

SINCE 1944

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DL T series (En)

Compact Type CNC Turning Center

DL 6T / 6TH / 6TMH
DL 8T / 8TH / 8TMH
DL 10T / 10TH / 10TMH
DL 18MA / 18MB

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 T series

DL 6T / 6TH / 6TMH

DL 8T / 8TH / 8TMH

DL 10T / 10TH / 10TMH

DL 18MA / 18MB

High-speed, High-precision Compact Type CNC Turning Center

Speed

Highest rapid traverse (LM Guide, 30/36 (X / Z)), Rapid split turret speed (0.2 sec), reduce non-cutting time.

Compact

compact 45° slant bed

Accuracy

Spindle supported by angular contact ball bearing at two ends, it can maintains excellent stability. Integrated bridge type bed minimizes vibration during machining and keep high accuracy machining.



DL 6T

| | |
|-----------------------|---------------------------|
| Travel(X/Z)(mm)(inch) | 160 × 350(6.30" × 13.78") |
| Guideway Type | LM guide |
| Spindle speed(rpm) | 6,000 |
| Max. No. of Tool(pcs) | 10(6+6) |



DL 8TH

| | |
|-----------------------|---------------------------|
| Travel(X/Z)(mm)(inch) | 160 × 520(6.30" × 20.47") |
| Guideway Type | LM guide |
| Spindle speed(rpm) | 4,500 |
| Max. No. of Tool(pcs) | 10 |

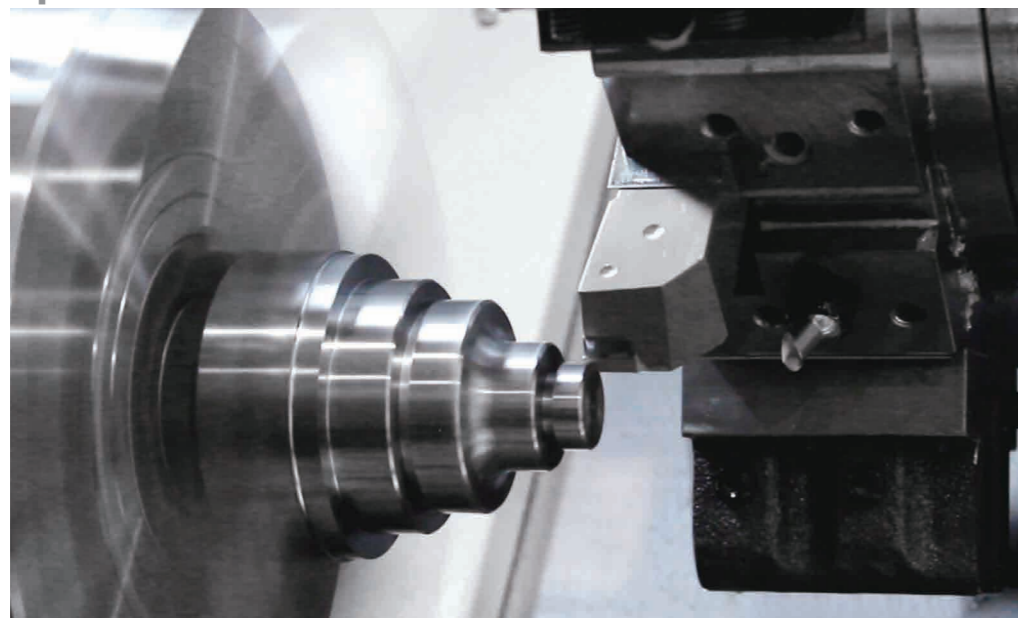


DL 10TMH

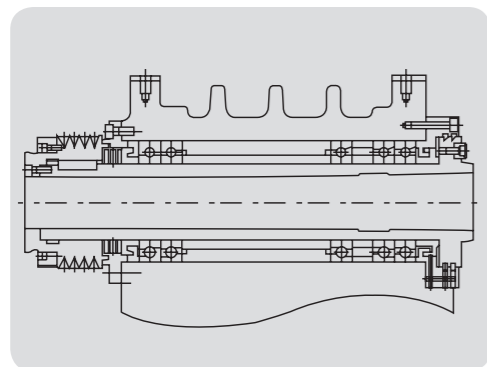
| | |
|-----------------------|---------------------------|
| Travel(X/Z)(mm)(inch) | 160 × 380(6.30" × 14.96") |
| Guideway Type | LM guide |
| Spindle speed(rpm) | 3,500 |
| Max. No. of Tool(pcs) | 12 |



High Productivity Spindle



High Precision, High Speed Spindle

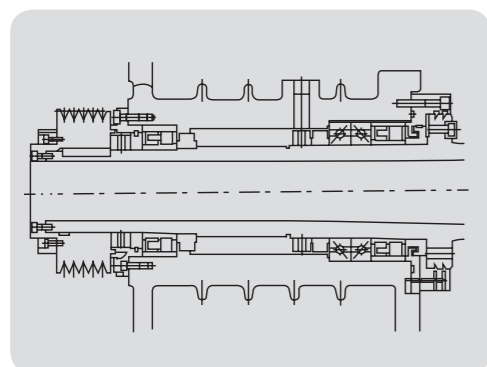


6" Spindle

The high level 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 doublerow 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

Fastest Spindle Speed in same class : 4,500rpm



High-speed, high precision cutting structure spindle leads to high productivity. Perfect symmetry structure makes high-definition, multiple antenna components cutting possible, even in high-speed running.

Max. spindle speed

DL 6T **6,000** rpm

Max. spindle motor power

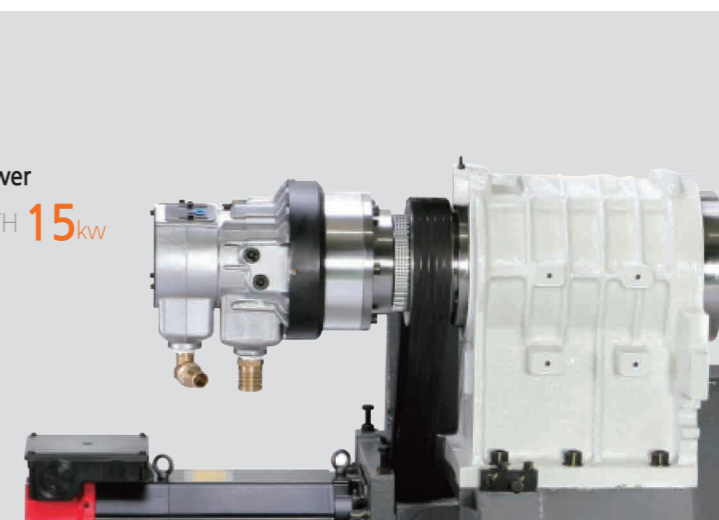
DL 6T/6TH/8T/8TH/10TH **15** kw

Max. spindle torque

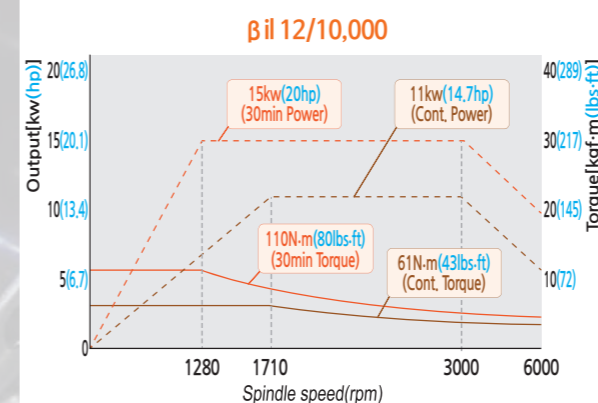
DL 6T **110** N·m

DL 8T **140** N·m

DL 10TH **190** N·m



Power-Torque Diagram



DL 8T

| | |
|--|--------------|
| CHUCK size/Bar capacity[mm(inch)] | 8"/ 51(2.01) |
| Max. Spindle Speed(rpm) | 4,500 |
| Max Spindle Motor[kw(hp)](cont./30min) | 11/15(15/20) |
| Max Spindle torque[N·m(lbs-ft)] | 150(110) |
| Spindle nose | A2-6 |

