Quaser

MF SERIES

Vision Manufactured

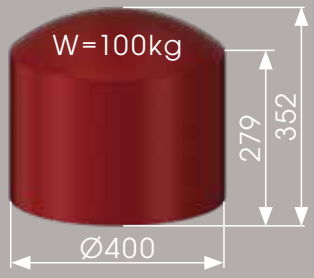
At Quaser Group, we dedicate to

Creating a world where there is no gap between design concept and manufacturing to maximize the power of engineering. Whatever you design, we can make it to upgrade your competitive edge.

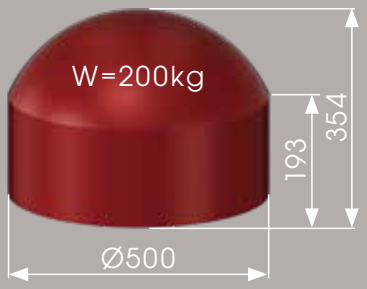
Series Overview

Workpiece Size & Machine Structure

MF400



MF500

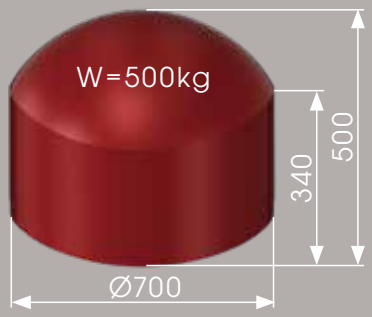


5 axes positioning/ 4 axes simultaneously
0iMF PLUS, SIEMENS 828D, MITSUBISHI M830

5 axes simultaneously
FANUC 31iB5, SIEMENS 840D, HEIDENHAIN TNC640

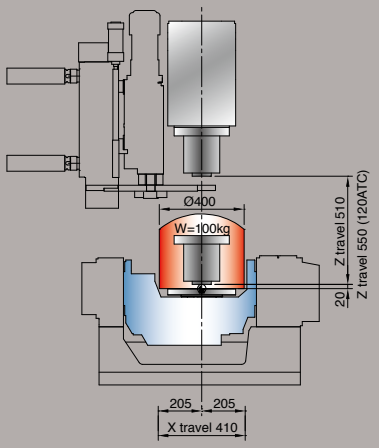
Note The object might be different from the photos of catalogue if there is any specification update

