Welcome to the inaugural edition of Seanic Ocean System’s Digital Catalog. Understanding the value of your time, we will be providing you with a convenient quarterly overview of Seanic’s unique projects, ongoing product development, and updates on our latest products and services.

The Seanic Catalog’s Winter 2016 edition features our new facility in Katy, Texas. This facility expands our tool pool capabilities, fabrication services, while offering a one-of-a-kind wet test pool. We also highlight our Electric Class 1-4 Torque Tool that was developed early last year. The tool’s success is gaining the attention and support of customers in all regions. Finally, we include Seanic’s most up to date product catalog for your information and convenience.

As we begin the new year, we look back at the path we began over eight years ago. In early 2007, the earliest members of the Seanic team had a round table discussion about a startup company, then referred to as “Toolco.” A charter was initiated with the foundation of defining the products we intended to build, the organizational structure, and most importantly how we intended to interact with our clients. We committed to showing our customers respect, providing superior service, and fair pricing no matter what the circumstances. Those fundamental beliefs have proven to be the right formula, as we have grown to serve hundreds of customers around the world. Even today, as the industry struggles under the weight of low oil prices, our valued customers continue to trust Seanic. We welcome the opportunity to show each and every customer how we have earned the phrase “Simple, Rugged and Reliable.” On behalf of the Seanic employees around the world, we thank you for your business.
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WHAT’S NEW AT SEANIC?

FACILITY EXPANSION

Houston is the epicenter for deepwater technology and today’s advanced ROVs and intervention hardware play a major role in making it all happen. Deepwater developments are often in some of the most challenging environments in the world. The high cost of offshore operations leaves little to chance, which is why subsea hardware will often undergo rigorous system integration testing (SIT) before deployment.

In 2016, Seanic will relocate to a state-of-the-art facility that features a 50’x50’x30’ in-ground, wet test tank built especially for enhanced ROV and system integration testing of subsea hardware. But being big isn’t all this tank offers. It is spatially designed for ROV testing and includes multiple cameras that transmit to an array of high-definition televisions casting real-time feeds to an air-conditioned viewing room. This convenience is designed so customers no longer have to peer through the porthole of an above ground tank or squeeze into an often-crowded ROV shack. This impressive test tank offers more insight into performance and reliability than any other commercial facility in the Houston area.

Located on 10.5 acres just west of Houston in Katy, Texas, in a 55,000 square foot building, the new facility will be home to Seanic’s creative design team with an expansive shop that includes overhead cranes and a dedicated welding facility. Meanwhile, a huge

<table>
<thead>
<tr>
<th>WELDING</th>
<th>CONFERENCE</th>
<th>STORAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Welding Capabilities</td>
<td>Client Collaboration Space</td>
<td>Expansive Shop Space</td>
</tr>
<tr>
<td>+ Increased welding capabilities will enable Seanic to design and build custom subsea hardware that will interface with our tools. + Critical to our tooling design and development process, this new welding facility will also allow Seanic to produce hardware solutions necessary for optimal subsea structure performance.</td>
<td>+ Our expanded administration space will also grant us access to multiple conference rooms and gathering spaces vital to the collaborative process. + Here we are able to pool the combined talents, expertise, and experience of Seanic employees and clients in one place.</td>
<td>+ Seanic’s shop space will also offer an expanded tool pool and storage area for those clients who may not have the capacity to store and maintain their own equipment. + A large, stabilized yard space will also afford clients the ability to store larger pieces of equipment on Seanic’s grounds.</td>
</tr>
</tbody>
</table>
The building includes a 17,000 sq ft test and assembly area, a 17,000 sq ft tool pool storage, and 5,000 sq ft welding shop.

By late 2008, the phrase “Simple, Rugged, and Reliable” became synonymous with the Seanic product line. As a result, clients began turning to Seanic to solve other bespoke intervention challenges and the company’s Engineering Solutions group gained a reputation for providing fast response, cost-effective solutions. Now, they are building the ultimate ROV/SIT wet test tank to support the testing of those advanced concepts.

**Tom Ayars**

“This expansive new facility will showcase our capabilities in a new way and give our customers a user friendly full service center to develop some of the subsea solutions of the future. Our industry is evolving, and Seanic intends to be a proactive participant in that evolution as we always have, by responding to our clients, and, of course, by continuing to build products that are Simple, Rugged, and Reliable.”

In addition to the expansive capabilities of the new facility, Seanic has brought Matt Whitworth on board to enhance the Senior Management Team as the Global Sales and Marketing Manager. Having worked with FMC Schilling Robotics for the last six years, Matt brings a wealth of experience with ROV’s and subsea intervention. Matt’s extensive background in Technical Oilfield Sales and Marketing will effectively help promote Seanic’s presence in key markets throughout the industry.
FEATURED PRODUCT

ELECTRIC SMART TORQUE TOOL
API 17H CLASS 1-4

PRODUCT SPECIFICATIONS

REAL-TIME TORQUE LIMITING
Real-time torque limiting gives very accurate torque feedback and control. The tool is ideally suited for both subsea and surface applications requiring up to 2000 ft-lbs of torque.

HIGHLY ACCURATE TORQUE FEEDBACK
The tool is ideally suited for both subsea and surface applications requiring up to 2000 ft-lbs of torque. As it does not require an HPU for operation, surface testing in the yard or shop environment is easily accomplished. Torque is measured by internal feedback with an accuracy of +/- 2%.

ELECTRIC MOTOR
The electric motor provides consistent and repeatable output not available in hydraulic torque tools due to inconsistencies in the hydraulic supply provided by HPUs, ROVs and motor wear.
SEANIC HAS DESIGNED AN ELECTRIC SMART TORQUE TOOL IN THE TRADITION OF PROVIDING OUR CUSTOMERS A SIMPLE, RUGGED AND RELIABLE PRODUCT.

1. **ELECTRIC TORQUE TOOL**

Seanic’s electric torque tool, operated with rotary power provided by an electric motor, eliminates the need for a hydraulic supply provided by an ROV, Hydraulic Power Unit (HPU) or intelligent valve pack. The electric torque tool is comparable in size to a standard class 1-4 hydraulic torque tool.

2. **CONVENIENCE & EFFICIENCY**

During testing, the tool provided convenience and efficiency in its ability to be operated without restarting the hydraulic systems on the vehicles. The tool has also proven to be cost-effective during onshore testing, as it does not need a HPU.

3. **SUBSEA & SURFACE**

Designed for both subsea and surface applications requiring up to 2,000 ft. lbs of torque, the tool features highly accurate torque feedback, fully automated electro/hydraulic-actuated latches, and maintains consistent performance and accuracy regardless of temperature and pressure fluctuations.
The Seanic Electric Torque Tool was fitted on board the Saab Seaeye Sabertooth at a recent demonstration in Houston, Texas. Saab Seaeye’s Sabertooth is the latest innovation in AUV/ROV technology, giving this deep water hovering hybrid 360° maneuverability and interfacing abilities with auxiliary equipment. A key differentiator in the development of the Sabertooth is the ability to operate off of 20 or 30 kWh battery power during lengthy un-tethered excursions.

The Seanic Torque Tool was fitted on board the Sabertooth during a wet test in Sweden late October of 2015. Another demonstration was performed in mid-November to a large attendance of oil and gas companies and service providers during a OneSubsea/Saab event at the NASA Neutral Buoyancy Laboratory (NBL) in Houston, Texas.

Both the mechanical and software interface of the Seanic Torque Tool to the Sabertooth were very straightforward. This is the first time a subsea valve has been opened and closed by an un-tethered ROV system. High speed, high bandwidth limited range untethered...
communications are possible via Free Space Optics.