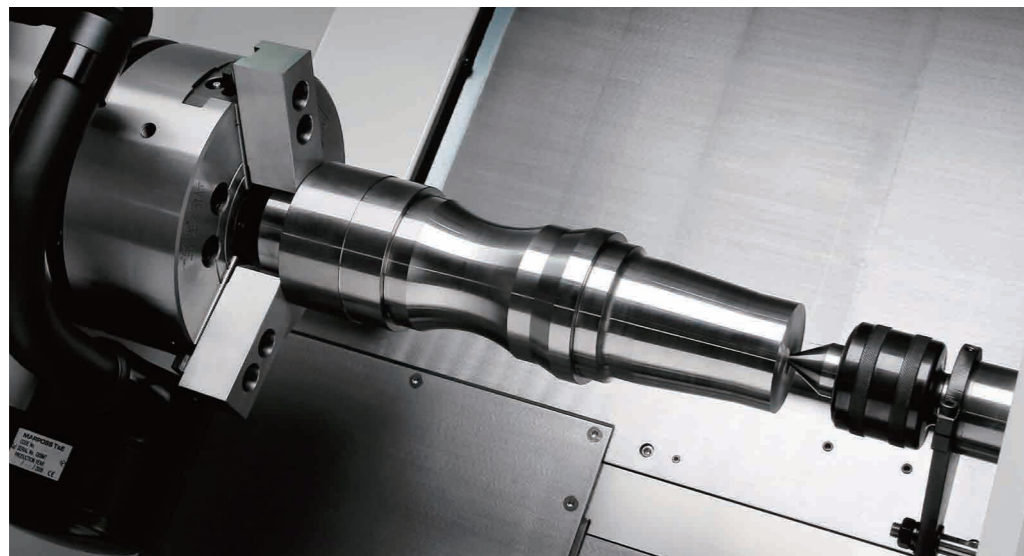
DL 6T

| | |
|--|--------------|
| CHUCK size/Bar capacity[mm(inch)] | 6"/ 44(1.73) |
| Max. Spindle Speed(rpm) | 6,000 |
| Max Spindle Motor[kw(hp)](cont./30min) | 11/15(15/20) |
| Max Spindle torque[N·m(lbs-ft)] | 110(81) |
| Spindle nose | A2-5 |

DL 10TH

| | |
|--|---------------|
| CHUCK size/Bar capacity[mm(inch)] | 10"/ 74(2.91) |
| Max. Spindle Speed(rpm) | 3,500 |
| Max Spindle Motor[kw(hp)](cont./30min) | 11/15(15/20) |
| Max Spindle torque[N·m(lbs-ft)] | 190(140) |
| Spindle nose | A2-8 |

High Productivity



Tailstock

Manual Tailstock T(OPT), TH/TMH(STD)

| | |
|-----------------------------|-----------------------------|
| Tailstock Quill diameter | Ø65mm(2.56") |
| Tailstock Quill stroke | 80mm(3.15") |
| Max. Tailstock Quill Thrust | 511kgf(1,127lbs) |
| Moving command | Operation panel Push Botton |
| Tailstock Quill Taper | MT#4 |

- Quill moving auto/ Body moving manual
- Ø65mm(2.56") Quill diameter
- 80mm(3.15") Quill stroke
- Powerfull thrust 511kgf(1,127lbs)



Wide saddle

High Stiffness Implementation

Saddle guide way expanded to two-way, it can prevent over hang of turret and minimize machining vibrations

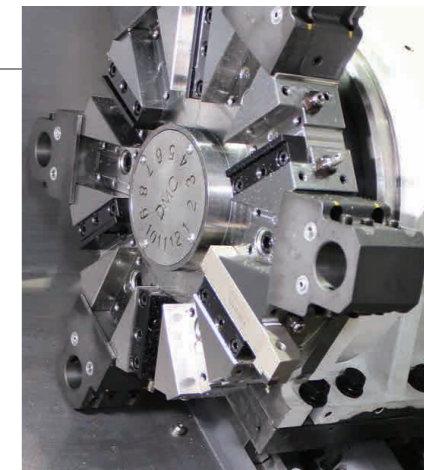


Turret

Turret Indexing Time **0.2sec**

High Productivity, High Rigidity Servo Turret

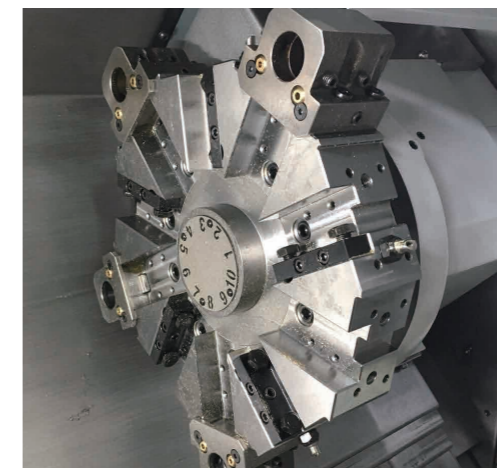
We have are able to add 10 station and 12 station turrets to both inside / outside diameter. Both Clock and counterclockwise and non-stop rotation are available, it can help shorten the tool changing speed. Accurate 3pc coupling keeps an accurate split angle of the turret and ensures the machining accuracy of the workpiece. Using a U-Drill holder process to improve the productivity.



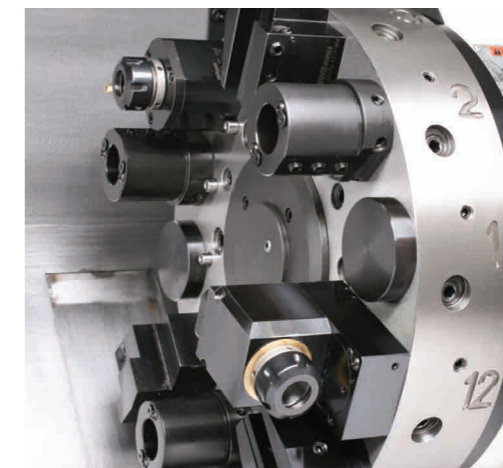
| | DL 6T/6TH | DL 6TMH | DL 8T/8TH | DL 8TMH | DL 10T/10TH | DL 10TMH | 18MA/18MB |
|-----------------------------------|-----------|----------|-----------|----------|-------------|----------|-----------|
| Turret Index method | Servo | Servo | Servo | Servo | Servo | Servo | Servo |
| Max No. of tools | 10/10 | 12 | 10/10 | 12 | 10(6+6)/10 | 12 | 12 |
| Tool shank size mm/inch | □25/1 | □20/0.75 | □25/1 | □20/0.75 | □25/1 | □20/0.75 | □20/0.75 |
| Turret Indexing Time (1st swivel) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.15 |

BMT Servo Turret [DL 18MA/B] VDI Servo Turret [TM / TMH]

Mounting indexing and milling capability compact turret with the servo motor can achieve complex 3-axis processing. Using high-speed, high torque servo motor to rotate turret and tools. When machining the tool it can maintain high machining accuracy without any any vibration.



