

O p t i c a l M a c h i n e

LC-50



NAKAMURA-TOME
PRECISION INDUSTRY CO.,LTD.

Introducing the latest optical centering technology...

Cutting-edge technology that gives your company a competitive edge.

All automatic NC lens Centering Machines

LC-50

- Double the productivity with 2 NC control axes.
- Automatic transport processing from ϕ 1mm lens.
- Work station and robotic system in one unit.
- User friendly and superior functionality for high efficiency.

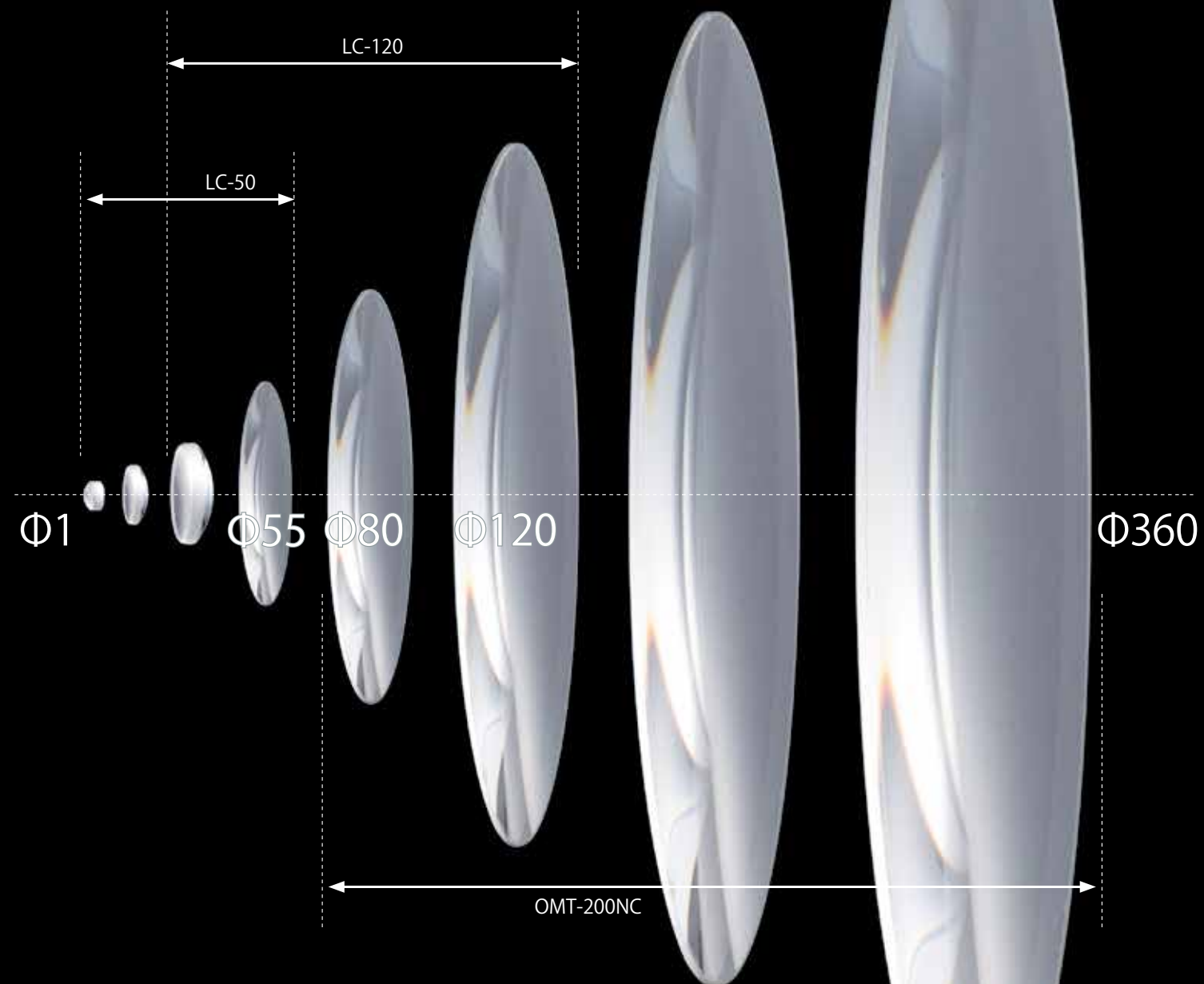


A centering machine unlike any other.

