CITIZEN

Miyano

LX08

CNC Lathe

Powerful machining with rigid machine construction.

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

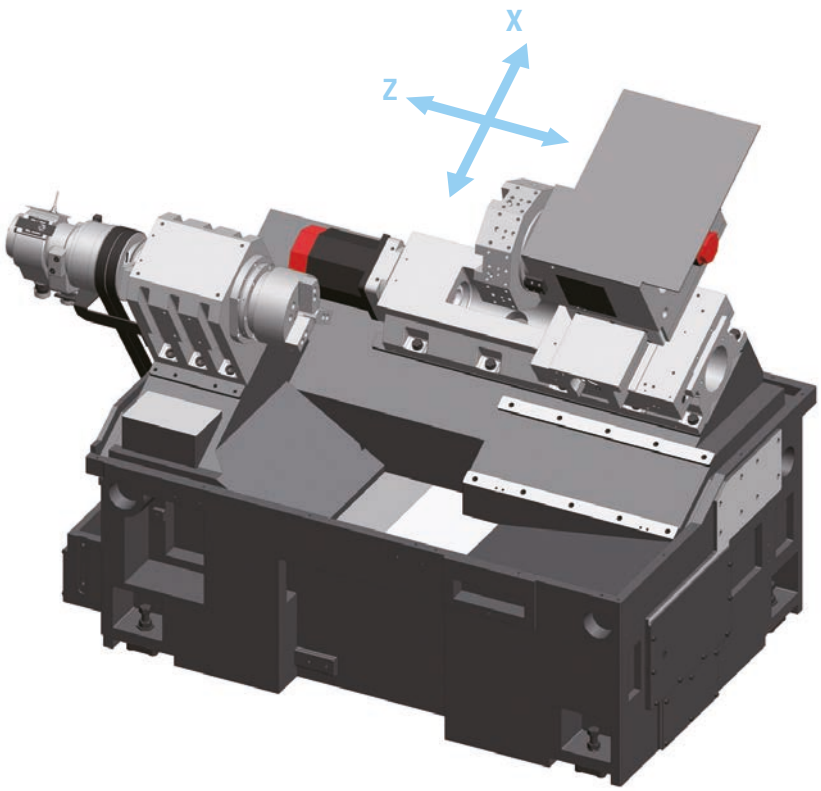
The rigid turret uses precision scraped square guideways providing excellent vibration damping characteristics, the rigid spindle is supported by double-row cylindrical roller bearings and angular contact ball bearings, and the heavy 30° slanted bed is in a platform-like surface table where the turret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


CITIZEN
LX08

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 minimize dimensional changes during machining, and supports high-precision machining as a closed-structure rigid body.