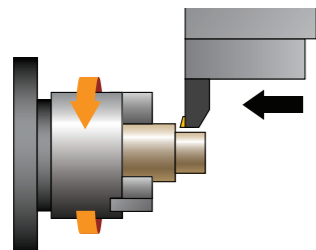
<BMT>



<VDI>

Precision

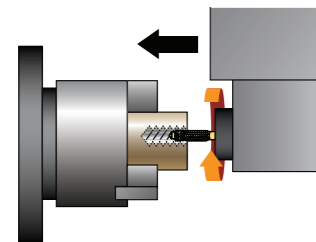
Wide saddle



O.D Cutting

<Material : SM45C(Carbon steel)>

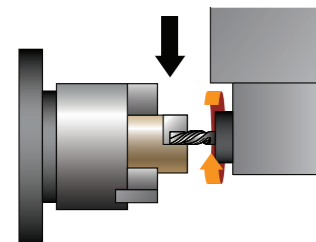
| | |
|--------------------|---------------------|
| Dia. of work | Ø41mm(1.61") |
| Side cutting depth | 4mm(0.16") |
| Cutting speed | 150m/min(5905ipm) |
| Spindle speed | 1,165 r/min |
| Feed rate | 0.3mm/rev(0.012ipr) |
| Chip emissions | 180 cc.min |



Tapping

<Material : SM45C(Carbon steel)>

| | |
|----------------|----------------------|
| Cutting depth | 15mm(0.59") |
| Tap spec/pitch | M10/1.5(0.39"/0.06") |
| Cutting speed | 6m/min(236ipm) |
| Milling speed | 200 r/min |
| Feed rate | 1.5mm/rev(0.06ipr) |

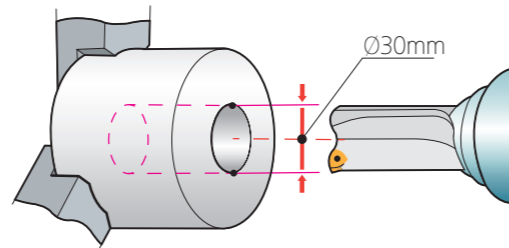


End Mill

<Material : SM45C(Carbon steel)>

| | |
|----------------|----------------------|
| Dia. of work | 8mm(0.31") |
| Dia. of tools | Ø16mm(0.63") |
| Cutting speed | 35m/min(1,378ipm) |
| Milling speed | 700 r/min |
| Feed rate | 0.05mm/rev(0.002ipr) |
| Chip emissions | 18 cc.min |

• Chip emissions **343 cm³/min**

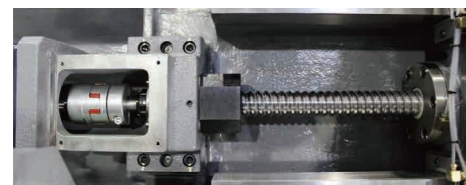


• U-drilling **168 cm³/min**

| | |
|----------------|---------------------|
| Material | Carbon steel, SM45C |
| Cutting speed | 80m/min(3,150ipm) |
| Feed rate | 0.28mm(0.012ipr) |
| U-drill holder | Modify holder |

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

Ball Screw



• We use high-precision, high-quality ball screw fixed at double anchor system. It helps minimize thermal deformation and complement rigidity.

• TMH, TH Ø28(1.10)(X), Ø32(1.26)(Z)

Rapid Traverse



• High-precision LM Guide can achieve a powerful cutting, high speed, quiet operation. And can reduce the non-cutting time as much as possible.

• Biggest Rapid Traverse in same class: X axis **30m/min(1,181ipm)**, Z axis **36m/min(1,417ipm)**

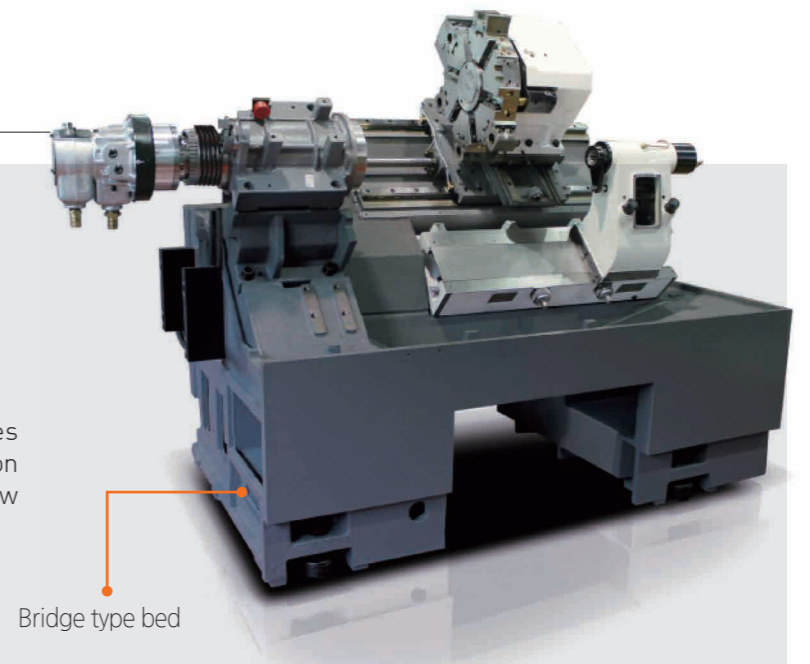
| | DL 6T/8T | DL 6TH/ 8TH/ 10TH | DL 6TMH/ 8TMH/ 10TMH | DL 18MA/18MB |
|--------|-----------|-------------------|----------------------|--------------|
| X axis | 30(1,181) | 30(1,181) | 30(1,181) | 32(1,260) |
| Z axis | 36(1,417) | 30(1,181) | 30(1,181) | 32(1,260) |

Bed

High stiffness implementation

45° integral slant bed

Integrated bridge type bed does not twist. Stable and non-vibration processing is available. Chips flow smoothly.

