

MULTIFUNCTIONAL MILLING MACHINES

MF 4-B | Art. no.: 3348340

**Drilling and milling machine
with mechanical infinitely
variable drive**



Visit our exhibition in Hallstadt/Bamberg

MZ 4S | Art. no.: 3346245

Tool milling machine
TOP equipment
and quality



Multifunctional drilling and milling machines with mechanically infinitely variable drive and with digital 3-axis position indicator DPA 31Plus

Facts that impress in terms of quality, performance and price

- ▶ Solid design using premium cast meehanite
- ▶ Excellent concentricity thanks to tapered roller bearings, ≤ 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
- ▶ Solid and generously dimensioned Cross table with precision surface finish and adjustable stops
- ▶ Drill/milling head tiltable $\pm 45^\circ$
- ▶ Automatic spindle sleeve feed, 3 stages, 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
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out



Fig.: MF 4-B

Arguments,...



MILLING HEAD

- › The spindle head can be swivelled forwards or backwards by 45° and tilted to the right or left by 90°.



CONTROL PANEL

- › Integrated switch panel
- › New - now with integrated digital position indicator DPA 31Plus
- › Swivelling



CENTRAL LUBRICATION

- › Reduces maintenance overhead
- › Reduces wear
- › Improves effectiveness and machine service life



FEED

- › Motorised feed on X, Y and Z axes

Technical specifications, accessories and dimensions

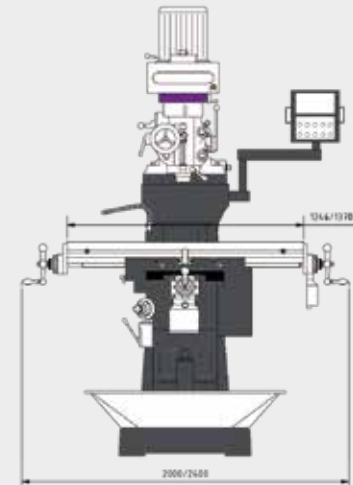
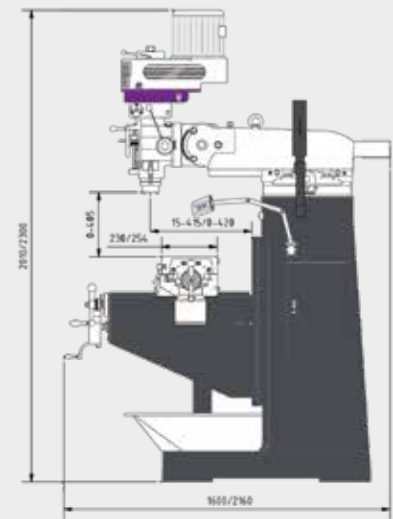
Model	MF 2-B	MF 4-B		
Article no.	3348330	3348340		
Output				
Electrical connection	400 V / 3 Ph ~50 Hz			
Total rated value	3 kW			
Drive motor	2.2 kW			
Coolant pump motor	90 W			
Drilling/milling output				
Drilling performance in steel (S235JR)	Ø 24 mm			
Continuous drilling performance in steel (S235JR)	Ø 20 mm			
Maximum cutting head size	Ø 76 mm			
Maximum end mill size	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			
Spindle - column distance	15 - 415 mm	0 - 420 mm		
Drilling/milling head				
Spindle speeds	60 - 4200 min ⁻¹			
Gearbox stages	2 speed, mechanically continuously controllable			
Milling cutter head travel	312 mm	470 mm		
Horizontal swivel range	± 90°			
Vertical swivelling range	± 45°			
Automatic spindle sleeve feed	3 stages: 0.038 / 0.076 / 0.152 mm/rev			
Cross table				
Cross table x width	1246 x 230 mm	1370 x 254 mm		
Cross table load capacity max.	200 kg	300 kg		
T-slot size / spacing / count	16 mm / 63 mm / 3			
Traverse paths				
	manual	autom.	manual	autom.
X axis (Cross table)	790 mm	~690 mm	920 mm	~820 mm
Y axis (Cross table)	280 mm	~280 mm	380 mm	~380 mm
Z-axis (Cross table mount)	390 mm	~370 mm	400 mm	~380 mm
Dimensions and weight				
Length x width x height approx.	2000 x 1600 x 2010 mm		2400 x 2160 x 2300 mm	
Net weight approx.	1000 kg		1260 kg	

Accessories

Designation	Article no.
Collet chuck set 18-part ISO 40	3352056
End mill set HSS TiN-coated 12-part	3352250
End mill set HSS TiN-coated 20-part	3352255
Precision Quick-action drill chuck 1 - 10 mm; B16	3050610
Copying and facing blade head ISO 40 DIN 2080	3350216
Precision bore head set ISO 40	3352128
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
Assortment of clamping tools SPW 14, 58-part	3352078
Precision machine shoe SEU1(4 units required)	3352985
Compressed air tool clamping system ISO 40 (see page 168)	3352394
Factory assembly compressed air tool clamping system ISO 40 (Order without assembly: Adjustment work may be required).	9000490

