



With colour  
touch display &  
eco mode!

# LaserStar T plus

The compact power laser from BEGO

- Compact and powerful, with user-friendly features
- Precision welding thanks to controllable welding energy with pulse time, charging voltage and focus adjustment
- Ergonomic design and arrangement of the controls directly in the field of vision for convenient and fatigue-free working
- Simple operation with a large colour touch display and intuitive menu navigation
- Pulse shaping for high-strength stress- and crack-free joints
- Eco mode switches off all unnecessary components in idle mode and reduces operating costs
- The external Ventus extraction unit efficiently removes welding fumes from the welding chamber, ensuring maximum safety at the workplace

Partners in Progress



## Quick and efficient working

With laser welding, you can reduce the time required by up to 80% since solder preparation and the use of welding flux is not necessary: A soldering model is not required – work can be conveniently performed directly on the master model.

### The advantages for you:

- Time savings with laser welding as a state-of-the-art joining technology
- Protection of resources since additional soldering materials are not required



## Maximum stability and biocompatibility

Compared to soldered connections, the joints created with deep welding are high-strength, as well as being mechanically far more resilient and durable.

By not using base solder, real laser welding enables a homogeneous alloy structure to be created and galvanic corrosion to be effectively prevented.

### The advantage for you:

- Additional safety and reliability for your customers and patients

## Precise welding

The adjustable focus of 0.2–2.6 mm ensures high-strength joints by means of targeted punctual welding, even with thin orthodontic wires or in interdental spaces.

Regardless of whether bridge or supra constructions: Compared to soldering, laser welding guarantees far great accuracy of fit.

### The advantage for you:

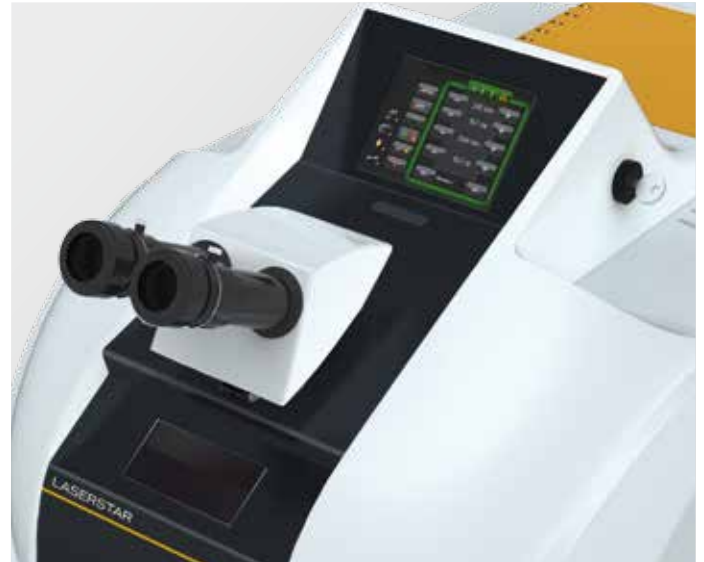
- Perfect welding results for a large range of indications

## Large colour touch display

The LaserStar T plus is operated and controlled using a 5.7 inch colour touch display which offers quick response times and simple menu navigation. The large active area of 5.7 inches as well as the simple menu navigation present a real improvement in terms of operation compared to more conventional concepts.

### The advantage for you:

- Convenient, intuitive operation



## Eco mode

- The unit switches off all unnecessary components in idle mode.
- The unit can be restarted in less than 1 second at any time.
- Consumption of just 10 W in Eco mode compared to 200 W in standby mode.

### The advantages for you:

- Active reduction of lamp wear and tear
- Reduction of operating costs

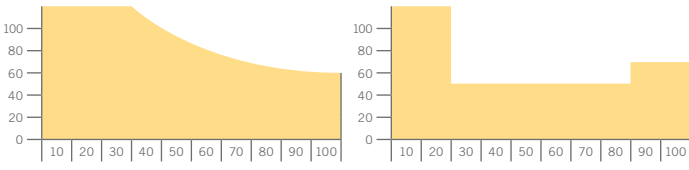


## Pulse shapes take account of the alloy properties

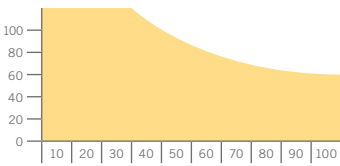
For optimal material preservation: Thanks to temporal modulation of the laser pulse which is programmed to suit the material type, the unit is able to take the metal properties of the alloys into account when welding. 4 pulse shapes are predefined, a further 12 can be individually programmed.