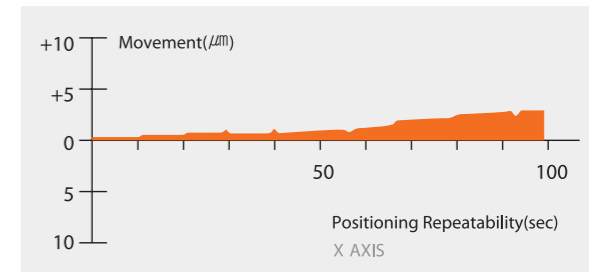


High precision 3µm repeat travel at its fastest and at its highest accuracy

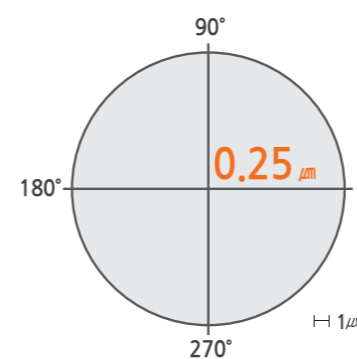
- Effectively prevented distortion
- Backlash prevented and vibration dampened



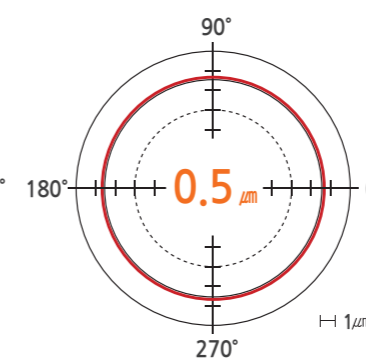
• Ball screw length movement



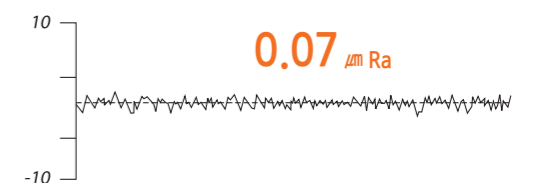
Roundness



Cylindricity



Surface profile

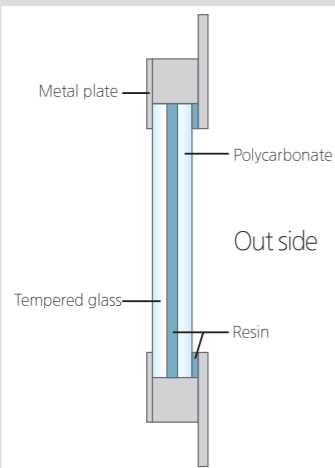


| Model | DL 6T |
|----------------|-------------------------------|
| Workpiece size | Ø20(0.79")xL20(0.79") (Brass) |
| Spindle speed | 300m/min(11,811ipm) |
| Cutting depth | 0.02mm(0.000787inch) |
| Traverse | 0.025 mm/rev |

• Above data are based on our in-house testing standards and can be circumstantial depending on working environment.

Pleasant workplace with the enhanced worker convenience

2-Panel Safety Glass



LED Working Light



+ Long life LED allows bright and safe work ambiance.

Chuck opening checking device.(STD.)

+ Prevent malfunction with chuck opening and close checking device.

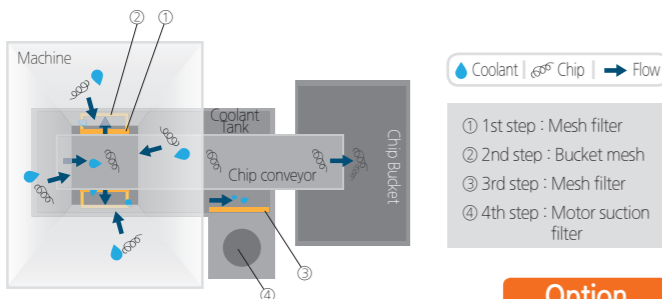
Oil retrieval box



Oil leak prevention

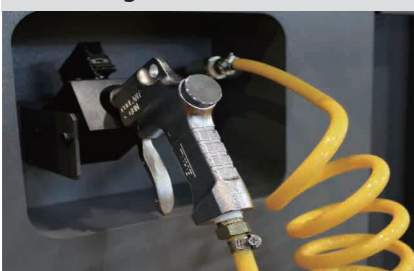
+ Cover to ensure the pleasant work place.
+ Long-lasting life with wiper protection.

3-steps filter coolant tank to prevent over flow and for easy maintenance



Option

Coolant gun



Air gun



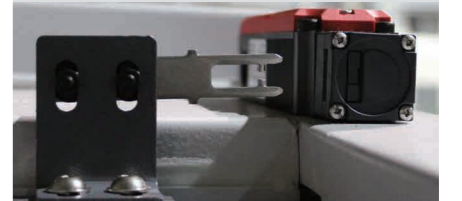
Spindle load meter for the visual spindle load time check



Patrol light

+ LED 3 color wrapped folded when shipping

Front door interlock equipment



+ Safety switch identifies open/close status of the door. To ensure safety, machining is only operated when the door is properly locked.

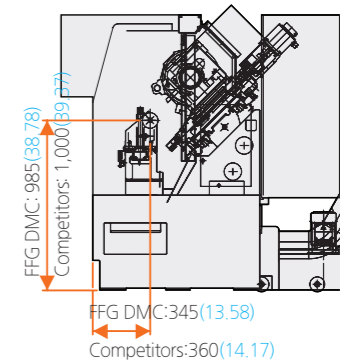
RS232C (Input/output interface)



+ USB port

Easy tool setting

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



Detachable cutting oil tank for easy maintenance and cleaning



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

| | |
|--------------------------|------------------------|
| Cutting oil tank volume: | Hydraulic tank volume: |
| 120l (31.70gal) | 11l (2.91gal) |

FOOT SWITCH



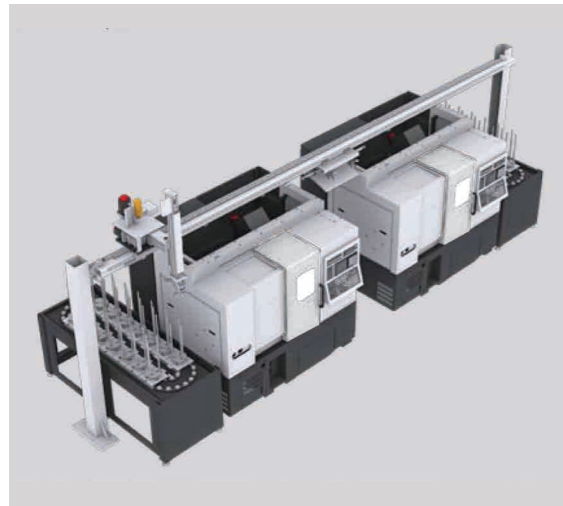
Tool monitoring system(OPT.)



+ Real-time cutting monitor oversight
+ Machining load self-checking function
+ 3 steps checking monitor (worn out, broken, free load)
+ 2-channel display
+ Built-in and outside
❖ Please check above function before you order.

Automation

Gantry loader Automation

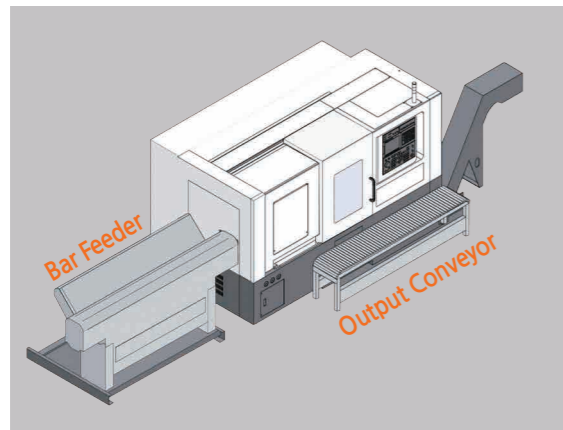


Material State (Casting) Machining Work

Gantry Spec

| | | | | | | | | | |
|----------------------|---|-------------------|----------------------|------------------|------------------|-----------------------------------|------|------|---------|
| product capacity | 300,000 pieces | | | | | | | | |
| Working time | 25 Day / 1 Month x 20.0 Hour / 1 Day x 80% efficiency(58 sec) | | | | | | | | |
| Cutting machine | CNC Turning Center 2 Machine | | | | | | | | |
| machine and Quantity | Time (sec) | Loading /APC(sec) | Work Loading (Piece) | Total Time (sec) | Cycle Time (sec) | 1 Machine Product (Work Quantity) | | | |
| Parts Name | Op. | Model | | | | | | | |
| Nipple | OP 10 | 6TM | 1.1 | 45.5 | 17 | 1 | 62.5 | 62.5 | 276,678 |
| | OP 20 | 6TM | 1.1 | 45.0 | 17 | 1 | 62.0 | 62.0 | 278,799 |

