TX 4414
Article no.	3432420
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	6.1 kW
Coolant pump motor	100 W
<b>Spindle</b>	
Drive motor	5.5 kW
Spindle taper	MT 6
Spindle seat	Camlock DIN ISO 702- 2 No. 6
Spindle bore, bar passage diameter	Ø 52 mm
Quick change tool holder	SWH 5-B
<b>Work area</b>	
Centre height	220 mm
Centre width	1 280 mm
Swing Ø above machine bed*	440 mm
Swing Ø above cross slide	250 mm
Bed width	300 mm
<b>Speed range</b>	
Spindle speed	40 - 2 200 rpm
Number of speeds	12 stages
<b>Traverse paths</b>	
Top slide travel	153 mm
Cross slide travel	290 mm
<b>Feeds and pitches</b>	
Longitudinal feed within the range	0.05 - 0.752 mm/rev (44 pcs.)
Cross feed within	0.025 - 0.376 mm/rev (44 pcs.)
Metric pitch	0.5 - 7.5 mm/rev (44 pcs.)
Pitch - inch in range	60 - 4 turns/inch (44 pcs.)
Diametral pitch in range	0.25 - 3.75 mm x π (44 pcs.)
Modular thread in range	120 - 8 turns/ π (44 pcs.)
<b>Tailstock</b>	
Tailstock seat	MT 4
Tailstock quill diameter/travel	Ø 58 mm/ 180 mm
<b>Dimensions and weight</b>	
Length x width x height	2 410 x 1 085 x 1 825 mm
Net weight	1 630 kg

<b>Lathe chuck Ø 200 mm Camlock No. 6</b>	Art no.
<b>OPTIMUM Four-jaw lathe chuck, centric</b>	3442846
<b>BISON Four-jaw lathe chuck, centric</b>	3450370

Information on lathe chuck from page 218

Fig.:  
Steady rest



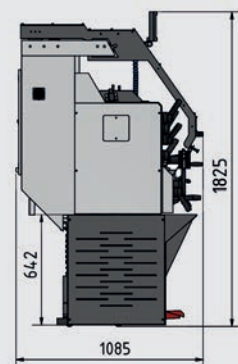
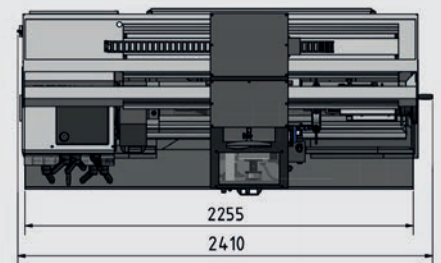
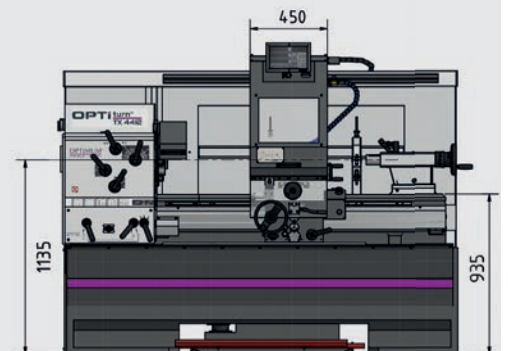
Fig.:  
Follow steady rest



Accessories	Art no.
<b>Follower rest</b> passage Ø 10 - Ø 170 mm	3438015
<b>Steady rest</b> passage Ø 15 - Ø 165 mm	3438017
<b>Clamping disc</b> Ø 350 mm Camlock DIN ISO 702-2 No. 6	3442980
<b>Revolving tailstock centre</b> MT 4	3440704
<b>BISON Revolving tailstock centre</b> MT 4	3451004
<b>Vibration-damper machine foot</b> SE 85 (6 units required)	3352982

**More accessories and information** on accessories from page 214

### Dimensions



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



### Scope of delivery

- › Three-jaw lathe chuck, Ø 200 mm No. 6
- › Two non-travelling centres MT 3 and MT 5
- › Reduction sleeve MT 6 - MT 5
- › Quick change tool holder SWH 5-B
- › Machine initially filled with premium grade oil
- › Operating tool

## Precision feed and lead screw lathes – unique in terms of precision and operation. With DPA 21 digital position display and quick change tool holder.

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground Z axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Shafts, gears and main spindle run in oil bath
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Mechanical longitudinal feed switch-off of bed slide with four configurable eccentrics
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Gearwheels smooth action, hardened and scraped borne on 2 re-adjustable precision taper rollers
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Generously dimensioned chip guard with integrated LED machine lamp
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Quick-switching feed gear with closed design, gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Scale on thread gauge adjustable
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Lines routed in energy chain
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Emergency stop device with foot pedal
- ▶ Quick change tool holder 5-B included in standard scope of delivery
- ▶ Tool holder 25 x 120 type D for square chisels 20 mm included in standard scope of delivery

### Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by SIEMENS or Schneider

### as of TH 4615: Energy chain



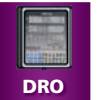
- › for gentle cable and hose routing

### Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Reduction of error quota



Fig.: TH 4615D - Shown with optional lathe chuck



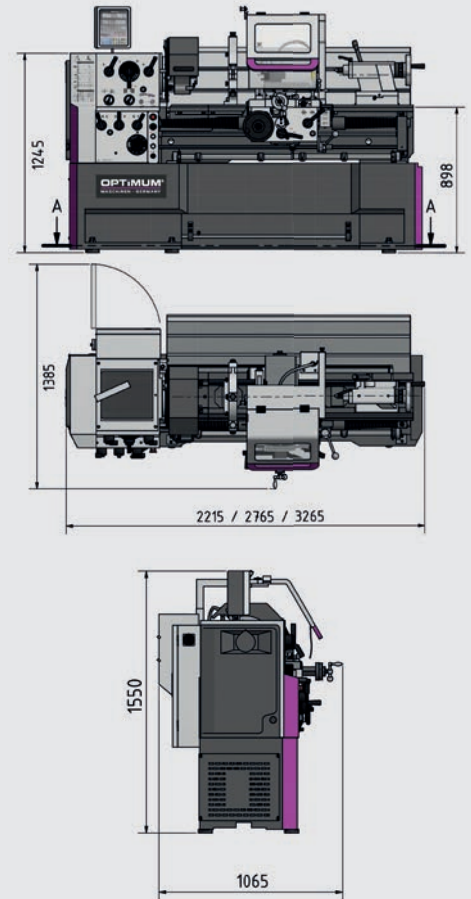
## Technical specifications, accessories and dimensions

Model	TH 4610D		TH 4615D	TH 4620D
Article no.	3462110		3462120	3462130
Power				
Electrical connection	400 V / 3 Ph ~50 Hz			
Total rated value	5.8 kW			
Coolant pump motor	125 Watts			
Spindle				
Drive motor	5.5 kW			
Spindle taper	MT 6			
Spindle seat	Camlock DIN ISO 702- 2 No. 6			
Spindle bore, bar passage diameter	Ø 58 mm			
Quick change tool holder	SWH 5-B			
Work area				
Centre height	230 mm			
Centre width	1 060 mm	1 560 mm	2 060 mm	
Swing Ø above machine bed*	460 mm			
Swing Ø above cross slide	270 mm			
Bed width	300 mm			
Swing Ø without bed bridge	690 mm			
Turning length in bed bridge	240 mm			
Speed range				
Spindle speed	25 - 2 000 rpm			
Number of speeds	12 stages			
Traverse paths				
Top slide travel	125 mm			
Cross slide travel	285 mm			
Feeds and pitches				
Longitudinal feed within the range	0.031 - 1.7 mm/rev (42 feeds)			
Cross feed within	0.014 - 0.784 mm/rev (42 feeds)			
Pitch - metric in range	0.1 - 14 mm/rev (41 pitches)			
Pitch - inch in range	112 - 2 turns/inch (41 pitches)			
Diametral pitch in range	4 - 112 turns/π (50 threads)			
Modular thread in range	0.1 - 7 mm x π (34 threads)			
Tailstock				
Tailstock seat	MT 4			
Sleeve diameter / travel	Ø 60 mm / 130 mm			
Dimensions and weight				
Length	2 215 mm	2 765 mm	3 265 mm	
Width x height	1 065 x 1 550 mm			
Net weight	1 645 kg	1 810 kg	1 965 kg	

Accessories	Art no.
<b>Spare tool holder 25 x 120 type D for square chisels</b>	3384306
<b>Spare tool holder 32 x 130 type H for round chisels</b>	3384324
<b>Lathe tool set HM 20 mm, 5-part</b>	3441670
<b>Lathe tool set HM 20 mm, 5-part, Extension kit</b>	3441617
<b>Clamping disc Ø 350 mm No. 6</b>	3442980
<b>Universal collet chuck device 5C</b>	3441507
<b>Collet set 3 - 25 mm, 5C, 17-part</b>	3441509
<b>Levelling platen SE 3 (6 units required)</b>	3381018
<b>Collet chuck 5C - Camlock no. 6</b>	3441556
<b>Position stop with fine adjustment</b>	3444022

**More accessories and information** on accessories from page 214

### Dimensions



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 25 - Ø 178 mm
- › Follower rest passage Ø 19 - Ø 114 mm
- › LED machine lamp
- › Reduction sleeve MT 6 / MT 4
- › Non-revolving centre tip MT 4
- › Non-revolving, but temperature resistant centre MT 4
- › Quick change tool holder 5-B
- › Tool holder 25 x 120 type D for square chisels 20 mm
- › Thread gauge
- › Interchangeable gear set
- › Gear wheels for threading gauge (metric)
- › Machine initially filled with premium grade oil
- › Operating tool

Lathe chuck	wArt no.
<b>OPTIMUM lathe chuck Ø 250 mm no. 6</b>	
<b>Three-jaw lathe chuck, centric</b>	3442765
<b>Four-jaw lathe chuck, centric</b>	3442852
<b>BISON lathe chuck Ø 250 mm no. 6</b>	
<b>Three-jaw lathe chuck, centric</b>	3450330
<b>Four-jaw lathe chuck, centric</b>	3450380

**Information on lathe chuck** from page 218



## Precision feed and lead screw lathe – unique in terms of precision and operation with Siemens inverter Vario drive

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground Z axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Shafts, gears and main spindle run in oil bath
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Mechanical longitudinal feed switch-off of bed slide with four configurable eccentrics
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Gearwheels smooth action, hardened and scraped borne on 2 re-adjustable precision taper rollers
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Generously dimensioned chip guard with integrated LED machine lamp
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Quick-switching feed gear with closed design, gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Scale on thread gauge adjustable
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm
- ▶ Fast, easy adjustment of the tailstock without tools thanks to clamping lever
- ▶ Lines routed in energy chain
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Emergency stop device with foot pedal
- ▶ Quick change tool holder 5-B included in standard scope of delivery
- ▶ Tool holder 25 x 120 type D for square chisels 20 mm included in standard scope of delivery

### Siemens inverter

Made in EU



### SINAMICS G120D

> More information: see page 186

### Control cabinet



- > 24 Volt DC power supply
- > All contactors and relays by SIEMENS or Schneider

### Dig. Position display DPA 21

- > User-friendly membrane keyboard
- > Clear reduction of manufacturing times
- > Reduction of error quota



Fig.: TH 4615V - Shown with optional lathe chuck

## Technical specifications, accessories and dimensions

Model	TH 4615V
Article no.	3462125
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	8.5 kW
Coolant pump motor	125 Watts
<b>Spindle</b>	
Drive motor	7.5 kW
Spindle taper	MT 7
Spindle seat	Camlock DIN ISO 702- 2 No. 8
Spindle bore, bar passage diameter	Ø 80 mm
Quick change tool holder	SWH 5-B
<b>Work area</b>	
Centre height	230 mm
Centre width	1 560 mm
Swing Ø above machine bed*	460 mm
Swing Ø above cross slide	270 mm
Bed width	300 mm
Swing Ø without bed bridge	690 mm
Turning length in bed bridge	240 mm
<b>Speed range</b>	
Spindle speed	30 - 2 000 rpm
Number of speeds	2 gears, electronically controlled
<b>Traverse paths</b>	
Top slide travel	125 mm
Cross slide travel	285 mm
<b>Feeds and pitches</b>	
Longitudinal feed within the range	0.031 - 1.7 mm/rev (42 feeds)
Cross feed within	0.014 - 0.784 mm/rev (42 feeds)
Pitch - metric in range	0.1 - 14 mm/rev (41 pitches)
Pitch - inch in range	112 - 2 turns/inch (41 pitches)
Diametral pitch in range	4 - 112 turns/π (50 threads)
Modular thread in range	0.1 - 7 mm x π (34 threads)
<b>Tailstock</b>	
Tailstock seat	MT 4
Sleeve diameter / travel	Ø 60 mm / 130 mm
<b>Dimensions and weight</b>	
Length x width x height	2 765 x 1 065 x 1 550 mm
Net weight	2 020 kg

Lathe chuck	Article no.
<b>OPTIMUM lathe chuck</b> Ø 315 mm no. 8	
<b>Three-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442768
<b>Four-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442856
<b>Four-jaw lathe chuck</b> , individually, max. 1 800 rpm	3442888
<b>BISON lathe chuck</b> Ø 315 mm no. 8	
<b>Three-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450335
<b>Four-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450385

Information on lathe chuck from page 218

Accessories	Article no.
<b>Clamping disc</b> Ø 450 mm No. 8	3442982
<b>Revolving tailstock centre</b> MT 5	3440705
<b>BISON Revolving tailstock centre</b> MT 5	3451005
<b>Position stop</b> with fine adjustment	3444022

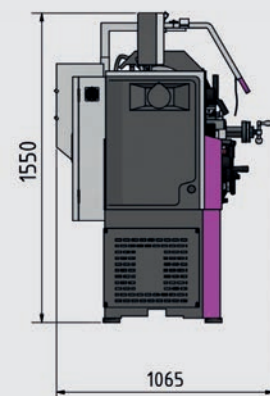
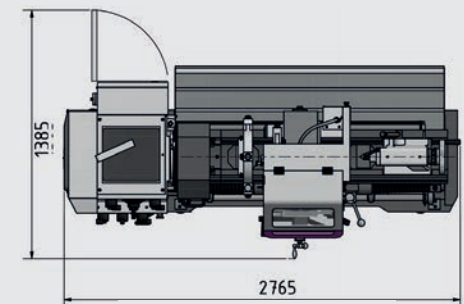
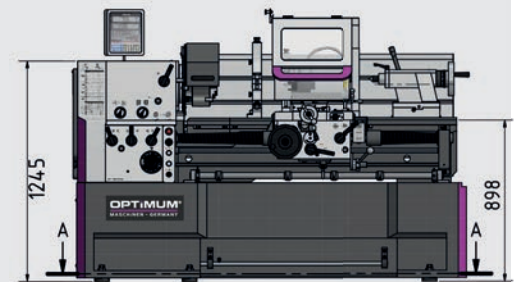
More accessories and information on accessories from page 214

\*Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C3

Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323



### Dimensions



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 25 - Ø 178 mm
- › Follow steady rest passageway Ø 19 - Ø 114 mm
- › LED machine lamp
- › Reduction sleeve MT 7 / MT 4
- › Non-revolving centre tip MT 4
- › Non-revolving, but temperature resistant centre MT 4
- › Quick change tool holder 5-B
- › Tool holder 25 x 120 type D for square chisels 20 mm
- › Thread gauge
- › Interchangeable gear set
- › Machine initially filled with premium grade oil
- › Operating tool

## Precision feed and lead screw lathes that comply with strictest requirements in terms of technical equipment and precision

### Facts that impress in terms of quality, performance and price

- ▶ Machine bed and chassis made of heavily ribbed cast material
- ▶ One-piece steel machine base
- ▶ High degrees of rigidity of the spindle bar housing thanks to heavily ribbed 25GG cast material
- ▶ Precision slide
- ▶ shafts on needle bearings, all components lubricated in oil bath
- ▶ Hardened and ground bed guides
- ▶ All electronic controls centrally accessible
- ▶ All feed gearwheels made of steel, hardened and ground
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Two-channel safety electronics
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Complete feed and lead screw cover
- ▶ Working area completely illuminated
- ▶ Hardened and ground spindle guarantees high degrees of accuracy and durability
- ▶ The powerful machining performance means that a high level of chip removal during roughing work is no problem
- ▶ Lockable chip guard moves with the bed slide with integrated position indicator and coolant hose, manually adjustable
- ▶ No interchangeable gears required
- ▶ With safety device to prevent simultaneous operation of thread cutting and pitch mechanism
- ▶ Electronically braked motor
- ▶ Electronic feed shut-off of Z axis
- ▶ Electrical position shut-off with quadruple positioning stop
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Tool holder 32 x 130 type D for square chisels 25 mm
- ▶ Quick change tool holder SWH 7-C

### Digital position display DP700 (More information see page 234)

#### TX 5216:

- ▶ Large spindle bore Ø 80 mm

#### TX 6222:

- ▶ Large spindle bore Ø 105 mm

### Control cabinet



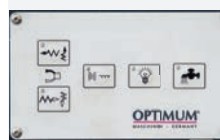
- › 24 Volt DC power supply
- › All contactors and relays by **SIEMENS** or **Schneider**

### Back panel



- › Easy to service thanks to removable rear panel

### Touch panel



#### Centralised control

- › Pitch deactivation using button
- › Feed bar drive
- › Rapid motion X and Y axis
- › Machine lamp
- › Coolant

### Energy chain



- › for routing that is easy on the cable and hose material



Fig. TX 5216



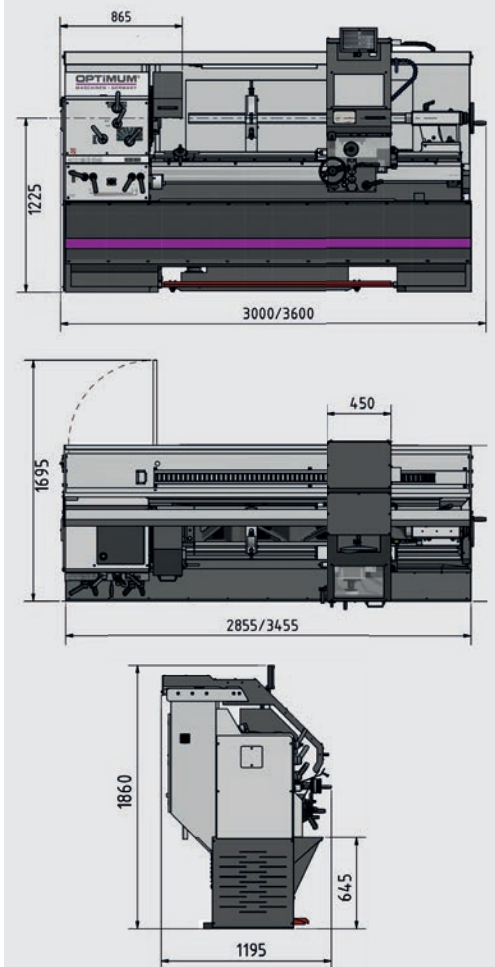


## Technical specifications, accessories and dimensions

Model	TX 5216	TX 6222
Article no.	3432440	3432460
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	6.1 kW	8.5 kW
Coolant pump motor	100 W	
Spindle		
Drive motor	5.5 kW	7.5 kW
Spindle taper	MT 7	Ø 113 mm (Taper 1:20)
Spindle seat	Camlock DIN ISO 702- 2 No. 8	
Spindle bore, bar passage diameter	Ø 80 mm	Ø 105 mm
Quick change tool holder	SWH 7-C	
Work area		
Centre height	260 mm	310 mm
Centre width	1 600 mm	2 225 mm
Swing Ø above machine bed*	520 mm	620 mm
Swing Ø above cross slide	324 mm	424 mm
Bed width	350 mm	
Speed range		
Spindle speed	30 - 1 500 rpm	40 - 1 650 rpm
Number of speeds	12 stages	
Traverse paths		
Top slide travel	170 mm	
Cross slide travel	350 mm	
Feeds and pitches		
Longitudinal feed within the range	0.05 - 1.5 mm/rev (55 feeds)	
Cross feed within	0.025 - 0.75 mm/rev (55 feeds)	
Metric pitch	0.5 - 15 mm/rev (55 pitches)	
Pitch - inch in range	60 - 2 turns/inch (55 pitches)	
Diametral pitch in range	0.25 - 7.5 mm x π (55 threads)	
Modular thread in range	120 - 4 turns/ π (55 pitches)	
Tailstock		
Tailstock seat	MT 5	
Tailstock sleeve diameter / travel	Ø 72 mm / 180 mm	
Dimensions and weight		
Length x width x height ( mm)	3 016x1 270x2 217	3 550x1 200x1 830
Net weight	2 470 kg	2 800 kg

Accessories	Art no.
<b>TX 5216</b>	
Follow rest passage Ø 15 - Ø 125 mm	3438020
Steady rest passage Ø 10 - Ø 185 mm	3438023
Steady rest passage Ø 160 - Ø 285 mm	3438024
Lathe tool set HM 20 mm	3441670
Lathe tool set HM 20 mm	3441617
<b>TX 6222</b>	
Follow rest passageway Ø 15 - Ø 125 mm	3438030
Steady rest passage Ø 10 - Ø 185 mm	3438033
Steady rest passage Ø 160 - Ø 285 mm	3438034
Lathe tool set HM 25 mm, extension kit	3441672
Lathe tool set HM 25 mm	3441623
<b>Accessories</b>	
Clamping disc Ø 450 mm No. 8	3442982
BISON Revolving tailstock centre MT 5	3451005
Vibration-damper machine foot SE 85 (6 units required)	3352982
<b>More accessories and information on accessories from page 214</b>	

### Dimensions



Follow this for the video presentation of our OPTIMUM lathe TX 5216



Fig.: Steady rest



Fig.: Follow steady rest

### Scope of delivery

- › Three-jaw lathe chuck, Ø 315 mm No. 8
  - › Non-revolving centre tip MT 5 long
  - › Non-revolving centre tip MT 5 short
  - › Quick change tool holder SWH 7-C
  - › Tool holder for square chisels 32 x 130 type D for 25 mm square chisels
  - › Machine initially filled with premium grade oil
  - › Operating tool
- TX 5216:**
- › Reduction sleeve MT 7 - MT 5
- TX 6222:**
- › Reduction sleeve Ø 113 mm / MT 5

## Precision feed and lead screw lathe with electronically controlled drive and digital position display **NEWALL** DP 700

### Facts that impress in terms of quality, performance and price

- ▶ Machine bed and chassis made of heavily ribbed cast material
- ▶ One-piece steel machine base
- ▶ High degrees of rigidity of the spindle bar housing thanks to heavily ribbed 25GG cast material
- ▶ Precision slide
- ▶ shafts on needle bearings, all components lubricated in oil bath
- ▶ Hardened and ground bed guides
- ▶ All electronic controls centrally accessible
- ▶ All feed gearwheels made of steel, hardened and ground
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Two-channel safety electronics
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Complete feed and lead screw cover
- ▶ Working area completely illuminated
- ▶ Easy to service thanks to removable rear panel
- ▶ Hardened and ground spindle guarantees high degrees of accuracy and durability
- ▶ The powerful machining performance means that a high level of chip removal during roughing work is no problem
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ Lockable chip guard moves with the bed slide with integrated position indicator and coolant hose, manually adjustable
- ▶ No interchangeable gears required
- ▶ With safety device to prevent simultaneous operation of thread cutting and pitch mechanism
- ▶ Electronically braked motor
- ▶ Electronic feed shut-off of Z axis
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Electrical position shut-off with quadruple positioning stop
- ▶ Three-jaw lathe chuck included in standard scope of delivery
- ▶ Quick change tool holder SWH 7-C
- ▶ Tool holder 32 x 130 type D for square chisels 25 mm

### Siemens inverter

Made in EU



- › **SINAMICS G120D**
- › For more information see page 186

### Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by **SIEMENS** or **Schneider**

### Touch panel



### Centralised control

- › Pitch deactivation using button
- › Feed bar drive
- › Rapid motion X and Y axis
- › Machine lamp
- › Coolant





## Technical specifications, accessories and dimensions

Model	TX 5216V	TX 6222V
Article no.	3432445	3432460
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	6 kW	12 kW
Coolant pump motor	100 W	
Spindle		
Drive motor	5.5 kW	11 kW
Spindle taper	MT 7	Ø 113 mm (Taper 1:20)
Spindle seat	Camlock DIN ISO 702- 2 No. 8	
Spindle bore, bar passage diameter	Ø 105 mm	
Quick change tool holder	SWH 7-C	
Work area		
Centre height	260 mm	310 mm
Centre width	1 600 mm	2 225 mm
Swing Ø above machine bed*	520 mm	620 mm
Swing Ø above cross slide	324 mm	424 mm
Bed width	350 mm	
Speed range		
Spindle speed	12 - 1 800 rpm	14 - 1 800 rpm
Number of speeds	2 x 3 stages	
Traverse paths		
Top slide travel	170 mm	
Cross slide travel	350 mm	
Feeds and pitches		
Longitudinal feed within the range	0.05 - 1.5 mm/rev (55 feeds)	
Cross feed within	0.025 - 0.75 mm/rev (55 feeds)	
Metric pitch	0.5 - 15 mm/rev (55 pitches)	
Pitch - inch in range	60 - 2 turns/inch (55 pitches)	
Diametral pitch in range	0.25 - 7.5 mm x π (55 threads)	
Modular thread in range	120 - 4 turns/ π (55 pitches)	
Tailstock		
Tailstock seat	MT 5	
Tailstock sleeve diameter / travel	Ø 72 mm/ 180 mm	
Dimensions and weight		
Length x width x height ( mm)	3 016 x1 195 x 1 860	3 550 x1 200 x 1 830
Net weight	2 470 kg	2 800 kg

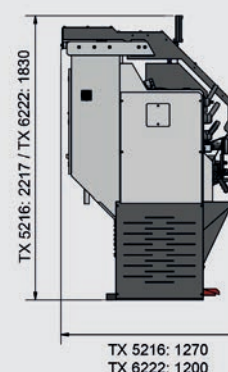
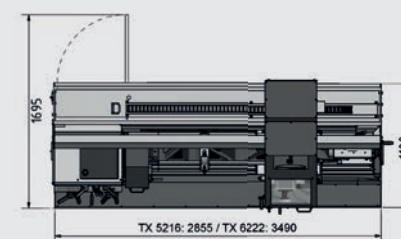
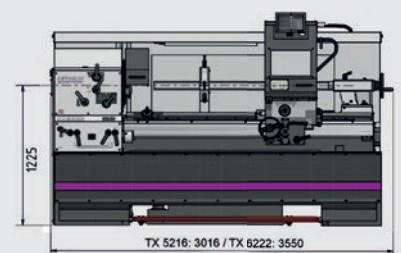
Accessories	Art no.
<b>TX 5216</b>	
Follow rest passage Ø 15 - Ø 125 mm	3438020
Steady rest passage Ø 10 - Ø 185 mm	3438023
Steady rest passage Ø 160 - Ø 285 mm	3438024
Lathe tool set HM 20 mm	3441670
Lathe tool set HM 20 mm, extension kit	3441617
<b>Accessories</b>	
Clamping disc Ø 450 mm no. 8	3442982
Revolving tailstock centre MT 5	3440705
BISON Revolving tailstock centre MT 5	3451005
Vibration damper machine foot SE 85 (6 units required)	3352982

**More accessories and information** on accessories from page 214

Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C3

\*For important information on the transport and transport packaging flat rate, as well as general information on the operation of our machines see page 323

### Dimensions



**YouTube**  
Follow this for the video presentation of our OPTIMUM lathe TX 5216



Fig.:  
Steady rest



Fig.:  
Follow steady rest

### Scope of delivery

- › Three-jaw lathe chuck, Ø 315 mm No. 8
- › Reduction sleeve MT 7 / MT 5 (TX 5216V)
- › Reducing sleeve Ø 113 mm/MT5 (TX 6222V)
- › Non-revolving centre tip MT 5 long
- › Non-revolving centre tip MT 5 short
- › Quick change tool holder SWH 7-C
- › Tool holder for square chisels 32 x 130 type D for 25 mm square chisels
- › Machine initially filled with premium grade oil
- › Operating tool



**Heavy lead screw and feed rod lathes, characterised by excellent flexibility, precision and economy.** With DPA 21 digital position display and quick change tool holder.

**Facts that impress in terms of quality, performance and price**

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 8
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Main spindle runs in oil bath
- ▶ Gears and shafts running in oil bath
- ▶ Gearwheels smooth action, hardened, ground and borne on 2 re-adjustable precision taper rollers
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Clearly-arranged selector lever for switching the feed speeds
- ▶ Closed design of the quick shift feed gear
- ▶ EMERGENCY-STOP push button, motor circuit breaker, lockable main switch
- ▶ Emergency stop device with foot pedal
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm. Fast, easy adjustment without tools thanks to clamping lever
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ LED machine lamp in chip guard
- ▶ Scale on thread gauge adjustable

**Control cabinet**



- › 24 Volt DC power supply
- › All contactors and relays by SIEMENS or Schneider

**Quick change tool holder**



- › SWH 7-C
- › 1 tool holder 32 x 150 type D
- › Play-free and repetition-accurate clamping of the change holder

**Dig. Position display DPA 21**

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Reduction of error quota

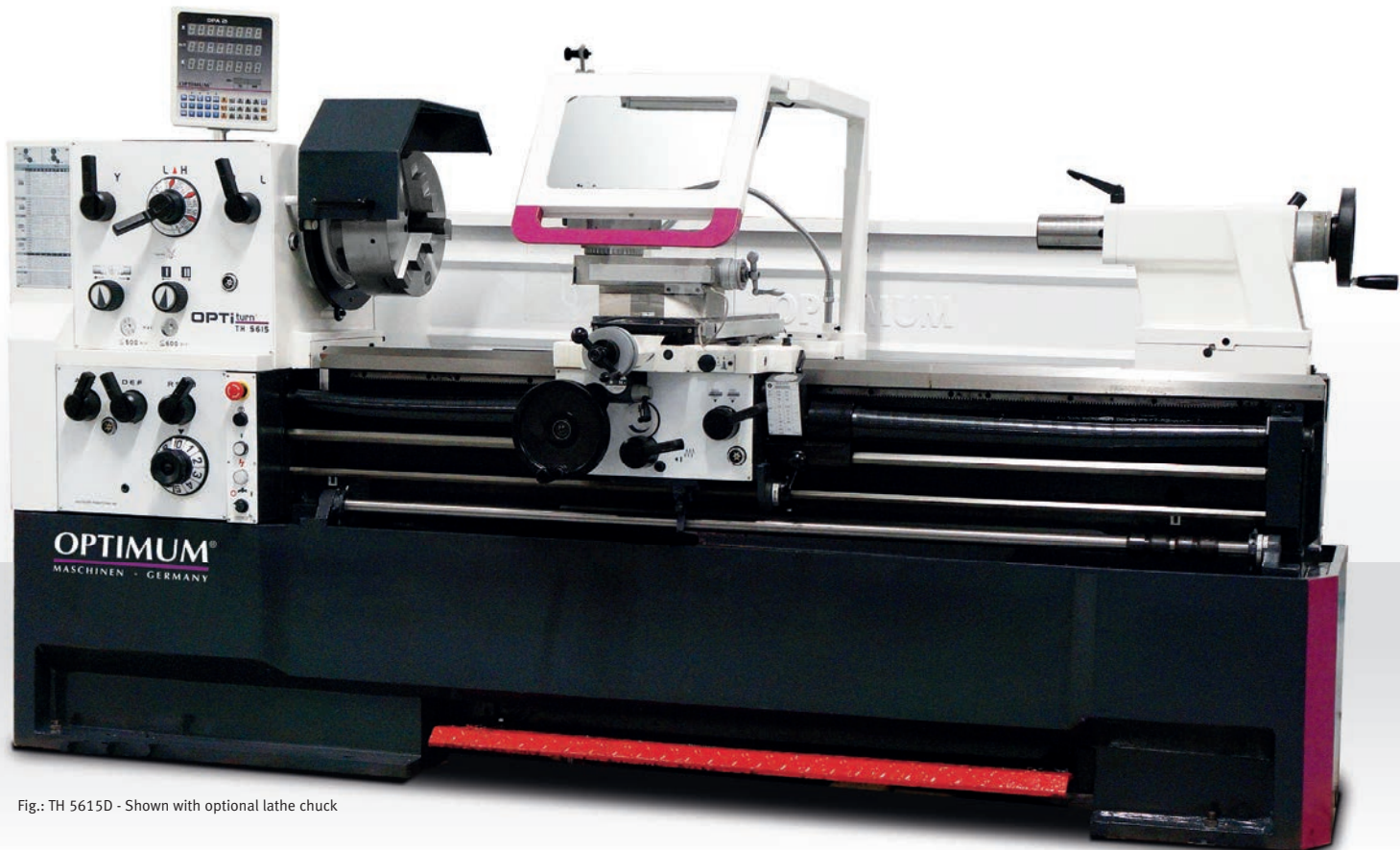
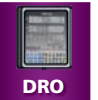


Fig.: TH 5615D - Shown with optional lathe chuck



## Technical specifications, accessories and dimensions

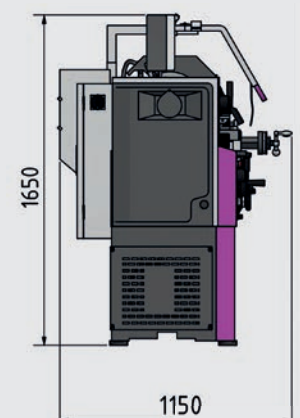
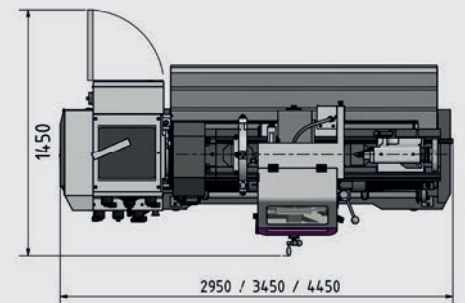
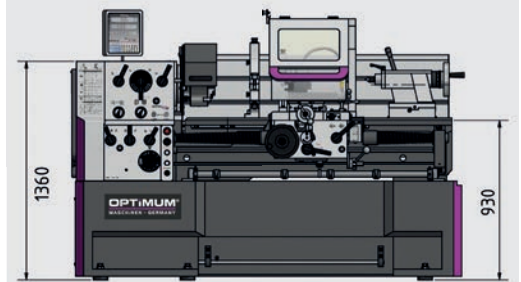
Model	TH 5615D	TH 5620D	TH 5630D
Article no.	3462160	3462170	3462180
Power			
Electrical connection	400 V / 3 Ph ~50 Hz		
Total rated value	8.5 kW		
Coolant pump motor	125 Watts		
Spindle			
Drive motor	7.5 kW		
Spindle taper	MT 7		
Spindle seat	Camlock DIN ISO 702- 2 No. 8		
Spindle bore, bar passage diameter	Ø 80 mm		
Quick change tool holder height	SWH 7-C		
Work area			
Centre height	280 mm		
Centre width	1 420 mm	1 910 mm	2 910 mm
Swing Ø above machine bed*	560 mm		
Swing Ø above cross slide	355 mm		
Bed width	350 mm		
Swing Ø without bed bridge	790 mm		
Turning length in bed bridge	170 mm		
Speed range			
Spindle speed	25 - 1 600 rpm		
Number of speeds	12 stages		
Traverse paths			
Top slide travel	130 mm		
Cross slide travel	316 mm		
Feeds and pitches			
Longitudinal feed within the range	0.059 - 1.646 mm/rev (35)		
Cross feed within	0.020 - 0.573 mm/rev (35)		
Pitch - metric in range	0.2 - 14 mm/rev (47)		
Pitch - inch in range	112 - 2 turns/inch (60 pitches)		
Diametral pitch in range	4 - 112 turns/ π (50 pitches)		
Modular thread in range	0.1 - 7 mm x π(34 threads)		
Tailstock			
Tailstock seat	MT 5		
Sleeve diameter / travel	Ø 75 mm / 180 mm		
Dimensions and weight			
Length	2 950 mm	3 450 mm	4 450 mm
Width x height	1 150 x 1 650 mm		
Net weight	2 300 kg	2 720 kg	3 000 kg

Lathe chuck Ø 315 mm No. 8	Art no.
<b>OPTIMUM Three-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442768
<b>OPTIMUM Four-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442856
<b>OPTIMUM Four-jaw lathe chuck</b> , individually, max. 1 200 rpm	3442888
<b>BISON Three-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450335
<b>BISON Four-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450385

Information on lathe chuck from page 218

Accessories	Art no.
<b>Clamping disc</b> Ø 450 mm No. 8	3442982
<b>Revolving tailstock centre</b> MT 5	3440705
<b>BISON Revolving tailstock centre</b> MT 5	3451005
<b>Spare tool holder</b> 40 x 160 type H for round chisels	3384326
<b>Spare tool holder</b> 32 x 150 Type D for square chisels	3384308
<b>Lathe tool set</b> HM 32 mm, 5-part (see page 227)	3441674
<b>Vibration damper machine foot</b> SE 85 (6 units required TH5615/5620) (8 units required TH5630)	3352982
<b>Position stop with fine adjustment</b>	3444023

### Dimensions



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 19 - Ø 165 mm
- › Follower rest passage Ø 16 - Ø 95 mm
- › LED machine lamp
- › Reduction sleeve MT 7 / MT 5
- › Non-revolving centre tip MT 5
- › Non-revolving, but temperature resistant centre MT 5
- › Quick change tool holder 7-C
- › Tool holder 32 x 150 type D for square chisels 25 mm
- › Thread gauge
- › Gear wheels for threading gauge (metric)
- › Interchangeable gear set
- › Machine initially filled with premium grade oil
- › Operating tool



## Heavy lead screw and feed rod lathe, characterised by excellent flexibility, precision and economy. Featuring Siemens inverter Vario drive

### Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 8
- ▶ Two speeds
- ▶ Spindle bore / bar passage  $\varnothing 105$  mm
- ▶ Siemens Sinamics frequency inverter / Safety Integrated
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Gearwheels smooth action, hardened, ground and borne on 2 re-adjustable precision taper rollers
- ▶ Gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety hand wheels with release function acc. to EN23125 in the X and Z axis
- ▶ Clearly-arranged selector lever for switching the feed speeds
- ▶ Closed design of the quick shift feed gear
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ EMERGENCY-STOP push button, motor circuit breaker, lockable main switch
- ▶ Emergency stop device with foot pedal
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock quill and handwheel with adjustable fine scaling 0.025 mm. Fast, easy adjustment without tools thanks to clamping lever
- ▶ Grey cast iron prism bed heavily ribbed, induction hardened and precision ground
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ LED machine lamp in chip guard
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ Scale on thread gauge adjustable
- ▶ Quick change tool holder SWH 7-C
- ▶ Tool holder 32 x 150 type D for square chisels 25 mm

### Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by SIEMENS or Schneider

### Siemens inverter

Made in EU



### SINAMICS G120D

- › For more information see page 186

### Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Reduction of error quota

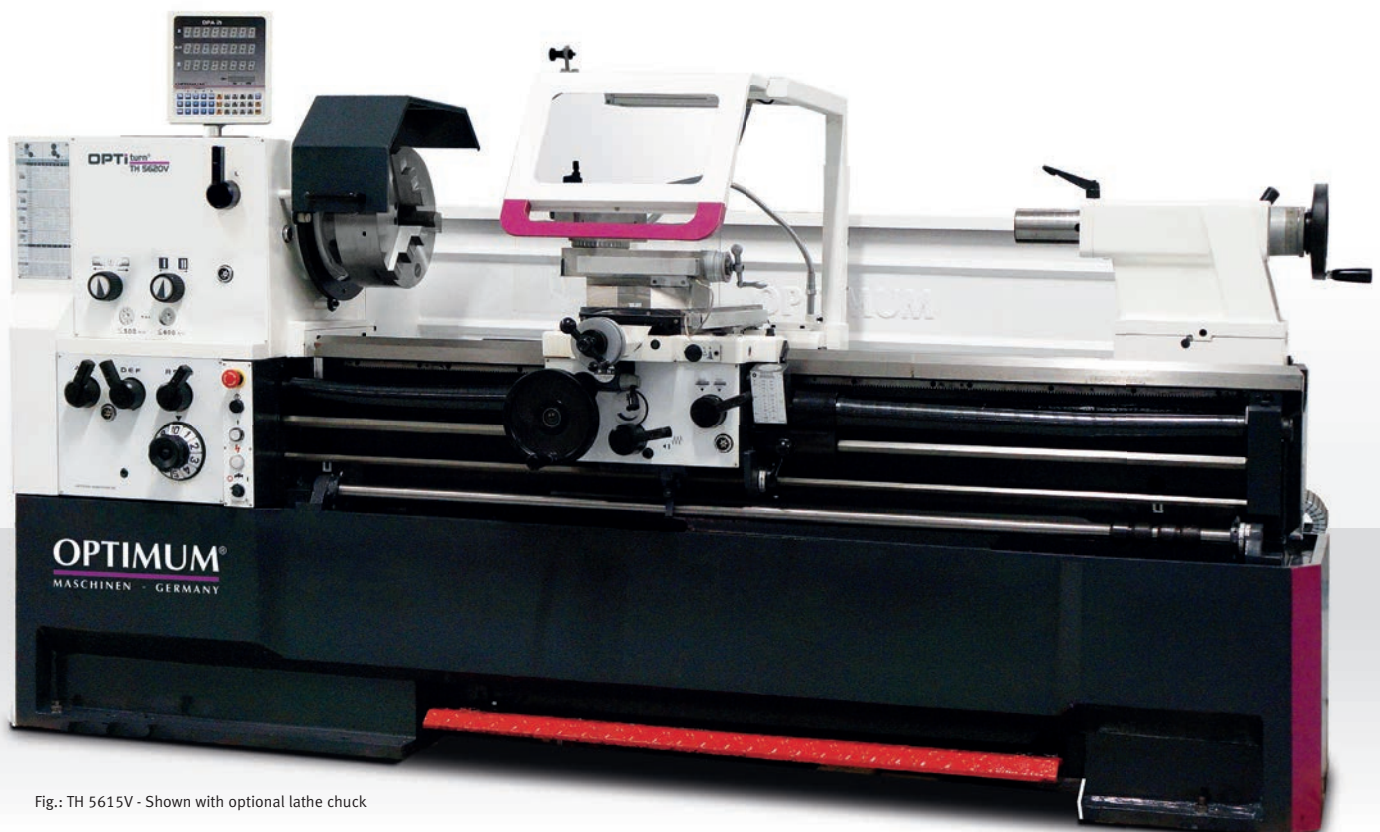


Fig.: TH 5615V - Shown with optional lathe chuck



## Technical specifications, accessories and dimensions

Model	TH 5620V
Article no.	3462175
<b>Power</b>	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	8.5 kW
Coolant pump motor	125 Watts
<b>Spindle</b>	
Drive motor	7.5 kW
Spindle taper	Ø 113 mm (Taper 1:20)
Spindle seat	Camlock DIN ISO 702- 2 No. 8
Spindle bore, bar passage diameter	Ø 105 mm
Quick change tool holder	SWH 7-C
<b>Work area</b>	
Centre height	280 mm
Centre width	1 910 mm
Swing Ø above machine bed*	560 mm
Swing Ø above cross slide	355 mm
Bed width	350 mm
Swing Ø without bed bridge	790 mm
Turning length in bed bridge	170 mm
<b>Speed range</b>	
Spindle speed	25 - 1 600 rpm
Number of speeds	2 speeds; electronically controlled
<b>Traverse paths</b>	
Top slide travel	130 mm
Cross slide travel	316 mm
<b>Feeds and pitches</b>	
Longitudinal feed within the range	0.031 - 1.7 mm/rev (42)
Cross feed within	0.014 - 0.784 mm/rev (42)
Pitch - metric in range	0.1 - 14 mm/rev (47)
Pitch - inch in range	112 - 2 turns/inch (60 pitches)
Diametral pitch in range	4 - 112 turns/ π (50 pitches)
Modular thread in range	0.1 - 7 mm x π (34 threads)
<b>Tailstock</b>	
Tailstock seat	MT 5
Sleeve diameter / travel	Ø 75 mm / 180 mm
<b>Dimensions and weight</b>	
Length x width x height	3 450 x 1 150 x 1 650 mm
Net weight	2 720 kg

Lathe chuck Ø 315 mm No. 8	Article no.
<b>OPTIMUM lathe chucks</b>	
OPTIMUM Three-jaw lathe chuck, centric, max. 1 800 rpm	3442768
OPTIMUM Four-jaw lathe chuck, centric, max. 1 800 rpm	3442856
OPTIMUM Four-jaw lathe chuck, individually, max. 1 200 rpm	3442888
<b>BISON lathe chucks</b>	
BISON Three-jaw lathe chuck, centric, max. 2 000 rpm	3450335
BISON Four-jaw lathe chuck, centric, max. 2 000 rpm	3450385

### Information on lathe chuck from page 218

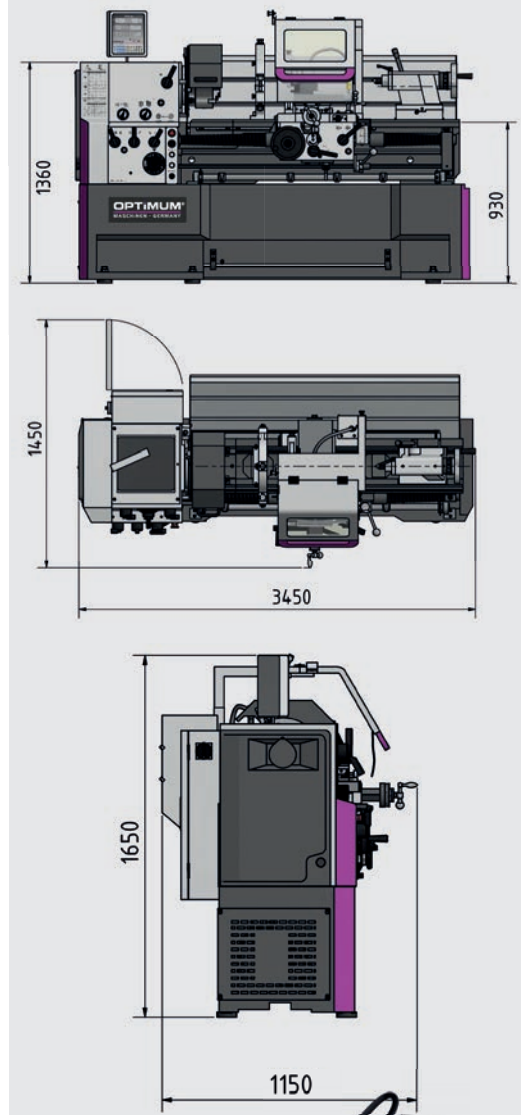
Accessories	Article no.
Clamping disc Ø 450 mm No. 8	3442982
Revolving tailstock centre MT 5	3440705
BISON Revolving tailstock centre MT 5	3451005
Spare tool holder 40 x 160 type H for round chisels	3384326
Spare tool holder 32 x 150 Type D for square chisels	3384308
Lathe tool set HM 32 mm, 5-part (see page 227)	3441674
Position stop with fine adjustment	3444023

Note: The machines comply with (frequency converter) the DIN EN 55011 standard: class C3

Important information on operation of machines with frequency converters as well as general information on the operation of our machines see page 323



### Dimensions



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 19 - Ø 165 mm
- › Follower rest passage Ø 16 - Ø 95 mm
- › LED machine lamp
- › Reduction sleeve Ø 113 mm / MT 5
- › Non-revolving centre tip MT 5
- › Non-revolving, but temperature resistant centre MT 5
- › Quick change tool holder 7-C
- › Tool holder 32 x 150 type D for square chisels 25 mm
- › Thread gauge
- › Gear wheels for threading gauge (metric)
- › Interchangeable gear set
- › Machine initially filled with premium grade oil
- › Operating tool

**Lead screw and feed rod lathes, characterised by excellent flexibility, precision and economy.** With DPA 21 digital position display and quick change tool holder.

## Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 8
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Central lubrication in bed slide
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Gearwheels smooth action, hardened, ground and borne on 2 re-adjustable precision taper rollers
- ▶ Clearly-arranged selector lever for switching the feed speeds
- ▶ Closed design of the quick shift feed gear
- ▶ Gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Safety hand wheels with release function in the X axis
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety limit switch with positively opening contacts
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ EMERGENCY-STOP push button, motor circuit breaker, lockable main switch
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock sleeve and hand wheel with adjustable fine scaling
- ▶ Tailstock crank for position change
- ▶ Tailstock sleeve with two adjustable transmission ratios 1/4 or 1/1 rev
- ▶ LED machine lamp
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ Emergency stop device with foot pedal
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Electrical motor brake with fast emergency stop – in normal operations, fast stop without post-run
- ▶ Quick change tool holder SWH 9-D
- ▶ Tool holder 41 x 180 type D for square chisels 32 mm

## Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by SIEMENS or Schneider

## Flat and longitudinal feed



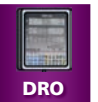
- › Fast feed - pushbutton and selector lever for activating and deactivating rapid motion in transverse and longitudinal directions for an even more rational work approach. Does not switch off the entire machine when running into the limit switch

## Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Reduction of error quota



Fig.: TH 6630D



## Technical specifications, accessories and dimensions

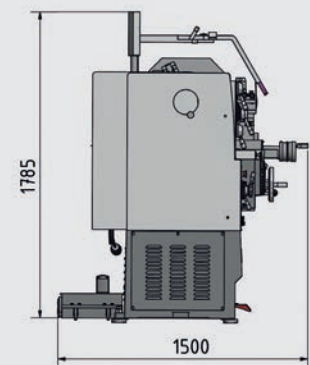
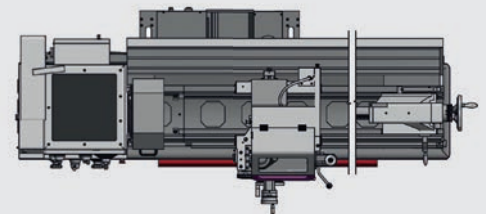
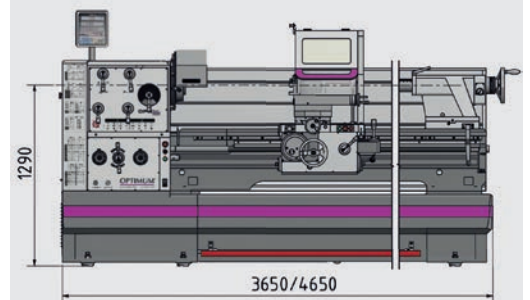
Model	TH 6620D	TH 6630D
Article no.	3462210	3462220
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	10 kW	
Coolant pump motor	150 W	
Spindle		
Drive motor	9 kW	
Spindle taper	Ø 113 mm (Taper 1:20)	
Spindle seat	Camlock DIN ISO 702- 2 No. 8	
Spindle bore, bar passage diameter	Ø 105 mm	
Quick change tool holder	SWH 9-D	
Work area		
Centre height	330 mm	
Centre width	2 050 mm	3 050 mm
Swing Ø above machine bed*	660 mm	
Swing Ø above cross slide	440 mm	
Bed width	400 mm	
Swing Ø without bed bridge	900 mm	
Turning length in bed bridge	250 mm	
Load bearing capacity	1.4 t/m	
Speed range		
Spindle speed	25 - 1 600 rpm	
Number of speeds	16 stages	
Traverse paths		
Top slide travel	230 mm	
Cross slide travel	368 mm	
Feeds and pitches		
Feed motor output	550 W	
Rapid traverse	3.8 m /min. max. 5 min. (30 min. break)	
Longitudinal feed within the range	0.044 - 1.48 mm/rev (25 feeds)	
Cross feed within	0.022 - 0.74 mm/rev (25 feeds)	
Pitch - metric in range	0.45 - 120 mm/rev (54 pitches)	
Pitch - inch in range	80 - 7/16 turns/inch (60 pitches)	
Diametral pitch in range	7/8 - 160 turns/ π (42 pitches)	
Modular thread in range	0.25 - 60 mm x π(46 threads)	
Tailstock		
Tailstock seat	MT 5	
Tailstock quill diameter/travel	90 mm / 235 mm	
Dimensions and weight		
Length	3 650 mm	4 650 mm
Width x height	1 500 x 1 785 mm	
Net weight	3 345 kg	3 730 kg

Lathe chuck Ø 315 mm No. 8	Art no.
<b>OPTIMUM Three-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442768
<b>OPTIMUM Four-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442856
<b>OPTIMUM Four-jaw lathe chuck</b> , individually, max. 1 200 rpm	3442888
<b>BISON Three-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450335
<b>BISON Four-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450385

Accessories	Art no.
<b>Revolving tailstock centre MT 5</b>	3440705
<b>BISON Revolving tailstock centre MT 5</b> (2-row SKF angular contact bearings)	3451005
<b>Lathe tool set HM 25 mm</b>	3441672
<b>Lathe tool set HM 25 mm, extension</b>	3441623
<b>Vibration damper machine foot SE 85</b> 6 units (TH 6620) / 8 units (TH 6630) are required	3352982

**More accessories and information** on accessories from page 214

### Dimensions



### Our recommendation

**cleancraft®**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 20 - Ø 190 mm
- › Follower rest passage Ø 20 - Ø 130 mm
- › LED machine lamp
- › Reduction sleeve Ø 113 mm / MT 5
- › Non-revolving centre tip MT 5
- › Non-revolving, but temperature resistant centre MT 5
- › Travelling centre MT 5
- › Quick change tool holder 9-D
- › Tool holder 41 x 180 type D for square chisels 32 mm
- › Interchangeable gear set
- › Quality oil included
- › Operating tool



**Lead screw and feed rod lathes, characterised by excellent flexibility, precision and economy.** With DPA 21 digital position display and quick change tool holder.

## Facts that impress in terms of quality, performance and price

- ▶ Hardened and ground z-axis guideway
- ▶ Guaranteed true running accuracy of spindle nose  $\leq 0.015$  mm
- ▶ Spindle seat, Camlock DIN ISO 702- 2 no. 8
- ▶ Lead screw cover
- ▶ Precisely machined slide
- ▶ All guides adjustable using wedge bars
- ▶ Clockwise/anti-clockwise rotation switchable on bed slide, switchable via switching spindle
- ▶ Two-channel safety electronics
- ▶ Top slide adjustment range  $\pm 90^\circ$
- ▶ Gearwheels smooth action, hardened, ground and borne on 2 re-adjustable precision taper rollers
- ▶ Clearly-arranged selector lever for switching the feed speeds
- ▶ Closed design of the quick shift feed gear
- ▶ Gears and shafts hardened and scraped, running in oil bath on precision bearings
- ▶ Hand wheels decoupled and approved in line with EN 23125
- ▶ Safety hand wheels with release function in the X axis
- ▶ Handwheels with adjustable fine scaling 0.04 / 0.02 mm
- ▶ Safety limit switch with positively opening contacts
- ▶ Switch with lifecycle calculation, approved in line with EN ISO 13849
- ▶ Central lubrication in bed slide
- ▶ EMERGENCY-STOP push button, motor circuit breaker, lockable main switch
- ▶ Tailstock adjustable  $\pm 10$  mm for taper turning
- ▶ Tailstock sleeve and hand wheel with adjustable fine scaling
- ▶ Tailstock crank for position change
- ▶ Tailstock sleeve with two adjustable transmission ratios 1/4 or 1/1 rev
- ▶ LED machine lamp
- ▶ Energy chain for material-friendly cable and hose guiding
- ▶ Emergency stop device with foot pedal
- ▶ Coolant system featuring separate coolant tank, fill level display and oil trap; easy and complete draining and cleaning as per DIN
- ▶ Electrical motor brake with fast emergency stop – in normal operations, fast stop without post-run
- ▶ Electrical system with Siemens and Schneider components
- ▶ Quick change tool holder SWH 9-D
- ▶ Tool holder 41 x 180 type D for square chisels 32 mm

## Control cabinet



- › 24 Volt DC power supply
- › All contactors and relays by SIEMENS or Schneider

## Flat and longitudinal feed



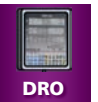
- › Fast feed - pushbutton and selector lever for activating and deactivating rapid motion in transverse and longitudinal directions for an even more rational work approach. Does not switch off the entire machine when running into the limit switch

## Dig. Position display DPA 21

- › User-friendly membrane keyboard
- › Clear reduction of manufacturing times
- › Reduction of error quota



Fig.: TH 8030D



## Technical specifications, accessories and dimensions

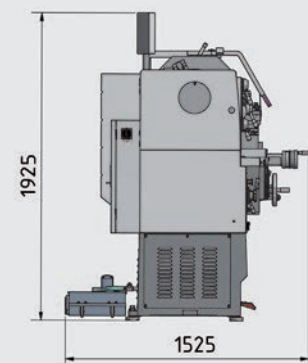
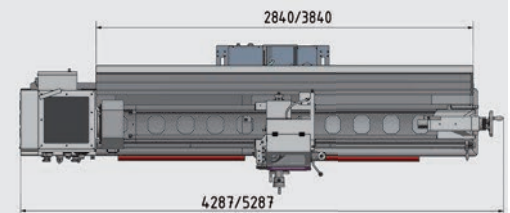
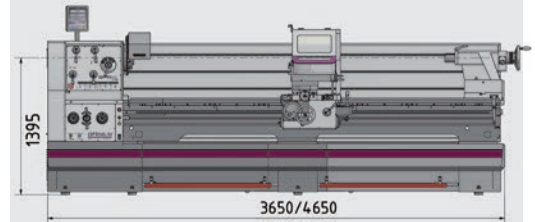
Model	TH 8020D	TH 8030D
Article no.	3462230	3462240
Power		
Electrical connection	400 V / 3 Ph ~50 Hz	
Total rated value	12 kW	
Coolant pump motor	150 W	
Spindle		
Drive motor	11 kW	
Spindle taper	Ø 113 mm (Taper 1:20)	
Spindle seat	Camlock DIN ISO 702- 2 No. 8	
Spindle bore, bar passage diameter	Ø 105 mm	
Quick change tool holder	SWH 9-D	
Work area		
Centre height	400 mm	
Centre width	2 050 mm	3 050 mm
Swing Ø above machine bed*	800 mm	
Swing Ø above cross slide	570 mm	
Bed width	400 mm	
Swing Ø without bed bridge	1 035 mm	
Turning length in bed bridge	250 mm	
Load bearing capacity	1.4 t/m	
Speed range		
Spindle speed	25 - 1 600 rpm	
Number of speeds	16 stages	
Traverse paths		
Top slide travel	230 mm	
Cross slide travel	368 mm	
Feeds and pitches		
Feed motor output	550 W	
Rapid traverse	3.8 m /min. max. 5 min. (30 min. break)	
Longitudinal feed within the range	0.044 - 1.48 mm/rev (25 feeds)	
Cross feed within	0.022 - 0.74 mm/rev (25 feeds)	
Pitch - metric in range	0.45 - 120 mm/rev (54 pitches)	
Pitch - inch in range	80 - 7/16 turns/inch (60 pitches)	
Diametral pitch in range	7/8 - 160 turns/ π (42 pitches)	
Modular thread in range	0.25 - 60 mm x π(46 threads)	
Tailstock		
Tailstock seat	MT 5	
Tailstock quill diameter/travel	90 mm / 235 mm	
Dimensions and weight		
Length	4 287 mm	5 287 mm
Width x height	1 525 x 1 925 mm	
Net weight	3 455 kg	3 820 kg

Lathe chuck Ø 315 mm No. 8	Art no.
<b>OPTIMUM Three-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442768
<b>OPTIMUM Four-jaw lathe chuck</b> , centric, max. 1 800 rpm	3442856
<b>OPTIMUM Four-jaw lathe chuck</b> , individually, max. 1 200 rpm	3442888
<b>BISON Three-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450335
<b>BISON Four-jaw lathe chuck</b> , centric, max. 2 000 rpm	3450385

Accessories	Art no.
<b>Revolving tailstock centre</b> MT 5	3440705
<b>BISON Revolving tailstock centre</b> MT 5 (2-row SKF angular contact bearings)	3451005
<b>Lathe tool set</b> HM 25 mm	3441672
<b>Lathe tool set</b> HM 25 mm, extension	3441623
<b>Vibration damper machine foot</b> SE 85 (8 units are required)	3352982

**More accessories and information** on accessories from page 214

### Dimensions



### Our recommendation

**cleancraft**  
**flexCAT 378 EOT-PRO**  
Article no. 7003380



**Don't forget  
the lathe chuck!**

### Scope of delivery

- › Steady rest passage Ø 20 - Ø 185 mm
- › Follower rest passage Ø 20 - Ø 125 mm
- › LED machine lamp
- › Reduction sleeve Ø 113 mm / MT 5
- › Non-revolving centre tip MT 5
- › Non-revolving, but temperature resistant centre MT 5
- › Travelling centre MT 5
- › Quick change tool holder 9-D
- › Tool holder 41 x 180 type D for square chisels 32 mm
- › Interchangeable gear set
- › Quality oil included
- › Operating tool

# ***ACCESSORIES FOR LATHES***





Revolving tailstock centre	Article no.
max. radial run-out 0.006 mm	
<b>MT 1</b>	3440701
› Max. speed 5 000 rpm; radial load max. 320 N	
<b>MT 2</b>	3440702
› Max. speed 5 000 rpm; radial load max. 400 N	
<b>MT 3</b>	3440703
› Max. speed 4 500 rpm; radial load max. 800 N	
<b>MT 4</b>	3440704
› Max. speed 3 500 rpm; radial load max. 1 250 N	
<b>MT 5</b>	3440705
› Max. speed 3 000 rpm; radial load max. 1 500 N	
<b>MT 6</b>	3440706
› Max. speed 2 500 rpm; radial load max. 1 800 N	



Collet set SPZ - 5C	3441509
› 17-part, clamping range 3 - 25 mm	
› Standard 385 E	
› For universal collet chuck device	



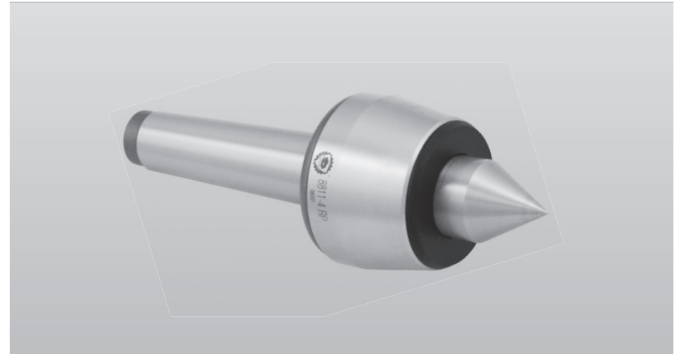
Collet set	Article no.
› DIN 6499	
<b>ER 16</b>	3440282
› 12-part, clamping range Ø 1 - 10 mm	
<b>ER 25</b>	3441109
› 15-part, clamping range Ø 1 - 16 mm	
<b>ER 32</b>	3441122
› 18-part, clamping range Ø 3 - 20 mm	



Universal collet chuck device 5C	Article no.
› for lathe <b>TH 42</b> (not Vario)	3441507



Revolving tailstock centre	Article no.
max. radial run-out 0.005 mm	
<b>MT 2</b> (NSK ball roller bearings and INA needle bearings)	3451002
› Max. speed 7 000 rpm; radial load max. 2 000 N	
<b>MT 3</b> (NSK ball roller bearings and INA needle bearings)	3451003
› Max. speed 5 000 rpm; radial load max. 4 000 N	
<b>MT 4</b> (NSK ball roller bearings and INA needle bearings)	3451004
› Max. speed 3 800 rpm; radial load max. 8 000 N	
<b>MT 5</b> (2-row SKF angular contact bearings)	3451005
› Max. speed 3 000 rpm; radial load max. 20 000 N	



Revolving tailstock centre	Article no.
› With 7 replaceable tips	
› Body made of hardened and ground tool steel	
› Precision needle bearings guarantee excellent true running accuracy	
<b>MT 2</b>	3440732
<b>MT 3</b>	3440733
<b>MT 4</b>	3440734



Position stop	Article no.
With fine adjustment	
› for lathe <b>TH 3309</b>	3441522
› for lathe <b>TH 3610</b>	3441523
› for lathe <b>TH 46</b>	3444022
› for lathe <b>TH 56</b>	3444023



The clamping height must be adjusted to the bed by reworking.

## Compatibility overview accessories for lathes

Turning accessories		Article no.	TU 1503V	TU 2004V	TU 2304V	TU 2406V	TU 2506V	TU 2807V	TU 3008/G/V	TM 3110	TH 3309/D/V	TM 3310/D	TH 3610/D	TH 4010V	TM 4010/D	TH 42	TH 4210V	TH 46	TH 4615V	TZ 4/ TZ4V	TX 4412	TX 5216	TX 6222	TH 56	TH 5620V	TH 66	TH 80
SWH	SWH AA	3384311		●																							
	SWH 1 - A	3384301			●	●	●	●	●																		
	SWH 3 - E	3384303								●	●	●	●	L	L												
	SWH 5 - B	3384305														●	L	L	L	L	L						
	SWH 7 - C	3384307																				L	L	L	L		
	SWH 9 - D	3384309																								L	L
Lathe tool	HM 8 mm	3441662	●	●	●																						
	HM 10 mm	3441664			●	●	●	●	●																		
	HM 12 mm	3441666			●	●	●	●	●																		
	HM 12 mm	3441212			●	●	●	●	●																		
	HM 16 mm	3441668								●	●	●	●	●	●												
	HM 16 mm	3441216								●	●	●	●	●	●												
	HM 16 mm	3441610								●	●	●	●	●	●												
	HM 20 mm	3441670														●	●	●	●	●	●	●		●	●		
	HM 20 mm	3441617														●	●	●	●	●	●	●		●	●		
	HM 25 mm	3441672															●	●	●		●	●	●			●	●
	HM 25 mm	3441623															●	●	●		●	●	●			●	●
	HM 32 mm	3441674																								●	●
Single lathe tool 12 mm	SSSC L1212J09	3441225			●	●	●	●	●																		
	SCLC L1212J09	3441226			●	●	●	●	●																		
Lathe tool	HM 8 mm	3441601	●	●	●																						
	HM 10 mm	3441602			●	●	●	●	●																		
	HM 12 mm	3441603			●	●	●	●	●																		
	HM 16 mm	3441604								●	●	●	●	●	●												
Inside turning tool set	10 mm	3441640			●	●	●	●	●																		
	12 mm	3441641			●	●	●	●	●		●	●	●		●												
	Set	3441650									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Pilot bit set		3203010			●	●	●	●	●		●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
Anti-vibration element	SE 1	3381012			●*	●*	●*	●*	●*	●*	●	●	●		●					●							
	SE 2	3381016												●						●	●	●					
	SE 3	3381018														●	●	●	●					●	●	●	●
Levelling platen	SE 55	3352981			○*	○*	○*	○*	○*	●	●	●		●							●						
	SE 85	3352982												●		●	●	●	●		●	●	●	●	●	●	●
Machine base	MST1	3440409			●	●	●	●	●	●																	
Number of SE required (*if using the MST)				6*	6*	6*	6*	6*	6*	8	6	6	6	6	6	6	6	6	6	8	6	6	6	6	6	6/8	8
Clamping block	Set 16- 05	3440653							●		●	●	●	●	●					●	●	●	●	●	●		
	Set 20- 05	3440654													●	●	●	●	●	●	●	●	●	●	●		
	Set 25- 05	3440655																								●	●
Twist drill HSS	MT 2	3051002		●	●	●	●	●																			
	MT 3	3051003							●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Clamping disc	Ø 170 mm	3440295		●																							
	Ø 220 mm	3440552				●																					
	Ø 240 mm	3441352					●																				
	Ø 265 mm	3441452						●																			
	Ø 300 mm Camlock No. 4	3442976							●		●																
	Ø 320 mm Camlock No. 5	3442979													●					●							
	Ø 330 mm Camlock No. 5	3442978											●														
	Ø 350 mm Camlock No. 6	3442980														●	●	●									
	Ø 450 mm Camlock No. 8	3442982																	●			●	●	●	●	●	●
Chuck flange	Ø 100 mm cylindrical	3440312		●																							
	Ø 125 mm cylindrical	3440313			●																						
	Ø 125 mm cylindrical	3440511				●																					
	Ø 125 mm short taper	3441312					●	●																			
	Ø 160 mm short taper	3441413						●																			

Turning accessories		Article no.	TU 1503V	TU 2004V	TU 2304/V	TU 2406/V	TU 2506/V	TU 2807/V	TU 3008/5/V	TM 3110	TH 3309/D/V	TM 3310/D	TH 3610/D	TH 4010V	TM 4010/D	TH 42	TH 4210V	TH 46	TH 4615V	TZ 4/1Z4V	TX 4412	TX 5216	TX 6222	TH 56	TH 5620V	TH 66	TH 80
Bison chuck flange	Ø 160 mm	3450245																									
Collet chuck	ER16	3440281																									
	ER25	3440305																									
	ER25	3440505																									
	ER32	3440506																									
	ER25	3441305																									
	ER32	3441306																									
BISON Collet chuck	16C	3450246																									
Collet chuck	5C - No. 4	3441554																									
	5C - No. 5	3441555																									
	5C - No. 6	3441556																									
	5C - No. 8	3441558																									
Collet set	5C	3441509																									
Revolving tailstock centre	MT 2	3440702																									
	MT 3	3440703																									
	MT 4	3440704																									
	MT 5	3440705																									
Revolving tailstock centre with replaceable tips	MT 2	3440732																									
	MT 3	3440733																									
	MT 4	3440734																									
BISON Revolving tailstock centre	MT 2	3451002																									
	MT 3	3451003																									
	MT 4	3451004																									
	MT 5	3451005																									
Collet set	ER 16	3440282																									
	ER 25	3441109																									
	ER 32	3441122																									
Collet chuck device	5C	3441507																									
Position stop		3441522																									
		3441523																									
		3444022																									
		3444023																									
Steady rest		3440211																									
		3440231																									
		3440361																									
		3440515																									
		3441315																									
		3441415																									
		3441461																									
		3441470																									
Follower rest		3440210																									
		3440230																									
		3440360																									
		3441310																									
		3441410																									
		3441460																									
		3441469																									
Universal coolant system		3351999																									
Digital position display	DRO 5	3383975																									

L - Included in scope of delivery    ● Recommended    ○ Recommended - restrictions apply

This equipment table covers all recommended equipment options. Depending on the individual case, use of accessories can be meaningful beyond this.



## OPTIMUM Three-jaw lathe chuck



**DIN  
6350**

**CAST**

### OPTIMUM Three-jaw lathe chuck

Article no.

#### > Centre clamping

- > Cylindrical centring mount as per DIN 6350
- > Concentricity better than 0.05 mm
- > Chuck flange required see page 228

Ø 80 mm	3440287
Block jaw set, soft, single-piece	3442902
Ø 100 mm	3442710
Block jaw set, soft, single-piece	3442904
Ø 125 mm	3442712
Block jaw set, soft, single-piece	3442906
Ø 160 mm	3442716
Block jaw set, soft, single-piece	3442907

#### Scope of delivery

- > Single-piece hard jaws for outside-inside clamping
- > Chuck key



**DIN  
55029**

**CAST**

**Camlock**

### OPTIMUM\* Three-jaw lathe chuck

Article no.

#### > centric clamping DIN ISO 702- 2

#### > DIN ISO 702- 2

#### > Camlock direct mount DIN 55029

Ø 160 mm Camlock No. 4	3442761
Block jaw set, soft, single-piece	3442907
Ø 200 mm Camlock No. 4	3442762
Block jaw set, soft, single-piece	3442910
Ø 200 mm Camlock No. 5	3442764
Block jaw set, soft, single-piece	3442910
Ø 200 mm Camlock No. 6	3442763
Block jaw set, soft, single-piece	3442910
Ø 250 mm Camlock No. 6	3442765
Block jaw set, soft, single-piece	3442912
Ø 315 mm Camlock No. 8	3442768
Block jaw set, soft, single-piece	3442916

#### Scope of delivery

- > Single-piece hard jaws for outside-inside clamping
- > Chuck key



## OPTIMUM Four-jaw lathe chucks



**DIN  
6350**

**CAST**

### OPTIMUM Four-jaw lathe chuck

Article no.

#### > Centre clamping

- > Cylindrical centring mount as per DIN 6350
- > Concentricity better than 0.05 mm
- > Chuck flange required see page 228

Ø 80 mm	3442808
Block jaw set, soft, single-piece	3442920
Ø 100 mm	3442810
Block jaw set, soft, single-piece	3442922
Ø 125 mm	3442812
Block jaw set, soft, single-piece	3442924
Ø 160 mm	3442816
Block jaw set, soft, single-piece	3442926

### OPTIMUM\* Four-jaw lathe chuck

Article no.

#### > individually clamping

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

#### Scope of delivery

- > Chuck key
- Lathe chuck centrically clamping:**
- > Hard jaws, single-part, with outside-inside clamping
- Lathe chuck single clamping:**
- > Set of hard reversible jaws



**DIN  
55029**

**CAST**

**Camlock**

### OPTIMUM\* Four-jaw lathe chuck

Article no.

#### > Centre clamping

#### > DIN ISO 702- 2

#### > Camlock direct mount DIN 55029

Ø 160 mm Camlock No. 4	3442840
Block jaw set, soft, single-piece	3442926
Ø 200 mm Camlock No. 4	3442843
Block jaw set, soft, single-piece	3442927
Ø 200 mm Camlock No. 5	3442845
Block jaw set, soft, single-piece	3442927
Ø 200 mm Camlock No. 6	3442846
Block jaw set, soft, single-piece	3442928
Ø 250 mm Camlock No. 6	3442852
Block jaw set, soft, single-piece	3442935
Ø 315 mm Camlock No. 8	3442856
Block jaw set, soft, single-piece	3442938

### OPTIMUM\* Four-jaw lathe chuck

Article no.

#### > individually clamping

Ø 200 mm Camlock No. 4	3442879
Ø 200 mm Camlock No. 5	3442880
Ø 250 mm Camlock No. 6	3442884
Ø 315 mm Camlock No. 8	3442888
Ø 400 mm Camlock No. 8	3442890

#### Scope of delivery

- > Chuck key
- Lathe chuck centrically clamping:**
- > Hard jaws, single-part, with outside-inside clamping
- Lathe chuck single clamping:**
- > Set of hard reversible jaws



Technical data for Lathe chucks, see page 220 „Chuck flange“ on page 228



## Three-jaw lathe chuck



**DIN  
6350**

**CAST**

**STEEL**

BISON <sup>®</sup> Three-jaw lathe chuck		Article no.
<b>&gt; Centre clamping</b> > All work surfaces induction hardened and ground > Permanently high clamping and repeating accuracy > Uniform clamping forces > High true running accuracy (better than DIN 6386)		
Ø 125 mm		3450230
Block jaw set, soft		3450410
Ø 160 mm		3450232
Block jaw set, soft		3450412

BISON <sup>®</sup> Three-jaw lathe chuck		Article no.
<b>&gt; Centre clamping</b> Ø 250 mm Block jaw set, soft		
		3450530
		3450426

### Scope of delivery

- > Single-piece hard jaws for outside-inside clamping
- > Chuck key



**DIN  
55029**

**CAST**

**Camlock**

BISON <sup>®</sup> Three-jaw lathe chuck		Article no.
<b>&gt; Centre clamping</b> > DIN ISO 702- 2 > All work surfaces induction hardened and ground > Camlock direct mount DIN 55029 > High true running accuracy (better than DIN 6386)		
Ø 160 mm Camlock No. 4		3450305
Block jaw set, soft		3450412
Ø 200 mm Camlock No. 4		3450310
Block jaw set, soft		3450414
Ø 200 mm Camlock No. 5		3450315
Block jaw set, soft		3450414
Ø 200 mm Camlock No. 6		3450320
Block jaw set, soft		3450414
Ø 200 mm DIN 6350 A2-5		3450210
Block jaw set, soft		3450414
Ø 250 mm Camlock No. 5		3450325
Block jaw set, soft		3450416
Ø 250 mm Camlock No. 6		3450330
Block jaw set, soft		3450416
Ø 250 mm Camlock No. 8		3450331
Block jaw set, soft		3450416
Ø 315 mm Camlock No. 8		3450335
Block jaw set, soft		3450418

### Scope of delivery

- > Hard jaws, single-part, with outside-inside clamping
- > Chuck key



## Four-jaw lathe chucks



**DIN  
6350**

**CAST**

BISON <sup>®</sup> Four-jaw lathe chuck		Article no.
<b>&gt; Centre clamping</b> > All work surfaces induction hardened and ground to ensure a high level of clamping and repeating accuracy > Uniform clamping forces > High true running accuracy (better than DIN 6386)		
Ø 125 mm		3450234
Block jaw set, soft		3450420
Ø 160 mm		3450236
Block jaw set, soft		3450422

### Scope of delivery

- > Single-piece hard jaws for outside-inside clamping
- > Chuck key



**DIN  
55029**

**CAST**

**Camlock**

BISON <sup>®</sup> Four-jaw lathe chucks		Article no.
<b>&gt; Centre clamping</b> > DIN ISO 702- 2		
Ø 160 mm Camlock No. 4		3450355
Block jaw set, soft		3450422
Ø 200 mm Camlock No. 4		3450360
Block jaw set, soft		3450424
Ø 200 mm Camlock No. 5		3450365
Block jaw set, soft		3450424
Ø 200 mm Camlock No. 6		3450370
Block jaw set, soft		3450424
Ø 250 mm DIN 6350 A2-5		3450216
Block jaw set, soft		3450426
Ø 250 mm Camlock No. 5		3450375
Block jaw set, soft		3450426
Ø 250 mm Camlock No. 6		3450380
Block jaw set, soft		3450426
Ø 250 mm Camlock No. 8		3450381
Block jaw set, soft		3450426
Ø 315 mm Camlock No. 8		3450385
Block jaw set, soft		3450428
Ø 400 mm Camlock No. 8		3450390
Block jaw set, soft		3450430

**STEEL**

BISON <sup>®</sup> Four-jaw lathe chucks		Article no.
<b>&gt; Centre clamping</b> Ø 250 mm Camlock No. 6 Block jaw set, soft Ø 250 mm DIN 6350 A2-5 Block jaw set, soft		
		3450580
		3450426
		3450217
		3450426

### Scope of delivery

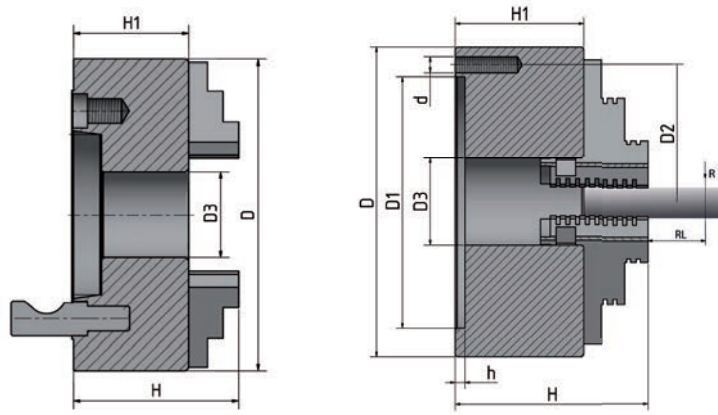
- > Hard jaws, single-part, with outside-inside clamping
- > Chuck key



Technical data for Lathe chucks, see page 221

## OPTIMUM

### Three-jaw lathe chuck

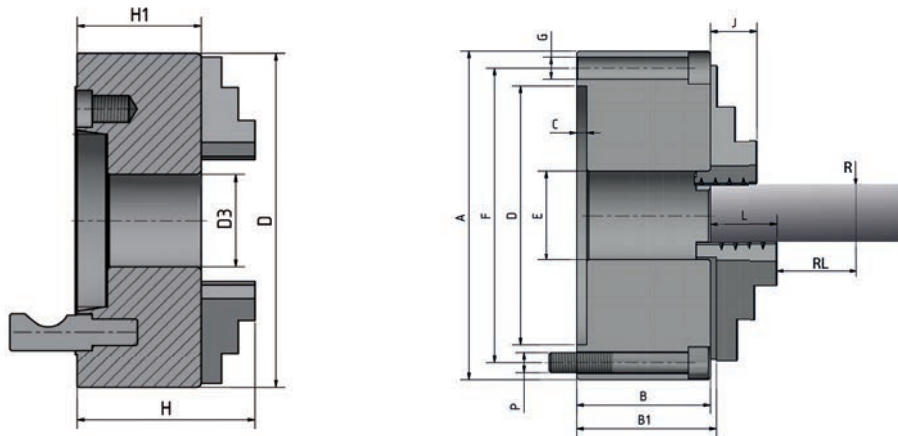


Chuck	Article no.	D	D1	D2	D3	d	H	H1	h	RL	True running accuracy (R)	Speed (rpm)
Ø 80 mm	3440287	80	55	66	16	M6	66	50	3.5	50	0.06	4 000
Ø 100 mm	3442710	100	72	84	22	M8	75	55	3.5	50	0.06	4 200
Ø 125 mm	3442712	125	95	108	30	M8	84	58	4	50	0.06	3 800
Ø 160 mm	3442716	160	130	142	45	M8	95	65	5	50	0.06	3 000

Chuck	Camlock	Item No.	D	D3	H	H1	Indexing circle	RL	True running accuracy (R)	Speed (rpm)
Ø 160 mm	No.4	3442761	160	40	101	71	82.6	50	0.06	3 000
Ø 200 mm	No.4	3442762	200	50	124	86	82.6	50	0.06	3 000
Ø 200 mm	No.5	3442764	200	52	124	86	104.8	50	0.06	3 000
Ø 200 mm	No.6	3442763	200	65	128	86	133.4	50	0.06	3 000
Ø 250 mm	No.6	3442765	250	70	140	98	133.4	50	0.06	2 400
Ø 315 mm	No.8	3442768	315	105	180	102.5	171.4	75	0.01	1 800



