

SAMSUNG Machine Tools

LCV 380 VERTICAL MACHINING CENTER



SMEC

SAMSUNG MACHINE TOOLS

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SAMSUNG MACHINE TOOLS

SAMSUNG'S Advanced Engineering and Machine Design

Division	LCV 380D	LCV 380S
Table Size	2-600 x 420 mm	600 x 420 mm
Travel(X/Y/Z)	520/380/350mm	520/380/350 mm
Max. Spindle Speed	12,000 rpm	12,000 rpm
Spindle Drive Motor	3.7/5.5 kW	3.7/5.5 kW
Loading capacity	2-200 kgf	Fixed Table
Rapid Traverse(X/Y/Z)	50/50/50 m/min	50/50/50 m/min

LCV 380D

LCV 380S

Movable Column Type Vertical Tap Center “LCV 380 Series”

LCV 380S : Single Table , LCV 380D : Dual Table

- Direct spindle 12,000rpm for high accuracy tapping.
- Applying high precision roller guide on all axis(X,Y,Z)
- Rapid travers 50m/min, reducing machine idle time with 3kw motor
- Adopting synchronized high precision roller gear cam tool change system, LCV 380 has the fastest tool change time in its class. (T-T 0.85 Sec)



**High Speed, High Accuracy, High Productivity,
Movable column tapping center LCV380 Series!**