Bar Feeder automation



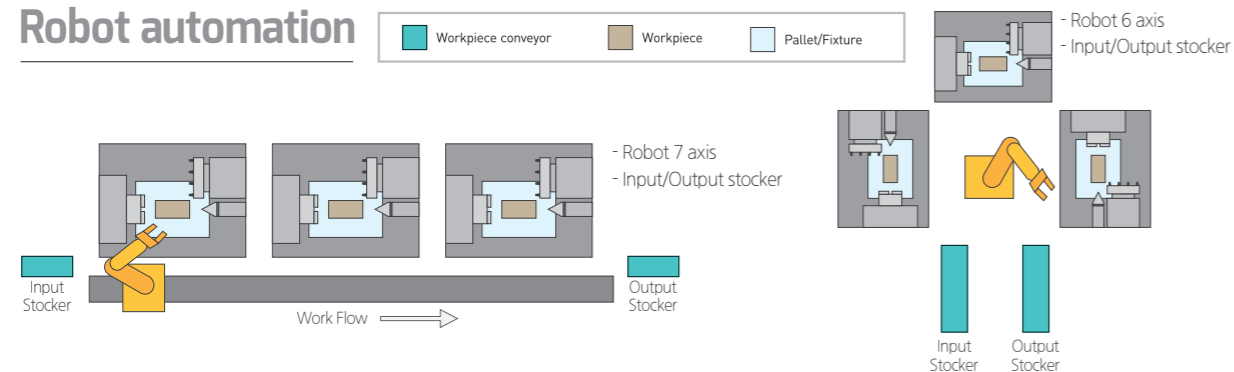
Use of bar feeder, parts catcher, and output conveyor at once to maximize production through automation

Entry Level Automation



- Front Low Loader & Output conveyor application example
- Low Loader: Cylinder type and Motor type

Robot automation



Option

Various standard options and Specialized features for customers Features

Standard: Hydraulic chuck, Soft jaw, Tool box, Hydraulic unit, Door interlock, Cutting oil supplying device, Work light, Leveling bolt&plate, Foot switch, Air unit, Lubrication unit, 3-step patrol light, RS232C

Option Equipment

- Auto Front Door
- Auto Top Door
- Coolant Tank
- Moderate/High pressure Coolant(6/20 bar)
- Oil Mist Collector
- Oil Skimmer(Belt type)
- Oil Skimmer(Disk type)
- Line Filter(100 Mesh)
- Spindle thru Air/Coolant (when special chuck is included)
- Parts Catcher
- Special Chuck
- Upper side chuck Air/Coolant
- Point Sensor(2 Point high precision position control)
- Multi Counter
- Counter
- 230ℓ (60.76gal) (Swing)
- 300ℓ (79.25gal) (Swing)
- 300ℓ (79.25gal) (Fork lift)
- 380ℓ (100.38gal) (Fork lift)
- 440ℓ (116.23gal) (Fork lift)
- Linear scale(High precision position control)
- Sub control panel
- Air Limit(Workpiece contact surface check equipment)

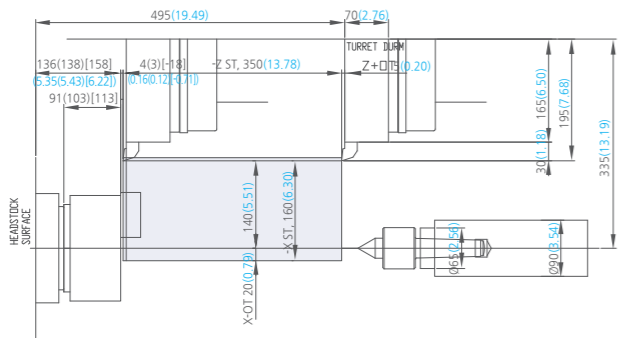
Other soft options selection

- I/O extension(16 contacts, 32 contacts)
- Automatic power-off
- M - code

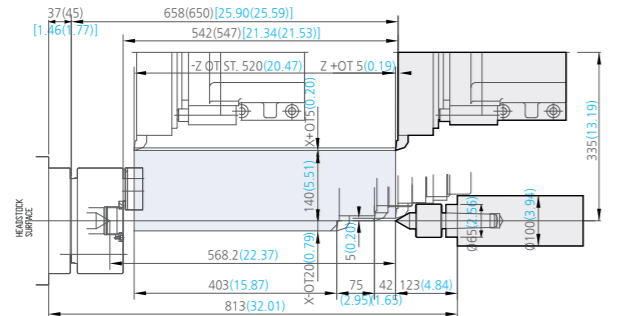
Working range

Unit : mm(inch)

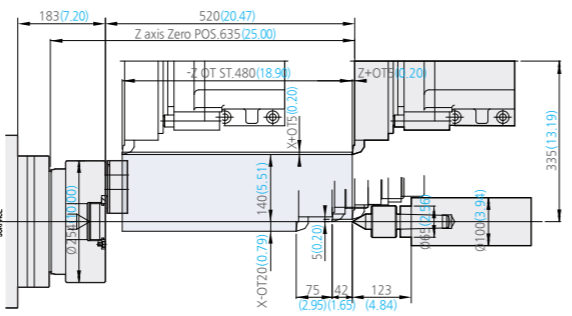
DL 6T/8T/10T



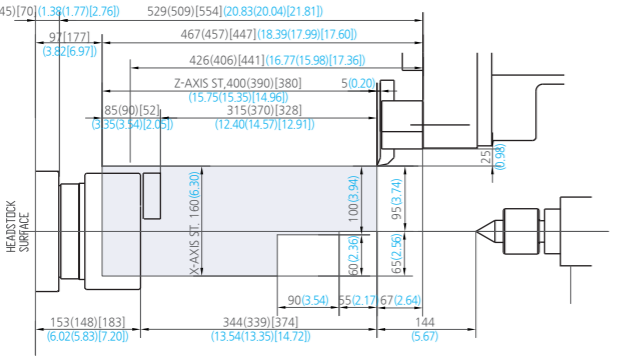
DL 6TH(8TH)



