



Doosan Infracore
Machine Tools

Lynx 220 α

Compact Turning Center





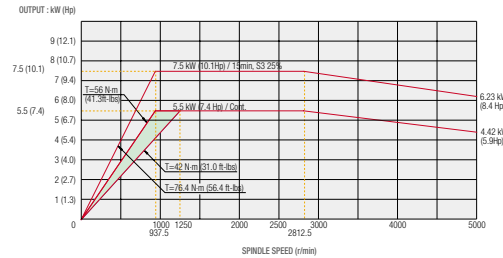
Main Spindle

The cylindrical roller bearings feature a large contact surface which ensures the highest rigidity for heavy loads and superior surface finishes. All spindle bearings are permanently grease lubricated precision class P4.

Spindle power-torque diagram

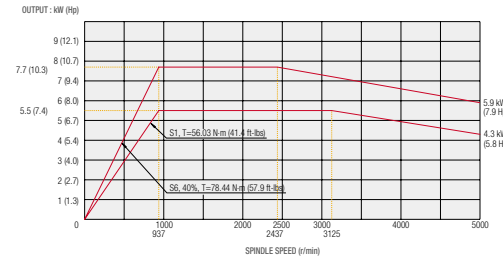
DOOSAN FANUC i series

- Spindle motor power :
7.5 / 5.5 kW (10.1 / 7.4 Hp)
- Max. Spindle speed :
5000 r/min



Siemens 802D sl

- Spindle motor power :
7.7 / 5.5 kW (10.3 / 7.4 Hp)
- Max. Spindle speed :
5000 r/min



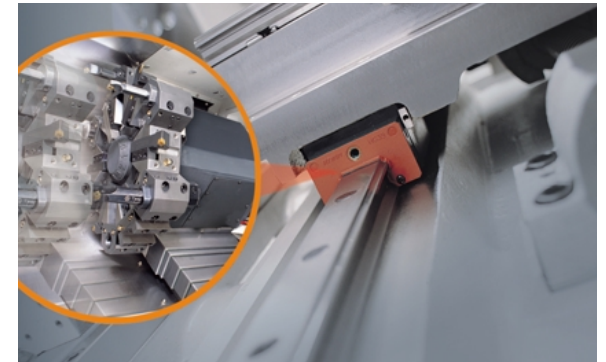
Rapid Traverse

X-axis

30 m/min

Z-axis

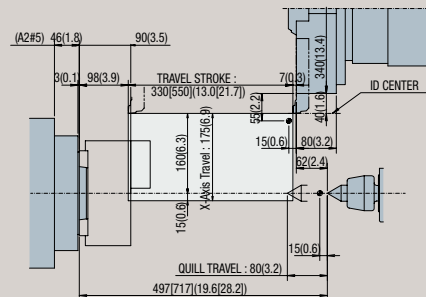
36 m/min



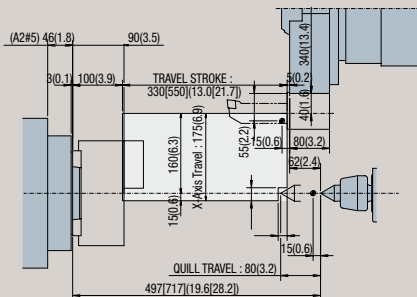
High precision linear guides ensure smooth and fast movement. In addition, the rigidity is equivalent to box way guide system. All in all, non-cutting time is greatly reduced.

Working Ranges

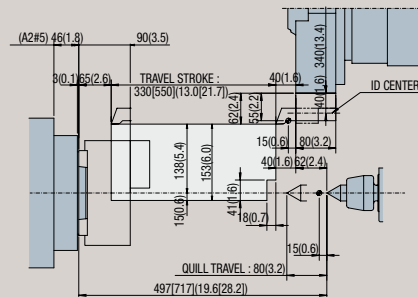
OD Tool Holder



ID Tool Holder



Face Tool Holder

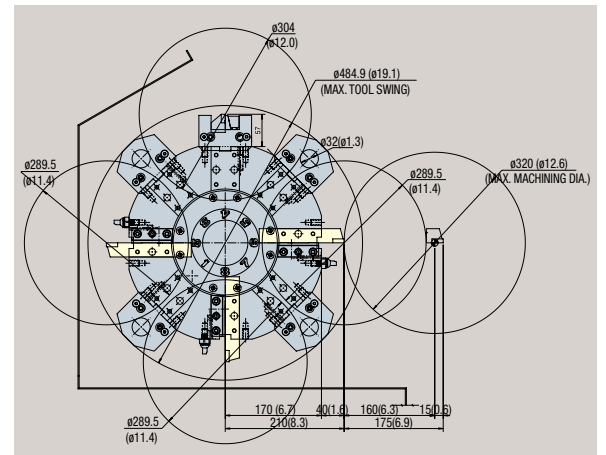


Unit : mm (inch)

