

SINCE 1944

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DL V series (En)

Vertical CNC Turning Center

DL 40V / 40VTT / 60V[L] / 60V[L]M /
80V[L] / 80V[L]M / 100V / 100VM

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



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DL V series

DL 40V / 40VTT

DL 60V[L] / 60V[L]M

DL 80V[L] / 80V[L]M

DL 100V / 100VM

The Box guideway, Line up from 8" to 32"
High Efficiency, High Productivity Vertical CNC Turning Center

Vs Competitors

Heavy Cutting
High Spindle speed

4000rpm
[DL 40V/40VTT]

High Torque

45kw(60.32hp)
347kgf·m(2,510lbs·ft)
[DL 100V]

Max. rapid traverse

X/Z axis
20m/min
(787.40ipm)

Max. Column Span

1.5x
730mm(28.74inch)
[DL 80V]



PISTON

DIFF.CASE

DISC

DRUM

KNUCLE

ALUMINIUM WHEEL



DL 40V

Travel (X/Z) (mm)(inch)	200 × 350	7.87 × 13.78
Guideway Type	BOX Way	
Spindle speed (rpm)	4,000	
Number of tools (pcs)	8	



DL 40VTT

Travel (X/Z) (mm)(inch)	200 × 350	7.87 × 13.78
Guideway Type	BOX Way	
Spindle speed (rpm)	4,000	
Number of tools (pcs)	8	



DL 60V(L)/60V(L)M

Travel (X/Z) (mm)(inch)	260 × 480	10.24 × 18.90
Guideway Type	BOX Way	
Spindle speed (rpm)	3,000	
Number of tools (pcs)	12 / M:BMT65	



DL 80V(L)/80V(L)M

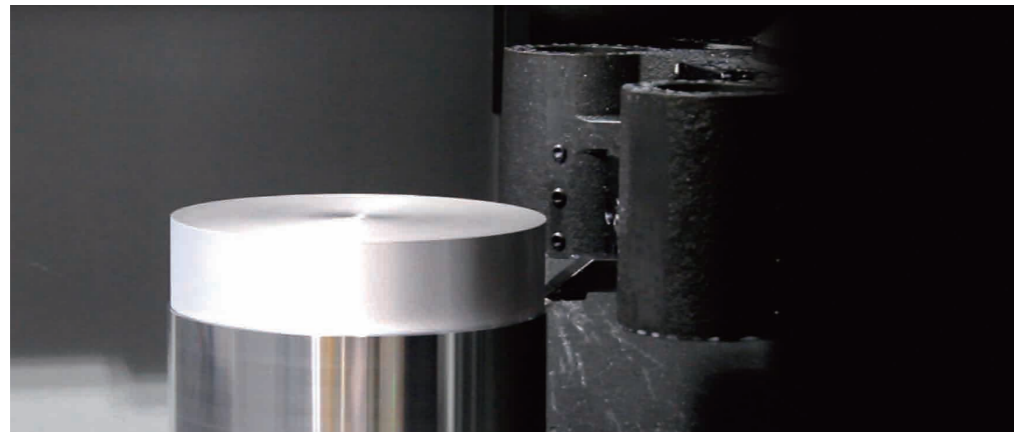
Travel (X/Z) (mm)(inch)	390 × 780	15.35 × 30.71
Guideway Type	BOX Way	
Spindle speed (rpm)	2,000	
Number of tools (pcs)	12 / M:BMT75	



DL 100V/100VM

Travel (X/Z) (mm)(inch)	480 × 860	18.90 × 33.86
Guideway Type	BOX Way	
Spindle speed (rpm)	1,800	
Number of tools (pcs)	12 / M:BMT 85	

High Productivity



Spindle

Main Spindle Structure for High Speed & Heavy Cutting Applications

- High torque main spindle motor is supported by strong double cylindrical roller bearings and angular thrust bearing which allow heavy duty cutting, Also minimize vibration and heat distortion.
- Clamping system operated by two steps. One is high pressure in rough cutting, the other low pressure in finish cutting. This system offer optimized cutting to prevent workpiece distortion. (2step Chucking Pressure System : OPT)



[] : model

DL V series	DL 40V	DL 40VTT	DL 60V(L)/60V(L)M	DL 80V(L)/80V(L)M	DL 100V/100VM
Spindle speed(rpm)	4,000	4,000	3,000	2,000	1,800
Spindle Nose	A2-6	A2-6	A2-8	A2-11	A2-15
Spindle Motor [Kw(hp)]	15(20)	15(20)	22(30)	30(40.2)	45(60)
Max. Turning dia. [mm(inch)]	320(12.6)	320(12.6)	450(17.72)	730(28.74)	920(36.22)
Max. Turning length [mm(inch)]	200(7.87)	200(7.87)	450(17.72)	750(29.53)	850(33.46)

ZF Gear Box



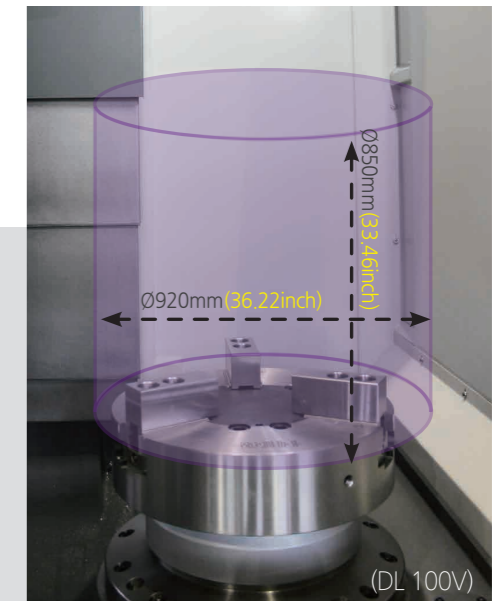
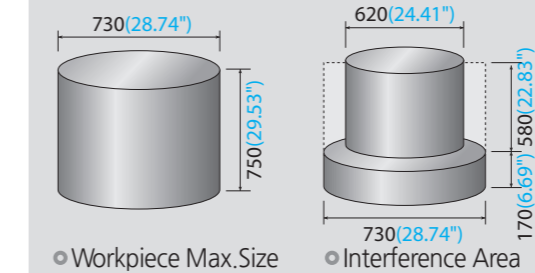
DL 60V / 80V : OPT
DL 100V : STD



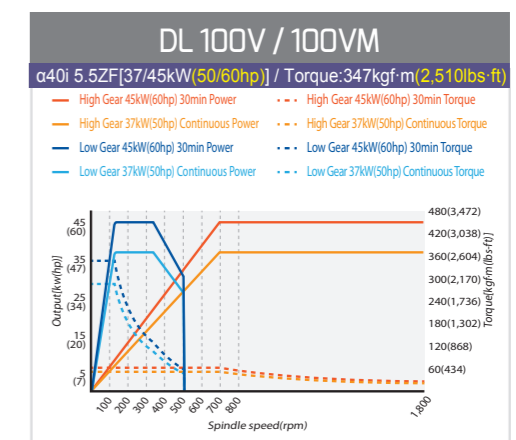
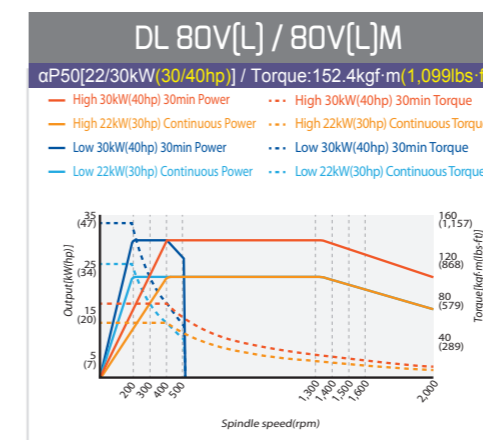
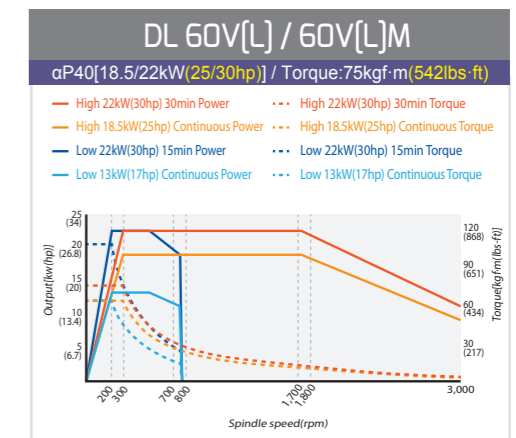
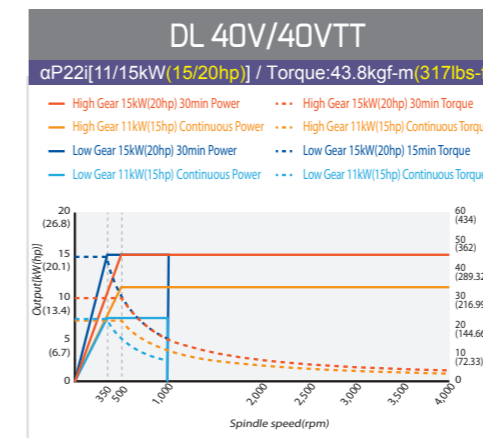
Maximum Workpiece Size: Ø920mm x 850mm(36.22" x 33.46")

The integrated box guideway and meehanite cast bed provide the foundation for superior heavy duty cutting. The exclusive rib design bed enables ideal stability for top-notch accuracy and great surface finishes as well.

Maximum Working Range/ Interference (DL 80V)



Super High Torque



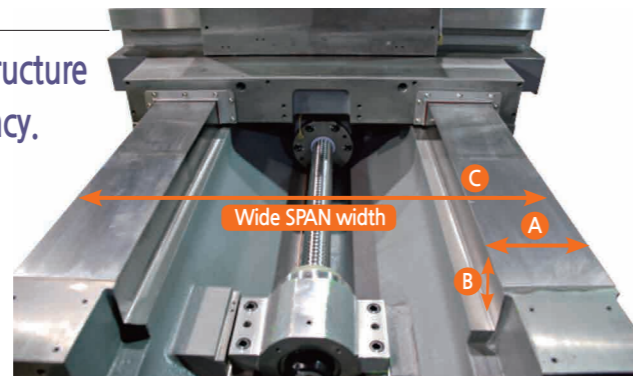
High Productivity

Bed & Column

The Wide Box Guideway Structure Provides Rigidity and Accuracy.

