Distributed by: ABQ Industrial LP USA
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Shimpo LS-9-12000 Xenon Linear Stroboscope

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PRECISION. RELIABILITY. QUALITY.

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7.0 Specifications

GENERAL PARAMETERS

Frequency range	0 to12,500 FPM (flashes per minute)
Power supply	24 VDC (+/-20%) / 40 W DIN 41524 5-pin standard connector Universal power supply unit available
External trigger input	3 to 30 V/max. 5 mA Isolated optocoupler DIN 41524 5-pin standard connector Uout = Uin, max. 200 mA Switchable trigger input
Trigger output	For parallel connection

FLASH PARAMETERS

Flash duration	<10 µs
Light intensity/sharpness	adjustable, on rotary knob
Light intensity single flash	approx. 20 megalux/12"/*30cm*
Light intensity	2,500 Lux/12"/*30cm*
Illumination area	12 x 20" *(30 x 50 cm)*
Flash colour approx.	6000 to 6500 K
Flash energy	2,000 mJ (@ ≤ 900 FPM)

HOUSING

Material	Aluminium
Dimensions	9.1 x 5.1 x 4.4" *(230 x 130 x 112mm)*
Weight	3.09 lbs. *(1,400g)*

AMBIENT CONDITIONS

Ambient temperature	32° to104°F *(0° to 40°C)*
Storage temperature	–13° to 158°F *(–25° to 70°C)*
Humidity max.	95% non-condensing

CERTIFICATIONS

CE certification

Table of Contents

1.0 Introduction

Congratulations on your purchase of a Checkline® LS-9-12000 Linear Stroboscope. It uses the principle of stroboscopic lighting to create an illusion of stopped motion, allowing detailed inspection of objects moving at high speeds.

NOTE: When using a stroboscope, it is important to remember that while objects may appear to become motionless, they are, in fact, still moving. Exercise proper care to prevent injury.

Please read this instruction manual thoroughly before operating your stroboscope. If you have any questions not answered by this manual, call your local supplier, or visit our web chat interface at www.checkline.com for full product support.

1.1 Package Contents

LS-9-12000 Stroboscope is shipped fully assembled in a metal enclosure. Your package should contain the following items:

- Stationary stroboscope
- Flash tube, factory installed
- Operating instruction
- Connector (1) for trigger input and supply

After unpacking, please examine your stroboscope for signs of mishandling during shipping. If damage has occurred, contact Electromatic before attempting to plug in the instrument. Notify your shipping carrier immediately for damage claim instructions.

2.0 Safety

LS-9-12000 stroboscopes operate at dangerously high voltages. Disconnect the unit from the power supply and wait two minutes for the capacitor to discharge before replacing the flash tube. Any service beyond flash tube replacement is not recommended.

- Do not look directly at the emitted light; it can damage your eyes. It may also trigger seizures in people with photosensitive epilepsy.
- Flash tubes are filled with high-pressure gas. When handling the flash tube always always wear safety glasses and protective gloves.
- Do not allow inflammable liquids and water enter the stroboscope.
- When operating the stroboscope with the front screen facing upwards, the screen can heat up.
- The stroboscope must not be used in explosion hazard areas.

6.0 Flash Tube Replacement

High Voltage!

Use only the manufacturer's original flashtubes.

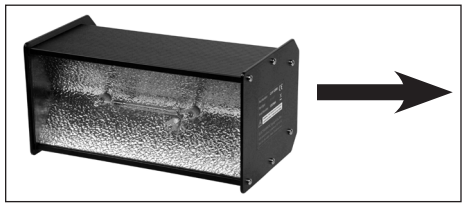
Never touch the flashtube to your bare skin.

Only use the device with an undamaged front lens fitted.

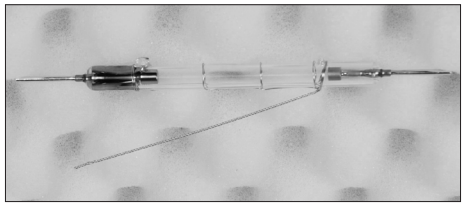
1. Switch off the LS-9-12000 and remove the power supply plug. Wait two minutes for the capacitor to discharge before continuing.

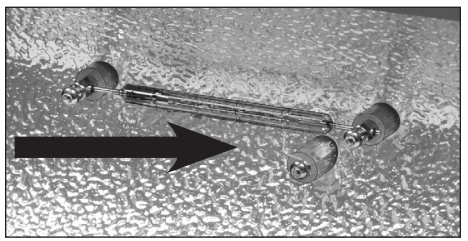
2. Loosen the six (6) T10-TORX screws on the side of the unit with the yellow label.

   NOTE: Do not open the screws on the other side of the unit. They are not T10-TORX type.



