

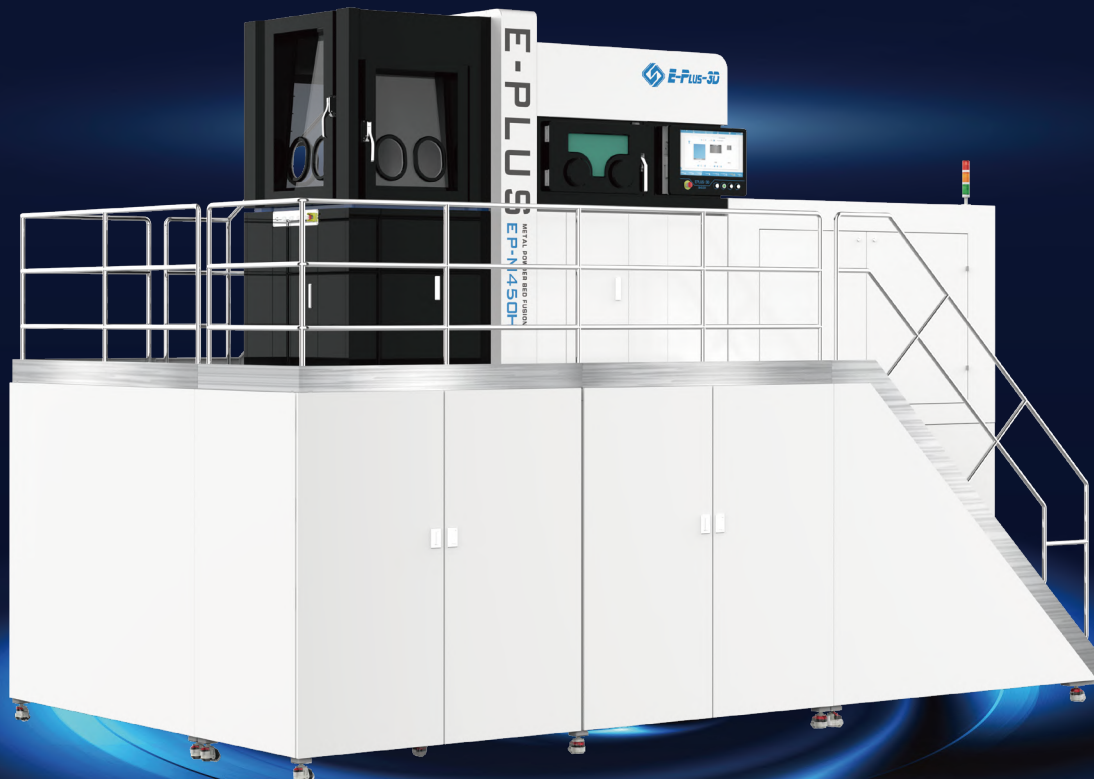


**METROLOGY**  
SOLUTIONS



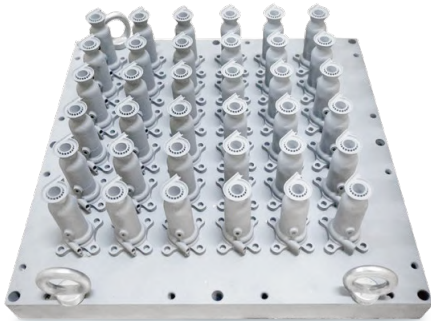
# EP-M450H

Large Size & High Speed & Reliable Production  
Metal Additive Manufacturing System

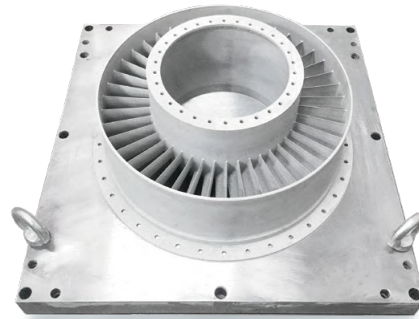


# EP-M450H

With a building chamber size of 456 x 456 x 1080 mm<sup>3</sup>, Eplus3D Introduces EP-M450H to the successful line of MPBF™ 3D printers. The new EP-M450 is a marvelous metal printer that makes the production of reliable and high quality large metallic parts viable on industrial scale without requiring any tools.



