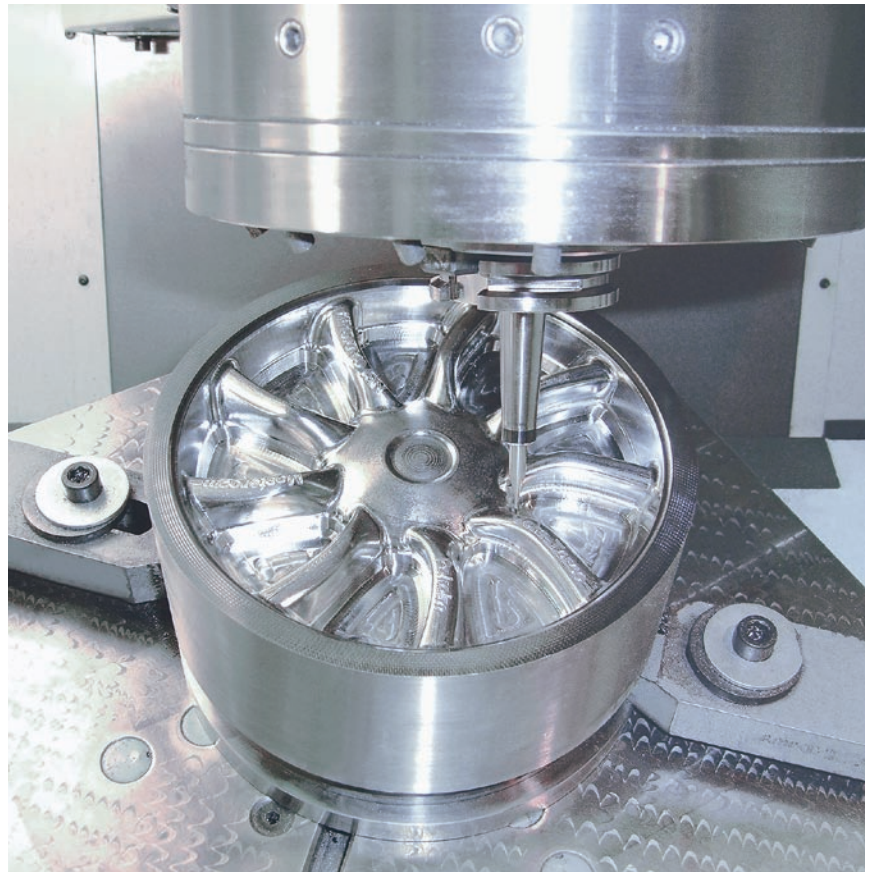


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## 5 AXES Series

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**MV154U** (ø250x200)

**MV204CU** (ø300/ø500x300)

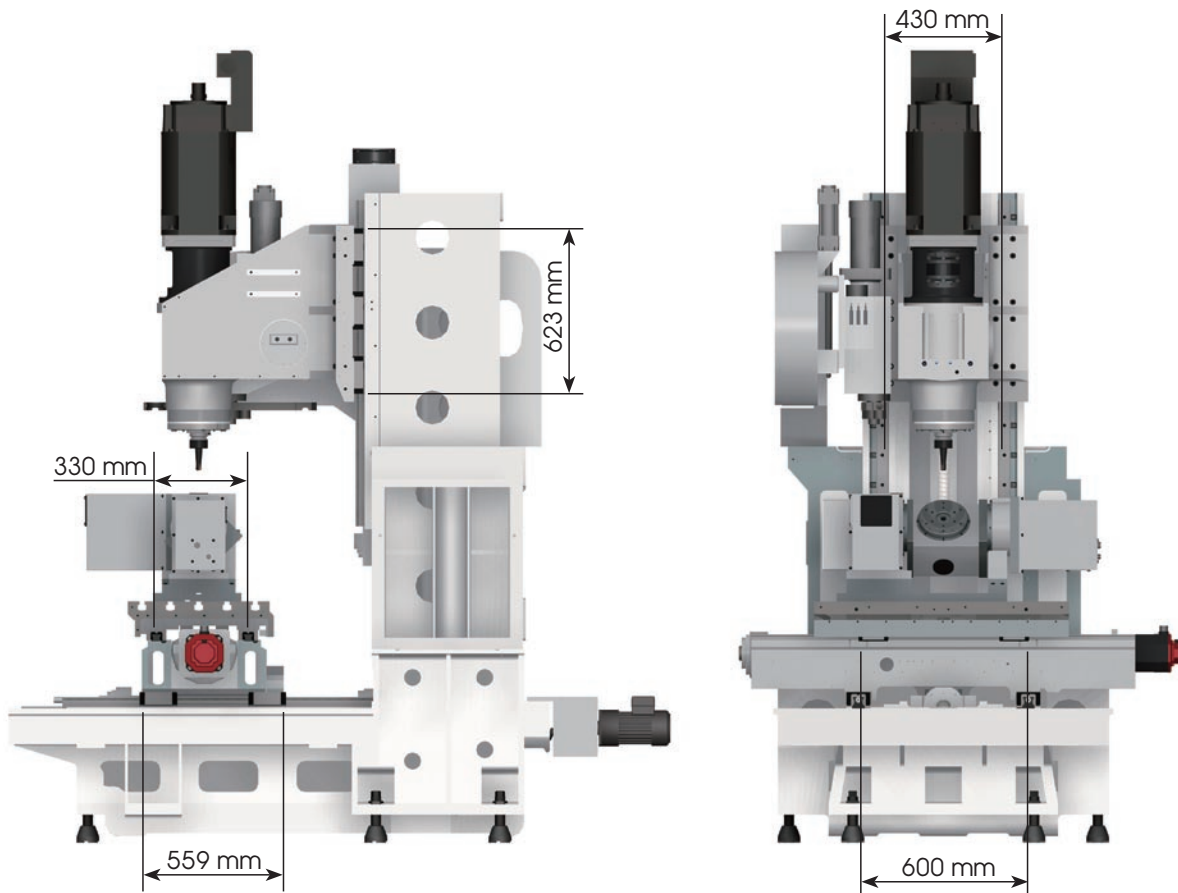
**MK603U** (ø700x350)

(2006)

