



JW FISHERS MFG INC

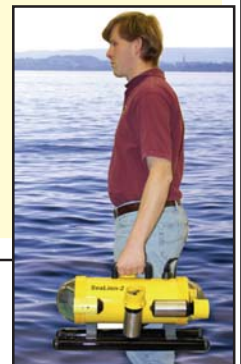
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TECHNICAL DATA SHEET



- PAN AND TILT COLOR FRONT CAMERA
- PAN AND TILT COLOR REAR CAMERA
- 500 FOOT DEPTH RATED HOUSING
- 50 DEGREE WIDE ANGLE LENS, 90 DEGREE TILT/PAN (140 DEG TOTAL VIEWING AREA)
- 10.4 INCH ULTRA BRIGHT COLOR MONITOR
- 100 WATT LIGHTING
- FOUR MOTORS, VARIABLE SPEED, REVERSIBLE
- 3 KNOTS FORWARD SPEED
- HIGHLY PORTABLE SYSTEM
- LEAK DETECTION CIRCUITRY
- SPARE WIRES IN UMBILICAL
- TWO YEAR WARRANTY



SYSTEM COMES COMPLETE AND READY TO GO WITH 250' OF CABLE AND 10.4" MONITOR

SeaOtter-2 Remote Operated Vehicle

The SeaOtter-2 is the next generation of Fishers very popular SeaOtter ROV. With pan and tilt cameras in both front and rear, it is perfect for pipeline inspections, river and ocean searches, dam inspections, oil and gas platform work, fish farms, inspection of hazardous sites, and almost every type of underwater search or inspection operation. This ROV can dramatically reduce search time and the high costs associated with diver based inspections. With the SeaOtter-2 your team can locate, inspect, and video tape a target without entering the water. The SeaOtter can also narrow the search area so when divers are required, their time is spent on the target, instead of swimming grid patterns. When outfitted with a metal detector (JW Fishers RMD-1), the ROV can search for weapons, unexploded ordnance, pipelines, buried treasure, or other metallic objects.

Fishers ROVs are in use around the world by US and foreign military, state and federal agencies, search and rescue groups, and many commercial diving companies. These high performance underwater camera systems can make public safety search operations less dangerous by assisting in the location of drowning victims and recovery of evidence. They help eliminate the need to dive in difficult or dangerous conditions, whether it be a low visibility environment or a dive beyond no-decompression limits.

The system is very user friendly and with just a little practice time in a pool, the operator will have the SeaOtter moving effortlessly through the water.

(continued on back side)

SPECIFICATIONS

DIMENSIONS/WEIGHTS:

- SeaOtter 23L x 16W x 12H inches 43 lbs.
- Control Box 17L x 12W x 8.5H inches 15 lbs.
- Cable5 inches Dia x 250/500 feet 30/60 lbs.
- Monitor (built into case) ... 10.4 inches

PERFORMANCE/DESCRIPTIONS:

- Camera/Lens 1/3" Super HAD CCD II color day/night, 4mm, 55 deg vertical by 70 deg horizontal lens, 700 lines, .0001 lux, 90 degree pan and tilt, auto iris.
- Monitor 10.4 inches high resolution ultra bright color.
- Lighting Two 50w tungsten halogen (front).
..... Ultra bright LED cluster (rear).
- Motors Four DC PM type, reversible, variable speed, proportional controlled, 6+lbs. thrust each motor, 3 knots.
- Operating Depth...500 feet.
- Color Yellow/black.
- Sealing Five separate housings, O-ring sealed, a leak detector in each housing, motors use "no maintenance" rotary seals.
- Power Req 120 vac, 5 amps, 600w max.

OPTIONS

- 500 foot cable
- DVD recorder
- Spare parts kit
- Scan-650 scanning sonar
- On screen display (time, date, heading, depth, GPS)
- Manipulator arm
- Attached metal detector (RMD-1)
- 220vac (Europe)
- PAL camera and monitor (Europe)

The ROV has a sophisticated four motor propulsion system; two motors for forward and reverse, and two motors for vertical and lateral thrust. All motors are reversible and operate at variable speeds. An off-the-shelf PS2 controller (supplied) controls the system. A joystick controls the horizontal motors (forward/reverse and turning) - it can hover "in place" and rotate 360 degrees; and the second joystick controls the vertical motors (up/down and lateral movement). A wireless PS2 controller can also be used.



A PS2 Controller's joysticks and buttons control the ROV

The SeaOtter-2 sends its video picture to a topside 10.4 inch high resolution ultra-bright color monitor which is built into the Control Box cover. A video output in the Control Box allows an additional remote monitor to be used simultaneously. An adjustable video amplifier on the Control Panel allows operator adjustment of the video picture to optimize picture quality for water clarity. A VCR/DVD can be connected to the Control Box to make a permanent record. The Control Box also contains an audio amplifier with an input jack on the Control Panel for audio recording.



