

**Press Release**

**Oct. 25, 2022**

 **Matsuura**

## Hybrid Metal 3D printer

# 「**LUMEX Avance-25**」 Upgrade



Matsuura Machinery Corporation is pleased to announce the launch of the newly upgraded **LUMEX Avance-25**, a hybrid metal 3D printer, to further improve productivity and operability.

**LUMEX** is Matsuura's hybrid metal 3D printer series which comprises metal laser sintering by fiber laser and high-speed milling with a machining center base. Matsuura led the world in 2002 with the commercialization of a hybrid metal 3D printer. By offering greater flexibility in the design, previously not possible in conventional metal milling, Matsuura's LUMEX Technology reduces lead time and minimizes cost for complex parts, meeting the diverse needs of our customers, who are predominately in the high value-added dies and molds market. (More than 100 machines have been delivered.)

The newly upgraded **LUMEX Avance-25** machines have improved productivity and reduced the workload, which are directly linked to the manufacturing cost of AM products. By enhancing the functions of the 5th generation hybrid metal 3D printer (high-speed model), launched in 2017, it has become possible to operate continuously for even longer periods of time.

Matsuura will exhibit the **LUMEX Avance-25** at the special event "Additive Manufacturing Area" of JIMTOF2022, the 31<sup>st</sup> Japanese International Machine Tool Fair, November 8-13 at Tokyo Big Sight.

### **Main Features**

- (1) Improved productivity by reduction in sintering and milling time
- (2) Productivity improvement by extended unmanned operation
- (3) Reduction of operator workload

### **Improved productivity by reduction in sintering and milling time**

To reduce the sintering and milling time, directly linked to the productivity of customers, the upgraded machine completely reviews the data processing method of the software and minimizes the wait time between operations, achieving a 17.3% reduction in sintering time compared to the conventional model.

Fig. 1. Sintering and milling time comparison between conventional and upgraded machine



	Conventional	Upgraded	Time in reduction (Rate of reduction)
Sintering time	3:23:52	2:48:39	0:35:13 (-17.3%)
Milling time	11:10:34	10:57:12	0:13:22 (- 2.0%)
Total time	14:34:26	13:45:52	0:48:34 (- 5.6%)

\*Data is not intended to guarantee the performance.

\*Time in reduction (rate of reduction) varies depending on the machine specifications and workpiece size.

## Productivity improvement by extended unmanned operation

To improve the machine utilization rate and ensure safe and reliable unmanned night and weekend operation, the newly upgraded **LUMEX Avance-25** achieved a reduction in the amount of surplus powder (60% reduction compared to the conventional) and increased in the hopper capacity (conventional 12 liters to 29 liters). By setting the maximum amount of powder in the machine, it is no longer necessary to add powders in the middle and collect excess powder during machine running when building a maximum height 300mm workpiece (including base plate thickness).

In addition, the **LUMEX Avance-25** has strengthened the dust prevention measures for the important part of mechanical structure. The protective window cover for laser irradiation is equipped as standard, and by reducing fume adhering and suppressing molding defects, prevents unexpected machine stops and alarms.

The "Operation Status Monitoring Function," which optimizes production efficiency, and the "Matsuura Remote Monitoring System," which reduces machine downtime in night/weekend unmanned operations, are available as options.

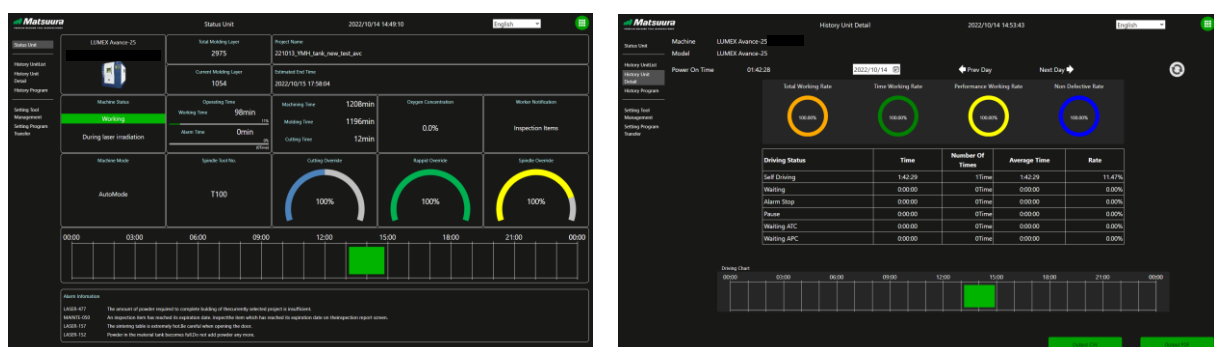


Fig. 2. Screen of Operation Status Monitoring

## Reduction of operator workload

To reduce the operator's workload, the newly upgraded **LUMEX Avance-25** offers advanced software to minimize setup time before operation. The capability to load large-capacity projects and handle large-sized and complicated-shaped workpieces, the software can shorten the reading time during data transfer. In addition, direct operation from an external device is possible, and large-capacity projects can

be operated with no stress by the available hard disk space inside the machine.

For ease of maintenance, the "Disposable Fume Collector System" is available as an option that enables automatic filter switching. It is possible to operate the machine without interruption and without contact with fumes. This ensures high workability and safe work environment can be maintained. In addition, the machine structure has been upgraded to reduce the workload during machine operation.

<b>Main Specification</b>		<Upgrade>	<Reference>
Item	Unit	<b>LUMEX Avance-25</b>	<b>LUMEX Avance-60</b>
Travel (X/Y/Z axis)	mm [in.]	260/260/100 [10.23/10.23/3.93]	610/610/100 [24.01/24.01/3.93]
Travel (U/W axis)	mm [in.]	185/522 [7.28/20.55] (STD) 300/522 [11.81/20.55] (OP)	500/990 [19.68/38.97]
Max. workpiece size	mm [in.]	W256xD256xH185 (STD) [W10.08xD10.08xH7.28] W256xD256xH300 (OP) [W10.08xD10.08xH11.81]	W600xD600xH500 [W23.62xD23.62xH19.68]
Loading Capacity	kg [lb.]	90 [198] (STD) 150 [330] (OP)	1,300 [2,860]
Spindle speed	min <sup>-1</sup>	45,000	45,000
Spindle taper		1/10 taper #20 (Matsuura special)	1/10 taper #20 (Matsuura special)
Rapid traverse rate (X/Y/Z axis)	m/min [ipm]	60/60/30 [2,362.20/2,362.20/1.180.10]	60/60/30 [2,362.20/2,362.20/1.180.10]
Laser type		Yb Fiber Laser	Yb Fiber Laser
Laser power	W	500(STD)/1,000(OP)	1,000(STD)/500(OP)
Tool storage capacity	tools	20	20
NC system		<b>Matsuura I-Tech Avance</b>	<b>Matsuura I-Tech Avance</b>