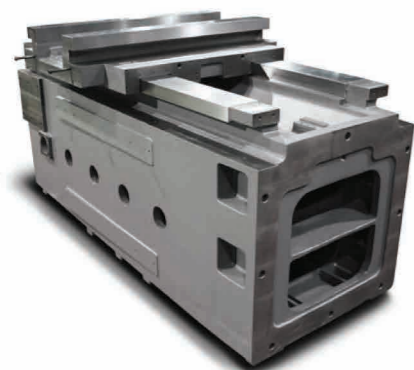
X, Z-axis

Very wide & thick guideway and Six faced slide way provided by high frequency heat treatment and fine grinding. This available for long time cutting and heavy duty cutting.

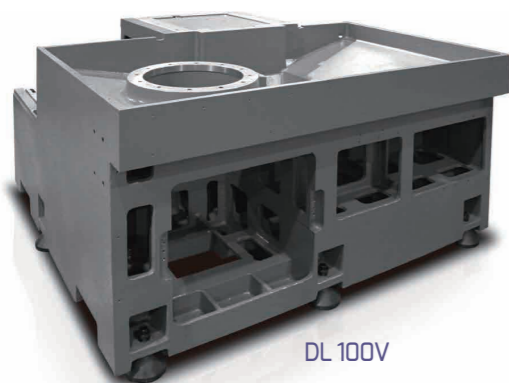


Unit:mm(inch)

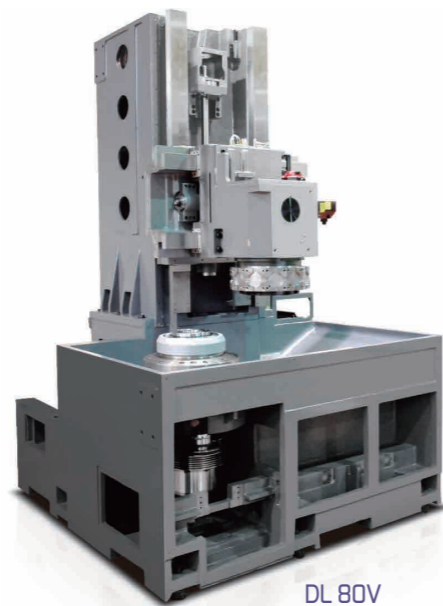
DL V series	Z axis Slide			X axis Slide		
	A	B	C	A	B	C
40	80(3.15)	65(2.56)	340(13.39)	65(2.56)	35(1.38)	260(10.24)
60	90(3.54)	50(1.97)	470(18.50)	75(2.95)	45(1.77)	335(13.19)
80	120(4.72)	65(2.56)	730(28.74)	90(3.54)	65(2.56)	530(20.87)
100	140(5.51)	60(2.36)	740(29.13)	105(4.13)	75(2.95)	510(20.08)



High Rigidity Column, Saddle



DL 100V



DL 80V

BED

- Bed structure: Heavy meehanite cast-iron
- Easy chip disposal
- Same center between spindle and motor → Prevent distortion by belt tension. (No impact for machining)

Turret

12 Stations Turret for Heavy Duty Cutting



High Torque Servo Turret(DL 80V)

Turret Index time (one face) : **0.2sec**
Max No. of Tools : **12ea**

- FANUC Servo Motor Index :
Turret Index time (one face) 0.2sec (DL 80V(L)), 0.3sec (DL 100V)
- Accurate and Stable during moving vertically in servo turret indexing
- Turret Index Position : 12Positions Flexible
- Tool Size : DL 40V/MTT : □25(0.98"), Ø32(1.26")
DL 60V(L) : □25(0.98"), Ø50(1.97")
DL 80V(L) : □32(1.26"), Ø50(1.97")
DL 100V : □32(1.26"), Ø80(3.15")



High Torque BMT Servo Turret(DL 80VM)

Turret Index time (one face) : **0.2sec**
Max No. of Tools : **12ea**
Milling Spindle Speed : **Max. 3,000rpm**

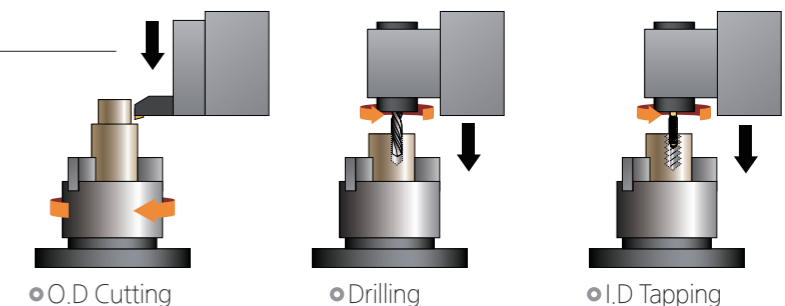
- Tool Holder : BMT65 (DL 60V(L)M)
BMT75 (DL 80V(L)M)
BMT85 (DL 100VM)

Mill Turret

DL V series	DL 60V(L)M	DL 80V(L)M	DL 100VM
Turret Index Type	SERVO	SERVO	SERVO
Max No. of Tools(ea)	12/BMT65	12/BMT75	12/BMT85
O.D. tool size[mm(inch)]	□25(0.98)	□32(1.26)	□32(1.26)
Boring bar dia.[mm(inch)]	Ø50(1.97)	Ø50(1.97)	Ø80(3.15)
Index time(one face)(sec)	0.2	0.2	0.25

Machining

Machining Variation



○O.D Cutting

○Drilling

○I.D Tapping

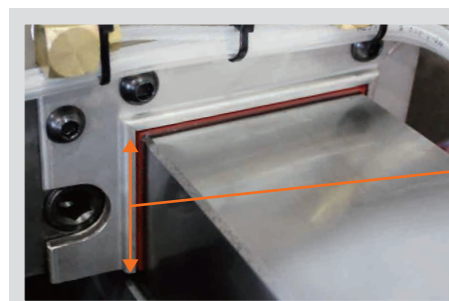
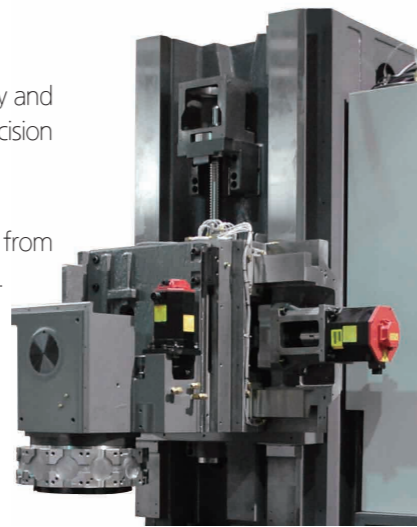
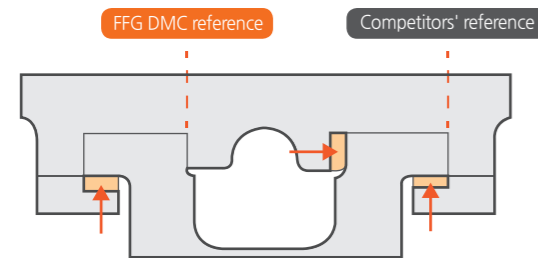
Accuracy

- FFG DMC way : Narrow guide type

Top/bottom guide way supports saddle for superb rigidity and guide way is close to spindle center line best in class precision machining.

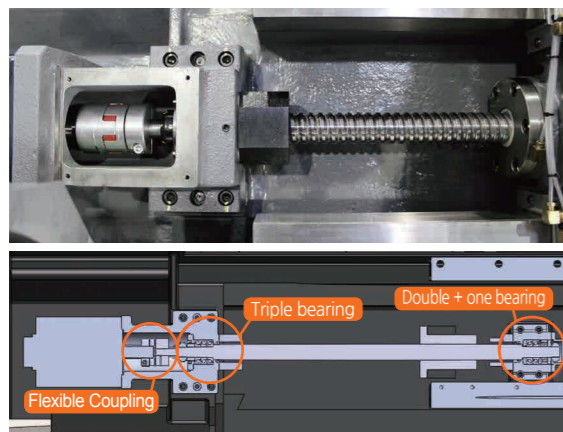
- Other companies : Guide on side

Only top guide way supports saddle, and guide way is far from center line, resulting in bad consistency in precision quality.



Box way

Guide way width :
Best in same class(1.5x)
(DL 80V)

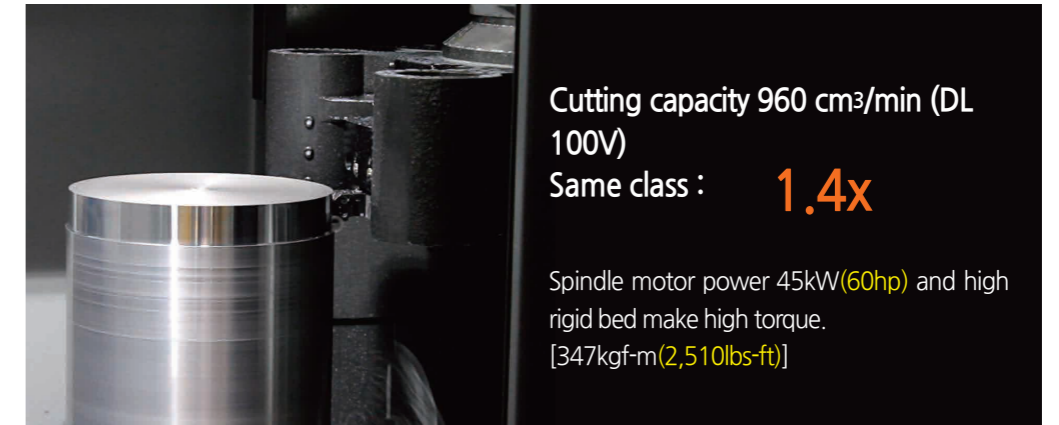


- Supported with double anchoring ball screw
- Optimal arrangement of triple angular ball bearing and double angular ball bearing(DL80V)
- Optimal arrangement of triple angular ball bearing, ball bearing, and radial bearing (DL80V/DL100V)
- Pretension-applied double anchored ball screw ensures highest quality of precision positioning.
- Flexible coupling connects ball screw and servo motor for intact power supply without lost motion and vibration damping ability.

