Quaser

# MF SERIES



selections

# 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.

connections

## Series Overview


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corrections

# Workpiece Size & Machine Structure

## MF400









## MF500









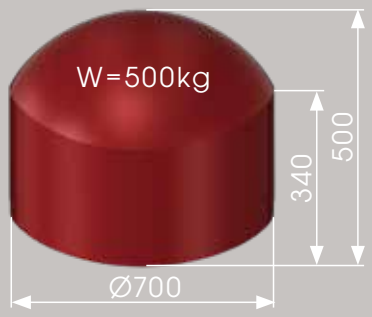
corrections

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

**5 axes simultaneously**
FANUC 31iB5, SIEMENS One,
HEIDENHAIN TNC7

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

## MF700





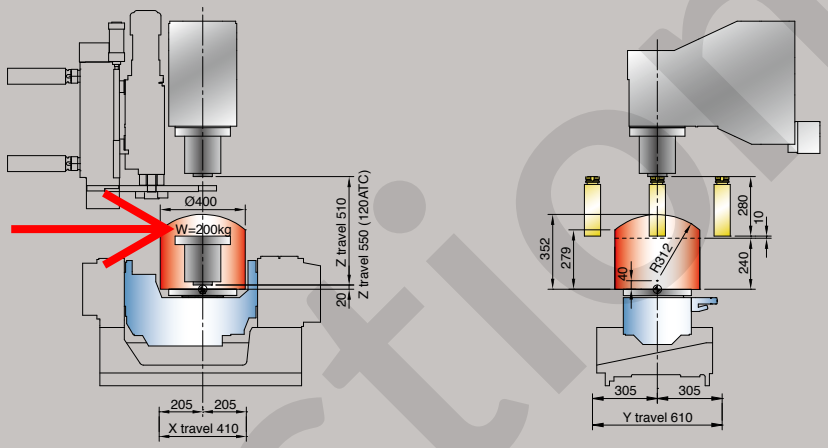




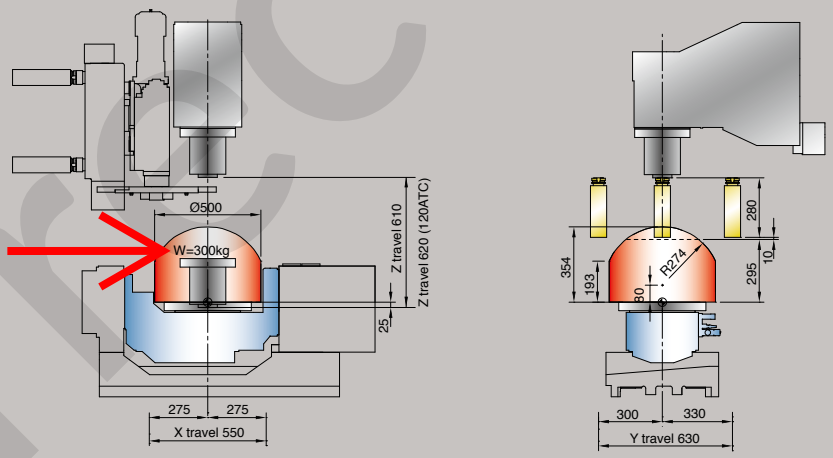
Corrections

# Cutting Area & Interference

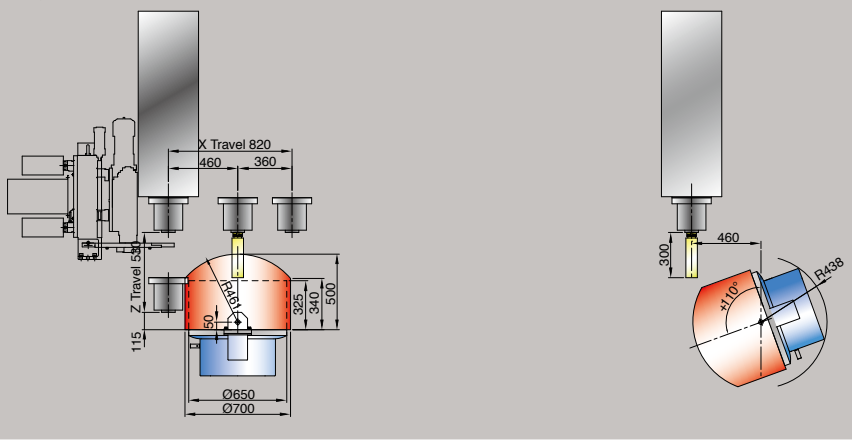
## MF400



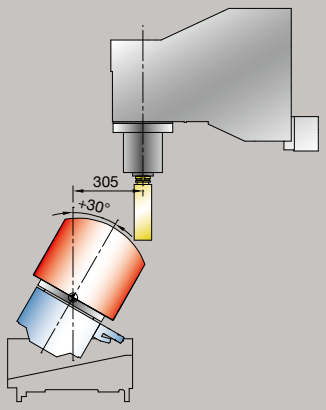

## MF500

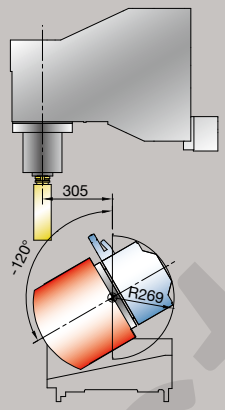


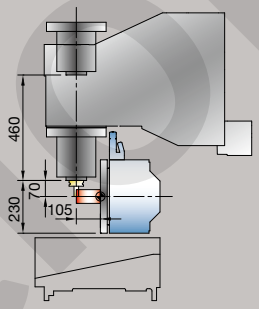

## MF700

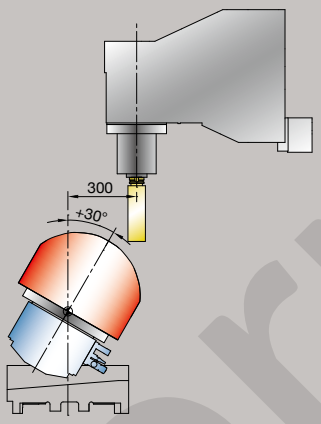


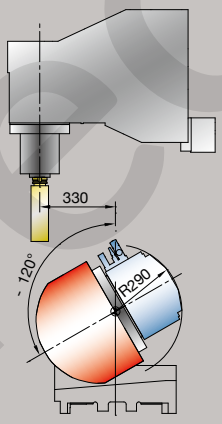

corrections

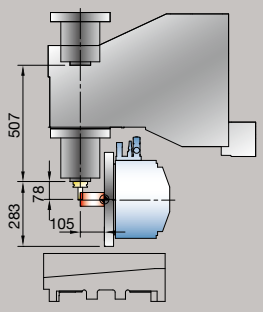


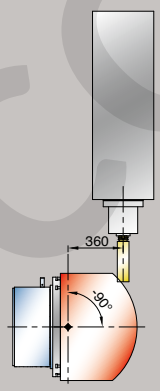



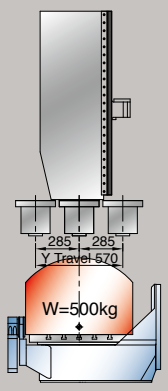



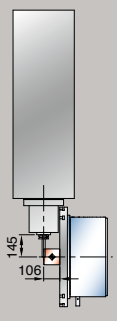




Corrections

# Application Samples


Turret Plate


A B C

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


D E F

**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 |



Corrections

# Spindle Technology

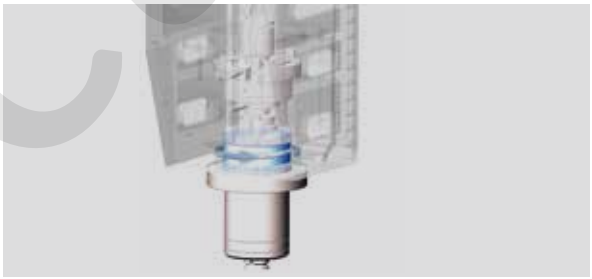


– 18.5 (S6-25%) Direct Coupling Spindle with 12,000 RPM, 15,000 RPM ( optional )
– CTS options for Highspeed Machining