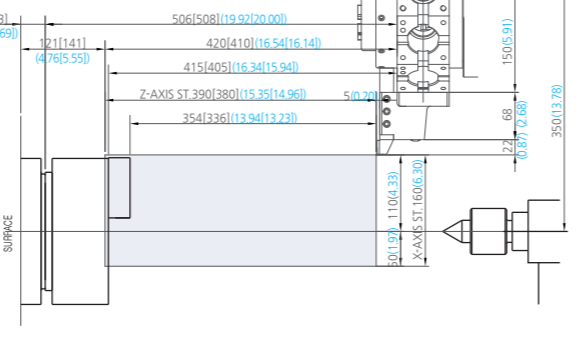
DL 10TH



DL 6TMH/8TMH/10TMH



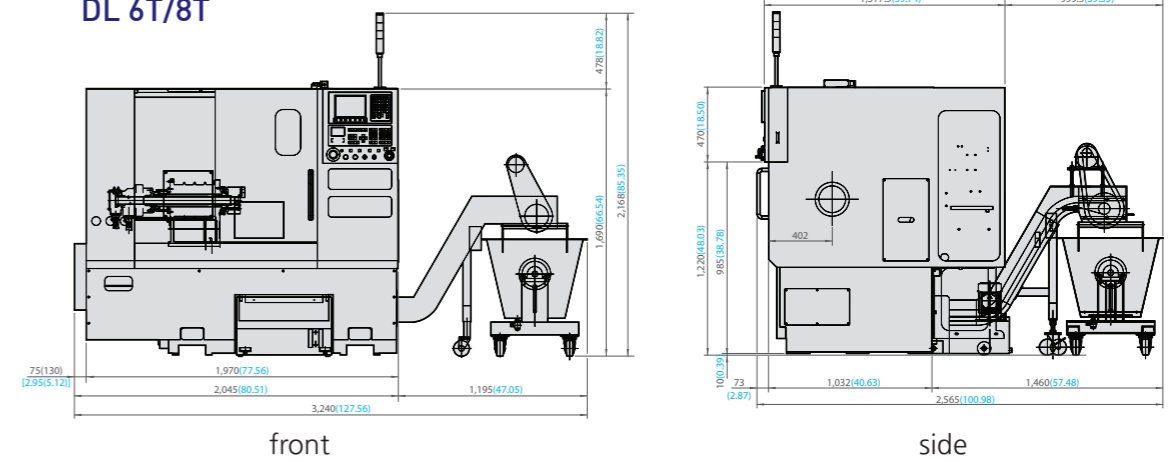
DL 18MA(B)



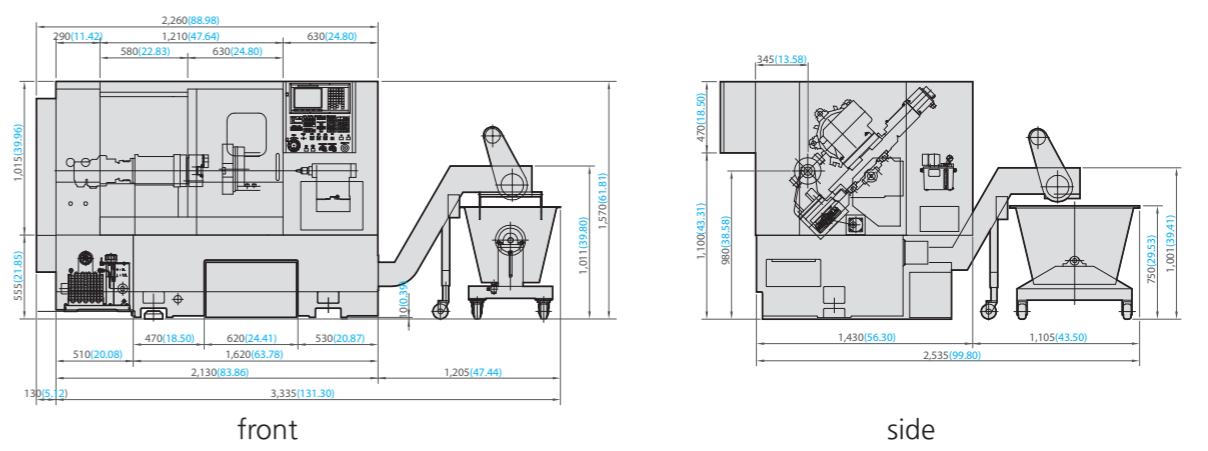
Machine lay-out

Unit : mm(inch)

