

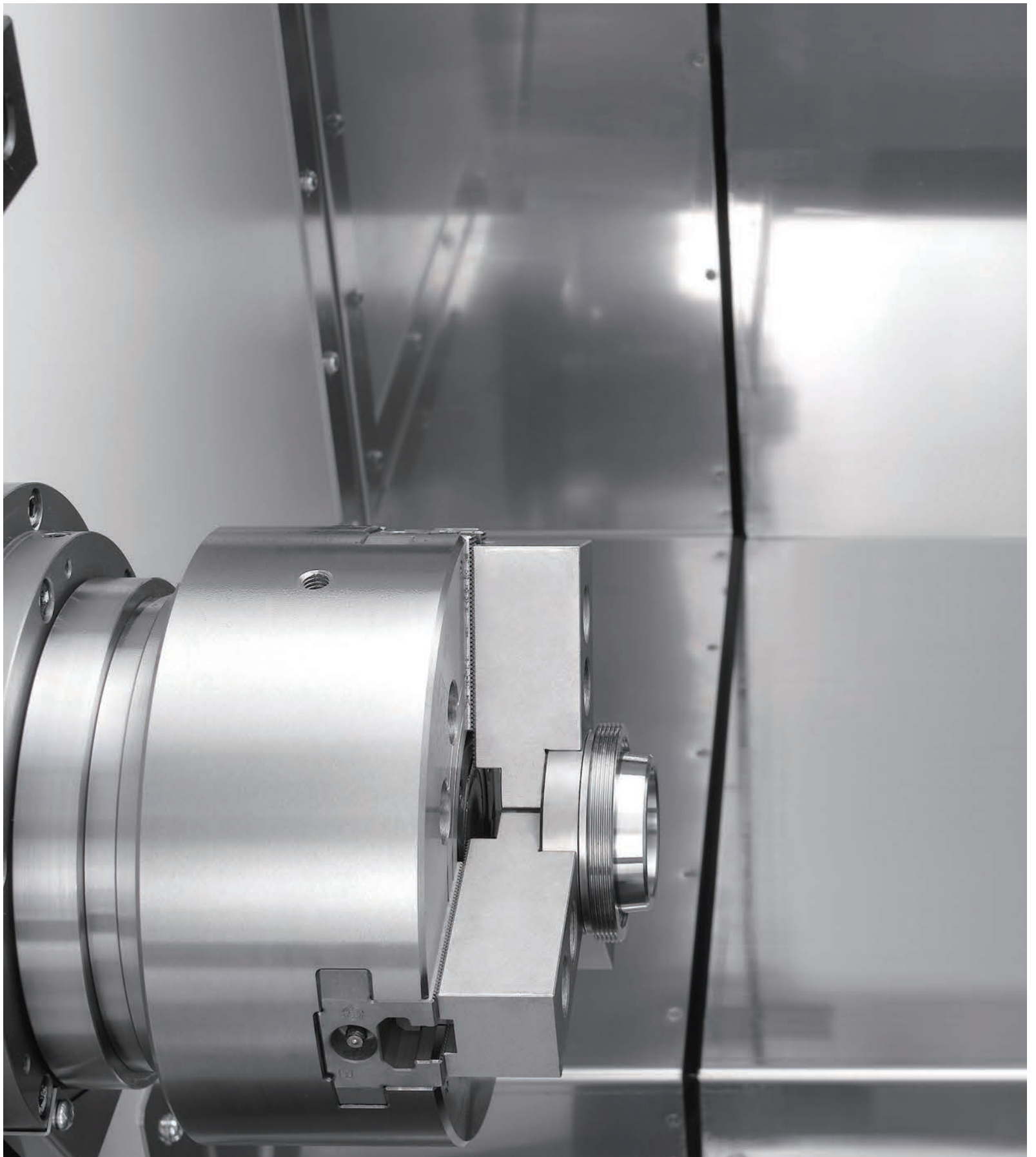
CITIZEN

Miyano

LX08c

CNC Lathe

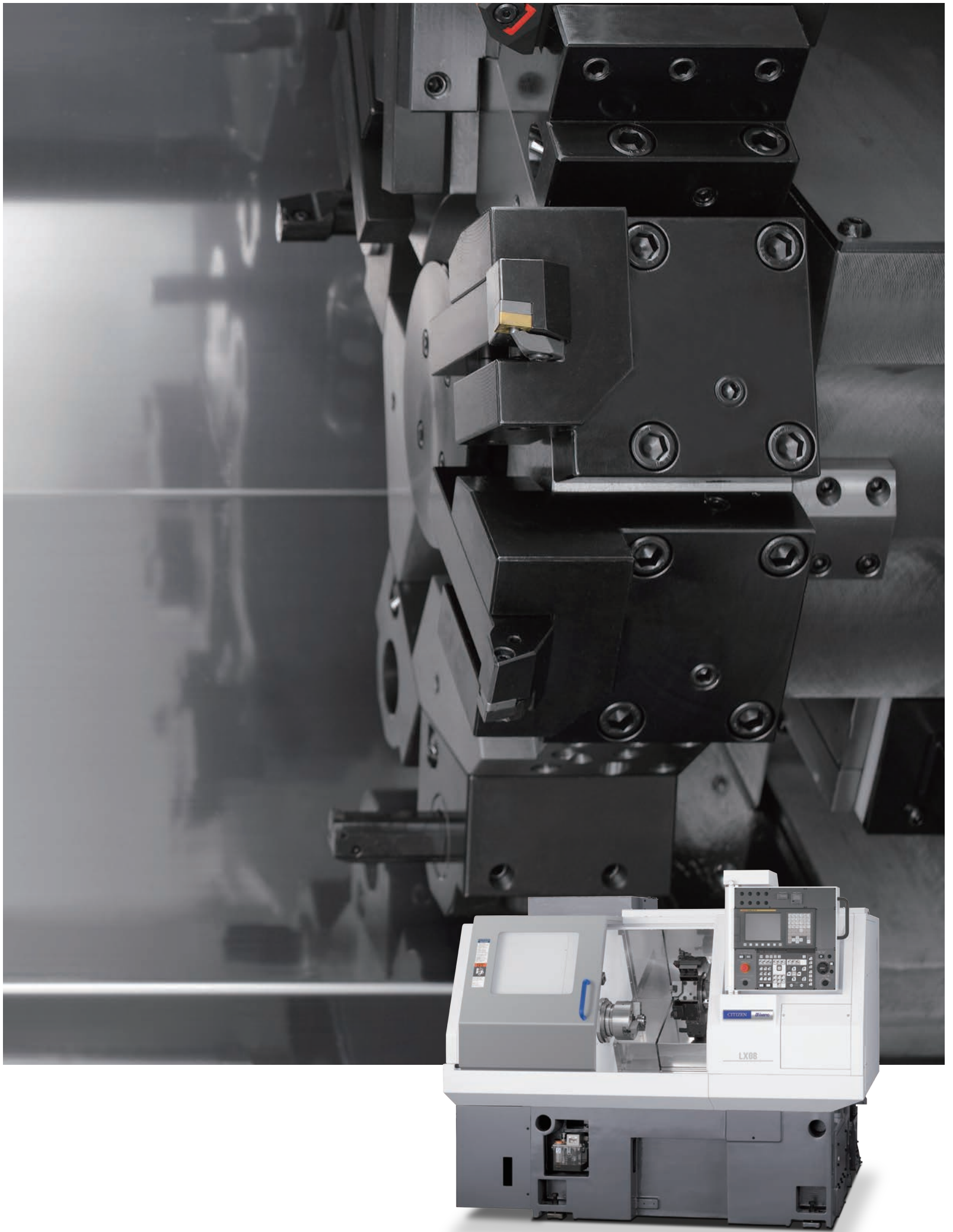




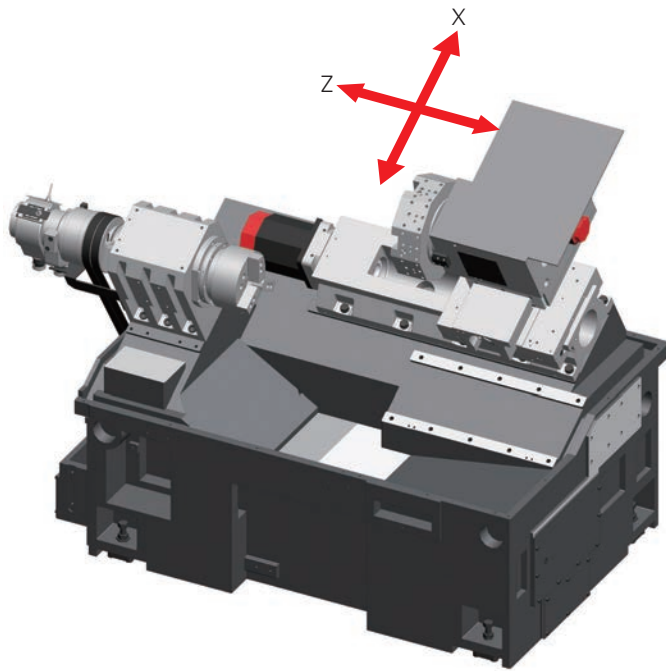
We proudly introduce an 8-inch chucking machine, developed through and close study of the basic performance required of machine tools.

The rigid turret uses precision scraped square guideways providing excellent vibration damping characteristics, the rigid spindle is supported by double-row cylindrical roller bearings and angular contact ball bearings, and the heavy 30° slanted bed is in a platform-like surface table where the turret and the spindle are mounted.

The high levels of basic performance accomplished give consistently high machining accuracy.



Rigid Base



Heavy bed, the basis for the machine's high performance

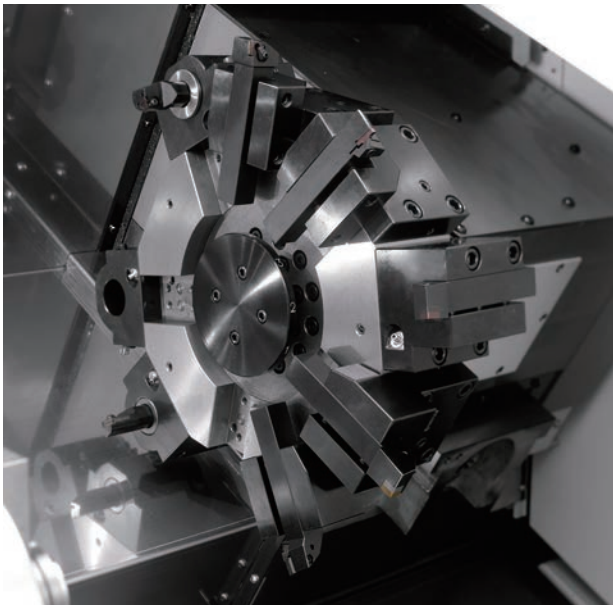
