

**Press Release**

**April 26, 2022**

 **Matsuura**

## High Precision Linear Motor Machine

### **LF-160** Product Release

**LV-500, LX-160, LM-500** simultaneously on sale



Matsuura Machinery Corporation is pleased to announce the launch of the newly designed **LF-160**, a high precision linear motor machine, and is accepting orders beginning today.

The **LX-Series** is an ultra high speed vertical linear motor machine series, driven by linear motors and achieving both high speed and high precision performance. Since its debut in 1998, 243 machines have sold (as of the end of March 2022), and have been installed in the precision mold, medical equipment, and impeller industries.

This is the first **LX-Series** model change in 11 years, and Matsuura developed 4 models simultaneously. These include: the high grade linear motor machine base model, **LX-160** (5-axis) / **LM-500** (3-axis), and the high precision linear motor machine high-end model, **LF-160** (5-axis) / **LV-500** (3-axis).

As the world transforms to a sophisticated information driven society, high precision electronic components become smaller and more complicated. Consequently, the need for high precision mold manufacturing increases. In order to address the labor shortage problem and meet the demand for production efficiency improvement, the Matsuura **LF-160** provides high precision and unmanned operation, while offering high productivity and manpower savings.

#### <Main Features>

- (1) Machining accuracy improving manufacturing efficiency, standardization, and quality control
- (2) Expandable automation design offering both manpower savings and high productivity
- (3) Total support functions for reliable 5-axis machining and prolonged unmanned operation
- (4) Environmental protection by reducing wasteful power consumption with auto power off function



#### **LX-160** User Testimonials

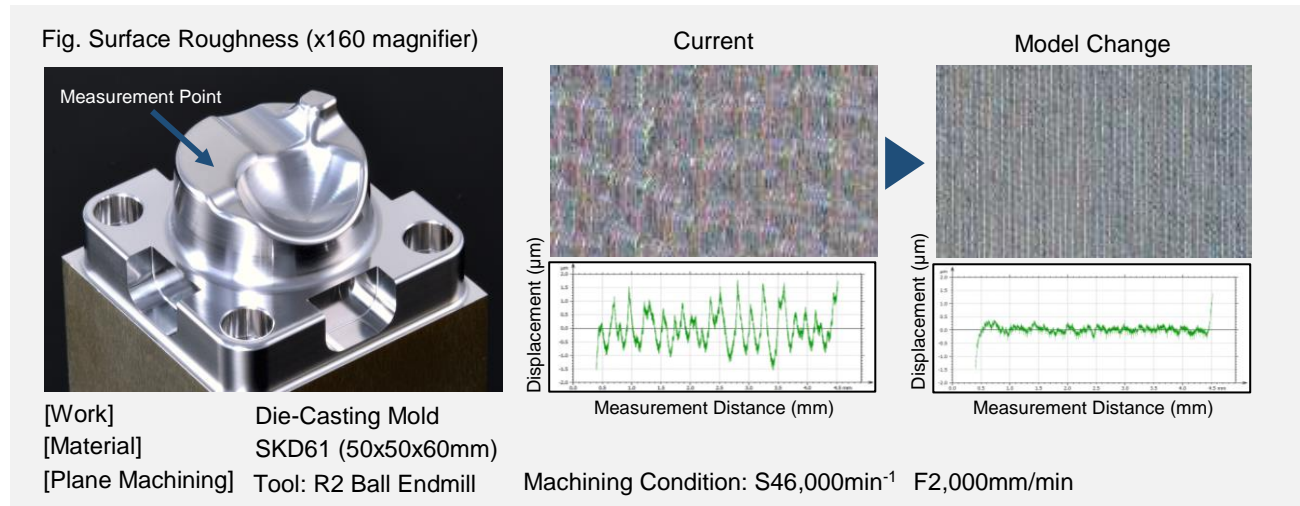
“Electrode cost \$100 to \$10” - Precision Products, Inc -



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## Shorten Mold Polishing Process by Surface Roughness Ra0.1 $\mu$ m in High Speed Machining

For the market that requires ultra-precision machining, and customers who require less mold surface polishing, Matsuura achieved Ra0.1 $\mu$ m (\*1) or less in surface roughness during high speed machining with the newly developed low-vibration spindle (65% reduction versus conventional). The newly developed low-vibration spindle suppresses tool rotation runout and contributes to extending the life of small-diameter tools. (\*1 Ra0.1 $\mu$ m is an actual value, not intended to guarantee the performance)



## Achieve Manpower Savings and High Productivity in High-Variation/Low-Volume Production and Prolonged Unmanned Operation

To solve labor shortages in your workplace, the **LF-160 / LX-160** can optionally build an automation system with up to 338 tools (matrix magazine) and up to 91 pallets (linear pallet system), while easily achieving high-variation/low-volume production and prolonged unmanned operation. The tool/pallet schedule management functions are built into the NC screen. Matsuura's in-house software, developed by engineers with decades-long experience, makes your daily management easier. Even during prolonged unmanned operation, stable machining accuracy can be achieved by equipping Matsuura's newly developed environmental thermal displacement compensation function as standard.

