

SINCE 1944

* Specifications in this catalog are subject to change without prior notice.
* Please contact us or visit our site for more product information.

DL G series (En)

Gang Type Slant Bed CNC Turning Center

DL 6G / 8G / 10G / 6GB / 8GB

www.ffg-dmc.com



FFG DMC CO.,LTD.

631-821,86,Sandan 2-gil, Jinbuk-myeon, Masanhappo-gu,
Changwon-si, Gyeongsangnam-do, Korea

Phone : +82-(0)55-340-8200

Fax : +82-(0)55-340-8394

E-mail : sales@dmcmt.com

www.ffg-dmc.com



©FFG DMC 2017.11.09



DL G series Slant Bed

DL 6G

DL 8G

DL 10G

DL 6GB

DL 8GB

High-speed, High-accuracy, High productivity Gang Type
Standard CNC Turning Center



DL 6G

Travel (X/Z) (mm)(inch)	420 x 250	16.54 x 9.84
Guideway Type	L.M Guide	
Spindle speed (rpm)	6,000	
Number of tools (pcs)	6	



DL 8G

Travel (X/Z) (mm)(inch)	420 x 250	16.54 x 9.84
Guideway Type	L.M Guide	
Spindle speed (rpm)	4,500	
Number of tools (pcs)	6	



DL 6GB

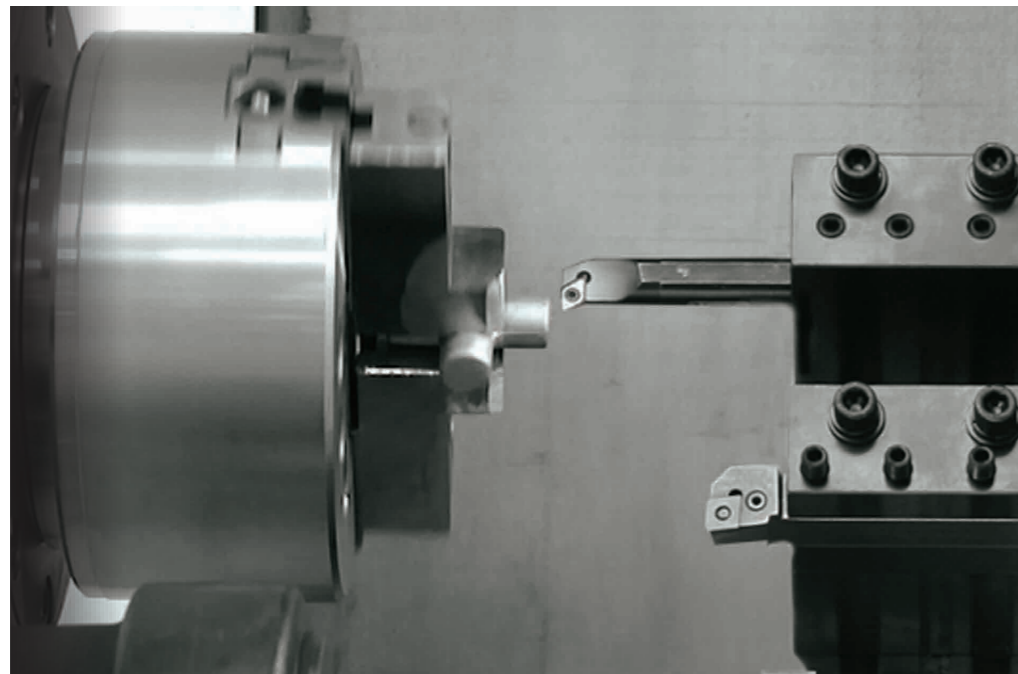
Travel (X/Z) (mm)(inch)	400 x 250	15.75 x 9.84
Guideway Type	BOX Way	
Spindle speed (rpm)	6,000	
Number of tools (pcs)	6	



DL 8GB

Travel (X/Z) (mm)(inch)	400 x 250	15.75 x 9.84
Guideway Type	BOX Way	
Spindle speed (rpm)	4,500	
Number of tools (pcs)	6	

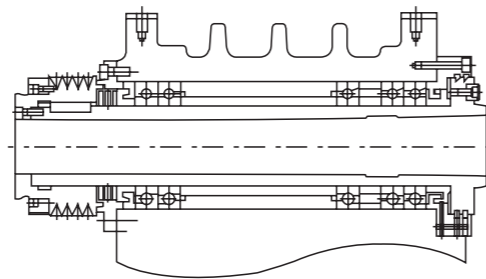
High Productivity



High Precision, High Speed Spindle

6" Spindle

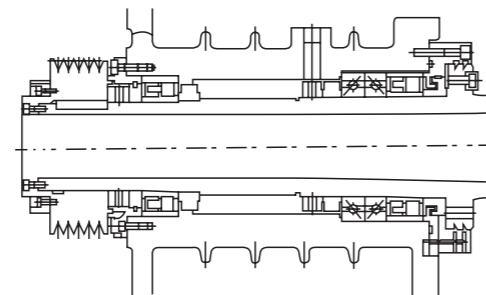
- The high accuracy of spindle and headstock are assembled in a positive pressure, temperature controlled clean room.
- The precision angular contact bearings promote thermal stability at a high rotational speed of 6,000 rpms.



Powerful High-Precision Spindle

8"/10" Spindle

- The spindle is supported by a double-row of cylindrical roller bearings and angular thrust bearings, creating greater stability and higher accuracies. The special lubricating system and meehanite cast bed are superior in preventing thermal distortion of the spindle.



High-speed, high precision spindle leads to high productivity.