LCV 380S
Fixed Table

Rapid Traverse(X/Y/Z)
50/50/50 m/min

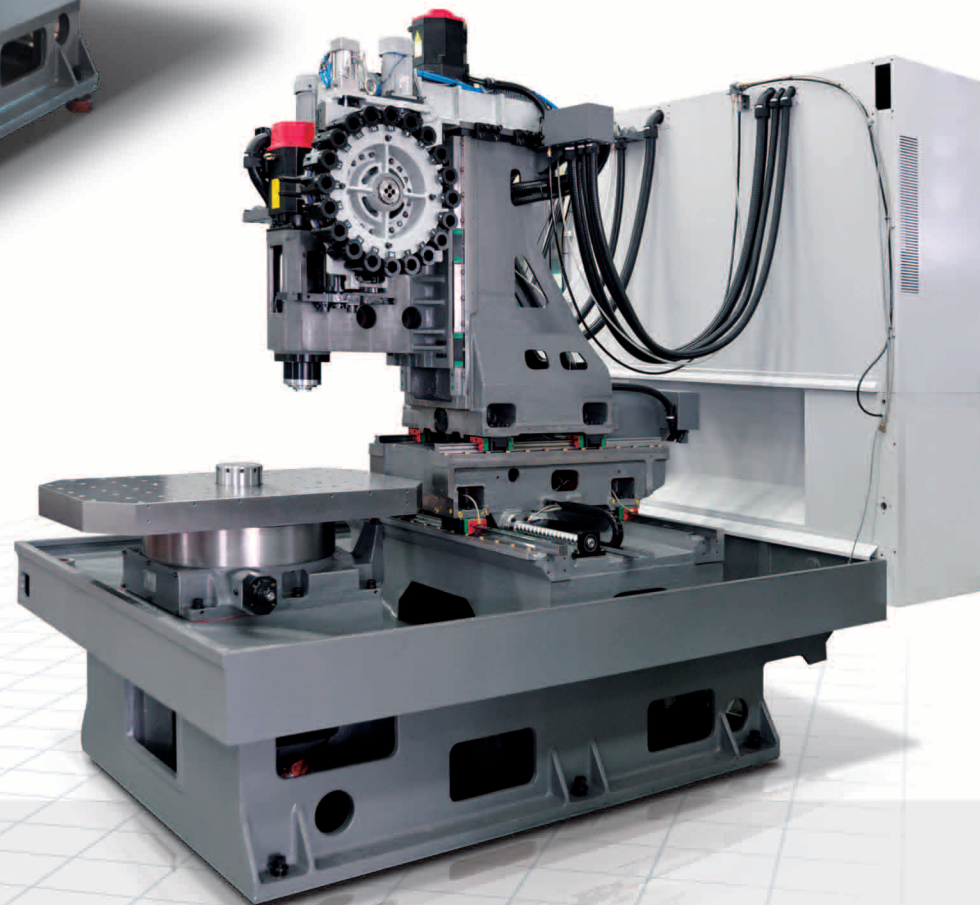
Spindle Motor(X/Y/Z)
3 kW

Travel(X/Y/Z)
520/380/350 mm

LCV 380D

Pallet Loading Capacity
2 x 200 kgf

Pallet Change Time
4.5 sec



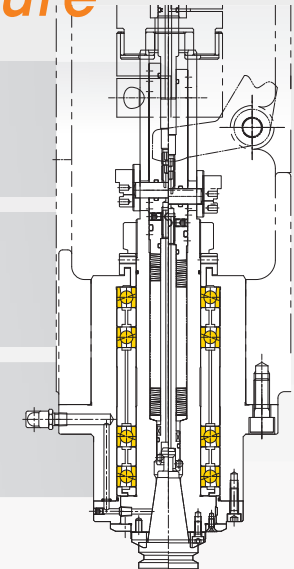
**High speed & High accuracy direct Motor Drive
main spindle structure**



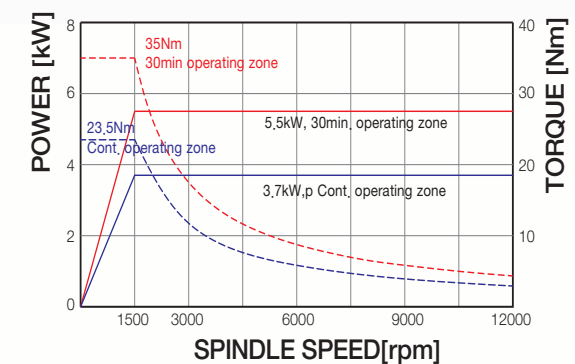
Spindle Speed
12,000 rpm

Spindle Motor
3.7/5.5 kW

Maximum Torque
35.3/23.5 N.m



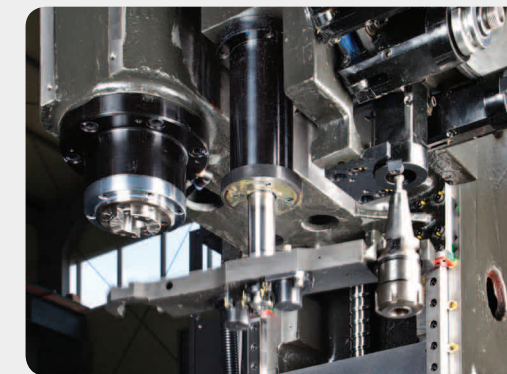
Spindle Power and Torque Diagram



High accuracy spindle unit

P4 class high precision angular contact ball bearings are used for high speed and ultra precision machining. Direct drive main spindle for high speed-high accuracy synchronized tapping.

Tool Change Time (T-T) : **0.85 sec**



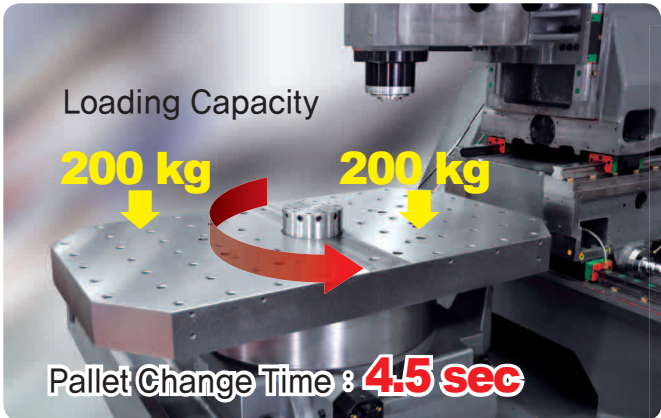
High speed tool change system

Adopting synchronized high precision CAM tool change system and memory random magazine, LCV 380 has the fastest tool change time in its class.

