



PELAGIC

RESEARCH SERVICES



EXCEPTIONAL DEEP SEA RESEARCH TOOLS & SERVICES

PELAGIC RESEARCH SERVICES is an ocean services company that brings expedition planning, execution and state of the art sub-sea research tools to the ocean community on a global basis. PRS is a dedicated group of ocean professionals with decades of experience implementing, managing and supporting offshore, multi-disciplinary conservation and science projects. PRS offers affordability, efficiency and flexibility, with assets available to be transported anywhere in the world by air, land or sea for your open-ocean endeavors.

PRS seaborne assets address a vital gap in existing support for deep sea and ocean science & technology by offering turnkey operations, available to the marine conservation, ocean industry and ocean science communities. PRS is ready to support our clients on their schedule and provide sophisticated and leading edge technology typically out of reach for the majority of ocean research and exploration efforts.

The founders and staff of PRS have formal research training and experience operating and sailing on research vessels: from oceanography to fisheries monitoring to submersible and ROV operations and living marine life assessment, the PRS leadership and operational teams understand the challenges and importance of working offshore.

THE PRS ROV SYSTEM

The PRS inaugural research asset is a 6500-meter-rated ROV system designed and built by Deep Ocean Exploration and Research (DOER). Designed for research from the skids up, DOER has created a truly flexible, versatile and sophisticated science-class ROV system. Whether supporting the installation and maintenance of ocean observation systems, surveying and performing light work tasks for industry, conducting video transects and/or biological and geological sampling, film operations or exploration, the PRS ROV system is the perfect choice.

PRS ROV Systems easily interface with existing research platforms and will readily “plug and play” on existing UNOLS .681 cable systems.

The PRS H6500 ROV System utilizes an innovative TMS design by DOER that provides a deployment/recovery heavy-lift capability of 1000 lbs. (454 kg) in air. The ROV itself provides a lift capability of over 400 lbs. (181 kg) in water.

PRS ROV Systems are affordable, capable and ready to serve the needs of research and exploration. They are available on a global basis, easily integrated into ships of opportunity around the world.



PRS ROV System – 2 operational configurations:

0 TO 4000 METER

Ships in two (2) standard 20' ISO shipping containers (ROV System control room container and winch and ROV System container)

4000 METERS TO 6500 METERS

Ships in three (3) pieces, two (2) standard shipping containers and one flat rack for winch.

Control Room

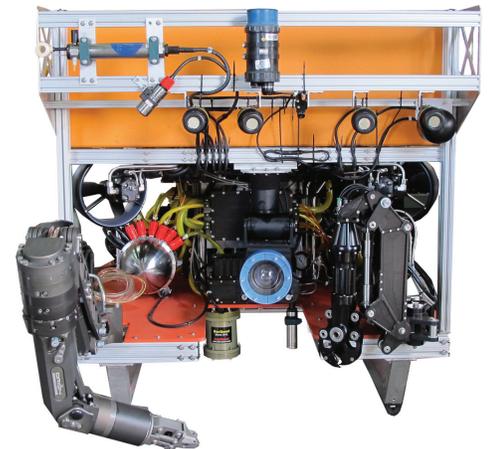
The PRS control room is designed with the client's comfort and ROV operations in mind. Housed in a 20 foot container the control room uses the latest video and data handling equipment to support embarked mission objectives. The PRS control room is also designed to be installed in a designated interior space on ship.

Flexibility

The PRS ROV system can be shipped, via truck, train, ship or air in a variety of operational configurations to be cost effective and also to meet the needs of the project budget and timeline.