More accessories and information about accessories from page 158 onwards

Dimensions



Scope of delivery

- > Chip tray
- > Operating tool

Vices

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

Information can be found on page 155 onwards

DRILLING ACCESSORIES

CORE DRILLING

THREAD TAPPING

MILLING

TURNING

MEASURING

SAWS

GRINDING

POLISHING

SHEET METAL WORKING

LIGHTING

COOLING

Multifunctional drilling/milling machines for professional deployment. Electronically infinitely variable drive with frequency converter 'Made in Germany' and digital 3-axis position display

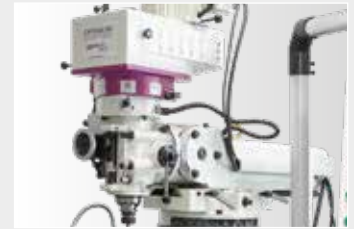
Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid design using premium cast meehanite
- ▶ Excellent concentricity thanks to tapered roller bearings, ≤ 0.01 mm measured in the spindle sleeve
- ▶ X and Z axis with adjustable dovetail guide
- ▶ Coolant system
- ▶ Digital position display
- ▶ Solid and generously dimensioned Cross table with precision surface finish and adjustable stops
- ▶ Spindle head: Tilt up/down $\pm 45^\circ$ and swivel left/right $\pm 90^\circ$
- ▶ 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
- ▶ Y axis with flat guide
- ▶ Motorised table height adjustment (Z axis)



Fig.: with optional Y-axis feed

Arguments,...



MILLING HEAD

- › The spindle head can be swivelled forwards or backwards by 45° and tilted to the right or left by 90° .



OPTiCONTROL PANEL

- › Integrated switch panel
- › Swivelling
- › Integrated digital position display



FREQUENCY CONVERTER MADE IN GERMANY



X AXIS

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



Follow this for the video presentation of our Optimum milling machine MF 4V

Technical specifications, accessories and dimensions

Model	MF 4V
Article no.	3336050
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	4.5 kW
Drive motor	3 kW
Coolant pump motor	100 Watts
Drilling/milling output	
Drilling performance in steel (S235JR)	Ø 32 mm
Continuous drilling performance in steel (S235JR)	Ø 28 mm
Maximum cutting head size	Ø 100 mm
Maximum end mill size	Ø 20 mm
Spindle	
Spindle sleeve stroke	127 mm
Spindle seat	ISO 40 DIN 2080
Clearance spindle to cross table	40 - 446 mm
Spindle - column distance	200 - 680 mm
Drilling/milling head	
Spindle speeds	9 - 6750 min ⁻¹
Gearbox stages	8 stages, electronically adjustable
Pivot/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	1370 x 254 mm
Cross table load capacity max.	275 kg
T-slot size / spacing / count	16 mm / 63 mm / 3
Traverse paths	
X axis (Cross table)	manual 900 mm / automatic ~800 mm
Y axis (Cross table)	manual 320 mm
Y axis (milling head)	manual 480 mm
Z axis (Cross table)	manual 400 mm / automatic ~365 mm
Dimensions and weight	
Length x width x height approx.	1500 x 1450 x 2200 mm
Net weight approx.	1150 kg

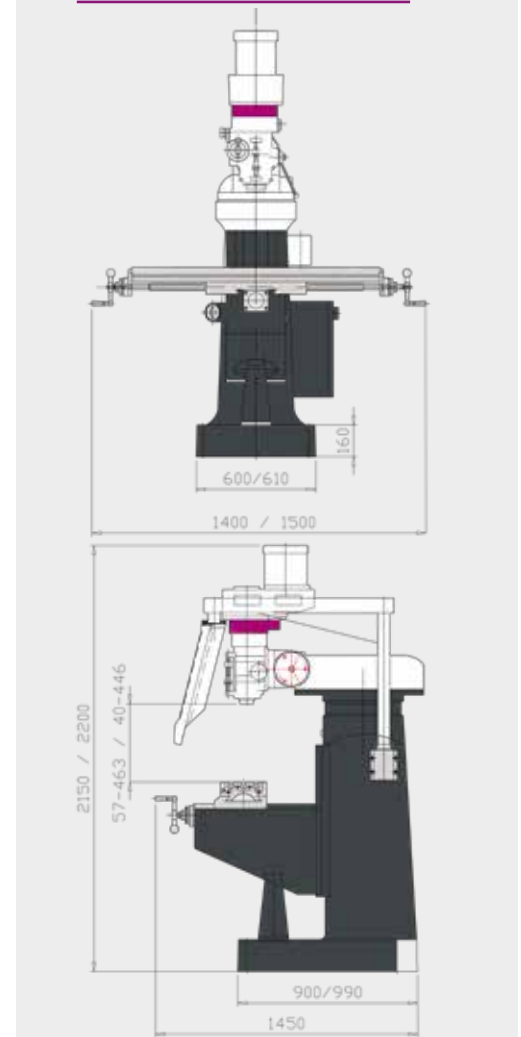
Accessories

Designation	Article no.
Collet chuck set 18-part ISO 40	3352056
End mill set HSS TiN-coated 20-part	3352255
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
Copying and facing blade head ISO 40 DIN 2080	3350216
Precision bore head set ISO 40	3352128
Horizontal-vertical rotary indexing table RT 150	3356150
Horizontal-vertical rotary indexing table RT 200	3356200
Horizontal-vertical rotary indexing table RTE 165	3356365
Assortment of clamping tools SPW 14, 58-part	3352078
Precision machine shoe SEU1(4 units required)	3352985
Universal table feed V250S (see page 167)	3352025
Factory assembly universal table feed V250S	9000489
Compressed air tool clamping system ISO 40 (see page 168)	3352394
Factory assembly compressed air tool clamping system ISO 40 (Order without assembly: Adjustment work may be required).	9000490