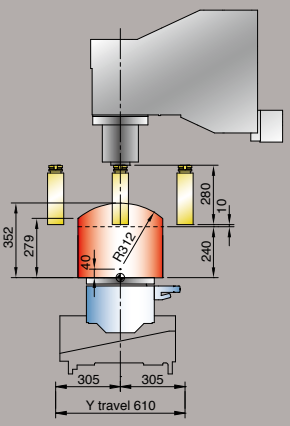
MF700



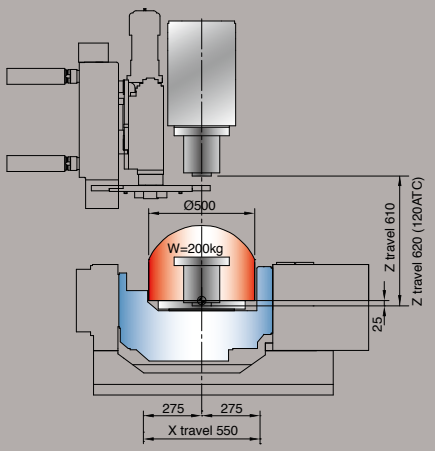
Cutting Area & Interference

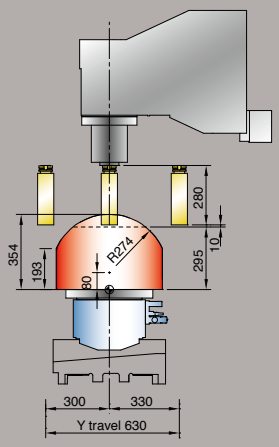
MF400



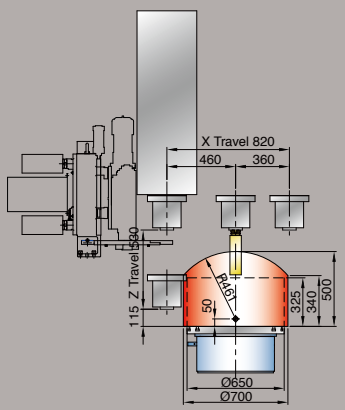


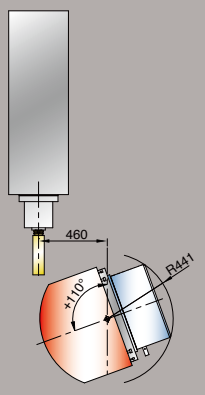
MF500

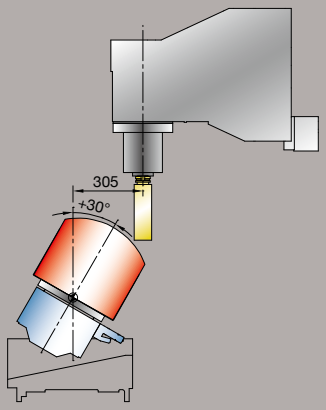


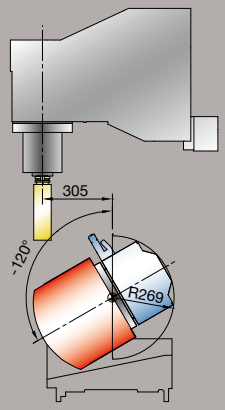


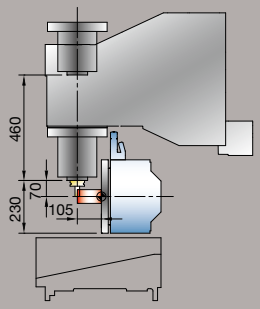
MF700

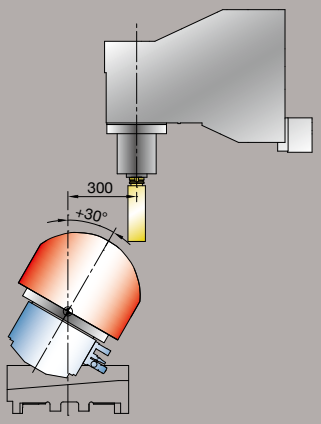


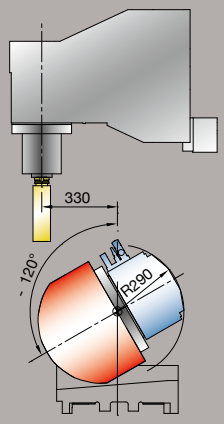


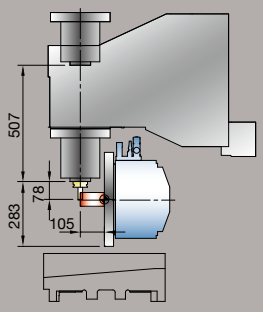

305
+30°

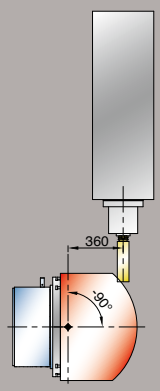

305
-120°
R269

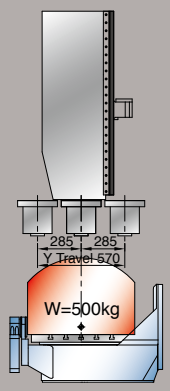

460
70
230
105

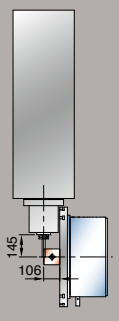

300
+30°


330
-120°
R290


507
78
283
105


360
-90°


285
285
Y Travel 570
W=500kg


145
106

Application Samples


Turret Plate

A. Three-way valves
B. Heat dissipation fins
C. Multi-way valves
D. Testing workpiece
E. Heat dissipation fins
F. Lens holder

MF700

Curve contour and smoothness to meet industry requirements for overall performances, working efficiency and dimensional accuracy

Forged Aluminum Wheel	Specifications
Material	A6061-T6
Machining Size	Ø 540 x 300 mm (L)
Machining Time	6 hr 28 min

Spindle Technology

– 18.5 (S6-25%) Direct Coupling Spindle with 12,000 RPM, 15,000 RPM (optional)
– CTS options for Highspeed Machining

Direct Coupling

The MF700's spindle uses a coupling that ensures outstanding power transfer efficiency with a moment of inertia of under 0.003 kgm^2.

Inverter Chiller

Spindle heat cooling jacket provide stable temperature to high-speed shaft and bearing.

Spindle Taper	
Max. spindle speed (min^{-1})	12,000
Spindle base speed (min^{-1})	1,500
Spindle power output kW (S6-25%)	18.5
Spindle power output Nm (S6-25%)	118
Spindle transmission	Coupling
Spindle bearing	Ø80 / << >>

Note: For detailed spindle specifications, refer to P26


QUASER
MF700

MF 700

MF700's space friendly design includes a wall mounted rotary table hiding the tilting axis motor under the column, ensuring larger processing area for a small and compact machine footprint.

Result is the best use of space proximity and easy operation.

Maximum loading capacity / 500KG
Max Workpiece Diameter / 700mm
Max workpiece Height / 500mm

Rotary Table

Strong and Rigid

Combining alloy steel and aluminum bronze greatly reduces friction coefficiency, effectively transmitting motor torque.

	MF400		MF500		MF700	
	Rotary Axis (C-axis)	Tilting Axis (A-axis)	Rotary Axis (C-axis)	Tilting Axis (A-axis)	Rotary Axis (C-axis)	Tilting Axis (B-axis)
Drive method	Worm		Worm		Worm	
Max. swing (mm)	Ø400		Ø500		Ø700	
Table load capacity (kg)	100		200		500	
Allowable unblancing workpiece moment (Nm)	110		200		200	
Maximum R.P.M (min^{-1})	25	25	16.6	11.1	25	25

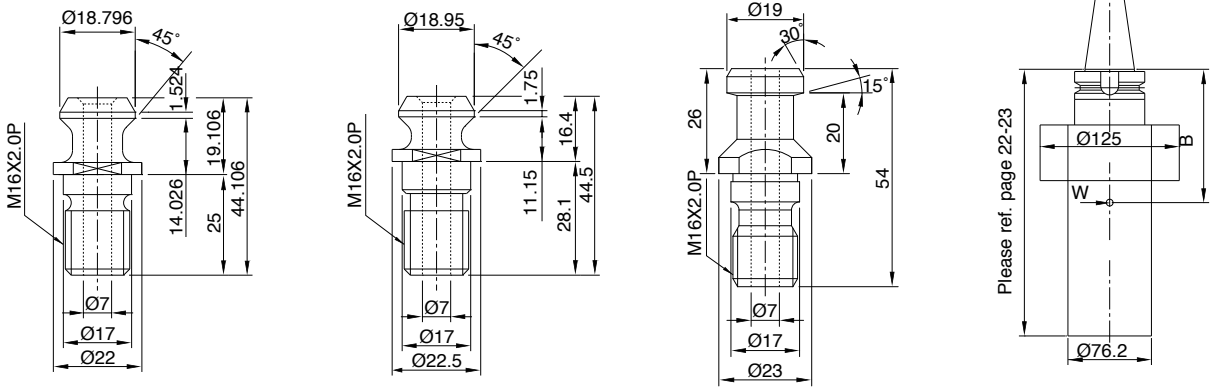
ATC and ATC Maintenance

Flexible Options

The MF700's standard tool capacity is 48T, but we also offer optional upgrades to 60, 90, and 120 tools to meet various machining demands.