[] : Long bed

Tool Interference Diagram

Unit : mm (inch)



Machine Specifications

Description		Unit	Lynx 220α	Lynx 220αL	
Capacity	Swing over bed	mm (inch)	510 (20.1)		
	Swing over saddle	mm (inch)	290 (11.4)		
	Recom. turning diameter	mm (inch)	170 (6.7)		
	Max. turning diameter	mm (inch)	320 (12.6)		
	Max. turning length	mm (inch)	322 (12.7)	542 (21.3)	
Carriage	Travel distance	X-axis	mm (inch)	175 (6.9)	
		Z-axis	mm (inch)	330 (13)	
Main Spindle	Spindle speed	r/min	5000		
	Spindle nose	ASA	A2 #5		
	Spindle bearing diameter (Front)	mm (inch)	80 (3.2)		
	Spindle through hole	mm (inch)	46 (1.8)		
Tool Post	No. of tool station		8st		
	OD tool height	mm (inch)	25 (1.0)		
	Boring bar diameter	mm (inch)	ø32 (1.3)		
Feedrate	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)	
		Z-axis	m/min (ipm)	36 (1417.3)	
	Max. cutting feedrate	X-axis	mm/rev (ipr)	500 (19.7)	
		Z-axis	mm/rev (ipr)	500 (19.7)	
Tail Stock (Manual)	Quill diameter	65 (2.6)			
	Quill bore taper	MT#4 (LIVE)	opt.	std.	
	Quill travel	80 (3.2)	mm (inch)		
Motor	Main spindle motor	15 min/Cont.	kW (Hp)	7.5 / 5.5 (10.1 / 7.4) DOOSAN FANUC i series	
		S6 40%/Cont.	kW (Hp)	7.7 / 5.5 (10.3 / 7.4) Siemens 802D sl	
	Servo motor	X-axis	kW (Hp)	2.29 (3.1)	
		Z-axis	kW (Hp)	2.29 (3.1)	
Machine Size	Machine height	mm (inch)	1655 (65.2)		
	Machine size	length	mm (inch)	2325 (91.5)	2560 (100.8)
		width	mm (inch)	1600 (63.0)	
Machine weight	kg (lb)	2900 (6393.3)	3100 (6834.2)		
NC SYSTEM	DOOSAN FANUC i series, Siemens 802D sl				

Standard Feature

- Coolant supply equipment
- Foot switch
- Front door interlock
- Full enclosure chip and coolant shield
- Hand tool kit (including small tool for operations)
- Hydraulic chuck and actuating cylinder (tool holders & boring sleeves)
- Hydraulic power unit
- Levelling jack screw and plates
- Lubrication equipment
- Manuals
- Soft jaws (total 5sets)
- Standard tooling kit
- Work light