More accessories and information about accessories from page 158 onwards

Note: The machines (frequency converters) comply with the DIN EN 55011 standard: class C2
Important information on "General information on operating our machines" on page 333

Dimensions



Scope of delivery

- > Chip tray
- > Operating tool

Vices

Designation	Article no.
ZAS 50	3354170
HMS 125	3355127
FMS 150	3354150
FMSN 150	3354130
VMQ 150	3354183
MV3-75	3354175
MV3-125	3354178
DAS 100	3355500
HCV 105	3536210
HCV 125	3536214

Information can be found on page 155 onwards

Versatility.

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
- ▶ Smooth running due to ground gearwheels 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 indicator DPA31 Plus
- ▶ Easy operation of the switching elements
- ▶ Feed motor with fixed speeds
- ▶ 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 V-ledges and adjustable stops
- ▶ Vertical and horizontal milling position
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out



Fig.: MT 100

Arguments,...



HORIZONTAL MILLING POSITION

- › With arrester and collet for disc milling cutter



OPTi CONTROL PANEL

- › Integrated switch panel
- › New - now with integrated digital position indicator DPA31 Plus
- › Pivots to left and right side of machine



MILLING HEAD

- › The milling head has two axes of rotation, allowing it to be swivelled and rotated at any spatial angle
- › A specific angle can be set by rotating the rear and front part of the milling head

Technical specifications, accessories and dimensions

Model	MT 100
Article no.	3336110
Output	
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
Drilling/milling output	
Cutter head size max.	Ø 85 mm
Maximum end mill size	Ø 20 mm
Spindle	
Spindle seat	ISO 40 DIN 2080
Drawbar	M16
Clearance spindle to cross table	90 - 520 mm
Spindle - column distance	60- 500 mm
Vertical	
Spindle speeds	45 - 1600 min ⁻¹
Gearbox stages	11 stages
Milling head forward tilt	90°
Rotation of milling head	360°
Cross table	
Cross table x width	1120 x 260 mm
Cross table load capacity max.	350 kg
T-slot size / spacing / count	14 mm / 63 mm / 3
X axis (Cross table)	
Travel	manual 600 mm / automatic ~480 mm
Table feed automatic	24 - 402 mm/min.
Y axis (Cross table)	
Travel	manual 270 mm
Z axis (Cross table)	
Travel	manual 380 mm / automatic ~340 mm
Table feed automatic	24 - 402 mm/min.
Dimensions and weight	
Length x width x height approx.	1540 x 1355 x 1650 mm
Net weight approx.	1300 kg

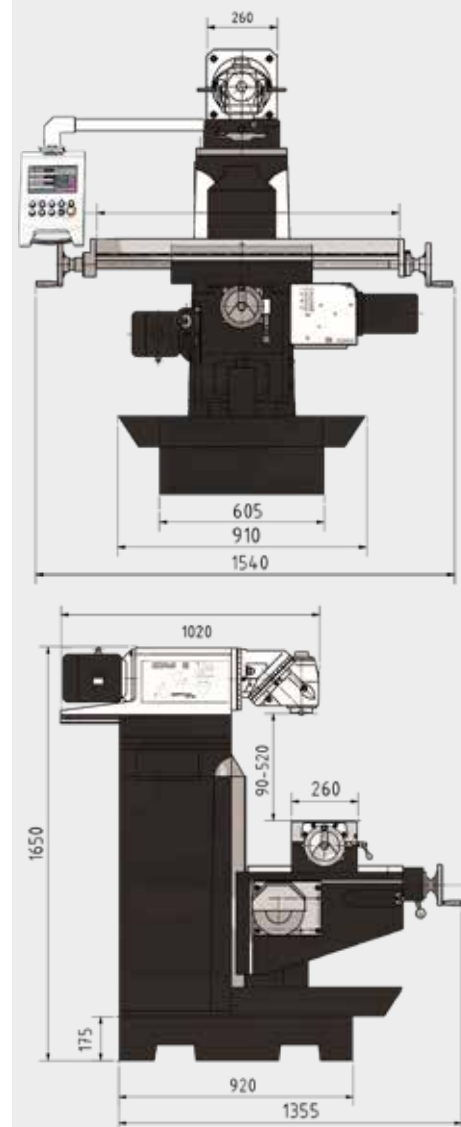
Accessories

Designation	Article no.
Collet chuck set 18-part ISO 40	3352056
End mill set HSS TiN-coated 12-part	3352250
End mill set HSS TiN-coated 20-part	3352255
Precision Quick-action drill chuck 1 - 10 mm; B16	3050610
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
Copying and facing blade head ISO 40 DIN 2080	3350216
Precision bore head set ISO 40	3352128
Parallel shim set, 18-part	3536191
Horizontal-vertical rotary indexing table RT 200	3356200
Horizontal-vertical rotary indexing table RTE 165	3356365
Horizontal-vertical rotary indexing table RTU 165	3354165
Assortment of clamping tools SPW 12, 58-part	3352077
Universal dividing head TA 125	3356125
Precision machine shoe SEU1(4 units required)	3352985

