

Manual for Sledge Hammer with Trigger Unit



The Trigger Unit consists of a trigger box, which converts a piezosignal into a TTL pulse. This will provide an exact time break to the seismograph.

The Trigger Unit can be used with a Sledge Hammer. 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 complete Trigger Unit connected to the Sledge Hammer is shown in figure 1.



Fig. 1: Trigger Unit and Sledge hammer

1. The Trigger Unit Box

The functions of the control panels and the connections of the Trigger Unit Box are explained in figures 2.1 and 2.2.

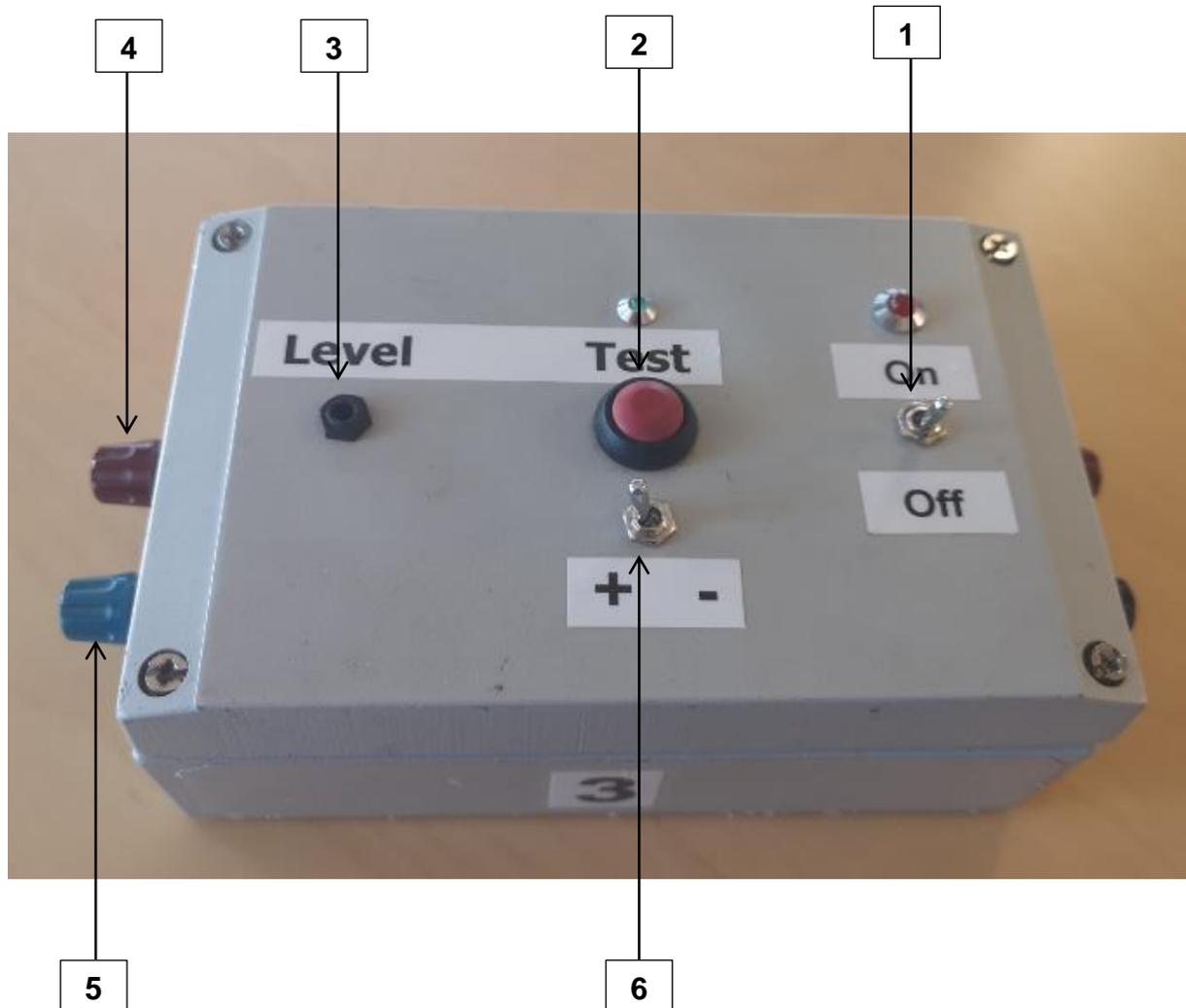


Fig. 2.1: Control panel at Trigger Unit Box

The Trigger Unit provides following functions (see Fig. 2.1 and 2.2).

1. Button switch On/Off (On = LED lights)
2. Test signal (LED lights up briefly)
3. Trigger level adjustment (turn clockwise - more sensitive, turn counterclockwise - less sensitive. Anyhow, the level is already adjusted)
4. Piezosignal coming from the sledge hammer

5. The grounding (blue panel socket)
6. Setting of required trigger type depending of used seismograph (+ positive; - negative. If a seismic recorder needs a short circuit for triggering, negative has to be chosen)
7. The grounding (black panel socket)
8. Trigger signal connection to the seismograph
9. 9V power supply

