SUBSEA INTERVENTION
CATALOGUE V.III
Velocious is an innovative, class leading, Engineering Services and Intervention Technology provider that delivers the highest standard of specialist support to the global activities of our clients. At Velocious, problems are pragmatically solved by highly qualified engineering teams that further balance their vast operational experience with in-depth product knowledge.

We design, develop and build products for the remote installation, operation and maintenance of subsea oil and gas production systems in any water depth, with no compromise! Our core focus ensures that Vision, Passion and Technical Excellence are applied to all of our specialist engineering services, in turn reducing operator’s costs and increasing profitability by leading technological developments on all fronts.

Velocious has extensive experience in subsea oil and gas construction, drill rig support activities and the IMR (Inspection, Maintenance and Repair) of established subsea infrastructure. With a total workforce of approximately 40 personnel, an office located just outside of the Perth CBD in West Australia, additional in-house fabrication facilities capable of the most complex turn-key projects and a linked network of other established specialist service providers, Velocious is a company well poised to respond to the most complex and urgent challenges that you encounter. Whether the requirement is for ISO/API standard intervention tools or bespoke equipment design, Velocious applies a wealth of experience and delivers products that will perform consistently in hostile environments.

Give Velocious the problem and Velocious will give you the solution! A typical range of our services and professional capabilities are listed on the right.

**Engineering Services**
- Subsea equipment design
- Intervention engineering
- Module intervention and handling equipment
- Component change out tools
- Tool deployment units
- De-commissioning equipment
- Repair tools and subsea repair systems
- Design of subsea structures
- Access verification
- Virtual simulations
- Structural analysis and mechanical design
- Complete fabrication and assembly of all designs
- Operational, FAT, SIT management and support
- Offshore management and supervision

**Professional Capabilities**
- Detailed knowledge and experience with DNV, Lloyds, ABS and other international design standards
- Knowledge of local design standards
- Design experience in the areas of structural, mechanical, hydraulic, electronic and software engineering
- State of the art computer systems with the latest design, modelling and analysis software (Solidworks, Cosmosworks, AutoCAD, MathCAD)
- Extensive experience in software development on platforms such as .NET

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Our standard range of intervention tooling includes:

- Torque tools
- Tooling control systems
- Surface verification units
- ROV operable shackles
- Flying lead orientation tools
- Linear actuator override and lock-out tools
- Inertial navigation products (through IXSEA partnership)
- High pressure water jetting units
- Multipurpose dirty work packs
- Torque tool adaptors
- ROV tooling baskets
- Multipurpose cleaning tools
- ROV operable grinders
- ROV interface panels
- ROV handles
- Suction dredging units and LP jetting systems
- Compliant mountings
- Subsea level indicators
- Pressure compensators
- Isolation valves
- Variety of hydraulic hotstabs and receptacles
- Underslung and rear-mounted fluid injection skids
- ROV torque buckets for intervention panels
- AX-VX ring replacement tools
- Wire rope cutters
- Soft rope cutters

Velocious continues to expand its equipment rental tool pool which includes Velocious manufactured tooling as well as other high quality third party equipment. Rental pool items can be supplied for ROV offshore operations 24 hrs a day, 365 days a year.

Other bespoke tooling solutions that Velocious is typically engaged in providing include:

- Custom torque solutions
- Subsea control systems and manifolds
- Underwater termination assemblies
- Tool deployment systems
- Handling systems
- Component change out tools
- Remote tie-in systems for pipelines, umbilicals and cables
- Pipeline repair systems
- Emergency response and salvage systems
- Suction pile skids
- Subsea cutting and decommissioning tools
- Riser cleaning, inspection, repair and clamping systems

The need for remote intervention equipment that can reliably perform new tasks, solve new problems and work first time every time is constant. Velocious has a pool of dedicated engineers ready to provide the right solution for your needs.
The Multipurpose Cleaning Tool is a hydraulically operated ROV tool designed to clean the surfaces of subsea structures. The tool is equipped with a D-Handle allowing for ease of operation with the ROV’s manipulator. The tool features interchangeable brush heads enabling the cleaning of a variety of surfaces and removal of marine growth, residual corrosion and hydrocarbon deposits at critical sealing interfaces. Upon request the Cleaning Tool and cleaning heads can be mounted into an ROV deployable frame for hub cleaning.