**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




copyrights

corrections

# 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



| | 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) | 200 | | 300 | | 500 | |
| Allowable unblancing workpiece moment (Nm) | 110 | | 200 | | 200 | |
| Maximum R.P.M ($min^{-1}$) | 25 | 25 | 16.6 | 11.1 | 25 | 25 |

corrections

# ATC and ATC Maintenance

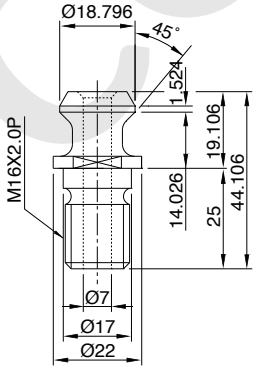
## Flexible Options

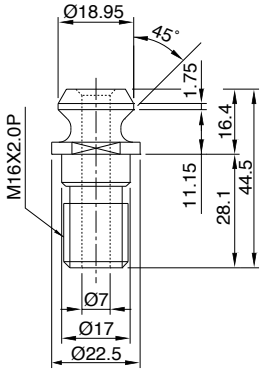


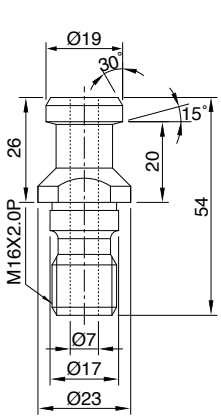
The MF700's standard tool capacity is 48T, but we also offer optional upgrades to 60, 90, and 120 tools to meet various machining demands.

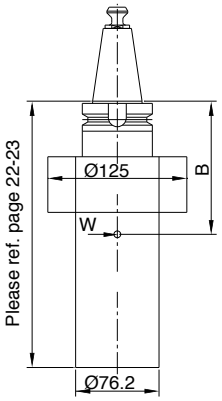
### Pull stud and applicable tools

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



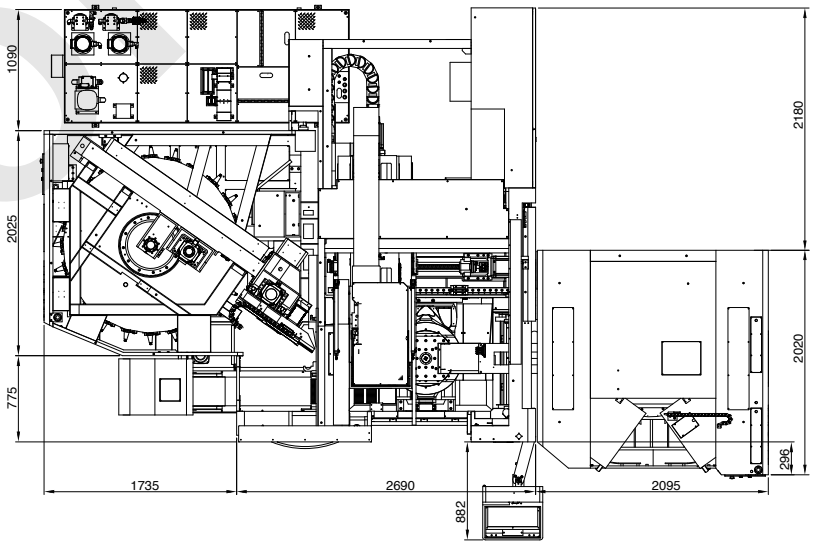



# Automation




| → APC | | → ATC | |
|---|---|---|---|
| Number of pallet (pcs) | 8 or 6 | Tool specification | #40 (BT/ISO/DIN/ HSK63A) |
| Table size (mm) | 400x400 / 500x500 | Tool magazine capacity (pcs) | 216 (210 storage +6 spare storage) |
| Max. work piece size (mm) | Ø500 x H368 / Ø600 x H368 | Max. tool weight (kg) | 7 |
| Table load capacity (kg) | 250(with pallet) / 350(with pallet) | Allowed max tool weight (kg) | 1,512 |
| Exchange Way | Lift and rotation | Max. tool length (mm) | 300 |
| Hight (mm) | 2,440 | Max. tool diameter (mm) | Ø125 |
| Floor space W x D (mm) | 2,085 x 2,030 | Floor space (mm) | 2,435 x 2,025 x 2,950 |
| Weight (kg) | 2,860 | Estimated weight of turret (without tool) (kg) | 3,600 |

Note: Layout of MF700 with Cell Pallet System.




connections

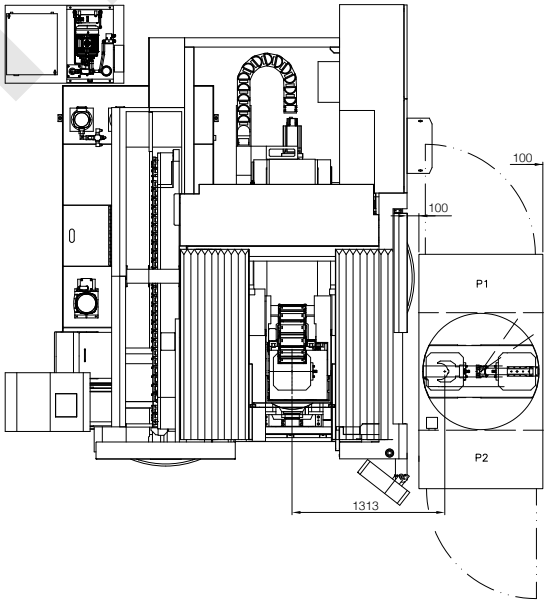


| Technical Details HALTER LoadAssistant 20 | | |
|---|---|---|
| Maximum load capacity robot arm | kg | 20 |
| Minimum workpiece dimension LxW | mm | 10x10 |
| Maximum workpiece dimension LxW | mm | 230x230 |
| Maximum height of workpiece | mm | 250 |
| System size L x W x H | mm | 1,750 x 1,434 x 2,220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



| 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.




Corrections

# Easy Operation

## Working with Convenience and Safety







**Accessibility** (MF700)

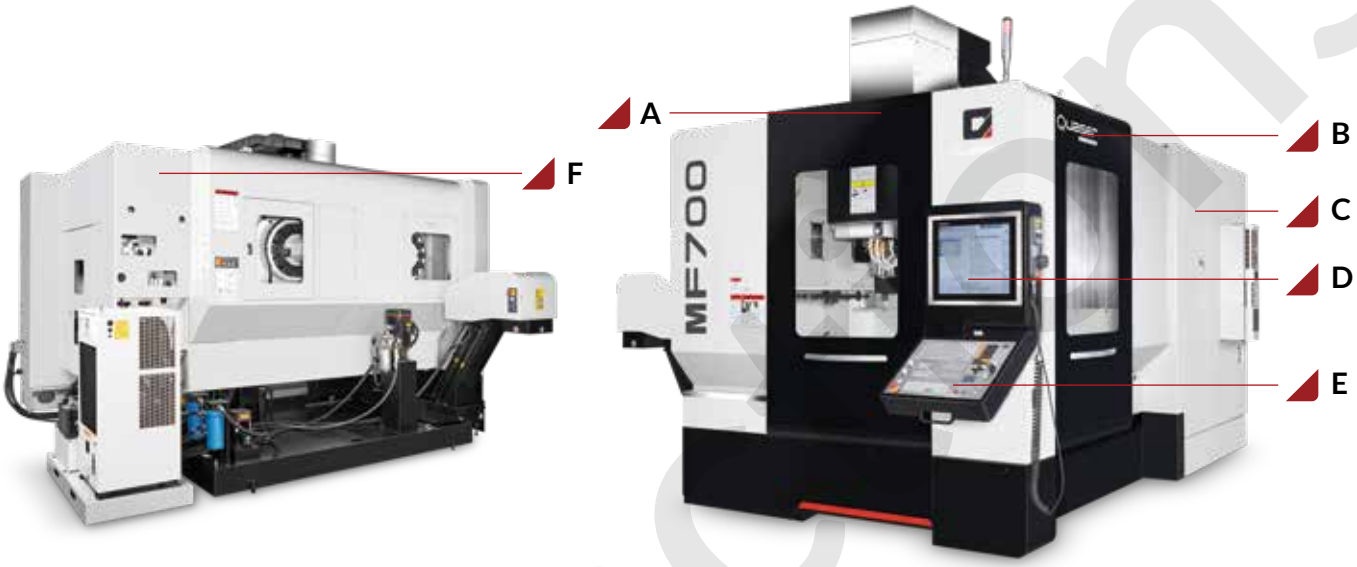
a. Max. size when front door open: 850mm
b. From center of table to front door: 600mm
c. Side door opening: 751mm
d. Distance from operator to spindle: 365mm