Travel & Rapid Traverse

[] : model

DL V series	DL 40V	DL 40VTT	DL 60V(L)/60V(L)M	DL 80V(L)/80V(L)M	DL 100V/100VM
Travel(X/Z) [mm(inch)]	200/350(7.87/13.78)	200/350(7.87/13.78)	260/480(10.24/18.90)	390/780(15.35/30.71)	480/860(18.90/33.86)
Rapid traverse(X/Z) [m/min(ipm)]	20/16(787/630)	20/16(787/630)	20/20(787/787)	20/20(787/787)	20/20(787/787)
Ball screw dia.(X/Z) [mm(inch)]	Ø32(1.26)/Ø32(1.26)	Ø32(1.26)/Ø32(1.26)	Ø32(1.26)/Ø40(1.57)	Ø40(1.57)/Ø50(1.97)	Ø40(1.57)/Ø50(1.97)

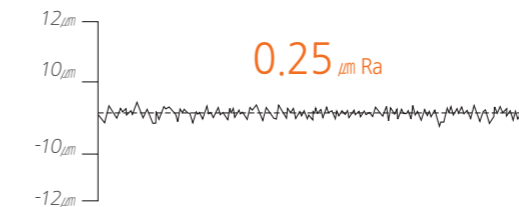


Cutting capacity 960 cm³/min (DL 100V)

Same class : **1.4x**

Spindle motor power 45kW(60hp) and high rigid bed make high torque.
[347kgf-m(2,510lbs-ft)]

Surface Roughness

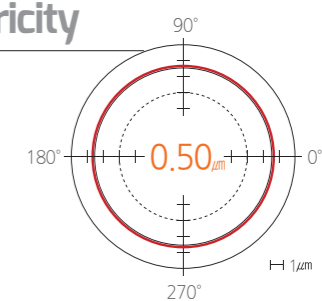


Machine type	DL 80V
Tool	Diamond tool (nose radius 0.508(0.02"))
Material	AL150(Aluminum)
Cutting speed	200m/min(7,874ipm)
Feedrate	0.1mm/rev(0.004ipr)
Depth of cut	0.15mm(0.01")
Outer diameter	200mm(7.87")

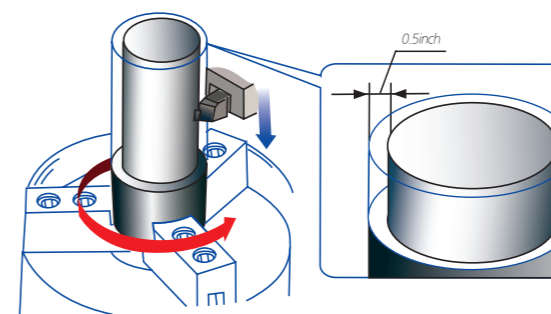
Roundness



Cylindricity



Example Of Machining



Model : DL 80V(Work Material : SM45C)

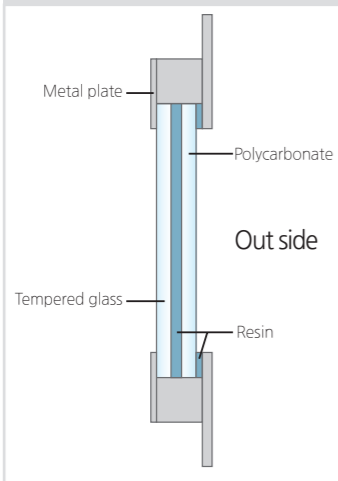
Heavy Cutting (O.D. tool size: □32(1.26"))

- Spindle speed : 357 rpm
- Cutting speed : 142 mm/min(6 ipm)
- Depth of cut : 12.7 mm(0.50") <Spindle Load 65%>
- Feedrate : 0.4 mm/rev(0.016 ipr)

⦿ 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.

Door Safety Steel Cover

+ Paste 2 step steel pin on the front of Door chuck center, prevent the safety accident from workpiece splash

Long-life Slide Cover



+ Minimized slide steps and simplified cover structure

Good Chip Removal



Tool presetter(OPT.)

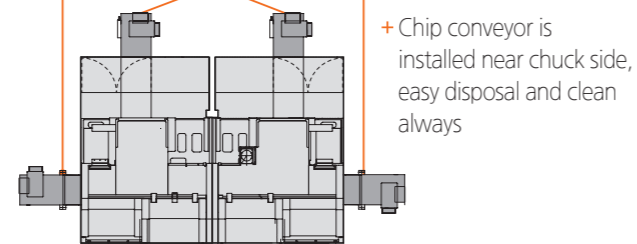


+ DMC use the portable tool setter, because accumulated chip can cause the wrong operation for vertical lathe.

Chip & Coolant Splash guard Cover

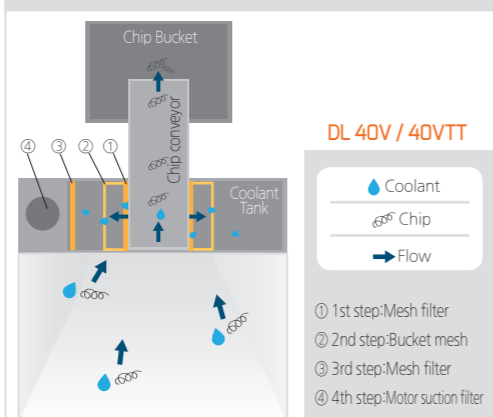
Left side chip conveyor (OPT) Right side chip conveyor (OPT)

Rear side chip conveyor (OPT)



+ Easy Installation of Chip Conveyor
+ Chip conveyor is installed near chuck side, easy disposal and clean always

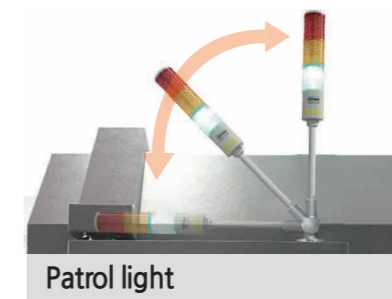
3 steps filter coolant tank Easy Clean-up & Prevent Coolant over flow



Spindle Load Meter Gauge

2step Chucking pressure system(Opt.)

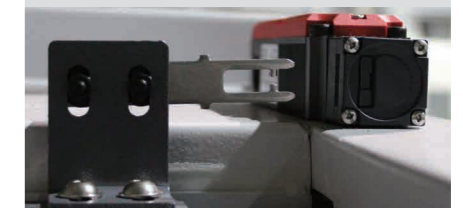
+ 2 step High-low Chucking System



Patrol light

+ LED 3 color wrapped folded when shipping

Front Door Interlock Device



+ CE standard safety switch can sense door open and close; door is closed during operation

RS232C (Input/output interface)



+ USB port

Movable CNC panel (Opt.)



+ Convenient swiveling CNC panel(OPT)

Easy Clean-up Removable Coolant



+ Big size tank
+ Drawer-type oil tank with wheels is detachable from the coolant tank for easy daily maintenance.

Coolant Tank Capacity	390ℓ(103.03gal) : DL 40V
	550ℓ(145.29gal) : DL 40VTT
	270ℓ(71.33gal) : DL 60V(L)/60V(L)M
Hydraulic Tank Capacity	370ℓ(97.74gal) : DL 80V(L)/80V(L)M/100V/100VM
	14ℓ(3.7gal) : DL 40V/DL 60V(L)/60V(L)M/100V/100VM
	60ℓ(15.85gal) : DL 40VTT
	66ℓ(17.44gal) : DL 80V(L)/80V(L)M

Spindle BRG Protect

+ Labyrinth



Protection cover

Option

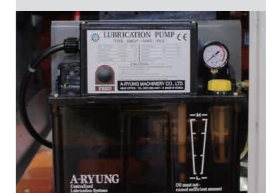
Air gun



Coolant gun



Lubrication unit



+ DL 40/DL 60V/DL 80V : 3ℓ(0.79gal)
DL 100V : 4ℓ(1.06gal)

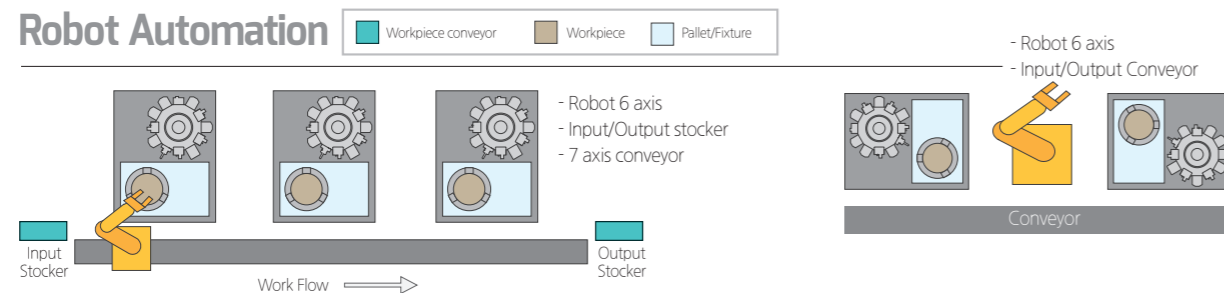
Automation & Option Examples

Front work loading system Automation

- Loader 3axis Servo, 1axis Hyd(Up/Down)
- Weight : 20kg
- in/out stocker
- Auto front door(Hyd.Up/Down)



Robot Automation



- Customer : Germany
- Work : Brake disc (14kg)
- Install : '11(1-line) '12(2-line) / '13(2-line)

Vertical Turning & Machining center

- DL 80V+DL 80V+Vertical Machining Center
- Robot & Double gripper
- Turn over & Stocker(IN-Out)

Aluminium Wheel Cutting



Disk Cutting



Drum Cutting (Model : DL 80V)



