6/8/10-Inch Global Compact Turning Center

Lynx

2100/M • **2100**L/LM/LMS



Doosan Machine Tools

Basic information

Basic Structure
Cutting
Performance

Detailed Information

Options
Applications
Diagrams
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Lynx 2100 series

The Lynx 2100 Series – the next generation of the Lynx Series, currently with more than 25000 sales worldwide – aims to deliver even greater customer satisfaction with its superior machining performance, reliability, and user convenience.

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Superior Machining Performance

Equipped with a 15 kW (20.1 Hp) high-power motor and machine structure, and further enhanced spindle and axis ball screw stiffness, the Lynx 2100 Series offers excellent cutting capability up to a maximum turning diameter of Ø350 mm (Ø13.8 inch) and a maximum turning length of 550 mm (21.7 inch).

High Reliability

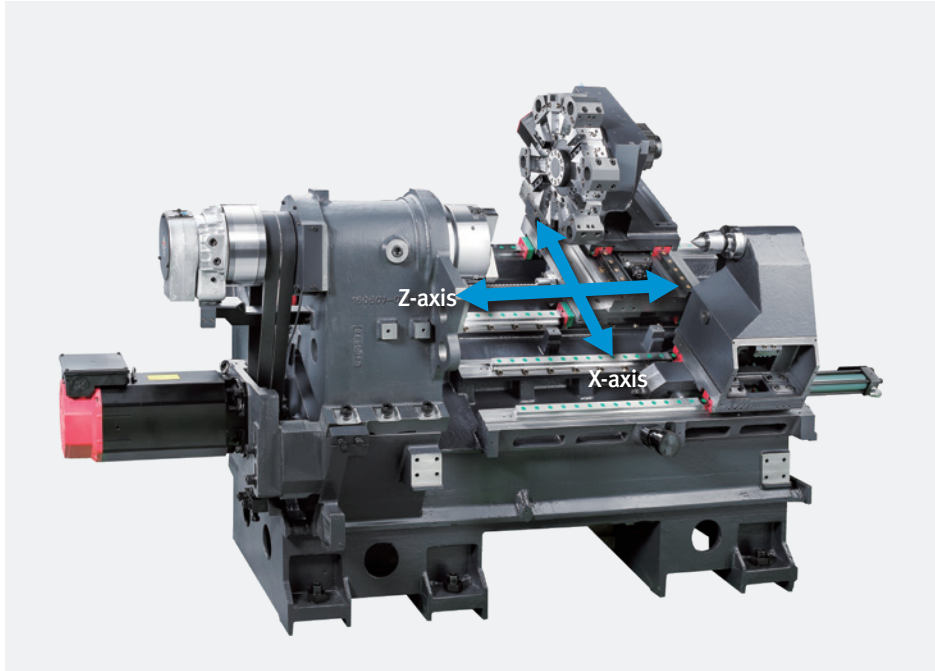
The Series' excellent reliability is based on the adoption of a wider support structure, more stable bed, low vibration/noise spindle, servo-driven turret, and a full slideway cover for preventing coolant leaks and chips from penetrating the machine.

Improved User Convenience

The CNC tailstock, new Easy Operation Package (EOP) and hot keys enable the user to operate peripheral devices quickly and conveniently. User convenience has been further enhanced with grease type lubrication and a lateral / rear side double-purpose chip conveyor.

Basic Structure

The Lynx 2100 Series includes a wider support structure for X, Z axes and tailstock traverse. The X and Z axes are fitted with highly rigid roller-type LM Guideways .

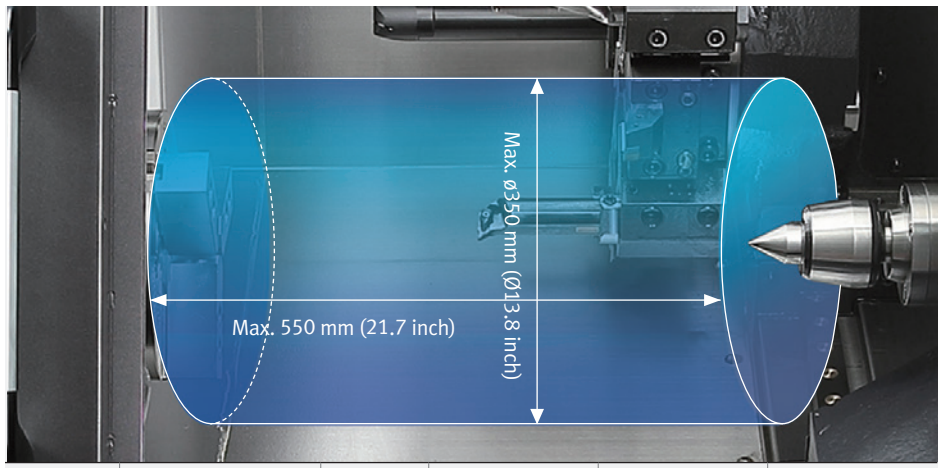


Standard chuck size	Models	Travel mm (inch)		Rapid feedrate m/min (ipm)		Fnuctions		
		X-axis	Z-axis	X-axis	Z-axis	2-axis	M	MS
6 inch	Lynx 2100A / MA	205 (8.1)	340 (13.4)	30 (1.2)	36 (1.4)	O	O	-
	Lynx 2100LA / LMA / LMSA		560 (22.0)			O	O	O
8 inch	Lynx 2100B / MB	205 (8.1)	340 (13.4)	30 (1.2)	36 (1.4)	O	O	-
	Lynx 2100LB / LMB / LMSB		560 (22.0)			O	O	O
10 inch	Lynx 2100LC	205 (8.1)	560 (22.0)	30 (1.2)	36 (1.4)	O	O	O

* M : 2-axis + Milling /
MS : Milling + Sub spindle

Largest Machining Area

The Series also offers the largest machining area window in its class, with a max. turning diameter of Ø350 mm (Ø13.8 inch) and a max. turning length of 550 mm (21.7 inch).



Function	Models	unit	Max. turning dia.	Bar working dia. (6inch / 8inch)	Max. cutting length
2-axis	Lynx 2100A / B	mm (inch)	Ø350 (Ø13.8)	51 / 65 (2.0 / 2.6)	330 (13.0)
	Lynx 2100LA / LB	mm (inch)	Ø350 (Ø13.8)	51 / 65 (2.0 / 2.6)	550 (21.7)
	Lynx 2100LC	mm (inch)	Ø350 (Ø13.8)	81 (3.2) (10 inch)	537 (13.0)
M / MS type	Lynx 2100MA / MB	mm (inch)	Ø300 (Ø11.8)	51 / 65 (2.0 / 2.6)	290 (11.4)
	Lynx 2100LMA / LMB	mm (inch)	Ø300 (Ø11.8)	51 / 65 (2.0 / 2.6)	510 (20.1)
	Lynx 2100LMSA / LMSB	mm (inch)	Ø300 (Ø11.8)	51 / 65 (2.0 / 2.6)	510 (20.1)
	Lynx 2100LMC/LMSC	mm (inch)	Ø300 (Ø11.8)	81 (3.2) (10 inch)	497 (19.6)

Spindle

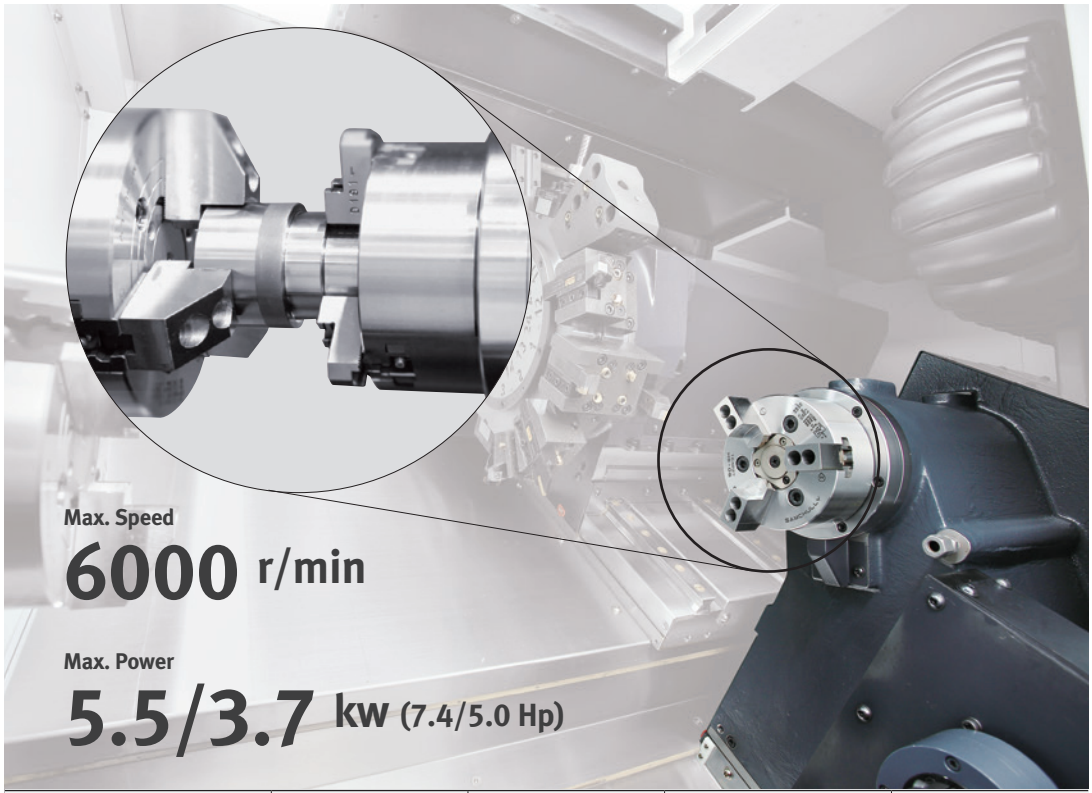
The high power / torque motor supports high-precision and heavy-duty cutting, improving productivity.



Standard chuck size	Models	Spindle speed r/min	Max.power (15min/cont.) kW (Hp)	Max torque N·m (ft-lbs)
6 inch	Lynx 2100A / LA / MA / LMA / LMSA	6000	15/11 (20.1/14.7)	127 (93.7)
8 inch	Lynx 2100B / LB / MB / LMB / LMSB	4500	15/11 (20.1/14.7)	169 (124.7)
10 inch	Lynx 2100LC / LMC / LMSC	3500	18.5/15 (24.8/20.1)	269 (198.5)

Sub-spindle

The sub-spindle function enables rear-side cutting by a single setup, thereby maximizing the user's productivity and efficiency. Full C axis 0.001 degree control is included to optimize capability.

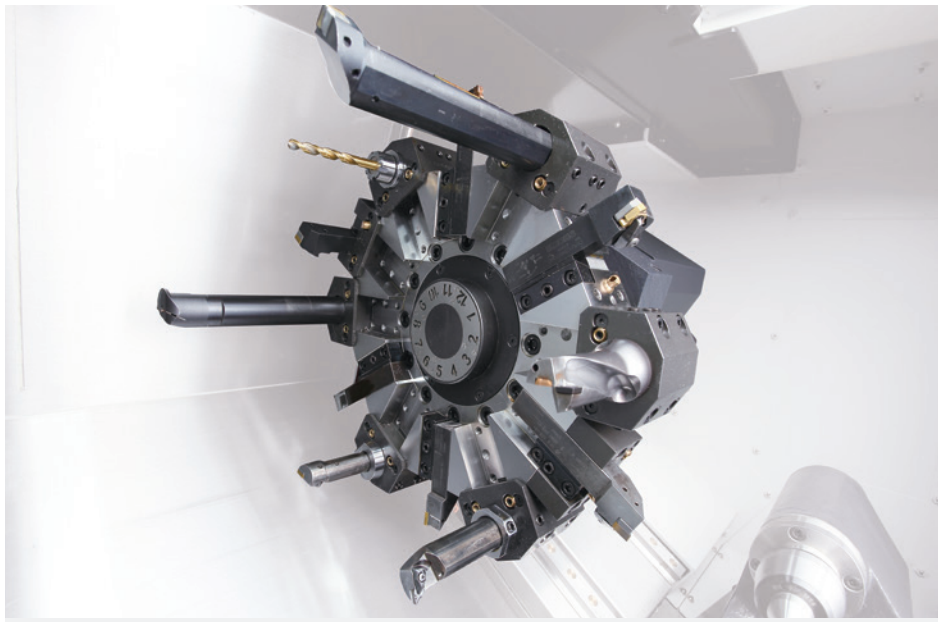


Models	Standard chuck size	Spindle speed r/min	Max.power (15min/cont.) kW	Max torque N·m (ft-lbs)
Lynx 2100LMSA / LMSB /LMSC	5 inch	6000	5.5 / 3.7 (7.4 / 5.0)	47 (34.7)

Turret

Rotation of the turret is controlled by servo motor for rapid and accurate selection of tools. The M model is fitted with Doosan's unique BMT45P turret to provide superior performance for milling operations.