Pull stud and applicable tools

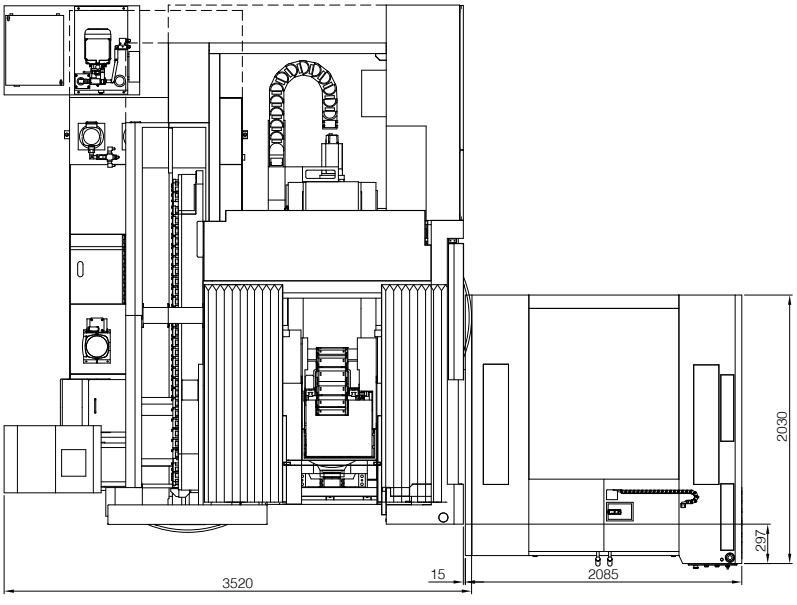
B	tool median point distance
C	tool weight
MOMENT=W*B≤(10.29N-m)	



Automation

Technical Details (Cell)		
Pallet size	mm	400x400 / 500x500
Max. work piece size	mm	Ø500x350 / Ø600x350
Pallet load capacity	kg	250 (with pallet) / 350 (with pallet)
Number of pallet	pcs	6 or 8
Exchange Way		Lift and rotation
Weight	kg	2,800
Floor space W x D x H	mm	2,085 x 2,030 x 2,200

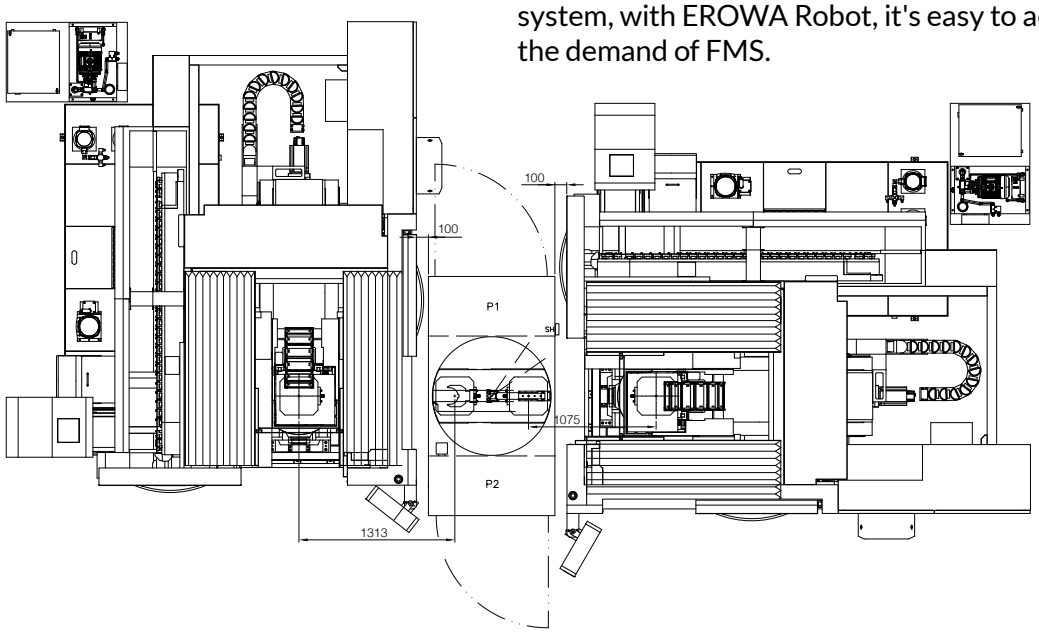
Note: Layout of MF700 with Cell Pallet System.



Technical Details HALTER LoadAssistant 20		
Maximum load capacity robot arm	kg	20
Minimum workpiece dimension LxW	mm	10x10
Maximum workpiece dimension LxW	mm	230x230
Maximum height of workpiece	mm	250
System size L x W x H	mm	1,750 x 1,434 x 2,220

Technical Details （EROWA)		
Transfer weight	kg	40
X - axis travel	mm	1,380
Z - axis travel	mm	1,680
Swivel rage		350°
System size L x W x H	mm	2,014 x 1,069 x 2,612

Both side doors are available to install automatic system, with EROWA Robot, it's easy to achieve the demand of FMS.