Perfect symmetry makes high speed, cutting possible

Max. spindle speed

6,000rpm (DL 6G)

Max. spindle motor power

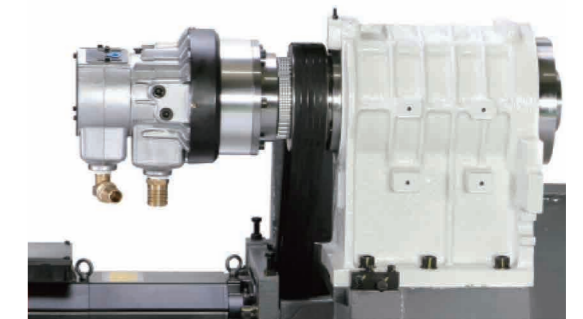
15kw **20hp**

Max. spindle torque

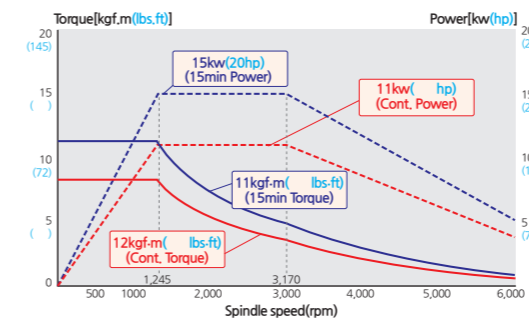
110.74N.m (DL 6G) **83lbf-ft**

143.20N.m (DL 8G) **106lbf-ft**

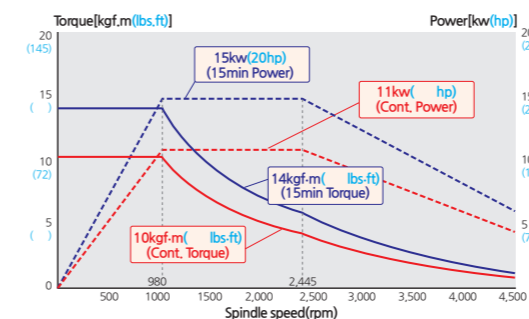
190.90N.m (DL 10G) **141lbf-ft**



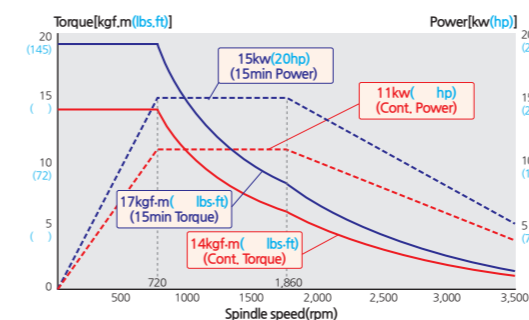
Power & Torque Diagram



	DL 6G / 6GB	
Chuck Size/Spindle Bore dia.	6" / 55 mm	6" / 2.17 inch
Spindle Speed	6,000 rpm	6,000 rpm
Main Spindle Motor	15 kW	20 hp
Max. Spindle Torque	11.3 kgf.m	83 lbf-ft
Spindle Nose	A2-5	A2-5



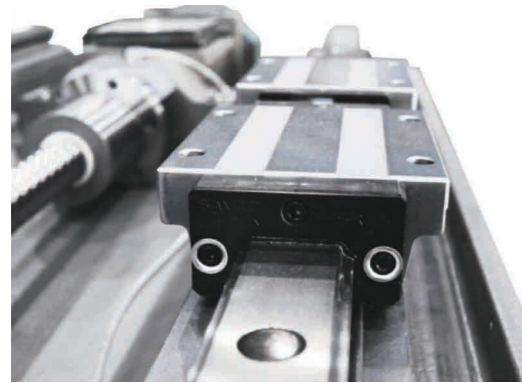
	DL 8G / 8GB	
Chuck Size/Spindle Bore dia.	10" / 62 mm	10" / 2.44 inch
Spindle Speed	4,500 rpm	4,500 rpm
Main Spindle Motor	15 kW	20 hp
Max. Spindle Torque	14.01 kgf.m	106 lbf-ft
Spindle Nose	A2-6	A2-6



	DL 10G	
Chuck Size/Spindle Bore dia.	10" / 87 mm	6" / 3.43 inch
Spindle Speed	3,500 rpm	3,500 rpm
Main Spindle Motor	15 kW	20 hp
Max. Spindle Torque	19.48 kgf.m	141 lbf-ft
Spindle Nose	A2-8	A2-8

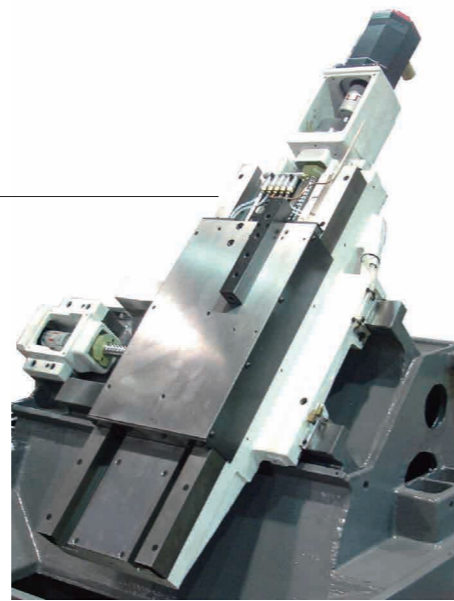
High Productivity

Slide Way



LM Guide (DL 6G / 8G / 10G)

High-precision LM guide achieves powerful cutting, fast and quiet operation, and can minimize non-cutting time.



BOX Way (DL 6GB / 8GB)

Over-sized box way system allows for interrupted cut during the machining process while still achieving high-accuracy.

Rapid Traverse Rate

Achieves maximum rapid traverse speed.

X axis: **30m/min** Z axis: **36m/min**
 X axis: **1181.10ipm** Z axis: **1417.32 ipm**
 (DL 6G/8G)

	DL 6G / 8G		DL 10G / 6GB / 8GB	
X axis	30m/min	1181.10ipm	20m/min	787.40ipm
Z axis	36m/min	1417.32ipm	24m/min	944.88ipm



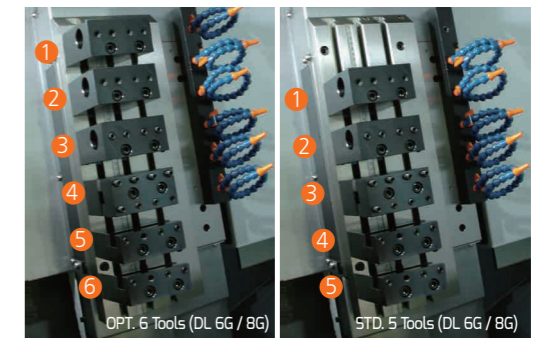
Ball Screw

Pre-tension, double-anchored ball screw ensures precision movement of the machine travel.