The 30° slanted bed, which is cast in one piece, provides outstanding thermal stability thanks to smooth chip flow to minimise dimensional changes during machining, and supports high-precision machining as a closed-structure rigid body.

Reliable flat faces to mount major machine units

The flat faces of the 30° slanted bed where major machine units such as spindles and tool slides are mounted assure rigidity by adopting the platform-like surface table.

This structure maintains stable flatness in the face of external and internal factors that work to impair machining accuracy, minimising changes in relative dislocation between the workpiece and tool nose.

Turret



Highly rigid turret

For the turret, subject to cutting forces and vibration under severe conditions, precision scraped square guideways are used on all axes to increase rigidity and vibration damping characteristics.

A two-piece curvic coupling is used to clamp the turret, prioritising rigidity. This also realises a compact mechanical structure.

Heavy cutting by direct mounting of tools

Since 25-mm square tools can be directly mounted on the turret, tools can be clamped securely with a short overhang, enabling heavy cutting.

Spindle



Rigid 8-inch spindle

The spindles manufactured in the dedicated in-house production lines feature rigid double-row cylindrical roller bearings and angular contact ball bearings to support the spindle at the front and rear. By spacing them sufficiently far apart, the bearable moment load and straightness of the centre of rotary axis are improved.

Hard turning



From grinding to hard turning

Hard turning is a kind of turning process for machining quenched materials on an NC lathe using CBN or ceramic tools.

Advantages of hard turning over grinding

Initial investment cost (machine price) is low.

Several grinding processes can be integrated into turning processes performed on a single NC lathe.

