

# SR-80

## Lifting-Engine

### Committed to Research

The SMELTS™ SR-80 Lifting Engine platform was engineered with sustainability in mind. Capable of reliable performance in real world conditions, the SR-80 is the model of choice for both deep sea commercial fishermen and researchers due to its durability, adaptability, and ease of use. Equipped with dual watertight vessels, The SR-80 can be configured for any application, and offers a versatile solution without compromising ocean health.



1003 Iowa Heights Road  
Sedro Woolley, WA 98284  
info@smelts.org  
(360) 303-9338

## Overview / Description

This data sheet provides an overview of the SMELTS SR-80 Lifting-Engine, an acoustically triggered lineless gear recovery lift-bag system designed as a sustainable solution for traditional bottom set fixed gear fishing. It outlines the purpose of the system, key features, and technical specifications to assist researchers, regulators, and users in evaluating its performance, capabilities, and suitability for fishing and research.

## Key Features

- 80 cubic foot air tank to provide buoyancy upon triggering.
- Durable high-visibility lift-bag to ensure easy gear recovery - visible by marine radar.
- Dual electronic vessels for operations & data collection.
- Robust HDPE core which protects critical components.
- Rubberized plastic coated 10.5-gauge corrosion resistant Aquamesh shell .
- Service-oriented design allowing for improved tank & vessel access.
- Long battery life supports consistent gear recovery.

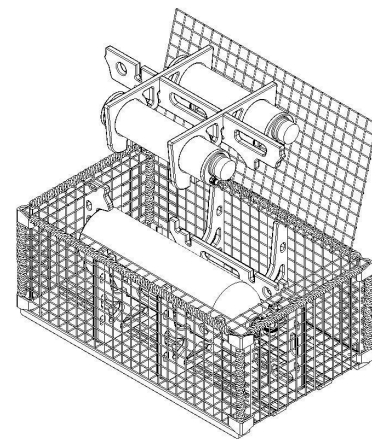


Figure 1: SR-80 Lifting Engine in open service position.

## Lift-Bags

SMELTS Lifting-Engines are retrieved using acoustics that open a valve to fill a lift-bag. Upon triggering, the compressed air stored in the air tank fills the bag, displacing the surrounding water, causing the bag to expand and become positively buoyant. This buoyant force lifts the attached gear through the water column to the ocean surface.

The SR-80 is equipped with a single 80 cubic foot tank capable of multiple hauls on a full tank. The SR-80 comes standard with a 250 lb lift-bag, which provides 250 lbs of buoyant force when fully inflated, but custom lift-bag sizes can be equipped to handle different depths or to achieve more hauls on a single tank.



Figure 2: Left to Right: 80, 250, and 1000LB Lift-Bags

## Acoustic Packages

SMELTS offers multiple options for acoustic communications packages to ensure compatibility with a wide range of environments and needs. Each package includes specific transducers, deck boxes, and research enabling features tailored to the abilities and the needs of our customers. Packages are pre-configured, but can be customized upon request.

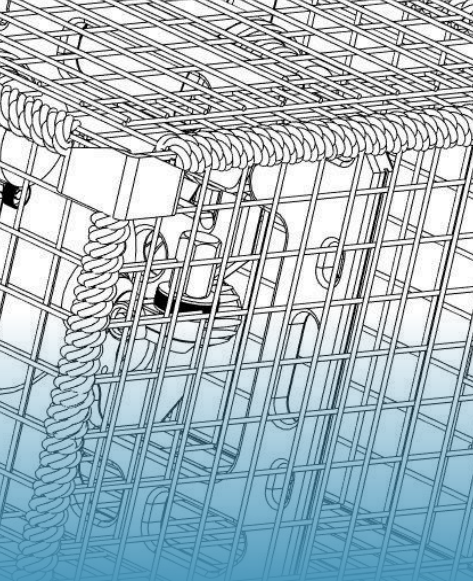


Figure 3: Teledyne Benthos [A] and EdgeTech [B] Deckbox



## Intended Use / Applications

The SMELTS SR-80 Lifting Engine is capable of deploying and recovering fishing gear, scientific instruments, and other forms of subsea technologies from depths of over 200 fathoms. Designed specifically to support marine research, the SR-80 features 2 vessel enclosures, allowing electronic instrumentation to be deployed to and recovered from the ocean floor for extended periods of time.



