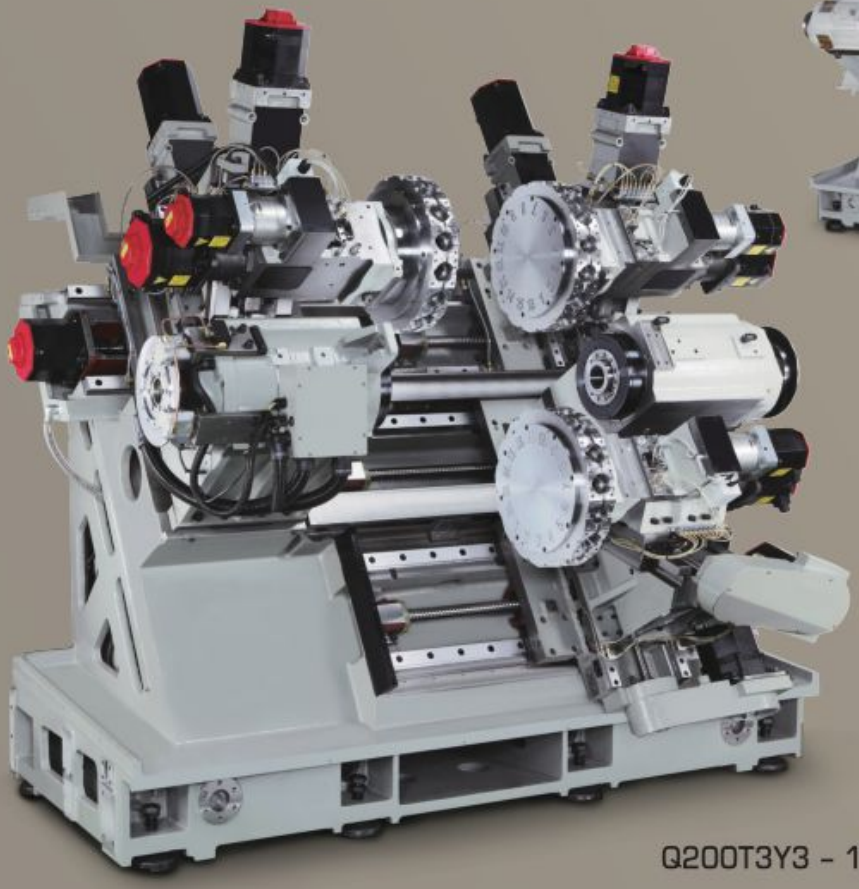
Victor Taichung
TÜVRheinland
CERTIFIED
Management System
ISO 9001:2008
ISO 14001:2004
Vturn-Q200
Quick & Quantitative
• Three milling turrets with Y-axis
• Twin spindles with built-in motor
• Turning center with 48 live tools
• Built-in unmanned automation
Victor Taichung - an established ISO-9001 & 14001 company

Vturn-Q200

Quick Production by Innovative 3rd Turret!

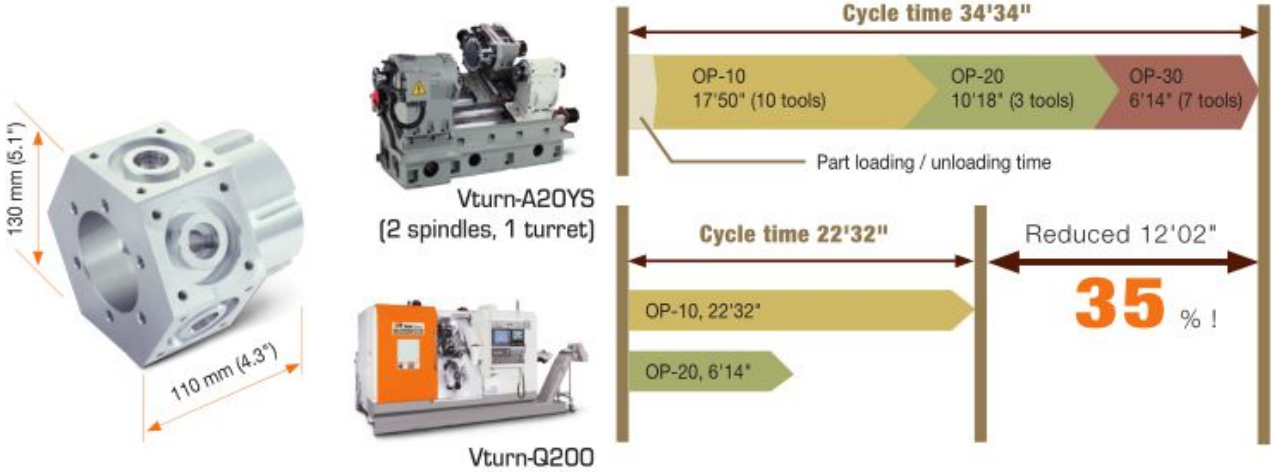
- *Minimizing the cutting time difference between OP-10 and OP-20 to balance cutting tempo and maximizing the turning length on twin-turret lathes when deep hole drilling is required.*
- *Offering sufficient 32 tools for both OP-10 and OP-20 machining applications at quicker tool exchange compared as multi-tasking lathes with ATC.*
- *Used as traveling steady rest, work rest or tailstock for more flexible applications.*
- *Turning slender shafts or drilling/tapping the symmetric holes with upper turret simultaneously ("balanced cutting")*