Optional Feature

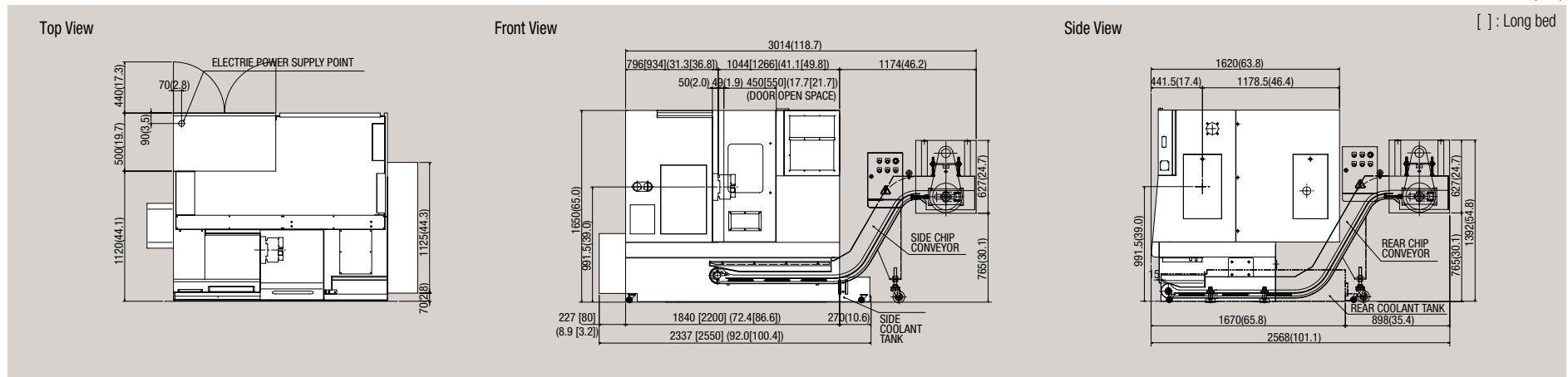
- Additional tool holders & sleeves
- Air blast for chuck jaw cleaning
- Air gun
- Automatic door
- Automatic measuring system (in-process touch probe)
- Automatic power off
- Bar feeder interface
- Chip conveyor
- Chip bucket
- Coolant level float switch
- Cool-jet interface
- Hardened & ground jaws
- Machine level inspection plate
- Oil skimmer
- Parts catcher (ø65 x L140)
- Proximity switches for chuck clamp detection
- Proximity switches for tail stock quill position detection
- Signal tower (yellow, red, green)
- Special chucks
- Tool pre-setter (hydraulic type)
- Tool pre-setter (manual type)

• The specifications and information given above can be change without prior notice.
 • For more details, please contact Doosan Infracore.

External Dimensions

Unit : mm (inch)

[] : Long bed



NC Unit Specifications

DOOSAN FANUC i series

AXES CONTROL

- Controlled axes	X, Z
- Simultaneous controlled axes	3 axes
- Backlash compensation	0 ~ ±9999 pulses
- Backlash compensation for each rapid traverse and cutting feed	
- Chamfering on/off	
- Emergency stop	
- Follow-up	
- HRV2 control	
- Inch / Metric conversion	
- Increment system 1/10	0.0001 / 0.0001 mm/inch
- Interlock	All axis / each axis
- Least input command	0.001 / 0.0001 mm/inch
- Machine lock	All axis / each axis
- Mirror image	
- Overtravel	
- Position switch	
- Servo off	
- Stored pitch error compensation	
- Stored stroke check 1	
- Stored stroke check 2, 3	
- Unexpected disturbance torque detection function	

OPERATION

- Automatic operation (memory)	
- Buffer register	
- DNC operation (Reader/puncher interface is required)	
- Dry run	
- Handle incremental feed	X1, X10, X100
- Handle interruption	
- JOG feed	
- Manual handle feed	1 unit
- Manual intervention and return	
- Manual pulse generator	1 ea
- Manual reference position return	
- MDI operation	
- Program number search	
- Program restart	
- Sequence number search	
- Single block	
- Wrong operation prevention	
- Reference position setting without dog	

INTERPOLATION FUNCTIONS

- Nano interpolation	
- 1st. reference position return	Manual, G28
- 2nd. reference position return	G30
- Circular interpolation	G02
- Continuous threading	
- Dwell (per sec)	G04
- High speed skip	
- Linear interpolation	G01
- Multiple threading	
- Positioning	G00
- Reference position return check	G27
- Thread cutting / Synchronous cutting	
- Thread cutting retract	
- Torque limit skip	
- Variable lead threading	

FEED FUNCTION

- Automatic acceleration / deceleration	
- Cutting feedrate clamp	
- Feed per minute	
- Feed per revolution	
- Feedrate override (10% unit)	0 - 200 %
- Jog feed override (10% unit)	0 - 2000 mm/min
- Manual per revolution feed	
- Override cancel	
- Rapid traverse override	F0, 25, 100 %

- Rapid traverse rate	
- Tangential speed constant control	

AUXILIARY / SPINDLE SPEED FUNCTION

- Spindle orientation	
- Actual spindle speed output	
- Auxiliary function lock	
- Constant surface speed control	
- High speed M/S/T interface	
- M - code function	M3 digits
- Multi spindle control	
- Rigid tapping	
- S - code function	S4 / S5 digits
- Spindle positioning	
- Spindle serial output	S4 / S5 digits
- Spindle speed override	0 - 150 %
- Spindle synchronous control	