Easy Operation

Working with Convenience and Safety

Accessibility (MF700)

a. Max. size when front door open: 850mm

b. From center of table to front door: 600mm

c. Side door opening: 740mm

d. Distance from operator to spindle: 365mm

(MF400/MF500)

e. Max. size when operator door open
- MF400 / MF500: 870mm

f. From center of table to operator door
- MF400 / MF500: 605mm

A. Guard with Top Side Bellow(optional)

B. Side Auto Door(optional)

C. Electrical box
Neat and clear wiring configuration

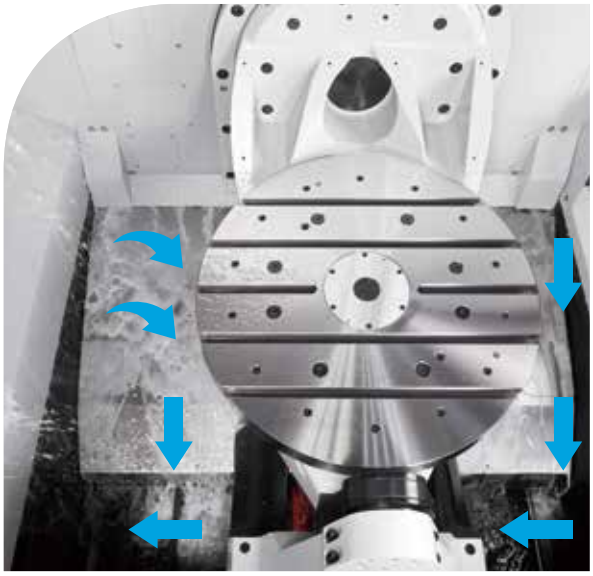
D. Green solutions
Quick steps 123

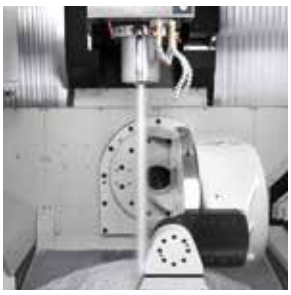
E. Control Panel
Ergonomic operation panel with adjustable angle.

F. Centralized Configuration
Lubrication and pneumatic panel easy to maintenance.

Chip Removal System Design

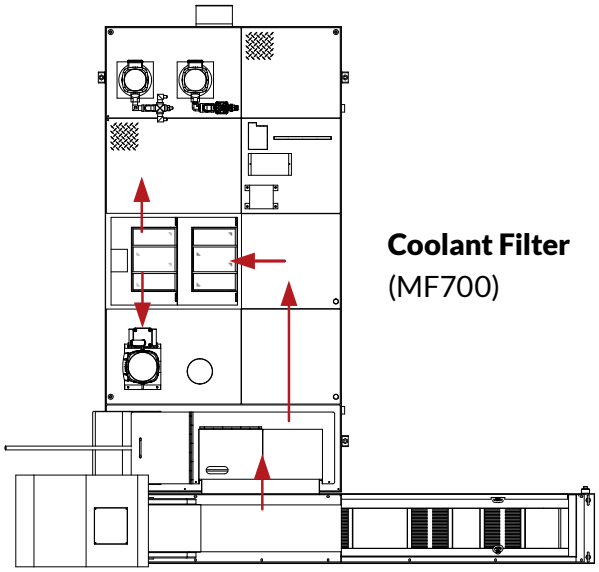
Save machine cleaning and maintenance time



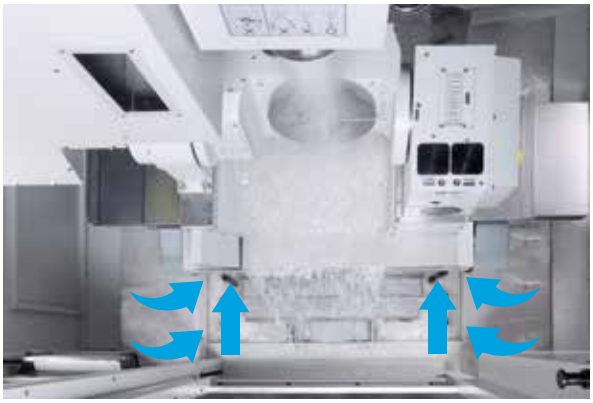


–Optimized chip removal system design allows chips to directly fall on the chip conveyor.

–The high-efficiency chip conveyor under the machine discharges the chips quickly and in large quantities.



Coolant Filter
(MF700)



–Internal chip augers (MF400/MF500)

Accuracy table

Accuracy Position / Repeatability

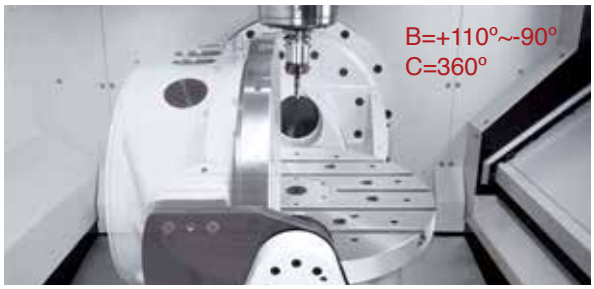
ISO 10791-4	0.010mm / 0.007mm

–Scraping all casting mounting surface to improve machine accuracy and flatness

Table Accuracy

–B/C indexing accuracy: 20/20 sec
(with optional angle encoder: 12/12 sec)

–B/C repeatability accuracy: 12/12 sec
(with optional angle encoder: 4/4 sec)