Rigid Base

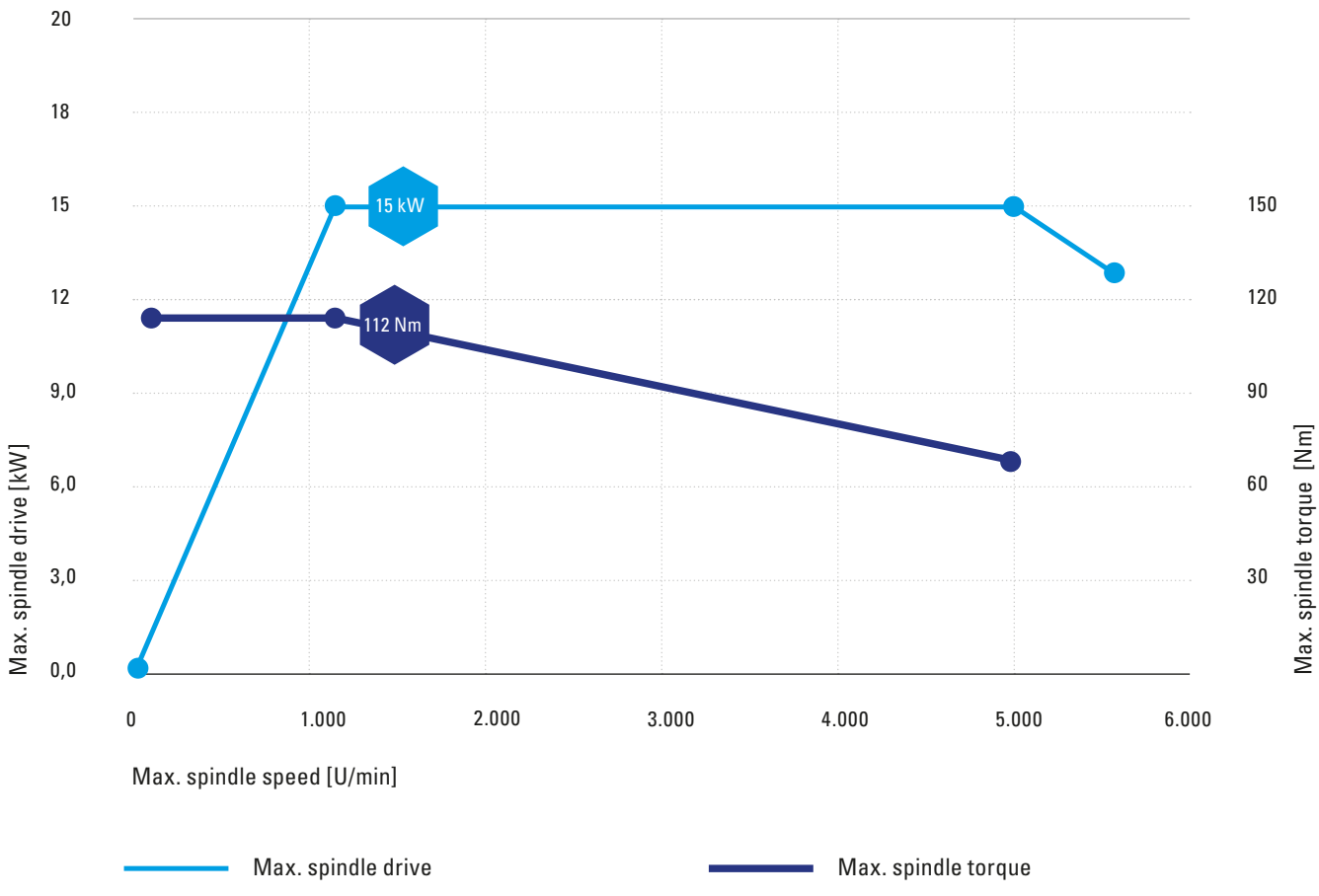


Reliable Flat Faces to Mount Major Machine Units

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.

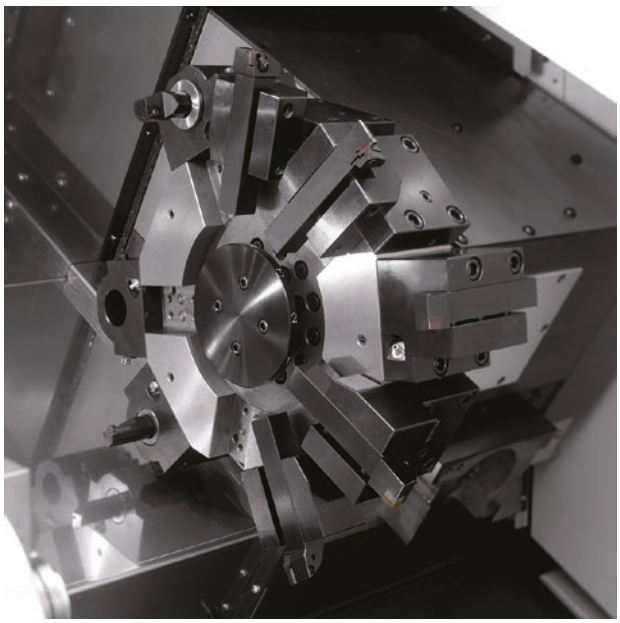
This structure maintains stable flatness in the face of external and internal factors that work to impair machining accuracy, minimizing changes in relative dislocation between the workpiece and tool nose.

Power and torque graph of the Miyano LX08



10 station turret for heavy and precise machining.

