

HELIOX TRANSFER SYSTEM MAYAAH



SPECIFICATION:

CONTAINER

Heliox Gas Transfer System

The system is housed in an offshore container certified to DNV 2.7-1 / BS EN 12079 / ISO 10855. It features a high-capacity Heliox transfer compressor designed for continuous 24-hour operation, achieving an exceptional transfer rate of 400 m³/hr (≈6,666 L/min) — performance unmatched by conventional systems.

The container is divided into two sections:

- One housing the main pump, buffer tank, and cooling system.
- The other section serves as a climate-controlled control room housing the gas management panel and a VFD-based B-Control system.

The B-Control interface enables precise electronic adjustment of pressure and flow, real-time monitoring of charging rates, transfer speed, and completion status.

Cooling is achieved via a freshwater/glycol circulation loop with a radiator for heat dissipation, or optionally, through a seawater-to-glycol heat exchanger.

Supplied with a full operations manual, schematics, and flowline layout.
Exclusion: Supply and charging hoses.



COMPRESSOR

Model: GIB 26.10-132

Capacity

- [l/min]: 6666
- [cfm]: 235
- [m³/hour]: 400

Inlet Pressure

- [bar]: 3

Operating Pressure

- max [bar]: 350

Motor

- [kW]: 132

Power consumption

- [kW]: 99

GIB 26.10 Series compressor systems are extremely low-maintenance with long service life, yet are significantly quieter than comparable air-cooled compressors. They are specifically designed for continuous industrial operation or heavy-duty applications. The total cost of ownership (TCO) is further reduced by their low oil consumption, long maintenance intervals and transparent maintenance rates. The dry sump lubrication system enables the compressors to be set up at angles of up to 30° in all directions.



BUFFER VESSEL

Ensures a continuous gas flow to the compressor to maintain operation

Model: GIB26.x

Volume

- 1 × 750 Litre

Working pressure max

- 16 bar

connection gas outlet (flange)

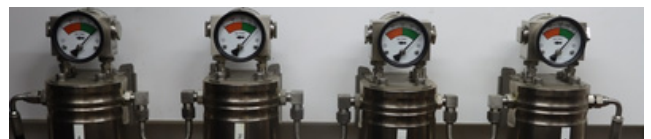
- DN80, PN16 EN1092-1

Diameter approx.

- 800 mm

Height (incl. safety valve) approx.

- 1971 mm



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heliox management panel

Inlet Connections

- 4 x HP Source Inlets

From external heliox quads or onboard banks

Filling Connections

- 6 x HP Filling Outlets

To onboard receiving banks or for onboard bank-to-bank transfer

Sampling & Analysis

- 1 1 x O₂ Analyzer with high / low alarm
- 2 1 x Sample Gas Flowmeter
- 1 x Spare Port for external / additional analyzer

