SAAB

SEAEYE TIGER & LYNX

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The Seaeye Tiger and Lynx are widely regarded as the leading observation and inspection vehicles within the oil and gas industry. Increasingly they are also being taken up as the ROV of choice by military and scientific customers seeking increased capability in deep water.

With depth ratings of 1000m and 1500m respectively, both the Tiger and Lynx are very stable platforms and are able to perform well in strong currents and under the harshest conditions, providing excellent handling and manoeuvrability.

Their open frame construction and generous payload offer the possibility of adding a wide range of tools and sensors as well as interchangeable tool skids.

With a depth rating of 1000m and a payload of 32 kg, the Seaeye Tiger also benefits from the following options:

- TMS type 2 or type 8, or free-swimming operation
- Up to 3 video cameras (2 live)
- Sonar systems, altimeter
- Scientific measurement systems (bathy, CTD, etc)
- CP probe (contact or proximity)
- Tracking systems
- Ultrasonic thickness gauge
- Tooling skids: 4-function manipulator, cutting tool, cleaning brush.

The Lynx is slightly larger and benefits from a fibre optic link to the surface, a depth rating of 1500m and a second vertical thruster.

The following options are available:

- TMS type 8 or free-swimming operation
- Up to 4 (live) video cameras
- Sonar systems, altimeter
- Scientific measurement systems (bathy, CTD, etc)
- CP probe (contact or proximity)
- Tracking systems
- Ultrasonic thickness gauge
- Tooling skids: water jet, 4-function manipulator, cutting tool, cleaning brush
- Flooded Member Detector (FMD) tool orientation skid.

THE VEHICLE

CHASSIS

The extremely rugged polypropylene chassis with stainless steel lift frames are totally maintenance free, non corroding and self-supporting in seawater. Additional equipment can be bolted directly onto the chassis for customisation.

BUOYANCY

The Seaeye Lynx syntactic foam buoyancy block is split into two sections for easier handling and access to vehicle components. The smaller Seaeye Tiger has a one piece buoyancy block. Apertures are provided for sonar and tracking transponder/emergency strobe.

PROPULSION

The Seaeye Tiger has one vertical and four horizontal vectored brushless SM4 250 Volt DC thrusters. The Seaeye Lynx has an extra vertical thruster.

These thrusters provide superior control and response and give the Seaeye Tiger and Lynx excellent stable handling characteristics.

COMPASS & RATE GYRO

A magneto-resistive compass and a solid-state rate sensor give superior azimuth stability.

Compass accuracy	±1°
Resolution	0.1°
Update rate	98 ms

DEPTH SENSOR

The system uses an electronic depth sensor accurate to ±0.1% FSD accuracy.

EQUIPMENT INTERFACES

A wide range of standard interfaces are available. Custom interfaces and configurations can also be provided.

AUTOPILOT FUNCTIONS

- Auto heading
- Auto depth
- Auto altitude (optional)

VIDEO SYSTEM

Up to 3 video channels are available on the Tiger (2 live + 1 switchable), and up to 4 simultaneous video channels are available on the Lynx.

The Lynx is fitted with fibre optic multiplexers, whereas on the Tiger video is transmitted over copper twisted pairs (although fibre may be used between the TMS and the surface).

TILT PLATFORM

The ±90 degree camera tilt platform accepts two cameras and lights.

A proportional tilt feedback potentiometer provides an accurate tilt angle which is displayed on the video overlay.

LIGHTING

300 Watts of lighting is available on the Tiger and 600 Watts on the Lynx (in two individually controlled channels), with two individually fused lamps per channel.

LED lamps providing exceptional illumination and durability are also available (optional).

VEHICLE ELECTRONICS POD

The electronics are enclosed in a watertight and anodised electronics pod machined from 6082 marine grade aluminium and fitted with a leak alarm (and vacuum alarm for the Lynx).

CONNECTORS

The Seaeye Tiger and Lynx use Seaeye's proven range of metal shell connectors.

TETHER TERMINATION

The Seaeye Tiger has a potted termination, whereas the Seaeye Lynx is electrically terminated in an oil-filled and pressure compensated vehicle junction box.

SURFACE CONTROL AND POWER SUPPLY

SURFACE CONTROL UNIT

The surface control system provides:

- AC and DC supply switching control
- DC current and voltage indication
- Control of video and video overlay
- A keypad for system configuration
- Plugs and sockets for system connections and interfaces for ancillary equipment
- ROV control system (via hand control unit)
- TMS control system (via SCU or foot-switches)

MONITORS AND VIDEO OVERLAY

The Seaeye Tiger and Lynx come with a 15" colour rack-mounted video monitor displaying the video signal from the cameras and the following overlay data:

- Heading
- Analogue compass rose
- Depth
- Tilt position
- Date and time
- Free text from keyboard
- TMS bail cable count (if applicable)
- CP probe readings (if fitted)
- Vehicle turns count
- Leak and vacuum alarms
- 1 string of live data, e.g. altitude or latitude/longitude (optional)

The Lynx has two video monitors.

HAND CONTROL UNIT

The hand control unit provides remote control of the ROV (propulsion, tilt platform, lights, autopilot functions, etc).

KEYBOARD

A rack-mountable keyboard is supplied for entering data and free text onto the video overlay.