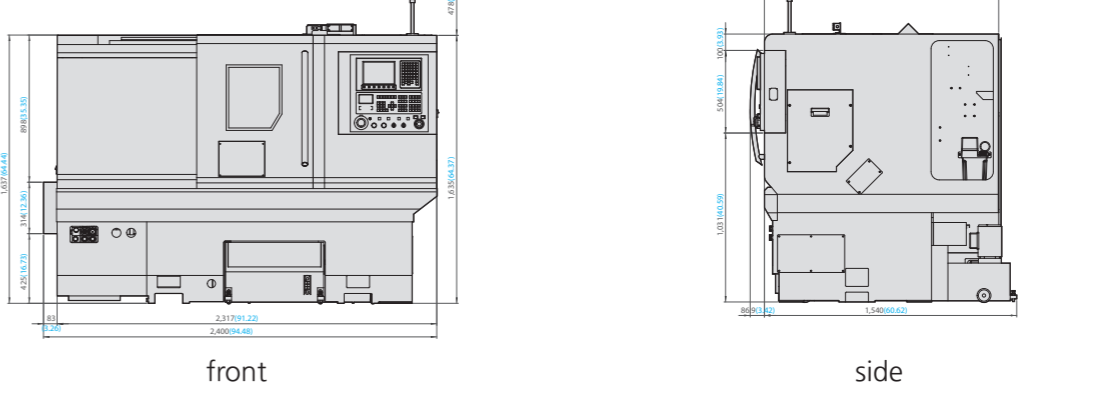
DL 6T/8T



DL 6TH/8TH/10TH DL 6TMH/8TMH/10TMH



DL 18MA/MB



Machine Specifications

| Specifications | | DL 6T | DL 6TH | DL 6TMH | |
|------------------|----------------------------------|-----------------------|-----------------------|----------------|--------------|
| Capacity | Swing over Bed (Max.swing dia.) | mm(inch) 480(18.90) | 480(18.90) | 480(18.90) | |
| | Swing over Cross slide | mm(inch) 285(11.22) | 285(11.22) | 285(11.22) | |
| | Max. Turning Dia. | mm(inch) 280(11.02) | 280(11.02) | 190(7.48) | |
| | Max. Turning Length | mm(inch) 320(12.60) | 520(20.47) | 390(15.35) | |
| | Bar Capacity | mm(inch) 44(1.73) | 44(1.73) | 44(1.73) | |
| Main spindle | Max. Spindle Speed | rpm 6,000 | 6,000 | 6,000 | |
| | Spindle Nose | - A2-5 | A2-5 | A2-5 | |
| | Spindle Bore diameter | mm(inch) 55(2.17) | 55(2.17) | 55(2.17) | |
| | Cs-Axis Spindle Index angle | deg - | - | 0.001 | |
| | Max. Spindle Torque | N·m(lbs-ft) 110(81) | 110(81) | 70(47) | |
| | Spindle Driven Method | - Belt | Belt | Belt | |
| | Chuck Size | inch 6 | 6 | 6 | |
| Motor | Main Spindle Motor(Cont./30min) | kw(hp) 15/11(20/15) | 15/11(20/15) | 7.5/5.5(15/11) | |
| | X axis Servo Motor | kw(hp) 1.8(2.4) | 1.8(2.4) | 1.6(2.1) | |
| | Z axis Servo Motor | kw(hp) 1.8(2.4) | 1.8(2.4) | 1.6(2.1) | |
| | Mill Spindle Motor(Cont./30min) | kw(hp) - | - | 3/-(4.0/-) | |
| Travel | X axis travel | mm(inch) 160(6.30) | 160(6.30) | 160(6.30) | |
| | Z axis travel | mm(inch) 350(13.78) | 520(20.47) | 400(15.75) | |
| | Guideway Type(X/Z) | - L.M Guide | L.M Guide | L.M Guide | |
| | X axis rapid traverse rate | m/min(ipm) 30(1,181) | 30(1,181) | 30(1,181) | |
| | Z axis rapid traverse rate | m/min(ipm) 36(1,417) | 30(1,181) | 30(1,181) | |
| Turret | Turret Index Type | - Servo,BMT | Servo,BMT | Servo, VDI30 | |
| | Max. No. of Tools | ea 10 | 10 | 12 | |
| | Turning tool shank size | mm(inch) □25(□1") | □25(□1") | □20(□0.75") | |
| | Boring bar diameter | mm(inch) Ø32(1.25) | Ø32(1.25) | Ø32(1.25) | |
| | Turret Indexing Time(1st swivel) | sec 0.2 | 0.2 | 0.2 | |
| | Rotating Tool Speed | rpm - | - | 5,000 | |
| Tailstock (OPT.) | Tailstock Quill diameter | mm(inch) 65(2.56) | 65(2.56) | 65(2.56) | |
| | Tailstock Quill stroke | mm(inch) 80(3.15) | 80(3.15) | 80(3.15) | |
| | Tailstock Quill Taper | MT MT#4 | MT#4 | MT#4 | |
| Tank Capacity | Coolant Tank Capacity | ℓ(gal.) 120(31.70) | 120(31.70) | 120(31.70) | |
| | Hydraulic Tank Capacity | ℓ(gal.) 11(2.91) | 11(2.91) | 11(2.91) | |
| General | Machine Weight | kgf(lbs) 2,630(5,798) | 3,000(6,614) | 3,050(6,724) | |
| | Machine height | mm(inch) 1,650(64.96) | 1,570(61.81) | 1,570(61.81) | |
| | Floor space | Length | mm(inch) 2,055(80.91) | 2,260(88.98) | 2,260(88.98) |
| | | Width | mm(inch) 1,625(63.98) | 1,670(65.75) | 1,670(65.75) |
| | Power capacity | kVA 23 | 23 | 27 | |
| Controller | - FOI-TF | FOI-TF | FOI-TF | | |

Machine Specifications

| Specifications | | DL 8T | DL 8TH | 8TMH | |
|------------------|----------------------------------|-----------------------|-----------------------|---------------------------------|--------------|
| Capacity | Swing over Bed (Max.swing dia.) | mm(inch) 480(18.90) | 480(18.90) | 480(18.90) | |
| | Swing over Cross slide | mm(inch) 285(11.22) | 285(11.22) | 285(11.22) | |
| | Max. Turning Dia. | mm(inch) 280(11.02) | 280(11.02) | 190(7.48) | |
| | Max. Turning Length | mm(inch) 300(11.81) | 510(20.08) | 380(14.96) | |
| | Bar Capacity | mm(inch) 51(2.01) | 51(2.01) | 51(2.01) | |
| Main spindle | Max. Spindle Speed | rpm 4,500 | 4,500 | 4,500 | |
| | Spindle Nose | - A2-6 | A2-6 | A2-6 | |
| | Spindle Bore diameter | mm(inch) 62(2.44) | 62(2.44) | 62(2.44) | |
| | Cs-Axis Spindle Index angle | deg - | - | 0.001 | |
| | Max. Spindle Torque | N·m(lbs-ft) 150(110) | 140(104) | 90(63) | |
| | Spindle Driven Method | - Belt | Belt | Belt | |
| | Chuck Size | inch 8 | 8 | 8 | |
| Motor | Main Spindle Motor(Cont./30min) | kw(hp) 11/15(15/20) | 11/15(15/20) | 5.5/7.5[11/15](7.4/10.1[15/20]) | |
| | X axis Servo Motor | kw(hp) 1.8(2.4) | 1.8(2.4) | 1.6(2.1) | |
| | Z axis Servo Motor | kw(hp) 1.8(2.4) | 1.8(2.4) | 1.6(2.1) | |
| | Mill Spindle Motor(Cont./30min) | kw(hp) - | - | 3/-(4.0/-) | |
| Travel | X axis travel | mm(inch) 160(6.30) | 160(6.30) | 160(6.30) | |
| | Z axis travel | mm(inch) 350(13.78) | 520(20.47) | 390(15.35) | |
| | Guideway Type(X/Z) | - L.M Guide | L.M Guide | L.M Guide | |
| | X axis rapid traverse rate | m/min(ipm) 30(1,181) | 30(1,181) | 30(1,181) | |
| | Z axis rapid traverse rate | m/min(ipm) 36(1,417) | 30(1,181) | 30(1,181) | |
| Turret | Turret Index Type | - Servo(BMT) | Servo, BMT | Servo, VDI30 | |
| | Max. No. of Tools | ea 10 | 10 | 12 | |
| | Turning tool shank size | mm(inch) □25(□1) | □25(□1) | □20(□0.79) | |
| | Boring bar diameter | mm(inch) Ø32(1.25) | Ø32(1.25) | Ø32(1.25) | |
| | Turret Indexing Time(1st swivel) | sec 0.2 | 0.2 | 0.2 | |
| | Rotating Tool Speed | rpm - | - | 5,000 | |
| Tailstock (OPT.) | Tailstock Quill diameter | mm(inch) 65(2.56) | 65(2.56) | 65(2.56) | |
| | Tailstock Quill stroke | mm(inch) 80(3.15) | 80(3.15) | 80(3.15) | |
| | Tailstock Quill Taper | MT MT#4 | MT#4 | MT#4 | |
| Tank Capacity | Coolant Tank Capacity | ℓ(gal.) 120(31.70) | 120(31.70) | 120(31.70) | |
| | Hydraulic Tank Capacity | ℓ(gal.) 11(2.91) | 11(2.91) | 11(2.91) | |
| General | Machine Weight | kgf(lbs) 2,730(6,019) | 3,200(7,055) | 3,250(7,165) | |
| | Machine height | mm(inch) 1,650(64.96) | 1,570(61.81) | 1,570(61.81) | |
| | Floor space | Length | mm(inch) 2,055(80.91) | 2,260(88.98) | 2,260(88.98) |
| | | Width | mm(inch) 1,625(63.98) | 1,670(65.75) | 1,670(65.75) |
| | Power capacity | kVA 23 | 23 | 27 | |
| Controller | - FOI-TF | FOI-TF | FOI-TF | | |