Gauges

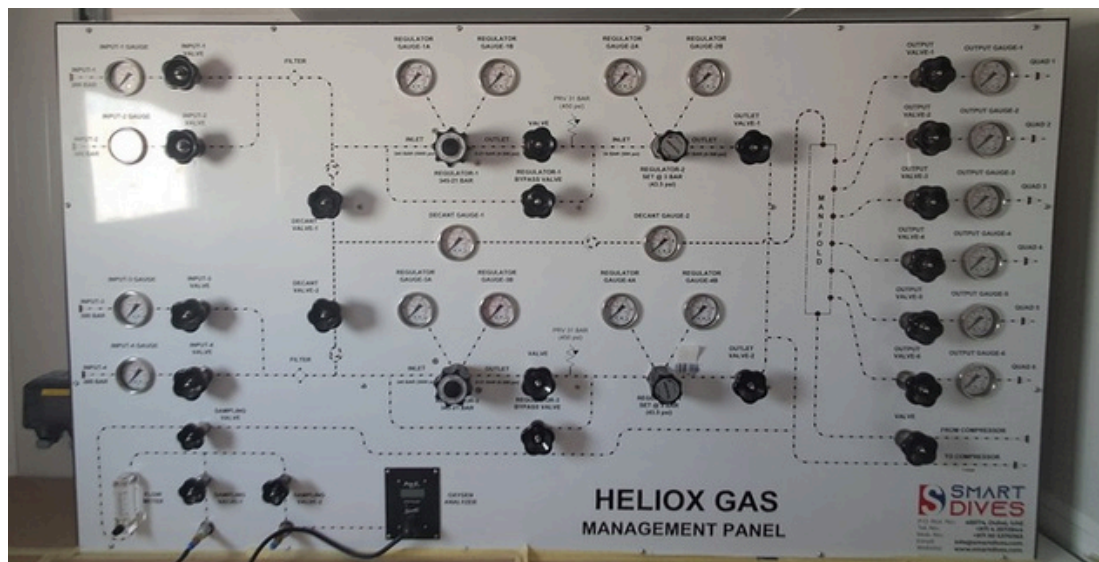
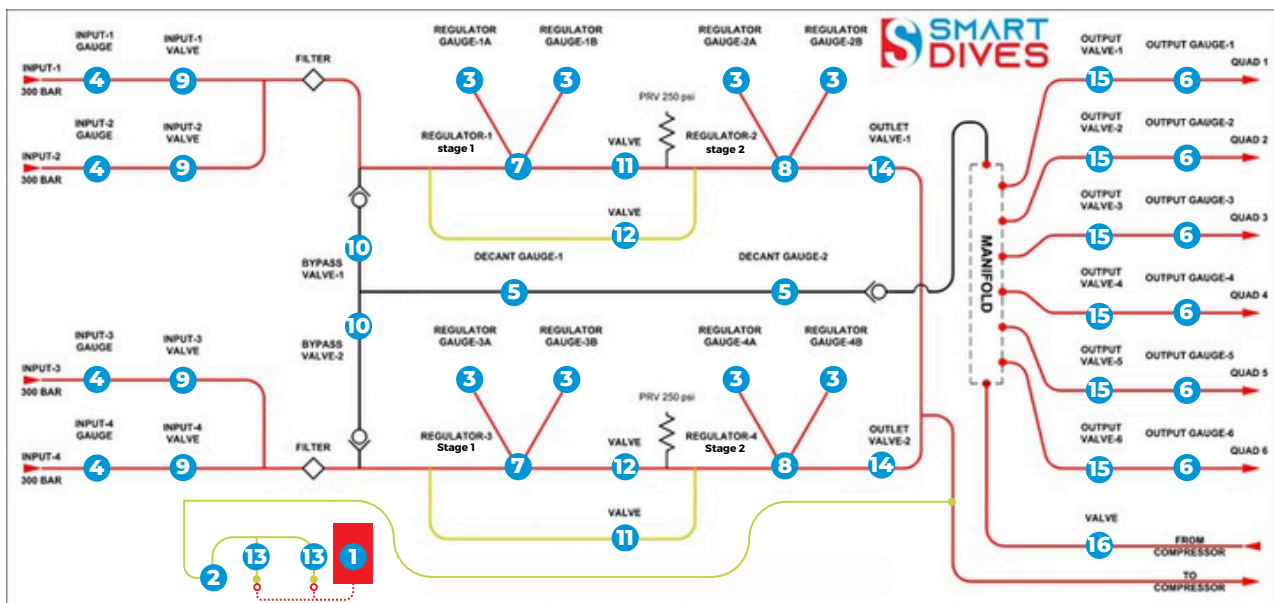
- 20 x Gauges
 - 3 8 x regulator gauges
 - 4 4 x Source Inlet Pressure Gauges
 - 5 2 x decant gauges
 - 6 6 x Filling Outlet Pressure Gauges

Regulators and Control Valves

- 4 x TESCO Pressure Regulators
 - 7 Regulator 1 & 3: Stage 1
 - 8 Regulator 2 & 4: Stage 2
- 22 x control valve
 - 9 4 x Source Inlet Isolation Valves
 - 10 2 x decant valve
 - 11 2 x intermediary valve between regulators
 - 12 2 x bypass valve
 - 13 3 x Sample / Analysis Isolation Valves
 - 14 2 x outlet valve
 - 15 6 x Filling Outlet Isolation Valves
 - 16 1 x from compressor

Operational Note

The panel supports heliox transfer from external source quads to onboard gas storage banks, as well as controlled transfer between designated gas banks onboard the vessel.



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DUAL-MODE COMPRESSOR COOLING

RADIATOR-SET / SEA WATER COOLING

Cooling Medium — Compressor Circuit

- Water / glycol mixture, up to 45% glycol

Radiator Cooling Mode

- External air-cooled radiator set
- Heat rejected to ambient air
- Suitable for onshore, yard and standalone operations

Seawater Cooling Mode

- Integrated internal heat exchanger
- Seawater inlet and outlet connections provided
- Suitable for offshore and vessel-based operations

Cooling Water Pressure

- Maximum: 10 bar

Cooling Water Flow

- 10 m³/h

Cooling Capacity — Radiator Set

- Approx. 92 kW

Radiator Set Water Connection

- R 1½"

Dual Cooling Capability for Flexible Deployment

The SmartDives Heliox Gas Transfer System features a flexible dual-mode compressor cooling arrangement for offshore and standalone deployment.

In radiator cooling mode, the closed-loop water/glycol circuit is cooled through an external air-cooled radiator set, making it suitable for onshore or independent operation.

In seawater cooling mode, heat is removed through an integrated internal heat exchanger. Only the vessel's seawater inlet and outlet connections are required externally, while the compressor remains cooled through its closed-loop water/glycol circuit.

This arrangement allows reliable cooling performance across vessel-based, offshore and onshore operating environments.



VARIABLE FREQUENCY DRIVE (VFD)

The SmartDives Heliox Gas Transfer System incorporates a VFD-controlled compressor drive for smooth start-up and stable operation. By controlling motor speed, the VFD reduces starting current and mechanical stress, improves energy efficiency, and supports reliable gas transfer performance across varying operating conditions.

