

UNIVERSAL DRILLING AND MILLING MACHINES



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Universal drilling/milling machine with digital position display DRO 5 and machine base made of cast iron.

OPTImill MB 4PV with electronically infinitely variable drive

Facts that impress in terms of quality, performance and price

- ▶ Heavy, solid cast design
 - ▶ High running smoothness due to ground gear wheels running in an oil bath
 - ▶ Solid and generously dimensioned cross table with precision surface finish and T-slots
 - ▶ Tilttable gear head ± 45°
 - ▶ Adjustable V-ledges
 - ▶ Drill depth stop
 - ▶ Right-/left-hand rotation
 - ▶ Drilling/Thread tapping function
 - ▶ Coolant system
 - ▶ Solid column with hand-honed dovetail guide for maximum stability and best possible precision
 - ▶ Feed spindle play adjustable and re-adjustable
 - ▶ Height-adjustable, large protective screen with micro switch
 - ▶ Machine lamp
 - ▶ Solid cast machine chassis with chip channel
- MB 4P:**
- ▶ Two-stage industrial quality electric motor
 - ▶ Wide speed range from 95 to 3200 min⁻¹ thanks to 12 switchable speeds
- MB 4PV:**
- ▶ Single-speed, premium, industrial electric motor
 - ▶ Large speed range from 60 - 2760 min⁻¹ thanks to 2 continuously variable gear stages
 - ▶ SINAMICS V20 inverter from **SIEMENS**



Fig.: MB 4PV

Arguments,...



AUTOMATIC SPINDLE SLEEVE FEED

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



X AXIS

- › Motorised positioning of the X-axis with rapid traverse



DIGITAL POSITION DISPLAY

- › Four-line LCD display



MB 4PV: SIEMENS INVERTER SINAMICS V20

- › The inverter is equipped with an energy-optimised control method and automatic flux reduction to increase energy efficiency
- › Wider voltage range, advanced cooling and painted electronic assemblies

Technical specifications, accessories and dimensions

Model	MB 4P	MB 4PV*
Article no.	3338460	3338466
Output		
Electrical connection	400 V / 3 Ph ~50 Hz	400 V / 3 Ph ~50 Hz
Motor power	1.1 / 1.5 kW	1.5 kW
Coolant pump motor	100 W	
Drilling/milling output		
Drilling performance in steel (S235JR)	Ø 32 mm	Ø 24 mm
Continuous drilling performance in steel (S235JR)	Ø 28 mm	Ø 20 mm
Maximum cutting head size	Ø 63 mm	Ø 63 mm
Maximum end mill size	Ø 28 mm	Ø 26 mm
Spindle		
Spindle sleeve stroke	120 mm	
Spindle sleeve diameter	75 mm	
Spindle seat	MT4	
Spindle - column distance	258 mm	
Drawbar	M16	
Drilling/milling head		
Spindle speeds	95 - 3200 min ⁻¹	60 - 2760 min ⁻¹
Gearbox stages	2 x 6 speeds	2 stages, electronically adjustable
Swivel range	± 45°	
Cross table		
Clearance spindle to cross table max.	420 mm	
Cross table x width	800 x 240 mm	
T-slot size / spacing / count	14 mm / 80 mm / 3	
Automatic spindle sleeve feed	0.1 / 0.18 / 0.26 mm/rev	
Traverse paths		
X axis	manual 560 mm / automatic ~480 mm	
Y axis manual	195 mm	
Z axis manual	350 mm	
Dimensions and weight		
Length x width x height approx.	1600 x 930 x 2110 mm	
Net weight approx.	495 kg	

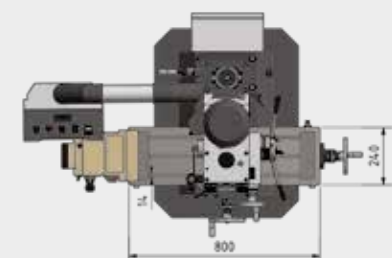
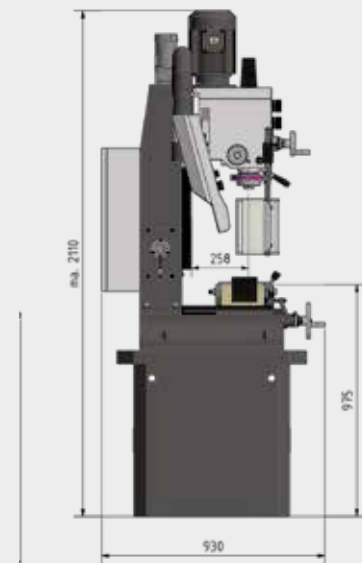
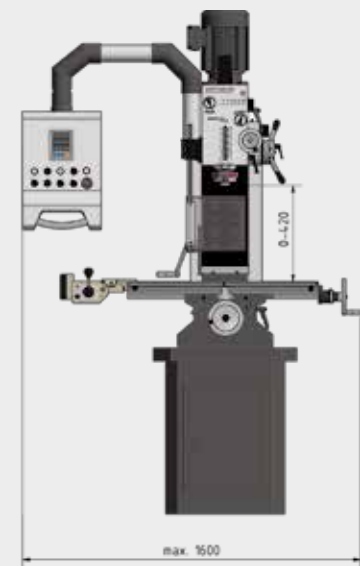
Accessories