### The advantages for you:

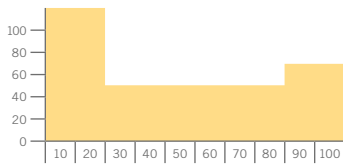
- High-strength joints
- Reduction of the risk of possible stress and cracks in the component



### Non-precious metal alloys (Wirobond®, Wironit®)



### Gold based alloys (BioPontoStar® XL, PlatinLloyd®)



### Palladium based alloys (BegoPal® 300)

### Standard pulse shapes incl. titanium

## Simple installation, operation and servicing

Connection of the LaserStar T plus in the laboratory couldn't be easier. A 230 V connection with normal fuse protection is sufficient. Automatic adjustment to the existing voltage 110 V/230 V – LaserStar T plus can thus be connected directly to the work station. In order to eliminate emissions produced as a result of welding, the BEGO Ventus extraction system which has been specially developed for this purpose can be simply attached to the connection piece.

The controls in the working chamber provide direct access to all important welding parameters without having to interrupt the process for unnecessarily long periods.

### The advantage for you:

- Ergonomic arrangement of the controls for convenient and effective working



## LaserStar T plus

### Technical data

• Laser type	Nd: YAG
• Wave length	1064 nm
• Pulse energy	60 Joule
• Pulse length	0.3–50 ms
• Rated power	60 W
• Pulse peak output	max. 8 KW
• Spot diameter	0.2–2.6 mm
• Pulse frequency	Single pulse, 1–50 Hz
• Pulse shapes	4 fixed, 12 variable available
• Microscope 4H Jena with TrueView function	16-fold (visible magnification)
• Target setting	cross line in microscope
• Welding parameters	can be set with 3 joysticks both inside and outside the welding chamber
• Inert gas nozzles for argon	1 fix, 1 flexible
• Illumination of the working chamber	LED ring light, adjustable
• Weld smoke extraction	integrated connection for external extraction system e.g. BEGO Ventus
• Water/air cooling with ion filter	integrated
• Connection values	230 VAC/50 Hz, 1 phase, 13 A or 110 VAC/60 Hz; 1 phase, 15 A
• Weight	Approx. 60 kg
• Height	505 mm
• Width	521 mm
• Depth	757 mm

## LaserStar T plus

Scope of delivery	Unit	REF
• LaserStar T plus	1	26405

### Accessories

• Hand rests, height-adjustable	2 pc./1 set	15650
• Pressure regulator for argon inert gas	1	13380
• Lifting table	1	15649
• Ventus filter system for LaserStar T plus	1	26440

## Ventus – compact extraction unit for LaserStar T plus

Ventus is a high-performance filter system specially adapted to meet the requirements of laser welding for the LaserStar T plus from BEGO. It ensures that the vapours and harmful substances extracted from the laser's working chamber remain in the filter and are not released into the air – for the users' safety.

Each time laser welding is performed on material surfaces, a small fraction of the materials is vaporised. This vaporisation creates fine dusts and vapours, which pose a health risk if inhaled. The set airflow ensures ideal extraction of the vapours whilst guaranteeing oxide-free welding results at the same time. The smoke particles are no longer able to settle directly on the lenses of the laser system and damage is kept to a minimum. For maximum safety in the laboratory, the automatic filter monitoring system also alerts the operator when the filter needs to be replaced. Replacing the filters is easy and is completed in just a few steps.