### Three-jaw lathe chuck



Chuck	Camlock	Item No.	D	D3	H1	H	Indexing circle	RL	True running accuracy (R)	Speed (rpm)
Ø 160 mm	No.4	3450305	160	42	81.5	124.5	82.6	60	0.03	3 600
Ø 200 mm	No.4	3450310	200	56	107	136	82.6	80	0.04	3 000
Ø 200 mm	No.5	3450315	200	56	107	136	104.8	80	0.04	3 000
Ø 200 mm	No.6	3450320	200	55	91	136	133.4	80	0.04	3 000
Ø 250 mm	No.5	3450325	250	76	103.5	156.5	104.8	80	0.04	2 500
Ø 250 mm	No.6	3450330	250	76	103.5	156.5	133.4	80	0.04	2 500
Ø 250 mm	No.8	3450331	250	76	103.5	156.5	171.4	80	0.04	2 500
Ø 315 mm	No.8	3450335	315	103	117.7	174.7	171.4	120	0.05	2 000

Chuck	Article no.	B	B1	C	D	E	F	G	J	L	kg	Speed (rpm)
Ø 125 mm	3450230	56	60.8	4	95	32	108	3 x M8	20	40	5	4 000
Ø 160 mm	3450232	64.5	69.3	4	125	42	140	3 x M10	32	43	10	3 600



# OPTIMUM

## Four-jaw lathe chuck

Chuck	Article no.	D	D1	D2	D3	d	H	H1	h	Speed (rpm)
<b>Centre clamping</b>										
Ø 80 mm	3442808	80	55	66	16	M6	66	50	3.5	4 300
Ø 100 mm	3442810	100	72	84	22	M8	75	55	3.5	3 400
Ø 125 mm	3442812	125	95	108	30	M8	84	58	4	2 750
Ø 160 mm	3442816	160	130	142	45	M8	95	65	5	2 150
<b>individually clamping</b>										
Ø 80 mm	3440286	80	55	66	22	M6	59	42	4	4 800
Ø 100 mm	3442872	100	72	84	25	M8	75	54	4	3 500
Ø 125 mm	3442874	125	95	108	30	M8	78	58	6	3 000

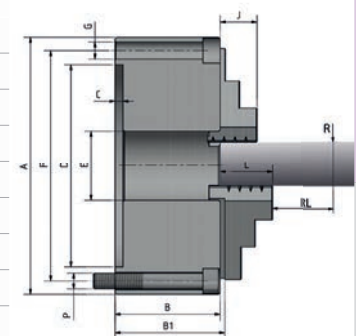
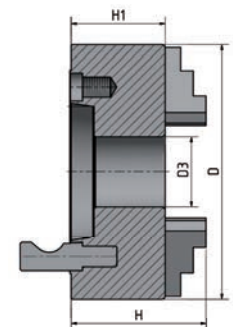
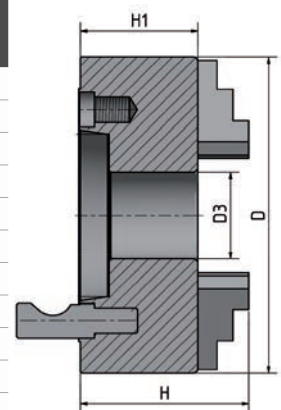
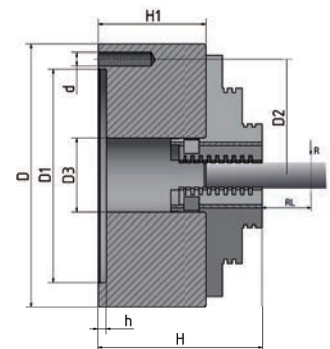
Chuck	Camlock	Item No.	D	D3	H	H1	RL	True running accuracy (R)	Indexing circle	Speed (rpm)
<b>Camlock centre clamping</b>										
Ø 160 mm	No.4	3442840	160	40	95	71	50	0.06	82.6	2 150
Ø 200 mm	No.4	3442843	200	50	109	86	50	0.06	82.6	3 000
Ø 200 mm	No.5	3442845	200	52	109	86	50	0.06	104.8	3 000
Ø 200 mm	No.6	3442846	200	65	109	86	50	0.06	133.4	3 000
Ø 250 mm	No.6	3442852	250	70	120	98	50	0.06	133.4	2 400
Ø 315 mm	No.8	3442856	315	105	142.5	102.5	75	0.01	171.4	1 800
<b>Camlock individual clamping</b>										
Ø 200 mm	No.4	3442879	200	56	107	75	50	0.06	82.6	2 100
Ø 200 mm	No.5	3442880	200	56	107	75	50	0.06	104.8	2 100
Ø 250 mm	No.6	3442884	250	100	120	80	50	0.06	133.4	1 600
Ø 315 mm	No.8	3442888	320	95	134	100	75	0.01	171.4	1 200
Ø 400 mm	No.8	3442890	400	125	148	101	75	0.01	171.4	1 000



## Four-jaw lathe chuck

Chuck	Camlock	Item No.	D	D3	H1	H	RL	True running accuracy (R)	Indexing circle	Speed (rpm)
<b>Centre clamping</b>										
Ø 160 mm	No.4	3450355	160	42	81.5	124.5	60	0.03	82.6	3 600
Ø 200 mm	No.4	3450360	200	55	91	136	80	0.04	82.6	3 000
Ø 200 mm	No.5	3450365	200	55	91	136	80	0.04	104.8	3 000
Ø 200 mm	No.6	3450370	200	55	91	136	80	0.04	133.4	3 000
Ø 250 mm	No.5	3450375	250	76	103.5	156.5	80	0.04	104.8	2 500
Ø 250 mm	No.6	3450380	250	76	103.5	156.5	80	0.04	133.4	2 500
Ø 250 mm	No.8	3450381	250	76	103.5	156.5	80	0.04	171.4	2 500
Ø 315 mm	No.8	3450385	315	103	117.7	174.7	120	0.05	171.4	2 000
Ø 400 mm	No.8	3450390	400	136	128.5	207.5	120	0.06	171.4	1 600

Chuck	Article no.	B	B1	C	H7	E	F	G	J	L	kg	Speed (rpm)
Ø 125 mm	3450234	56	60.8	4	95	32	108	3 x M8	20	40	5	4 000
Ø 160 mm	3450236	64.5	69.3	4	125	42	140	3 x M10	32	43	10	3 600
Ø 250 mm	3450216	75	79.8	4	160	55	176	6 x M10	29	45	17.5	2 500
Ø 250 mm	3450217	75	79.8	4	160	55	176	6 x M10	29	45	17.5	3 500



## Quick change tool holder

Quick change tool holder	Article no.
› Repeating accuracy 0.01 mm · angle scale on tool holder head	
› 40 different angle settings · Height adjustment via knurled screw	
› Tool holder head and tool holder with profile ground gears	
› Play-free and repetition-accurate clamping of the change holder	
› For self-assembly	

Quick change tool holder set SWH AA	3384311
› Tool holder head AA	
› 3 units tool holder 12 x 50 type D for square chisels	
› 1 unit tool holder 12 x 50 type H for round chisels	
<b>Spare tool holder 12 x 50 type D</b> for square chisels	3384312
<b>Spare tool holder 12 x 50 type H</b> for round chisels	3384320

Quick change tool holder set SWH 1-A	3384301
› Tool holder head A	
› 3 units tool holder 20 x 90 type D for square chisels	
› 1 unit tool holder 20 x 85 type H for round chisels	
<b>Spare tool holder 20 x 90 type D</b> for square chisels	3384302
<b>Spare tool holder 20 x 85 type H</b> for round chisels	3384321

Quick change tool holder set SWH 3-E	3384303
› Tool holder head E	
› 3 units tool holder 20 x 100 type D for square chisels	
› 1 unit tool holder 30 x 100 type H for round chisels	
<b>Spare tool holder 20 x 100 type D</b> for square chisels	3384304
<b>Spare tool holder 30 x 100 type H</b> for round chisels	3384322

Quick change tool holder set SWH 5-B	3384305
› Tool holder head B	
› 3 units tool holder 25 x 120 type D for square chisels	
› 1 unit tool holder 32 x 130 type H for round chisels	
<b>Spare tool holder 25 x 120 type D</b> for square chisels	3384306
<b>Spare tool holder 32 x 130 type H</b> for round chisels	3384324

Quick change tool holder set SWH 7-C	3384307
› Tool holder head C	
› 3 units tool holder 32 x 150 type D for square chisels	
› 1 unit tool holder 40 x 160 type H for round chisels	
<b>Spare tool holder 32 x 150 type D</b> for square chisels	3384308
<b>Spare tool holder 40 x 160 type H</b> for round chisels	3384326

Quick change tool holder set SWH 9-D	3384309
› Tool holder head D	
› 3 units tool holder 40 x 180 type D for square chisels	
› 1 unit tool holder 63 x 180 type H for round chisels	
<b>Spare tool holder 40 x 180 type D</b> for square chisels	3384332
<b>Spare tool holder 63 x 180 type H</b> for round chisels	3384333

Factory assembly and adjustment SWH		
› Only with orders for new machines		
for <b>SWH AA / SWH 1-A</b>		9000401
for <b>SWH 3-E to SWH 9D</b>		9000400



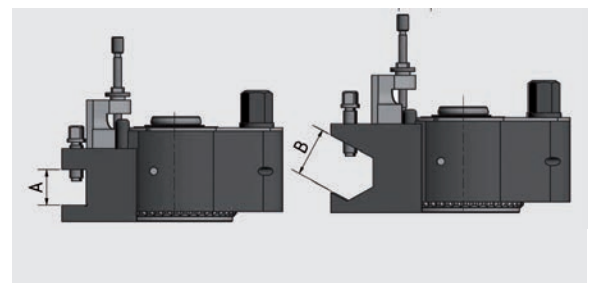
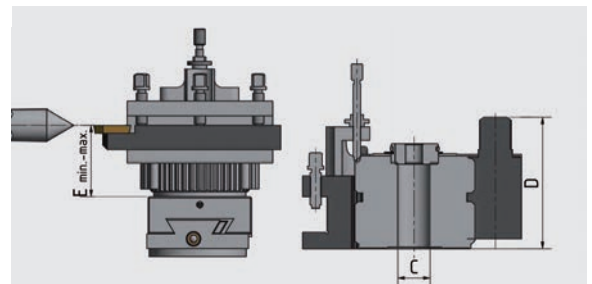
Tool holder head



Tool holder type D  
for square chisels



Tool holder type H  
for round chisels



Tool holder head dimensions			SWH AA	SWH 1-A	SWH 3-E	SWH 5-B	SWH 7-C	SWH 9-D
Turning diameter		mm	120 - 220	150 - 300	200 - 400	300 - 500	400 - 700	600 - 800
Drive output lathe max.		kW	1	2	4.5	7	13	20
Support width square chisel max.	A	mm	12	20	20	25	32	40
Diameter round chisel max.	B	mm	Ø 12	Ø 20	Ø 20	Ø 25	Ø 32	Ø 40
Normal hole	C	mm	Ø 13	Ø 20	Ø 20	Ø 32	Ø 40	Ø 40
Height of base body/overall	D	mm	37	56	68	79	110	122
Height top carriage to lathe centre	E	mm	18 - 26	28.5 - 39.5	28.5 - 39.5	37 - 57	47 - 87	60 - 95

## Lathe tool set HM 8 mm

Lathe tool set	Article no.
HM 8 mm	3441662

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	SWGC	L0808	D05	8 mm
2	SSDC	N0808	D06	8 mm
3	SWGC	R0808	D05	8 mm
4	STGC	R0808	D09	8 mm
5	SDJC	R0808	D07	8 mm



Carbide replacement indexing inserts (5 pcs. each)

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

## Lathe tool set HM 10 mm

Lathe tool set	Article no.
HM 10 mm	3441664

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	SWGC	L1010	E05	10 mm
2	SSDC	N1010	E06	10 mm
3	SWGC	R1010	E05	10 mm
4	STGC	R1010	E09	10 mm
5	SDJC	R1010	E07	10 mm



Carbide replacement indexing inserts (5 pcs. each)

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

## Lathe tool set HM 12 mm

Lathe tool set	Article no.
HM 12 mm	3441666

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	SWGC	L1212	H 05	12 mm
2	SSDC	N1212	H 09	12 mm
3	SWGC	R1212	H 05	12 mm
4	STGC	R1212	H 11	12 mm
5	SDJC	R1212	H 07	12 mm



Carbide replacement indexing inserts (5 pcs. each)

No.	Article no.	ISO	D1	D2	B1	S1	right
1/3	3441759	WCMT050308	7.94	3.2	80°	3.18	0.8
2	3441763	SCMT09T304	9.525	4.4	90°	3.97	0.4
4	3441762	TCMT110204	6.35	2.8	60°	2.38	0.4
5	3441758	DCMT070204	6.35	2.8	55°	2.38	0.4



## Lathe tool set HM 12 mm

Lathe tool set	Article no.
HM 12 mm	3441212
› 5-part	
› With HM turning plates	
› TiN coated	

	ISO	h1	Art.no.
1	SSSC R1212 J09	12 mm	3441220
2	SCLC R1212 J09	12 mm	3441221
3	SDNC N1212 J11	12 mm	3441222
4	SDJC R1212 J11	12 mm	3441223
5	SDJC L1212 J11	12 mm	3441224

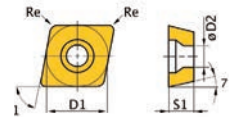
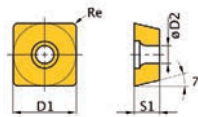


Carbide replacement indexing inserts (5 pcs. each)

No.	Article no.	ISO	D1	D2	B1	S1	right
1	3441280	SCMT09T304	9.525	4.4	90°	3.97	0.4
2	3441282	CCMT09T304	9.525	4.4	80°	3.97	0.4
3-5	3441281	DCMT11T304	9.525	4.4	55°	3.97	0.4

Lathe tool 12 mm	Article no.
SSSC L1212J09	3441225
HM replacement turning plates(5 pcs. each)	3441280
SCMT09T304	9.525 4.4 90° 3.97 0.4

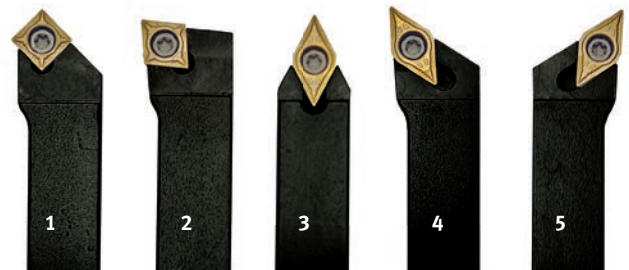
Lathe tool 12 mm	Article no.
SCLC L1212J09	3441226
HM replacement turning plates (5 pcs. each)	3441282
CCMT09T304	9.525 4.4 80° 3.97 0.4



## Lathe tool set HM 16 mm

Lathe tool set	Article no.
HM 16 mm	3441216
› 5-part	
› With HM turning plates	
› TiN coated	

	ISO	h1	Article no.
1	SSSC R1616 J09	16 mm	3441230
2	SCLC R1616 J09	16 mm	3441231
3	SDNC N1616 J11	16 mm	3441232
4	SDJC R1616 J11	16 mm	3441233
5	SDJC L1616 J11	16 mm	3441234



Carbide replacement indexing inserts (5 pcs. each)

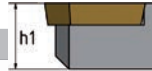
No.	Article no.	ISO	D1	D2	B1	S1	right
1	3441280	SCMT09T304	9.525	4.4	90°	3.97	0.4
2	3441282	CCMT09T304	9.525	4.4	80°	3.97	0.4
3-5	3441281	DCMT11T304	9.525	4.4	55°	3.97	0.4

## Lathe tool set HM 16 mm

Lathe tool set	Article no.
HM 16 mm	3441668

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	PWLN	R1616	H06	16 mm
2	PWLN	L1616	H06	16 mm
3	PSDNN	1616	H09	16 mm
4	CKJN	R1616	H16	16 mm
5	MDJN	R1616	H11	16 mm



Carbide replacement indexing inserts (5 pcs. each)

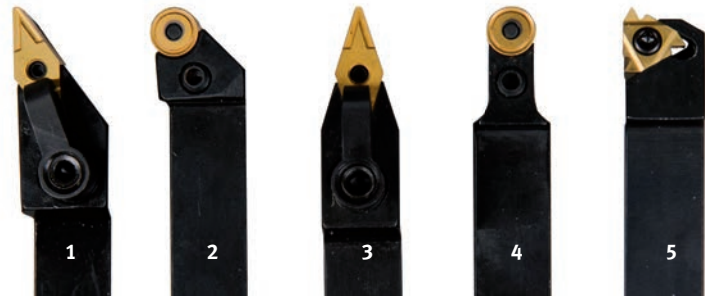
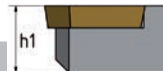
No.	Article no.	ISO	D1	D2	B1	S1	right	L1
1/2	3441753	WNMG060408	9.252	3.81	80°	4.76	0.8	-
3	3441755	SNMG090304	9.252	3.81	90°	3.18	0.4	-
4	3441754	KNUX160405R	9.252		55°	4.76	0.5	16.15
5	3441750	DNMG110408	9.525	3.81	55°	4.76	0.8	-

## Lathe tool set HM 16 mm

Lathe tool set	Article no.
HM 16 mm	3441610

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	MVJNR	1616	H16	16 mm
2	MVVNN	1616	H16	16 mm
3	PRANN	1616	H10	16 mm
4	PRGNR	1616	H10	16 mm
5	SER	1616	H16	16 mm



Carbide replacement indexing inserts (5 pcs. each)

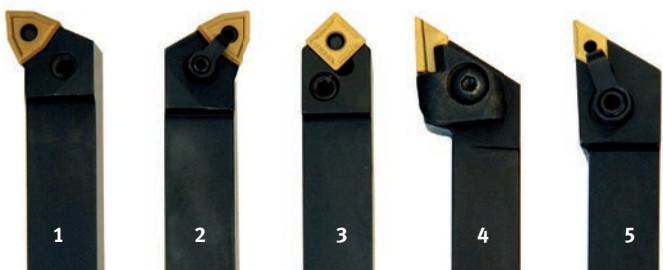
No.	Article no.	ISO	D1	D2	B1	S1	right
1/2	3441701	VNMG160408	9.525	3.81	35°	4.76	0.8
3/4	3441702	RNMG1003MO	10	3.6	-	3.97	-
5	3441703	16ER AG60	16	3.95	60°	3.65	-

## Lathe tool set HM 20 mm

Lathe tool set	Article no.
HM 20 mm	3441670

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	PWLN	R2020	K08	20 mm
2	PWLN	L2020	K08	20 mm
3	PSDN	N2020	K12	20 mm
4	CKJN	R2020	K16	20 mm
5	MDJN	R2020	K11	20 mm



Carbide replacement indexing inserts (5 pcs. each)

No.	Article no.	ISO	D1	D2	B1	S1	right	L1
1/2	3441752	WNMG080408	9.252	3.81	80°	4.76	0.8	-
3	3441756	SNMG120408	12.7	5.16	90°	4.76	0.8	-
4	3441754	KNUX160405R	9.252		55°	4.76	0.5	16.15
5	3441750	DNMG110408	9.525	3.81	55°	4.76	0.8	-

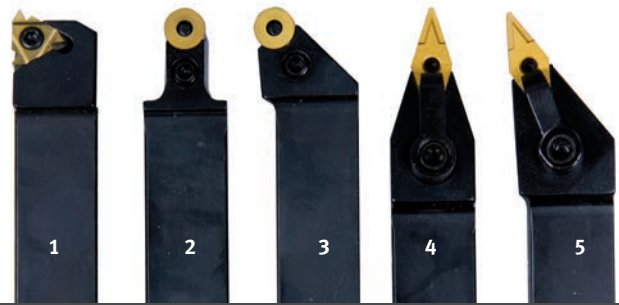
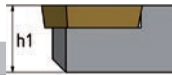
## Lathe tool sets

### Lathe tool set HM 20 mm

Lathe tool set	Article no.
HM 20 mm	3441617

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	SER	2020	K16	20 mm
2	PRGNR	2020	K10	20 mm
3	PRANN	2020	K10	20 mm
4	MVVNN	2020	K16	20 mm
5	MVJNR	2020	K16	20 mm



Carbide replacement indexing inserts (5 pcs. each)

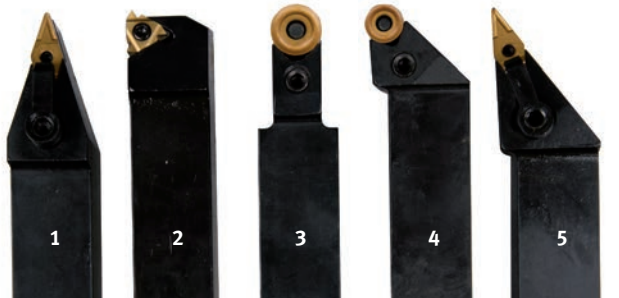
No.	Article no.	ISO	D1	D2	B1	S1	right
1	3441703	16ER AG60	16	3.95	60°	3.65	-
2/3	3441702	RNMG1003MO	10	3.6	-	3.97	-
4/5	3441701	VNMG160408	9 525	3.81	35°	4.76	0.8

### Lathe tool set HM 25 mm

Lathe tool set	Article no.
HM 25 mm	3441623

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	MVVN	N2525	M16	25 mm
2	SE	R2525	M16	25 mm
3	PRGN	R2525	M12	25 mm
4	PRAN	N2525	M16	25 mm
5	MVJN	R2525	M16	25 mm



Carbide replacement indexing inserts (5 pcs. each)

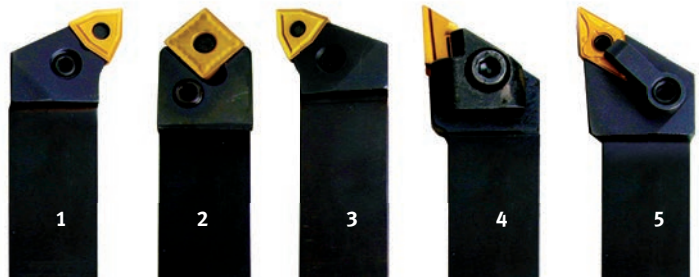
No.	Article no.	ISO	D1	D2	B1	S1	right
1/2	3441701	VNMG160408	9 525	3.81	35°	4.76	0.8
3	3441703	16ER AG60	16	3.95	60°	3.65	-
4	3441705	RNMG1204MO	12	4.75	R	5.1	-
5	3441704	RNMG1605MO	16	5.4	R	6.3	-

### Lathe tool set HM 25 mm

Lathe tool set	Article no.
HM 25 mm	3441672

- › 5-part
- › With HM turning plates
- › TiN coated
- › Aluminium box

ISO				
1	PWLN	L2525	M08	25 mm
2	PSDN	N2525	M15	25 mm
3	PWLN	R2525	M08	25 mm
4	CKJNR	R2525	M16	25 mm
5	MDJN	R2525	M15	25 mm



Carbide replacement indexing inserts (5 pcs. each)

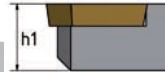
No.	Article no.	ISO	D1	D2	B1	S1	right	L1
1/2	3441752	WNMG080408	9.252	3.81	80°	4.76	0.8	-
3	3441757	SNMG150608	15.875	06.35	90°	6.35	0.8	-
4	3441754	KNUX160405R	9.252	-	55°	4.76	0.5	16.15
5	3441751	DNMG150408	12.7	5.16	55°	4.76	0.8	-



## Lathe tool set HM 32 mm

Lathe tool set	Article no.
<b>HM 32 mm</b>	3441674
<ul style="list-style-type: none"> <li>› 5-part</li> <li>› With HM turning plates</li> <li>› TiN coated</li> <li>› Aluminium box</li> </ul>	

ISO				
1	PWLN	L3232	P08	32 mm
2	PSDN	N3232	P15	32 mm
3	PWLN	R3232	P08	32 mm
4	CKJN	R3232	P16	32 mm
5	MDJN	R3232	P15	32 mm



**Carbide replacement indexing inserts (5 pcs. each)**

3441757		3441752		3441751		3441754		
No.	Article no.	ISO	D1	D2	B1	S1	right	L1
1/3	3441752	WNMG080408	9.252	3.81	80°	4.76	0.8	-
2	3441757	SNMG150608	15 875	06.35	90°	06:35	0.8	-
4	3441754	KNUX160405R	9.252	-	55°	4.76	0.5	16.15
3	3441751	DNMG150408	12.7	5.16	55°	4.76	0.8	-

## Inside turning tool set 10 mm

Inside turning tool set	Article no.
<b>10 mm</b>	3441640
<ul style="list-style-type: none"> <li>› 3-part</li> <li>› With carbide indexing inserts, TiN-coated</li> <li>› Aluminium box</li> </ul>	






No.	10 mm	10 mm		
1	S10K	S12M	SCFCR	06
2	S10K	S12M	SDQCR	07
3	S10K	S12M	STFCR	11

## Inside turning tool set 12 mm

Inside turning tool set	Article no.
<b>12 mm</b>	3441641
<ul style="list-style-type: none"> <li>› 3-part</li> <li>› With carbide indexing inserts, TiN-coated</li> <li>› Aluminium box</li> </ul>	

**HM replacement turning plates (5 pcs. each)**

3441164		3441163		3441166				
								
No.	Article no.	ISO		l	s	R	d	d1
1	3441164	CCMT060204	C/80°	6.35	2.60	0.40	6.35	2.70
2	3441163	TCMT110204	T/60°	10.84	2.53	0.40	9.1	2.70
3	3441166	DCMT070204	D/55°	7.30	2.53	0.40	6.35	2.70

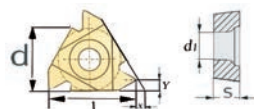
## Inside thread turning tool set 8 - 20 mm

Inside thread turning tool	Article no.
<b>8 - 20 mm</b>	3441650
<ul style="list-style-type: none"> <li>› 5-part (8/10/12/16/20 mm)</li> <li>› With HM turning plates</li> <li>› TiN coated</li> <li>› Aluminium box</li> </ul>	

No.	ISO			d
1	S10K	SIR 0008	H08	8 mm
2	S10K	SIR 0010	K11	10 mm
3	S10K	SIR 0012	M11	12 mm
4	S10K	SIR 0016	P16	16 mm
5	S10K	SIR 0020	S16	20 mm



**Carbide replacement indexing inserts (5 pcs. each)**



No.	Article no.	ISO		l	s	R	d	d1
1	3441725	08IR A60	60° IR	8	2.22	4.76	2.5	M10
2/3	3441726	11IR A60	60° IR	11	3.22	6.35	3.0	M12
4/5	3441727	16IR A60	60° IR	16	3.65	9.5	3.95	M16

## Accessories for lathes

### Lathe tool set 8 / 10 / 12 / 16 mm

Accessories	Article no.
<b>Lathe tool set 8 mm</b>	3441601
11-part . With carbide plates soldered on	
<b>Lathe tool set 10 mm</b>	3441602
11-part . With carbide plates soldered on	
<b>Lathe tool set 12 mm</b>	3441603
11-part . With carbide plates soldered on	
<b>Lathe tool set 16 mm</b>	3441604
11-part . With carbide plates soldered on	



Clamping disc	Article no.
Ø 170 mm for TU 2004V/TU 2304	3440295
Ø 240 mm for TU 2406	3440552
Ø 240 mm for TU 2506	3441352
Ø 265 mm for TU 2807	3441452
Ø 300 mm Camlock DIN ISO 702-2 No. 4	3442976
Ø 320 mm A 2-5	3442979
Ø 330 mm Camlock DIN ISO 702-2 No. 5	3442978
Ø 350 mm Camlock DIN ISO 702-2 No. 6	3442980
Ø 450 mm Camlock DIN ISO 702-2 No. 8	3442982



Collet chuck	Article no.
<b>ER 16 Ø 22 mm</b>	3440281
> cylindrical for TU 1503V	
<b>ER 25 Ø 72 mm</b>	3440305
> cylindrical for TU 2004V / TU 2304	
<b>ER 25 Ø 52 mm</b>	3440505
> cylindrical for TU 2406	
<b>ER 32 Ø 52 mm</b>	3440506
> cylindrical for TU 2406	
<b>ER 25 Ø 52 mm</b>	3441305
> cylindrical for TU 2506 / TU 2807	
<b>ER 32 Ø 52 mm</b>	3441306
> Short taper for TU 2506 / TU 2807	



Lathe chuck key	Article no.
<b>10 mm</b> (L x B 190 x 155 mm)	3442960
<b>11 mm</b> (L x B 190 x 155 mm)	3442961
<b>12 mm</b> (L x B 240 x 260 mm)	3442962
<b>13 mm</b> (L x B 240 x 260 mm)	3442963
<b>14 mm</b> (L x W 240 x 260 mm)	3442964



Chuck flange	Article no.
> For lathe chuck assembly	
<b>Ø 160 mm Camlock DIN ISO 702-2 No. 4</b>	3441512
> for four-jaw lathe chucks Ø 160 mm	
<b>Ø 200 mm Camlock DIN ISO 702-2 No. 4</b>	3441513
> for four-jaw lathe chucks Ø 200 mm	
<b>Ø 200 mm Camlock DIN ISO 702-2 No. 5</b>	3441514
> for four-jaw lathe chucks Ø 200 mm	
<b>Ø 200 mm Camlock DIN ISO 702-2 No. 6</b>	3444012
> for four-jaw lathe chucks Ø 200 mm	
<b>Ø 250 mm Camlock DIN ISO 702-2 No. 6</b>	3444013
> for four-jaw lathe chucks Ø 250 mm	
<b>Ø 315 mm Camlock DIN ISO 702-2 No. 8</b>	3444041
> for three- and four-jaw lathe chucks Ø 315 mm	

Chuck flange	Article no.
> For lathe chuck assembly	
Ø 100 mm	3440312
> cylindrical for TU 2004V	
Ø 125 mm	3440313
> cylindrical for TU 2304	
Ø 125 mm	3440511
> cylindrical for TU 2406	
Ø 125 mm	3441312
> Short taper for TU 2506 / TU 2807	
Ø 160 mm	3441413
> Short taper for TU 2807	



NEU

**Accessories** **Article no.**

**Clamping block set 16-05** **3440653**

- Lathes: TU 3008 / TH 3309 / TH 3610
- › 1 unit clamping block SLTBN 16-05
  - › 1 each parting-off turning tool SLIH 26-2 / SLIH 26-3
  - › 5 pcs. cutting inserts GTN2 (cutting width 2.2 mm)
  - › 5 pcs. cutting inserts GTN3 (cutting width 3.1 mm)
  - › Aluminium box

**Clamping block set 20-05** **3440654**

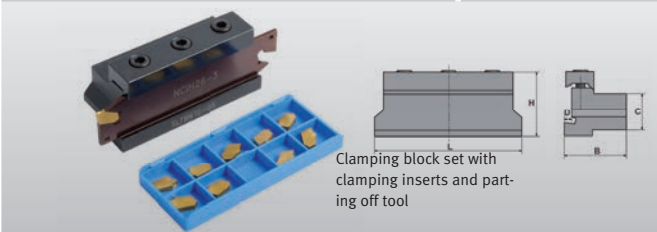
- Lathes: TH 4010 / TH 4210 / TH 46 / TH 56
- › 1 unit clamping block SLTBN 20-05
  - › 1 each parting-off turning tool SLIH 26-3 / SLIH 26-4
  - › 5 pcs. cutting inserts GTN3 (cutting width 3.1 mm)
  - › 5 pcs. cutting inserts GTN4 (cutting width 4.1 mm)
  - › Aluminium box

**Clamping block set 25-05** **3440655**

- For the lathes: TH 66 / TH 80
- › 1 unit clamping block SLTBN 25-05
  - › 1 each parting-off turning tool SLIH 26-3 / SLIH 26-4
  - › 5 pcs. cutting inserts GTN3 (cutting width 3.1 mm)
  - › 5 pcs. cutting inserts GTN4 (cutting width 4.1 mm)
  - › Aluminium box

**Replacement cutting insert set (10 pcs.)** **Article no.**

- for cutting inserts **GTN 2** **3440663**
- for cutting inserts **GTN 3** **3440664**
- for cutting inserts **GTN 4** **3440665**



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

**Centre drill set** **3203010**

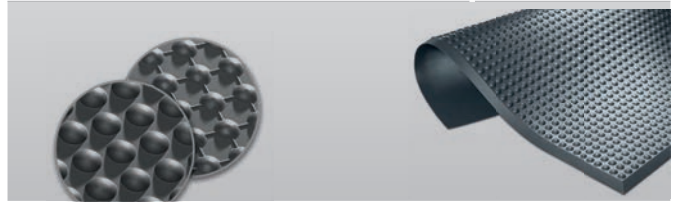
- › As per DIN 333 shape A
- › 10-part: 0.75/1/1.5/1.6/2/2.5/3/3.15/4/5 mm
- › Right-hand cutting tapered grinding edge 120°
- › Centre drill angle 60°
- › High speed steel top quality for tensile strength up to approx. 750 N/mm<sup>2</sup>
- › Powerful shank, also well suited for predrilling and expansion drilling with a twist drill bit
- › Practical OPTIMUM plastic case



**Workplace mats – for dry and wet areas** **Article no.**

- › Fire retardant
- › Made of polyurethane on polyether basis
- › Surface: nubbed and underside nubbed: for maximum standing comfort and slip resistance
- › 14 mm thickness
- › Colour anthracite
- › Temperature resistant -35°C to +95°C
- › Fire classification B1 as per DIN 4102
- › 5-year warranty

<b>Work mat</b> 1 840 x 640 mm	6800000
<b>Work mat</b> 1 840 x 940 mm	6800005
<b>Work mat</b> 3 040 x 640 mm	6800001
<b>Work mat</b> 3 040 x 940 mm	6800006



**Hollow spindle stop** **Article no.**

- › Optimum auxiliary tool suits virtually any lathe
- › Worthwhile even for smallest batches
- › Expensive tooling time can be reduced to a minimum
- › Can be easily and quickly attached at any point of the hollow spindle

<b>HSP 38</b>	3444410
› Spindle Ø 35–42 mm	
<b>HSP 52</b>	3444415
› Spindle Ø 48–56 mm	
<b>HSP 80</b>	3444420
› Spindle Ø 76–84 mm	
<b>HSP 105</b>	3444425
› Spindle Ø 101–109 mm	



**Collet chuck** **Article no.**

- › for collets type 5C / 385E
- › as per DIN 6341
- › With spindle chuck as per DIN ISO 702- 2
- › Concentricity 0.02 mm

<b>5C - Camlock no. 4</b>	3441554
<b>5C - Camlock Nr. 5</b>	3441555
<b>5C - Camlock no. 6</b>	3441556
<b>5C - Camlock no. 8</b>	3441558



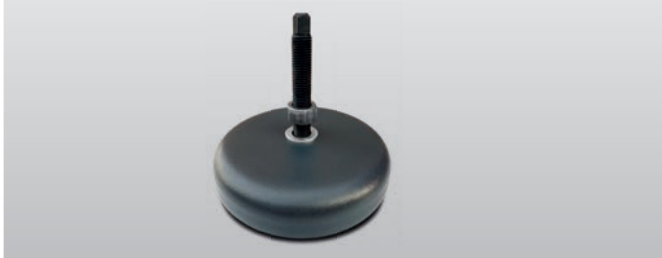


## Accessories for lathes

Levelling platen	Article no.
› The machines and equipment can be installed without anchors and precisely levelled using the height adjustment system.	

› non-slip rubberised

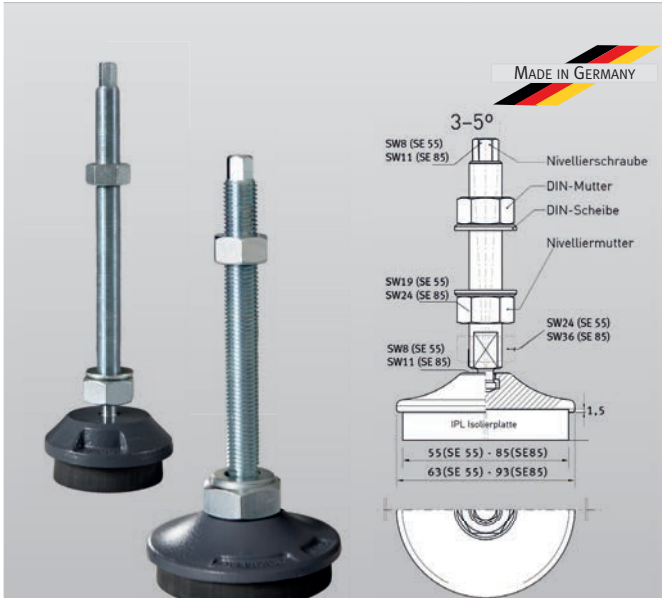
SE 1	3381012
SE 2	3381016
SE 3	3381018



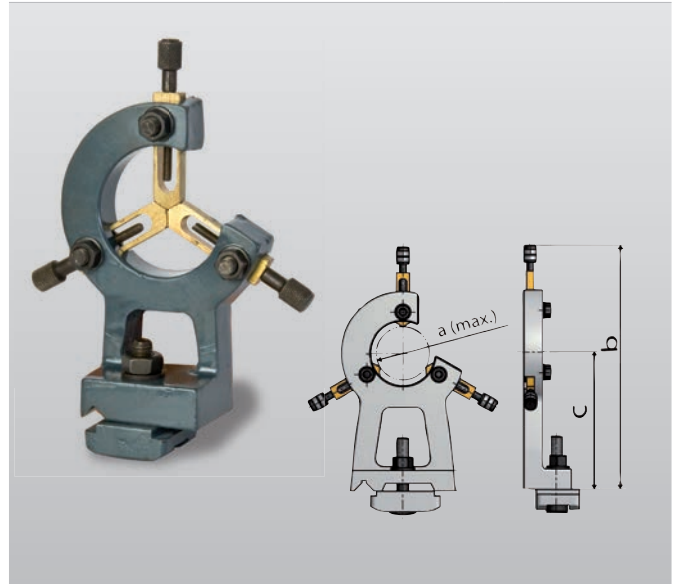
Load	SE 1	SE 2	SE 3
Milling machines	340 kg	460 kg	1 600 kg
Sawing/gen. Machine	570 kg	1 460 kg	3 500 kg
Thread	M12	M16	M20
Base Ø/Base height	120/32	160/35	185/39

Vibration damper machine foot	Article no.
› Excellent vibration and structure-borne noise insulation › Noise reduction › Eliminates floor unevenness up to 5° › Precision levelling by means of a regular threaded screw › Better distribution of impact-like axial forces due to the geometrically larger contact surface with the screw › No notching effect - like for example with conical screw tips › The levelling screw and the levelling disc are captively connected by a very simple system. › Problem-free changeover of the machine possible, as the complete levelling disc remains on the machine foot when the machine is lifted	

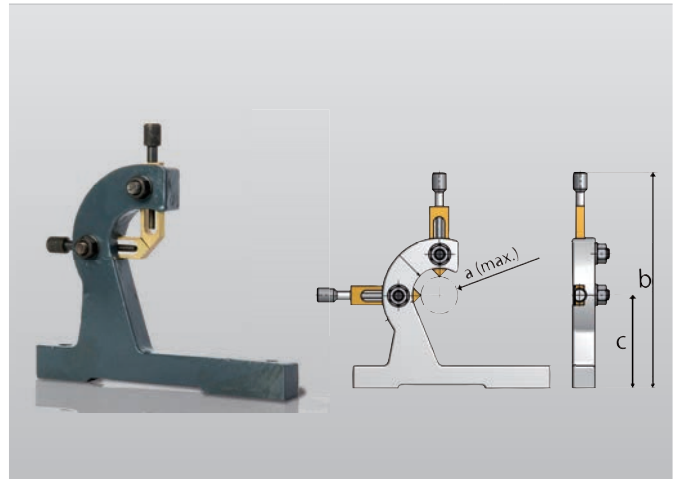
SE 55	3352981
› Jackscrew M12 x 1 x 150 › Maximum load: 600 kg	
SE 85	3352982
› Levelling screw M16 x 150 › Maximum load: 1 500 kg	



Steady rest	Article no.
for TU 1503V	3440211
› a = Ø 40 mm; b = 145 mm; c = 70.5 mm	
for TU 2004V	3440231
› a = Ø 50 mm; b = 200 mm; c = 100 mm	
for TU 2304 / TU 2304V	3440361
› a = Ø 55 mm; b = 220 mm; c = 115 mm	
for TU 2406 / TU 2506	3441315
› a = Ø 50 mm; b = 245 mm; c = 125 mm	
for TU 2807 / TU 2807V	3441415
› a = Ø 55 mm; b = 250 mm; c = 140 mm	
for TU 3008 / TU 3008G / TU 3008V	3441461
› a = Ø 60 mm; b = 260 mm; c = 157 mm	

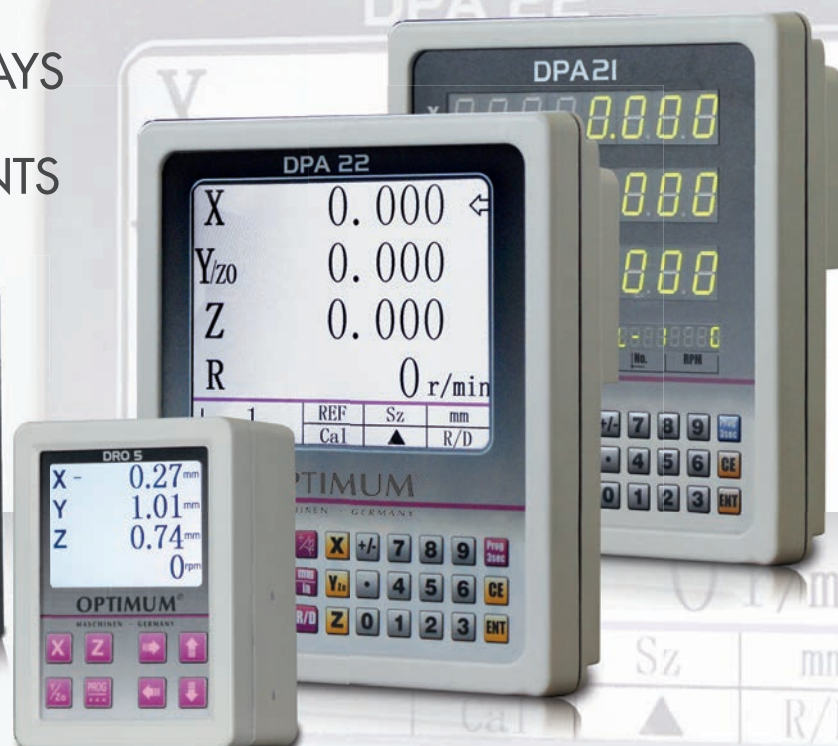


Follower rest	Article no.
for TU 1503V	3440210
› a = Ø 45 mm; b = 155 mm; c = 76 mm	
for TU 2004V	3440230
› a = Ø 40 mm; b = 195 mm; c = 100 mm	
for TU 2304 / TU 2304V	3440360
› a = Ø 34 mm; b = 200 mm; c = 97 mm	
for TU 2406 / TU 2506	3441310
› a = Ø 34 mm; b = 220 mm; c = 107 mm	
for TU 2807 / TU 2807V	3441410
› a = Ø 56 mm; b = 250 mm; c = 130 mm	
for TU 3008 / TU 3008G / TU 3008V	3441460
› a = Ø 60 mm; b = 255 mm; c = 151 mm	



## POSITION DISPLAYS

DIGITAL POSITION DISPLAYS  
LINEAR ENCODERS  
MEASURING INSTRUMENTS



### DRO 5 Digital 3-axis position display

#### DRO 5

Article no. 3383975

- › Digital 3-axis position display for milling machines (X - Y - Z) and for lathes (X, Z,  $\phi$ )
- › For measuring positions
- › Rev counter
- › Three incremental inputs
- › Four-line LCD display
- › User-friendly menu navigation
- › Rugged aluminium housing
- › Programming from the front
- › Dimensions L x W x H: 98 x 65 x 134 mm

#### Including

- › Speed sensor cable length 5 metres
- › 3 units magnetic sensors without magnetic strip
- › Power supply cable length 6 metres
- › Magnetic plate



Accessories	Article no.
Magnetic strip length 1 100 mm	3383978
Magnetic strip length 2 000 mm	3383979
Magnetic strip per metre	3383980
Factory assembly	
Magnetic strip three axes	9000420
Speed sensor	9000421
Assembly kit	
TU 3008	3383985
MH 22V	3383990

The digital position displays for three axes with speed display support versatile use and are a genuine aid to the user, as they substantially boost precision and productivity.

