

CRABBS

The CRABBS ROV is a “state of the art” 3000meter rated work ROV system with a dedicated STS trenching skid attachment. The equipment was designed from a systems level approach in order to utilize the proven technology based on the innovator ROV system along with the ITS Centaur trenching equipment.



Tested at depths exceeding 3,017 meters (9,900 feet) and rated at 500 shaft-horsepower, the Sedna is a new breed of intervention and Burial ROV Systems. Designed and built in-house, the free-flying trenching system is capable of constant operations in 6 knots of current and trenching at speeds of 1,200 meters per hour. Additional burial and de-burial tasks can be carried out in soils up to 150kPa.

System features of the Sedna:

- 500 shaft-horse power
- Depth rated to 3,500m(11,500ft)
- Maximum burial depth of 1.5m
- Jetting capacity of 5.8 bars @ 510m/3hr to 15.0 bars @ 300m/hr
- Jetting bars, fire hose, dredge tool
- 8 horizontal, 4 vertical thrusters
- 3,000kg of thrust
- Video, sonar, GUI, cable tracker, etc. can be recorded into VHS, HDTV or DVD.

TECHNICAL SPECIFICATIONS

Manufacturer: SONSUB Inc.

ROV

Operating depth : 30m - 3000m

Dimensions (with tracks) : Length 185.25"
Width 102"
Height 120.5"
Weight in air 11500 kg
Weight in water neutral
Payload up to 250 kg

Vehicle power : 2x250 shaft HP, 4160 VAC, 3 phase, 4 poles
Frequency 60 Hz
Max load current 42 Amp.
Rotational speed 1800 rpm

Weight in air (ROV & Jetter) : 11500kg

Heading control : Automatic heading control
Depth sensor
Altitude sensor
Automatic Altitude Control
Pitch and Roll sensors
Automatic Pitch and Roll Control

Thrusters : 8 horizontal 17" nozzle vectored
4 vertical 15" nozzle vectored
longitudinal thrust 3000 kg
transversal thrust 1100 kg

Cameras : 2 Color zoom CCD Camera (Hi resolution)
Tritech Orion NTSC Res. 460 lines, zoom 12:1

1 color 3-Chip CCD Camera (Hi resolution)
Tritech Aries NTSC Res. 750 lines, zoom
14:1 super wide angle

2 Monochrome silicon intensified target
camera

Tritech Gemini NTSC Res. 700 lines, lens 12.5 mm wide angle

2 Monochrome CCD Camera
Apollo/Omni (low light) NTSC Res. 550 lines, wide angle

Digital NTSC still camera (W/feed) Benthos DSC 4000 1 x SIT mono (Osprey OE1323)

- Lighting : 4 Deep Ocean Eng. HMI/MSR400
400 Watt sodium Arc.
- 8 Remote Ocean System
Miniversa Beam Spot
250 Watt Halogen
- 4 Remote Ocean System QL3000 Flood
250 Watt Halogen
- Pan & tilt units : 5 Hydrolek 360/120, Pan 360deg, Tilt +/-60deg
- Navigation System : Ultrashort baseline acoustic
Long baseline acoustic
Recovery devices
Flasher
Radio beacon
Direction finding receiver
Acoustic transponder
Obstacle avoidance Sonar
Dual Sonar Ranging Altimeters
Automatic Depth Control
- Cable tracking system : Innovatum Ultra System Model #44
AC cable location
DC cable location
Passive cable location
- Cable cutter : HCV100 WEBTOOL
Cutting capacity 4" Cable
Max hydraulic pressure 9280 psi
Weight in air 64 lbs
- Cable gripper : SEL TA17 – 23 TONNE

Cable diameter	100 mm armoured
Max hydraulic pressure	165 bar
Weight in air/water	35 – 25 kg

Manipulators : interfacing for 2 manipulators

General Instrumentation

Hydraulics	interface for: 12 function thruster valve pack 2 thrusters bearing housing compensator 3 x 12 station solenoid valve pack 2 distribution manifolds 1 pressure distribution manifold 2 pressure control manifold 2 hydraulic power units and relevant
Compensators	2 main compensators 2 manipulator compensators HP water pump start manifold
Hydraulic Power Pack Sensor	Pressure Oil contents volume for each compensator Motor temperature Flow sensors
Alarm system	Water ingress to all enclosures
Jetting tool	max trench depth 1.5 m Min/max trench width 50-500 mm HP min/max water flow 350-570 m3/h HP min/max water pressure 5.8-9.3 bar LP water flow 700 m3/h LP water pressure 1.2 bar
Dredging system	Max suction flow 110 m3/h Max high water pressure/flow 9 bar/45 m3/h
Fire hose	Functions: extension, pan/tilt (500mm,+/- 7.5deg-45 deg) Min/max flow rate 230-570 m3/h Min/max water pressure 7.2-9.3 bar
Umbilical	Diameter 38.2 mm

Total length	3300 m
Weight in air/water	4.928- 3.753kg/m
Max operative temperature	150 deg C
Max voltage rating	4.5 KVAC
Breaking load	657 kN

Maximum sea state – launch and recovery	Sea state 6 and Beaufort wind force 7
Sea state 6	Hs 4.3 to 6.1 metres (14 to 20 feet) Ts 4 to 15 sec Wind speed 27 to 33 knots
Beaufort wind force 7	Hs 4 to 5.5 metres (9.5 to 13 feet) Wind speed 28 to 33 knots
Sea current	
Forward	Surface 0-100 m 6 knots mid water 1000m 4 knots Bottom 3000 m 2 knots forward speed with a bottom current of 1.5 knots
Astern	Surface 0-100 m 6 knots Mid water 1000m 4 knots Bottom 3000 m 2 knots forward speed with a bottom current of 1.5 knots
Vertical	Surface to bottom 2.5 knots vertical speed with a mid water current of 4 knots
Lateral	Surface 0-100 m 6 knots Mid water 1000m 4 knots Bottom 3000 m 2 knots forward speed with a bottom current of 1.5 knots
Turning	Surface 0-100 m 25deg/sec in a 6 knots surface current Mid water 1000m 35deg/sec in a 4 knots mid water cur. Bottom 3000 m 45deg/sec in a 1.5 bottom current