	DL 6G / 8G		DL 10G		DL 6GB / 8GB	
X axis travel (mm)	420mm	16.54inch	420mm	16.54inch	400mm	15.75inch
Z axis travel (mm)	250mm	9.84inch	185mm	7.28inch	250mm	9.84inch
Number of tools	6 each		6 each		6 each	

Easy Tool Setting

- 60° (DL 6G/8G / 45° (DL 10G/6GB/8GB) Slant Bed gang tool post and T-slot type tool block.
- Max. tool number 6 each
- Coolant nozzle in every tool :
Std. 5 each / Max. 6 each

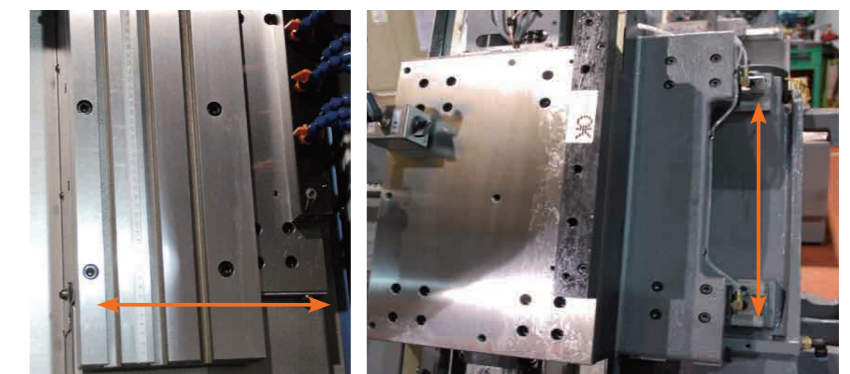


Wide Saddle

() : inch

Compare with competitors

Xaxis + 80(3.15)mm Zaxis +120(4.72)mm

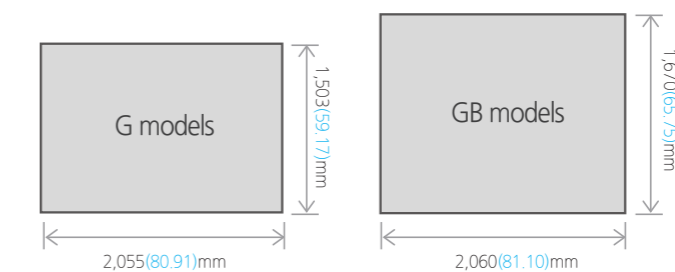


Wide saddle LM guide is used to prevent vibration.

Optimum SPACE

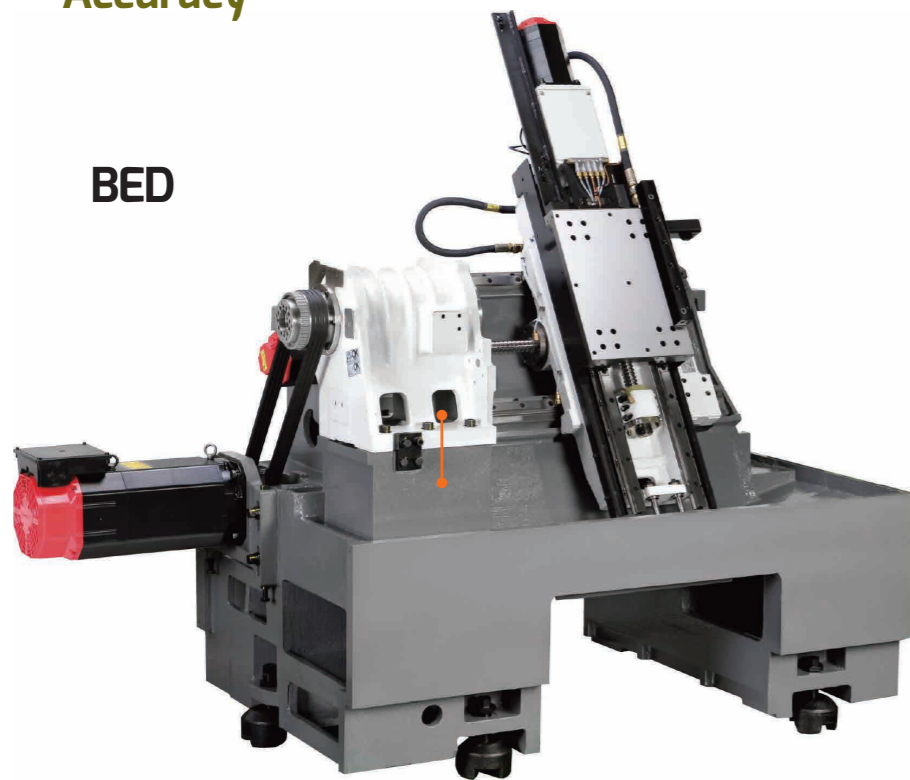
() : inch

Smaller footprint than competing machines.



Accuracy

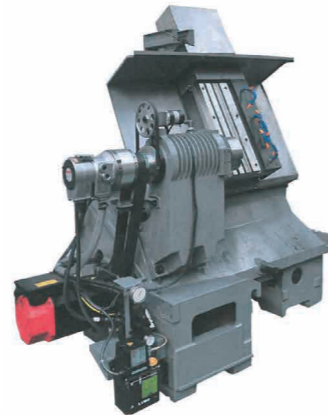
BED



Bridge type bed

FFG DMC Bed Bridge Type All-in-One Bed

Stable Bed:
No vibration, even in heavy cutting



Competitors' Bed Unstable type bed

The machine shaking on heavy duty cutting due to unbalanced weight.

High Rigidity

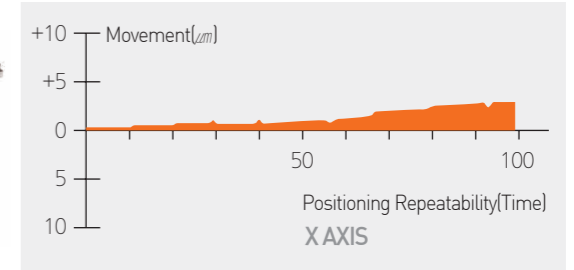
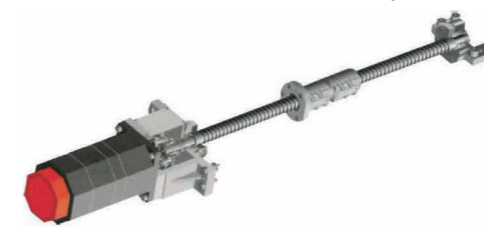
- Better chip flow.
- Bridge type bed enhanced structural stability reduces the effects of vibration during production
- Box way 45° Slant Bed
- LM Guide 60° Slant Bed



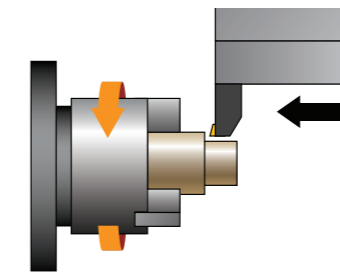
Fast and spot-on movement Repeatability accuracy 3 μ m

- Minimizes thermal deformation.
- Reduces backlash and vibration.