Designation	Article no.
Collet chuck MT4/M16	3352094
Tapping chuck MT4/ M3 - M12	3050709
Tapping chuck MT4/ M8 - M20	3050710
End mill set HSS TiN-coated , 12-part	3352250
End mill set HSS TiN-coated , 20-part	3352255
Arbour for drill chuck MT4	3350304
Copy and planer cutter MT4	3350214
Boring head MT4	3352125
Parallel shim set, 20-part	3354001
Parallel shim set, 18-part	3536191
Horizontal-vertical rotary indexing table RT 150	3356150
Horizontal-vertical rotary indexing table RTE 165	3356365
Assortment of clamping tools SPW 12, 58-part	3352077
Vibration damping machine base SE 55 (4 units required)	3352981

More accessories and information about accessories from page 158 onwards

Coolant accessories see page 93

Dimensions



Scope of delivery

- › Machine base
- › Morse cone MT3/B16
- › Adapter MT4/MT3
- › Tightening rod M16
- › Operating tool

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

Facts that impress in terms of quality, performance and price

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



Fig.: MT 50E

Arguments,...



MILLING HEAD

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



FEED

- › Table feed on X- and Y-axis with speed adjustment



CROSS TABLE

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



CONTROL PANEL

- › Easy to operate
- › Control of:
 - › Direction of rotation
 - › Coolant pump
 - › Spindel Stop

Technical specifications, accessories and dimensions

Model	MT 50E
Article no.	3336010
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Drive motor	0.85 / 1.5 kW
Coolant pump motor	40 W
Drilling/milling output	
Drilling performance in steel (S235JR)	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 25 mm
Maximum cutting head size	Ø 63 mm
Maximum end mill size	Ø 25 mm
Spindle	
Spindle sleeve stroke	120 mm
Spindle seat	ISO 40 DIN 2080
Clearance spindle to cross table	60 - 360 mm
Spindle - column distance	250 - 650 mm
Drawbar	M16
Drilling/milling head	
Spindle speeds	115 - 1750 min ⁻¹
Gears / motor speeds	4-speed / 2-speed
Swivel range milling head	± 45°
Cross table	
Cross table x width	1000 x 240 mm
Cross table load capacity max.	150 kg
T-slot size / count	14 mm / 4
Swivel range	± 45°
Traverse paths	
X axis	manual 580 mm automatic ~500 mm
Y axis	manual 230 mm automatic ~150 mm
Z axis manual	320 mm
Dimensions and weight	
Length x width x height approx.	1360 x 1150 x 2080 mm
Net weight approx.	760 kg

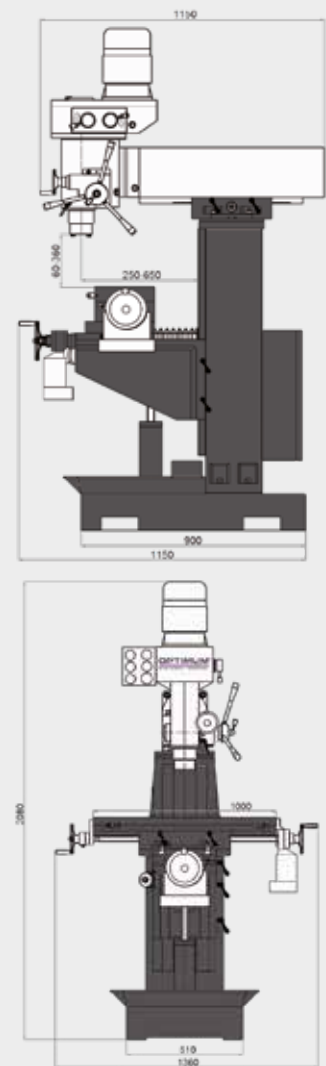
Accessories

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
Copying and facing blade head ISO 40 DIN 2080	3350216
Precision bore head set ISO 40	3352128
Parallel shim set, 20-part	3354001
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
Workpiece support WPS-4	3354264
Hold-down unit set of 2	3352031
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