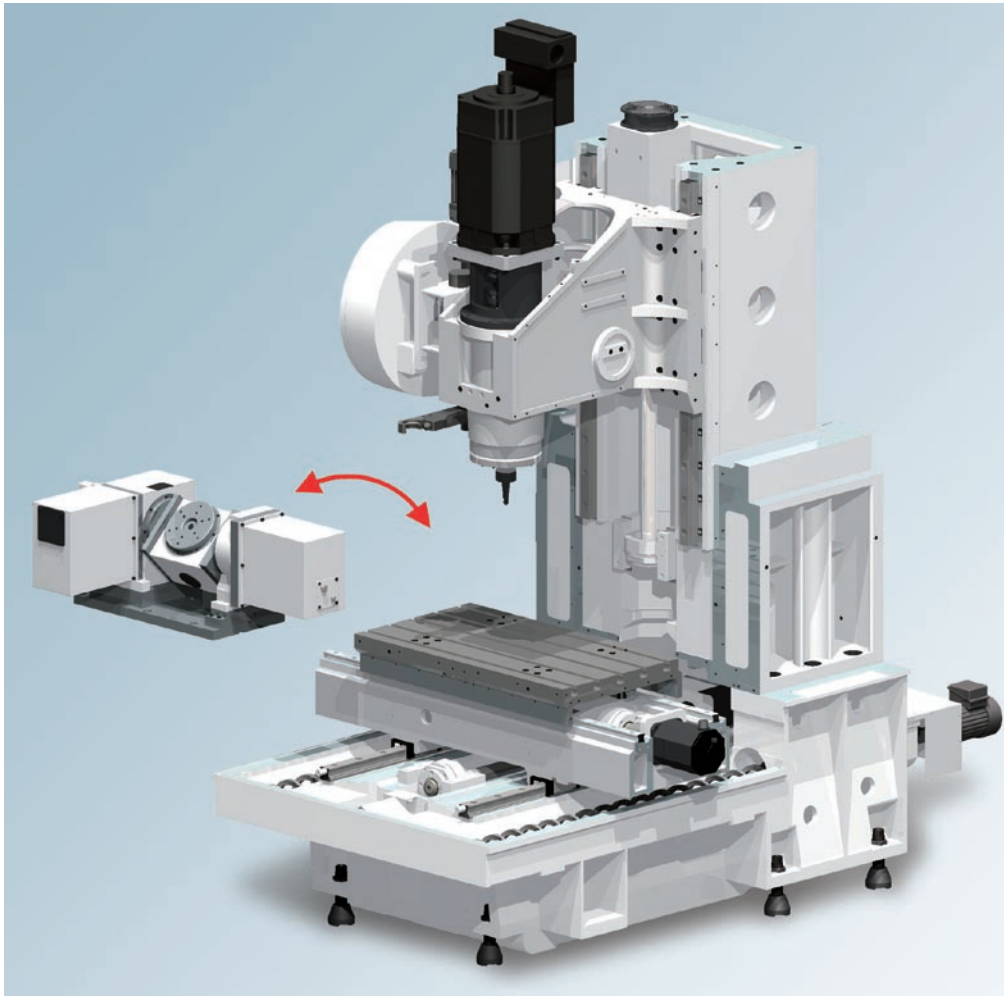
## Three models from small to large for your choices:

MODEL	CONSTRUCTION	TRAVELS (mm)
MV154U	FIXED COLUMN : X / Y / C / A + Z	X = 700 Y = 500 Z = 485 C = 360° A = 20° ~ -110°
MV204CU	FIXED COLUMN : X / Y / C / A + Z	X = 700 Y = 660 Z = 480 C = 360° A = ±110°
MK603U	MOVING COLUMN : X / Y / Z + C / A	X = 800 Y = 700 Z = 535 C = 360° A = -100° ~ 20°

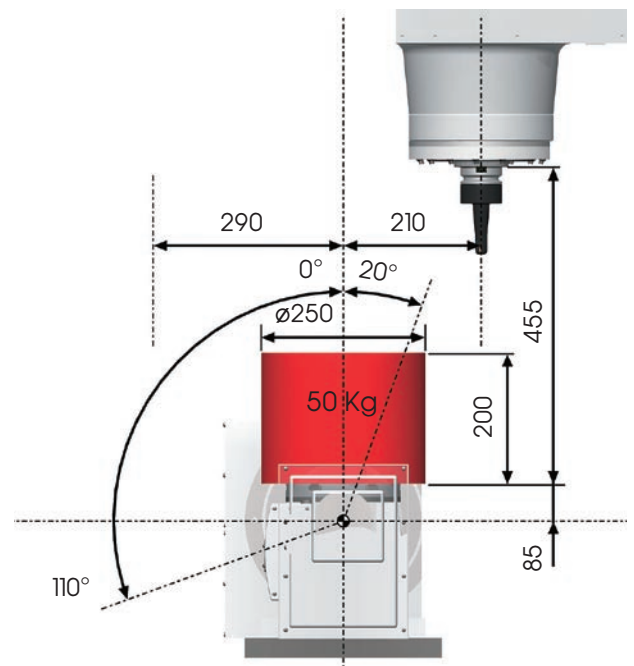
WORK PIECE	SPINDLE (S6-40%)	ATC	CONTROLS
 <p> <math>\varnothing 250</math>                      50 kg                      200                 </p>	<p><b>FANUC</b></p> <p>22 kW / 15,000 min<sup>-1</sup></p> <p><b>HEIDENHAIN</b></p> <p>21 kW / 15,000 min<sup>-1</sup>                      30 kW / 15,000 min<sup>-1</sup></p>	<p>32 POS. (std)</p>  <p>48 POS., 60 POS. (opt)</p>	 <p>HEIDENHAIN iTNC530</p>
 <p> <math>\varnothing 300</math>                      265 kg                      150                      300  <math>\varnothing 500</math> </p>	<p><b>FANUC</b></p> <p>22 kW / 15,000 min<sup>-1</sup></p> <p><b>HEIDENHAIN</b></p> <p>21 kW / 15,000 min<sup>-1</sup>                      30 kW / 15,000 min<sup>-1</sup></p>	<p>32 POS. (std)</p>  <p>48 POS., 60 POS. (opt)</p>	 <p>FANUC 18iMB / 18iMB5</p>
 <p> <math>\varnothing 700</math>                      650 kg                      120                      230  <math>\varnothing 630</math> </p>	<p><b>FANUC</b></p> <p>22 kW / 15,000 min<sup>-1</sup></p> <p><b>HEIDENHAIN</b></p> <p>21 kW / 15,000 min<sup>-1</sup>                      30 kW / 15,000 min<sup>-1</sup></p>	<p>48 POS. (std)</p>  <p>60 POS. (opt)</p>	 <p>FANUC 18iMB / 18iMB5</p>



Exchangeable working capacity between 5 AXES / 3 AXES application



Work envelope		
	ROTARY AXIS (C-axis)	TILTING AXIS (A-axis)
Maximum R. P. M	: 33.3 min <sup>-1</sup>	25 min <sup>-1</sup>
Indexing accuracy	: 45 sec (±5 sec)	45 sec (±5 sec)
Repeatability	: ±2 sec (±1 sec)	±3 sec (±2 sec)
Clamping torque	: 284 N·m	1,250 N·m

