

MAXAM



ZEB

Zünderwerke Ernst Brün GmbH

ZEB ECO Blaster

User Manual

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Introduction

The ZEB ECO Blaster is a high voltage Shock Tube Initiation System. The battery powered device charges a high voltage capacitor and discharges it by command into an electrode to generate a powerful spark to initiate shock tubes.

Safety information and Overview

Explanation of symbols

 Caution! Read this instruction manual carefully before using the device, even if you already have experience and pertinent training in blasting technology!

 Warning: High Voltage! Risk of electrical shock!

The device may only be used by trained and qualified personnel under observation of the applicable regulations and ordinances. It may only be transferred to third parties with the instruction manual. Access to the machine by unauthorized persons must be prevented.



It is not allowed to power the ZEB ECO Blaster with an external power source.



Only touch the electrode or the socket at the end of the flex-electrode cable when the device is fully discharged (OFF), since a very high DC voltage is present at the terminal while ignition. There is a risk of burns from the ignition spark. The device may only be triggered when the centering cap is installed!

Proper use:

The ZEB ECO Blaster features a battery cut power switch. Only turn to switch on and push down to switch off. Always switch machine off after operation is finished. Battery state is indicated by light signal.



CAUTION! Always switch equipment off (push power button down) after operation!

Always stow flex electrode in the housing. Replace ignition electrode when the spark is no more powerful to initiate shock tubes.

Homologations

Each Zeb Blaster OP is tested during quality control while the manufacturing process. The equipment is not yet homologated, but CE Mark according to EN13763-26 is ongoing. Once a homologation is achieved this document will be updated.

Improper use

Never use the ZEB ECO Blaster in mines with a methane or coal dust explosion hazard or in other areas with explosion hazards. The device is not designed for use in explosive environments. (Not explosion-proof). It is strictly prohibited to do any physical changes to the device. This could lead to safety technology defects, possible material damage or personal injury during blasting work, and to the destruction of the equipment. Never attach any adapters than products provided by the manufacturer. The ZEB ECO Blaster must only be used in accordance with the specified guidelines.

Transportation and storage

Please inspect the packaging immediately upon receipt and the device during unpacking for any visible outer damage. Store all parts in the transport bag or the original packaging in case return shipment becomes necessary. Only the original packaging may be used for return shipment. Secure all parts and protect them from damage. Be sure that the equipment is switched OFF. The ZEB ECO Blaster is powered by two 9V Alkaline batteries. The battery cut off switch and removal of batteries may allow a transport by plane without any internal disassembling.

Scope of delivery

- Shock Tube Initiator ZEB ECO Blaster
- Key (2pcs)
- Flex-Electrode cable with Ignition electrode and Centering cap
- 9V Alkaline Battery (2pcs)
- This Instruction Manual

Technical data

Type	ZEB ECO Blaster
Operating principle	Electronical
Power Supply	9V Alkaline Battery (2pcs)
Weight	~4kg
Dimensions (LxWxH)	214 x 172 x 98 mm
Voltage (max)	Approx. 1800 V
Capacity	330 nF
Electrode	Approx. 300 ignitions
Protection	IP67
Temperature Range	-20°C to +55°C



Explanation of material

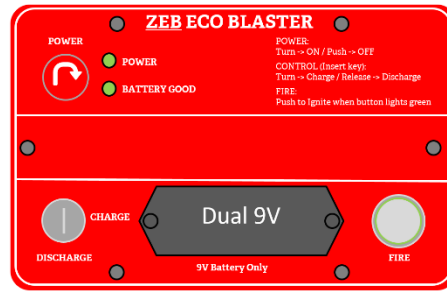
For a better understanding of this user manual the explosion chart shows the most important parts and positions of components.



LED color code

The ZEB ECO Blaster is equipped with several indication lights:

Power LED	green	Power ON
Battery Good LED	blue	Battery OK
FIRE LED	green	Ready to Fire



Buttons and switches

The ZEB Blaster OP is equipped with several buttons and switches:

Element	Action	Result
Power Button	Turn	Power ON
Power Button	Push down	Power OFF
Charge Switch	Turn	Hold to Charge
Charge Switch	Release	Release to Discharge
Fire Button	Press	Press to Fire (while holding Charge Switch)

Housing overview



The PELI housing is equipped with one waterproof socket for the flex-electrode.

Battery Compartment



In the middle of the front panel the battery compartment is located. It takes 2 pcs 9V Alkaline batteries. Always exchange both batteries. The battery compartment is protected against water with a cover. To exchange the batteries, remove the knurled nuts, lift the cover and replace both batteries in the chambers. Then put the cover back on the compartment and ensure that the sealing is facing the battery compartment. Secure the cover with both knurled nuts.

How to operate

The ZEB ECO Blaster needs four steps to initiate a shock tube:

1. First turn the switch to power ON.
2. Then connect the flex electrode to the socket on the right side.
3. Insert the safety key and turn for about 45° to the right and hold the position.
4. When the FIRE button lights green additionally press FIRE.

After the ignition release the Charge switch and remove the key. Then switch off the equipment by pushing down the power switch and stow the flex electrode in the clamps.

Faults

Fire button does not light while holding the Charge button	Generator cannot reach target voltage. Change the batteries.
Battery status LED does not light	Batteries are empty. Exchange both.
Power LED does not light	Check power switch position (upwards), replace batteries.

Accessories & Spare Parts



If the flex-electrode cable is damaged or missing a replacement is available. This also counts for the centering cap and the ignition electrodes. The ignition electrodes are wear parts and need to be replaced periodically.

Maintenance

Regular inspections

The functional and safety technology features of the ZEB ECO Blaster must be inspected at regular intervals within the framework of quality assurance. The responsible operating company must define a suitable interval and the type and scope of this inspection. The respective applicable legal or agency regulations and ordinances for blasting technology accessories must be observed. Subject to other requirements, we recommend a maximum testing interval of 2 years.

Cleaning, Service, Maintenance, and Disposal

Do not use any aggressive cleaning agents (solvents or the like), only a cloth moistened with a mild soap solution. Ensure that no liquid gets into the device and dry it with a soft, dry cloth. Large amounts of dirt must be removed immediately. Take care to ensure that the sockets for electrode, charging unit and antenna are kept clean. Also take care of the ID Chip reader. The device is subject to type testing. This prerequisite requires that the service personnel have years of experience and a thorough knowledge of the design and function of the ignition system. Necessary inspections, maintenance, and repairs may only be performed by ZEB or by local partners authorized by ZEB. Only original spare parts may be used.



The old device may not be disposed of in household waste.

Warranty

The regular one-year warranty and conformity expires in case of

- non-observance of the manufacturer guidelines in the instruction manual
- use not conforming to the described application
- modification of the device
- mechanical damage and damage due to substances or liquids

The warranty expires with natural wear and tear.