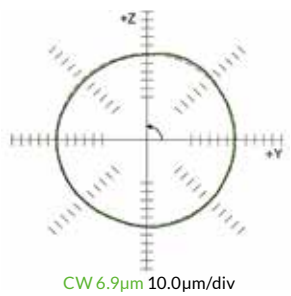


Accuracy

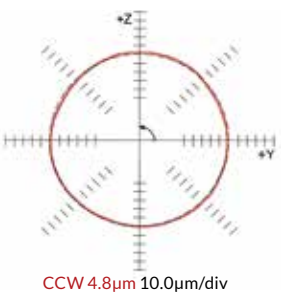
–Linear scales and angle encoders are installed

DBB

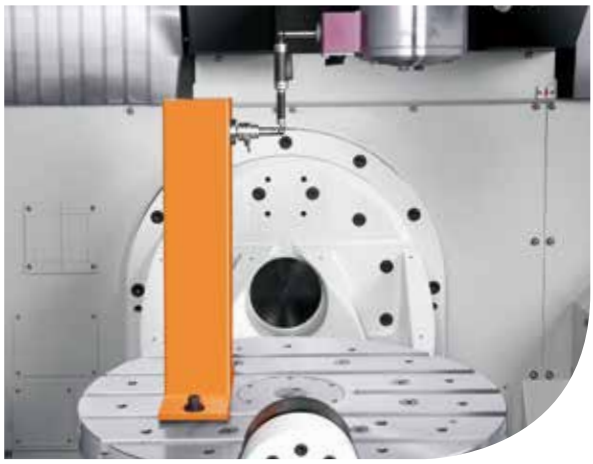
Y-Z plane measured resuliits	
Machine	MF700
Radius	150.000mm
Feedrate	500.0mm/min



CW 6.9µm 10.0µm/div



CCW 4.8µm 10.0µm/div



Technical Data

Technical Data	MF400		
Spindle code	12C	15C	20C
Work Range			
Table size (mm)	Ø320		
Travel X / Y / Z (mm)	410 / 610 / 510[2]		
Travel A[1] (degree)	+30° ~ -120°		
Travel C (degree)	360° (Continuous)		
Max. swing (mm)	Ø400		
Table surface to spindle nose (mm)	20 ~ 530		
Spindle nose to tilting center (mm)	20 ~ 530		
Max. work piece size (mm)	Ø400 x 300		
Table load capacity (kg)	100 (110 Nm)		
Feed drive			
Feed force X / Y / Z (N)	5,760 / 5,760 / 10,472 (F) 6,283 / 6,283 / 14,137 (S) 6,283 / 11,781 / 11,781 (M)	6,283 / 6,283 / 11,519 (F) 6,283 / 6,283 / 14,137 (S)	
	6.283 / 6,283 / 11,519 (F) 6,283 / 6,283 / 14,137 (S) 9,268 / 11,310 / 11,310 (T)	6.283 / 6,283 / 11,519 (F) 6,283 / 6,283 / 14,137 (S) 9,268 / 11,310 / 11,310 (T)	
Rapid movement X / Y / Z (m/min)	36 / 36 /24		
Rapid movement A / C (min^{-1})	A=25 / C=25		
Acceleration X / Y / Z (m/s^2)	3 / 3 / 2 (F; M; T) 3 / 2 / 2 (S)		
Accuracy Positioning / Repeatability			
ISO 10791-4	0.010mm / 0.007mm		

Control: (F) FANUC (S) SIEMENS (M) MITSUBISHI (T) HEIDENHAIN
5 FACE : (F) 0iMF Plus (S) 828D (M) M830 **5 AXES :** (F) 31iB5 (S) 840D (T) TNC640

MF500			MF700		
12C	15C	20C	12C	15C	20C
Ø 410			Ø650		
550 / 630 / 610[3]			820 (-460 ~ +360) / 570 (-285~+285) / 530		
+30° ~ -120°			+110° ~ -90°		
360° (Continuous)			360° (Continuous)		
Ø500			Ø700		
-25 ~ 585			115 ~ 645		
-25 ~ 585			65 ~ 595		
Ø 500 x 300			Ø700 x H500		
200 (200 Nm)			500		
5,760 / 10,472 / 10,472 (F) 6,283 / 14,137 / 14,137 (S) 6,283 / 11,781 / 11,781(M)	6,283 / 6,283 / 11,519 (F) 6,283 / 14,137 / 14,137 (S)		11,519 / 11,519 / 11,519 (F) 18,850 / 14,137 / 14,137 (S)		
6,283 / 11,519 / 11,519 (F)	6,283 / 11,519 / 11,519 (F)		11,519 / 11,519 / 11,519 (F)		
6,283 / 14,137 / 14,137 (S)	6,283 / 14,137 / 14,137 (S)		18,850 / 14,137 / 14,137 (S)		
9,268 / 11,310 / 11,310 (T)	9,268 / 11,310 / 11,310 (T)		14,661 / 11,310 / 11,310 (T)		
36 / 36 /24			36 / 36 /36		
A=11.1 / C=16.6			B=25 / C=25		
3 / 3 / 2			3 / 3 / 3		
0.010mm / 0.007mm					

Note: [1] MF700 is B axis [2] Option 120 ATC Z axis travel 550 mm [3] Option 120 ATC Z axis travel 620 mm