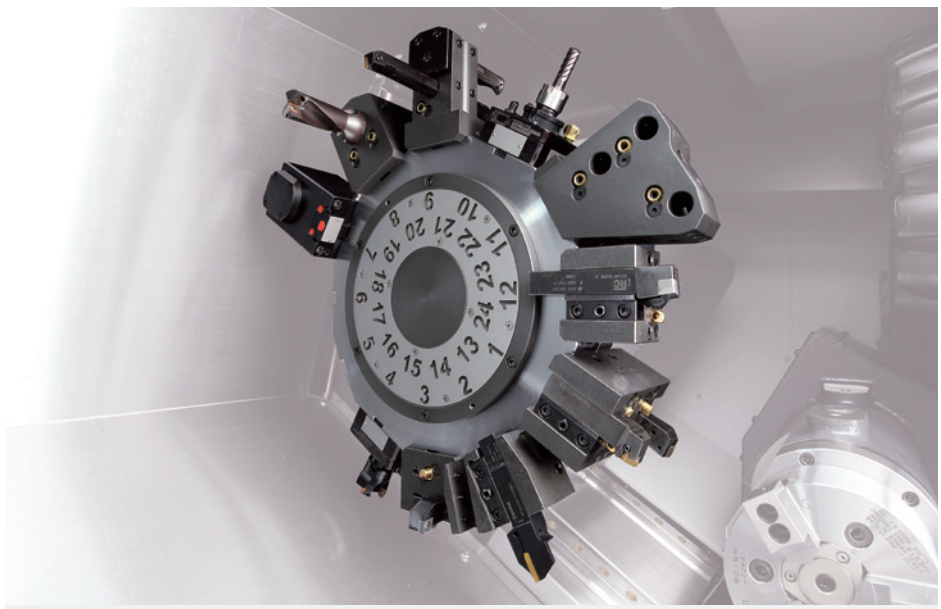
Turret for 2-axis Models_ Lynx 2100A / B / LA / LB / LC



No. of Tool Positions	Lynx 2100A/LA/B/LB	Lynx 2100LC
	10 station option	10 station
	12 station	12 station option

BMT45P Turret for M/MS Models_ Lynx 2100 MA / MB / LMA / LMB / LMC / LMSA / LMSB / LMSC

The BMT45 turret developed using Doosan's unique technology minimizes thermal error by using an air / oil cooling system. The direct turret clamping system improves accuracy and rigidity.

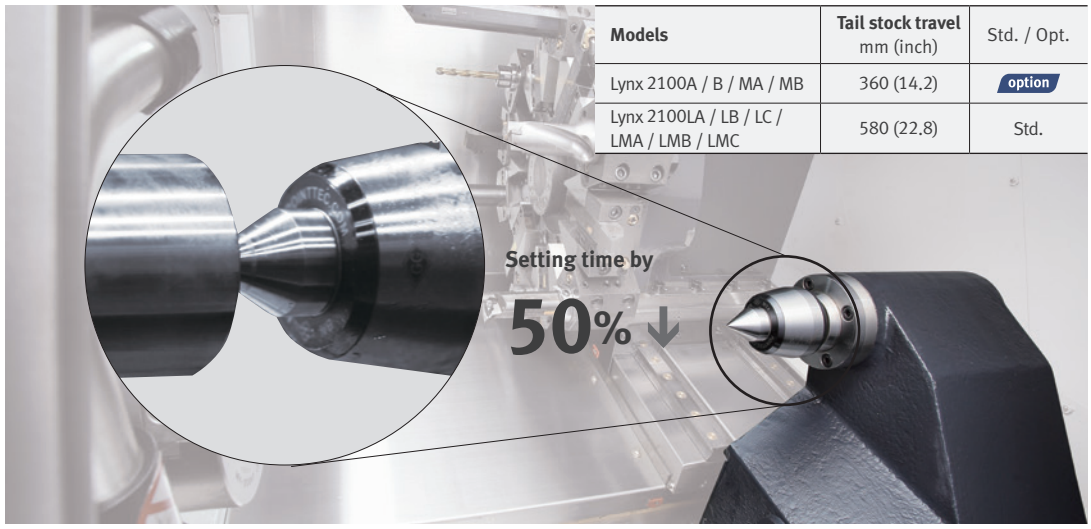


No. of Tool Positions	Indexing
12 station	24 position index

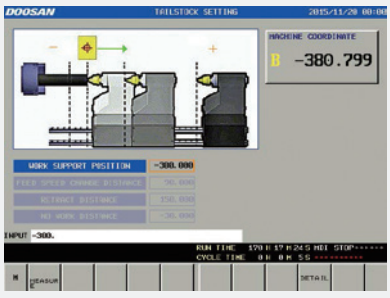
Tailstock

Adoption of the hydraulic actuation type CNC tailstock (hydraulic type) enables tailstock positioning and work setting using the operation panel. The dedicated screen reduces the work setting time by about 50%.

CNC Tailstock (Hydraulic Type)



Models	Tail stock travel mm (inch)	Std. / Opt.
Lynx 2100A / B / MA / MB	360 (14.2)	option
Lynx 2100LA / LB / LC / LMA / LMB / LMC	580 (22.8)	Std.

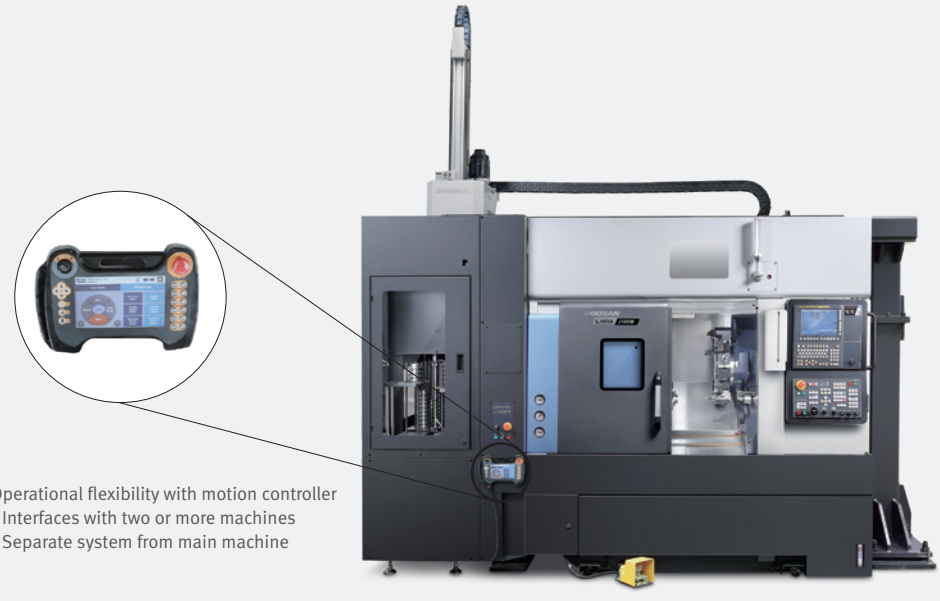


The EOP (Easy Operation Package) System enables fast and easy tailstock position setting and control.

Work clamp → Tailstock moving → Auto memory of support point by a quick and simple operation (button) → Auto support or retreat using the M-code or buttons on the operation panel

Doosan Gantry Loader

Doosan Gantry Loader is compact and easy customized stand alone type automation solution controlled by motion controller .



* Operational flexibility with motion controller
- Interfaces with two or more machines
- Separate system from main machine

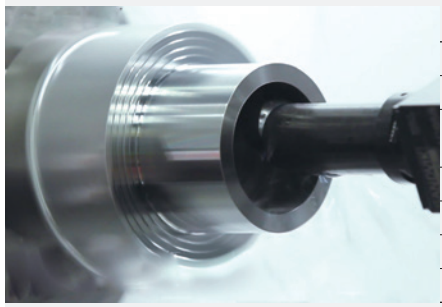
Description		Unit	Doosan Gantry Loader
Travel	Z / Y axis	mm (inch)	2080 / 900 (81.9 / 35.4)
Rapid Traverse	Z / Y axis	m/min (ipm)	210 / 180 (8267.7 / 7086.6)
Work Capacity		mm (inch)	Ø150 x 90 (Ø5.9 x 3.5)
		kg (lb)	3 (6.6)
Number of Pallets (Work Stocker)		st	14
Applicable model		-	Lynx 2100 series / PUMA GT2100 series

Cutting Performance

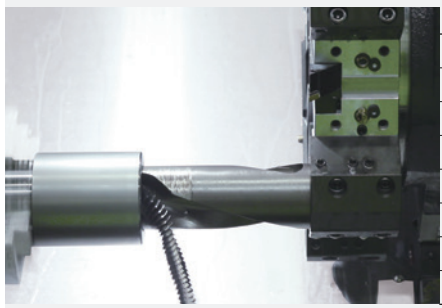
Lynx 2100 series has powerful cutting performance.



O.D turning		
	Unit	Lynx 2100LB
Cutting speed	m/min (ipm)	210 (8267.7)
Feed	mm/rev (ipr)	0.56 (0.0)
Spindle speed	r/min	844
Cutting depth	mm (inch)	4 (0.2)
Chip removal rate	cm^3/min ($inch^3$/min)	462 (28.2)



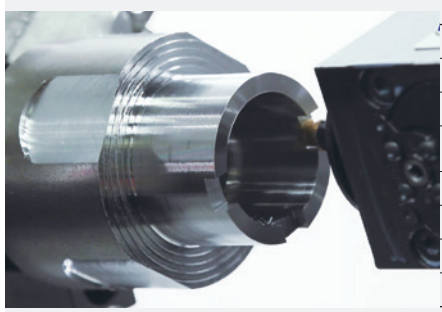
I.D turning (Rough / End)		
	Unit	Lynx 2100LB
Cutting speed	m/min (ipm)	280 / 200 (11023.6 / 7874.0)
Feed	mm/rev (ipr)	0.3 / 0.1 (0.0 / 0.0)
Spindle speed	r/min	1182 / 863
Cutting depth	mm (inch)	3 / 0.4 (0.1 / 0.0)
Tool length	mm (inch)	4.0D / 4.0D (0.2D / 0.2D)



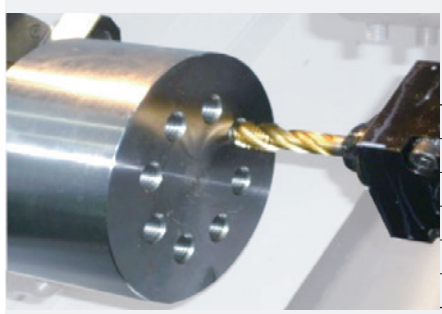
U-drilling		
	Unit	Lynx 2100LB
Cutting speed	m/min (ipm)	200 (7874.0)
Feed	mm/rev (ipr)	0.12 (0.0)
Spindle speed	r/min	1011
U-drill dia.	mm (inch)	63 (2.5)
Cutting depth	mm (inch)	176 (6.9)
Chip removal rate	cm^3/min ($inch^3$/min)	378 (23.1)



Face milling		
	Unit	Lynx 2100MA
Cutting speed	m/min (ipm)	188 (7401.6)
Feed	mm/min (ipm)	600 (23.6)
Spindle speed	r/min	1500
Cutting depth	mm (inch)	3 (0.1)
Chip removal rate	cm^3/min ($inch^3$/min)	57.6 (3.5)
Tool dia.	mm (inch)	50 (2.0)



End milling		
	Unit	Lynx 2100MA
Cutting speed	m/min (ipm)	57 (2244.1)
Feed	mm/min (ipm)	300 (11.8)
Spindle speed	r/min	1500
Cutting depth	mm (inch)	30 (1.2)
Chip removal rate	cm^3/min ($inch^3$/min)	108 (6.6)
Tool dia.	mm (inch)	12 (0.5)



Tap		
	Unit	Lynx 2100MA
Tap dia.	mm (inch)	10 (0.4)
Cutting speed	m/min (ipm)	60 (2.4)
Feed	mm/rev (ipr)	1.75 (0.1)
Spindle speed	r/min	1592

* The results, indicated in this catalogue are provides as example. They may not be obtained due to differences in cutting conditions and environmental conditions during measurement.

Standard / Optional Specifications

Various optional features are available for customer-specific work environments.