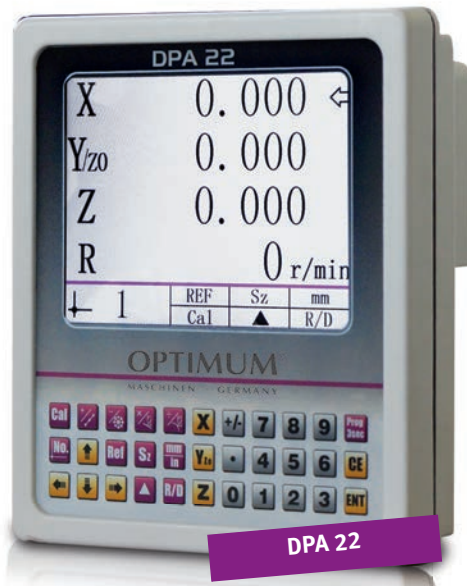
## Differences:

## DPA 21

- LED display

## DPA 22

- LCD display
- High-contrast display
- Simplified menu navigation
- Graphical input for cycle programming



DPA 22



DPA 21

Digital position display	Article no.
<b>DPA 21 (LED display)</b>	3384020
<b>DPA 22 (LCD display)</b>	3384022
<ul style="list-style-type: none"> <li>› User-friendly membrane keyboard, splash water protected, sealed and dazzle free</li> <li>› Switchable for milling machine and lathe, freely selectable input signal (sinus/square), e.g. usable for glass scales and/or magnetic strip system</li> <li>› Greater operation accuracy</li> <li>› Clear reduction of manufacturing times</li> <li>› Reduction of error quota</li> <li>› X, Y/Z, Z axis each with 8-digit display</li> <li>› Sensor supplied for acquiring spindle speeds</li> <li>› Three measuring inputs can be evaluated with seven correction memory stores each for tools</li> <li>› Dimensions L x W x H: 230 x 80 x 260 mm . Weight: 2 kg</li> </ul>	

## Possible functions

- › Calculator, speed display, axis coupling (total Z), sub-D connector sockets, absolute/incremental operation, conversion inch/metric thread, bolt circle computation (chain dimension), coordinates in circle (pitch circle), drill holes in circle (pitch circle), measured values switchable radius/diameter, Zero reset data default, self diagnostics, reference point, linear error correction, 99 tool memory

## Scope of delivery

- › Speed sensor
- › Holder
- › Power supply 24 V

## Magnetic strip

- › Magnetic strip for assembly on machines that do not have enough space for linear encoders
- › Connector 9-pin

Ø 1 100 mm long 3383978

Ø 2 000 mm long 3383979

Active scanning head 3383934



Linear encoders	Article no.
<ul style="list-style-type: none"> <li>› Fully encapsulated measuring systems with high precision glass scale</li> <li>› Resolution 5 µm</li> <li>› Accuracy ± 0.003 mm</li> <li>› Scanning carriage guided by miniature ball bearings and connected to the mounting foot via coupling</li> <li>› Protected against dust, chips and splash water by a rubber lip</li> <li>› Flexible metal protection hose</li> <li>› Connecting cable three metres; four metres as of ML 620</li> <li>› Without assembly</li> </ul>	

<b>ML 80 mm</b>	3384108
<b>ML 100 mm</b>	3384110
<b>ML 120 mm</b>	3384112
<b>ML 170 mm</b>	3384117
<b>ML 220 mm</b>	3384122
<b>ML 270 mm</b>	3384127
<b>ML 320 mm</b>	3384132
<b>ML 370 mm</b>	3384137
<b>ML 420 mm</b>	3384142
<b>ML 470 mm</b>	3384147
<b>ML 520 mm</b>	3384152
<b>ML 570 mm</b>	3384157
<b>ML 620 mm</b>	3384162
<b>ML 670 mm</b>	3384167
<b>ML 720 mm</b>	3384172
<b>ML 770 mm</b>	3384177
<b>ML 820 mm</b>	3384182
<b>ML 870 mm</b>	3384187
<b>ML 920 mm</b>	3384192
<b>ML 970 mm</b>	3384197
<b>ML 1 020 mm</b>	3384202
<b>ML 1 250 mm</b>	3384225
<b>ML 1 400 mm</b>	3384240
<b>ML 1 520 mm</b>	3384252
<b>ML 1 670 mm</b>	3384267
<b>ML 1 940 mm</b>	3384294
<b>ML 2 010 mm</b>	3384295
<b>ML 3 000 mm</b>	3384300
<b>Factory assembly ML</b>	9000410

› per linear encoder



**Universal useable digital position displays for two or three axes, with speed display,**  
for guaranteed excellent results on machines to improve accuracy

Digital position display	Article no.
DPA 31-2 for two axes	3384030
DPA 31-3 for three axes	3384031
<ul style="list-style-type: none"> <li>› LED display</li> <li>› User-friendly membrane keyboard, splash water protected, sealed and dazzle free</li> <li>› Switchable for milling machine and lathe</li> <li>› Greater operation accuracy</li> <li>› Clear reduction of manufacturing times</li> <li>› Reduction of error quota</li> <li>› 8-digit display</li> <li>› Sensor supplied for acquiring spindle speeds</li> <li>› Three measuring inputs can be evaluated with seven correction memory stores each for tools</li> <li>› Dimensions L x W x H: 230 x 80 x 260 mm</li> <li>› Weight: 2 kg</li> </ul>	



MSS31 linear encoders	Article no.
<ul style="list-style-type: none"> <li>› The electronic measuring components of the linear encoders are protected and sealed in the housing</li> <li>› Provides accurate and reliable measurement results even if the measuring system is operated in oil or coolant</li> <li>› Tolerant towards vibration and magnetic interference</li> <li>› Without assembly</li> </ul>	
51 mm (length 311 mm)	3384405
102 mm (length 362 mm)	3384410
152 mm (length 412 mm)	3384415
203 mm (length 463 mm)	3384417
254 mm (length 514 mm)	3384419
305 mm (length 565 mm)	3384421
356 mm (length 616 mm)	3384422
406 mm (length 666 mm)	3384423
457 mm (length 717 mm)	3384424
506 mm (length 766 mm)	3384425
559 mm (length 819 mm)	3384426
610 mm (length 870 mm)	3384427
660 mm (length 920 mm)	3384428
711 mm (length 971 mm)	3384429
762 mm (length 1022 mm)	3384430
813 mm (length 1073 mm)	3384431
864 mm (length 1124 mm)	3384432
914 mm (length 1174 mm)	3384433
965 mm (length 1225 mm)	3384434
1016 mm (length 1276 mm)	3384435
1118 mm (length 1378 mm)	3384437
1168 mm (length 1428 mm)	3384438
1219 mm (length 1479 mm)	3384439
1270 mm (length 1530 mm)	3384440
1321 mm (length 1581 mm)	3384441
1372 mm (length 1632 mm)	3384442
1422 mm (length 1882 mm)	3384443



1473 mm (length 1933 mm)	3384444
1524 mm (length 1784 mm)	3384445
1626 mm (length 1886 mm)	3384446
1727 mm (length 1987 mm)	3384447
1829 mm (length 2089 mm)	3384448
1930 mm (length 2190 mm)	3384449
2032 mm (length 2292 mm)	3384450
2134 mm (length 2394 mm)	3384451
2235 mm (length 2495 mm)	3384452
2337 mm (length 2597 mm)	3384453
2438 mm (length 2698 mm)	3384454
2540 mm (length 2800 mm)	3384455
2642 mm (length 2902 mm)	3384456
2743 mm (length 3003 mm)	3384457
2845 mm (length 3105 mm)	3384458
2946 mm (length 3206 mm)	3384459
3048 mm (length 3248 mm)	3384460

Accessories	Article no.
Extension cable 1 metres	3384040
Active scanning head	3384035



Magnetic strip	Article no.
<ul style="list-style-type: none"> <li>› Magnetic strip for assembly machines that do not have enough space for magnetic scales</li> <li>› Connector 9-pin</li> </ul>	
Ø 1 100 mm long	3383978
Ø 2 000 mm long	3383979

## Digital position display DP700 for precise measurement of travels and positioning on machine and drives



	Article no.
<b>Digital position display DP700</b>	3390073
<b>Attachment kit - Milling Spherosyn</b>	3390220
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› fitting</li> <li>› Attachment parts for assembling three axes Spherosyn</li> </ul>	
<b>Attachment kit - Milling Microsyn</b>	3390230
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› fitting</li> <li>› Attachment parts for assembling three axes Microsyn</li> </ul>	
<b>Attachment kit - Turning 1</b>	3390405
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› fitting</li> <li>› Attachment parts for assembling one axis Spherosyn and one axis Microsyn greater than 300 mm</li> </ul>	
<b>Attachment kit - Turning 2</b>	3390406
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› fitting</li> <li>› Attachment parts for assembling one axis Spherosyn and one axis Microsyn less than 300 mm</li> </ul>	
<b>Complete attachment kit MH 35G</b>	3390330
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› 3 units Microsyn linear encoder</li> <li>› Bracket · Attachment parts for linear encoder mounting</li> </ul>	
<b>Complete attachment kit MH 50G</b>	3390346
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› 3 units Microsyn linear encoder</li> <li>› Bracket · Attachment parts for linear encoder mounting</li> </ul>	
<b>Complete attachment kit TH 3309</b>	3390420
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› 2 pcs. Microsyn linear encoder · 1 pcs. Spherosyn linear encoder</li> <li>› Bracket · Attachment parts for linear encoder mounting</li> </ul>	
<b>Complete attachment kit TH 3610 / TH 4010</b>	3390430
<ul style="list-style-type: none"> <li>› Digital position display DP700</li> <li>› 2 pcs. Microsyn linear encoder · 1 pcs. Spherosyn linear encoder</li> <li>› Bracket · Attachment parts for linear encoder mounting</li> </ul>	

### Digital position display DP700

- › Powerful DP display with many functions
- › Ergonomically shaped, slim-line aluminium housing
- › Has all necessary functions for a variety of machining applications
- › The operator works with an intuitive and user-friendly interface
- › Developed and manufactured in England
- › IP67 encoding units can be deployed under the toughest ambient conditions with a high degree of precision.
- › Five-year warranty on indicator and read heads
- › The linear encoding units are insensitive to soiling in the workshop, such as coolant, water, dust, chips, knocks and vibrations
- › No maintenance required
- › Fast and easy installation

Possible functions		
Number of axes	2 or 3 axes	
	Milling machine	Lathe
Undo	•	•
Digfind (position search function)	•	•
Centrefind	•	•
Radius/diameter	•	•
Absolute/step wise	•	•
mm/inch	•	•
Axes preset/zero set	•	•
Zero point approach	•	•
Tool repository		•
Taper		•
Axis addition		•
PCD/bolt circle	•	
Arc control	•	
Polar coordinates	•	
Slotted rail	•	
Input mode/Sub-datum	•	•
Feed function	•	•
RS232 output	•	•
Linear error compensation	•	•
Segmental error compensation	•	•
Protection classes	IP 40 (digital display)	
	IP 54 (front control panel)	
Languages	DE, EN, FR, ES, IT, TU, TR, CZ, RU, PT, DK	

## Analogue measuring systems (Spherosyn & Microsyn)



The Spherosyn and Microsyn linear encoder systems are specially designed for requirements in the demanding environment of a workshop. The measuring transducers use a totally unique design with all components sealed and protected. This means that you can achieve precise and reliable measured values, even if the measuring systems are immersed in coolant, oil water or lubricant.



### The advantages

- › Easy to install – low assembly costs
- › Degree of protection IP 67
- › Impermeable to coolants, oil, dust, chips and almost all workshop influences
- › No risk of broken or scratched glass
- › Tolerant towards vibration and magnetic interference
- › No regular maintenance or cleaning needed
- › No mechanical wear
- › Lifetime guarantee on the scale

More than 400 000 Spherosyn and Microsyn encoders worldwide offer the highest level of reliability.

Spherosyn and Microsyn can be used both for the digital position display DP700 and also be integrated for a variety of feedback applications, such as CNC systems and PLC.

How does that work?

The Spherosyn and Microsyn linear encoders are based on the principle of electromagnetism and consist of a stainless steel or carbon fibre tube filled with individually classified high-precision steel balls. The balls are pre-stressed and calibrated in a temperature-controlled environment in the tube.

The read head consists of six coils which are wound around a composite fibre coil. The coils and the required electronic circuitry are sealed on the inside of the read ahead by a special potting method. Applying voltage to the coil generates an electro-magnetic field in the read head. Due to the curvature of the balls on the inside of the tube, the output signal varies depending on the position of the coils above the balls. When the measuring head runs over the probe, signals are generated by the relative axial movement induced at each probe coil.



### Difference between Spherosyn and Microsyn scales

Analogue measuring systems	Spherosyn	Microsyn
Measuring length	51 mm up to 2 945 mm	30 mm up to 1 000 mm
Scale	15.25 mm	6.5 mm
Scale material	Stainless steel	Carbon fibre
Scale length, total	Measuring length + 250 mm	Measuring length + 175 mm
Read head dimensions	51 mm x 131 mm x 28 mm	35 mm x 75 mm x 20 mm
Maximum feed	2.0 metres per second	0.75 metres per second
Output cable length	3.5 metre stainless steel armouring (Extension cable available as accessory page 208)	
Accuracy	+/- 10 micron	
Repeat accuracy	within one resolution step	
Input	85mA +/- 5mA	
Output	2.0 V +/- 0.5 RMS, 1 kHz phase-analogue, 360° per 12.7 mm	
Suitable	For large machines and machines without space problems when fitting the probes	For small machines with space problems when fitting the probes



## Analogue measuring systems (Spherosyn & Microsyn)



Fig.: Spherosyn with optional attachment



Fig.: Microsyn with optional attachment

Spherosyn linear encoders	Article no.
MS S2G - 51 mm	3391005
MS S2G - 102 mm	3391010
MS S2G - 152 mm	3391015
MS S2G - 178 mm	3391018
MS S2G - 203 mm	3391020
MS S2G - 229 mm	3391023
MS S2G - 254 mm	3391025
MS S2G - 305 mm	3391030
MS S2G - 356 mm	3391035
MS S2G - 406 mm	3391040
MS S2G - 457 mm	3391046
MS S2G - 508 mm	3391051
MS S2G - 559 mm	3391056
MS S2G - 610 mm	3391061
MS S2G - 660 mm	3391066
MS S2G - 711 mm	3391071
MS S2G - 762 mm	3391076
MS S2G - 813 mm	3391081
MS S2G - 864 mm	3391086
MS S2G - 914 mm	3391091
MS S2G - 965 mm	3391097
MS S2G - 1 016 mm	3391101
MS S2G - 1 118 mm	3391111
MS S2G - 1 168 mm	3391117
MS S2G - 1 219 mm	3391121
MS S2G - 1 270 mm	3391127
MS S2G - 1 321 mm	3391132
MS S2G - 1 372 mm	3391137
MS S2G - 1 422 mm	3391142
MS S2G - 1 473 mm	3391147
MS S2G - 1 524 mm	3391152
MS S2G - 1 626 mm	3391162
MS S2G - 1 727 mm	3391172
MS S2G - 1 829 mm	3391182
MS S2G - 1 930 mm	3391193
MS S2G - 2 032 mm	3391203
MS S2G - 2 134 mm	3391213
MS S2G - 2 235 mm	3391223
MS S2G - 2 337 mm	3391233
MS S2G - 2 438 mm	3391243
MS S2G - 2 540 mm	3391254
MS S2G - 2 642 mm	3391264
MS S2G - 2 743 mm	3391274
MS S2G - 2 845 mm	3391284
MS S2G - 2 946 mm	3391294

Microsyn linear encoder	Article no.
MS M2G - 30 mm	3392003
MS M2G - 50 mm	3392005
MS M2G - 75 mm	3392007
MS M2G - 100 mm	3392010
MS M2G - 125 mm	3392012
MS M2G - 150 mm	3392015
MS M2G - 175 mm	3392017
MS M2G - 180 mm	3392018
MS M2G - 200 mm	3392020
MS M2G - 225 mm	3392022
MS M2G - 250 mm	3392025
MS M2G - 275 mm	3392027
MS M2G - 300 mm	3392030
MS M2G - 325 mm	3392032
MS M2G - 350 mm	3392035
MS M2G - 400 mm	3392040
MS M2G - 450 mm	3392045
MS M2G - 500 mm	3392050
MS M2G - 550 mm	3392055
MS M2G - 600 mm	3392060
MS M2G - 650 mm	3392065
MS M2G - 700 mm	3392070
MS M2G - 750 mm	3392075
MS M2G - 800 mm	3392080
MS M2G - 850 mm	3392085
MS M2G - 900 mm	3392090
MS M2G - 950 mm	3392095
MS M2G - 1 000 mm	3392100

Accessories	Article no.
Extension cable 1 metres	3393601
Extension cable 2 metres	3393602
Extension cable 3.5 metres	3393603
Extension cable 5 metres	3393604
Extension cable 10 metres	3393605

# ***METAL-CUTTING BAND SAWS***

# ***METAL-CUTTING CIRCULAR SAWS***





This **manual band saw** can either be installed on the optional work table with vice, as well as used free-hand guided

## Facts that impress in terms of quality, performance and price

- ▶ Powerful 1.1 kW motor
- ▶ Ideally suited for sawing solid steel materials with low tensile strength, preferably for sawing off pipes, steel sections, aluminium and non-ferrous metals.
- ▶ Also suitable for cutting wood, plastics and other thin non-ferrous metals
- ▶ Strong bridge construction with aluminium frame
- ▶ Variable saw band speed for various materials
- ▶ Easy-to-operate saw blade clamps and adjusting screws ensure permanently precise band run
- ▶ The saw supports virtually spark-free sawing without coolant and is thus easy on the material
- ▶ LED work light illuminates dark work areas for precise cutting
- ▶ Reduced cutting noise
- ▶ Always the right working position thanks to the adjustable additional grip
- ▶ Transport case
- ▶ Removable from optional worktable for flexible use



### Work table

- > Vice included
- > Net weight 13 kg
- Article no. 3184212

Model	SQ-V10
Article no.	3184210
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	1.1 kW
Saw band speed	42 - 144 m/min
Saw band dimensions	1 140 x 13 x 0.65 mm
Length x width x height	465 x 280 x 165 mm
Net weight	6.6 kg

### Scope of delivery

- > Transport case
- > Bi-metal saw band 10- 14 teeth per inch M42

### Cutting areas

with optional work table			
0°	Ø 115 mm	105 mm	100 x 115 mm
45°	Ø 45 mm	40 mm	30 x 45 mm
without optional work table			
0°	Ø 127 mm	127 mm	127 x 127 mm
45°	Ø 40 mm	40 mm	40 x 120 mm

### Saw bands HSS bi-metal M 42

Teeth per inch	Article no.
10 - 14 tpi	3357548



## Transportable mitre bandsaws with excellent cutting precision, extremely low-noise.

With continuously adjustable saw band speed

### Facts that impress in terms of quality, performance and price

- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Adjustable material stop for batch work
- ▶ Pushbutton on lever arm for saw band run, switches the saw band run on and off
- ▶ Base plate with anti-slip feet
- ▶ Swivelable saw bow from 0° to +60° to allow angled saw cuts



### Optional accessories

#### Machine base MUG 1

- ▶ Stable, space-saving, folding, easy to transport
- ▶ Dimensions L x W x H: 500 x 470 x 780 mm

Article no. 3630000

### Scope of delivery

- ▶ Material stop
- ▶ Bi-metal saw band

Model	SQ-V13
Article no.	3194013
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	400 W
Saw band speed	30 - 80 m/min
Saw band dimensions	1 440 x 12.5 x 0.6 mm
Cutting angle	0° - 60°
Length of open/closed vice	795 / 670 mm
Width without/with material stop	382 / 613 mm
Height, lower / upper end position	640 / 420 mm
Net weight	23.3 kg



### Mitre square

- ▶ Easily legible scale for adjusting the angle



### Saw band guide

- ▶ Ball-bearing borne; for an excellent band run and thus optimal cutting



### Pushbutton

- ▶ Pushbutton on lever arm for saw band run
- ▶ Switches the saw band run on and off



### Vario drive

- ▶ Continuously adjustable saw band speed from 30 to 80 m/min

	Cutting areas		
0°	Ø 125 mm	125 mm	125 x 125 mm
45°	Ø 85 mm	85 mm	85 x 85 mm
60°	Ø 50 mm	50 mm	50 x 50 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

Saw bands HSS bi-metal M 42		
Teeth per inch	Tooth angle	Article no.
6 - 10 tpi	0°	3351546
10 - 14 tpi	0°	3351547

Saw band information see page 260

**Transportable mitre bandsaws with excellent cutting precision, extremely low-noise.** With continuously adjustable saw band speed

**Facts that impress in terms of quality, performance and price**

- Equipped as a factory standard with bi-metal saw blade
- Adjustable material stop for batch work
- Pushbutton on lever arm for saw band run, switches the saw band run on and off
- Base plate with anti-slip feet
- Low vibration and wear thanks to special gearbox with two hardened steel gears
- Vario drive motor with low speed and carbon brushes for up to 10x longer service life

#### SP 11V

- Swivelable saw bow from 0° to +45° to allow angled saw cuts

#### SP 13V

- Swivelable saw bow from 0° to +60° to allow angled saw cuts



Fig.: SP13V

#### Optional accessories

Machine base MUG 1

(adaptation required)

- Stable, space-saving, folding, easy to transport
- Dimensions L x W x H: 500 x 470 x 780 mm

Article no. 3630000



Model	SP 11V	SP 13V
Article no.	3300070	3300075
Electrical connection	230 V/1 Ph ~50 Hz	230 V/1 Ph ~50 Hz
Motor power	850 W	1 kW
Saw band speed	30 - 80 m/min	30 - 80 m/min
Saw band dimensions	1 335 x 13 x 0.65 mm	1 440 x 13 x 0.65 mm
Cutting angle	0° - 45°	0° - 60°
Length	650 mm	720 mm
Width without/with material stop	290 / 670 mm	300 / 650 mm
Height, lower / upper end position	450 / 630 mm	420 / 680 mm
Net weight	19 kg	19.5 kg



#### Mitre square

- Easily legible scale for adjusting the angle



#### Saw band guide

- Ball-bearing borne; for an excellent band run and thus optimal cutting






#### Vario drive

- Saw band speed continuously adjustable from 30 to 80 m/min.

#### Scope of delivery

- Material stop
- Bi-metal saw band

#### Cutting areas

				
SP 11V	0°	Ø 105 mm	100 mm	100 x 100 mm
SP 13V		Ø 125 mm	125 mm	125 x 125 mm
SP 11V	45°	Ø 65 mm	60 mm	60 x 65 mm
SP 13V		Ø 85 mm	85 mm	85 x 85 mm
SP 13V	60°	Ø 45 mm	45 mm	45 x 50 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

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

	Teeth per inch	Tooth angle	Article no.
SP11V	<b>6 - 10 tpi</b>	0°	3351542
	<b>10 - 14 tpi</b>	0°	3351543
SP13V	<b>6 - 10 tpi</b>	0°	3351546
	<b>10 - 14 tpi</b>	0°	3351547

**Saw band information** see page 260

**Light and handy metal-cutting band saw.** Ideal for universal deployment on construction sites, on jobs, in customer service vehicles, workshops, hobby workshops and in agriculture

#### Facts that impress in terms of quality, performance and price

- ▶ Quick clamping vice for fast workpiece clamping
- ▶ Swivelable saw bow from 0° to 45° to allow angled saw cuts
- ▶ Easily legible scale for adjusting the angle
- ▶ Microswitch for automatic limit position cut-off
- ▶ Automatic lowering of the saw bow via three-stage adjustable saw bow lowering pressure
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Large, practical handle and light weight allow for trouble-free transport to the construction site
- ▶ Adjustable material stop for batch work
- ▶ Fully equipped; the user can immediately start productive work after commissioning
- ▶ Transportation lock



#### Optional accessories

- Machine base MUG 1
- ▶ Stable, space-saving, folding, easy to transport
  - ▶ Dimensions L x W x H: 500 x 470 x 780 mm
- Article no. 3630000

Model	S 100G
Article no.	3300100
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	370 W
Saw band speed	45 m/min
Saw band dimensions	1 470 x 13 x 0.65 mm
Cutting angle	0° to 45°
Length of vice open / closed	950 / 850 mm
Width without/with material stop	300 / 660 mm
Height, lower / upper end position	680 / 820 mm
Net weight	23 kg



#### Automatic limit switch cut-off



- › Switches the saw band off at the bottom stop

#### Saw band guide



- › Ball-bearing borne 3-point guide

#### Transport



- › Large, convenient handle and light weight allow for trouble-free transport to the construction site

#### Scope of delivery

- › Material stop
- › Operating tool
- › Bi-metal saw band

#### Cutting areas

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

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

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

Teeth per inch	Tooth angle	Article no.
6 tpi	10°	3351109
10 - 14 tpi	0°	3351110
Saw band set HSS bi-metal M 42		
1 saw band 6 tpi; 10°		3351100
2 pcs. saw band 10 - 14 tpi; 0°		

Saw band information see page 260



## Metal-cutting band saw ideal for light sawing work. Mitre cutting from -45° to 60° via pivoting saw bow

### Facts that impress in terms of quality, performance and price

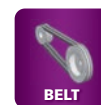
- ▶ Circuit breaker for belt cover and saw band cover, low-voltage version
- ▶ Separate emergency stop pushbutton
- ▶ 24 V low voltage electronics
- ▶ Low-noise running action
- ▶ Three speeds for a wide choice of materials
- ▶ Microswitch for automatic limit position cut-off
- ▶ Easily legible scale for adjusting the angle
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Saw band tensioning at front, adjustable via handwheel
- ▶ Adjustable material stop for batch work
- ▶ Quick clamping vice for fast workpiece clamping



### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base

Model	S 131GH
Article no.	3300131
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	1.1 kW
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	22 / 31 / 55 m/min
Saw band dimensions	1 638 x 13 x 0.65 mm
Cutting angle	-45° bis 60°
Dimensions L x W x H	1 085 x 498 x 978 mm
Net weight	78 kg



### Mitre square



- › Grey cast iron
- › Cutting angle easily adjustable from -45° to +60° using scale

### Hydraulic cylinder



- › Precise, continuously adjustable lowering via hydraulic cylinder and choke valve

### Saw band guide



- › Ball-bearing borne

### Cutting areas

		
0°	Ø 128 mm	100 x 145 mm
45°	Ø 90 mm	85 x 70 mm
60°	Ø 45 mm	55 x 45 mm
-45°	Ø 90 mm	85 x 70 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
6 tpi	10°	3351511
6 - 10 tpi	0°	3351512
8 - 12 tpi	0°	3351517
10 - 14 tpi	0°	3351518

### Saw band set HSS bi-metal M 42

1 saw band 6 tpi; 10°	3351500
1 saw band 6- 10 tpi; 0°	
1 saw band 10- 14 tpi; 0°	

Saw band information see page 260



## Band saw for metal working with mitre-pivoting saw bow and continuously adjustable saw band speed

### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Grey cast base plate and saw bow
- ▶ Stable saw frame for smooth, low-vibration action
- ▶ Easily legible scale for adjusting the angle
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Saw band tensioning at front, adjustable via handwheel
- ▶ Adjustable material stop for batch work
- ▶ Fast workpiece clamping thanks to quick clamping vice
- ▶ Fully equipped; the user can immediately start productive work after commissioning

### Manual saw band run pushbutton

- › Switches the saw band run on and off



### Control unit



- › Generously dimensioned
- › Coolant pump switch
- › Potentiometer

### Vario drive



- › Continuously variable saw band speed

### Saw band guide



- › Ball-bearing borne

### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant system

Model	S 150G Vario
Article no.	3300150
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	1.1 kW
Coolant pump motor	50 W
Lifting the saw bow	manual
Feed	manual
Saw band speed	20 - 65 m/min
Number of speeds	Continuously variable
Saw band dimensions	1 735 x 12.7 x 0.9 mm
Cutting angle	0° to 60°
Length of vice open / closed	1 120 / 930 mm
Width without/with material stop	510 / 720 mm
Height of saw bow, bottom / top limit position	1 240 / 1 590 mm
Net weight	100 kg

Important information on „Operation of machines with frequency converters“ on page 323  
The machines comply with (frequency converter) the DIN EN 55011 standard: class C3

### Cutting areas

0°	Ø 150 mm	160 mm	150 x 160 mm
45°	Ø 105 mm	105 mm	105 x 130 mm
60°	Ø 65 mm	65 mm	65 x 65 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
6 tpi	10°	3351521
6 - 10 tpi	0°	3351522
10 - 14 tpi	0°	3351538

### Saw band set HSS bi-metal M 42

1 saw band 6 tpi; 10°	3351501
1 saw band 6- 10 tpi; 0°	
1 saw band 10- 14 tpi; 0°	

Saw band information see page 260

## The metal-cutting band saw for challenging sawing tasks. With V-belt and 4 saw band speeds

### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Rugged cast design
- ▶ Saw bow lowering via hydraulic cylinder continuously adjustable by throttle valve
- ▶ Microswitch for automatic limit position cut-off
- ▶ Easily legible scale for adjusting the angle
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Saw band tensioning at front, adjustable via handwheel
- ▶ Ball-bearing borne saw band guide
- ▶ Rugged machine mobile base with large wheels and practical transport bar allows trouble-free relocation of the machine
- ▶ Adjustable material stop for batch work
- ▶ Circuit breaker for belt cover
- ▶ Fully equipped; the user can immediately start productive work after commissioning



### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base

Model	S 181
Article no.	3300181
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	750 W
Coolant pump motor	90 W
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	21 / 33.5 / 45 / 50 m/min
Saw band dimensions	2 362 x 19 x 0.9 mm
Cutting angle	0° to 45°
Length	1 295 mm
Width without/with material stop	450 / 600 mm
Height of saw bow, bottom / top limit position	1 060 / 1 550 mm
Net weight	130 kg



### Belt



- › Four speeds adjustable by shifting the belt

### Quick clamping vice






- › Adjustable clamping jaws from 0° to 45° for mitre cuts

### Coolant tank



- › Integrated in machine base
- › Tank capacity 11 litres

### Cutting areas

			
0°	Ø 180 mm	180 mm	180 x 240 mm 50 x 300 mm
45°	Ø 110 mm	150 mm	110 x 170 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357522
5 - 8 tpi	6°	3357516
6 - 10 tpi	0°	3357521
10 - 14 tpi	0°	3357520

### Saw band set HSS bi-metal M 42

1 saw band 6- 10 tpi; 0°	3357500
1 saw band 5- 8 tpi; 0°	
1 saw band 5- 8 tpi; 6°	

**Saw band information** see page 260



## The metal-cutting band saw for challenging sawing tasks. With gearbox and 3 saw band speeds



### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Rugged cast design
- ▶ Saw bow lowering via hydraulic cylinder continuously adjustable by throttle valve
- ▶ Microswitch for automatic limit position cut-off
- ▶ Easily legible scale for adjusting the angle
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Ball-bearing borne saw band guide
- ▶ Rugged machine mobile base with large wheels and practical transport bar allows trouble-free relocation of the machine
- ▶ Saw band tensioning at front, adjustable via handwheel
- ▶ Adjustable material stop for batch work
- ▶ Fully equipped; the user can immediately start productive work after commissioning



Scope of delivery	
› Material stop	
› Bi-metal saw band	
› Machine base	

Model	S 181G
Article no.	3300182
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	750 W
Coolant pump motor	90 W
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	45 / 67 / 77 m/min
Saw band dimensions	2 362 x 19 x 0.9 mm
Cutting angle	0° to 45°
Length	1 200 mm
Width without/with material stop	450 / 600 mm
Height of saw bow, bottom / top limit position	1 060 / 1 550 mm
Net weight	130 kg

Cutting areas			
0°	Ø 180 mm	180 mm	180 x 240 mm 65 x 300 mm
45°	Ø 110 mm	150 mm	110 x 170 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

AQUACUT C1	3530030
› For cooling the cut, 10 litres	

Saw bands HSS bi-metal M 42		
Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357522
5 - 8 tpi	6°	3357516
6 - 10 tpi	0°	3357521
10 - 14 tpi	0°	3357520
Saw band set HSS bi-metal M 42		
1 saw band 6- 10 tpi; 0°		3357500
1 saw band 5- 8 tpi; 0°		
1 saw band 5- 8 tpi; 6°		

**Saw band information** see page 260

## The metal-cutting gear band saw for challenging sawing tasks.



### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Rugged cast design
- ▶ Saw bow lowering via hydraulic cylinder continuously adjustable by throttle valve
- ▶ Microswitch for automatic limit position cut-off
- ▶ Easily legible scale for adjusting the angle
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Saw band tensioning at front, adjustable via handwheel
- ▶ Ball-bearing borne saw band guide
- ▶ Rugged machine mobile base with large wheels and practical transport bar allows trouble-free relocation of the machine
- ▶ Adjustable material stop for batch work
- ▶ Easy-to-clean coolant parts
- ▶ Polished workpiece mounting surface
- ▶ Circuit breaker for belt cover
- ▶ Fully equipped; the user can immediately start productive work after commissioning



**Saw band guide**

- › Ball-bearing borne; for an excellent band run and thus optimal cutting



**Coolant tank**

- › Integrated in machine base
- › Tank capacity 11 litres



**Gearbox**




- › Powerful
- › Two speed stages

### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base

Model	SD 200G
Article no.	3300200
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	550 W/750 W
Coolant pump motor	100 W
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	44 / 88 m/min
Saw band dimensions	2 360 x 19 x 0.9 mm
Cutting angle	0° to 45°
Length	1 295 mm
Width without material stop	535 mm
Height, lower / upper end position	790 mm / 1200
Net weight	130 kg

### Cutting areas

			
0°	Ø 180 mm	180 mm	180 x 240 mm 50 x 300 mm
45°	Ø 110 mm	150 mm	110 x 170 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357522
5 - 8 tpi	6°	3357516
6 - 10 tpi	0°	3357521
10 - 14 tpi	0°	3357520

Saw band set HSS bi-metal M 42 with 1 pc. saw band each 6 - 10 tpi; 0° / 5 - 8 tpi; 0° / 5 - 8 tpi; 6°

3357500

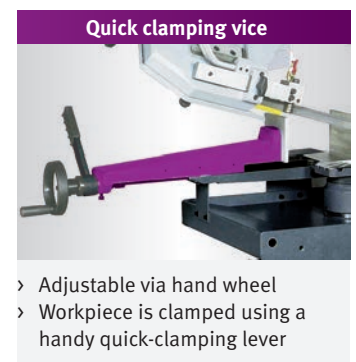
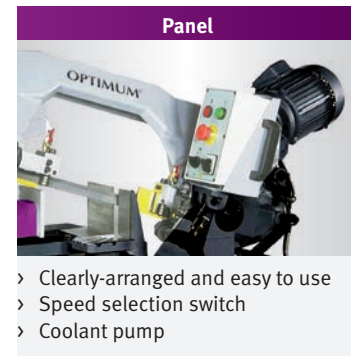
**Saw band information** see page 260

## Metal-cutting band saw with pivoting saw bow, and two saw band speeds



### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Rugged cast design
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Two switchable speeds
- ▶ Saw bow lowering via hydraulic cylinder, continuously adjustable by throttle valve
- ▶ Microswitch for automatic limit position cut-off
- ▶ Easily legible scale for adjusting the angle
- ▶ Coolant system
- ▶ Rugged machine mobile base
- ▶ Ball-bearing borne saw band guide
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Adjustable material stop for batch work
- ▶ Fully equipped; the user can immediately start productive work after commissioning



### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant pump

Model	S 210G
Article no.	3300210
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	750 W
Coolant pump motor	90 W
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	40 / 80 m/min
Saw band dimensions	2 080 x 20 x 0.9 mm
Cutting angle	0° to 45°
Length of closed/open vice	1 200 / 1 310 mm
Width without/with material stop	685 / 985 mm
Height, lower / upper end position	1 320 / 1 550 mm
Net weight	152 kg

### Cutting areas

0°	Ø 170 mm	140 mm	140 x 190 mm
45°	Ø 125 mm	125 mm	95 x 140 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357503
5 - 8 tpi	6°	3357505
6 - 10 tpi	0°	3357514
10 - 14 tpi	0°	3357515

### Saw band set HSS bi-metal M 42

1 saw band 6- 10 tpi; 0 °	3357502
1 saw band 5- 8 tpi; 0 °	
1 saw band 5- 8 tpi; 6 °	

Saw band information see page 260



## Metal-cutting band saw with pivoting saw bow.

### S 275NV with continuously variable saw band speed



#### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Rugged cast design
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Saw bow lowering via hydraulic cylinder, continuously adjustable by throttle valve
- ▶ Microswitch for automatic limit position cut-off
- ▶ Coolant system
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Adjustable material stop for batch work
- ▶ Rugged machine mobile base
- ▶ Ball-bearing borne saw band guide
- ▶ Easily legible scale for adjusting the angle
- ▶ Overload protection