(MF400/MF500)

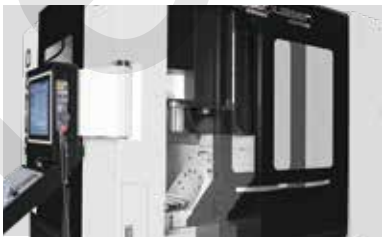
e. Max. size when operator door open
   - MF400 / MF500: 870mm
f. From center of table to operator door
   - MF400 / MF500: 605mm

Corrections






**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



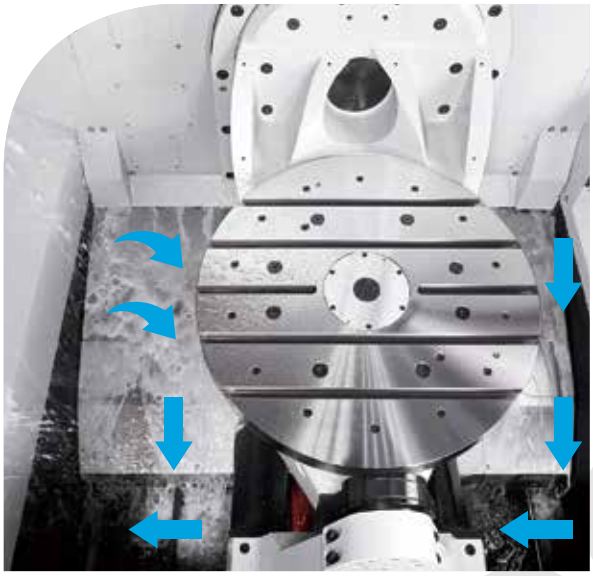
**E. Control Panel**
Ergonomic operation panel with adjustable angle.

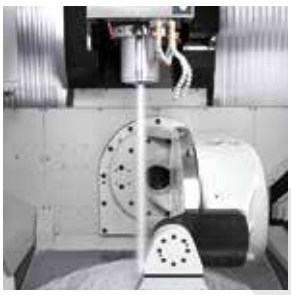


**F. Centralized Configuration**
Lubrication and pneumatic panel easy to maintenance.

# Chip Removal System Design

## Save machine cleaning and maintenance time

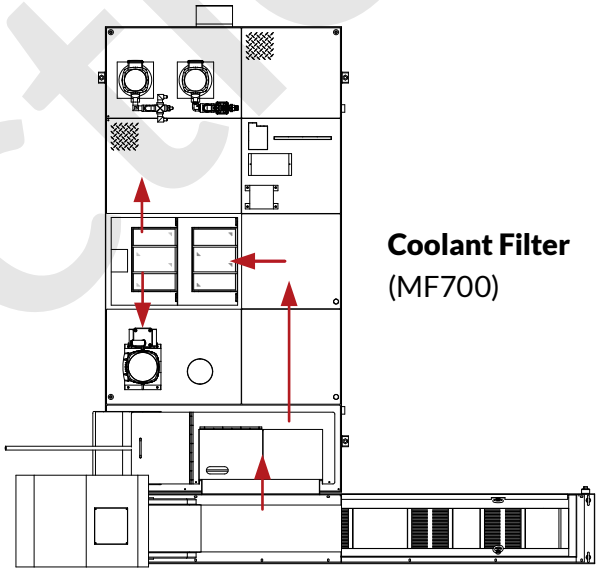






–Optimized chip removal system design allows chips to directly fall on the chip conveyor.

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



**Coolant Filter**
(MF700)



–Internal chip augers (MF400/MF500)

corrections

# Accuracy table

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

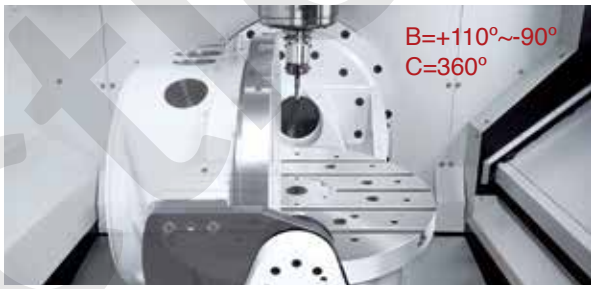




## Table Accuracy

–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)



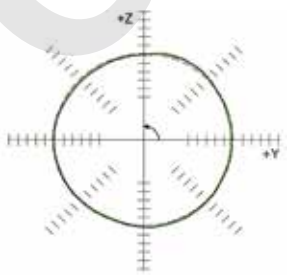

## Accuracy

–Linear scales and angle encoders are installed

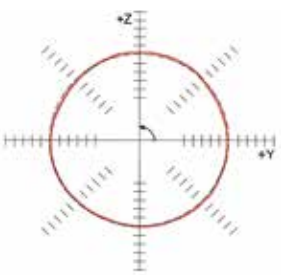


## DBB

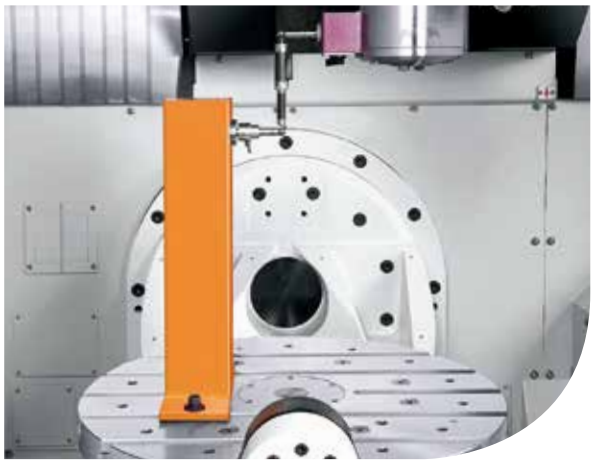
| Y-Z plane measured resuliits | |
|---|---|
| Machine | MF700 |
| Radius | 150.000mm |
| Feedrate | 500.0mm/min |




CW 6.9µm 10.0µm/div




CCW 4.8µm 10.0µm/div



Correctus

# Technical Data

| Technical Data | MF400 | | | | |
|---|---|---|---|---|---|
| Spindle code | 12C | 15C | 20C[4] | 18M | 24M |
| **Main spindle** | | | | | |
| Spindle taper | 40 Taper | | | | |
| **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) | 200 | | | | |
| **Feed drive** | | | | | |
| Feed force X / Y / Z (N) | F | 5,760 / 5,760 / 10,472 | 6,283 / 6,283 / 11,519 | | |
| | S | 11,519 / 11,519 / 14,137 | 11,519 / 11,519 / 14,137 | | |
| | F | 6,283 / 6,283 / 11,519 | 6,283 / 6,283 / 11,519 | | |
| | S | 11,519 / 11,519 / 14,137 | 11,519 / 11,519 / 14,137 | | |
| | T | 9,268 / 11,310 / 11,310 | 9,268 / 11,310 / 11,310 | | |
| 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;T) 3 / 2 / 2 (S) | | | | |