- Ball screw length movement

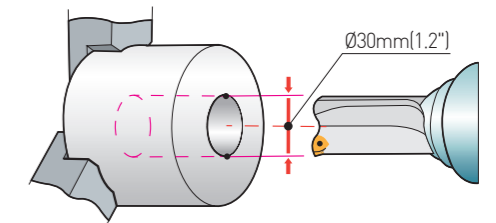


Example



O.D Cutting [Material : S45C]

Dia. of work	Ø41mm(1.61")
Side cutting depth	4mm(0.16")
Cutting speed	150 m/min(5905 ipm)
Spindle speed	1,165 r/min
Feed rate	0.3 mm/rev(0.012 ipr)
Chip emissions	180 cc.min

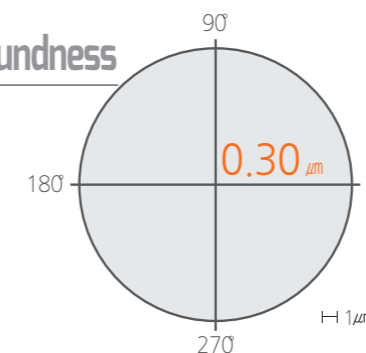


I.D Cutting

[Material : S45C] U-drilling **168_{cut}/min(10.25_{ms}/inch)**

Material	Carbon steel, SM45C
Cutting speed	80 m/min(3149 ipm)
Feedrate	0.28 mm/rev(0.011 ipr)

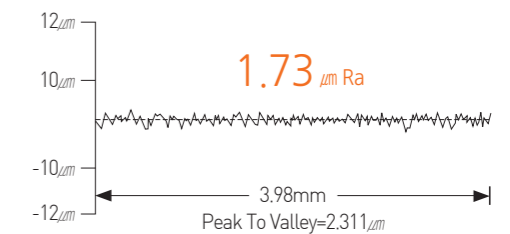
Roundness



DL 6G

Tool	Diamond tool(nose radius 0.1mm)
Material	AL 150(Aluminum)
Cutting speed	227.3 m/min(8949 ipm)
Feedrate	0.05 mm/rev(0.002 ipr)
Depth of cut	0.1 mm
Out diameter	201 mm(7.91")

Surface Profile (OD cutting)



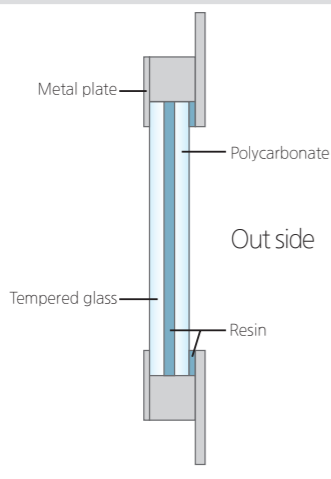
DL 6G

Tool	Diamond tool(nose radius 0.1mm)
Material	AL 150(Aluminum)
Cutting speed	227.3 m/min(8949 ipm)
Feedrate	0.05 mm/rev(0.002 ipr)
Depth of cut	0.1 mm
Out diameter	201 mm(7.91")

● This is actual cutting result. It might be not available under certain circumstances.

User-Friendly, Safe and Designed for Operator Efficiency / Ergonomics

2-Panel Safety Glass



LED Working Light



+ Long-life LED lighting creates well-lighted work environments.

Chuck opening checking device.(STD.)

+ Prevent malfunction with chuck opening and close checking device.

Oil Recovery Box

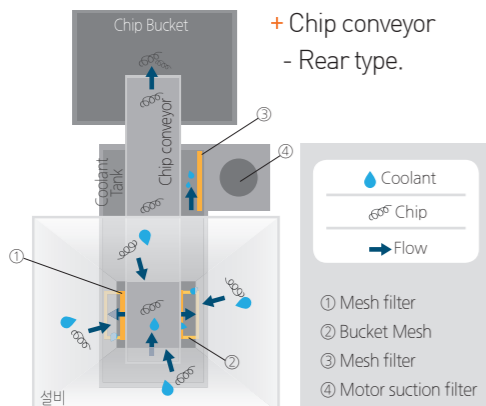


Rear Leak Prevention

+ Cover improves work environment.
+ Wiper protection.

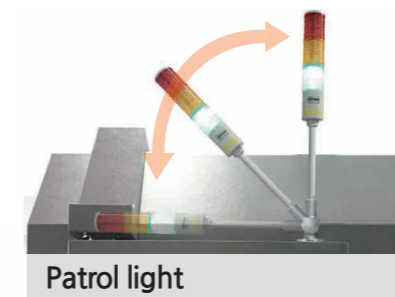
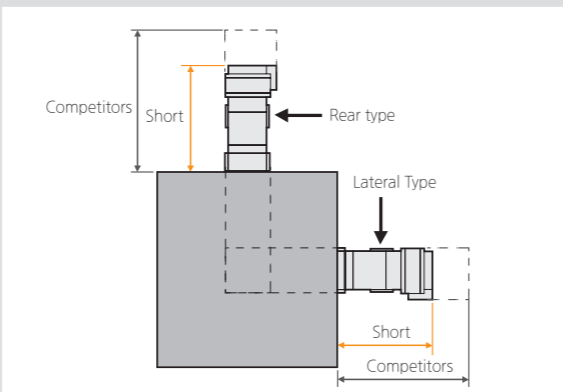


Coolant Tank 3-Triple Filter for easy cleaning and prevents coolant overflow



+ Chip conveyor - Rear type.

Chip Conveyor Occupies Minimal Floor Space



Patrol light

+ LED 3-color lighting can be attached before shipping

Front Door Interlock Device



+ CE standard safety switch can sense door opening and close; door is closed during processing.