PROGRAM INPUT

- Absolute / incremental programming	
- Addition of custom macro common variables	
- Automatic coordinate system setting	
- Canned cycle for drilling / Turning	
- Canned cycle	
- Circular interpolation by R programming	
- Control in/out	
- Coordinate system setting	G50
- Coordinate system shift	
- Custom macro	
- Decimal point programming	
- Pocket calculator type decimal point programming	
- Diameter / radius programming (X axis)	
- Direct drawing dimension programming	
- Direct of coordinate system shift	
- G code system B/C	
- Input unit 10 time multiply	
- Label skip	
- Manual absolute on and off	
- Maximum program dimension	±9 digit
- Multiple repetitive canned cycle	G70 - G76
- Multiple repetitive canned cycle II	
- Optional block skip	1 piece
- Optional block skip (Soft operator's panel)	9 piece
- Parity check	
- Pattern data input	EIA RS422 / ISO840
- Plane selection	G17, G18, G19
- Program number	04 digit
- Program stop / end (M00, M01 / M02, M30)	
- Programmable data input	G10
- Sequence number	N5 digit
- SUB program call	4 folds nested
- Tape code : ISO / EIA auto recognition	

PROGRAM INPUT

- Coordinate system setting	G50
- Custom macro	
- Decimal point programming	
- Pocket calculator type decimal point programming	
- Diameter / radius programming (X axis)	
- Direct drawing dimension programming	
- Direct of coordinate system shift	
- G code system B/C	
- Input unit 10 time multiply	
- Label skip	
- Manual absolute on and off	
- Maximum program dimension	±9 digit
- Multiple repetitive canned cycle	G70 - G76
- Multiple repetitive canned cycle II	
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- Programmable data input	G10
- Sequence number	N5 digit
- SUB program call	4 folds nested
- Tape code : ISO / EIA auto recognition	

DATA INPUT/OUTPUT

- External data input	
- External key input	
- External program input	
- External program number search	
- External work number search	
- Memory card input/output	
- Reader/puncher interface	CH1 interface
- RS232C interface	

OTHERS

- Cycle start and lamp	
- Display unit	8.4" Color LCD/MDI
- Feed hold and lamp	
- NC and servo ready	1280m(512kB)
- PC/MCIA port in the front of LCD display unit	
- PMC system	PMC-SB7
- Reset / rewind	

OPERATION GUIDANCE FUNCTION

- Manual Guide Oi	
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INTERFACE FUNCTION

- Ethernet function	Embedded ethernet
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OPTIONAL SPECIFICATIONS

- AXIS CONTROL	
- Controlled axes expansion (total)	Max. 4 axes
- Simultaneous controlled axes expansion (total)	Max. 4 axes

FEED FUNCTION

- Advanced preview control	
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INTERFACE FUNCTION

- Fast ethernet / Data server	
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OTHERS

- 10.4" Color LCD	
- Ez guide I (only with 10.4" color LCD option)	

ROBOT INTERFACE

- Robot interface with PMC I/O module (Hardware between PMC I/O modules)	
- Robot interface with PROFIBUS-DP	

EDITING OPERATION

- Back ground editing	
- Extended part program editing	

Siemens 802D sl

AXES CONTROL

- Controlled axes	Max. 5 axes (including spindle)
- Simultaneous controlled axes	max. 4 axes
- Backlash compensation	
- Leadscrew error compensation	
- Program protect	
- Measuring system error compensation	
- Feedforward control, speed-dependent	
- Friction compensation	
- Follow-up	
- Working area limitation	
- Overtravel (software and hardware limit switch)	
- Position monitoring	
- Standstill monitoring	
- Clamping monitoring	
- Contour monitoring	
- Pirch error compensation	

OPERATION

- Automatic mode	
- Excute from Cf card	
- Excute from RS 232 C interface	
- Program control / editing	
- Block search with/without calculation	

JOG mode

- handwheel selection	
- Inch/metric changeover	
- Manual measurement of work offset	
- Manual measurement of tool compensation	
- Automatic tool measurement	
- Reference point approach, automatic	

MDA mode

- Input in text editor	
- Save MDA program	

Teach In mode

- Teach positions in MDA buffer	
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REPOS mode

- Repositioning with operator command/semi-automatically	
- Program controlled	

INTERPOLATION FUNCTIONS

- Helical interpolation	
- 1st. reference position return	Manual, G74
- 2nd. reference position return	G75
- Circular interpolation	G02
- Continuous threading	
- Dwell (per sec)	G04
- High speed skip	
- Linear interpolation	G01
- Multiple threading	
- Positioning	G00
- Continuous-path mode with programmable rounding clearance	G64
- Thread cutting / Synchronous cutting	
- Thread cutting retract	
- Cylinder surface transformation TRACYL	
- Variable lead threading	

