



## **MOD. CHE - BOREHOLE SEISMIC ENERGIZER** **“P/S waves”**



# **USER MANUAL**

Edition 2016  
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## **MOD.CHE - BOREHOLE SEISMIC ENERGIZER “ P/S WAVE” (cross-hole energizer)**

### **ISTRUCTION FOR USE**

1. First of all, connect the crosshole energizer to the instrument trigger. Put the instrument in acquisition mode. Make some test hits by pulling the steel cable up or letting it go down. If everything is ok the instrument should make the acquisition only when reaching the bottom or the top. **In case the acquisition starts when only moving the mass you can reduce the sensibility of the energizer's starter geophone by turning clockwise the black switch that you find on the energizer reel. In case of difficulties there is also the option to regulate the instrument trigger sensibility (see the instrument manual, the minimum sensibility is 7 and the maximum is 1). (FIG.4)**
2. Before introducing the borehole geophone and the energizer in the wells make the connection from the energizer to the trigger and from the borehole geophone to the geophones connector (13-24 recommended).
3. Connect the air compressor to the battery.
4. Unroll the cable with the depth you need for the test.
5. Connect the air compressor at the opposite connector on the energizer cable reel to allow the air to circulate through the “tubepack”.
6. Verify the clamping system correct functioning by moving the lever on the reel in + and switch on the air compressor, switch off the air compressor and after that move the lever in - position for unclamping.
7. Begin to let down the energizer in the borehole till the necessary depth for the test **using only the steel cable.**
8. When you reach the requested depth inside the borehole push the lever to + to clamp the energizer to the borehole walls and switch on the compressor for clamping (normally 2/3 of the scale is enough). After the energizer is blocked, switch on the air compressor, leaving the lever in + position (FIG.1 clamped position).
9. **Using only the steel cable** push up to execute the first shot – the trigger installed on the energizer will start the acquisition for the “P/S”. After that you will have to drop the mass so that to make the acquisition with inverse polarity.

- 10.** After making both acquisitions you must unclamp the energizer by pushing the lever to – position and move it to the next testing depth (FIG.2 unclamped position).
- 11.** At the end of all testing the energizer must be pull out from the borehole and also un connecting the tube from the reel pushing with to fingers the green ring of the connector and with the free hand pulling out the tube.
- 12.** Regarding the crosshole acquisition on channels 13,14,15 (respective if you use 2 borehole geophones also 12,11,10) you will have the seismic acquisition

P.S. for a better visualization of the measurements, before making a crosshole acquisition please select manually only the needed channels, in case you use 1 borehole geophone the channels from 13 to 15 and if you use 2 borehole geophone channels add also the channels from 10 to 12.

Channels 12,13 are Vertical channel Z ( P wave)

Channels 14,11 are Horizontal Channel X (S1 wave)

Channels 10,15 are Horizontal channels Y (S2 wave)



FIG.1 Clamped

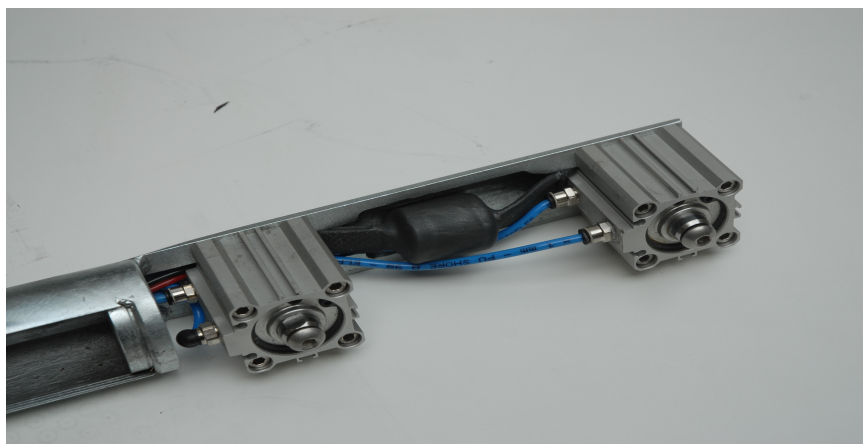


FIG.2 Unclamped



FIG.3 Trigger connection



FIG. 4 Control Panel