Low Γ_Z Lens High-speed Processing Precision stability Reduced cycle times

Faster, more productive centering... regardless of lens size.

Lens sizes from $\Phi 1\text{mm}$ to $\Phi 360\text{mm}$.
Various types of processing!



OD Chamfering / D Cut

Variant Processing

I Cut / Square Process

Low Z Processing

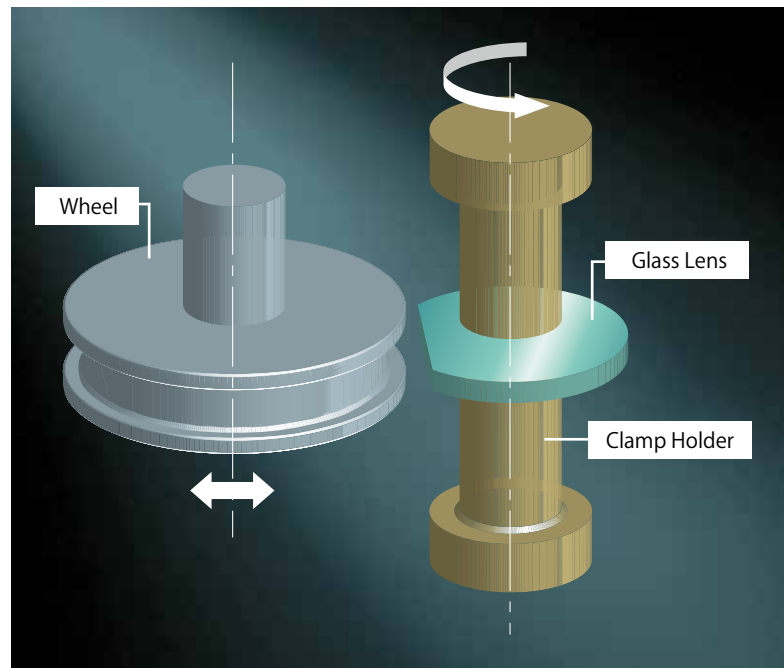
Lens processing of $\Phi 1\text{mm}$ to $\Phi 360\text{mm}$ size is possible with LC-50, LC-120 and OMT-200NC. OD chamfering, I-cut, D-cut, or Variant-formed processing are possible with easy-to-program NC control.

Also capable of processing a low centering coefficient lens.

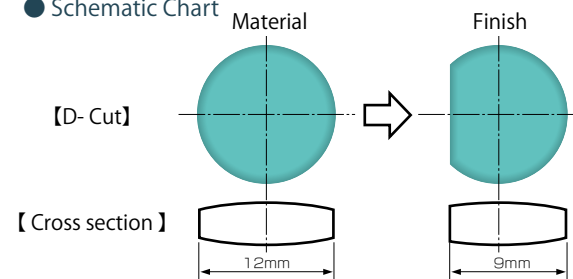
High precision and performance due to combined machining technique.

OD Chamfering / D-Cut

- D-cut processing is possible by polar-coordinates interpolation processing.
- Capable of processing D-cut and centering at the same time.
- The setting of D-cut dimensions only inputs a trim size desired.

