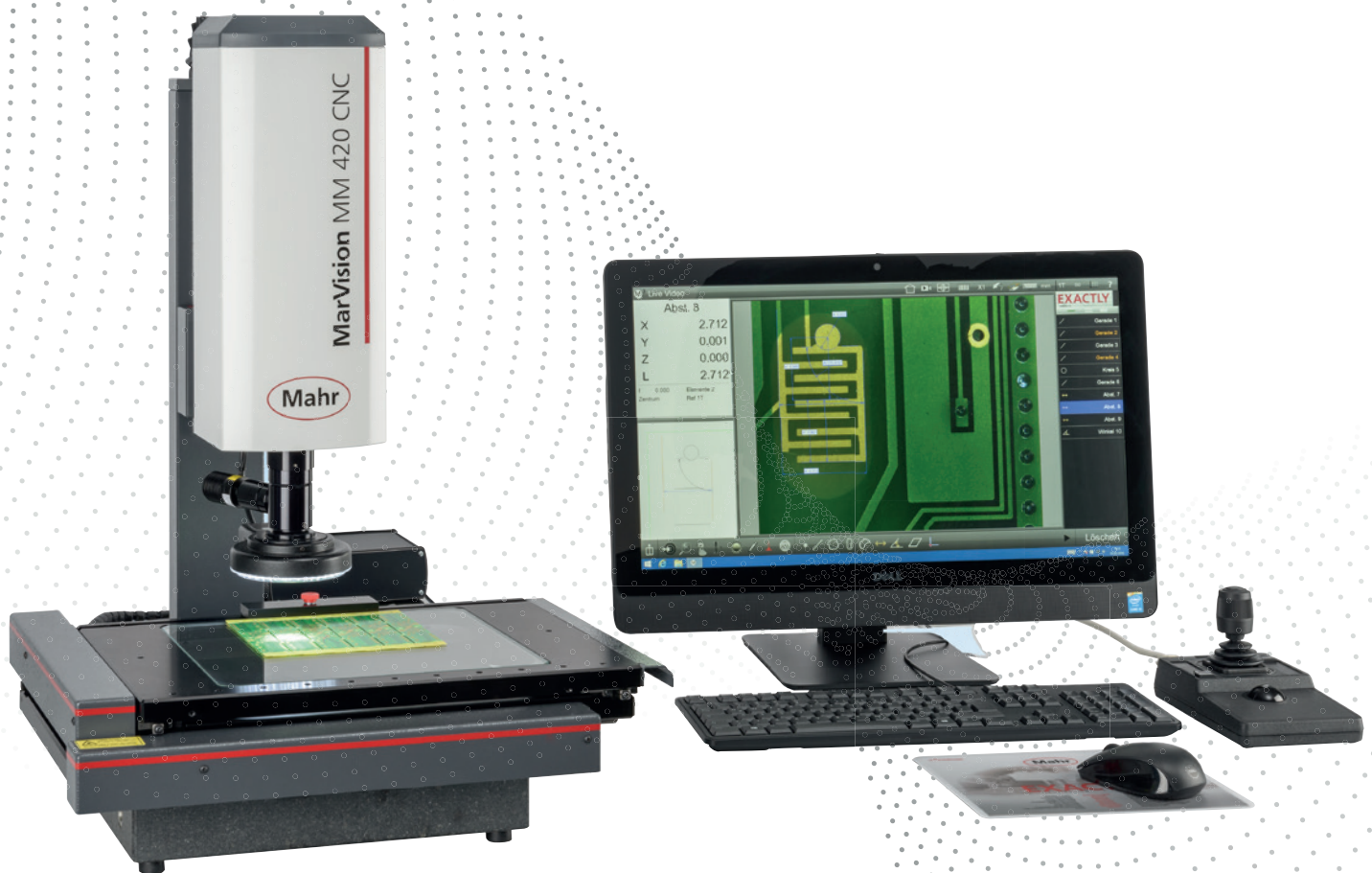


MarVision | Optical Measuring Instruments

Quality control is in a state of transition throughout the manufacturing industry: The pressure is on to measure workpieces more quickly, more accurately and yet at the same time also less expensively. That is where measuring microscopes from Mahr come into their own. These instruments provide fast, contactless measurement of contours, distances, angles, radii and also form and position features on your components, close to production. Even the smallest components can be measured very accurately by selecting appropriate zoom settings. Measuring microscopes from Mahr can be found in virtually every sector and deliver precise measuring results at an unbeatable price-performance ratio.