The Hybrid Sabertooth was operated in ROV mode, the commands to the ROV and live video from the ROV was transmitted through the water column using Free Space Optics. The age of the un-tethered hybrid AUV/ROV has arrived. AUVs are evolving into WCAUVs. The Seanic Electric Torque Tool is helping move the technology forward.

**Bert Johansson, Sales Director Saab Seaeye**

“On behalf of Saab, I would like to personally thank you for providing us with your high-quality electric torque tool for use on board the Seaeye Sabertooth during the Demonstration at the NASA Neutral Buoyancy Laboratory (NBL). Demonstrating Seaeye Sabertooth deploying the Seanic Ocean Systems torque tool in the crystal clear water at the NBL, while astronauts were working on a mock-up of the international space station, was a fantastic opportunity; a perfect location to showcase Seaeye Sabertooth’s capabilities.

“Seaeye Sabertooth will provide deep water and remote location operators with the ability to reduce offshore personnel and DP ship time to perform IMR tasks in a production field. Electric tooling will play a major role in deep water production fields in the future, and the torque tool really helped the clients see and understand what future subsea operations will look like. Operating a valve in real time using Free Space Optics opens a new era in subsea evolution.”

Seanic’s new facility is opening its doors to the Subsea Industry in 2016. Seanic is now accepting applications from vendors/customers to participate in ‘Demo Day,’ a designated day each month where a screened applicant can utilize the test tank at no cost. This is a unique opportunity for companies in the subsea sector to showcase their products to the rest of the industry. ‘Demo Day’ will award a one-day access to the Seanic pool along with all their other amenities.

For eligibility requirements and test tank availability, please contact Tom Ayars at Seanic: tayars@seanicusa.com, Subject: Demo Day.
WINTER 2016
STANDARD ROV TOOLING

www.seanicusa.com
Seanic has designed an Electric Smart Torque Tool in the tradition of providing our customers a simple, rugged and reliable product. The tool has a closed loop speed/position control system, allowing fine control and angular position feedback. Real-time torque limiting gives very accurate torque feedback and control. The tool is ideally suited for both subsea and surface applications requiring up to 2000 ft-lbs of torque.

REAL-TIME TORQUE LIMITING

Real-time torque limiting gives very accurate torque feedback and control. The tool is ideally suited for both subsea and surface applications requiring up to 2000 ft-lbs of torque.

HIGHLY ACCURATE TORQUE FEEDBACK

As it does not require an HPU for operation, surface testing in the yard or shop environment is easily accomplished. Torque is measured by internal feedback with an accuracy of +/- 2%.

<table>
<thead>
<tr>
<th>MAX TORQUE OUTPUT</th>
<th>120 VAC at 12.5 A max</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 ft lbs</td>
<td>120 lbs</td>
</tr>
<tr>
<td>25 inches</td>
<td></td>
</tr>
<tr>
<td>15 rpm</td>
<td>15 rpm</td>
</tr>
</tbody>
</table>

POWER

- 125:1 TORQUE MULTIPLIER

- Fully automated hydraulic-actuated latches

- Torque limiting and alarming

- Start/stop; Direction; Speed; Torque Control

WELDING

- Motor controls

- Weight (Air)

- Max Speed

- Additional features

Latches disengage when power is lost. Same proven latch design as standard Seanic torque tools. Internal electric-driven HPU circuit provides hydraulic power and control.

Torque limited by closed loop motor current and strain gauge feedback. Safe Torque Off feature (torque output is immediately disengaged if limit is met).

No changes in accuracy or performance due to pressure and temp changes. Single 3/4" hose houses and protects the cable assembly, replacing multiple hydraulic hoses. Dynamic subsea test jig designed specifically for ETT use available as option.

Calibrated strain gauge feedback within +/-2%; Input current limiting and alarming; Optional communication (isolated RS232, ethernet); Turns counter, torque output, shaft position displayed topside; Speed limiting alarming; Resolver-based turns counter accurate to less than 1/10th degree of a revolution.
The Seanic Smart Torque Tool has retained the rugged features of its predecessor and added the technologically advanced features our customers require.

**TECHNICAL SPECIFICATIONS**

We have retained the mechanical counter as a backup which allows for failsafe operation if the battery is depleted, but also added a digital display that provides real-time torque and turns both subsea and on the surface, via laptop control.

**RUGGED FEATURES**

The tool can be supplied as a stand-alone smart tool or with a proportional valve pack, laptop and GUI that can limit torques, control speed and direction and log values.

**LOW MAINTENANCE DESIGN**

Our robust latch system provides confidence that you are securely locked into the subsea bucket and will stay that way until you choose to disengage. In the case of an unforeseen power failure, our latches are spring-loaded and will retract, allowing you to safely disconnect from the work site.

**RELIABLE PERFORMANCE**

<table>
<thead>
<tr>
<th>LATCHES</th>
<th>WHAT’S IN THE BOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Return</td>
<td>Subsea Display</td>
</tr>
<tr>
<td>Robust Dogs</td>
<td>Surface Test Jig and Read Out</td>
</tr>
<tr>
<td>17-4 Hardened Fins</td>
<td>#8 JIC Hoses (2)</td>
</tr>
<tr>
<td>110 lbs/50 kg (air)</td>
<td>#4 JIC Hose</td>
</tr>
<tr>
<td>85 lbs/39 kg (water)</td>
<td>Comp Bottle with Fittings</td>
</tr>
<tr>
<td>Display in Tenths</td>
<td>Operating &amp; Maintenance Manual</td>
</tr>
<tr>
<td>Large, easy-to-read numbers</td>
<td>Electrical Spares</td>
</tr>
<tr>
<td>Oil-filled, Independently-sealed housing</td>
<td>Mechanical Spares</td>
</tr>
<tr>
<td>Allows failsafe operation if battery is depleted or display is compromised</td>
<td>195CC Motor (2)</td>
</tr>
<tr>
<td></td>
<td>36CC Motor (2)</td>
</tr>
<tr>
<td></td>
<td>1-4 End Effector and Test Stem</td>
</tr>
<tr>
<td></td>
<td>Cable Between Tool and Display</td>
</tr>
</tbody>
</table>
HI-TORQUE TOOL
API 17H

Our tool has a removable and exchangeable 17H Class-4 nose that can also be attached to Seanic’s Smart Torque Tool, for a convenient two-in-one functionality.

The hi-torque tool is useful in installing umbilicals and flying leads, opening and closing valves on a Christmas tree, and conjunction with Tool Deployment Units (TDUs).

A mechanical turns counter, which needs no battery and features highly visible numbers for easy monitoring, eliminates the inherent problems commonly associated with electronic digital counters.

WHAT’S IN THE BOX

+ Surface Test Jig with Topside Digital Readout
+ Hoses
+ Complete Spares Kit
+ 1 High Torque Motor
+ 1 High Torque Adapter
+ Operating & Maintenance Manual

Seanic Ocean Systems has designed an API 17H and ISO 13628-8 compliant hi-torque tool to reliably perform a multitude of subsea applications.

MECHANICAL TURN COUNTER

Mechanical (no battery)
Highly visible numbers
Displays in tenths
Oil-filled, independently sealed housing

WEIGHT
72 lbs/33 kg (air)
55 lbs/25 kg (water)
The Seanic Flying Lead Orientation Tool, or FLOT, is designed and built for ease of operation and maintenance. The tool allows for angular and rotational orientation of a class 4 torque tool to aid in connection of flying leads subsea. Simple design allows for customized configurations. Built-in load holding valves ensure safe and reliable pitch control.

