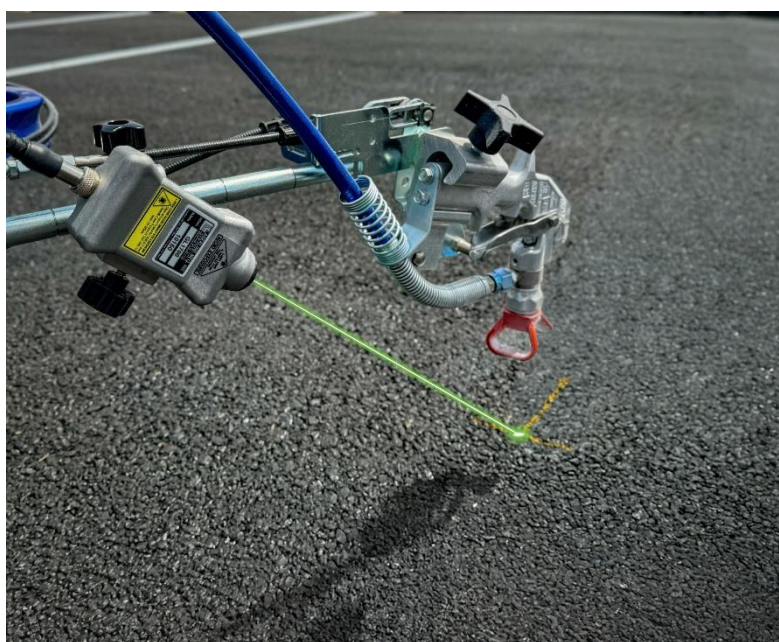


GL1000 SERIES

OWNERS MANUAL – OPERATION GUIDE



GL1000
Guidance Line Laser



GL1700
Start-Stop Laser

L LASERLINE MFG., INC.

1810 SE First Street, Suite H • Redmond, OR 97756

GL1000

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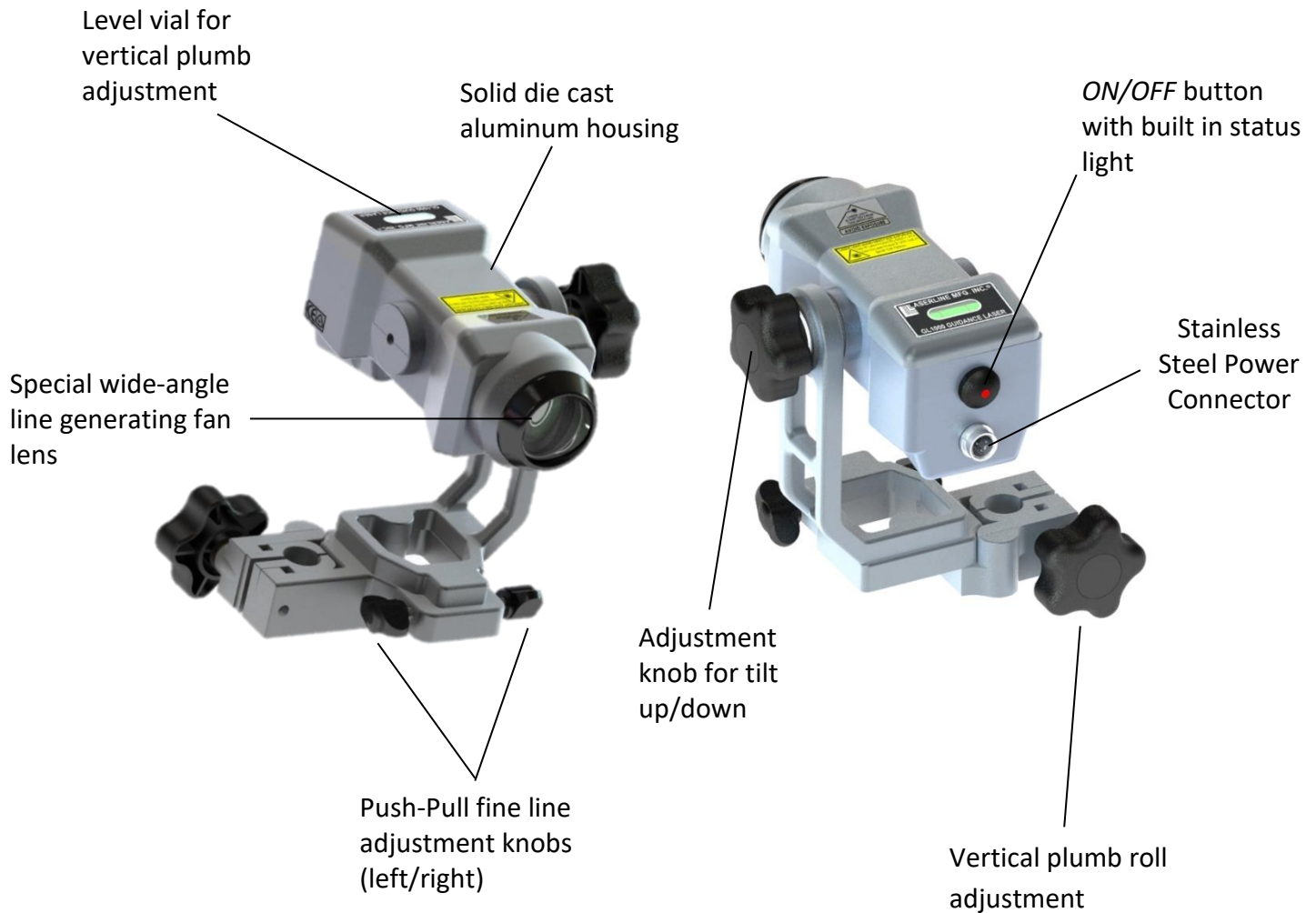
PRODUCT OVERVIEW

The GL1000 Laser Guide was designed from the ground up to provide line control for walk behind paint striping or paint removal equipment.

