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OPTIMUM®

MASCHINEN - GERMANY

METAL WORKING MACHINERY

THE OPTIMUM IN TERMS OF QUALITY,

PRICE-PERFORMANCE AND SERVICE



MAIN CATALOGUE 2019

The OPTIMUM in terms of quality,
price-performance and service



Sales and service Germany in Hallstadt/Bamberg

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 relies on 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 propagate it to you our customers.



Kilian Stürmer
Managing Directors



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 avoid missing any of the new videos.





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.

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.

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.

Today, OPTIMUM Maschinen Germany GmbH, German company, collaborates globally with professional partners from its headquarters in Hallstadt near Bamberg.

You will find OPTIMUM subsidiaries with strong dealers. 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!



All OPTIMUM products are produced under high quality requirements.



OPTIMUM plant in Yangzhou, China

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.



Production on our own CNC machines



Drilling machine assembly



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. 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.



Lathe production



Metal-cutting band saw production

German Quality – made in China



Our production facilities

Optimum Maschinen Germany GmbH has commenced production in 2006 in Touqiao Town near Yangzhou in Jiangsu Province, only about three hours by car from Shanghai, on a total area of 20 000 square meters - a building floor space of 9 000 square meters with 180 employees, including 40 technicians.

Today, we produce our Optimum machine program in three production plants with a total area of 74 000 square meters and a building floor space of 30 000 m² with about 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 it is this attitude that finally helps to achieve this

demanding certification. 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.





Our standards are high. And we strictly adhere to them

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.

Achieving our quality goals is an important management task



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 operations and 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

Quality Assurance department

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



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 Outbound goods inspection

In addition to adherence 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 our 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 at our facility and at facilities operated by our partners. Major benefits: this ensures that market factors and customer requirements are immediately adopted into our workflow, setting the stage for a 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 devising production documents and manuals, but are also used for computations, for computer-aided manufacturing, and 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 as 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. Following this, the residual risk is evaluated after implementing the measures.



Supplier management

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 benefits: this qualification offers the ability to ensure professionally founded consultancy and problem solving in all dealings with the customer. At our training centre, we offer practically-oriented product training that aim to disseminate professional knowledge in a highly intuitive way.



Supply of spare parts

We know that rapid availability of spare parts is one of the major pre-conditions 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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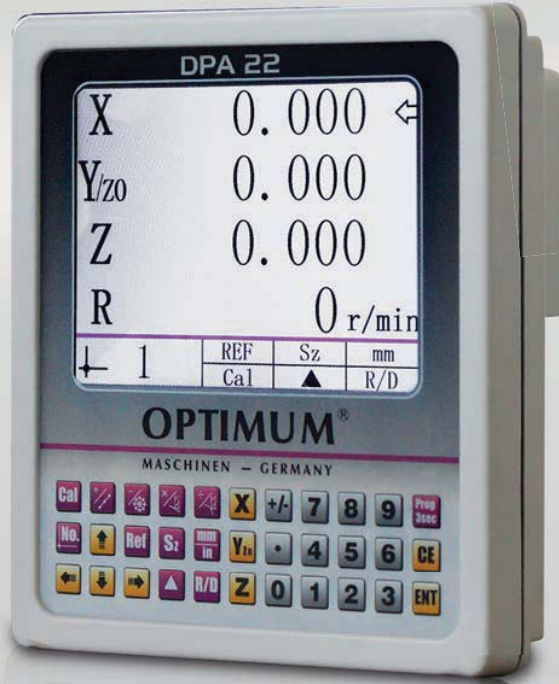
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MACHINES - COOLANT ACCESSORIES, MEASURING EQUIPMENT, LAMPS

Robust machine lamps for individual use:

LED machine and workshop lighting				
› Electrical connection 230 V ~ 50Hz or DC 24V	› LED service life > 60 000 h			
› Colour temperature neutral white 5 000 K	› Vibration-proof at 10 to 55 Hz (amplitude 0.35 mm), shockproof up to 50 g			
› Safety glass	› Degree of protection IP65, protection class I (operation with PE connection)			
› Robust, high-luminosity machine lamp	› Operating mode: Continuous operation			
› Aluminium housing with black side parts	› Maximum permissible ambient temperature Tmax. 50 °C			
› Reflection angle 120° (reflector)	› 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*	3351042*	3351043*
Services	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