**TECHNICAL SPECIFICATIONS**

**DURABLE DESIGN**

The Seanic Flying Lead Orientation Tool (FLOT) provides the operator a durable design with greater versatility and less overall weight, which means you don’t sacrifice valuable payload.

**RIGOROUSLY TESTED**

Seanic’s FLOT provides the option of roll up to 360° in certain configurations, giving you the ability to dock flying leads in the most difficult of conditions.

**BUILT TO FIT SEANIC TORQUE TOOL**

This unit has been designed to fit the Seanic’s torque tool, and has been customized or retrofitted for compatibility with many industry-recognized torque tools.

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>316 SS / 6061 T6 AL / Ni-Al-Brz</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS</td>
<td>17”W x 40”L x 14”H</td>
</tr>
<tr>
<td>HYDRAULIC REQUIREMENTS</td>
<td>Two open-center directional control valves</td>
</tr>
<tr>
<td>MAX OPERATING PSI &amp; FLOW</td>
<td>Pitch cylinder: 3000 psig at .5 gpm</td>
</tr>
<tr>
<td></td>
<td>Roll motor: 3000 psig at 1.75 gpm</td>
</tr>
<tr>
<td>FLOT WEIGHT</td>
<td>149 lbs/68 kg (air) - 108 lbs/49 kg (water)</td>
</tr>
<tr>
<td>PITCH ANGLE</td>
<td>135° (90° down from horizontal, 45° up from horizontal)</td>
</tr>
<tr>
<td>ROLL ANGLE</td>
<td>32° either direction (360° optional configuration depending on application)</td>
</tr>
<tr>
<td>MAX HANG WEIGHT ON TT</td>
<td>600 lbs</td>
</tr>
</tbody>
</table>

**WHAT’S IN THE BOX**

+ #8 JIC Hose (2)
+ #4 JIC Hose (2)
+ Spares Kit
+ Operating & Maintenance Manual
Seanic Ocean Systems has a subsea verification unit that verifies torque readings of an API 17H Class 1-4 torque tool at depth.

This tool is also available as a dual gauge unit, subsea switchable between class 1-2 and 3-4 without the need to change gauges at the surface. Useful when multiple tools are being used that require subsea verification prior to use.

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>WHAT’S IN THE BOX</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 2,200 ft-lb Gauge (2)</td>
<td>316 L SS Nickel-Aluminum-Bronze</td>
</tr>
<tr>
<td>+ 500 ft-lb Gauge (2)</td>
<td>17-4 SS</td>
</tr>
<tr>
<td>+ Test Stems</td>
<td>API 17H Class 1-2 end effector</td>
</tr>
<tr>
<td>+ Operating &amp; Maintenance Manual</td>
<td>API 17H Class 3 end effector</td>
</tr>
<tr>
<td></td>
<td>API 17H Class 4 end effector</td>
</tr>
<tr>
<td></td>
<td>170 lbs/77 kg (air)</td>
</tr>
<tr>
<td></td>
<td>145 lbs/65 kg (water)</td>
</tr>
<tr>
<td></td>
<td>2,000 ft-lbs MAX INPUT TORQUE</td>
</tr>
</tbody>
</table>

**SUBSEA AND SURFACE READINGS**
The unit readily attaches to the ROV cage or TMS to provide a reliable assessment of changes in torque output when adjustments are made, without the need to return to the surface.

**SIMPLE TORQUE OUTPUT ASSESSMENT**
Our verification unit boasts a two-in-one functionality, as it can additionally be used to verify torque adjustments on the surface in place of a normal torque tool test jig.

**PURELY HYDRO-MECHANICAL DESIGN**
Because it is a purely mechanical piece of equipment, our subsea verification unit has no electronics to fail, batteries to die, wires to break or electrical housings to flood.
Seanic Intelligent Valve Packs can be configured to meet many requirements. The pack is designed and built to operate our Smart Torque Tool, but can also be configured for other tooling requirements including FLOT’s and custom multi-function tools.

**COMPACT DESIGN**
Standard design allows for scaling of valve size and type providing simple rugged function while maintaining compact and light weight form.

**CUSTOM SOFTWARE**
Closed or open loop control, data logging and custom control interfaces are all available options that can be added to the system.

**STANDARD OR CONFIGURED TO SUIT**
Graphical User Interface design can be customized for a wide range of applications.

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>87 lb (air)</td>
<td>Power and Communications:</td>
</tr>
<tr>
<td>15 station</td>
<td>24 VDC @ 6 amps, RS232</td>
</tr>
<tr>
<td>68 lb (water)</td>
<td>Hydraulic:</td>
</tr>
<tr>
<td></td>
<td>3,000 psi @ 20 gpm max</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td></td>
</tr>
<tr>
<td>10 1/4” W x 22” L x 8 3/4” H</td>
<td></td>
</tr>
<tr>
<td>FEATURES</td>
<td></td>
</tr>
<tr>
<td>15 NG directional control valves, capable of proportional pressure control on 10 stations</td>
<td></td>
</tr>
<tr>
<td>Transducers integrated to monitor supply, return and ambient pressure</td>
<td></td>
</tr>
<tr>
<td>Clear lid for viewing Diagnostic’s LED’s</td>
<td></td>
</tr>
<tr>
<td>Isolated RS232 circuit</td>
<td></td>
</tr>
<tr>
<td>Customizable software and valve configurations</td>
<td></td>
</tr>
<tr>
<td>30 #4 JIC A/B Outputs; #12 JIC P/T Inputs; Filter included</td>
<td></td>
</tr>
</tbody>
</table>
The real beauty of an API 17H Class V adapter is that no hydraulic connection is required, which allows the API 17H Class V tool to be left in place while other API 17H Class IV duties are being performed.

Seanic has designed and manufactured an API 17H Class IV to API 17H Class V torque adapter for use in all standard API 17H Class V interfaces.

Using an API 17H Class IV and API 17H Class V tool on the same dive is very common.

### Technical Specifications

#### API Class IV to API Class V

The tool can be purchased with or without a spring-loaded end effector and in latching or non-latching configurations.

#### Spring-Loaded Effector (Optional)

### What’s in the Box

- Surface Test Jig and Read Out
- Compensator Bottle Complete with Fittings and Gear Oil
- Spares Kit
- Operating & Maintenance Manual

<table>
<thead>
<tr>
<th>Materials</th>
<th>Aluminum housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel gear reduction</td>
<td></td>
</tr>
<tr>
<td>17-4 SSTL location fins</td>
<td></td>
</tr>
<tr>
<td>17-4 SSTL end effectors</td>
<td></td>
</tr>
<tr>
<td>Delrin nose</td>
<td></td>
</tr>
<tr>
<td>316 SSTL ROV handle</td>
<td></td>
</tr>
<tr>
<td>316 SSTL hardware</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Torque Range</th>
<th>0-5,000 ft-lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>215 lbs/98 kg (air)</td>
<td></td>
</tr>
<tr>
<td>170 lbs/77 kg (water)</td>
<td></td>
</tr>
</tbody>
</table>
## Technical Specifications

<table>
<thead>
<tr>
<th>Materials</th>
<th>Stainless steel housing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steel gear reduction</td>
</tr>
<tr>
<td></td>
<td>17-4 SSTL location fins</td>
</tr>
<tr>
<td></td>
<td>17-4 SSTL end effectors</td>
</tr>
<tr>
<td></td>
<td>Delrin nose</td>
</tr>
<tr>
<td></td>
<td>316 SSTL ROV handle</td>
</tr>
<tr>
<td></td>
<td>316 SSTL hardware</td>
</tr>
<tr>
<td>Input Interface</td>
<td>API 17H Class 4 male end effector (1.5” square drive)</td>
</tr>
<tr>
<td>Output Interface</td>
<td>API 17H Class 7 female end effector (3.5” square drive)</td>
</tr>
<tr>
<td></td>
<td>API 17H Class 6 female end effector (2.625” square drive)</td>
</tr>
<tr>
<td>Weight</td>
<td>535 lbs/243 kg (air)</td>
</tr>
<tr>
<td></td>
<td>425 lbs/193 kg (water)</td>
</tr>
<tr>
<td>Torque Range</td>
<td>5,000-25,000 ft-lbs</td>
</tr>
</tbody>
</table>

### Latching or Non-Latching Configurations

The tool can be purchased with or without a spring-loaded end effector and in latching or non-latching configurations.