### The advantages for you:

- High protection for users against dangerous fumes and gases
- Oxide-free results thanks to set airflow

### Ventus 230 V, 50/60 Hz

#### Scope of delivery

- Preliminary filter
- Combifilter
- Suction tube dia. 50 mm, 3 m
- Adapter for connection to LaserStar T plus
- Power cable
- Operating instructions

#### Data

• Line voltage	200–240V, 50/60Hz
• Rated power	140W
• Flow rate	59–120 m <sup>3</sup> /h
• Sound level	< 55 dB(A)
• Dimensions	(H × B × T) 512 × 320 × 310 mm
• Weight	21 kg

### Product details

Availability	Composition in % by mass	Thickness/mm	Quantity	REF
Wiroweld (CoCrMo, C-free)	Co 65.0 · Cr 28.0 · Mo 6.0 · Mn · Si	0.35	2 m – 1.5 g	50003
Wiroweld (CoCrMo, C-free)	Co 65.0 · Cr 28.0 · Mo 6.0 · Mn · Si	0.5	1.5 m – 2 g	50005
Wiroweld NC (NiCrMo, C-free)	Ni 60.0 · Cr 22.0 · Mo 9.0 · Fe 4.0 · Nb 3.6 · Al · Co · Cu · Mn · Si · Ta · Ti	0.35	5.5 m – 4 g	50006
Titan Grade 2 wire	Ti 100.0	0.35	5 m – 2 g	50008
AuroLloyd® KF wire	Au 55.0 · Ag 29.3 · Pd 10.0 · In 3.5 · Zn 1.2 · Sn 1.0 · Re · Ru	0.35	5 g	61153
BegoCer® G wire	Au 51.5 · Pd 38.4 · In 8.7 · Ga 1.3 · Ru	0.35	5 g	61164
BegoPal® 300 wire	Pd 75.2 · In 6.3 · Ag 6.2 · Au 6.0 · Ga 6.0 · Re · Ru	0.35	5 g	61165
BegoStar® ECO wire	Pd 51.9 · Ag 23.0 · Au 15.0 · In 6.0 · Sn 4.0 · Ru	0.35	5 g	61171
Bio PlatinLloyd® wire	Au 74.9 · Ag 14.9 · Pt 7.8 · Zn 2.2 · Mg · Mn · Rh	0.35	5 g	61161
Bio PontoStar® wire	Au 86.7 · Pt 10.7 · Zn 1.5 · In · Mn · Rh · Ta	0.35	5 g	61157
Bio PontoStar® XL wire	Au 86.0 · Pt 11.5 · Zn 1.6 · Fe · In · Rh	0.35	5 g	61167
ECO d'OR wire	Ag 40.5 · Au 38.1 · Pd 13.0 · In 8.0 · Mn · Ta	0.35	5 g	61170
InLloyd® 100 wire	Au 78.1 · Ag 15.5 · Pt 3.9 · Zn 2.4 · Ir	0.35	5 g	61163
PlatinLloyd® 100 wire	Au 72.0 · Ag 13.7 · Cu 9.8 · Pt 3.5 · Ir · Zn	0.35	5 g	61152
PlatinLloyd® KF wire	Au 72.8 · Ag 16.1 · Pd 5.7 · Zn 3.0 · Pt 2.0 · Ir · Mn · Rh	0.35	5 g	61158
PlatinLloyd® M wire	Au 70.0 · Ag 11.7 · Cu 10.0 · Pt 5.0 · Zn 1.9 · Pd 1.0 · In · Re	0.35	5 g	61155
PontoLloyd® P wire	Au 77.5 · Pt 9.9 · Pd 8.9 · In 1.4 · Ag 1.0 · Cu · Fe · Ir · Sn	0.35	5 g	61154
Pontonorm wire	Au 73.8 · Ag 9.2 · Pt 9.0 · Cu 4.4 · Zn 2.0 · In 1.5 · Ir	0.35	5 g	61172
PontoRex® G wire	Au 70.0 · Ag 13.2 · Pt 9.4 · Cu 3.0 · Zn 2.0 · In 1.9 · Ir · Rh	0.35	5 g	61151
PontoStar® G wire	Au 85.5 · Pt 11.4 · In 2.3 · Fe · Rh	0.35	5 g	61150

ISO 28319

Subject to modifications in design, scope of delivery and composition. Our instructions for use and recommendations are based on our own experience and trials and can only be regarded as guidelines. Date of issue: June 2017.