NEW

Model	LED workbench lamp WBL 3
Article no.	3351062
› Electrical connection 3 x 1 Watt LED / 230 V ~ 50 Hz	
› Luminosity 390 Lm	
› Colour temperature: 5 600 - 6 000 K	
› Articulated arm with sleeve for best possible mobility	
› Excellent positional stability	
› Swivel head	
› Impact-proof, easy-to-clean plastic housing	
› Arm length 520 mm	
› Degree of protection IP20	
› Magnetic base, fixing bracket	
› Integrated transformer	

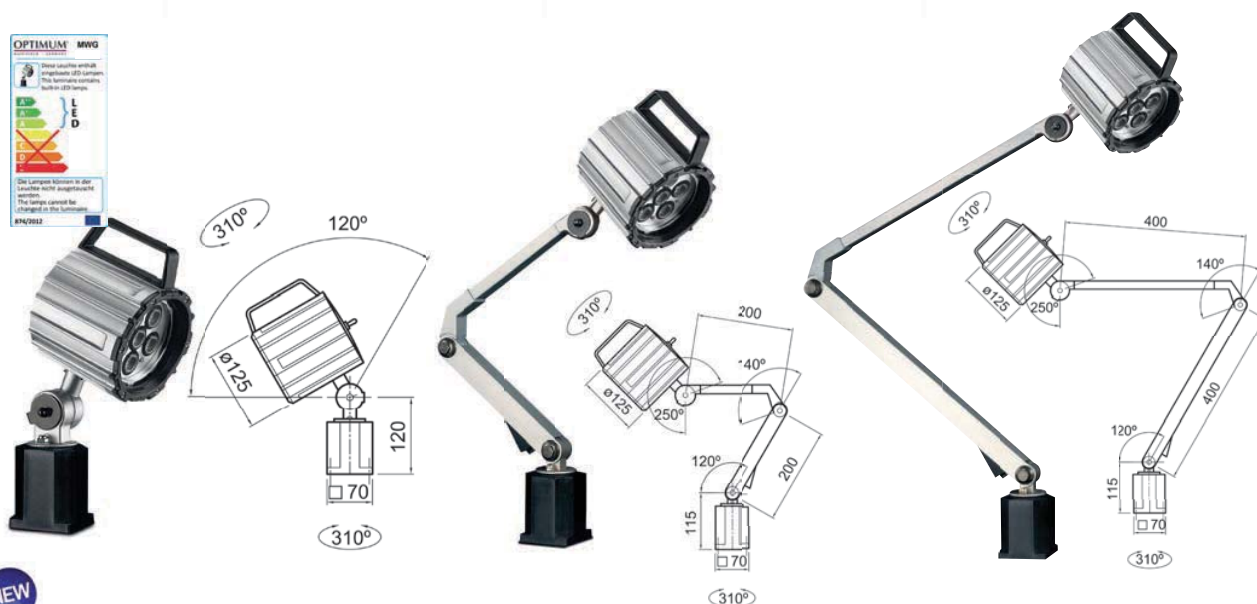


NEW

LED machine and workshop lamp

- › Electrical connection 6 x 2 Watt LED / 230 V ~50 Hz
- › Luminosity 1 020 Lm
- › Colour temperature: 5 600 - 6 000 K
- › Robust and powerful articulated machine lamp
- › State of the art LED technology
- › Low exterior temperature; lubricants and coolants do not burn on
- › Reflection angle 60° (reflector)
- › Base bracket-mounted, rotates through 310°
- › Maximum permissible ambient temperature Tmax. 50 °C
- › LED service life > 60 000 h
- › Degree of protection IP65, protection class I (operation with PE connection)
- › Aluminium housing
- › Swivel head

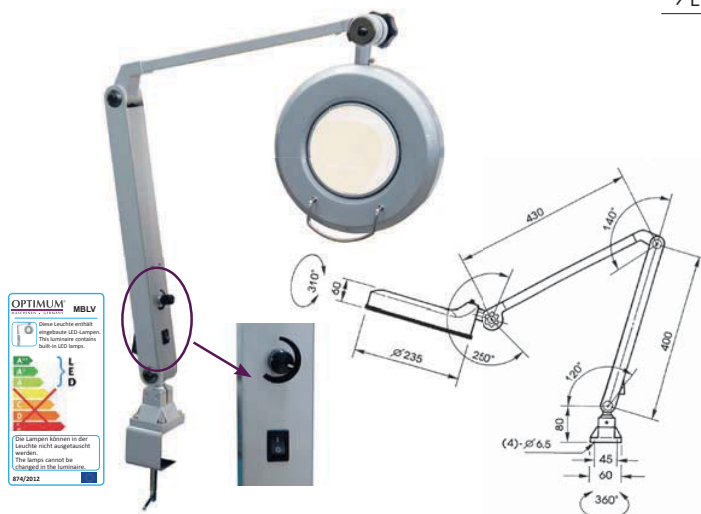
Model	MWG 6-100	MWG 6-600	MWG 6-720
Article no.	3351051	3351052	3351053