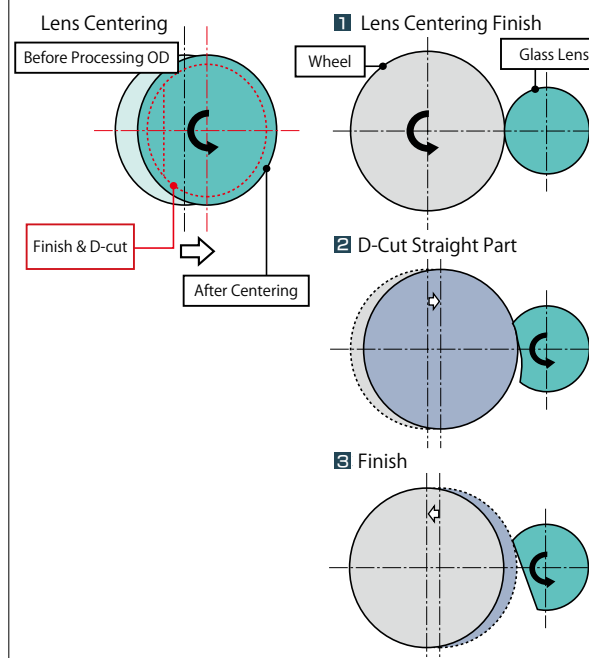


● Schematic Chart



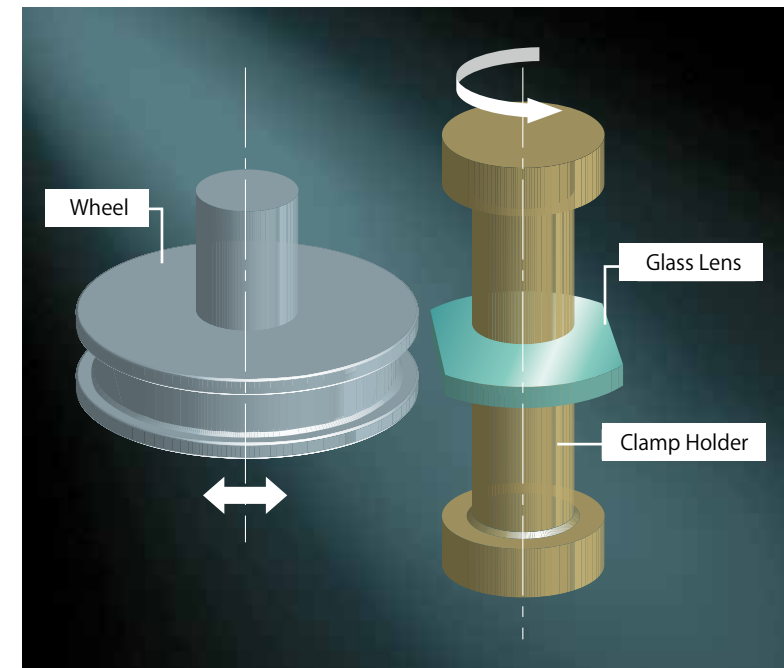
Specification		Condition			
Material	S-BAH27	Work Spindle	rpm		
Knoop Hardness	514	Wheel	rpm	3600	
Abrasion Degree	160	Cycle Time	sec		
Focal Distance f	-36.427	High-pressure Clamp	Mpa		
Refractive Index nd	1.70154 ± 30	Low-pressure Clamp	Mpa		
Eccentric	less than 30"	Holder Diameter(Upper)	mm		
Press Diameter	39.2	Holder Diameter(Lower)	mm		
Finishing Diameter	37.51 ± 0.005	Particle Size		# 400	
R1		Coolant		For Oil	
R2					
Centering Coefficient	0.257				

● Process

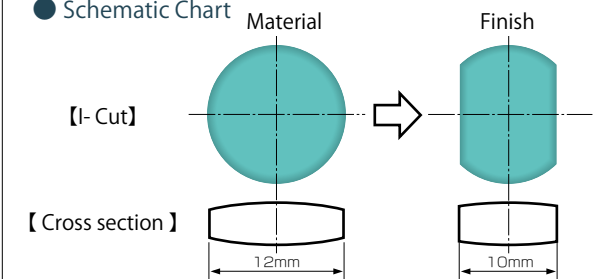


I-Cut / Four-Sided Processing

- Straight line synchronization of wheel and work spindle.
- Capable of making an I-Cut with a set parameter.
- Capable of processing a square.