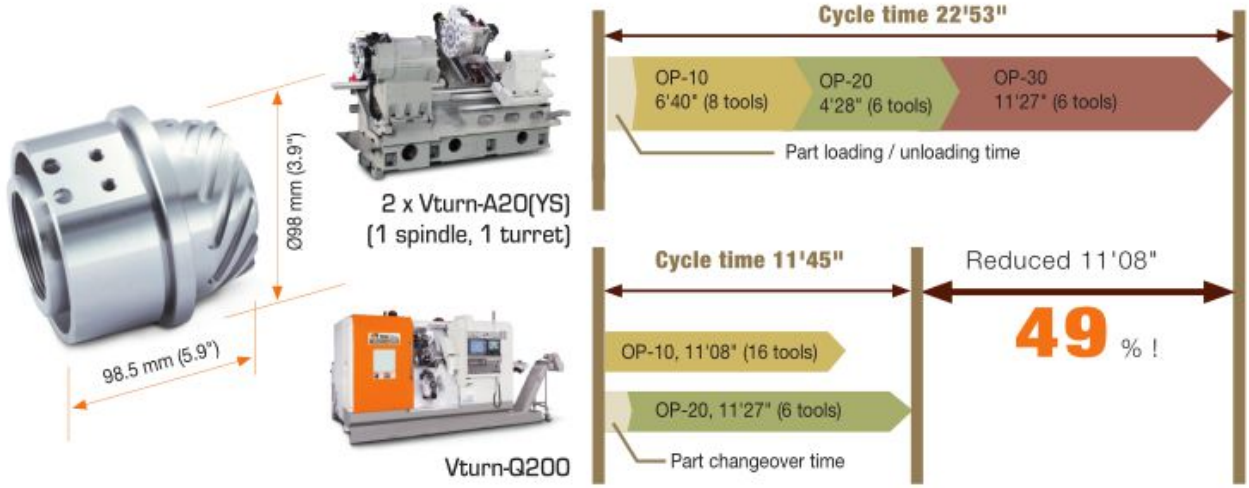
Q200T3(M3) - 12x3 tools



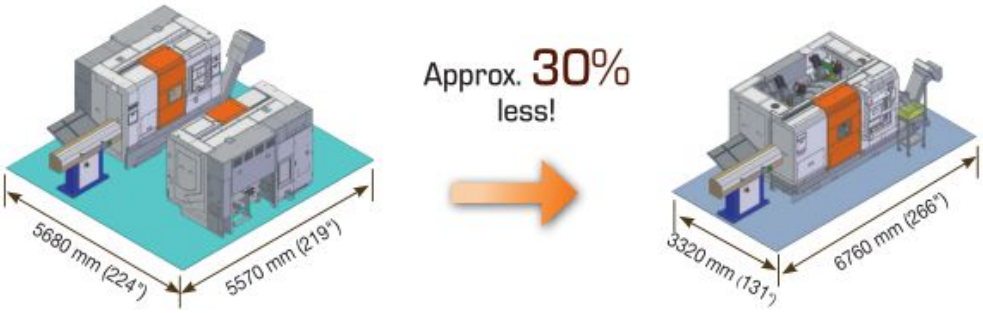
Q200T3Y3 – 16x3 tools

Machining Examples





Quantitative Production with less floor space



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Vturn-Q200

Quantitative Production by 3 Milling Turrets with Y-axis!

- *Y-axis (±45mm) on all 3 servo turrets.*
- *48 tool stations with BMT-55 interface.*
- *High torque at low milling rpm.*
- *Twin built-in spindles.*

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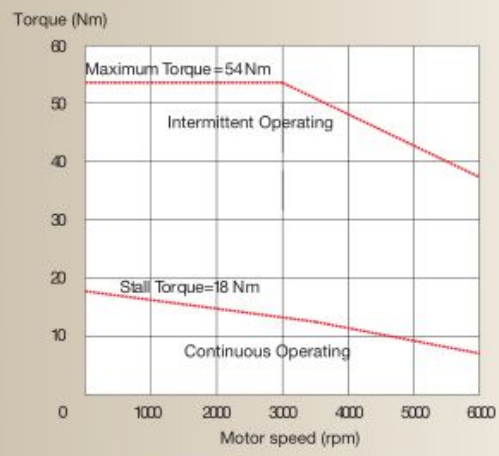
18 Nm (4.5kW) Milling Motor x 3



Fanuc α22/6000is

S2

Right spindle
22/25 kW
5000 rpm

S1 ↔ S2

12 sec.
(2500 rpm)