FEATURES
- Manipulator held ROV ‘D’ Handle
- Removes marine growth easily
- Nylon or Stainless Steel brush heads available

TECHNICAL SPECIFICATIONS
- Overall Dimensions (LxWxH) (nylon bristle brush head): 310 x 300 x 410 mm
- Weight in Air: 10.3 kg
- Weight Subsea: 8.5 kg
- Hydraulic Fluid: Tellus 32 or equivalent
- Max Output Torque: 40 Nm (cont)
- Displacement: 32 ccm/Rev
- Rotation: Reversible / Bi-directional
- Depth Rating: 3000 MSW, hydraulically compensated
- Max Input Pressure: 125 bar (cont.)
- Max Flow: 20 lpm (cont.)
- Hydraulic Connections: 2 off JIC #4
Velocious design and manufacture ROV Docking Probes capable of withstanding the full thrust load of all typical Work Class ROV's.

Designed with an ISO 13628-8 interface, the ROV docking probes are used to latch ROV's to an interface.

The unit is robust and features replaceable components such as latching fingers, nose guide, pins & cylinder components.

A positive spring return latching system ensures latching fingers retract & release once hydraulic pressure is relieved from the system.

**FEATURES**

- ISO 13628-8 Interface
- Spring assisted retract
- Adaptable to other manufacturers' mounting detail
- 316 Stainless Steel Construction
- Max. Hydraulic Operating Pressure 207 bar
The Velocious Flange Repair System uses patented subsea machining technology to overcome damage or deformation to critical flange or hub faces and so restore the integrity of permanent subsea hardware. The flange repair system is designed for rapid emergency response and so can be both installed and powered by a standard workclass ROV from the smallest of construction support vessels.

Recently deployed onto the impact damaged BOP/Tree Cap interface flange of a subsea Tree, the device restored both edge and tapered flange surfaces to as drawn dimensions to allow successful installation of the Tree Cap.

Clamping and cutting functions can be precisely controlled by ROV manipulator and hydraulic power reliably supplied from the ROV auxiliary system via Velocious Hotstab. Cutters can be configured to overcome the hardest materials used within the subsea industry with ease.

Use of the Flange Repair System can present a host of options without which Clients can be faced with more expensive alternatives which expose vital equipment to elevated levels of risk.

**TECHNICAL SPECIFICATIONS**

- Hydraulic motor max input pressure: 170 bar
- Maximum pressure drop across motor: 140 bar
- Nominal motor flow rate required: 35–40 L/min
- Hydraulic cylinder operating pressure: 205 bar
- Nominal cylinder flow rate required: 0.2 L/min
- FRT Hydraulic Fluid Type: Mineral Oil
- FRT Weight: 330 kg
- Dimensions (LxWxH): 1050 x 1050 x 950 mm
- Manipulator Interface: “D” Handles
- Hydraulic interface: 4 Port hotstab
Sea Squirt Fluid Injection System

Today’s subsea hardware is becoming more complicated and requires greater working pressures, Sea Squirt can be tailored to suit the exacting requirements of your subsea hardware.

All equipment is supplied in a purpose built frame that can easily be fitted or removed to/from the WROV without the need for under vehicle access. The complete fluid injection skid is neutrally buoyant to ensure that any potential effects on the ROV dynamic handling characteristics are minimised.

All hardware is mounted inside the fluid injection skid and is connected to the host ROV via minimal hydraulic and electrical connections to reduce installation and removal time. The standard buoyancy supplied with the Sea Squirt has a safe working depth of 1000m although can be optionally upgraded upon request.

The Control System offers an accurate and repeatable solution to client requirements for the control of hydraulic tools for high integrity applications. In this particular instance the GUI code has been written specifically for the fluid injection system. This allows the user to infinitely adjust pump output pressure and flow within the system range whilst the equipment remains fully operational at depth.

The internal datalogger has the ability to log both the Control System and hydraulic pump output pressures simultaneously, this means that seal tests of up to 600 bar can be performed and recorded by the system where the pump is appropriately specified.

The Sea Squirt control system can be operated from a standard PC or Laptop Computer using the powerful GUI supplied. The system can also be provided with custom built isolation panels for conducting seal or annulus tests or indeed any other suitable application.
The Velocious High Pressure Fluid Injection Skid is designed for operation and testing of Subsea hardware. Today’s Subsea hardware has become more complicated and requires greater working pressures, the Velocious HP Fluid Injection System can be tailored to suit the exacting testing requirements for your subsea hardware.

All equipment is supplied in a dedicated tooling frame that can be installed and removed efficiently from the base of the ROV system using the through frame lift posts built into the vehicle. The complete fluid injection skid is neutrally buoyant to ensure the ROV’s dynamic handling characteristics are affected to a minimum.