● Standard ○ Optional X Not applicable

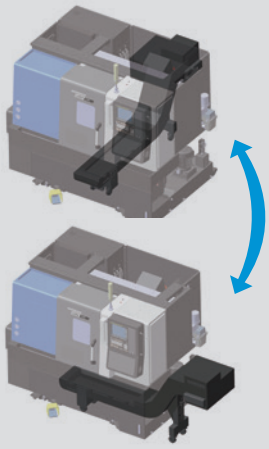
NO.	Description	Features	Lynx 2100A/LA	Lynx 2100B/LB	Lynx 2100LC	Lynx 2100MA/ LMA/LMSA	Lynx 2100MB/ LMB/LMSB	Lynx 2100LMC/ LMSC
1	Chuck	6 inch	●	X	X	●	X	X
2		8 inch	○	●	X	○	●	X
3		10 inch	X	○	●	X	○	●
4		None	○	○	○	○	○	○
5	Jaw	Soft jaw	●	●	●	●	●	●
6		Hard jaw	○	○	○	○	○	○
7	Chucking option	DUAL PRESSURE CHUCKING	○	○	○	○	○	○
8		CHUCK CLAMP CONFIRMATION	○	○	○	○	○	○
9	Turret	Rotary tool_6000r/min	X	X	X	●	●	●
10		Rotary tool_10000r/min	X	X	X	○	○	○
11	Coolant pump	1.5 bar	●	●	●	●	●	●
12		4.5 bar	○	○	○	○	○	○
13		7 bar	○	○	○	○	○	○
14		10 bar	○	○	○	○	○	○
15		14.5 bar	○	○	○	○	○	○
16	Coolant pump (opt.)	4.5 bar	○	○	○	○	○	○
17	Coolant options	Oil Skimmer	○	○	○	○	○	○
18		Coolant chiller	○	○	○	○	○	○
19		Coolant pressure switch	○	○	○	○	○	○
20		Coolant level switch : Sensing level - Empty / Low / Enough / Full	●	●	●	●	●	●
22	Side chip conveyor	Hinged belt	○	○	○	○	○	○
23		Magnetic scrapper	○	○	○	○	○	○
24		Screw (auger)	○	○	○	○	○	○
25	Rear chip conveyor	Hinged belt	○	○	○	○	○	○
26		Magnetic scrapper	○	○	○	○	○	○
27		Screw (auger)	○	○	○	○	○	○
28	Chip bucket	Folklift 110L (for auger conveyor)	○	○	○	○	○	○
29		Folklift 200L (for auger conveyor)	○	○	○	○	○	○
30		Folklift 220L	○	○	○	○	○	○
31		Folklift 300L	○	○	○	○	○	○
32		Folklift 380L	○	○	○	○	○	○
33		Rotation 220L	○	○	○	○	○	○
34		Rotation 300L	○	○	○	○	○	○
35		Rotation 380L	○	○	○	○	○	○
36	Chip processing options	Air blower	○	○	○	○	○	○
37		Chuck coolant	○	○	○	○	○	○
38		Coolant gun	○	○	○	○	○	○
39		Mist collector ready	○	○	○	○	○	○
40		Assembled mist collector	○	○	○	○	○	○
41	Measurement & Automation	Bar feeder system	○	○	○	○	○	○
42		Auto door	○	○	○	○	○	○
43		Tool setter (Manual)	○	○	○	○	○	○
44		Tool setter (Auto)	○	○	○	○	○	○
45		Parts catcher and box	○	○	○	○	○	○
46		Parts catcher and conveyor	○	○	○	○	○	○
47	Standard devices	Front door interlock	●	●	●	●	●	●
48		Manual book	●	●	●	●	●	●
49		installation parts	●	●	●	●	●	●
50		safety sticker	●	●	●	●	●	●
51		Work light	●	●	●	●	●	●
52		Standard operation tools	●	●	●	●	●	●
53		Foot switch	●	●	●	●	●	●
54	Optional devices	Tool monitoring system	○	○	○	○	○	○
55		Signal tower	○	○	○	○	○	○
56		Air gun	○	○	○	○	○	○
57		Auto power off	○	○	○	○	○	○
58		Quick change tooling(CAPTO)	○	○	○	○	○	○
59		Sketch-turn S/W	○	○	○	○	○	○
59	Customized Special Option	AUTOMATIC TOP DOOR	○	○	○	○ /○ / X	○ /○ / X	○ / X
60		SHOWER COOLANT	○	○	○	○	○	○
61		DUAL PRESSURE COOLANT FOR MAIN TURRET	○	○	○	○	○	○
62		AUTO. WORK MEASUREMENT_ OLP40_RENISHAW	○	○	○	○	○	○
63		TSC FOR MAIN/LEFT SPINDLE_PREPARATION	○	○	○	○	○	○
64		MILLING TOOL HOLDER_UNIVERSAL	○	○	○	○	○	○

* Please contact your Doosan Machine Tools representative for detailed machine information.

Fire Safety Precautions There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting the controlled and careful use of coolants and modifying the machine without the consent of the manufacturer. Always check the SAFETY GUIDELINES carefully before using the machine.

Peripheral Equipment

Chip Conveyor (option 21~26)



The chip conveyor can be configured in a side or rear layout to meet the demands of the work environment.

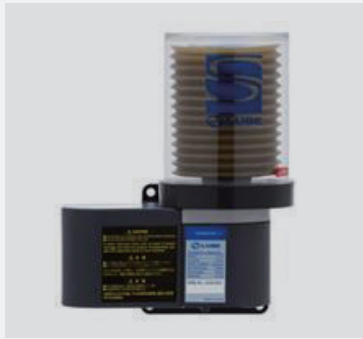
Chip conveyor type	Material	Description
Hinged belt	Steel	Most typical type of chip conveyor. Appropriate for steel materials generating chips of length of 30 mm or more.
Screw (auger)	Steel	Chip conveyor with smallest footprint. Demands 80% of footprint comparing to hinged belt.
Magnetic scrapper	Cast iron	Chip conveyor with magnet equipped: Appropriate for cast iron workpieces generating fine chips.

Quick change CAPTO (option)



The Quick Change Tool system simplifies tool change operation. Recommended for users who need to change tools frequently or reduce the set-up time.

Grease Lubrication System



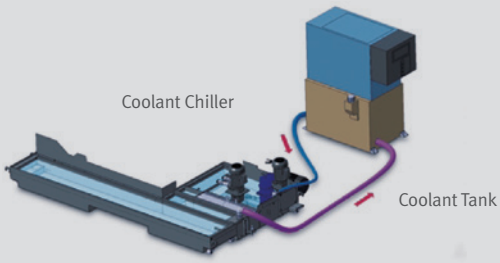
The standard grease lubrication system eliminates the need for an oil skimmer and reduces lubrication costs by about 80% compared to oil lubrication.

Yearly maintenance cost

Max. 80% ↓

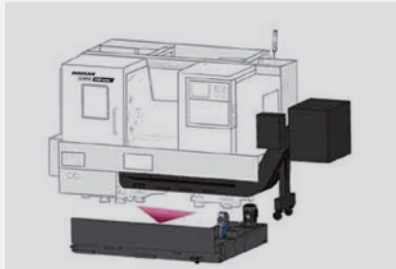
Coolant Chiller (option 18)

Coolant chiller is highly recommended to prevent temperature rise and minimize thermal deformation, when using a water-insoluble coolant or high-pressure coolant system of which the power is over 1.5 kw.



Easy-to-clean Coolant Tank

The coolant tank can be isolated without removing the chip conveyor, significantly enhancing the operator's convenience.



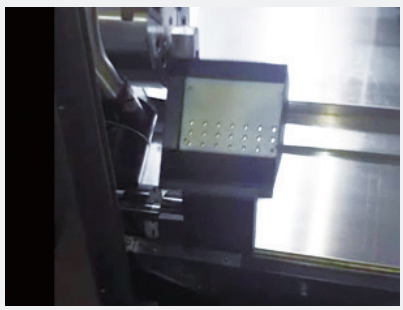
Tool Setter (Manual /Auto) (Tool length measurement device) (option 42~43)

The tool setter facilitates the setting of machining tools, and can be used to automatically compensate for worn tools accurately.



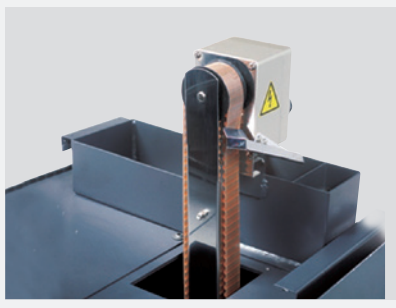
Part Catcher (option 44~45)

The Part Catcher automatically catches finished parts and transfers them to the downstream processes.



Oil Skimmer (option 17)

As the Lynx 2100 Series uses a grease type lubricant, the coolant rarely mixes with oil. This optional oil skimmer helps keep exceptional service life of the coolant.



DOOSAN Fanuc i Plus

DOOSAN Fanuc i Plus is optimized for maximizing customer productivity and convenience.

15 inch screen + New OP

DOOSAN Fanuc i Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout, and features the Qwerty keyboard for fast and easy operation.



DOOSAN Fanuc i Plus
- 15 inch color display
  Intuitive and user-friendly design

USB & PCMCIA card
QWERTY keyboard
- EZ-guide i standard
- Ergonimic operator panel
- 2MB Memory
- Hot key



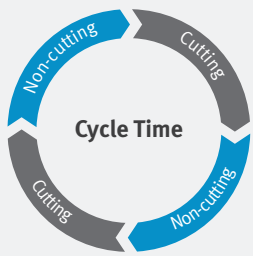
iHMI Touch screen option
- iHMI provides an intuitive interface that utilizes a touch screen for quick and easy operation

Variety of applications
- Providing various applications related to PLANNING, MACHINING, IMPROVEMENT, and UTILITY for customer convenience.

Improved Productivity

Cycle time, mechanism operating speed, acceleration and deceleration are optimized and non-cutting times during cutting operation are analyzed and minimized to enhance productivity.

Non-cutting time reduced by
10%

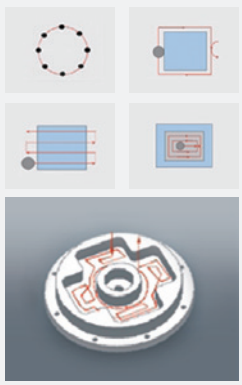


EZ-Guide i

Using the DOOSAN EZ-Guide i, users can create a cutting program for any desired shape, including patterns, by entering the appropriate figures only.

Exemplary Programming

Cutting shape



EZ-Guide i Screen



Enter the dimensions of the desired shape.

Automatic creation of cutting program

```
O7000 (SAMPLE PROGRAM) ;
...
M3 S1500 ;
G0 X50. Y125. ;
G0 Z30. ;
G1040 T0.5 J3. H0.2 K0.5 ··· ;
G1020 H120. V50. U37. W68. ··· ;
G0 Z80. ;
M5 ;
```

A cutting program is automatically created with the entered values.

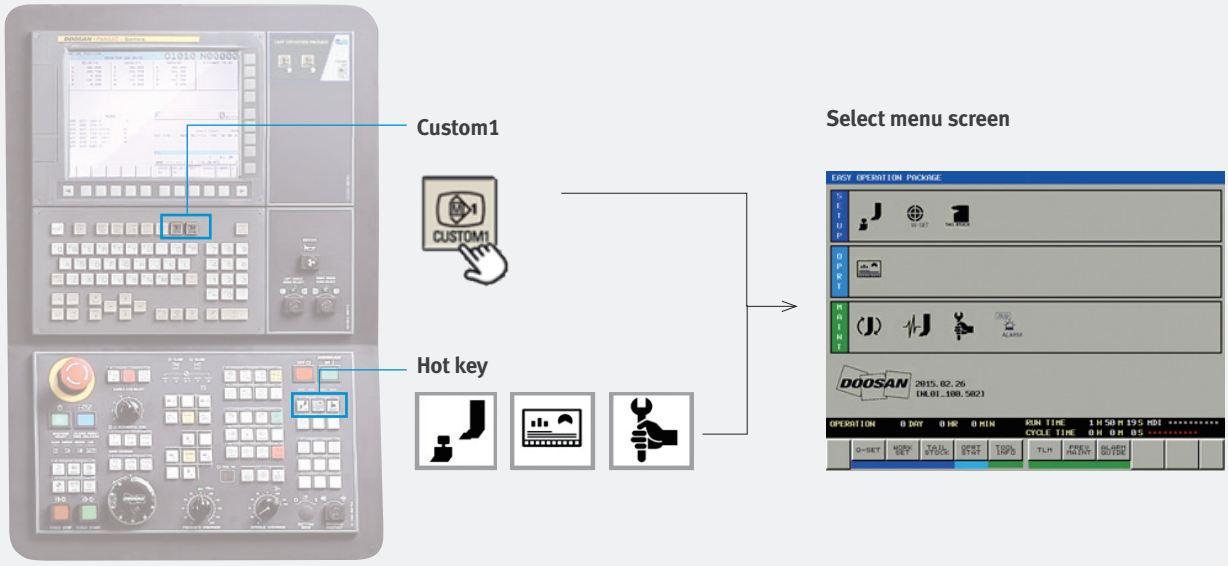
SKETCH-TURN option



DOOSAN Conversational programming software for PC
- Easy to learn for beginners
- Time savings in programming
- Reduce processing cycle time

Easy Operation Package

Doosan Easy Operation Package (EOP) supports the user with tool, help desk, operation, functionalities to maximize operational efficiency and user convenience.



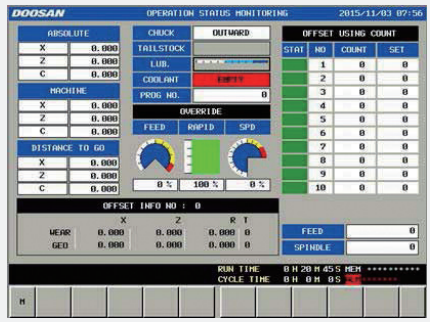
Convenient set up for peripheral equipment

Helps tool setter guide, work setting, tailstock setting, and other measurement and parameter control to reduce setting-up time and facilitates operation.



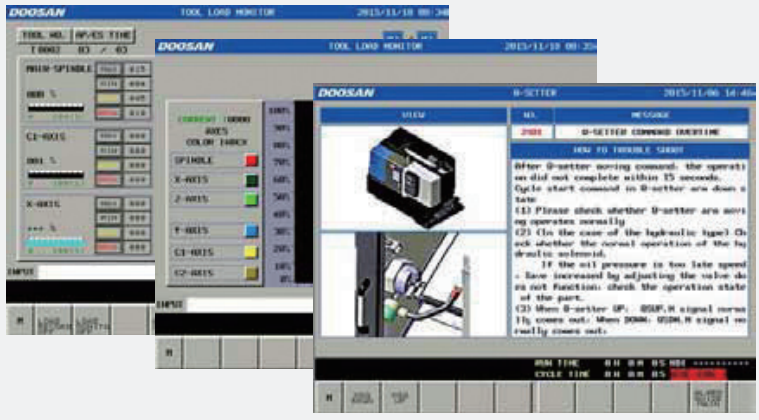
Screen for monitoring the machine and operating conditions

The screen provides a complete view of machine operation. Information on the feed system position, offset, feedrate and spindle speed, tool life and count in an easy-to-view screen.



Management Convenience Screen

Helps to prepare tools and provides for visual information on alarms to reduce maintenance time.



SIEMENS S828D

SIEMENS CNC optimized for DOOSAN machine tools maximizes users' productivity.