MarVision MM 220

Workshop Measuring Microscope with M2 Software

FEATURES

Measuring Microscope

- High quality optics for light intensive and sharp images
- Zoom lens with continuous variable magnification
- Focusing with an ergonomic handwheel, mounted either side, ideal for either a left or right-handed operator
- Prism head tilted to 45° with dioptic adjustment
- LED ring light, dimmable
- LED transmitted light, dimmable
- Solid granit stand
- Sturdy XY table, precision-mounted
- Quick and fine adjustment of axes
- Optical incremental measuring system for outstanding accuracy and reliability

M2 Geometry Measuring Software

- 2 axes (X, Y)
- Measuring point recorded using crosshair
- Creation of other magnifications using front-lens
- Measure, define and construct 2D elements
- Different calculation methods (best fit, best form, minimum circumscribing circle, maximum inscribed circle, etc.)
- Partial programming using Teach-In
- Comprehensive measuring records
- Multilingual user guidance
- Tolerances test as per DIN / ISO
- Data transmission

Evaluation Unit

- All-in-one PC 15.6"
- Interfaces*: 2x RS232, 4x USB 3.1
- Hard disk*: SSD 120 GB
- User memory*: 4 GB
- * Subject to deviations!
- **Data interface:** RS232C, USB
- **Package contains:** M2 software with tablet PC, standard stop bar 220 as, instruction manual



Application:

- For measuring distances, bore holes and angles
- Determination of geometric elements (points, lines, circles, distances, intersections, etc.) for example: punched and flexible parts, plastic components, as well as electronic circuit boards

TECHNICAL DATA

Order no.		4246230	4246235	4246231	4246236	4246232	4246237
Product type		MM 220					
Operating and display unit		Tablet PC with M2 software					
Measuring range X/Y	mm	100 / 100		200 / 100		250 / 170	
Z travel path	mm	200					
Maximum table load	kg	20					
Measuring system		Built-in incremental scale					
Measuring system - resolution	mm	0.001					
Measuring system - E1 X/Y	µm	1.9 + (L/100) L in mm					
Measuring system - E2 XY	µm	2.9 + (L/100) L in mm					
Magnification		8–40x variable zoom					
Image field - diameter	mm	23 –4					
Max. height of test piece	mm	185					
Max. height of test piece / 0.5-fold	mm	110					
200 extension in Z	mm	385					
200 extension in Z / 0.5-fold	mm	310					
Illumination		LED Incident and transmitted light, individually adjustable					
Energy supply		230 V / 50 Hz	110 V / 60 Hz	230 V / 50 Hz	110 V / 60 Hz	230 V / 50 Hz	110 V / 60 Hz
H x W x D	mm	550 x 480 x 430		550 x 650 x 530		550 x 700 x 600	