Option

A Variety of Easy Standard and Optional Parts

Standard Parts

Hydraulic Chuck with one set of Soft Jaw, soft jaw (1 SET, additional), Tool box with necessary operating tools, hydraulic Unit, Door interlocks, Work light, Leveling bolts & plates, Foot switch, Lubrication System, 3-color alarm lamp, Chuck open / close confirmation, RS232C+USB Port

Options



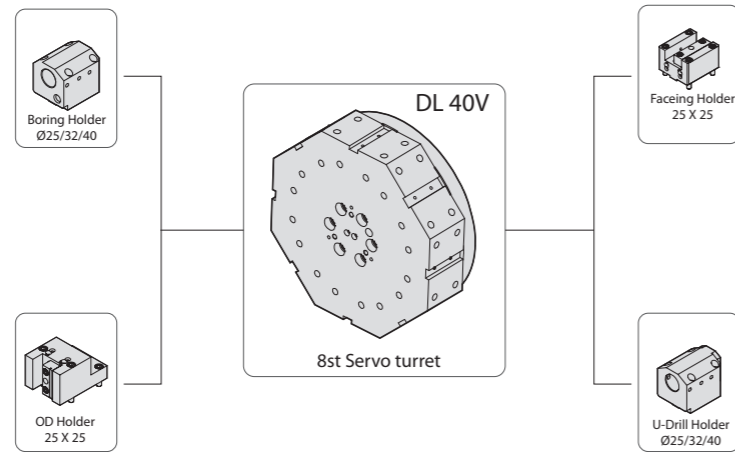
Various Soft Options

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

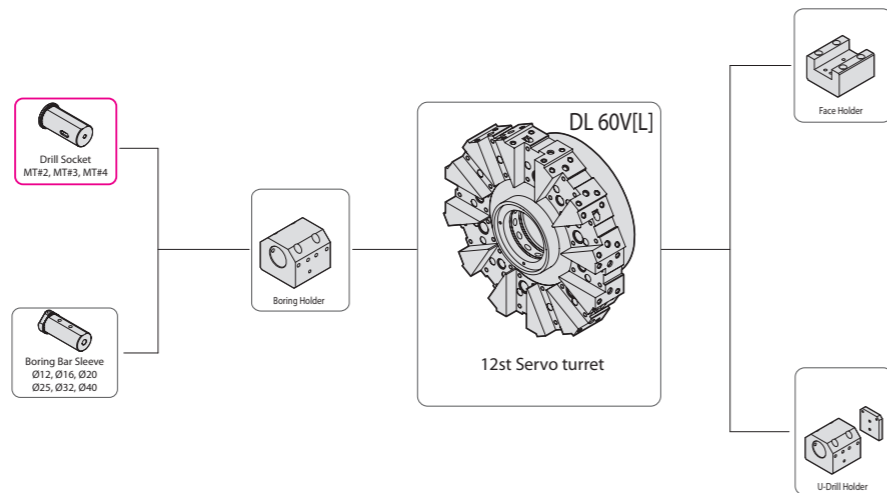
Tooling Diagram

□ : Option(Not-Supplied)

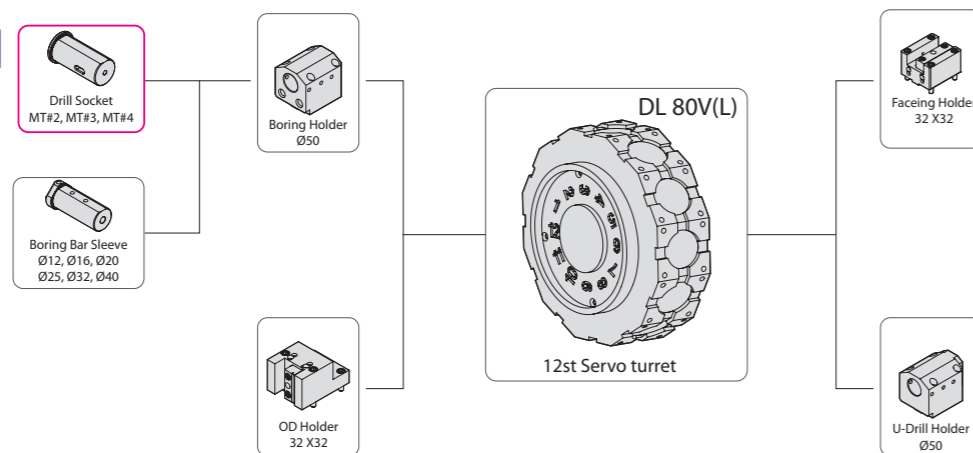
DL 40V/40VTT



DL 60V(L)



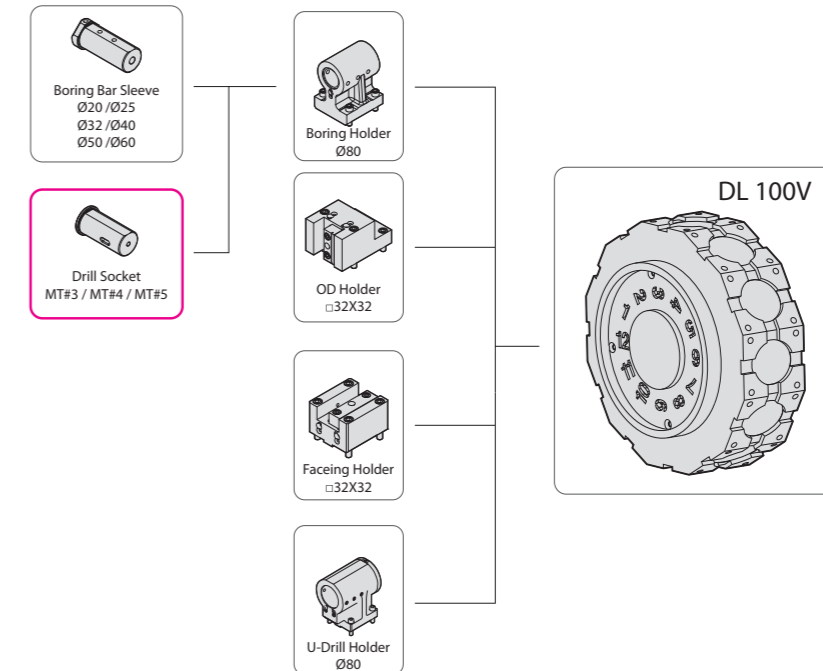
DL 80V(L)



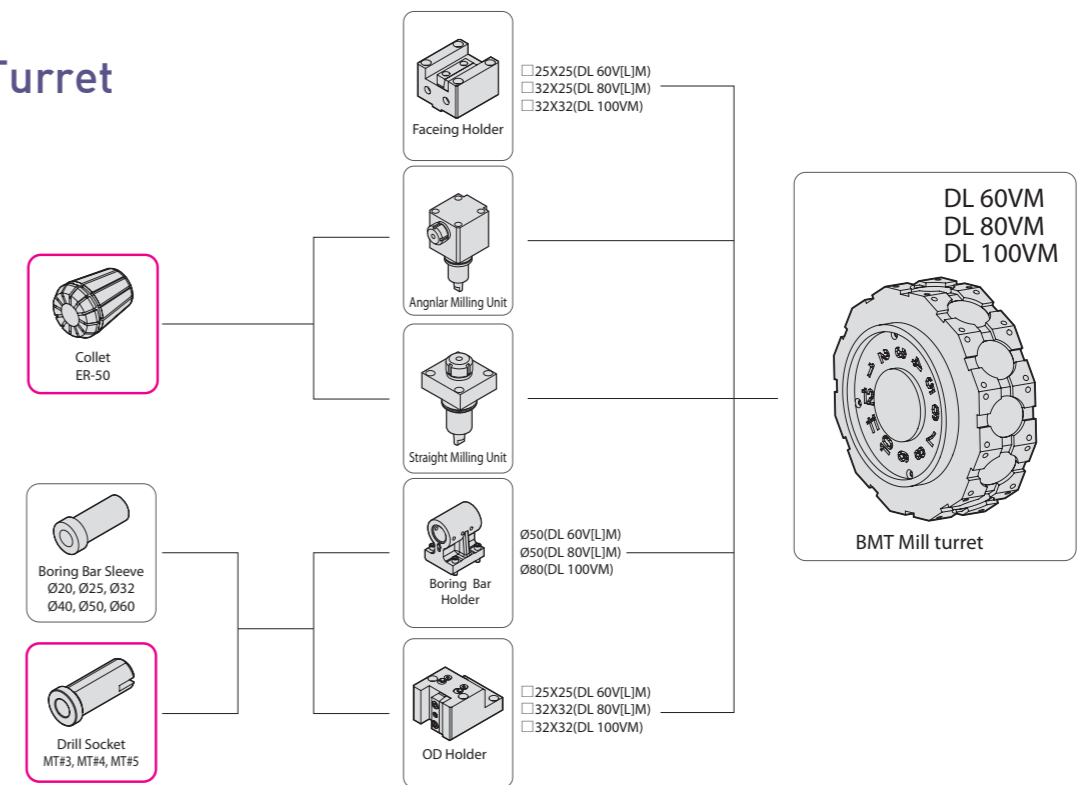
Tooling Diagram

□ : Option(Not-Supplied)

DL 100V



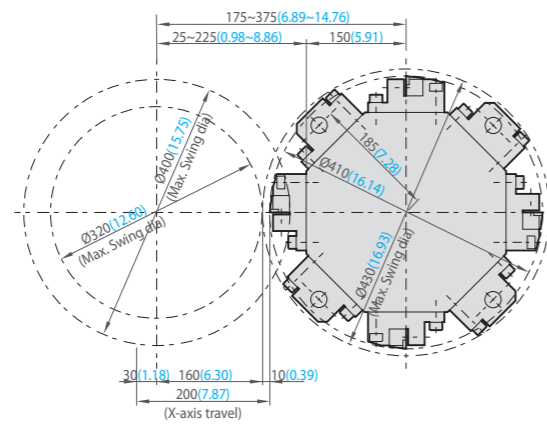
Mill Turret



Tooling interference diagram

Unit : mm(inch)