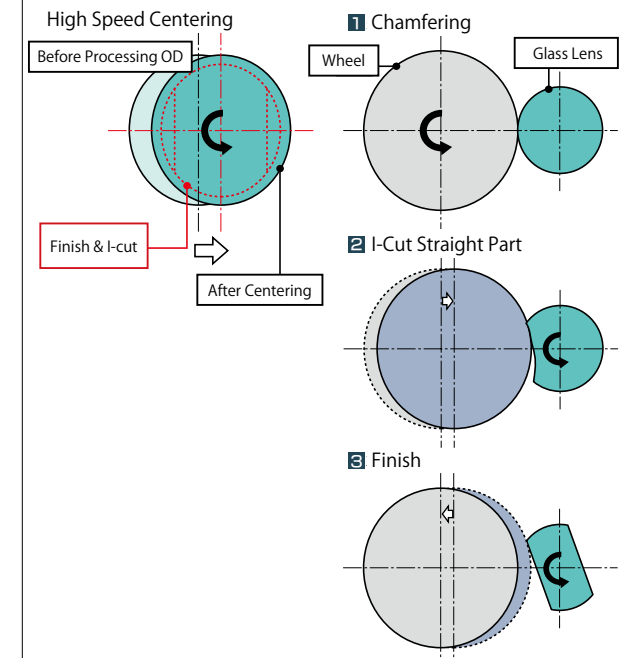


● Schematic Chart



Specification		Condition			
Material	S-BAH27	Work Spindle	rpm		
Knoop Hardness	514	Wheel	rpm	3600	
Abrasion Degree	160	Cycle Time	sec		
Focal Distance f	-36.427	High-pressure Clamp	Mpa		
Refractive Index nd	1.70154 ± 30	Low-pressure Clamp	Mpa		
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Finishing Diameter	37.51 ± 0.005	Particle Size		# 400	
R1		Coolant		CL5	
R2					
Centering Coefficient	0.257				

● Process

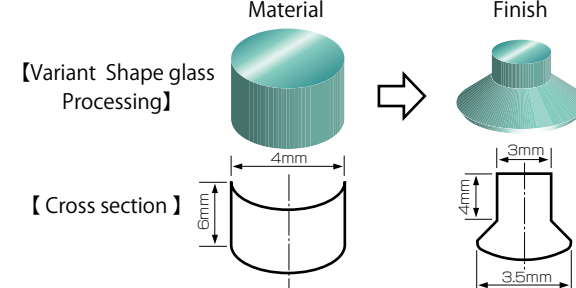


Variant Shape Processing

- Wheel moves in two directions at the same time to process any type of angled surface

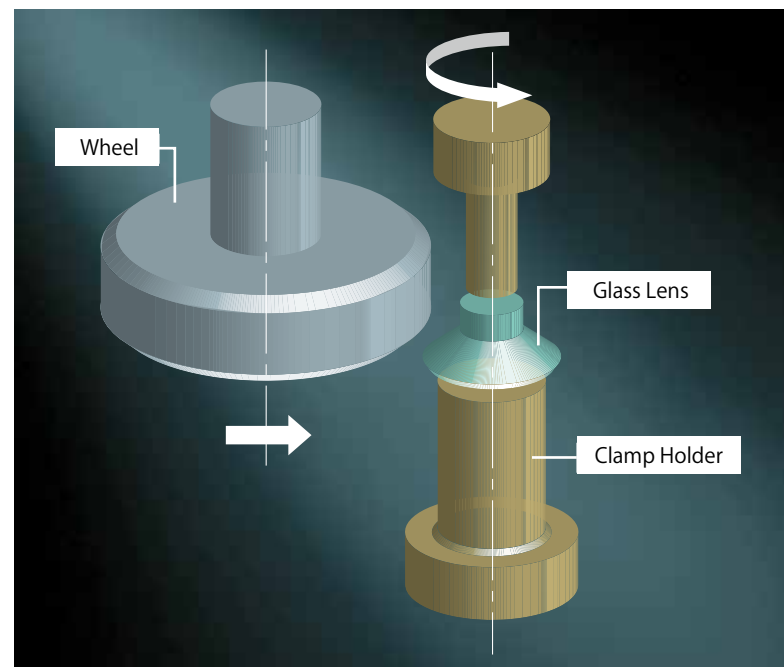
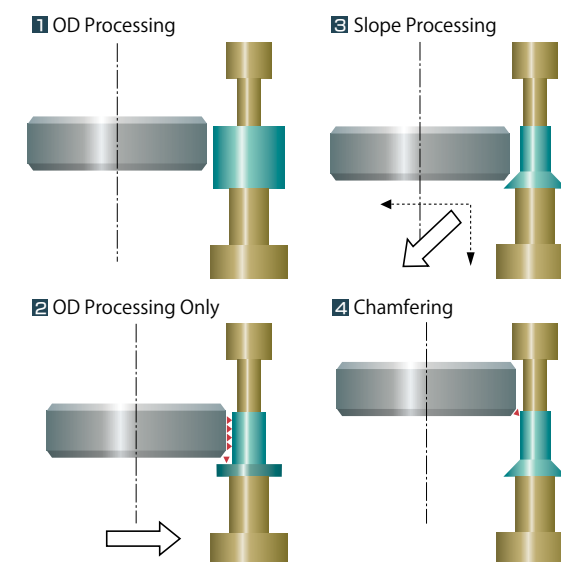