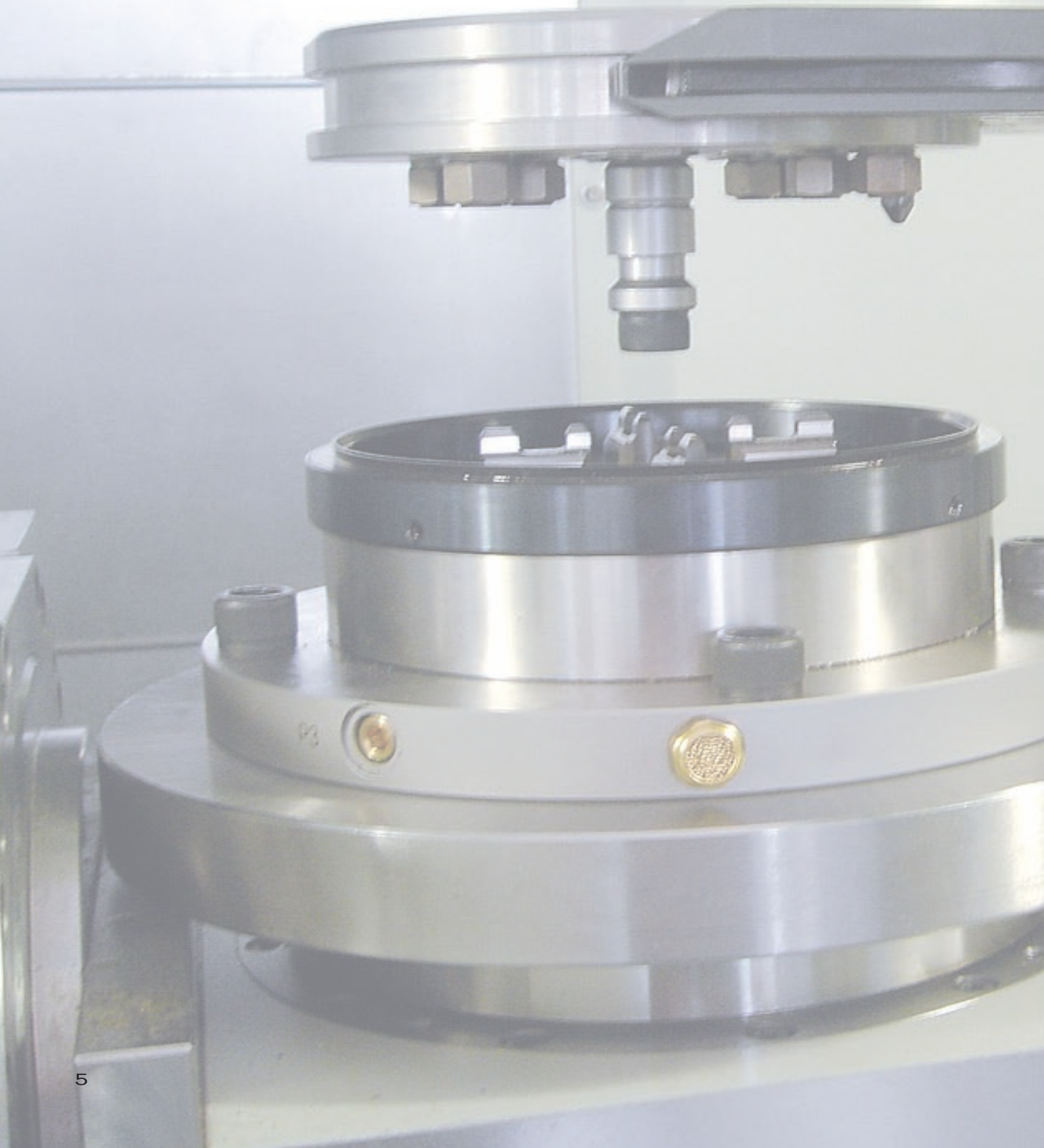


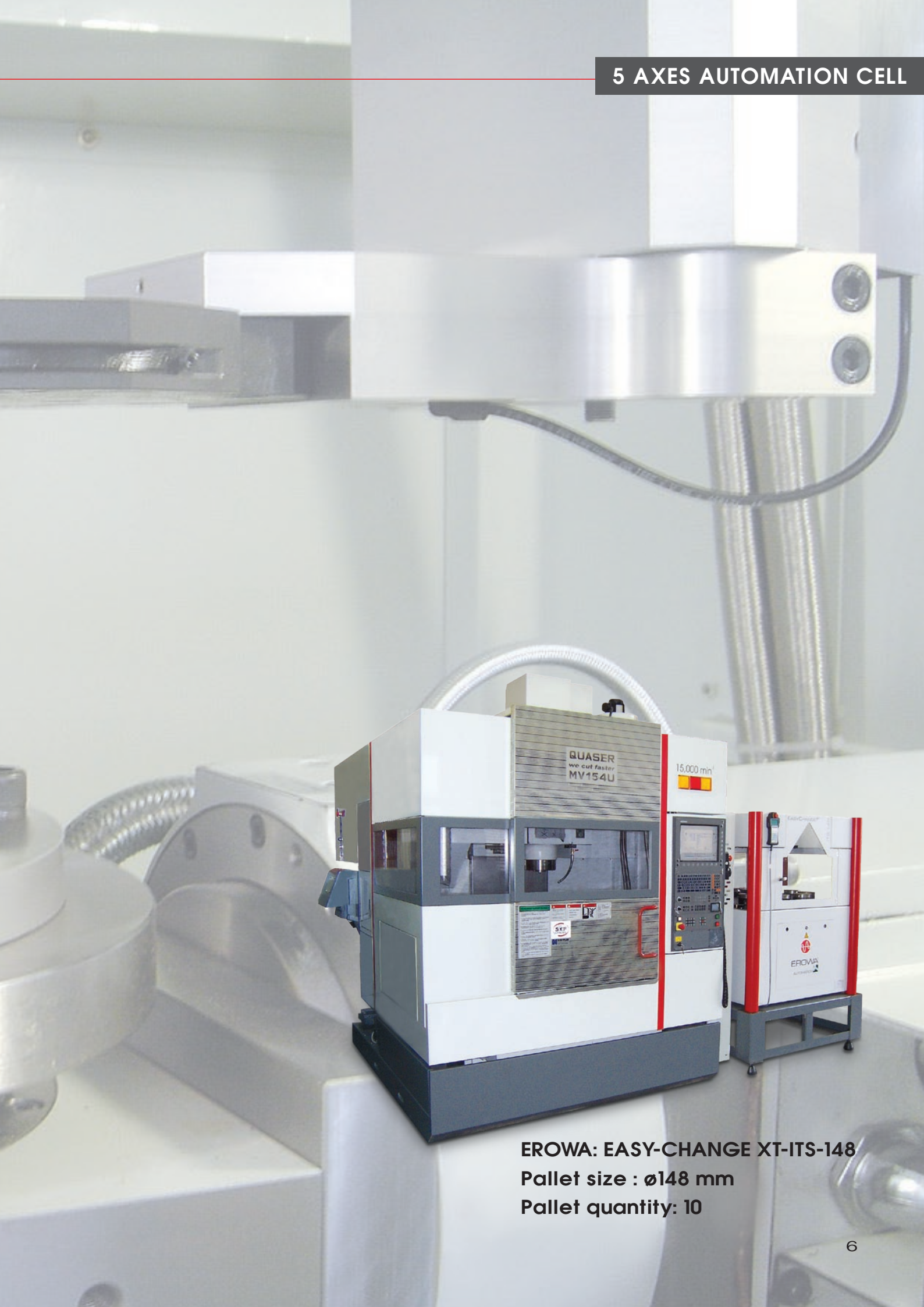
( ) with optional absolute rotary encoder - highly recommended for precise 5 faces or contouring work.

**Special option**

**Interface with EROWA (CH) or 3R (S) automation system**

- **Need specify type of equipments**
- **Connection & test at our dealers showroom**