Turret



Highly Rigid Turret

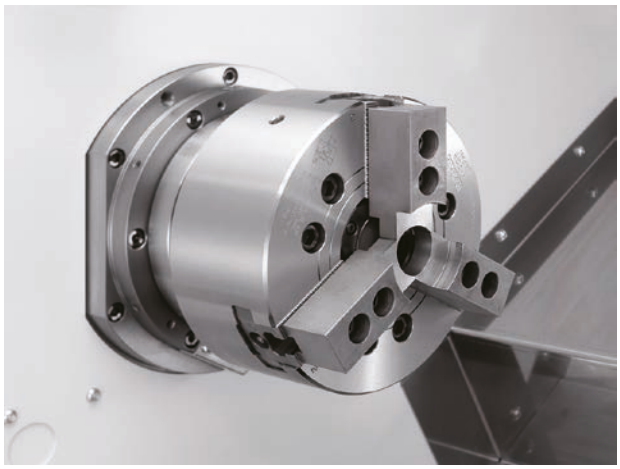
For the turret, subject to cutting forces and vibration under severe conditions, precision scraped square guideways are used on all axes to increase rigidity and vibration damping characteristics.

A two-piece curvic coupling is used to clamp the turret, prioritizing rigidity. This also realizes 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

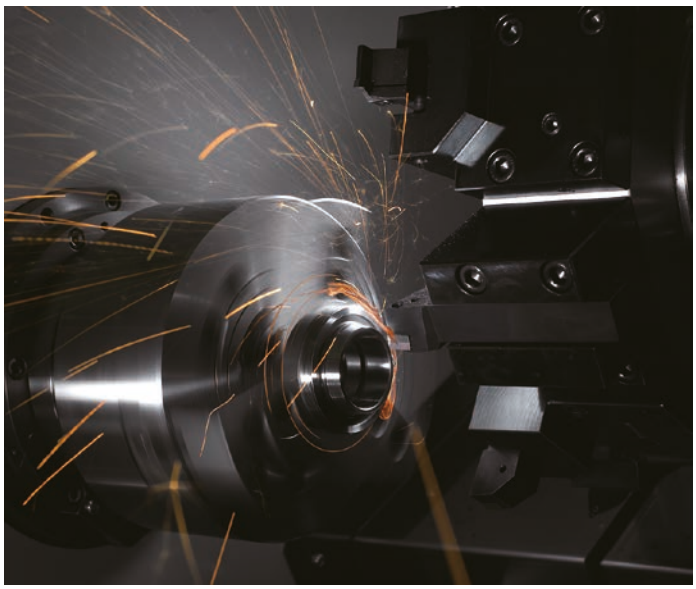


Rigid 8-inch Spindle

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 center of rotary axis are improved.

From Grinding to Hard Turning.

Hard Turning



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

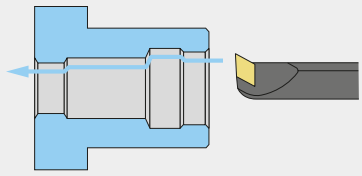
Advantages of hard turning over grinding

- 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.

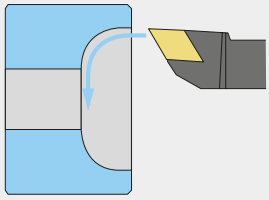
Making operation easier for you.

Examples of circular and free-form surface machining

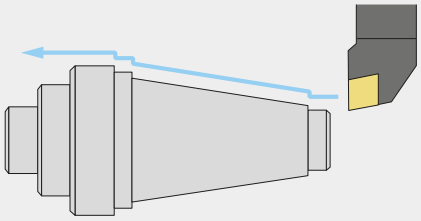
Internal turning
(thread cutting, stepped internal turning)



