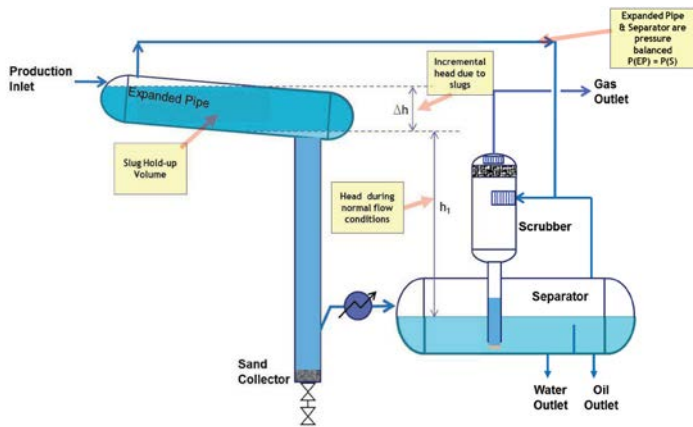


SEP-iSYS™ SEPARATOR Slug Handling and Separator with Integrated Polishing Scrubber



Schematic diagram of SEP-iSYS™ Separator .

SEP-iSYS™ SEPARATOR

The Sep-iSYS™ is a compact separation system that performs stable 3-phase separation with high separation efficiency, slug handling, and sand removal of the inlet production fluids. The system is compact, light-weight and improves energy efficiency making it very suitable for offshore and deep-water applications. The system is jointly developed and owned with PETRONAS.

ABOUT THE SYSTEM

The system provides high separation efficiency through effective handling of slug and sand, selective inlet liquid heating, stable inlet three (3) phase separation and high liquid droplet removal efficiency from gas. This proprietary system is designed with minimal controls and instrumentation, thus, ensuring very high reliability and availability and low operational manning requirements. In comparison with conventional separation systems, the Sep-iSYS™ has the potentiality of space and weight saving of up to 50%, resulting to significant cost savings.

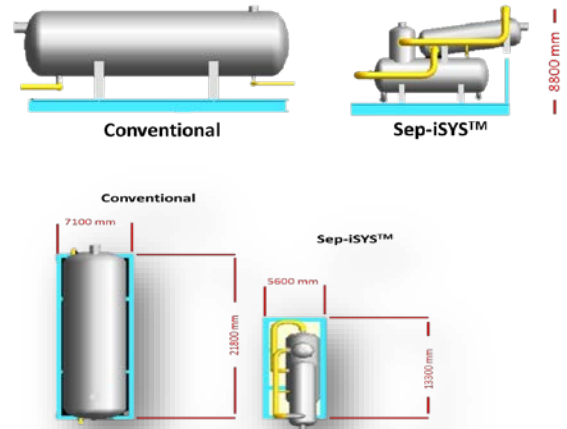
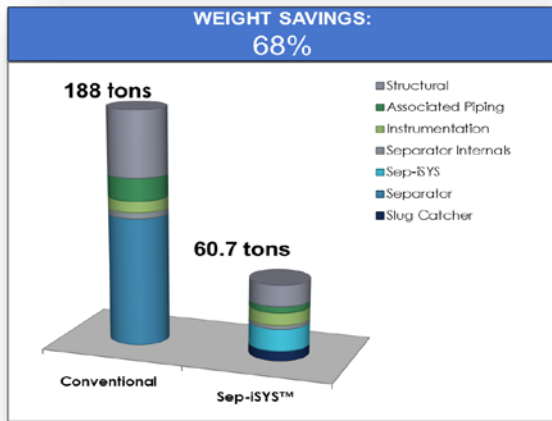


SEP-iSYS™ Separator on D1 FPSO.

MAIN FEATURES AND BENEFITS

- Capable of handling large slug volume and sand with minimal pressure drop. Sep-iSYS™ separator reduces the size of the slug catcher as liquid hold-up and degassing is undertaken in the downstream three (3) phase separator;
- Smaller (3) three phase separator as it is sized for minimal gas handling and does not require any gas outlet devices ;
- Reduction in scrubber's size as it need not have to cater for any liquid hold-up and surge volume;
- Expanded pipe handles entire slug volume thus ensuring stable flow into the downstream system hence improving the separation efficiency;
- Bulk gas and liquid removal upstream of inlet heater enables heating of only liquids which improves the heating efficiency of the system
- Able to remove sand particle with sizes of 100 micron and above. If higher sand removal efficiency is required, a cyclonic sand removal can be integrated into the system;
- A compact and self-regulating system with minimized control and instrumentation;
- High availability and reliability of the system
- Demonstrates about 50% weight, space and cost savings over conventional separators.

TECHNO ECONOMIC MERITS: CONVENTIONAL VERSUS SEP-ISYS™



*Comparison is done based on an undisclosed field at offshore Sarawak for a production of 160 MMscfd and 160,000 barrels liquid with 15m³ slug requirement

TRACK RECORD OF SEP-ISYS™ TECHNOLOGY

Armada TGT1 FPSO, offshore Vietnam	Operation since 2011
Armada Sterling, D1 Field, offshore India	Operation since 2012
BOSS 6 MOPU, KE-38 Field, offshore Indonesia	Operation since 2014
Petronas FLNG Dua, Rotan Gas Field, offshore Sarawak (3 trains)	Fabrication completed in June 2016

TGT FPSO

Bumi Armada Berhad: Engineering Management & Process Design for Te Giac Trang (TGT) 1 FPSO, Offshore Vietnam

Operating Capacity:

Maximum Inlet Liquid	: 75,000 BLPD
Maximum Inlet Gas	: 120 MMscfd
Maximum Inlet Temperature	: 60°C
Operating Pressure	: 5 to 10 barg



SEP-iSYS™ Separator on TGT FPSO.