More accessories and information about accessories from page 158 onwards

Coolant accessories see page 93

Dimensions



Scope of delivery

- › Horizontal milling spindle Ø 32 mm
- › Milling arbour Ø 32 mm
- › Operating tool

Vices

Designation	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

Information can be found on page 155 onwards

Versatility.

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
- ▶ Smooth running due to ground gearwheels running in an oil bath
- ▶ All guides hardened and adjustable using V-ledges
- ▶ 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
- ▶ Table feed in the X, Y and Z axes
- ▶ Feed system controllable by servomotor in fixed steps
- ▶ Solid and generously dimensioned cross table with precision surface finish with re-adjustable V-ledges and adjustable stops
- ▶ Vertical and horizontal milling position
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out



Fig.: MT 130S

Arguments,...



HORIZONTAL MILLING POSITION

- › With arrester and collet for disc milling cutter



OPTi CONTROL PANEL

- › Integrated switch panel
- › Swivelling
- › Integrated digital position display DPA31 Plus



MILLING HEAD

- › The milling head has two axes of rotation, allowing it to be swivelled and rotated at any spatial angle
- › A specific angle can be set by rotating the rear and front part of the milling head



Scan QR code

Information & Video

Technical specifications, accessories and dimensions

Model	MT 130S
Article no.	3344110
Output	
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
Milling capacity	
Cutter head size max.	Ø 100 mm
Maximum end mill size	Ø 20 mm
Spindle	
Spindle seat	ISO 40 DIN 2080
Drawbar	M16
Clearance spindle to cross table	100 - 500 mm
Spindle - column distance	150 - 550 mm
Vertical	
Spindle speeds	45 - 1660 min ⁻¹
Gearbox stages	11 stages
Forward tilt of milling head	90°
Rotation of milling head	360°
Cross table	
Cross table x width	1270 x 300 mm
Cross table load capacity max.	250 kg
T-slot size / spacing / count	14 mm / 80 mm / 3
X axis (Cross table)	
Travel	manual 720 mm / automatic ~650 mm
Table feed automatic	30 - 830 mm/min.
Rapid traverse	1,335 mm/min.
Y axis (Cross table)	
Travel	manual 300 mm / automatic ~220 mm
Table feed automatic	30 - 830 mm/min.
Rapid traverse	1,335 mm/min.
Z axis (Cross table)	
Travel	manual 400 mm / automatic ~320 mm
Table feed automatic	23 - 625 mm/min.
Rapid traverse	1,000 mm/min.
Dimensions and weight	
Length x width x height approx.	1760 x 1550 x 1700 mm
Net weight approx.	1450 kg

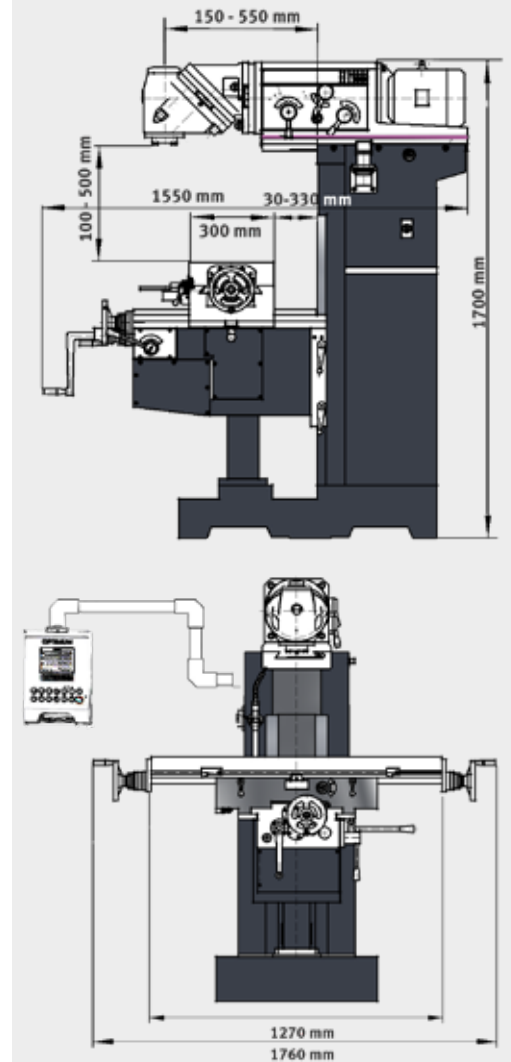
Accessories

Designation	Article no.
Collet chuck set 18-part ISO 40	3352056
End mill set HSS TiN-coated 12-part	3352250
End mill set HSS TiN-coated 20-part	3352255
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
Precision Quick-action drill chuck 1 - 10 mm; B16	3050610
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
Assortment of clamping tools SPW 12, 58-part	3352077
Precision machine shoe SEU1(4 units required)	3352985

More accessories and information about accessories from page 158 onwards

Coolant accessories see page 93

Dimensions



Scope of delivery

- › Tapered shank with counter bearing for horizontal milling cutters Ø27 mm
- › Milling arbour Ø 27 mm
- › Operating tool

Vices

Designation	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

Information can be found on page 155 onwards

Versatility.