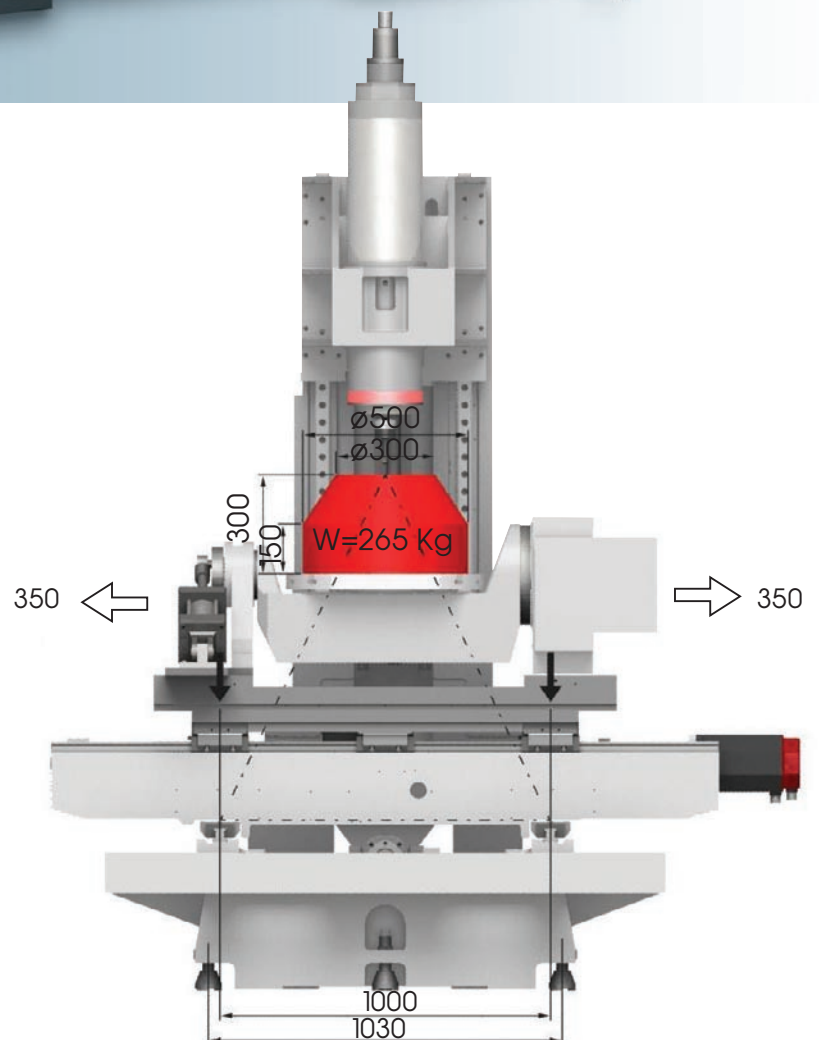




**EROWA: EASY-CHANGE XT-ITS-148**  
Pallet size :  $\varnothing 148$  mm  
Pallet quantity: 10

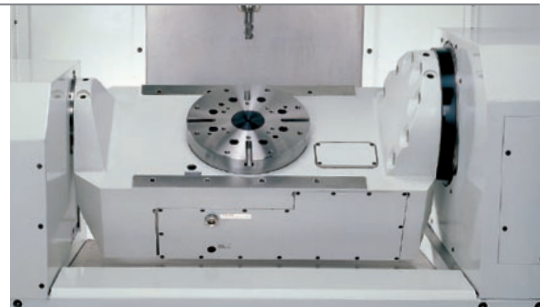
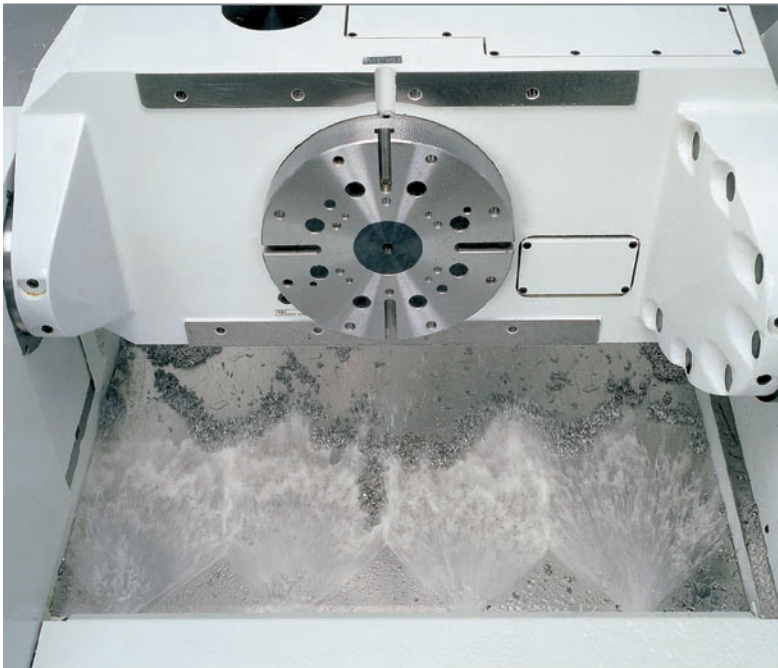


For basic machine construction,  
ref cat. on MV204C series

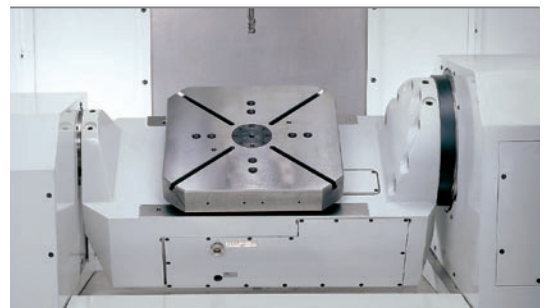


Chip flow slope & built-in wash down

Various optional table configurations for miscellaneous application



Standard :  $\varnothing 280$  table (5 Axes)



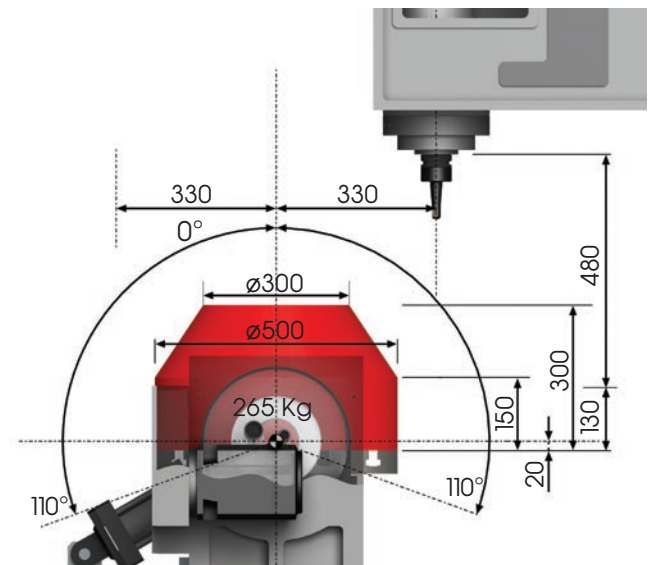
Opt 400 x 400 Fixture plate (5 Axes)



Opt 400 x 600 Fixture plate (4 Axes)

Work envelope		
	ROTARY AXIS (C-axis)	TILTING AXIS (A-axis)
Maximum R. P. M	: 30 min <sup>-1</sup>	25 min <sup>-1</sup>
Indexing accuracy	: 14 sec ( $\pm 5$ sec)	45 sec ( $\pm 5$ sec)
Repeatability	: $\pm 2$ sec ( $\pm 1$ sec)	$\pm 3$ sec ( $\pm 2$ sec)
Clamping torque	: 1,666 N·m	2,156 N·m*