- › Gear rim drill chuck 3 - 13 mm / B18
- › Arbor for drill chuck ISO 40 / B18
- › T-slot nuts
- › push-out tool
- › Adapter ISO 40/MT3
- › Adapter MT3/MT2
- › Operating tool

Vices

Designation	Article no.
FMS 125	3354125
FMSN 125	3354120
VMQ 100	3354181
MV3-75	3354175
MV3-125	3354178
DAS 100	3355500
ZAS 50	3354170

Information can be found on page 155 onwards

Universal precision drilling/milling machine for horizontal and vertical milling work. With digital 3-axis position indicator DPA31 Plus

Facts that impress in terms of quality, performance and price

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



Fig.: MT 50

Arguments,...



HORIZONTAL MILLING POSITION

- > With arresster and collet for disc milling cutter
- > The spindle head carrier must be rotated by $\pm 180^\circ$ for horizontal milling



OPTi CONTROL PANEL

- > Integrated switch panel
- > Integrated digital position display DPA31 Plus
- > Pivots to left and right side of machine



CROSS TABLE HOUSING

- > Fold-up type
- > Removable



CROSS TABLE

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

Technical specifications, accessories and dimensions

Model	MT 50
Article no.	3336005
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	4.5 kW
Vertical drive motor	1.1 / 2.2 kW
Horizontal drive motor	1.5 kW
Coolant pump motor	40 W
Drilling/milling output	
Drilling performance in steel (S235JR)	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 25 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
Clearance spindle to cross table	60 - 390 mm
Vertical	
Spindle speeds	115 - 1750 min ⁻¹
Gearbox stages	8 stages
Swivel range milling head	± 45°
Spindle - column distance	240 - 650 mm
Horizontal	
Spindle speeds	60 - 1350 min ⁻¹
Gearbox stages	9 stages
Spindle - column distance	0 - 185 mm
Cross table	
Cross table x width	1000 x 240 mm
Cross table load capacity max.	160 kg
T-slot size / count	14 mm / 4
Rotatable cross table	± 45°
Traverse paths	
X axis	manual 580 mm / automatic ~500 mm
Table feed X axis (8 speeds)	24 - 720 mm/min.
Y axis manual	200 mm
Z axis manual	340 mm
Dimensions and weight	
Length x width x height approx.	1290 x 1090 x 2170 mm
Net weight approx.	820 kg

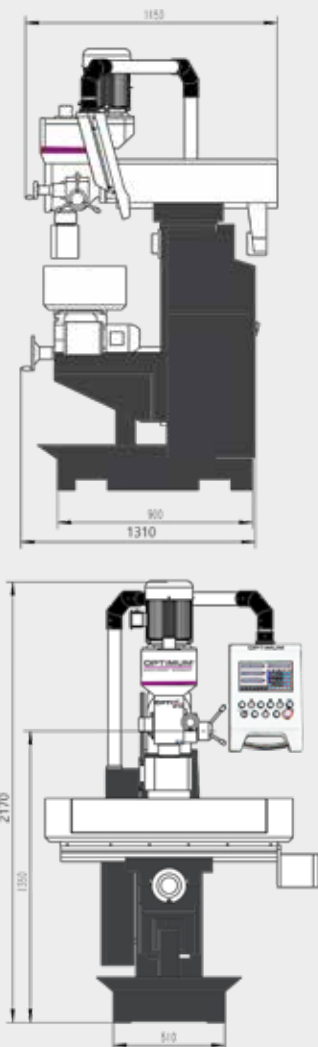
Accessories

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
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 RTE 165	3356365
Horizontal-vertical rotary indexing table RTU 165	3354165
Assortment of clamping tools SPW 12, 58-part	3352077
Milling table feed V250 for the Y-axis	3352030
Factory assembly V250	9000489
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

- › Gear rim drill chuck 3 - 13 mm / B18
- › Arbor for drill chuck ISO 40 / B18
- › Horizontal milling spindle with counter bearing, disc cutter holder Ø 22 mm, Ø 27 mm
- › Adapter ISO 40/MT3
- › Adapter ISO 40/MT2
- › Tie rod vertical and horizontal
- › T-slot nuts
- › push-out tool
- › Operating tool

Vices

Designation	Article no.
FMS 125	3354125
FMSN 125	3354120
VMQ 100	3354181
MV3-75	3354175
MV3-125	3354178
DAS 100	3355500
ZAS 50	3354170

Information can be found on page 155 onwards

Universal milling machine for horizontal and vertical milling work. With digital 3-axis position indicator DPA31 Plus

Facts that impress in terms of quality, performance and price

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



Fig.: MT 60

Arguments,...



