

## 12 Series

Technical Data

## Machining centers with fixed table

Technical data	FZ 12 S	FZ 12 S with swivel head	DZ 12 S
Drilling capacity in E 335 with inserted drill	Ø 25 mm	Ø 18 mm	2 x Ø 25 mm
Thread cutting	M 20	M 16	2 x M 20
Milling capacity in E 335	150 cm <sup>3</sup> /min	80 cm <sup>3</sup> /min	2 x 150 cm <sup>3</sup> /min
Tool places	24	24	2 x 12
Tool taper DIN 69893	HSK-A 50	HSK-A 50	HSK-A 50
Max. tool diameter	60 mm	60 mm	60 mm
Max. tool diameter if adjacent places are free	125 mm	125 mm	125 mm
Max. tool length	250 mm	250 mm	250 mm
Max. tool weight	4 kg	4 kg	4 kg
Tool change time approx.	0.9 s	0.9 s	0.9 s
Chip-to-chip time approx.	2.2 s	–	2.2 s
Chip-to-chip time from swivel head position 0° (vertical)	–	2.4 s	–
Chip-to-chip time from swivel head position 90° (horizontal)	–	2.9 s	–
Spindle distance in X	–	–	250 mm
Infinitely variable speed range	15,000 rpm	15,000 rpm	15,000 rpm
Max. torque	45 Nm	29 Nm	2 x 45 Nm
Spindle drive (Siemens / Fanuc)	40 / 11 kW	36 kW	2 x 40 / 11 kW
Max. speed thread cutting	8,000 rpm	8,000 rpm	8,000 rpm
Spindle bearing diameter	60 mm	50 mm	60 mm
Tool clamping	11,000 N	11,000 N	11,000 N
Range from spindle to cover	285 - 605 mm	280 - 600 mm	280 - 600 mm
Clearance spindle take-up – table surface	240 - 600 mm	240 - 600 mm	240 - 600 mm
Travel X / Y / Z axis	550 / 400 / 400 mm	550 / 320 / 360 mm	550 / 400 / 400 mm
Feed force X / Y / Z axis	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N
Rapid feed rate X / Y / Z axis	75 / 75 / 75 m/min	75 / 75 / 75 m/min	75 / 75 / 75 m/min
Acceleration X / Y / Z axis	10 / 15 / 20 m/s <sup>2</sup>	10 / 12 / 15 m/s <sup>2</sup>	10 / 15 / 20 m/s <sup>2</sup>
Direct path measuring system in all axis	•	•	•
<b>Swivel head</b>			
Swivelling range of the spindle	–	-10° up to +100°	–
Rapid feed rate B axis	–	60 m/min	–
Acceleration time B axis	–	4 1/s <sup>2</sup>	–
<b>Fixed table</b>			
Clamping surface	820 mm x 440 mm	820 mm x 440 mm	820 mm x 440 mm
Mounting hole pattern	2 x 18 H12	2 x 18 H 12	2 x 18 H 12
Aligning groove and center hole	1 x 18 H8	1 x 18 H 8	1 x 18 H 8
Table load capacity	500 kg	500 kg	500 kg
Cooling unit, tank capacity	100 l	100 l	100 l
Total connected power approx.	11 - 50 kVA	11 - 50 kVA	11 - 50 kVA
Machine weight approx.	6.5 t	6.5 t	6.7 t
Floor space approx.	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>
Air connection	6.0 bar	6.0 bar	6.0 bar
Central lubrication	•	•	•
<b>Technology package "Milling from bars"</b>			
Autom. collet chuck clamping up to	–	Ø 100 mm	–
NC rotary table, speed max.	–	45 rpm	–
NC slide for bar feed, max. stroke	–	400 mm	–
NC indexing device with clamping stock for processing	–	6th side	–
<b>Technology package "Turning from bars"</b>			
Max. bar passage	–	Ø 65 mm	–
Infinitely variable speed range up to	–	4,500 rpm	–
Max. torque	–	90 Nm	–
Turning spindle with collet chuck holder	–	14.1 kW	–
NC slide for bar feed, max. stroke	–	400 mm	–
NC indexing device with clamping stock for processing	–	6th side	–

Options	FZ 12 S	FZ 12 S with swivel head	DZ 12 S
<b>High Speed Plus package</b>			
Increased speed range up to	24,000 / 30,000 rpm	24,000 rpm	24,000 rpm
Tool taper DIN 69893	HSK-A 50 / A 40	HSK-A 50	HSK-A 50
Max. torque	29 / 11 Nm	29 Nm	2 x 29 Nm
Spindle drive	36 / 9 kW	36 kW	2 x 36 kW
Spindle ramp time up to max. speed approx.	0.7 / 1.9 s	0.7 s	0.7 s
<b>More powerful spindle drive</b>			
Infinitely variable speed range up to	18,000 rpm	–	18,000 rpm
Max. torque	59 Nm	–	59 Nm
<b>More Options</b>			
Tool places	48 / 64 / 128	48 / 64 / 128	2 x 24 / 32 / 64
Coolant through the spindle up to 70 bar	•	•	•
Chip conveyor, ejection height 490 mm / 1,050 mm	•	•	•
Coolant treatment	•	•	•
NC rotary table	•	•	–
NC rotary table with basic device, free bridge dimension 620 mm	•	–	•
Tool life monitoring	•	•	•
CHIRON Laser Control	•	•	•
Tool breakage monitoring	•	•	•
Stationary 3D probing system	•	•	•
Probe	•	•	•
Work area mist collection	•	•	•
Connection for central mist collection	•	•	•
Oil package	•	•	•
Machining with minimal lubrication	•	•	•
Pneumatic connection for clamping devices	•	•	•
Hydraulic unit and connection for clamping devices	•	•	•
Automatic doors	•	•	•
Handwheel	•	•	•
Adaptor for multi spindle heads	•	–	•
Electrical robot interface	•	•	•
Variocell UNO / SYSTEM	•	•	•