## SR-80 Technical Characteristics

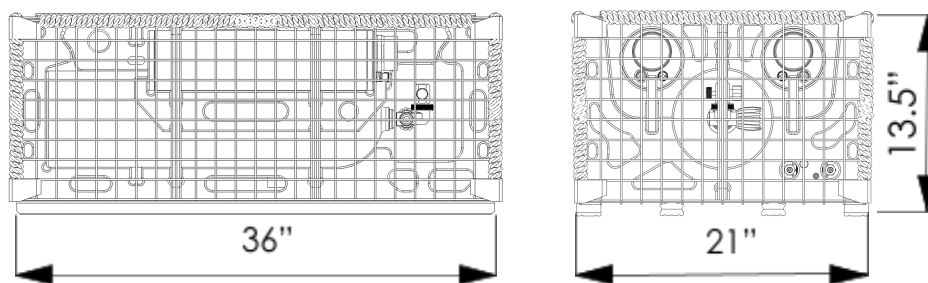


Table 1: Technical Specifications for SR-80 Lifting Engine

Recommended Deployment Depth	200 Fathoms
Acoustic Range	1000 meters
Buoyant Lift Capacity	250 lbs
Maximum Tank Pressure	3300 PSI
Apparent Weight	~130 lbs
Acoustic Vessel Length	17" or 20"
Acoustic Vessel Material	Schedule 80 PVC or Aluminum
Wing Core Material	High Density Polyethylene
Mesh Material	10.5 Gauge Aquamesh

## Gear Maintenance Recommendations

To ensure proper function and increase useful lifetime, SMELTS recommends inspecting gear before each use.

Perform the following checks **before & after each haul**.

- Status unit & ensure batteries are charged.
- Ensure tank valves are in the **open** position & bleeders are closed.
- Ensure tanks have adequate pressure.
- Inspect zinc anodes for reasonable wear.
- Inspect pneumatic lines for leaks/corrosion.
- Inspect cage & lift-bag for signs of damage.

**DO NOT USE THIS DEVICE IF THERE ARE ANY SIGNS OF PHYSICAL DAMAGE, CORROSION, OR COMPROMISED COMPONENTS.**

SMELTS recommends servicing Lifting-Engines **Bi-annually** to ensure optimal performance, safety, and longevity under field conditions.

Operating the system with visible damage may result in failure of the buoyancy mechanism, loss of equipment, or risk to personnel. Always inspect the unit—including the housing, lift-bag, air tank, and connectors—prior to deployment. If any irregularities are detected, discontinue use immediately and contact the manufacturer for evaluation and repair.

## Acoustic Package Specifications

	EdgeTech	Teledyne
Communication	EdgeTech Deckbox [A]	Releaseit [B] / UTS
Gear Marking	EdgeTech TrapTracker	Chartplotter
Communication Protocol	Tonal <sub>1</sub> Modem	USBL <sub>2</sub> Modem
Inflation Programming	Tilt-Dependent	Pressure-dependant
Resurface Failsafe	No	Adjustable
AGM Battery Voltage	18V	12V / 24V <sub>3</sub>
AGM Battery Capacity	1.3Ah / 2.6Ah <sub>4</sub>	3.4Ah
Temperature Sensor	Yes	Yes
Pressure Sensor	No	Yes

1: Tonal Systems transmit a single frequency tone and transfer minimum data.

2: USBL (Ultra-Short Baseline) systems are capable of digital signaling and data transfer between units.

3. Battery Voltage for Teledyne Units depends on customer requirements: 20" Vessels can accommodate 2 batteries wired in series. Always consult owner's manual before attempting to charge a battery.

4. Battery capacity depends on vessel configuration: 20" vessels can accommodate 2 batteries wired in parallel, doubling the battery capacity. Always consult owner's manual before attempting to charge a battery.