



## HIGH PRODUCTIVITY- DIAMOND COLD LASER MARKER



**GEMSCRIPTOR PS-500-R**



By modifying the iris or the power, one can modulate the marking to be lighter or darker.

### **Versatile: Inscription of Logos, drawings and True Type Font text**



**Quick release spring holders for Diamonds and special cuts,  
Table branding Set stones– Earrings –, Girdle marking**



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## A SYSTEM DESCRIPTION

### Easy installation.

The system is mounted on castors. It runs on 240 volts 50 – 60 Hz.

The electrical consumption of the machine is less than 1200 Watt. (7 VA)

The frame is isolated and the laser-marking unit **vibration free**

- Gem **authentication** and **identification**
- **Long life** metal-ceramic resonator (One Billion shots),
- **Mark any type of gem, pearls, etc** on any side
- Mark: **Rounds, Pears, Marquise, Emerald, Princess...**
- **Mark mounted stones** on rings, earrings ...
- **No need for a coating** before marking
- Easy access to the working area, easy mount of the stones on a **quick release magnetic holder**
- **Inscribe on any type of gem** or transparent stone even mounted
- Easy to operate even by unskilled workers
- **Direct control** of the inscription on the vision system in order to control while programming and inscribing the gem. **Never miss a marking**
- High productivity, mark **600 stones** and more in a day
- **No patent infringement**
- Desk help and **fast service** when needed
- **Deep UV laser, cold ablation, no danger of damaging a stone**
- Extra fine marking with **line width of 3 to 10 microns**
- Choose any **letter and or logo height** (<20 microns to > 2 mm)
- **Import** of any characters (All **True type fonts**) **logos** and **DXF format drawings**
- **Focus** adjust is **easy** and visible on the screen, no need to focus each letter or marking
- Easy **maintenance**; gas purge is **performed automatically**
- **Mark any rounds, fancy shapes, any sizes**

## A1 LASER UNIT

- High performance compact Excimer Laser Unit
- Extra long life, metal ceramic design, Corona pre-ionisation.
- Economical, Long dynamic and static gas life time
- Cold UV laser technology harmless for diamonds, no coatings or protection needed
- Very high productivity, mark up to 600 jobs/stones and more in one day  
(One job is one stone marked with a Logo and 12 Letters or numbers)
- Power control, for deeper or shallow marking jobs
- Dot distance control for higher marking density
- Air cooled, metal ceramic design,
- Diaphragm control for line width selection
- Computer controlled, long dynamic and static gas life time
- ArF, 193 nm Excimer laser harmless for diamonds
- Gas filter inside the laser
- The EX501 works at 250 Hz? Higher marking speed

GEMSCRIPTOR Laser	BLS PS500
Wavelength	193 nm
Energy Max.	12 mJ
Energy density mm <sup>2</sup>	0,66 mJ
Max. Rep. Rate	250 Hz
Dynamic gas life time	8.00E+06
Pulse length	10 ns
Stability	<2%
Tube service	0,5 Billion Pulses
Beam size	6 x 3 mm
Divergence	0,5 x 1 mRad full angle
Type of laser	BLS EXCIMER UV

## A2 POSITIONING SYSTEM, GEMSCRIPTOR PS500

The OWIS optical grade co-ordinate tables are high precision tables

### X-Y-Z Tables

- |                             |  |
|-----------------------------|--|
| • Z axis, travel 25 mm      |  |
| • X – Y axis, travel 25 mm. | High precision linear tables                                 |
| • End contacts              | Inductive PNP contacts on each end                           |
| • Max. Working speed        | 2 mm/sec   |
| • Backlash free ball screw  | pitch: 1 mm  |
| • Guidance linearity        | 10 $\mu$ for Z axis, 2 $\mu$ /100 mm for X – Y axes          |
| • Repeatability             | Z axis 10 $\mu$ (vertical) X – Y axis 2 $\mu$ m (horizontal) |
| • Smallest step, resolution | 0.12 $\mu$   |

## A3 User friendly operation

The high definition vision system makes it easy to position each stone into focus.

All axes are controlled by means of on the screen buttons or with the mouse.

The image of the stone is directly seen in the programming window of the computer screen. See while you work no risk of missing

This unique feature allows the operator to align the stone directly in its working position.

Mark anywhere on the stone, at any angle, mark on two lines in one job

## A4 SOFTWARE

The program is easy to use and the job is visible on the screen.