**Control:** (F) FANUC (S) SIEMENS (T) HEIDENHAIN
**5 FACE :** (F) 0iMF Plus (S) 828D **5 AXES :** (F) 31iB5 (S) ONE (T) TNC7

Corrections

| MF500 | | | | | MF700 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12C | 15C | 20C[4] | 18M | 24M | 12C | 15C | 20C[4] | 18M | 24M |
| 40 Taper | | | | | | | | | |
| 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 | | | | |
| 300 | | | | | 500 | | | | |
| 5,760 / 10,472 / 10,472 | | 6,283 / 6,283 / 11,519 | | | 11,519 / 11,519 / 11,519 | | | | |
| 11,519 / 15,708 / 14,137 | | 11,519 / 15,708 / 14,137 | | | 18,850 / 14,137 / 14,137 | | | | |
| 6,283 / 11,519 / 11,519 | | 6,283 / 11,519 / 11,519 | | | 11,519 / 11,519 / 11,519 | | | | |
| 11,519 / 15,708 / 14,137 | | 11,519 / 15,708 / 14,137 | | | 18,850 / 14,137 / 14,137 | | | | |
| 9,268 / 11,310 / 11,310 | | 9,268 / 11,310 / 11,310 | | | 14,661 / 11,310 / 11,310 | | | | |
| 36 / 36 / 24 | | | | | 36 / 36 /36 | | | | |
| A=11.1 / C=16.6 | | | | | B=25 / C=25 | | | | |
| 3 / 3 / 2 | | | | | 3 / 3 / 3 | | | | |

**Note:** [1] MF700 is B axis [2] Option 120 ATC Z axis travel 550 mm [3] Option 120 ATC Z axis travel 620 mm
[4] Only for FANUC control. [5] The depth of MF700 is able to hold from 48ATC up to 120 ATC.
* Machine specifications might be different from the catalogue if there is any specification update.

Corrections

# Technical Data

| Technical Datas | MF400 | | | | |
|---|---|---|---|---|---|
| Spindle code | 12C | 15C | 20C[4] | 18M | 24M |
| **Main spindle** | | | | | |
| Spindle taper | 40 Taper | | | | |
| **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.)-60Hz | 9±0.2 | | | | |
| **Coolant System** | | | | | |
| Coolant tank capacity (Liter) | 480L | | | | |
| Pump capacity | | | | | |
| -Nozzle coolant | 75 L/min., 3 bar | | | | |
| -Coolant through spindle | 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 | | | | |
| 60ATC | 2,020 x 3,160 | | | | |
| Weight (kg) | 7,300 (30ATC) / 7,600 (48ATC) / 7,800 (60ATC) / 8,670 (120ATC) | | | | |
| **Connections** | | | | | |
| Main power | 220~230V / 50~60 Hz, 380~415V/50~60Hz | | | | |
| Power consumption (KVA) | 25 (F; S) | 35(F)30(S) | 30 (F) | 40(F) 50(S) | |
| | 30 (F; T)<br>25 (S) | 35 (F; T)<br>30 (S) | 30 (F) | 40(F) 50(T;S) | |

corrections

| MF500 | | | | | MF700 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12C | 15C | 20C[4] | 18M | 24M | 12C | 15C | 20C[4] | 18M | 24M |
| 40 Taper | | | | | | | | | |
| Random<br>30 (std.) 48 / 60 / 120 (opt.)<br>76.2<br>125<br>280<br>7<br>9 ±0.2 | | | | | Random<br>48 (std.) 60 / 90 / 120 (opt.)<br>76.2<br>125<br>300<br>7<br>9 ±0.2 | | | | |
| 480L<br><br>75 L/min., 3 bar<br>75 L/min., 3 bar | | | | | 450L<br><br>75 L/min., 3 bar<br>75 L/min., 3 bar | | | | |
| 3,175<br><br>2,280 x 3,225<br>2,280 x 3,610<br>7,480 (30ATC) / 7,780 (48ATC) /<br>7,980 (60ATC) / 8,850 (120ATC) | | | | | 3,130<br><br>3,680 x 4,220[5]<br><br>10,500 (48ATC) / 10,700 (60ATC) /<br>11,420 (90ATC) / 11,520 (120ATC) | | | | |
| 220~230V / 50~60 Hz, 380~415V/50~60Hz | | | | | | | | | |
| 25(F; S) | 35(F; S) | 30(F) | 40(F) 50(S) | | 40(F) 45(S) | 40(F) 45(S) | 40(F) | 50(F) 60(T;S) | |
| 30(F; T)<br>25(S) | 35(F; S)<br>40(T) | 30(F) | 40(F)<br>50(T;S) | | 40(F)<br>45(T;S) | 40(F)<br>45(T;S) | 40(F) | 50(F)<br>60(T;S) | |

Corrections

# Standard / Optional Accessories

| Standard / Optional accessories | MF400 | | | | |
|---|---|---|---|---|---|
| Spindle code | 12C | 15C | 20C | 18M | 24M |
| FANUC 0iMF Plus (5 Faces) | ○ | ○ | ○ | ○ | ○ |
| SIEMENS 828D (5 Faces) | ○ | ○ | × | ○ | ○ |
| FANUC 31iB5 (5 Axes) | ○ | ○ | ○ | ○ | ○ |
| SIEMENS One (5 Axes) | ○ | ○ | × | ○ | ○ |
| HEIDENHAIN TNC7 (5 Axes) | ○ | ○ | × | ○ | ○ |
| Spindle oil chiller | ● | ● | ● | ● | ● |
| 30 position tool magazines | ● | ● | ● | ● | ● |
| 48 position tool magazines | ○ | ○ | ○ | ○ | ○ |
| 60 / 90[*1] / 120 position tool magazine | ○ | ○ | ○ | ○ | ○ |
| Balance tooling for spindle warm up | ○ | ○ | ○ | ○ | ○ |
| ATC auto door | ○ | ○ | ○ | ○ | ○ |
| X / Y / Z linear scale | ○ | ○ | ○ | ○ | ○ |
| Rotary & Tilting encoder | ○ | ○ | ○ | ○ | ○ |
| Transformer | ○ | ○ | ○ | ○ | ○ |
| Work probe[*2] | ○ | ○ | ○ | ○ | ○ |
| Tool length / breakage measurement[*2] | ○ | ○ | ○ | ○ | ○ |
| 4 Port through table[*3] | ○ | ○ | ○ | ○ | ○ |
| 6 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

Corrections

| MF500 | | | | | MF700 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12C | 15C | 20C | 18M | 24M | 12C | 15C | 20C | 18M | 24M |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | × | ○ | ○ | ○ | ○ | × | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | × | ○ | ○ | ○ | ○ | × | ○ | ○ |
| ○ | ○ | × | ○ | ○ | ○ | ○ | × | ○ | ○ |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | × | × | × | × | × |
| ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | × | × | × | × | × |
| × | × | × | × | × | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ | ● | ● | ● | ● | ● |