The GL1000 features a rugged die cast aluminum housing. The special 5/8" mounting bracket allows the GL1000 to attach to virtually any walk behind machine in just minutes. The unit can be powered by 12 or 24 volts DC and only draws 0.1 of 1 amp or less allowing you to operate up to 30-40 hours on a small 12 volt 5Ah ATV battery.

The ON/OFF switch on the back of the laser has an internal LED light to indicate if the GL1000 is getting power. Also the power cord has a strain relief built in to reduce cord fatigue failure.

MECHANICAL FEATURES



ACCESSORIES-REPLACEMENT PARTS

Battery Kit: P/N 3003-0811-1 (U.S.)
P/N 3003-0801-2 (INTL)

Consists of: Hard shelled weatherproof battery case w/ mounting hardware, 12VDC 5Ah lead acid battery plus battery A/C wall charger. (Refer to page 3 for detailed information)



*Powers GL1000 and GL1700 simultaneously

Battery Box Bracket: GRACO 3400/ TITAN P/N 3003-3400

Allows you to clamp the bracket to a round or square tube with 12v battery box attached.



Cables-Adaptors

GRACO LineLazer V "Y" Cable Harness Adaptor. Allows plug and play for GL1000 and GL1700 simultaneously using GRACO's factory onboard 12v battery. P/N 3003-1401



Battery Clip Cable Adaptor. Adapts to any 12- or 24-volt battery source. P/N 3003-1402



GL1000/GL1700 7ft. Power Cord
P/N 3003-0008



Collapsible Reflective Alignment Target: P/N 3003-0076

Heavy duty collapsible crosshair alignment target for vertical and horizontal use. Dimensions are 20"x 14" and collapses down to 2.5". Also features two carrying handles.



12" Extension w/ 5/8 Collar P/N 3003-0027

Allows you to raise the laser as high as 36" for increased visibility on the alignment target.

Includes: Allen wrench and built-in holder.

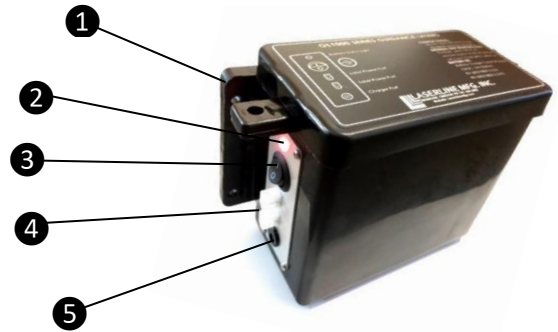


12V BATTERY KIT

Battery Kit: P/N 3003-0811-1 (U.S.)
P/N 3003-0802-2 (INTL)

Consists of: Hard shelled weatherproof battery case w/ mounting hardware, 12VDC 5Ah lead acid battery plus battery A/C wall charger.

- ① Mounting tabs (2) / Mounting hardware included
- ② Red LED indicator for operation, state of charge and charging status
- ③ ON/OFF power rocker
- ④ Built in dual Molex DC output connectors / nominal 12V, 900mA total
- ⑤ Built in charging port / DC input jack 5.5x2.5mm 15V 560mA
- ⑥ 12VDC 5Ah sealed lead acid battery operates 1 laser approx. 30-40 hours
- ⑦ A/C adaptor-charger Universal input voltage, meets level VI efficiency standards with multiple regulatory approvals for safety and EMI.
- ⑧ International Travel Adaptor kit (included in P/N 3003-0802-2)



Battery Box Features:

- Enclosed weather proof plastic box
- Charge control functions built in
- Cell balancing function
- Battery maintaining function
- Current and voltage limited
- Reverse polarity protected
- Short circuit protected
- Thermally protected

Battery Box Operation:

(Approx. 30-40 hours run time using one laser and 15-20 using two lasers)

LED solid = Fully charged

LED blinking = Needs to be charged *(You should have 1-2 days of operation remaining)*

Note: This battery box contains an internal self-resetting fuse. To reset, press rocker switch off, remove/unplug shorted source, wait 1-2 minutes and press rocker switch to on position.