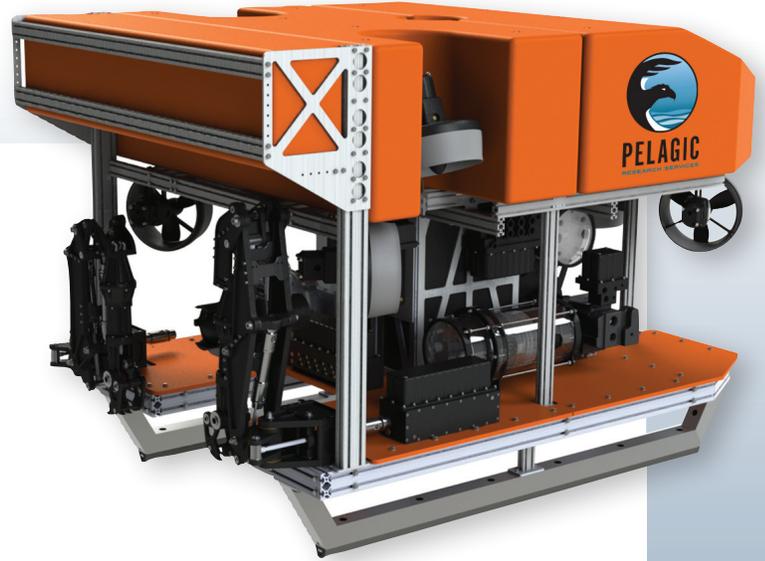
The PRS system is designed to operate on non-DP vessels or DP vessels and does not need a specialized Launch and Recovery System (LARS). It is designed to work off of typical LARS systems found on most capable work and research class vessels. The ROV system weighs less than 5,000 lbs which broadens the number of vessels worldwide that support its deployment.

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ADDITIONAL SERVICES OFFERED BY PRS

Branded research and/or conservation focused expeditions for conservation organizations, aquariums, and science and maritime institutions. These services can include, marketing, education, outreach, and fundraising support.



H6500

REMOTELY OPERATED VEHICLE (ROV)

VEHICLE

DEPTH CAPABILITY:

0 to 6500 meters

DIMENSIONS:

80" L x 55" W x 58" H (203.2 x 139.7 x 147.32 cm)

WEIGHT IN AIR:

2700 lbs (1225 kg)

PAYLOAD:

110 lbs (50 kg)

LIFTING CAPACITY:

450 lbs (204kg) in water weight

POWER (measured at shaft):

25 HP

HYDRAULICS:

3000 psi @ 10 gpm

THRUSTER:

7 total: 4 horizontal, 3 vertical

VALVES:

12 proportional auxiliary, 8 proportional thruster

LIGHTS:

8 high-intensity LED lights on 3 independent, dimmable channels

MANIPULATOR:

Two manipulator configurations:

A) (1) 7-function and (1) 5-function, or

B) (2) 5-function

VOLTAGE:

24 VDC, 12 VDC

CAMERAS

1 high-definition broadcast quality, mounted on pan and tilt

4 standard definition (includes pilot camera)

THRUSTERS

TOTAL CALCULATED THRUST:

Forward Thrust 700 pounds (318 kg)

Reverse Thrust 525 pounds (238 kg)

Up Thrust 500 pounds (227 kg)

Down Thrust 375 pounds (318 kg)

Lateral Thrust 300 pounds (136kg)

The vehicle has a total of 7 thrusters. 4 thrusters provide accurate control of the vehicle in the lateral and rotational axes. 3 thrusters provide vertical control of the vehicle in the water column.

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H6500 ROV



RESEARCH MANIFOLD (Forward Vehicle Manifold)

The research manifold is an innovative solution that facilitates integrating ancillary devices while protecting the integrity of the sealed enclosures. The manifold permits access to all of the data, video and instrument power connections without entering the main cans. All signals are ported to predetermined connectors on the manifold permitting installation of ancillary equipment by means of a whip interface only.

