



Screw Compressor Units for Offshore Associated Gas Processing



Application

The first and second stages of offshore gas recompression trains, as well as related hydrocarbon gas applications such as flare gas recovery (for closed flare systems) and tank vapor recovery systems. The screw gas compressor is continuously gaining popularity in a field hitherto dominated largely by turbomachinery.

Process Information

In selecting compressors for the first (lower pressure) compression stages of an offshore gas recompression train, a number of process challenges need to be taken into account. Gas composition (molecular weight) and flow rate depend on the wellstream composition, which in turn changes with time. Separator foaming and suction scrubber overload and/or malfunction frequently causes the liquid content of the gas to be higher than specified or foreseen. Gas problem constituents, such as traces of asphaltenes, can lead to build-up of sticky substances.



Customer benefits

The positive displacement principle of the screw compressor causes the pressure ratio to be largely independent of variations in gas molecular weight and compressor speed. Further, dry screw compressors can process gases with high molecular weight (> 40 kg/kmol) without suffering from the problem of rapid lube oil deterioration known from lubricant injected machines. Due to low rotor speeds, the screw compressors tolerate appreciable liquid fractions in the gas, and the operating principle effectively limits the build-up of sludge in the machine. Combine this with simple control - requiring no surge protection - and excellent reliability and availability - meaning spare units are not required, unlike reciprocating compressors - and the dry screw compressor stands out as the machine type of choice for first and second stage offshore recompression.

Leading technology - Powered by experience

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Tailor-made solutions by MAN TURBO are based on a unique spectrum of compressors and turbines - from single machines to total train capability.



Product line:

- Compressors (axial, centrifugal, pipeline, gear type, isotherm, process-gas screw)
- Vacuum blower
- Expanders
- Gas turbines
- Steam turbines
- Turbolog® control and monitoring system

After sales service.

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Typical Project Data

Installation:	Single Buoy Moorings for Esso Nigeria (FPSO)	Hamilton Oil (BHP) Liverpool Bay, Great Britain
Type:	SKUJEL321 / CP160	SKUJEL510
Gas:	Hydrocarbon flash gas	Hydrocarbon flash gas
Volume flow [m ³ /h]:	7,400 / 2,375	22,110
Suction pressure [bar (a)]:	1.5 / 7.0	0.5
Discharge pressure [bar (a)]:	7.5 / 20.5	6.0
Speed [rpm]:	6,080 / 9,765	4,631
Driver power [kW]:	2,150	2,250