Multi-oil pipeline assembly parts  
IN718 high temperature alloy  
420\*420\*110 mm<sup>3</sup>



Engine turbine casing assembly  
IN718 high temperature alloy  
φ 410\*240mm<sup>3</sup>

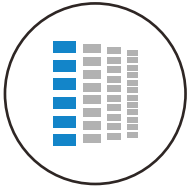


Engine leaf ring structure  
316L stainless steel  
φ 400\*60mm<sup>3</sup>



TC4 titanium alloy  
φ 393\*340mm<sup>3</sup>





## « HIGH QUALITY

- Printed parts' density > 99.9 %, deviation in parts' mechanical properties < 5 %.
- The optimized gas flow design ensures efficient removal of smoke and splashes as well as achievement of uniform and consistent full size printing.
- Dynamic software with ability to divide the model into different sections like upper and lower surfaces, core areas and small areas etc. Different process parameters can be applied individually to these parts for high printed part quality.
- Repeatable positional accuracy along Z-axis of building direction  $\leq \pm 5 \mu\text{m}$ .
- Overlapping deviation with dual laser printing  $\leq \pm 0.1 \text{ mm}$ . Overall mechanical properties of the printed part remains same when compared to printing results with the single laser machine.



## « HIGH EFFICIENCY

- Build chamber size (XxYxZ): 456 x 456 x 1080 mm<sup>3</sup>, build chamber volume > 200 L.
- Printing with increased layer thickness can be realized, increasing the production capacity.
- With in-house developed processing software (EP-Hatch), optimized scanning strategies can be achieved yielding reduced print duration.
- Optional dual laser system with 2\*500 W fiber lasers increases printing efficiency by 70 %.
- Maximum building rate of 55 cm<sup>3</sup>/h.
- Bi-directional powder re-coating method leads to reduced re-coating time.



## « RELIABLE

- Excellent core optic components from world-class supplier and mature process control parameter algorithm provides highest part quality.
- High quality uniform part printing due to excellent control over building environment and components.
- Tightly sealed build chamber maintains oxygen concentration <100 ppm and a stable pressure during printing.
- Sustained monitoring of powder left in feeder and ability to add powder without stopping the machine ensures uninterrupted part printing.
- Double protection of chamber door is attained due to dual gas releasing ports on top of printing chamber.





## « COST-EFFECTIVE & EASY OPERATION

- Two-stage filtration system with permanent filter can use blow back function to remove the fume.
- Highly user friendly software interface and one-click printing technology makes printing super simplified.
- Comparability with different types of recoater blades such as ceramic, PU, alloy steel etc.
- Reduced gas consumption during printing  $\leq 12$  L/min helps reducing operation cost.
- Traceable print records after every print and real-time display of readings for various sensors.



## « OPEN SYSTEM

- Open parameters for editing laser power, scan speed, scan direction, up and down facing surfaces etc.
- Open system ensures freedom to choose among wide range of metal powders available in market.
- Process software can be integrated with Siemens NX software to realize effective planning of design, simulation and printing path planning, within one software and highly improving the production efficiency.
- Process software supports SLC and CLI formats.



# EP-M450H PARAMETER

Machine Model	EP-M450H
Build Chamber (XxYxZ)	456 x 456 x 1080 mm <sup>3</sup>
Optical System	Fiber Laser 500 W/1000 W (single or dual-laser optional)
Spot Size	80–120 μm
Max Scan Speed	8 m/s
Layer Thickness	20–120 μm
Building Speed	Single Laser : 15–35 cm <sup>3</sup> /h Dual Laser : 35–65 cm <sup>3</sup> /h
Material	Titanium Alloy, Aluminium Alloy, Nickel Alloy, Maraging Steel, Stainless Steel, Cobalt Chrome, Copper Alloy, etc.
Power Supply	380 V, 10 kW, 46.4 A, 50 / 60 Hz ( Dual Laser : 13 kW, 50 A )
Gas Supply	Ar/N <sub>2</sub>
Forming chamber oxygen content	≤100 ppm
Dimension (WxDxH)	6410 x 3670 x 4850 mm <sup>3</sup>
Weight	15000 kg
Software	EPLUS 3D, EP Hatch
Input Data Format	STL file or other convertible format

Notice: Eplus3D reserves the right to explain any alteration of the specifications and pictures.