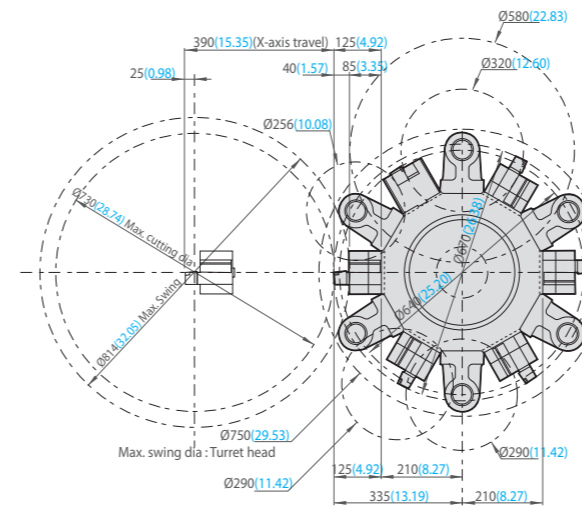
DL 40V/40VTT



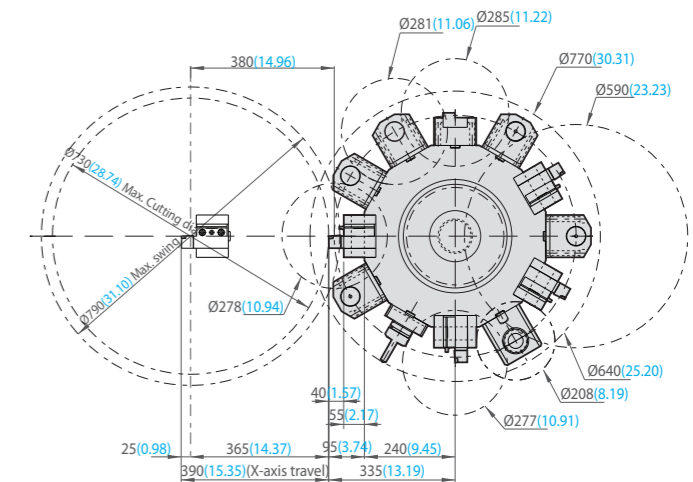
Tooling interference diagram

Unit : mm(inch)

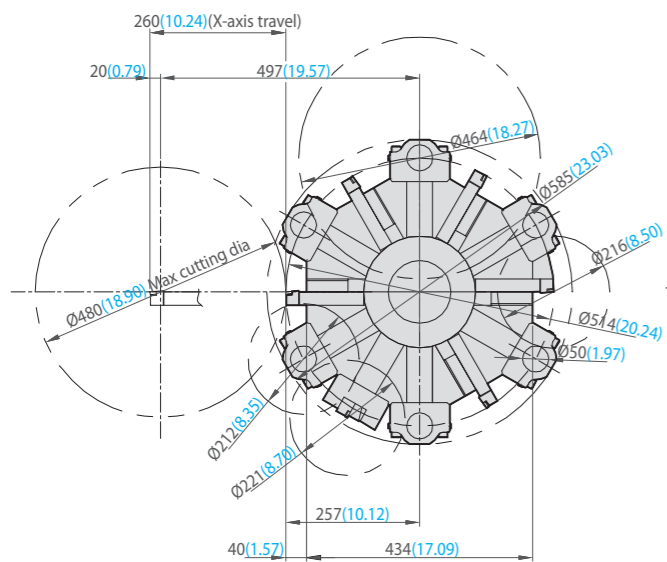
DL 80V(L)



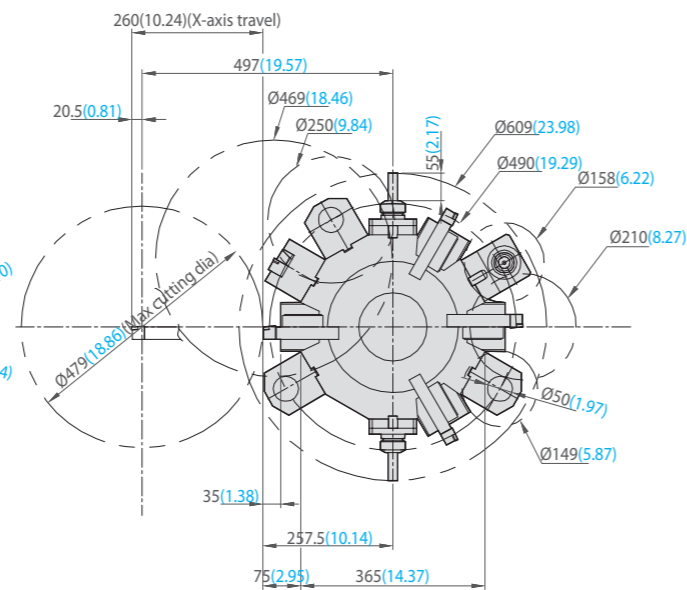
DL 80V(L)M



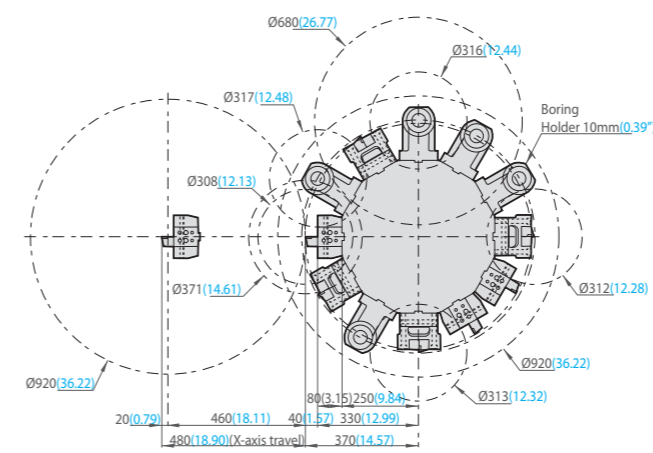
DL 60V(L)



