



TRASER®

TRABECULAR LASER MELTED TITANIUM



permedica
ORTHOPAEDICS

Additive Manufacturing

Additive manufacturing (or 3D printing) is a technology that allows to produce three-dimensional solid objects from a digital model using as a raw material metal powder.

Does not replace completely but rather complements the traditional machining processes.

The objects are created by adding the material in successive layers one over the other up to completion of the object.

This differs from traditional machining process with machine tools, in which the object is obtained by subtracting material from the raw material.

Selective Laser Melting is an additive manufacturing technology that selectively melts and sinterizes by means of the thermal energy from a laser beam specific portions of titanium powder layer to create 3D solid parts

Selective Laser Melting process take place in an inert atmosphere (Argon) in order to avoid any titanium powder oxidation.

TRASER[®] Raw material
Titanium powder - Ti6Al4V (ISO 5832/3)

CHEMICAL ANALYSIS

Element	Result (Wt %)
Aluminium	6.13
Carbon	0.01
Iron	0.21
Hydrogen	0.002
Nitrogen	0.034
Oxigen	0.09
Titanium	Balance
Vanadium	3.82

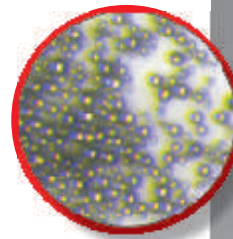
Production flow



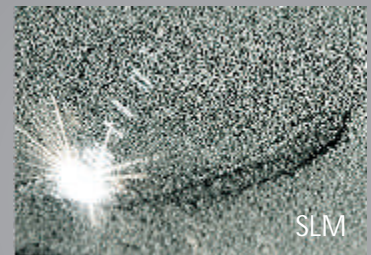
3D - CAD Model



Titanium Powder



power diameter range: 16 - 76 µm



SLM



Green State



Thermal Treatment Sandblasting



Traditional milling and turning processes