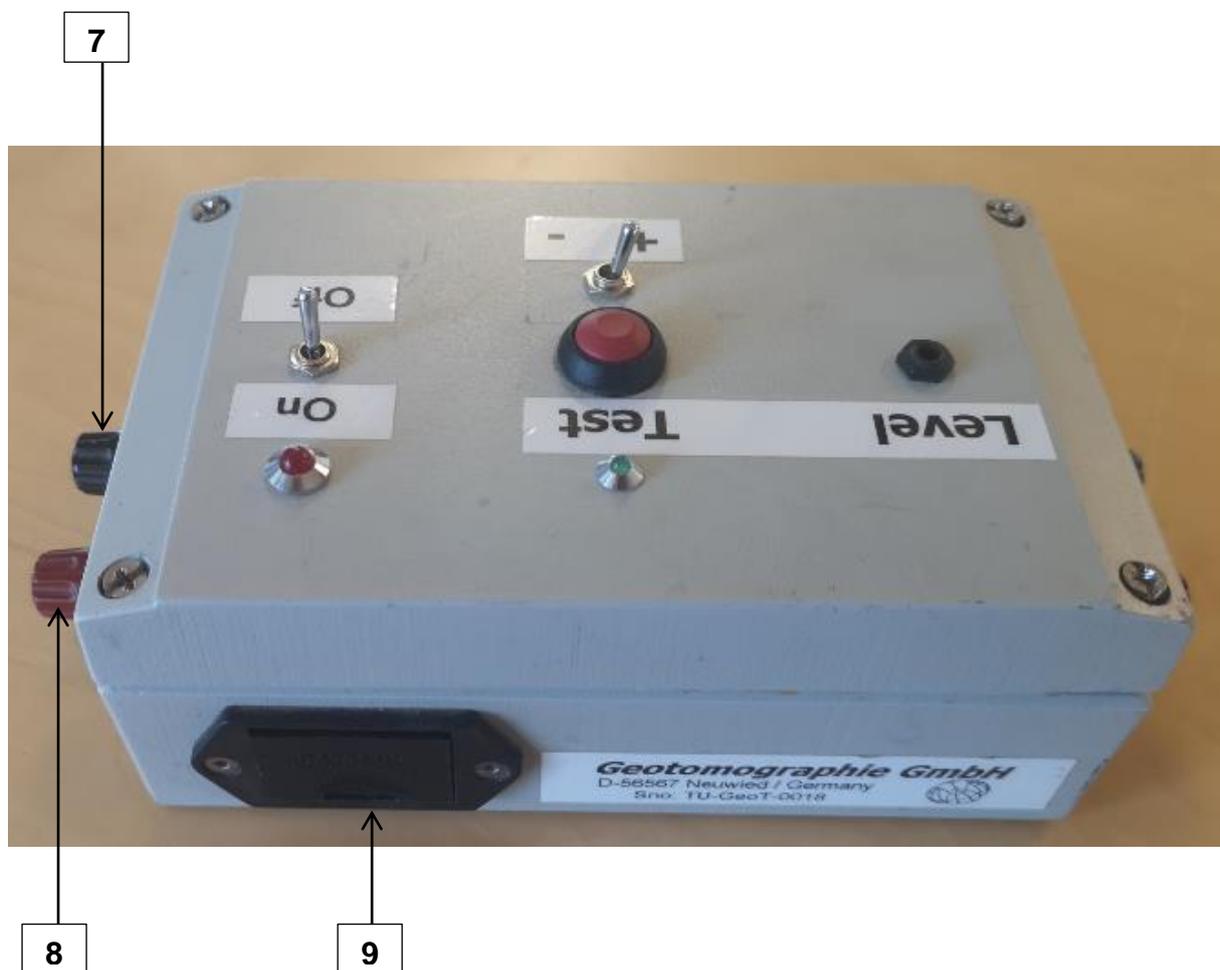


Fig. 2.2: Trigger Unit Box

2. Instructions for installing the piezo sensor on the Sledge Hammer

The different components of the Sledge Hammer with Trigger Unit are shown in figure 3.