Machine Specifications

| Specifications | | DL 10T | DL 10TH | DL 10TMH | |
|------------------|----------------------------------|-----------------------|-----------------------|---------------------------------|--------------|
| Capacity | Swing over Bed (Max.swing dia.) | mm(inch) 480(18.90) | 480(18.90) | 480(18.90) | |
| | Swing over Cross slide | mm(inch) 285(11.22) | 285(11.22) | 285(11.22) | |
| | Max. Turning Dia. | mm(inch) 270(10.63) | 280(11.02) | 190(7.48) | |
| | Max. Turning Length | mm(inch) 350(13.78) | 485(19.09) | 355(13.98) | |
| | Bar Capacity | mm(inch) 74(2.91) | 74(2.91) | 74(2.91) | |
| Main spindle | Max. Spindle Speed | rpm 3,500 | 3,500 | 3,500 | |
| | Spindle Nose | - A2-8 | A2-8 | A2-8 | |
| | Spindle Bore diameter | mm(inch) 87(3.43) | 87(3.43) | 87(3.43) | |
| | Cs-Axis Spindle Index angle | deg - | - | 0.001 | |
| | Max. Spindle Torque | N·m(lbs·ft) 190(140) | 190(140) | 130(94) | |
| | Spindle Driven Method | - Belt | Belt | Belt | |
| | Chuck Size | inch 10 | 10 | 10 | |
| Motor | Main Spindle Motor(Cont./30min) | kw(hp) 11/15(15/20) | 11/15(15/20) | 5.5/7.5[11/15](7.4/10.1[15/20]) | |
| | X axis Servo Motor | kw(hp) 1.8(2.4) | 1.8(2.4) | 1.6(2.1) | |
| | Z axis Servo Motor | kw(hp) 1.8(2.4) | 1.8(2.4) | 1.6(2.1) | |
| | Mill Spindle Motor(Cont./30min) | kw(hp) - | - | 3/-(4.0/-) | |
| Travel | X axis travel | mm(inch) 160(6.30) | 160(6.30) | 160(6.30) | |
| | Z axis travel | mm(inch) 350(13.78) | 480(18.90) | 380(14.96) | |
| | Guideway Type(X/Z) | - L.M Guide | L.M Guide | L.M Guide | |
| | X axis rapid traverse rate | m/min(ipm) 30(1,181) | 30(1,181) | 30(1,181) | |
| | Z axis rapid traverse rate | m/min(ipm) 36(1,417) | 30(1,181) | 30(1,181) | |
| Turret | Turret Index Type | - Servo,BMT | Servo,BMT | Servo, VDI30 | |
| | Max. No. of Tools | ea 10 | 10 | 12 | |
| | Turning tool shank size | mm(inch) □25(□1") | □25(□1") | □20(□0.75") | |
| | Boring bar diameter | mm(inch) Ø32(1.25) | Ø32(1.25) | Ø32(1.25) | |
| | Turret Indexing Time(1st swivel) | sec 0.2 | 0.2 | 0.2 | |
| | Rotating Tool Speed | rpm - | - | 5,000 | |
| Tailstock (OPT.) | Tailstock Quill diameter | mm(inch) 65(2.56) | 65(2.56) | 65(2.56) | |
| | Tailstock Quill stroke | mm(inch) 80(3.15) | 80(3.15) | 80(3.15) | |
| | Tailstock Quill Taper | MT MT#4 | MT#4 | MT#4 | |
| Tank Capacity | Coolant Tank Capacity | ℓ(gal.) 120(31.70) | 120(31.70) | 120(31.70) | |
| | Hydraulic Tank Capacity | ℓ(gal.) 11(2.91) | 11(2.91) | 11(2.91) | |
| General | Machine Weight | kgf(lbs) 3,000(6,614) | 3,400(7,496) | 3,400(7,496) | |
| | Machine height | mm(inch) 1,500(59.06) | 1,570(61.81) | 1,570(61.81) | |
| | Floor space | Length | mm(inch) 2,110(83.07) | 2,260(88.98) | 2,260(88.98) |
| | | Width | mm(inch) 1,650(64.96) | 1,670(65.75) | 1,670(65.75) |
| | Power capacity | kVA 23 | 23 | 27 | |
| Controller | - FOI-TF | FOI-TF | FOI-TF | | |

Machine Specifications

| Specifications | | DL 18MA | DL 18MB | |
|------------------|----------------------------------|----------------------------|-----------------------|--------------|
| Capacity | Swing over Bed (Max.swing dia.) | mm(inch) 490(19.29) | 490(19.29) | |
| | Swing over Cross slide | mm(inch) 360(14.17) | 360(14.17) | |
| | Max. Turning Dia. | mm(inch) 270(10.63) | 270(10.63) | |
| | Max. Turning Length | mm(inch) 380(14.96) | 370(14.57) | |
| | Bar Capacity | mm(inch) 44(1.73) | 51(2.01) | |
| Main 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) | |
| | Cs-Axis Spindle Index angle | deg 0.001 | 0.001 | |
| | Max. Spindle Torque | N·m(lbs·ft) 110(81) | 150(108) | |
| | Spindle Driven Method | - Belt | Belt | |
| | 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) 3(4) | 3(4) | |
| | Z axis Servo Motor | kw(hp) 3(4) | 3(4) | |
| | Mill Spindle Motor(Cont./30min) | kw(hp) 3.7(5.0) | 3.7(5.0) | |
| Travel | X axis travel | mm(inch) 160(25+135)(6.30) | 160(25+135)(6.30) | |
| | Z axis travel | mm(inch) 390(15.35) | 380(14.96) | |
| | Guideway Type(X/Z) | - L.M Guide | L.M Guide | |
| | X axis rapid traverse rate | m/min(ipm) 32(1,260) | 32(1,260) | |
| | Z axis rapid traverse rate | m/min(ipm) 32(1,260) | 32(1,260) | |
| Turret | Turret Index Type | - Servo,BMT45 | Servo,BMT45 | |
| | Max. No. of Tools | ea 12 | 12 | |
| | Turning tool shank size | mm(inch) □20(□0.75") | □20(□0.75") | |
| | Boring bar diameter | mm(inch) Ø32(1.25) | Ø32(1.25) | |
| | Turret Indexing Time(1st swivel) | sec 0.15 | 0.15 | |
| | Rotating Tool Speed | rpm 5,000 | 5,000 | |
| Tailstock (OPT.) | Tailstock Quill diameter | mm(inch) 80(3.15) | 80(3.15) | |
| | Tailstock Quill stroke | mm(inch) 80(3.15) | 80(3.15) | |
| | Tailstock Quill Taper | MT MT#4 | MT#4 | |
| Tank Capacity | Coolant Tank Capacity | ℓ(gal.) 120(31.70) | 120(31.70) | |
| | Hydraulic Tank Capacity | ℓ(gal.) 19(5.02) | 19(5.02) | |
| General | Machine Weight | kgf(lbs) 3,050(6,724) | 3,250(7,165) | |
| | Machine height | mm(inch) 1,640(64.57) | 1,640(64.57) | |
| | Floor space | Length | mm(inch) 2,400(94.49) | 2,400(94.49) |
| | | Width | mm(inch) 1,460(57.48) | 1,460(57.48) |
| | Power capacity | kVA 27 | 27 | |
| Controller | - FOI-TF | FOI-TF | | |

NC Specifications (FANUC F0i-TF)

○ : Standard, OPT. : Option, (!) : M type, (!!) : 250 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 | | ○ | |
| | 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 | | 1 unit | ○ | |
| 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 | | ○ | |
| AICC 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 | | ○ (!) | |
| Programming functions | Auxiliary function | M8 digit | ○ | |
| | 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 | 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 | ○ |
| 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 | | ○ |
| Other functions | USB Memory | Input/Output | ○ |
| | Fast Data Server | Only 1 path, need option board | OPT |
| | MDI / DISPLAY unit | | 8.4"/10.4"(OPT) |
| | PMC system | | ○ |
| | Ethernet function | Embedded ethernet function | ○ |