● Schematic Chart



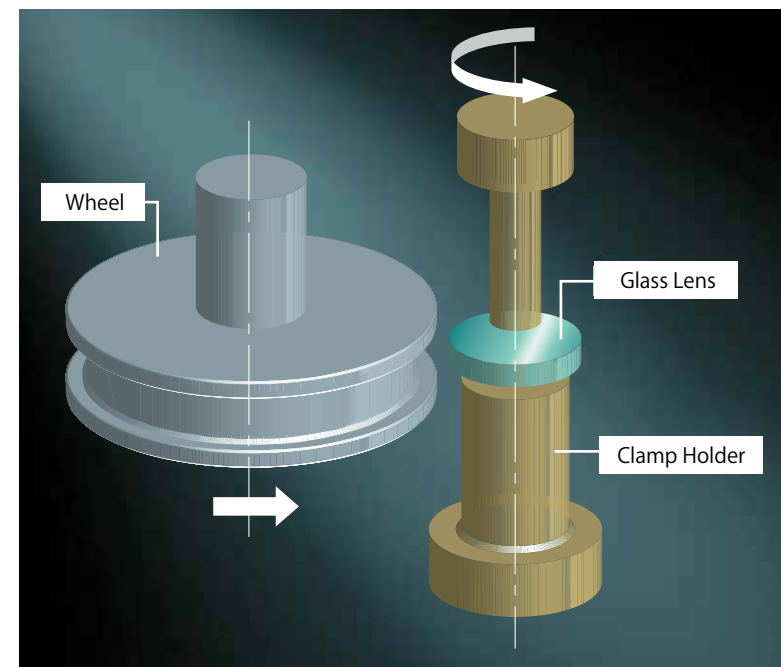
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Finishing Diameter	37.51 ± 0.005	Particle Size		# 400	
R1		Coolant		CL5	
R2					
Centering Coefficient	0.257				

● Process

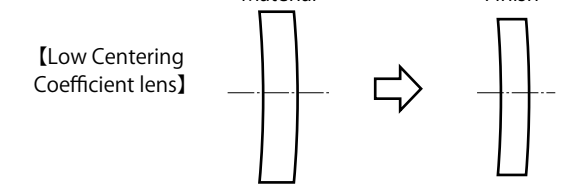


Low Z Processing

- Low centering coefficient processing is possible due to rapid fluctuation in clamping pressure during pre-clamp rotation

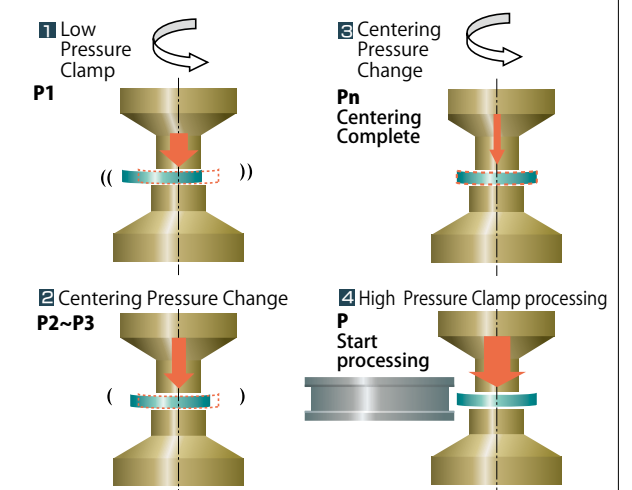


● Schematic Chart

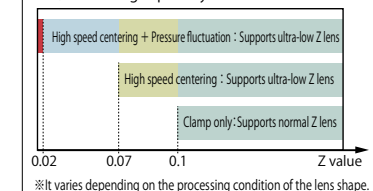


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Press Diameter	39.2	Holder Diameter(Lower)	mm		
Finishing Diameter	37.51 ± 0.005	Particle Size		# 400	
R1		Coolant		CL5	
R2					
Centering Coefficient	0.020				

