PT. LINTECH DUTA PRATAMA

DELIVER HIGH QUALITY EPFC PROJECT SAFELY
Business fields: MINING, INDUSTRIAL AND CHEMICAL PLANT, OIL AND GAS PLANT ONSHORE AND OFFSHORE, MARINE AND SHIP REPAIR

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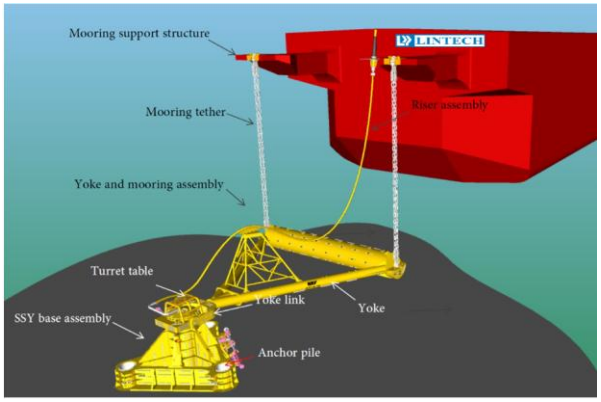
LINTECH IN SUBMERGED SWIVEL & YOKE (SSY)

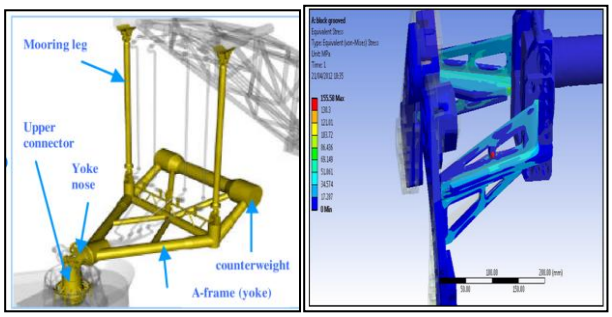
The Submerged Swivel & Yoke (SSY) is a cost-effective solution for FPSO vessels operating in relatively shallow to moderate water depths (20 to 50 meters). It is based on proven technological components and is designed for long-term unattended service with all critical components designed for lifetime use along with inspection and maintenance access.



3D Model designed by LINTECH

LINTECH ANCHORED BASE WITH INTEGRATED PLEM and MOORING YOKE

The SSY base is anchored to the seabed, integrating the pipeline end manifold (PLEM) and a mooring yoke with a chain connection to the FPSO vessel at its bow.
The SYS LINTECH's design allows for reduced bending moments on the structure compared to traditional jacket soft yoke systems, making it more cost-efficient and less prone to fatigue issues. LINTECH obtained from the FEA results with allowable stress and to determine yoke structure strength.

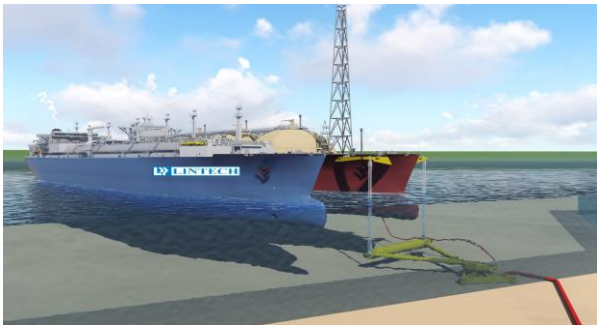


Stresses and Fatigue analysis on SSY by FEA software

VESSEL INTEGRATION AND OFFSHORE INSTALATION

The mooring unit (such as an FPSO/FSRU) connected via chains or cables to a mooring system. Below the unit, key technical components such as the mooring yoke and SSY Base Assembly (which integrates the Pipeline End Manifold and structural support) are connected to the seabed foundation (pile or suction foundation)

LINTECH can be installed offshore before the FPSO vessel arrives at the field, allowing for scheduled decoupling between offshore and shipyard work. The vessel hooks up to the SSY with the help of tugs, without requiring a construction vessel to assist



LINTECH CAPABILITIES AND FEATURE FOR SSY

-Swivel Mechanism for Fluid Transfer
The SSY system integrates a swivel stack that enables continuous fluid transfer (oil, gas, or LNG) between the seabed pipeline and the floating unit. This swivel mechanism ensures that the vessel can rotate freely without twisting or damaging the pipeline connections.

-Yoke-Based Mooring for Stability
The yoke structure connects the floating unit to the seabed foundation, providing a rigid yet flexible mooring system. The weight and design of the yoke are optimized based on vessel size and environmental conditions to ensure stability.

-Pipeline End Manifold (PLEM) Integration
The SSY system includes a Pipeline End Manifold (PLEM), which serves as the connection point for subsea pipelines. This integration allows direct gas or oil transfer without requiring a jetty or additional infrastructure.

-Foundation and Installation
The SSY system is anchored to the seabed using pile foundations or suction anchors, ensuring long-term stability. It is designed for shallow to moderate water depths, typically ranging from 20 to 50 meters, depending on seabed conditions.

-Disconnection Capability in Extreme Weather
Some SSY designs allow for quick disconnection in cyclone or hurricane-prone environments, ensuring vessel safety without requiring tug assistance.