15.6 inch screen + New OP

The newly-designed operation panel enhances operating convenience by incorporating common-design buttons and layout, and features the Qwerty keyboard for fast and easy operation.

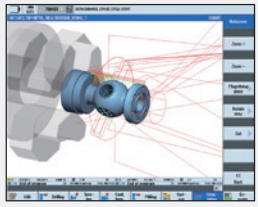


15.6-inch display

- USB (standard)
- QWERTY Keyboard (standard)

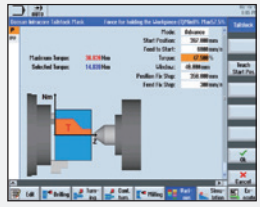
Conversational Convenient function

The machining monitoring function developed on the basis of the Shop Turn – an interactive machining support function of SIEMENS – provides users with cutting, servicing and maintenance screens for easy and convenient machine operation.



Cutting and operation support function

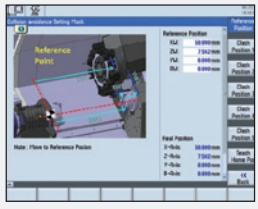
This function shows a cutting and tool path simulation of a cutting program on a real-time basis.



Shop-turn mode[various]
⬇
[attachments]

Tail stock function

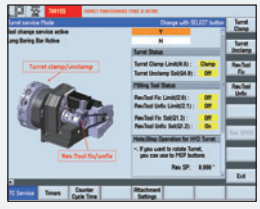
Dialogic Sceen will help easy setting and operating about CNC Tail stock.basis.



[offset]
⬇
[operating parameter]
⬇
[attachment setting]
⬇
[Collision avoidance]

Operation safety function

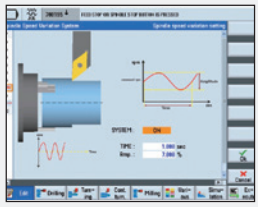
Spindle and Turret's interference could be checked before crash. So that it Protect operator's mistake.
[offset] [operating parameter]
[attachment setting] [Collision avoidance]



[offset]
⬇
[operating parameter]
⬇
[TC service]

Maintenance and service convenience function

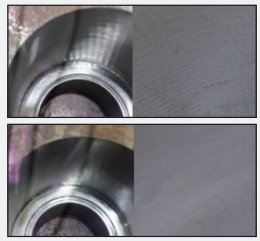
Maintenance and service of major units and peripheral devices, timer setting and parts counter setting can be easily carried out on a convenient screen.



[various]
⬇
[attachment]
⬇
[DSSV]

Machining accuracy improvement

The NC controls spindle speed at an optimal level for precision threading and turning, making it possible to improve surface roughness automatically.



Before applying the function

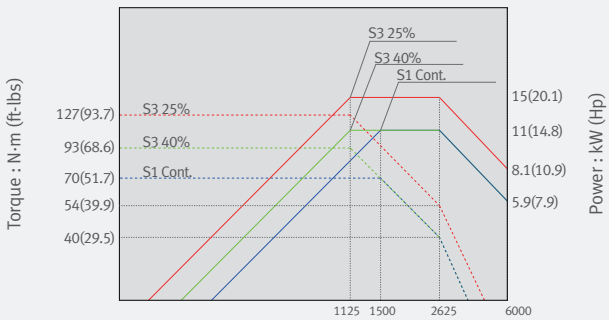
After applying the function

Power-Torque Diagram (FANUC)

Main Spindle

Lynx 2100A / LA / MA / LMA / LMSA

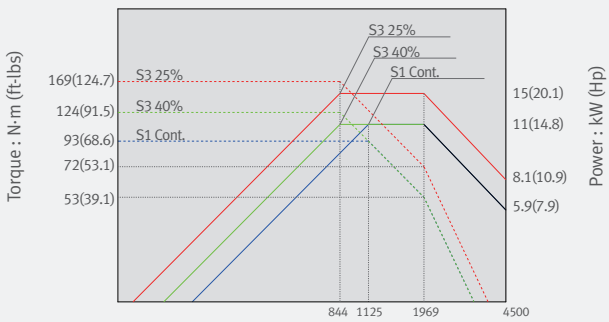
Speed **6000** r/min Power **15/11** kW (20.1/14.8 Hp)



Spindle speed : r/min

Lynx 2100B / LB / MB / LMB / LMSB

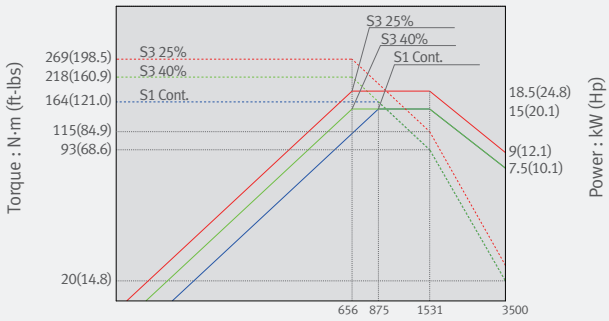
Speed **4500** r/min Power **15/11** kW (20.1/14.8 Hp)



Spindle speed : r/min

Lynx 2100LC / LMC / LMSC

Speed **3500** r/min Power **18.5/15** kW (24.8/20.1 Hp)

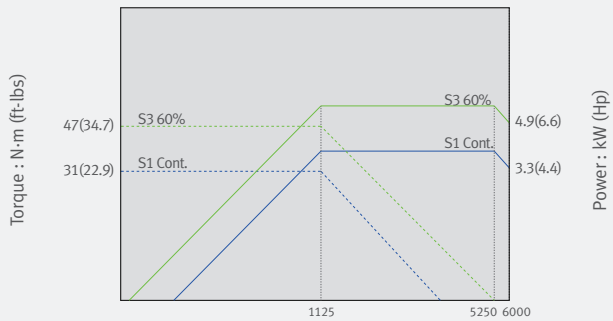


Spindle speed : r/min

Sub-Spindle

Lynx 2100LMSA / LMSB / LMSC

Speed **6000** r/min Power **4.9/3.3** kW (6.6/4.4 Hp)

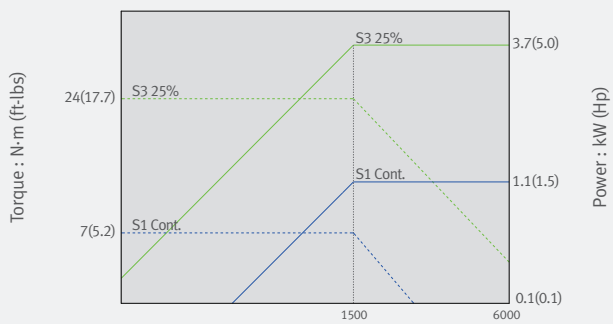


Spindle speed : r/min

Rotary Tool

Lynx 2100M / LM / LMS

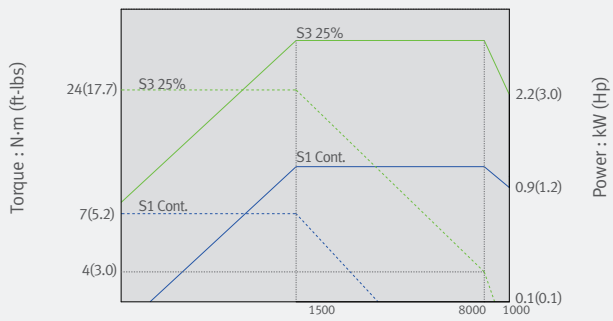
Speed **6000** r/min Power **3.7/1.1** kW (5.0/1.5 Hp)



Spindle speed : r/min

Lynx 2100M / LM / LMS option

Speed **10000** r/min Power **2.2/0.9** kW (3.0/1.2 Hp)



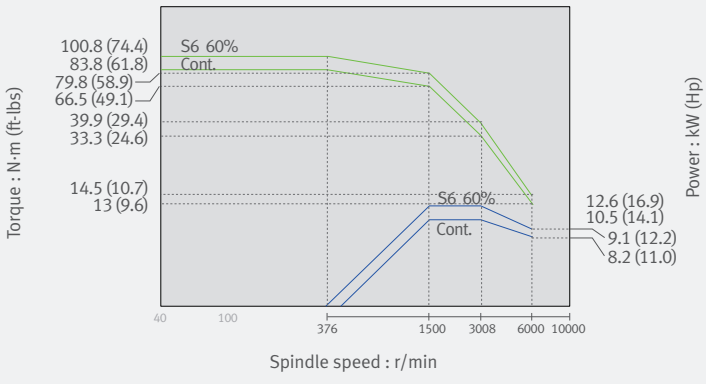
Spindle speed : r/min

Power-Torque Diagram (SIEMENS)

Main Spindle

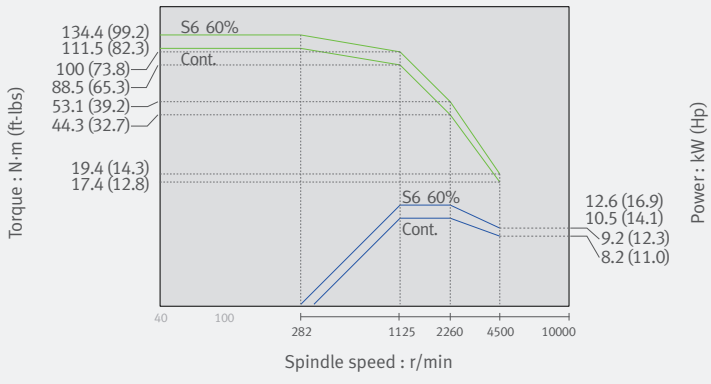
Lynx 2100A / LA / MA / LMA / LMSA

Speed **6000** r/min Power **12.6/10.5** kW (16.9/14.1 Hp)



Lynx 2100B / LB / MB / LMB / LMSB

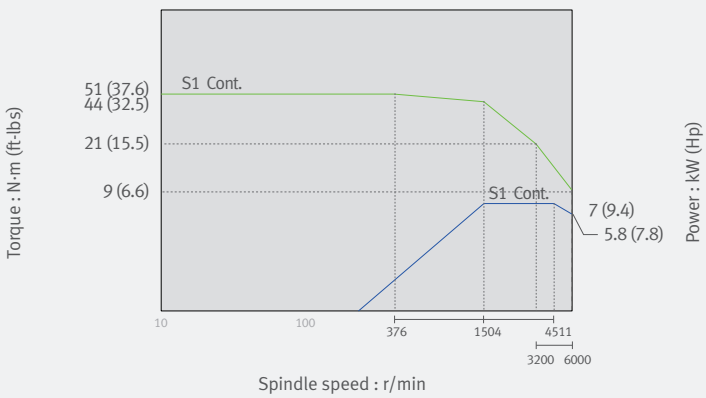
Speed **4500** r/min Power **12.6/10.5** kW (16.9/14.1 Hp)



Sub-Spindle

Lynx 2100LMSA / LMSB

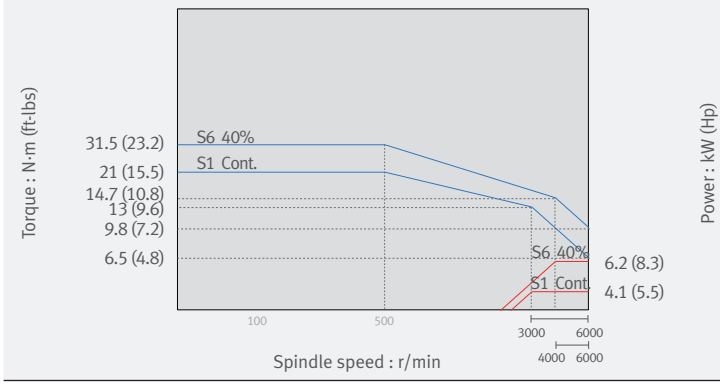
Speed **6000** r/min Power **7** kW (9.4 Hp)



Rotary Tool

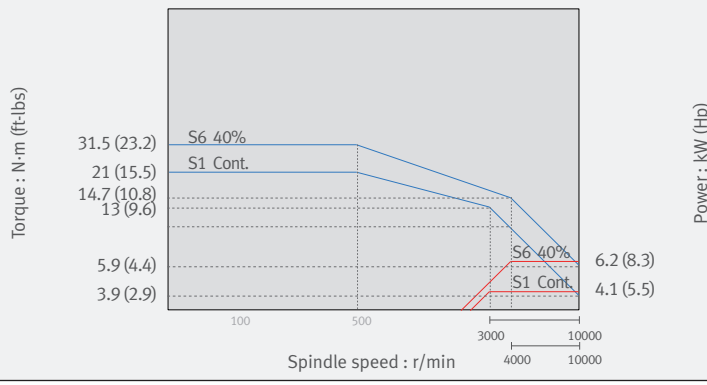
Lynx 2100M / LM / LMS

Speed **6000** r/min Power **6.2/4.1** kW (8.3/5.5 Hp)



Lynx 2100M / LM / LMS option

Speed **10000** r/min Power **6.2/4.1** kW (8.3/5.5 Hp)