Tool Magazine Capacity
20ea

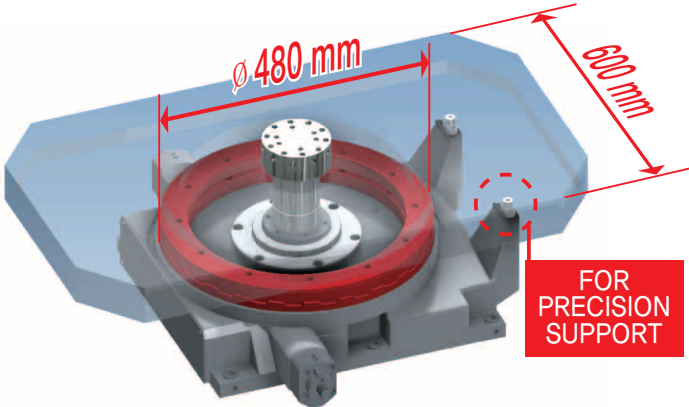


Machine Structure



Equipping large size coupling(480Ø) on High speed and high precision dual table

LCV380D is equipped with standard dual table, which provides high productivity and less machine idle time as an operator can set up parts on the second table while parts on the first table are being machined.



Highly reliable Lubrication unit

Highly reliable LUBE unit discharges the right amount of lubrication oil to each guide way automatically.



Guide plane of roller guide

High precision machining is achieved with the widest guide span in its class, low-centered box structure design, high-load roller guide

Ball screws (X,Y,Z)

"Fixed and Supported" structure is applied on 32mm ball screws to minimize the change of ball screws in high speed machining and it provides extended life of ball screws also long lasting high precision.

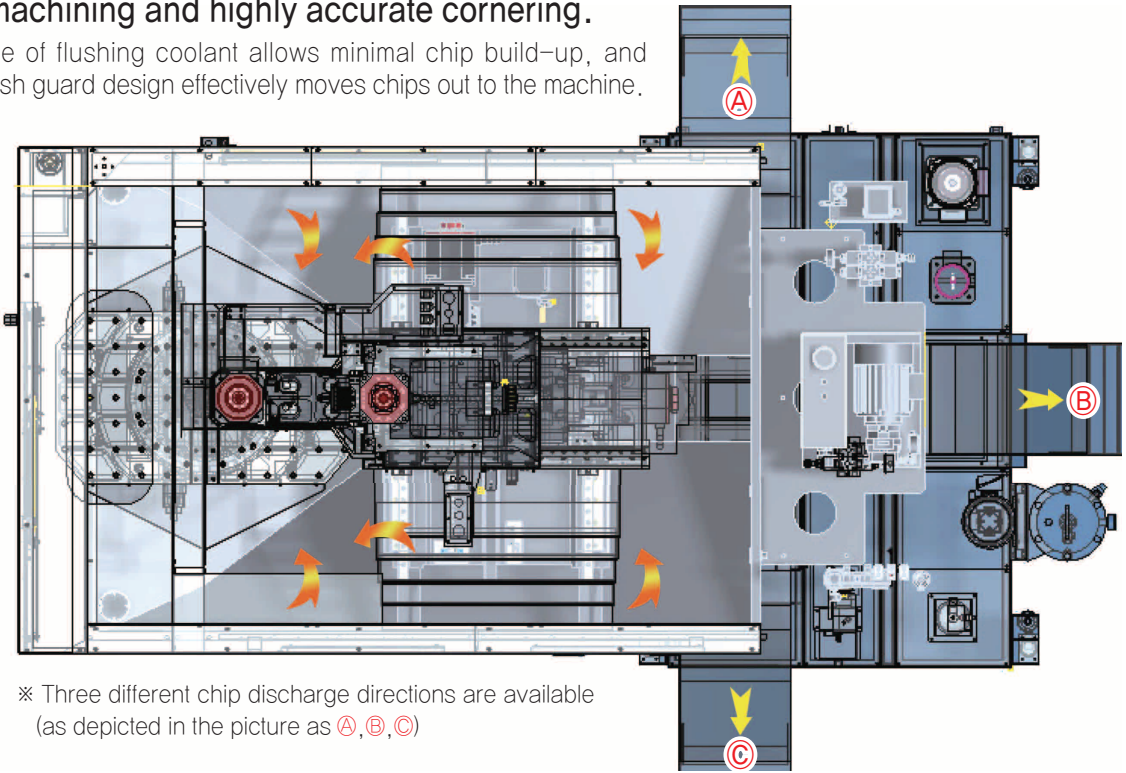
3kw large capacity motor (X,Y,Z)

3kw motor is applied on all axis to achieve quiet and smooth machining and highly accurate cornering.