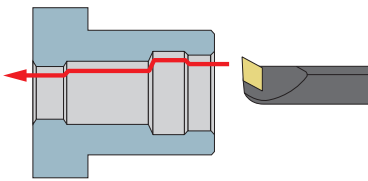
Since all machining processes including outer and inner turning, circular machining and free-form surface machining can be performed in one chucking, geometrical accuracy, such as straightness, squareness and concentricity, is considerably improved.

Cycle time can be reduced thanks to short loading and unloading time.

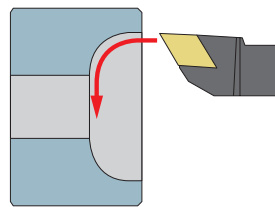
Dry cutting is environmentally friendly - reduced use of coolant, and recovery of resources by recycling chips instead of disposing of the sludge generated in grinding.

Examples of circular and free-form surface machining

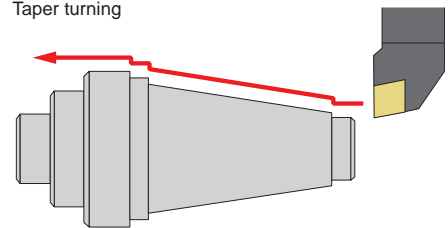
Internal turning
(thread cutting, stepped internal turning)



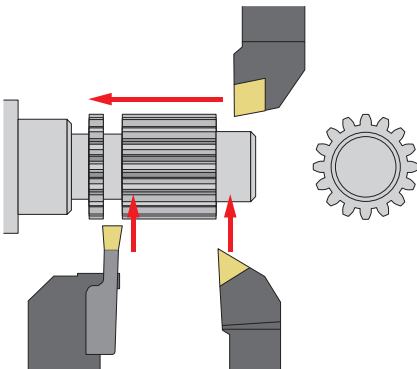
Spherical and free-form surface turning



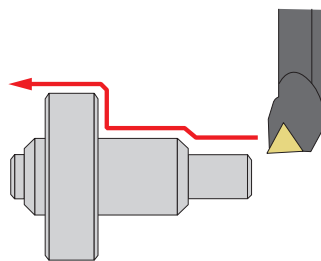
Taper turning



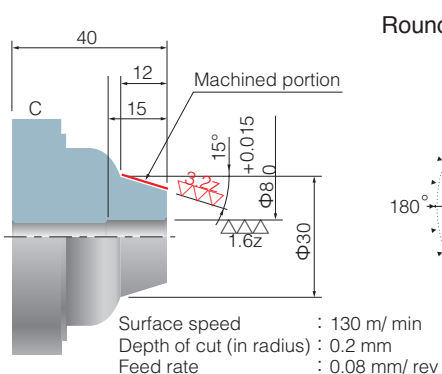
Grooving and width setting turning



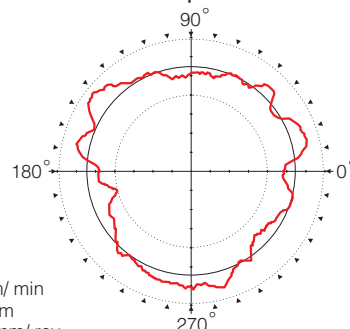
External + Face turning



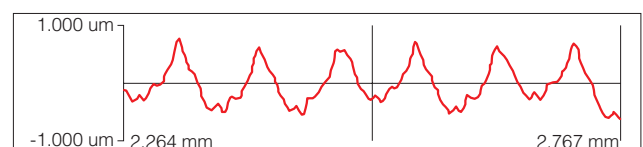
Machining accuracy in hard turning



Roundness: 0.45 μm

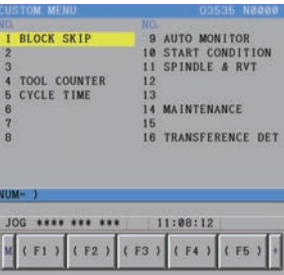


Surface roughness: 1.301 μm

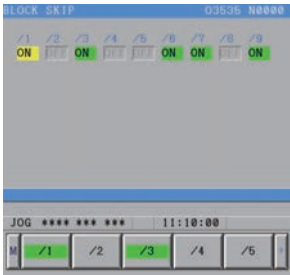


NC Custom menu

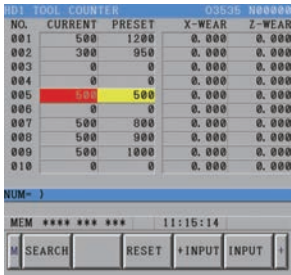
The functions convenient for machining and checking can be called in one-touch operations.