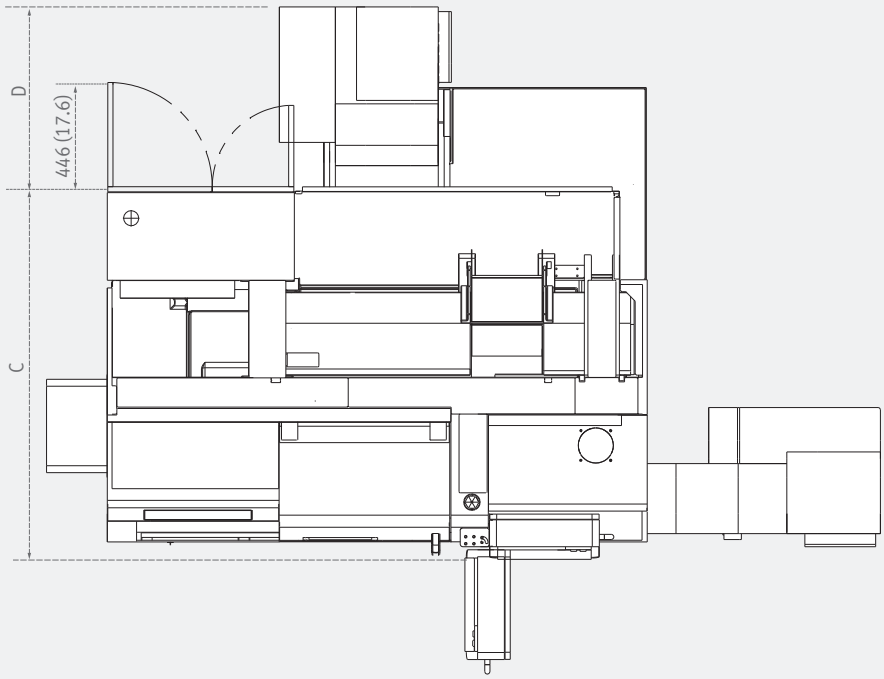


External Dimensions

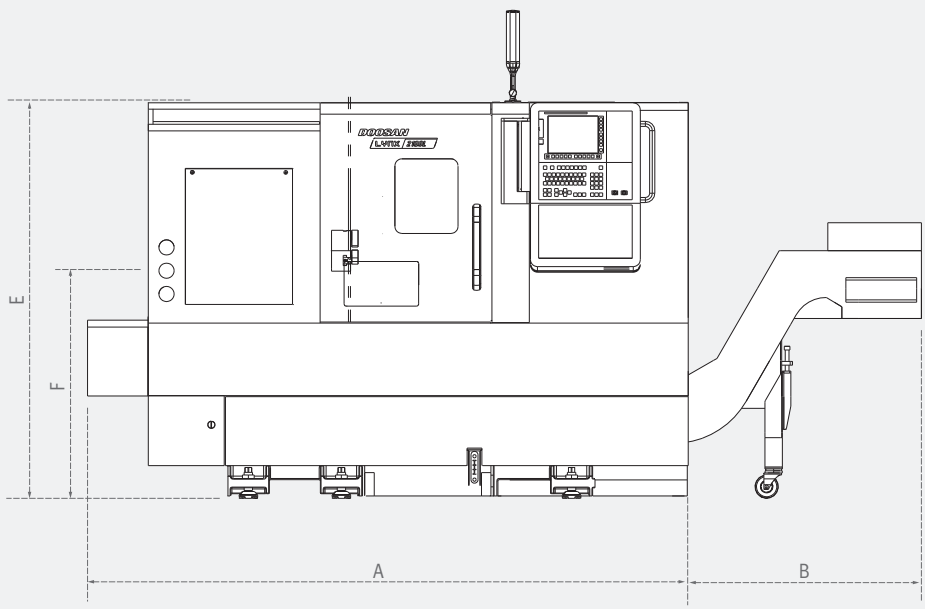
Lynx 2100 series

Unit : mm (inch)

Top View



Front View



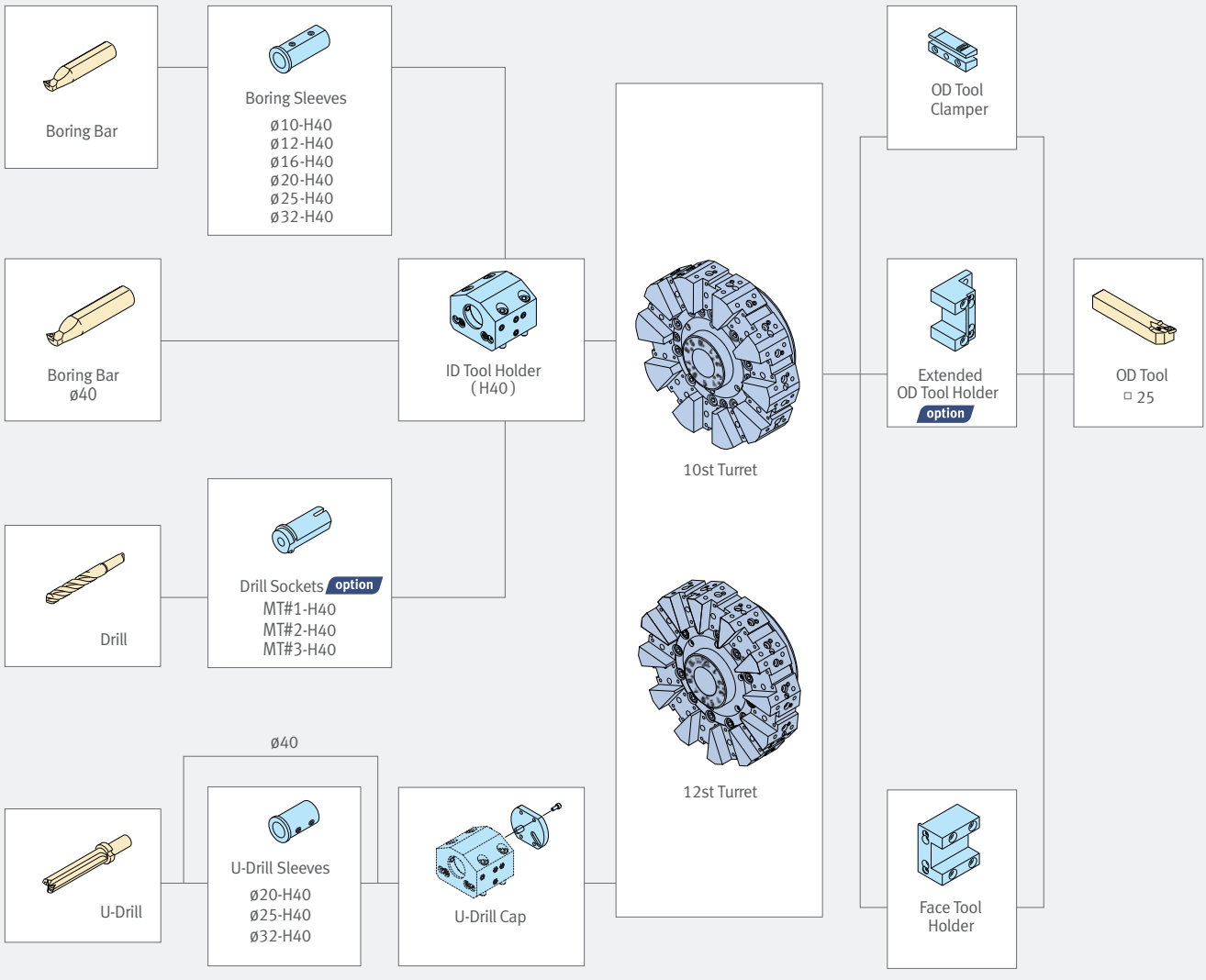
Models	A	B		C	D		E	F
		side hinged chip conveyor	side screw (auger) chip conveyor		rear hinged chip conveyor	rear screw (auger) chip conveyor		spindle center
Lynx 2100A /MA [B / MB]	2320 [2350] (91.3 [92.5])	953 (37.5)	759 (29.9)	1595 (62.8)	770 (30.3)	583 (23.0)	1693 (66.7)	1060 (41.7)
Lynx 2100LA / LMA [LB / LMB]	2540 [2570] (100.0 [101.2])	997 (39.3)	830 (32.7)	1595 (62.8)	770 (30.3)	616 (24.3)	1693 (66.7)	1070 (42.1)
Lynx 2100LC / LMC	2570 (101.2)	997 (39.3)	-	1602 (63.1)	770 (30.3)	-	1693 (66.7)	1060 (41.7)
Lynx 2100LMSA [LMSB]	2805 [2835] (110.4 [111.6])	997 (39.3)	830 (32.7)	1595 (62.8)	770 (30.3)	616 (24.3)	1693 (66.7)	1060 (41.7)
Lynx 2100LMSC	2837 (111.7)	993 (39.1)	-	1602 (63.1)	770 (30.3)	-	1693 (66.7)	1060 (41.7)

* Some peripheral equipment can be placed in other places

Tooling System

Lynx 2100A / B / LA / LB / LC (10/12 station)

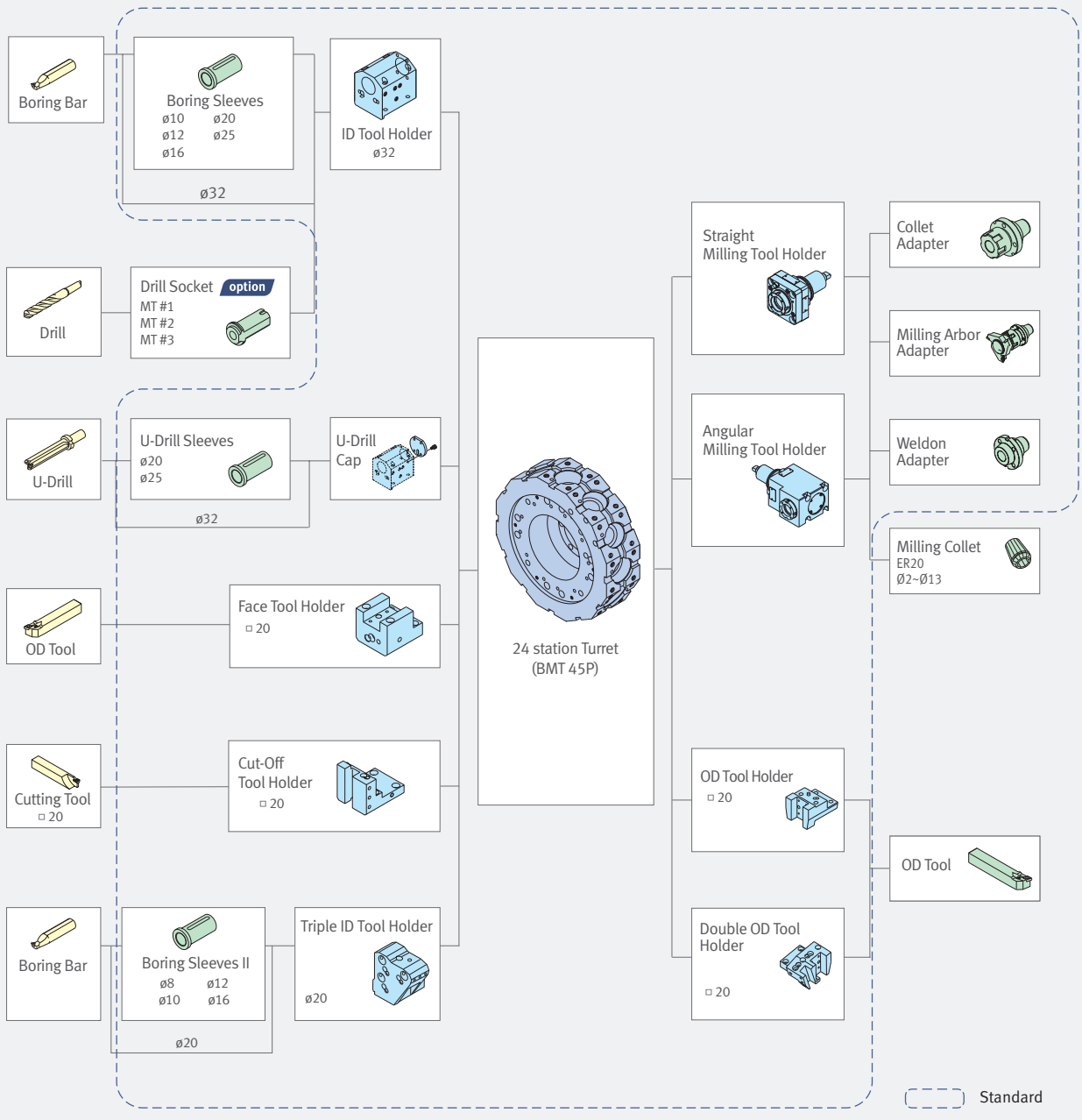
Unit : mm (inch)



Tooling System

Lynx 2100MA / MB / LMA / LMB / LMC (12 station(24 Position Index), BMT45P)