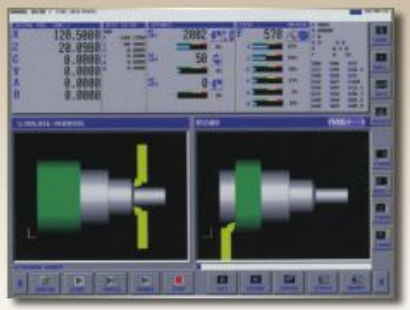
22/25 kW Built-in Spindle x 2

Fanuc αBil 170S_8000 Type M

4

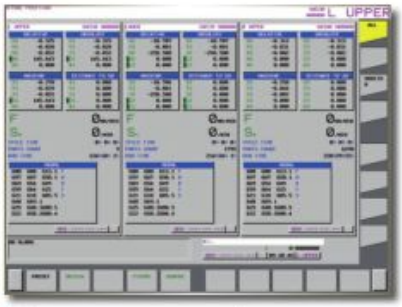
Victor Taichung's NC Package

With 15" LCD included as standard for 3 turret model (T3Y3, T3M3, T3M0) , Victor Taichung's Fanuc 31i-B control package displays technical information for individual turret in one screen to let the machine operation become an easy job without switching different turret system. The 3D cutting simulation can be executed in MGI (Manual Guide i) and 2D on-line cutting (moving with turret during cutting along the part profile) on both spindles can be done simultaneously. Fanuc "air bag" function (DTRQ : Unexpected Disturbance Torque detection) has been integrated into NC package to minimize damages caused by faulty operation.



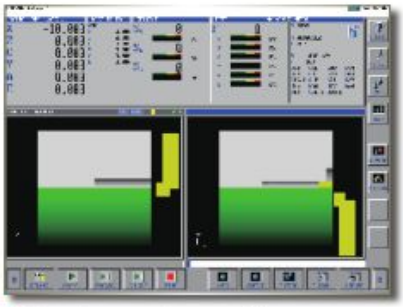
Cutting Simulation in MGI (3D)

In case the 3rd turret is not required to complete the machining processes, the 10.4" monitor is able to include technical information and the controller is replaced by Fanuc 0i-T control to lower the investment costs.

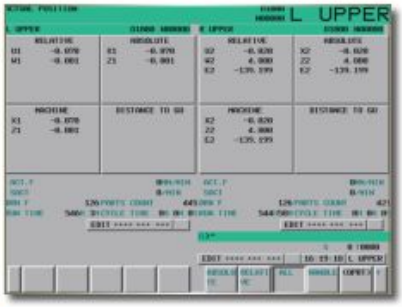


3 turret system in one screen

Tool offset setting & display



Cutting paths on 2 parts in MGI



2 turret system in one screen

Tool offset setting & display 10.4"

Cutting paths on single part in MGI

Victor Taichung's Fanuc 0i/31i Control Specification

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STANDARD:

ITEM	SPECIFICATION	DESCRIPTION
Control System:		
1	Control model	Fanuc 31i-B 3-path Fanuc 0i-TF 2-path
2	Visual display unit	Fanuc 31i-B 15" color LCD Fanuc 0i-TF 10.4" color LCD
3	Keyboard unit	Separate type MDI unit (standard keys)
4	Unexpected disturbance torque detection	Std.
Axes and Spindle control:		
1	Max. Controlled Axes	20 (for 31i-B),11 (for 0i-TF)
2	Simultaneously controlled axes	4 (L-Upper X1,Z1,C1 Y1, A1) + 5 (Lower X2,Z2,C2, Y2,A2,E2) + 4(R-Upper X3,Z3,C3 Y3, A3) *1 0i-TF only support two turrent
3	Spindles	2
4	Synchronous axes	Std. (twin spindles)
Input command:		
1	Least input increment	X, Z, Y, E: 0.001mm/0.0001 inch.
2	Lease command increment	X: 0.0005mm, Z/Y/E: 0.001mm, C: 0.001deg.
3	Maximum programmable dimension	± 999999.999mm/ ± 39370.0767inch ± 999999.999deg
4	Absolute / Incremental programming	X,Z,C,Y,E (absolute only for E) / U,W,H,V
5	Decimal input	Std.
6	Program code	EIA / ISO automatic recognition
7	Program storage memory	Back up by battery
8	Inch / Metric conversion	G20 / G21
9	Programmable date input	G10
Feed functions:		
1	Cutting feed (when AI contouring control is not executed)	X, Z, Y, E: 1-4800mm/min (0.01-188inch/min) C: 1-4800deg/min C: 0.01-4800.0000min/rev. (0.000001-50.000000inch/rev)
2	Dwell	G04
3	Feed per minute/ rev.	G98 / G99
4	Thread cutting	G32
5	Thread cutting retract	Std.
6	Continuous thread cutting	Std.
7	Handle feed	Manual pulse generator (MPG) 0.001/0.01/0.1mm (per pulse)
8	Automatic acceleration/deceleration	Std.
9	Linear acc/deceleration after cutting feed interpolation	Std.
10	Rapid feed override	F0, 25%, 50%, 100%
11	Cutting feedrate override	0~150% (each 10%)
12	AI contouring control I (30 blocks/path)	G5.1 (opt. for 0i-TF)
Program memory:		
1	Part program storage length	2560m (1MB)
2	Part program editing	Delete, insert, change
3	Program number search	Std.
4	Sequence number search	Std.
5	Address number search	Std.
6	No. of registered programs	1000 (in total)
7	Multiple program simultaneous editing	Std.
8	DNC though memory card	Std. (excl. memory card)
9	Extended part memory editing	Std.
Programming support:		
1	Circular interpolation	Std.
2	Direct drawing dimension programming	Std.
3	Canned cycles	Std.
4	Multiple repetitive canned cycles	Std.(G70~G76)
5	Multiple repetitive canned cycles II	Std.(G70~G76 TYPE II)
6	Synchronous control	Std. (for C-axis)
7	Sub programs	Std.
8	Balance cut	G68~G69
9	Custom macro	Std.
10	Addition to custom macro common variables	Std.
11	Manual Guide i	Std.