Technical Data

Technical Datas	MF400		
Spindle code	12C	15C	20C
Main spindle			
Spindle taper	BBT40		
Tool changer			
Tool selection	Random		
Magazine positions	30 (std.) 48 / 60 / 120 (opt.)		
Max. tool diameter (mm)	76.2		
w/o adjacent tool (mm)	125		
Max. tool length (mm)	280		
Max. tool weight (kg)	7		
CTC time – ISO 10791-9 (sec.)	9 ±0.2 (F; S; M; T)		
Coolant System			
Coolant tank capacity (Liter)	480		
Pump capacity–Nozzle coolant	75 L/min., 3 bar		
–Wash down	75 L/min., 3 bar		
Machine Size			
Height (mm)	3,070	3,140	
Floor space W x D (mm) - 30/48ATC	2,020 x 3,120		
Floor space W x D (mm) - 60ATC	2,020 x 3,160		
Weight (kg)	7,300(30ATC) / 7,600(48ATC)/ 7,800(60ATC)/ 8,670 (120ATC)		
Connections			
Main power	220V or 380V or 400V or 415V / 50Hz or 60Hz		
Power consumption (KVA)	25 (F; S; M)	35 (F) 30 (S)	30 (F)
	30 (F; T) 25 (S)	35 (F; T) 30 (S)	30 (F)

MF500			MF700		
12C	15C	20C	12C	15C	20C
BBT40			BBT40		
Random			Random		
30 (std.) 48 / 60 / 120 (opt.)			48 (std.) 60 / 90 / 120 (opt.)		
76.2			76.2		
125			125		
280			300		
7			7		
9 ±0.2 (F; S; M; T)			9 ±0.2 (F; S; M; T)		
480			450		
75 L/min., 3 bar			75 L/min., 3 bar		
75 L/min., 3 bar			75 L/min., 3 bar		
3,175			3,670		
2,280 x 3,225			3,520 x 4,400		
2,280 x 3,610			3,520 x 4,400		
7,480(30ATC)/ 7,780(48ATC)/ 7,980(60ATC)/ 8,850(120ATC)			10,500(48ATC) / 10,700(60ATC)/ 11,420(90ATC)/ 11,520(120ATC)		
220 ~ 230V / 50-60Hz, 380 ~ 415V / 50-60Hz			220 ~ 230V / 50-60Hz, 380 ~ 415V / 50-60Hz		
25 (F; S; M)	35 (F; S)	30 (F)	30 (F) 40(S)	35 (F) 40(S)	
30 (F; T) 25 (S)	35 (F; S) 40 (T)	30 (F)	30 (F) 40 (S; T)	35 (F) 40 (S; T)	

Standard/ Option Accessories

Standard / Option accessories	MF400		
	12C	15C	20C
FANUC 0iMF PLUS 15" (5 Faces)	○	○	○
SIEMENS 828D 10.4" (5 Faces)	○	○	×
MITSUBISHI M830 10.4" (5 Faces)	○	×	×
FANUC 31iB5 15" (5 Axes)	○	○	○
SIEMENS 840D 19" (5 Axes)	○	○	×
HEIDENHAIN TNC640 19"(5 Axes)	○	○	×
Spindle oil chiller	●	●	●
30 position tool magazine	●	●	●
48 position tool magazine	○	○	○
60 / 90[*1] / 120 position tool magazine	○	○	○
Pull stud for BT tooling system	○	○	○
Balance tooling for spindle warm up	○	○	○
ATC auto door	○	○	○
X / Y / Z linear scale	○	○	○
DD table package	×	×	×
Rotary & Tilting encoder	○	○	○
Transformer	○	○	○
Work probe[*2]	○	○	○
Tool length / breakage measurement[*2]	○	○	○
2 Port through table	○	○	○
4 Port through table[*3]	○	○	○
Coolant through spindle 20 bar	○	○	○
Scrape type Chip conveyor	○	○	○
Oil-mist collector	○	○	○
Filtration unit (paper)	○	○	○
Work light	●	●	●
Machine status light	●	●	●
Documentation (USB)	●	●	●
CE	○	○	○

Note: [*1] 90 ATC only for MF700 option [*2] BLUM or RENISHAW [*3] port ready only

MF500			MF700		
12C	15C	20C	12C	15C	20C
○	○	○	○	○	○
○	○	×	○	×	×
○	×	×	×	×	×
○	○	○	○	○	○
○	○	×	○	○	×
○	○	×	○	○	×
●	●	●	●	●	●
●	●	●	×	×	×
○	○	○	●	●	●
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	●	●	●
○	○	○	○	○	○
×	×	×	○	○	○
○	○	○	●	●	●
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	×	×	×
○	○	○	●	●	●
○	○	○	●	●	●
○	○	○	●	●	●
○	○	○	○	○	○
○	○	○	○	○	○
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
○	○	○	●	●	●