Battery Box Mounting Example
(LineLazer IV)



Battery Box Tips:

- For best battery life and performance, it is recommended to charge your battery box once a week.
- Replace battery with only Duracell model DURA12-5F / 12V 5Ah AGM

“Y” CABLE INSTALLATION INSTRUCTIONS

POWERING TWO LASERS FROM FACTORY INSTALLED GRACO LINELAZER V WIRING HARNESS (P/N 3003-1401)

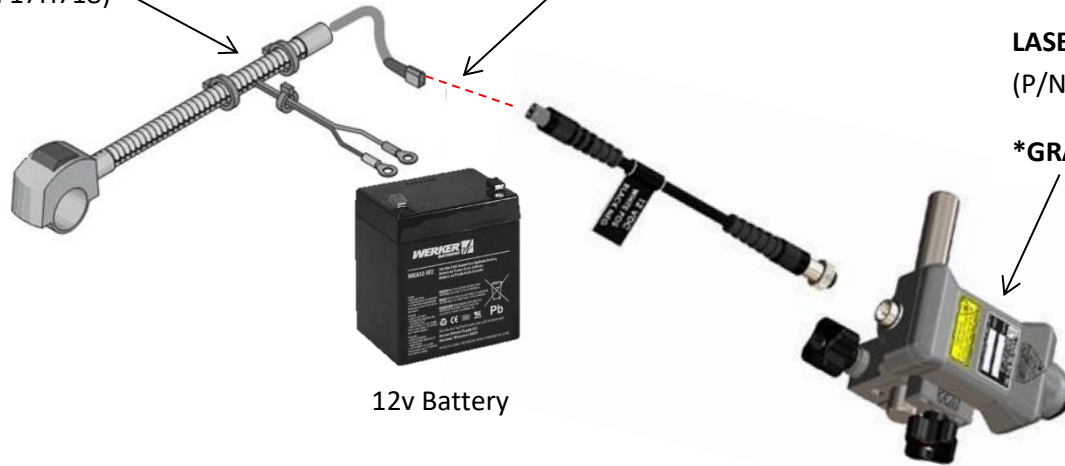
GRACO wiring harness
with on/off rocker switch
(P/N 17H718)

***Note:** You may have to remove the GRACO battery box cover to get access to the wiring harness connections. Once you have access, disconnect the GL1700 connector from the GRACO wiring harness connector. (See below for next step)

LASERLINE GL1700 START-STOP LASER
(P/N GL1700)

***GRACO (P/N 17H714)**

12v Battery



GRACO wiring harness
with on/off rocker switch
(P/N 17H718)

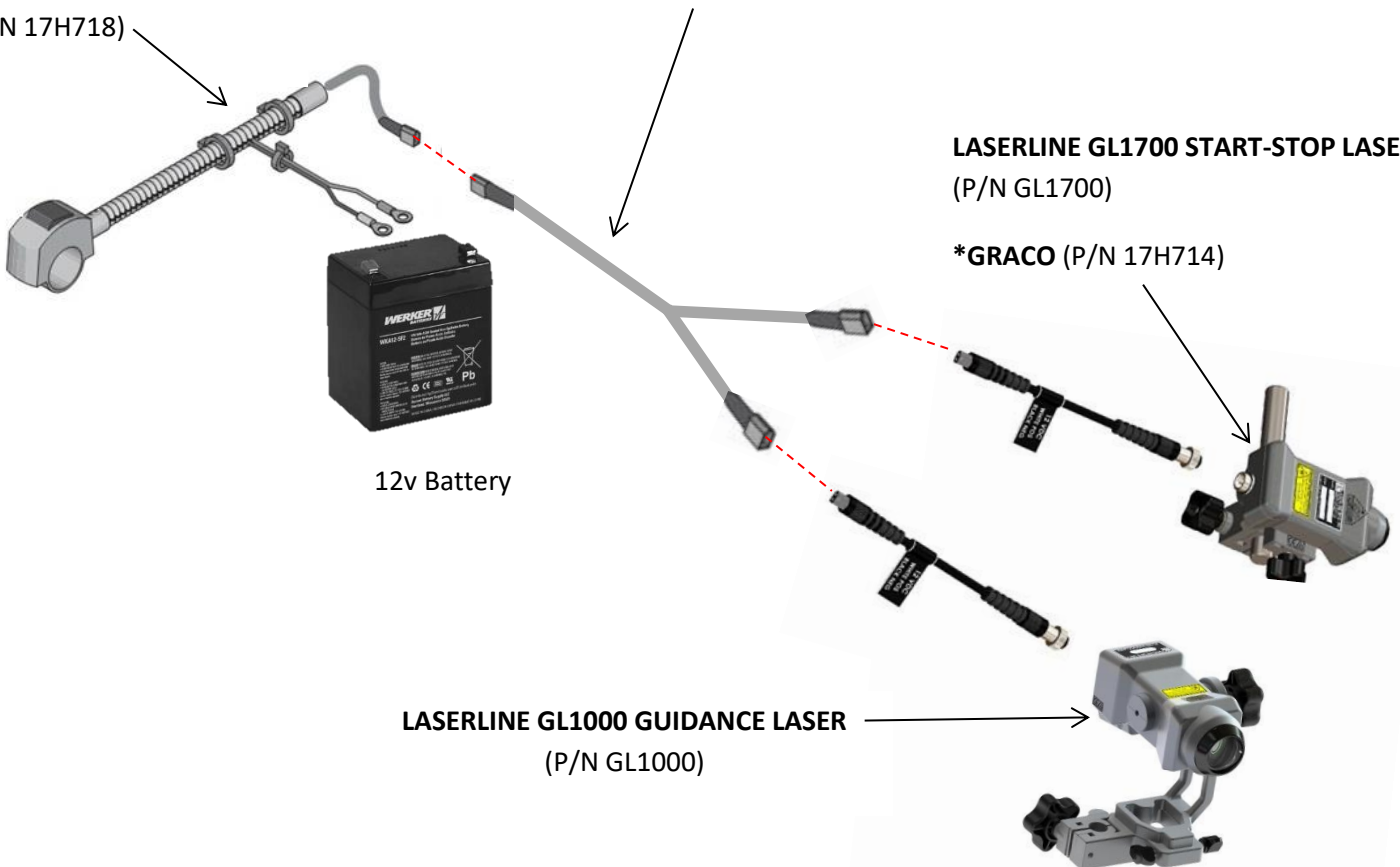
Insert provided LaserLine “Y” cable adaptor (P/N 3003-1401) to the GRACO wiring harness as shown. Then connect both the GL1000 and GL1700 to either one of the two connectors.