3. Slide front glass out laterally.
4. Using a clean cloth, carefully remove the old flashbulb.
5. Pick up new flashbulb with a clean cloth (free of dust and grease) and insert into the two retaining clips. Orient the tube so that the trigger wire can be easily attached to the terminal clamp screw. Ensure that the flashtube is correctly positioned inthe socket.





IMPORTANT: When the flashtube is correctly positioned, the extra length of wire will be closest to the RIGHT retaining clip and near the terminal clamp screw.

6. Re-insert the front screen and replace the screws.

   NOTE: Never operate the stroboscope without a front screen or with a defective front screen.

5.0 Operation

1. Position the stationarystroboscope and connect the trigger input signal and supply voltage to the sockets as outlined in Section 4.0.
2. Switch the stroboscope on. The red LED will light, indicating that the unit is ready for use.
3. As soon as the trigger signal is applied, the strobe will start to flash with the trigger frequency.
4. If the flashing frequency coincides with the movement frequency, a stationary image will appear.

NOTE: A stationary image will not only appear with an identical flashing frequency, but also with multiples and fractions of the flashing frequency.

5. **Switching between sockets 1 and 2:**
   Use the rocker switch located between the two sockets to choose into which of the two sockets a trigger signal is to be fed.

CAUTION

Please make sure that an input signal is actually present at the socket selected.

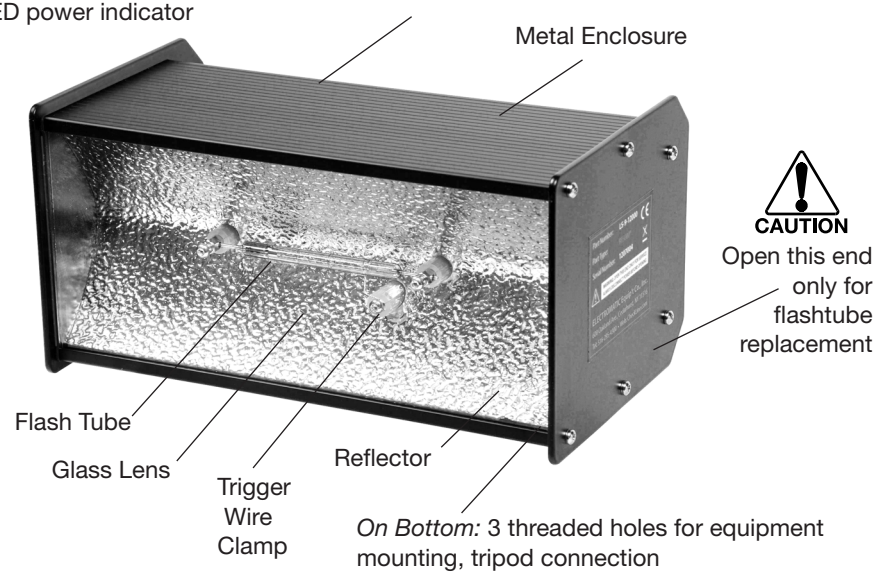
6. **Setting the brightness:**
   Use the rotary knob marked with SHARP/BRIGHT and the ◑/☼ symbols to adjust the brightness to your needs.

   Turn to the left, towards ◑ (SHARP): Brightness is reduced.

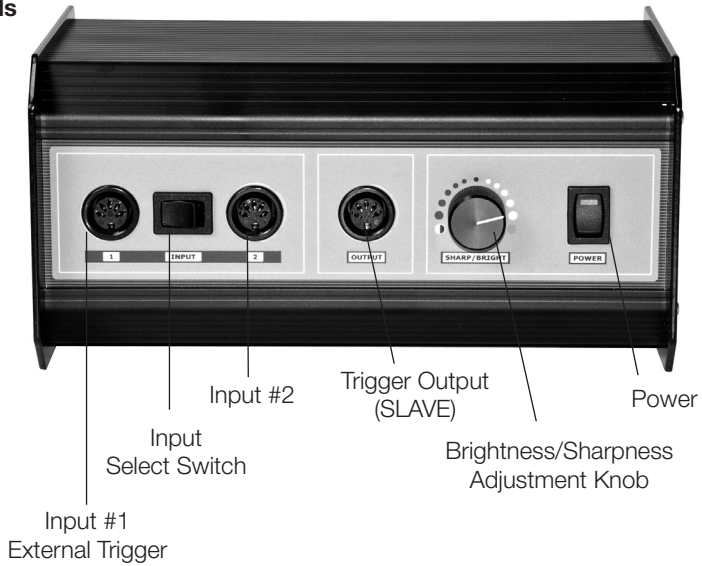
   Turn to right, towards ☼ (BRIGHT): Brightness is increased.

