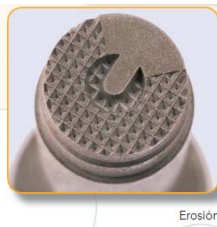


## METAL LASER SINTERING (M3 LINEAR)

### Description and characteristics of the technology

Linear M3 is the first machine in the world for materials processing using laser built in modular. The machine consists of the laser station and the axis actuated by the high precision dynamic linear motors. The technology is made up of 3 modules to work effectively, saving time and money and allows exchange between technologies flexibly.



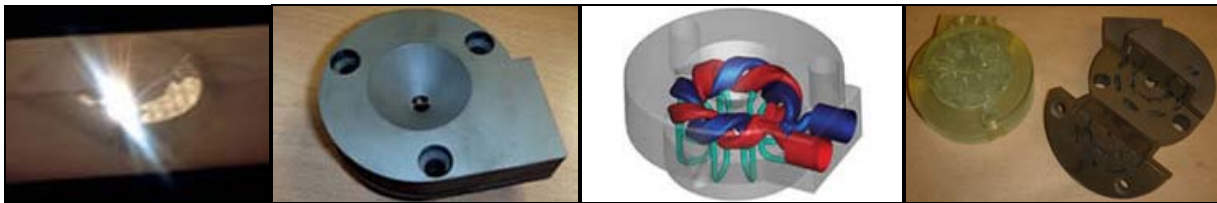
### Advantages

- **Save time and money.** Especially suited to the construction of tools for the manufacture of prototype parts.
- The best **flexible technology.** Allow switching between processes quickly and easily.
- Highest beam **accuracy and quality** is achieved by reducing the scanning area
- 100% of density in parts and tools manufactured by LaserCUSING of metal powder for single components.
- **3D Erosion over freeform surfaces.**
- Allows the manufacture of **complex cooling channels** thereby reducing the production cycle times.
- Allow **rebuilding tools and inserts** with the ability to weld onto metal surfaces.

## LASERCUSING ® TECHNOLOGY

The LaserCUSING ® is a technology based on the fusion of metal powder of a single component. This process allows the manufacture of parts so that the metal powder is completely melted layer by layer, thus achieving a density of the piece almost 100%. The special strategy of developed exposition, also allows the generation of solid pieces and large volume free of distortion.

It is also possible to do a hybrid construction, which is made from a workpiece machined previously and adding a supplement with LáserCUSING ®. To perform this type of piece must be constructed before a steel base.



### Applications

- Manufacture of tools and inserts for molds.
- Reduced cycle time and process optimization.
- Reconstruction of tools and molds.
- Manufacture of prototype parts in metal.

### Technical characteristics

Laser system	Solid state laser 100W
Positioning accuracy	15µm
Construction area L	300x350x300mm (x,y,z)
Layer thickness	20 – 80 µm
Production speed	2 – 20 cm <sup>3</sup> /h (depending on material)

### Materials

- Stainless Steel CL 20ES (1.4404)
- Hardened Steel CL 50WS (1.2709)
- Hardened Steel CL 60DG (1.2709 modified)

## 3D EROSION TECHNOLOGY AND ENGRAVING

3D Erosion technology allows not only perform deep inscriptions but also 3D engraved freeform surfaces. The material is eroded layer by layer and by the laser action.

The technology is complementary to LaserCusing<sup>®</sup> so they can be applied optimally from the economic point of view in addition to milling, because it does not require the complicated and additional task of generating and producing electrodes.



Es posible realizar marcas e inscripciones sobre diferentes tipos de metales y plásticos mediante la aplicación de un rayo láser. Mediante la erosión del recubrimiento es posible crear elementos con diseño día y noche.

It is possible to make markings and inscriptions on different types of metals and plastics by applying a laser beam. Through erosion of the coating it can be created elements with day and night design.

### Technical characteristics

Workspace	450x450mm
Part Size max.	800x500x400mm
Maximum Part Weight	500 kg
Maximum dimensions of marking area	450x450mm
Maximum speed of the laser	7 m/s
Focus diameter	70 µm

### Applications

- 2D, 2.5D and 3D Erosion
- Marking and Engraving Surfaces.