
Regulatory information

Compliance standards

This hardware was designed and built in compliance with the relevant EC marking and EEC directives :

- EMC Directive 2014/30/EU
- LDV Directive 2014/35/EU
- MD Directive 2006/42/EC



Any change or transformation made to this equipment, any adaptation or installation of accessories not recommended by BOXFORD, any installation of this equipment in a manufacturing process, any piloting by a robot, any connection to an external automaton, any change to the characteristics of this material, can make it become non-compliant with the European Directives it is subjected to. Such changes void the manufacturer's responsibility. In this case, the person who fits the machine and the equipment is responsible for the EC compliance of the final work station.

Electrical security

This hardware complies with standards EN 60204-1 and EN 60950-1, which also refer to the LASER system safety standard CEI 825-1 (08/2001).

Machine security

This hardware complies with standards EN ISO12100:2010, EN 60204-1:2006+AC:2010.

Electromagnetic compatibility

This hardware complies with the following electromagnetic compatibility standards:

- EN 61000-3-2:2014
- EN 61000-3-3:2013



This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Electrical security



This material is «class 1». The mains plug MUST always be connected to a neutral socket and comply with the regulations in force in the country of installation. If you do not have a plug of this type, have one installed by an approved electrician. Under no circumstances should you depart from this instruction.

The manufacturer bears no responsibility towards any user where alterations have been carried out contrary to the manufacturer's specifications, notably with respect to electrical/electronic elements.



Any operation, other than those mentioned here, must only be carried out by an approved Boxford technician. Do not take the machine apart to repair or clean it : this will void your guarantee.



This symbol indicates that once this equipment has reached the end of its useful life, it must not be disposed of with non-sorted municipal waste, in accordance with the European Directive 2002/96/EC.

The equipment must be disposed of at an appropriate collection point for processing, sorting, and recycling of Waste Electrical and Electronic Equipment (DEEE).

The elements which compose Electrical and Electronic Equipment may contain substances which have harmful effects on the environment or on human health.

By following these instructions, you are helping the environment, contributing to the preservation of our natural resources, and protecting human health.

Overview

Introduction

Thank you for purchasing the BGL machine. Years of testing and refinements have made this unit the ultimate LASER engraving and cutting system.

Thanks to its innovative design with :

- the **"A-sens" Auto sensor concept**, which adjusts the focal length automatically for you according to the surface to be worked on (even when engraving a hollow item),
- the beam concentration with the **"X-beam" eXpanding beam concept** designed to produce perfect quality engraving over the entire surface of the table,

and with its performance results (speed, power and engraving areas), the BGL Machine combines flexibility and full featured performance without sacrificing simplicity, ease of use, or ease of maintenance.



To begin with, we highly recommend that this entire safety manual be read before attempting to use the LASER system.

Contra-indications



Do not use the controls or settings and do not carry out procedures other than those specified in the guides & training, to avoid risking exposure to dangerous radiation.



The machine must never be handled without an adult present. Keep the machine, wires and cables out of children's reach. This machine is only designed for one user. Do not let several people use the machine simultaneously.



The LASER engraving machine is a high performance machine : All safety instructions must be complied with.



Exposure to the LASER beam may cause physical burns or severe eye damage. Proper use and care of this system are essential to safe operation.



This machine is only designed for engraving and cutting purposes and must never be used for other applications.



The LASER machine must be properly installed and connected to an appropriate discharge system.

Do not use this machine in an explosive environment.

The processing materials must be introduced entirely into the machine.



Never expose yourself to the LASER beam. It could cause severe physical burns and irreparable eye damage.



Never operate the LASER engraving machine close to a pacemaker.

Overview



Never operate the LASER Beam without closing the guard or wearing protective glasses. Never operate the LASER system if the doors are in bad condition or can not be closed properly.



Never operate the LASER system without constant supervision of the cutting and engraving process. Exposure to the LASER beam may cause ignition of combustible materials and start a fire. A properly maintained fire extinguisher should be kept on hand at all times.



Never operate the LASER machine without a properly configured, installed, maintained, and operating fume/smoke exhaust system. Fumes and smoke from the engraving process must be extracted from the LASER system and exhausted outside.



Never engrave or cut with LASER materials which may produce toxic and corrosive fumes. DISCONTINUE processing any material that shows signs of chemical deterioration of the LASER system (Systems damaged from this abuse will NOT be covered under warranty).



We suggest that you obtain the Material Safety Data Sheet (MSDS) from the materials manufacturer. The MSDS discloses all of the hazards that may arise from handling or processing that material. The law requires all manufacturers to provide this information to anyone who requests it.



