



Geo-Source 1600

Ocean Depth Multi-Tip Sparker System



Applications

- Site & route surveys
- Offshore engineering
- Mineral exploration
- Oceanographic research



From Shelf to Ocean Depth

This 1600-tip mega-sparker, in combination with our 16 kJ pulsed power supply, covers the entire range of water depths - from continental shelf to ocean floor.

The Geo-Source 1600 recently achieved 350 ms seabed penetration in 4500 m water depths (offshore Portugal) with a resolution of 0.5 - 1.0 m.

Examples of Records

To see examples of our sparker records, please visit the 'Downloads' on our website: www.geo-spark.com

Operational Features

- VHR marine seismic source
- Water depths from 2 to 4500 m
- Penetration to 750 ms below seabed
- Vertical resolution up to 30 cm
- Overall performance depending on acoustic characteristics of vessel, geology and acquisition conditions



INNOVATIVE Preserving Electrode Mode

The Geo-Source 1600 has been designed for operation with the Geo-Spark 16 kJ pulsed power supply (PPS) using the patented Preserving Electrode Mode: this mode uses a **NEGATIVE** electric discharge pulse instead of a positive pulse.

(Please note that this negative pulse is **NOT** the same as the simple reversal of the positive polarity of a 'standard' power supply.)

Maintenance free electrodes

5 year guarantee

The Preserving Electrode Mode **reduces the tip wear to practically zero**. You can shoot day after day, week after week, month after month with practically **NO tip**

Efficient & Cost Effective

With the Geo-Spark HV power supplies you will save a lot of time and money, since the electrodes do **NOT** burn off like in all other systems.

You don't need to trim tips during the survey. There is no need to have any stock of consumables.



Total Control of All Parameters

The advanced Geo-Source 1600 design gives you full control of:

- Joules per tip
 - Number of tips actively in use
 - Source depth and geometry
- The effective source depth can be fine tuned by the adjustable floats. This feature is essential in order to optimise the constructive interference between the primary pulse and surface ghost. Typical source depth is 20 cm below surface (floats pointing at four o'clock)
 - The electrode modules are evenly spaced in a planar array of 1.6 m x 2.0 m. This geometry not only enhances the downward projection of the acoustic energy, it also reduces the primary pulse length since all tips are well in phase.
 - Each tip has an exposed surface of 1.4 mm², suitable for 10 (ten) Joules per tip.
 - Eight individually powered electrode modules of 200 tips each allow the distribution of energy from the Geo-Spark 16 kJ PPS over 200 to 1600 tips at 200-tip intervals.
 - The standard electrode configuration with the Geo-Spark 16 kJ power supply consists of eight electrode modules (1600 tips). This configuration gives an excellent pulse over the 4000 - 16000 Joules power range.
 - For energy levels below 2000 Joules however, a configuration consisting of two-four electrode modules is recommended.

HV Power/Tow Cable

The Geo-Source 1600 is towed by a very high quality, Kevlar-reinforced, coaxial power/tow cable, with stainless steel Kellum towing grip. This very sturdy, dedicated HV cable contains eight 10 mm² inner leads (negative) together with an 80 mm² outer braiding (ground). It is designed to have a very low self-inductance in order to preserve the high di/dt pulse output of the Geo-Spark 16 kJ.

The wet side of the cable is terminated with eight special HV connectors to the electrode modules and a ground connector to the frame. Connecting or disconnecting the cable to the Geo-Source 1600 takes only five minutes.

Coaxial Cable = 100 % Safety + Zero Electric Interference

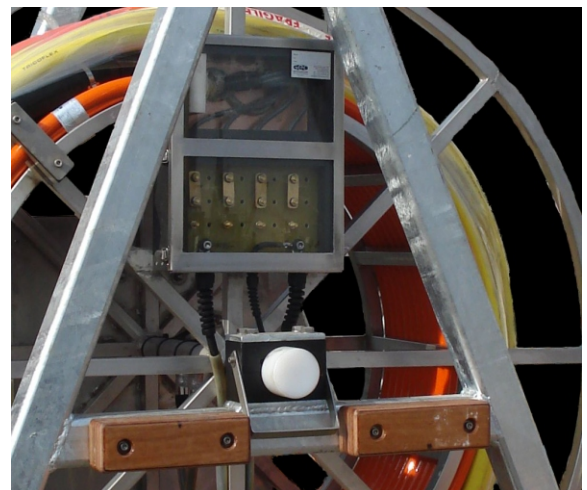
The coaxial structure of the HV power cable is 100 % safe and reduces all electromagnetic interference to the absolute minimum.

HV Cable Winch with Patch Panel & Axial High Voltage Contacts

The power winch with remote control and variable speed allows easy and safe deployment of the sparker source.

The axial HV connection allows the winch to be operated **without disconnecting the HV deck lead**.

The patch panel allows you to connect or disconnect the electrode modules **without recovering the source to deck**.



Patch Panel & Axial Rotating Contacts