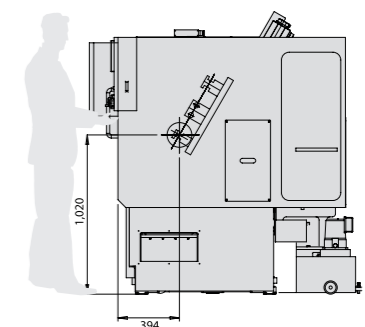
RS232C (Input/output interface)



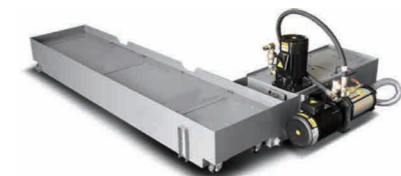
+ USB port

Easy tool setting

+ Fast and easy tool setting you can identify trouble source easily



Removable Coolant Tank



+ Front wheels attached to the structure for ease of cleaning the coolant tank.

Coolant Tank Capacity	120l (31.7gal.): G series All models
Hydraulic Tank Capacity	11l (2.91gal.): G series All models

Option

Air gun



Coolant gun

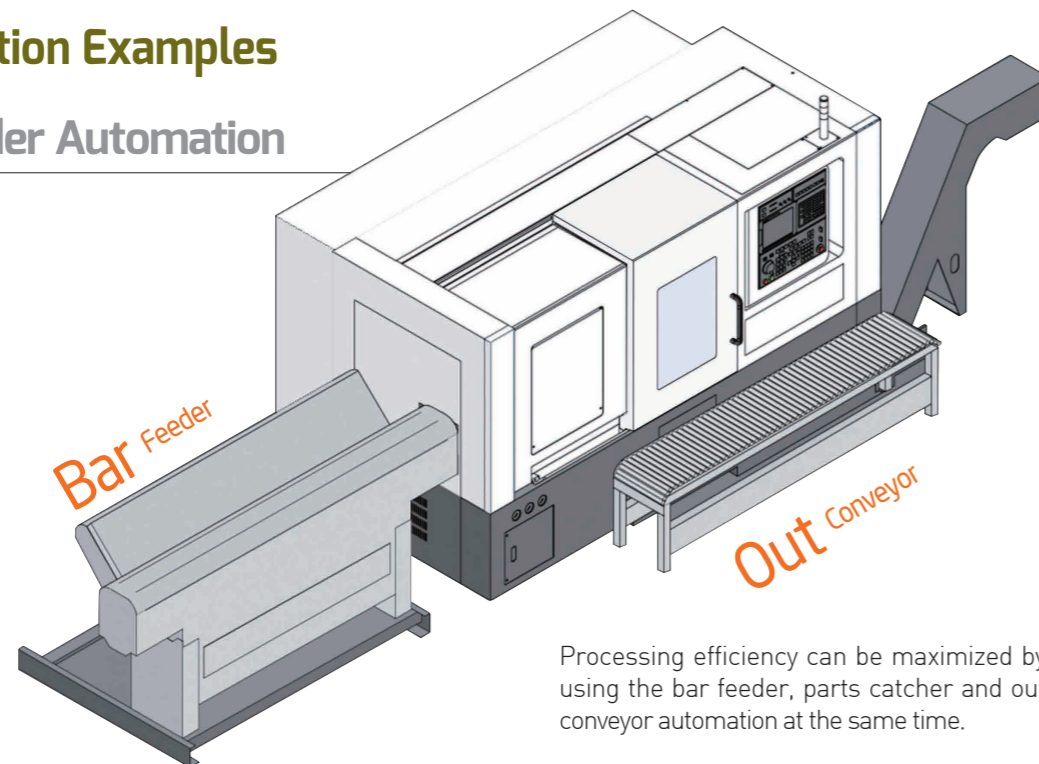


Foot switch



Automation Examples

Bar Feeder Automation



Processing efficiency can be maximized by using the bar feeder, parts catcher and out conveyor automation at the same time.

Automation Line



Work piece : Nipple

- Facilities : DL 6G / 10 machines
- Type : Chute & Elevator
- Air cylinder type / 1-axis Servo type



Work piece : Bearing Inner Race/Outer Ring

- Model: DL 6GB (Box Way) / 20 machines.
- Processing: Bearing, Inner Race/Outer Ring turning process.
- Loading & Unloading Device: Forward input automation.
- Work stocker : Belt conveyor



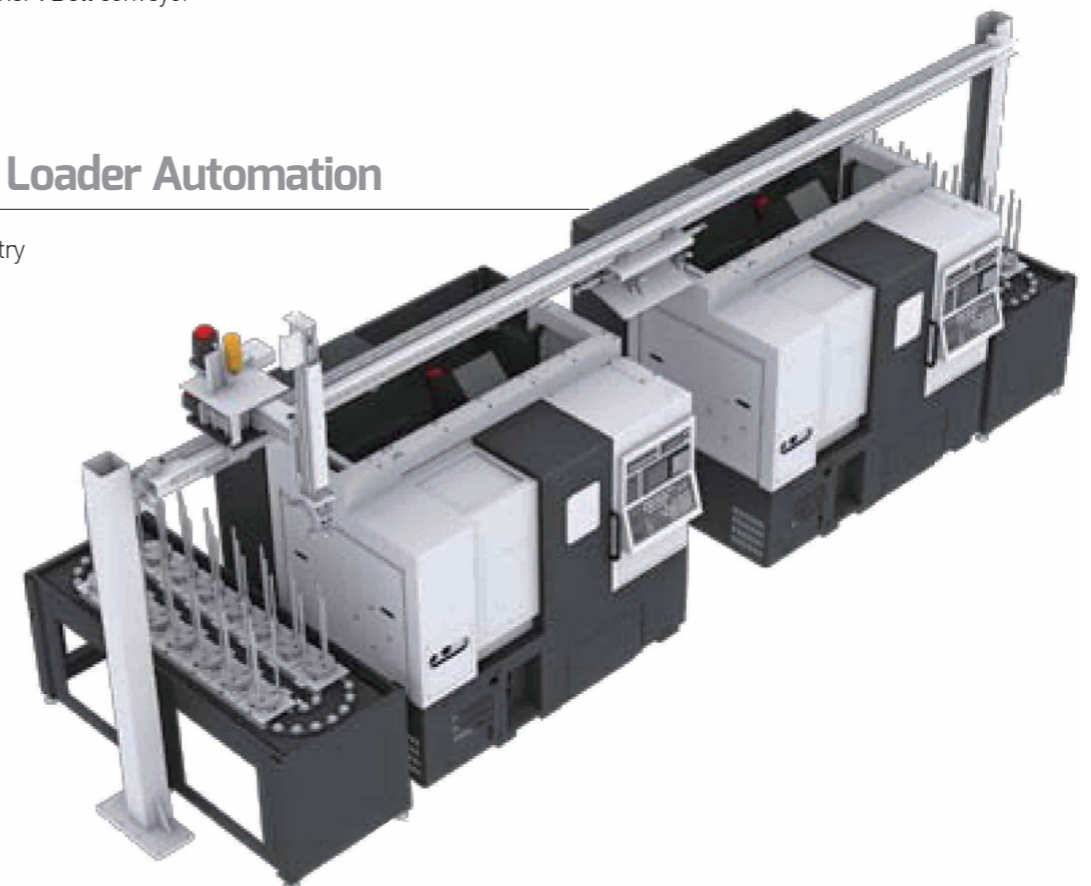
Front Load Automation



- Work piece :
Bush, Nipple (Air cylinder type / Servo type)
- Loading & Unloading Device: Front load, simplicity automation.
- Work stocker : Belt conveyor