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
- ▶ Smooth running due to ground gearwheels running in an oil bath
- ▶ All guides hardened and adjustable using V-ledges
- ▶ 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 V-ledges 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 machines conveniently located 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



Fig.: MT 200

Arguments,...



HORIZONTAL MILLING POSITION

- › With arrester and collet for disc milling cutter
- › Adjustable plain bearing
- › Horizontal milling counterholder, attached to rear of machine for easy access



OPTI CONTROL PANEL

- › Integrated switch panel
- › New - now with integrated digital position indicator DPA31 Plus
- › Pivots to left and right side of machine



MILLING HEAD

- › The milling head has two axes of rotation, allowing it to be swivelled and rotated at any spatial angle
- › A specific angle can be set by rotating the rear and front part of the milling head

Technical specifications, accessories and dimensions

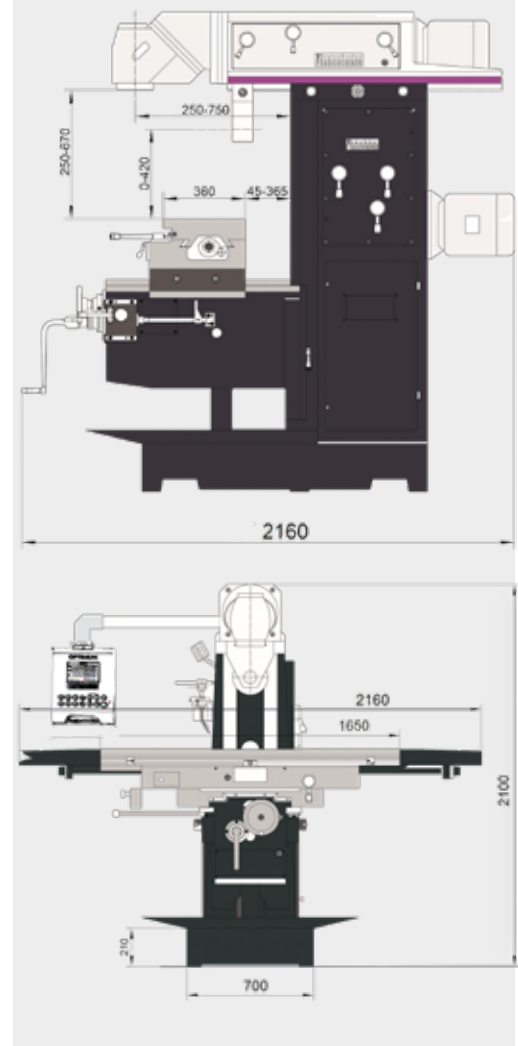
Model	MT 200
Article no.	3336120
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	9.2 kW
Drive motor horizontal/vertical	4 kW
Feed motor output	1.1 kW
Coolant pump motor	90 Watts
Milling capacity	
Cutter head size max.	Ø 100 mm
Maximum end mill size	Ø 20 mm
Spindle	
Horizontal/ vertical spindle seat	ISO 50 DIN 2080
Drawbar	M24
Vertical	
Clearance spindle to cross table	250 - 670 mm
Spindle - column distance	250 - 750 mm
Spindle speeds	60 - 1750 min ⁻¹
Gearbox stages	12 stages
Forward tilt of milling head	90°
Rotation of milling head	360°
Horizontal	
Clearance spindle to cross table	0 - 400 mm
Spindle speeds	58 - 1800 min ⁻¹
Gearbox stages	12 stages
Cross table	
Cross table x width	1650 x 360 mm
Cross table load capacity max.	450 kg
T-slot size / spacing / count	14 mm / 95 mm / 3
Rotatable cross table	35°
X axis (Cross table)	
Travel	manual 1290 mm / automatic ~1210 mm
Table feed automatic	22 - 380 mm/min.
Table feed, stages	8 stages
Table feed rapid motion	1,290 mm/min.
Y axis (Cross table)	
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.
Z axis (Cross table)	
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.
Dimensions and weight	
Length x width x height approx.	2160 x 2160 x 2100 mm
Net weight approx.	2700 kg

Accessories

Designation	Article no.
Morse cone ISO50 / B18 DIN2080	3352067
Parallel shim set, 18-part	3536191
Assortment of clamping tools SPW 12, 58-part	3352077
2-piece set of hold-down clamps, 14 mm/M12	3352031
Precision machine shoe SEU1 (4 units required)	3352985

More accessories and information about accessories from page 158 onwards

Dimensions



Scope of delivery

- › Horizontal milling spindle Ø 32 mm
- › Horizontal milling spindle Ø 27 mm
- › Milling arbor ISO 50
- › Milling cutter chuck ISO 50 Ø 4 - Ø 26 mm
- › Operating tool

Vices

Designation	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

Information can be found on page 155 onwards

Versatility.