## Machining centers with fixed table

Technical data	FZ 12 S MAGNUM	FZ 12 S MAGNUM with swivel head	DZ 12 S MAGNUM
Drilling capacity in E 335 with inserted drill	Ø 25 mm	Ø 18 mm	2 x Ø 25 mm
Thread cutting	M 20	M 16	2 x M 20
Milling capacity in E 335	150 cm <sup>3</sup> /min	80 cm <sup>3</sup> /min	2 x 150 cm <sup>3</sup> /min
Tool places	32	32	2 x 16
Tool taper DIN 69893	HSK-A 63	HSK-A 63	HSK-A 63
Max. tool diameter	85 mm	85 mm	85 mm
Max. tool diameter if adjacent places are free	125 mm	125 mm	125 mm
Max. tool length	240 mm	240 mm	240 mm
Max. tool weight	5 kg	4 kg	5 kg
Tool change time approx.	0.9 s	0.9 s	0.9 s
Chip-to-chip time approx.	2.2 s	–	2.2 s
Chip-to-chip time from swivel head position 0° (vertical)	–	2.4 s	–
Chip-to-chip time from swivel head position 90° (horizontal)	–	2.9 s	–
Spindle distance in X	–	–	250 mm
Infinitely variable speed range	15,000 rpm	15,000 rpm	15,000 rpm
Max. torque	45 Nm	29 Nm	2 x 45 Nm
Spindle drive (Siemens / Fauc)	40 / 11 kW	36 kW	2 x 40 / 11 kW
Max. speed thread cutting	8,000 rpm	8,000 rpm	8,000 rpm
Spindle bearing diameter	60 mm	50 mm	60 mm
Tool clamping	11,000 N	11,000 N	11,000 N
Range from spindle to cover	285 - 605 mm	280 - 600 mm	280 - 600 mm
Clearance spindle take-up – table surface	240 - 600 mm	240 - 600 mm	240 - 600 mm
Travel X / Y / Z axis	550 / 400 / 400 mm	550 / 320 / 400 mm	550 / 400 / 400 mm
Feed force X / Y / Z axis	3,000 / 4,000 / 4,000 N	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N
Rapid feed rate X / Y / Z axis	75 / 75 / 75 m/min	75 / 75 / 75 m/min	75 / 75 / 75 m/min
Acceleration X / Y / Z axis	10 / 15 / 20 m/s <sup>2</sup>	10 / 12 / 15 m/s <sup>2</sup>	10 / 15 / 20 m/s <sup>2</sup>
Direct path measuring system in all axis	•	•	•
<b>Swivel head</b>			
Swivelling range of the spindle	–	-10° up to +100°	–
Rapid feed rate B axis	–	60 m/min	–
Acceleration time B axis	–	4 1/s <sup>2</sup>	–
<b>Fixed table</b>			
Clamping surface	820 mm x 440 mm	820 mm x 440 mm	820 mm x 440 mm
Mounting hole pattern	2 x 18 H12	2 x 18 H 12	2 x 18 H 12
Aligning groove and center hole	1 x 18 H8	1 x 18 H 8	1 x 18 H 8
Table load capacity	500 kg	500 kg	500 kg
Cooling unit, tank capacity	100 l	100 l	100 l
Total connected power approx.	11 - 50 kVA	11 - 50 kVA	11 - 50 kVA
Machine weight approx.	6.5 t	6.5 t	6.7 t
Floor space approx.	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>
Air connection	6.0 bar	6.0 bar	6.0 bar
Central lubrication	•	•	•
<b>Technology package "Milling from bars"</b>			
Autom. collet chuck clamping up to	–	Ø 100 mm	–
NC rotary table, speed max.	–	45 rpm	–
NC slide for bar feed, max. stroke	–	400 mm	–
NC indexing device with clamping stock for processing	–	6th side	–
<b>Technology package "Turning from bars"</b>			
Max. bar passage	–	Ø 65 mm	–
Infinitely variable speed range up to	–	4,500 rpm	–
Max. torque	–	90 Nm	–
Turning spindle with collet chuck holder	–	14.1 kW	–
NC slide for bar feed, max. stroke	–	400 mm	–
NC-Wender mit Spannstock für Bearbeitung	–	6th side	–

Options	FZ 12 S MAGNUM	FZ 12 S MAGNUM with swivel head	DZ 12 S MAGNUM
<b>High Speed Plus package</b>			
Increased speed range up to	20,000 rpm	20,000 rpm	20,000 rpm
Tool taper DIN 69893	HSK-A 63	HSK-A 63	HSK-A 63
Max. torque	29 Nm	29 Nm	2 x 29 Nm
Spindle drive	36 kW	36 kW	2 x 36 kW
Spindle ramp time up to max. speed approx.	0.7 s	0.7 s	0.7 s
<b>More powerful spindle drive</b>			
Infinitely variable speed range up to	16,000 rpm	–	16,000 rpm
Max. torque	59 Nm	–	59 Nm
<b>More Options</b>			
Travel Y axis	Standard	–	Standard
Tool places	64	64	2 x 32
Coolant through the spindle up to 70 bar	•	•	•
Chip conveyor, ejection height 490 mm / 1.050 mm	•	•	•
Coolant treatment	•	•	•
NC rotary table	•	•	–
NC rotary table with basic device, free bridge dimension 620 mm	•	–	•
Tool life monitoring	•	•	•
CHIRON Laser Control	•	•	•
Tool breakage monitoring	•	•	•
Stationary 3D probing system	•	•	•
Probe	•	•	•
Work area mist collection	•	•	•
Connection for central mist collection	•	•	•
Oil package	•	•	•
Machining with minimal lubrication	•	•	•
Pneumatic connection for clamping devices	•	•	•
Hydraulic unit and connection for clamping devices	•	•	•
Automatic doors	•	•	•
Handwheel	•	•	•
Adaptor for multi spindle heads	•	–	•
Electrical robot interface	•	•	•
Variocell UNO / SYSTEM	•	•	•

## Machining centers in five axis version

Technical data	FZ 12 FX	DZ 12 FX	FZ 12 FX MAGNUM	DZ 12 FX MAGNUM
Drilling capacity in E 335 with inserted drill	Ø 25 mm	2 x Ø 25 mm	Ø 25 mm	2 x Ø 25 mm
Thread cutting	M 20	2 x M 20	M 20	2 x M 20
Milling capacity in E 335	150 cm <sup>3</sup> /min	2 x 150 cm <sup>3</sup> /min	150 cm <sup>3</sup> /min	2 x 150 cm <sup>3</sup> /min
Tool places	24	2 x 12	32	2 x 16
Tool taper DIN 69893	HSK-A 50	HSK-A 50	HSK-A 63	HSK-A 63
Max. tool diameter	60 mm	60 mm	85 mm	85 mm
Max. tool diameter if adjacent places are free	125 mm	125 mm	125 mm	125 mm
Max. tool length	250 mm	250 mm	240 mm	240 mm
Max. tool weight	4 kg	4 kg	5 kg	5 kg
Tool change time approx.	0.9 s	0.9 s	0.9 s	0.9 s
Chip-to-chip time approx.	2.2 s	2.2 s	2.2 s	2.2 s
Spindle distance in X	–	250 mm	–	250 mm
Infinitely variable speed range	15,000 rpm	15,000 rpm	15,000 rpm	15,000 rpm
Max. torque	45 Nm	2 x 45 Nm	45 Nm	2 x 45 Nm
Spindle drive (Siemens / Fanuc)	40 / 11 kW	2 x 40 / 11 kW	40 / 11 kW	2 x 40 / 11 kW
Max. speed thread cutting	8,000 rpm	8,000 rpm	8,000 rpm	8,000 rpm
Spindle bearing diameter	60 mm	60 mm	60 mm	60 mm
Tool clamping	11,000 N	11,000 N	11,000 N	11,000 N
Range from spindle to cover	285 - 605 mm	285 - 605 mm	285 - 605 mm	285 - 605 mm
Clearance spindle take-up – table surface	200 - 560 mm	200 - 560 mm	200 - 560 mm	200 - 560 mm
Travel X / Y / Z axis	550 / 400 / 400 mm	550 / 400 / 400 mm	550 / 400 / 400 mm	550 / 400 / 400 mm
Feed force X / Y / Z axis	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N
Rapid feed rate X / Y / Z axis	75 / 75 / 75 m/min	75 / 75 / 75 m/min	75 / 75 / 75 m/min	75 / 75 / 75 m/min
Acceleration X / Y / Z axis	10 / 15 / 20 m/s <sup>2</sup>	10 / 10 / 15 m/s <sup>2</sup>	10 / 15 / 20 m/s <sup>2</sup>	10 / 10 / 15 m/s <sup>2</sup>
Direct path measuring system in all axis	•	•	•	•
<b>2-axis NC tilt rotary table</b>				
NC swivel range	± 120°	± 120°	± 120°	± 120°
Face plate diameter	280 mm	2 x 245 mm	280 mm	2 x 245 mm
Mounting hole pattern	M 16 x Ø 15 H7 x 50 mm	M 16 x Ø 15 H7 x 50 mm	M 16 x Ø 15 H7 x 50 mm	M 16 x Ø 15 H7 x 50 mm
Load capacity	320 kg	2 x 200 kg	320 kg	2 x 200 kg
Speed 4th axis	50 rpm	50 rpm	50 rpm	50 rpm
Speed 5th axis	200 / 1,000 rpm	2 x 200 / 1,000 rpm	200 / 1,000 rpm	2 x 200 / 1,000 rpm
Max. torque	180 Nm	180 Nm	180 Nm	180 Nm
Direct path measuring system 4th and 5th axis	± 5" / ± 5"	± 5" / ± 5"	± 5" / ± 5"	± 5" / ± 5"
Media line to the adapter face plate	6	2 x 6	6	2 x 6
Cooling unit, tank capacity	100 l	100 l	100 l	100 l
Total connected power approx.	11 - 50 kVA	11 - 50 kVA	11 - 50 kVA	11 - 50 kVA
Machine weight approx.	6.5 t	6.7 t	6.5 t	6.7 t
Floor space approx.	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>	5.0 m <sup>2</sup>
Air connection	6.0 bar	6.0 bar	6.0 bar	6.0 bar
Central lubrication	•	•	•	•