All hardware is mounted inside the fluid injection skid and is connected to the host ROV via minimal hydraulics and electrical connections to reduce installation and removal time. The standard buoyancy supplied with these units has a safe working depth of 1000m although can be upgraded upon clients request.

The Control System offers an accurate and repeatable solution to client’s requirements for the control of hydraulic tools in high integrity applications. In this particular instance the GUI code has been written specifically for the fluid injection system. This allows the user to infinitely adjust pressure output of the hydraulic pump.

The internal datalogger system has the ability to datalog both the Control System and hydraulic pump output pressures simultaneously. This means that seal tests up to 600 Bar can be recorded if the hydraulic pump is specified to produce this output.

The control system is supplied with all the parts required to operate from a standard PC or laptop using the powerful dedicated GUI. Surface control system is supplied with the unit.
**FEATURES**

Typical features for Velocious Hot Stabs are as follows:

- Robust design, minimal parts
- Sizes from 35 mm to 6” (150 mm)
- One-Piece construction, no welding
- Solid compliant 'D' handles with positive stops (fish tail and t-bar available)
- High flow and high pressure available
- Easy handling and operation
- Tension wire / Strain Relief for hose connections
- Different seal types available from O-Ring to K35 profile seals
- Pressure ratings up to 15,000 psi available

Velocious ROV operable Hot Stabs are robust, reliable, easy-to operate units that allow high flow capacity, low pressure drop and 90 degree bend capacity with zero flow reduction.

The main Hot Stab body is machined from a single piece of material to reduce the risk of leakage whilst also providing high mechanical strength. Whilst material for the main Male Hot Stab bodies is usually Super Duplex Stainless Steel or Acetyl (depending on the application), they can be constructed to Client Specification as required.

The Sealing Interface between Stab and Receptacle consists of K35-P gaskets (H-PUR material suitable for 50 years subsea service life) or standard Viton O-rings.

Female receptacles are made from Hiduron 130 material for proven durability with Dummy Male Hot Stabs manufactured from Acetyl available to protect the units when they are not being used.

As Velocious has designed and produced ROV Hot Stabs in accordance with the wide range of applicable standards, various types are available. Hot Stabs can be delivered with specially designed check valves fitted to flow paths to minimize the potential for water ingress contamination. Velocious can offer expert advice on matching fluid delivery circuits to all Hot Stab products.
High Pressure Water Jetter

The HP Water Jetting Unit uses a patented HPW-pump which is a reciprocating, double acting, hydraulic piston pump. This develops pressure in the delivery (water) line by transforming the actuating fluid power, usually hydraulic oil, into pumping fluid power; this is defined by the supplied flow rate and pressure to the pump.

These systems are specifically designed for integration with industry standard workclass Remotely Operated Vehicle (ROV) systems. The system delivers water at high pressure through a turbo (rotating point) nozzle which combines the advantages of fan and point nozzles in one unit.

The system is designed for ease of installation and maintenance and is robustly constructed to resist corrosion and so enhance environmental protection, a variety of specifications can be provided upon request.

Up to 10,000 psi units available upon request.

TECHNICAL SPECIFICATIONS

Overall Dimensions (LxWxH): 350 x 200 x 190 mm
Weight In Air: 22 kg
Weight Subsea: 18 kg
Max Water Delivery Pressure: 420 bar (6,174 psi)
Max Water Deliver Flow: 20 lpm
Hydraulic Fluid: Tellus 32 or equivalent
Hydraulic Inlet Pressure: 190 bar (2,755 psi)
Hydraulic Demand Flow: 50 lpm
Water Filtration: 250 micron
Depth Rating: 3000 MSW, hydraulically compensated
Supply Fluid: Water Based Fluids
Unloading Valve Setting: 400 bar
Maximum Pilot Line Pressure: 210 bar
Connections: 1 off JIC #4, 1 off JIC #8, 1 off JIC #12
Velocious Subsea Level Indicators (typically known as Bulls-eyes), are used for levelling subsea structures and other related offshore equipment, units manufactured to date have been proven to withstand hydrostatic pressure at 4000 metres depth.

As each customer has different requirements we have developed a variety of shapes and sizes with differing profiles and angular graduations to suit the level of accuracy required.

A maintenance free levelling system for all Sub Sea Systems, Manifolds, Pipelines, Habitats, Trees, BOP Stacks, LMRP’s, Suction Piles, PLEMS/PLETS which can be recovered or abandoned in situ for long term status monitoring.