Control Box cover with monitor can be removed for custom positioning or mounting

The system has two color cameras (front and back) with 4mm wide angle (50 degree) lens. The camera's 90 degree tilt allows a full 140 degree vertical viewing. The camera's 90 degree pan allows an additional 140 degrees of horizontal viewing. Both pan and tilt is controlled by pushbuttons on the PS2. Camera selection, front or back, is operator selectable from the Control Panel.

The Control Panel also contains a LCD readout which displays the overall status of the system.



Control Panel's switches, controls, and interface connectors

Illumination is provided by two, 50 watt operator controlled tungsten halogen lamps for the front camera and "ultra-bright" LED cluster for the rear camera.



Pan and Tilt Cameras (front and back) with 100 watts of Lighting

At 43 lbs, the ROV is highly portable and very "user friendly". With the optional spare parts kit, the ROV is completely field maintainable. Carrying case is included. *JW Fishers* SeaOtter-2 ROV system represents a major breakthrough in cost/performance for a commercial grade ROV. This high performance system competes with systems more than twice the price. The SeaOtter-2 is covered by a TWO YEAR WARRANTY.



Fishers ROVs are in commercial use Worldwide



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Underwater Search Equipment it **Pays** to Own



— Comparison of SeaOtter-2 to SeaLion-2 —



SeaOtter-2

10.4" built-in Ultrabright monitor

Control Box
 17" x 12" x 8.5"



SeaLion-2

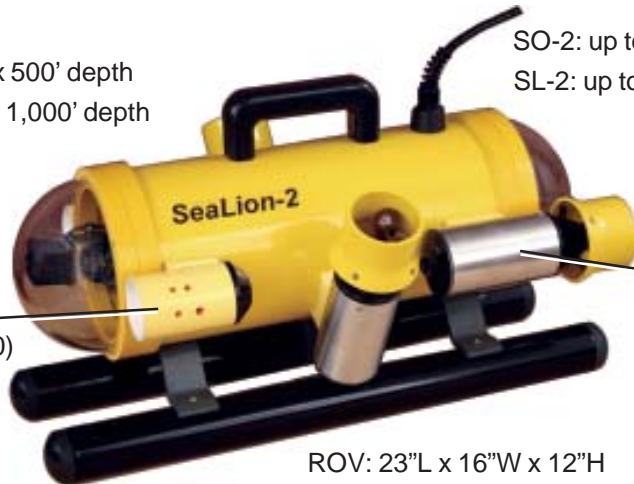
15" built-in Ultrabright monitor

Control Box
 19" x 16" x 8.5"

SO-2: max 500' depth
 SL-2: max 1,000' depth

SO-2: up to 500' of cable
 SL-2: up to 1,500' of cable

SO-2: 100w of lighting (on/off)
 SL-2: 200w of lighting (variable 0-200)



SL-2: Hi performance motors

ROV: 23"L x 16"W x 12"H

— See complete list on back —

Features of SeaOtter-2 and SeaLion-2

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SeaOtter-2

- 500' depth rating
- 250' cable length standard
- 3 mph forward speed
- 4 motors (variable speed/reversible)
- 100 watt of lighting (on/off)
- 2 color cameras (front and rear)
- Pan and tilt (both front and rear cameras)
- Built in 10.4" flat "ultra bright" screen monitor
- PS2 joystick controlled (can be wireless)
- Spare twisted pair in umbilical
- Ground fault and leak detection circuitry

Options:

- Up to 500' total cable length
- On-screen-display (time, date, heading, depth, GPS)
- Auto depth control
- Manipulator arm
- Attached metal detector (our RMD-1)
- Scanning sonar (our SCAN-650)
- Basic spares kit
- DVD recorder

SeaLion-2

- **1,000** depth rating
- 250' cable length standard
- **4 mph+** forward speed
- **4 Hi Output motors** (variable speed/reversible)
- **Power boost Circuit (for short bursts of extra thrust)**
- **200 watt of lighting (0 to 200 variable)**
- 2 color cameras (front and rear) and both sides)
- Pan and tilt (both front and rear cameras)
- Built in **15"** flat "ultra bright" screen monitor
- PS2 joystick controlled (can be wireless)
- Ground fault and leak detection circuitry

Options:

- Up to **1,500'** total cable length
- On-screen-display (time, date, heading, depth, GPS, **and distance from bottom**)
- **2 color side cameras (4 cameras total)**
- Auto depth control
- **Auto distance off bottom**
- **Can be controlled by computer**
- **Video text overlay**
- Manipulator arm
- Attached metal detector (our RMD-1)
- Scanning sonar (our SCAN-650)
- Basic spares kit
- External DVD recorder
- Built-in DVR recorder

Note: Items in red are only available on the SeaLion-2



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