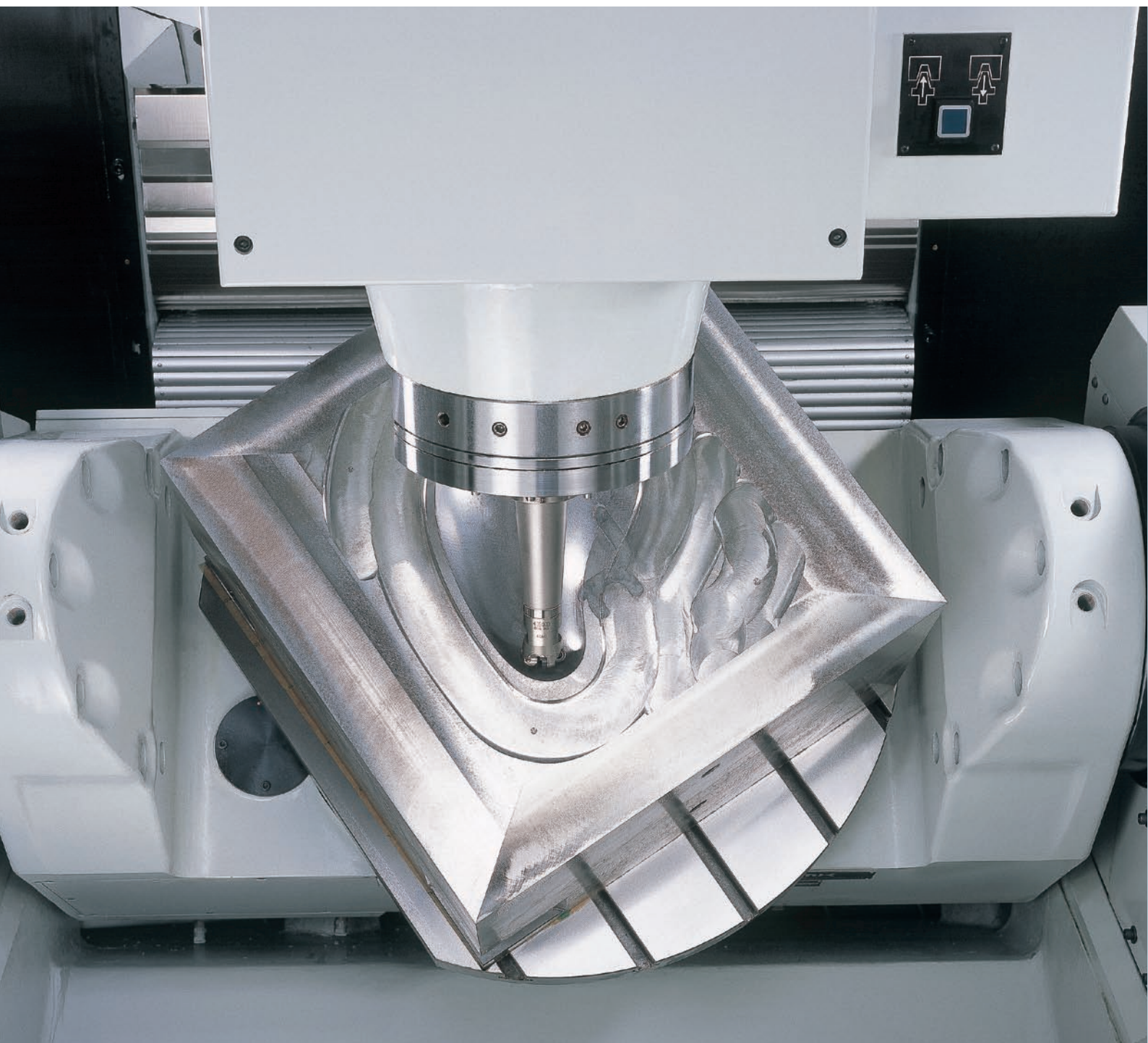
\*Hydraulic clamping on both ends  
 ( ) with optional absolute rotary encoder - highly recommended for precise 5 faces or contouring work.



The maximum work piece height is based on standard table flange

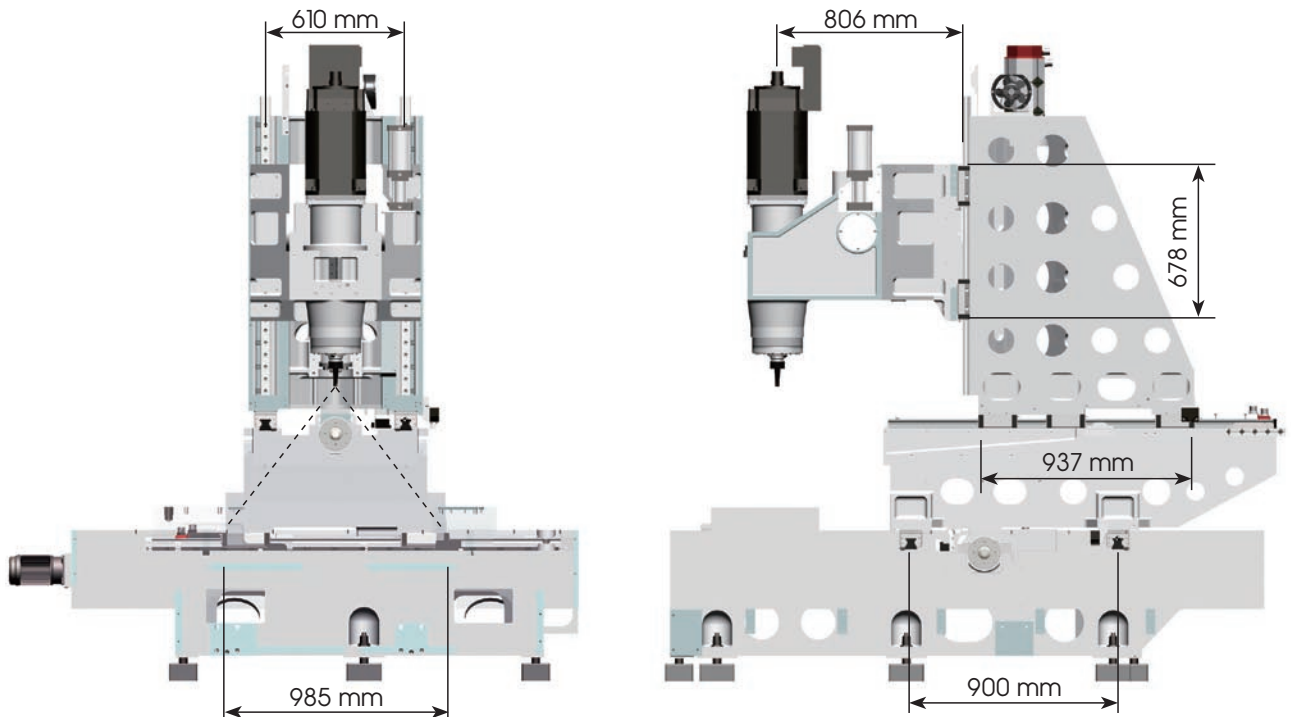
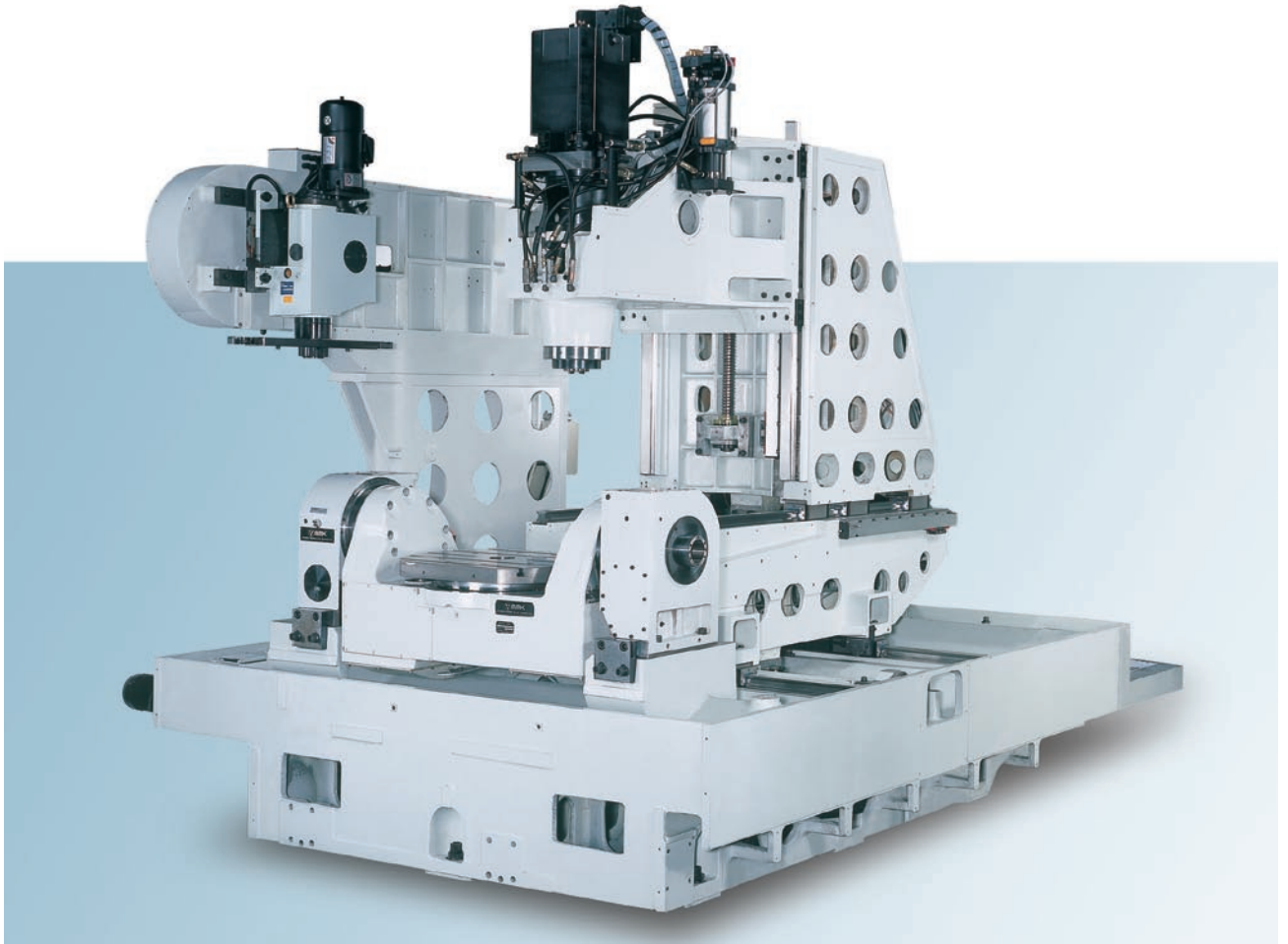
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## Solid cast iron constructions with wide spacing roller ways on all 3-axis