#### S 275N

- ▶ Motor protection switch
- ▶ Two switchable speeds

#### S 275NV

- ▶ Saw band speed continuously adjustable from 20 to 90 m/min.
- ▶ Speed change possible during operation

#### Saw band tension



- ▶ Easy and accurate adjustment of the saw band tension by pressure gauge

#### Quick clamping vice,



- ▶ adjustable via handwheel
- ▶ Workpiece is clamped using a handy quick-clamping lever






Fig.: S 275N

#### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant pump

#### Cutting areas

			
0°	Ø 225 mm	170 mm	150 x 245 mm
45°	Ø 145 mm	145 mm	145 x 180 mm
60°	Ø 90 mm	90 mm	90 x 120 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

Model	S 275N	S 275NV
Article no.	3300260	3300265
Electrical connection	400 V/3 Ph ~50 Hz	230 V/1 Ph ~50 Hz
Motor power	1.1 kW	1.5 kW
Coolant pump motor	90 W	
Lifting the saw bow	manual	
Feed	continuously variable	
Saw band speed	45 / 90 m/min	20 - 90 m/min
Saw band dimensions	2 480 x 27 x 0.9 mm	
Cutting angle	0° to 60°	
Length	1 400 mm	
Width without/with material stop	685 / 985 mm	
Height, lower / upper end position	1 235 / 1 700 mm	
Net weight	185 kg	

AQUACUT C1	3530030
› For cooling the cut, 10 litres	

Saw bands HSS bi-metal M 42		
Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357511
5 - 8 tpi	6°	3357512
6 - 10 tpi	0°	3357524
10 - 14 tpi	6°	3357510
10 - 14 tpi	0°	3357525
Saw band set HSS bi-metal M 42		
1 saw band 6- 10 tpi; 0 °		3357504
1 saw band 5- 8 tpi; 0 °		
1 saw band 5- 8 tpi; 6 °		
Saw band information see page 260		

## Metal-cutting band saw with SIEMENS Sinamics inverter for continuously variable saw band speed

### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Rugged cast design
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Variable cutting speeds
- ▶ Saw bow lowering via hydraulic cylinder, continuously adjustable by throttle valve
- ▶ Powerful 100 Watt coolant system
- ▶ Carbide saw band guide
- ▶ Microswitch for automatic limit position cut-off
- ▶ Clearly-arranged control panel for easy use
- ▶ Ball-bearing borne saw band guide
- ▶ Quick clamping vice, adjustable via hand wheel. Workpiece is clamped using a handy quick-clamping lever
- ▶ Easily legible scale for adjusting the angle
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ 2-channel safety chain with quick stop in case of emergency stop
- ▶ Adjustable material stop for batch work



### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant pump

Model	SD 281V
Article no.	3290250
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.5 kW
Coolant pump motor	100 W
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	15 - 100 m/min
Saw band dimensions	2 480 x 27 x 0.9 mm
Cutting angle	0° to 60°
Length	1 400 / 1 700 mm
Width without/with material stop	685 / 985 mm
Height, lower / upper end position	1 300 / 1 700 mm
Net weight	185 kg

Important information on „Operation of machines with frequency converters“ on page 323  
The machines comply with (frequency converter) the DIN EN 55011 standard: class C2



### Inverter






- › SIEMENS Sinamics G110M
- › A technically unique solution exclusively for OPTIMUM

### Coolant pump



- › Powerful
- › 100 W motor

### Cutting areas

			
0°	Ø 225 mm	190 mm	150 x 235 mm
45°	Ø 155 mm	155 mm	155 x 210 mm
60°	Ø 90 mm	90 mm	90 x 120 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357511
5 - 8 tpi	6°	3357512
6 - 10 tpi	0°	3357524
10 - 14 tpi	6°	3357510
10 - 14 tpi	0°	3357525

### Saw band set HSS bi-metal M 42

1 saw band 6- 10 tpi; 0 °	3357504
1 saw band 5- 8 tpi; 0 °	
1 saw band 5- 8 tpi; 6 °	

Saw band information see page 260

## Metal-cutting band saw with pivoting saw bow, for economical and precise work



### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Heavy cast design
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Ball-bearing borne saw band guide
- ▶ Chip brush
- ▶ Automatic saw switch-off after completing the cut
- ▶ Rugged machine machine base
- ▶ Generously dimensioned control unit
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Material stop with scaling
- ▶ Quick clamping vice, adjustable via hand wheel. Workpiece is clamped using a handy quick-clamping lever
- ▶ End stops adjustable to degree accuracy
- ▶ Roller support for supporting long materials
- ▶ Fully equipped; the user can immediately start productive work after commissioning



### Saw band tension



- › Easy and accurate adjustment of the saw band tension by pressure gauge

### Coolant pump






- › Powerful
- › 100 W

### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant pump

Model	S 285DG
Article no.	3300285
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.1 kW
Coolant pump motor	100 W
Lifting the saw bow	manual
Feed	hydraulic via lowering cylinder
Saw band speed	45 / 90 m/min
Saw band dimensions	2 480 x 27 x 0.9 mm
Cutting angle	-45° bis 60°
Length	1 720 mm
Width without/with material stop	870 / 1 270 mm
Height lower / upper end position	1 280 / 1 800 mm
Net weight	295 kg

### Cutting areas

			
0°	Ø 225 mm	180 mm	150 x 245 mm
45°	Ø 150 mm	150 mm	150 x 190 mm
60°	Ø 90 mm	90 mm	90 x 180 mm
-45°	Ø 150 mm	150 mm	120 x 150 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
<b>5 - 8 tpi</b>	0°	3357511
<b>5 - 8 tpi</b>	6°	3357512
<b>6 - 10 tpi</b>	0°	3357524
<b>10 - 14 tpi</b>	0°	3357525
<b>Saw band set HSS bi-metal M 42</b>		3357504
1 saw band 6- 10 tpi; 0 °		
1 saw band 5- 8 tpi; 0 °		
1 saw band 5- 8 tpi; 6 °		

Saw band information see page 260

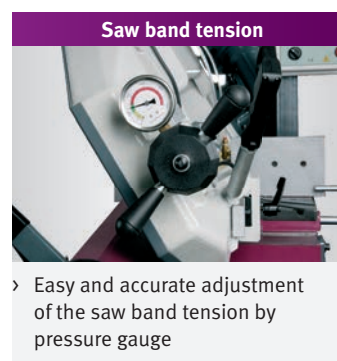


## Band saw for metal working with pivoting saw bow.



### Facts that impress in terms of quality, performance and price

- Low-noise running action
- Heavy cast design
- Excellent cutting precision thanks to vibration-free action
- Ball-bearing borne saw band guide
- Chip brush
- Microswitch for automatic limit position cut-off
- Pushbutton - manual saw band run - on the lever switches the saw band run on and off
- Equipped as a factory standard with bi-metal saw blade
- Material stop with scaling
- Quick clamping vice, adjustable via hand wheel. Workpiece is clamped using a handy quick-clamping lever
- Rugged machine machine base
- End stops adjustable to degree accuracy



### Scope of delivery

- Material stop
- Bi-metal saw band
- Machine base
- Coolant pump

Model	SD 300DG
Article no.	3290290
Technical data	
Electrical connection	400 V / 3 Ph ~50 Hz
Motor power	1.5 kW
Coolant pump motor	100 W
General Information	
Lifting the saw bow	manual
Feed	continuously variable
Saw band speed	35/70 m/min.
Saw band dimensions	2 750 x 27 x 0.9 mm
Cutting angle	45° bis -60°
Dimensions	
Length	1 680 mm
Width without/with material stop	700 / 1 300 mm
Height, lower / upper end position	1 600 / 1 850 mm
Weight	335 kg

### Cutting areas

0°	Ø 255 mm	190 mm	190 x 310 mm
45°	Ø 215 mm	190 mm	190 x 200 mm
-60°	Ø 135 mm	135 mm	135 x 135 mm
-45°	Ø 220 mm	190 mm	135 x 190 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357751
5 - 8 tpi	10°	3357752
6 - 10 tpi	0°	3357753
10 - 14 tpi	0°	3357754

### Saw band set HSS bi-metal M 42

1 saw band 5- 8 tpi; 0 °	3357700
1 saw band 5- 8 tpi; 10 °	
1 saw band 6- 10 tpi; 0 °	

**Saw band information** see page 260

## Band saw for metalworking with **SIEMENS** inverter Vario drive for continuously adjustable saw band speed



### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Heavy cast design
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Ball-bearing borne saw band guide
- ▶ EMC class C2
- ▶ Two-channel safety chain with quick stop for emergency stop
- ▶ Chip brush
- ▶ Pushbutton - manual saw band run - on the lever switches the saw band run on and off
- ▶ Powerful 100 Watt coolant system
- ▶ Microswitch for automatic limit position cut-off
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Material stop with scaling
- ▶ Quick clamping vice, adjustable via hand wheel. Workpiece is clamped using a handy quick-clamping lever
- ▶ Rugged machine machine base
- ▶ End stops adjustable to degree accuracy
- ▶ Saw band speed continuously adjustable from 15 to 90 m/min.



### Saw band tension



- › Easy and accurate adjustment of the saw band tension by pressure gauge

### Roller support



- › For supporting long materials

### Inverter



- › **SIEMENS** Sinamics G110M
- › A technically unique solution exclusively for OPTIMUM

### Cutting areas

0°	Ø 255 mm	190 mm	190 x 310 mm
-45°	Ø 220 mm	190 mm	135 x 190 mm
-60°	Ø 135 mm	135 mm	135 x 135 mm
45°	Ø 215 mm	190 mm	190 x 200 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant pump

Model	SD 300V
Article no.	3290310
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.5 kW
Coolant pump motor	100 W
Lifting the saw bow	manual
Feed	hydraulic via lowering cylinder
Saw band speed	15 - 90 m/min
Saw band dimensions	2 750 x 27 x 0.9 mm
Cutting angle	45° bis -60°
Length	1 680 mm
Width without/with material stop	700 / 1 330 mm
Height bottom/top limit position	1 600 / 1 850 mm
Net weight	335 kg

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357751
5 - 8 tpi	10°	3357752
6 - 10 tpi	0°	3357753
10 - 14 tpi	0°	3357754

### Saw band set HSS bi-metal M 42

1 saw band 6- 10 tpi; 0 °	3357700
1 saw band 5- 8 tpi; 0 °	
1 saw band 5- 8 tpi; 10 °	

**Saw band information** see page 260

## Band saw for metalworking with rotary plate and Siemens inverter. Drive for infinitely adjustable saw band speed



### Facts that impress in terms of quality, performance and price

- ▶ Low-noise running action
- ▶ Heavy cast design
- ▶ Carbide guide
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ EMC class C2
- ▶ Two-channel safety chain with quick stop for emergency stop
- ▶ Saw band speed continuously adjustable via frequency inverter
- ▶ Professional inverter technology
- ▶ High motor output even at low speeds
- ▶ Microswitch for automatic limit position cut-off
- ▶ Precise, re-adjustable and durable saw band guide
- ▶ End stops adjustable to degree accuracy
- ▶ Chip brush
- ▶ Powerful 100 Watt coolant system
- ▶ Quick clamping vice, adjustable via hand wheel. Workpiece is clamped using a handy quick-clamping lever
- ▶ Rugged machine machine base
- ▶ Control unit facilitates machine setup
- ▶ Fully equipped; the user can immediately start productive work after commissioning



### Scope of delivery

- › Material stop
- › Bi-metal saw band
- › Machine base
- › Coolant pump

Model	SD 310V
Article no.	3290340
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.5 kW
Coolant pump motor	100 W
Lifting the saw bow	manual
Feed	hydraulic via lowering cylinder
Saw band speed	15 - 100 m/min
Saw band dimensions	2 750 x 27 x 0.9 mm
Cutting angle	45° bis -60°
Length	1 850 mm
Width without/with material stop	700 / 1 300 mm
Height, lower / upper end position	1 600 / 2 000 mm
Net weight	380 kg

### Saw band tension



- › Easy and correct adjustment of the saw band tension by pressure gauge

### Turntable



- › Any angle between 45° and -60° can be sawed as the cutting gap pivots with the saw arm
- › Easily legible angle scale

### Inverter



- › **SIEMENS** Sinamics G110M
- › A technically unique solution exclusively for OPTIMUM

### Cutting areas

0°	Ø 255 mm	255 mm	200 x 270 mm
-45°	Ø 190 mm	140 mm	140 x 210 mm
-60°	Ø 110 mm	110 mm	110 x 210 mm
45°	Ø 190 mm	160 mm	160 x 160 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### AQUACUT C1

3530030

- › For cooling the cut, 10 litres

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357751
5 - 8 tpi	10°	3357752
6 - 10 tpi	0°	3357753
10 - 14 tpi	0°	3357754

### Saw band set HSS bi-metal M 42

1 saw band 5- 8 tpi; 0 °	3357700
1 saw band 5- 8 tpi; 10 °	
1 saw band 6- 10 tpi; 0 °	

**Saw band information** see page 260



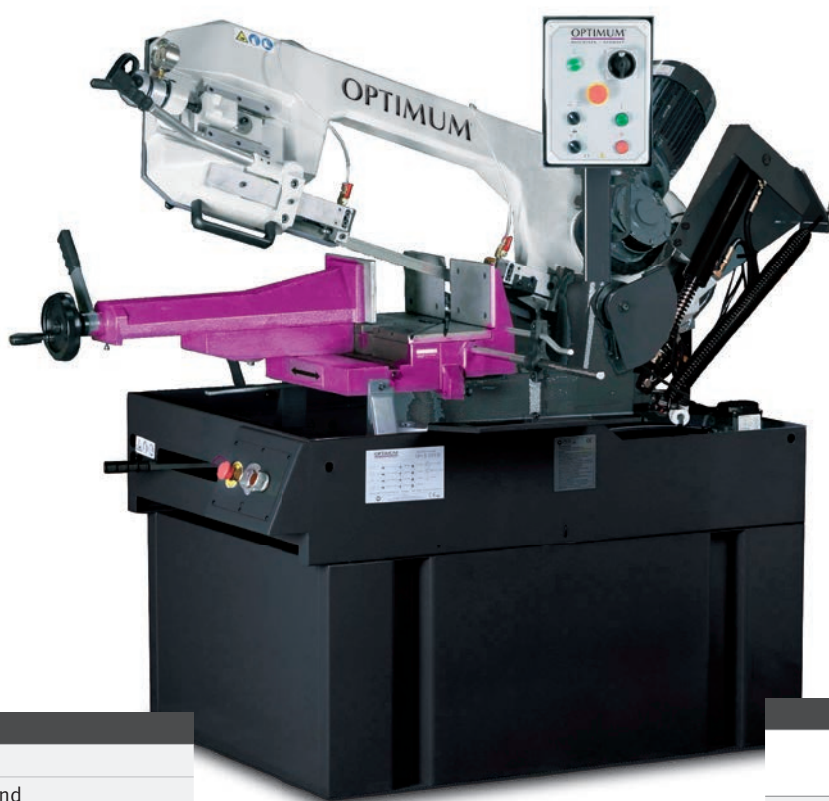
## Metal-cutting band saw with double mitre, heavy-duty design with a cutting capacity of up to 350 mm



### Facts that impress in terms of quality, performance and price

- Heavy-duty industrial design
- Low-noise running action
- Excellent cutting precision thanks to vibration-free action
- Two switchable speeds 36/72 m/min.
- Mitre adjustment to -60° by pivoting the entire saw bow
- Generously dimensioned, rugged quick clamping vice, adjustable via handwheel Workpiece clamping with a practical quick-clamping lever, can be shifted for large materials
- Equipped as a factory standard with bi-metal saw blade
- End stops adjustable to degree accuracy
- Chip brush
- Combinable and individually adjustable carbide and ball bearing guides on the saw band

- Precise, continuously adjustable saw band movement via hydraulic cylinder
- Powerful 100 Watt coolant system
- Easy adjustment of the lowering speed via feed control valve in control panel
- Emergency stop button
- Rugged machine mobile base
- Microswitch for automatic limit position cut-off
- Roller support adjustable for long and heavy workpieces
- Fully equipped; the user can immediately start productive work after commissioning



### Roller support



► For supporting long materials

### Saw band tension



► Easy and accurate adjustment of the saw band tension by pressure gauge

### Scope of delivery

- Material stop
- Bi-metal saw band
- Machine base
- Coolant pump

Model	S 350DG
Article no.	3290350
Electrical connection	400 V/3 Ph ~50 Hz
Total rated value	2.4 kW
Saw motor	2.2 kW
Coolant pump motor	50 W
Lifting the saw bow	manual
Feed	hydraulic via lowering cylinder
Saw band speed	36/72 m/min.
Saw band dimensions	2 925 x 27 x 0.9 mm
Cutting angle	-45° to 60°
Length	1 750 mm
Width without/with material stop	1 075 / 1 415 mm
Height, lower / upper end position	1 420 / 2 000 mm
Net weight	550 kg

### Cutting areas

0°	Ø 270 mm	230 mm	230 x 350 mm
45°	Ø 230 mm	200 mm	210 x 220 mm
60°	Ø 140 mm	140 mm	140 x 220 mm
-45°	Ø 230 mm	170 mm	140 x 200 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
<b>5 - 8 tpi</b>	0°	3357541
<b>4 - 6 tpi</b>	6°	3357540
<b>6 - 10 tpi</b>	0°	3357542
<b>10 - 14 tpi</b>	0°	3357543
<b>Saw band set</b>		3357501
1 saw band 6- 10 tpi; 0 °		
1 saw band 5- 8 tpi; 0 °		
1 saw band 4- 6 tpi; 6 °		

Saw band information see page 260

## Semi-automatic double mitre metal-cutting band saw with **SIEMENS** inverter drive Professional and rugged saw with a cutting capacity of up to 350 mm



### Facts that impress in terms of quality, performance and price

- ▶ Heavy-duty industrial design
- ▶ Low-noise running action
- ▶ Manual or semi-automatic operation
- ▶ Saw band speed continuously adjustable from 0 to 80 m/min.
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Mitre adjustment to 60° by pivoting the entire saw bow
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ End stops adjustable to degree accuracy
- ▶ Chip brush
- ▶ Microswitch for automatic limit position cut-off
- ▶ Roller support adjustable for long and heavy workpieces
- ▶ Powerful 100 Watt coolant system
- ▶ Ball bearing borne saw band guide with carbide shims for optimal cutting results
- ▶ Easy adjustment of the lowering speed via feed control valve in control panel

- ▶ Generously dimensioned, hydraulic quick-action vice, self-closing, adjustable for large cross-sections
- ▶ Machine with full equipment set; the user can immediately start productive work
- ▶ 2-channel safety chain with quick stop in case of emergency stop
- ▶ EMC class C2

### Function

#### Semi-automatic operation

- ▶ Vice closes and motor is activated
- ▶ Lower the saw bow to cut
- ▶ Motor stops and saw bow returns to the starting position

### Inverter

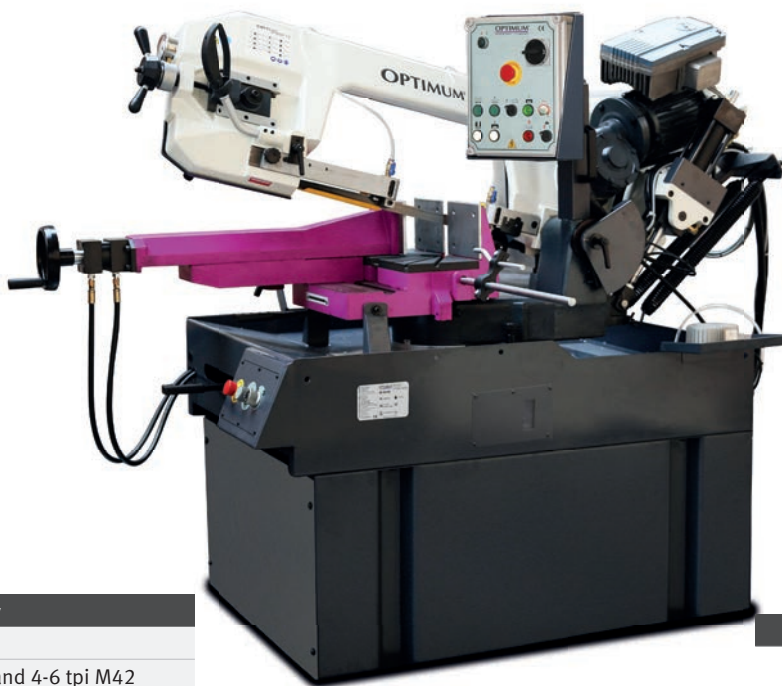


- ▶ **SIEMENS** Sinamics G110M
- ▶ A technically unique solution exclusively for OPTIMUM

### Saw band tension



- ▶ Easy and accurate adjustment of the saw band tension by pressure gauge



### Scope of delivery

- ▶ Material stop
- ▶ Bi-metal saw band 4-6 tpi M42
- ▶ Machine base
- ▶ Coolant pump

Model	SD 351AV
Article no.	3290360
Electrical connection	400 V/3 Ph ~50 Hz
Total rated value	3.8 kW
Saw motor	2.2 kW
Coolant pump motor	50 W
Motor-hydraulic pump	1.4 kW
Lifting the saw bow:	
Manual operation	Hydraulic via pushbutton
Semi-automatic operation	automatic
Saw band speed	15 - 100 m/min continuously variable
Saw band dimensions	2 925 x 27 x 0.9 mm
Cutting angle	-45° bis 60°
Length x width x height min.	1 935 x 1 425 x 1 626 mm
Net weight	600 kg

### Cutting areas

0°	Ø 270 mm	230 mm	230 x 350 mm
45°	Ø 230 mm	200 mm	210 x 220 mm
60°	Ø 140 mm	140 mm	140 x 220 mm
-45°	Ø 230 mm	170 mm	140 x 200 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
<b>5 - 8 tpi</b>	0°	3357541
<b>4 - 6 tpi</b>	6°	3357540
<b>6 - 10 tpi</b>	0°	3357542
<b>10 - 14 tpi</b>	0°	3357543

### Saw band set

1 saw band 6- 10 tpi; 0 °	3357501
1 saw band 5- 8 tpi; 0 °	
1 saw band 4- 6 tpi; 6 °	

**Saw band information** see page 260

## Double mitre metal-working band saw with versatile application possibilities in trade and industry



### Facts that impress in terms of quality, performance and price

- Heavy-duty industrial design
- Low-noise running action
- Excellent cutting precision thanks to vibration-free action
- Mitre adjustment -45° to 60° by pivoting the entire saw bow
- Equipped as a factory standard with bi-metal saw blade
- Microswitch for automatic limit position cut-off
- Powerful 100 Watt coolant system
- Ball bearing borne saw band guide with carbide shims for optimal cutting results
- Easy adjustment of the lowering speed via feed control valve in control panel
- Clearly-arranged control panel



### Roller support



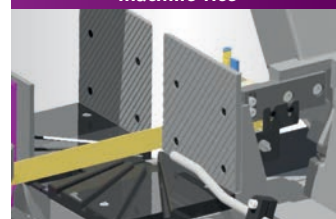
- For supporting long materials

### Saw band tension



- Easy and accurate adjustment of the saw band tension by pressure gauge

### Machine vice



- Generously dimensioned quick clamping vice, laterally displaceable
- cutting gap

Model	SD 500
Article no.	3292380
Technical data	
Electrical connection	400 V/3 Ph ~50 Hz
Total rated value	3.8 kW
Saw motor	2.2 kW
Coolant pump motor	100 W
General Information	
Lifting the saw bow	manual
Feed	hydraulic via lowering cylinder
Saw band speed	35 / 70 m/min
Saw band dimensions	3 770 x 34 x 1.1 mm
Cutting angle	-45° bis 60°
Dimensions and weight	
Length x width x height min.	2 122 x 1 046 x 1 497 mm
Net weight	552 kg

Cutting areas			
0°	Ø 355 mm	280 mm	280 x 490 mm
45°	Ø 355 mm	280 mm	280 x 340 mm
60°	Ø 230 mm	180 mm	180 x 220 mm
-45°	Ø 290 mm	250 mm	250 x 250 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

### Saw bands HSS bi-metal M 42

Teeth per inch	Tooth angle	Article no.
5 - 8 tpi	0°	3357590
6 - 10 tpi	0°	3357591

### Scope of delivery

- Material stop
- Bi-metal saw band 4-6 tpi M42
- Machine base
- Coolant pump



## Semi-automatic double mitre metal-cutting band saw with **SIEMENS** inverter drive Versatile application possibilities in trade and industry



### Facts that impress in terms of quality, performance and price

- ▶ Heavy-duty industrial design
- ▶ Low-noise running action
- ▶ Manual or semi-automatic operation
- ▶ Saw band speed continuously adjustable from 0 to 80 m/min.
- ▶ Excellent cutting precision thanks to vibration-free action
- ▶ Mitre adjustment -45° to 60° by pivoting the entire saw bow
- ▶ Equipped as a factory standard with bi-metal saw blade
- ▶ Microswitch for automatic limit position cut-off
- ▶ Powerful 100 Watt coolant system
- ▶ Ball bearing borne saw band guide with carbide shims for optimal cutting results

- ▶ Easy adjustment of the lowering speed via feed control valve in control panel
- ▶ Generously dimensioned, hydraulic quick clamping vice, self-locking, laterally displaceable
- ▶ Pressure gauge for correct saw band tension
- ▶ Clearly-arranged control panel

### Function

#### Semi-automatic operation

- ▶ Vice closes and motor is activated
- ▶ Lower the saw bow to cut
- ▶ Motor stops and saw bow returns to the starting position



### Scope of delivery

- ▶ Material stop
- ▶ Bi-metal saw band 4-6 tpi M42
- ▶ Machine base
- ▶ Coolant pump

### Roller support



- ▶ For supporting long materials

### Inverter



- ▶ **SIEMENS** Sinamics G110M
- ▶ A technically unique solution exclusively for OPTIMUM

### Saw band tension



- ▶ Easy and correct adjustment of the saw band tension by pressure gauge

Model	SD 500AV
Article no.	3292385
Electrical connection	400 V/3 Ph ~50 Hz
Total rated value	3.8 kW
Saw motor	3 kW
Coolant pump motor	100 W
Motor-hydraulic pump	1.4 kW
<b>Lifting the saw bow:</b>	
Manual operation	Hydraulic via pushbutton
Semi-automatic operation	automatic
Saw band speed	20 - 80 m/min
Saw band dimensions	3 770 x 34 x 1.1 mm
Cutting angle	45° bis -60°
Dimensions L x W x H min.	2 129 x 1 046 x 1 687 mm
Net weight	645 kg

Cutting areas			
0°	Ø 355 mm	300 mm	300 x 490 mm
45°	Ø 350 mm	290 mm	290 x 340 mm
60°	Ø 230 mm	180 mm	180 x 220 mm
-45°	Ø 290 mm	250 mm	250 x 250 mm

The cutting area was determined for aluminium. It can vary when using different materials and may be smaller (not cutting capacity).

<b>AQUACUT C1</b>	3530030
▶ For cooling the cut, 10 litres	

Saw bands HSS bi-metal M 42		
Teeth per inch	Tooth angle	Article no.
<b>5 - 8 tpi</b>	0°	3357590
<b>6 - 10 tpi</b>	0°	3357591




## Manual metal circular saws for steel, iron, light metals, solid material and profiles

### Facts that impress in terms of quality, performance and price

- ▶ Pivot range of  $\pm 45^\circ$  on both sides
- ▶ Easily readable angle scale supports precise work
- ▶ Mitre adjustment within seconds
- ▶ Protected vice spindle
- ▶ Solid machine base with drill holes on both sides for attaching the MSR material stand
- ▶ Long handle supports sawing without applying excessive force, includes integrated pushbutton (on/off)
- ▶ Automatic coolant pump switch-on during sawing
- ▶ Functional protection device, closed design, mobile
- ▶ Fast opening mechanism for optimal safety during cutting
- ▶ Centrally clamping vice, 4x guided with individually adjustable clamping jaws Cut always occurs in optimal position relative to workpiece
- ▶ Solid machine base
- ▶ Protected vice spindle
- ▶ 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 a circular saw blade (saw blade division freely selectable)



Fig.: CS 315

Cutting areas				
				
CS 275	0°	Ø 60 mm	60 mm	60 x 100 mm
CS 315		Ø 85 mm	85 mm	70 x 130 mm
CS 275	45°	Ø 60 mm	60 mm	60 x 70 mm
CS 315		Ø 85 mm	85 mm	70 x 90 mm

Model	CS 275	CS 315
Article no.	3302275	3302300
Power		
Electrical connection	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz
Motor power	1.4 / 2.0 kW	0.75 / 1.5 kW
Coolant pump motor	40 W	
General Information		
Cutting angle	-45° to +45°	
Cutting angle adjustment	via rotating bearing block	
Feed	manual	
Saw blade speed	41 / 82 rpm	19 / 38 rpm
Saw blade diameter	Ø 275 mm; Inside Ø 40 mm	Ø 315 mm; Inside Ø 40 mm
Vice clamping width	110 mm	135 mm
Dimensions and weight		
Length	460 mm	560 mm
Width	830 mm	902 mm
height	1 700 mm	1 765 mm
Net weight	175 kg	235 kg

### Scope of delivery

- › Coolant system
- › Machine base

Material supports	Article no.
MSR 4	3357610
MSR 4H	3357001
MSR 7	3357611
MSR 7H	3357002
MSR 10	3357613
MSR 10H	3357003

### Metal-cutting circular saw blade CS 275

mm/per tooth	Teeth	Blade width	Article no.
4 mm/T	220 Z	2.5 mm	3357444
6 mm/T	140 Z	2.5 mm	3357446
8 mm/T	110 Z	2.5 mm	3357448

### Metal-cutting circular saw blade CS 315

mm/per tooth	Teeth	Blade width	Article no.
4 mm/T	240 Z	2.5 mm	3357454
6 mm/T	150 Z	2.5 mm	3357456
8 mm/T	120 Z	2.5 mm	3357458

# ***SAWING ACCESSORIES***





## Compatibility overview accessories for metal-cutting band saws

Saw accessories		SQ-V10	SQ-V13	SP 11V	SP 13V	S 100G	S 131GH	S 150G Vario	S 181	S 181G	SD 200G	S 210G	S 275N	S 275NV	SD 281V	S 285DG	S 300DG	SD 300V	SD 310V	S 350DG	S 350DG	SD 351AV	SD 500	SD 500AV
Material stand MSR 4 - 10	3357610-13							●				●	●	●	●	●								
Material stand MSR 4H - 10H	3357001-3																●	●	●	●	●	●	○	○
PVC rollers	3357609							●				●	●	●	●	●	●	●	●	●	●	●	○	○
Table extension MSR 1	3357006							●				●	●	●	●	●	●	●	●	●	●	●	○	
Connecting plate	3357005							●				●	●	●	●	●	●	●	●	●	●	●		
Trimming and length measuring system LMS 10-40	3383851-4							●				●	●	●	●	●	●	●	●	●	●	●	○	○
Trimming and length measuring system LMS 1M	3383841							●				●	●	●	●	●	●	●	●	●	●	●	○	○
Trimming and length measuring system LMS 2M	3383842							●				●	●	●	●	●	●	●	●	●	●	●	○	○
AQUACUT C1	3530030							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Levelling platen SE 1	3381012							●				●												
Levelling platen SE 2	3381016												●	●	●	●	●	●	●	●	●	●	●	●

● Recommended

○ Recommended - restrictions apply

## Saw bands HSS bi-metal M 42

for sections and pipes, as well as solid material

Band dimensions:		Tooth angle		Art. no.	Fits:
1 140 x 13 x 0.65 mm	10 - 14 tpi			3357548	Manual metal-cutting band saw SQ-V10
1 335 x 13 x 0.65 mm	6 - 10 tpi	0°		3351542	Metal-cutting band saw SP 11V
1 335 x 13 x 0.65 mm	10 - 14 tpi	0°		3351543	
1 440 x 13 x 0.65 mm	6 - 10 tpi	0°		3351546	Metal-cutting band saw SP 13V
1 440 x 13 x 0.65 mm	10 - 14 tpi	0°		3351547	Metal-cutting band saw SQ-V13
1 470 x 13 x 0.65 mm	6 tpi	10°		3351109	Metal-cutting band saw S100G
1 470 x 13 x 0.65 mm	10 - 14 tpi	0°		3351110	
1 638 x 13 x 0.65 mm	6 tpi	10°		3351511	Metal-cutting band saw S 131GH
1 638 x 13 x 0.65 mm	6 - 10 tpi	0°		3351512	
1 638 x 13 x 0.65 mm	8 - 12 tpi	0°		3351517	
1 638 x 13 x 0.65 mm	10 - 14 tpi	0°		3351518	
1 735 x 12.7 x 0.9 mm	6 tpi	10°		3351521	Metal-cutting band saw S 150G Vario
1 735 x 12.7 x 0.9 mm	6 - 10 tpi	0°		3351522	
1 735 x 12.7 x 0.9 mm	10 - 14 tpi	0°		3351538	
2 080 x 20 x 0.9 mm	5 - 8 tpi	0°		3357503	Metal-cutting band saw S 210G
2 080 x 20 x 0.9 mm	5 - 8 tpi	6°		3357505	
2 080 x 20 x 0.9 mm	6 - 10 tpi	0°		3357514	
2 080 x 20 x 0.9 mm	10 - 14 tpi	0°		3357515	
2 362 x 19 x 0.9 mm	5 - 8 tpi	0°		3357522	Metal-cutting band saw S 181 Metal-cutting band saw S 181G Metal-cutting band saw SD 200G
2 362 x 19 x 0.9 mm	5 - 8 tpi	6°		3357516	
2 362 x 19 x 0.9 mm	6 - 10 tpi	0°		3357521	
2 362 x 19 x 0.9 mm	10 - 14 tpi	0°		3357520	
2 480 x 27 x 0.9 mm	5 - 8 tpi	0°		3357511	Metal-cutting band saw S 275N Metal-cutting band saw S 275NV Metal-cutting band saw SD 281V Metal-cutting band saw S 285DG
2 480 x 27 x 0.9 mm	5 - 8 tpi	6°		3357512	
2 480 x 27 x 0.9 mm	6 - 10 tpi	0°		3357524	
2 480 x 27 x 0.9 mm	6 - 10 tpi	6°		3357510	
2 480 x 27 x 0.9 mm	10 - 14 tpi	0°		3357525	
2 750 x 27 x 0.9 mm	5 - 8 tpi	0°		3357751	Metal-cutting band saw SD 300V Metal-cutting band saw S 300DG Metal-cutting band saw SD 310V
2 750 x 27 x 0.9 mm	5 - 8 tpi	10°		3357752	
2 750 x 27 x 0.9 mm	6 - 10 tpi	0°		3357753	
2 750 x 27 x 0.9 mm	10 - 14 tpi	0°		3357754	
2 925 x 27 x 0.9 mm	5 - 8 tpi	0°		3357541	Metal-cutting band saw S 350DG Metal-cutting band saw SD 351AV
2 925 x 27 x 0.9 mm	4 - 6 tpi	6°		3357540	
2 925 x 27 x 0.9 mm	6 - 10 tpi	0°		3357542	
2 925 x 27 x 0.9 mm	10 - 14 tpi	0°		3357543	
3 770 x 34 x 1.1 mm	5 - 8 tpi	0°		3357590	Metal-cutting band saw SD 500
3 770 x 34 x 1.1 mm	6 - 10 tpi	0°		3357591	Metal-cutting band saw SD 500AV



## Workpiece

The workpiece to be machined must be firmly clamped so that it cannot vibrate or rotate. Do not use damaged, bent or severely deformed workpieces. The closer the band saw guides are fixed relative to the workpiece, the more precise the cut becomes.



## Teeth per inch

The tooth pitch refers to the number of teeth per inch (25.4 mm).

As a general rule:

The shorter the cutting length (e.g. profiles), the finer the toothing selected. The greater the material attack (e.g., solid material), the coarser the tpi value used.

Too large a tpi value can cause the cut to run out as chips clog the gullet thus forcing the saw band out of its cutting line. Too small a tpi value can cause teeth to break out as the cutting pressure on the individual tooth becomes too great. At least 3 teeth need to be engaged to achieve economical results.

## Running in saw bands

- ▶ Correct running in guarantees a long service life.
- ▶ Sharp cutting edges with extremely small edge radii are the precondition for high cutting capacity of the saw bands.
- ▶ To achieve an optimal service life, we recommend running in the saw band appropriately.
- ▶ Depending on the material and the dimension of the material you are cutting, determine the correct cutting speed (m/min.) and feed rate (mm/min.).
- ▶ Important is: The new saw band should be deployed at approx. 50 % of the determined feed rate only. The idea is to avoid the extremely sharp cutting edges on the teeth being damaged by micro fracturing in case of large chip thicknesses.
- ▶ New saw bands can tend to vibrate and cause vibration noise initially. If this happens, reduce the cutting speed slightly. In case of small workpiece dimensions, the run-in should be over approx. 300 - 500 cm<sup>2</sup> of the material you are cutting.
- ▶ If you are processing large workpiece dimensions, we recommend running in for a period of approx. 15 min. After running in, gradually increase the feed rate to the target value determined previously.

## Optimal chip formation

- › Chips are the best indicator of a correctly adjusted feed and the correct saw band speed. Take a look at the chips you generate and set the feed correctly.

## Thin chips that look like powder

- › Increase the feed rate or reduce the saw band speed.