NEW

Model	LED magnifying lamp MBLV
Article no.	3351090
› Electrical connection 14 W / 230 V ~50 Hz	
› Large magnifying glass: 125 mm diameter	
› Luminosity dimmable 10 - 100 %	
› Joint easily adjustable and lockable thanks to clamp screw	
› Pleasant, glare-free light	
› Articulated arm length 830 mm	
› IP Degree of protection: IP20	
› Magnifying lamp with 1.5x optical magnification	


Model	Machine lamp LED 3-500
Article no.	3351010
› Electrical connection 3 x 1 W LED / 230 V ~50 Hz	
› Colour temperature: 4 000 - 4 500 K	
› Made of oil-resistant and impact proof plastic	
› No impairment of the service life through vibration or knocks	
› Optimum mobility of the articulated arm	
› IP degree of protection IP64 (dust and splash-water protected)	
› Lifetime 60 000 operating hours	
› Low exterior temperature; lubricants and coolants do not burn on	
› Mains supply cable approx. 1.2 m	
› Energy-saving and durable machine lamp	




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
	Coolant hose set 2 pcs. articulated hose; 150 mm 2 pcs. NPT coupling 1/4" and 1/8" 3 pcs. round nozzle 1/16" / 1/8" / 1/4" 1 pc. flat nozzle	1/4"	3356702
		1/2"	3356802
	Coolant hose set 2 pcs. articulated hose; 150 mm 2 pcs. NPT coupling 1/4" and 1/8" 2 pcs. round nozzle 1/8" / 1/4", 2 pcs. shut-off valve	1/4"	3356703
	Grips	1/4"	3356710
		1/2"	3356810
	Articulated hose Hose roll 15 metres	1/4"	3356711
		1/2"	3356811
	Circular nozzles	1/4"	3356712
		1/2"	3356812
	Flat nozzles 5-hole 5 units	1/4"	3356713
		1/2"	3356820
	Flat nozzles 5 units	1/4"	3356714
		1/2"	3356813
	Flat nozzle 75 mm wide 2 units	1/4"	3356715
		1/2"	3356814
	Connector Threaded connection RP3/8" 5 units	1/4"	3356716
		1/2"	3356815
	Connector Threaded connection RP1/2" 5 units	1/2"	3356816
	Y connector 5 pcs. 1/4" 2 pcs. 1/2"	1/4"	3356717
		1/2"	3356817
	Cap 5 units	1/4"	3356718
		1/2"	3356818
	Shut off valve for articulated hose 2 pcs.	1/4"	3356719
		1/2"	3356819


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

Universal coolant unit 230 V/1 Ph	3352002
<ul style="list-style-type: none"> › Max. delivery height 2.5 m / delivery rate 8 l/min › Tank content 11 l / dimensions 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 	
	

Coolant mist lubricator MMC1	3356663
<ul style="list-style-type: none"> › 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 	
	

NEW

AQUACUT C1	3530030
<ul style="list-style-type: none"> • 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 	
	

Coolant hose KMS 2	3356660
<ul style="list-style-type: none"> › 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 	
	

Digital position display DP700 for precise measurement of travel Travel and positioning on the machine and drives



Digital position display DP700	3390073
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Extension kit - Spherosyn milling	3390220
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- › Digital position display DP700
- › Display holder
- › Attachment parts for assembling three axes Spherosyn

Extension kit - Microsyn milling	3390230
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- › Digital position display DP700
- › Display holder
- › Attachment parts for assembling three axes Microsyn

Extension kit - turning 1	3390405
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- › Digital position display DP700
- › Display holder
- › Attachment parts for assembling one axis Spherosyn and one axis Microsyn greater than 300 mm

Extension kit - turning 2	3390406
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- › Digital position display DP700
- › Display holder
- › Attachment parts for assembling one axis Spherosyn and one axis Microsyn less than 300 mm