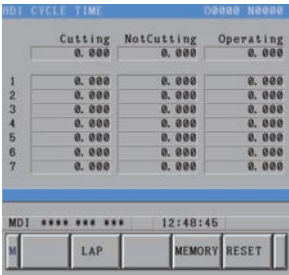
Custom menu
Displays the list of custom screens.



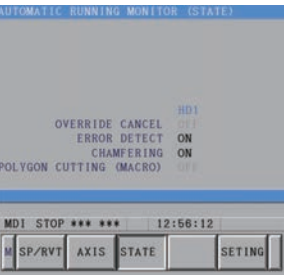
Block skip
Used to set block skip 1 to block skip 9.



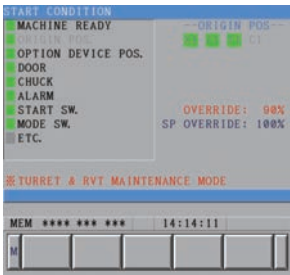
Tool counter
Used to set and reset the tool counter stop value and enter the tool wear offsets.



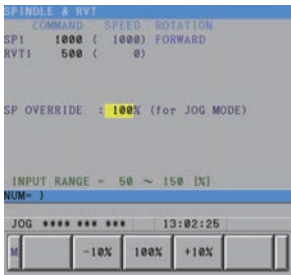
Cycle time
Measures the cutting time, non-cutting time and running time in each cycle.



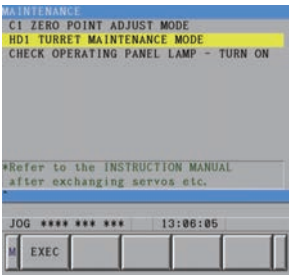
Automatic running monitor
Displays the control status of each axis.
Used to set ON / OFF for the machine lock function.



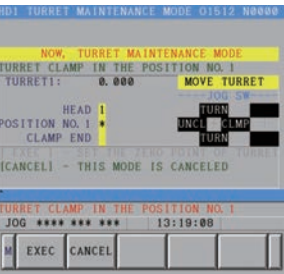
Start condition
Used to set the start conditions for automatic running.



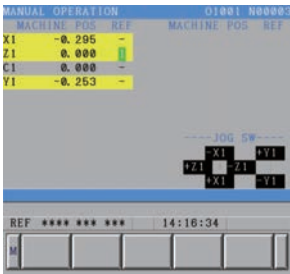
Spindle & rvt
Used to set the rotational speed of the spindle and revolving tools.



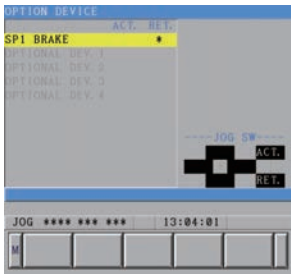
Maintenance
Used to set ON / OFF for the maintenance items.
Used to set ON / OFF for turret zero point adjustment.



Turret maintenance
Used to adjust the turret zero point.