## Burnt, heavy chips

- › Reduce the feed rate and/or the saw band speed



## Crinkly, silver and warm chips

- › Optimal feed rate and sawing speed



Materials	Cutting speed (M42)
Construction steel/Machining steel	80 - 90 m/min
Case-hardened steels/Heat-treated steels	45 - 75 m/min
Unalloyed tool steels/Rolled steels	40 - 60 m/min
Alloyed tool steels/high-speed steels	30 - 40 m/min
Stainless steels	20 - 35 m/min
Heat resistant steels/Highly heat-resistant alloys	15 - 25 m/min

## Teeth per inch when using HSS bi-metal bands

Standard tpi		Combined tpi		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	Teeth per inch (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

Teeth per inch 4 - 5 tpi not available from Optimum

## Height-adjustable MSR material stand as a manual aid for supporting and moving workpieces on metal-cutting saws. H version variably adjustable up to 1 050 mm

### Facts that impress in terms of quality, performance and price

- ▶ Trouble-free and material transport when feeding and unloading workpieces
- ▶ Universally deployable for metal-cutting band saws, circular saws, etc.
- ▶ Roller support, continuously adjustable
- ▶ Safe workpiece support due to solid steel rollers with high load-bearing capacity
- ▶ Infinitely extensible
- ▶ Extension options for LMS length measuring systems
- ▶ Stable frame design with strong custom profile
- ▶ Steel bearing rollers, ball-bearing borne on both sides



Fig.: MSR 4

Fig.: MSR 10



Fig.: Example of use:  
OPTIsaw S 275N, material stand MSR 4, measuring system LMS 1,  
digit. position display DRO 1; table extension MSR 1, connecting  
plates

Model	MSR 4	MSR 7	MSR 10
Article no.	3357610	3357611	3357613
Model	MSR 4H	MSR 7H	MSR 10H
Article no.	3357001	3357002	3357003

Idler roller diameter	Ø 60 mm	Ø 60 mm	Ø 60 mm
Idler roller width	360 mm	360 mm	360 mm
Static table load	500 kg	700 kg	700 kg
<b>Dimensions and weight</b>			
Length x width	1 000 x 440 mm	2 000 x 440 mm	3 000 x 440 mm
Height	650 - 950 mm	650 - 950 mm	650 - 950 mm
Height H version	660 - 1 050 mm	660 - 1 050 mm	660 - 1 050 mm
Net weight	29 kg	44,7 kg	65,8 kg
Net weight H version	30,2 kg	46,1 kg	68 kg

### PVC rollers

Article no. 3357609



- › Additionally attachable
- › Made of non-slip PVC
- › To avoid scratches
- › Simply slot the rollers into the holder provided
- › With practical wall-mount

### Table extension MSR 1

Article no. 3357006



- › for MSR roller conveyors
- › Removable rollers
- › Additionally attachable
- › Can be fitted in both directions

### Connecting plate

Article no. 3357005



- › Additionally attachable
- › With add-on parts right and left
- › Slots

### Scope of delivery

- › Fastening material for extension



## Digital trimming and length measuring systems for attaching to MSR material stand.

For perfect length measurement and precise positioning

### Facts that impress in terms of quality, performance and price

- ▶ Magnetic measuring system with magnetic strip
- ▶ For recurring measuring tasks with high precision 0.05 mm
- ▶ Automatic display switch-on
- ▶ Material stop for small pieces with extension
- ▶ Positioning slide right- and left-hand, folds up
- ▶ In case of longer breaks, the measuring system switches off and keeps the last stored dimension
- ▶ Measurement accuracy:  $\pm(0.025 + 0.02 \times \text{measuring length [m]})$



Fig.: MSR 4 material stand with LMS 10 length measuring system

#### Linear guide



- › Lubrication-free
- › Very quiet action
- › Wear resistant
- › Corrosion-resistant
- › Low friction values
- › High static load bearing capacity

#### Slide



- › Easily movable
- › Precisely guided
- › Replaceable, long-life dry plain bearings
- › Easy self-assembly

#### Digital display



- › LCD
- Switching functions:
  - › Metric / inch / angle
  - › absolute position or incremental position
  - › Zeroing
  - › ABS mode, fast calibration

Model	LMS 10	LMS 20	LMS 30	LMS 40
Article no.	3383851	3383852	3383853	3383854
<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

Other lengths on request

Manual trimming and length measuring systems LMS 1M/LMS 2M for attaching to MSR material stand. For perfect length measurement and precise positioning

Facts that impress in terms of quality, performance and price

- ▶ Modular system
- ▶ For perfect length measurement and precise positioning
- ▶ For recurring measuring tasks with high precision



Trimming and length measuring systems	Art. no.
› Sliding carriage with stop	
<b>LMS 1M</b> guide rail 1 300 mm	3383841
› Includes 1 metre rule	
<b>LMS 2M</b> guide rail 2 300 mm	3383842
› Includes 2 metre rule	

Magnetic strip	Art. no.
<b>Length 1 600 mm</b> for LMS 1M	3383876
<b>Length 2 600 mm</b> for LMS 2M	3383877
<b>Yard goods</b> (price per metre)	3383878

Digital display DRO1	Art. no.
› With extension kit for LMS 1M / 2M	3383845
▶ Radius/diameter mode	measurement
▶ Parameter memory	▶ Absolute/incremental
▶ Inch/metric adaptation	▶ 8-digit LCD display
▶ Multifunctional LCD display	▶ Coordinate conversion
▶ Adjustable angular	

Extension rail	Art. no.
› only in combination with DRO1	
<b>Length 1 300 mm</b> for LMS 1M/2M	3383843
<b>Length 2 600 mm</b> for LMS 1M/2M	3383844



AQUACUT C1	Art. no.
› 10 litre cannister	3530030
› For mixing emulsions	
› Drilling and cooling emulsion	
› High-pressure resistant and containing mineral oil, for long tool life and clean surfaces	
› Emulsifiable with water, microbe-resistant and kind to the skin	



Levelling platen	Art. no.
› The machines and equipment can be installed without anchors and precisely levelled using the height adjustment system.	
› non-slip rubberised	
<b>SE 1</b>	3381012
<b>SE 2</b>	3381016



# ***SURFACE GRINDERS***





## Manual surface grinder by OPTIMUM for finishing metal surfaces. Precision and high grinding quality with digital position display DPA 31

### Facts that impress in terms of quality, performance and price

- ▶ Permanent magnet for holding the workpiece
- ▶ Premium spindle with precision taper roller bearings
- ▶ Hardened and ground bed guides
- ▶ Turcite-B coated counter guides for excellent wear-resistance and low friction
- ▶ Integrated grinding wheel dressing device
- ▶ Machine base made of stable, torsion resistant cast material for maximum rigidity and stability
- ▶ Backlash-free V-flat guide on the Z axis and flat guides on the X and Y axes
- ▶ Trapezoidal threaded spindle on the Y axis
- ▶ Manual centralised lubrication system
- ▶ All flat guides are finely honed and thus guarantee a high precision of all manual movements
- ▶ LED lamp
- ▶ Safety electrics in 24 V DC
- ▶ Grinding accuracy: 0.005 mm
- ▶ Corundum grinding wheel 46 grain for all popular metals included in standard scope of delivery
- ▶ Two-channel safety electrics
- ▶ EMC filter class
- ▶ Substantial energy savings thanks to IE3 motor
- ▶ Coolant unit with external coolant tank

### Digital position display DPA 31- 2

#### Display:

- › User-friendly membrane keyboard, splash water protected, dazzle free and easy to clean

#### New measuring strips:

- › The electronic measuring components of the linear encoders are protected and sealed in the housing
- › Provides accurate and reliable measurement results even if the measuring system is operated in oil or coolant
- › Tolerant towards vibration and magnetic interference

### Permanent magnet



- › Fast and safe workpiece clamping



## Technical data and dimension

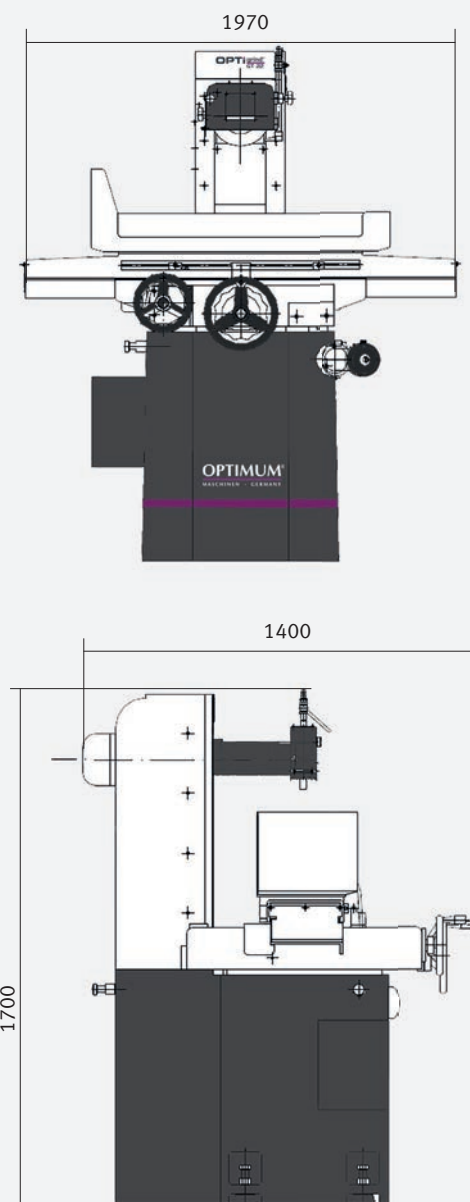
Model	GT 22
Article no.	3111020
<b>Technical data</b>	
Electrical connection	400 V/3 Ph ~50 Hz
Grinding wheel drive motor	1.5 kW
Coolant pump motor	125 W
<b>Surface grinding table</b>	
Surface grinding table length x width	200 x 450 mm
Magnetic clamping plate	200 x 500 mm
T-slot size/number of slots	14 mm / 1
Load bearing capacity of grinding table including permanent magnet	128 kg
Workpiece size length x width x height	450 x 200 x 350 mm
Spacing spindle centre - grinding table	max. 450 mm
<b>Grinding wheel</b>	
Size of grinding wheel	Ø 200 x 20 mm, shaft Ø 31.75 mm
Clearance grinding wheel - grinding table	405 mm
Circumferential speed of grinding wheel	33 m/s
Grinding spindle true running accuracy	0.005 mm
<b>Manual travel</b>	
X axis	500 mm
Z axis	240 mm
<b>Rotational speeds</b>	
Constant spindle speed	2 850 rpm
<b>Dimensions and weight</b>	
Length x width x height	1 970 x 1 300 x 1 700 mm
Net weight	900 kg

### Scope of delivery

- Corundum grinding wheel 46 grain
- Digital position display
- Balancing stand
- Degaussing unit
- Grinding wheel and clamping chuck
- Dresser for grinding wheel (with diamond tip)
- Wheel balancing mandrel
- Wheel dresser
- Base plate for dresser
- Levelling feet
- Operating tool in toolbox

See for accessories page 274

### Dimensions



## Solid surface grinding machine by OPTIMUM with compact footprint. Impresses with easy handling, precision and great grinding quality.

### Facts that impress in terms of quality, performance and price

- ▶ Electro-magnetic clamping plate for holding the workpiece with automatic degaussing function
- ▶ Premium spindle with precision taper roller bearings
- ▶ Hardened and ground bed guides
- ▶ Turcite-B coated counter guides for excellent wear-resistance and low friction
- ▶ Grinding spindle with premium precision bearings
- ▶ Integrated grinding wheel dressing device
- ▶ Digital position display
- ▶ Machine base made of stable, torsion resistant cast material for maximum rigidity and stability
- ▶ Backlash-free V-flat guide on the Z axis and flat guides on the X and Y axes
- ▶ Trapezoidal threaded spindle on the Y axis
- ▶ Precision ball screws
- ▶ Guideways and transport spindle with centralised lubrication system
- ▶ All flat guides are finely honed and thus guarantee highest precision of all manual movements
- ▶ Safety electrics in 24 V DC
- ▶ Generously dimensioned, decoupled hand wheels on all three axes
- ▶ Hydraulic lines according to DIN EN 853
- ▶ Grinding accuracy: 0.005 mm
- ▶ Corundum grinding wheel 46 grain for all popular metals included in standard scope of delivery
- ▶ Pivoting control panel substantially facilitates work
- ▶ Separate hydraulics unit with heat exchanger avoids vibrations and thermal load
- ▶ Two-channel safety electronics
- ▶ Grinding table splash guard
- ▶ EMC filter class
- ▶ Coolant unit with external coolant tank, capacity 100 litres
- ▶ Substantial energy savings thanks to IE3 motor



### Digital position display DPA 31-2

NEW



#### Display:

- › User-friendly membrane keyboard, splash water protected, dazzle free and easy to clean

#### New measuring strips:

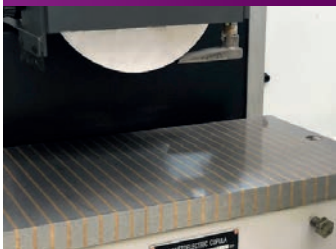
- › The electronic measuring components of the linear encoders are protected and sealed in the housing
- › Provides accurate and reliable measurement results even if the measuring system is operated in oil or coolant
- › Tolerant towards vibration and magnetic interference

### Central lubrication



- › Prevents wear, repair costs and unnecessary downtime to a major extent

### Electromagnetic clamping plate



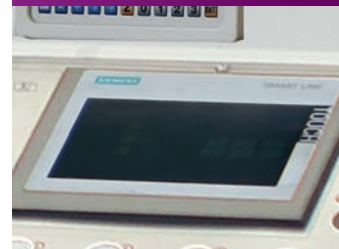
- › Fast and safe workpiece clamping

### Hydraulic power unit



- › External hydraulic power unit with heat exchanger for constant oil temperature

### Touch Screen



- › for entering work data and displaying information
- › Hand wheel for moving the Y axis
- › Swivelling control panel

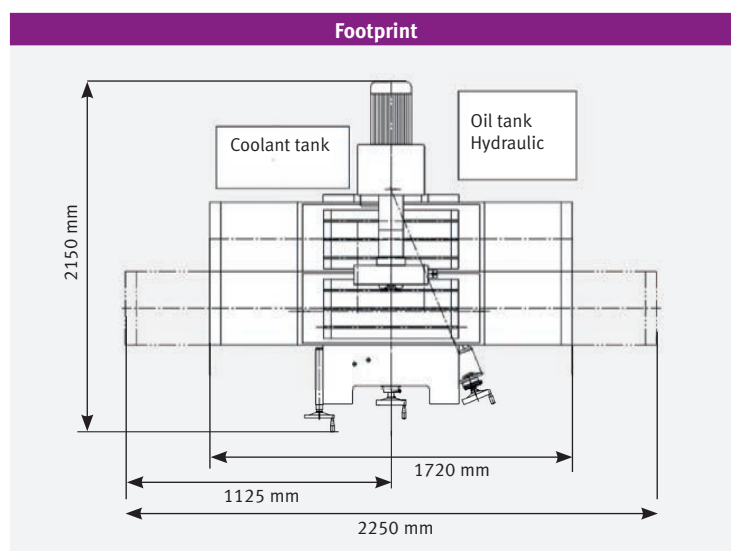




## Technical data and dimension

Model	GT 25
Article no.	3111025
<b>Technical data</b>	
Electrical connection	400 V/3 Ph ~50 Hz
Total connected load	3.7 kW
Grinding wheel drive motor	2.2 kW
Hydraulic motor	0.75 kW
Coolant pump motor	70 W
<b>Surface grinding table</b>	
Surface grinding table length x width	254 x 508 mm
Electro-magnetic clamping plate	250 x 500 mm
T-slot size/number of slots	14 mm / 1
Grinding table load bearing capacity including electromagnetic clamping plate	180 kg
Workpiece size length x width x height	508 x 254 x 350 mm
Spacing spindle centre - grinding table	max. 450 mm
Oscillating speeds of table	5 - 25 m/min
<b>Grinding wheel</b>	
Size of grinding wheel	Ø 200 x 20 mm, shaft Ø 31.75 mm
Clearance grinding wheel - grinding table	405 mm
Circumferential speed of grinding wheel	33 m/s
Grinding spindle true running accuracy	0.005 mm
<b>Oscillating travel/travel travel</b>	
Oscillating travel X-axis	560 mm
Traverse path Z axis	275 mm
<b>Z axis</b>	
Continuous transverse feed	0.1 - 8 mm
Rapid traverse on Y axis	990 mm/min
Scale division on handwheel	0.02 mm
<b>Y axis</b>	
Step widths of rapid traverse feed	0.005   0.01   0.02   0.03   0.04   0.05
Rapid traverse adjustment on the Z axis	480 mm/min
Scale division on handwheel	0.005 mm
<b>Rotational speeds</b>	
Constant spindle speed	2 850 rpm
<b>Dimensions and weight</b>	
Length x width x height	2 250 x 2 150 x 1 675 mm
Net weight	1 900 kg

Scope of delivery
• Corundum grinding wheel 46 grain
• Digital position display
• Balancing stand
• Degaussing unit
• Grinding wheel and clamping chuck
• Dresser for grinding wheel (with diamond tip)
• Wheel balancing mandrel
• Wheel dresser
• Base plate for dresser
• Levelling feet
• Operating tool in toolbox
<b>See for accessories</b> page 274



## Solid surface grinding machine by OPTIMUM equipped with digitally controlled automatic vertical feed and digital position display DPA 31

### Facts that impress in terms of quality, performance and price

- ▶ Electro-magnetic clamping plate for holding the workpiece with automatic degaussing function
- ▶ Premium spindle with precision taper roller bearings
- ▶ Hardened and ground bed guides
- ▶ Turcite-B coated counter guides for excellent wear-resistance and low friction
- ▶ Grinding spindle with premium precision bearings
- ▶ The grinding wheel can be sharpened with a dressing unit directly on the machine
- ▶ Digital position display
- ▶ Machine base made of stable, torsion resistant cast material for maximum rigidity and stability
- ▶ Guideways for longitudinal, transverse and vertical movements are play-free and designed to self-centre as V and flat rails
- ▶ Precision ball screws
- ▶ Guideways and transport spindle with centralised lubrication system
- ▶ All flat guides are finely honed and thus guarantee highest precision of all manual movements
- ▶ Safety electrics in 24 V DC
- ▶ Generously dimensioned, decoupled hand wheels on all three axes
- ▶ Time-controlled centralised lubrication system
- ▶ Hydraulic lines according to DIN EN 853
- ▶ Grinding accuracy: 0.005 mm
- ▶ Corundum grinding wheel 46 grain for all popular metals included in standard scope of delivery
- ▶ Pivoting control panel substantially facilitates work
- ▶ Two-channel safety electronics
- ▶ Grinding table with splash protection enclosure
- ▶ Coolant unit with external coolant tank, capacity 100 litres
- ▶ Digitally controlled automatic vertical feed with servo motor
- ▶ Motorised vertical height adjustment via spindle
- ▶ Hydraulic and continuously adjustable longitudinal feed
- ▶ EMC filter class
- ▶ Substantial energy savings thanks to IE3 motor



### Digital position display DPA 31-2

NEW



#### Display:

- › User-friendly membrane keyboard, splash water protected, dazzle free and easy to clean

#### New measuring strips:

- › The electronic measuring components of the linear encoders are protected and sealed in the housing
- › Provides accurate and reliable measurement results even if the measuring system is operated in oil or coolant
- › Tolerant towards vibration and magnetic interference

### Dressing unit



- › Manual parallel dressing unit

### Hydraulic power unit



- › External hydraulic power unit with heat exchanger for constant oil temperature

### Electromagnetic clamping plate



- › Fast and safe workpiece clamping

### Touch Screen



- › For entering work data and displaying information
- › Hand wheel for moving the Y axis
- › Swivelling control panel



## Technical data and dimension

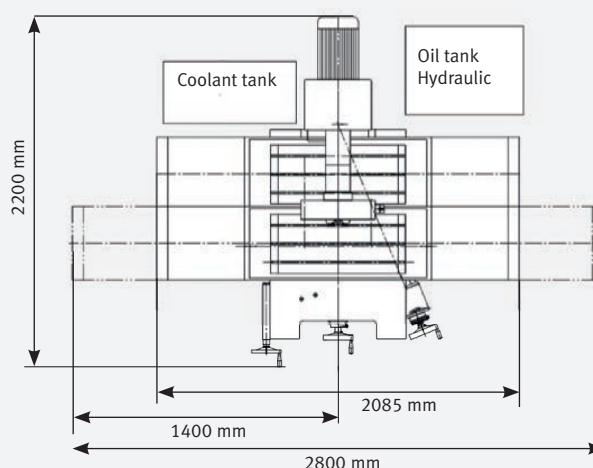
Model	GT 30
Article no.	3111030
<b>Technical data</b>	
Electrical connection	400 V/3 Ph ~50 Hz
Total connected load	7.5 kW
Grinding wheel drive motor	4 kW
Hydraulic motor	2.2 kW
Coolant pump motor	90 W
<b>Surface grinding table</b>	
Surface grinding table length x width	305 x 635 mm
Electro-magnetic clamping plate	300 x 600 mm
T-slot size/number of slots	14 mm / 1
Grinding table load bearing capacity including electromagnetic clamping plate	270 kg
Workpiece size length x width x height	635 x 305 x 405 mm
Spacing spindle centre - grinding table	max. 580 mm
Oscillating speeds of table	5 - 25 m/min
<b>Grinding wheel</b>	
Size of grinding wheel	350 x 40 x shaft Ø 127 mm
Clearance grinding wheel - grinding table	405 mm
Circumferential speed of grinding wheel	27 m/s
Grinding spindle true running accuracy	0.005 mm
<b>Oscillating travel/travel travel</b>	
Oscillating travel X-axis	765 mm
Traverse path Z axis	340 mm
<b>Z axis</b>	
Continuous transverse feed	0.1 - 8 mm
Rapid traverse on Y axis	990 mm/min
Scale division on handwheel	0.02 mm
<b>Y axis</b>	
Step widths of rapid traverse feed	0.005   0.01   0.02   0.03   0.04   0.05
Rapid traverse adjustment on the Z axis	480 mm/min
Scale division on handwheel	0.005 mm
<b>Rotational speeds</b>	
Constant spindle speed	1 450 rpm
<b>Dimensions and weight</b>	
Length x width x height	2 800 x 2 205 x 1 900 mm
Net weight	3 000 kg

### Scope of delivery

- Corundum grinding wheel 46 grain
- Digital position display
- Balancing stand
- Degaussing unit
- Grinding wheel and clamping chuck
- Dresser for grinding wheel (with diamond tip)
- Wheel balancing mandrel
- Wheel dresser
- Base plate for dresser
- Levelling feet
- Operating tool in toolbox

See for accessories page 274

### Footprint





## Solid surface grinding machine by OPTIMUM equipped with digitally controlled automatic vertical feed and digital position display DPA 31

### Facts that impress in terms of quality, performance and price

- ▶ Electro-magnetic clamping plate for holding the workpiece with automatic degaussing function
- ▶ Premium spindle with precision taper roller bearings
- ▶ Hardened and ground bed guides
- ▶ Turcite-B coated counter guides for excellent wear-resistance and low friction
- ▶ Grinding spindle with premium precision bearings
- ▶ The grinding wheel can be sharpened with a dressing unit directly on the machine
- ▶ Digital position display
- ▶ Machine base made of stable, torsion resistant cast material for maximum rigidity and stability
- ▶ Guideways for longitudinal, transverse and vertical movements are play-free and designed to self-centre as V and flat rails
- ▶ Precision ball screws
- ▶ Guideways and transport spindle with centralised lubrication system
- ▶ All flat guides are finely honed and thus guarantee highest precision of all manual movements
- ▶ Safety electrics in 24 V DC
- ▶ Generously dimensioned, decoupled hand wheels on all three axes
- ▶ Time-controlled centralised lubrication system
- ▶ Hydraulic lines according to DIN EN 853
- ▶ Grinding accuracy: 0.005 mm
- ▶ Corundum grinding wheel 46 grain for all popular metals included in standard scope of delivery
- ▶ Pivoting control panel substantially facilitates work
- ▶ Two-channel safety electronics
- ▶ Grinding table with splash protection enclosure
- ▶ Coolant unit with external coolant tank, capacity 100 litres
- ▶ Digitally controlled, automatic vertical feed with servo motor
- ▶ Motorised vertical height adjustment via spindle
- ▶ Hydraulic and continuously adjustable longitudinal feed
- ▶ EMC filter class
- ▶ Substantial energy savings thanks to IE3 motor



### Digital position display DPA 31-2

NEW



#### Display:

- › User-friendly membrane keyboard, splash water protected, dazzle free and easy to clean

#### New measuring strips:

- The electronic measuring components of the linear encoders are protected and sealed in the housing
- › Provides accurate and reliable measurement results even if the measuring system is operated in oil or coolant
- › Tolerant towards vibration and magnetic interference

### Dressing unit



- › Manual parallel dressing unit

### Hydraulic power unit



- › Prevents wear, repair costs and unnecessary downtime to a major extent

### Electromagnetic clamping plate



- › Fast and safe workpiece clamping

### Touch Screen



- › For entering work data and displaying information
- › Hand wheel for moving the Y axis
- › Swivelling control panel

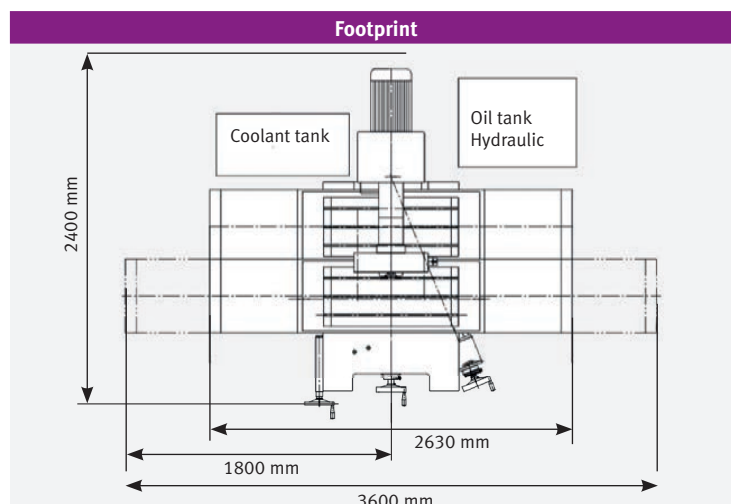


## Technical data and dimension

Model	GT 40
Article no.	3111040
<b>Technical data</b>	
Electrical connection	400 V/3 Ph ~50 Hz
Total connected load	7.5 kW
Grinding wheel drive motor	4 kW
Hydraulic motor	2.2 kW
Coolant pump motor	90 W
<b>Surface grinding table</b>	
Surface grinding table length x width	406 x 813 mm
Electro-magnetic clamping plate	400 x 800 mm
T-slot size/number of slots	14 mm / 3
Grinding table load bearing capacity including electromagnetic clamping plate	500 kg
Workpiece size length x width x height	813 x 406 x 405 mm
Spacing spindle centre - grinding table	max. 580 mm
Oscillating speeds of table	5 - 25 m/min
<b>Grinding wheel</b>	
Size of grinding wheel	350 x 40 x shaft Ø 127 mm
Clearance grinding wheel - grinding table	405 mm
Circumferential speed of grinding wheel	27 m/s
Grinding spindle true running accuracy	0.005 mm
<b>Oscillating travel/travel travel</b>	
Oscillating travel X-axis	830 mm
Traverse path Z axis	420 mm
<b>Z axis</b>	
Continuous transverse feed	0.1 - 8 mm
Rapid traverse on Y axis	990 mm/min
Scale division on handwheel	0.02 mm
<b>Y axis</b>	
Step sizes of the rapid traverse infeed	0.005   0.01   0.02   0.03   0.04   0.05
Rapid traverse adjustment on the Z axis	480 mm/min
Scale division on handwheel	0.005 mm
<b>Rotational speeds</b>	
Constant spindle speed	1 450 rpm
<b>Dimensions and weight</b>	
Length x width x height	3 600 x 2 400 x 1 900 mm
Net weight	3 600 kg

Scope of delivery
• Digital position display
• Coolant system
• External hydraulic unit with oil cooler
• Balancing station and balancing mandrel
• Corundum grinding wheel 46 grain
• Diamond dressing tip
• Table enclosure as splash guard when used
• Levelling feet, set screws and lock nuts
• Operating tool
• LED lamp
• Electromagnetic clamping plate
• Degaussing function

See for accessories page 274



## Magnetic separator with paper belt filter MPS 1

- Magnetic separator filters out metal contaminants
- Paper belt filter for versatile and safe filtering of fluids such as grinding fluids, cooling lubricants, etc. during operation.

Magnetic separator with paper belt filter MPS 1	
Article no.	3112000
Filtration (water-based emulsion)	30 ~ 40 µm
Coolant pump flow rate	25 litres per minute
Tank volume	120 litres
Overall dimensions L x W x H	1 290 x 460 x 580 mm
Diameter of (non-woven) filter cloth	Ø 200 mm
Width of filter cloth	400 mm
Coolant pump drive power	120 W
Filter cloth feed motor drive power	90 W
Weight	110 kg

Spare filter paper	
Article no.	3112001
Width of paper filter	400 mm
Length of paper filter	100 metres

Grinding wheel adapter	Article no.
For fast grinding wheel change	
GT 22 / GT 25	3112010
GT 30 / GT 40	3112011



Diamond dresser	3112025
for the grinding wheel	
3/8 x 2" x 1.00 carat	



Corundum grinding wheel	Article no.
Dimensions: 200 x 20 x 31.75 mm	
46 grain	3112040
60 grain	3112042
80 grain	3112044



Corundum grinding wheel	Article no.
Dimensions: 350 x 40 x 127 mm	
46 grain	3112050
60 grain	3112052
80 grain	3112054

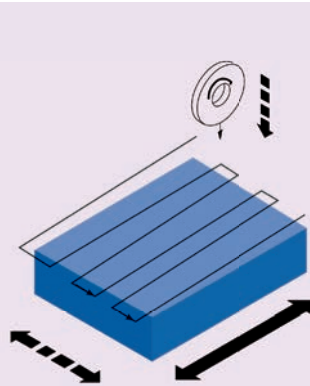


The GT 25, GT 30 and GT 40 series models are equipped with automatic feed control. Various grinding cycles are available as shown in the diagram.

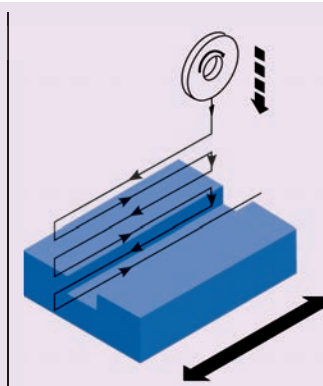
Workpieces can be individually processed by entering the number of feeds with a minimum possible feed of 0.001 mm and by selecting the type of grinding.

The maximum possible feed per sequence step during automatic feed control is 0.01 mm.

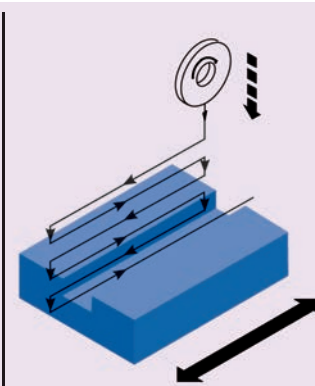
A further possibility is to enter the number of grinding passes without grinding wheel feed in order to enable "firing" on the workpiece



Surface grinding with feed at start point



Slot grinding with feed at start point



Slot grinding with feed at start and end point



# ***DRILLING/GRINDING MACHINES***



## The handy drill bit grinding device by quantum.

For easy sharpening of twist drill bits from Ø 3 mm to Ø 13 mm

### Facts that impress in terms of quality, performance and price

- ▶ Easy to operate for inexpensive grinding of twist drill bits with two cutting edges
- ▶ Drill bit grinding without prior experience - clean, fast and precise
- ▶ Easy to transport
- ▶ Easy replacement of the grinding wheel
- ▶ Positively-driven sharpening action, thus easy to operate
- ▶ Automatic grinding of the tip geometry thanks to cam
- ▶ Robust plastic housing with anti-slip base
- ▶ Diamond grinding stone with long service life for the perfect grind

# DRILL BIT GRINDERS



Fig.: GQ-D13

### Three steps to a ground drill bit



#### Adjust the drill bit

- › Twist drills are aligned in projection length and at the correct angle



#### Sharpening the drill bit

- › Through slight rotation from stop to stop



#### Tipping the drill bit

- › Again through slight rotation from stop to stop

Model	GQ-D13
Article no.	3140020
<b>Power</b>	
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	80 W
<b>Technical data</b>	
Continuously variable speed	4 200 rpm
Grinding wheel	Ø 78 mm
Grinding capacity of drill bits	Ø 3 mm to Ø 13 mm
<b>Dimensions and weight</b>	
Length x width x height	220 x 200 x 160 mm
Net weight	2.5 kg

### Scope of delivery

- › Diamond grinding wheel
- › Collet chuck holder

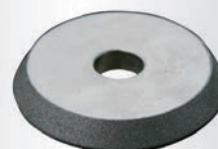
### Accessories

#### Replacement grinding wheel

### Article no.

3140021

Crystalline cubic boron nitride  
Grain size: 170 - 200  
Area of application: High-speed steel (HSS)



## The handy drill grinders. Ideal for grinding twist drills

### Facts that impress in terms of quality, performance and price

- ▶ Easy to operate for inexpensive grinding of twist drill bits with two cutting edges
- ▶ Drill bit grinding without prior experience - clean, fast and precise
- ▶ Easy to transport
- ▶ Grinding stone with long service life for the perfect grind on HSS (high-speed steel) drill bits
- ▶ Diamond grinding stone available as option for HM drill bits from accessories programme.
- ▶ Fully equipped with ER collets in the machine interior



Drill bit ...



... with blunt cutting edges

**Comprehensive scope of delivery**  
with complete  
collet assortment



### GH 10T

- ▶ 11 units collets ER 20 sizes  
Ø 2 - Ø 13 mm



### GH 15T

- ▶ 6 units collets ER 20 sizes  
Ø 3 - Ø 8 mm
- ▶ 22 units collets ER 40 sizes  
Ø 8 - Ø 30 mm



Fig.: GH10T



Fig.: GH15T

# DRILL BIT GRINDERS

Model	GH 10T	GH 15T	Accessories	Article no.
Article no.	3100110	3100115	<b>for GH10T</b>	
<b>Power</b>			<b>Replacement grinding wheel</b> <b>Crystalline cubic boron nitride</b> Grain size: 170 - 200 Area of application: High-speed steel (HSS)	3100126
Electrical connection	230 V/1 Ph ~50 Hz	230 V/1 Ph ~50 Hz	<b>Replacement grinding wheel</b> <b>Diamond</b> Grain size: 150 Area of application: Carbide	3100131
Motor power	180 W	450 W	<b>for GH15T</b>	
<b>Technical data</b>			<b>Replacement grinding wheel</b> <b>Crystalline cubic boron nitride</b> Grain size: 170 - 200 Area of application: High-speed steel (HSS)	3100127
Grinding wheel	Steel disc, coated with cubic crystalline boron nitride		<b>Replacement grinding wheel</b> <b>Diamond</b> Grain size: 150 Area of application: Carbide	3100132
Collet chuck holder	ER20 DIN 6499	ER20 and ER 40 DIN 6499		
Continuously variable speed	5 300 rpm	5 000 rpm		
Tip sharpening angle	90° - 135°	90° - 145°		
Drill bit grinding range	Ø 3 mm to Ø 13 mm	Ø 3 mm to Ø 30 mm		
<b>Dimensions and weight</b>				
Length x width x height	310 x 180 x 190 mm	450 x 240 x 270 mm		
Net weight	9.5 kg	33 kg		



## Versatile graver and tool grinding machine for various tool geometries

### Facts that impress in terms of quality, performance and price

- ▶ Many pivoting and adjustment options usable for creating gravers (cylindrical, centric, tapered)
- ▶ For grinding stamps, twist drills, electrodes, lathe tools, centres etc.
- ▶ High level of precision thanks to rugged machine body and vibration-free driven precision grinding spindle
- ▶ Easy handling and operation
- ▶ Indexing head with 24 latching positions
- ▶ Adjustable dressing device

## GRAVER GRINDING MACHINE



Model	GH20T
Article no.	3100125
<b>Power</b>	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	370 W
Grinding wheel speed, diamond	5 000 rpm
Max. grinding speed	35 m/s
Motor speed	2 750 rpm
Tool holder travel	140 mm
Tool holder fine adjustment	18 mm
Longitudinal fine adjustment	6 mm
<b>Adjustable angle</b>	
vertical/rear side	0° - 40°
horizontal/conical grinding	0° - 180°
Negative angles	0° - 52°
Latching setting angle of rotation	22° x 15° 180°
<b>Collet chuck holder</b>	
Clamping range	Ø 1- 12 mm
Clamping jaw type	385E (5C), DIN 6341
<b>Dimensions and weight</b>	
Length x width x height	350 x 450 x 340 mm
Net weight	45 kg

\* Two latching positions occupied for sharpening drill bits

Replacement grinding wheel	Grain size	Area of application	Article no.
Corundum	K 80	Fast-working steel (HSS)	3100128
Diamond	K 150	Carbide	3100129

### Comprehensive scope of delivery



- › Collets 385E (5C) DIN 6341 Ø 37.5 mm; L=89 mm; 20°
- › Sizes Ø 4/6/8/10/12 mm



- › Corundum cup grinding wheel Ø 100 x 51 x Ø 20 mm
- › Diamond cup grinding wheel Ø 100 x 51 x Ø 20 mm (already mounted when delivered)



- › Device for sharpening lathe tools



Follow this for the video presentation of our drill bit grinding machine GH 20T  
**Subscribe** to our YouTube channel, to avoid missing any of the new videos:  
[www.youtube.com/user/OptimumMaschinen](http://www.youtube.com/user/OptimumMaschinen)



- › Device for sharpening end mills



- › Device for sharpening twist drill bits



- › Operating tool



Fig.: Corundum Fig.: Diamond

# ***BELT SANDERS***



## Belt grinding machine offers the user a maximum of application possibilities on a minimal footprint

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, durable industrial design with maintenance-free motor
- ▶ Long service life and quiet action thanks to balanced rotor with quality ball bearings
- ▶ Sturdy and stable machine body
- ▶ Tray for safety glasses

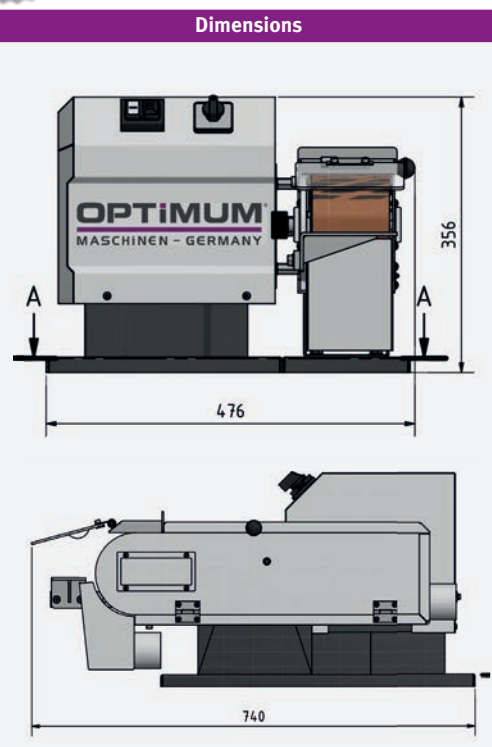


Fig. shows sample application

Model	GB 100S
Article no.	3101660
<b>Power</b>	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.3 / 1.8 kW
<b>Grinding belt</b>	
Grinding belt width - length	100 x 1 190 mm
Extraction port	Ø 60 mm
Usable contact surface for grinding at top on grinding belt	345 x 100 mm
Circumferential speed of grinding belt	19.4 m/s at 2 850 rpm
Speed	1 450 / 2 850 rpm
<b>Dimensions and weight</b>	
Length x width x height	740 x 476 x 356 mm
Net weight	47 kg

Machine base	Article no.
GU 2	3107115

› Cyclone extraction unit with two motors

› Noise-insulated

Extraction pipes (2 pcs.)	3107116
---------------------------	---------

› 300 - 1 000 mm variable length

For information see page 307

### Scope of delivery

› Grinding belt

Grinding belt	PQ	Article no.
Grain size 40	5 units	3357637
Grain size 60	5 units	3357638
Grain size 80	5 units	3357639
Grain size 120	5 units	3357640



## Belt grinders in heavy and rugged industrial design for roughing, finishing and profile grinding of various materials in continuous operations

### Facts that impress in terms of quality, performance and price

- ▶ Time-saving deburring of edges and weld polishing
- ▶ Sturdy and vibration-free design
- ▶ Powerful motor
- ▶ 22° - 50° inclinable grinding table
- ▶ Continuously adjustable top stop supports fast and convenient initial grinding of workpieces
- ▶ Large surface grinding surface
- ▶ Additional safety device
- ▶ Front extraction duct for attaching an extraction unit
- ▶ Spark guard
- ▶ Workpiece support allows grinding at the required angle
- ▶ One grinding belt included in standard scope of delivery



Surface grinding surface

- › Open throughout and to rear
- › Also perfectly suited for machining longer workpieces



Operation

- › Emergency stop button
- › Setting the angle of inclination

# BELT GRINDER



Fig.: GBS 75



Fig.: GBS150

Machine base with cyclone suction system see page 307

Model	GBS 75	GBS 150
Article no.	3321155	3321160
<b>Power</b>		
Electrical connection	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz
Motor power	1.5/2.2 kW	1.5/2.2 kW
<b>Rotational speeds</b>		
Speed	1 450 / 2 850 rpm	1 450 / 2 850 rpm
<b>Grinding belt</b>		
Grinding belt dimensions	75 x 2 000 mm	150 x 2 000 mm
Surface grinding surface	98 x 60 mm	173 x 60 mm
<b>Dimensions and weight</b>		
Extraction duct nominal width outside	Ø 60 mm	Ø 60 mm
Dimensions L x W x H	430 x 1 000 x 937 mm	500 x 1 070 x 937 mm
Height: Pivot bearing below	1 035 mm	1 065 mm
Height: Pivot bearing above	1 090 mm	1 065 mm
Net weight	72 kg	87.5 kg

### Scope of delivery

- › Grinding belt 60 grain
- › Allen key

GBS 75 grinding belts	Article no.	PQ
Grain size 40	3357642	5 pcs.
Grain size 60	3357644	5 pcs.
Grain size 80	3357646	5 pcs.
Grain size 120	3357648	5 pcs.
Grain size 180	3357649	5 pcs.
Grain size 240	3357650	5 pcs.

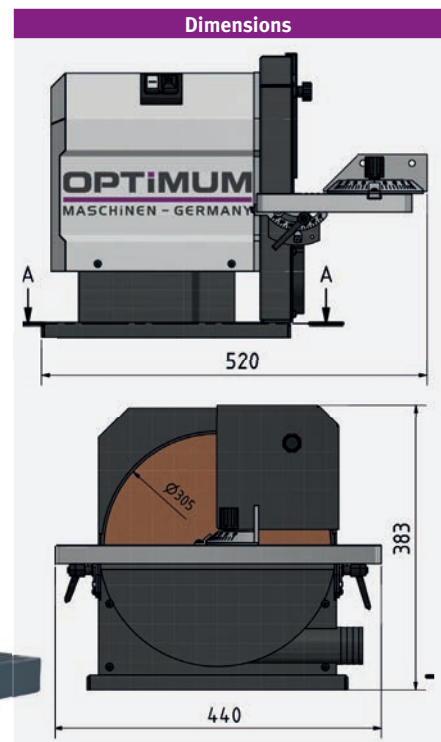
Grinding belts GBS 150	Article no.	PQ
Grain size 40	3357672	5 pcs.
Grain size 60	3357674	5 pcs.
Grain size 80	3357676	5 pcs.
Grain size 120	3357678	5 pcs.
Grain size 180	3357679	5 pcs.
Grain size 240	3357680	5 pcs.

