

QUASER

we cut faster

MV2 SERIES

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MV2 SERIES:

MV204 / MV205

MV214 (MV204_L)

MV215 (MV205_L)

MV234 / MV235





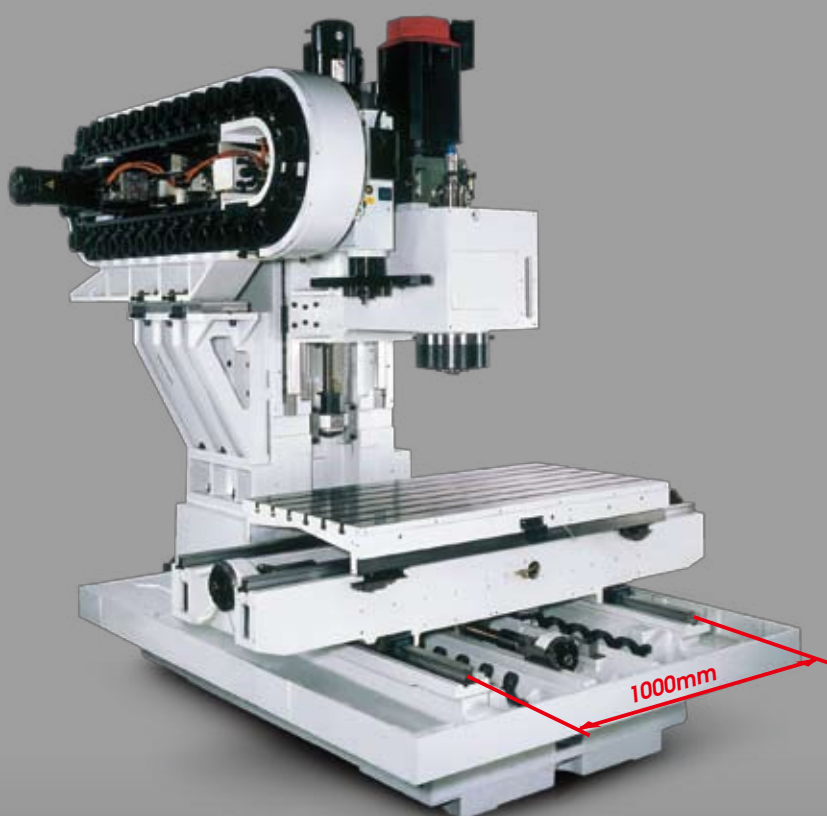
MV2 SERIES

Travel X / Y / Z

MV204 & MV205:
1,270 / 700 / 610 (mm)

Table size

MV204 & MV205:
1,400 x 700 (mm)



MV204 & MV205



Travel X / Y / Z

MV214 & MV215:
1,524 / 700 / 610 (mm)

Table size

MV214 & MV215:
1,700 x 700 (mm)



MV214 & MV215



Travel X / Y / Z

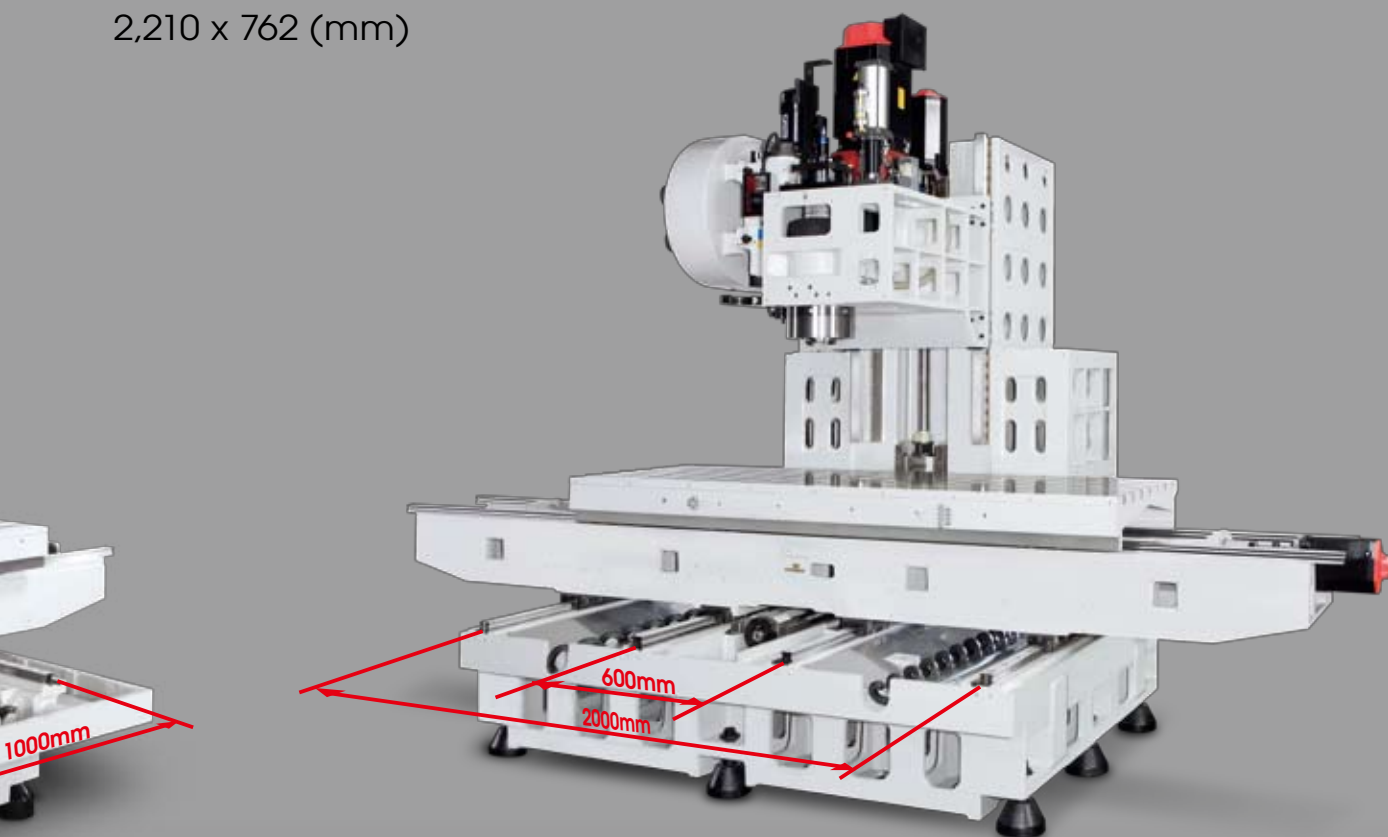
MV234 & 235:

2,040 / 762 / 661 (mm)

Table size

MV234 & 235:

2,210 x 762 (mm)



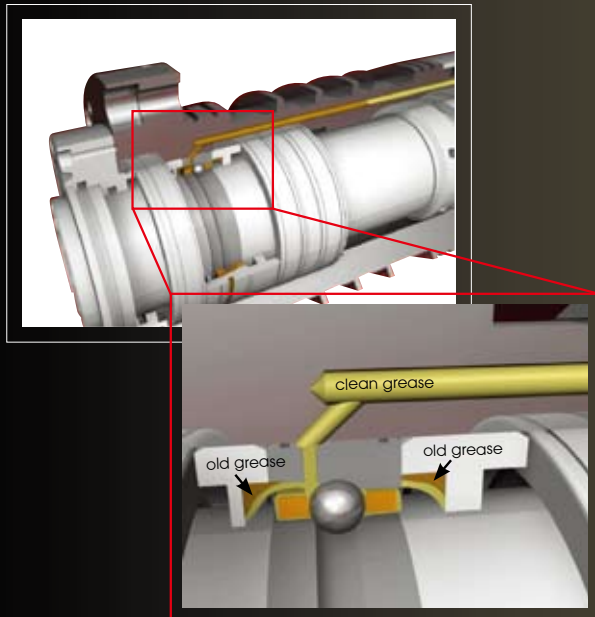
MV234 & MV235



Unique spindle technology

Grease replenishing system

- Use car industry re-greasing principle to supply "clean grease" at 60~100 hr interval by 25~50 mm³ / shoot.