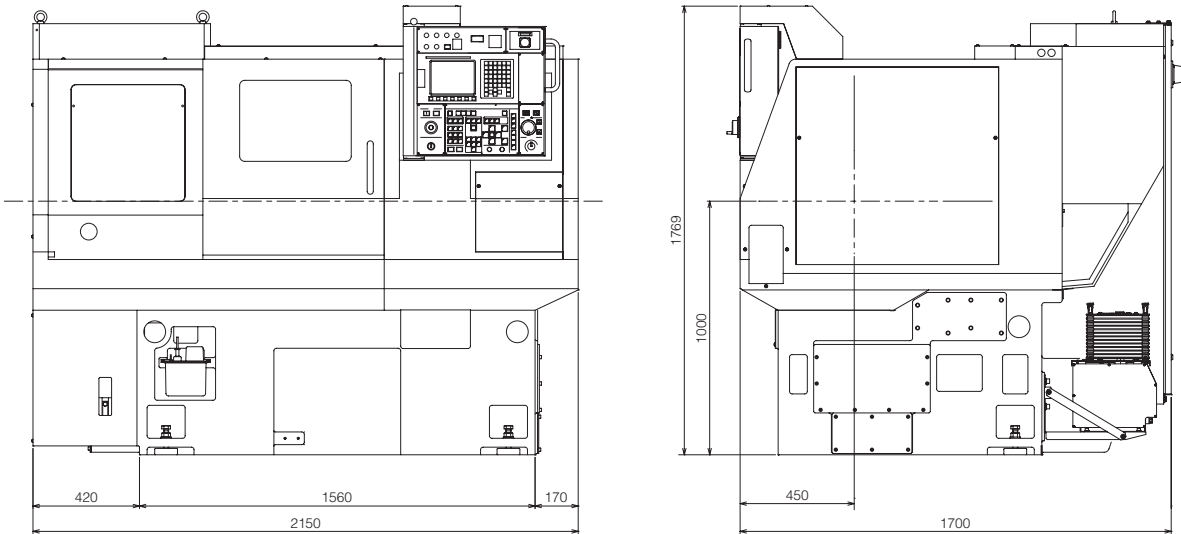


Manual operation
Displays the zero point lamp status and the machine coordinate of each axis.

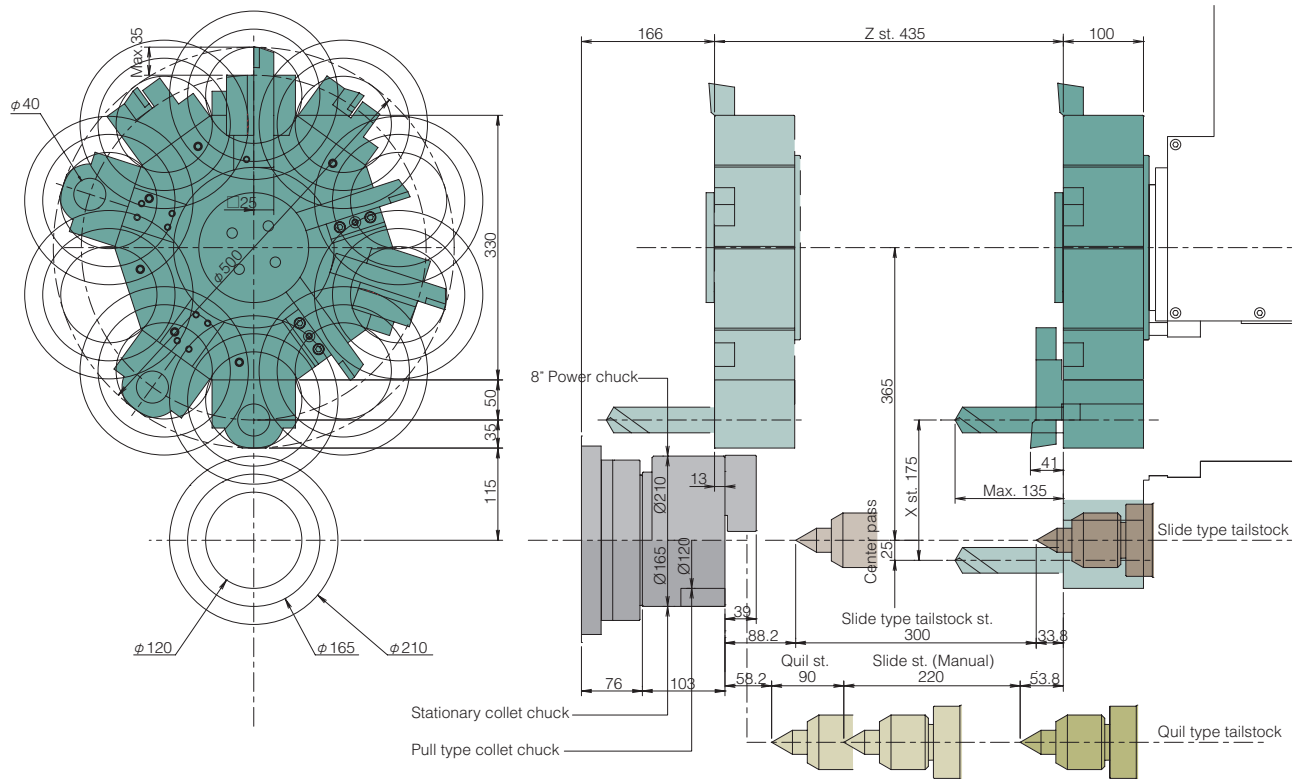


Option device
Used to select an auxiliary device such as a part catcher to be operated manually.