# ***PLATE GRINDING MACHINES***



**Disc sanding machine** for processing surfaces, edges and curves**Facts that impress in terms of quality, performance and price**

- ▶ Heavy, durable industrial design with maintenance-free motor
- ▶ Long service life and quiet action thanks to balanced rotor with quality ball bearings
- ▶ Versatile areas of application:
  - ▶ For roughing, fine and moulding grinding work
  - ▶ Sturdy and stable machine body
  - ▶ Balanced aluminium grinding wheel for smooth action
  - ▶ Powerful motor
  - ▶ Delivered with grinding sheet
  - ▶ Tray for safety glasses



DISK GRINDER

**Hook and loop fastener pad**

- › Good grinding wheel adhesion, easy replacement

**Mitre stop**

- › Mitre stop 180° swivelable
- › ± 45° inclinable grinding table

**Base units**

**GU 1** - 400 V with extraction unit 3107109

**Extraction pipes** (2 pcs.) 3107111

› 300 - 1 000 mm variable length

**GU 4** 3107119

**For information** see page 307

**Accessories**

Grinding sheets	Article no.	PQ
› Hook and loop fastener		
Grain size 40	<b>3357854</b>	<b>5 pcs.</b>
Grain size 60	<b>3357856</b>	<b>5 pcs.</b>
Grain size 80	<b>3357858</b>	<b>5 pcs.</b>
Grain size 100	<b>3357860</b>	<b>5 pcs.</b>
Grain size 120	<b>3357862</b>	<b>5 pcs.</b>
Grain size 150	<b>3357865</b>	<b>5 pcs.</b>
Grain size 180	<b>3357866</b>	<b>5 pcs.</b>
Grain size 240	<b>3357867</b>	<b>5 pcs.</b>

**Extraction hose** 3107111 **35.00**

2 flexible extraction pipes

Model	GB 305D
Article no.	3101675

Power	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.1 kW
Grinding wheel	
Dimensions	Ø 305 mm
Extraction port	Ø 50 mm
Table support	440 x 210 mm
Adjustment of angle stop	180°
Grinding attachment swivel range	0 - 45°
Speed	1 450 rpm
Dimensions and weight	
Length x width x height	560 x 440 x 380 mm
Net weight	26.5 kg





## Disc grinder for machining metal surfaces

### Facts that impress in terms of quality, performance and price

- ▶ Versatile areas of application:
- ▶ For roughing, fine and moulding grinding work
- ▶ Sturdy and stable machine body
- ▶ Balanced aluminium grinding wheel for smooth action
- ▶ Powerful motor
- ▶ Delivered with grinding sheet bonded onto grinding wheel



Fig.: TS 305

DISK GRINDER

#### Extraction port



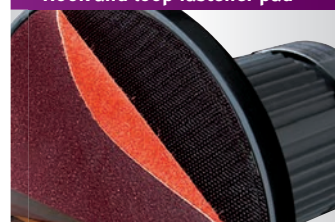
- › Factory standard extraction duct with two diameters for attaching an extraction unit
- › Outside nominal width  $\pm \varnothing 30 / \varnothing 38$  mm

#### Mitre stop



- › Factory standard mitre stop pivots up to  $\pm 60^\circ$
- ›  $\pm 45^\circ$  inclinable grinding table

#### Hook and loop fastener pad



- › Optional accessories (Article No. 3357801). Good grinding wheel adhesion, easy replacement

#### Scope of delivery

- › Adjustable angle stop
- › Grinding sheet

#### Accessories

Accessories	Article no.
Hook and loop fastener pad	3357801

#### Grinding sheets

Grinding sheets	Article no.	PQ
› Hook and loop fastener		
Grain size 40	3357854	5 pcs.
Grain size 60	3357856	5 pcs.
Grain size 80	3357858	5 pcs.
Grain size 100	3357860	5 pcs.
Grain size 120	3357862	5 pcs.
Grain size 150	3357865	5 pcs.
Grain size 180	3357866	5 pcs.
Grain size 240	3357867	5 pcs.

Pack of 5  
Grain size 40 to 240

Model	TS 305
Article no.	3310305
<b>Power</b>	
Electrical connection	230 V/1 Ph ~50 Hz
Motor power	900 W
<b>General Information</b>	
Grinding wheel	$\varnothing 305$ mm
Speed	1 420 rpm
Table support	155 x 440 mm
Adjustment of angle stop	$\pm 60^\circ$
Tiltable grinding table	$\pm 45^\circ$
<b>Dimensions and weight</b>	
Length x width x height	440 x 445 x 365 mm
Net weight	30 kg

## ***DOUBLE GRINDERS***



## Double grinders by OPTIMUM.

A quality product for trades and industry

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, durable industrial design with maintenance-free motor for continuous use
- ▶ Housing made of strand cast aluminium
- ▶ Long service life and quiet action thanks to balanced rotor with quality ball bearings
- ▶ Spark guard on each grinding wheel reduces flying sparks and is made of break-proof material
- ▶ Sturdy adjustable workpiece support
- ▶ Vibration-damping rubber feet
- ▶ Coarse and fine grinding wheel (K36/K80) included in standard scope of delivery



Fig.: GU 30



Fig.: GU 15 - GU 25

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 300

# BENCH GRINDERS

### Scope of delivery

› 1 grinding wheel each normal corundum 36/80 grain

For machine bases, see from page 306

For grinding wheels, see from page 310

Model	GU 15	GU 18	GU 20	GU 25	NEW GU 30
Article no. (230V)	3101505	3101510	3101515	-	-
Article no. (400V)	-	-	3101520	3101525	3101530
Technical data					
Electrical connection	230 V/1 Ph ~50 Hz	230 V/1 Ph ~50 Hz	230 V / 400 V ~50 Hz	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz
Motor power	450 W	450 W	600 W	1.5 kW	2.2 kW
Grinding wheel dimensions	Ø 150 x 20 mm	Ø 175 x 25 mm	Ø 200 x 30 mm	Ø 250 x 40mm	Ø 300 x 50 mm
Shaft diameter	Ø 16 mm	Ø 32 mm	Ø 32 mm	Ø 32 mm	Ø 75 mm
Grinding speed	22 m/s	26 m/s	30 m/s	37 m/s	22 m/s
Rotational speeds	2 850 rpm	2 850 rpm	2 850 rpm	2 850 rpm	1 450 rpm
Extraction duct nominal width	Ø 34 mm	Ø 34 mm	Ø 34 mm	Ø 34 mm	Ø 35 / Ø 50 mm
Dimensions L x W x H	389 x 205 x 265 mm	389 x 235 x 280 mm	495 x 260 x 330 mm	471 x 320 x 365 mm	765 x 422 x 525 mm
Net weight	11 kg	14 kg	19 kg	33 kg	65 kg



## PREMIUM Double grinders.

GZ - DD Models with machine base and integrated extraction system



Facts that impress in terms of quality, performance and price

### ► 10-year OPTIMUM guarantee\*

- Heavy industrial grinding machine absorbs the vibrations, which are low anyway, thanks to its high deadweight
- Also suitable for strong thrust force on the grinding wheels
- Maintenance-free, durable, induction motor with smooth action
- Cast iron housing
- Spark guard
- Sturdy, adjustable workpiece support
- Grinding wheels not included in standard scope of delivery

### GZ-D models:

- without machine base (machine base available as option)

### GZ-DD models:

- Integrated extraction system with aluminium fan and self-cleaning impellers
- Dust bag made of self-extinguishing woven material
- Sturdy base with water tray

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 304

**BENCH GRINDERS**



Fig.: GZ 25DD with optional grinding wheels



Accessories	Article no.
<b>Electronic brake</b>	3091099
► Controlled braking ► Including factory assembly	



For machine bases, see from page 306

For grinding wheels, see from page 310

Model	GZ 20D	GZ 25D	GZ 30D
Article no.	3091010	3091015	3091020
Model	GZ 20DD	GZ 25DD	GZ 30DD
Article no.	3091040	3091045	3091050

Technical data			
Electrical connection	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz
Motor power	750 W	1.1 kW	1.8 kW
Grinding wheel dimensions	Ø 200 x 25 mm	Ø 250 x 30 mm	Ø 300 x 35 mm
Shaft diameter	Ø 20 mm	Ø 25 mm	Ø 30 mm
Rotational speeds	2 800 rpm	1 400 rpm	1 400 rpm
Dimensions L x W x H GZ models	550 x 290 x 360 mm	670 x 340 x 410 mm	810 x 420 x 560 mm
Dimensions L x W x H GZ-DD models	800 x 710 x 1 120 mm	800 x 710 x 1 300 mm	810 x 1 200 x 1 320 mm
Net weight GZ/GZ-DD models	25 kg / 63.7 kg	44.8 kg / 91 kg	64.5 kg / 124 kg

## PREMIUM Industrial - double grinder, extremely robust and stable

Facts that impress in terms of quality, performance and price

- **10-year OPTIMUM guarantee\***
- Suitable for continuous and intensive use in industry
- Heavy industrial grinding machine absorbs the vibrations, which are low anyway, thanks to its high deadweight
- Also suitable for strong thrust force on the grinding wheels
- Maintenance-free, durable, induction motor with smooth action
- Cast iron housing
- Spark guard
- Stable, displaceable workpiece support
- Grinding wheels not included in standard scope of delivery

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 303



Fig.: Showing optional grinding wheels and GU4-H machine base

BENCH GRINDERS



### Material support



- › Displaceable
- › Sturdy

### Extraction port



- › Nominal width 90 mm

### Control unit



- › With EMERGENCY-STOP push button



Model	GZ40D
Article no.	3091025

Technical data	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	4.4 kW
Grinding wheels	
Dimensions	Ø 400 x 50 mm
Shaft diameter	Ø 40 mm
Rotational speeds	1 400 rpm
Extraction duct nominal width	90 mm
Dimensions and weight	
Length x width x height	980 x 600 x 660 mm
Net weight	168 kg

For grinding wheels, see from page 310

Machine base	Article no.
GU 5-H with cyclone extraction unit	3107114
GU 4-H	3107119

For information see page 308

# ***COMBINED AND UNIVERSAL GRINDERS***

UNIVERSAL  
COMBINED GRINDERS  
BRUSH DEBURRER



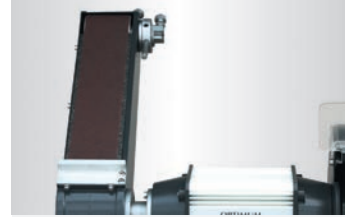


## Functional universal grinding machines with grinding attachment

### Facts that impress in terms of quality, performance and price

- ▶ Rugged and sturdy universal grinding machines with grinding belt and grinding wheel for a variety of materials
- ▶ Heavy, durable industrial design with maintenance-free motor for continuous use
- ▶ Large, heavy fastening flanges ensure excellent disc true running accuracy
- ▶ Grinding attachment with graphite support; prevents friction and heat
- ▶ Stop allows for fast and convenient initial grinding of the workpieces
- ▶ Belt run adjustment without tools - adjustable using a single star knob
- ▶ Universal corundum grinding wheel and grinding belt included in standard scope of delivery

### Grinding belt



- › Grinding attachment can be adjusted via the flange in a swivel range of 0° to 90°

### Grinding wheel



- › Sturdy workpiece support surface
- › Adjustable spark protection

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 302



Fig.: GU 30S



Fig.: GU 20S

Model	GU 20S	GU 25S	GU 30S
Article no. (230V)	3101570	-	-
Article no. (400V)	3101575	3101580	3101585

Technical data			
Electrical connection	230 V or 400V	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz
Motor power	600 W	1.5 kW	2.2 kW
Grinding wheel size	Ø 200 x 30 mm	Ø 250 x 40 mm	Ø 300 x 50 mm
Shaft diameter	Ø 32 mm	Ø 32 mm	Ø 25 mm
Grinding belt L x W	75 x 762 mm	75 x 1 016 mm	100 x 1 190 mm
Extraction port	Ø 32 mm	Ø 32 mm	Ø 35 / Ø 50 mm
Grinding speed, belt sander	16 m/s	16 m/s	10 m/s
Grinding speed, grinding wheel	30 m/s	37 m/s	27 m/s
Dimensions L x W x H	501 x 261 x 459 mm	514 x 319 x 596 mm	767 x 420 x 527 mm
Net weight	20.7 kg	31.5 kg	64.5 kg

### Scope of delivery

- › Grinding wheel normal corundum fine 80 grain
- › Grinding belt normal corundum fine 80 grain

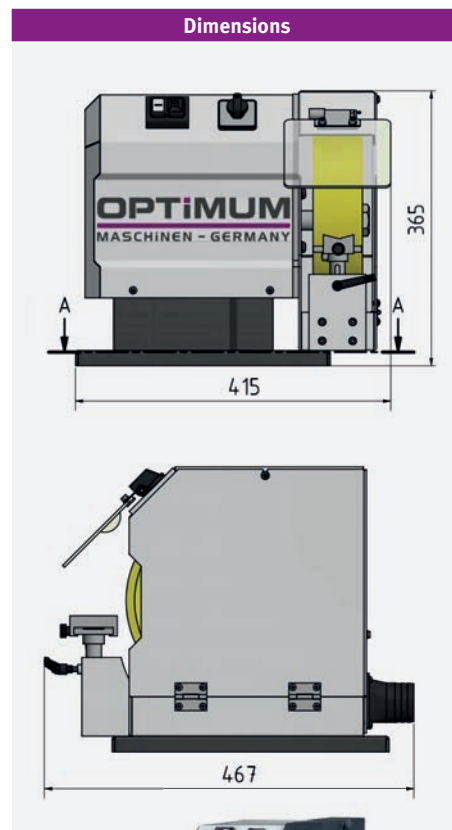
For machine bases, see from page 306

For polishing discs, see from page 310

## Effective brush deburrer for trades and small series

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, durable industrial design with maintenance-free motor
- ▶ Long service life and quiet action thanks to balanced rotor with quality ball bearings
- ▶ For deburring pipes, sections and flat workpieces made of metal
- ▶ Tray for safety glasses
- ▶ Sturdy and stable machine body
- ▶ Safe and clean working with the optional GU 1 machine base with cyclone dust extraction



# BRUSH DEBURRER

### Material support



- › Height-adjustable
- › Holder also for round material

### Extraction duct



- › The extraction connection outer diameter is 50 mm

Model	GB 250B
Article no.	3101670

Technical data	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	1.3 / 1.8 kW
Round brush	
Round brush dimensions	Ø 250 x 40 mm
Shaft diameter	Ø 25 mm
Extraction port	Ø 50 mm
Circumferential speed of round brush	37.3 m/s at 2 850 rpm
Speed	1 450 / 2 850 rpm
Dimensions and weight	
Length x width x height	415 x 467 x 356 mm
Net weight	36 kg

### Scope of delivery

- › Round brush, wire thickness 0.35 mm

Machine base	Article no.
GU 1 - 400 V with extraction unit	3107109
GU 4	3107119

For information, see page 307

Extraction hose	3107111
2 flexible extraction pipes	

Round brush steel wire	Article no.
for stainless steel	
Ø 250 x 32-37 mm with adapter 25 mm	
Wire thickness 0.30 mm	
	3098070

Round brush steel wire	Article no.
Ø 250 x 42-47 mm with 25mm adapter	
Wire thickness 0.20 mm	
Wire thickness 0.30 mm	
	3107451
	3107452



## Combined grinding machines by Optimum for workshops

### Facts that impress in terms of quality, performance and price

- ▶ Durable design with maintenance-free motor for continuous use
- ▶ Housing made of strand cast aluminium
- ▶ Large, heavy fastening flanges ensure excellent disc true running accuracy
- ▶ Grinding attachment with graphite support - prevents friction and heat
- ▶ Stop allows for fast and convenient initial grinding of the workpieces
- ▶ Swivelling brush protection housing
- ▶ Extraction duct for attaching an extraction unit
- ▶ One grinding wheel and one multi-purpose brush included in scope of delivery

### Material support



- › Mobile and sturdy

### Multi-purpose brush



- › in swivelling brush housing
- › High tensile steel wire
- › with extraction duct



### Scope of delivery

- › Grinding wheel - normal corundum coarse 36 grain
- › Multi-purpose wire brush, wire thickness 0.3 mm

For machine bases, see from page 306

For polishing discs, see from page 310

Model	GU 15B	GU 18B	GU 20B	GU 25B
Article no. (230V)	3101600	3101605	3101610	-
Article no. (400V)	-	-	3101615	3101620
Technical data				
Electrical connection	230 V/1 Ph ~50 Hz	230 V/1 Ph ~50 Hz	230 V / 400 V	400 V/3 Ph ~50 Hz
Motor power	450 W	450 W	600 W	1.5 kW
Grinding disk dimensions	Ø 150 x 20 mm	Ø 175 x 25 mm	Ø 200 x 30 mm	Ø 250 x 40 mm
Multi-purpose wire brush	Ø 150 x 20 mm	Ø 175 x 25 mm	Ø 200 x 25 mm	Ø 250 x 30 mm
Shaft diameter	Ø 16 mm	Ø 32 mm	Ø 32 mm	Ø 32 mm
Rotational speeds	2 850 rpm	2 850 rpm	2 850 rpm	2 850 rpm
Extraction duct	Ø 34- 35 mm	Ø 34- 35 mm	Ø 34- 35 mm	Ø 34- 35 mm
Dimensions L x W x H	428 x 305 x 230 mm	428 x 305 x 244 mm	517 x 345 x 282 mm	526 x 380 x 319 mm
Net weight	10.7 kg	12.3 kg	18.5 kg	32.5 kg



**PREMIUM** Combined grinding machines for workshops, steel construction companies.

## GZ - CD Models with machine base and integrated extraction system

Facts that impress in terms of quality, performance and price

- ▶ **10-year OPTIMUM guarantee\***
- ▶ Heavy industrial combined grinding machine absorbs the vibrations, which are low anyway, thanks to its high deadweight
- ▶ Also suitable for strong thrust force on the grinding wheel and brush
- ▶ Maintenance-free, durable, induction motor with smooth action
- ▶ Cast iron housing
- ▶ Sturdy, adjustable workpiece support
- ▶ Grinding wheel and brush not included in standard scope of delivery



### Extraction system



- GZ - CD models
- › Made in Italy
  - › Perfectly aligned to avoid noise and vibrations
  - › self-cleaning wings

### Dust collection bag



- GZ - CD models
- › For a clean workplace
  - › More safety - collects glowing chips in a sack

### Multi-purpose brush



- › with swivelling brush housing
- › High tensile steel wire

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 302

Fig.: Base of CD machines with integrated extraction system

COMBINED GRINDERS



Model	GZ 20C	GZ 25C
Article no.	3091070	3091075
Model	GZ 20CD	GZ 25CD
Article no.	3091080	3091085
Technical data		
Electrical connection	400 V/3 Ph ~50 Hz	400 V/3 Ph ~50 Hz
Motor power	750 W	1.1 kW
Grinding wheel dimensions	Ø 200 x 25 mm	Ø 250 x 30 mm
Round brush dimensions	Ø 200 x 25 mm	Ø 250 x 25 mm
Shaft diameter	Ø 20 mm	Ø 25 mm
Rotational speeds	2 800 rpm	1 400 rpm
Dimensions L x W x H GZ-C	650 x 300 x 360 mm	850 x 340 x 410 mm
Dimensions L x W x H GZ-CD	900 x 710 x 1 300 mm	850 x 1 200 x 1 300 mm
Net weight GZ-C / GZ-CD	26.5 kg / 65 kg	47.9 kg / 87 kg

Accessories	Article no.
<b>Electronic brake</b>	3091099

- › Controlled braking
- › Including factory assembly



**For polishing discs and multi-purpose brushes,**  
see page 310

Machine base	Article no.
<b>GZ 20D</b>	3091120
<b>GZ 25D</b>	3091122

**For information,** see page 306

## PREMIUM combination grinder - a powerful industrial grinder with multi-purpose brush and grinding wheel



Facts that impress in terms of quality, performance and price

- ▶ **10-year OPTIMUM guarantee\***
- ▶ Suitable for continuous and intensive use in industry
- ▶ Heavy-duty combined grinding machine absorbs the vibrations thanks to its high deadweight
- ▶ Also suitable for strong thrust force on the grinding wheel and brush
- ▶ Maintenance-free, durable, induction motor with smooth action
- ▶ Cast iron housing
- ▶ Swivelling brush protection housing with extraction ducts
- ▶ Sturdy, adjustable workpiece support
- ▶ Grinding wheel and brush not included in standard scope of delivery

COMBINED GRINDERS



**OPTION:**  
Vario drive with  
SIEMENS Inverter  
Sinamics V20  
see from page 302

Fig.: Showing optional grinding wheel, brush, and GU4-H machine base

### Material support



› Mobile and sturdy

### Multi-purpose brush



› with swivelling brush housing  
› Optionally available multi-purpose brush made of high tensile steel wire

### Speed



› constant speed, also under load

Model	GZ 40C
Article no.	3091079

Technical data	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	4.4 kW
Grinding wheel dimensions	Ø 400 x 50 mm
Grinding wheel Shaft diameter	Ø 40 mm
Round brush dimensions	Ø 350 x 35 mm
Round brush Shaft diameter	Ø 25 mm
Rotational speeds	1 400 rpm
Extraction duct nominal width	Ø 90 mm
Dimensions length x width x height	1 200 x 660 x 580 mm
Net weight	144 kg

For polishing wheels and multi-purpose brushes, see page 310

Machine base	Article no.
GU 5-H with extraction unit (cyclone)	3107124
GU 4-H	3107123

For information, see page 307

# ***GRINDING/POLISHING MACHINE***





## Polishing machine for fine surface finishing on metallic workpieces

### Facts that impress in terms of quality, performance and price

- ▶ Heavy, durable industrial design with maintenance-free motor
- ▶ Housing made of strand cast aluminium
- ▶ Long service life and quiet action thanks to balanced rotor with quality ball bearings
- ▶ Two wide polishing discs included in standard scope of delivery
- ▶ Vibration-damping rubber feet (without extraction hood - can be ordered as an option)

# GRINDING/POLISHING MACHINE



Fig.: GU 20P

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 300



Fig.: Vario conversion  
Machine base with view window (not available)

Model	GU 20P	GU 25P
Article no. (230V)	3101540	-
Article no. (400V)	3101545	3101550

Technical data		
Electrical connection	230 V or 400 V	400 V/3 Ph ~50 Hz
Motor power	600 W	1.5 kW
Speed	2 850 rpm	2 850 rpm
Polishing disc size	Ø 200 x 20 mm	Ø 250 x 25 mm
Shaft diameter	Ø 16 mm	Ø 20 mm
Polishing speed	30 m/s	37 m/s
Dimensions L x W x H	545 x 200 x 262 mm	555 x 250 x 296 mm
Net weight	10.6 kg	17.4 kg

Machine base	Article no.
<b>GU 3</b> without extraction unit	3107118
<b>GU 1</b> (230 V)	3107110
<b>GU 1</b> (400 V)	3107109

› Cyclone extraction unit with two motors

<b>Extraction pipes</b> (2 pcs.)	3107111
----------------------------------	---------

For more information see page 306



Extraction hood set	Article no.
<b>For GU 20P</b>	3107060
<b>For GU 25P</b>	3107061

› 2-part (left and right)

› For use of an extraction unit



### Scope of delivery

› 2 buffing discs

For polishing discs, see from page 310

## Polishing machine for fine surface finishing on metallic workpieces

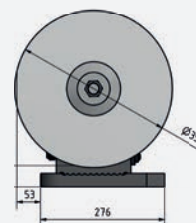
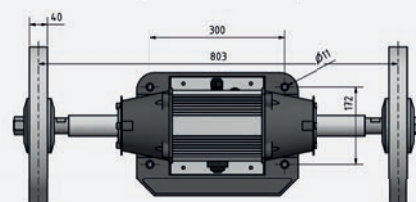
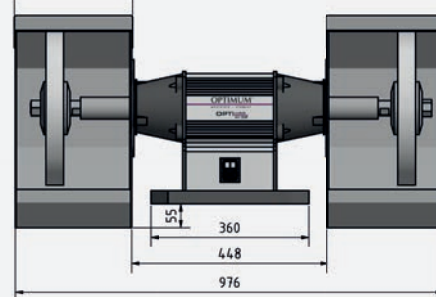
### Facts that impress in terms of quality, performance and price

- ▶ Heavy, durable industrial design with maintenance-free motor
- ▶ Housing made of strand cast aluminium
- ▶ Long service life and quiet action thanks to balanced rotor with quality ball bearings
- ▶ Emergency stop button
- ▶ Two wide polishing discs included in standard scope of delivery
- ▶ Vibration-damping rubber feet, base plate
- ▶ Extraction hood for use of an extraction unit

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 300



### Dimensions



GRINDING/POLISHING MACHINE

Model	GU 35P
Article no.	3101560
Technical data	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	2.2 kW
Speed	1 450 rpm
Polishing disc size	Ø 350 x 30 mm
Shaft diameter	Ø 25 mm
Polishing speed	37 m/s
Dimensions L x W x H	1 017 x 420 x 527 mm
Net weight	64.1 kg

### Scope of delivery

› 2 buffing discs

For machine bases, see from page 306

For polishing discs, see from page 310

## PREMIUM Polishing machine - a powerful industrial machine

Facts that impress in terms of quality, performance and price

- ▶ **10-year OPTIMUM guarantee\***
- ▶ Suitable for continuous and intensive use in industry
- ▶ Heavy-duty buffing grinder absorbs the vibrations (which are low anyway) thanks to its high deadweight
- ▶ Maintenance-free, durable, induction motor with smooth action
- ▶ Cast iron housing
- ▶ Polishing discs not included in standard scope of supply

# GRINDING/POLISHING MACHINE



Fig: With optional polishing discs and GU4-H machine base

**OPTION:**  
Vario drive with  
**SIEMENS** Inverter  
Sinamics V20  
see from page 302

### Safety enclosure



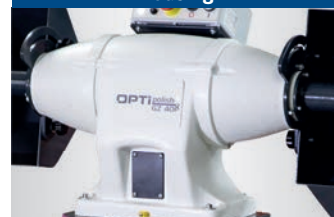
- › swivelling
- › Extraction support for attaching an extraction unit

### Control unit



- › With EMERGENCY-STOP push button

### Housing



- › Made of cast iron
- › Very high damping capacity

Model	GZ 40P
Article no.	3091130

Technical data	
Electrical connection	400 V/3 Ph ~50 Hz
Motor power	4.4 kW
Grinding wheel dimensions	350 x 30 mm
Shaft diameter	Ø 25 mm
Rotational speeds	1 400 rpm
Extraction duct nominal width	Ø 90 mm
Dimensions L x W x H	1 390 x 530 x 580 mm
Net weight	110 kg

For polishing discs, see from page 310

Machine base	Article no.
<b>GU 5-H</b> with extraction unit (cyclone)	3107114
<b>GU 4-H</b>	3107123

For information see page 307



# VARIO DRIVES



Machine	20			25			30		35	40
Bench grinders	GU 20	GZ 20D	GZ 20DD	GU 25	GZ 25D	GZ 25DD	GU 30	GZ 30D		GZ 40D
Universal grinders	GU 20S			GU 25S			GU 30S			
Combined grinders	GU 20B	GZ 20C	GZ 20CD	GU 25B	GZ 25C	GZ 25CD		GZ 30C		GZ 40C
Polishing machines	GU 20P			GU 25P					GU 35P	GZ 40P
<b>Vario drive</b>										
GU 1 with cyclone extraction unit				●						
<b>GU 3</b>				●						
<b>GU 4</b>							●		●	
<b>GU 4-H</b>										●
GU 5 with cyclone extraction unit							●		●	
GU 5-H with cyclone extraction unit										●
<b>GZ</b>		●	●		●	●		●		

Vario Vario drive with GU 1 machine base with cyclone extraction unit enables continuously adjustable grinding machine speed control



Vario drive with SIEMENS Sinamics V20 inverter

- › Wider voltage range, advanced cooling and painted electronic components increase the robustness of the inverter
- › Stable operation even with difficult grid conditions



Vario machine base with machine base GU 1 with cyclone extraction unit

- › Without grinder- must be ordered separately along with your order.
- › Sturdy machine base
- › Cyclone extraction unit integrated in machine base, consequently less space required
- › Noise-insulated

Automatic start-up

No need to additionally switch the extraction unit on or off because the extraction unit switches on or off automatically after a delay of 2- 3 seconds when the unit is switched on or off. The residual dust is extracted after switching off the machine in line with the Hazardous Materials Ordinance



Vario conversion with machine base GU 1

Motor power up to 1.5 kW

Article no. 3491530

Controlable circumferential speeds 37 m/s to 6 m/s

Machines required

› Double grinder GU 25	3101525
› Combined grinding machine GU 25B	3101620
› Polishing machine GU 25P	3101550
› Universal grinding machine GU 25S	3101580

For more information on machine bases see page 307

The Vario conversion comply with DIN EN 55011 standard: class C2 note: The extraction unit needs a neutral conductor, 400-V version

**Vario drive with GU 3 machine base**

enables continuously adjustable grinding machine speed control

**Vario drive with SIEMENS Sinamics V20 inverter**

- › Wider voltage range, advanced cooling and painted electronic components increase the robustness of the inverter
- › Stable operation even with difficult grid conditions

**Vario conversion with machine base GU 3**

- › Without grinder- must be ordered separately along with your order
- › Coolant tray
- › Small footprint



Fig.: Base with sample view window

**Vario conversion with machine base GU 3**

Motor power up to 1.5 kW

Article no.	3491531
Controlable circumferential speeds 37 m/s to 6 m/s	

**Machines required**

› Double grinder GU 25	3101525
› Combined grinding machine GU 25B	3101620
› Polishing machine GU 25P	3101550
› Universal grinding machine GU 25S	3101580

For more **information** on machine bases see page 307



Vario drive optionally with machine machine base GU 4 or GU 5  
enables continuously adjustable grinding machine speed control



Vario drive with **SIEMENS** Sinamics V20 inverter

- › Wider voltage range, advanced cooling and painted electronic components increase the robustness of the inverter
- › Stable operation even with difficult grid conditions



GU 4



GU 5



Machine base  
&  
Machine  
= Vario

Machines required	
› Double grinder GU 30	3101530
› Combined grinding machine GU 30S	3101585
› Polishing machine GU 35P	3101560

Vario conversion with machine base GU 4 without extraction unit	
Motor power up to 2.2 kW	
Article no.	3491550

- › Without grinder- must be ordered separately along with your order.
- › Controlable circumferential speeds 34 m/s to 6 m/s
- › Coolant tray
- › Small footprint

Vario conversion with machine base GU 5 with cyclone extraction unit	
Motor power up to 2.2 kW	
Article no.	3491552

- › Without grinder- must be ordered separately along with your order.
- › Controlable circumferential speeds 34 m/s to 6 m/s
- › Sturdy machine base
- › Cyclone extraction unit integrated in machine base, consequently less space required
- › Noise-insulated

Automatic start-up

No need to additionally switch the extraction unit on or off because the extraction unit switches on or off automatically after a delay of 2- 3 seconds when the unit is switched on or off. The residual dust is extracted after switching off the machine in line with the Hazardous Materials Ordinance

**Vario drive optionally with machine base GU 4-H or GU 5-H**  
enables continuously adjustable grinding machine speed control



**Vario drive with SIEMENS Sinamics V20 inverter**

- › Wider voltage range, advanced cooling and painted electronic components increase the robustness of the inverter
- › Stable operation even with difficult grid conditions



**GU 4-H**



**GU 5-H**

**Machine base  
&  
Machine  
= Vario**

Machines required	
› Double grinder GZ40D	3091025
› Combined grinding machine GZ 40C	3091079
› Polishing machine GZ 40P	3091130

Vario conversion with GU 4-H machine base without extraction unit	
Motor power up to 4.4 kW	
Article no.	3491571

- › Without grinder- must be ordered separately along with your order
- › Controlable circumferential speeds 34 m/s to 6 m/s
- › Coolant tray
- › Small footprint

Vario conversion with GU 5-H machine base with cyclone extraction unit	
Motor power up to 4.4 kW	
Article no.	3491573

- › Without grinder- must be ordered separately along with your order.
- › Controlable circumferential speeds 34 m/s to 6 m/s
- › Sturdy machine base
- › Cyclone extraction unit integrated in machine base, consequently less space required
- › Noise-insulated

Reminder: The bases must be filled with concrete by the customer.

**Automatic start-up**

No need to additionally switch the extraction unit on or off because the extraction unit switches on or off automatically after a delay of 2- 3 seconds when the unit is switched on or off. The residual dust is extracted after switching off the machine in line with the Hazardous Materials Ordinance

For more **information** on machine bases see page 308

## Vario drive with machine base GZ with or without extraction unit enables continuously adjustable grinding machine speed control



### Vario drive with **SIEMENS** Sinamics V20 inverter

- › Wider voltage range, advanced cooling and painted electronic components increase the robustness of the inverter
- › Stable operation even with difficult grid conditions



Fig.: GZ 25D

### Vario conversion with GZ machine base without extraction unit

Motor power up to 0.75 kW

Article no.	3491513
-------------	---------

- › Without grinder- must be ordered separately along with your order.
- › including base(without extraction unit)
- › Controlable circumferential speeds 30 m/s to 5 m/s

### Vario conversion with GZ machine base without extraction unit

Motor power up to 1.1 kW

Article no.	3491530
-------------	---------

- › Without grinder- must be ordered separately along with your order.
- › including base(without extraction unit)
- › Controlable circumferential speeds 19 m/s to 3 m/s

### Machines required

› Double grinder GZ 20D	3091010
› Universal grinder GZ 20C	3091070

### Machines required

› Double grinder GZ 25D	3091015
› Universal grinder GZ 25C	3091075



Fig.: GZ 25DD

### Vario conversion GZ with cyclone extraction unit

Motor power up to 0.75 kW

Article no.	3491514
-------------	---------

- › Machine base (scope of delivery) is converted to Vario
- › Controlable circumferential speeds 30 m/s to 5 m/s

### Vario conversion GZ with cyclone extraction unit

Motor power up to 1.1 kW

Article no.	3491534
-------------	---------

- › Machine base (scope of delivery) is converted to Vario
- › Controlable circumferential speeds 19 m/s to 3 m/s

### Machines required with machine base

› Double grinder GZ 20DD	3091040
› Universal grinder GZ 20CD	3091080

### Machines required with machine base

› Double grinder GZ 25DD	3091045
› Universal grinder GZ 25CD	3091085

For more **information** on machine bases see page 306



# MACHINE BASES



Machine													
Belt sanders	GB 100S	GBS 75	GBS 150										
Brush deburrer				GB 250B									
Plate grinding machine				GB 305D									
Bench grinders					GU 15	GU 18	GU 20	GZ 20D	GU 25	GZ 25D	GU 30	GZ 30D	GZ 40D
Universal grinders							GU 20S		GU 25S		GU 30S		
Combined grinders					GU 15B	GU 18B	GU 20B	GZ 20C	GU 25B	GZ 25C		GZ 25C	GZ 40C
Polishing machines							GU 20P		GU 25P		GU 35P		GZ 40P
Matching machine base													
Wall holder					●	●	●		●				
GZ								●		●		●	
GU 1 with extraction unit				●	●	●	●		●				
GU 2 with extraction unit	●	●	●										
GU 3					●	●	●		●				
GU 4				●							●		
GU 4-H													●
GU 5 with extraction unit											●		
GU 5-H with extraction unit													●

## Machine bases

### GU 3 - Machine base with cyclone extraction unit for grinding machines

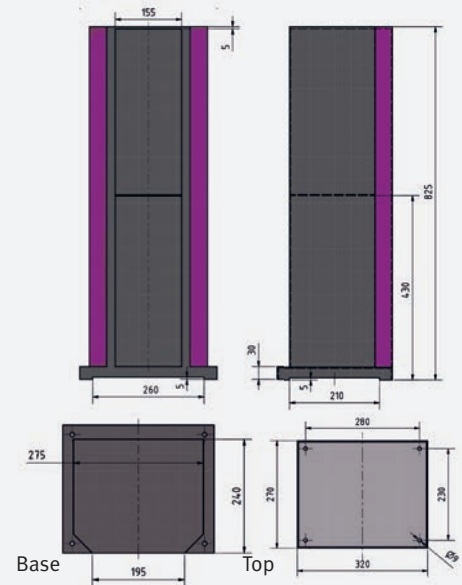
Facts that impress in terms of quality, performance and price

- ▶ Coolant tray
- ▶ Small footprint
- ▶ Specially suited for our machines
  - › Bench grinders GU 15 - GU 25
  - › Universal grinding machines GU 20S and 25S
  - › Combined grinder GU 15B - GU 25B
  - › Polishing machines GU 20P and GU 25P

Model	GU 3
Article no.	3107118
Dimensions L x W x H	320 x 270 x 825 mm
Net weight	14.5 kg



#### Dimensions and holes



### Machine base for GZ grinding machines

Facts that impress in terms of quality, performance and price

- ▶ Sturdy
- ▶ Small footprint
- ▶ Specially suited for our machines
  - › Bench grinders GZ 20 - GZ 30
  - › Combined sanders GZ 20C - GZ 25C

Model - suitable for	GZ 20	GZ 25	GZ 30
Article no.	3091120	3091122	3091124
Dimensions L x W x H	400 x 370 x 760 mm	437 x 437 x 675 mm	460 x 430 x 760 mm
Net weight	33 kg	40 kg	52 kg



### Wall holder

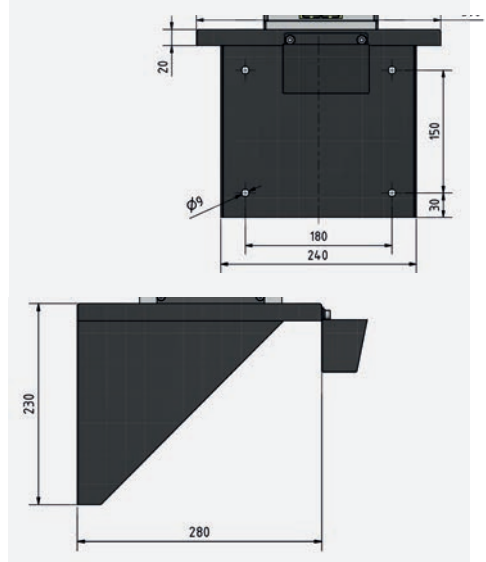
Facts that impress in terms of quality, performance and price

- ▶ Coolant tray
- ▶ L x W x H: 332 x 300 x 230 mm
- ▶ Specially suited for our machines
  - › Bench grinders GU 15 - GU 25
  - › Universal grinding machines GU 20S and 25S
  - › Combined grinder GU 15B - GU 25B
  - › Polishing machines GU 20P and GU 25P



Model	Wall holder
Article no.	3107050

#### Dimensions



## GU 1 - Machine base with cyclone extraction unit for grinding machines

### Facts that impress in terms of quality, performance and price

- ▶ Sturdy machine base
- ▶ Cyclone extraction unit integrated in machine base, consequently less space required
- ▶ For GU and GU-S machines
- ▶ Noise-insulated
- ▶ Without drilled holes - must be drilled individually
- ▶ Y adapter for two-pipe extraction unit connection each with Ø 50 mm



#### Lamp holder

- ▶ prepared for machine lamp LED 3- 500

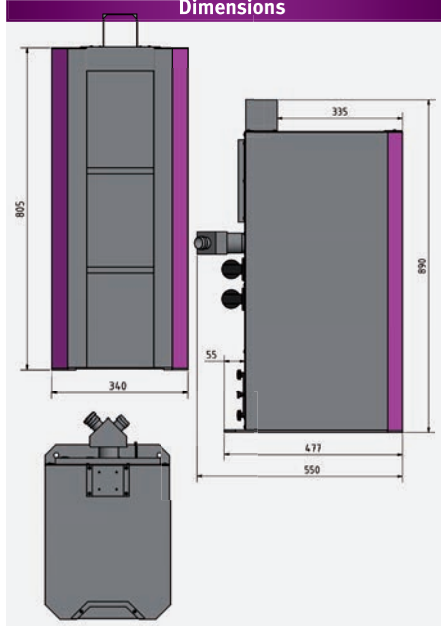
Model	GU 1	
Article no.	3107110	3107109
Electrical connection	230 V/1 Ph	400 V/3 Ph
Motor power	1.3 kW	
Speed	29 000 rpm	
Air throughput	2.3 m³ per minute	
Dimensions L x W x H	477 (550) x 340 x 805 (890) mm	
Net weight	42 kg	

Note: The extraction unit needs a neutral conductor, 400-V version



Fig. shows sample application

### Dimensions



Extraction hose	3107111
▶ 2 flexible extraction pipes ▶ for GU and GU-S grinders ▶ Connection with Ø 50 mm and Ø 35 mm	



### Automatic start-up GU 1 and GU 2

No need to additionally switch the extraction unit on or off because the extraction unit switches on or off automatically after a delay of 2- 3 seconds when the unit is switched on or off. The residual dust is extracted after switching off the machine in line with the Hazardous Materials Ordinance

## GU 2 - Machine machine base with cyclone extraction unit

### Facts that impress in terms of quality, performance and price

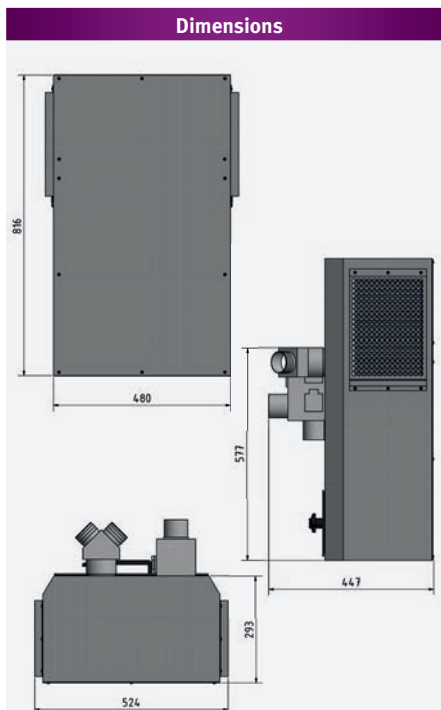
- ▶ Cyclone extraction unit with two motors
- ▶ Includes Y adapter for two-tube extraction unit connection, 60 x 300 - 1000 mm flexible
- ▶ Small footprint
- ▶ Noise-insulated
- ▶ External 230 V permanent power supply
- ▶ Specially suited for our belt grinding machines GBS 75 /GBS 150 or external machines

Model	GU 2
Article no.	3107115
Electrical connection	400 V/3 Ph 50Hz
Total connected load	4 kW
Motor output per blower	1.3 kW
Number of blowers	2
Speed	29 000 rpm
Air throughput	4.6 m³ per minute
Chip filter container volume	15 litres
Dimensions L x W x H	525 x 440 x 815 mm
Net weight	60 kg



Chip drawer

### Dimensions



Extraction hose	3107116
2 units flexible extraction tube Ø 60 mm 300 - 1 000 mm length	

The bases GU 1 and GU 2 comply with the DIN EN 55011 standard:: class C2 Note:  
The extraction unit needs a neutral conductor



## GU 4 / GU 4-H - machine base for grinding machines

### GU 4-H for heavy loads

#### Facts that impress in terms of quality, performance and price

- ▶ Coolant tray
- ▶ Small footprint
- ▶ The GU 4-H machine base must be filled with concrete at the customer's site.
- ▶ GU 4 - Particularly suitable for the machines
  - › Double grinder GU 30
  - › Universal grinding machine GU 30S
  - › Polishing grinder GU 35P
- ▶ GU 4-H - Particularly suitable for the machines
  - › Double grinder GZ 40D
  - › Combined grinder GZ 40C
  - › Polishing grinder GZ 40P



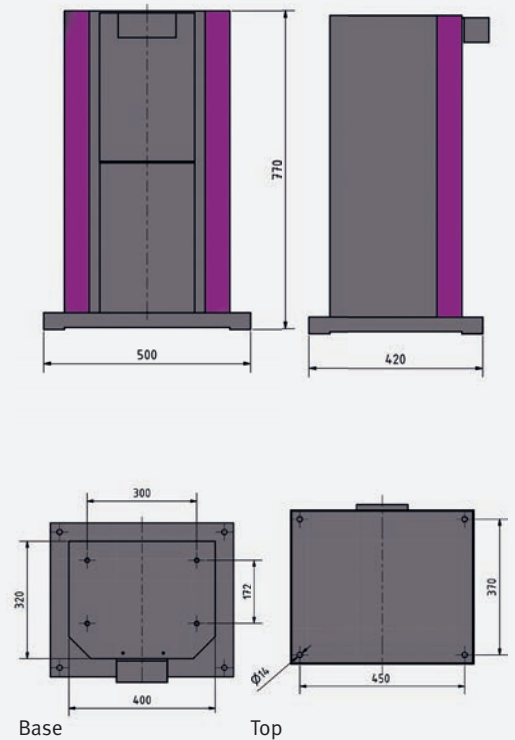
Fig. GU 4

Fig. GU 4-H

\*Reminder: The GU 4-H machine base must be filled with concrete at the customer's site.