Options	FZ 12 FX	DZ 12 FX	FZ 12 FX MAGNUM	DZ 12 FX MAGNUM
<b>High Speed Plus package</b>				
Increased speed range up to	24,000 / 30,000 rpm	24,000 rpm	20,000 rpm	20,000 rpm
Tool taper DIN 69893	HSK-A 50 / A 40	HSK-A 50	HSK-A 63	HSK-A 63
Max. torque (Siemens / Fanuc)	29 / 11 Nm	2 x 29 Nm	29 Nm	2 x 29 Nm
Spindle drive (Siemens / Fanuc)	36 / 9 kW	2 x 36 kW	36 kW	2 x 36 kW
Spindle ramp time up to max. speed approx.	0.7 / 1.9 s	0.7 s	0.7 s	0.7 s
<b>More powerful spindle drive</b>				
Infinitely variable speed range up to	18,000 rpm	18,000 rpm	16,000 rpm	16,000 rpm
Max. torque	59 Nm	59 Nm	59 Nm	59 Nm
<b>More Options</b>				
Tool places	48 / 64 / 128	2 x 24 / 32 / 64	64	2 x 32
Coolant through the spindle up to 70 bar	•	•	•	•
Chip conveyor, ejection height 490 / 1.050 mm	•	•	•	•
Coolant treatment	•	•	•	•
2-axis NC tilt rotary table for five axis machining	•	Standard	•	Standard
Zero point clamping system integrated in adapter face plate	•	•	•	•
Adapter Face Plate	Ø 450 mm	–	Ø 450 mm	–
Tool life monitoring	•	•	•	•
CHIRON Laser Control	•	•	•	•
Tool breakage monitoring	•	•	•	•
Stationary 3D probing system	•	•	•	•
Probe	•	•	•	•
Work area mist collection	•	•	•	•
Connection for central mist collection	•	•	•	•
Oil package	•	•	•	•
Machining with minimal lubrication	•	•	•	•
Pneumatic connection for clamping devices	•	•	•	•
Hydraulic unit and connection for clamping devices	•	•	•	•
Automatic doors	•	•	•	•
Handwheel	•	•	•	•
Adaptor for multi spindle heads	•	–	•	–
Electrical robot interface	•	•	•	•
Variocell UNO / SYSTEM	•	•	•	•

## Machining centers with workpiece changer

Technical data	FZ 12 W	DZ 12 W
Drilling capacity in E 335 with inserted drill	Ø 25 mm	2 x Ø 25 mm
Thread cutting	M 20	2 x M 20
Milling capacity in E 335	150 cm <sup>3</sup> /min	2 x 150 cm <sup>3</sup> /min
Tool places	24	2 x 12
Tool taper DIN 69893	HSK-A 50	HSK-A 50
Max. tool diameter	60 mm	60 mm
Max. tool diameter if adjacent places are free	125 mm	125 mm
Max. tool length	250 mm	250 mm
Max. tool weight	4 kg	4 kg
Tool change time approx.	0.9 s	0.9 s
Chip-to-chip time approx.	2.2 s	2.4 s
Spindle distance in X	–	250 mm
Infinitely variable speed range	15,000 rpm	15,000 rpm
Max. torque	45 Nm	2 x 45 Nm
Spindle drive (Siemens / Fanuc)	40 / 11 kW	2 x 40 / 11 kW
Max. speed thread cutting	8,000 rpm	8,000 rpm
Spindle bearing diameter	60 mm	60 mm
Tool clamping	11,000 N	11,000 N
Clearance spindle take-up – table surface	240 - 600 mm	240 - 600 mm
Travel X / Y / Z axis	550 / 400 / 400 mm	550 / 400 / 400 mm
Feed force X / Y / Z axis	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N
Rapid feed rate X / Y / Z axis	75 / 75 / 75 m/min	75 / 75 / 75 m/min
Acceleration X / Y / Z axis	10 / 15 / 20 m/s <sup>2</sup>	10 / 15 / 20 m/s <sup>2</sup>
Direct path measuring system in all axis	•	•
Workpiece changing device with speed control	0° / 180°	0° / 180°
Clamping surface	2 x 660 x 350 mm	2 x 660 x 350 mm
Mounting hole pattern	M 16 x Ø 15 H7 x 50 mm	M 16 x Ø 15 H7 x 50 mm
Workpiece change time approx.	2.0 s	2.0 s
Load capacity per table side	400 kg	400 kg
Chip conveyor, ejection height	490 mm	490 mm
Cooling unit, tank capacity	100 l	500 l
Total connected power approx.	11 - 50 kVA	11 - 50 kVA
Machine weight approx.	7.5 t	7.7 t
Floor space approx.	6.0 m <sup>2</sup>	6.0 m <sup>2</sup>
Air connection	6.0 bar	6.0 bar
Central lubrication	•	•

Options	FZ 12 W	DZ 12 W
<b>High Speed Plus package</b>		
Increased speed range up to	24,000 / 30,000 rpm	24,000 rpm
Tool taper DIN 69893	HSK- A 50 / A 40	HSK- A 50
Max. torque (Siemens / Fanuc)	29 / 11 Nm	2 x 29 Nm
Spindle drive (Siemens / Fanuc)	36 / 9 kW	2 x 36 kW
Spindle ramp time up to max. speed approx.	0.7 s / 1.9 s	0.7 s
<b>More powerful spindle drive</b>		
Infinitely variable speed range up to	18,000 rpm	18,000 rpm
Max. torque	59 Nm	59 Nm
<b>More Options</b>		
Tool places	48 / 64 / 128	2 x 24 / 32 / 64
Coolant through the spindle up to 70 bar	•	•
Chip conveyor, ejection height 490 mm / 1,050 mm	•	•
Coolant treatment	•	•
NC rotary table	•	–
NC rotary table with basic device	•	•
Workpiece changer with integrated 2-axis NC rotary table for 5-axis machining	•	•
Workpiece changer with integrated 2-axis NC rotary table and one satellite	•	–
Workpiece changer with integrated 2-axis NC rotary table and two satellite	•	•
Tool life monitoring	•	•
CHIRON Laser Control	•	•
Tool breakage monitoring	•	•
Stationary 3D probing system	•	•
Probe	•	•
Work area mist collection	•	•
Connection for central mist collection	•	•
Oil package	•	•
Machining with minimal lubrication	•	•
Pneumatic connection for clamping devices	•	•
Hydraulic unit and connection for clamping devices	•	•
Automatic doors	•	•
Handwheel	•	•
Adaptor for multi spindle heads	•	–
Electrical robot interface	•	•
Tool measurement and management	•	•
Variocell UNO / SYSTEM	•	•