Complete attachment kit MH 35G	3390330
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- › Digital position display DP700
- › 3 pcs. measuring strip Microsyn
- › Display holder · Attachment parts measuring strip assembly

Complete attachment kit MH 50G	3390346
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- › Digital position display DP700
- › 3 pcs. measuring strip Microsyn
- › Display holder · Attachment parts measuring strip assembly

Complete attachment kit TH 3309	3390420
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- › Digital position display DP700
- › 2 pcs. measuring strip Microsyn · 1 pc. measuring strip Spherosyn
- › Display holder · Attachment parts measuring strip assembly

Complete attachment kit TH 3610 / TH 4010	3390430
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- › Digital position display DP700
- › 2 pcs. measuring strip Microsyn · 1 pc. measuring strip Spherosyn
- › Display holder · Attachment parts measuring strip assembly

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/steps	•	•
mm/inch	•	•
Axes preset/zero set	•	•
Approach zero point	•	•
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	

Measuring strips

Analogue measuring systems (Spherosyn & Microsyn)

The Spherosyn and Microsyn length measuring 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 IP67
- › 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 measuring probe

Worldwide, more than 400 000 Spherosyn and Microsyn transducers offer the highest degree 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 measuring probes rely on the principle of electro-magnetism and consist of a stainless steel or carbon fibre tube filled with individual, classified, highly precise 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 measuring probes

Analogue measuring systems	Spherosyn	Microsyn
Measuring length	51 mm to 2 945 mm	30 mm to 1 000 mm
Scale	15.25 mm	6.5 mm
Measuring probe material	stainless steel	Carbon fibre
Measuring probe 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)	
Precision	+/- 10 micron	
Repetition accuracy	Within one resolution sample	
Drive input	85mA +/-5mA	
Output	2.0 V +/-0.5 RMS, 1 kHz phase-analogue, 360 degrees 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 fastening



Fig.: **Microsyn** with optional fastening

Measuring strips Spherosyn	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

Measuring strips Microsyn	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

Digital positioning displays for versatile deployment for three axes with speed display. Premium technology and durable industrial quality

Differences:

DPA 21

- ▶ LED display

DPA 22

- ▶ LCD display
- ▶ High-contrast display
- ▶ Simplified menu navigation
- ▶ Graphical input for cycle programming



Digital position display	Article no.
DPA 21 (LED display)	3384020
DPA 22 (LCD display)	3384022
<ul style="list-style-type: none"> › User-friendly membrane keyboard, splash water protected, sealed and dazzle free › Switchable for milling machine and lathe, freely selectable input signal (sinus/square), e.g. usable for glass measuring probes and/or magnetic strip system › Greater operation accuracy › Clear reduction of manufacturing times › Reduction of error quota › X, Y/Z, Z axis each with 8-digit display › Sensor supplied for acquiring spindle speeds › Three measuring inputs can be evaluated with seven correction memory stores each for tools › Dimensions L x W x H: 230 x 80 x 260 mm . Weight: 2 kg 	

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 slots

Scope of delivery

- › Speed sensor
- › Holder
- › Power supply 24 V

Read head active



Magnetic strip

- › Magnetic strip for assembly machines that do not have enough space for magnetic measuring probes
 - › Connector 9-pin
- | | |
|-------------------------|---------|
| Length 1 100 mm | 3383978 |
| Length 2 000 mm | 3383979 |
| Read head active | 3383934 |
- › for magnetic strip

Measuring strips

Article no.

- › Fully encapsulated measuring systems with high precision glass measuring probe
- › Resolution 5 µm
- › Accuracy ± 0.003 mm
- › Sampling slide borne on miniature ball bearings and connected to the assembly base by a coupling
- › Protected against dust, chips and splash water by a rubber lip
- › Flexible metal protection hose
- › Connecting cable three metres; four metres as of ML 620
- › Without assembly