### Super heavy duty linear ways

X axis linear ways size 55 / Roller type

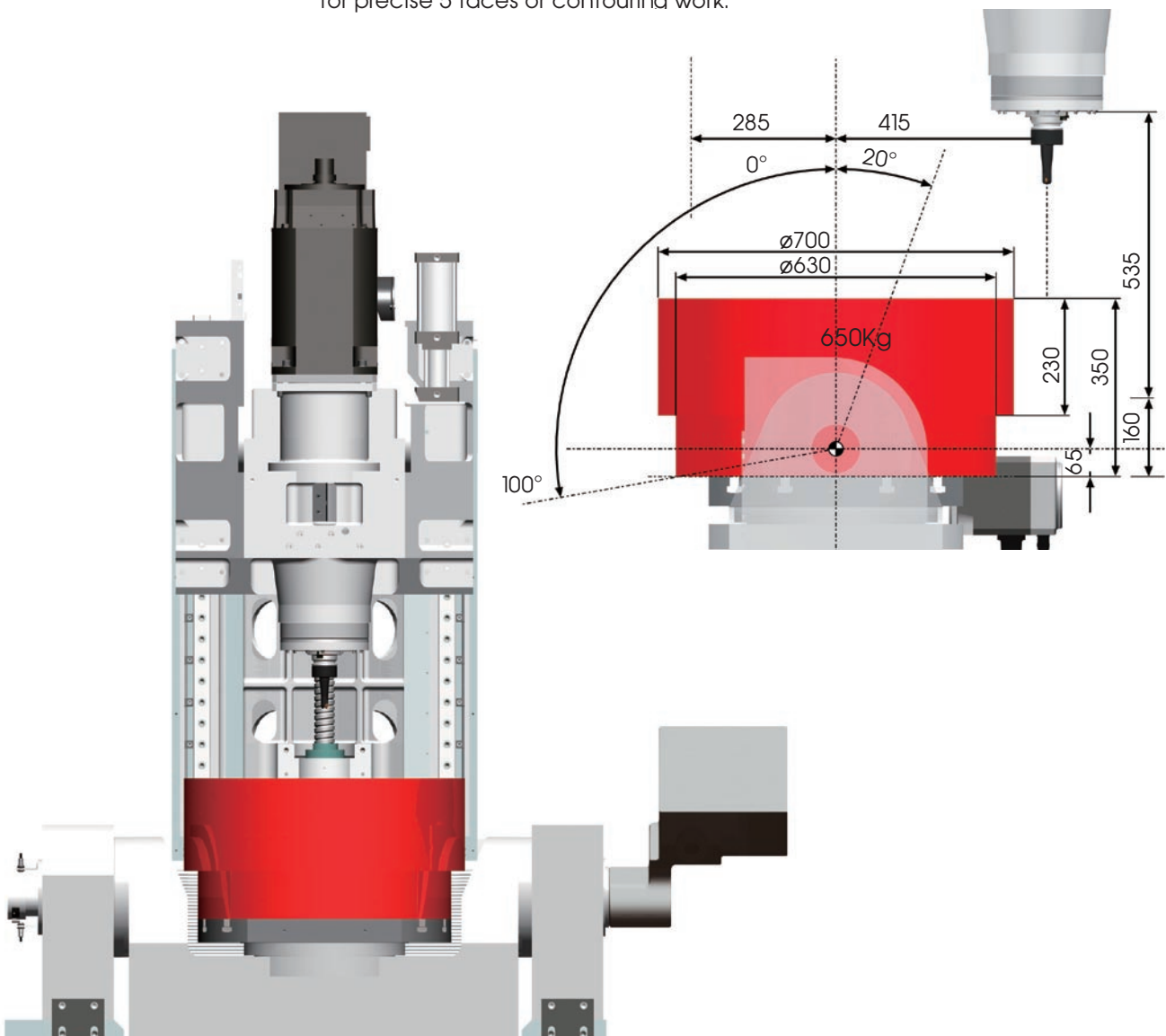
Y axis linear ways size 55 / Roller type

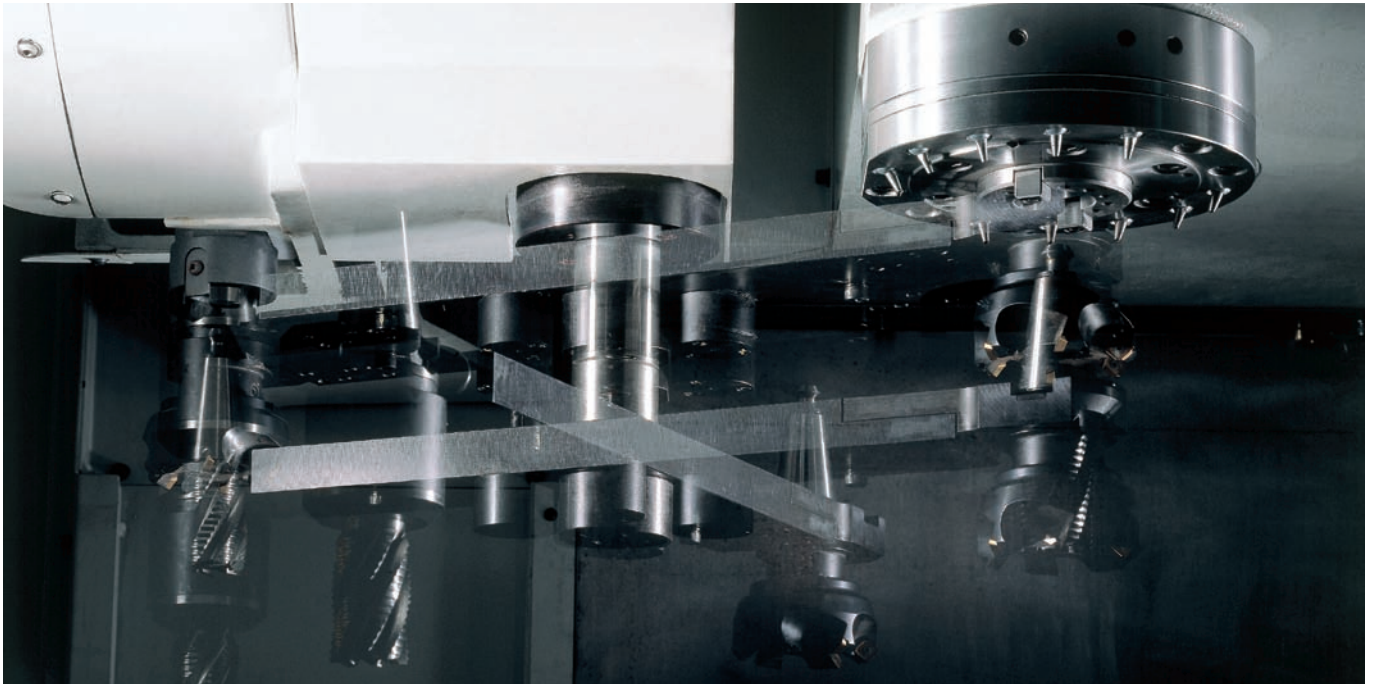
Z axis linear ways size 45 / Roller type