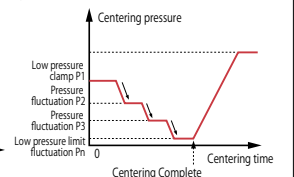
● Process



● Centering capability



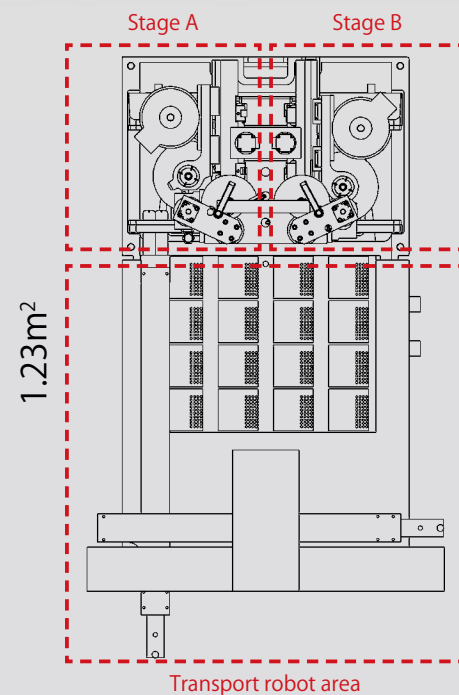
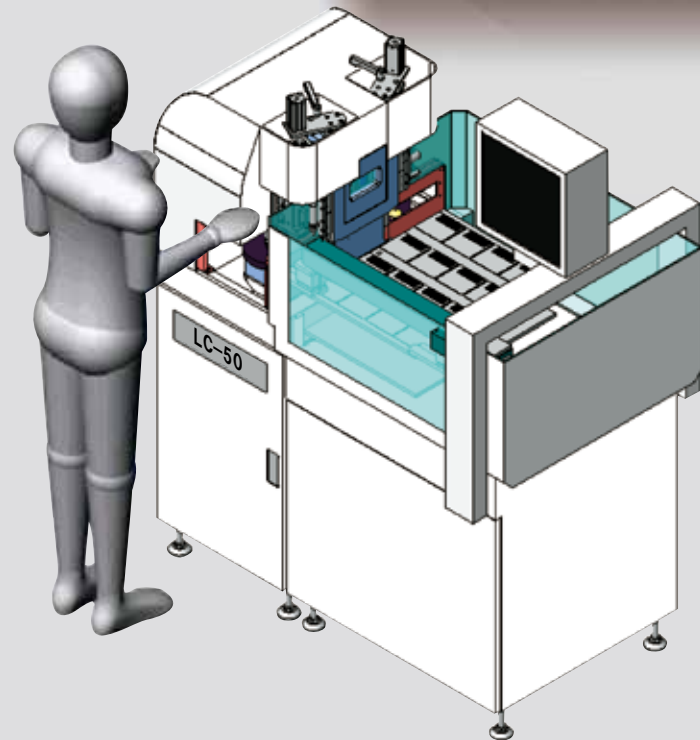
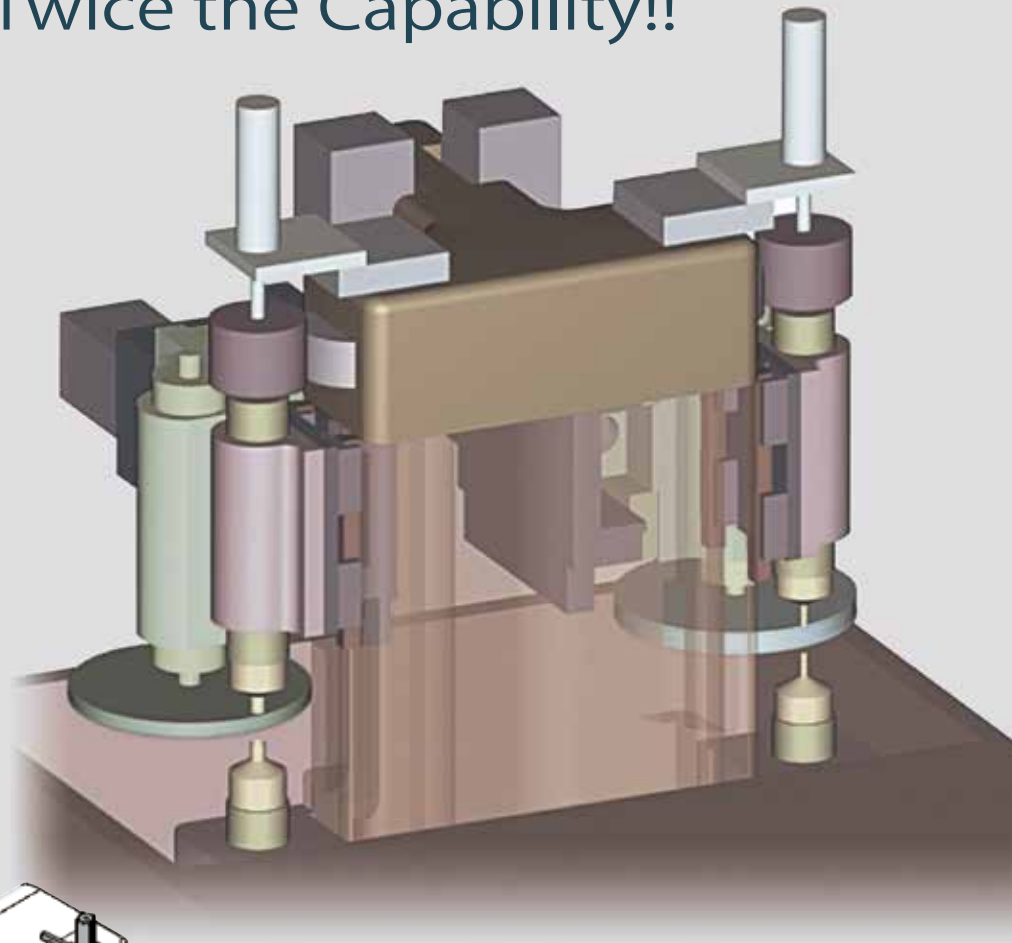
● Pressure fluctuation