MarVision MM 220

Workshop Measuring Microscope with M2 Software

ACCESSORIES

Order no.	Product name	Product type
4246010	Optional eyepiece head with angle measuring device	200 w
4247050	Optional telecentric transmitted light for measuring rotationally symmetrical parts	200 ld
4246051	Optional Z axis, extended by 200 mm	320 Zv
4246020	Ancillary lens 0.5x	200 v0.5
4246021	Ancillary lens 2.0x	200 v2.0
4246801	Prisms, pair, for diameter 5–55 mm (measuring tables 100x100 mm, 200x100 mm)	220 p
4246802	Center support, pair, center height 40 mm (measuring tables 100x100 mm, 200x100 mm)	220 sp
4246806	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 200 x 100 mm)	220 sps
4246920	Pivoting glass plate, Ø 100 mm (measuring table 200 x 100 mm)	200 dk
4246821	90° stop for MM 220 / MM 320	220 as90
4245067	Cold light source	300 fs
4245042	Fiber optic gooseneck, 2 arm, L = 500 mm, D = 40 mm	200 fl
4246901	Calibration standard for circles, with calibration certificate	320 nkz
4246071	Protective cover for measuring tables 100x100 and 200x100 mm	
4246850	Set of clamping elements in wooden case	220 Set 1
4246851	Rack rails for measuring range 200 x 100 mm	220 Set 2/1
4246854	V-supports, jaw chuck and tailstock	220 Set 3
4246855	Rotating swivel holder without jaw chuck or rack rails	220 ds
4246856	Precision jaw chuck for 0–3 mm for rotating swivel holder 220 ds	220 pb03
4246857	Precision jaw chuck for Ø 0–6.5 mm for rotating swivel holder 220 ds	220 pb065
4246831	Prisms, pair, for diameter 5–55 mm (measuring table 250 x 170 mm)	220 p
4246833	Center support, pair, center height 40 mm (measuring table 250 x 170 mm)	220 sp
4246807	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 250 x 170 mm)	220 sps
4246921	Pivoting glass plate, Ø 100 mm (measuring table 250 x 170 mm)	200 dg
4246852	Rack rails for measuring range 250 x 170 mm	220 Set 2/2



220 p



220 sp



220 sps



220 as90



300 fs



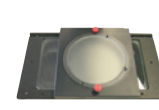
200 fl



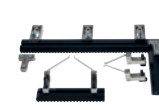
220 Set 1



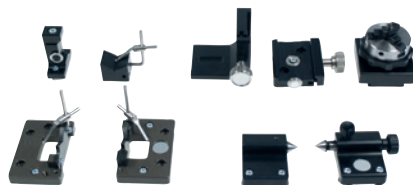
220 ds



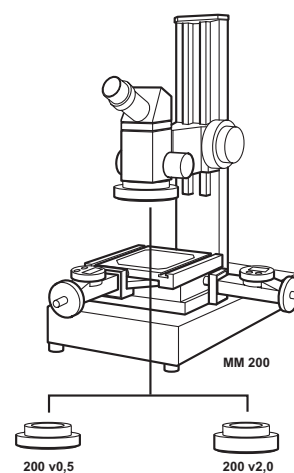
200 dg



220 Set 2/3



220 Set 3



200 v2.0

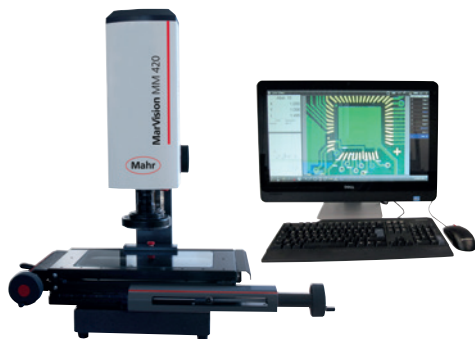
MarVision MM 420

Workshop Measuring Microscope with M3 Software

FEATURES

Measuring Microscope

- Integrated color camera
- Zoom lens (0.7x –4.5x), optionally motorized
- LED ring light: 1 ring and 4 segments, individually switchable and dimmable
- Dimmable LED transmitted light
- Laser pointer for position finding
- Solid granite base
- Sturdy steel XY table, precision-mounted
- Quick and fine adjustment of axes
- Optical incremental measuring system for outstanding accuracy and reliability



Application:

- Measurement or determination of geometric elements (point, straight line, circle, distance, intersection point, etc.) by automatic edge detection, e.g. on punched and bent components, plastic components, and circuit boards

Control and Display Unit with M3 Software and Touchscreen PC

- 23" touchscreen with keyboard and mouse
- Windows 10 Pro operating system, additional software can be installed
- Operation via the multi-touch screen or with a mouse/keyboard
- Large video screen
- Reference/actual evaluation with tolerances
- Record output with company logo
- Graphical display with dimensioning
- Automatic edge detection, even on low contrast parts
- Stitching
- Statistics
- **Package contains:** M3 software with touchscreen PC, standard stop bar 220 as, instruction manual, Mahr calibration certificate

Optional

- Navitar motorized zoom 35x - 225x
- Navitar 4K motorized zoom 8x - 116x
- Telecentric light for 4K motorized zoom