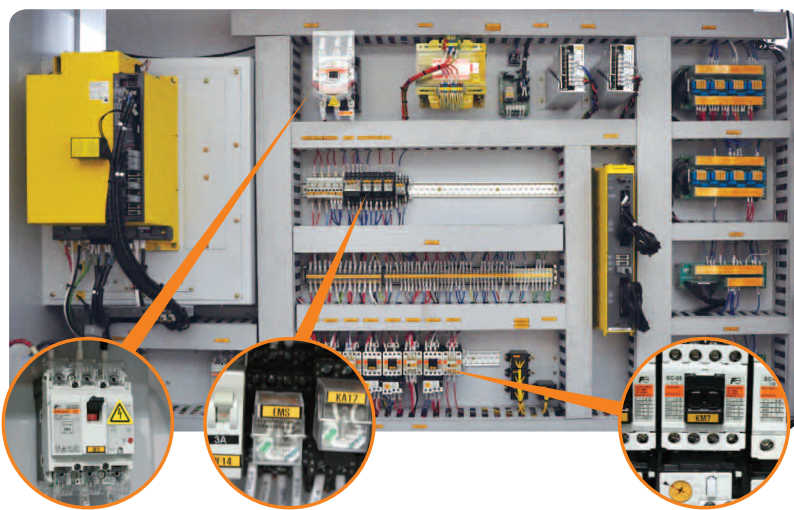
Machine Structure

3kw motor is applied on all axis to achieve quiet and smooth machining and highly accurate cornering.

High volume of flushing coolant allows minimal chip build-up, and slanted splash guard design effectively moves chips out to the machine.



User friendly Centralized Control Panel



- 8.4inch color LCD
- Semi permanent LED lamp
- Rotating type operation panel for Easy to operate and access

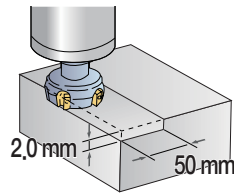
Electric cabinet made with highly reliable components

- Magnet switch, Circuit breaker, Key S/W(Fuji)
- Relay(Widemuller, Omron)

■ Cutting Capacity (BT30 3.7/5.5 kW)

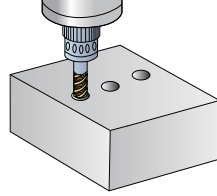
Face milling Carbon Steel (SM45C)

Ø63mm Face mill (5Z)
Cutting amount
112.5 cm/min
Spindle speed
1000 r/min
Feedrate
450 mm/min



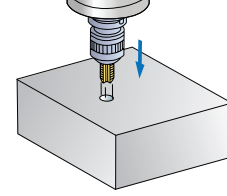
Drilling Carbon Steel (SM45C)

Ø16 Drill
Cutting amount
45 cm/min
Spindle speed
1200 r/min
Feedrate
225 mm/min



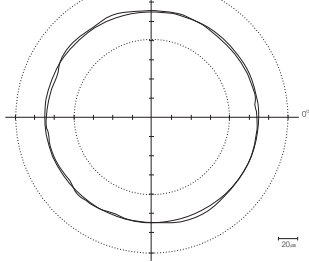
Tapping Carbon Steel (SM45C)