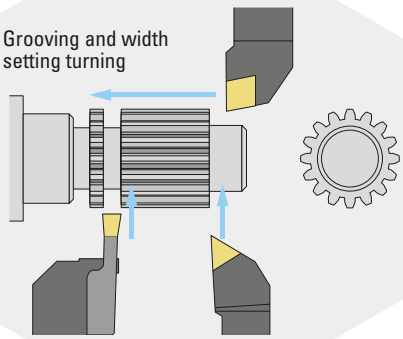
Spherical and free-form surface turning



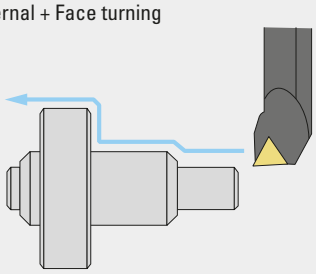
Taper turning



Grooving and width
setting turning

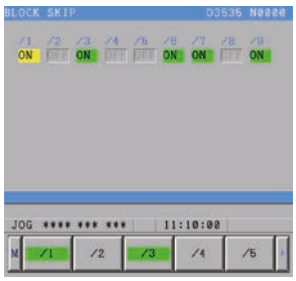


External + Face turning

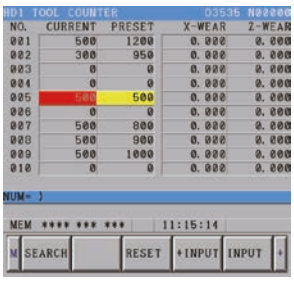


The functions convenient for machining and checking can be called in one-touch operations

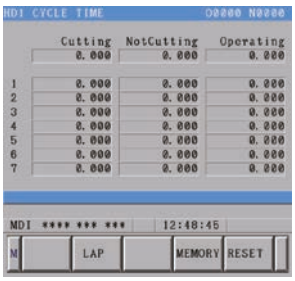
Custom Menu
Displays the list of custom screens.



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

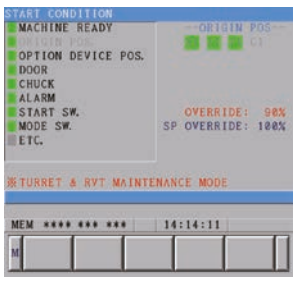


Tool Counter
Used to set and reset the tool counter stop value and enter the tool wear offsets.

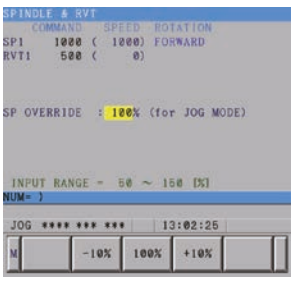


Cycle Time
Measures the cutting time, non-cutting time and running time in each cycle.

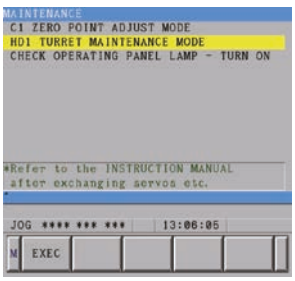
Automatic Running Monitor
Displays the control status of each axis. Used to set ON / OFF for the machine lock function.



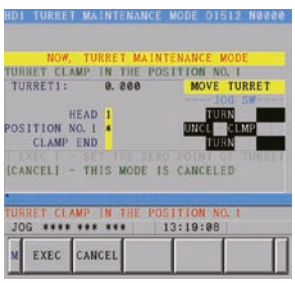
Start Condition
Used to set the start conditions for automatic running.



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

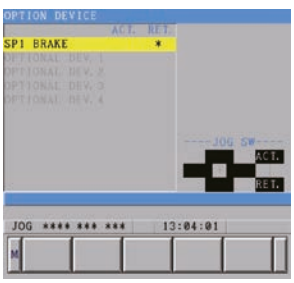


Maintenance
Used to set ON / OFF for the maintenance items.
Used to set ON / OFF for turret zero point adjustment.



Turret Maintenance
Used to adjust the turret zero point.