TECHNICAL DATA

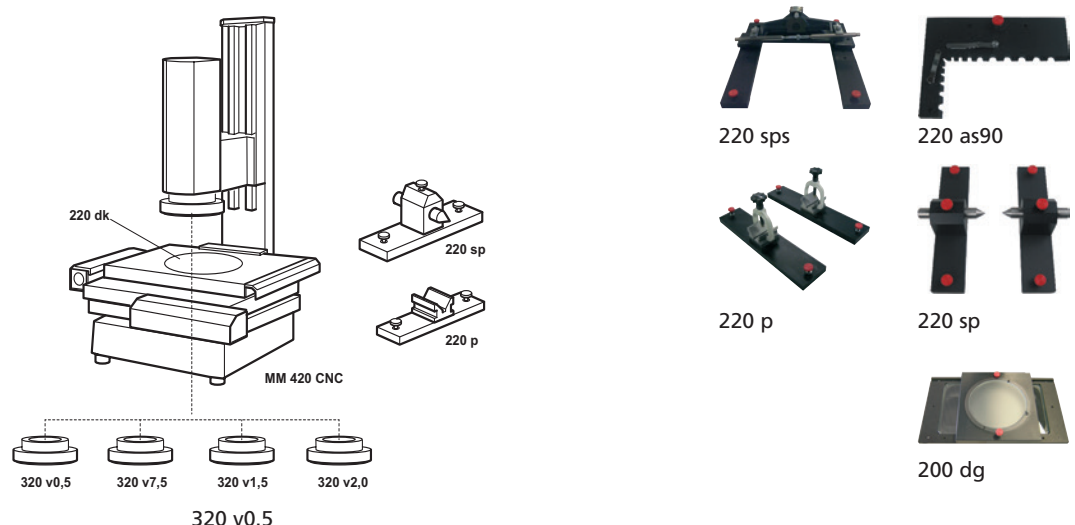
Order no.		4247600	4247605	4247601	4247606	4247602	4247607	4247603	4247608	
Product type		MM 420								
Measuring range X/Y	mm	100 / 100		200 / 100		250 / 170		400 / 250		
Size of table	mm	270 x 210		370 x 210		420 x 280		600 x 480		
Maximum table load	kg	20								
Measuring system		Built-in incremental scale								
Measuring system - resolution	mm	0.001								
Measuring system - E1 X/Y	µm	1.9 + (L/100)	1.9 + (L/100)	1.9 + (L/100)	1.9 + (L/100)			3.9 + (L/100)	3.9 + (L/100)	
Measuring system - E2 XY	µm	2.9 + (L/100)	2.9 + (L/100)	2.9 + (L/100)	2.9 + (L/100)	2.9 + (L/100)	2.9 + (L/100)	4.9 + (L/100)	4.9 + (L/100)	
Magnification		35 –225x								
Max. height of test piece	mm	115							290	
Max. height of test piece / 0.5-fold	mm	20							200	
Max. height of test piece with coax.	mm	115							260	
200 extension in Z	mm	315								
200 extension in Z / 0.5-fold	mm	220								
Illumination		LED back and front illumination, adjustable								
Energy supply		230 V / 50 Hz	110 V / 60 Hz	230 V / 50 Hz	110 V / 60 Hz	230 V / 50 Hz	110 V / 60 Hz	230 V / 50 Hz	110 V / 60 Hz	
H x W x D	mm	700 x 480 x 430		700 x 650 x 550		700 x 700 x 600		800 x 1000 x 900		

