

## IHC Engineering Business Saipem J-Lay Tower



### Description

Working closely with its client, Saipem, EB has delivered one of the world's most versatile pipelay systems. The J-Lay tower for the FDS2 is capable of deploying quad joints at line tensions of up to 1,500t and supporting catenary tensions of up to 2,000t at the hang off clamp. The system can handle pipes from 4" to 36" in diameter and with the tower angle adjustable from 0 to 96 degrees and a working range of 45 to 96 degrees it can lay in deep and shallow water. An integral bulky item handling system and an adjustable stinger also contribute to the high functionality and versatility of the system.

The key design drivers throughout the development of the system were the efficiency of the pipe handling operations to ensure low cycle time, weight optimisation and safety in all aspects of operation. The combination of EB's in-house engineering expertise and Saipem's operational experience has resulted in the delivery of an industry leading system that meets these challenging requirements.

**The technology innovator.**

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### Overview

1,500t capacity rigid pipe lay tower  
 Client: Saipem  
 Vessel: Saipem FDS2 (Field Development Ship)  
 Project Duration: 2007-2011

### Features

- 2,000t hang off capacity
- Tower angle adjustable from 0 to 96 degrees, working range of 45 to 96 degrees
- Accommodates pipes from 4" to 36"
- Operating depth up to 3,000m
- Optimised for low system weight
- Designed for handling quad joints
- Integrated Bulky Item handling system

### Benefits

- Tailor-made solution to customer requirements
- Versatile for operation in deep and shallow water
- Low cycle time
- High sea state operation
- Maximum possible vessel payload due to optimised weight



### Pipe Handling

An adjustable loader arm delivers pipe sections to the tower, where travelling clamps and alignment systems ensure pipes are accurately positioned for welding and completion of field joints. Several clamps can pivot clear of the firing line to aid with cycle time reduction.



### Optimised Structural Design

Overall weight, design and fatigue life were considered in all aspects of the innovative design, which is DNV approved. Stringent weight targets were successfully met to allow the vessel to carry the maximum possible payload.



### Control System

The tower incorporates a Safety PLC back up system for safety critical functions and is regulated to a Safety Integrity Level (SIL) 3. It features automatic modes for tower raise and lower, and pipe loading and lay operations.



### Multi-Angled Access Platforms

Variable angle stairways are fitted the full length of the port tower leg. A hybrid, adjustable step system provides safe access across the full working range of 45 to 96 degrees.

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