●=Standard ○=Option ×=N/A

corrections

# Spindle

| Spindle code | SC-4.2 | | | MC-4.1R |
|---|---|---|---|---|
| Shaft diameter | Ø80 / Ø70 | | | Ø80 / Ø65 |
| Spindle Taper | ISO-40 | | | ISO-40 / HSK A63 |
| Bearing arrangement | << >> | | | < >= |
| Ball bearing type | Ceramic | | | Ceramic |
| Roller bearing type | - | | | Steel |
| Bearing lubrication | Grease packed | | | Re-grease |
| Transmission | Coupling | | | Coupling |
| Spindle Speed | 12,000 | | | 15,000 |
| **FANUC (S6-25%)** | | | | |
| Motor | α iI12/12,000 | α iIT12/12,000 ( β iSVSP-18-B) | | α iIT15/15,000 (SPM30) |
| Spindle base speed ($min^{-1}$) | 1,500 | 1,500 | | 1,400 |
| Spindle power (kW) | 18.5 | 18.5 | | 26 |
| Spindle torque (Nm) | 118 | 118 | | 177 |
| **HEIDENHAIN (S6-25%)** | | | | |
| Motor | QAN200U | QAN200UH | QAN260MH | 1PH8131 |
| Spindle base speed ($min^{-1}$) | 1,500 | 1,500 | 1,500 | 2,000 |
| Spindle power (kW) | 17 | 17 | 32 | 27.7 |
| Spindle torque (Nm) | 108 | 108 | 204 | 132 |
| **SIEMENS (S6-25%)** | | | | |
| Motor | 1PH8105 | 1PH8105 | 1PH8133 | 1PH8131 |
| Spindle base speed ($min^{-1}$) | 1,500 | 1,500 | 1,500 | 2,000 |
| Spindle power (kW) | 13.5 | 13.5 | 28.5 | 27.7 |
| Spindle torque (Nm) | 85 | 85 | 182 | 132 |
| CTS Availability | × | ● | ● | ● |
| Available NC adapting | (F) FANUC (T) HEIDENHAIN (S) SIEMENS | | | |
| MF400 | ○ ○ ○ | ○ ○ ○ | - | ○ ○ ○ |
| MF500 | ○ ○ ○ | ○ ○ ○ | - | ○ ○ ○ |
| MF700 | - | ○ | ○ ○ ○ | ○ ○ ○ |

● (F) =FANUC ● (T) =HEIDENHAIN ● (S) =SIEMENS

Corrections

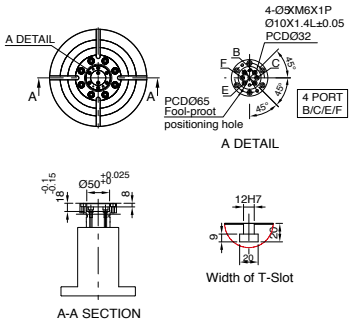
| MC-4.0R | MS30-20 | MS30-24 |
|---|---|---|
| Ø70 / Ø60 | Ø80 | Ø80 |
| ISO-40 / HSK A63 | HSK A63 | HSK A63 |
| < >= | <<> > | <<> > |
| Ceramic | Ceramic | Ceramic |
| Ceramic | - | - |
| Re-grease | Oil air | Oil air |
| Coupling | Built-in | Built-in |
| 20,000 | 18,000 | 24,000 |
| | | |
| α iIL8/20,000 (SPM30) | - | - |
| 1,500 | 2,420 | 2,650 |
| 15 | 31.7 | 32.2 |
| 125 | 125 | 116 |
| | | |
| - | - | - |
| - | 3,330 | 3,460 |
| - | 43.5 | 42 |
| - | 125 | 116 |
| | | |
| - | - | - |
| - | 3,330 | 3,460 |
| - | 43.5 | 42 |
| - | 125 | 116 |
| ● | ● | ● |
| (F) FANUC (T) HEIDENHAIN (S) SIEMENS | | |
| ○ × × | ○ ○ ○ | ○ ○ ○ |
| ○ × × | ○ ○ ○ | ○ ○ ○ |
| ○ × × | ○ ○ ○ | ○ ○ ○ |

