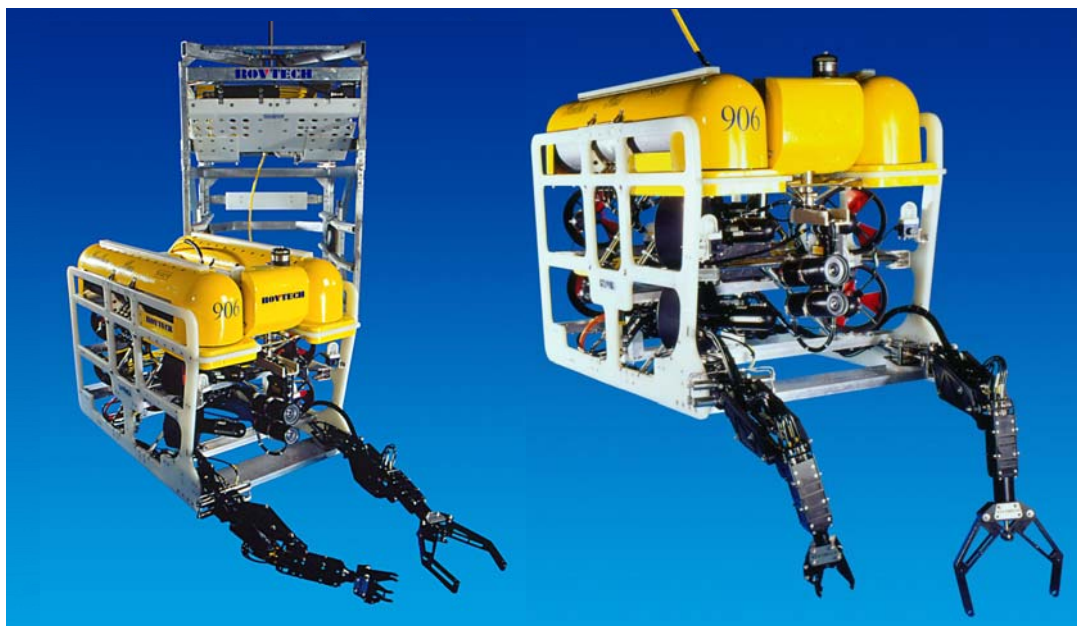


Seaeye Panther Plus ROV



Compact Work-Class Remotely Operated Vehicle

The *Panther Plus* is a development of the highly successful *Panther* ROV. The *Panther Plus* has increased power, payload and dual manipulator capability constituting a true work-class ROV. The *Panther Plus* has 8 horizontal thrusters giving a forward thrust of 220kg and handling abilities that our pilots report as being "simply spectacular".

The Fugro-Rovtech fleet of *Panther Plus* ROVs have, over their short life, performed beyond all expectations in general drill support, completions, work-overs, pipeline survey, platform survey, light construction support, cable lay & plough support.

The Fugro-Rovtech *Panther Plus* ROVs are all deployed in a side entry garage Tether Management System (TMS) and are launched (depending on the specific ROV system) using either an 'A' Frame, a Crane or a dedicated Crane Launch and Recovery Skid.

The *Panther Plus* deck equipment are both smaller and lighter than a conventional hydraulic work-class ROV, with less deck space and power requirements needed and mobilisation is fast and cost effective. Operationally, the *Panther Plus* is simpler to operate, easy to maintain and very agile and controllable in the water.



CAPABILITIES:

Pipeline Inspection

- All standard pipeline inspection tasks including but not limited to: CP, PipeTracker, Dual Head Scanning Sonar & Boom Cameras

Platform Inspection

- General Visual Inspection
- CP Inspection
- FMD Inspection
- Caisson cleaning using surface supplied high pressure water-jet unit
- Local area cleaning using ROV mounted water-jet tool and/or rotary brush tool.