### No Hydraulic Interface Necessary

The tool requires no electrical or hydraulic interface, freeing the ROV to leave it in place and perform other subsea operations.

### What’s in the Box

- Surface Test Jig and Read Out
- Standard Nosecone
- Class 6/7 End Effector and Test Stem
- Compensator Bottle Complete with Fittings and Gear Oil
- Spares Kit
- Vector Nosecone (optional)
- Operating & Maintenance Manual

Seanic has designed and manufactured an API 17H Class 6/7 torque adapter for use in all standard API 17H Class 6/7 interfaces.

The tool is ideally suited for any subsea application requiring up to 25,000 ft-lbs torque.
Seanic manufactures and stocks a wide variety of API/ISO standard hot stabs and receptacles to meet your needs. Using the highest quality materials and stringent quality program ensures our products perform in the harshest subsea environment.

**TECHNICAL SPECIFICATIONS**

**ROV FRIENDLY COMPLIANT**

- Handles 316 SS
- All products are accompanied with material certification of US manufacture as well as pressure test reports.

**PRESSURE RATINGS TO 20,000 PSI**

- Pressure ranges are from 5,000-20,000psi on all models.

**OTHER MATERIALS AVAILABLE UPON REQUEST**

- Stabs and manifolds conform to API 17D or API 17H (ISO 13628-8) and can be configured with various fitting sizes and types.

**WHAT’S IN THE BOX**

- Operating & Maintenance Manual
- Handles are 316 SS
- Bodies are Xylane coated Nitronic 60
- Female receptacles are Nitronic 50
- Nose tips are Ni-Al-Brz
- Fittings and fasteners are 316 SS
- O-rings are:
  - 70 Durometer HNBR on Dummy Stabs
  - 90 Durometer HNBR on PSI Stabs

**MATERIALS**

- Bodies are Xylane coated Nitronic 60
- Female receptacles are Nitronic 50
- Nose tips are Ni-Al-Brz
- Fittings and fasteners are 316 SS
- O-rings are:
  - 70 Durometer HNBR on Dummy Stabs
  - 90 Durometer HNBR on PSI Stabs
Seanic Ocean Systems offers ROV-operable ball valve interfaces to complement the wide array of subsea ball, needle and directional control valves currently on the market.

Seanic’s commitment to durable design and construction ensures that your tools will hold up under the demands of the subsea environment.

We maintain a constant supply of paddle valves in stock, and can additionally provide your team with the necessary valve components to suit your project needs.

**TECHNICAL SPECIFICATIONS**

- **CORROSION-RESISTANT**: Seanic’s paddle valves, manufactured entirely from durable and corrosion-resistant stainless steel, are designed with hard stops to prevent an ROV from over-torquing and avoid costly damage to the valve stem.
- **ROV-OPERABLE INTERFACE**: Seanic’s paddle valves meet the industry standard API 17H specifications for ROV interface tooling.
- **20-YEAR DESIGN LIFE**: Designed with longevity in mind, our stainless steel paddle valves resist the damaging effects of subsea corrosion and boast a 20-year design life.

**WHAT’S IN THE BOX**

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>Stainless steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPTH RATING</td>
<td>Full ocean depth</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>11 lbs/5 kg</td>
</tr>
</tbody>
</table>

+ Operating & Maintenance Manual
Seanic Ocean Systems has created a specially designed tool for the removal of fouling and marine growth from wellhead sealing surfaces prior to AX/VX gasket installation.

The hub cleaning tool can be manipulator-driven or built for hydraulic operation, and is available to fit all API standard or other customer-requested hub sizes.

A valuable instrument for subsea construction or drilling work, the hub cleaning tool features no bolts or pieces that could potentially fall into the wellhead, eliminating the risk of costly damage and retrieval efforts.

This tool creates a clean and polished sealing surface to allow a gasket to attain a reliable seal, minimizing operational risks.

Our HUB Cleaning Tool can be built with a scrubbing surface of various Scotch-Brite® pads or brushes to further break up tough marine deposits.

**WHAT’S IN THE BOX**

+ Operating & Maintenance Manual
+ Spare Scotch Brite® Pads
+ Spare Hardware

**TECHNICAL SPECIFICATIONS**

**REMOVES MARINE GROWTH**

Seanic Ocean Systems has created a specially designed tool for the removal of fouling and marine growth from wellhead sealing surfaces prior to AX/VX gasket installation.

**MANIPULATOR- OR HYDRAULIC-DRIVEN**

The hub cleaning tool can be manipulator-driven or built for hydraulic operation, and is available to fit all API standard or other customer-requested hub sizes.

**DESIGN ELIMINATES EXPOSED HARDWARE TO WELL BORE**

A valuable instrument for subsea construction or drilling work, the hub cleaning tool features no bolts or pieces that could potentially fall into the wellhead, eliminating the risk of costly damage and retrieval efforts.

**MATERIALS**

<table>
<thead>
<tr>
<th>Stainless Steel</th>
<th>Nickel-Aluminum-Bronze</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDPE</td>
<td></td>
</tr>
</tbody>
</table>

**WEIGHT**

<table>
<thead>
<tr>
<th>65 lbs/29 kg (air)</th>
<th>28 lbs/13 kg (water)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.5”W x 18”H</td>
<td></td>
</tr>
</tbody>
</table>
Seanic Ocean Systems has designed and manufactured a variety of ring gasket removal and installation tooling that boasts a rugged yet lightweight design to perform under the formidable conditions of the deep sea environment. In addition to the standard configurations currently in stock, we have engineered and manufactured custom Max-8 and Max-14 gasket removal and replacement tool designs that require side entry to the wellhead (2” and 4” AX).

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>RUGGED, LIGHTWEIGHT DESIGN</th>
<th>This tool can be manufactured to accommodate a variety of industry standards or custom gasket sizes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELIABLE REMOVAL AND INSTALLATION</td>
<td>Our gasket removal and installation tool, designed to be positioned by the ROV manipulator, efficiently and reliably replaces standard 18 3/4-inch AX and VX style gaskets.</td>
</tr>
<tr>
<td>CORROSION-RESISTANT ALLOY CONSTRUCTION</td>
<td>The tool is manufactured using 100% corrosion-resistant alloys, ensuring resistance to corrosion damage and years of dependable subsea operation.</td>
</tr>
</tbody>
</table>

**WHAT’S IN THE BOX**

- AX/VX Tool
- #4 Size Hose (2)
- Spare Grip Tape
- Operating & Maintenance Manual

<table>
<thead>
<tr>
<th>WEIGHT (AIR)</th>
<th>WEIGHT (WATER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 3/4”</td>
<td>61 lbs</td>
</tr>
<tr>
<td></td>
<td>54 lbs</td>
</tr>
<tr>
<td>16 3/4”</td>
<td>56 lbs</td>
</tr>
<tr>
<td></td>
<td>48 lbs</td>
</tr>
<tr>
<td>15”</td>
<td>50 lbs</td>
</tr>
<tr>
<td></td>
<td>42 lbs</td>
</tr>
</tbody>
</table>

MATERIALS

- Stainless steel
- Nickel-Aluminum-Bronze
High-pressure Cleaning

Built with longevity in mind, our 5K water blaster requires less frequent gearbox flushing than other similarly powered water blasters on the market.

