

Street Crane - Radical Overhead Crane Design for Flexible Hose Manufacturing

Submitted by: Ainsworth Maguire

Wednesday, 1 July 2015

Dunlop Oil & Marine is a World leader in making hoses for demanding applications in the oil and gas industry. Newly installed overhead cranes from Street Crane Company (<http://www.streetcrane.co.uk>) play a crucial role supporting the process and enabling the lean and responsive manufacture of hoses of different construction to meet the urgent needs of global customers.

The process cranes supplied for the main production area are of an unusual specification. To complement the production process Street have provided two triple girder cranes, each with three hoists of 3.2 tonnes to support the long hose lengths. These cranes may be operated singly or electronically synchronised to work together when double length hoses are required.

Hoses are formed on long mandrels around which the hose is constructed by layering reinforcement and resins to achieve the required strength and technical characteristics. The cranes are needed to load the mandrels onto the hose fabrication machines and to offload the completed product for transportation down the shop for de-moulding and testing. In the main production area Street have provided a six beam system, configured as two triple girder cranes, each with three hoists of 3.2 tonnes to support the long hose lengths.

The cranes are installed in a limited height envelope and Street were required to apply some radical thinking to develop cranes to answer this need. A crane beam spanning the full 18 metre bay width would have been too deep for the available space between the top of the production equipment and the underside of the roof trusses. To overcome this, a mid-bay runway has been installed so that the crane is supported at three points, enabling a lighter and shallower beam to be installed. To complement the low depth beam, low headroom hoists were selected. These run on the lower flange of the crane beam and intrude only minimally into the space below the beam.

In a second workshop, where higher diameter, shorter, heavy duty hoses are made, a 15 tonne, double girder crane is installed with two hoists of 7.5 tonnes. As this department was transitioning from production of one type of hose to another at the time of the installation, this crane was initially fitted with triple hoists of six, three and six tonnes. This permitted the bulk of the hose weight to be taken by the six tonne end hoists, with the central hoist preventing sagging and stabilising the hoist during movement. Finally, in the test and warehousing area, twin 10 tonne hoists, are installed on a double girder crane for cable and drum handling.

Street Crane's class-leading ZX hoist technology is deployed throughout. Built for endurance and low life-time cost of ownership, ZX hoists are manufactured in a new purpose-built facility at Street's Derbyshire site. Opened in September, this is the world's most advanced hoist production facility. Motors, gear boxes and other components in the ZX hoist run cooler and are easy to access for service because of the open frame design.

Unique safety features include the cooler running and easily accessible external brake, operating directly on the primary gear shaft and located away from the motor so that performance is not impaired by

heat transfer. Lubricated for life – gears run in an oil filled gear box. As an additional safeguard, this has an access plate for easy inspection, without the need to be dismantled.

Numerous other features on the cranes contribute to higher levels of safety and productivity. These include digital load displays, overload protection, audible approach alarms, anti-collision protection and HBC radio controls, with a back-up pendant control. The crane systems are engineered to ensure efficient movement of tools and product with complete stability for greater safety.

Street's sales and marketing director, Chris Lindley-Smith noted, "The operation of overhead cranes is often closely linked to the manufacturing process, but Dunlop Oil & Marine have taken the application of process cranes one stage further. These cranes will help the company achieve greater flexibility and responsiveness in their manufacturing operations and are designed for endurance to give maximum uptime."

More information

Chris Lindley-Smith, Tel. +44 (0)1298 812456 Fax. +44 (0)1298 814 945

E-mail: admin@streetcrane.co.uk Web: www.streetcrane.co.uk

Street Crane Company, Chapel-en-le-Frith, High Peak, SK23 0PH, UK

High resolution images are on the web at www.ainsmag.co.uk/st165/5399st1h-dunlop-cranes.htm

Additional Information

Dunlop Oil & Marine is a trading name of the ContiTech division of Continental AG. The company produces hoses for every phase of offshore field development. During the exploration phase, for example, hoses are required for the transportation of drilling muds and grouting cements. During production high integrity hoses of specialist construction are required to transport oil and gas safely. In the later phase of field exploitation special hoses may be needed for the injection of gas to enable marginal reserves to be extracted. Many other specialist hoses are produced, in various diameters, all engineered to address the technical issues of the application.