● Standard ○ Option × N/A

Spindle

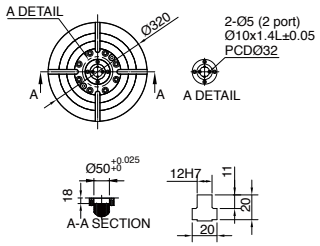
Spindle code	SC-4.2			MC-4.1R	MC-4.0R
Shaft diameter	Ø80 / Ø70			Ø80 / Ø65	Ø70 / Ø60
Spindle Taper	ISO-40			ISO-40	ISO-40
Transmission	Coupling			Coupling	Coupling
Spindle Speed	12,000			15,000	20,000
FANUC	α iI12 / 12,000	α iIT12 / 12,000		α iIT15 / 15,000	α IL8 / 20,000
Spindle base speed	1,500	1,500		1,400	1,500
Spindle output power kW S6-25%	18.5	18.5		26	15
Spindle output torque Nm S6-25%	118	118		177	125
HEIDENHAIN	QAN200U	QAN200UH	QAN260MH	1PH8131	-
Spindle base speed	1,500	1,500	1,500	2,000	-
Spindle output power kW S6-25%	17	17	32	27.7	-
Spindle output torque Nm S6-25%	108	108	204	132	-
SIEMENS	1PH8105	1PH8105	1PH8133	1PH8131	-
Spindle base speed	1,500	1,500	1,500	2,000	-
Spindle output power kW S6-25%	13.5	13.5	28.5	27.7	-
Spindle output torque Nm S6-25%	85	85	182	132	-
MITSUBISHI	SJ-VK30-16ZT	SJ-VKS30-16ZT	-	-	-
Spindle base speed	1,400	1,400	-	-	-
Spindle output power kW 30min	15	15	-	-	-
Spindle output torque Nm 30min	102	102	-	-	-
CTS Availability	×	●	○	○	○
Available NC adapting	○ FANUC	○ HEIDENHAIN	○ SIEMENS	○ MITSUBISHI	
MF400	○ ○ ○ ○	○ ○ ○ ○	-	○ ○ ○	○ ○ ○
MF500	○ ○ ○ ○	○ ○ ○ ○	-	○ ○ ○	○ ○ ○
MF700	-	○	○ ○ ○	○ ○ ○	○ ○ ○

● Standard ○ Option × N/A

Layout & Dimension

Table Dimension

MF400



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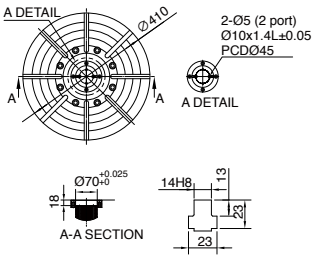

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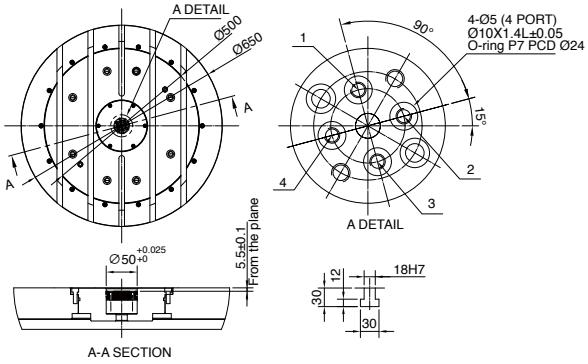

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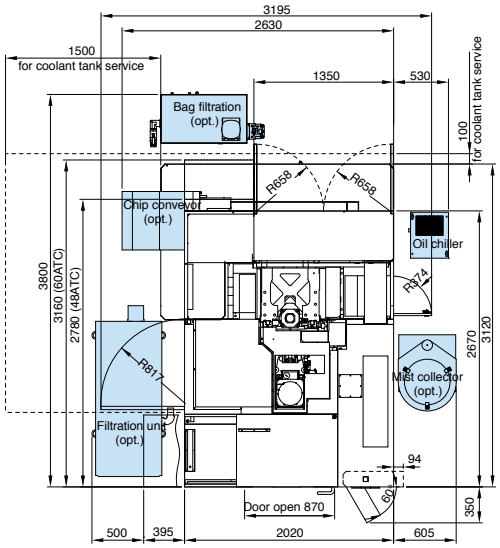

