

robotic
intervention
engineering

STS Explorer 11

ROV System

Technical Specification



Equipment

STS EXPLORER 11 ROV	
Manufacturer	Hydrovision
Length	3.50 Metres
Width	1.86 Metres
Height	2.01 Metres
Weight	3,500 Kgs
CRANE	
Manufacturer	ACB
Length (Stowed)	3.45 Metres
Width (Base)	2.45 Metres
Height (Stowed)	3.45 Metres
Weight	7,000 Kgs
WINCH HYDRAULIC POWER PACK	
Manufacturer	Scantech
Length (Stowed)	1.80 Metres
Width (Base)	1.60 Metres
Height (Stowed)	1.8 Metres
Weight	2,000 Kgs
UMBILICAL WINCH	
Manufacturer	Odin
Length	3.31 Metres
Width	2.50 Metres
Height	2.60 Metres
Weight	13,000 Kgs
CONTROL VAN	
Manufacturer	
Length	6.11 Metres
Width	2.48 Metres
Height	2.62 Metres
Weight	9,000 Kgs
WORKSHOP VAN	
Manufacturer	
Length	6.08 Metres
Width	2.42 Metres
Height	2.62 Metres
Weight	9,000 Kgs
SYSTEM POWER REQUIREMENTS	
Supply Rating	440 Vac @ 60Hz – 3 Phase
Minimum Generator Size	350 Kva



Technical Specification

VEHICLE DESCRIPTION	
Depth Rating	2,000 Metres
HPU Size	100 HP
Through Frame Capability	3,000 Kgs
Payload	200 Kgs
Variable Lift Point	Six Position

TECHNICAL DESCRIPTION	
HPU Motor	Curvtech 100HP Electric Motor 3000Vac – 60Hz 3 ph. 4 Pole Double ended (for optional aux power pack)
HPU Pump	Rexroth – A10VSO140DR (Constant pressure, variable displacement pump)
Main Hydraulic Supply	210 l/min at 185 bar
Thruster Control Unit (TCU)	Eight Servo Valve Manifold <ul style="list-style-type: none"> ▪ Seven valves for Thruster operations ▪ Spare valves for tooling operations ▪ 77 l/min servo valves ▪ Hydraulic Soft start ▪ 3300 psi relief Valve
Hydraulic Control Units (HCU)	Solenoid valve pack <ul style="list-style-type: none"> ▪ Two HCU's fitted as standard ▪ Each HCU contains 10 solenoid valves ▪ 4 way, 3 position valves rated at 3000psi w/p, 15 l/min ▪ Each valve has a pilot-check valve and a cross relief valve (set at 3000 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 <ul style="list-style-type: none"> ▪ Three HT300 Curvtech Thrusters Horizontal, Vectored Thrusters <ul style="list-style-type: none"> ▪ Four HT380 Curvtech Thrusters
Vehicle Power Requirements	<ul style="list-style-type: none"> ▪ HPU – 3000Vac ▪ Instruments – 1100Vac ▪ TMS – 2400Vac
Video Channels	Five switchable, Subsea camera outputs <ul style="list-style-type: none"> ▪ Four outputs have focus control ▪ Four Co-axial signals ▪ Four channel F/O Video Mux (1 Multimode Fibre)
Underwater Lighting	Six, 110Vac - 250w variable intensity light outputs



TECHNICAL DESCRIPTION – CONT'D	
Standard Interfaces	<ul style="list-style-type: none"> ▪ Obstacles Avoidance Sonar – Tritech Super Seaking ▪ Manipulator, 7F – Schilling Orion ▪ Manipulator, 5F – Schilling Rigmaster
Additional Interfaces	<ul style="list-style-type: none"> ▪ Three, 24Vdc @ 2.5A, switchable outputs ▪ Four, 110Vac @2A, switchable outputs ▪ Interfaces can be modified accordingly
Vehicle Functions / Integral Sensors	<ul style="list-style-type: none"> ▪ Fluxgate compass and Integral rate Gyro – KSG105 ▪ 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	> 360 kgf @ maximum thrust (each thruster)
Capability	<ul style="list-style-type: none"> ▪ Ahead - 3.5 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	<ul style="list-style-type: none"> ▪ Input voltage - 380 to 440Vac @ 60Hz (variable txfr tapings) ▪ Ground fault monitors ▪ Voltage, current, frequency, HPU run hours and phase rotation indications ▪ HV Step-up transformers for ROV motor, ROV instruments, TMS Motor and domestic supplies ▪ Distribution panel for LARS and Workshop
ROV Controls	<ul style="list-style-type: none"> ▪ Pilots and Observers control panels in a four bay 19" Rack ▪ PC Based ROV surface controls ▪ Video distribution system ▪ Video recording system ▪ Four channel Fibre Optic Video Mux ▪ 14" and 9" monitors for viewing ROV camera pictures ▪ Audio Comms to allow comms between ROV Pilot & Launch area

SYSTEM POWER REQUIREMENTS	
Supply Rating	<ul style="list-style-type: none"> ▪ 440 Vac @ 60Hz – 3 phase ▪ 350Kva (Minimum generator size) ▪ Main Power cable – 95mm², 4 core cable - 20 mtrs length ▪ Domestic supply cable – N/A ▪ LARS HPU cable - 70mm², 4 core cable - 15 mtrs length



Launch and recovery system

CRANE		
Manufacturer	ACB	
Safe Working Load (SWL)	4,400 Kgs @ 11.20 Metres	
Transportation Details (Stowed)	Length	2.45 Metres
	Width (Crane Base)	2.45 Metres
	Height	2.90Metres
Operational Details	Minimum Inboard Reach	2.00 Metres
	Maximum Reach	11.2 Metres
	Maximum Height	7.75 Metres
Crane Winch	Wire Rope Capacity	40 Metres (Max)
	Winch Speed (2 nd Layer)	0.46 m/sec
	Wire Rope Diameter	19mm
	Wire Rope Type	Non-rotating
CRANE HYDRAULIC POWER PACK		
Manufacturer	Scantech	
Technical Details	Power Rating	55Kw
	Start Method	Star / Delta Starter
	Power Supply	440 Vac, 50/60 Hz
	Pump Output	220 Bar
UMBILICAL WINCH		
Manufacturer	Odim	
Safe Working Load (SWL)	4,000 Kgs – At top layer	
Operational Details	Max Line Speed	60m/min Top Layer (35m/min Inner)
	Drum Diameter	1.30 Metres
	Drum Flanges Diameter	2.00 Metres
	Drum Width	1.80 Metres
Design Factors	Maximum Umbilical Length	1,100 Metres
Note: Umbilical values may differ from actual umbilical used	Umbilical Diameter	46.5mm – Max
	Winch Weight	8,000 Kgs (Without Umbilical Fitted)



