

## Your partner for a Lifetime of Lifting

With many years of experience delivering umbilical, flexible flowline and cable lay systems under the Norson and AmClyde Norson brands, NOV has the expertise, skills and overall product handling experience to ensure you get the right equipment on schedule and within budget.

All of our products are supported by an extensive worldwide aftermarket service network designed for a lifetime of reliability.

Our Horizontal Lay Systems (HLS) are used for the installation of SURF products and subsea power cable typically in water depths where the product lay tension is less than 100Te. Larger capacity systems can be provided.





## **Horizontal Flex Lay System**

A typical HLS generally contains one or two tensioners. Systems with dual tensioners can be used for both single and dual product-lay if the system is designed to accommodate this. In the dual-lay mode both products can be bundled together as they exit the tensioners.

The product is guided from its storage location around the deck through the tensioner, or tensioners, and over an overboarding chute. NOV has developed and supplied horizontal flex lay systems that can lay a single product or two products simultaneously in dual-lay application. It can also be used to lay two power cables and a fiber optic cable in a single bundle.

## **Key Features**

- Dual-lay operations for cable lay with additional fiber optic cable options
- 2,3 or 4 track tensioner options
- 20Te 300Te tension range, higher if required
- Tensioner tops open to allow crane handling of end-fitting, UTA etc.
- · High equipment efficiency and reliability
- Plain overboarding chute (right), conveyor track or wheel options
- Regenerated power can be burned off or supplied back into the vessel power system to reduce operating costs
- Modular and permanent equipment installation options
- Installation possible using vessel crane.
- Quick mobilization and demobilization with plug and play connections
- Designed to DNV 2.22 -2013 -06 Lifting Appliances
- · The HLS is integrated into the vessel for easier and safer handling
- Can be designed to meet regional and global classifications

The 70Te HLS (right and below) is fitted with  $2 \times 35$ Te 4 track tensioners. It can lay a single product up to 70Te tension or dual-lay with two individual products each with up to 35Te tension. The tensioners operate in 2 or 4 track mode and are suitable for handling product from ø50mm to ø500mm.

This layout is suited to laying two products together side by side or for laying cables that are bundled together prior to installation.

The HLS shown is supplied with:

- Stainless steel line and adjustable height overboarding chute
- Retractable work platform with opening doors and bellmouth chute
- 2 x 5Te gantry hoists
- Hang off padeyes for clamp attachment
- · A&R winch and retractable sheaves



Horizontal flex lay systems typically consists of the following components:

- Storage system
- Product deck guides/tables
- Tensioner(s)
- Overboarding chute
- Fully integrated control system





## Additional equipment includes:

- A&R winch system with routing sheaves
- Support structure
- · Clamp or hang-off padeyes
- · Gantry hoists
- Retracting Work platform
- Safety platforms designed for ease of maintenance
- Optional handling equipment, hoists, tugger winches etc.
- Optional carousel or RDS provided