## Machining centers with workpiece changer

Technical data	FZ 12 W MAGNUM	DZ 12 W MAGNUM
Drilling capacity in E 335 with inserted drill	Ø 25 mm	2 x Ø 25 mm
Thread cutting	M 20	2 x M 20
Milling capacity in E 335	150 cm <sup>3</sup> /min	2 x 150 cm <sup>3</sup> /min
Tool places	32	2 x 16
Tool taper DIN 69893	HSK-A 63	HSK-A 63
Max. tool diameter	85 mm	85 mm
Max. tool diameter if adjacent places are free	125 mm	125 mm
Max. tool length	240 mm	240 mm
Max. tool weight	5 kg	5 kg
Tool change time approx.	0.9 s	0.9 s
Chip-to-chip time approx.	2.4 s	2.4 s
Spindle distance in X	–	250 mm
Infinitely variable speed range	15,000 rpm	15,000 rpm
Max. torque	45 Nm	2 x 45 Nm
Spindle drive (Siemens / Fanuc)	40 / 11 kW	2 x 40 / 11 kW
Max. speed thread cutting	8,000 rpm	8,000 rpm
Spindle bearing diameter	60 mm	60 mm
Tool clamping	11,000 N	11,000 N
Clearance spindle take-up – table surface	240 - 600 mm	240 - 600 mm
Travel X / Y / Z axis	550 / 400 / 400 mm	550 / 400 / 400 mm
Feed force X / Y / Z axis	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N
Rapid feed rate X / Y / Z axis	75 / 75 / 75 m/min	75 / 75 / 75 m/min
Acceleration X / Y / Z axis	10 / 15 / 20 m/s <sup>2</sup>	10 / 15 / 20 m/s <sup>2</sup>
Direct path measuring system in all axis	•	•
Workpiece changing device with speed control	0° / 180°	0° / 180°
Clamping surface	2 x 660 x 350 mm	2 x 660 x 350 mm
Mounting hole patter	M 16 x Ø 15 H7 x 50 mm	M 16 x Ø 15 H7 x 50 mm
Workpiece change time approx.	2.0 s	2.0 s
Load capacity per tabel side	400 kg	400 kg
Chip conveyor, ejection hight	490 mm	490 mm
Cooling unit, tank capacity	100 l	500 l
Total connected power approx.	11 - 50 kVA	11 - 50 kVA
Machine weight approx.	7.5 t	7.7 t
Floor space approx.	6.0 m <sup>2</sup>	6.0 m <sup>2</sup>
Air connection	6.0 bar	6.0 bar
Central lubrication	•	•

Options	FZ 12 W MAGNUM	DZ 12 W MAGNUM
<b>High Speed Plus package</b>		
Increased speed range up to	20,000 rpm	20,000 rpm
Tool taper DIN 69893	HSK-A 63	HSK-A 63
Max. torque	29 Nm	2 x 29 Nm
Spindle drive	36 kW	2 x 36 kW
Spindle ramp time up to max. speed approx.	0.7 s	0.7 s
<b>More powerful spindle drive</b>		
Infinitely variable speed range up to	16,000 rpm	16,000 rpm
Max. torque	59 Nm	59 Nm
<b>More Options</b>		
Tool places	64	2 x 32
Coolant through the spindle up to 70 bar	•	•
Chip conveyor, ejection hight 490 mm / 1.050 mm	•	•
Coolant treatment	•	•
NC rotary table	•	–
NC rotary table with basic device	•	•
Workpiece changer with integrated 2-axis NC rotary table for 5-axis machining	•	•
Workpiece changer with integrated 2-axis NC rotary table and one satellite	•	–
Workpiece changer with integrated 2-axis NC rotary table and two satellite	•	•
Tool life monitoring	•	•
CHIRON Laser Control	•	•
Tool breakage monitoring	•	•
Stationary 3D probing system	•	•
Probe	•	•
Work area mist collection	•	•
Connection for central mist collection	•	•
Oil package	•	•
Machining with minimal lubrication	•	•
Pneumatic connection for clamping devices	•	•
Hydraulic unit and connection for clamping devices	•	•
Automatic doors	•	•
Handwheel	•	•
Adaptor for multi spindle heads	•	–
Electrical robot interface	•	•
Tool measurement and management	•	•
Variocell UNO / SYSTEM	•	•

