

# EXPLORER 125 HP WORK CLASS ROV SYSTEM TECHNICAL SPECIFICATION

## ROV

Length	3.50 Metres
Width	1.50 Metres
Height	2.20 Metres
Weight	3,500 kg

## CRANE / INTEGRATED POWER PACK

Length	2.45 Metres
Width (Base)	2.45 Metres
Height	3.10 Metres
Weight	7,000 kg

## UMBILICAL WINCH / INTEGRAL POWER PACK

Length	2.65 Metres
Width	2.60 Metres
Height	2.20 Metres
Weight	7,500 kg

## CONTROL VAN

Length	6.25 Metres
Width	2.45 Metres
Height	2.75 Metres
Weight	10,000 kg

## WORKSHOP VAN

Length	6.20 Metres
Width	2.45 Metres
Height	2.65 Metres
Weight	8,000 kg

## SYSTEM POWER REQUIREMENTS

Supply Rating	440 VAC @ 60 Hz – 3 Phase
Minimum Generator Size	350 kVA

## VEHICLE DESCRIPTION

Depth Rating	2,000 Metres
HPU Size	125 HP
Through Frame Capability	800 kg
Payload	200 kg
Variable Lift Point	Six Position

## TECHNICAL DESCRIPTION

### HPU Motor

Curvtech 125 HP Electric Motor 3000 VAC – 60 Hz 3 ph.  
4 Pole

### HPU Pump

Rexroth – A10VSO140DR (Constant Pressure, Variable  
Displacement Pump)



## Main Hydraulic Supply

210 l/min at 185 Bar

## Thruster Control Unit (TCU)

Eight Ultra Servo Valve Manifold

- Six Valves for Thruster Operations
- Spare Valves for Tooling Operations
- 77 l/min Servo Valves
- Hydraulic Soft Start
- 3,300 PSI Relief Valve

## Hydraulic Control Units (HCU)

Solenoid Valve Pack

- Two HCU's fitted as standard
- Each HCU contains 8 Solenoid Values
- 4 Way, 3 Position Valves rated at 3,000 PSI w/p, 15 l/min
- Each Valve has a Pilot-Check Valve and a Cross Relief Valve (set at 3,000 PSI)
- External Pressure Adjustment (between 7 and 210 Bar for each Valve)
- Port side HCU set at user choice
- Starboard HCU set at user choice

## Thruster Configuration

Vertical Thrusters

- Two HT300 Curvtech Thrusters  
Horizontal, Vectored Thrusters
- Four HT300 Curvtech Thrusters

## Vehicle Power Requirements

- HPU – 3,000 VAC
- Instruments – 1,100 VAC

## Video Channels

Five Switchable, Subsea Camera Outputs

- Four Outputs have Focus Control
- Four Co-axial Signals
- Four Channel F/O Video Mux (1 Multimode Fibre)

## Underwater Lighting

Six, 110 VAC – 250 W Variable Intensity Light Outputs

## Standard Interfaces

- Obstacles Avoidance Sonar
- Manipulator, 7F
- Manipulator, 5F

## Additional Interfaces

- Three, 24 VDC @ 2.5 A, Switchable Outputs
- Four, 110 VAC @ 2 A, Switchable Outputs
- Interfaces can be modified accordingly

## Vehicle Functions / Integral Sensors

- Fluxgate Compass and Integral Rate Gyro
- Hydraulic Pressure Sensor
- Depth Sensor
- Auto Heading Function
- Auto Depth Function
- Pitch and Roll Sensors
- 96 Channel Analogue Data Multiplexer (Time Division Multiplexer)
- Thruster Control (Servo Valves)
- Valve Pack Control (Solenoid Valves)
- Turns Counter

## VEHICLE PERFORMANCE

### Thruster Capability

> 250 kgf @ maximum thrust (each Thruster)

### Capability

- Ahead – 3.0 knots (1.54 m/s)
- Lateral – 2.8 knots (1.44 m/s)
- Astern – 2.5 knots (1.28 m/s)

## SURFACE CONTROLS

### Power Distribution

- Input Voltage – 380 to 440 VAC @ 60 Hz (variable txfr tappings)
- Ground Fault Monitors
- Voltage, Current, Frequency, HPU run hours and Phase Rotation Indications
- HV Step-up Transformers for ROV Motor, ROV Instruments and Domestic Supplies
- Distribution Panel for LARS and Workshop

### ROV Controls

- Pilots and Observers Control Panels in a 4 bay 19" Rack
- PC Based ROV Surface Controls
- Video Distribution System
- Video Recording System (DVD)
- Four Channel Fibre Optic Video Mux
- 14" and 9" Monitors for viewing ROV Camera Pictures – Optional 19" TFT
- Audio Comms to allow comms between ROV Pilot & Launch Area

## SYSTEM POWER REQUIREMENTS

### Supply Rating

- 440 VAC @ 60 Hz – 3 Phase
- 400 kVA (Minimum Generator Size)
- Main Power Cable – 95 mm<sup>2</sup>, 4 core Cable – 18 Metres length
- Domestic Supply Cable – 25 mm<sup>2</sup>, 4 core Cable – 20 Metres length
- Crane HPU Cable – 25 mm<sup>2</sup>, 4 core Cable – 20 Metres length
- Winch HPU Cable – 25 mm<sup>2</sup>, 4 core Cable – 30 Metres length

## CRANE

Safe Working Load (SWL) 4,200 kg @ 8.9 Metres

### Transportation Details (Stowed)

Length 3.00 Metres  
Width (Crane Base) 2.45 Metres  
Height 3.20 Metres

### Operational Details

Minimum Inboard Reach 1.50 Metres  
Maximum Reach 8.90 Metres  
Maximum Height 8.90 Metres

### Crane Winch

Wire Rope Capacity 40 Metres (Max)  
Winch Speed (2nd Layer) 0.46 m/sec  
Wire Rope Diameter 19 mm  
Wire Rope Type Non-Rotating

## CRANE HYDRAULIC POWER PACK

### Technical Details

Power Rating 45 kW  
Start Method Star / Delta Starter  
Power Supply 440 VAC, 50/60 Hz  
Pump Output 220 Bar

## UMBILICAL WINCH

Safe Working Load (SWL) 3,000 kg – At Top Layer

### Operational Details

Max Line Speed 40 m/min Top Layer (28 m/min Inner)  
Drum Diameter 1.0 Metres  
Drum Flanges Diameter 1.75 Metres  
Drum Width 1.40 Metres

### Design Factors

Note: Umbilical Values may differ from actual Umbilical used  
Maximum Umbilical Length 1,000 Metres  
Umbilical Diameter 43 mm (Max)  
Winch Weight 6,000 kg (Without Umbilical Fitted)

### Power Pack

Power Rating 42 kW  
Start Method DOL Starter  
Power Supply 440 VAC, 50/60 Hz  
Reservoir Capacity 300 ltrs  
Pump Output 140 lpm / 180 Bar



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