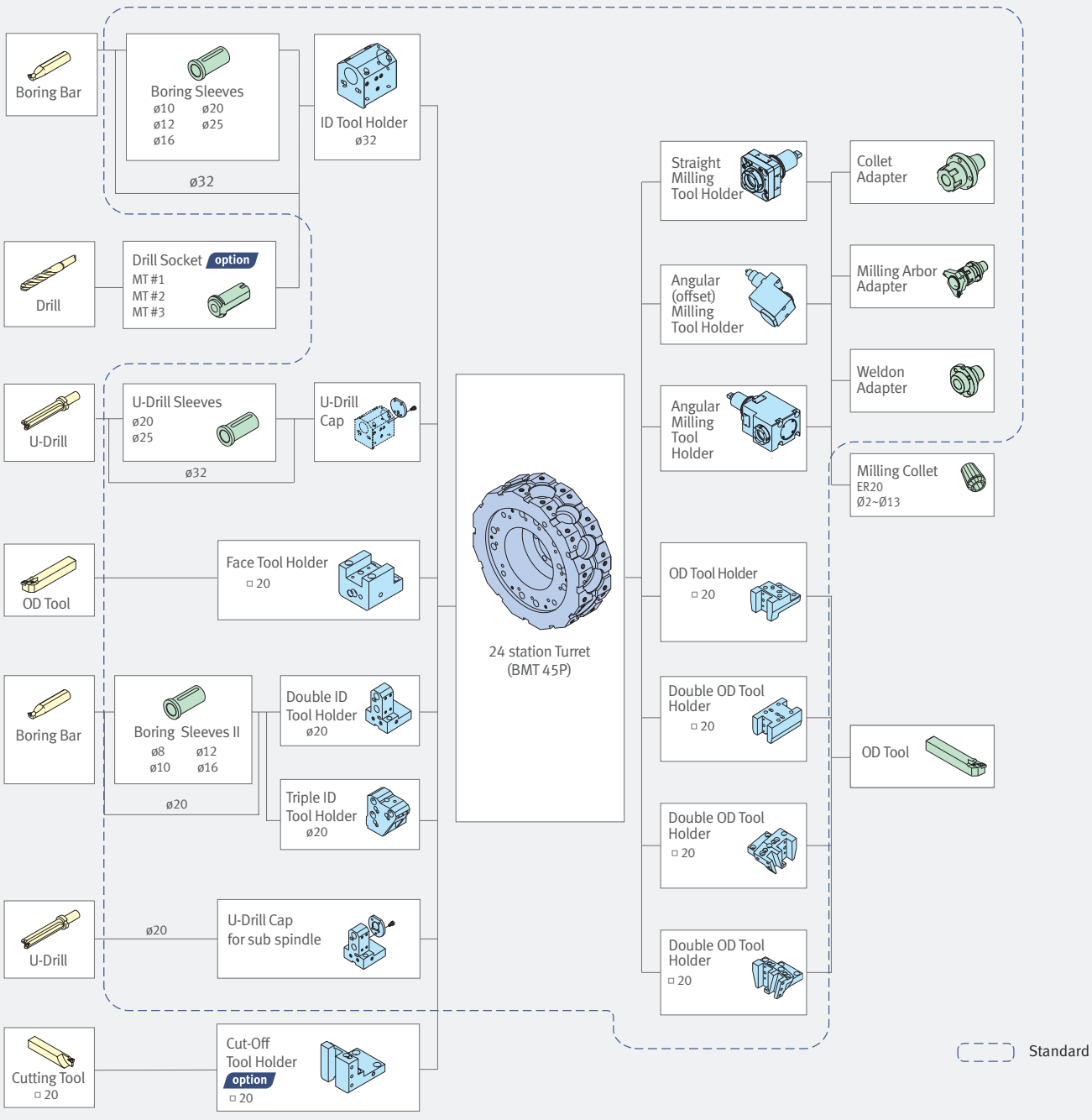
Unit : mm (inch)



Tooling System

Lynx 2100LMSA / LMSB / LMSC (12 station(24 Position Index), BMT45P)

Unit : mm (inch)

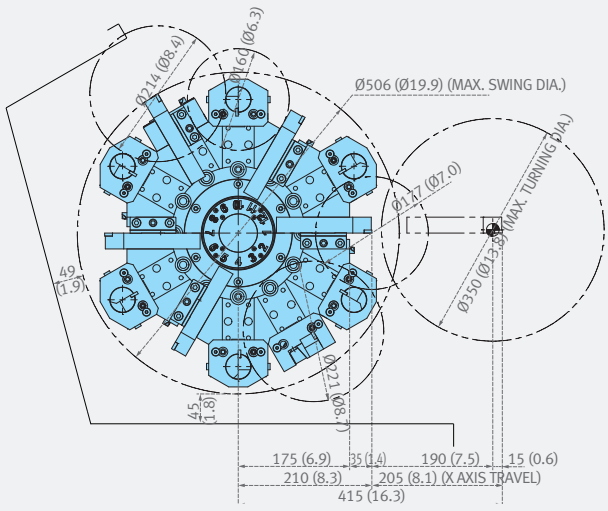


Tool Interference Diagram

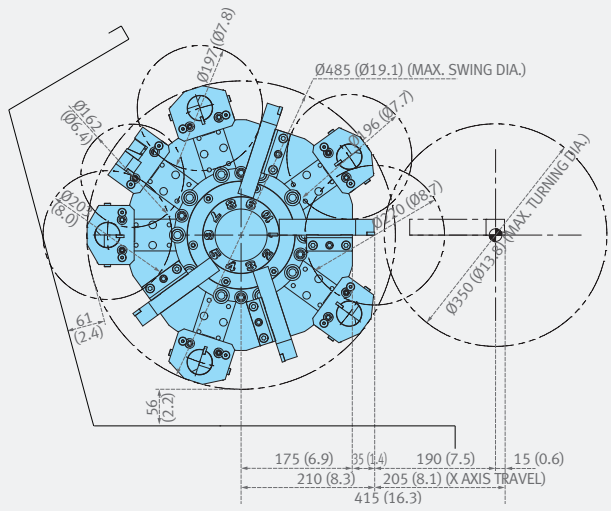
Lynx 2100A / B / LA / LB / LC*

Unit : mm (inch)

12st

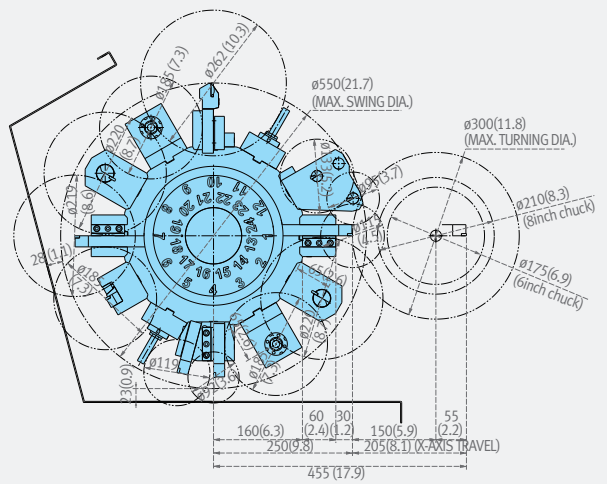


10st



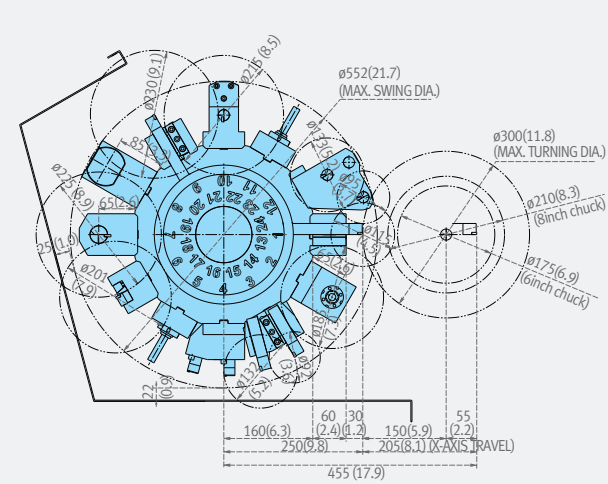
* Lynx 2100A / B / LA / LB : 12st is STD, Lynx 2100LC : 10st is STD

Lynx 2100MA / MB / LMA / LMB / LMC



Lynx 2100LMSA / LMSB / LMSC

Unit : mm (inch)

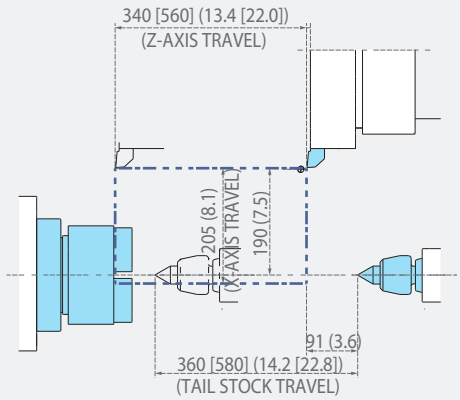


Working Range

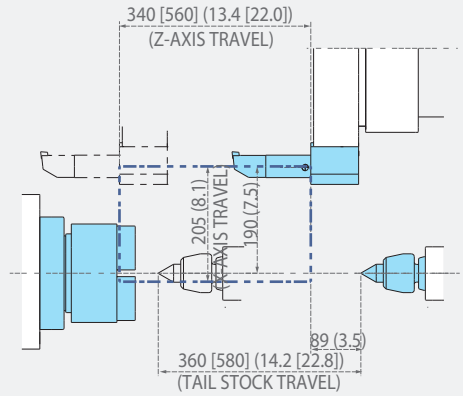
Lynx 2100A / B [LA / LB / LC]

Unit : mm (inch)

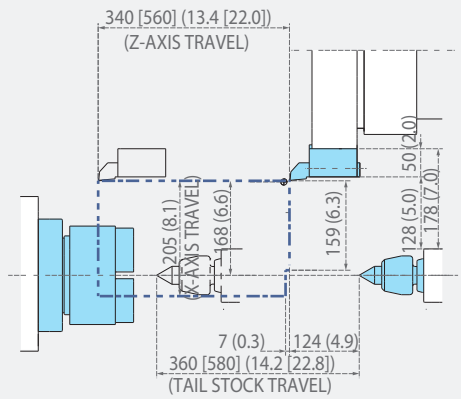
OD Holder



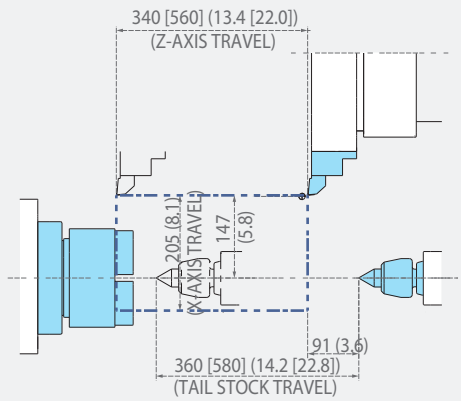
ID HOLDER



Face Tool Holder



Extended OD Holder

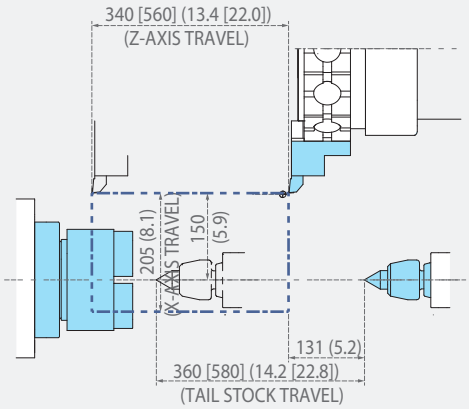


Working Range

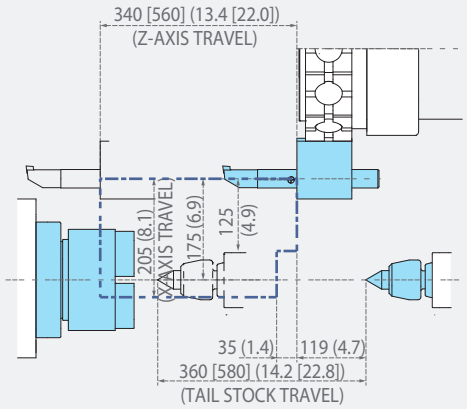
Lynx 2100MA / MB [LMA / LMB / LMC]

Unit : mm (inch)