## Machining centers in MILL Turn version

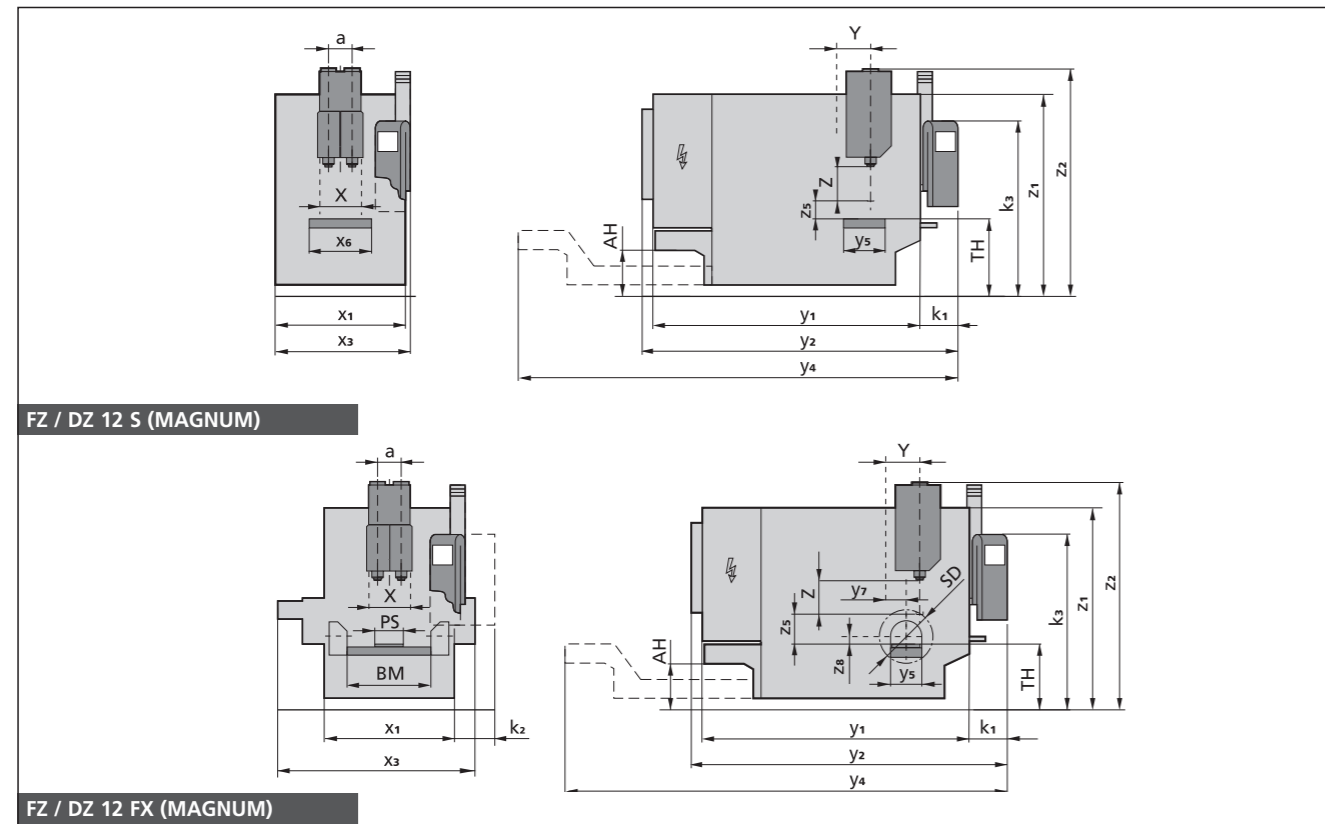
Technical data	FZ 12 MT with fixed head	FZ 12 MT with swivel head	FZ 12 MT MAGNUM with fixed head	FZ 12 MT MAGNUM with swivel head
Drilling capacity in E 335 with inserted drill	Ø 16 / 25 mm	Ø 12 / 18 mm	Ø 25 mm	Ø 18 mm
Thread cutting	M 12 / M 20	M 8 / M 16	M 20	M 16
Milling capacity in E 335	60 / 150 cm <sup>3</sup> /min	30 / 80 cm <sup>3</sup> /min	150 cm <sup>3</sup> /min	80 cm <sup>3</sup> /min
Tool places	48 / 24	48 / 24	32	32
Tool taper DIN 69893	HSK-A 40 / HSK-A 50	HSK-A 40 / HSK-A 50	HSK-A 63	HSK-A 63
Max. tool diameter	60 mm	60 mm	85 mm	85 mm
Max. tool diameter if adjacent places are free	60 / 125 mm	60 / 125 mm	125 mm	125 mm
Max. tool length	200 mm	200 mm	190 mm	190 mm
Max. tool weight	4 kg	4 kg	5 kg	5 kg
Tool change time approx.	0.9 s	0.9 s	0.9 s	0.9 s
Chip-to-chip time approx.	2.4 s	–	2.4 s	–
Chip-to-chip time from swivel head position 0° (vertical)	–	2.4 s	–	2.4 s
Chip-to-chip time from swivel head position 90° (horizontal)	–	2.9 s	–	2.9 s
Infinitely variable speed range	15,000 rpm	15,000 rpm	15,000 rpm	15,000 rpm
Max. torque	23 / 45 Nm	15 / 29 Nm	45 Nm	29 Nm
Spindle drive	7,4 / 40 kW	14 / 36 kW	40 kW	36 kW
Max. speed thread cutting	8,000 rpm	8,000 rpm	8,000 rpm	8,000 rpm
Spindle bearing diameter	40 / 60 mm	40 / 60 mm	60 mm	60 mm
Tool clamping	6,500 / 11,000 N	6,500 / 11,000 N	11,000 N	11,000 N
Travel X / Y / Z axis	550 / 320 / 360 mm	550 / 320 / 420 mm	550 / 320 / 360 mm	550 / 320 / 420 mm
Feed force X / Y / Z axis	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N	3,000 / 3,000 / 4,000 N
Rapid feed rate X / Y / Z axis	75 / 75 / 75 m/min	75 / 75 / 75 m/min	75 / 75 / 75 m/min	75 / 75 / 75 m/min
Acceleration X / Y / Z axis	10 / 12 / 15 m/s <sup>2</sup>	10 / 12 / 15 m/s <sup>2</sup>	10 / 12 / 15 m/s <sup>2</sup>	10 / 12 / 15 m/s <sup>2</sup>
Direct path measuring system in all axis	•	•	•	•
<b>Swivel head</b>				
Swivelling range of the spindle	–	-10° / +100°	–	-10° / +100°
Rapid feed rate B axis	–	60 rpm	–	60 rpm
Acceleration time B axis	–	4 1/s <sup>2</sup>	–	4 1/s <sup>2</sup>
<b>Turning spindle with collet chuck holder</b>				
Max. bar passage	32 mm	32 mm	32 mm	32 mm
Infinitely variable speed range up to	8,000 rpm	8,000 rpm	8,000 rpm	8,000 rpm
Max. torque	14.3 Nm	14.3 Nm	14.3 Nm	14.3 Nm
Cooling unit, tank capacity	100 l	100 l	100 l	100 l
Total connected power approx.	25 - 90 kVA	25 - 90 kVA	25 - 90 kVA	25 - 90 kVA
Machine weight approx.	9.0 t	9.0 t	9.0 t	9.0 t
Floor space approx.	6.0 m <sup>2</sup>	6.0 m <sup>2</sup>	6.0 m <sup>2</sup>	6.0 m <sup>2</sup>
Air connection	6.0 bar	6.0 bar	6.0 bar	6.0 bar
Central lubrication	•	•	•	•

Options	FZ 12 MT with fixed head	FZ 12 MT with swivel head	FZ 12 MT MAGNUM with fixed head	FZ 12 MT MAGNUM with swivel head
<b>High Speed Plus package</b>				
Increased speed range up to	24,000/30,000/40,000 rpm	24,000/30,000/40,000 rpm	20,000 rpm	20,000 rpm
Tool taper DIN 69893	HSK-A 50 / A 40 / E 40	HSK-A 50 / A 40 / E 40	HSK-A 63	HSK-A 63
Max. torque	29 / 11 / 9 Nm	29 / 11 / 9 Nm	29 Nm	29 Nm
Spindle drive	36 / 9 / 18 kW	36 / 9 / 18 kW	36 kW	36 kW
Spindle ramp time up to max. speed approx.	0.7 / 1.9 s / 1.9 s	0.7 / 1.9 s / 1.9 s	0.7 s	0.7 s
<b>Turning spindle</b>				
Max. bar passage	42 / 65 mm	42 / 65 mm	42 / 65 mm	42 / 65 mm
Increased speed range up to	4,500 / 6,500 rpm	4,500 / 6,500 rpm	4,500 / 6,500 rpm	4,500 / 6,500 rpm
Max. torque	14.3 / 90 Nm	14.3 / 90 Nm	14.3 / 90 Nm	14.3 / 90 Nm
<b>Turning turret</b>				
Tool places	12	12	12	12
Tool taper	Capto C4	Capto C4	Capto C4	Capto C4
Speed driven tools to	5,000 rpm	5,000 rpm	5,000 rpm	5,000 rpm
<b>Opposed spindle</b>				
Diameter up to	65 mm	65 mm	65 mm	65 mm
Speed range up to	6,500 rpm	6,500 rpm	6,500 rpm	6,500 rpm
Max. torque	14.3 Nm	14.3 Nm	14.3 Nm	14.3 Nm
Locking pressure up to	50 bar	50 bar	50 bar	50 bar
<b>More Options</b>				
Tool places	48 / 64	48 / 64	–	–
Coolant through the spindle up to 70 bar	•	•	•	•
Chip conveyor, ejection height 490/1,050 mm	•	•	•	•
Coolant treatment	•	•	•	•
Tool life monitoring	•	•	•	•
Tool measurement and management	•	•	•	•
CHIRON Laser Control	•	•	•	•
Tool breakage monitoring	•	•	•	•
Stationary 3D probing system	•	•	•	•
Probe	•	•	•	•
Work area mist collection	•	•	•	•
Connection for central mist collection	•	•	•	•
Oil package	•	•	•	•
Machining with minimal lubrication	•	•	•	•
Automatic doors	•	•	•	•
Handwheel	•	•	•	•
Electrical interface for bar loader	•	•	•	•
Electrical robot interface	•	•	•	•
Workpiece transport and magazining devices	•	•	•	•
Unloading station	•	•	•	•
Handling robot with workpiece storage	•	•	•	•