Setting and Display:		
1	Status Display	Std.
2	Clock Function	Std.
3	Current Position Display	Std.
4	Program Display	Program name 32 characters
5	Parameter Setting and Display	Std.
6	Self Diagnosis Function	Std.
7	Alarm Display	Std.
8	Alarm History Display	60
9	Operation History Display	Std.
10	Help Function	Std.
11	Run Hour and Parts Count Display	Std.
12	Actual Cutting Feedrate Display	Std.
13	Display Spindle Speed and T Code At All Screens	Std.
14	Dynamic Graphic Display	Std.(Available in MGI by another function)
15	Servo Setting Screen	Std.
16	Display of Hardware and Software Configuration	Std.
17	Multi-Language Display	Std.
18	Data Protection Key	Std.
19	Erase CRT Screen Display	Std.
20	Spindle Setting Screen	Std.
Data interface:		
1	Ethernet (10/100BaseT)	Std.
2	PCMCIA port	Std. (excl. memory card)
3	RS-232-C	Std.

CONTROL OPTIONS:

		0i-TF	31i-B
1	Helical interpolation	☐	☐
2	Circular thread cutting (G35)	N.A.	☐
3	3-D coordinate system conversion	N.A.	☐
4	Data server (with PCB and ATA card)	☐	☐
5	Part Program Storage Length 5120m/2Mbyte (in total) Incl. Number of registered program 2000 (in total)	N.A.	☐
6	Part Program Storage Length 4Mbyte (in total) Incl. Number of registered program 4000 (in total)	N.A.	☐
7	Part Program Storage Length 8Mbyte (in total) Incl. Number of registered program 4000 (in total)	N.A.	☐
8	AI contouring control I (30 blocks/path)	☐	Std.
9	AI contour control II (G5.1 Q1) (200 blocks/path)	☐	☐
10	AICC II High-speed processing (600 blocks/path)	N.A.	☐
11	AICC II Look-ahead blocks expansion (1000 blocks/path)	N.A.	☐
12	Optional block skip 2-9	☐	☐
13	Polygon turning	☐	☐
14	Manual handle feed 2 (2nd MPG)	☐	☐
15	Profibus	☐	☐
16	DeviceNet	☐	☐

Standard Accessories

Ergonomic design for easy & safe operation

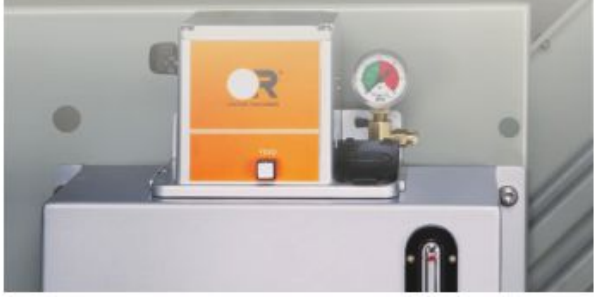
- **Enclosed guarding** with the **high outlet chip conveyor** fitted into the machine bed ensures no access to the machine during operation and no coolant leakages.
- **Front removed coolant tank** with **High pressure coolants** by Grundfos® pump SPK4-8 (or MTH4-40/4) improves the machining quality on part surface. **Oil skimmer** is installed on coolant tank to separate the oil layer from coolants.
- **Rotary control box** with **front mounted hydraulic gauges** facilitate the easy adjustment and operation.
- **Spindle oil cooler** for twin DDS spindles.

Powerful hydraulic chuck

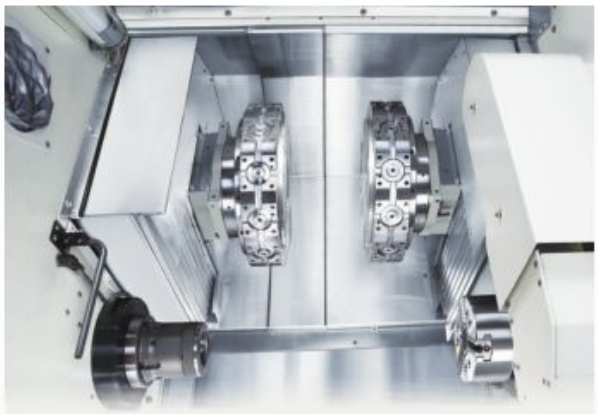
- Hydraulic 3-jaw hollow chuck is foot operated for easy and safe operation.