Corrections

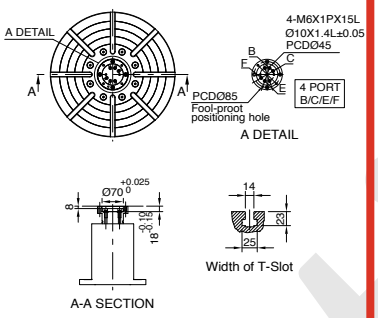
# Layout & Dimension

## Table Dimension

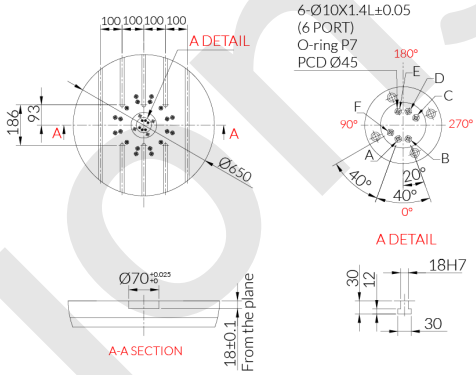
### MF400



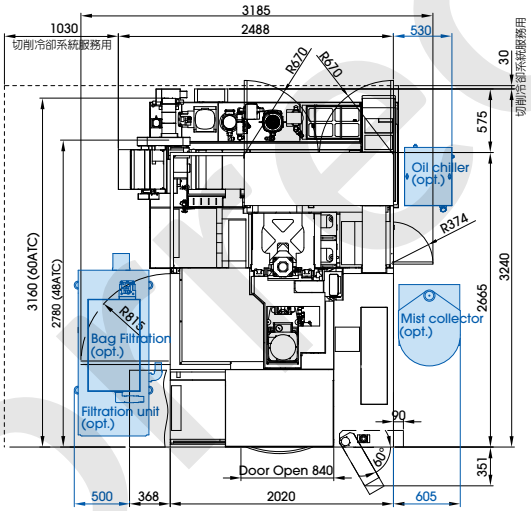

### MF500

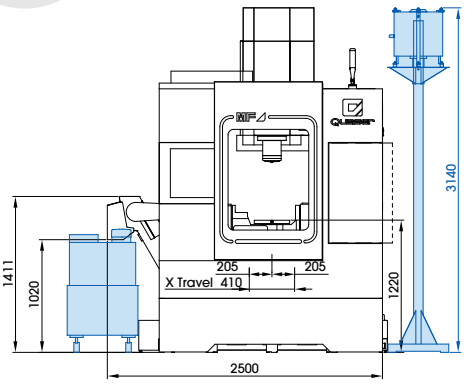


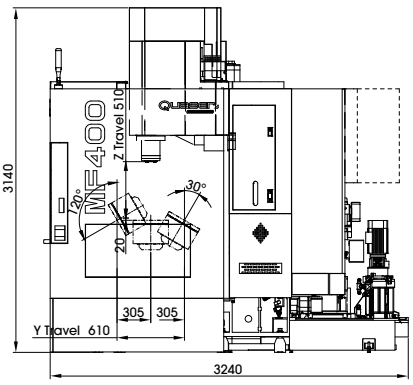

### MF700




## MF400

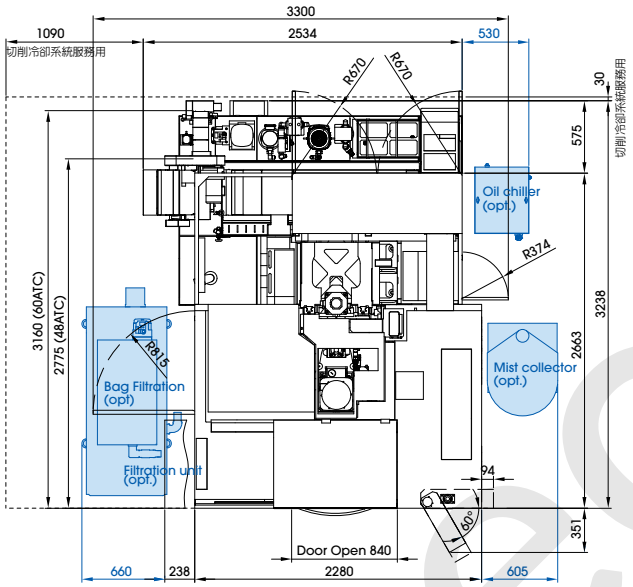


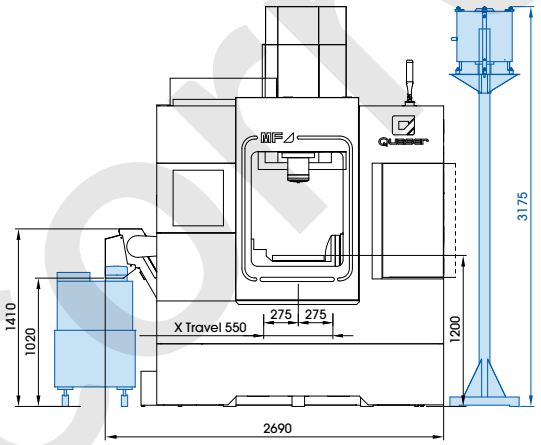



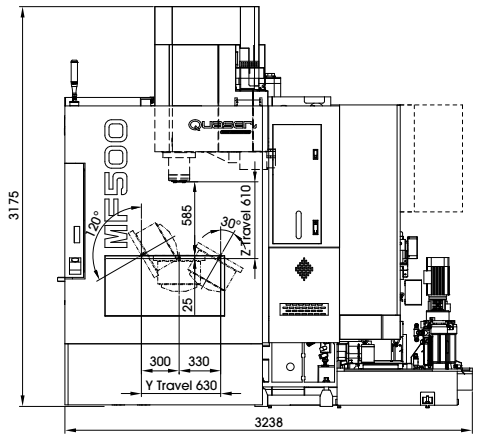




Corrections

# MF500

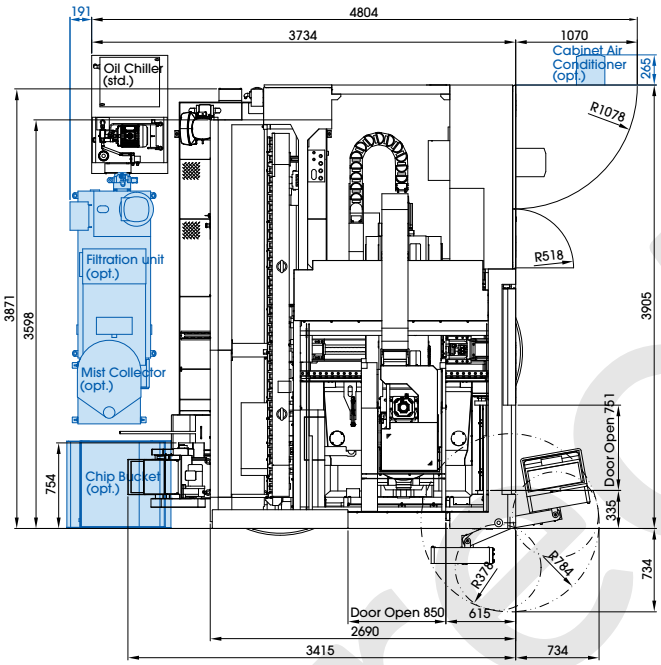


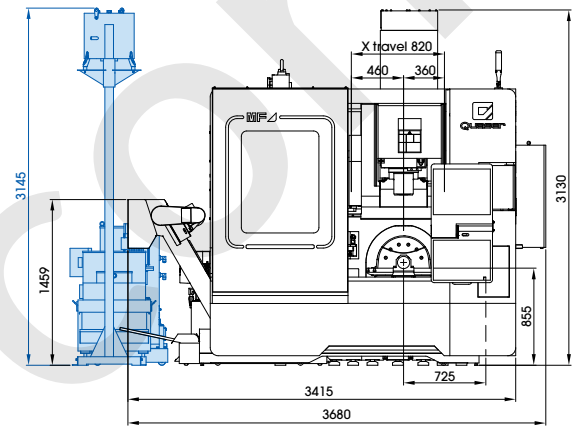



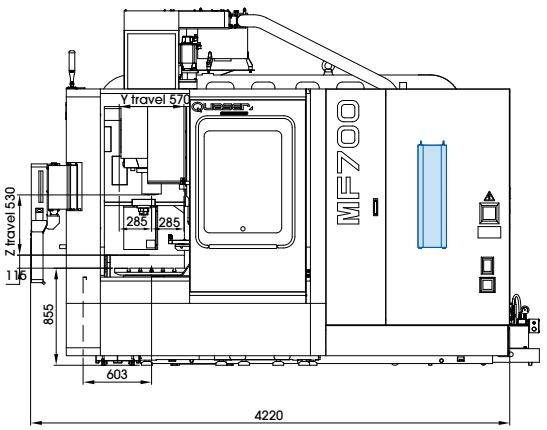




corrections

## MF700




corrections

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connections

Specimen

MF-E-20/12/2024

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Quaser

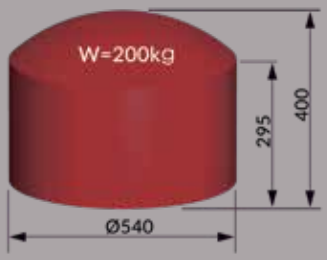
# UX500



# Structure & Capability

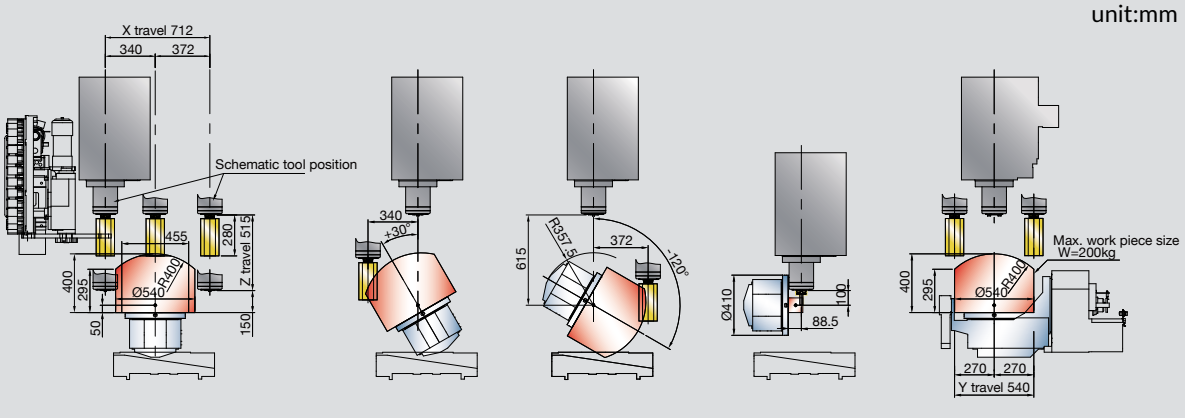



| | UX500 | |
|---|---|---|
| | Rotary Axis (C-axis) | Tilting Axis (B-axis) |
| Drive method | Worm Gear Drive | |
| Max. workpiece size (mm) | Ø 540 x 400 | |
| Table load capacity (kg) | 200 | |
| Maximum R.P.M ($min^{-1}$) | 22.2 | 16.6(F/S); 22.2(T) |
| Indexing accuracy (arcsec) | 8* | 12* |
| Repeatability (arcsec) | 4* | 8* |
| Clamping torque (Nm) | 1,600 | 2,500 |



