Sledge Hammer with Piezo Trigger Element

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Content

1. Description

The sledge hammer is used to generate seismic P-waves or S-waves at the surface. It is a suitable source for shallow downhole surveys up to a depth of 100 m or seismic surface applications, such as seismic refraction or MASW surveys. The piezo trigger element is used to generate a constant electrical output signal.

2. Sledge Hammer and Piezo Trigger Element

The different components of the sledge hammer with the piezo trigger element are shown in fig. 1. The piezo trigger generates by convention a **positive signal** that is sent to the seismograph.

Fig. 1: Sledge hammer and piezo trigger element.

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3. Installation of the Piezo Trigger Element

You can position the piezo trigger element in two ways to ensure an accurate time break signal (positive edge) to the seismograph:

1. Attach the piezo trigger element directly to the hammer
2. Place the piezo trigger element on the ground near the hammer impact point

1.) Mounting the piezo trigger on the sledge hammer

The next steps describe the attachment of the piezo trigger element directly to the hammer, compare fig. 2.

1. Position the sensor on the side opposite to the striking face of the hammer and ensure the "+" symbol on the sensor is facing towards to you.

2. Secure the piezo trigger tight with tape and make sure the sensor remains firmly in place.

3. Fix the cable with the tape along the sledge hammer and certain poins. Make a relaxation loop. Coil a small section of the cable and fix it with tape.

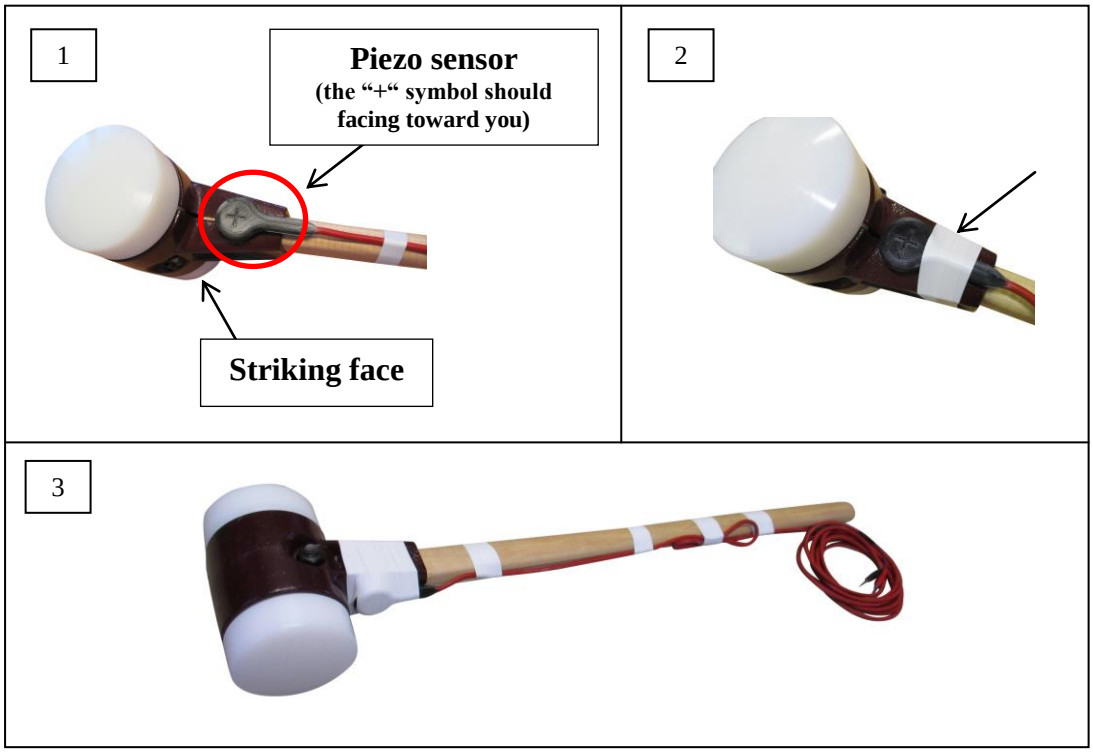

Fig. 2: Attachment of the piezo trigger element directly to the hammer.

2.) Place the piezo trigger on the ground

Instead of attaching the piezo trigger to the hammer, you can place it on the ground near the hammer's impact point to generate the positive trigger signal (fig. 3). Make sure the "+" side of the trigger element is facing the ground, so it is not visible to you (as shown in the figure below).

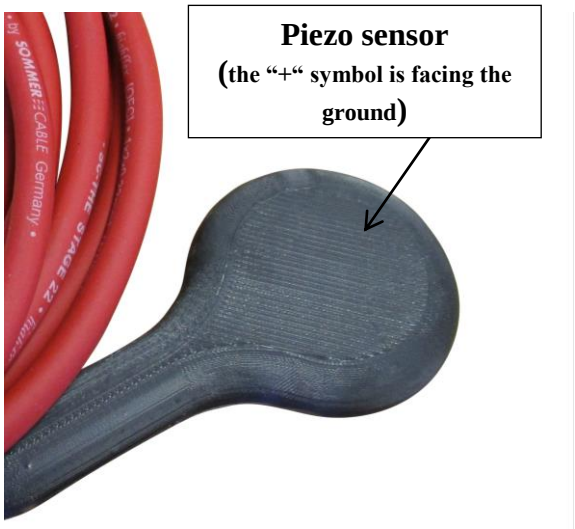

Fig. 3: Piezo trigger element placed on the ground near the hammer's impact point.