Victor's lubrication pump

- High Quality lube pump (4 liters) ensures long service life for the machine.



Modular Design for Simpler Applications by 2 Turrets



Vturn-Q200TTY2

- with Twin Turrets

Vturn-Q200T2Y2

- with Double Turrets.

Optional Accessories

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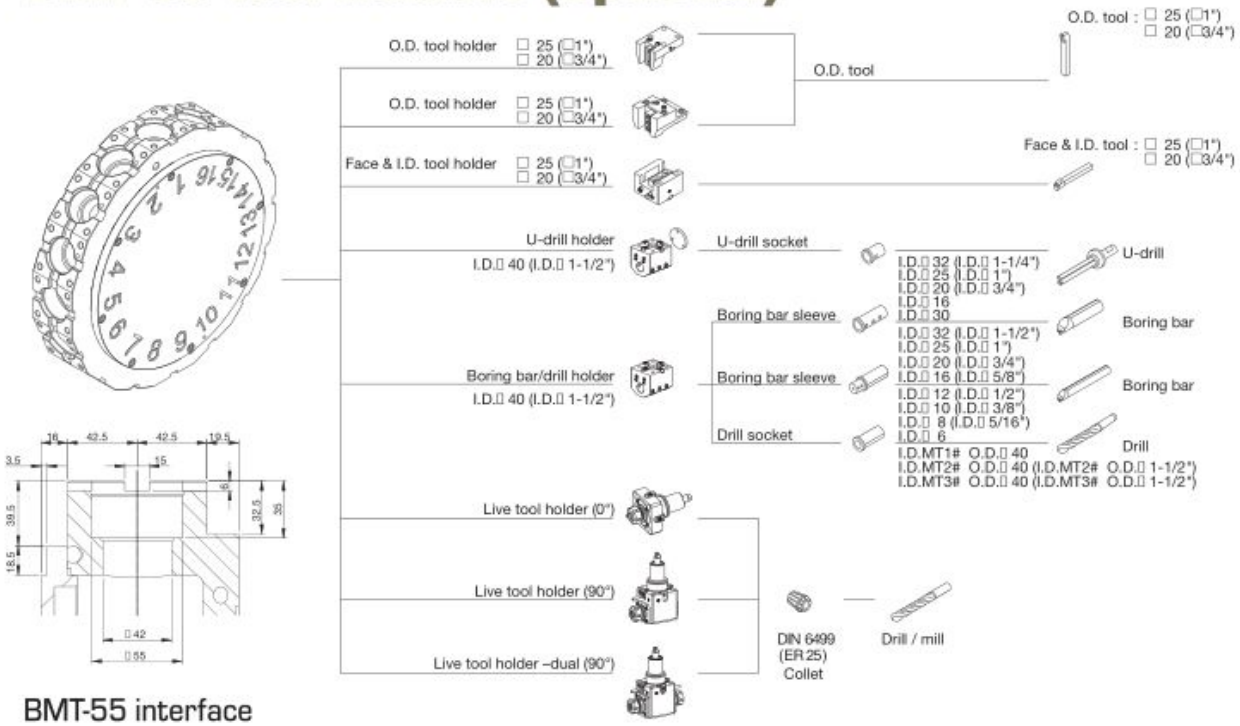
Manual Tool Presetter (Renishaw® Tool-Eye)

The Detachable Renishaw tool presetter allows more space within the machining area, and measures the tool lengths and diameters automatically.

Robotic Part Catcher for Unmanned Operation

By linking the machine to either a bar feeder or work feeding system, a robotic parts catcher then collects the finished part removing it from the machine, for either manual collection or by a part receiver to form an unmanned machining line.

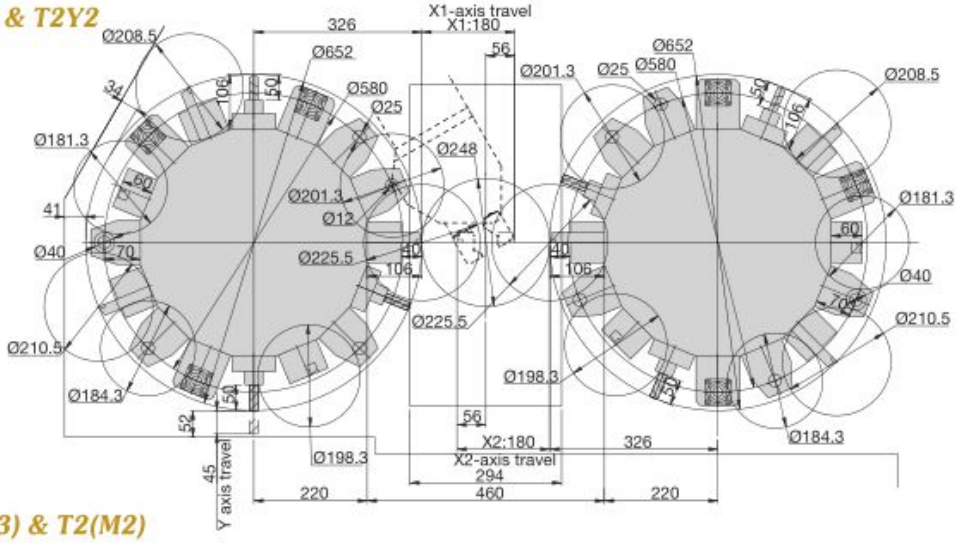
BMT-55 Tool Holders (Optional)