LASERLINE GL1700 START-STOP LASER
(P/N GL1700)

***GRACO (P/N 17H714)**

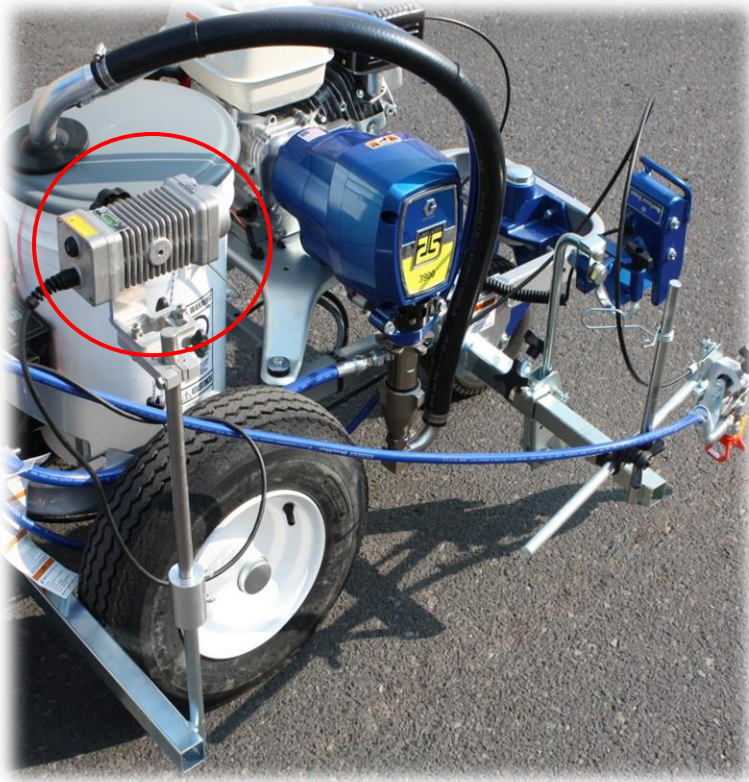
12v Battery

LASERLINE GL1000 GUIDANCE LASER
(P/N GL1000)

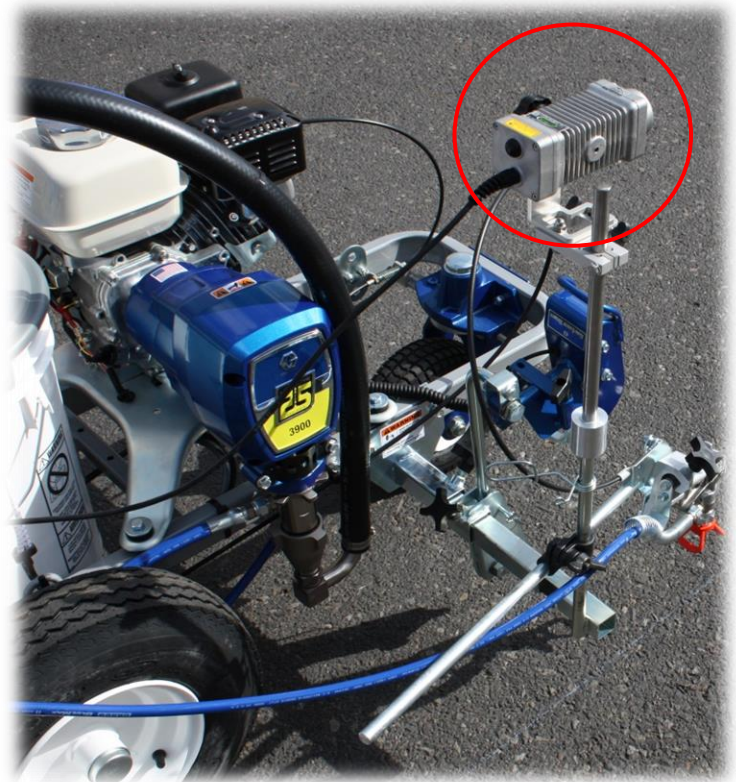


MOUNTING

The GL1000 mounts to any walk behind striper using a 5/8" round gun support bracket.



POSITION 1: Mount in rear above and in line with sprayer.



POSITION 2: Mount in front above and in line with sprayer

Common Battery Kit locations



Above picture shown with 12- volt DC battery kit, bolted to GRACO Series 4 existing plate using supplied 1/4-20 hardware.

**Note: Some machines will require different mounting locations.*

Caution: 

Do Not operate the GL1000 laser guide directly from a generator source as doing so can create over voltage to the laser and damage the electronics



Titan Stripping Machine with optional **3003-3400** Battery Bracket

MOUNTING SUGGESTIONS

The GL1000 laser must be mounted so that it is in line with the gun package and projecting forward in line with where you will be painting to. For day use, the height of the laser unit should be 24" to 36" above ground level for optimum performance. This provides better reflectivity off the target for day use. Recommended height for night use is 12"-24" which provides a longer reference line on the ground.