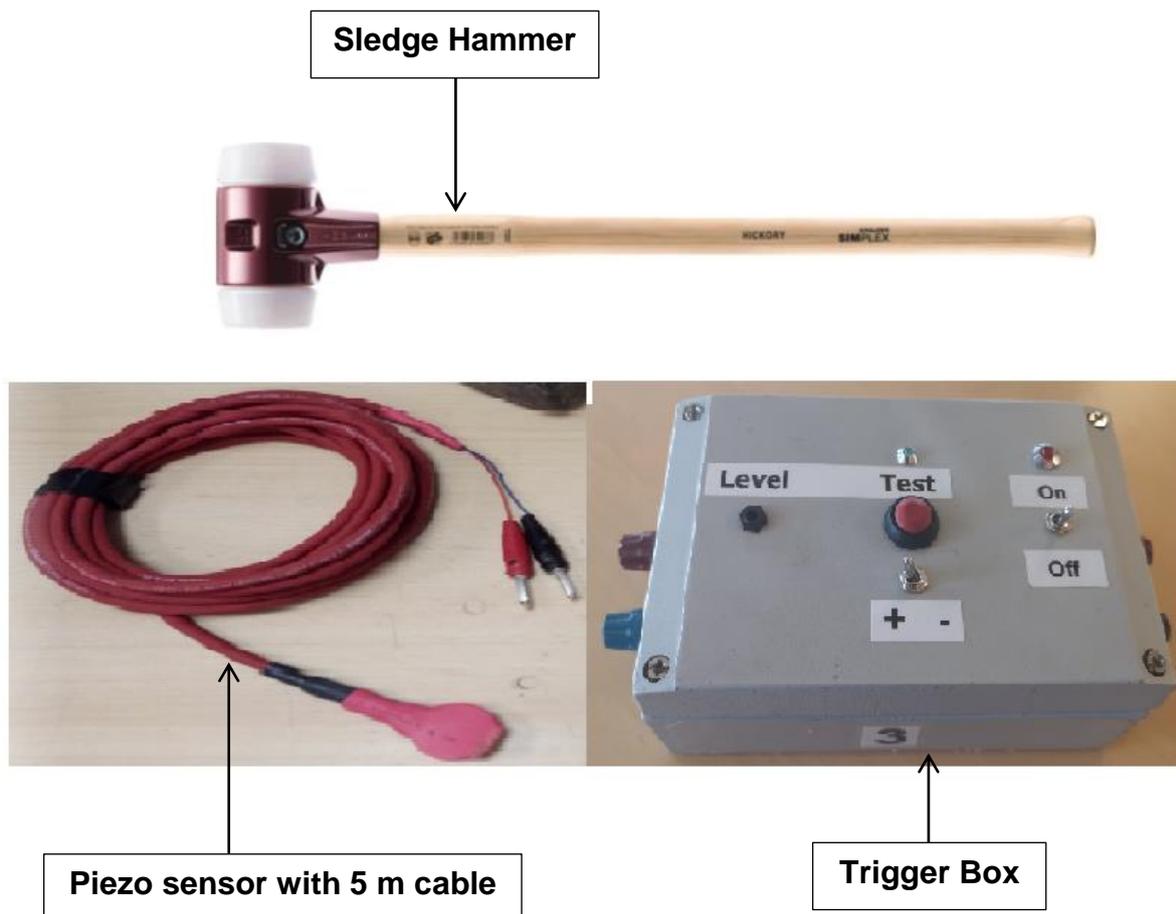
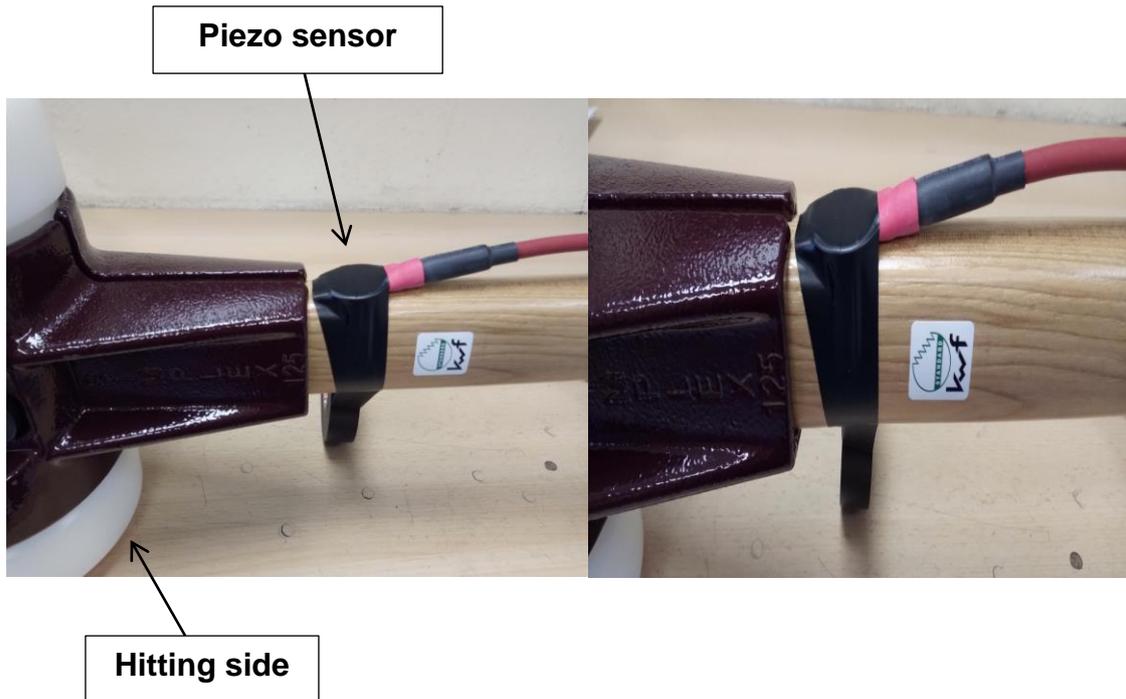


Fig. 3: Components of Sledge Hammer and Trigger Box

- ✚ Place the piezo on the Hammer and fix it with tape. The piezo sensor must be on the opposite side to the hitting side.



- ✚ Roll up a little cable and fix it with the tape. The sensor should not move, if the cable is pulled.



✚ The result should look like this.



✚ Fix the cable with the tape along the Hammer, spaced from each other.



✚ At the end your complete system should look like the system shown in figure 1.