## Dimensions

12 Series	FZ 12 S (MAGNUM)	FZ 12 FX (MAGNUM)	DZ 12 S (MAGNUM)	DZ 12 FX (MAGNUM)	FZ 12 MT (MAGNUM)
a Spindle distance	-	-	250 mm	250 mm	-
AH Ejection height chip conveyor min.	490 mm	490 mm	490 mm	490 mm	490 mm
BT Swivelling range BT axis	-	-	-	-	-45° / +180°
BM Bridge dimensions	-	700 mm	-	700 mm	-
C Swivelling range C axis	-	-	-	-	+/- 360°
DL Max. passage	-	-	-	-	65 mm
k1 Control panel depth	370 mm	370 mm	370 mm	370 mm	700 mm
k2 Control panel depth - swivelled	-	360 mm	-	360 mm	530 mm
k3 Control panel height	1,900 mm	1,900 mm	1,900 mm	1,900 mm	1,920 mm
PS Face plate diameter	-	280 mm	-	245 mm	245 mm
SD Max. interference area diameter	-	650 mm	-	650 mm	-
TH Height face plate / rotary table center	770 mm	810 mm	770 mm	810 mm	-
V Travel V axis	-	-	-	-	1,065 mm
X Travel X axis	550 mm	550 mm	550 mm	550 mm	550 mm
XR Travel XR axis	-	-	-	-	163 mm
x1 Cabin width	1,475 mm	1,475 mm	1,475 mm	1,475 mm	1,790 mm
x3 Total width with drives left	1,590 mm	2,200 mm	1,590 mm	2,350 mm	2,210/2,720 mm*
x6 Clamping surface - width	818 mm	-	818 mm	-	-
Y Travel Y axis	400 mm	400 mm	400 mm	400 mm	320 mm
y1 Cabin depth	2,810/3,055 mm**	2,810/3,055 mm**	2,810/3,055 mm**	2,810/3,055 mm**	2,581 mm
y2 Total depth (with chip conveyor to the rear)	3,176/3,421 mm**	3,176/3,421 mm**	3,176/3,421 mm**	3,176/3,421 mm**	3,890 mm
y4 Total depth with chip conveyor pulled out	4,750 mm	4,750 mm	4,750 mm	4,750 mm	5,150 mm
y5 Clamping surface - depth	440 mm	315 mm	440 mm	315 mm	-
y7 Furthest distance Y Position - A Axis	-	235 mm	-	235 mm	183 mm
Z Travel Z axis, spindle vertical	400 mm	400 mm	400 mm	400 mm	420 mm
ZR Travel ZR axis	-	-	-	-	450 mm
z1 Cabin height	2,240 mm	2,240 mm	2,240 mm	2,240 mm	2,340 mm
z2 Total height	2,710 mm	2,710 mm	2,710 mm	2,710 mm	2,865 mm
z3 Height of swivel axis	-	-	-	-	1,005 mm
z4 Height of workpiece center	-	-	-	-	1,005 mm
z5 Deepest spindle position - clamping face / faceplate	240 mm	200 mm	240 mm	200 mm	-
z7 Deepest spindle position - workpiece center	-	-	-	-	-30
z8 Clearance face plate Planscheibe - swivel axis	-	100 mm	-	100 mm	80 mm

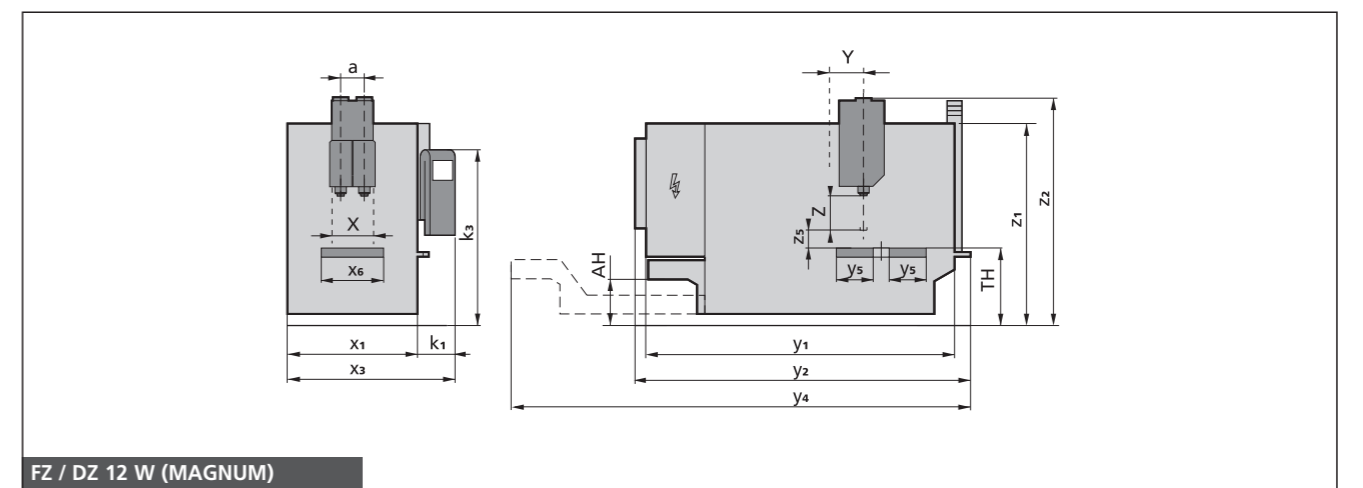
\* with discharge area \*\* depending on equipment



## Dimensions

12 Series	FZ 12 W (MAGNUM)	DZ 12 W (MAGNUM)
a Spindle distance	-	250 mm
AH Ejection height chip conveyor min.	490 mm	490 mm
k1 Control panel depth	370 mm	370 mm
k3 Control panel height	1,900 mm	1,900 mm
TH Height face plate / rotary table center	770 mm	770 mm
X Travel X axis	550 mm	550 mm
x1 Cabin width	1,475 mm	1,475 mm
x3 Total width with chip conveyor to the rear	1,850 mm	1,850 mm
x6 Clamping surface - width	660 mm	660 mm
Y Travel Y axis	400 mm	400 mm
y1 Cabin depth	3,400/3,647 mm*	3,400/3,647 mm*
y2 Total depth (with chip conveyor to the rear)	3,765/4,010 mm*	3,765/4,010 mm*
y4 Total depth with chip conveyor pulled out	5,390 mm	5,390 mm
y5 Clamping surface - depth	2 x 350 mm	2 x 350 mm
Z Travel Z axis, spindle vertical	400 mm	400 mm
z1 Cabin height	2,240 mm	2,240 mm
z2 Total height max.	2,710 mm	2,710 mm
z5 Deepest spindle position (vertical) - clamping face / faceplate	240 mm	240 mm

