

Seismic lead-in termination for wide tow/high loads

Today's 3D seismic operators tow 16 plus streamers to provide staggering amounts of data to meet client demands. This has led the industry to push for a low profile full strength seismic lead termination that can grip a faired lead-in as well as provide lead-in bend protection. In addition the termination must be able to be installed mid span at any location on the lead-in and be conveniently designed so it can be wound on a cable drum.

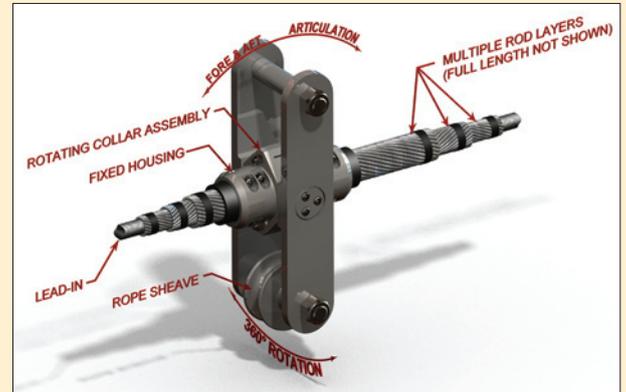
PMI Industries Inc has met this challenge with the Dyna-Hanger Suspension System (DHSS), a highly reliable cable attachment point for seismic streamers, paravanes, surface and subsurface floats, cable depressors and where ever a mid span termination is required.

DHSS lead-in gripping and bend protection is accomplished with multiple layers of helically preformed high strength electro-galvanised steel rods. The helical gripping concept is not new, it has evolved over 40 years and its use for holding underwater cables has been proven by years of field use. What's new is the use of multiple rod layers, of staggered lengths, to provide varying stiffness for seismic lead-in bend protection. Lead-in bend protection was formerly provided by much larger profile (higher drag) all polyurethane bending strain reliefs.

The low profile helical rod system provides bend protection with less drag, can be easily wound on a cable drum, and as such is well received by seismic operators towing multiple streamers.

Additional features which make the DHSS versatile for towing seismic lead-ins are its two degrees of freedom with respect to the cable axis. The DHSS helical rod layers are captured in a split housing which is bolted together and fixed on the cable. The housing has a circumferential groove which accepts a collar assembly which can rotate 360 degrees around the cable. Attached to the collar assembly are a pair of trunnion mounted arms which articulate fore and aft, the arms connect to the spread ropes. These two degrees of freedom allow the lead-in to rotate and the arms to align with the load. For deck storage the collar assembly with arms can be quickly removed allowing the housing and rods to be reeled directly on the cable drum.

The DHSS has been designed for a variety of cable sizes, and the attachment to the arms has been designed to meet customer towing and interface requirements which



includes shackles and rope sheave inserts. DHSS hardware is supplied in kit form for customer shipboard installation. No special tooling is required to install a DHSS. Re-termination kits for all DHSS systems are available. A re-termination kit includes replacement DHSS helical rods as the major stainless steel machined parts are re-useable. Typically the working life of DHSS rods, under constant towing conditions, is 12 to 16 months.

The Dyna-Hanger Suspension System is an engineered system; PMI has designs for the most widely used seismic lead-ins and develop new designs and attachment points as the seismic industry advances lead-in technology. ●

PMI Industries, Inc is based in Cleveland, Ohio, USA. www.pmiind.com

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