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Transverse Gradiometer Frame Data Sheet

The Geomatrix Transverse Gradiometer (TVG) frame offers a simple solution for unexploded ordinance mitigation, pipeline tracking or for simply finding lost objects. The design of the TVG frame enables the Geometrics G-882 caesium vapour magnetometers (with or without altimeters) to be connected via the standard nose cone which eliminates the requirement of unnecessary additional fixtures and fittings. The TVG frame exploits the innate hydrodynamic properties of the G-882 tow fish to minimise the inline drag enabling a 1:6 layback to depth ratio.



The Geomatrix TVG frame (2016 design) fitted with 2 G-882 marine magnetometers, and the Geomatrix Telemetry system.

The in-line drag force of the TVG frame is less than 50Kg at typical survey speeds (4 knots) and therefore can be deployed with up to a 100m soft tow cable and 30V top end power supply or with up to a 6km wire line when deployed with a Geometrics telemetry system. The 1.5m front spar assembly maintains the lateral offset of the sensors and provides a ridged mount from which the frame can be towed. The spar also provides additional protection to the G-882 if it is run aground, improving the chances of recovering the system.

The long A frame arms isolate the tow assembly from the magnetometer sensors. By locating the tow assembly a significant distance from the sensors it is possible to install the wet end telemetry electronics onto the tow assembly and connect the wire line clevis directly to the TVG frame removing the need to have a soft umbilical tow cable.

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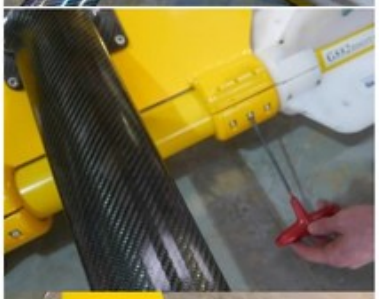


Hydrodynamic Front Spar assembly and Rear beam for reduced drag and 6:1 layback ratio.



Frame still backwards compatible with any model in the field

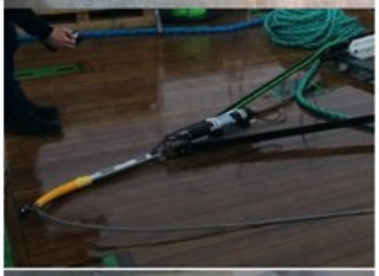
Fully moulded carbon fibre cross beam assembly which maintains dihedral fin angle



C-clamps for quick installation of G-882. No need for the customer to remove the G-882 nose.



G-882 can be installed or exchanged quickly with new update



Telemetry bottle can be mounted on the nose point to allow wireline connection directly to frame.



Isolation of conductive materials to ensure EM fields cannot be induced into conductive loops

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In addition the tow assembly offers the operator the option to install a USBL beacon onto the frame, improving the operator's confidence in controlling the position and depth of the frame, which is particularly important when deploying two frames simultaneously. Field tests indicate the sensitivity of the G-882 magnetometers is not impacted by the placement of of a telemetry bottle and USBL on the tow assembly.

The length of the A frame arms in combination with the spar assembly significantly simplifies the procedure of deploying and recovering the system and reduces the risk of damaging the instrumentation.

Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	287cm x 150cm x 50cm	30kg

Technical Specifications

Traverse Gradient:	1.5m
Layback ratio:	1:6 @ 4 knots in slack water
Inline drag:	4 knots = 40kg 8 knots = 70kg
Maximum tow cable length:	100m soft tow cable with 30V supply. 300m steel tow cable with Geomatrix telemetry system. 6km steel tow cable with Geometrics telemetry system.

Gallery



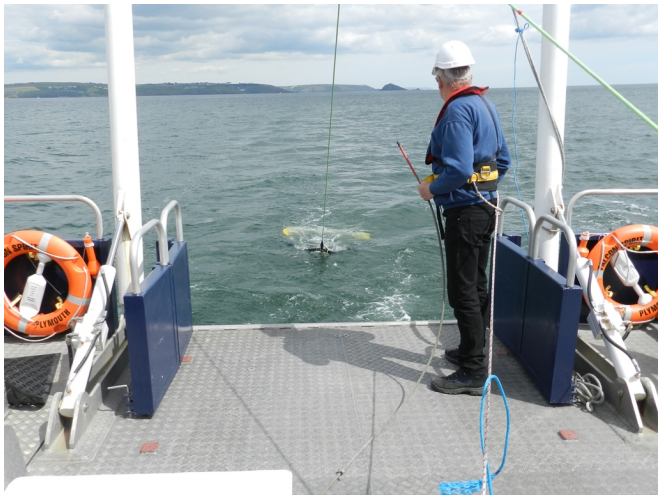
Setting the correct angle of the dihedral fins on the Geomatrix TVG Frame. Not required with 2016 TVG design..



The stream line front spar assembly reduces drag and improving the layback ratio

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Recovering the Geomatrix TVG frame.

Videos

TVG Frame Deployment
https://www.youtube.com/watch?v=rcFZ4mdN5ZM

TVG Frame Recovery
https://www.youtube.com/watch?v=1-LTKxCeK0w

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