Twin Axis for Twice the Capability!!

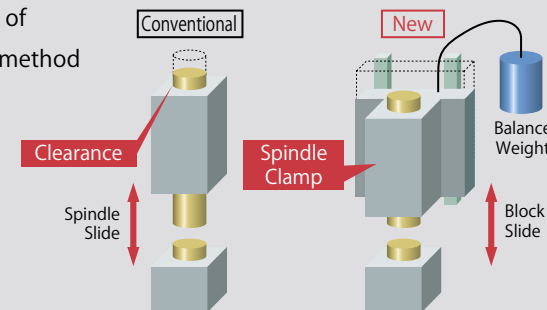
Double Productivity!!

Max Stock Space
735 × 570mm
(Flat, 2 Hands)

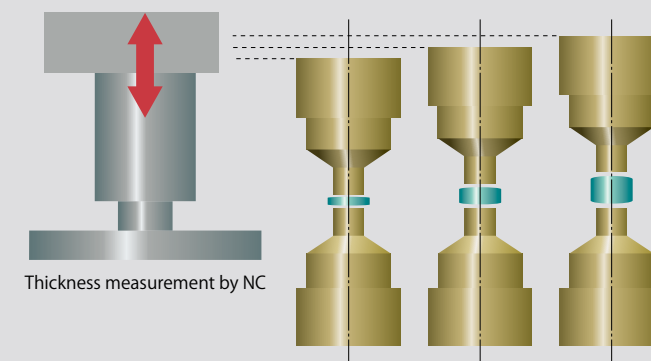


High-Precision

- Adoption of new clamp method

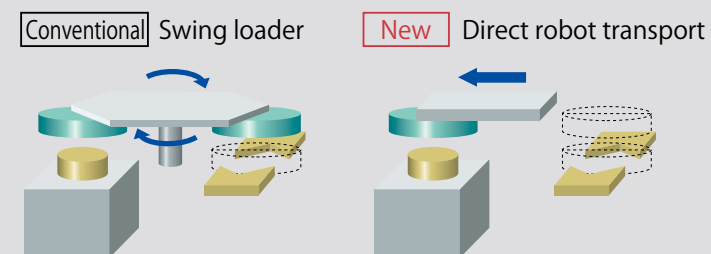


- Min size 0.0001mm available
- Automatic thickness measurement machine



Improvement Of Work Efficiency

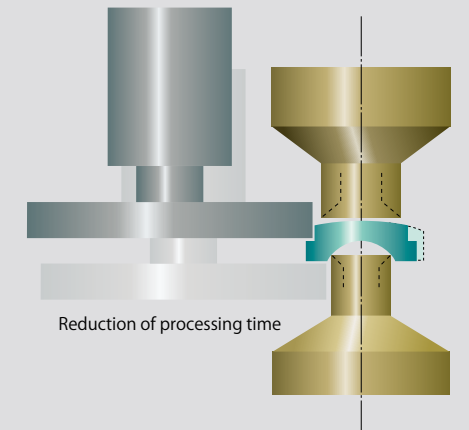
- There is no turning type loader



- Unified control units

Powerful NC control

- Faster setups
 - All offsets are saved for every job.
 - User friendly interface for easy programming.
 - On screen corrections.
 - Easy to operate because of large screen panel.

