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- Product specifications and dimensions are subject to change without prior notice.
- The photos may show optional accessories.



This product is subject to all applicable export control laws and regulations



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Matsuura **LS-160**

5-Axis Vertical Machining Center



MAXIA
Innovation by  Matsuura

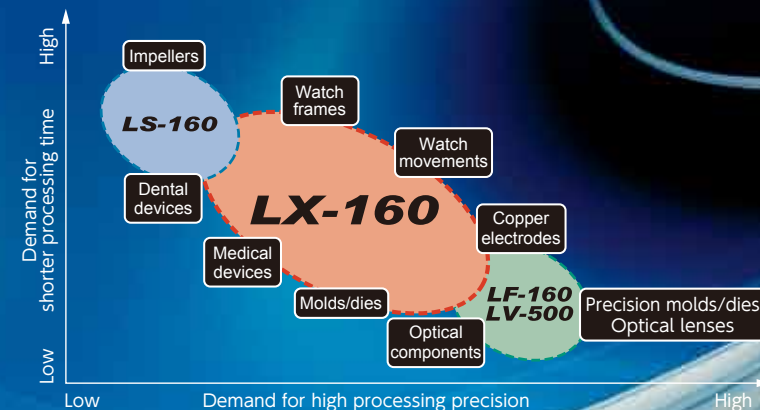
Ultra High Speed 5 Axis Machining

Unerring accuracy, the highest quality finish in the shortest cycle time possible

- Technology leading platform for complex geometric components
- Industry example: Impellor machining times are drastically reduced on the **LS-160**
- Incorporating our proven and globally renowned Matsuura **MAXIA** Spindle Technology



■ Target Markets



One Hit 5 axis machining, linear drives and 40,000min⁻¹ spindle – effortless performance dramatically reducing cycle times

Industry example; The **LS-160** creates impellers at remarkable speed – guaranteeing reduced cycle times with no accuracy or quality loss



Size	φ 112 mm (4.40 in.)	φ 80 mm (3.14 in.)	φ 64 mm (2.51 in.)	φ 44 mm (1.73 in.)
Material	Aluminum A2017	Aluminum A2017	Aluminum A2017	Aluminum A2017
Blade (pcs)	7	6	6	6
Cutting Method	Flank Cut	Flank Cut	Flank Cut	Flank Cut
Machining Time	15 min 5 sec	9 min 34 sec	5 min 27 sec	1 min 50 sec

Matsuura L-Tech840Dsl controller installed

The L-Tech 840Dsl controller equipped with abundant functions can handle various machining applications that require high speed, high precision, and high quality.

Optimized acceleration/deceleration

〈Parameter settings : CYCLE832〉
The high-speed setting function, "Advanced Surface", enables free-curve machining data settings to achieve optimal machining.

Optimized smoothing tolerance

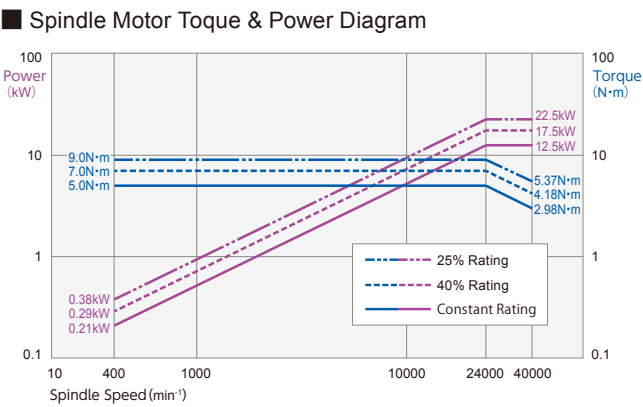
〈Tool vector smoothing function : ORISON〉
By smoothing tool vectors across multiple blocks, vibrations that might affect the rotary motion can be reduced, making both rotary and contouring motions smooth.

Tool path optimization

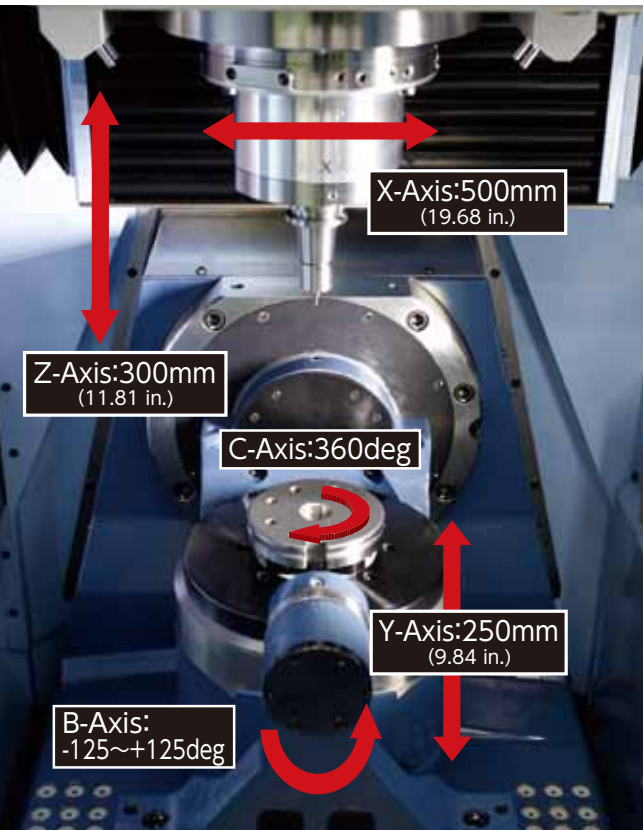
〈CAM specific to impeller machining〉
By using the tool side edge cutting algorithm, straight line element surface design and tool side edge cutting method can reduce your machining costs. The entire surface of each vane can be finished in a single tool path motion.

