

Hyperbaric & Saturation Diving Systems

CAPABILITY SHEET · 30 ATA · PVHO-1 · ENGINEERED TO ORDER

THE SYSTEM

WHAT	The man-rated pressure vessels and gas and life-support engineering that keep people alive, and working, at pressures the sea would not - recompression chambers, saturation living chambers and wet pots to the 30 ATA (about 290 msw) class.
THE CORE IDEA	Past a point the body saturates with inert gas and takes on no more, so decompression stops growing. Pressurise divers once, let them live at depth for days, and decompress once at the end - that is saturation diving, and it is a life-support problem.
STATUS	Engineered to order. Reference configuration, not yet built - quoted against Indian naval and armed-forces diving requirements; no delivered system is claimed.

GAS & LIFE SUPPORT

THE GAS IS NOT AIR	Under pressure nitrogen is narcotic and dense, so divers breathe heliox (helium-oxygen). Helium is expensive and finite, so exhaled helium is recovered by a reclaim unit to IMCA standards - the gas spread (quads, boosters, blending) is as much of the system as the chambers.
THE KNIFE-EDGE	Oxygen is made up within a narrow window between hypoxia and toxicity; CO2 is scrubbed continuously; and because helium conducts heat ~6x faster than air, temperature and humidity are held close. Gas is analysed continuously, with BIBS for therapy and emergency.
MAN-RATED	Chambers are pressure vessels for human occupancy to ASME PVHO-1 - view ports to code, medical locks, transfer-under-pressure locks between compartments - appraised by DNV, IRS or LRS and containerised to DNV 2-7-1 where portable.

THE SPREAD

SATURATION	Primary and secondary living chambers, a wet diving chamber (wet pot) with helium reclaim, and a diving bell or self-propelled hyperbaric lifeboat that mates to the chambers to carry divers to the worksite at pressure and recover them, including in an emergency.
RECOMPRESSION	A treatment chamber re-pressurises a stricken diver to drive decompression-sickness bubbles back into solution and treat on a therapeutic table - a standby requirement of every diving operation, and the same chambers serve clinical hyperbaric oxygen therapy.
CONTROL	A dedicated, redundant life-support control console - depth, gas, environment, communications, CCTV and diver monitoring - watched continuously while anyone is inside.

SOURCING & ENGAGEMENT

WHAT IS BOUGHT	Diving compressors, gas boosters, CO2 scrubbers, gas analysers, breathing regulators and view-port acrylics are proprietary items from established makers.
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WHAT NEOMETRIX BRINGS

ENGAGEMENT	Send the depth, occupancy and duty - treatment, research or a working saturation dive - to sales@neometrixgroup.com ; compliance matrix within two working days.
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DEFENCE PROGRAMMES DESK

sales@neometrixgroup.com · +91 7777 876 876 · neometrixgroup.com

Neometrix Defence Limited · E-148, Sector 63, Noida, Uttar Pradesh, India