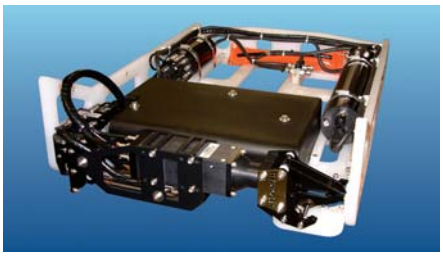
TELEMETRY MONITOR UNIT

A telemetry monitor unit allows the ROV data (heading, depth, etc) to be displayed on a PC and/or exported to a survey computer, and is also a useful fault diagnostics tool.

SYSTEM POWER SUPPLY

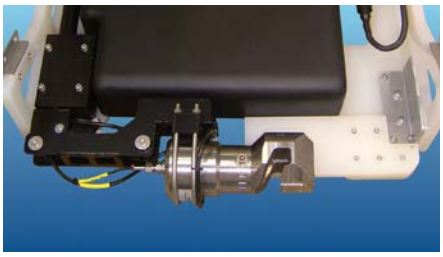
The power supply unit incorporates protection devices, interlocks and cooling fans. Safety features include both AC and DC line insulation monitors (LIMs) which constantly monitor electrical leakage in the system (with trips and alarm indicators) and test the isolation of the system.

OPTIONS, TOOLS AND ACCESSORIES

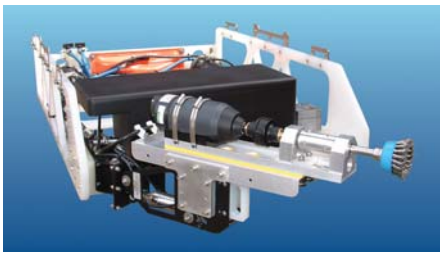


TIGER MANIPULATOR SKID

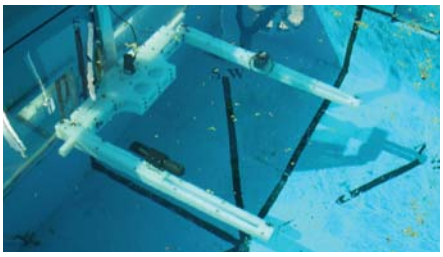
LYNX MANIPULATOR SKID



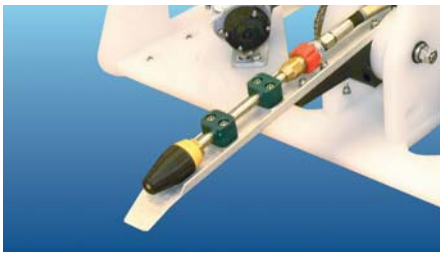
CABLE CUTTER SKID



CLEANING BRUSH SKID



LYNX FMD ORIENTATION TOOL SKID



LYNX WATER JET SKID

LED LAMPS

TRANSPONDER

SONAR

CP PROBE

EMERGENCY STROBE

CYGNUS UT GAUGE

LOCK LATCH FOR FREE-SWIMMING OPTION

SEAEYE TIGER & LYNX SPECIFICATIONS

SPECIFICATIONS	TIGER	LYNX
Depth rating	1000 msw	1500 msw
Length	1030 mm	1500 mm
Height	590 mm	605 mm
Width	700 mm	815 mm
Launch weight	150 kg	200 kg
Forward speed	3 knots	3 knots
Thrust forward	62 kgf	66 kgf
Thrust lateral	43 kgf	47 kgf
Thrust vertical	22 kgf	43 kgf
Payload	32 kg	34 kg

SYSTEM POWER REQUIREMENTS	TIGER	LYNX
Input	3-phase 380-480 VAC	3-phase 380-480 VAC
ROV	8 kVA	11 kVA
TMS	1.5 kVA	1.5 kVA
Tooling (optional AC)	450 VA (3.3 kVA)	450 VA (3.3 kVA)
LARS (typical)	25 kVA	25 kVA
Cabin (typical)	12 kVA	12 kVA

TIGER & LYNX DEPLOYMENT AND OPERATION

TETHER MANAGEMENT SYSTEM (TMS)

The Seaeye Tiger and Lynx can both be operated in a free-swimming configuration, with up to 450m of umbilical cable, usually fitted to an electric winch. But for work at greater depths and in higher currents, and for faster travel to and from the working zone, as well as greater protection of the vehicle through the splash zone, it is usual to deploy this type of ROV with a TMS.

The Seaeye Tiger can be deployed from the compact and lightweight galvanised steel Seaeye TMS type 2, which can accommodate up to 140m of tether. It can alternatively be deployed from the larger stainless steel Seaeye TMS type 8, which can accommodate up to 200m of tether. The Seaeye Lynx is deployed from the Seaeye TMS type 8.

Both these TMSs use a bail arm mechanism to spool the tether on and off a drum controlled by the ROV pilot. The TMS's height can be adjusted to accommodate tool skids.

The TMS type 8 can be used in conjunction with an optional snubber-rotator mechanism, which allows the TMS to be locked into position, rotated and securely moved through the A-frame.

CABIN

Surface control equipment can either be installed directly in the customer's facility or integrated into a custom ISO control cabin. A range of control cabins, workshops and storage containers are available and can be adapted to suit customer-specific requirements.

Safe Area or Zone 2 ratings are available.

LAUNCH AND RECOVERY SYSTEM (LARS)

A range of different configurations and winch sizes are available to accommodate different cable lengths and applications.

A single skid A-frame, hydraulic power unit (HPU) and winch with an armoured umbilical cable is the most commonly used launch and recovery system.

When deck space is at a premium, crane-based systems can alternatively be used.

Safe Area or Zone 2 ratings are available.

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