M16
Depth of cut
30 mm
Spindle speed
1500 r/min
Feedrate
3000 mm/min



■ High Precision

■ Roundness



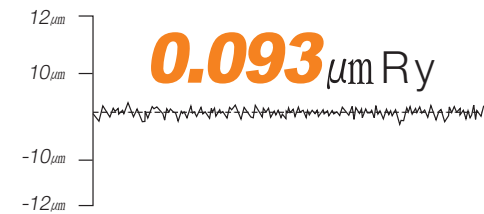
6.3μm

Roundness

Machine	LCV 380
Material	A 1050P
Tool	Ø 25 × 4T
Spindle Speed	1,500RPM

Surface roughness <O.D. cutting>

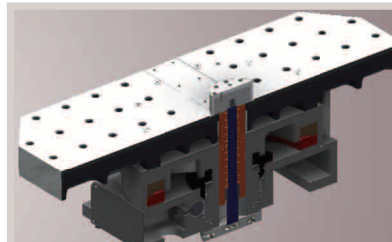
0.093μm Ry



■ Accessories (Option)



Chip Conveyor



Center Thru Supply System



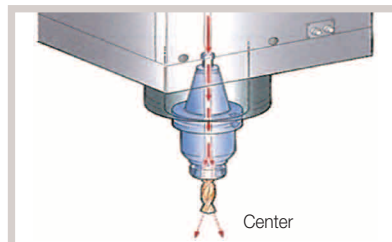
Oil Skimmer



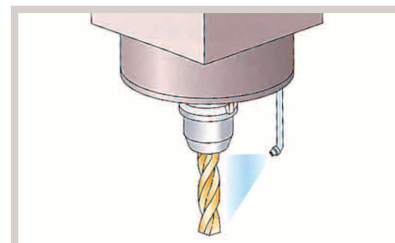
Auto Tool Length Measurement System



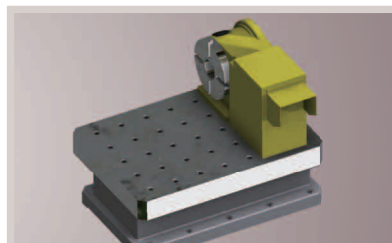
Gun Coolant



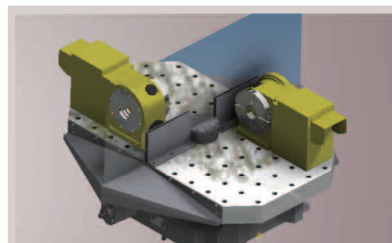
Through-Spindle Coolant System



Oil Mist System



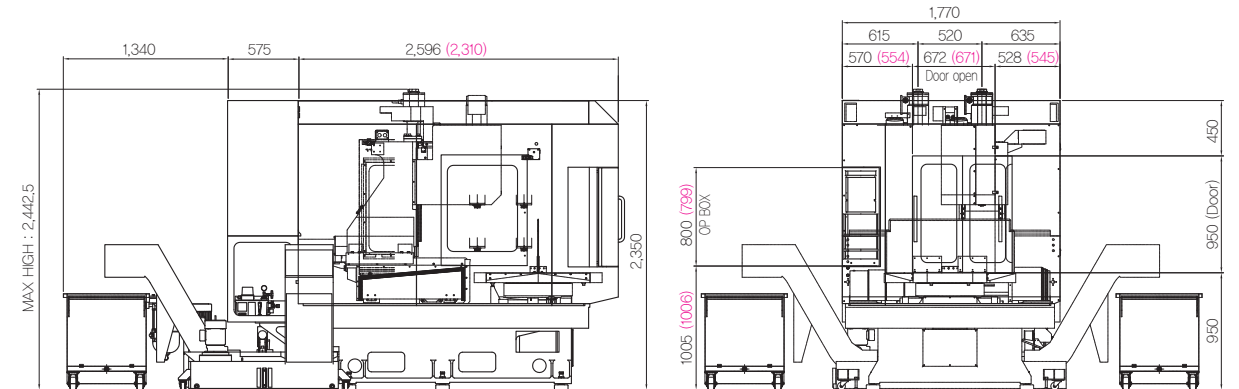
Additional 1 axis



Additional 2 axis

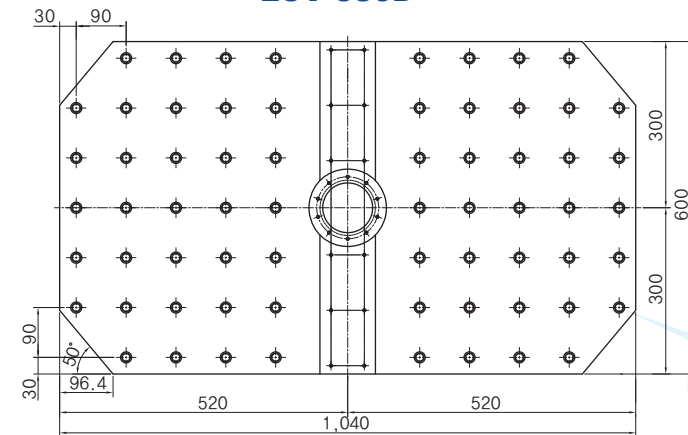
■ Machine Dimensions

LCV 380D (LCV 380S)