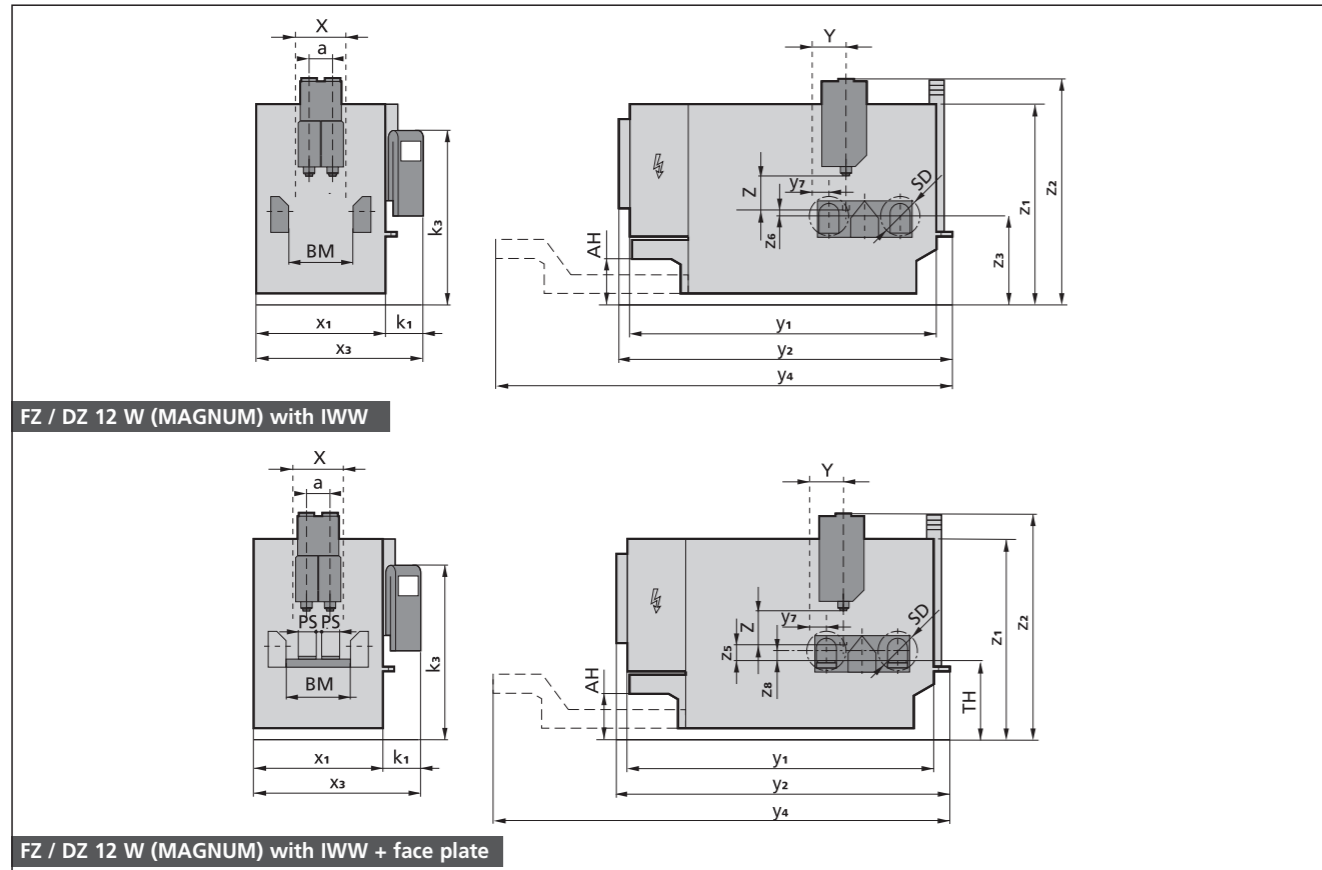
\* depending on equipment



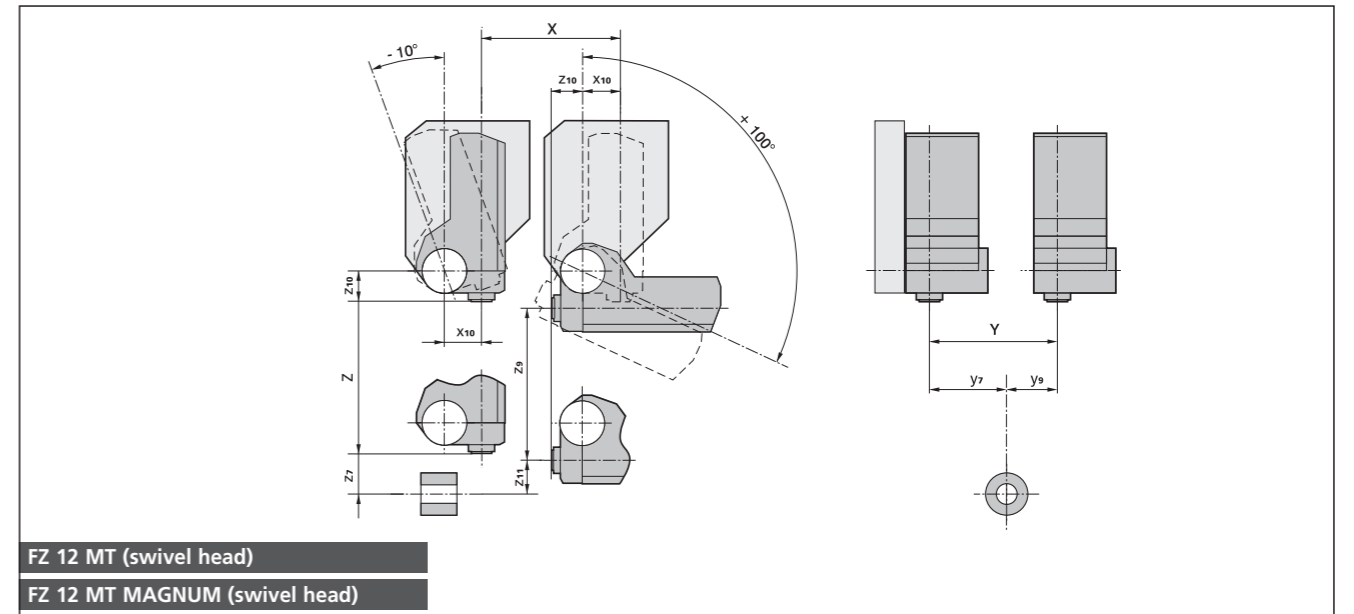
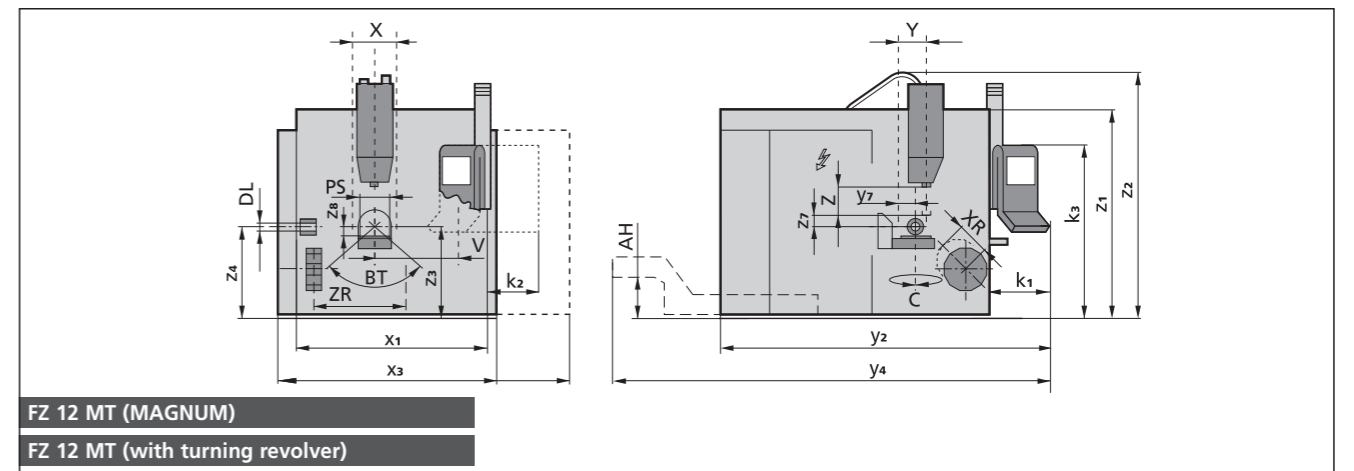