- The grease volume in 1st installation can support 30,000 hr or 3 years.



40 Taper

NC40



FANUC = ● HEIDENHAIN = ● SIEMENS = ● MITSUBISHI = ●

SPINDLE

Max. spindle speed
Spindle transmission
Spindle diameter

FANUC

Spindle base speed
Spindle output kW (S3-25%)
Spindle output torque Nm (S3-25%)

HEIDENHAIN

Spindle base speed
Spindle output kW (S6-40%)
Spindle output torque Nm (S6-40%)

SIEMENS

Spindle base speed
Spindle output kW (S6-40%)
Spindle output torque Nm (S6-40%)

MITSUBISHI

Spindle base speed
Spindle output kW (30min.)
Spindle output torque Nm (30min.)

40 Taper

MV204C
MV204E
MV204V
MV204P / MV214P
MV234E
MV234P

50 Taper

MV205E / MV215E
MV205P / MV215P
MV235E
MV235P

Note : ⁽¹⁾ S3-60% ⁽²⁾ S3-40%

50 Taper

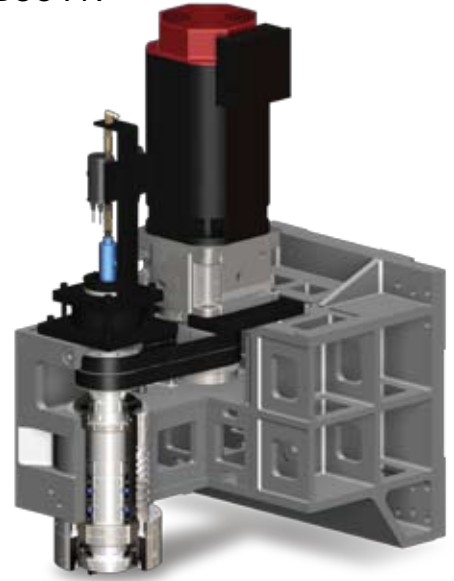
GB40R



GC40R



GB50VR



NC40		GC40R		GB40R				GB50VR	
10,000	12,000	15,000	15,000	9,000	12,000	9,000	12,000	6,000	7,500
Coupling				Belt				Belt	Belt + ZF
Ø70								Ø100	
-	-	1,400	600	1,125	1,500	1,125	1,500	750	375
-	-	25	30 ⁽¹⁾	25	25	35	35	35	35
-	-	171	350 ⁽²⁾	212	159	297	223	446	891
-	-	-	2,000	1,125	1,500	1,500	2,000	-	500
-	-	-	36.7	25	25	36.7	36.7	-	36.7
-	-	-	175	212	159	234	175	-	701
1,500	1,500	-	2,000	1,125	1,500	1,500	2,000	-	500
16.5	22.5	-	36.7	22.5	22.5	36.7	36.7	-	36.7
105	144	-	175	191	144	234	175	-	701
1,500	1,400	-	-	1050	1,400	-	-	575	375
15	18.5	-	-	18.5	18.5	-	-	22	26
96	102	-	-	136	102	-	-	365	662
 	 	-	-			-	-	-	-
-	-	-	-			-	-	-	-
-	-	-	-	 	 	-	-	-	-
-	-		  	-	-	  	  	-	-
-	-	-	-	 	 	-	-	-	-
-	-	-	  	-	-	  	  	-	-
-	-	-	-	-	-	-	-	-	 
-	-	-	-	-	-	-	-	-	 
-	-	-	-	-	-	-	-	 	-
-	-	-	-	-	-	-	-	-	  