Powerful Fluid Injection

In addition, the blaster can also be used as a high pressure, high-volume pump for rapid and powerful fluid injection.

Available for Rental

We maintain a stock of our standard 5K water blaster, and offer the option of customization according to customer needs.

Seanic Ocean Systems has designed and manufactured high-pressure Triplex water blasters for a multitude of purposes. Common applications include cleaning marine growth from sub-sea hardware and structures prior to inspection and applying high pressure to break up hard materials in mud for eased dredging.

**Technical Specifications**

<table>
<thead>
<tr>
<th>High-Pressure Cleaning</th>
<th>POWERFUL FLUID INJECTION</th>
<th>AVAILABLE FOR RENTAL</th>
</tr>
</thead>
</table>

## What’s in the Box

- Compensator bottle complete with gear and oil fittings
- Spare strainer
- Wand / turbo nozzle
- Gauge panel
- #8 JIC hose (2)
- #6 JIC hose (1)
- #8 5K JIC hose (1)
- Spares kit
- Operating & maintenance manual

### Interface

- #6 JIC hose motor case drain
- #8 JIC high pressure hose for water nozzle

### Max Pressure

- Input: 3000 psi / Output: 5000 psi
- Input: 12 gpm / Output: 4.5 gpm

### Max Flow

- 100 lbs/45kg (air) – 60 lbs/27 kg (water)

### Weight

- 15"W x 27"L x 7"H
The Seanic Ocean Systems Super Grinder is a powerful tool for cutting materials up to six inches in thickness.

Aside from the standard fiber abrasive blade, the super grinder can operate with blade options including carbide tooth, carbide brazed, and rescue-grade blades to suit the most demanding of subsea cutting needs.

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>REMOVABLE AND REPLACEABLE BLADES</th>
</tr>
</thead>
<tbody>
<tr>
<td>316 SS frame, shroud and hardware</td>
<td>Powered by a commonly used and industry-accepted thruster motor, our Super Grinder features removable and replaceable blades to best suit the task at hand.</td>
</tr>
<tr>
<td>Painted aluminum housing</td>
<td>Our standard 20-inch blade is in stock, and can be manufactured in sizes ranging from 6-30 inches, in addition to custom diameters according to project specifications.</td>
</tr>
<tr>
<td>17-4 drive shaft</td>
<td>This rugged and rigorously tested tool is used for decommissioning, storm repair and recovery and for cutting and removal of jumpers and umbilicals to the surface.</td>
</tr>
<tr>
<td>Fiber abrasive grinding wheel</td>
<td></td>
</tr>
<tr>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>Nickel-Aluminum-Bronze</td>
<td></td>
</tr>
<tr>
<td>Oil of opportunity</td>
<td></td>
</tr>
<tr>
<td>Motor requires A &amp; B connection with #8 JIC</td>
<td></td>
</tr>
<tr>
<td>Case drain requires C connection with #10 JIC</td>
<td></td>
</tr>
<tr>
<td>Requires open center directional flow valve (1)</td>
<td></td>
</tr>
</tbody>
</table>

### CUSTOM SIZE OPTIONS

This rugged and rigorously tested tool is used for decommissioning, storm repair and recovery and for cutting and removal of jumpers and umbilicals to the surface.

### WEIGHT

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>OPERATING PRESSURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 lbs/54 kg (air)</td>
<td>Max operation pressure: 3,000 psi</td>
</tr>
<tr>
<td>100 lbs/45 kg (water)</td>
<td>Max flow rate: 20 gpm</td>
</tr>
</tbody>
</table>

### WHAT’S IN THE BOX

- #8 JIC Hose (3)
- Spare Abrasive Blades (15)
- Diamond Blades (upon request)
- Operating & Maintenance Manual
BRUSHING TOOL

SINGLE HEAD

Seanic Ocean Systems has designed a powerful brushing tool that cuts through tough marine growth on jacket legs, wellheads and other structures to allow for improved inspection, cutting, or attachment to subsea structures. The hydraulic-driven rotary brush, held by the ROV manipulator, safely and efficiently cleans growth and accumulated debris on subsea structures. The brush operates to a working depth of 10,000 FSW.

TECHNICAL SPECIFICATIONS

Our custom-engineered brushing tool features removable individual bristle pods, eliminating the need to replace the entire brush head when exhausted bristles begin to show signs of wear.

CUSTOM-ENGINEERED TO ORDER

The tool can be outfitted with a reservoir and pump to inject citric acid onto the cleaning site through the brush head, ensuring thorough removal of stubborn calcium growth and marine debris.

OPTIONAL CITRIC ACID PUMP

Our custom-engineered brushing tool features removable individual bristle pods, eliminating the need to replace the entire brush head when exhausted bristles begin to show signs of wear. Seanic also offers a standard HUB cleaning tool that has an 18 3/4-inch diameter brush head, and can be customized to any dimensions to meet your subsea project specifications.

REMOVABLE BRISTLE PODS

WHAT’S IN THE BOX

+ All Hoses Supplied
+ Spare Bristle Pods
+ Citric Acid Pump and Reservoir (as required)
+ Operating & Maintenance Manual

MATERIALS

6061 T-6 Aluminum
316 stainless steel
Ampco 45 Nickel-Aluminum-Bronze
Carbon steel (motor)
Polypropylene bristles
Brass or nylon bristles
6 gpm @ 2,000 psi

HYDRAULIC REQUIREMENTS

10,000 FSW

WORKING DEPTH
ECB UNITS
CLEANING METHOD

Seanic has developed a revolutionary new cleaning method for subsea applications. By combining low pressure/high volume pumps and inertial cavitation nozzles, Seanic has developed a safe and effective ROV powered cleaning system. Traditional high pressure water blasters can be ineffective or even destructive if used improperly. The Seanic ECB systems are a field proven solution for removing marine growth from vessel hulls, strakes, risers, fairings and moorings.

TECHNICAL SPECIFICATIONS

SAFE, THOROUGHB CLEANING WITHOUT DAMAGE

Using cavitation for cleaning has alleviated these issues and allowed Seanic to make an extremely efficient and powerful cleaning machine for removal of marine growth from vessel hulls, strakes, risers, fairings and moorings.

USED ON STRAKE/FAIRING, UWILD, ETC.

Seanic has developed a revolutionary new cleaning method for subsea applications.

RELIABLE, PREDICTABLE RESULTS

Traditionally high pressure water blasters are often ineffective because they aren’t powerful enough or they are too powerful and often damage the object being cleaned.

WHAT’S IN THE BOX

+ Pump Assembly
+ Nozzles/Hoses
+ Complete Spares Package Includes Fittings, Hoses, etc.
+ Maintenance Tools and Supplies
+ Operating & Maintenance Manual
+ Spares Inventory List

<table>
<thead>
<tr>
<th>INPUT</th>
<th>Output 3000 psi @ 14 gpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT</td>
<td>Input 3000 psi @ 20-22 gpm</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>275 lbs (air)</td>
</tr>
<tr>
<td>MATERIALS</td>
<td>316 SS</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>30”W x 36”L x 12”H</td>
</tr>
</tbody>
</table>
Seanic’s multipurpose pumping system has a 3.8:1 ratio and is capable of pumping fluids to a working pressure of 10,000 psi.