The universal milling machine with digital 3-axis position display DPA31 Plus

Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Rugged machine construction
- ▶ Heavy, solid design using premium cast meehanite
- ▶ Smooth running due to ground gearwheels running in an oil bath
- ▶ All guides hardened and adjustable using V-ledges
- 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
- ▶ 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 V-ledges and adjustable stops
- ▶ Height-adjustable protective screen with microswitch for best possible user protection against chips and parts being flung out



Fig.: MT 230S

Arguments,...



HORIZONTAL MILLING SPINDLE

- › With arrester and collet for disc milling cutter
- › Adjustable plain bearing
- › Horizontal milling counterholder, attached to rear of machine for easy access



OPTI CONTROL PANEL

- › Integrated switch panel
- › Swivelling
- › Integrated digital position display DPA31 Plus



MILLING HEAD

- › The milling head has two axes of rotation, allowing it to be swivelled and rotated at any spatial angle
- › A specific angle can be set by rotating the rear and front part of the milling head

Technical specifications, accessories and dimensions

Model	MT 230S
Article no.	3344125
Output	
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
Milling capacity	
Cutter head size max.	Ø 160 mm
Maximum end mill size	Ø 25 mm
Spindle	
Spindle seat	ISO 50 DIN 2080
Drawbar	M 24
Vertical	
Clearance spindle to cross table	185 - 585 mm
Spindle - column distance	260 - 940 mm
Spindle speeds	60 - 1750 min ⁻¹
Gearbox stages	12 stages
Forward tilt of milling head	90°
Rotation of milling head	360°
Horizontal	
Clearance spindle to cross table	15 - 415 mm
Spindle speeds	60 - 1800 min ⁻¹
Gearbox stages	12 stages
Cross table	
Table length x width	1600 x 360 mm
Cross table load capacity max.	350 kg
T-slot size / spacing / count	18 mm / 3 / 80 mm
Rotatable cross table	45°
X axis (Cross table)	
Travel	manual 1300 mm / automatic ~1220 mm
Table feed automatic	30 - 750 mm/min.
Table feed rapid motion	1,200 mm/min.
Y axis (Cross table)	
Travel	manual 300 mm / automatic ~220 mm
Table feed automatic	20 - 500 mm/min.
Table feed rapid motion	800 mm/min.
Z axis (Cross table)	
Travel	manual 400 mm / automatic ~320 mm
Table feed automatic	15 - 375 mm/min.
Table feed rapid motion	600 mm/min.
Dimensions and weight	
Length x width x height approx.	2550 x 2160 x 2005 mm
Net weight approx.	2800 kg

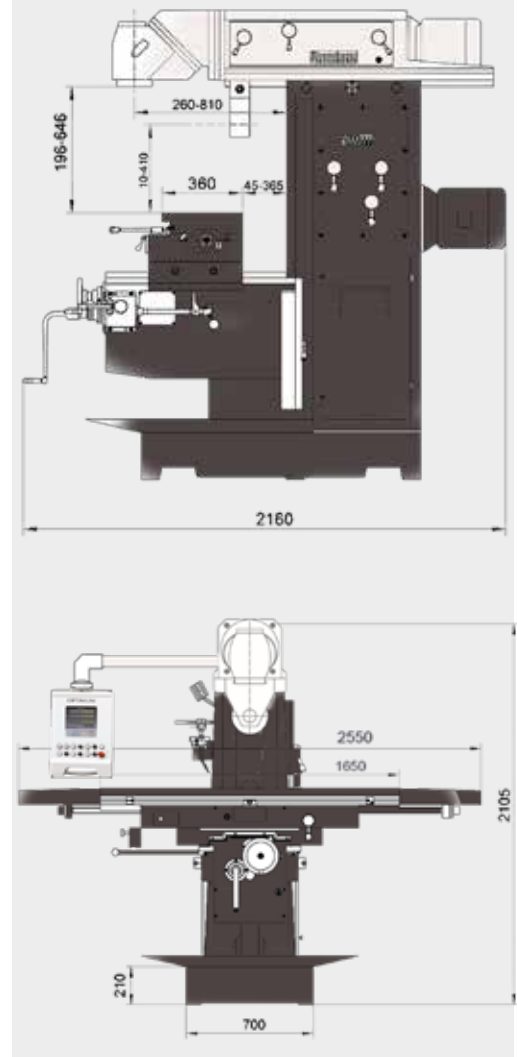
Accessories

Designation	Article no.
Collet chuck set ISO 50/ER32	3352065
Morse cone ISO50 B18 DIN2080	3352067
Precision bore head set ISO 50	3352129
Parallel shim set, 18-part	3536191
Assortment of clamping tools SPW 16, 58-part	3352077
Precision machine shoe SEU1(4 units required)	3352985
2-piece set of hold-down clamps, 18 mm/M16	3352032