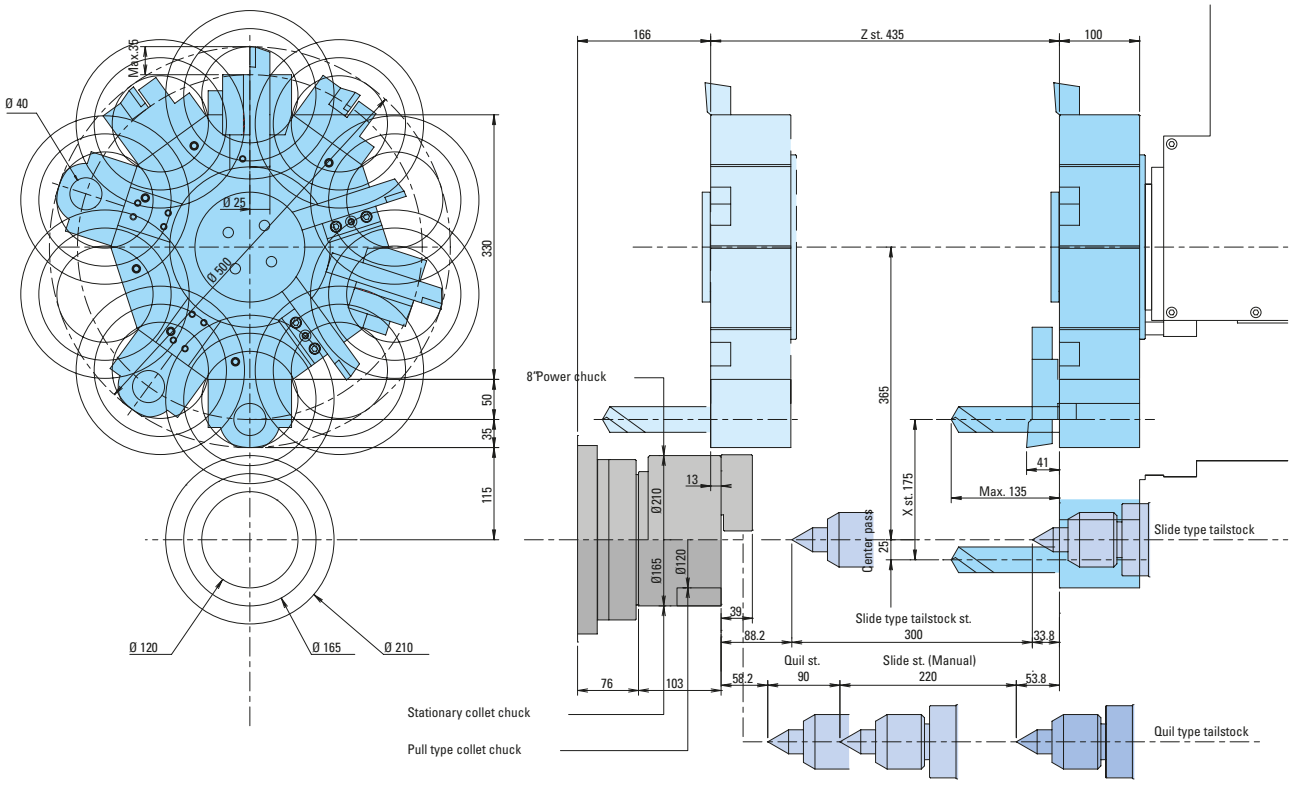
Manual Operation
Displays the zero point lamp status and the machine coordinate of each axis.