DAY USE-FRONT
24"-36"



DAY USE-REAR
24"-36"

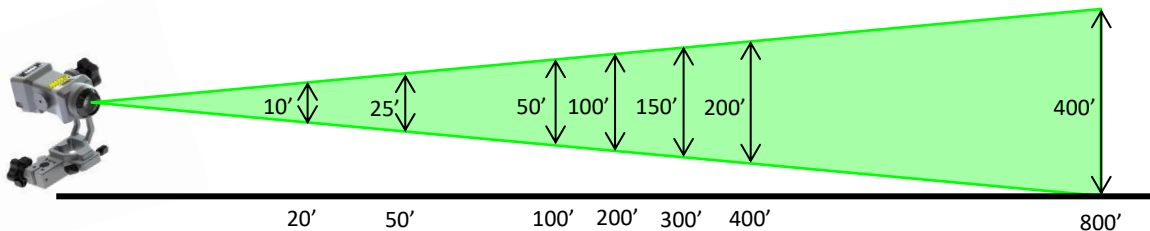


NIGHT USE-FRONT
12"-24"

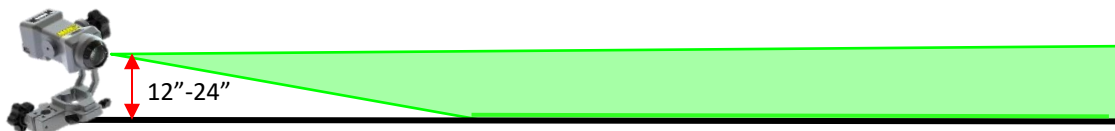


NIGHT USE-REAR
12"-24"

The "Line" is created by a special lens that elongates the laser spot to a vertical fan or plane of light. The fan expands the beam at about 50 feet per 100 linear feet. The fan allows you to easily stay aimed at your far point as it compensates for the up and down movement of the machine caused by uneven surfaces.



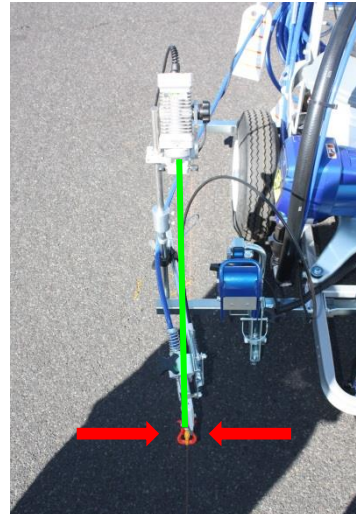
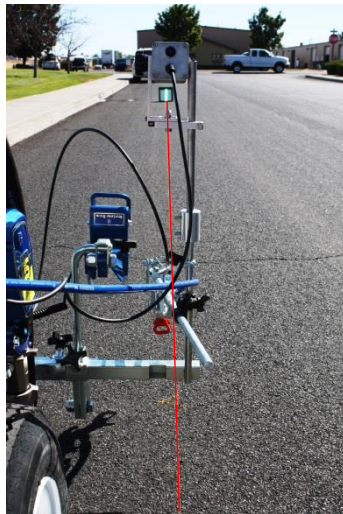
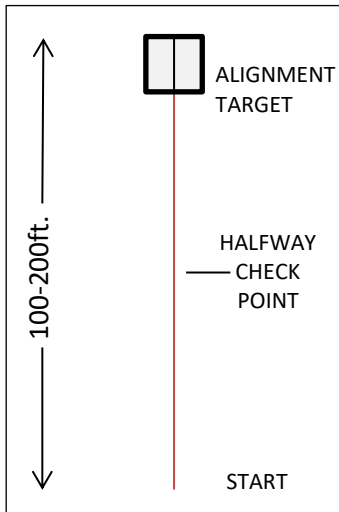
For night use, position the laser housing so that you are picking up the line near to your striper (starting point) and still seeing your "line" at your far point. (Where you are striping to)



For optimum "line" use, set the GL1000 from one to two feet above ground level. This will allow you the most effective use of the fan and give you the longest line.

CALIBRATING THE LINE TO YOUR MACHINE

(Same procedure for front or rear mounted laser- Also applies to auto layout)



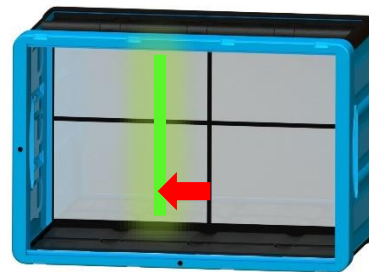
① Find an existing long straight line such as a curb edge, existing striped line or asphalt concrete seam. (Or snap approx. a 100-200 ft. chalk line for a reference line) Mark halfway point and set the alignment target at far point.