ZF two speeds gear box for NO.50 taper
mega torque spindle

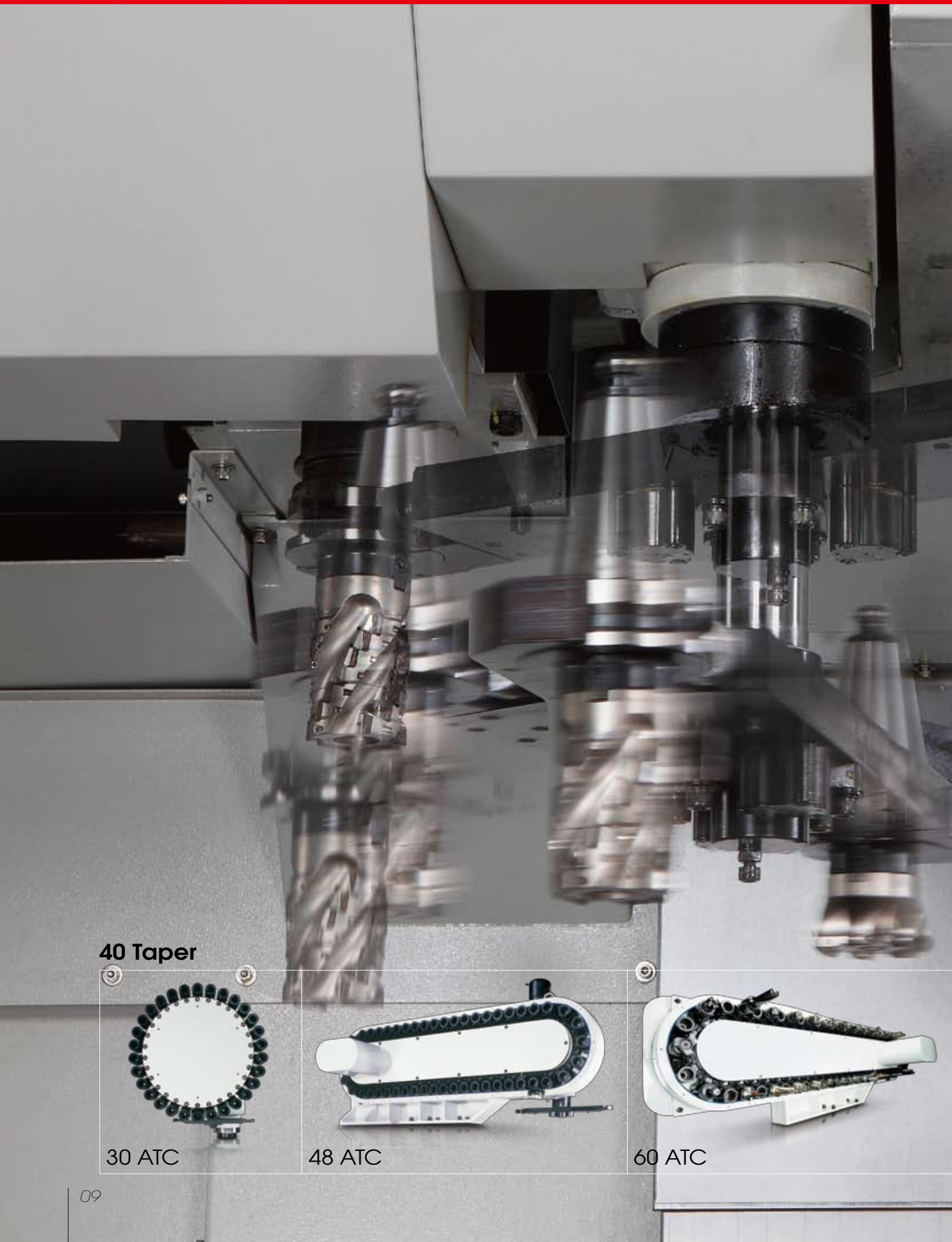


F = FANUC
 M = MITSUBISHI
 S = SIEMENS
 H = HEIDENHAIN

Motor		MV204C		MV204E		MV204V		MV204P & MV214P		
		10C & 12C	9B & 12B	9B	12B	9B	12B	9B	12B	15C
X / Y / Z (kW)	F	-		3 / 3 / 4		3 / 3 / 4		4 / 4 / 4		
	H	-		-		4.5 / 4.5 / 5.4		5.1 / 5.1 / 8.6		
	S	2.7 / 2.7 / 4.9		-		-		4.9 / 4.9 / 4.9		
	M	2 / 2 / 3		-		-		-		-

Motor		MV234E		MV234P			MV235E	MV235P	MV205P & MV215P	
		9B	12B	9B	12B	15C	6B	7.5B	7.5B	
X / Y / Z (kW)	F	4 / 7 / 7		4 / 7 / 7			4 / 7 / 7		4 / 4 / 4	
	H	-		5.1 / 8.6 / 8.6			-	5.1 / 8.6 / 8.6	5.1 / 5.1 / 8.6	
	S	-		4.9 / 8.2 / 8.2			-	4.9 / 8.2 / 8.2	-	
	M	3.5 / 4.5 / 4.5		-			3.5 / 4.5 / 4.5	-	3.5 / 3.5 / 3.5	