Gantry Loader Automation

- 2-axis gantry
- Popular



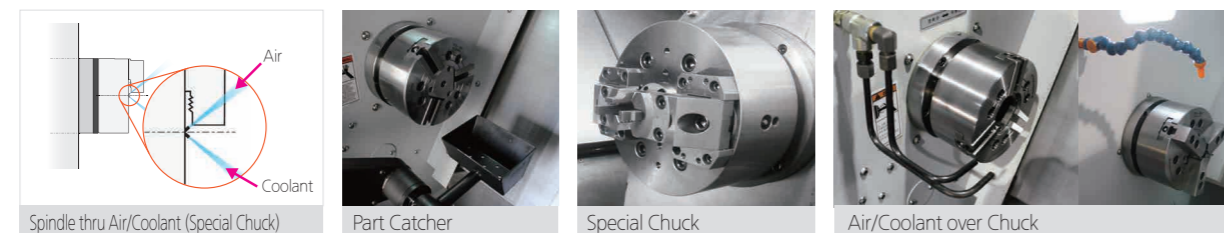
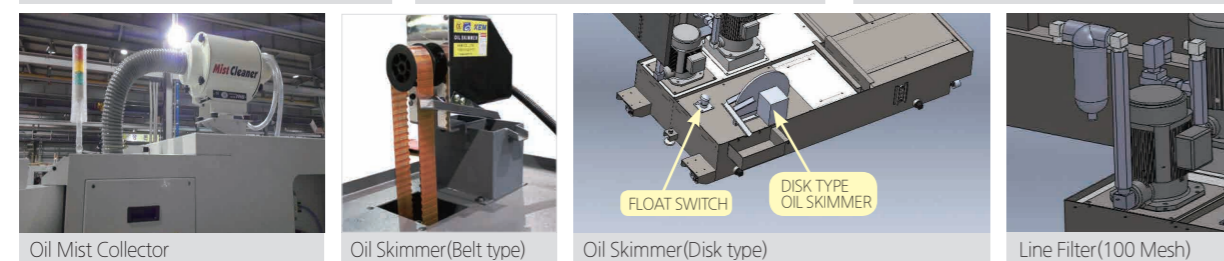
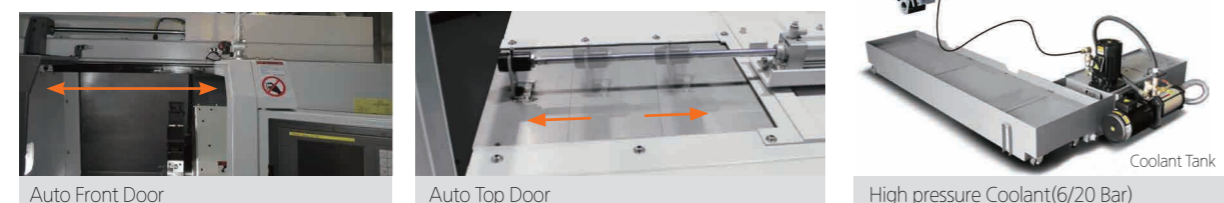
Options

A Variety of Easy Standard and Optional Parts

Standard Parts

Hydraulic chuck with one set of soft jaws, toolbox with basic tools, hydraulic unit, door interlocks, work light, leveling bolts and plates, foot switch pedal, lubrication system, 3-color alarm lamp, chuck open / close confirmation, RS232C + USB port.

Options

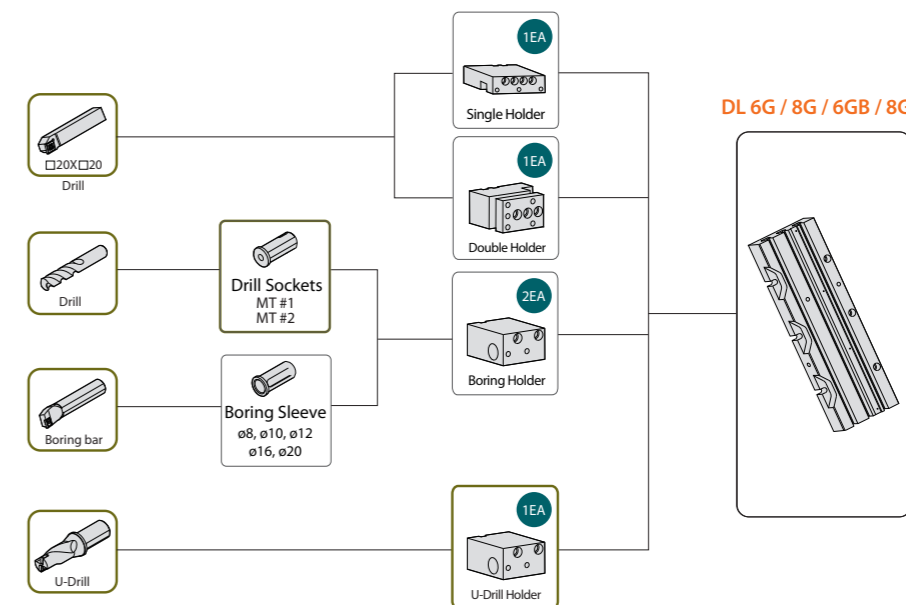


Various Soft Options

- I / O expansion (16-contact, 32-contact)
- Power disconnection device
- M - code