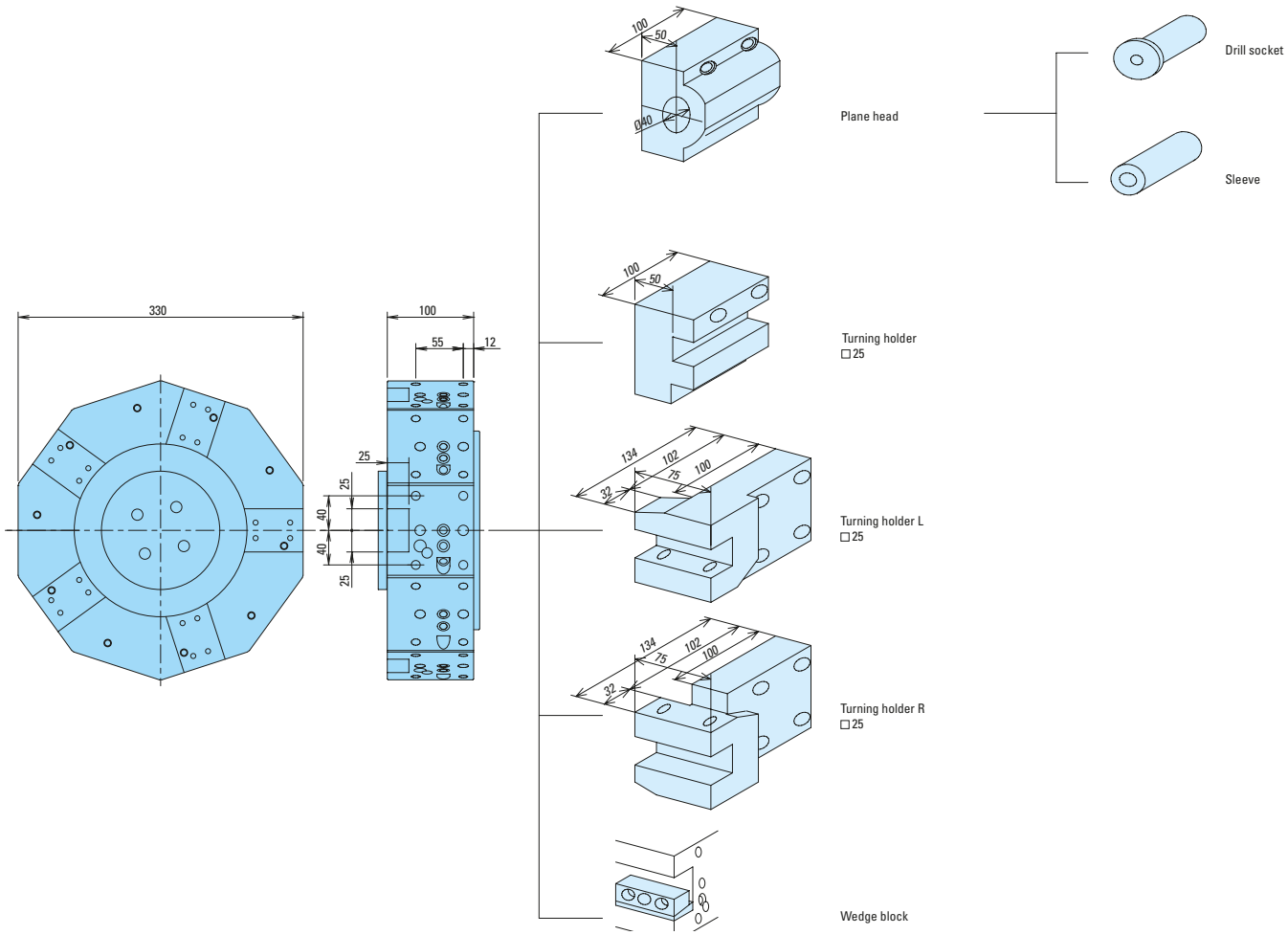
Option Device
Used to select an auxiliary device such as a part catcher to be operated manually.

Tooling system.