Model	GU 4	GU 4-H*
Article no.	3107119	3107123
Dimensions	500 x 420 x 770 mm	500 x 420 x 770 mm
Net weight	30 kg	empty 33 kg / filled 139 kg

#### Dimensions and holes



## GU 5 / GU 5-H - Universal machine base with cyclone extraction unit for grinding machines. GU 5-H for heavy loads

- ▶ Sturdy machine base
- ▶ Cyclone extraction unit integrated in machine base, consequently less space required
- ▶ Noise-insulated
- ▶ Without drilled holes - must be drilled individually
- ▶ Y adapter for two-tube extraction unit connection
- ▶ The GU 5-H machine base must be filled with concrete at the customer's site.
- ▶ GU 5 - Particularly suitable for the machines
  - › Double grinder GU 30
  - › Universal grinding machine GU 30S
  - › Polishing grinder GU 35P
- ▶ GU 5-H - Particularly suitable for the machines
  - › Double grinder GZ 40D
  - › Combined grinder GZ 40C
  - › Polishing grinder GZ 40P

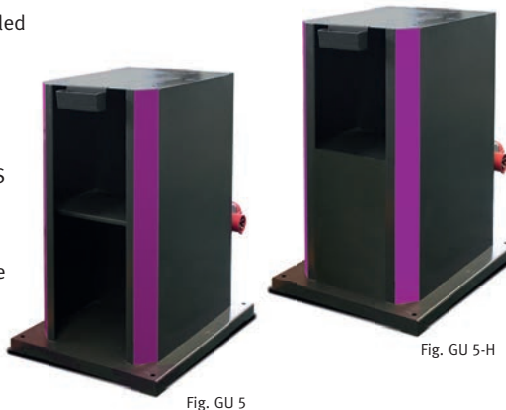


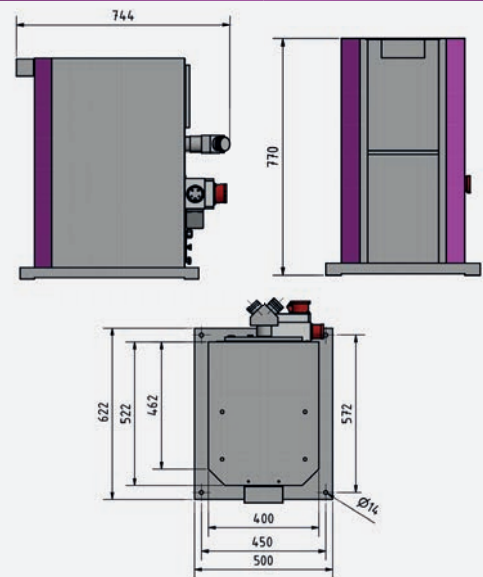
Fig. GU 5

Fig. GU 5-H

\*Reminder: The GU 5-H machine base must be filled with concrete at the customer's site.

Model	GU 5	GU 5-H
Article no.	3107114	3107124
Total connected load	4 kW 400 V/3 Ph	
Speed	29 000 rpm	
Air throughput	2.3 m³ per minute	
Dust tank volume	0.06 m³	
Dimensions L x W x H	744 x 500 x 770 mm	
Net weight	50 kg	empty 53 kg / filled 165 kg

#### Dimensions and holes



Extraction hose	3107116	35.00
2 units flexible extraction tube Ø 60 mm		
300 - 1000 mm length		

#### Automatic start-up

When the external device is switched on, the extraction unit automatically starts up after a delay of 2-3 seconds. There is no need to switch the extraction system on and off: The residual dust is extracted after switching off the machine in line with the Hazardous Materials Ordinance

# ***ACCESSORIES FOR GRINDING MACHINES***



## Accessories for grinding machines

Grinding wheel	Article no.
for GU 15 - GU 30	

- › Normal corundum grinding wheel
- › Rough grain 36

Ø 150 x 20 shaft diameter Ø 16 mm	3107150
Ø 175 x 25 shaft diameter Ø 32 mm	3107180
Ø 200 x 30 shaft diameter Ø 32 mm	3107210
Ø 250 x 40 shaft diameter Ø 32 mm	3107250
Ø 300 x 50 shaft diameter Ø 75 mm	3107270

- › Fine grain 80

Ø 150 x 20 shaft diameter Ø 16 mm	3107155
Ø 175 x 25 shaft diameter Ø 32 mm	3107185
Ø 200 x 30 shaft diameter Ø 32 mm	3107215
Ø 250 x 40 shaft diameter Ø 32 mm	3107255
Ø 300 x 50 shaft diameter Ø 75 mm	3107275

for GZ 20 - GZ 40
-------------------

- › Normal corundum grinding wheel
- › Hardness M - grey, Made in Italy



GRINDING WHEEL GZ 20	
K 36	3098121
K 60	3098123
K 80	3098125

GRINDING WHEEL GZ 25	
K 36	3098131
K 60	3098133
K 80	3098135

GRINDING WHEEL GZ 30	
K 36	3098141
K 60	3098143
K 80	3098145

GRINDING WHEEL GZ 40	
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- › Max. speed 1 650 rpm
- › Dimensions: 400 x 50 mm hole Ø 40 mm

K 36	3098150
K 60	3098152
K 80	3098154

Polishing disc	Article no.
----------------	-------------

hard - for GU 20P - GU 35P
----------------------------

Ø 200 x 20 shaft diameter Ø 16 mm	3107321
Ø 250 x 25 shaft diameter Ø 20 mm	3107331
Ø 350 x 40 shaft diameter Ø 25 mm	3107341



soft - for GU 20P - GU 35P
----------------------------

Ø 200 x 20 shaft diameter Ø 16 mm	3107320
Ø 250 x 25 shaft diameter Ø 20 mm	3107330
Ø 350 x 30 shaft diameter Ø 25 mm	3107340



Multi-purpose wire brush	Article no.
for GU 15B / GU 18B / GU 20B / GU 25B	

- › 0.3 mm thickness

Ø 150 x 20 shaft diameter Ø 16 mm	3107425
Ø 175 x 20 shaft diameter Ø 32 mm	3107430
Ø 200 x 20 shaft diameter Ø 32 mm	3107435
Ø 250 x 20 shaft diameter Ø 32 mm	3107440

- › High tensile steel wire
- › Made in EU

GZ 20C/GZ 20CD
----------------

Wire thickness 0.35 mm	3098081
Wire thickness 0.5 mm	3098082

GZ 25C/GZ 25CD
----------------

Wire thickness 0.3 mm	3098086
Wire thickness 0.5 mm	3098087

GZ 40C
--------

Wire thickness 0.2 mm	3098092
Wire thickness 0.35 mm	3098093



Grinding belt	PQ	Article no.
---------------	----	-------------

For GU 20S		
Grain size 40	5 units	3357612
Grain size 60	5 units	3357614
Grain size 80	5 units	3357616
Grain size 120	5 units	3357618
Grain size 180	5 units	3357619
Grain size 240	5 units	3357620

For GU 25S		
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Grain size 40	5 units	3357682
Grain size 60	5 units	3357684
Grain size 80	5 units	3357686
Grain size 120	5 units	3357688
Grain size 180	5 units	3357689
Grain size 240	5 units	3357690

For GU 30S		
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Grain size 40	5 units	3357637
Grain size 60	5 units	3357638
Grain size 80	5 units	3357639
Grain size 120	5 units	3357640

Grinding wheel dresser	3101821
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- › Diamond
- › Dimensions 45 x 13 mm





# ***SHEET METAL/METALWORKING***

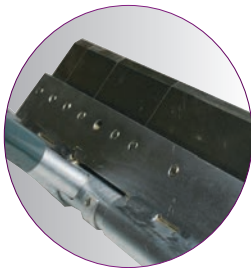




Folding machine FP 30 - universally deployable

Facts that impress in terms of quality, performance and price

- ▶ Folding machine FP 30 for bending and folding sheet metals
- ▶ Removable bending beam segments
- ▶ Convenient swivel movement of the bending beam via lever handle
- ▶ Premium quality bending beam
- ▶ For use on a vice



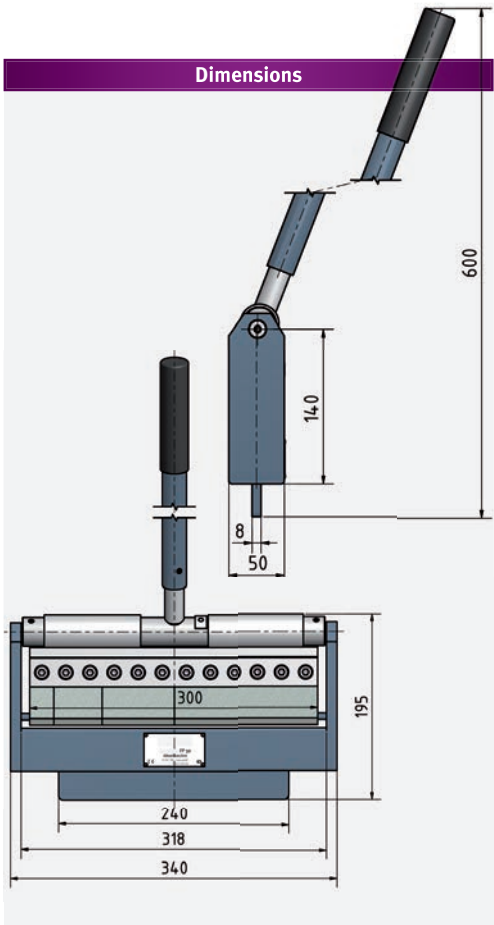
› Bending segment pieces

150 mm/75 mm/50 mm and  
25 mm removable

Fig.: Folding machine FP 30

Model	FP 30
Article no.	3244028
<b>Performance features</b>	
Max material width	320 mm
Max. sheet thickness	2.5 mm

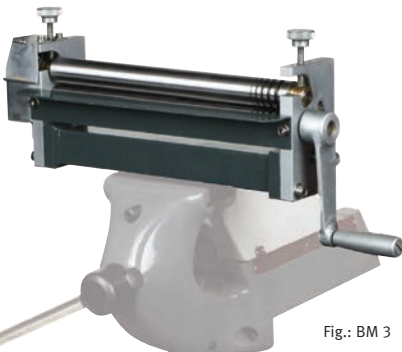
Max. folding performance at 90°	
Aluminium/copper	300 x 2 mm
Steel sheet	300 x 1 mm
Net weight	10 kg



Three-roller roll bending machine BM3 - universally deployable

Facts that impress in terms of quality, performance and price

- ▶ Bending and rolling of wires, tubes and sheet
- ▶ Polished bending rollers
- ▶ Borne steel side frames (self-lubricating)
- ▶ Two removable unwinding rollers
- ▶ Material thickness and rolling radius separately adjustable
- ▶ For use on a vice
- ▶ Sturdy support surface

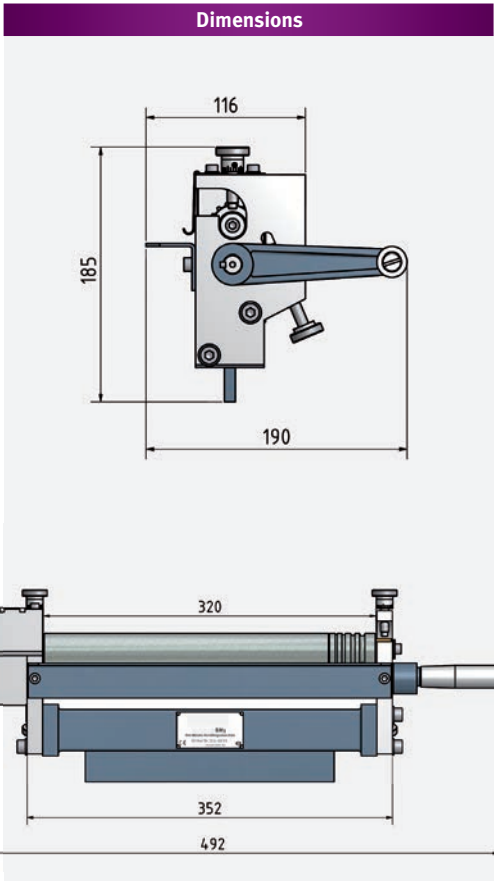


› Wire insertion  
grooves Ø 1 - 2 - 3 - 4  
- 5 mm

Fig.: BM 3

Model	BM 3
Article no.	3244030
<b>Performance features</b>	
Max material width	310 mm
Bending Ø min.	35 mm
Bending Ø max.	unlimited
Net weight	10 kg

Rolling thickness max.	
Steel sheet St. 37	1 mm
Stainless steel	1 mm
Aluminium/copper	2 mm
Brass	1 mm
Gold/silver/tinplate	2 mm
Narrow widths	3 mm
Round materials	1 - 5 mm
Unwinding roller	Ø 30 mm



## Sheet metal working machine 3 in 1: Plate rolling, folding, and cutting

Ideally suited for demanding users

### Facts that impress in terms of quality, performance and price

- Modern design and sturdy steel construction
- High level of design flexibility thanks to segmented folding rail with removable segments
- Operation via two large, adjustable and easily operable levers arranged at the side
- Scissor table with recessed measuring strips and right-angle stop on both sides
- Easily adjustable top, rear and bottom rollers
- Long support surface
- Adjustable rear stop and extensible front material support for safe support of large-format sheet metal



Fig.: SAR 1000

### Scope of delivery

- Adjustable rear stop
- Front material support
- Tool

Model	SAR 1000
Article no.	3242100

Technical data	
Max material width	700 mm
Plate rolling	
Plate rolling min.	Ø 48 mm
Plate rolling max.	Ø unlimited
Steel sheet (S235JR)	up to 1 mm
Stainless steel	up to 0.5 mm
Aluminium/copper	up to 1.5 mm
Brass	up to 1 mm
Gold/Silver/Tinplate	up to 1.5 mm
Unwinding roller Ø	48 mm
Folding	
Max. sheet thickness	2.5 mm*
Aluminium/copper	up to 1.5 mm
Steel sheet (S235JR)	up to 1 mm
Number of segments	7
Cutting	
Cutting capacity max.	up to 1 mm
Net weight	290 kg

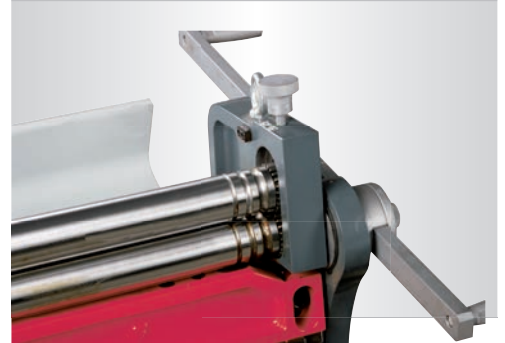


### Optional accessories

- Machine base  
 ► L x W x H: 1 185 x 500 x 700 mm  
 Article no. 3242107

### Plate rolling

- Adjusting screws for material thickness with scale
- Ground bending rollers with wire insert slots on the bottom and front rollers



### Folding

- Premium folding bars
- Spring hold-down unit
- Segmented folding rail 40 mm/50 mm/65 mm/100 mm/180 mm/255 mm/380 mm for cassette bending

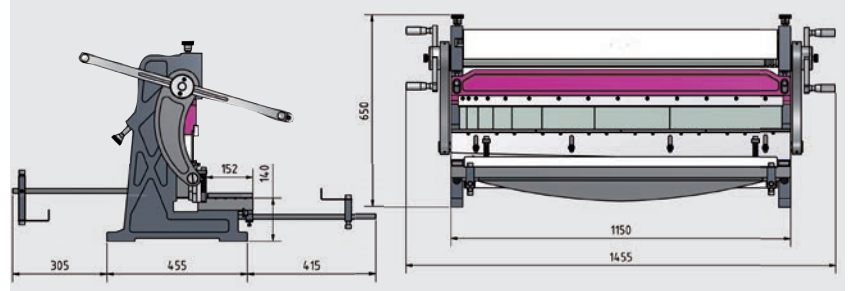


### Cutting

- Clean and burr-free cutting thanks to top and bottom blades made of quality grade steel



### Dimensions







## Lever-action snips - a quality product for trade applications

### Facts that impress in terms of quality, performance and price

- For cutting metal plates, sheet, round and flat steel
- Sturdy snip body
- Good ergonomic cutting geometry
- Easy, strength-saving cutting over the entire length of the cut
- Robust handle ensures a good grip
- Premium blades
- The workpiece to be cut is held down in horizontal position by the hold-down unit
- Stable base and holes drilled for stationary fastening



Fig.: PS 125

Fig.: PS 300



- Premium blade with long service life
- Hold-down unit prevents sheet twisting during cutting
- Strong springs prevent the shears closing autonomously



Model	PS 125	PS 150	PS 300
Article no.	3241006	3241007	3241012
Cutting capacity			
Max. cutting length (b)	95 mm	115 mm	235 mm
Max. sheet thickness (c)	3 mm*	4 mm*	4 mm*
Dimensions L x W x H	245 x 110 x 935 mm	325 x 120 x 960 mm	490 x 155 x 1 340 mm
Net weight	8.7 kg	10.7 kg	23 kg

\*Not over the entire length - material steel (S235JR), stainless steel up to 1 mm

Spareblade set	Article no.
► 2-part	
for PS 125	3241025
for PS 150	3241026
for PS 300	3241028

## DDP 10/DDP 20/DDP 30/DDP 50



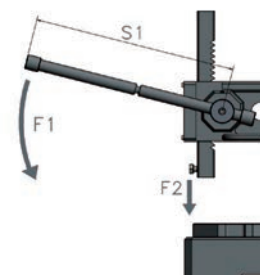
## Precision arbour presses with rugged and solid design. For mechanical workshops and repair operations

### Facts that impress in terms of quality, performance and price

- For pressing in and out of bearings, mandrels, bushings, spindles, pins
- Stable design
- Premium grey cast body
- Variably adjustable lever
- Baseplate adjustable in four positions
- For fastening on a workbench



Model	DDP 10	DDP 20	DDP 30	DDP 50
Article no.	3359011	3359012	3359013	3359015
Technical data				
Max. workpiece height	123 mm	195 mm	310 mm	459 mm
Throat	95 mm	120 mm	150 mm	226 mm
Dimensions/weight				
L x W x H max.	270 x 180 x 410 mm	430 x 235 x 680 mm	455 x 260 x 850 mm	650 x 350 x 785 mm
Stamp size (L x W x H)	25 x 25 x 240 mm	32 x 32 x 345 mm	38 x 38 x 455 mm	50 x 50 x 647 mm
Net weight	14 kg	33 kg	55 kg	167 kg



Effective force		DDP 10		DDP 20		DDP 30		DDP 50	
Hand 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)
Long lever	S1	340 mm		450 mm		600 mm		850 mm	
Effective force	F2	7 480 N	11 220 N	8 364 N	12 555 N	7 705 N	11 566 N	10 251 N	15 372 N
		(763 kg)	(1 143 kg)	(853 kg)	(1 280 kg)	(786 kg)	(1 179 kg)	(1 045 kg)	(1 567 kg)

# ***MACHINE LAMPS***



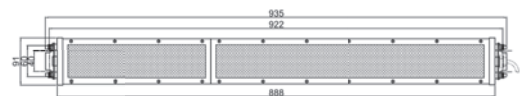
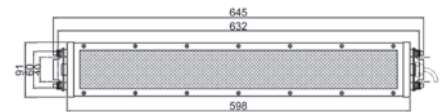
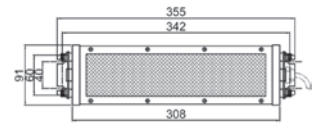
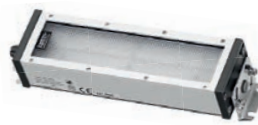
## Robust machine lamps for individual use:

### LED machine and workshop lighting

- › Electrical connection 230 V ~ 50Hz or DC 24V
- › Colour temperature neutral white 5 000 K
- › Safety glass
- › Robust, high-luminosity machine lamp
- › Aluminium housing with black side parts
- › Reflection angle 120° (reflector)
- › LED service life > 60 000 h
- › Vibration-proof at 10 to 55 Hz (amplitude 0.35 mm), shockproof up to 50 g
- › Degree of protection IP65, protection class I (operation with PE connection)
- › Operational mode: Continuous operation
- › Maximum permissible ambient temperature Tmax. 50° C°
- › Bracket-mounted, swivel angle ± 45°

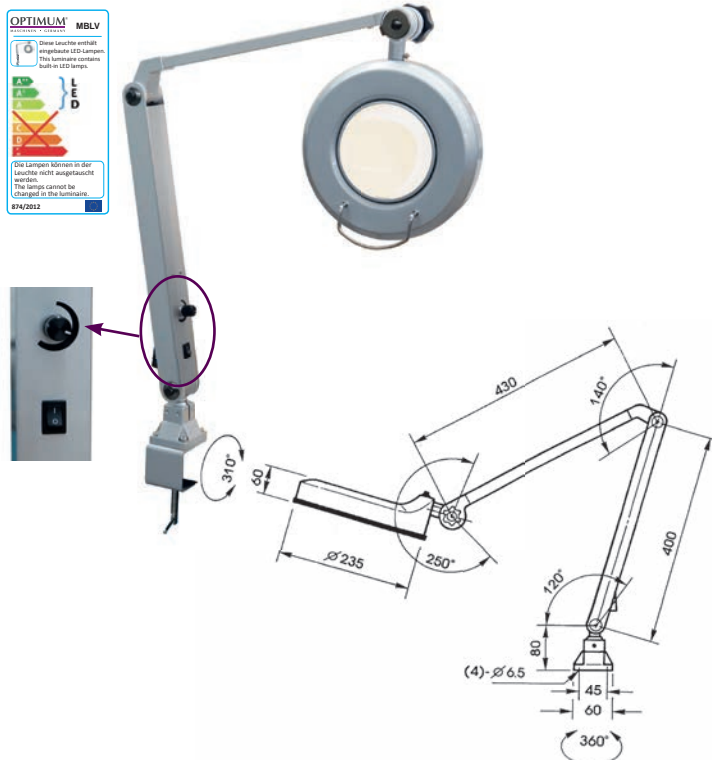
Model	MWL 1	MWL 2	MWL 3	MWL 4
Article no. AC230V	3351030	3351031	3351032	3351033
Article no. DC24V	3351040*	3351041*	<b>3351042*</b>	<b>3351043*</b>
Power	28 Watts	56 Watts	84 Watts	112 Watts
Lamp length	340 mm	630 mm	920 mm	1 210 mm
Luminosity (Lumen)	3 456 Lm	6 800 Lm	10 300 Lm	13 600 Lm

\* Required safety transformer as per EN 61558-2-6 not included in scope of delivery





Model	LED magnifying lamp MBLV
Article no.	3351090
<ul style="list-style-type: none"> <li>› Electrical connection 14 W / 230 V ~50 Hz</li> <li>› Large magnifying glass: 125 mm diameter</li> <li>› Luminosity dimmable 10 - 100 %</li> <li>› Joint easily adjustable and lockable thanks to clamp screw</li> <li>› Pleasant, glare-free light</li> <li>› Articulated arm length 830 mm</li> <li>› IP Degree of protection: IP20</li> <li>› Magnifying lamp with 1.5x optical magnification</li> </ul>	



Model	LED workbench lamp WBL 3
Article no.	3351062
<ul style="list-style-type: none"> <li>› Electrical connection 3 x 1 Watt LED / 230 V ~50 Hz</li> <li>› Luminosity 390 Lm</li> <li>› Colour temperature: 5 600 - 6 000 K</li> <li>› Articulated arm with sleeve for best possible mobility</li> <li>› Excellent positional stability</li> <li>› Swivel head</li> <li>› Impact-proof, easy-to-clean plastic housing</li> <li>› Articulated arm length 520 mm</li> <li>› IP Degree of protection: IP20</li> <li>› Magnetic base, fixing bracket</li> <li>› Integrated transformer</li> </ul>	



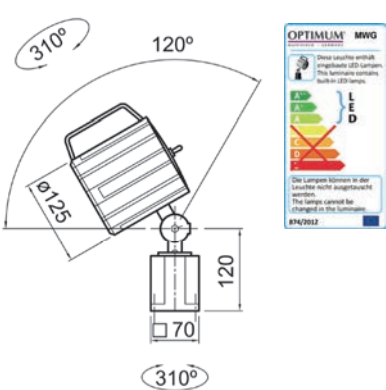
Model	Machine lamp LED 3- 500
Article no.	3351010
<ul style="list-style-type: none"> <li>› Electrical connection 3 x 1 W LED / 230 V ~50 Hz</li> <li>› Colour temperature: 4 000 - 6 000 K</li> <li>› Made of oil-resistant and impact proof plastic</li> <li>› No impairment of the service life through vibration or knocks</li> <li>› Optimum mobility of the articulated arm</li> <li>› IP degree of protection IP64 (dust and splash-water protected)</li> <li>› Lifetime 60 000 operating hours</li> <li>› Low exterior temperature; lubricants and coolants do not burn on</li> <li>› Mains supply cable approx. 1.2 m</li> <li>› Energy-saving and durable machine lamp</li> </ul>	



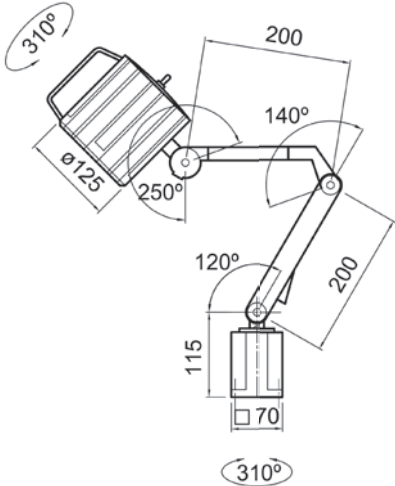
Machine lamps

LED machine and workshop lamp	
› Electrical connection 6 x 2 Watt LED / 230 V ~50 Hz	› Base bracket-mounted, rotates through 310°
› Luminosity 1 020 Lm	› Maximum permissible ambient temperature Tmax. 50° C
› Colour temperature: 5 600 - 6 000 K	› LED service life > 60,000 hours
› Robust and powerful articulated machine lamp	› Degree of protection IP65, protection class I (operation with PE connection)
› State of the art LED technology	› Aluminium housing
› Low exterior temperature; lubricants and coolants do not burn on	› Swivel head
› Reflection angle 60° (reflector)	

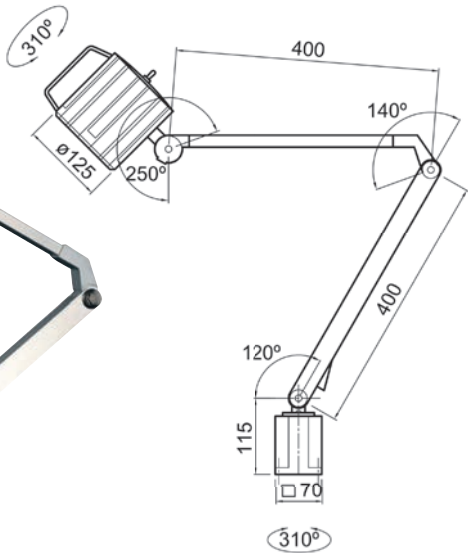
Model	MWG 6-100
Article no.	3351051
Foot size: 70 x 70 mm	



Model	MWG 6-600
Article no.	3351052
Foot size: 70 x 70 mm	
Arm length: 400 mm	
Arm type: Swivelling	



Model	MWG 6-720
Article no.	3351053
Foot size: 70 x 70 mm	
Arm length: 800 mm	
Arm type: Swivelling	










# ***COOLANT ACCESSORIES***





## Coolant accessories

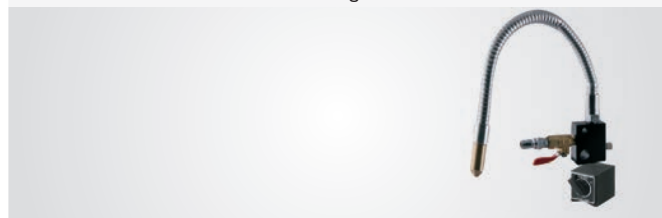
	Designation	Size	Article no.
	Coolant hose set 2 pcs. articulated hose; 300 mm 2 pcs. round nozzles, 1 pc. shut-off valve 1 pc. magnetic base	1/4"	3356700
		1/2"	3356801
	Coolant hoses 4 pcs. articulated hose; 150 mm	1/4"	3356701
	<b>Coolant hose set</b> 2 pcs. articulated hose; 150 mm 2 pcs. NPT connection 1/4" and 1/8" 3 pcs. round nozzle 1/16" / 1/8" / 1/4" 1 pc. flat nozzle	1/4"	3356702
	<b>Coolant hose set</b> 2 pcs. articulated hose; 150 mm 2 pcs. NPT connection 1/4" and 1/8" 3 pcs. round nozzle 1/16" / 1/8" / 1/4"	1/2"	3356802
	<b>Coolant hose set</b> 2 pcs. articulated hose; 150 mm 2 pcs. NPT connection 1/4" and 1/8" 2 pcs. round nozzle 1/8" / 1/4" 2 pcs. shut-off valve	1/4"	3356703
	<b>Grips</b>	1/4"	3356710
		1/2"	3356810
	<b>Articulated hose</b> Hose roll 15 metres	1/4"	3356711
		1/2"	3356811
	<b>Circular nozzles</b>	1/4"	3356712
		1/2"	3356812
	<b>Flat nozzles</b> 5-hole 5 pcs.	1/4"	3356713
		1/2"	3356820
	<b>Flat nozzles</b> 5 pcs.	1/4"	3356714
		1/2"	3356813
	<b>Flat nozzle</b> 75 mm wide 2 pcs.	1/4"	3356715
		1/2"	3356814
	<b>Connector</b> Threaded connection RP3/8" 5 pcs.	1/4"	3356716
		1/2"	3356815
	<b>Connector</b> Threaded connection RP1/2" 5 pcs.	1/2"	3356816
	<b>Y connector</b> 5 pcs. 1/4" 2 pcs. 1/2"	1/4"	3356717
		1/2"	3356817
	<b>Cap</b> 5 pcs.	1/4"	3356718
		1/2"	3356818
	<b>Shut-off valve for articulated hose</b> 2 pcs.	1/4"	3356719
		1/2"	3356819

	Designation	Size	Article no.
	<b>Coolant hoses basic equipment</b> <b>1/4" - No. 1</b> <ul style="list-style-type: none"> <li>› 8 pcs. articulated hoses 150 mm</li> <li>› 2 pcs. each round nozzle 1/16" / 1/8" / 1/4",</li> <li>› 2 pcs. NPT connection 1/4" and 1/8",</li> <li>› 1 pc. flat nozzle,</li> <li>› 1 pc. Y-distributor,</li> <li>› 2 pcs. shut-off valve inside and outside,</li> <li>› 2 pcs. shut-off valve inside - 1/4",</li> <li>› 2 pc. NPT extension,</li> <li>› 1 pc. magnetic base, 1 pc. flexible sealing tape</li> </ul>	1/4"	3356704
	<b>Coolant hoses basic equipment</b> <b>1/4" - No. 2</b> <ul style="list-style-type: none"> <li>› 6 pcs. articulated hose 150 mm</li> <li>› 2 pcs. each round nozzle 1/16" / 1/8" / 1/4",</li> <li>› 2 pcs. each NPT connection 1/4" and 1/8",</li> <li>› 5 pcs. flat nozzle,</li> <li>› 4 pcs. 90° nozzle,</li> <li>› 1 pc. Y-distributor,</li> <li>› 1 pc. shut-off valve, inside and outside,</li> <li>› 1 pc. shut-off valve, inside - 1/4"</li> <li>› 1 piece clamping tong</li> </ul>	1/4"	3356705
	<b>Coolant hoses basic equipment</b> <b>1/2" - No. 1</b> <ul style="list-style-type: none"> <li>› 6 pcs. articulated hose 150 mm</li> <li>› 2 pcs. each round nozzle 1/2" / 3/8" / 1/4",</li> <li>› 2 pcs. each NPT connection 1/4" and 1/2",</li> <li>› 1 pc. flat nozzle,</li> <li>› 3 pcs. 90° round nozzle 1/2" / 3/8" / 1/4",</li> <li>› 1 pc. Y-distributor,</li> <li>› 1 pc. shut-off valve, inside and outside,</li> <li>› 1 pc. shut-off valve, inside - 1/2"</li> <li>› 1 piece clamping tong</li> </ul>	1/2"	3356800

Universal coolant unit 230 V	3351999
› Max. delivery height 2.5 m / delivery rate 8 l/min	
› Tank capacity 11 litres. / Size L x W x H: 370 x 245 x 170 mm	
› Complete with tank, flexible tube, hose and switch/plug combination	
› Magnetic base fastener for coolant hose	



MMC1 coolant mist lubricator	3356663
› Magnetic base with a holding force of 75 kg	
› Base size L x W x H: 62 x 50 x 55 mm	
› Screw connection for external compressed air supply	
› Flexible and stable hose with a length of 500 mm	



AQUACUT C1	3530030
› 10 litre cannister	
› For mixing emulsions	
› Drilling and cooling emulsion	
› High-pressure resistant and containing mineral oil, for long tool life and clean surfaces	
› Emulsifiable with water, microbe-resistant and kind to the skin	



KMS 2 coolant hose	3356660
› Insensitive to most solvents and chemicals	
› Not electrically conductive	
› Magnetic base holding force up to 50 kg	
› Length of coolant hoses each 335 mm	
› 6mm hose connection	
› 1/4" coolant hoses	



# MEASURING ACCESSORIES



Accessories	Article no.
<b>Precision magnetic measuring stand</b>	3356650
› Measuring column Ø 12 mm x 181 mm	
› Transverse arm Ø 10 mm x 160 mm	
› Magnetic base L x W x H: 50 x 62 x 55 mm	
› Holding force 50 kg	
› Dial gauge holder with mounting hole for dial gauges, fine indicators, electrical length measuring probes	



Accessories	Article no.
<b>Measuring and test platen</b>	3385060
› Dimensions L x W x H: 630 x 400 x 100 mm	
› Precision 7 µ	
› Granite	
› Thermally and dynamically stable	
› Compressive strength 250 - 260 N/mm <sup>2</sup>	
› DIN 876/0	
› Corrosion-free	

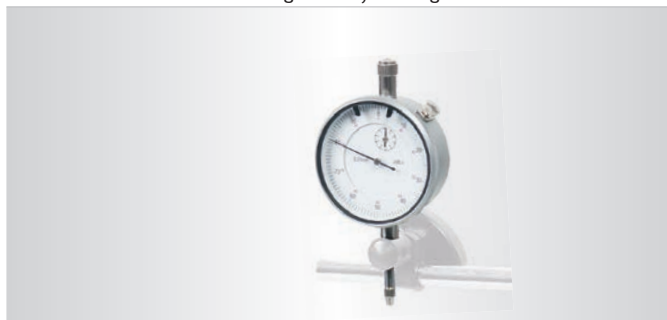




Accessories	Article no.
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Dial gauge	3385090
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- › Precision as per DIN 878
- › Metal housing matt chrome plated
- › Clamping shaft 8 mm
- › Pitch 0.01 mm
- › Measuring range 10 mm
- › Outer ring with two adjustable tolerance marks
- › Scale rotatable via outer ring for easy zeroing



Accessories	Article no.
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Machine spirit level	3385064
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- › With prismatic base for levelling horizontal surfaces and shafts
- › Compact and stress-free installation of the longitudinal spirit level guarantees constant precision
- › Precision 0.02 mm/m
- › Horizontal and longitudinal spirit level as per DIN 2276 Form B
- › Eliminates time-consuming adjustment work
- › Heat protected handle
- › Dimensions: 200 mm x 46 mm x 46 mm



## PLEASE NOTE

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- › Our machines must be supervised at all times during operation. Leaving the machine during operations constitutes gross negligence.
- › The details on machine precision are found in the technical data of the catalogue pages. If you do not find any values here, please contact [info@optimum-maschinen.de](mailto:info@optimum-maschinen.de) for more detailed information.
- › The stated precisions are achieved under standardised conditions (correct installation of the machine and ambient temperature of 20 °C). The machines are not designed for continuous operation.
- › Please note that operators are required to make conversions in the event of installing third-party chucks or flanged chucks to reach the stated, technically possible rotating diameter.
- › All machines are designed S6-60% operation.

## OPERATION OF MACHINES WITH FREQUENCY CONVERTERS

› Electrical connection only by a qualified electrician  
Machines with frequency inverters or inverters must not be operated via an ordinary plug. A permanent connection is required. The drive components conduct a high leakage current via the protective conductor. Touching conductive parts when the protective conductor is interrupted can result in death or serious injury.

› Building electrics:  
In order to avoid tripping of residual current circuit breakers - if present in the building electrics - an all-current-sensitive residual current circuit breaker type B is required.  
AC - sensitive AC type RCDs (AC only) are not suitable for frequency inverters. AC sensitive earth-leakage circuit breakers of type AC are no longer in use and are no longer permitted in Germany.

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