



# SAFETY INSTRUCTIONS IN THE USE OF SD SERIES LF DETONATORS

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## 1 Operating instructions for safe functioning

### 1.1 Warning

The SD series of lead-free (LF) detonators are classified as UN0255, 1.4B. They should be used in accordance with these instructions and relevant national regulations.

All explosive materials are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, trained, and experienced persons, and in accordance with applicable state and local laws, regulations and ordinances. If, after carefully reading this entire leaflet, you have any questions or doubts as to how to use any explosive product, do not use it before consulting your supervisor, or Event Horizon Pyrotechnics Ltd.

### 1.2 Application and use

1. The SD series LF detonators, distributed by Event Horizon Pyrotechnics Ltd. has been issued the EU-type examination certificate satisfying Directive 2014/28/EU, as detailed by the Declaration of Conformity.
2. The SD series consists of SD-15LF, SD-25LF, SD-50LF, SD-75LF and SD-100LF. They are designed to function by blowing out in all directions from the end opposite the lead wires. The designation SD is derived from the term "soft detonator" which essentially means a blasting cap without a metal jacket or shell. The SD-15 to SD-25LF can be used to simulate bullets striking inanimate objects when a powerful effect is required. Additionally, the SD-50LF to SD-100LF can be used to simulate machine cannon fire.
3. Products mentioned in this leaflet are for professional use only.
4. They are for use in special effects motion picture and television production only.
5. The responsible person (operator) must have prior experience using this product for its intended purpose before use.
6. Not for use in blasting, mining, tunnelling, construction, or excavating operations of any kind.
7. Not permitted for use in a flammable environment.
8. Not for use as a primary charge (for example: cast boosters, initiating shock tube or detonating cord).
9. Do not use until all hazard analysis, hazard communication, and safety planning have been completed.
10. Not for use under water or high moisture atmospheres. Must be kept dry at all times.
11. May be used in temperatures from 0° to 50°C (32° to 122°F).
12. Suitable for use at 0 m – 3000 m above sea level.
13. When used to simulate bullet impacts, all precautions must be taken to ensure no debris located around the device could become shrapnel or a projectile that could harm personnel. Limit the area to only essential personnel before use.
14. Risk assessment shall consider best available safety measures according to the effect, performance characteristics, specific parameters and surrounding conditions as assessed by the operator.
15. Gasses can be harmful in high concentrations, use in a well-ventilated location.

### 1.3 Electric Characteristics & circuit preparation

1. Make sure that all leg wire ends are clean before connecting.
2. Do not remove leg wire shunt until ready to make connection.
3. Keep the firing circuit completely insulated from ground or other conductors.
4. For checking the circuit values use only instruments approved for use with explosives.
5. Never make the final hook up to power source until all personnel are clear of the use area.
6. Do not connect detonators in series.
7. All fire current = 1 A
8. All fire firing pulse = 88 mj/Ohm
9. No fire current = 0.5 A
10. No fire firing pulse = 52 mj/Ohm
11. Total resistance including lead wires = 0.32 Ohms – 0.58 Ohms

### 1.4 Protecting from sources of stray electricity and RF

1. Never use detonators or any other explosives during a thunderstorm.
2. Never handle or use electric detonators: when stray currents are present:
  - a. during electrical storms;
  - b. if static electricity is present. The SD LF series is not protected against ESD
3. Do not use the SD LF series in the presence of potential Radio Frequency Interference (RFI).



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4. Shunted lead wires are NOT a means of protecting against static electricity but will minimize unintended ignition caused from RF.

## 2 Misfires

1. Wait at least 15 minutes with misfires before returning to the use area. Follow local regulation.
2. Misfires should be handled by a trained, competent and experienced person familiar with the use and design.
3. Always shunt the naked leg wires of a misfired electric igniters by twisting them together to protect against RF sources of electrical energy.

## 3 Storage and handling procedures

### 3.1 Storage

1. Shelf life of 36 months is expected provided all storage conditions are met during this time frame.
2. Be sure magazines are securely locked and protected from weather, fire and theft.
3. Keep the inside of the magazine clean, dry, cool and well ventilated.
4. Always rotate stocks of explosive material so the oldest material in the magazine is used first.
5. Store with compatible materials.
6. Detonators must be stored in an environment with relative humidity not exceeding 80% and temperatures between 0°C and +50°C (32 to 122°F).
7. Use care when loading and unloading detonators.
8. Keep explosives and detonators separate until the last possible moment.
9. Do not remove detonators from inner package until ready to use.
10. Detonators should be contained in the **complete (inner + outer)** original packaging system for storage.

### 3.2 Transportation

1. Always follow state and local directives and regulations concerning transportation.
2. Detonators must be contained in the **complete (inner + outer)** original packaging system for transport.
3. Transport only the required number of detonators to the use area.
4. Do not leave a vehicle containing detonators unattended.
5. When transporting by foot, detonators should be located in the original packaging.

### 3.3 Handling

1. Keep explosive materials away from children, unauthorised persons and livestock.
2. Never cut into or disassemble a detonator for any reason.
3. Do not compress or bend a detonator.
4. Do not pull on lead wires from the attachment point.
5. Read and understand the Safety Data Sheet (SDS) prior to use.
6. Do not allow devices to come into contact with stray electrical charges and avoid friction or impact.

### 3.4 Shipping

1. Transport as detonators electric UN0255 per IATA, ADR, IMDG and local regulations.
2. If repackaging use only original packaging as the shipping approvals are tied to specific boxes.
3. You must follow De La Mare Engineering, Inc. Packaging and Closure Instructions before offering for transport.

## 4 Disposal procedures

1. Handle defective or damaged detonators with special care.
2. Defective or damaged detonators present a greater hazard than explosive material in good condition.
3. Consult with Event Horizon Pyrotechnics Ltd. before returning any defective detonators.
4. Expired, defective or damaged detonators determined to be waste must be disposed of in accordance with local regulations.
5. Never allow detonators to enter wastewater, watersheds, ground water, lakes, rivers, or ocean.

## 5 Contact Details

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