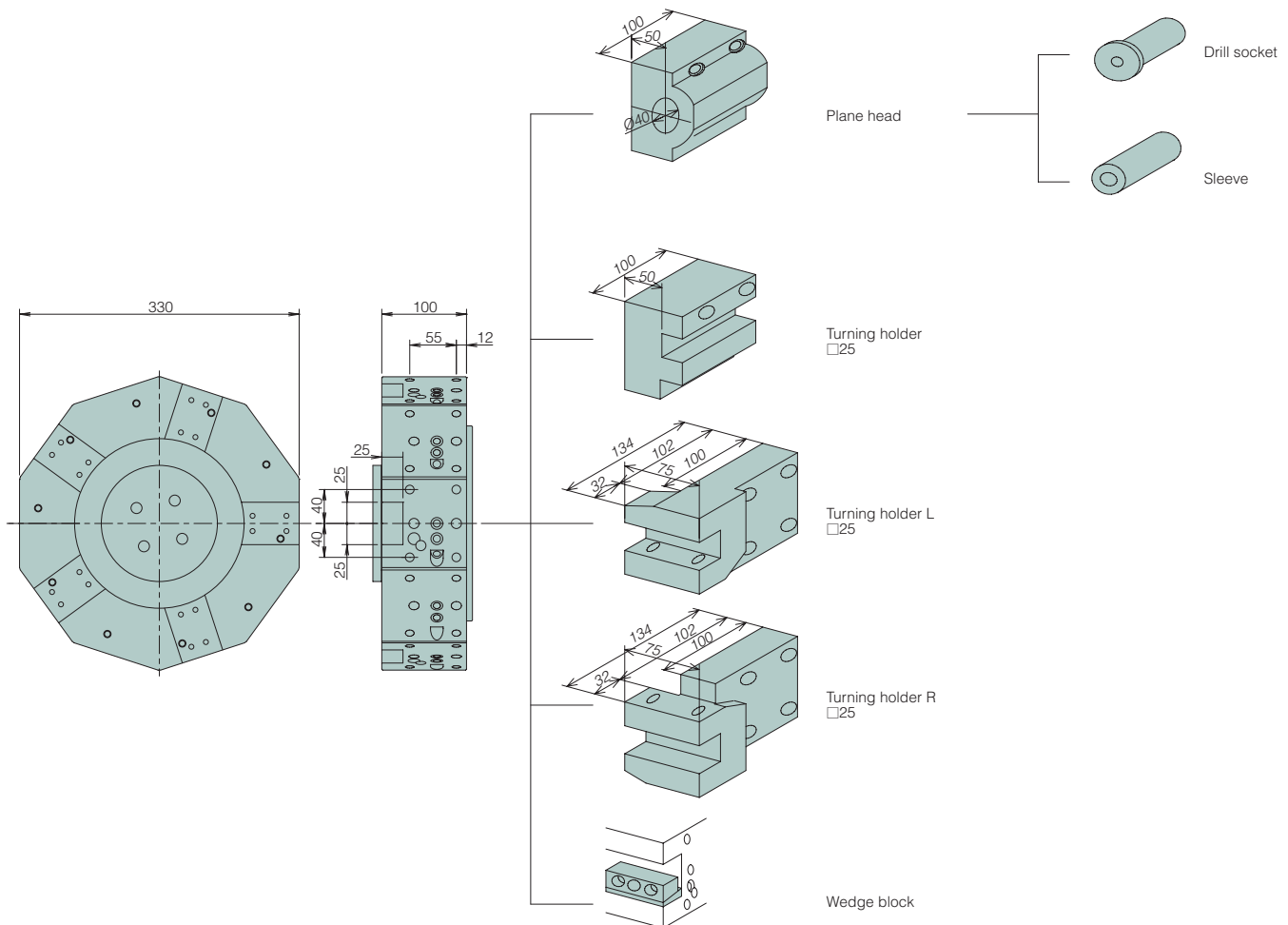
External view



Tooling area



Tooling system



Machine specification

Items		LX-08C	NC specification	
Machining capacity				FANUC 0i-TD
Max. work length		320mm	Axial control	X, Z
Max. machining diameter		Max. 210mm Dia.	Simultaneous	
Spindle			control axis	2 axis (Positioning, Linear interpolation)
Number of spindle		1	Minimum setting unit	0.001mm
Spindle speed range		40 - 4,000min ⁻¹	Minimum output unit	X: 0.0005 mm Z: 0.001 mm
Spindle draw tube dia.		52mm Dia.	Interpolation functions	G00, G01, G02, G03
Type of chucking system		Hydraulic thru-hole chuck cylinder	Interpolation functions	512Kbyte (1280 m)
Collet chuck type		HardingeS22 with pad	Spindle function	S4 digit direct spindle speed input (G97)
Power chuck type		8" thru-hole power chuck		Constant cutting speed control (G96)
Tool slide			Feed	F3.4 digit feed per revolution,
Number of Tool slide		1		F6 digit feed per min.
Type of tool slide		10st. turret	Feed rate override	0 - 150% (10% step)
Size of Turning Tools		25mm Sq.	Rapid feed	X : 12m/ min, Z : 16m/ min
Size of Drill & Boring Tools		40mm Dia.	Interpolation functions	G01, G02, G03
Turret Index Time		0.26 sec./ 1pos.	Thread cutting	G32, G92
Slide			Canned cycle	G90, G92, G94
Slide travel	X-axis	175 mm	Tool function	T AABB
	Z-axis	435 mm		(AA=Tool number and geometry,
Rapid Feed rate	X-axis	12 m/ min.		BB=Wear offset number)
	Z-axis	16 m/ min.	Tool position direct	
Tailstock (Option)			input function	by measured MDI
Slide type		Hydraulic	Automatic operation	PC card slot, USB memory interface,
Max. slide travel		300 mm	Auto cycle	1 cycle/ Automatic operation, Single block,
Live centre size		MT4		Block delete, Machine lock,