3.0 Overview

On Back (see below): Sockets for trigger input and supply voltage, ON/OFF switch, LED power indicator



Controls



4.0 Assembly and Connection

Point the stroboscope at the object to be observed. On the bottom of the stroboscope are 3 threaded holes, which allow you to affix it to the equipment to be observed or a stand (available as an option):

- Center = 1 x 1/4" threaded hole
- Right and left, with a total distance of 60mm = 2 x M5 threaded holes

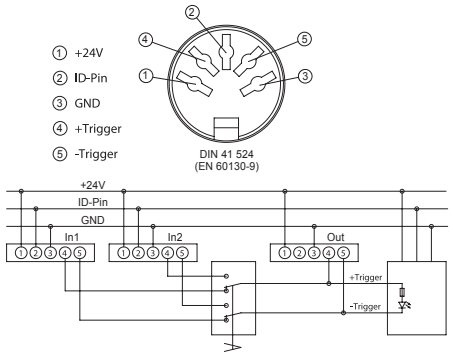
The stationary stroboscope has two identical assigned sockets (located on the back of the unit) for the combined input of trigger signal and supply voltage. The assignment of plug contacts is shown in **Figure 1.**

CAUTION: Please make the connections in accordance with the wiring diagram (Fig. 1). The trigger input is potential-free. The potential-free input is suitable for PNP and NPN signals. A matching plug for these input sockets is included with the stroboscope.

RECOMMENDATION: Use shielded cable to connect the trigger signal.

CAUTION: Do not trigger the stroboscope with signals above 12,500 FPM.

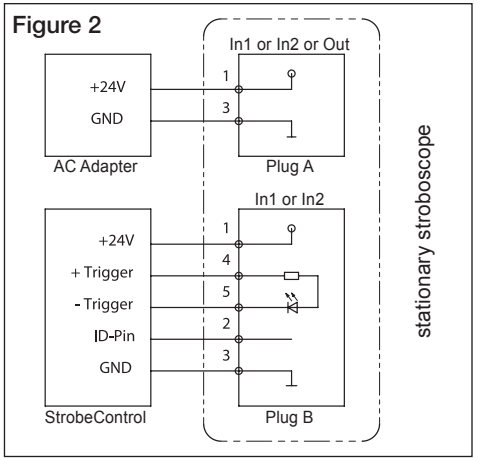
Figure 1



4.1 Typical connection examples

Please take connection examples from Figures 2 to 5. Note that you will need optional accessories for some of the examples (stationary stroboscope, AC Adapter, sensor, etc.)

Figure 2



Trigger signal from optional stroboscope control unit, supply voltage from optional AC Adapter.

FIG. 3 Trigger signal and supply voltage from external equipment.

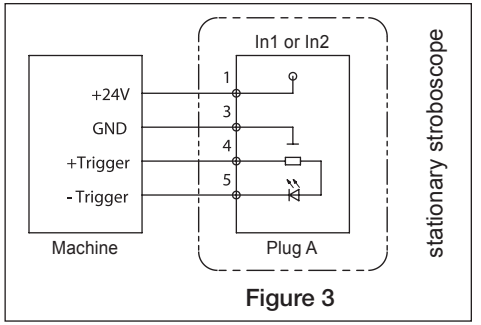


Figure 3

FIG. 4 Trigger signal from external equipment, supply voltage from optional AC Adapter.

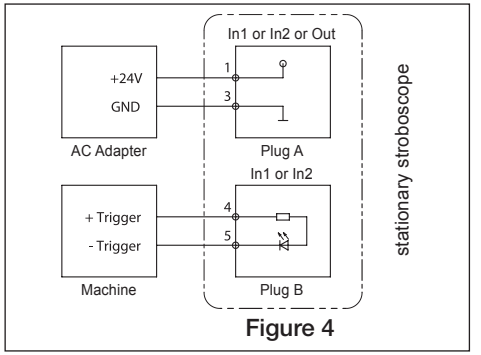


Figure 4

FIG. 5 Trigger signal from optional sensor, supply voltage for strobe and sensor from optional AC Adapter.

The voltage is either supplied by the strobe power supply unit (available as an option) or the equipment being observed.

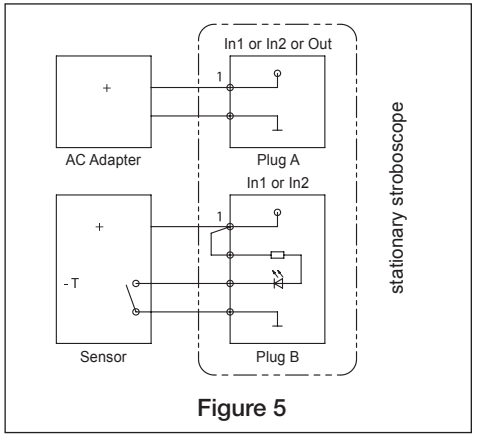


Figure 5

NOTE: When using the LS-9-12000 stroboscope without a stroboscope control unit, the stroboscope flashes with the trigger signal of the connected equipment. This signal cannot be influenced without a stroboscope control unit.

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8.0 Warranty

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