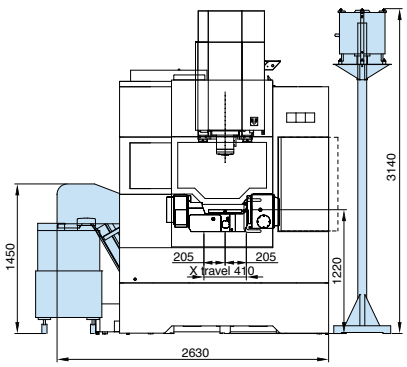

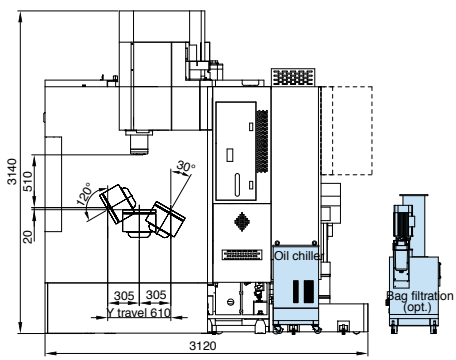

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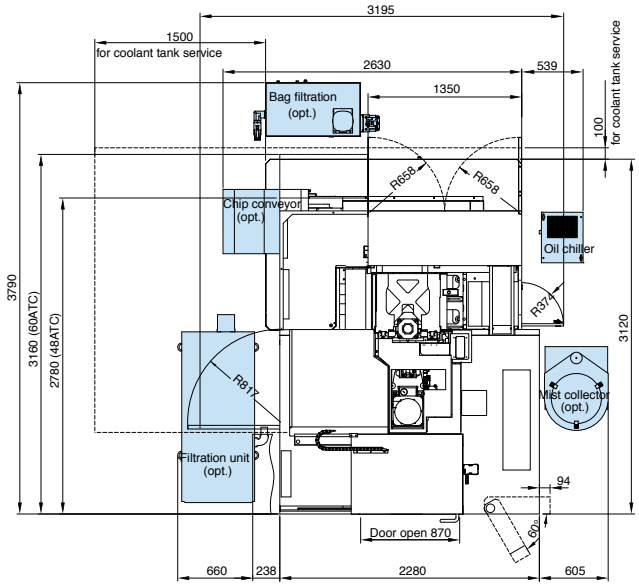
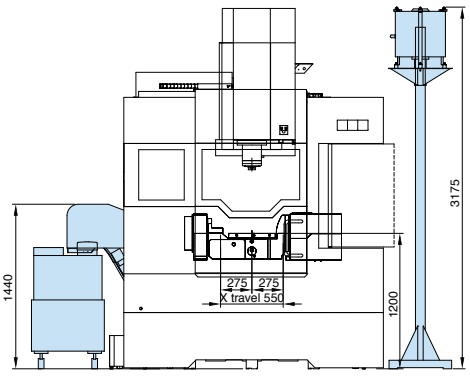
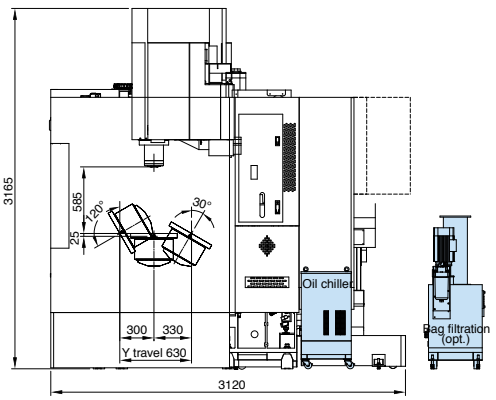
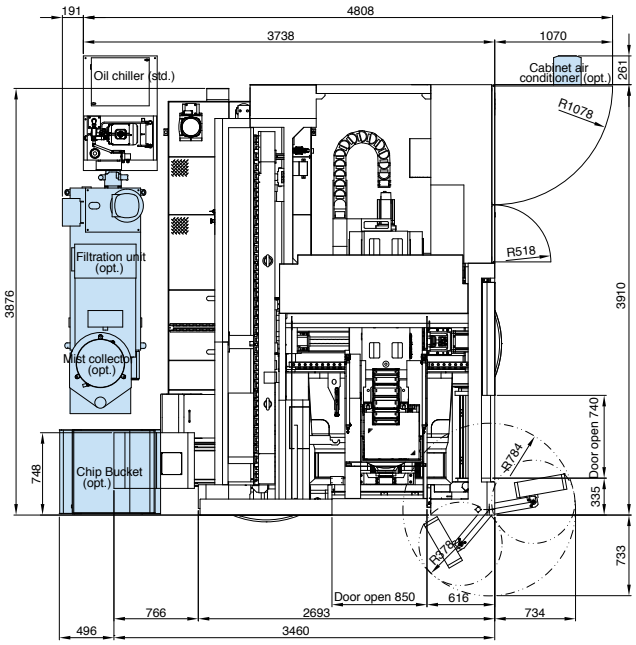
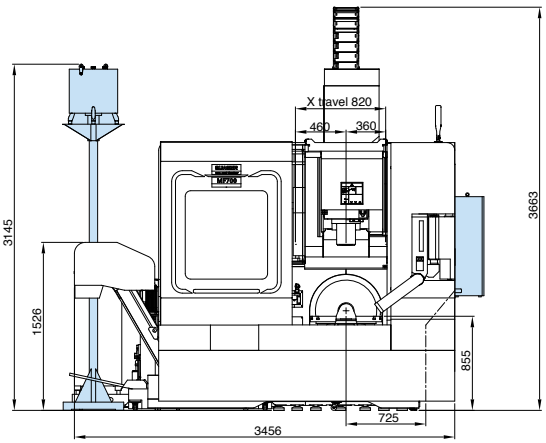

3195
1500
for coolant tank service
2630
539
1350
Bag filtration
(opt.)
100
for coolant tank service
R658
R658
Chip conveyor
(opt.)
Oil chiller
3790
3160 (60ATC)
2780 (48ATC)
R371
3120
R817
Mist collector
(opt.)
Filtration unit
(opt.)
94
Door open 870
60°
660
238
2280
605

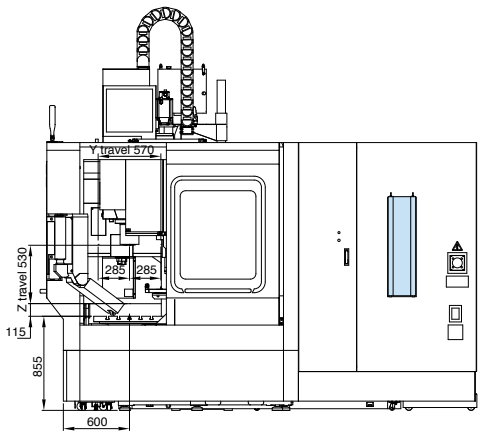

3175
1440
275
275
X travel 550
1200


3165
585
25
20°
30°
Oil chiller
300
330
Y travel 630
Bag filtration
(opt.)
3120

MF700


191
4808
3738
1070
Oil chiller (std.)
Cabinet air conditioner (opt.)
261
R1078
Filtration unit (opt.)
R518
3876
3910
Mist collector (opt.)
Door open 740
748
Chip Bucket (opt.)
R784
335
R784
733
Door open 850
616
766
2693
734
496
3460


X travel 820
460
360
3145
3663
1526
855
725
3456


Y travel 570
285
285
Z travel 530
115
855
600

Carbon Reduction & Green Power

Quaser in the future will not only dedicate to technology in new field, but also contribute to escalating Cooperate Social Responsibility, such as obtain carbon neutral within 5 years. Instead of urging, we will lead stakeholders to reach the goal together.

We are trying to implement a sustainable economy, build healthy cities with the world, and create a prosperous future.
Business or Citiaens, everyone is accountable to save the world.
We all know that without your support, we would never achieve it.
Let's create a green future and start it from today, everyday!

ISO 9001 / ISO 14001 / ISO 14952-1

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