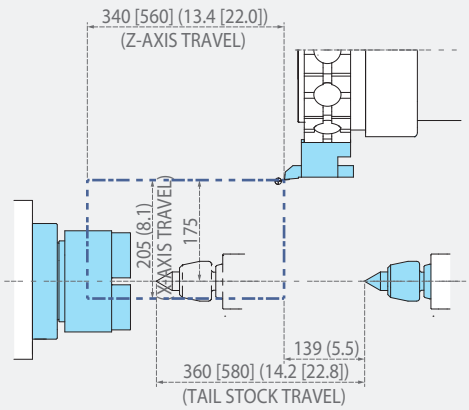
OD Holder



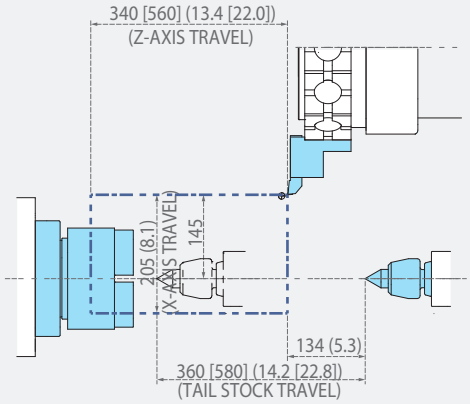
ID HOLDER



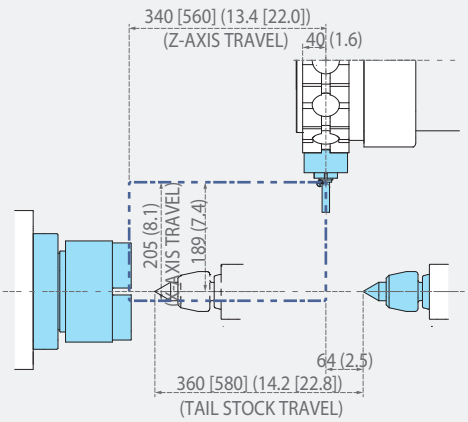
Face Tool Holder



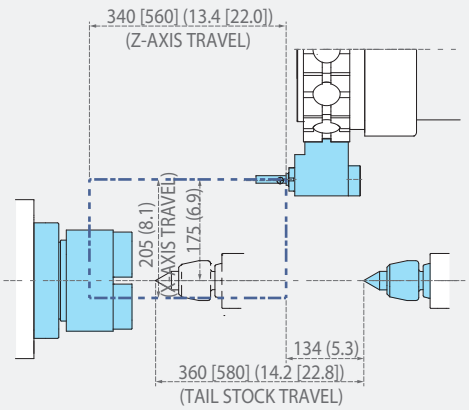
Double OD Holder



Straight Milling Holder



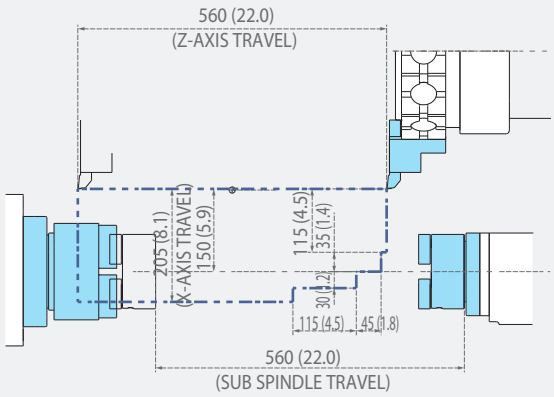
Angular Milling Holder



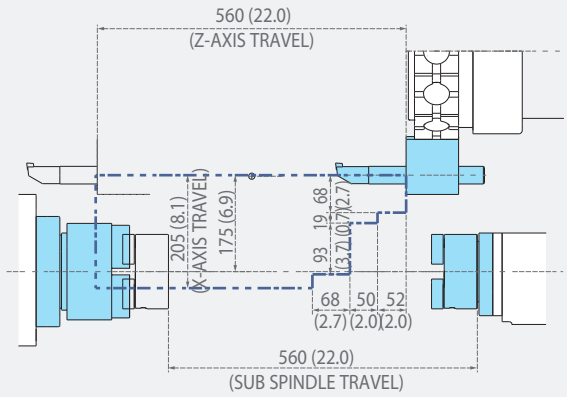
Lynx 2100LMSA/ LMSB / LMSC

Unit : mm (inch)

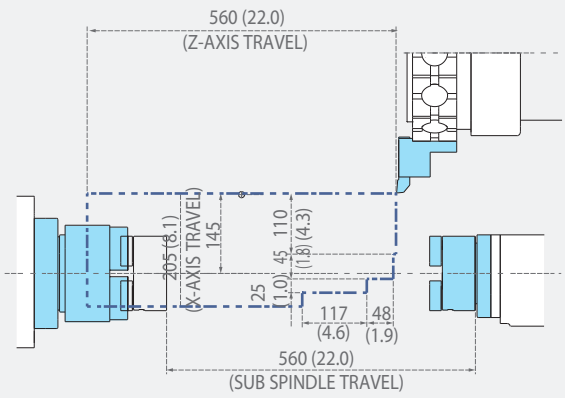
OD Holder



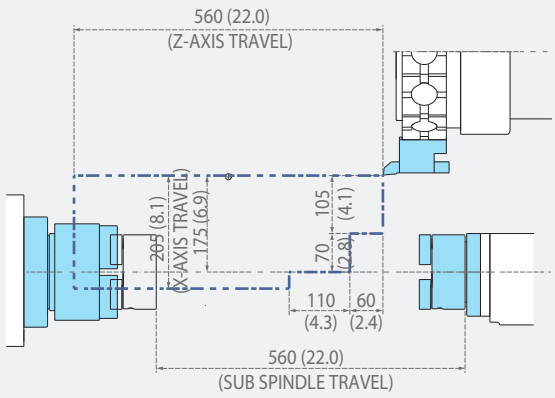
ID HOLDER



Double OD Holder



Face Tool Holder



Machine Specifications

Description			Unit	Lynx 2100A [LA]	Lynx 2100MA [LMA]	Lynx 2100LMSA	Lynx 2100B [LB]
Capacity	Swing over bed		mm (inch)	600 (23.6)		600 (23.6)	
	Swing over saddle		mm (inch)	400 (15.7)		400 (15.7)	
	Recommended turning diameter		mm (inch)	170 (6.7)			210 (8.3)
	Max. turning diameter		mm (inch)	350 (13.8)	300 (11.8)	300 (11.8)	350 (13.8)
	Max. turning length		mm (inch)	330 [550] (13.0 [21.7])	290 [510] (11.4 [20.1])	510 (20.1)	330 [550] (13.0 [21.7])
	Chuck size		inch	6 {8}*		6 {8}*	8{10}*
	Bar working diameter		mm (inch)	51 (2.0)		51 (2.0)	65 (2.6)
Travel	Travel distance	X-axis	mm (inch)	205 (8.1)		205 (8.1)	
		Z-axis	mm (inch)	340 [560] (13.4 [22.0])		340 [560] (13.4 [22.0])	
Feedrate	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)		30 (1181.1)	
		Z-axis	m/min (ipm)	36 (1417.3)		36 (1417.3)	
Spindle	Spindle speed		r/min	6000		6000	4500
	Spindle moter power (15min/cont.) (FANUC)		kW (Hp)	15/11 (20.1/14.8)		15/11 (20.1/14.8)	
	Spindle motor power (S6 60%/cont.) (SIEMENS)		kW (Hp)	12.6/10.5 (16.9/14.1)		12.6/10.5 (16.9/14.1)	
	Max. spindle torque (FANUC)		N·m (ft-lbs)	127 (93.7)		127 (93.7)	169 (124.6)
	Max. spindle torque (SIEMENS)		N·m (ft-lbs)	100.8 (74.4)		100.8 (74.4)	134.4 (99.2)
	Spdinel nose		ASA	A2-5		A2-5	A2-6
	Spindle bearing diameter		mm (inch)	90 (3.5)		90 (3.5)	110 (4.3)
	Spindle inner diameter		mm (inch)	61 (2.4)		61 (2.4)	76 (3.0)
	C-axis min.indexing angle		deg	-	0.001	0.001	-
Turret	No.of tool stations		ea	12 {10}*	12	12	12 {10}*
	OD tool size		mm (inch)	25 x 25 (1.0 x 1.0)	20 x 20 (0.8 x 0.8)	20 x 20 (0.8 x 0.8)	25 x 25 (1.0 x 1.0)
	Max.ID tool size		mm (inch)	40 (1.6)	32 (1.3)	32 (1.3)	40 (1.6)
	Turret indexing time		s	0.11 {0.15}*	0.11	0.11	0.15 {0.11}*
	Max.rotary tool speed		r/min	-	6000 {10000}*	6000 {10000}*	-
	Ratary tool motor power (FANUC)		kW (Hp)	-	3.7 (5.0)	3.7 (5.0)	-
	Rotary tool motor power (SIEMENS)		kW (Hp)	-	6.2 (8.3)	6.2 (8.3)	-
Tail stock	Travel distance		mm (inch)	360 [580] (14.1 [22.8])	360 [580] (14.1 [22.8])	-	360 [580] (14.1 [22.8])
	Quill diameter		mm (inch)	65 (2.6)	65 (2.6)	-	65 (2.6)
	Quill taper		MT	MT#4 (Live)	MT#4 (Live)	-	MT#4 (Live)
S ub spindle	Spindle speed			-	-	6000	-
	Spindle moter power (15min/cont.) (FANUC)		kW (Hp)	-	-	5.5/3.7 (7.4/5.0)	-
	Spindle motor power (cont.) (SIEMENS)		kW (Hp)	-	-	7 (9.4)	-
	Max. spindle torque		N·m (ft-lbs)	-	-	47 (34.7)	-
	Spdinel nose			-	-	Flat ø110	-
	Spindle bearing diameter		mm (inch)	-	-	75 (3.0)	-
	Spindle inner diameter		mm (inch)	-	-	43 (1.7)	-
	C-axis min.indexing angle			-	-	0.001	-
Power source	Power consumption		kVA	24.21	24.21	30.07	24.21
Machine dimensions	Length		mm (inch)	2320 [2540] (91.3 [100.0])	2320 [2540] (91.3 [100.0])	2805 (110.4)	2350 [2570] (92.5 [101.2])
	Width		mm (inch)	1595 (62.8)		1595 (62.8)	
	Height		mm (inch)	1693 (66.7)		1693 (66.7)	
	Weight		kg (lb)	3100 [3400] (6834.2 [7495.6])	3170 [3480] (6988.6 [7672.0])	3600 (7936.5)	3100 [3400] (6834.2 [7495.6])
Control	NC system			DOOSAN Fanuc i Plus, SIEMENS S828D		DOOSAN Fanuc i Plus, SIEMENS S828D	

* { } : Option
** : Please check with Doosan.

Description			Unit	Lynx 2100MB [LMB]	Lynx 2100LMSB	Lynx 2100LC	Lynx 2100LMC	Lynx 2100LMSC
Capacity	Swing over bed		mm (inch)	600 (23.6)		600 (23.6)		
	Swing over saddle		mm (inch)	400 (15.7)		400 (15.7)		
	Recommended turning diameter		mm (inch)	210 (8.3)		255 (10.0)		
	Max. turning diameter		mm (inch)	300 (11.8)	300 (11.8)	350 (13.8)	300 (11.8)	300 (11.8)
	Max. turning length		mm (inch)	290 [510] (11.4 [20.1])	510 (20.1)	537 (21.1)	497 (19.6)	497 (19.6)
	Chuck size		inch	8{10}*		10		
	Bar working diameter		mm (inch)	65 (2.6)		81 (3.2)		
Travel	Travel distance	X-axis	mm (inch)	205 (8.1)		205 (8.1)		
		Z-axis	mm (inch)	340 [560] (13.4 [22.0])		560 (22.0)		
Feedrate	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)		30 (1181.1)		
		Z-axis	m/min (ipm)	36 (1417.3)		36 (1417.3)		
Spindle	Spindle speed		r/min	4500		3500		
	Spindle moter power (15min/cont.) (FANUC)		kW (Hp)	15/11 (20.1/14.8)		18.5/15 (24.8/20.1)		
	Spindle motor power (S6 60%/cont.) (SIEMENS)		kW (Hp)	12.6/10.5 (16.9/14.1)		**		
	Max. spindle torque (FANUC)		N·m (ft-lbs)	169 (124.6)		269 (198.5)		
	Max. spindle torque (SIEMENS)		N·m (ft-lbs)	134.4 (99.2)		**		
	Spdinel nose		ASA	A2-6		A2-8		
	Spindle bearing diameter		mm (inch)	110 (4.3)		130 (5.1)		
	Spindle inner diameter		mm (inch)	76 (3.0)		91 (3.6)		
	C-axis min.indexing angle		deg	0.001	0.001	-	0.001	0.001
Turret	No.of tool stations		ea	12	12	10	12	12
	OD tool size		mm (inch)	20 x 20 (0.8 x 0.8)	20 x 20 (0.8 x 0.8)	25 x 25 (1.0 x 1.0)	20 x 20 (0.8 x 0.8)	20 x 20 (0.8 x 0.8)
	Max.ID tool size		mm (inch)	32 (1.3)	32 (1.3)	40 (1.6)	32 (1.3)	32 (1.3)
	Turret indexing time		s	0.11	0.11	0.15	0.11	0.11
	Max.rotary tool speed		r/min	6000 {10000}*	6000 {10000}*	-	6000 {10000}*	6000 {10000}*
	Ratary tool motor power (FANUC)		kW (Hp)	3.7 (5.0)	3.7 (5.0)	-	3.7 (5.0)	3.7 (5.0)
	Rotary tool motor power (SIEMENS)		kW (Hp)	6.2 (8.3)	6.2 (8.3)	**		
Tail stock	Travel distance		mm (inch)	360 [580] (14.1 [22.8])	-	580 (22.8)	580 (22.8)	-
	Quill diameter		mm (inch)	65 (2.6)	-	65 (2.6)	65 (2.6)	-
	Quill taper		MT	MT#4 (Live)	-	MT#4 (Live)	MT#4 (Live)	-
S ub spindle	Spindle speed			-	6000	-	-	6000
	Spindle moter power (15min/cont.) (FANUC)		kW (Hp)	-	5.5/3.7 (7.4/5.0)	-	-	5.5/3.7 (7.4/5.0)
	Spindle motor power (cont.) (SIEMENS)		kW (Hp)	-	7 (9.4)	**		
	Max. spindle torque		N·m (ft-lbs)	-	47 (34.7)	-	-	47 (34.7)
	Spdinel nose			-	Flat ø110	-	-	Flat Ø110
	Spindle bearing diameter		mm (inch)	-	75 (3.0)	-	-	75 (3.0)
	Spindle inner diameter		mm (inch)	-	43 (1.7)	-	-	43 (1.7)
	C-axis min.indexing angle			-	0.001	-	-	0.001
Power source	Power consumption		kVA	24.21	30.07	32.46	32.46	34.49
Machine dimensions	Length		mm (inch)	2350 [2570] (92.5 [101.2])	2835 (111.6)	2570 (101.2)	2570 (101.2)	2837 (111.7)
	Width		mm (inch)	1595 (62.8)		1602 (63.1)		
	Height		mm (inch)	1693 (66.7)		1693 (66.7)		
	Weight		kg (lb)	3170 [3480] (6988.6 [7672.0])	3600 (7936.5)	3450 (7605.8)	3500 (7716.1)	4100 (9038.8)
Control	NC system			DOOSAN Fanuc i Plus, SIEMENS S828D		DOOSAN Fanuc i Plus, SIEMENS S828D		