MarVision MM 420

Workshop Measuring Microscope with M3 Software

ACCESSORIES

Order no.	Product name	Product type
4246114	Optional DXF file integration for M3 software	
4247027	Optional TV adapter, 0.67x (instead of 1.0x)	320 tv.0.67
4247028	Optional Navitar zoom 6.5:1, motorized	320 zmo
4247029	Optional Navitar zoom 6.5:1, motorized with coaxial light	320 zmk
4247035	Optional Navitar 4 K Motor-Zoom 8x –116x	
4247050	Optional telecentric transmitted light for measuring rotationally symmetrical parts	200 ld
4247039	Optional telecentric transmitted light for Navitar 4 K motor-zoom	200 ldm
4245300	Optional coaxial LED incident light for zoom lens	320 kaz
4246050	Optional Z axis with measuring system	320 zm
4246051	Optional Z axis, extended by 200 mm	320 Zv
4246052	Optional Z axis, extended by 200 mm, including measuring system	320 zvm
4247020	Ancillary lens 0.5x (for Navitar objective lens only)	320 v0.5
4247021	Ancillary lens 0.75x (for Navitar objective lens only)	320 v0.75
4247022	Ancillary lens 1.5x (for Navitar objective lens only)	320 v1.5
4247023	Ancillary lens 2.0x (for Navitar objective lens only)	320 v2
4246801	Prisms, pair, for diameter 5–55 mm (measuring tables 100x100 mm, 200x100 mm)	220 p
4246802	Center support, pair, center height 40 mm (measuring tables 100x100 mm, 200x100 mm)	220 sp
4246806	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 200 x 100 mm)	220 sps
4246920	Pivoting glass plate, Ø 100 mm (measuring table 200 x 100 mm)	200 dk
4246821	90° stop for MM 220 / MM 320	220 as90
4246901	Calibration standard for circles, with calibration certificate	320 nkz
4246071	Protective cover for measuring tables 100x100 and 200x100 mm	
4246115	Upgrade M3-Software Version V1 to V2	
4246121	Upgrade M3 software from version V2 to V3	
4246116	DXF option and profiling package for MM420	
4246117	Upgrade from DXF to profiling for MM420 / MM420-CNC	
4246118	Thread measuring option for MM420	
4246119	Optional cable insulation measurement for MM420	
4246831	Prisms, pair, for diameter 5–55 mm (measuring table 250 x 170 mm)	220 p
4246833	Center support, pair, center height 40 mm (measuring table 250 x 170 mm)	220 sp
4246807	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 250 x 170 mm)	220 sps
4246921	Pivoting glass plate, Ø 100 mm (measuring table 250 x 170 mm)	200 dg
4246072	Protective cover for measuring table 250x170 mm	
4246054	Option measuring system for extended Z-axis (350 mm)	320 zvl
4246832	Prisms, pair, for diameter 5–55 mm (measuring table 400 x 250 mm)	220 p
4246834	Center support, pair, center height 40 mm (measuring table 400 x 250 mm)	220 sp
4246808	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 400 x 250 mm)	220 sps
4246922	Pivoting glass plate, Ø 100 mm (measuring table 400 x 250 mm)	200 db
4246825	90° stop for table 400x250 mm	220 as90–1
4246073	Protective cover for measuring table 400x250 mm	



MarVision MM 420 CNC

CNC Workshop Measuring Microscope

FEATURES

Measuring microscope

- 3 axis CNC control with servo motor and joystick
- Axis movement and speed regulation controlled via the joystick
- Integrated color camera
- Motorized zoom lens (0.7x –4.5x) with automatic focus
- LED ring light: 1 ring and 4 segments, individually switchable and dimmable
- Dimmable LED transmitted light
- Laser pointer for position finding
- Solid granite base
- Sturdy steel XY table, precision mounted
- Optical incremental measuring system for outstanding accuracy and reliability



Application:

- Measurement or determination of geometric elements (point, straight line, circle, distance, intersection point, etc.) by automatic edge detection, e.g. on punched and bent components, plastic components, and circuit boards

TECHNICAL DATA

Order no.		4247701	4247702	4247703	4247706	4247707	4247708
Product type		MM 420 CNC					
Measuring range X/Y	mm	200 / 100	250 / 170	400 / 250	200 / 100	250 / 170	400 / 250
Z travel path	mm	200		200		200	
Size of table	mm	370 x 210	420 x 280	600 x 480 x 200	370 x 210	420 x 280	600 x 480 x 200
Maximum table load	kg	20					
Measuring system		built-in incremental scale					
Measuring system - resolution	mm	0.001					
Measuring system - E1 X/Y	µm	1.9 + (L/100)	1.9 + (L/100)	3.9 + (L/100)	1.9 + (L/100)	1.9 + (L/100)	3.9 + (L/100)
Measuring system - E2 XY	µm	2.9 + (L/100)		4.9 + (L/100)		2.9 + (L/100)	
Magnification		35 –225x					
Max. height of test piece	mm	200					
Max. height of test piece / 0.5-fold	mm	110					
Max. height of test piece with coax.	mm	200					
Max. height of test piece with coax. / 0.5-fold	mm	110					
Illumination		LED back and front illumination, adjustable					
Energy supply		230 V / 50 Hz			110 V / 60 Hz		

