Garo®
An Ingersoll Rand Business

ONE GUYANA YELLOWTAIL FPSO

Garo, Dott. Ing. Roberto Gabbioneta, Strada Provinciale Cassanese 108, 20052, Vignate (MI)

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Our Products:

Garo Single Stage Compressors

SIngle stage compressors deliver reliable, proven performance especially for Chemical and Petrochemical process applications.

With a discharge pressure up to 6 bar abs. (72 psig), GARO offers efficient, OEM compressors with low maintenance requirements.

With a suction capacity ranging from 100 to 5,000 m3/h (60 to 2,900 CFM), Single Stage models are indicated for demanding process applications like **Chlorine**, **Vinyl Chloride Monomer (VCM)**, **and Steamer Off Gas**

Garo Double Stage Compressors

GARO Two Stage compressors deliver reliable, proven performance especially for Oil & Gas, Chemical and Petrochemical process applications.

With a discharge pressure up to 13 bar abs. (175 psig), GARO offers efficient, OEM compressors with low maintenance requirements.

With a suction capacity ranging from 100 to 4,000 m3/h (60 to 2,350 CFM), Double Stage models are indicated for demanding process applications like **Flare Gas Recovery, or Vapor Recovery.**

Customized Packages

Our customized package solutions offer complete system designs and are built around the efficiency of GARO liquid ring compressors.

Providing compressor packages for refineries and chemical plants, Garo custom designs each solution to handle the most demanding oil & gas, chemical and petrochemical applications.

Applications:

Flare Gas Recovery

Dry and Wet Chlorine Compression

Offshore Gas Compressors and Compression Packages

Vapor Recovery Unit

And more...!!

PROJECT INFORMATION:

ESSO Exploration and Production Guyana Ltd. is developing the oil discoveries at the Stabroek Basin at approximately 200 km northeast of Georgetown offshore Guyana.
The Yellowtail FPSO will be the fourth unit in the Stabroek field.

The **FPSO facility will be provided to ESSO Exploration and Production Guyana Ltd. on a bare boat charter basis and will be operated by Guyana Deep Water Operations UK Ltd.**

The process plant of the FPSO will have a **250,000 bpd annual average Oil Capacity**, with the total ability to process **300,000 bpd total fluids.** It **will have water injection capacity of 300,000 bpd** (annual average), injection gas compression capability up to 415 MMSCFD (annual average) and the **gas handling capacity is 450 MMSCFD.**

PROJECT INFORMATION:

The **FPSO will be located in 1790m of water depth**, and will be designed to:

·Produce, store and offload oil;
·Produce treat and re-inject gas;
·Lift seawater, treat seawater and inject treated water;
·Treat produced water;
·Remain on station by mean of a spread mooring system

For the FPSO the new built Multi-Purpose Floater (MPF#3) as developed under SBM's Fast award program will be used. **The FPSO will be classed in accordance with the rule sand regulations of American Bureau of Shipping (ABS)**, for a design life of 20 years without dry-docking.

The project will be executed in a Joint Venture between SBM and McDermott (YTSM).

The **Vapor Recovery Unit collects gas from the Induced Gas Flotation vessels**, TEG overhead and blanket gas from the cargo tanks and compresses it to the 1st stage Flash Gas Compressor suction pressure to minimize flaring of hydrocarbon gases.

The CONTRACTOR shall design the Vapor Recovery Unit and all associated ancillary systems for the full range of operational conditions specified in "Vapor Recovery Unit Datasheet" and in accordance with the appropriate codes, standards and documents listed.
A common pre-condenser shall be included in the package to cool the incoming gas along with recycle flow.
Compressor discharge line shall slope towards the separator.

The scope of supply shall include all equipment necessary to operate safely, adequately and without interruption in a tropical marine environment.
The compressors shall be designed in accordance with API 681 - Liquid Ring Vacuum Pumps and Compressors.

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PROJECT INFORMATION

Capacity control of the compressors shall be achieved by recycle.
The pressure control valve and piping between the discharge and suction of the compressor shall be included in the CONTRACTOR scope of supply.

The applied VFD is included to speed up the compressor to required operating speed, not for capacity control.

The make-up water supply and separator drain control systems shall be manual controlled.

Quality sampling/monitoring shall be done via 2" connection. This connection will be hooked-up to sampling system provided by PURCHASER.

The Liquid Ring Compressor shall be provided with a ring liquid system of the **Total Recirculation Type as per [4] API 681 - Liquid Ring Vacuum Pumps and Compressors,** mounted on the common base frame.

The couplings shall be dry, metallic flexible disc-type coupling with stainless steel discs as API 671 - Special Purpose Couplings.

The coupling guards shall be manufactured from non-sparking materials excluding glass reinforced plastic and shall be suitable for a marine environment.

PROJECT INFORMATION

The mechanical seals shall be of the dual, pressurized cartridge type with a 53B seal flush plan as per API 682 - Pumps Shaft Sealing Systems for Centrifugal and Rotary Pumps.

The CONTRACTOR shall perform a lateral rotor dynamic analysis for the compressors.
Inlet and outlet connections shall be flanged, studded connections are subject to PURCHASER approval.

The CONTRACTOR shall provide a vertical Gas/Liquid Separator vessel to separate the ring liquid from the discharge gas streams of the compressor.

The packages shall be designed to operate satisfactorily when subject to operational motion conditions and operational accelerations as per General Conditions and Data Specification.

When not in operation but filled with operational fluids, **the packages shall be designed to withstand the extreme operational and transit motion conditions and accelerations as per General Conditions and Data Specification.**

The CONTRACTOR shall design and fabricate the complete packages for a minimum lifetime of 20 years.

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