BMT-55 interface

Technical Drawings

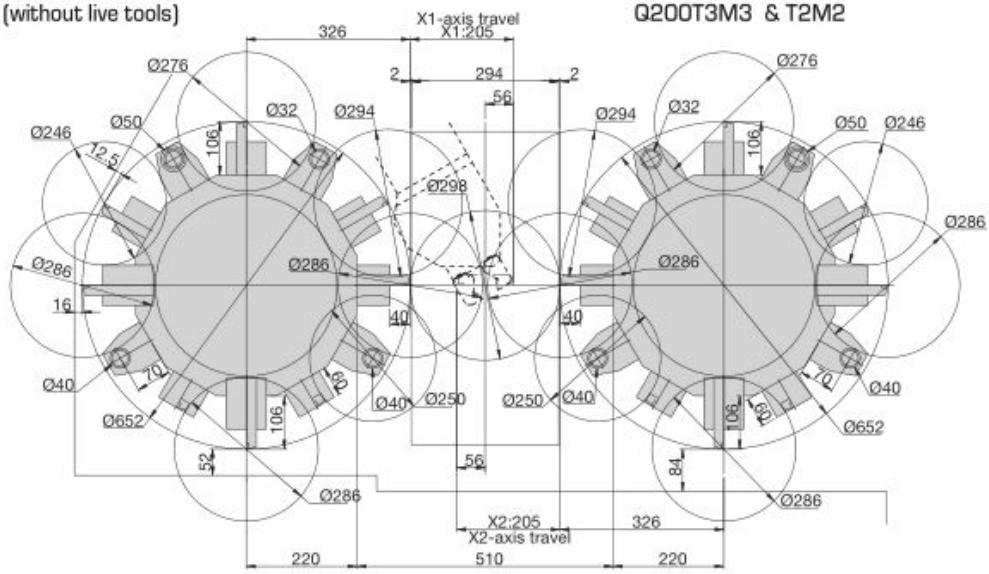
Q200T3Y3 & T2Y2



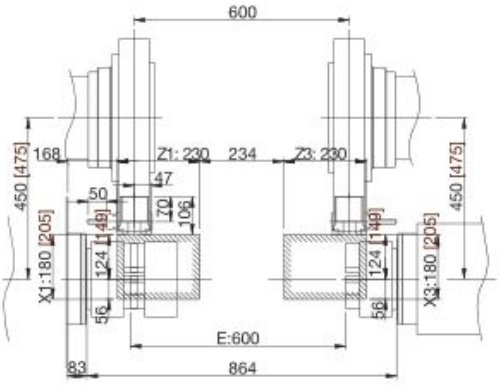
Q200T3(M3) & T2(M2)

Q200T3 & T2 (without live tools)

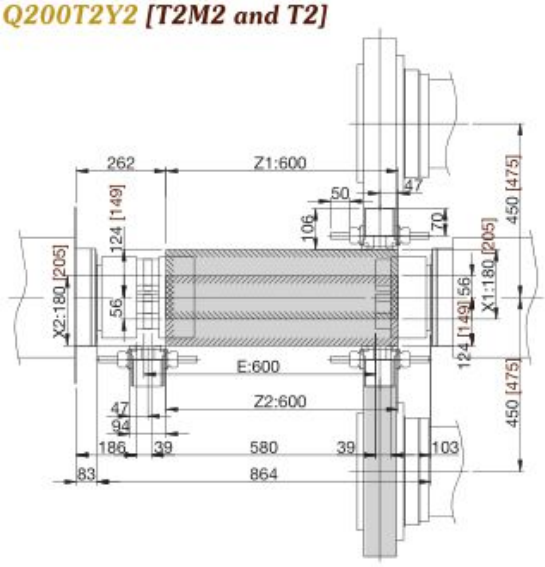
Q200T3M3 & T2M2



Q200TTY2 [TTM2 and TT]



Q200T2Y2 [T2M2 and T2]