ATC system



40 Taper



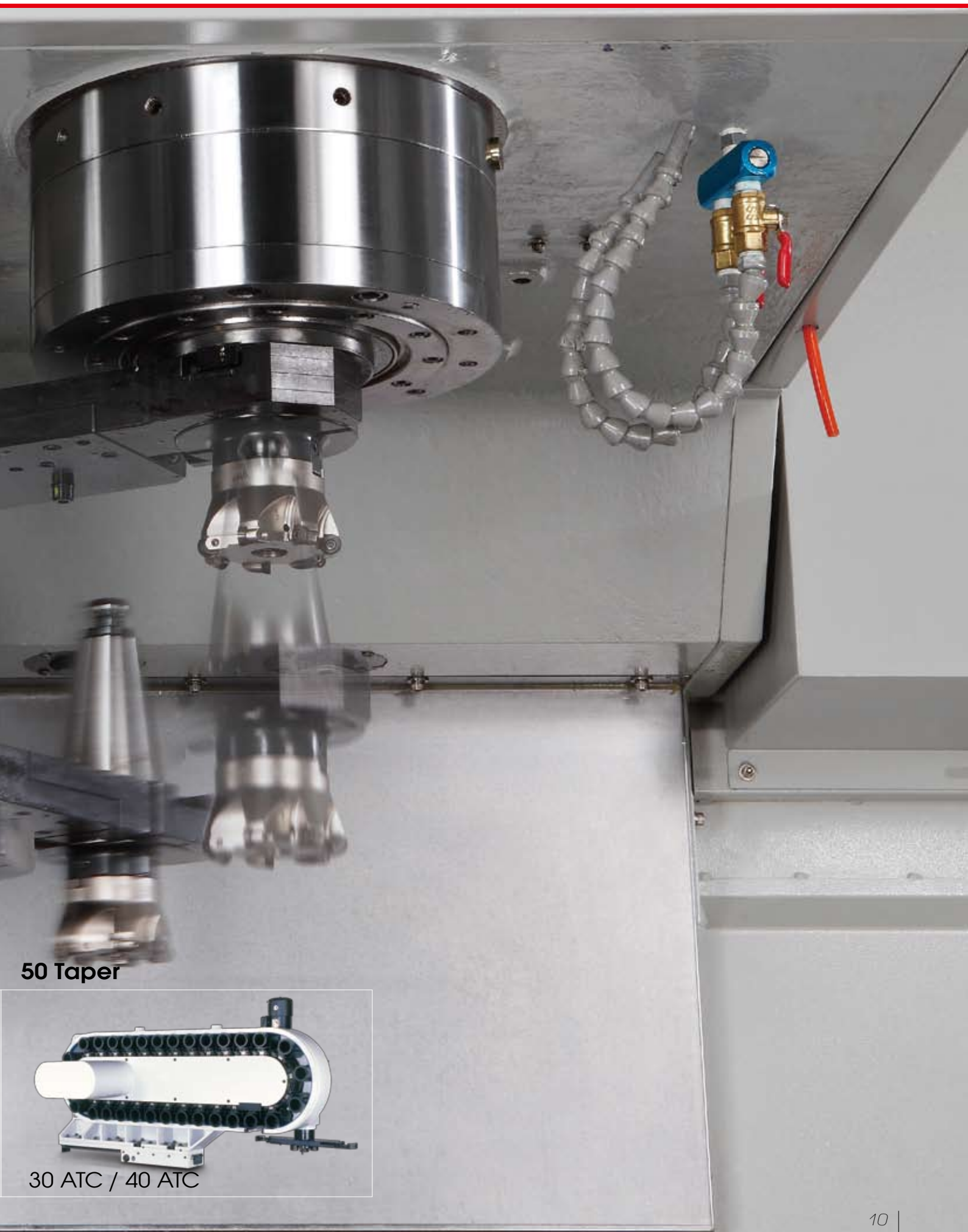
30 ATC



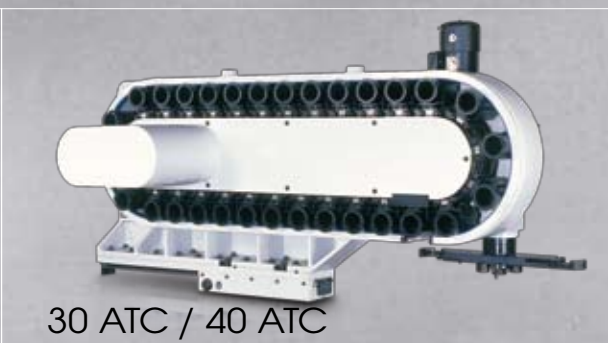
48 ATC



60 ATC



50 Taper

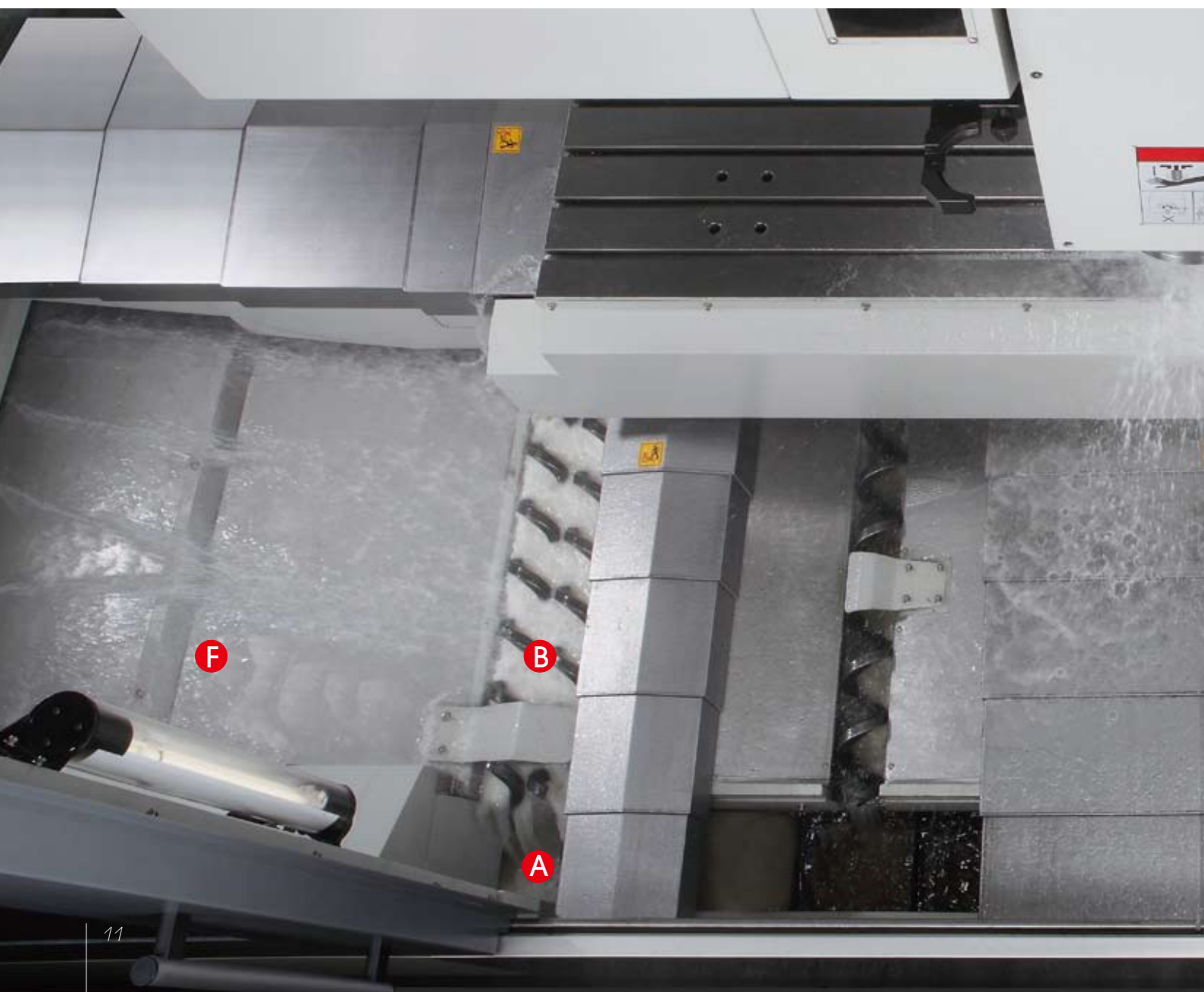


30 ATC / 40 ATC

Coolant system & Chip management

		MV204C	MV204 MV205	MV214 MV215	MV234 MV235
A	Chip slot	4			
B	Augers plus chip conveyor	2			6
C	Wash gun	1		2	2
D	Through spindle coolant*	-	20 Bar		
E	Nozzle coolant	3.5 Bar			
F	Auto flushing on stainless	4.5 Bar			
G	Coolant tank	600 L			710 L
H	External auger	std.	-		
I	External chip conveyor	opt.	std.		

Note: * MV204C not available.





Easy operation

		MV204 MV205	MV214 MV215	MV234 MV235
A	Max. size when operator door open (mm)	1,400	1,700	2,210
B	Table to front-easy access (mm)	195	195	254
C	Table surface to floor* (mm)	1,040	1,040	1,040
D	Easy loading of large workpiece			
E	Hand held remote MPG			
F	Documentation & hand tool shelf			

Note: * MV204C table surface to floor at 970 mm.





Technical data			MV204				MV204 MV214					
			C				E / V		P			
			9B	12B	10C	12C	9B	12B	9B	12B	15C	15D
Work range												
Table size (mm)			1,400 x 700						1,400 x 700 1,700 x 700			
Travel X / Y / Z (mm)			1,270 / 700 / 610 ⁽¹⁾						1,270 / 700 / 610 ⁽¹⁾ 1,524 / 700 / 610 ⁽¹⁾			
Spindle nose to table surface (mm)			150 ~ 760						150 ~ 760			
Table load capacity (kg)			1,000						1,800 / 2,000			
Feed drive												
Feed force X / Y / Z (N)		F	-			6,283 / 6,283 / 11,519		11,519 / 11,519 / 11,519				
		H	-			9,268 / 9,268 / 13,666		11,310 / 11,310 / 19,897				
		M	7,173 / 7,173 / 17,671			-		-				
		S	6,283 / 6,283 / 14,137			-		14,137 / 14,137 / 14,137				
Rapid movement X / Y / Z (m/min.)			24 / 24 / 16			36 (F) 32 (T) / 36 (F)		36				
Acceleration X / Y / Z (m/s²)		F	-			3 / 3 / 3		4 / 4 / 4				
		H	-			4 / 3 / 4		5 / 5 / 4 4 / 4 / 4				
		M	3 / 3 / 3			-		-				
		S	3 / 3 / 3			-		4 / 4 / 3				
Dia. & pitch of the ball screw			Ø45 / P = 12 / 12 / 8 (M) Ø45 / P = 12 / 12 / 12 (S)			Ø45 / P = 12 / 12 / 12 (F) (T)		Ø45 / P = 12 / 12 / 12 (F) (T) (S)				
Accuracy Positioning / Repeatability												
ISO 230-2			0.008 / 0.004									
JIS 6338 (300mm)			±0.003 / ±0.002									
VDI 3441			0.008 / 0.004									
Main spindle												
Spindle model			40 Taper									
Tool changer												
Tool selection			Random									
Magazine positions		Std.	30				30 / 48					
		Opt.	-			48 / 60		48 & 60 / 60				
Max. tool diameter (mm)			76.2									
Max. tool dia. Due to neighbor pots are empty			125									
Max. tool length (mm)			300									
Max. tool weight (kg)			7									
CTC time-ISO 10791-9 (sec.)-60Hz			4.4 (M) 5.5 (S)			6		5.5				
Coolant system												
Coolant tank capacity (Liter)			600									
Pump capacity ⁽²⁾												
- Nozzle coolant			60L / min, 3.5 bar									
-Through spindle coolant			-			25L / min, 20 bar						
- Wash down			60L / min, 3.5 bar			60L / min, 4.5 bar						
Machine size									3,050		3,280	
Height (mm)			3,050						3,120		3,350	
		Floor space W x D (mm)	30 ATC	3,700 x 3,240					3,700 x 3,240 / -			
		48 ATC	-			3,700 x 3,610		3,700 x 3,610 / 4,520 x 3,710				
		60 ATC	-			3,700 x 3,970		3,700 x 3,970 / 4,520 x 4,070				
Weight (kg)			9,500						9,500 - 10,100 / 10,100 - 11,000			
Connections												
Main power			220V / 60Hz or 400V / 50Hz									
Power consumption (KVA)			24 (S)		24 (S) 19 (M)	30 (M)	28 (F) 30 (T)		35 (F) 40 (T) 37 (S)		35 (F) 40 (T)	45 (F)

Note: ⁽¹⁾ Z axis travel 800mm is also available, spindle nose to table surface will be 150 ~ 950mm, container shipment is not possible.⁽²⁾ At 60Hz.