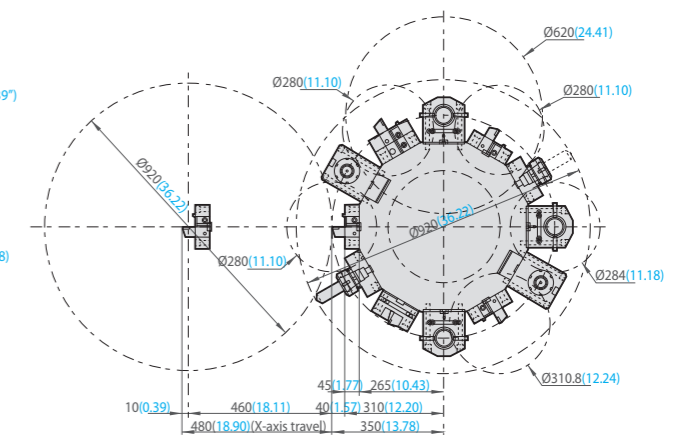
DL 60V(L)M



DL 100V



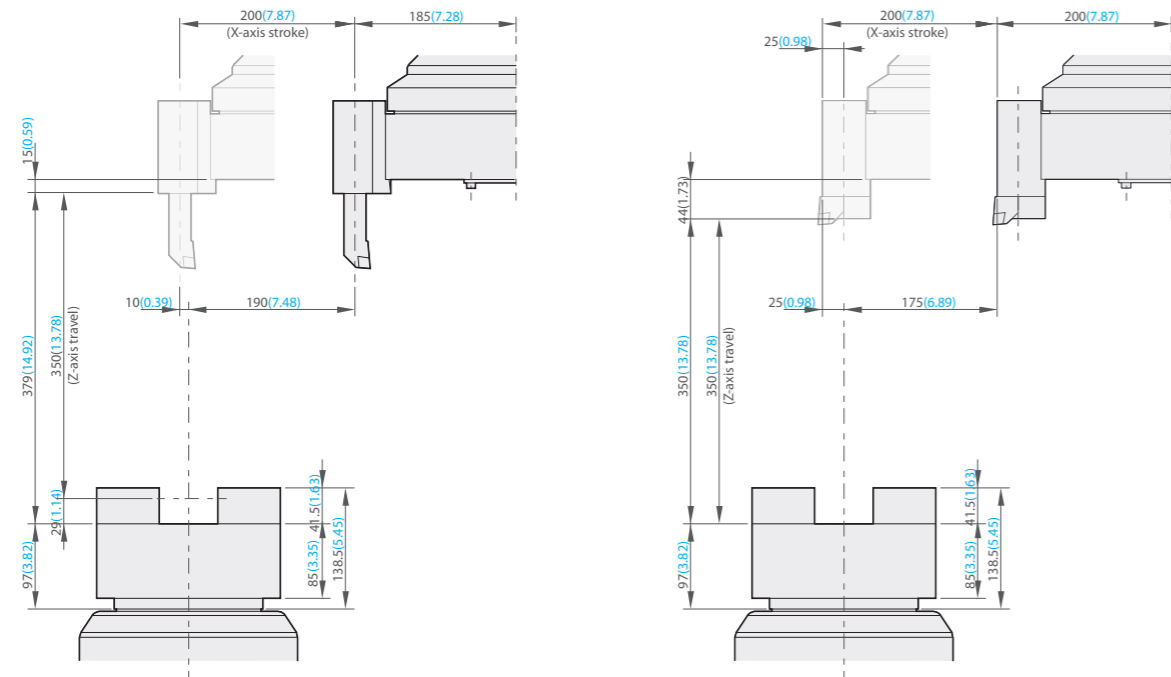
DL 100VM



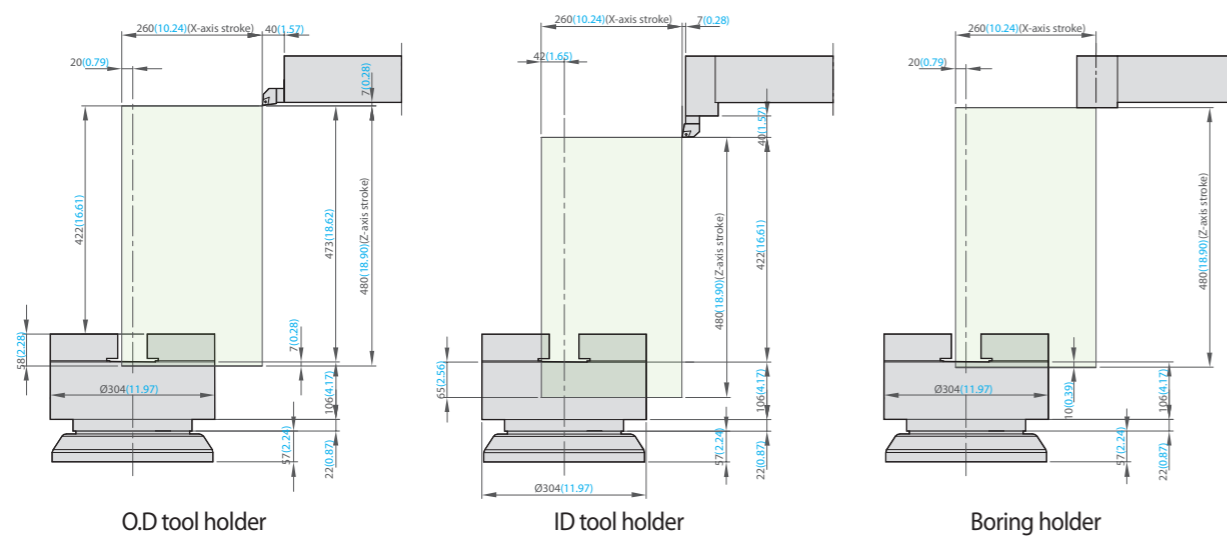
Working range

Unit : mm(inch)

DL 40V/40VTT



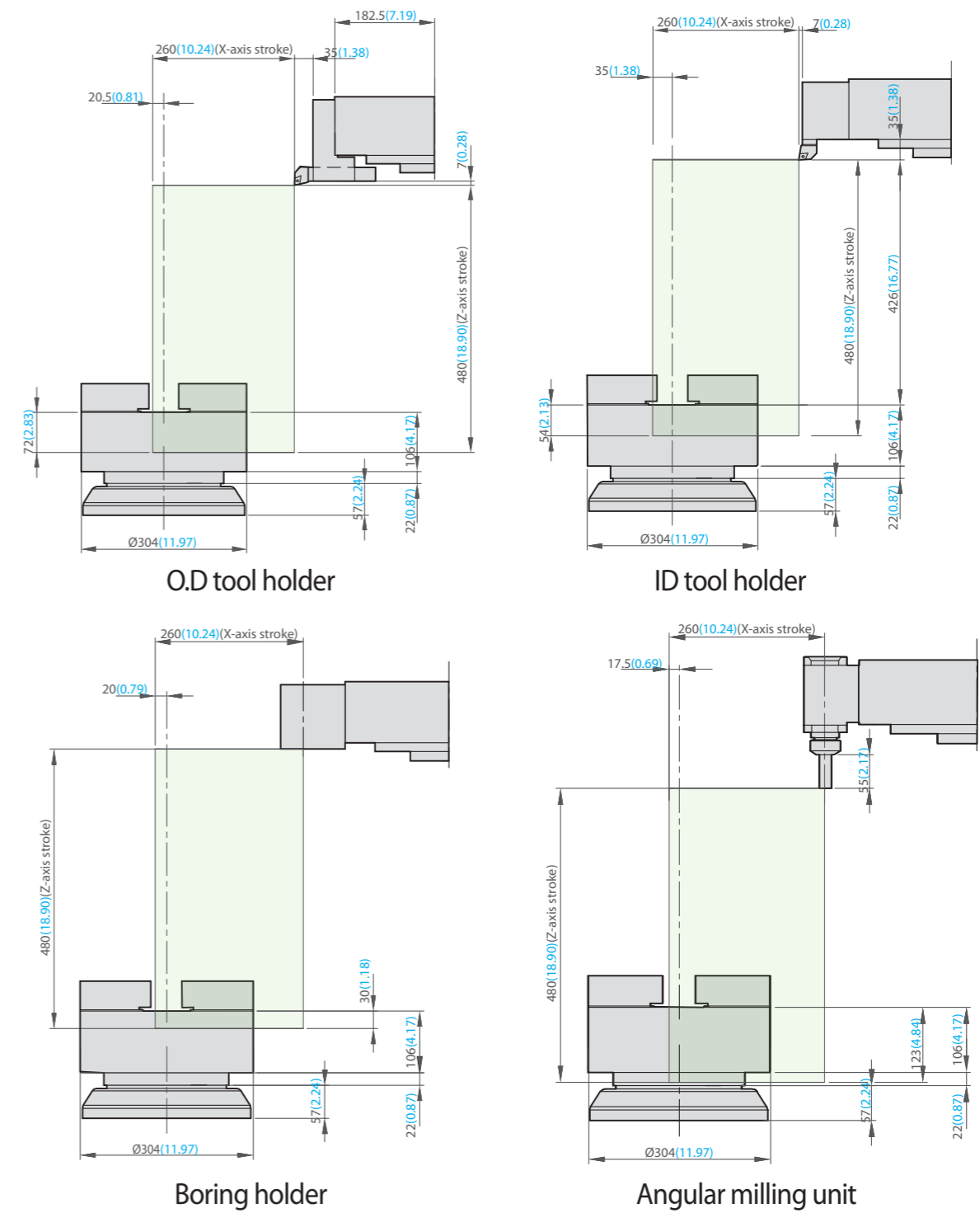
DL 60V(L)



Working range

Unit : mm(inch)

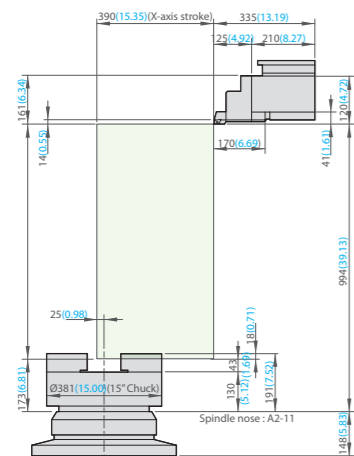
DL 60V(L)M



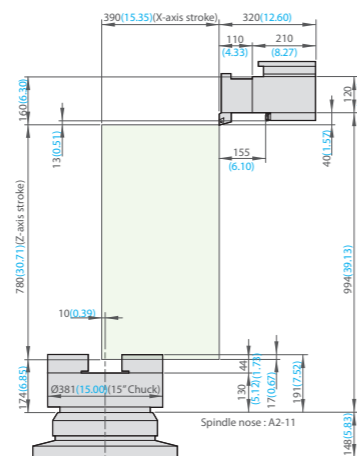
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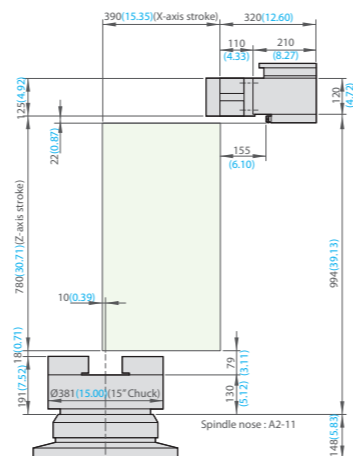
DL 80V(L)



O.D tool holder

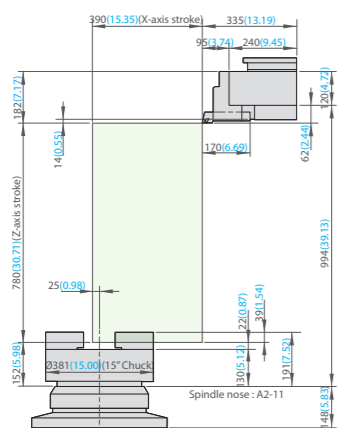


ID tool holder

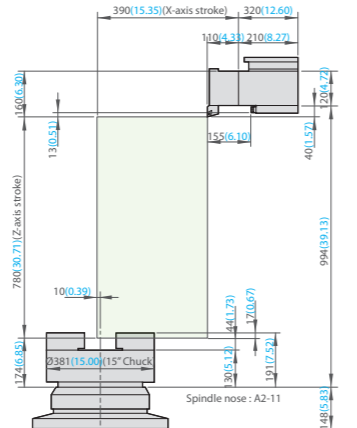


Boring holder

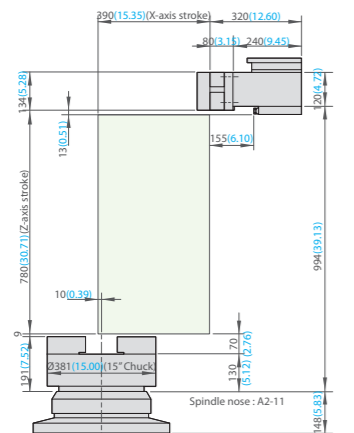
DL 80V(L)M



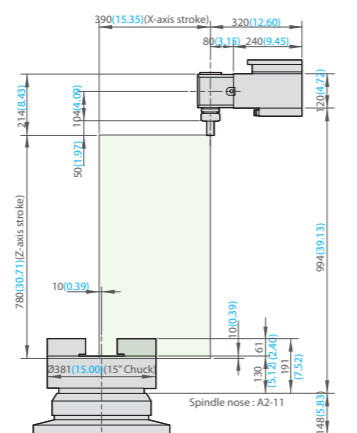
O.D tool holder



ID tool holder



Boring holder

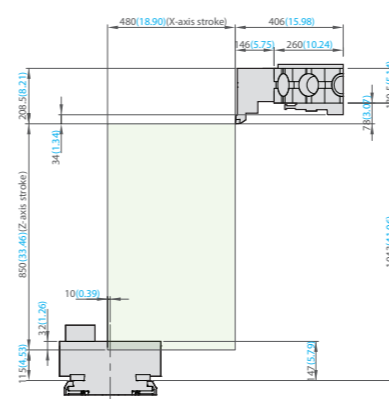


Angular driven holder

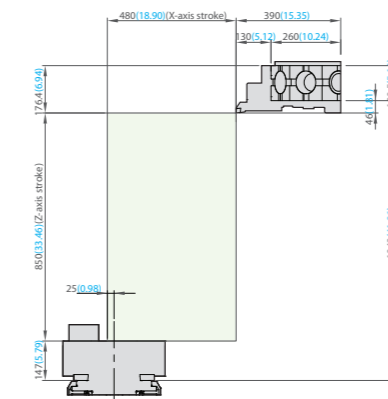
Working range

Unit : mm(inch)