***Note:** A 200 ft. reference line is recommended if striping in excess of 400 feet.

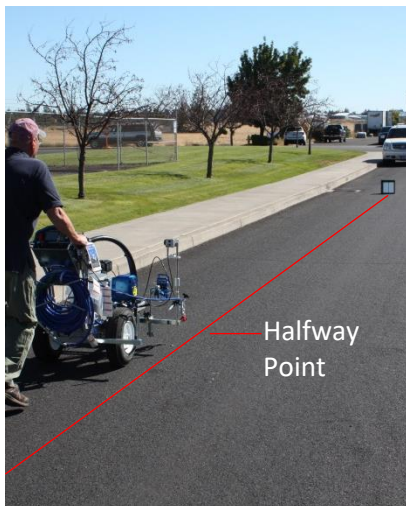
② At your starting point, make sure your striper frame is true to your reference line by pushing the machine about 10 feet while keeping the spray nozzle over or parallel with the line. Next, make sure laser is level, then adjust the laser left-right until you are centered in the alignment target at your far point.

③ Plunge laser downward and swing spray gun left or right until it is in line with the laser. Adjust laser back to upward position.

④ Position spray nozzle directly over reference line and maneuver machine left-right until laser is centered in alignment target and the spray nozzle is centered over line.



Adjust line the same distance and to the same side of the alignment target. (e.g. 1 1/2" to the left of the centerline as shown)



⑤ Walk towards alignment target while keeping the laser centered in the alignment target. Look only at the target NOT the nozzle. **STOP** at halfway point and check the position of the spray nozzle relative to the line.



⑥ In this case the spray nozzle is to the left of the reference line by 1 1/2 inches. Adjust laser using fine-line adjustment screws 1 1/2" to the left of the center line. (Same distance to the same side on the alignment target)



⑦ Go back to your starting point. Get centered in the alignment target with the spray nozzle over your line. Walk to the halfway point keeping the laser centered on the target as in step 5. If laser is centered in the target and the spray nozzle is directly over reference line then you are calibrated! If not, take out the error as in step 6 and repeat step 7.

***NOTE:** The calibration procedure may take 1-3 attempts until properly aligned averaging approx. 3-7 minutes. Calibration only has to be performed periodically

Scan QR code for calibration video!



USING THE LASER LINE

Change your Method • Get Rid of String Lines • Increase Profits

You need two points:

- A. **Starting point** to position your gun over
- B. **Ending point** to stripe to.
 1. For day operation the 3003-0076 reflection alignment target is used at your far point to stripe to.
 2. For night work the target is *optional* since you can see the line to your far point to stripe to. However, it is useful for longer runs as a visual tool to determine the end of the run.

Place your machine set up over your starting point and lined up with your far point. (Reflective Alignment Target)

Start striping by keeping the laser line lined up with your far point (Reflective Alignment Target) as you move forward.

***NOTE:** *What seems like a large correction at your far point is actually a very small correction at the machine.*

You are staying on line by looking out ahead to your far point and NOT by looking down at a string line or chalk line.

Since the laser line is laser-straight, your painted lines will be just that – *Laser Straight*.

- **NO** more string lines blowing in the wind
- **NO** more string line crew

DAY USE

Using the GL1000 fan line during the day requires the use of the **3003-0076** reflective alignment target to be placed at your far point.

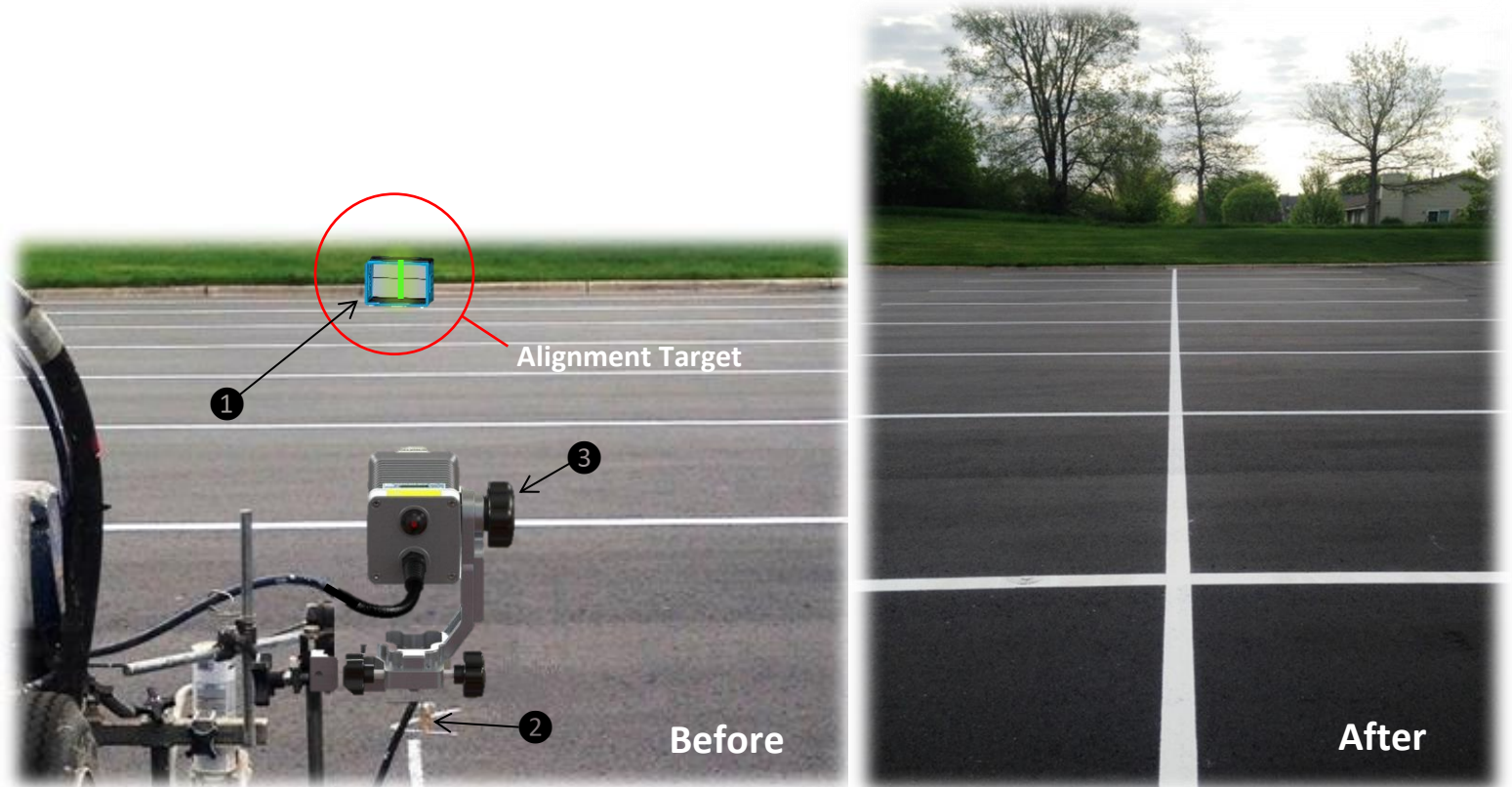
In daylight you will not see the green line along the surface as you do at night, but you will see the line on the “target” at your far end up to several hundred feet away.