Tooling area

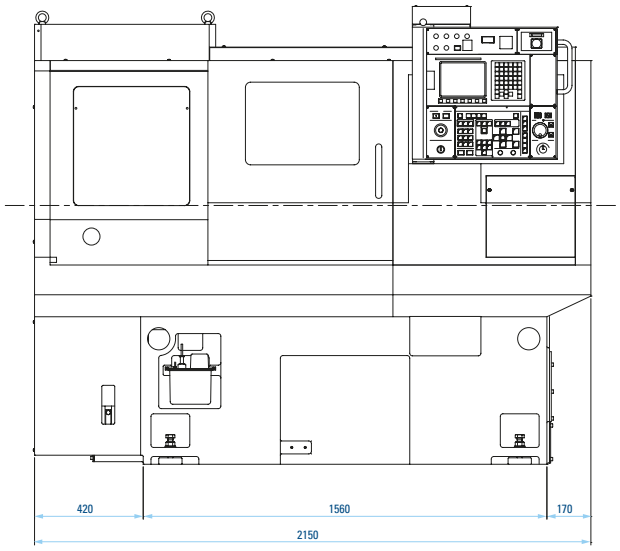


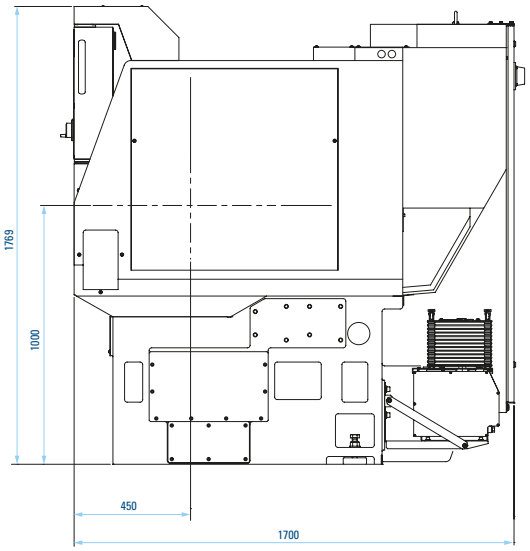
Tooling system



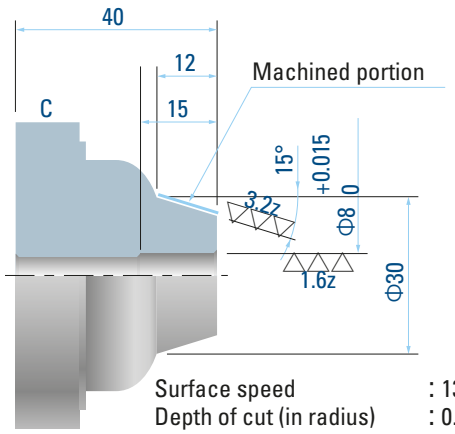
Machine Layout LX08.

External view



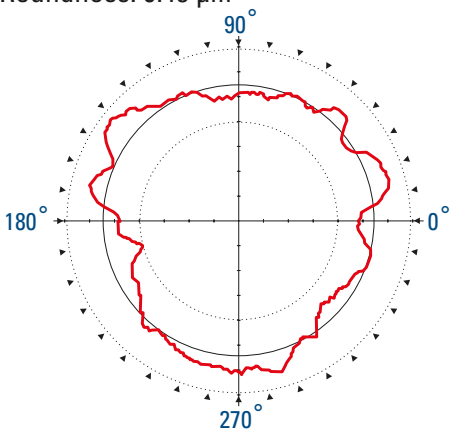


Machining accuracy in hard turning

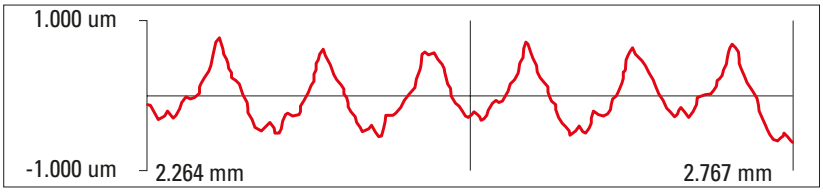


Surface speed : 130 m/ min
Depth of cut (in radius) : 0.2 mm
Feed rate : 0.08 mm/ rev

Roundness: 0.45 µm



Surface roughness: 1.301 µm



Tradition and Global Innovation Power for Local Markets.

Citizen Holdings Co., LTD. is a Japanese manufacturer operating in micro-technology and also being the world market leader in this sector. Citizen Group is divided into the five business sectors Watches, Electronic components, Electronic products, Other products and Lathes. The Group employs approx. 18,000 employees worldwide.
The holding company is headquartered in Tokyo, Japan. The company is listed on the Tokyo stock exchange. Citizen Machinery Europe stands for innovation on the highest international level, hand in hand with traditional German engineering. German customers profit from the strength of an international large-scale enterprise. At the same time, they may fall back on the more than 100-year old history in our local markets.

Excellent service – always in your vicinity and there for you.

With your decision in favor of a Citizen lathe, you have not only opted for absolute precision and efficiency - but also for our outstanding service included with every machine we deliver.

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- **Timely and fast delivery of spare parts**