More accessories and information about accessories from page 158 onwards

Note: The machines (frequency converters) comply with the DIN EN 55011 standard: class C2
Important information on "General information on operating our machines" on page 333

Dimensions



Scope of delivery

- > Horizontal milling spindle with counter bearing, disc cutter holder Ø 32 mm, Ø 27 mm
- > Adapter ISO 50 (7:24) / MT4
- > Drawbar horizontal and vertical M24
- > Operating tool

Vices

Designation	Article no.
FMS 200	3354200
HMS 125	3355127
MV3-75	3354175
MV3-125	3354178
ZAS 50	3354170
DAS 100	3355500
HCV 105	3536210
HCV 125	3536214

Information can be found on page 155 onwards

Tool milling machines with digital 3-axis position display

Facts that impress in terms of quality, performance and price

- ▶ Versatile range of applications
- ▶ Robust machine design
- ▶ All guides hardened
- ▶ Central lubrication
- ▶ Large diameter handwheel with scale
- ▶ Simple operation of the switching elements for changing the speed
- ▶ Extremely quiet operation due to gearbox running in an oil bath
- ▶ Automatic table feed in the X Y and Z axes
- ▶ All axes with ball screws
- ▶ Servo motor in all axes



Technical data and accessories

Model	MX 2	MX 3	MX 4
Article no.	3343020	3343030	3343040
Output			
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Total rated value	9 kW	9 kW	9 kW
Vertical drive motor	3.7 kW	3.7 kW	5.5 kW
Spindle			
Spindle seat	ISO 40 DIN 2080	ISO 40 DIN 2080	ISO 40 DIN 2080
Vertical			
Spindle speeds	40 - 2000 min ⁻¹	40 - 2000 min ⁻¹	40 - 2000 min ⁻¹
Gearbox stages	2 stages	2 stages	2 stages
Cross table			
Horizontal cross table (L x W)	750 x 320 mm	800 x 400 mm	850 x 450 mm
Cross table load capacity max.	160 kg	200 kg	300 kg
T-slot size / spacing / count	14 mm / 63 mm	14 mm / 63 mm	14 mm / 63 mm
X axis (Cross table)			
Travel	405 mm	500 mm	600 mm
Y axis (Cross table)			
Travel	305 mm	400 mm	450 mm
Z axis (Cross table)			
Travel	400 mm	400 mm	450 mm
Dimensions and weight			
Length x width x height approx.	1900 x 1650 x 1882 mm	1950 x 1700 x 1882 mm	2200 x 1900 x 2000 mm
Net weight approx.	1500 kg	1550 kg	1800 kg

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Accessories

Designation	Article no.
Collet chuck set 18-part ISO 40	3352056
End mill set HSS TiN-coated 12-part	3352250
End mill set HSS TiN-coated 20-part	3352255
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
Precision Quick-action drill chuck 1 - 10 mm; B16	3050610
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
Assortment of clamping tools SPW 12, 58-part	3352077
Precision machine shoe SEU1(4 units required)	3352985
① MX 2 housing	3343021
① MX 3 housing	3343031
① MX 4 housing	3343041

More accessories and information about accessories from page 158 onwards

Coolant accessories see page 93

Scope of delivery

- › Reducing sleeve MT1 / MT2 / MT3
- › Horizontal milling spindle
Ø 16 mm / 22 mm / 27 mm / 32 mm
- › Operating tool

Vices

Designation	Article no.
FMS 200	3354200
HMS 125	3355127
MV3-75	3354175
MV3-125	3354178
ZAS 50	3354170
DAS 100	3355500
HCV 105	3536210
HCV 125	3536214

Information can be found on page 155 onwards

DRILLING AC-
CESSORIES

CORE DRILLING

THREAD TAP-
PING

MILLING

TURNING

MEASURING

SAWS

GRINDING

POLISHING

SHEET METAL WORK-
ING

LIGHTING

COOLING

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 V-ledges
- ▶ 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
- ▶ Manual centralised lubrication system
- ▶ X and Y axes with magnetic couplings. These decouple the feed motor when the machine is moved by hand



Arguments,...



CONTROL CABINET

- › With components from **SIEMENS**



OPTiCONTROL PANEL

- › Swivels centrally for a clearly-arranged overview
- › Automatic feed on X, Y and Z axis, continuously adjustable via an electronic joystick on the control panel
- › DP 700 digital position display integrated into the control panel



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
- › Detachable housing for more access