You will need a starting point to position your spray gun over and a far point to set your reflective alignment target at.

Line up on your first point and adjust the machine so that the green line is centered on your alignment target. Stripe to the far point keeping the green laser line on target center.

The alignment target must be moved to the far point of each new line so you can line up on it.

Using the GL1000 with line in conjunction with the **3003-0076** reflection alignment target eliminates at least one man if not two from the operation, and it's faster plus gives you straighter lines.



- ① Set reflective alignment target over far point (Up to 700 feet)
- ② Position spray nozzle w/ laser over near (Starting) point
- ③ Slightly loosen vertical adjustment knob and rotate GL1000 up or down until the laser stripe on the far target is the brightest. Lock vertical adjustment knob.
- ④ Start striping while keeping laser in center of alignment target

NIGHT USE

The GL1000 creates a visible virtual string line that is aimed from just in front of your gun carriage to your far point up to several hundred feet away.

The line is bright green and visible on the surface. Since it is a laser line it is perfectly straight at all times in all conditions.

Since the green laser line is visible along its entire length, it allows you to line up on two points and stripe a perfectly laser true line without using a string line crew and the expense associated with it. Your job goes much faster and your lines will be laser straight.

-
- Visible on the ground
 - Just connect the dots - The laser is your string line
 - **Optional:** Use reflective alignment target for long distance lines and hit your marks flawlessly



Restripe



Single Stalls



New Layout

- **Makes restripe work laser straight!**

- **Just connect the dots.**

- **Turns new layout jobs into restripe jobs, because there is a constant reference line on the ground.**

Laser Certification, Safety and Maintenance

Laser Product Certification

This laser product qualifies as 'Class IIIa' in the U.S. under US FDA/CDRH 21 CFR, part I, Subchapter J, sections 1040.10 and 1040.11

This product qualifies internationally (outside the US) as 'Class 3R' under:

- 'EN/IEC 60825-1 2014 edition 3' (E.U.), **CE**
- 'BS EN 60825-1:2014' (UK)
- 'AS/NZS 60825-1:2011' (Australia/New Zealand)
- & other countries, including: Japan, Korea, China, Singapore, Israel, South Africa, and more

**Note: In the United States as a Class IIIa, the special wide-angle lens may be swung away to provide a laser spot if desired. Turn the laser "OFF" loosen upper right socket screw on front of laser (See page 2) and swing fan lens out of the way.*



- WARNING: LASER LIGHT, AVOID DIRECT EYE EXPOSURE!

- Eye exposure to Class IIIa / 3R levels of laser light can potentially present an eye (retinal) injury hazard, including spot blindness or other retinal injury.**

The maximum power output of this laser is less than 5mW for U.S. OSHA compliance. A laser safety kit is supplied with the GL1000 laser. The kit contains operator qualification cards and a sign that should be posted near the laser whenever it is in use. Observe the following operating rules:

- **NEVER** look directly into a laser beam or point the beam into the eyes of others, even at long distances.
- **NEVER** shine the laser at mirror like surfaces which can cause specular reflections of the beam.
- **ALWAYS** set the laser at a height and angle that prevents the beam from shining into people's eyes.
- **IMMEDIATELY** terminate laser emissions if personnel, animals or reflective objects approach the beam.
- **ALWAYS** turn off laser when unattended.
- **DO NOT** remove any warning labels from the laser.
- **ONLY** properly trained laser operators are to use this product.
- **NEVER** allow beams to be aimed toward traffic, vehicles, or heavy equipment. Even when not damaging at long distances, the high brightness of lasers can distract or disrupt vehicle operations.
- **NEVER** point a laser at an aircraft or law enforcement personnel. This is considered a felony in most locations, with the possibility of jail time, heavy fines or both.
- **DO NOT** disassemble laser product, return to factory for all service procedures.