12 Series	FZ 12 W (MAGNUM) IWW	DZ 12 W (MAGNUM) IWW	FZ 12 W (MAGNUM) IWW + face plate	DZ 12 W (MAGNUM) IWW + face plate
a Spindle distance	-	250 mm	-	250 mm
AH Ejection height chip conveyor min.	490 mm	490 mm	490 mm	490 mm
BM Bridge dimensions	620 mm	620 mm	620 mm	620 mm
k1 Control panel depth	370 mm	370 mm	370 mm	370 mm
k3 Control panel height	1,900 mm	1,900 mm	1,900 mm	1,900 mm
PS Face plate diameter	-	-	245 mm	245 mm
SD Max. interference area diameter	480 mm	480 mm	480 mm	480 mm
TH Height face plate / rotary table center	943 mm	943 mm	988 mm	988 mm
X Travel X axis	550 mm	550 mm	550 mm	550 mm
x1 Cabin width	1,475 mm	1,475 mm	1,475 mm	1,475 mm
x3 Total width with chip conveyor to the rear	1,850 mm	1,850 mm	1,850 mm	1,850 mm
Y Travel Y axis	400 mm	400 mm	400 mm	400 mm
y1 Cabin depth	3,400/3,647 mm	3,400/3,647 mm	3,400/3,647 mm	3,400/3,647 mm
y2 Total depth (with chip conveyor to the rear)	3.700/4.013 mm	3.700/4.013 mm	3.700/4.013 mm	3.700/4.013 mm
y4 Total depth with chip conveyor pulled out	5,390 mm	5,390 mm	5,390 mm	5,390 mm
y7 Furthest distance Y Position - A Axis	198 mm	198 mm	198 mm	198 mm
Z Travel Z axis, spindle vertical	400 mm	400 mm	400 mm	400 mm
z1 Cabin height	2,240 mm	2,240 mm	2,240 mm	2,240 mm
z3 Height of swivel axis	1,021 mm	1,021 mm	-	-
z2 Total height max.	2,710 mm	2,710 mm	2,710 mm	2,710 mm
z5 Deepest spindle position (vertical) - clamping face / faceplate	240 mm	240 mm	240 mm	240 mm
z6 Deepest spindle position (vertical) - swivel axis	67 mm	67 mm	-	-
z8 Clearance face plate Planscheibe - swivel axis	-	-	7.5 mm	7.5 mm

\* optional



Dimensions NC swivel head	FZ 12 MT (MAGNUM)	FZ 12 MT (with turning revolver)
X Travel X axis	550 mm	550 mm
x10 Horizontal clearance spindle take-up – swivel axis	140 mm	140 mm
Y Travel Y axis	320 mm	320 mm
y7 Furthest distance Y Position – A-Axis	220 mm	183 mm
y9 Clearance table centre – end of travel path Y axis	100 mm	137 mm
Z Travel Z axis, spindle vertical	400 mm	420 mm
z7 Deepest spindle position (vertical) – clamping face / workpiece center	-65 mm	-30 mm
z9 Travel Z axis, spindle horizontal	400 mm	420 mm
z10 Clearance spindle take-up – swivel axis	130 mm	130 mm
z11 Deepest spindle position (horizontal) – clamping face / workpiece center	-75 mm	-40 mm



## 12 Series – Options

High Speed package
High Speed Plus package
Technology package "Milling from bars"
Technology package "Turning from bars"
Tool places up to 128 tools
Coolant through the spindle
Coolant treatment
Chip conveyor
NC rotary table
NC rotary table with basic device
2-axis NC rotary table for 5-axis machining
Tool life monitoring
Tool measurement and management
CHIRON Laser Control
Tool breakage monitoring
Stationary 3D probing system
Work area mist collection
Connection for central mist collection
Oil package
Machining with minimal lubrication
Pneumatic connection for clamping devices
Hydraulic unit and connection for clamping devices
Automatic doors
Handwheel
Speed range up to 40,000 rpm
Tool taper HSK-A 32, HSK-A 40, HSK-E 40
Central lubrication system
Robot interface
Variocell UNO / SYSTEM

### Basic series

#### 08 Series

Fast, compact machining centers for high precision and various applications

#### 12 Series

Fast, compact single, double-spindle and multi-functional precision machining centers

#### 15 Series

Fast and powerful precision machining centers for profitable production - with one, two or four spindles

#### 18 Series

Powerful, single and twin-spindle machining centers for high-speed machining and heavy cutting

#### 24 Series

Powerful, single and double spindle machining centers for high-productive machining of large workpieces

#### MILL Series

Universal precision machining centers for high performance cutting - from small parts to large workpieces

### Flexible production systems

#### Variocell UNO

Robot-automated 6-side complete machining

#### Variocell SYSTEM

Customized automation solutions

## CHIRON subsidiaries

### CHIRON Technologies de Production SAS

14 Chemin de la Litte  
92390 Villeneuve-la-Garenne, France  
Tel. +33 1479 859 50, Fax -854 31  
info@chiron-technologies.fr  
www.chiron-technologies.fr

### CHIRON Italia S.p.A.

Via Ambrosoli 4/C  
20090 Rodano Millepini – MI, Italy  
Tel. +39 02 953 211 02, Fax -286 20  
info@chironitalia.it  
www.chironitalia.it

### CHIRON Istanbul

Makine Ticaret ve Servis Ltd. Şti.  
MURAT PAŞA MAHALLESİ ULUYOL  
Caddesi No:19 İSTANBUL TOWER  
Plaza Kat: 13 D:59-60  
34040 Bayrampaşa Eyüp - İSTANBUL, Turkey  
Tel. +90 212 612 12 11, Fax -48 28  
info@chiron-turkey.com  
www.chiron-turkey.com

### CHIRON Polska Sp. z o.o.

ul. Darwina 42  
44-177 PANIOWKI, Poland  
Tel. +48 32 790 98 50  
info@chiron-poland.com  
www.chiron-poland.com

### CHIRON Machine Tool (Beijing) Ltd., China

Room 1805, NUO Office,  
A2 Jiangtai Road Chaoyang District  
Beijing 100016, P.R. China  
Tel. +86 10 6598 9811, Fax -9812  
info@chiron-china.com  
www.chiron-china.com

### CHIRON Machine Tool (Taicang) Co., Ltd.

No. 1-1, Fada Road  
Technological Development Zone,  
Taicang 215413, Jiangsu Province, P.R. China  
Tel. +86 512 5367 0800, Fax -0808  
info@chiron-china.com  
www.chiron-china.com

### CHIRON America INC.

10950 Withers Cove Park Drive  
Charlotte, NC 28278, USA  
Tel. +01 704 587 95 26, Fax -04 85  
info@chironamerica.com  
www.chironamerica.com

#### Detroit Office

44692 Helm Street  
Plymouth, MI 48170  
Tel. +01 734 233 9650, Fax +01 704 587 0485  
info@chironamerica.com  
www.chironamerica.com

### CHIRON India Machine Tools Private Limited

#33, Naseer Affinity, 1st Floor  
Miller Tank Bund Road, Kaveriappa Layout  
Vasanth Nagar, Bangalore - 560 052, India  
Tel. +91 80 4905 6490, Fax -6450  
info@chiron-india.com  
www.chiron-india.com

### CMS-GmbH

Gewerbepark „take-off“ 125  
78579 Neuhausen ob Eck, Germany  
Tél. +49 7461 940-3700, Fax -53701  
cms@chiron.de  
www.pre-owned-machines.com

### CHIRON Werke GmbH & Co. KG

Kreuzstrasse 75  
78532 Tuttlingen, Germany  
Tél. +49 7461 940-0  
Fax +49 7461 940-53000  
info@chiron.de