# Super rigid NC swivelling rotary table with clamping torque up to 4,400 N-m on A axis

Work envelope		
	ROTARY AXIS (C-axis)	TILTING AXIS (A-axis)
Maximum R. P. M	: 20.8 min <sup>-1</sup>	11.1 min <sup>-1</sup>
Indexing accuracy	: 12 sec (±5 sec)	45 sec (±5 sec)
Repeatability	: ±2 sec (±1 sec)	±3 sec (±2 sec)
Clamping torque	: 2,200 N-m	4,400 N-m*

\*Hydraulic clamping on both ends  
 ( ) with optional absolute rotary encoder - highly recommended for precise 5 faces or contouring work.





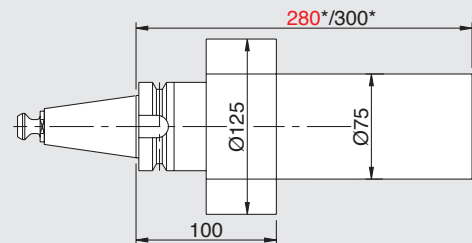
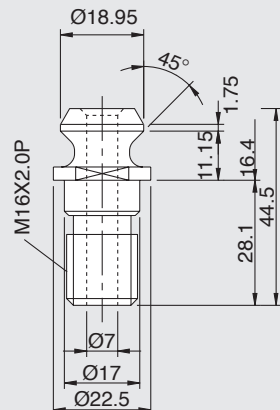
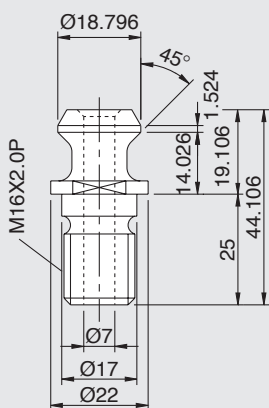
**NO. 40 TAPER :**

32 / 48 / 60-POS. magazine



BT 40 (QUASER SUPPLY)

ISO 40



Note : — MV154U & MV204CU  
— MV603U  
\*The speed limitation below 12,000 min<sup>-1</sup>

### HEIDENHAIN iTNC 530

- 15" TFT color flat-panel display
- 6GB hard disk
- Block process time 0.5 ms
- Look ahead 256 blocks
- Ethernet interface (100 BaseT)
- Free contour programming (FK)
- Straight fine interpolation in 5 axes
- Circle interpolation in 3 axes
- Helix interpolation
- Spindle interpolation
- Cylindrical interpolation
- Tool center point management
- 3-D tool-length compensation
- Titring the working plane
- Datum tables
- Programming graphics
- Feed forward control



### ● FANUC 18iMB (5 Faces) ■ FANUC 18iMB 5 (5 Axes)

- ■ 10.4" TFT color display
- ■ Data servo
- ■ Fast block processing speed (■ / ○ 0.4 ms, ● 4ms)
- ■ Look ahead (■ / ○ 600 blocks, ● 40 blocks)
- ■ Ethernet interface
- ■ Manual guide
- × ■ 3-D circular interpolation
- ■ Helical interpolation
- ■ Nano smoothing
- ■ Cylindrical interpolation
- × ■ Tool center point control for 5-axes machining
- × ■ Tool radial compensation for 5-axes machining
- × ■ Titring working plane command
- × ■ 3-D coordinate system conversation
- ■ Graphic
- ■ RISK
- ■ AI nano HPCC
- ■ Servo HRV3 control



NOTE: ■ / ● standard □ / ○ option × not available

## 5 Axes/5 Faces series

### Technical data

### Models

#### 5 Axes / 5 Faces machine

Small	Medium	Large
MV154 U /15	MV204 CU / 15	MK603 U / 15

Technical Data		MV154 U	MV204 CU	MK603 U
		Small /15	Medium /15	Large /15
<b>Work range</b>				
Table size (mm)		ø250	ø280	ø630 x W500
Travel	X (mm)	700	700	800
	Y (mm)	500	660	700
	Z (mm)	485	480	535
	A (degree)	20° ~ -110°	±110°	20° ~ -100°
	C (degree)	360°	360°	360°
Max. swing (mm)		ø250	ø500	ø700 <sup>(1)</sup>
Table surface to spindle nose (mm)		-30 ~ 455	100 ~ 580	160 ~ 695
Max. work piece size (mm)		ø250 x 200	ø300 / ø500 x 300	ø700 x 350 <sup>(1)</sup>
Table load capacity (kg)		50	265	500 / 650 <sup>(2)</sup>
<b>Feed drive</b>				
Feed force	X (N)	4,712 (F) / 6,951 (T)	11,519 (F) / 11,310 (T)	11,780 (F) / 14,922 (T)
	Y (N)	4,712 (F) / 6,951 (T)	11,519 (F) / 11,310 (T)	8,640 (F) / 14,922 (T)
	Z (N)	11,519 (F) / 11,310 (T)	11,519 (F) / 13,666(T)	11,519 (F) / 19,896 (T)
Rapid movement X/Y/Z (mm/min)		40	32	32
A/C (min <sup>-1</sup> )		A=25/C=33.3	A=25/C=30	A=11.1/C=20.8
Acceleration X/Y/Z (m/s <sup>2</sup> )	F	7 / 6 / 5	6 / 5 / 5	4 / 5 / 4
	T	6 / 5 / 5	4 / 4 / 5	4 / 4 / 4
Dia. & pitch of the ball screw		ø45 / P=16 / 16 / 12	ø45 / P=12 / 12 / 12	ø45 / P=12 / 12 / 12
<b>Main spindle</b>		40 Taper		
Spindle model		ISO 40 / BT 40 or HSK 63A		
Spindle taper		ISO 40 / BT 40 or HSK 63A		
Max. spindle speed		15,000	15,000	15,000
Spindle base speed	F	1,400	1,400	1,400
	T	1,500   1,580	1,500   1,580	1,500   1,580
Spindle output KW (S6~40%)	F	22	22	22
	T	21   30	21   30	21   30
Spindle torque N·m (S6~40%)	F	150	150	150
	T	134   183	134   183	134   183
Spindle transmission	F	Coupling	Coupling	Coupling
	T	Coupling	Coupling	Coupling
Spindle diameter (mm)		ø70		
<b>Position accuracy</b>		0.008 / 0.004 <sup>(3)</sup>		
ISO 230-2 / JIS in X/Y/Z (mm)		0.008 / 0.004 <sup>(3)</sup>		
<b>Tool changer</b>		Random		
Tool selection		Random		
Magazine positions	STD	32		48
	OPT	48 / 60		60
Max. tool diameter (mm)		75		
w/o adjacent tool (mm)		125 <sup>(4)</sup>		
Max. tool length (mm)		280 <sup>(4)</sup>		300 <sup>(4)</sup>
Max. tool weight (kg)		7		
CTC time - ISO 10791-9 (sec.)		4.9	5.5	6