Matsuura MAXIA Spindle Technology – world leaders

Spindle Speed	min ⁻¹	400 ~ 40,000
Type of Spindle Taper Hole	—	HSK-E40
Spindle Motor	kW	12.5 / 22.5
Max. Spindle Torque	N·m/min ⁻¹	9 / 24,000

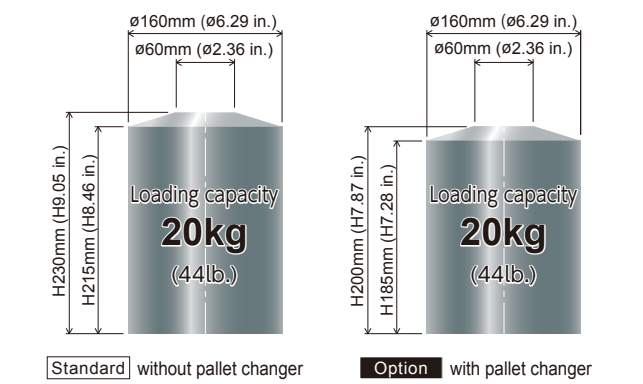


X-/Y-/Z-axis linear motors and B-/C-axis DD motors

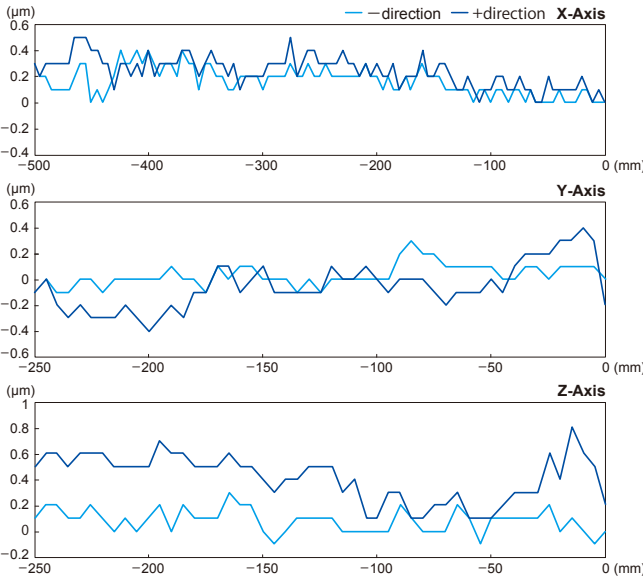


Rapid Traverse Rate		Table Rotation Torque
X-Axis 90,000mm/min (3543.3 ipm)	B-Axis 100min ⁻¹	B-Axis 64.8N·m C-Axis 13N·m
Y-Axis 90,000mm/min (3543.3 ipm)	C-Axis 200min ⁻¹	
Z-Axis 90,000mm/min (3543.3 ipm)		

Maximum Workpiece Size *Bullet shape



Positioning accuracy of each axis



*The measurement results are actual values but not guaranteed values.

Cutting Test Data

	Work material	Tool	Cut width Cut depth	Spindle speed	Feed rate	Removal rate
	A5052	Ø50mm (1.96) 3blades	W=40mm (1.57) D=1.5mm (0.05)	6,000 min ⁻¹	5,500 mm/min (216.53)	330 cc/min
	S45C	Ø63mm (2.48) 5blades	W=50mm (1.96) D=0.5mm (0.019)	1,500 min ⁻¹	700 mm/min (27.55)	17.5 cc/min
	A5052	Ø16mm (0.62) 2blades	W=14mm (0.55) D=3mm (0.11)	40,000 min ⁻¹	16,000 mm/min (629.92)	672 cc/min
	S45C	Ø16mm (0.62) 4blades	W=1mm (0.03) D=16mm (0.62)	6,000 min ⁻¹	5,000 mm/min (196.85)	80 cc/min
	A5052	Ø14.5mm (0.57)		1,300 min ⁻¹	120 mm/min (4.72)	19.8 cc/min
	S45C	Ø6.8mm (0.26)		900 min ⁻¹	80 mm/min (3.14)	2.90 cc/min
	A5052	M12 × P1.75		400 min ⁻¹	700 mm/min (27.55)	
	S45C	M8 × P1.25		400 min ⁻¹	500 mm/min (19.68)	

Note: The data above is from examples of actual results. Depending on conditions, there may be cases where results equivalent to those of the catalog data may not be able to be obtained.