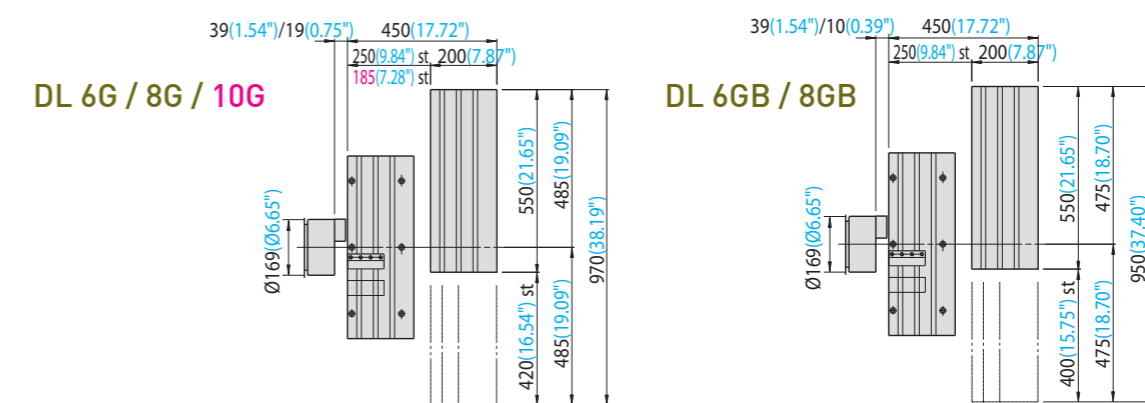
Tooling Diagram

□ : Option (Not-Supplied)



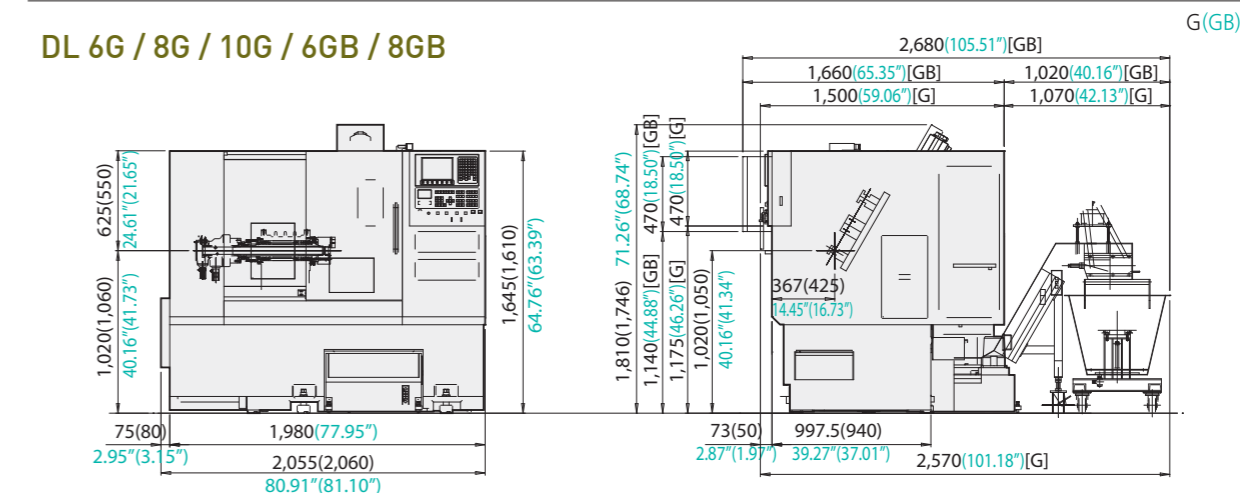
Working Range

Unit : mm(inch)



Machine Lay-Out

Unit : mm(inch)



Machine Specifications

() : Option

Specifications				DL 6G		DL 8G		DL 10G		
Capacity	Swing over Bed (Max. swing dia.)	mm	inch	490	19.29	490	19.29	490	19.29	
	Swing over Cross slide	mm	inch	170	6.69	170	6.69	170	6.69	
	Max. Turning Dia.	mm	inch	170	6.69	170	6.69	170	6.69	
	Max. Turning Length	mm	inch	240	9.45	220	8.66	185	7.28	
	Bar Capacity	mm	inch	44(28)	1.73(1.10)	51	2.01	74	2.91	
Spindle	Max. Spindle Speed	rpm		6,000		4,500		3,500		
	Spindle Nose	-		A2-5		A2-6		A2-8		
	Spindle Bore diameter	mm	inch	55	2.17	62	2.44	87	3.43	
	Max. Spindle Torque	N.m	lbs-ft	110.74	83	143.20	106	190.90	141	
	Spindle Driven Method	-		Belt(Built-in)		Belt		Belt		
	Standard Chuck Size	inch		6		8		10		
Motor	Main Spindle Motor(Cont./30min)	kw	hp	11/15(5.5/7.5)	15/20(7.4/10)	11/15	15/20	11/15	15/20	
	X axis Servo Motor	kw	hp	1.8	2	1.8	2	1.8	2	
	Z axis Servo Motor	kw	hp	1.8	2	1.8	2	1.8	2	
Travel	X axis travel	mm	inch	420	16.54	420	16.54	420	16.54	
	Z axis travel	mm	inch	250	9.84	250	9.84	185	7.28	
	Guideway Type(X/Z)	-		LM Guide		LM Guide		LM Guide		
	X axis rapid traverse rate	m/min	ipm	30	1181.10	30	1181.10	30	1181.10	
	Z axis rapid traverse rate	m/min	ipm	36	1417.32	36	1417.32	36	1417.32	
Turret	Turret Index Type	-		Gang		Gang		Gang		
	Max. No. of Tools	ea		6		6		6		
	Turning tool shank size	mm	inch	20	0.79	20	0.79	20	0.79	
	Boring bar diameter	mm	inch	32	1.25	32	1.25	32	1.25	
General	Machine Weight	kgf	lbs	2,500	5511.48	2,600	5731.93	2,850	6283.08	
	Machine height	mm	inch	1,645	64.76	1,645	64.76	1,645	64.76	
	Floor space	Length	mm	inch	2,055(1,980)	80.91(77.95)	2,055	80.91	2,055	80.91
		Width	mm	inch	1,500	59.06	1,500	59.06	1,500	59.06
	Power capacity	kVA		20		20		20		
	Controller			FOi-TF		FOi-TF		FOi-TF		