FEED FUNCTION

- Automatic acceleration / deceleration	
- Cutting feedrate clamp	
- Feed per minute	
- Feed per revolution	
- Feedrate override	0 - 200 %

ROBOT INTERFACE

- Robot interface with PROFIBUS-DP	
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EDITING OPERATION

- Back ground editing	
- Part program editing	

- Jog feed override	0 - 2000 mm/min
- Acceleration with jerk limitation	
- Override cancel	
- Rapid traverse override	F0, 25, 100 %
- Rapid traverse rate	
- Tangential speed constant control	G96

AUXILIARY / SPINDLE SPEED FUNCTION

- Oriented spindle stop	
- Actual spindle speed output	
- Auxiliary function lock	
- Constant surface speed control	
- High speed M/S/T interface	
- M - code function	M3 digits
- Multi spindle control	
- Rigid tapping	
- Automatic gear stage selection	
- Spindle positioning	
- Spindle speed limitation (min./max.)	
- Spindle speed override	0 - 200 %
- Spindle synchronous control	

PROGRAM INPUT

- Programming language	
- Subroutine levels and interrupt routines	Max. 8
- Number of subroutine repetition	<=9999
- Polar coordinates	
- 1/2/3-point contours	
- Dimensions metric/inch, changeover manually or via program	
- Auxiliary function out	
- Predefined user variables	
- Indirect programming	
- Program jumps and branches	
- Arithmetic and trigonometric functions	
- Comparing operations and logic combinations	
- Control structures IF-ELSE-ENDIF	
- Online ISO dialect interpreter	
- Absolute/incremental programming	
- Addition of custom macro common variables	
- Coordinate system setting	
- Graphical canned cycle for drilling / Turning	
- Optional block skip	
- Plane selection	G17, G18, G19
- Program stop / end (M00, M01 / M02, M30)	
- Work coordinate system	G52 - G59

TOOL FUNCTION / TOOL COMPENSATION

- Tool type	
- Turning / Drilling	
- Tool radius compensations in plane	
- With transition circle/ellipse on outer edges	
- Tool change via T number	
- Look-ahead detection of contour violations	
- Operation without tool management	
- Editing of tool data	
- Tool compensation selection via T and D numbers	
- Number of tool/cutting edges in tool list	128 / 128
- Monitoring of tool life and workpiece count	

EDITING OPERATION

- Back ground editing	
- Part program editing	

- Max part program storage length 3MB	
- Block search with/without calculation	
- Override cancel	
- Handwheel selection	
- Inch/metric changeover	
- Reference point approach, automatic/via CNC program	
- Play back	
- Program protect	

SETTING AND DISPLAY

- Easy setup of tools and workpieces	
- Alarm display	
- Alarm history display	
- Current position display	
- Directory display and punch for each	
- graphical support for cycles	
- Display of spindle speed and T code at all screens	
- External message display	
- Help function	
- Lock function	
- Multi-language display	
- Operation history display	
- Parameter setting and display	
- Program name display	31 characters
- Run hours / parts count display	
- Graphical support for cycles/Graphical Simulation	
- Servo setting screen	
- Spindle setting screen	
- Status display	
- Soft operator's panel	
- Tool path graphic display	

DATA INPUT / OUTPUT

- CF Card card input/output	
- Interface	
- Serial interfaces RS 232 C	
- I/O interfacing via PROFIBUS DP	
- Save data to internal memory and/or CF card	
- Save data via RS 232 C interface	
- Save data to network drive (Ethernet)	

OTHERS

- Cycle start and lamp	
- Display unit	10.4" TFT-LCD Monitor
- PLC remote diagnostics via Ethernet	
- Feed hold and lamp	
- Tool life and operation monitoring	
- Integrated pocket calculator	
- CF-Card port in the front of LCD display unit	
- PLC S7-200 (Integrated)	
- Reset / rewind	
- Spine Compressor (Pro Ver.) Enable high speed cutting	
- USB data server available (Pro Ver.)	
- No battery required	

INTERFACE FUNCTION

- Ethernet function/Embedded ethernet	
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OPTIONAL SPECIFICATIONS

- REMOTE CONTROL	
- RCS 802	
- (Remote Control System, remote diagnostics for SINUMERIK 802D sl)	

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Doosan Infacore
Machine Tools

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