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Machine Specification

Item		LX-08C
Machining capacity		
Max. work length		320 mm
Max. machining diameter		Max. 210mm Dia.
Spindle		
Number of spindle		1
Spindle speed range		40 – 4,000min^{-1}
Spindle draw tube dia.		52 mm Dia.
Type of chucking system		Hydraulic thru-hole chuck cylinder
Collet chuck type		HardingeS22 with pad
Power chuck type		8" thru-hole power chuck
Tool slide		
Number of Tool slide		1
Type of tool slide		10st. turret
Size of Turning Tools		25 mm Sq
Size of Drill & Boring Tools		40 mm Dia
Turret Index Time		0.26 sec./ 1pos.
Slide		
Slide travel	X-axis	175 mm
	Z-axis	435 mm
Rapid Feed rate	X-axis	12 m/ min.
	Z-axis	16 m/ min.
Tailstock (Option)		
Slide type		Hydraulic
Max. slide travel		300 mm
Live center size		MT4
Max. slide thrust		4.3 KN/ 3.4 MPa
Min. slide thrust		0.36 KN/ 0.3 MPa
Quill type		Hydraulic
Max. slide travel		10 mm (Quill 90 mm + Manyual 220 mm)
Live center size		MT4
Max. slide thrust		4.3KN /3.4 MPa
Min. slide thrust		0.36KN /0.3 MPa
Tank capacity		
Hydraulic oil tank capacity		10 L
Lubricating oil tank capacity		2 L
Coolant tank capacity		150 L
Machine dimensions		
Machine hight		1,734 mm
Floor space		2,150 mm × 1,728 mm
Machine weight		4,500 kg
Motors		
Spindle drive		AC 7.5/ 11
Coolant ponp		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/ cm2)
Fuse		100 A

NC specifications	FANUC 0i-TD
Axial control	X, Z
Simultaneous control axis	2 axis (Positioning, Linear interpolation)
Minimun setting unit	0.001mm
Minimum output unit	X: 0.0005 mm Z: 0.001 mm
Interpolation functions	G00, G01, G02, G03
Interpolation functions	512Kbyte (1280 m)
Spindle function	S4 digit direct spindle speed input (G97) Constant cutting speed control (G96)
Feed	F3.4 digit feed per revolution, F6 digit feed per min.
Feed rate override	0 – 150% (10 % step)
Rapid feed	X : 12m/ min, Z : 16 m/ min
Interpolation functions	G01, G02, G03
Thread cutting	G32, G92
Canned cycle	G90, G92, G94
Tool function	T AABB (AA=Tool number and geometry, BB=Wear offset number)
Tool position direct input function	by measured MDI
Automatic operation	1 cycle/ Automatic operation, Single block, Block delete, Machine lock, Optional block skip, Dry run, Feed hold
Standard NC functions	The circle radius R command, Nose radius compensation
	Constant surface speed control (G96),
	Back ground editing,
	Programmable date input (G10),
	Run hour/Parts count display,
	Multiple repetitive cycles (G70 - G76),
	Spindle rigid tap, Polar coordinate interpolation,
	Custom macro B,
	Canned cycles for drilling (G80 - G86),
	Tool life management.
Others	
8.4" color LCD/ MDI,	
Program storage capacity addition:400	
A decimal point input, Manual pulse generator	
Memory protect, AC digital servo motor, etc.	

Citizen Machinery Europe GmbH

Mettinger Straße 11 | D-73728 Esslingen
Tel. +49 [0]711 / 3906-100 | Fax: +49 [0]711 / 3906-106
cme@citizen.de | www.citizen.de

Cincom | Tel. +49 [0]711 / 3906-140 | service@citizen.de
Miyano | Tel. +49 [0]741 / 17407-13 | service@citizen.de

Japan | Citizen Machinery Co., LTD. | Cincom Company: 4107-6 Miyota, Miyota-machi, Kita-saku-gun, Nagano-ken, 389-0206, Japan, Tel. 81-267-32-5961, Fax 81-267-32-5928 | Miyano Company: 500 Akazawa, Yabuki-machi, Nishishirakawa-gun, Fukushima-ken, 969-0206, Japan, Tel. 81-248-44-3050, Fax 81-248-44-3051 | **South Asia** | Citizen Machinery Asia Co., Ltd. | 69 Moo 1 Phaholyothin Road, Sanubtube, Wang Noi, Ayutthaya 13170, Thailand, Tel. 66-35-721-833, Fax 66-35-721-835 | **Europe – UK** | Citizen Machinery UK Ltd. | 1 Park Avenue, Bushey, WD23 2DA, UK, Tel. 44-1923-691500, Fax 44-1923-691599 | **USA** | Marubeni Citizen-Cincom Inc. | Boroline Road Allendale, NJ 07401, U.S.A., Tel. 1-201-818-0100, Fax 1-201-818-1877