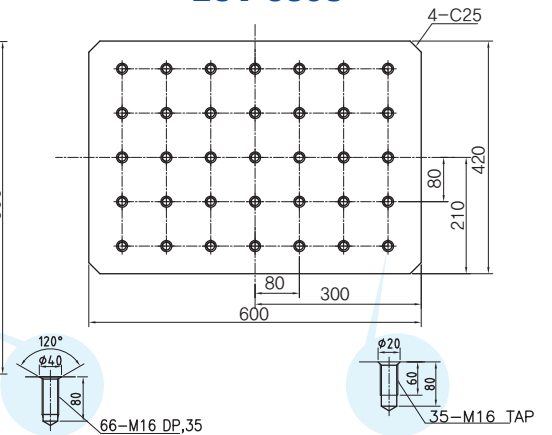


■ Table & T-Slot

LCV 380D

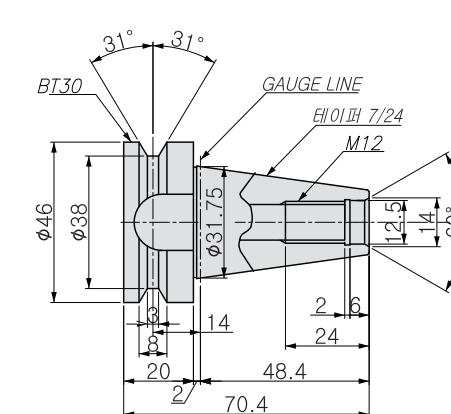


LCV 380S

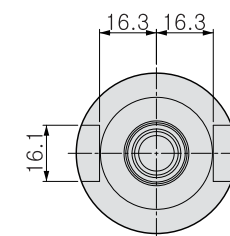


■ Tool Shank

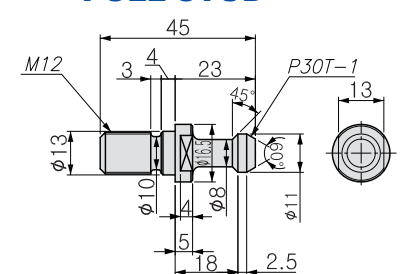
Unit : mm



BT30



PULL STUD



Machine Specification

Item		LCV 380D	LCV 380S
Travel	X-axis	mm 520	520
	Y-axis	mm 380	380
	Z-axis	mm 350	350
	Distance from table surface to spindle nose	mm 200~550	200~550
	Distance from pallet center to column	mm 471	471
Table	Table Size	mm 2-600×420	600×420
	Loading capacity	kgf 2-200	Fixed table
	Table index time	sec 4.5	-
	Table & T Slot	mm 2×33 - M16×90×90	35 - M16×80×80
Spindle	Max. Spindle Speed	min ⁻¹ 12,000 [15,000]	12,000 [15,000]
	Maximum Torque(30min/cont.)	Nm 35.3/23.5(48/35.3) [11.8/6.9]	35.3/23.5(48/35.3) [11.8/6.9]
	Bearing inner Dia.	mm ø 50	ø 50
Feedrate	Rapid Traverse(X/Y/Z)	m/min 50	50
	Feedrate(X/Y/Z)	mm/min 1-20,000	1-20,000
ATC	Tool Shank	- BT30	BT30
	Tooling changing method	- Double arm swing	Double arm swing
	Tool Changing Time(T-T)	sec 0.85	0.85
	Magazine Capacity	ea 20	20
	Tool Selection	- Memory Random	Memory Random
	Max. Tool dia./adjacent empty	mm ø60 / ø120	ø60 / ø120
	Max. Tool Length/Weight	mm/kgf 200 / 3	200 / 3
	Pull stud type	- MAS P30T-1	MAS P30T-1
Motors	Spindle Drive Motor(30min/Cont.)	kW 3.7 / 5.5 (5.5 / 7.5) [2.2 / 3.7]	3.7 / 5.5 (5.5 / 7.5) [2.2 / 3.7]
	Feed motor(X/Y/Z)	kW 3 / 3 / 3	3 / 3 / 3
Power Supply		kVA 30	30
Floor Space (L×W×H)		mm 3,476×1,870×2,443	3,713×1,771×2,535
Machine Weight		kgf 4,500	4,000
CNC System		Fanuc 0i-MD	Fanuc 0i-MD

• Design and specifications subject to change without notice. () : Option

Standard

- TOOL AND TOOL BOX
- WORK LIGHT
- MPG
- COOLANT SYSTEM AND TANK
- FULL SPLASH GUARD

Optional Accessories

- CHIP CONVEYOR
- 3AXIS MPG
- THRU SPINDLE COOLANT
- AUTO TOOL LENGTH MEASUREMENT
- DATA SERVER
- ROTARY TABLE 4thAXIS, 5thAXIS
- LINEAR SCALE

NC Specification / FANUC 0i-MD