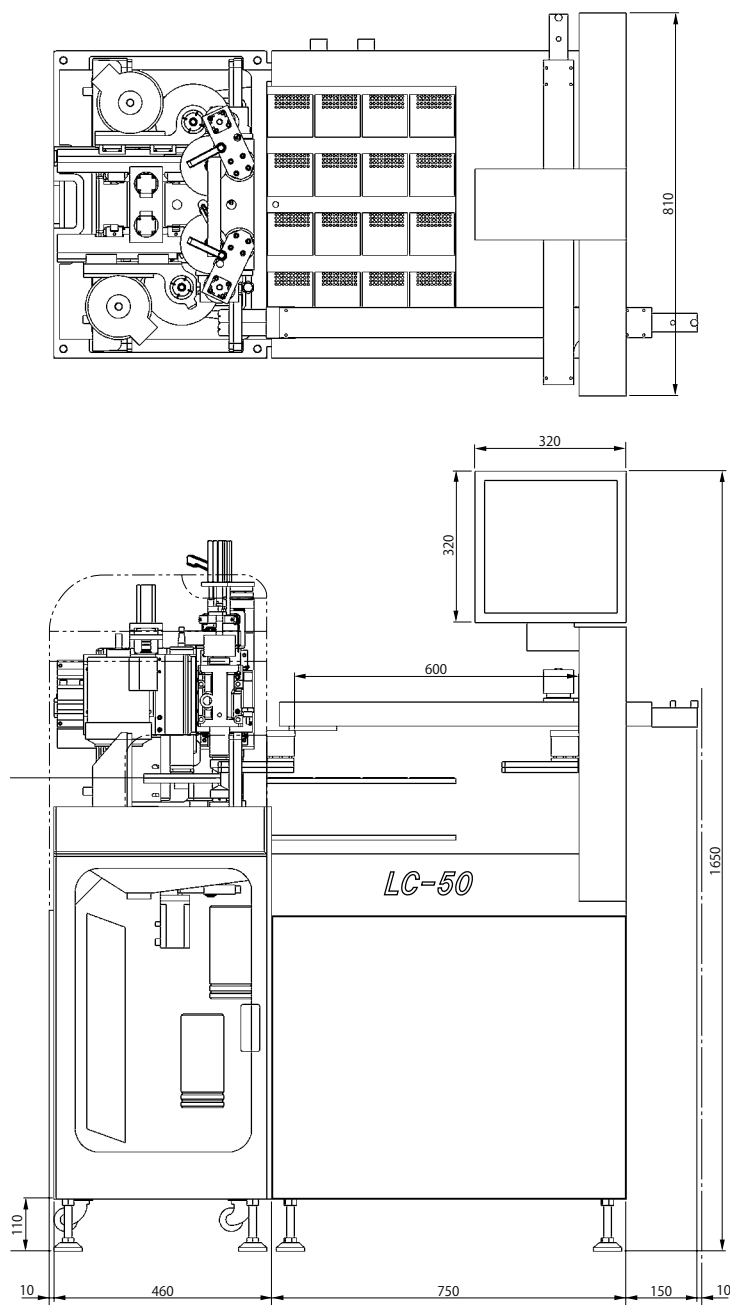


The pattern of loader operation

- 2 axes + 4 hands + 2 V clamp (OP)
- Material : Flat Pallet
- 1 axis + 2 hands + V clamp
- Material : Cleaning Basket



LC-50 Specification



Summary

Lens	Size	Φ 2mm ~ Φ 55mm (~ Φ 30mm)
	Max Thickness	10mm
Control	Method	Numerical control
	Axis	6 axis
	Min Unit	0.0001mm
Whetstone	Diameter	Φ 160mm
Stocker	Loader Movement	X : 600mm Y : 600mm
	Min Unit	0.01mm
	Z drive / Carrier System	Air cylinder / Vacuum contact
Power	Supply	11kVA
	Air Pressure	0.5Mpa
Machine Dimensions	Height	1650mm
	Floorspace	1380mm × 890mm
	Weight	800kg

● Please note that specifications may be changed without notice due to improvements in machines and so on.



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