The pump is rated for use in 10,000 FSW and is made of corrosion-resistant materials, making it robust and reliable for subsea use.

The pump is ideally suited for hydrate remediation work, as it can draw a powerful 22 in HG vacuum.

This unique pump has the ability to pump a multitude of fluids and can be used for methanol service with no risk of cross contaminating the ROV’s supply oil.

These pumps can be delivered with a variety of different reservoirs and directional control valves rated for 10k and 15k service.

WHAT’S IN THE BOX

+ Spares Kit
+ Operating & Maintenance Manual

**TECHNICAL SPECIFICATIONS**

### 3.8:1 RATIO
Seanic’s multipurpose pumping system has a 3.8:1 ratio and is capable of pumping fluids to a working pressure of 10,000 psi.

### CORROSION-RESISTANT DESIGN
The pump is rated for use in 10,000 FSW and is made of corrosion-resistant materials, making it robust and reliable for subsea use.

### RATED TO 10,000 FSW DEPTH
The pump is ideally suited for hydrate remediation work, as it can draw a powerful 22 in HG vacuum.

### MATERIALS
- 316 SS housings, SS fittings
- Ni-Al-Brz piston

### WEIGHT
- 78 lbs/35 kg (air)
- 60 lbs/27 kg (water)

### MAX OUTPUT PRESSURE
- 10,000 psi, 2.5 gpm max flow

### OPERATING PRESSURES
- Max HPU input pressure: 2900 psi
- Flow rate not to exceed 8 gal/min
- Oil of opportunity

### HYDRAULIC
- Requires one open-center directional flow valve
- Oil of opportunity

### CONNECTIONS
- Pump and tank: #6 JIC fittings
- Input and output: #4 JIC fittings

### WORKING DEPTH
- 10,000 FSW
- 36” x 6” x 8”
The 5k Dynaset Water Blaster pump system was designed for high pressure, subsea cleaning.

**TECHNICAL SPECIFICATIONS**

**COMPACT SIZE**
Common applications include cleaning marine growth from subsea hardware and structures prior to inspection and applying high pressure to break up hard materials in mud for eased dredging.

**RELIABLE PERFORMANCE**
At its core, the hydraulically driven Dynaset intensifier pump uses filtered sea water and a ROV friendly Turbo nozzle.

**LOW MAINTENANCE**
In addition, the pump can be used as a high pressure, high flow for rapid and powerful fluid injection.

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>25 lbs (air) / 15 lbs (water)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS</td>
<td>18 in W x 19 in D x 7 in H</td>
</tr>
<tr>
<td>MATERIALS</td>
<td>Primarily Aluminum 6061-T6 and Stainless Steel</td>
</tr>
<tr>
<td>HYDRAULIC CONNECTIONS</td>
<td>Requires (1) open center directional control valve(s). P and T connections are #12 JIC male fittings.</td>
</tr>
<tr>
<td>INPUT PRESSURE &amp; FLOW</td>
<td>3,000 PSI @ 30 gpm max</td>
</tr>
<tr>
<td>OUTPUT PRESSURE &amp; FLOW</td>
<td>5,000 PSI @ 5.5 gpm</td>
</tr>
</tbody>
</table>

**WHAT’S IN THE BOX**

- Spare Hoses
- Rebuild Kit
- Operating & Maintenance Manual
Seanic Ocean Systems has designed a pH probe used to measure and monitor pH in the subsea environment, particularly useful in drilling operations and the prediction of cement returns. The probe, which features a handle for ease of manipulation by the ROV, monitors pH levels within a wellbore and assists in the accurate prediction of cement return.

**TECHNICAL SPECIFICATIONS**

**ACCURATE SUBSEA PH READINGS**
The probe also features a logging function that can record pH readings for later download and analysis.

**BATTERY-POWERED**
Our pH probe is entirely self-contained and battery powered, with an extensive battery life of approximately 72 hours.

**HIGHLY VISIBLE LED DISPLAY**
The probe’s red LED display is highly visible in dark water, and features an energy-conserving sleep function that can be switched on or off by flashing the ROV lights.

**WHAT’S IN THE BOX**

- Spares Kit
- Solutions
- Operating & Maintenance Manual

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>DEPTH RATING</th>
<th>BATTERY LIFE</th>
<th>DIMENSIONS</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 lbs/30 kg (air)</td>
<td>10,000 FSW/3,000 MSW</td>
<td>Approx 72 hours display time</td>
<td>54 in L x 7 in diameter (largest)</td>
<td>Stainless steel body and display housing</td>
</tr>
<tr>
<td>UHMW probe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Seanic Ocean Systems maintains a supply of standard and customizable API Torque Receptacles in a variety of materials to interface with an ROV torque tool. Our bearingless torque receptacles can be panel-mounted for reliable docking, valve rotation, and interface with a torque tool or other subsea equipment to prevent costly damage to installation valves.

Technical Specifications

Seanic API Torque Receptacles are available in three materials to ensure sound interface and reliable performance with your subsea equipment. We offer torque receptacles in corrosion-resistant stainless steel, durable carbon steel, or a self-lubricating Nickel-Aluminum-Bronze alloy.

No Painting Required

While standard torque receptacles are currently in stock, Seanic’s API Torque Receptacle can be modified as needed to meet customer demands for specific projects or custom orders.

Built to API 17H

Our superior quality torque receptacles conform to API 17H and ISO 13628-8 standards, and can be machined to match any custom bolt pattern—providing a seamless connection and guaranteed compatibility with your ROV.

What’s in the Box

<table>
<thead>
<tr>
<th>Materials</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1020 Carbon Steel</td>
<td></td>
</tr>
<tr>
<td>316 L Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Ni-Al-Brz</td>
<td></td>
</tr>
</tbody>
</table>
The Seanic Linear Valve Override Tool (LVOT) is designed to API 17H specifications to manually override linearly-actuated valves that have lost hydraulic control power and returned to the closed or fail-safe position. Custom lockout positions are available.

**ROV-DEPLOYABLE**
The LVOT and lockouts are designed to be deployed through ROV intervention.

**THREE LOCKOUT SIZE OPTIONS**
Custom lockout positions are available.

**MANUAL VALVE OVERRIDE**
In addition to the LVOT, three different size lockouts are supplied to lock the linearly actuated valve at the 2-inch, 5-inch and 7-inch positions. The LVOT and lockouts are designed to be deployed through ROV intervention.

**WHAT’S IN THE BOX**
- Type A, B and C Heads
- Intensifier Panels
- Lockouts (as needed)
- Spares
- Hoses
- API 17H Hot Stab Receptacle (Dual Port or Single Port)
- Operating & Maintenance Manual

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (air)</td>
<td>300 lbs/136 kg</td>
</tr>
<tr>
<td>Weight (water)</td>
<td>256 lbs/116 kg</td>
</tr>
<tr>
<td>Max Pressure (rod side)</td>
<td>3000 psi</td>
</tr>
<tr>
<td>Max Pressure (piston side)</td>
<td>9115 psi</td>
</tr>
<tr>
<td>Stroke</td>
<td>13 inches</td>
</tr>
<tr>
<td>Fail Safe</td>
<td>Spring retracts plunger</td>
</tr>
<tr>
<td>Max Force</td>
<td>170,000 lbs</td>
</tr>
<tr>
<td>Interface</td>
<td>Spring return retracts plunger</td>
</tr>
</tbody>
</table>

ROV Tooling 2016 / 33
Seanic Ocean Systems manufactures a GL4 Regan Latch Release Tool for the disconnection and removal of subsea guideposts.