Standard / Option accessories	MV204						MV204 MV214			
	C				E / V		P			
	9B	12B	10C	12C	9B	12B	9B	12B	15C	15D
■ QUASER mill i for MV204E only	X	X	X	X	● / X	● / X	X	X	X	X
■ FANUC 31iB	X	X	X	X	X / ●	X / ●	●	●	●	●
AICC II (Look-ahead 200 blocks)	X	X	X	X	○ / ●	○ / ●	●	●	●	●
FANUC - data server	X	X	X	X	○	○	○	○	○	○
FANUC - high speed processing (Look-ahead 600 blocks)	X	X	X	X	X / ○	X / ○	○	○	○	○
■ HEIDENHAIN iTNC530	X	X	X	X	X / ●	X / ●	●	●	●	X
HEIDENHAIN option2	X	X	X	X	X / ○	X / ○	○	○	○	X
■ SIEMENS 828D	○	○	●	○	X	X	●	●	●	X
■ MITSUBISHI M70	X	X	●	○	X	X	X	X	X	X
■ MITSUBISHI M720	X	X	●	○	X	X	X	X	X	X
■ GB40R Belt spindle 9,000 min ⁻¹	●	X	X	X	●	X	●	X	X	X
■ GB40R Belt spindle 12,000 min ⁻¹	X	●	X	X	X	●	X	●	X	X
■ NC40 Coupling spindle 10,000 min ⁻¹	X	X	●	X	X	X	X	X	X	X
■ NC40 Coupling spindle 12,000 min ⁻¹	X	X	X	●	X	X	X	X	X	X
■ GC40R Coupling spindle 15,000 min ⁻¹	X	X	X	X	X	X	X	X	●	●
■ Pull stud for BT tooling	○	○	○	○	●	●	●	●	●	●
■ Balance tooling for spindle warm up	○	○	○	○	●	●	●	●	●	●
■ 40 Taper 30 position tool magazine	●	●	●	●	●	●	● / X	● / X	● / X	● / X
■ 40 Taper 48 position tool magazine	X	X	X	X	○	○	○ / ●	○ / ●	○ / ●	○ / ●
■ 40 Taper 60 position tool magazine	X	X	X	X	○	○	○	○	○	○
■ ATC auto door	X	X	X	X	○	○	○	○	○	○
■ Linear encoder	X	X	X	X	○	○	○	○	○	○
■ Remote manual pulse generator	●	●	●	●	●	●	●	●	●	●
■ Transformer	○	○	○	○	●	●	●	●	●	●
■ Spindle ECO cooler	●	●	●	X	●	●	●	●	X	X
■ Spindle oil chiller	○	○	○	●	○	○	○	○	●	●
■ 4 th axis preparation	X	X	X	X	●	●	●	●	●	●
■ 20 bar through spindle coolant	X	○	X	○	●	●	●	●	●	●
■ 50 bar through spindle coolant	X	○	X	○	○	○	○	○	○	○
■ Coolant wash gun	●	●	●	●	●	●	●	●	●	●
■ Coolant wash down	●	●	●	●	●	●	●	●	●	●
■ Chip-Auger conveyor	●	●	●	●	X	X	X	X	X	X
■ Chip conveyor	○	○	○	○	●	●	●	●	●	●
■ Cutter air blast	●	●	●	●	●	●	●	●	●	●
■ Mist collector	○	○	○	○	○	○	○	○	○	○
■ Work Probe	X	X	X	X	○	○	○	○	○	○
■ Tool length / breakage measurement	○	○	○	○	○	○	○	○	○	○
■ Documentation ⁽¹⁾	●	●	●	●	●	●	●	●	●	●
■ Foundation bolts & blocks	●	●	●	●	●	●	●	●	●	●
■ Work light	●	●	●	●	●	●	●	●	●	●
■ Machine status light	●	●	●	●	●	●	●	●	●	●
■ CE & EMC ⁽²⁾	○	○	○	○	○	○	○	○	○	○

Note: ⁽¹⁾ C type CD-ROM version.

⁽²⁾ Standard for Eu area except C type.

- Machine spec. might be different from the catalog if there is any spec. update.
- For C series ambient temperature greater than 35°C, the cabinet heat exchanger is required.

Technical data			MV234				
			E		P		
			9B	12B	9B	12B	15C
Work range							
Table size (mm)			2,210 x 762				
Travel X / Y / Z (mm)			2,040 / 762 / 661				
Spindle nose to table surface (mm)			150 ~ 811				
Table load capacity (kg)			2,000				
Feed drive							
Feed force X / Y / Z (N)			11,519 / 15,708 / 15,708 (F) 11,781 / 19,478 / 19,478 (M)		11,519 / 15,708 / 15,708 (F) 19,897 / 19,897 / 19,897 (T) 11,310 / 18,849 / 18,849 (S)		
Rapid movement X / Y / Z (m/min.)			20 / 20 / 16				
Acceleration X / Y / Z (m/s²)	F		2 / 2 / 2				
	T		-		3 / 4 / 4		
	M		2 / 2 / 2		-		
	S		-		3 / 4 / 4		
Dia. & pitch of the ball screw			X = Ø63 / P12 Y,Z = Ø50 / P12				
Accuracy Positioning / Repeatability							
ISO 230-2			0.008 / 0.004				
JIS 6338 (300mm)			±0.003 / ±0.002				
VDI 3441			0.008 / 0.004				
Main spindle							
Spindle model			40 Taper				
Tool changer							
Tool selection			Random				
Magazine positions			48 (std.) 60 (opt.)				
Max. tool diameter (mm)			76.2				
Max. tool dia. Due to neighbor pots are empty			125				
Max. tool length (mm)			300				
Max. tool weight (kg)			7				
CTC time-ISO 10791-9 (sec.)-60Hz			6		5.5 (F) 6.5 (T)		
Coolant system							
Coolant tank capacity (Liter)			710				
Pump capacity*							
- Nozzle coolant			60 L / min, 3.5 bar				
-Through spindle coolant			25 L / min, 20 bar				
- Wash down			60 L / min, 4.5 bar				
Machine size							
Height (mm)			3,150			3,380	
Floor space W x D (mm)	48 ATC		5,745 x 3,700				
	60 ATC		5,745 x 4,100				
Weight (kg)			13,700 (48ATC) 13,800 (60ATC)				
Connections							
Main power			220 V / 60 Hz or 400 V / 50 Hz				
Power consumption (KVA)			38 (F) 38 (T) 30 (M) 35 (S)		44 (F) 44 (T) 43 (S)		48 (F) 38 (T) 35 (S)