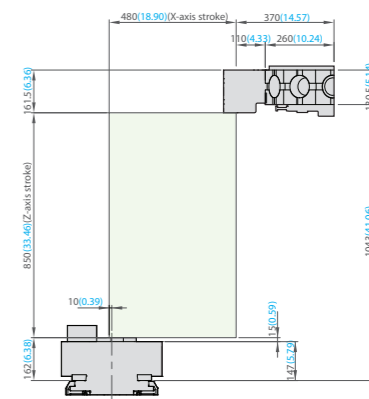
DL 100V



O.D tool holder

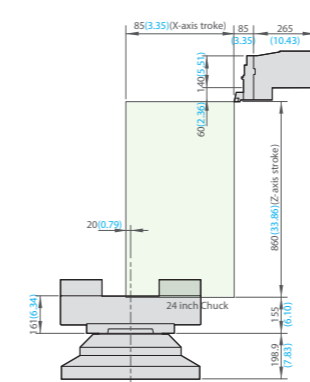


ID tool holder

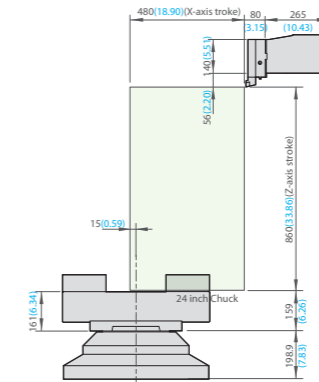


Boring holder

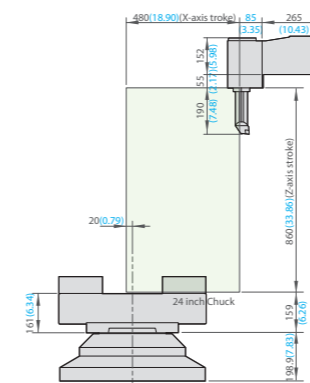
DL 100VM



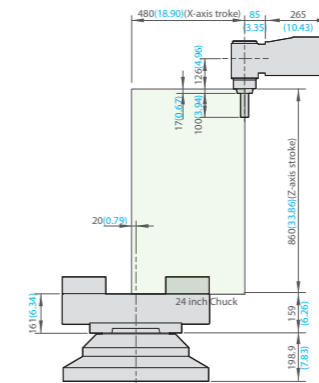
O.D tool holder



ID tool holder



Boring holder

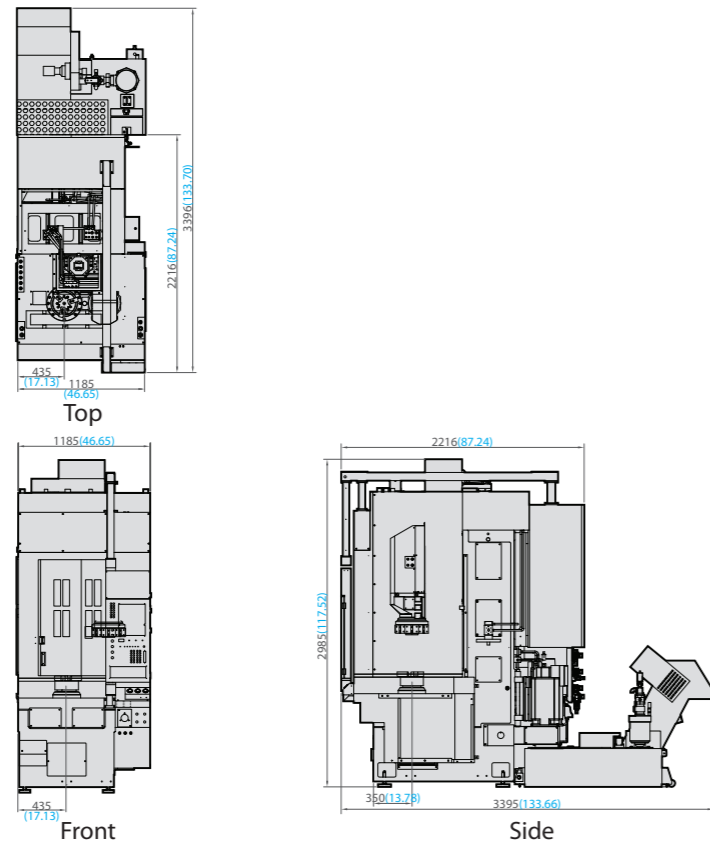


Angular Driven holder

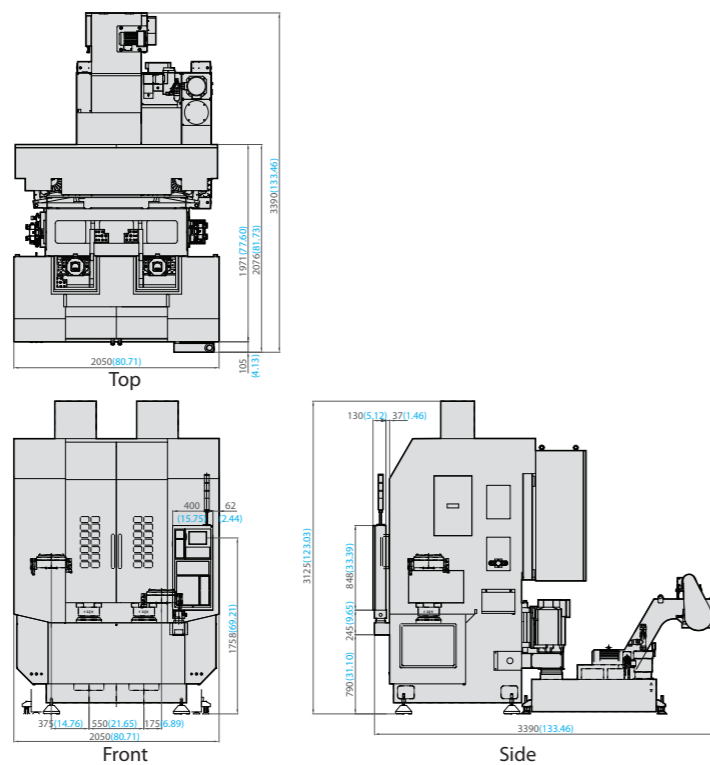
Machine Lay-Out

Unit : mm(inch)

DL 40V



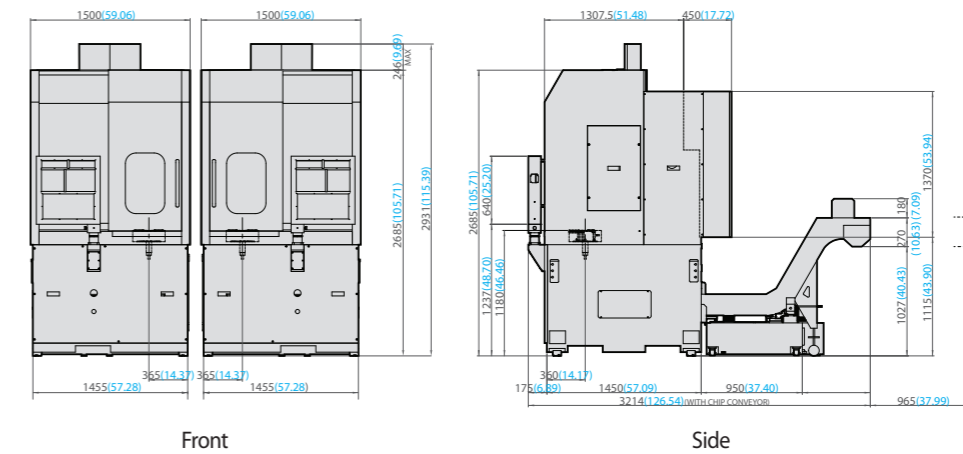
DL 40VTT



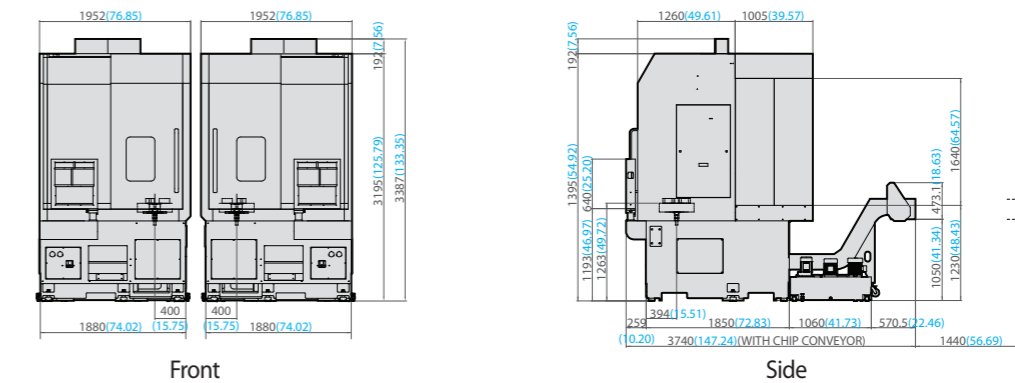
Machine Lay-Out

Unit : mm(inch)