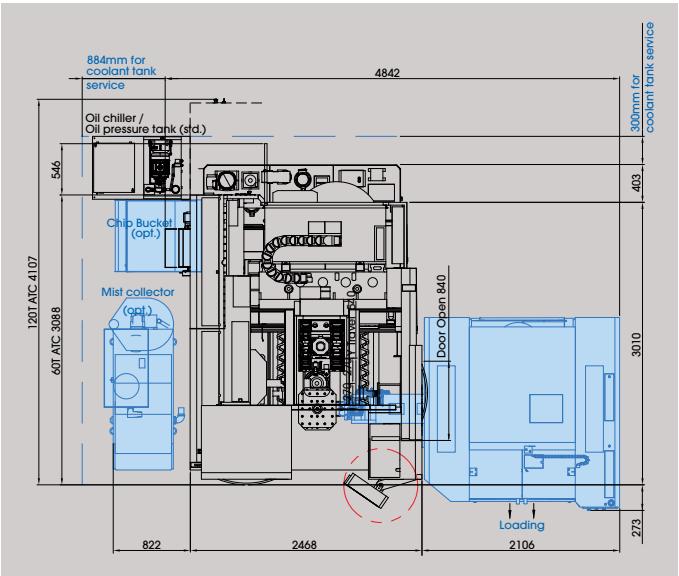

Note: * With rotary encoder.
- Accuracy data are measured values for an individual machine and are provided for reference. Actual values are subject to the inspection results of the machine shipped.

unit:mm



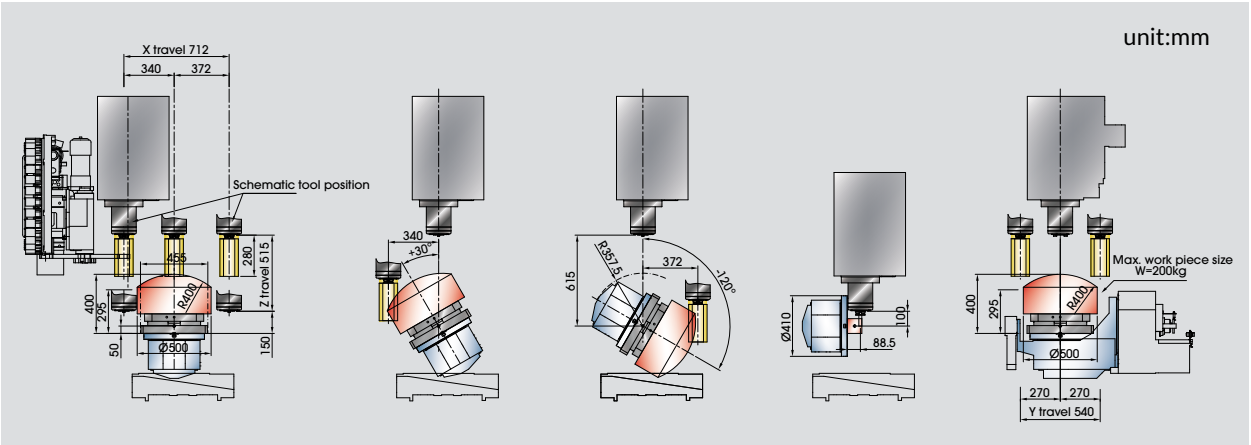
# Automated solution



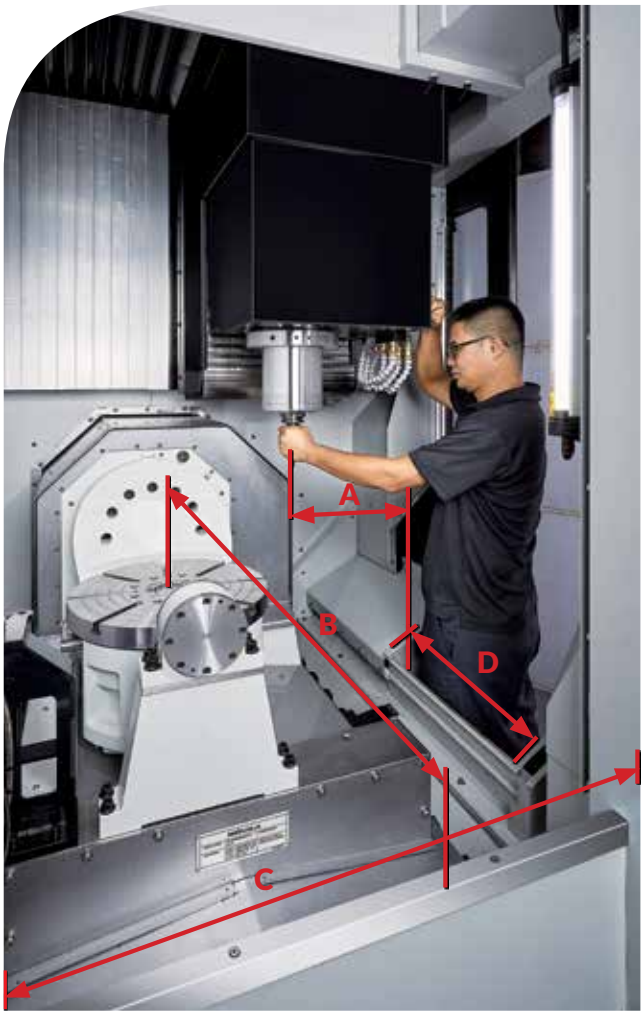




| Cell | |
|---|---|
| Number of pallet (pcs) | 8 |
| Table size (mm) | 400 x 400 |
| Max. work piece size (mm) | Ø 500 x H368 |
| Exchange Way | Lift and rotation |
| Height (mm) | 2,440 |
| Floor space WxD (mm) | 2,085 x 2,030 |
| Weight (kg) | 2,860 |

unit:mm



# Ergonomic Operation
















| UX500 | | |
|---|---|---|
| A | Spindle to side door at a convenient (mm) | 295 |
| B | From center of table to front door (mm) | 654 |
| C | Max. size when front door open (mm) | 820 |
| D | Side door opening (mm) | 545 |
| E | Swivel type operation panel | |
| F | Documentation & hand tool shelf | |
| G | Tool loading/ unloading on magazine side | |
| H | Centralized configuration of lubrication and pneumatic panel | |

# Standard / Optional Accessories

| Standard / Optional accessories | UX500 | | | |
|---|---|---|---|---|
| Spindle code | 12C | 15C | 18M | 24M |
| FANUC (5 Face / 5 Axes) | ○ | | ○ | |
| HEIDENHAIN (5 Face / 5 Axes) | ○ | | ○ | |
| SIEMENS (5 Face / 5 Axes) | ○ | | ○ | |
| Spindle oil chiller | ● | | ● | |
| 40 taper / 30 position tool magazine | ● | | ● | |
| 40 taper / 48 / 60 / 90 / 120 position tool magazine | ○ | | ○ | |
| Balance tooling for spindle warm up | ○ | | ○ | |
| BBT spindle attachment (Double contact) | ● | | ● | |
| ATC auto door | ● | | ● | |
| Auto lube | ● | | ● | |
| Auto grease | ○ | | ○ | |
| X / Y / Z linear scale | ○ | | ○ | |
| Rotary encoder on B & C axes | ● | | ● | |
| Transformer [1] | ○ | | ○ | |
| Work probe | ○ | | ○ | |
| Tool length / breakage measurement | ○ | | ○ | |
| 6 Port through table * | ○ | | ○ | |
| Coolant system | ● | | ● | |
| Coolant through ball screw | ○ | | ○ | |
| Coolant through spindle 20 bar | ○ | | ○ | |
| Coolant wash gun | ● | | ● | |
| Coolant wash down | ● | | ● | |
| Air gun | ○ | | ○ | |
| Chip conveyor | ● | | ● | |
| Chip augers | ● | | ● | |
| Cutter air blast | ● | | ● | |
| Oil-mist collector | ○ | | ○ | |
| Filtration unit (paper) | ○ | | ○ | |
| Operator auto door | ○ | | ○ | |
| Documentation (USB) [2] | ● | | ● | |
| Work light | ● | | ● | |
| Machine status light | ● | | ● | |
| CE & EMC | ○ | | ○ | |

**Note:** [1] Transformer as standard or optional item will be varied according to control system and power supply condition.
[2] Paper documentation is optional
* For option port through table with port-ready only and limited for Factory-assembled .

