

## ROVING BAT

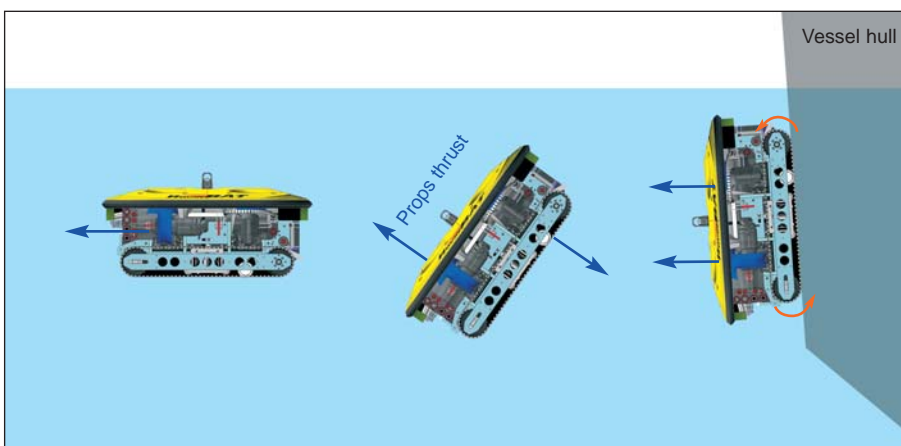
Hybrid free-flying ROV and crawler



The ROVING BAT is a powerful hybrid ROV/crawler, equipped with 6 thrusters (2 longitudinal, 4 vertical), 2 sets of motorized tracks and a dome TV camera; it can:

- reach its target in free-flying mode
- completely tilt up or roll to one side and then stick to any vertical or inclined surface
- then move along this surface in crawling mode to run a close inspection.

Key feature is a very strong thrust (80 kg in the vertical direction, 48 kg in the horizontal) which permits ROVING BAT to operate in severe conditions.



The primary applications are :

- hull inspection for FPSO units or vessels
  - inspection of immersed structures
  - inspection of hydraulic dams
- Sensors and tools can be installed specific to each task.

The body of the ROVING BAT has been designed to minimize drag, thus ensuring optimum contact with the surface to be inspected in all conditions.

# ROVING BAT

## Hybrid free-flying ROV and crawler

### TECHNICAL SPECIFICATIONS

#### VEHICLE

##### PERFORMANCE

|                    |  |
|--------------------|--|
| Movements          |  |
| - horizontal       | : forward/ backward; right & left rotation |
| - vertical         | : up/down                                  |
| - tilt             | : 0° - 360°                                |
| - roll to one side | : 0° - 360°                                |
| Thrust             | : in vertical direction : 80 kg            |
|                    | : in horizontal direction : 48 kg          |
| Forward speed      | : flying mode: 2.0 kn                      |
|                    | : crawling mode: 0 to 0.30m/sec            |
| Operating depth    | : 50 m                                     |

##### GENERAL CHARACTERISTICS

|               |   |
|---------------|---|
| Dimensions    | : L 1042 mm W 1054 mm                               |
|               | : H 440 mm up to top of the buoyancy cap            |
|               | : H 640 mm including transponder & lifting bail     |
| Weight in air | : 120 kg  |
| Material      | : frame: polypropylene ; fittings : stainless steel |
|               | : electronic pod: hard anodized aluminium 5086      |
|               | : crawler sheave: hard anodized aluminium 5083      |
|               | : tracks: polyurethane                              |

##### TELEMETRY UNIT

|  |  |
|--|--|
| Communication through RS 485 data link |  |
| Spare data link for sonar              |  |

##### VIEWING SYSTEM

|   |  |
|---|--|
| Colour zoom camera with panoramic viewing through dome  |  |
| Wide angle B/W rear camera with built-in infrared light |  |
| Two halogen lights 150w each                            |  |

ACOUSTIC POSITIONING : Long base line system

##### SENSORS

|                    |  |
|--------------------|--|
| Heading/pitch/roll | : 3 axis magnetometer/accelerometer/gyro |
|                    | : Accuracy: +/- 1%                       |
|                    | : Auto heading function                  |

|       |                                 |
|-------|---------------------------------|
| Depth | : Piezoresistive type sensor    |
|       | : Accuracy: +/- 0.25 full scale |
|       | : Auto depth function           |

|               |   |
|---------------|---|
| Other sensors | : Electronic pod: temperature, water ingress, amperage, voltage |
|---------------|---|

Odometer in crawling mode : incremental encoder mounted on wheel

#### CONTROL UNIT

##### PC

17" LCD screen. Communication 9600 baud  
Opto-insulated serial link.

##### Digital controls on screen

- Camera selection and setup
- Lights power control
- Thrusters enable
- Video inserts enable : text - date  
time - heading/depth

##### Navigation displays

- Umbilical No. of turns indicator
- Depth indicator
- Heading indicator

##### ROV feedback

- Power supply (Amps)
- Voltmeter
- Electronic pod internal temperature
- Electronic pod internal humidity level
- Electronic pod water ingress alarm
- Vertical thrust trim indicator



##### DVD recorder

|                    |                       |
|--------------------|-----------------------|
| Model              | : Pioneer DVD-R-330-S |
| Record format      | : PAL/NTSC            |
| Play format        | : PAL/NTSC            |
| Video input level  | : 1,0Vp-p, 75 ohms    |
| Video output level | : 1,0Vp-p, 75 ohms    |

#### HAND CONTROLLER

|          |   |
|----------|---|
| Controls | : Thrusters, 2 joysticks                            |
|          | : Propulsion mode selection (thrusters/crawlers)    |
|          | : Vertical stabilization trimmer                    |
|          | : Camera selection                                  |
|          | : Colour camera: focus, zoom, tilt/rotate movements |
|          | : Lights on/off and intensity                       |

|           |                  |
|-----------|------------------|
| Functions | : Auto heading   |
|           | : Auto depth     |
|           | : Auto "docking" |

#### OPERATING CONDITIONS

|                       |                            |
|-----------------------|----------------------------|
| Operating temperature | : 0 to 50°C                |
| Storage temperature   | : -10 to 60°C              |
| Humidity              | : < 80% (for control unit) |