DO NOT ENGRAVE OR CUT PVC (Polyvinylchloride) BASED MATERIALS. The fumes are extremely toxic if you inhale them. The fumes are so corrosive that they can chemically destroy the metallic parts of the LASER system. Damage to the LASER system from this type of abuse **WILL NOT** be covered under warranty.



Never work on the electronics and LASER parts of the machine without having unplugged the machine, as hazardous voltages are present.



Although access to these areas is not necessary during normal use, should you need to open one of these enclosures for service reasons, please remember to unplug the machine first.



Never move or lift the LASER machine without the assistance of other people. Severe bodily injury may occur if improper lifting techniques are applied. Be careful not to drop the LASER system. Not only can it cause bodily harm, but it can also severely damage the equipment and render it inoperable and this will void your guarantee.



Do not move, push, press on, or shake the LASER machine while the engraving is in progress. This might shove the engraving part aside and make the engraving unsuccessful.



Do not connect this equipment to an IT power supply card.

- If the machine is to remain unused for a long period, unplug the power supply and cover the machine (packaging, cover, lid, etc.)
- Do not move the focus carriage holder manually except in case of a mechanical jamming of the machine.
- Do not spill any liquids onto the machine (drinks, cleaning fluids, etc.) unless recommended by BOXFORD (e.g. for lubrication).
- If the engraving process must be stopped, use the function key provided for this purpose on the keyboard of the machine.

LASER safety



This LASER machine contains a sealed carbon dioxide (CO₂) LASER that produces intense and invisible LASER radiation at a wavelength of 10.6 microns (μm) (0.417 10⁻⁶ inch) in the infrared spectrum.



This LASER system contains a CO₂ LASER in a Class I enclosure. However, due to the presence of a visible red LASER diode (power < 1mW), the entire LASER system is classified as Class 2.

- The entire system is completely enclosed with a protective housing. This will completely contain the invisible CO₂ LASER beam under normal use. However, the red diode LASER is a visible LASER beam. **DO NOT STARE INTO THE BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.**
- The key switch and user door will disable the CO₂ LASER beam from firing when the user door(s) are opened. The red diode LASER beam is **NOT** safety interlocked and can be activated with the door either open or closed.



Do not modify or disable any safety feature of this system. Do not operate any system that has had its safety features modified, disabled, or removed. Improper use of controls and adjustments, or performance of procedures other than those specified in this manual, may invalidate the safety of this system.

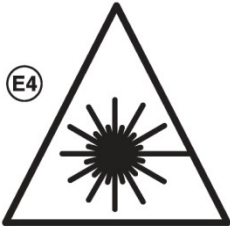
CDRH and EC regulations require all LASER manufacturers to affix warning labels in specific locations throughout the equipment.



The following warning labels are placed on the LASER system for your safety. **DO NOT remove them for any reason. If the labels become damaged or have been removed for any reason, DO NOT OPERATE the LASER system and immediately contact Boxford for a free replacement.**

4 labels

One is next to the beam window where the LASER beam enters the engraving area inside the LASER system and is visible when the door is opened.
The second one is on the right, on the #1 mirror cover.
The third one is located on the LASER head next to the access hole of the #2 mirror.



DANGER - Invisible and visible LASER radiation is present at that place. Avoid eye or skin exposure to direct or scattered radiation.

1 label E6 :

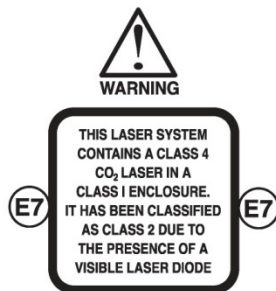
On the outside of the door. Visible from the outside under normal operating conditions with the door closed.



CAUTION LASER RADIATION. Do not stare into beam. Wavelength : 630-680 nm (25 10⁻⁹ - 27 10⁻⁹ inch) - Max. output : 1mW. Class 2 LASER product.

1 label E7 :

On the outside of the door. Visible from the outside under normal operating conditions with the door closed.



WARNING. This LASER system contains a CO₂ class4 LASER in a class I enclosure. It has been classified as class 2 due to the presence of a visible LASER diode.

1 label E8 :

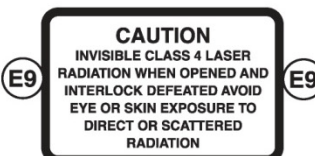
On the outside of the door. Visible from the outside under normal operating conditions with the door closed.



WARNING. Never operate the LASER system without constant supervision. Exposure to the LASER beam may cause ignition of combustible materials which can cause severe damage to the equipment.

1 label E9 :

One is on the door and visible under normal operating conditions.



CAUTION - Invisible class 4 LASER radiation if open and the lock is disabled. Avoid exposing the skin or eyes to direct or diffuse radiation.