The damaged or non-functional guidepost can then be retrieved to the surface along existing guide wires.

TECHNICAL SPECIFICATIONS

Our GL4 Regan Latch Release Tool, designed to be held in the ROV manipulator, enables an ROV to mechanically attach to the top of a guidepost and enable its removal using hydraulic power to compress and disengage the latching mechanism that holds the guidepost in place.

The GL4 Regan Latch Release Tool’s hydraulic supply can be either plumbed directly to the ROV, or supplied in the form of a hot stab attachment.

WHAT’S IN THE BOX

+ Spares Kit
+ Hoses
+ Operating & Maintenance Manual

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>316 L SS, carbon steel or aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>STROKE</td>
<td>3”</td>
</tr>
<tr>
<td>OUTPUT</td>
<td>3,000 psi @ 2 gpm</td>
</tr>
<tr>
<td>RELEASE FORCE</td>
<td>18,000 lbs</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>35 lbs/16 kg (air)</td>
</tr>
<tr>
<td></td>
<td>28 lbs/13 kg (water)</td>
</tr>
</tbody>
</table>
DOCKING CONE
API/ISO STANDARD

Our docking cone is built to API/ISO standards guaranteeing ROV compatibility, no matter the application.

The hydraulically actuated docking cone connects to a receptacle and serves as an interface between objects for such purposes as tree and piletop landings, pile alignment, docking to subsea tooling systems, and as a component installed on a Tool Deployment Unit (TDU).

Seanic can also provide the matching female mating receptacle that can be mounted on the tree or pile for orientation and simplified interface purposes.

WHAT’S IN THE BOX

+ Hoses
+ Spare Seals Kit
+ Operating & Maintenance Manual

316 Stainless Steel
Anodized Aluminum Housing
Delrin Nose Cone
20 lbs/9 kg (air)
16 lbs/7 kg (water)
3,000 psi @ 1 gpm
1/4in JIC

MATERIALS
WEIGHT
OPERATING PRESSURE
SIZE FITTINGS
The Seanic load cell is designed to provide accurate, reliable load readings for the lifting of subsea structures. This unit is a simple, rugged and reliable alternative to some of the other high tech options on the market.

Calibration certifications are good for one year and can be quickly recertified annually. The subsea load cell comes with 2x gauges: one 0-10000 lb calibrated and one 0-20000 lb calibrated and can be interchanged quickly.

**TECHNICAL SPECIFICATIONS**

**INSTALLS BETWEEN LIFTING LINE AND LOAD**

- The subsea load cell installs directly between the lifting line and load itself.

**EASILY MONITORED BY AN ROV**

- There are no electrical or battery operated components and the load cell can be easily monitored by an ROV with the large, easy-to-read display.

**NO ELECTRICAL/BATTERY OPERATED COMPONENTS**

- The cells are manufactured of all stainless components and are completely oil-filled so corrosion is not a problem.

**WHAT’S IN THE BOX**

- + Spare Gauge
- + Operating & Maintenance Manual

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>316/304/17-4 SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPACITY</td>
<td>20,000 lbs max lift</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>12” L x 12” W x 8 1/2” D</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>55 lbs (air)</td>
</tr>
<tr>
<td></td>
<td>45 lbs (water)</td>
</tr>
<tr>
<td>CYLINDER MAX PRESSURE RATING</td>
<td>3,000 psi</td>
</tr>
</tbody>
</table>
Seanic Ocean Systems designs and manufactures a suction cup sticky foot that can be built to custom sizes or suction levels to assist in station-keeping and lifting smooth-surface objects.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SIMPLE, RUGGED DESIGN</th>
<th>Its high level of suction and grip ensures that an ROV will stay reliably in place when attached to smooth surfaces such as a vessel hull or pipeline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW COST</td>
<td>The sticky foot can be deployed by the ROV manipulator or hard-mounted to the vehicle in an appropriate location for the job.</td>
</tr>
<tr>
<td>CHOICE OF ROV HANDLES</td>
<td>While we have a variety of sizes in stock, our sticky foot can be manufactured to custom shape or size specifications, load holding capacities, and suction levels to ensure reliable performance under any conditions your ROV may encounter.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>250 mm SUCTION CUP BELLOWS</th>
<th>9 gpm @ 2,000 psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 FSW WORKING DEPTH</td>
<td>250 gpm</td>
</tr>
<tr>
<td>6061 T-6 Aluminum MATERIALS</td>
<td></td>
</tr>
<tr>
<td>316 SS</td>
<td>45 lbs/20 kg (air)</td>
</tr>
<tr>
<td>Rubber</td>
<td>38 lbs/18 kg (water)</td>
</tr>
<tr>
<td>Ampco 45 Ni-Al-Brz</td>
<td></td>
</tr>
<tr>
<td>Carbon steel (motor)</td>
<td>12” x 12” x 20”</td>
</tr>
</tbody>
</table>

250 gpm OUTPUT REQUIREMENTS

38 lbs/18 kg (water) WEIGHT

12” x 12” x 20” DIMENSIONS
Seanic Ocean Systems manufactures an ROV friendly suction pile stab primarily used during the installation of suction piles.

The stab is also available with a rubber flap seal option, eliminating the need for the additional hydraulic power used to inflate the bladder.

**TECHNICAL SPECIFICATIONS**

**MATERIALS**
- 6061-T6 Aluminum body/handles
- Delrin nose piece
- 316 SS fittings
- Buna-N rubber bladder
- Buna-N rubber solid seal is also available

**WEIGHT**
- 45 lbs (air)
- 38 lbs (water)

**DIMENSIONS**
- 32 in L
- 13 in OD at handle

**WHAT’S IN THE BOX**
- Spare Bladder
- Gauge
- Operating & Maintenance Manual

Our stabs can be outfitted with pressure sensors, providing more accurate feedback than gauges and reducing the risk of damage or costly pile collapse.

Our suction pile interface stabs are built to order, can be customized to any size, and are rigorously tested onshore to assure product quality and reliable performance at depth.

Seanic’s custom-engineered design features an optional inflatable seal to overcome common sealing problems associated with irregularly painted or corroded surfaces inside the stab interface of most suction piles. This provides a secure fit and the ability to tighten the O-ring in the event of rust or scale buildup.
The low hydraulic consumption leaves enough hydraulic supply on most ROV’s to utilize a purpose built jetter unit for effective soil breakup.

Environmental concerns are addressed through the high efficiency, low energy demand hydraulic system negating the need for external compensators.

This is a completely modular system with many installation options for a variety of ROV’s. The true 4 inch performance with minimum 3.89 inch internal diameter reduces blockages and operates on a lower hydraulic flow.

The most powerful 4 inch ROV and diver dredge in the world is available for rent. The Vortex has a removal rate performance more commonly seen in the 6 inch dredges. Vortex do not supply dredges as a combination jetter/dredge unit, with the belief that it is better to create the most powerful inlet suction and combine that with an actual high pressure jetter unit.