* { } : Option

** : Please check with Doosan.

CNC Specifications

FANUC

● Standard ○ Optional X Not applicable

NO.	Division	Item	Spec.	DOOSAN Fanuc i Plus		
				2축	M	MS
				A / B / LA / LB / LC	MA / MB / LMA / LMB / LMC	MSA / MSB / LMSC
1	Controlled axis	Controlled aXes		2(X,Z)	3(X,Z,C)	4(X,Z,C,B)
2		Simultaneously controlled aXes		2 aXes	3 aXes	4 aXes
3		Cs contouring control		X	●	●
4		Synchronous / Composite control		X	X	○
5		Torque control		●	●	●
6		HRV2 control		●	●	●
7		Inch / metric conversion		●	●	●
8		Stored stroke check 1		●	●	●
9		Stored stroke check 2,3		●	●	●
10		Stored limit check before move		●	●	●
11		Chamfering on / off		●	●	●
12		UneXpected disturbance torque detection function		●	●	●
13		Position switch		●	●	●
14	Operation	DNC operation	Included in RS232C interface.	●	●	●
15		DNC operation with memory card		●	●	●
16		Quick program restart		○	○	○
17		Tool retract and recover		○	○	○
18		Wrong operation prevention		●	●	●
19		Dry run		●	●	●
20		Single block		●	●	●
21		Reference position shift		●	●	●
22		Handle interruption		○	○	○
23		Incremental feed	X1,X10,X100	●	●	●
24		Manual handle retrace		○	○	○
25	Interpolation functions	Nano interpolation		●	●	●
26		Linear interpolation		●	●	●
27		Circular interpolation		●	●	●
28		Polar coordinate interpolation		X	●	●
29		Cylindrical interpolation		X	●	●
30		Helical interpolation		X	○	○
31		Thread cutting, synchronous cutting		●	●	●
32		Multi threading		●	●	●
33		Thread cutting retract		●	●	●
34		Continuous threading		●	●	●
35		Variable lead thread cutting		●	●	●
36		Polygon machining with two spindles		X	●	●
37		High-speed skip	Input signal is 8 points.	○	○	○
38		2nd reference position return	G30	●	●	●
39		3rd / 4th reference position return		●	●	●
40	Feed function	Override cancel		●	●	●
41		AI contour control I		○	○	○
42		AI contour control II		○	○	○
43		Rapid traverse block overlap		●	●	●
44	Program input	Optional block skip	9 pieces	●	●	●
45		Absolute / incremental programming	Combined use in the same block	●	●	●
46		Diameter / Radius programming		●	●	●
47		Automatic coordinate system setting		●	●	●
48		Workpiece coordinate system	G52 - G59	●	●	●
49		Workpiece coordinate system preset		●	●	●
50		Direct drawing dimension programming		●	●	●
51		G code system	A	●	●	●
52		G code system	B/C	●	●	●
53		Chamfering / Corner R		●	●	●
54		Custom macro		●	●	●

FANUC

● Standard ○ Optional X Not applicable

NO.	Division	Item	Spec.	DOOSAN Fanuc i Plus		
				2축	M	MS
				A / B / LA / LB / LC	MA / MB / LMA / LMB / LMC	MSA / MSB / LMSC
55	Program input	Addition of custom macro common variables	#100 - #199, #500 - #999	●	●	●
56		Interruption type custom macro		●	●	●
57		Canned cycle		●	●	●
58		Multiple repetitive cycles	G70~G76	●	●	●
59		Multiple repetitive cycles II	Pocket profile	●	●	●
60		Canned cycle for drilling		●	●	●
61		Coordinate system shift		●	●	●
62		Direct input of coordinate system shift		●	●	●
63		Pattern data input		●	●	●
64	Operation Guidance Function	EZ Guide i (Conversational Programming Solution)		●*1)	●*1)	●*1)
65		iHMI with Machining Cycle		○*2)	○*2)	○*2)
66		EZ Operation package		●	●	●
67	Auxiliary / Spindle speed function	Constant surface speed control		●	●	●
68		Spindle override	0 - 150%	●	●	●
69		Spindle orientation		●	●	●
70		Spindle synchronous control		X	X	●
71		Rigid tap		●	●	●
72		Arbitrary speed threading		○	○	○
73	Tool function / Tool compensation	Tool offset pairs	128-pairs	●	●	●
74		Tool offset pairs	200-pairs	○	○	○
75		Tool offset		●	●	●
76		Tool radius / Tool nose radius compensation		●	●	●
77		Tool geometry / wear compensation		●	●	●
78		Automatic tool offset	G36/G37	●	●	●
79		Direct input of offset value measured B		●	●	●
80		Tool life management		●	●	●
81	Accuracy compensation function	Backlash compensation for each rapid traverse and cutting feed		●	●	●
82		Stored pitch error compensation		○	○	○
83	Editing operation	Part program storage size & Number of registerable programs	5120M(2MB)_1000 programs	●	●	●
84		Part program storage size & Number of registerable programs	1280M(512KB)_400 programs	X	X	X
85		Part program storage size & Number of registerable programs	5120M(2MB)_400 programs	X	X	X
86		Program protect		●	●	●
87		Password function		●	●	●
88		Playback		●	●	●
89	Setting and display	Main menu screen		●	●	●
90	Data input / output	Fast data server		○	○	○
91		EXternal data input		●	●	●
92		Memory card input / output		●	●	●
93		USB memory input / output		●	●	●
94		Automatic data backup		●	●	●
95	Interface function	Embedded Ethernet		●	●	●
96		Fast Ethernet		○	○	○
97	Others	Display unit	15" color LCD	●	●	●
98			15” color LCD with Touch Panel	○	○	○
99		Robot interface with PMC I/O module		○	○	○
100		Robot interface with PROFIBUS-DP		○	○	○

*1) Only with 15" LCD standard *2) Only with 15" Touch LCD standard

CNC Specifications

SIEMENS S828D

● Standard ○ Optional X Not applicable

No.	ITEM		Spec.	S828D
1	Axes control	Controlled axes	2 axis	X, Z, SP
2		R: Milling spindle	M-type	X, Z, C, R
3		Simultaneously controlled axes	Positioning(G00)/Linear interpolation(G01) : 3 axes Circular interpolation(G02, G03) : 2 axes	●
4		Backlash compensation		●
5		Leadscrew error compensation		●
6		Measuring system error compensation		●
7		Feedforward control	velocity-dependent	●
8		Follow up mode		●
9		Programmable acceleration		●
10		Emergency stop / overtravel		●
11		Least command increment	0.001mm (0.0001 inch)	●
12		Least input increment	0.001mm (0.0001 inch)	●
13		Maximum commandable value	±99999.999mm (±3937 inch)	●
14		Machine lock (PRT)		●
15		Absolute encoder		●
16	Interpolation & Feed function	Dry run		●
17		Feedrate/Rapid override	0 - 120 %	●
18		Reference point return	G75 FP=1	●
19		2nd reference point return	G75 FP=2	●
20		3rd / 4th reference return	G75 FP=3, 4	●
21		Linear interpolation	Max. 4	●
22		Circular interpolation	G02, G03	●
23		Inverse time feedrate	G93	●
24		Helical interpolation		●
25		Universal interpolator NURBS		●
26		Spline interpolation (A, B and C splines)		○
27		Dwell	G04	●
28		Separate path feed for corners and chamfers		●
29		Reposition		●
30		Acceleration with Jerklimitation		●
31		Positioning	G00	●
32		Cartesian point-to-point (PTP) travel		●
33		TRANSMIT/cylinder surface transformation	Not available for 2-axis type	●
34		Inclined axis	If machine attached inclind Y axis	●
35		Inclined axis TRAANG after TRANSMIT/ TRACYL	If machine attached inclind Y axis	●
36		Couplings	CP-Basic(If machine attached milling spindle)	●
37			CP-Comfort	○
38	Spindle & M code function	Spindle speed, digital setpoint		●
39		Spindle speed, max. programmable value range	106 ... 0.0001 (display: ± 999999999.9999)	●
40		Spindle override	50 - 120 %	●
41		Automatic gear state selection		●
42		Oriented spindle stop		●
43		Spindle speed limitation min./max.		●
44		Constant cutting rate		●
45		Spindle control via PLC (Positioning, oscillation)		●
46		Changeover to axis mode		●
47		Tapping with compensating chuck/rigid tapping		●
48		Retraction for rigid tapping		●
49	Tool function	Tool radius compensations in plane		
50		• With approach and retract strategies		●
51		• With transition circle/ellipse on outer edges		●
52		Number of tools/cutting edges in tool list	PPU.4 for S828D SW261 (2 axis/M-type)	256/512
53			PPU.4 for S828D SW281 (S/MS/Y/SY-type)	768/1536
54		Tool length compensation		●
55		Operation with tool management		●
56		Tool list		●
57		Tool offset selection via T and D numbers		●
58		Replacement tools for tool management	Include tool load monitoring option	○
59		Monitoring of tool life and workpiece count		●
60		Manual measurement of tool offset		●
61		Magazine list		●
62		Loading and unloading of tools		●
63	Programming & Editing function	Number of subroutine passes <= 9999		●
64		Number of levels for skip blocks 1		●
65		Number of levels for skip blocks 8		○
66		Polar coordinates		●
67		1/2/3-point contours		●
68		Dimensions metric/inch, changeover manually or via program		●

SIEMENS S828D

● Standard ○ Optional X Not applicable

No.	ITEM		Spec.	S828D
69	Programming & Editing function	Program functions		
70		• Dynamic preprocessing memory FIFO		●
71		• Look ahead number of blocks	In 840D, If machine attached milling spindle	1
72		• Frame concept		●
73		• Inclined-surface machining with swivel cycle		●
74		• Axis/spindle replacement		●
75		• Geometry axes, switchable online in the CNC program		●
76		• Program preprocessing		●
77		Online ISO dialect interpreter		●
78		Program/workpiece management		
73		• Parts programs on NCU, max. number		750
74		• Workpieces on NCU, max. number		250
75		• On USB storage medium (e.g. disk drive, USB stick)		●
76		• On network drive		○
77		Settable offsets, max. number	G54, G55, G56 ...	100
78		Program editor		
79		• Programming support for cycles program(Program Guide)		●
80		• CNC editor with editing functions: Marking, copying, deleting		●
81		• Programming graphics/free contour input (contour calculator)		●
82		• Support for parameter input Animated Elements		●
83		• ShopTurn/ShopMill Machining step programming		●
84		Technology cycles for drilling/milling		●
85		Pocket milling free contour and islands stock removal cycle		●
86		Residual material detection		●
87		Access protection for cycles		●
88		Programming support can be extended,e.g. customer cycles		●
89		2D simulation		●
90		3D simulation, finished part		●
91		Simultaneous recording		●
92	Others functions (Operation, setting & Display, etc)	JOG		
93		• Handwheel selection		●
94		• Switchover: inch/metric		●
95		• Manual measurement of zero/work offset		●
96		• Manual measurement of tool offset		●
97		• Automatic tool/workpiece measurement		●
98		• Reference point approach, automatic/via CNC program		●
99		Automatic		
100		• Execution from USB or CF card interface on operator panel front		●
101		• Execution from HMI memory on NCU CF card	In 840D, If machine attached milling spindle	X
102		• Execution from network drive		○
103		Operating software languages		
104		• Ch_S,Ch_T, En, Fr, Gr, It, Kr, Pt, Sp		●
105		• Additional languages, use of language extensions		●
106		Working area limitation		●
107		Limit switch monitoring		●
108		Software and hardware limit switches		●
109		Position monitoring		●
110		Standstill (zero-speed) monitoring		●
111		Clamping monitoring		●
112		2D/3D protection zones		●
113		Contour monitoring		●
114		Axis limitation from the PLC		●
115		Alarms and messages		●
116		Action log can be activated for diagnostic purposes		●
117		PLC status		●
118		Remote Control System (RCS) remote diagnostics		
119		• RCS Host remote diagnostics function		○
120		• RCS Commander (viewer function)	RCS Commander for PC/PG on CD-ROM	●
121		Integrated service planner for the monitoring of service intervals		●
122		Measuring, Measuring stage 1 Two probes (switching) with/without deletion of distance-to-go	Measurement prove & receiver is needed	●
123		Measuring cycles for drilling/milling and turning • Calibrating workpiece probes • Workpiece measurement • Tool measuring	Measurement prove & receiver is needed (included in MDynamics 3-axis & 5-axis) In 840D, If machine attached milling spindle	○
124		Easy Extend		●
125		Contour handwheel		●
126		Integrate screens in SINUMERIK Operate with SINUMERIK Integrate Run MyScreens		●
127		Cross-mode actions (ASUPs and synchronized actions in all operating modes)		○

Responding to Customers Anytime, Anywhere

Doosan Machine Tools' Global Network, Responding to Customer's Needs nearby, Anytime, Anywhere

Doosan machine tools provides a system-based professional support service before and after the machine tool sale by responding quickly and efficiently to customers' demands. By supplying spare parts, product training, field service and technical support, we can provide top class support to our customers around the world.



Global Sales and Service Support Network

Corporations	Dealer Networks	Technical Centers	Service Post	Factories
		Technical Center: Sales Support, Service Support, Parts Support		
4	167	51	200	3

Doosan Machine Tools Customer Support Service

We help customers to achieve success by providing a variety of professional services from pre-sales consultancy to post-sales support.



Supplying Parts

- Supplying a wide range of original Doosan spare parts
- Parts repair service



Field Services

- On site service
- Machine installation and testing
- Scheduled preventive maintenance
- Machine repair



Technical Support

- Supports machining methods and technology
- Responds to technical queries
- Provides technical consultancy



Training

- Programming / machine setup and operation
- Electrical and mechanical maintenance
- Applications engineering

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