Machine Specifications

Specifications				DL 6GB		DL 8GB		
Capacity	Swing over Bed (Max. swing dia.)	mm	inch	490	19.29	490	19.29	
	Swing over Cross slide	mm	inch	170	6.69	170	6.69	
	Max. Turning Dia.	mm	inch	170	6.69	170	6.69	
	Max. Turning Length	mm	inch	240	9.45	220	8.66	
	Bar Capacity	mm	inch	44	1.73	51	2.01	
Spindle	Max. Spindle Speed	rpm		6,000		4,500		
	Spindle Nose	-		A2-5		A2-6		
	Spindle Bore diameter	mm	inch	55	2.17	62	2.44	
	Max. Spindle Torque	N.m	lbs-ft	111.62	82	143.17	106	
	Spindle Driven Method	-		Belt		Belt		
	Standard Chuck Size	inch		6		8		
Motor	Main Spindle Motor(Cont./30min)	kw	hp	11/15	15/20	11/15	15/20	
	X axis Servo Motor	kw	hp	1.8	2	1.8	2	
	Z axis Servo Motor	kw	hp	1.8	2	1.8	2	
Travel	X axis travel	mm	inch	400	15.75	400	15.75	
	Z axis travel	mm	inch	250	9.84	250	9.84	
	Guideway Type(X/Z)	-		BOX Way		BOX Way		
	X axis rapid traverse rate	m/min	ipm	20	787.40	20	787.40	
	Z axis rapid traverse rate	m/min	ipm	24	944.88	24	944.88	
Turret	Turret Index Type	-		Gang		Gang		
	Max. No. of Tools	ea		6		6		
	Turning tool shank size	mm	inch	20	0.79	20	0.79	
	Boring bar diameter	mm	inch	32	1.25	32	1.25	
General	Machine Weight	kgf	lbs	2,600	5731.93	2,700	5952.39	
	Machine height	mm	inch	1,610	63.39	1,610	63.39	
	Floor space	Length	mm	inch	2,060	81.10	2,060	81.10
		Width	mm	inch	1,660	65.35	1,660	65.35
	Power capacity	kVA		20		20		
	Controller			FOi-TF		FOi-TF		

NC Specifications (FANUC F0i-TF3)

○ : Standard, OPT. : Option, (!) : M type, (!!) : 250 type

	Item	Specification	0iTf3
Controls	Controlled axes	Std. 2axes	X, Z
	Simultaneously control axes expansion(Total)	0.001mm/0.0001"	2 axes
Axis Functions	Least input increment		○
	HRV2 control		○
	Inch/metric conversion	G20/G21	○
	Increment system 1/10	0.0001mm/0.00001"	○
	Stored stroke 1	Overtravel control	○
	Stored stroke 2 and 3		○
	Mirror image		○
	Chamfering on/off		○
	Backlash compensation	Max. 255 pulses	○
	Stored pitch error compensation		○
Operation	Automatic operation(memory)		○
	MDI operation		○
	Buffer register		○
	Program restart		○
	Search function	Sequence NO. / Program NO. / Address	○
	DNC operation		○
	Reference position shift		-
	Manual handle feed rate	X1, X10, X100	○
	Manual pulse generator	1unit	○
	Manual handle interruption		○
Interpolation	Linear interpolation	G01	○
	Circular interpolation	G02, G03	○
	Dwell	G04	○
	Thread cutting/Synchronous cutting		○
	Multiple threading		○
	Thread cutting retract		○
	1st, 2nd reference position return & check	G27, G28, G30	○
	Variable lead thread cutting		○
	Continuous thread cutting		○
	Circular thread cutting		OPT.
3rd and 4th reference point return		○	
polygon turning		OPT.	
Helical interpolation		OPT.	
Feed functions	Rapid traverse override	F0/25/50/100%	○
	Feedrate Override	0-200% (10% unit)	○
	Jog feed override	0-2000 mm/min	○
	Feed per minute	G98	○
	Feed per revolution	G99	○
	Cutting feedrate clamp		○
	External deceleration		○
	Feed stop		-
	Advanced preview control		OPT.
	Spindle speed override	0~150%	○
Auxiliary & Spindle functions	Constant surface speed control	G96, G97	○
	1st Spindle orientation		○
	Rigid tapping		○
	Auxiliary function	M8 digit	○
Programming functions	Program/code	EIA/ISO	○
	Optional block skip	1 Piece	○
	Additional block skip	Total 0(Only NC function)	○

	Item	Specification	0iTf3
Programming functions	Maximum command dimension	± 99999.999mm/(± 9999.9999 inch)	○
	Program file name	32 characters	○
	Sequence number	N8 digit	○
	Absolute / Incremental programming		○
	Decimal point input		○
	Work coordinate system selection	G52 ~ G59	○
	Direct drawing dimension programming		○
	G code system A		○
	G code system B/C(selectable)		○
	Chamfering / corner R		○
	Programmable data input	G10	○
	Sub program call	Nested holds	10
	Custom macro B		○
	Simple canned cycle	G90, G92, G94	○
	Circular interpolation by R programming		○
	Multi repetitive canned cycle	G70 ~ G76	○
	Multi repetitive canned cycle2		○
	Drilling canned cycle(G80 series)		○
	Tape format for FANUC series 15		-
	Tape format for FANUC series 10/11		○
Manual guide oi		OPT.	
Tool functions	Tool number command(t-code function)	T4-digit	○
	Number of tool offsets		128 Pairs
	Tool offset	G43, G44, G49	○
	Tool nose radius compensation	G40 ~ G42	○
	Tool geometry / wear offset	Geometry & wear data	○
	Tool life management		○
	Tool offset value counter input		○
	Auto tool offset		○
	Direct input of tool offset value measured B		○
	Editing op. functions	Part program storage size	
No. of Registered programs			400 ea
Part program editing			○
Program protect			○
Background editing			○
Expanded part program editing		Copy, Move, Change of NC program	○
Setiing & display	Status display		○
	Program name display	31 characters	○
	Self diagnostic function		○
	Help function	Alarm & Operation display	○
	Running tiome / Parts number display	Auto running time & Parts No. display	○
	Load meter display	Spindle & Servo load display	○
	External message display		○
	Display of spindle speed and T-code at all screen		○
	Tool path graphic display		○
	Servo setting screen		○
Spindle setting screen		○	
Multi language display		○	
Data input & output	Reader puncher control	CH1 interface	○
	I/O interface	RS-232C	○
	Memory card input and output		○
	External key input		○
	External program input		○
	External work number search		○
	USB Memory	Input/Output	○
Data Server	Only 1 path, need option board	-	
Other functions	MDI / DISPLAY unit		8.4"
	PMC system		○
	Ethernet function	Embedded ethernet function	○