## Comfortable Operability for 5-axis Machining and Night/Weekends Unmanned Operation

**Matsuura L-Tech 31i** (iHMI, 15-inch touch panel type), equipped as standard, improves the visibility and operability of the NC screen. The Matsuura original collision prevention function (Intelligent Protection System) is installed as standard on the NC screen. Previously requiring an external PC, this function prevents collision from programming errors during auto operation and human errors during manual operation. To support unmanned operation at night and on weekends, "Operation Status Monitoring Function" is installed as standard for visualizing operation status on the NC screen. "Machine Information Output (MT Connect)" can be selected as an option for visualizing the operation status of the entire factory including machines from other manufacturers. "Matsuura Remote Monitoring System" which enables operation status monitoring and pallet schedule editing remotely and, "Coolant Management System" which automatically manages and refills coolant are also available as options. As part of environmental commitment to reduce energy costs, wasteful power consumption is reduced by a new standard function that automatically turns off the machine power when not in use, to increase your shop's productivity.

## LF-160 Features

1. **MAXIA** Spindle (from high-accuracy machining to rough machining): 46,000 min<sup>-1</sup>
2. All axes are driven by linear motors
  - 2.1. Rapid traverse rate (X/Y/Z) : 90,000 mm/min [3543.3 in/min]
  - 2.2. Rapid feed ACC./DEC.(X/Y/Z) : 1.05/0.77/1.14 G
3. High-speed high-precision 4th/5th axes of dedicated design
  - 3.1. Drive system : Direct drive motor
  - 3.2. Rapid traverse rate (B/C) : 100mn<sup>-1</sup>, 200min<sup>-1</sup>
  - 3.3. Rotation Angle (B/C) : -125~+125 deg, 360 deg
4. Expandability (abundant options available for variable-part/variable-volume production and extended unmanned operation)
  - 4.1. ATC : 10 Tool [Standard]  
 : 30/50 Tool Chain Magazine [Option]  
 : 128 - 338 Tool Matrix Magazine [Option]
  - 4.2. APC : Flat Table [Standard]  
 : PC2 [Option]  
 : PC42/ PC91 Linear pallet system [Option]
5. Usability
  - 5.1. **Matsuura L-Tech 31i** ( iHMI, 15-inch touch panel screen)
  - 5.2. Operator assisting software “**MIMS** (Matsuura Intelligent Meister System)” [Standard]
  - 5.3. Collision prevention function “Intelligent Protection System” [Standard]
  - 5.4. Operation status monitoring function [Standard]

## Machine Specification

\* Bullet shaped

Item	Unit	High Precision Linear Motor Machine		High Grade Linear Motor Machine	
		<b>LF-160</b>	<b>LV-500</b>	<b>LX-160</b>	<b>LM-500</b>
Machine		<b>LF-160</b>	<b>LV-500</b>	<b>LX-160</b>	<b>LM-500</b>
Number of axis		5-axis	3-axis	5-axis	3-axis
Spindle		Ultra low vibration	Ultra low vibration	Low vibration	Low vibration
Travel (X/Y/Z axis)	mm [in.]	500/250/300 [19.68/9.84/11.81]	500/350/300 [19.68/13.77/11.81]	500/250/300 [19.68/9.84/11.81]	500/350/300 [19.68/13.77/11.81]
Travel (B/C axis)	deg	-125 ~ +125/360	—	-125 ~ +125/360	—
Rapid traverse rate (X/Y/Z axis)	m/min [ipm]	90/90/90 [3543.3]	90/90/90 [3543.3]	90/90/90 [3543.3]	90/90/90 [3543.3]
Rapid traverse rate (B/C axis)	min <sup>-1</sup>	100/200	—	100/200	—
Spindle speed	min <sup>-1</sup>	46,000	46,000	46,000	46,000
Tooling system		BT30/HSK-E40	BT30/HSK-E40	BT30/HSK-E40	BT30/HSK-E40
Max. workpiece size	mm [in.]	D160 x H230* [D6.29 x H9.05] D160 x H200* (with PC) [D6.29 x H7.87]	—	D160 x H230* [D6.29 x H9.05] D160 x H200* (with PC) [D6.29 x H7.87]	—
Loading capacity	kg [lb.]	20 [44]	100 [220]	20 [44]	100 [220]

Matsuura will exhibit the newly designed **LF-160** at JIMTOF2022, the 31<sup>st</sup> Japanese International Machine Tool Fair, November 8-13 at Tokyo Big Sight.