HORIZONTAL MILLING POSITION

- › With arrester and collet for disc milling cutter
- › The spindle head carrier must be rotated by $\pm 180^\circ$ for horizontal milling



MILLING HEAD

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



OPTi CONTROL PANEL

- › Integrated switch panel
- › Pivots to left and right side of machine
- › Integrated Digital position display DPA 31Plus
 - › User-friendly membrane keyboard, splash water protected, sealed and dazzle free
 - › Greater operation accuracy
 - › Reduction of error quota
 - › Clearly-arranged keyboard layout

Technical specifications, accessories and dimensions

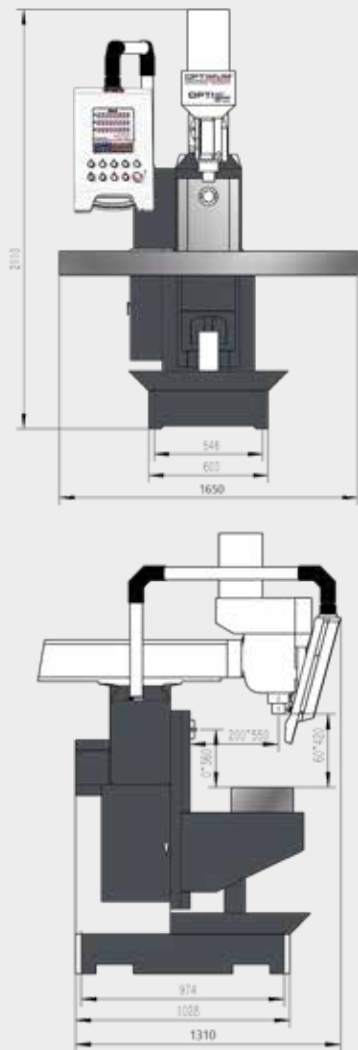
Model	MT 60
Article no.	3336090
Output	
Electrical connection	400 V / 3 Ph ~50 Hz
Total rated value	5 kW
Horizontal and vertical drive motor	2.2 kW
Coolant pump motor	40 W
Drilling/milling output	
Drilling performance in steel (S235JR)	Ø 30 mm
Continuous drilling performance in steel (S235JR)	Ø 25 mm
Maximum cutting head size	Ø 100 mm
Maximum end mill size	Ø 25 mm
Spindle	
Spindle sleeve stroke	120 mm
Spindle sleeve diameter	Ø 90 mm
Spindle seat	ISO 40 DIN 2080
Clearance spindle to cross table	60 - 420 mm
Drawbar	M16
Vertical	
Spindle speeds	90 - 2000 min ⁻¹
Gearbox stages	8 stages
Swivel range milling head	± 45°
Spindle - column distance	220 - 550 mm
Automatic spindle sleeve feed	3 stages: 0.08 / 0.25 / 1 mm/rev
Horizontal	
Spindle speeds	40 - 1300 min ⁻¹
Gearbox stages	9 stages
Spindle - column distance	35 - 370 mm
Cross table	
Cross table x width	1270 x 280 mm
Cross table load capacity max.	150 kg
T-slot size / spacing / count	14 mm / 50 mm / 4
Traverse paths	
X axis	manual 750 mm / automatic ~680 mm
Y axis manual	230 mm
Z axis manual	360 mm
Dimensions and weight	
Length x width x height approx.	1650 x 1310 x 2160 mm
Net weight approx.	1300 kg

Accessories

Designation	Article no.
Collet chuck set 18-part ISO 40	3352056
Drill chuck holder (arbour) ISO 40/ M16 / B16	3352070
End mill set HSS TiN-coated 20-part	3352255
Copying and facing blade head ISO 40 DIN 2080	3350216
Precision bore head set ISO 40	3352128
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
Milling table feed V250 for the Y-axis	3352030
Factory assembly V 250	9000489
Precision machine shoe SEU1(4 units required)	3352985

More accessories and information about accessories from page 158 onwards

Dimensions



Scope of delivery

- › Gear rim drill chuck 3 - 13 mm / B18
- › Arbor for drill chuck ISO 40 / B18
- › Adapter ISO 40/MT3
- › Adapter MT3/MT2
- › Horizontal milling spindle with counter bearing, disc cutter holder Ø 22 mm, Ø 27 mm
- › Drawbar horizontal and vertical
- › Operating tool

Vices

Designation	Article no.
FMS 125	3354125
FMSN 125	3354120
VMQ 100	3354181
MV3-75	3354175
MV3-125	3354178
DAS 100	3355500
ZAS 50	3354170

Information can be found on page 155 onwards