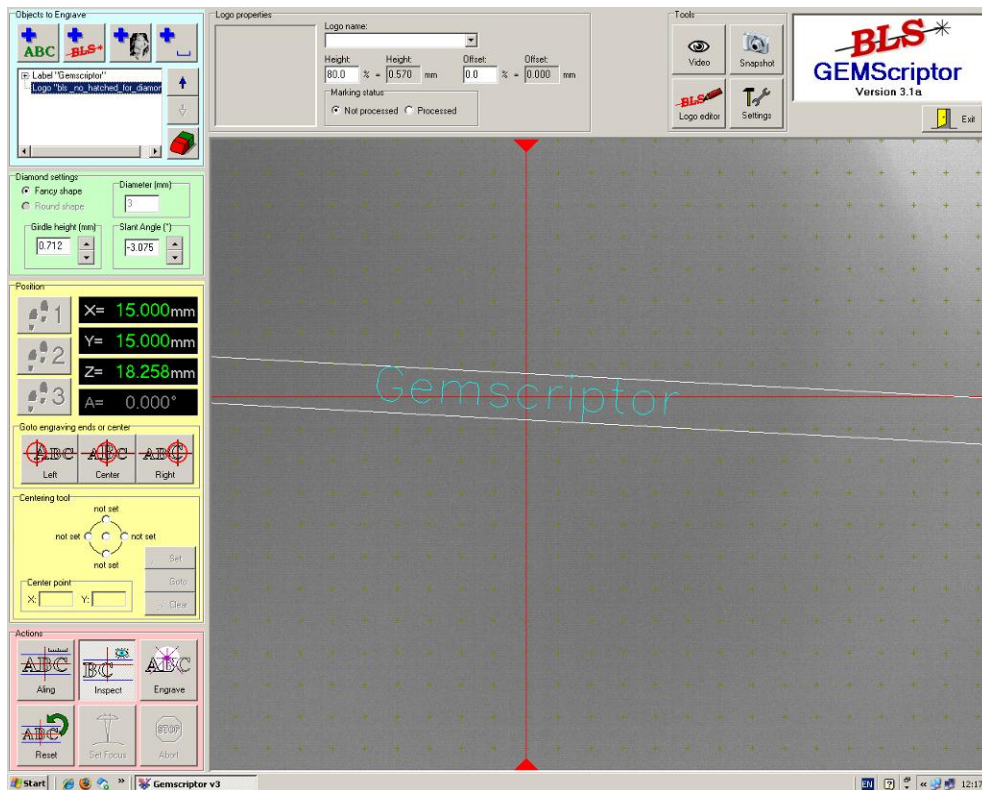
The working window has the image of the stone as background.

The dimensions of the marking job on the viewing screen are in accordance with the marking on the stone.

This allows an eventual second marking at exactly the same position as the one made before.

Before starting the programmed marking there is a possibility to check the focusing of each letter or marking in order to teach-in or correct the exact focusing position of each.

This is a so-called WYSIWYG system. (What you see is what you get)



The marking programs have two options:

Marking of round stones with the rotation axis for positioning of each marking (Option)

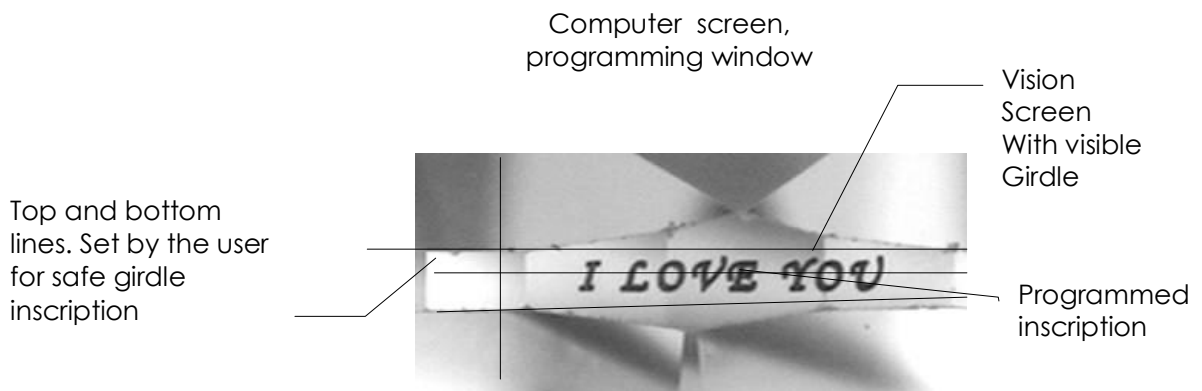
Marking of fancy shape with the rotation axis deactivated in order to mark linearly

The user selects the height of the marking in function of girdle height.

A cross hair with two parallel lines representing the limits of the girdle helps to adjust and position the marking in the centre of the girdle.

Several settings are possible: select the height in function of the girdle height and the spacing between each letter or marking in %.

**Mark up to 20 characters and two logos in one working session with the three point auto focus.**



Other significant parameters that can be adjusted:

- Speed of the X-Y Z tables
- Laser Power and line width
- Pulse rate: the dot distance is selectable, from 0,1 micron and up for lighter or deeper marking.

*Advantages of the BLS GEMSCRIPTOR PS500*

All elements such as: Special Gas filters, regulators, gas bottles and vacuum pump are inside the cabinet. (No need for a separated housing for the gas bottle behind the desk)  
Computer and programs are included.

USB camera, with image enhancer.

The installation is done in a minimum of time. The apprentice is done in half a day.

The machine is delivered with several holders for marking on loose stones, set- or mounted stones.

Table marking holder and program for larger markings

High speed marking the laser works at 250 Hz

Marking time is < 1 sec per character.

Auto-focusing on three points for marking on curved or angled surfaces



## A5 CONSTRUCTION

Industrial Aluminium profiles with adjustable feet.  
Closed construction with security locks. Laser class 1

### Dimensions BLS PS500 GEMSCRIPTOR

Length of construction	1040 mm
Width	600 mm
Height	1 450 mm
Weight	±210 kg

### Security

The construction is made following the DIN security standard.  
Laser Safety class I: closed safety-working area with sliding door.

## A6 PC SPECIFICATIONS FOR GEMSCRIPTOR SOFTWARE

- Operating System: Windows XP
- **The program does not working with Windows Vista**
- Processor: Pentium 4
- RAM: 512 Mb minimum
- Available hard disk space: 300Mb Minimum
- One USB 2.0 port available for camera
- One Ethernet network adapter for communication with motion controller (mandatory)
- One Ethernet network adapter for remote control (Optional)
- Display resolution: 1280x1024 or above
- One PCI slot available (PCI board size requirement : 12cm height above motherboard level and 18 cm length) for communication with laser head
- One free USB connector for enhanced laser control