Drill Support

- General Observation Tasks
- Tree work-overs and completions using API 17D Torque Tools either manipulator deployed or ROV mounted
- Tree work-overs and completions using Single Point Tool Deployment Unit (SP TDU) and a suite of API 17D Torque Tools
- Seabed surveys
- Guide wire cutting
- AX Gasket ring change-out

Construction Support

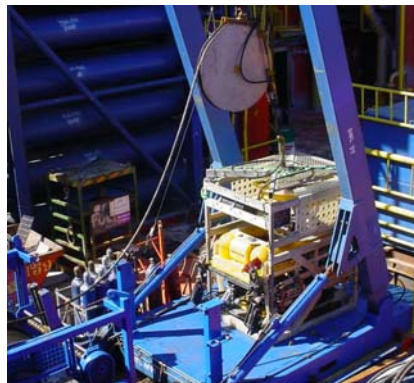
- Pre/Post-Installation Survey Support
- Subsea Infrastructure Intervention
- Rock dumping support
- Ploughing observation work
- Diver observation

Angola
 Argentina
 Australia
 Azerbaijan
 Belgium
 Bermuda
 Brazil
 Brunei
 Canada
 China
 Congo
 Denmark
 Egypt
 France
 Gabon
 Germany
 Ghana
 Hong Kong
 India
 Indonesia
 Ireland
 Italy
 Japan
 Kazakhstan
 Kuwait
 Lebanon
 Luxembourg
 Malaysia
 Mexico
 Netherlands
 Netherlands Antilles
 Norway
 Nigeria
 Oman
 Pakistan
 Philippines
 Poland
 Qatar
 Russia
 Saudi Arabia
 Singapore
 South Africa
 Spain
 Switzerland
 Thailand
 Trinidad & Tobago
 Turkmenistan
 United Arab Emirates
 United Kingdom
 United States
 Venezuela
 Vietnam