Note: *At 60 Hz

Standard / Option accessories	MV234				
	E		P		
	9B	12B	9B	12B	15C
■ QUASER mill I	●	●	×	×	×
■ FANUC 31iB	×	×	●	●	●
AICC II (Look-ahead 200 blocks)	○	○	●	●	●
FANUC - data server	○	○	○	○	○
FANUC - high speed processing (Look-ahead 600 blocks)	×	×	○	○	○
■ HEIDENHAIN iTNC530	×	×	●	●	●
HEIDENHAIN option2	×	×	○	○	○
■ SIEMENS 828D	×	×	●	●	●
■ MITSUBISHI M70	●	●	×	×	×
■ MITSUBISHI M720	○	○	×	×	×
■ GB40R belt spindle 9,000 min ⁻¹	●	×	●	×	×
■ GB40R belt spindle 12,000 min ⁻¹	×	●	×	●	×
■ GC40R coupling spindle 15,000 min ⁻¹	×	×	×	×	●
■ Pull stud for BT tooling	●	●	●	●	●
■ Balance tooling for spindle warm up	●	●	●	●	●
■ 40 Taper 48 position tool magazine	●	●	●	●	●
■ 40 Taper 60 position tool magazine	○	○	○	○	○
■ ATC auto door	○	○	○	○	○
■ Linear encoder	○	○	○	○	○
■ Remote manual pulse generator	●	●	●	●	●
■ Transformer	●	●	●	●	●
■ Spindle ECO cooler	●	●	●	●	×
■ Spindle oil chiller	○	○	○	○	●
■ 4 th axis preparation	●	●	●	●	●
■ 20 bar through spindle coolant	●	●	●	●	●
■ 50 bar through spindle coolant	○	○	○	○	○
■ Coolant wash gun	●	●	●	●	●
■ Coolant wash down	●	●	●	●	●
■ Chip conveyor	●	●	●	●	●
■ Cutter air blast	●	●	●	●	●
■ Mist collector	○	○	○	○	○
■ Work Probe	○	○	○	○	○
■ Tool length / breakage measurement	○	○	○	○	○
■ Documentation	●	●	●	●	●
■ Foundation bolts & blocks	●	●	●	●	●
■ Work light	●	●	●	●	●
■ Machine status light	●	●	●	●	●
■ CE & EMC ⁽¹⁾	○	○	○	○	○

Note: ⁽¹⁾ Standard for Eu area.

- Machine spec. might be different from the catalog if there is any spec. update.

Technical data		MV205 MV215		MV235	
		E	P	E	P
		7.5B		6B	7.5B
Work range					
Table size (mm)		1,400 x 700 1,700 x 700		2,210 x 762	
Travel X / Y / Z (mm)		1,270 / 700 / 610 ⁽¹⁾ 1,524 / 700 / 610 ⁽¹⁾		2,040 / 762 / 661	
Spindle nose to table surface (mm)		190 ~ 800		150 ~ 811	
Table load capacity (kg)		1,800 / 2,000		2,000	
Feed drive					
Feed force X / Y / Z (N)		11,519 / 11,519 / 11,519 (F) 11,310 / 11,310 / 19,897 (T) 11,781 / 11,781 / 19,477 (M)		11,519 / 15,708 / 15,708 (F) 11,781 / 19,478 / 19,478 (M)	11,519 / 15,708 / 15,708 (F) 19,897 / 19,897 / 19,897 (T) 14,137 / 18,849 / 18,849 (S)
Rapid movement X / Y / Z (m/min.)		36		20 / 20 / 16	
Acceleration X / Y / Z (m/s²)	F	4 / 4 / 2		2 / 2 / 2	
	T	5 / 5 / 4 4 / 4 / 4		-	3 / 4 / 4
	M	4.9 / 4.5 / 6.7 4.5 / 4.3 / 6.7	-	2 / 2 / 2	-
	S	-		-	3 / 4 / 4
Dia. & pitch of the ball screw		Ø45 / P = 12 / 12 / 12		X = Ø63 / P12 Y,Z = Ø50 / P12	
Accuracy Positioning / Repeatability					
ISO 230-2		0.008 / 0.004			
JIS 6338 (300mm)		±0.003 / ±0.002			
VDI 3441		0.008 / 0.004			
Main spindle					
Spindle model		50 Taper			
Tool changer					
Tool selection		Random			
Magazine positions		30 (std.) 40 (opt.)			
Max. tool diameter (mm)		125			
Max. tool dia. Due to neighbor pots are empty		200			
Max. tool length (mm)		350			
Max. tool weight (kg)		15			
CTC time-ISO 10791-9 (sec.)-60Hz		9	10		
Coolant system					
Coolant tank capacity (Liter)		600	710		
Pump capacity ⁽²⁾					
- Nozzle coolant		60 L / min, 3.5 bar			
-Through spindle coolant		25 L / min, 20 bar			
- Wash down		60 L / min, 4.5 bar			
Machine size					
Height (mm)		3,400 3,470		3,220	
Floor space W x D (mm)	30 ATC	3,700 x 3,760 / 4,520 x 3,860		5,745 x 3,880	
	40 ATC	3,700 x 4,360 / 4,520 x 4,460		5,745 x 4,500	
Weight (kg)		10,000 - 10,600 / 11,000 - 12,000		14,000 (30 ATC) 14,500 (40 ATC)	
Connections					
Main power		220 V / 60 Hz or 400 V / 50 Hz			
Power consumption (KVA)		40 (F) (T) 33 (M)	40 (F) (T)	44 (F) 38 (M)	44 (F) 45 (T) 43 (S)

Note: ⁽¹⁾ Z axis travel 800mm is also available, spindle nose to table surface will be 200 ~ 1000mm, container shipment is not possible.

⁽²⁾ At 60Hz.