Max. slide thrust		4.3 KN/ 3.4 MPa		Optional block skip,
Min. slide thrust		0.36 KN/ 0.3 MPa		Dry run, Feed hold
Quill type		Hydraulic	Others	8.4" color LCD/ MDI,
Max. slide travel		Quill 90 mm + Manual 220 mm		Program storage capacity addition:400
Live centre size		MT4		A decimal point input, Manual pulse generator
Max. slide thrust		4.3KN /3.4 MPa		Memory protect, AC digital servo motor, etc.
Min. slide thrust		0.36KN /0.3 MPa	Standard NC functions	The circle radius R command,
Tank capacity				Nose radius compensation
Hydraulic oil tank capacity		10 L		Constant surface speed control (G96),
Lubricating oil tank capacity		2 L		Back ground editing,
Coolant tank capacity		150 L		Programmable date input (G10),
Machine dimensions				Run hour/Parts count display,
Machine height		1,734 mm		Multiple repetitive cycles (G70 - G76),
Floor space		2,150 mm × 1,728 mm		Spindle rigid tap, Polar coordinate interpolation,
Machine weight		4,500 kg		Custom macro B,
Motors				Canned cycles for drilling (G80 - G86),
Spindle drive		AC 7.5/ 11		Tool life management.
Coolant pump		AC 0.18 kW		
Power supply				
Voltage		AC 200 V ± 10%, 50/ 60 Hz± 1%		
Capacity		22 KVA		
Air supply		0.5 MPa (5 kgf/ cm ²)		
Fuse		100 A		
Others				
Splash guard interlock, Foot switch				
Option				
Collet system, Power chuck system, Pneumatic Unit, Chuck air blow, Spindle inner air blow				
Automatic fire-extinguishing equipment, Automatic power shut-off, Parts catcher, Parts conveyor, High pressure coolant, Tail stock, Chip conveyor, Chip box, Total & preset counter				
Coolant mistcollector, Oil mist damper, Warning light, 1100V, RS-232C, etc.				

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