Seaeye Panther Plus

Compact Work-Class Remotely Operated Vehicle

Vehicle/General			Tether			Launch & Recovery System		
Dimensions	Length	1.75m	Type	Polyurethane Sheathing (PU)		The Panther Plus can be deployed either by an 'A'-Frame, a marine crane or a stand-alone Launch and Recovery Skid comprising a marine crane and winch with integral power pack. A deck pack for testing vehicle hydraulic systems is also included with the winch.		
	Width	1.06m	Diameter	20mm				
	Height	1.22m	Length	Up to 150m				
Launch Weight	500 kg	Breaking Strain	2000 kg					
Depth Rating	1,000m	Weight	340kg/km in air, neutral in water					
Payload	105 kg	Tether Management System (TMS)			Deployment			
Construction	Open frame polypropylene chassis. Carbon Fibre buoyancy pods encapsulating the vehicle electronics. Additional shaped syntactic foam buoyancy blocks. Metal shell connectors generally used throughout.		Seaeye Marine side-entry garage, Type 3 bale arm, TMS with level wind mechanism to improve tether spooling. The pilot operates the TMS from the ROV hand controller. The length of tether spooled out is displayed onto the video overlay.			Crane	'A' Frame	
			The Garage TMS Frame is fitted with 4 extendable upright sections that allow the TMS to be heightened to accommodate the ROV when it is fitted with a underside mounted Tooling or Pipeline Survey Skid.			Length	2.4m	5.4m
Thrusters	Seaeye SM5 brushless DC motors - 8 x Vectored horizontal - 2 x Vertical		Dimensions			Width	2.4m	2.8m
			Weight			900 kg	Height	2.6m
Performance	Thrust	Fore/Aft	220 kg	Construction			Galvanised Steel	
		Lateral	170 kg	Depth Rating			1,500m	
Speed	Fore/Aft	Vertical	80 kg	Tether Capacity			Up to 150m	
		Lateral	2.8 knots	Combined Control Cabin / Workshop			Winch/Power Pack	
Standard Equipment			Dimensions			Dimensions		
Cameras	1 x Colour CCD Camera 1 x Black & White Low Light Camera (optional up to 4 cameras including zoom)		Length	1.7m	Length			2.4m
			Width	1.4m	Width			2.4m
Pan & Tilt	Electrical Tilt Unit, ± 90 deg Pan Unit ±135deg both with positional feedback displayed on overlay.		Height	2.1m	Height			2.2m
			Weight	900 kg	Weight			7.5 tonnes
Lighting	4 x 150w each quartz-halogen on tilt unit (Optional up to 6)		Construction			Lift Capacity		
			Galvanised Steel			3000kg at bare drum		
Sonar	Sonavision 2000		Depth Rating			Umbilical		
			1,500m			1000m of 31mm diameter		
Compass	Flux-gate unit with solid-state rate stabilization sensor Accuracy ± 1°, Resolution 0.35°		Tether Capacity			Breaking Strain		
			Up to 150m			200nm		
Depth Gauge	Electronic pressure sensor Accuracy ± 0.1%		Equipment Fit			Power Pack		
			1x isolation transformer for ROV and 1x domestic supplies. ROV Control Unit fitted in 19" rack Sonar Processor fitted in 19" rack 1 x ROV Hand Controller 3 x Monitors 2 x Super VHS VCRsor.... 2 x Hard Drive/DVD recorders. 1 x Video Grabber (optional) Zone 2 Air-conditioning			50HP		
Auto Pilot	Auto Depth and Auto Heading		Video Overlay			Full Zone 2 Rating including Exd slings.		
			Date, time, heading, depth, CP, camera tilt angle, turns counter, auto-functions			Power Requirements		
Video System	Two dual fibre-optic transmitters		Workshop			ROV & Control		
			Fitted with 110v supply for power tools. Work benches, vice. Complete set of Hand Tools, specialized Tools Ample storage for all ROV system spares			380-480vac 50/60hz 25 kVA System		
Hydraulics	2.5 kw hydraulic motor and pump for tooling and Manips.		Classification			LARS HPU		
			EXD Zone 2			40kw 440v 3 phase		
Valve Pack	12-Function hydraulic valve pack		Equipment Fit			OPTIONAL EQUIPMENT		
			1x isolation transformer for ROV and 1x domestic supplies. ROV Control Unit fitted in 19" rack Sonar Processor fitted in 19" rack 1 x ROV Hand Controller 3 x Monitors 2 x Super VHS VCRsor.... 2 x Hard Drive/DVD recorders. 1 x Video Grabber (optional) Zone 2 Air-conditioning			Drill Support		
Manipulators	1 x 6 function manipulator 1 x 5 function grabber with electro-hydraulic power pack		Video Overlay			- Various Gasket replacement tools		
			Date, time, heading, depth, CP, camera tilt angle, turns counter, auto-functions			- Guide Post replacement tool		
Cable Cutter	Suitable for cutting 1 1/4" wire supplied with intensifier		Workshop			- 1"-1.5" Hydraulic Anvil Wire Cutter		
			Fitted with 110v supply for power tools. Work benches, vice. Complete set of Hand Tools, specialized Tools Ample storage for all ROV system spares			- Brush Cleaning Tool		
						- API 17D Hydraulic Torque tools		
						- Single Point TDU and API 17H Torque Tool suite		
						Pipeline Survey		
						- Pipeline Survey skid c/w retractable booms, fitted with Cameras & lights on pan units (Booms can also be mounted directly to the ROV)		
						- Pipetracker (TSS440)		
						- Profilers		
						- Bathymetric Units		
						- Specialist CP survey		
						- Survey Gyros etc.		
						Platform Inspection		
						- Cleaning tools - powered brush, ROV mounted or surface supplied, grit entrainment etc.		
						- Manipulator mounted FMD inspection etc.		
						- UT Wall thickness measurement & mapping tools		



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