Machining Range

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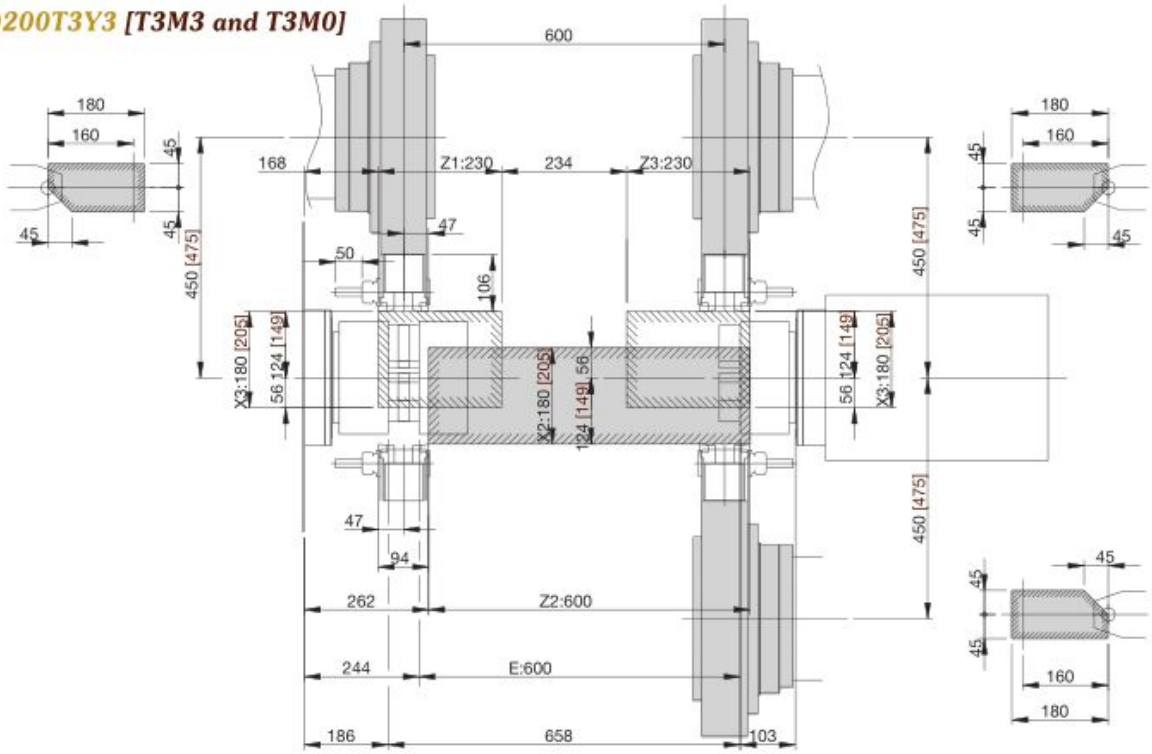
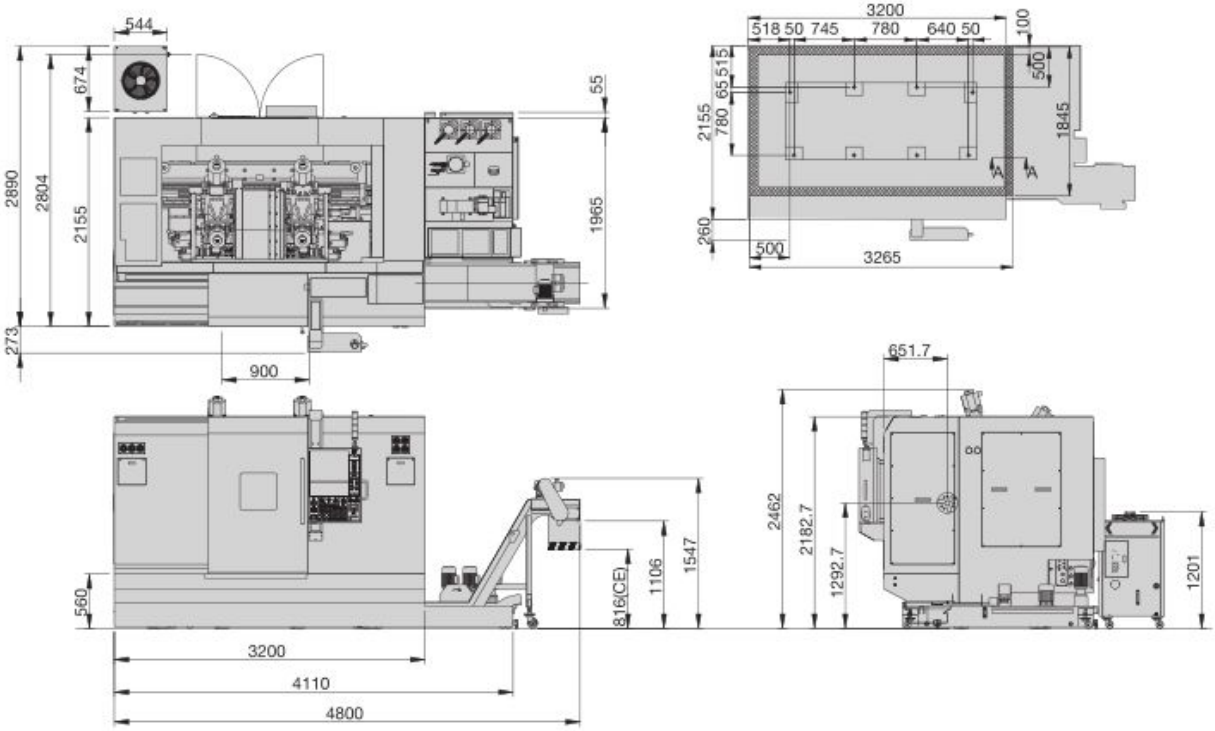
Q200T3Y3 [T3M3 and T3M0]