Laser Certification, Safety and Maintenance (Cont'd)

*** Note: Although all Class IIIa / 3R lasers should be respected as potentially hazardous and operated to avoid eye exposure to the beam or a direct specular reflection, as these are considered a theoretical eye hazard, in actuality confirmed rates of retinal eye injuries from visible CW (non-pulsed) lasers are exceedingly low and essentially non-existent after 50 years of global laser use.*

Maintenance

The GL1000 requires no maintenance other than periodically cleaning the laser output lens. Use a soft cloth with Windex or alcohol.

***NOTE: Laser must be turned OFF when cleaning the lens, so as not to create unwanted laser refraction.**

Warning

Under no circumstances, attempt to open or disassemble the Laser Housing. Doing so may cause exposure to potentially hazardous levels of laser radiation. No user serviceable parts within. Unit is factory sealed.

Caution:

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- The use of optical instruments with this product will increase eye hazard.

Do Not operate the GL1000 laser guide directly from a generator source as doing so can create over voltage to the laser and damage the electronics.

LABELS

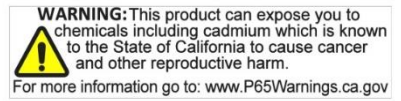
The labels required for this product are:

Top

Bottom



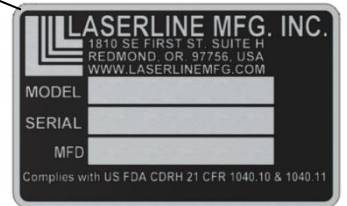
Aperture Label



State of California Prop 65 Label



Explanatory and Warning Label-Hazard Symbol



Identification and Certification Label



European Conformity Logo and Regulatory Compliance Mark Logo (Bottom Right Side-Not Shown)

OSHA REQUIRED (USA ONLY)

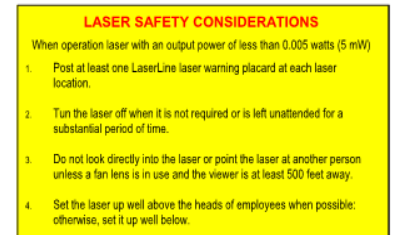
Warning Plaque: To be posted near laser



Operator Card: To be carried by laser operator



Front



Back

GL1000 Specifications

“Built To Work Where You Work”

Laser

- Laser Wavelength 510-532nm
- Laser Power: 4.75mW (Nominal)
- U.S.A: ‘Class IIIa’ in the U.S. under US FDA/CDRH 21 CFR, part I, Subchapter J, sections 1040.10 and 1040.11
- International: ‘Class 3R’ under:
 - ‘EN/IEC 60825-1 2014 edition 3’ (E.U.), 
 - ‘BS EN 60825-1:2014’ (UK)
 - ‘AS/NZS 60825-1:2011’ (Australia/New Zealand)
 - & other countries, including: Japan, Korea, China, Singapore, Israel, South Africa, and more.
- U.S.A OSHA compliant: Meets all Federal and International standards
- Operational Life: 20,000 hrs. MTBF

Environment

- Operating Temperature: -40°F to 122°F (-40° to 50°C) (Nominal)
- Enclosure Rating: Outdoor dust and water rated to IP65
- Vibration compliant per MIL-STD-810F method 5145 and truck assurance level 2, schedule E

Electronic

- Power Source: 12 or 24 volt DC
- Power Draw: 0.1 of 1 amp at 12vdc, 0.05 of 1 amp at 24vdc (Nominal)
- Reverse Polarity and Spike Protected
- Over Temperature Protection Circuit
- Automatic Power Control: (APC) Keeps laser power stabilized through ambient temperature changes

Mechanical

- Special wide-angle line generating fan lens
- Rugged die cast aluminum housing
- Built in level vial to assure laser plane (line) is plumb
- Universal clamp with built-in fine line adjust
- Built in adjust knob for aiming left/right – up/down and swivel for adjusting fan (line) beam
- Waterproof ON/OFF button with built in power indicator light
- Heavy duty power cord
- Laser w/ Mount Dimensions: 6.14” length x 5.57” width x 6.11” height

- Weight: 2.00 lbs.



GL1000 WARRANTY

This product is guaranteed against defects in materials and workmanship for both parts and labor, under normal working conditions for one year from the date of purchase, except as noted herein. LaserLine Mfg., Inc. liability under this warranty is limited to repairing or replacing any product returned to an authorized service center for that purpose. Any evidence of attempts to repair this unit by other than factory authorized personnel automatically voids the warranty. LaserLine Mfg., Inc. does not take liability for any damages caused by non-accuracy of this product. Before using the product always check for accuracy per the enclosed instructions in this manual.

Factory Service Center

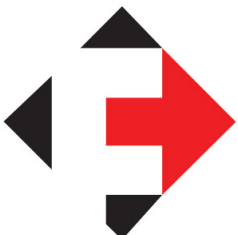
LaserLine MFG., INC.
1810 S.E. First Street, Suite H
Redmond, OR 97756
(P) 541-548-0882
(F) 541-548-0892
(Email) laserline@laserline.net

For all Warranty: Call Order Processing for RMA # at 541-548-0882. The Unit will be repaired and returned by prepaid freight.

All Non-Warranty Repairs:

Send to: LaserLine MFG., INC. at above address

Out of Warranty Repairs: 1 Year on replacement parts, 90 days on labor.



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