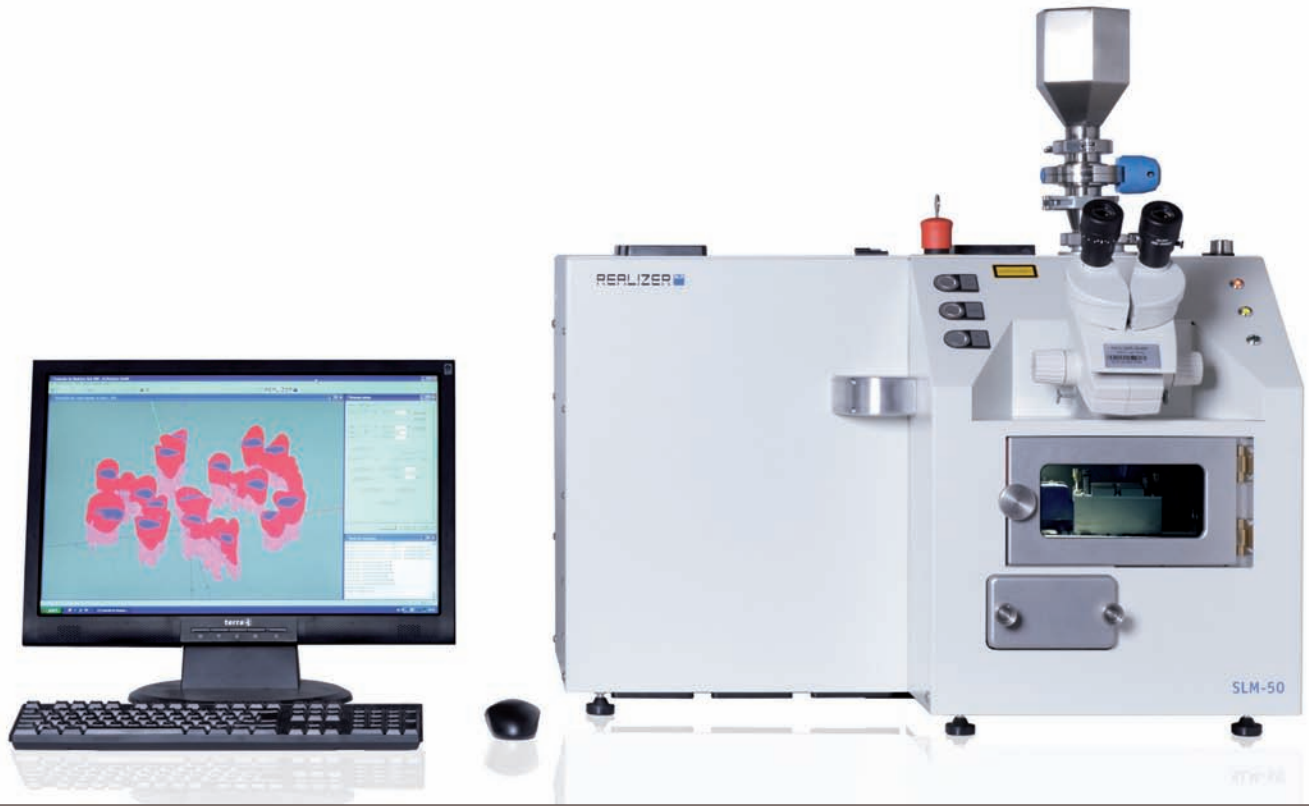
SLM 50

Desktop Machine



REALIZER SLM

ReaLizer in Action

SLM 50
for manufacturing jewellery Components

With the SLM 50, Realizer delivers the globally first SLM™ desktop machine for manufacturing components made of metal. The desktop device has been designed for the manufacturing of components with a diameter of up to 70 mm and a height of up to 40 mm.

Realizer, in its function as technology leader, can fall back on many years of experience with this process in the development of SLM™ machines. As the developers of Selective Laser Melting, in 1999 they launched the world-wide first SLM™ machine for the manufacturing of components made from metallic materials.

Selective Laser Melting

For Selective Laser Melting (SLM™), the work piece is directly created in layers, based on 3D data. To effect this, metal powder (e.g. stainless steel, tool steel, cobalt chrome, or gold) is applied in thin layers and melted on at the predetermined locations using a powerful fibre laser. Following each melting process, the work platform is lowered so that the next layer can be applied. This way, precise and complex functional components are created which not only feature the same material properties as conventionally produced components but can also be processed the same way.

Wall thickness	Weight
0,2 mm	5,92 g

Wall thickness	Weight
0,3 mm	9,60 g

Wall thickness	Weight
0,2 mm	6,05 g

progold master alloys

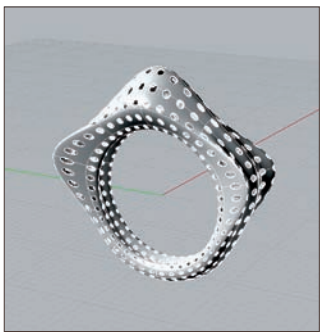
ReaLizer Partner for Precious-Metal-Powder

Traditionally, 70% of industrially manufactured jewellery is cast. The wax models necessary for lost wax casting are, for the most part, manufactured in silicone (rubber moulds). For a few years now, we have manufactured some of the wax models using 3D wax printers (3D printing). This was the first step of CAD/CAM technology into jewellery manufacturing.

The use of SLM machines for jewellery making offers completely new options. Jewellery is manufactured directly from 3D data, without wax models and without casting, from any jewellery alloy desired (gold, silver, palladium, platinum, titanium, steel). This way, even small quantities (customization) and individual pieces can be manufactured at similar cost as large series. The SLM technology provides jewellery designers with significantly larger design freedom; many design ideas can now finally be implemented technically. Hollow parts and very thin walls of up to 0.10 mm can be produced. This saves material and allows for voluminous parts at a low weight.

Both the detail precision and the post-polishing surface quality that is very important for jewellery are better than that of cast jewellery. In addition, the SLM manufacturing is environmentally friendly. Many work steps inherent in casting that are harmful to the environment are eliminated. Far less energy is consumed and no waste is generated, such as silicone rubber, burned wax, investment for casting and ...

The huge design freedom, the superior post-polishing surface qualities, the lower wall thickness, the lower weight and the corresponding material savings are the decisive advantages of using SLM machines in jewellery making.

CAD-Design	SLM Manufacturing	Polished Part
		

Specifications	
Construction volume	Platform diameter 70 mm, max. construction height 40 mm
Thickness of layers	20-50 µm
Laser type	Fibre laser 20 to 120 W
Power supply	16A, 230V
Power consumption	1.0 KW
Argon consumption	approx. 30 Liter/h
Dimensions	W800 x D700 x H500 mm
Weight	approx. 80 kg
Software	ReaLizer Control Software
Materials	Cobalt Chrome, Stainless Steel 316 L, gold-, silver-, palladium-, titanium alloys

REALIZER SLM

ReaLizer GmbH
Hauptstraße 35
33178 Borchen
Germany

Phone 49 (0) 5251 63232
Fax 49 (0) 5251 63062
E-Mail info@realizer.com