Technical data and accessories

Model	MZ 2S
Article no.	3346235
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	4 kW
Drive motor	2.2 kW
Motor rapid motion/feed	0.375 kW
Coolant pump motor	95 W
Drilling/milling output	
Drilling performance in steel (S235JR)	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 26 mm
Maximum cutting head size	Ø 100 mm
Maximum end mill size	Ø 25 mm
Spindle	
Spindle sleeve stroke	120 mm
Spindle seat	ISO 40 DIN 2080
Drawbar	M16
Speed range	
Spindle speeds	50 - 1890 min ⁻¹
Gearbox stages	12 stages
Vertical	
Vertical rotation area	± 90°
Distance between spindle nose - cross table	75 - 410 mm
Maximum throat depth	100 mm
Vertical cross table x width	830 x 250 mm
T-slot size / spacing / count	14 mm / 63 mm / 2
Horizontal	
Clearance horizontal spindle to cross table	70 - 400 mm
Horizontal cross table x width	750 x 320 mm
Max. load bearing capacity	285 kg
T-slot size / spacing / count	14 mm / 63 mm / 5
Travel during feed	
X axis (Cross table)	manual 400 mm / automatic ~310 mm
Y axis (milling head)	manual 200 mm / automatic ~160 mm
Z axis (Cross table)	manual 335 mm / automatic ~295 mm
Drive speed feed/rapid motion	50 - 450 min ⁻¹ / 700 min ⁻¹
Feed speed	10 - 600 mm/min.
Dimensions and weight	
Length x width x height approx.	1239 x 1168 x 1900 mm
Net weight approx.	1400 kg

Accessories

Designation	Article no.
Hydraulic clamping device DIN 69871 ex works only	3346226
Compressed air tool changer incl. mounting adapter and installation costs	3346225
Vibration damping machine base SE 55 (4 units required)	3352981

More accessories and information about accessories from page 158 onwards

Angled table	3346221
<ul style="list-style-type: none"> > Table length x width 375 x 660 mm . Max. load bearing capacity 150 kg > T-slot size / count / spacing: 12 mm / 8 / 45 mm > Dimensions 895 x 433 x 354 mm > Weight 140 kg 	



Note: The machines (frequency converters) comply with the DIN EN 55011 standard: class C2
Important information on 'Operating machines with frequency converters' on page 333

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Scope of delivery

- > Adapter ISO 40/MT3
- > MT1 and MT2 shank
- > Horizontal milling spindle Ø 27 mm
- > Operating tool

DRILLING AC-
CESSORIES

CORE DRILLING

THREAD TAP-
PING

MILLING

TURNING

MEASURING

SAWS

GRINDING

POLISHING

SHEET METAL WORK-
ING

LIGHTING

COOLING

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 V-ledges
- ▶ 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:
- ▶ Automatic centralised lubrication
- ▶ X and Y axes with magnetic couplings. These decouple the feed motor when the machine is moved by hand



Fig.: MZ 4S

Arguments,...



CONTROL CABINET

- › With components from SIEMENS



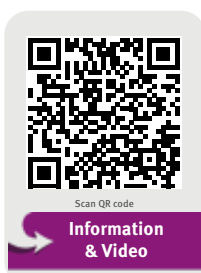
OPTi CONTROL PANEL

- › Swivels centrally for a clearly-arranged overview
- › Automatic feed on X, Y and Z axis, continuously adjustable via an electronic joystick on the control panel
- › DP 700 digital position display integrated into the control panel



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
- › Detachable housing for more access

Technical data and accessories

Model	MZ 4S
Article no.	3346245
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	5.4 kW
Drive motor	3.75 kW
Motor rapid motion/feed	0.75 kW
Coolant pump motor	95 W
Drilling/milling output	
Drilling performance in steel (S235JR)	Ø 32 mm
Continuous drilling performance in steel (S235JR)	Ø 28 mm
Maximum cutting head size	Ø 100 mm
Maximum end mill size	Ø 25 mm
Spindle	
Spindle sleeve stroke	120 mm
Spindle seat	ISO 40 DIN 2080
Drawbar	M16
Speed range	
Spindle speeds	30 - 2250 min ⁻¹
Gearbox stages	18 stages
Speed range after optional Vario conversion	
Spindle speeds	48 - 3045 min ⁻¹
Gearbox stages	2 x 6 gear stages
Vertical	
Vertical rotation area	± 90°
Distance between spindle nose - cross table	70 - 400 mm
Maximum throat depth	185 mm
Vertical cross table x width	1200 x 250 mm
T-slot size / spacing / count	14 mm / 63 mm / 3
Horizontal	
Clearance horizontal spindle to cross table	130 - 390 mm
Horizontal cross table x width	900 x 500 mm
Max. load bearing capacity	360 kg
T-slot size / spacing / count	14 mm / 63 mm / 7
Travel during feed	
X axis (Cross table)	manual 600 mm / automatic ~510 mm
Y axis (milling head)	manual 480 mm / automatic ~440 mm
Z axis (Cross table)	manual 390 mm / automatic ~345 mm
Drive speed feed/rapid motion	50 - 450 min ⁻¹ / 780 min ⁻¹
Feed speed	10 - 600 mm/min.
Dimensions and weight	
Length x width x height approx.	1610 x 1825 x 1885 mm
Net weight approx.	1890 kg

Accessories

Designation	Article no.
Hydraulic clamping device DIN 69871 ex works only	3346226
Compressed air tool changer incl. mounting adapter and installation costs	3346225
Vibration damping machine base SE 55 (4 units required)	3352981

More accessories and information about accessories from page 158 onwards

Angled table	3346221
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Scope of delivery

- > Adapter ISO 40/MT3
- > MT1 and MT2 shank
- > Horizontal milling spindle Ø 27 mm
- > Operating tool