Control and Display Unit with M3 Software and Touchscreen PC

- 23" touchscreen with keyboard and mouse
- Windows 10 Pro operating system, additional software can be installed
- Operation via the Multi-touch screen or with a mouse/keyboard
- Large video screen
- Reference/actual evaluation with tolerances
- Record output with company logo
- Graphic display with dimensioning
- Automatic edge detection, even on low contrast parts
- Stitching
- Statistics
- Palletizing of serial parts
- **Package contains:** M3 software with touchscreen PC, standard stop bar 220 as, instruction manual, Mahr calibration certificate

Optional

- 3D tactile measuring system TP20
- Conversion motor zoom to Navitar 4K motor zoom 8x - 116x
- Telecentric light for 4K motorized zoom

MarVision MM 420 CNC

CNC Workshop Measuring Microscope

ACCESSORIES

Order no.	Product name	Product type
4247036	Optional Navitar 4 K motor-zoom 8x –116x for CNC versions	
4246114	Optional DXF file integration for M3 software	
4247027	Optional TV adapter, 0.67x (instead of 1.0x)	320 tv0.67
4247050	Optional telecentric transmitted light for measuring rotationally symmetrical parts	200 ld
4247039	Optional telecentric transmitted light for Navitar 4 K motor-zoom	200 ldm
4245302	Optional coaxial LED incident light for zoom lens	320 kac
4247020	Ancillary lens 0.5x (for Navitar objective lens only)	320 v0.5
4247021	Ancillary lens 0.75x (for Navitar objective lens only)	320 v0.75
4247022	Ancillary lens 1.5x (for Navitar objective lens only)	320 v1.5
4247023	Ancillary lens 2.0x (for Navitar objective lens only)	320 v2
4246801	Prisms, pair, for diameter 5–55 mm (measuring tables 100x100 mm, 200x100 mm)	220 p
4246802	Center support, pair, center height 40 mm (measuring tables 100x100 mm, 200x100 mm)	220 sp
4246806	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 200 x 100 mm)	220 sps
4246920	Pivoting glass plate, Ø 100 mm (measuring table 200 x 100 mm)	200 dk
4246821	90° stop for MM 220 / MM 320	220 as90
4246901	Calibration standard for circles, with calibration certificate	320 nkz
4246071	Protective cover for measuring tables 100x100 and 200x100 mm	
4246834	Center support, pair, center height 40 mm (measuring table 400 x 250 mm)	220 sp
4246115	Upgrade M3 Software version V1 to V2	
4246121	Upgrade M3 Software version V2 to V3	
4246116	DXF option and profiling package for MM420	
4246117	Upgrade from DXF to profiling for MM420 / MM420-CNC	
4246118	Thread measuring option for MM420	
4246119	Optional cable insulation measurement for MM420	
4247040	Optional 3D tactile measuring system TP20, probe L=20 mm with ball diameter 2 mm	
4247041	Calibration standard ball Ø 20 mm and setting ring Ø 10 mm	
4246831	Prisms, pair, for diameter 5–55 mm (measuring table 250 x 170 mm)	220 p
4246833	Center support, pair, center height 40 mm (measuring table 250 x 170 mm)	220 sp
4246807	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 250 x 170 mm)	220 sps
4246921	Pivoting glass plate, Ø 100 mm (measuring table 250 x 170 mm)	200 dg
4246072	Protective cover for measuring table 250x170 mm	
4246825	90° stop for table 400x250 mm	220 as90–1
4246922	Pivoting glass plate, Ø 100 mm (measuring table 400 x 250 mm)	200 db
4246832	Prisms, pair, for diameter 5–55 mm (measuring table 400 x 250 mm)	220 p
4246808	Center support, pivoting, pair, center height 50 mm, distance between centers 130 mm (measuring table 400 x 250 mm)	220 sps
4246073	Protective cover for measuring table 400x250 mm	