ML 80 mm	3384108
ML 100 mm	3384110
ML 120 mm	3384112
ML 170 mm	3384117
ML 220 mm	3384122
ML 270 mm	3384127
ML 320 mm	3384132
ML 370 mm	3384137
ML 420 mm	3384142
ML 470 mm	3384147
ML 520 mm	3384152
ML 570 mm	3384157
ML 620 mm	3384162
ML 670 mm	3384167
ML 720 mm	3384172
ML 770 mm	3384177
ML 820 mm	3384182
ML 870 mm	3384187
ML 920 mm	3384192
ML 970 mm	3384197
ML 1 020 mm	3384202
ML 1 250 mm	3384225
ML 1 400 mm	3384240
ML 1 520 mm	3384252
ML 1 670 mm	3384267
ML 1 940 mm	3384294
ML 2 010 mm	3384295
ML 3 000 mm	3384300
Factory assembly ML	9000410

- ▶ Per measuring strip

Digital 3-axis position display for milling machines and lathes with speed display

Digital 3-axis position display DRO5	
Article no.	3383975
› Digital 3-axis position display for milling machines (X - Y - Z) and for lathes (X, Z, Z ₀)	
› For measuring positions	
› Rev counter	
› Three incremental inputs	
› Four-line LCD display	
› User-friendly menu navigation	
› Rugged aluminium housing	
› Programming from the front	
› Dimensions length 98 mm x width 65 mm x height 134 mm	
Including	
› Speed sensor cable length 5 metres	
› 3 pcs. 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

Measuring accessories

Dial gauge	3385090
› Precision as per DIN 878	
› Metal housing matt chrome plated	
› Clamping shank 8 mm	
› Scale 0.01 mm	
› Measuring range 10 mm	
› Outer ring with two adjustable tolerances	
› Scale rotatable via outer ring for easy reading	

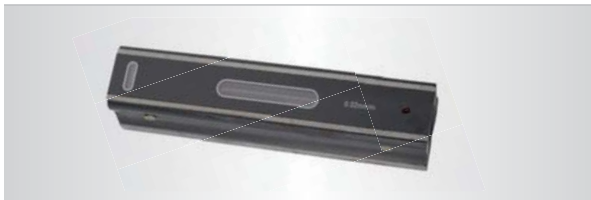


Precision magnetic measuring stand	3356650
› Measuring column Ø 12 mm x 181 mm	
› Traverse Ø 10 mm x 160 mm	
› Magnetic base L x W x H: 50 x 62 x 55 mm	
› Holding force 50 kg	
› Dial gauge holder with mounting hole for dial gauges, fine indicators, electrical length measuring probes	



Fig.: Dial gauge and measuring stand

Machine spirit level	3385064
› 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	



Measuring and test platen	3385060
› Dimensions L x B x W: 630 x 400 x 100 mm	
› Precision 7 µ	
› Granite	
› Thermally and dynamically stable	
› Compressive strength 250 - 260 N/mm²	
› DIN 876/0	
› Corrosion-free	



Please note

- › These offers are intended exclusively for business owners, retailers and tradespersons who are making a purchase in pursuit of their profession or self-employment. This is an explicit CONDITION FOR THE CONCLUSION OF A CONTRACT. Consumers are not eligible to purchase as per Section 13 BGB (German Civil Code)
- › We accept no liability for printing errors, mistakes or incorrect representation.
- › Subject to technical modifications and visual changes.
- › Illustrations show optimal accessories in some cases
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- › Please note that transport packaging surcharges apply for some machines in this catalogue to cover transport units, packaging and packaging overheads.

Warranty conditions

- › Independently of your legal warranty entitlement, OPTIMUM provides a guarantee on the basis of the following provisions for the period as stated in the catalogue for the respective machine; the guarantee period starts on the date of sale of the machine to the end customer. OPTIMUM offers a guarantee on catalogue products where a guarantee is specifically indicated. The guarantee exclusively covers defects resulting from material or manufacturing errors. The warranty exclusively covers spare parts but not the transport and installation costs or labour and ancillary services necessary for eliminating defects. The guarantee excludes unintended use or improper application such as overloading of the machine or the use of non-approved and unsuitable tools, use of force, damage caused by external influences or by foreign bodies, e.g., dust, chips or stones, damage caused by failure to observe the Operating Instructions, e.g., connection to the wrong mains voltage or current, failure to observe assembly instructions, conversions and extensions carried out by the customer, as well as normal wear. The guarantee also excludes partially or fully disassembled machines and machine tools. When claiming against guarantee/warranty, you must submit the original sales receipt showing the date of purchase. Repairs under guarantee/warranty may be performed by authorised partners only who will be named by the guarantee/warranty provider. The guarantee/warranty is restricted to the end customer of the new machine and is not transferrable.

General notes on operating our machines

- › 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 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.

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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