Item		Specification	F 0i-MD
Controlled axis	feed axes		X,Y,Z,(A,B)
	Max. feed axes		4(6) AXIS
	Max. simultaneously controlled axis		4
	Least command increment	0.001mm / 0.0001"	○
Operation functions	Pulse handle feed	X1, X10, X100	○
	Feedrate per minute	G94	○
	Feedrate per revolution	G95	○
Interpolation functions	Linear interpolation	G01	○
	Circular interpolation	G02, G03	○
	Dwell	G04	○
	Cylindrical interpolation	G70, 1	○
	Reference position return	G28	○
	Reference position return check	G27	○
Feed function	Rapid traverse rate override	F0, 25%, 50%, 100%	○
	Feedrate override		0~200%
Spindle function	Spindle orientation		○
	Rigid tapping		○
Tool functions	Tool number command	T4-Digt / T2-Digt	T2-Digt
	Tool nose radius compensation	G40 ~ G42	○
	Tool offset pairs		400
	Tool geometry/wear offset	GEOMETRY & WEAR DATA	○
	Tool life management		○
	Tool path graphic display		○
	Automatic tool length measurement		○
Program input	Absolute/incremental programming		○
	Multiple repetitive cycle	G70 ~ G76	○
	Canned cycles	G90, G92, G94	○
	Inch/metric conversion	G20 / G21	○
	Program restart		○
	Retraction for rigid tapping		○
	Max. programmable dimension	±99999.999mm/±9999.9999"	○
	M function	M3 digit	○
	Custom macro		○
	Canned cycle for drilling		○
	Direct drawing dimension programming		○
	Programmable data input	G10	○
	Optional block skip		○
	Workpiece coordinate system	G52 ~ G59	○
	Number of registerable programs		400EA
Setting and display	Alarm & Operator histor display	ALARM & OPERATION DISPLAY	○
	Run hour and parts count display	RUNNING TIME & PART NO. DISPLAY	○
	Display spindle & servo overload	SPINDLE & SERVO LOAD DISPLAY	○
	Self-diagnosis function		○
	Extended part program editing	COPY, MOVE, CHANGE OF NC PROGRAM	○
Data input/output	Display screen		8.4"/10.4" color
	Memory card input/output		○
Editing operation	USB memory input/output		○
	Part program storage size	512Kbyte(1280m)	1280M
Manual guide i	Manual Guide I		Opt.