Machine Layout & Foundation



Machine Specification

Items		Unit	Vturn-Q200T3(M3) Vturn-Q200T3Y3	Vturn-Q200T2(M2) Vturn-Q200T2Y2	Vturn-Q200TT(M2) Vturn-Q200TTY2
Capacity	Swing over bed	mm	330	330	330
	Between centers	mm	850	850	850
	Max. turning dia.	mm	298 248	298 248	298 248
	Std. Turning dia.	mm	298 248	298 248	298 248
	Bar capacity	mm	52 (LSB. 66)	52 (LSB. 66)	52 (LSB. 66)
	Max. part dia. from 1st spindle to 2nd spindle	mm	294 248	294 248	294 248
Axis travel	X1/X2/X3 axis travel	mm	205 (185+20) 180 (160+20)	205 (185+20) 180 (160+20)	205 (185+20) 180 (160+20)
	Z1/Z2/Z3 axis travel	mm	Z1/Z3: 230, Z2: 600	Z1: 600, Z2: 600	Z1/Z3: 230
	E axis travel (right spindle)	mm	600	600	600
	Y1/Y2/Y3 axis travel	mm	±45 (90)	±45 (90)	±45 (90)
	Rapid feedrate	m/min	X1/X2/X3: 24 Z1/Z2/Z3: 36 Y1/Y2/Y3: 12, E: 24	X1/X2: 24 Z1/Z2: 36 Y1/Y2: 12, E: 24	X1/X3: 24 Z1/Z3: 36 Y1/Y3: 12, E: 24
	JOG feedrate	mm/min	X/Z=0~1260	X/Z=0~1260	X/Z=0~1260
Left spindle	Max. spindle speed	rpm	5000 (LSB. 4500)	5000 (LSB. 4500)	5000 (LSB. 4500)
	Spindle nose (chuck)	inch	A2-6 (8")	A2-6 (8")	A2-6 (6")
	Spindle bore	mm	62 (LSB. 75)	62 (LSB. 75)	62 (LSB. 75)
	Bearing inside dia.	mm	100 (LSB. 110)	100 (LSB. 110)	100 (LSB. 110)
Right spindle	Max. spindle speed	rpm	5000	5000	6000
	Spindle nose (chuck)	inch	A2-6 (8")	A2-6 (8")	A2-5 (6")
	Spindle bore	mm	62	62	52
	Bearing inside dia.	mm	100	100	90
Turret	No. of tools	no.	T1/T2/T3: 12(12) T1/T2/T3: 16	T1/T2: 12(12) T1/T2: 16	T1/T3: 12(12) T1/T3: 16
	No. of live tools	no.	- (12) 16	- (12) 16	- (12) 16
	Tool shank size	mm	20	20	20
	Max. boring bar dia.	mm	40 (BMT-55)	40 (BMT-55)	40 (BMT-55)
	Exchange time (incl. turret disk up & down)	mm	1.0 (Adjacent) 1.3 (opposite)	1.0 (Adjacent) 1.3 (opposite)	1.0 (Adjacent) 1.3 (opposite)
	Milling speed	rpm	6000	6000	6000
Motor	Left spindle motor	kW	22/25	22/25	22/25
	Right spindle motor	kW	22/25	22/25	22/25
	Feed servo motor	kW	X1/X2/X3: 4 Z1/Z2/Z3: 3 Y1/Y2/Y3: 3	X1/X2: 4 Z1/Z2: 3 Y1/Y2: 3	X1/X3: 4 Z1/Z3: 3 Y1/Y3: 3
	Milling motor	kW	4.5	4.5	4.5
Coolant	Tank capacity	L.	420	420	420
Controller	FANUC		31i-B (15")	0i-TF (10.4")	0i-TF (10.4")
Machine	Power requirement	kVA	88	80.2	80.2
	Dimension (L×W×H)	mm	4803 x 2335 x 2410	4803 x 2335 x 2410	4803 x 2335 x 2410
	Net weight (with conveyor)	kg	10500 (10700) 11200	9060 (9260) 9560	9030 (9230) 9530

Standard accessories:

- Hydraulic chuck with soft jaws
- Chip conveyor
- Hand wheel (Remote MPG)
- Coolant flush on Z-axis cover
- 3 step warning light
- Oil skimmer
- Fanuc e-book (CD)

Optional accessories:

- Kitagawa® power chuck
- Large spindle bore (LSB) 66mm (2.6") / 4500rpm
- Manual tool presetter (Tool-eye)
- Robotic part catcher
- Part receiver for part catcher.
- Air conditioner for electrical cabinet (Panel cooler)
- Bar feeder interface
- Air blow
- Oil mist collector
- Hard jaws
- Auto door
- Steady rest for lower turret
- BMT-55 tool holders
- Fanuc manuals

THE VICTOR-TAICHUNG COMPANIES

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VictorTaichung was also marketed under the brand names VICTOR (outside North America) and FORTUNE GA1GE16EC