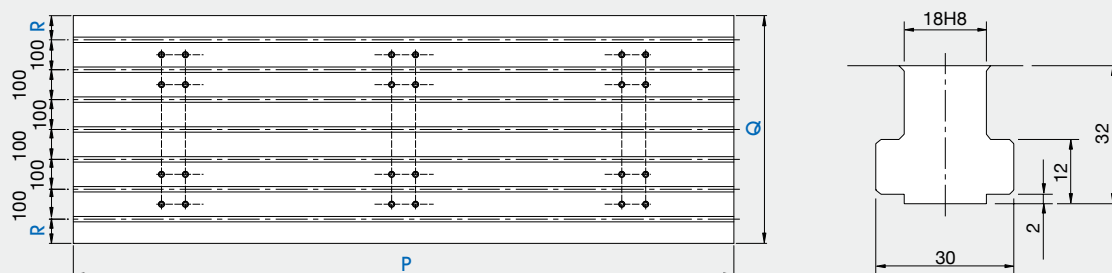
Standard / Option accessories	MV205 MV215		MV235	
	E	P	E	P
	7.5B	7.5B	6B	7.5B
■ QUASER mill I	●	×	●	×
■ FANUC 31iB	×	●	×	●
AICC II (Look-ahead 200 blocks)	○	●	○	●
FANUC - data server	○	○	○	○
FANUC - high speed processing (Look-ahead 600 blocks)	×	○	×	○
■ HEIDENHAIN iTNC530	×	●	×	●
HEIDENHAIN option2	×	○	×	○
■ SIEMENS 828D	×	×	×	●
■ MITSUBISHI M70	●	×	●	×
■ MITSUBISHI M720	○	×	○	×
■ GB50VR belt spindle 6,000 min ⁻¹	●	×	●	×
■ GB50VR belt spindle 7,500 min ⁻¹ + ZF Gear box	○	●	○	●
■ Pull stud for BT tooling	●	●	○	●
■ Balance tooling for spindle warm up	●	●	○	●
■ 50 Taper 30 position tool magazine	●	●	●	●
■ 50 Taper 40 position tool magazine	○	○	○	○
■ ATC auto door	○	○	○	○
■ Linear encoder	○	○	○	○
■ Remote manual pulse generator	●	●	●	●
■ Transformer	●	●	○	●
■ Spindle ECO cooler	×	×	●	×
■ Spindle oil chiller	●	●	○	●
■ 4 th axis preparation	●	●	●	●
■ 20 bar through spindle coolant	●	●	●	●
■ 50 bar through spindle coolant	○	○	○	○
■ Coolant wash gun	●	●	●	●
■ Coolant wash down	●	●	●	●
■ Chip conveyor	●	●	●	●
■ Cutter air blast	●	●	●	●
■ Mist collector	○	○	○	○
■ Work Probe	○	○	○	○
■ Tool length / breakage measurement	○	○	○	○
■ Documentation	●	●	●	●
■ Foundation bolts & blocks	●	●	●	●
■ Work light	●	●	●	●
■ Machine status light	●	●	●	●
■ CE & EMC ⁽¹⁾	○	○	○	○

Note: ⁽¹⁾ Standard for Eu area.

- Machine spec. might be different from the catalog if there is any spec. update.

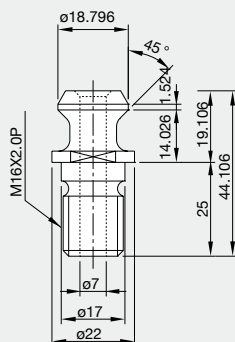
Table dimension

	MV204C	MV204/205	MV214/215	MV234/235
P	1,400	1,400	1,700	2,210
Q	700	700	700	762
R	100	100	100	81
T-Slots No.	6	6	6	7

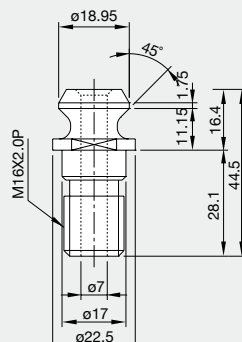


Pull stud and applicable tools ISO-40

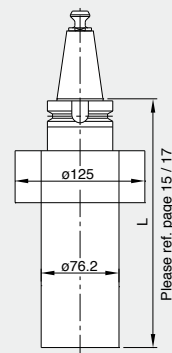
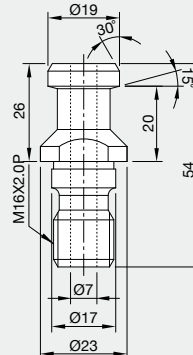
BT 40



ISO (7388-B)

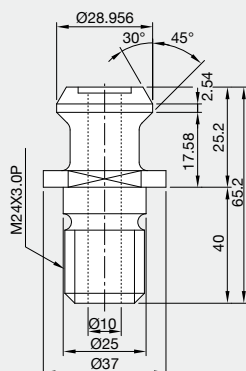


DIN (69872-A)

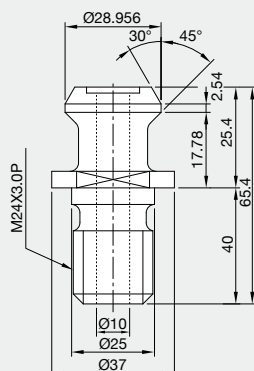


Pull stud and applicable tools ISO-50

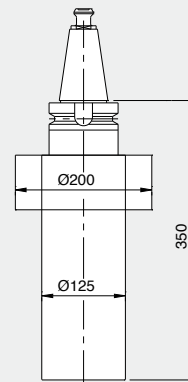
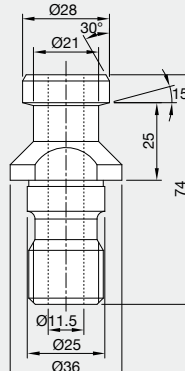
BT 50



ISO (7388-B)



DIN (69872-A)

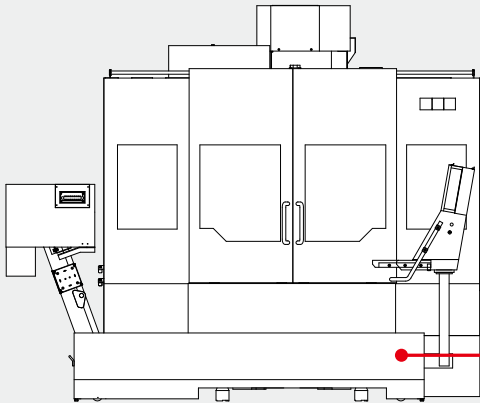
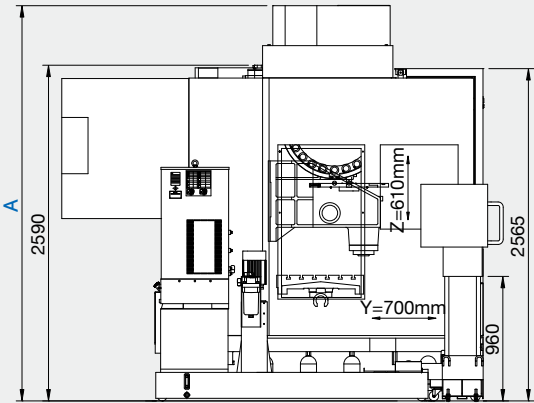
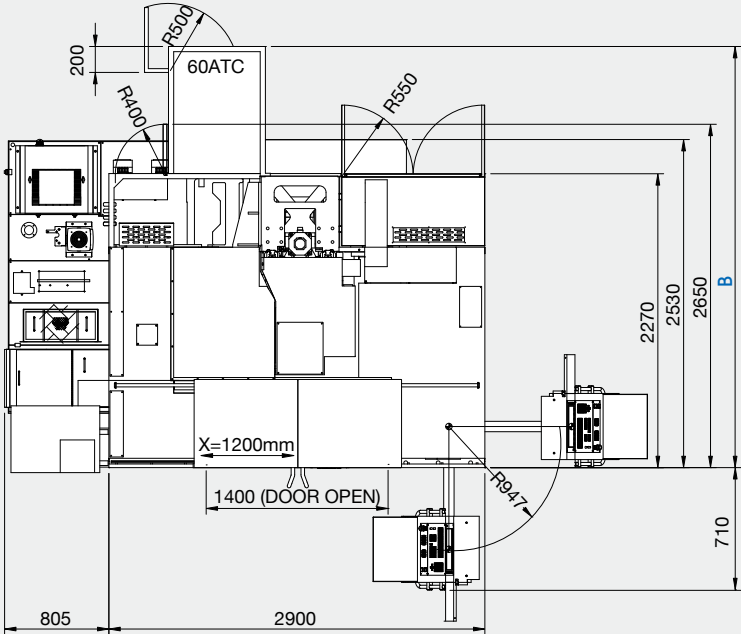