## Main spindle

**40 Taper** Coupling spindle : 15,000 min<sup>-1</sup> (FANUC)  
 : 15,000 min<sup>-1</sup> (HEIDENHAIN)

## Control

(F) : FANUC - 18i M-B (5 Faces)  
 - 18i M-B5 (5 Axes)  
 (T) : HEIDENHAIN - i TNC 530 (5 Axes)

Technical Data	MV154 U	MV204 CU	MK603 U
	Small	Medium	Large
	/15	/15	/15
<b>Coolant system</b>			
Coolant tank capacity (Liter)	400	600	580
Pump capacity	40L / min. , 2 bar		
-Nozzle coolant	25L / min. , 20 bar		
-Through spindle coolant	60L / min. , 2 bar		
-Wash down			
<b>Machine size</b>			
Height (mm)	3,100	2,720	3,250
Floor space W x D (mm)	2,200 x 2,450	3,675 x 3,230	2,820 x 4,654
Weight (kg)	7,150	10,100	14,000
<b>Connections</b>	400V / 50Hz		
Main power			
Power consumption (KVA)	F	30	35
	T	35	40

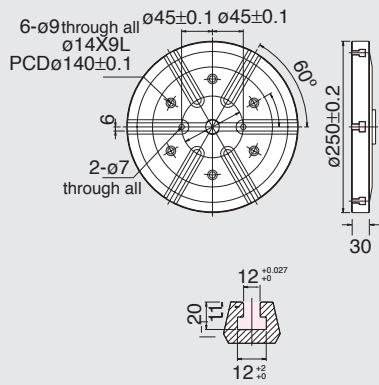
● = Standard    ○ = Option    ✕ = N / A    ⊙ = Option but highly recommended

Standard / Option accessories:	MV154 U	MV204 CU	MK603 U
	15	15	15
■ FANUC 18iM-B (5 Faces)	●	●	●
■ FANUC 18iM-B-5 (5 Axes) with 3"o"package : RISC, Data Servo, AI nano HPCC	●	●	●
■ HEIDENHAIN iTNC530 (5 Axes) with Option2	●	●	●
■ Spindle oil chiller	●	●	●
■ 40 taper / 32 position tool magazine	●	●	X
■ 40 taper / 48 position tool magazine	○	○	●
■ 40 taper / 60 position tool magazine	○	○	○
■ Pull stud for BT tooling system	●	●	●
■ Table plate 600 x 400 x H40	X	○	X
■ Table plate □400 x H40	X	○	X
■ EROWA "EASY CHANGE" 10 pallet system (pallet size ø150 mm)	○	X	X
■ Linear encoder ( Absolute 0.1 μm)	⊙	⊙	●
■ Option rotary encoder in A & C axes	⊙	⊙	⊙
■ Tool length / breakage measurement	○	○	○
■ Coolant system	●	●	●
■ 20 bar through spindle coolant	●	●	●
■ 50 bar through spindle coolant	X	○	○
■ Coolant wash gun	●	●	●
■ Coolant wash down	●	●	●
■ Chip conveyor	●	●	●
■ Stainless steel chip pan & chip channel	●	●	X
■ Work light	●	●	●
■ Machine status light	●	●	●
■ CE & EMC	●	●	●

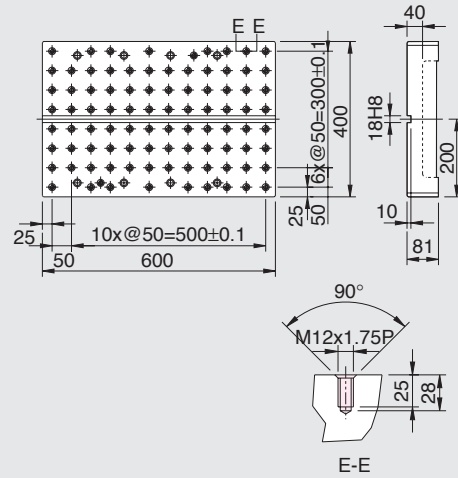
Note : (1) : For acture work piece dimensions, please reference page 2.  
 (2) : at 8.3min<sup>-1</sup> within ± 30°  
 (3) : Feed at 3m/min.  
 (4) : The speed limitation below 12,000 min<sup>-1</sup>



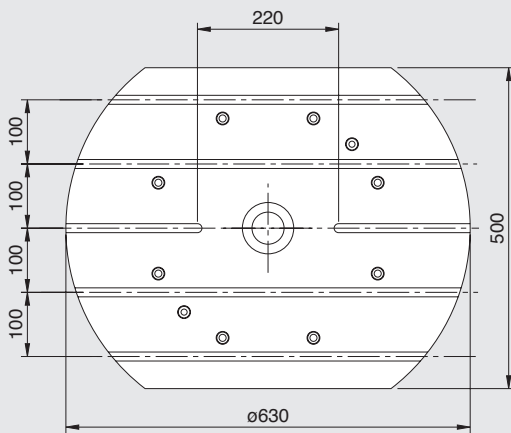
**MV154U /  $\phi$  250X30 FIXTURE PLATE**



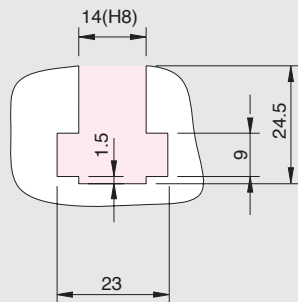
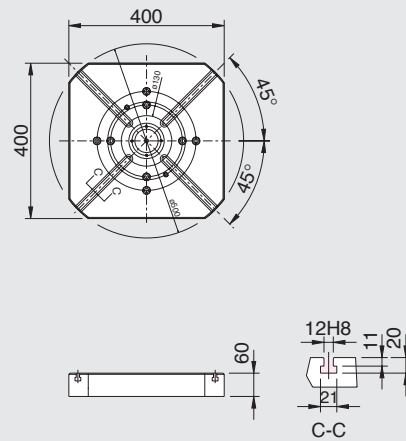
**MV204CU / 400X600X40 FIXTURE PLATE**



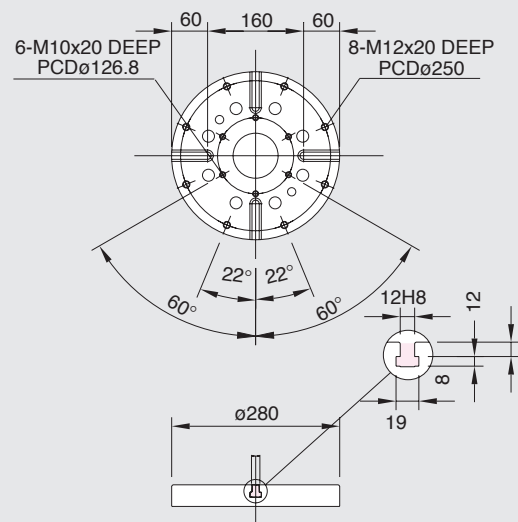
**MK603U**



**MV204CU / 400X400x40 FIXTURE PLATE**



**MV204CU / M DAT303ii (BASE TABLE  $\phi 280$ )**





# QUASER

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