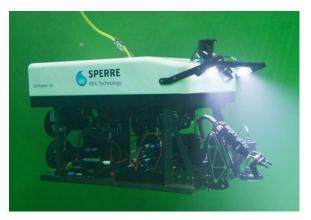


Survey and Inspection Class Remotely Operated Vehicle

Sperre SUB-fighter 15k

Survey and Inspection Class Remotely Operated Vehicle Sperre SUB-fighter 15k is depth rated to 3,000 m.

The ROV system can be installed on the vessel of opportunity with deck space for 20 ft. ISO container and 2×3 m deck space for winch and vehicle. Topside equipment and ROV pilots workplaces are located in the 20 ft. control container.



The system is transported in a 20 ft. container with dedicated space for winch and vehicle storage.

Sperre SUB-fighter 15k have 950 m of tether on a main winch, there is possibility to connect a winch with 3,000 m of tether.

All additional equipment on ROV is 3,000 m depth rated.

The system was built in 2016.

MAGE

The vehicle can withstand high currents, due to the high power of the thrusters.

It is possible to connect a wide range of additional equipment. The reconfiguration of the system is quick due to the Focal MUX capabilities. Wide range of tools and sensors could be connected the vehicle.

System is suitable for any LARS on the vessel like crane or frame.

MAGE is ready to provide service across all types of Survey and Inspection ROV workscopes: inspection of underwater pipelines; visual inspections; water, soil and gas sampling, survey.

> MARINE ARCTIC GEOLOGICAL EXPEDITION

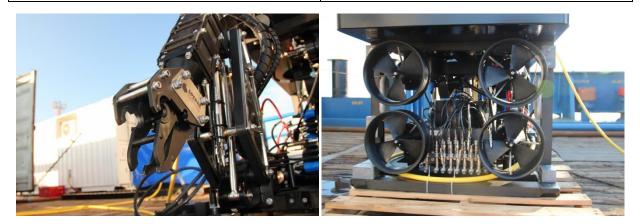


Ul. S. Perovskoy, 26, Murmansk, 183038, Russia, +7 (8152) 45-07-09 Ul. Osennyaya, 11, Moscow, 121609, Russia, +7 (495) 66-555-66

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MARINE ARCTIC GEOLOGICAL EXPEDITION

Vehicle	
Manufactured by	Sperre AS (Norway, Notodden)
Type and serial number of the system	SUB-fighter 15k #105
Year Built	2016
Maximum working depth	Up to 3000 m
Length Width Height	2,00×0,82×1,30 m
Weight in air	700 kg
Payload	Approx. 20 kg
Frame: through frame lift, material	Approx. 300 kg, Anodized aluminium
ROV Thrusters	
Horizontal, Vertical, Lateral	5 × 2000 Вт, 2 × 2000 Вт, 1 × 2000 Вт
Horizontal and vertical bollard pull	160 kgs, 80 kgs
Speed approx.	Horizontal 3.5 kn
	Lateral 1.2 kn
	Vertical 1.8 kn
	Turn 60 deg / sec
ROV Sensors	
Compass	Fluxgate magnetic with auto heading
Depth	300 bar depth sensor with auto depth
Altimeter	200 kHz, range 30 m
Sonar	Kongsberg Mesotech 1171
Water ingress	Moisture sensor in each 1 atm. housing
Cameras	5 interfaces, three cameras connected: high
	sensitivity fixed focus, color zoom, Full HD 1080p
Lights	2 x ROS Q-LED III, 3500 lux
Mini Latch & Bullet	Imenco Mini Latch 1.5Te
Telemetry	Focal 907, Survey Channels on bulkhead:
	1 x RS 232, 24 V, 1 X RS 485, 24 V
Power input	
Main power	230 / 400 / 440 VAC, 3 phase 20 kW
Manipulators and pan/tilt	
HPU	140 bar, 2.2 lpm
5 function	HydroLEK HLK-HD5
Grabber	Grabber and rope cutter
Valve pack	HLK-73300 (6B & 7 Function Valve Pack)
Pan/tilt	HydroLEK HLK-21000 Mini Pan & Tilt



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Sperre SUB-fighter 15k

Control Container	
Manufacturer	Trans Construction AS (ATC, Norway,
	https://www.atcno.com/)
Year built	2016
Length, width, height, weight	6.065 m, 2.895 m, 2.440 m, 6150 kg



Container equipment	
Main equipment	Splash proof 19` rack Consisting of: PC, Power
	remote control, Video matrix 8 channel, Vigra
	Option overlay system.
Telemetry	Data presentations of, depth, heading, date,
	time, twist counter, video grabber and screen
	writer. DVD and HDD video PC recorder
	Connections for umbilical, sonar, control console,
	RS 232 communication ports Digital instruments,
	Volts, Amps and HZ.
Video and telemetry recorder	Options Video Logger
	SSP&T DVS 4.6
Power control and fuse cabinet	Steel cabinet Power input 230V 50 HZ. 3 phase,
	20kW. Transformer 230 V / 2500 V AC. Fuses and
	ground fault system. Connections for umbilical.
Transformer	Noratel 3LT30-240+/2500-yY0-23
	Output voltage 2500 V
Control console	Glass fibre portable console. ROV pilot chair
	control console with two XY joysticks for
	thrusters control. Switches for camera, light,
	manipulator, remote functions on ROV, and other
	external functions.



MARINE ARCTIC GEOLOGICAL EXPEDITION

Sperre SUB-fighter 15k



Main winch	
Manufacturer	Sperre AS (Norway, Notodden)
Туре	Sperre Winch Model Medium (modified)
Serial number	#92
Year built	2016
Length, width, height, weight	1.75 m; 0.98 m; 1.12 m;
	330 kg excl. cable, 650 incl. Cable 950 m
Drum capacity	950 m of neutral buoyancy cable
Construction	All welded in corrosion resistant aluminium,
	frame and cable drum
Drum dimensions	Core length 1000mm
	Core diameter 400 mm
	Flange diameter 900 mm
Cable pull	Inner layer 2000N with clutch
Cable speed	Calculated average speed 35 m/min
Spooling system	Stainless steel shaft, belt driven with release
	mechanism. Cable dia. adjustable from 1 mm to
	40 mm in 50 steps.
Electric motor	1500W. 3 ph, 1395 o/min.
Electric input	Single phase 230 V AC 50 Hz. 16 A
Controls	Frequency inverter, Manual control with 15
	meters cable. Up, down and emergency stop.
	Potentiometer speed control.
Slip ring	Delivered by Sperre AS
Brake	Automatic
Temperature rating	-25+65 °C

System includes spares and tools for service at remote location.



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