MV204 / 205 Layout

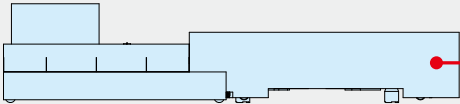
MV204 / MV205

MV204	A	E & V	9B / 12B	3,050
		P	9B / 12B	
			15C / 15D	3,280
MV205		E & P	7.5B	3,400

MV204	B	40 Taper	30 ATC	2,530
			48 ATC	2,900
			60 ATC	3,260
MV205		50 Taper	30 ATC	3,050
			40 ATC	3,650



● E 、 P models



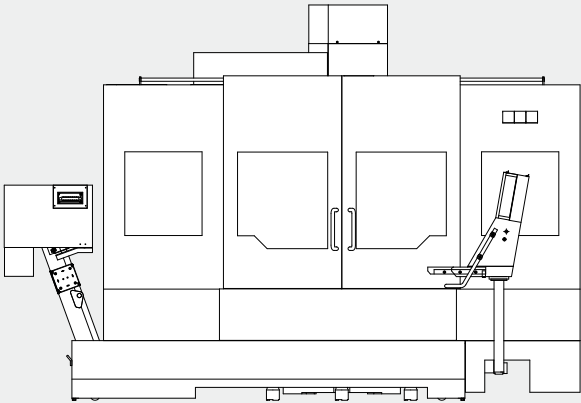
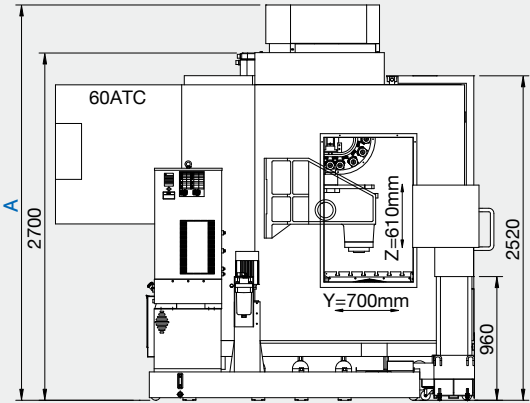
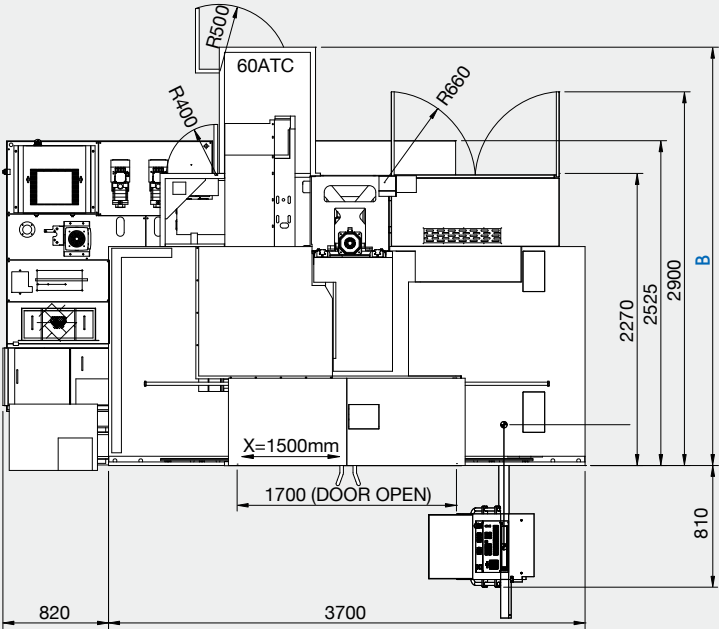
● C models

MV214 & MV215 Layout

Installation dimension

MV214	A	P	9B / 12B	3,120
MV215			15C / 15D	3,350
		E & P	7.5B	3,470

MV214	B	40 Taper	48 ATC	2,900
MV215			60 ATC	3,260
		50 Taper	30 ATC	3,050
			40 ATC	3,650

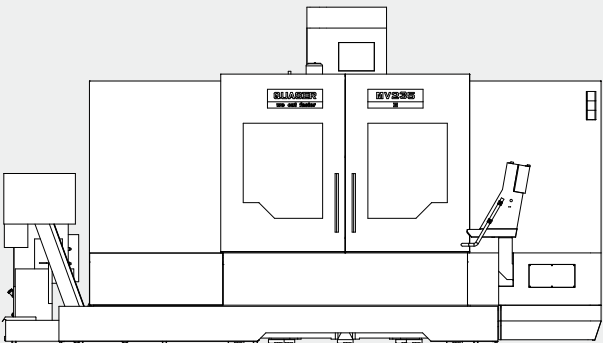
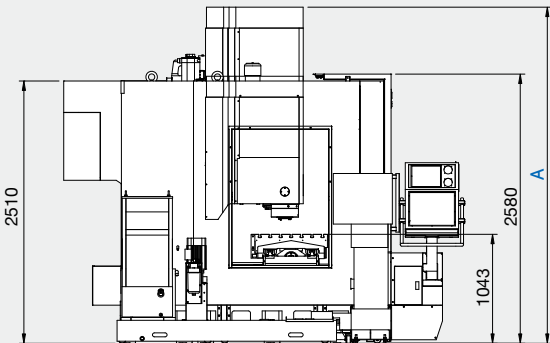
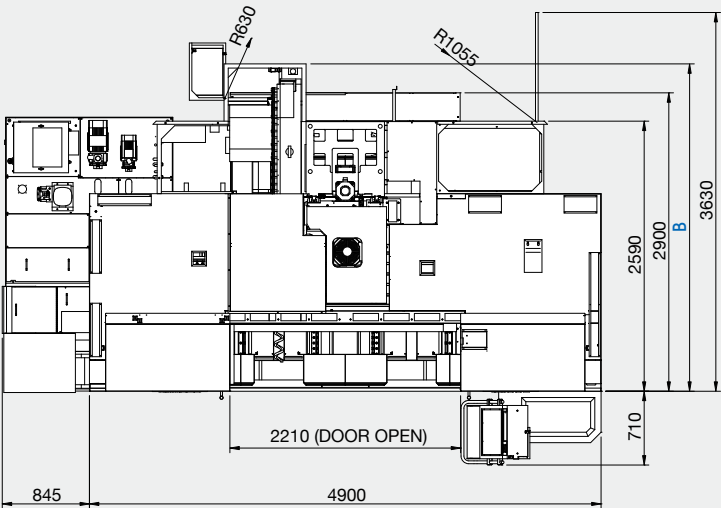


MV234 / 235 Layout

Installation dimension

MV234	A	E	9B / 12B	3,150
		P	9B / 12B	
			15C	3,380
MV235				6B
			7.5B	

MV234	B	40 Taper	48 ATC	2,990
			60 ATC	3,390
50 Taper		30 ATC	3,170	
		40 ATC	3,790	



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