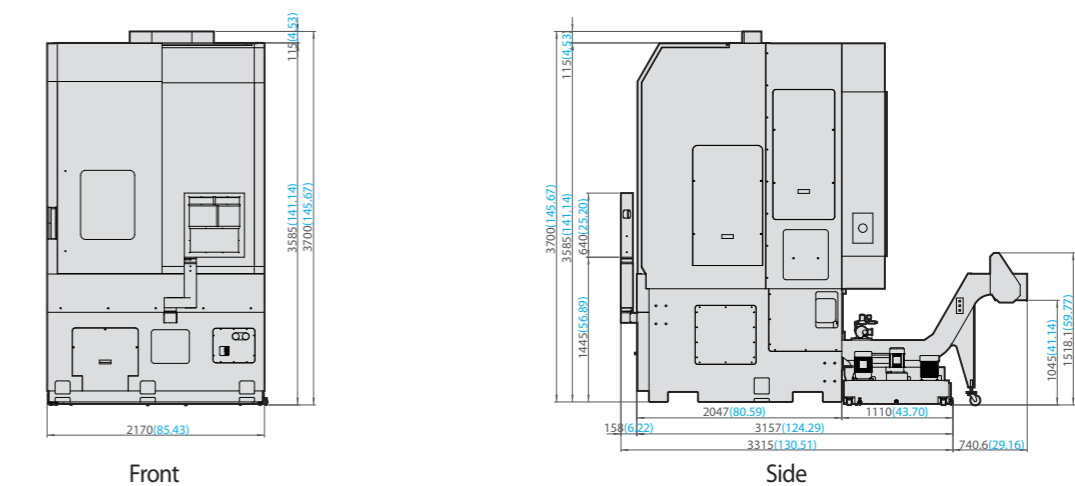
DL 60V(L)/60V(L)M



DL 80V(L)/80V(L)M



DL 100V/100VM



Machine Specifications

[] : Model, < > :Option

Specifications		DL 40V	DL 40VTT	DL 60V[L]	DL 60V[L]M	
Capacity	Swing over Bed(Max. swing dia.) mm(inch)	400(15.75)	400(15.75)	610(24.02)	610(24.02)	
	Max. Turning Dia. mm(inch)	320(12.60)	320(12.60)	450(17.72)	450(17.72)	
	Max. Turning Length mm(inch)	200(7.87)	200(7.87)	450(17.72)	450(17.72)	
Spindle	Max. Spindle Speed rpm	4,000	4,000	3,000	3,000	
	Spindle Nose -	A2-6	A2-6	A2-8	A2-8	
	Spindle Bore diameter mm(inch)	70(2.76)	70(2.76)	90(3.54)	90(3.54)	
	Max. Spindle Torque kgf-m(lbs-ft)	44(317)	44(317)	75(542)	75(542)	
	Spindle Driven Method -	Belt	Belt	Belt	Belt	
	Chuck Size inch	8<10>	8<10>	12<15,18>	12<15,18>	
Motor	Main Spindle Motor(Cont./30min) kw(hp)	11/15(15/20)	11/15(15/20)	18.5/22(25/30)	18.5/22(25/30)	
	X axis Servo Motor kw(hp)	3(4)	3(4)	3(4)	3(4)	
	Z axis Servo Motor kw(hp)	4(5)	4(5)	4(5)	4(5)	
	Mill Spindle Motor(Cont./30min) kw(hp)	-	-	-	2.2/3.7(3/5)	
Travel	X axis travel mm(inch)	200(7.87)	200(7.87)	260(10.24)	260(10.24)	
	Z axis travel mm(inch)	350(13.78)	350(13.78)	480(18.90)	480(18.90)	
	Guideway Type(X/Z) -	BOX Way	BOX Way	BOX Way	BOX Way	
	X axis rapid traverse rate m/min(ipm)	20(787)	20(787)	20(787)	20(787)	
	Z axis rapid traverse rate m/min(ipm)	16(630)	16(630)	20(787)	20(787)	
Turret	Turret Index Type -	Servo	Servo	Servo	Servo	
	Max. No. of Tools ea	8	8	12	12 / BMT 65	
	Turning tool shank size mm(inch)	□25(0.98)	□25(0.98)	□25(0.98)	□25(0.98)	
	Boring bar diameter mm(inch)	Ø32(1.26)	Ø32(1.26)	Ø50(1.97)	Ø50(1.97)	
	Turret Indexing Time (1st swivel) sec	0.2	0.2	0.2	0.2	
Tank Capacity	Coolant Tank Capacity ℓ(gal)	390(103.03)	550(145.29)	270(71.33)	270(71.33)	
	Hydraulic Tank Capacity ℓ(gal)	14(3.70)	60(15.85)	14(3.70)	14(3.70)	
General	Machine Weight kgf(lbs)	5,500(12,125)	8,500(18,739)	6,200(13,668)	6,350(13,999)	
	Height mm(inch)	3,125(123.03)	3,125(123.03)	2,700(106.30)	2,700(106.30)	
	Floor Space	Length mm(inch)	1,210(47.64)	2,050(80.71)	1,500(59.06)	1,500(59.06)
		Width mm(inch)	3,430(135.04)	3,430(135.04)	2,780(109.45)	2,780(109.45)
	Power Capacity kVA	32	57	57	41	
	Controller -	F0i-TF	F0i-TF	F0i-TF	F0i-TF	

Machine Specifications

[] : Model, < > :Option

Specifications		DL 80V[L]	DL 80V[L]M	DL 100V	DL 100VM	
Capacity	Swing over Bed(Max. swing dia.) mm(inch)	800(31.50)	800(31.50)	1,000(39.37)	1,000(39.37)	
	Max. Turning Dia. mm(inch)	730(28.74)	730(28.74)	920(36.22)	920(36.22)	
	Max. Turning Length mm(inch)	750(29.53)	750(29.53)	850(33.46)	850(33.46)	
Spindle	Max. Spindle Speed rpm	2,000	2,000	1,800	1,800	
	Spindle Nose -	A2-11	A2-11	A2-15	A2-15	
	Spindle Bore diameter mm(inch)	104(4.09)	104(4.09)	108(4.25)	108(4.25)	
	Max. Spindle Torque kgf-m(lbs-ft)	152(1,099)	152(1,099)	347(2,510)	347(2,510)	
	Spindle Driven Method -	Belt	Belt	Belt	Belt	
	Chuck Size inch	15<18,21,24>	15<18,21,24>	21<24>	21<24>	
Motor	Main Spindle Motor(Cont./30min) kw(hp)	22/30(30/40)	22/30(30/40)	37/45(50/60)	37/45(50/60)	
	X axis Servo Motor kw(hp)	3(4)	3(4)	4(5)	4(5)	
	Z axis Servo Motor kw(hp)	4(5)	4(5)	7(9)	7(9)	
	Mill Spindle Motor(Cont./30min) kw(hp)	-	2.2/3.7(3/5)	-	7.5/11(10/15)	
Travel	X axis travel mm(inch)	390(15.35)	390(15.35)	480(18.90)	480(18.90)	
	Z axis travel mm(inch)	780(30.71)	780(30.71)	860(33.86)	860(33.86)	
	Guideway Type(X/Z) -	BOX Way	BOX Way	BOX Way	BOX Way	
	X axis rapid traverse rate m/min(ipm)	20(787)	20(787)	20(787)	20(787)	
	Z axis rapid traverse rate m/min(ipm)	20(787)	20(787)	20(787)	20(787)	
Turret	Turret Index Type -	Servo	Servo	Servo	Servo	
	Max. No. of Tools ea	12	12 / BMT 75	12	12 / BMT 85	
	Turning tool shank size mm(inch)	□32(1.26)	□32(1.26)	□32(1.26)	□32(1.26)	
	Boring bar diameter mm(inch)	Ø50(1.97)	Ø50(1.97)	Ø80(3.15)	Ø80(3.15)	
	Turret Indexing Time (1st swivel) sec	0.2	0.2	0.3	0.3	
Tank Capacity	Coolant Tank Capacity ℓ(gal)	370(97.74)	370(97.74)	370(97.74)	370(97.74)	
	Hydraulic Tank Capacity ℓ(gal)	66(17.44)	66(17.44)	14(3.70)	14(3.70)	
General	Machine Weight kgf(lbs)	9,800(21,605)	9,950(21,936)	15,000(33,069)	15,000(33,069)	
	Height mm(inch)	3,390(133.46)	3,390(133.46)	3,740(147.24)	3,740(147.24)	
	Floor Space	Length mm(inch)	1,950(76.77)	1,950(76.77)	2,170(85.43)	2,170(85.43)
		Width mm(inch)	3,170(124.80)	3,170(124.80)	3,275(128.94)	3,275(128.94)
	Power Capacity kVA	47	50	69	79	
	Controller -	F0i-TF	F0i-TF	F0i-TF	F0i-TF	

NC Specifications (FANUC FOi-TF)

○ : Standard, OPT. : Option, (!) : M type, (!!) : 2SO type

	Item	Specification	OiTF
Controls	Controlled axes	Std. 2axes	X, Z, C (!)
	Simultaneously control axes expansion(Total)	0.001mm/0.0001"	3 axes (!)
Axis Functions	Least input increment		○
	Cs contouring control		○ (!)
	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		○
	Automatic operation(memory)		○
	MDI operation		○
	Buffer register		○
Operation	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	○
	Polar coordination interpolation	G12.1, G13.1	○ (!)
	Cylindrical interpolation		○ (!)
	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		-
	AI contour control I/II		OPT.
	Auxiliary & Spindle functions	Spindle speed override	0~150%
Constant surface speed control		G96, G97	○
1st Spindle orientation			○
Rigid tapping			○
Multi-spindle control			○ (!)
Auxiliary function		M8 digit	○
Programming functions	Program/code	EIA/ISO	○
	Optional block skip	1 Piece	○
	Additional block skip	Total 9(Only NC function)	○

	Item	Specification	OiTF
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/B/C		○
	Chamfering / corner R		○
	Programmable data input	G10	○
	Sub program call	Nested holds	10
	Custom macro Del.		○
	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)		○
	Program 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		G43 ~ 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	○
Setting & display	Status display		○
	Program name display	31 characters	○
	Self diagnostic function		○
	Help function	Alarm & Operation display	○
	Running time / 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		○
Data input & output	Spindle setting screen		○
	Multi language display		○
	I/O interface	RS-232C/LAN Port	○
	Memory card input and output		○
	External key input		○
	External program input		○
	External work number search		○
	USB Memory	Input/Output	○
Other functions	Fast Data Server	Only 1 path, need option board	OPT.
	MDI / DISPLAY unit		10.4" (DL40V : 8.4")
	PMC system		○
	Ethernet function	Embedded ethernet function	○