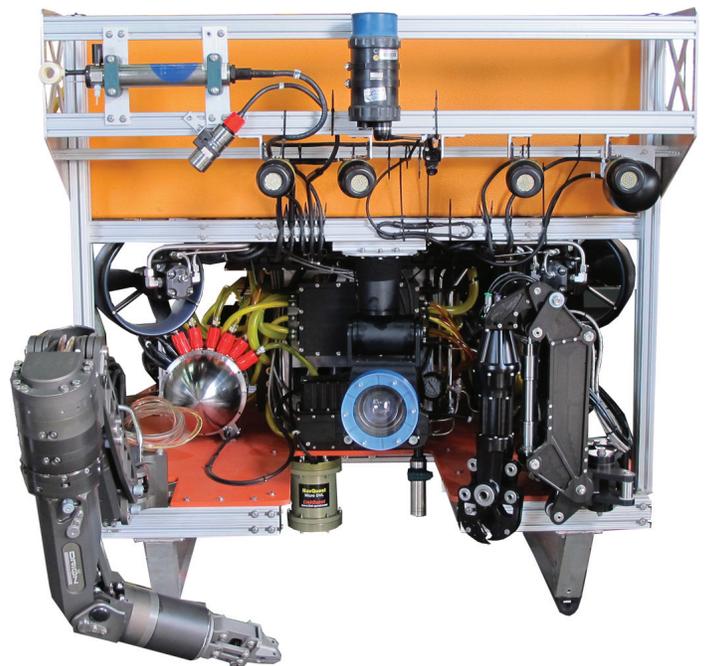
The research manifold is an oil-filled, aluminum hard-anodized box fitted with multiple connector port allowing the integration of the majority of the ancillary equipment, while allowing the provision for future upgrades.

VALVE MANIFOLD

Two, 6 function proportional manifolds are used to regulate hydraulic fluid flow to the manipulators and other devices. The manifolds use a combination of proportional control and load holding valves. All vehicle valves are on an RS485 distributed network; this feature eliminates the need for multiple multi-conductor cables. All valves inclusive of thrusters operate on a RS485 network with dip switch settable addressing from the main controller. Each valve receives the same +/- 24 VDC and RS 485 signal minimizing the terminals and connectors required allow expansion in the number of valves on the system and supports the addition of multiple valve packs with no system rewiring.

HPU

The 25HP subsea Hydraulic Power Unit (HPU) provides pressurized fluid flow of 3000 psi at 10 gpm capabilities to the hydraulic thrusters, platform actuators and manipulator.



PRS ROV systems have two manipulator options. Configuration A comes with one (1) 7-function arm and one (1) 5-function arm. Configuration B comes with two (2) 5-function arms. Configuration A has a slight increase in the day rate cost for the ROV system

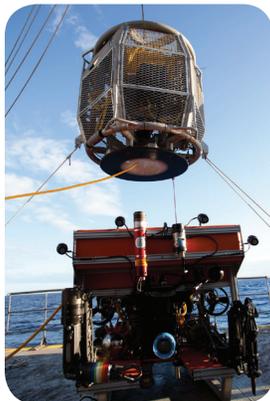


H6500 TMS

TETHER MANAGEMENT SYSTEM (TMS) for H6500 ROV

VEHICLE

DIMENSIONS:	76" Dia x 87" H (193.4 x 221 cm)
WEIGHT IN AIR:	1700 lbs (771 kg)
POWER (measured at shaft):	10 HP
HYDRAULICS:	3000 psi @ 7 gpm
THRUSTER:	2 total
LIFTING CAPACITY:	1000 lbs (454 kg) in air
VALVES:	6 proportional auxiliary 4 thruster
LIGHTS:	4 lights, 2 independent channels (dimnable)
CAMERA:	(3) Standard Definition cameras
SENSOR INTERFACE:	Sensor interface manifold allows for easy instrumentation installation freeing up additional sensor channels and payload on ROV
VOLTAGE:	24 VDC, 12 VDC



OVERVIEW

TMS features an innovative trapeze payload launch and recovery system capable of deploying and/or recovering payload up to 1000 pounds (454 kg). A 10 HP HPU provides pressured fluid flow to two 2 HP thrusters, the level wind, tether drum, and the vehicle capture assembly. The thrusters will permit the TMS to be positioned independently from the ROV. The TMS also features an innovative tether level wind and vehicle docking latch.

TERMINATIONS

The top end of the flying tether is hard wired to the TMS junction box. The bottom end of the umbilical is wire-locked into the termination bullet with the cable core passing through to a cable gland in the termination enclosure. The umbilical attachment can sustain the full load of the vehicle during launch, recovery and operations with a 4:1 factor of safety.

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