● Standard ○ Option ╳ N/A

# Technical Data

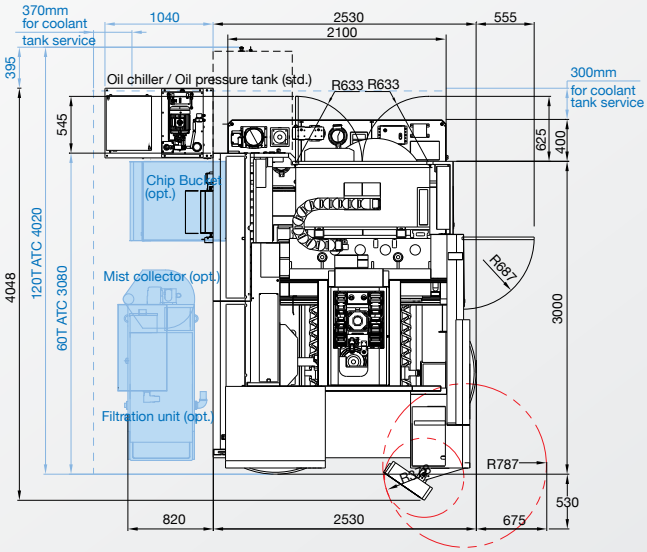
| Technical Data | | UX500 | | | |
|---|---|---|---|---|---|
| Spindle code | | 12C | 15C | 18M | 24M |
| **Work range** | | | | | |
| Table size (mm) | | Ø410 | | | |
| Travel | X / Y / Z (mm) | 712 / 540 / 515 | | | |
| | B / C (degree) | +30° ~ -120° / 360° (Continuous) | | | |
| Max. swing (mm) | | Ø540 | | | |
| Table surface to spindle nose (mm) | | 150 ~ 665 | | | |
| Spindle nose to tilting center at 90° (mm) | | 150 ~ 665 | | | |
| Max. work piece size (mm) | | Ø540 x H400 (1) | | | |
| Table load capacity (kg) | | 200 | | | |
| **Feed drive** | | | | | |
| Feed force | X / Y / Z (N) | 6,283 / 6,283 / 11,519 (F)<br>6,283 / 6,283 / 14,137 (S)<br>9,268 / 9,268 / 11,310 (T) | | | |
| Rapid movement | X / Y / Z (m/min) | 36 / 36 / 36 | | | |
| | B / C ($min^{-1}$) | B=22.2(T) I6.6(F ; S) / C=22.2 | | | |
| Acceleration | X / Y / Z ($m/s^2$) | 3 / 3 / 2.5 | | | |
| Dia. & pitch of the ball screw (mm) | | Ø40 / P= 12/ 12/ 12 | | | |
| **Main spindle** | | | | | |
| Spindle taper | | BBT40 | | HSK A63 | |
| Max. spindle speed | | 12,000 | 15,000 | 18,000 | 24,000 |
| Spindle base speed | F | 1,500 | 1,400 | 2,420 | 2,650 |
| | T / S | 1,500 | 2,000 | 3,330 | 3,460 |
| Spindle output power (kW) | F* | 18.5 | 26 | 31.7 | 32.2 |
| | T* / S* | 17 / 13.5 | 27.7 | 43.5 | 42 |
| Spindle output torque (Nm) | F* | 118 | 177 | 125 | 116 |
| | T* / S* | 108 / 85 | 132 | 125 | 116 |
| Spindle transmission | | Coupling | | Built-in | |

| Technical Data | UX500 | | | |
|---|---|---|---|---|
| Spindle code | 12C | 15C | 18M | 24M |
| **Tool changer** | | | | |
| Tool selection | Random | | | |
| Magazine positions | 30 (std.) 48 / 60 / 90 / 120 (opt.) | | | |
| Max. tool diameter w/o adjacent tool | Ø76.2 / Ø125 | | | |
| Max. tool length (mm) | 280 | | | |
| Max. tool weight (kg) | 7 | | | |
| Tool to tool time (sec.) | 1.7±0.2 | | | |
| Chip to chip time (sec.) | 9.0±0.2 | | | |
| **Coolant system** | | | | |
| Coolant tank capacity (Liter ) | 450L | | | |
| Pump capacity | | | | |
| - Nozzle coolant | 70L / min., 3 bar | | | |
| - Coolant through spindle | Opt. (25L/min.,20bar) | | | |
| - Wash down | 70L/min., 3 bar | | | |
| **Machine size** | | | | |
| Height (mm) | 3,360 | | | |
| Floor space W x D (mm) | 2,770 x 4,040 | | | |
| Weight (kg) | 8,430 (30ATC) 8,730 (48ATC)<br>8,930 (60ATC) 9,690 (90ATC) 9,750 (120ATC) | | | |
| **Connections** | | | | |
| Main power | 220V or 380V or 400V or 415V / 50Hz or 60Hz | | | |
| Power consumption (KVA) | 30(F)(T) 25(S) | 35(F)(S) 40(T) | 40(F) 50(T)(S) | |

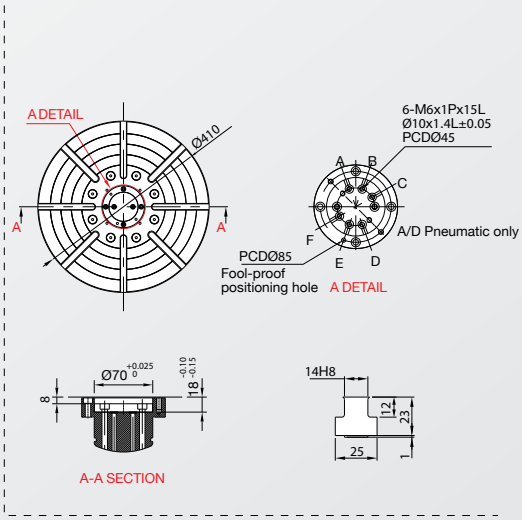
**Note:** (1) Please refer to actual max. workpiece interference diagram.
*(S6-25%)
- Machine specifications are subject to change without prior notice. Please refer to the latest specifications for updated information.

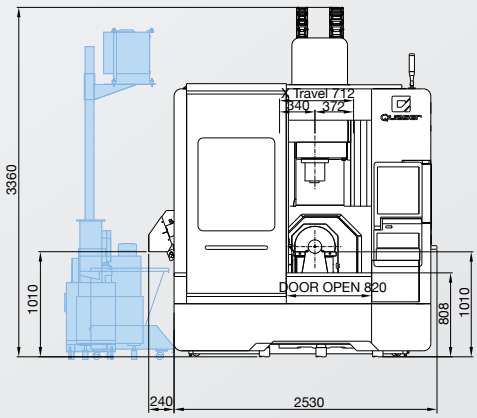
# Machine Dimensions

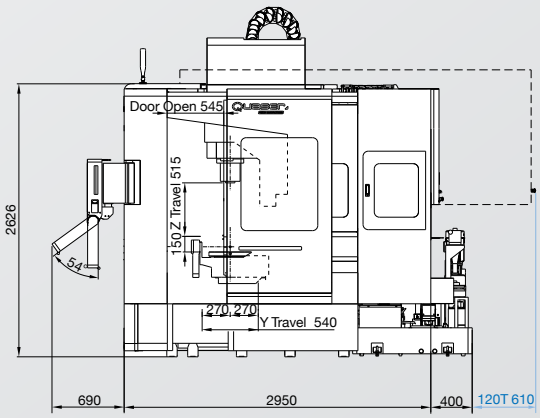
## Installation dimension




## Table dimension





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