**FLOW REQUIREMENTS**

- 19 gpm (minimum)
- 22 gpm (optimum)

**PRESSURE**

- 2400 psi (minimum)
- 4500 psi (maximum)
- 2800 psi (optimum)

**WEIGHT**

- 99 lbs / 45 kg (air)

+ www.vortexpipe.com
The drill is mounted to the metallic work site by energizing a lifting magnet using a hydraulic cylinder as the actuator. The powerful magnet holds the drill in place to perform precise cuts for the purposes of decommissioning, salvage, pinning, flooding or venting.

**TECHNICAL SPECIFICATIONS**

**HANDLES UP TO 6 IN DIAMETER**

Our Mag Drill is rated for 10,000 FSW and can easily cut holes into any flat or round steel structure with an annular cutter of up to 6 inches in diameter, at various depths-of-cut.

**UP TO 4 1/4 IN HOLE DEPTH**

This tool is custom engineered and built to meet customer specifications, and can be customized according to hole diameter and drill depth to suit project needs.

**ATTACHES TO ROUND OR FLAT SURFACES**

Seanic Ocean Systems designs and manufactures a Mag Drill that allows an ROV to attach a drill to any metallic subsea surface to cut holes of varying diameters.

<table>
<thead>
<tr>
<th>WHAT’S IN THE BOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>✦ Spare Annular Bits</td>
</tr>
<tr>
<td>✦ Hoses</td>
</tr>
<tr>
<td>✦ Spare Motor</td>
</tr>
<tr>
<td>✦ Operating &amp; Maintenance Manual</td>
</tr>
</tbody>
</table>

**DRILLING**

6” (150mm) (3/4” shank) maximum diameter annular cutter

**HYDRAULIC**

Requires 3 open centered directional control valves

(4 valves if using optional Slug Ejector function)

**WEIGHT**

201 lbs/91 kg (air)

171 lbs/77 kg (water)
The Seanic Standard Sample Bottle system is a safe, simple and effective tool for gathering subsea samples. Custom configurations and interchangeable collection interfaces makes it the right choice for subsea sampling.

**TECHNICAL SPECIFICATIONS**

**CONFIGURABLE**

The Subsea Sample Bottle Assembly is used to collect samples of gas bubbles/ fluid from on or near the sea floor.

**SAFE AND EASY TO OPERATE**

The Subsea Sample Bottle Assembly uses differential pressure to create a vacuum which will allow the gas bubbles/ fluid samples to be captured in the sample bottle subsea.

**AVAILABLE FOR RENTAL OR SALE**

The Subsea Sample Bottle Assembly is not intended to identify the cause of or source of the gas bubbles/ fluid at the operation site, only to collect samples in a safe and easy way for future analysis.

**WHAT’S IN THE BOX**

+ Sample Bottle Assembly
+ ROV Handle
+ Various Relief Valve Springs
+ Spare Funnel
+ Spare Flex Hose
+ Operating & Maintenance Manual

**MATERIALS**

316 SS valve and fittings

Aluminum sample bottle

Flexible PVC collection tube

Compressed gas: 77.7 cu-ft/2.2cu.m

Water: 2.93 gal/11.1 L

Pressure: 3000 psi
Seanic Ocean Systems designs and manufactures a variety of hydraulic ROV actuation kits for shackles ranging from 5–500 tons for the purpose of lowering or lifting heavy equipment to or from the sea floor without cutting lifting wires.

ROV shackles adhere to DNV 2.7-1 standards to ensure compatibility for your subsea needs.

**WHAT’S IN THE BOX**

+ Dummy Poly Stab
+ API 17H Hot Stabs (optional)
+ Hoses (optional)
+ Operating & Maintenance Manual

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>WEIGHT (AIR)*</th>
<th>WEIGHT (WATER)*</th>
<th>DIMENSIONS*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>360 lbs/163 kg</td>
<td>311 lbs/141 kg</td>
<td>50” x 14” x 25”</td>
<td>120T</td>
</tr>
<tr>
<td>984 lbs/446 kg</td>
<td>910 lbs/412 kg</td>
<td>64” x 14” x 30”</td>
<td>200T</td>
</tr>
<tr>
<td>1282 lbs/582 kg</td>
<td>1102 lbs/500 kg</td>
<td>74” x 19” x 36”</td>
<td>400T</td>
</tr>
</tbody>
</table>

*Weights and dimensions for example models shown. ROV shackles can be manufactured in sizes ranging from 5–450 T.

**HYDRAULICALLY OPERATED**

Constructed from an alloy steel and designed for simple operation through the use of an ROV manipulator, this tool enables an ROV to make or break shackle connections hydraulically when adding subsea hardware to a field, landing manifold or other subsea construction.

**MECHANICAL OVERRIDE CAPACITY**

Seanic’s actuation kits for shackles are built with a mechanical override capacity, in order to make or break shackles without the need for hydraulic power.

**CUSTOM-ENGINEERED TO ORDER**

Our ROV operable shackle conversions are custom-engineered according to customer specifications, and we have the ability to adapt any shackle to make it ROV-friendly.
The flex joint cleaning tool was designed to clamp around steel catenary risers with pipeline diameters ranging from 6 to 24 inches.

The tool is operated by a Seanic technician through the use of a joystick and tooling computer with GUI interface inside the ROV control van.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>WORKCLASS ROV COMPATIBLE</th>
<th>The unique deployment system of the tool allows it to be used on any industry-recognized workclass ROV.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERCHANGEABLE TOOL TRAYS</td>
<td>The tool is designed with interchangeable tool trays, which provide the option to work with various inspection cameras, lasers, temperature probes and cleaning tools.</td>
</tr>
<tr>
<td>RELIABLE CLEANING AND INSPECTION</td>
<td>The purpose of the tool is to thoroughly clean the underside of the flex joint by removing excessive marine growth from the elastomer, allowing for optimal inspection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPROX WEIGHT</th>
<th>800 lbs/363 kg (air)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>~ 20 lbs/9 kg (water)</td>
</tr>
<tr>
<td>HYDRAULIC REQUIREMENTS</td>
<td>10 gpm at 3000 psi</td>
</tr>
<tr>
<td></td>
<td>Four Open-center Directional Control Valves</td>
</tr>
<tr>
<td>MOVEMENT</td>
<td>Rotates 190° to 260° in either direction</td>
</tr>
<tr>
<td></td>
<td>Brush pole moves up and down and tilts forward and backward to reach corners/transition areas</td>
</tr>
<tr>
<td></td>
<td>Transit tray moves pole closer to or away from the riser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHAT’S IN THE BOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating &amp; Maintenance Manual</td>
</tr>
<tr>
<td>For information regarding what is packaged with this tool, please call Seanic.</td>
</tr>
</tbody>
</table>
Seanic Ocean Systems has designed and manufactured ROV-installable Sea Chest Covers in a variety of sizes, used for UWILD and for marine maintenance activities on subsea platforms. During a UWILD the external hull must be cleaned and inspected, in addition to the replacement and/or repair of internal systems inside the hull.

**TECHNICAL SPECIFICATIONS**

**ROV-FRIENDLY**

The differential pressure at the sea chest flange provides a sealing mechanism allowing for the seal face of the Sea Chest Cover to stay in place and prevent seawater from entering into the sea chest flange. Clamping mechanisms on the sea chest covers provide additional security for the connection and sealing force. An internal bladder on the sea chest is inflated using a seawater injection pump providing an internal sealing element as a secondary measure to prevent any additional seawater from entering the hull in the event of a slow failure of the primary face seal.

**DEPENDABLE SEALING**

The design of Seanic’s Sea Chest Covers is ROV friendly, and capable of being deployed and installed efficiently. Seanic’s API 17H FLOT and Class 1-4 torque tool is used to deploy and lock the Sea Chest Cover onto the sea chest flange.
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