Custom mounts can be fabricated for a range of options including fixed pre-deployment installation and ROV post deployment. In addition, customers often specify different display decals, scales and/or logos, we are able to offer a unique design and customisation service for all Velocious built bulls-eyes.

### TECHNICAL SPECIFICATIONS

- **100 mm to 350 mm diameter**
- **2–30 degree out-of-level indication**
- Custom built handles to suit specific deployment method required by Client
- Can be manufactured to withstand in excess of 200 degrees Celsius
ROV Operable Shackles are primarily designed to provide an ROV friendly link between a lifting line and standard padeyes that can readily be made/unmade at depth. Such shackles allow this action to be repeated as often as necessary without the need to recover rigging to “re-set” the mechanism and can alternatively be used to acquire masterlinks, soft strops and/or other shackles that are compatible with both physical dimensions and load capacity of the ROV operable unit.

By allowing initial surface isolated connection of rigging to heave sensitive seabed loads, vessel working weather windows can be significantly increased by using Velocious ROV Operable Shackles.

Velocious ROV Operable Shackles consists of the following main parts:

- Main load carrying body
- Manipulator handle with unique patented open/close mechanism
- 2nd barrier lock (optional)
- Custom designed guides to assist with specific subsea installations
- Dedicated Transportation Cases

2nd Barrier Locks can be customised to specific Client requirements and generally comprise spring loaded ‘keeper’ fingers that cannot be displaced by wave action or single event impact.

Velocious ROV Operable Shackles can also be configured to allow rapid and reliable emergency disconnection.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SWL: 4–100 tonnes</th>
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<tbody>
<tr>
<td>Dry weights: 5–90 kg</td>
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</table>

ROV Operable Shackles
Velocious has extensive experience in the design, build and delivery of baskets for the deployment and recovery of general subsea equipment and ROV/Diver tooling. Specific applications include the safe and reliable handling of:

- Steel Tube Umbilical
- Hydraulic and Electrical Flying Leads
- ROV Intervention Tooling
- Subsea Isolation Test Panels / Hoses

Deployment baskets provide a secure, fully engineered and purpose built environment in which flying leads, intervention tools, subsea work packages etc. can be fully protected during deployment or recovery operations.

Velocious subsea rated baskets are designed to accommodate dynamic marine environment loadings that can otherwise complicate or delay critical operations, they come certified to DNV standards.

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Load Limit</td>
<td>0–10,000 kg (minimum)</td>
</tr>
<tr>
<td>Depth Rating</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Materials</td>
<td>Carbon Steel with approved offshore surface treatment</td>
</tr>
<tr>
<td>Certification</td>
<td>Designed and Load Tested in accordance with DNV Standards</td>
</tr>
<tr>
<td>Marine Transportation</td>
<td>4 off (min) welded lashing points</td>
</tr>
<tr>
<td>Layout</td>
<td>ROV Lids, folding bail arms, custom build, specific mounting points etc.</td>
</tr>
<tr>
<td>Available on request</td>
<td></td>
</tr>
</tbody>
</table>

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The Surface Torque Analyser consists of a calibrated torque transducer mechanism mounted within a painted carbon steel body. The analyser fully replicates the reaction geometry of the subsea interface and can be fitted with an appropriately sized drive shaft to reflect the range or class of torque required. Drive shafts are easily interchangeable and an external handle is provided so that the operator can guide and retain the unit in place.

The integral transducer is bi-directional, and has a nominal torque range of 0–3000 Nm. Greater torque ranges can be accommodated on request to suit any range up to and exceeding Class 7–33,000 Nm.

Power and signal connections to the transducer are via a Harsh Environment IP65 hand held meter, which is supplied with a suitable interconnecting cable. Clear torque values in clockwise and counter clockwise directions can be simply verified both before and after any given Torque Tool operation.
Torque Tool Adaptors

The Velocious Torque Tool Adaptor can be connected and disconnected from the nose of a 17D (ISO13628-8 Figure 18) Torque Tool, either on deck or subsea. This allows the operator to readily convert to 17H configuration without coming to surface, and additionally allows the Client to reduce the number of operational and contingency Torque Tools necessary for certain scopes of work.

Torque Tool Adapters can be tailored to overcome problems presented by subsea interfaces that may fall outside ISO configuration e.g. when an over or under length actuator shaft prevents successful mating with the Torque Tool nose or a custom interface has been manufactured and installed subsea.

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**TECHNICAL SPECIFICATIONS**

- **Interface:** Converts 17D (ISO13628-8 Figure 18) to 17H (ISO13628-8 Figure 14)
- Custom adaptors made to order with a range already developed i.e. Low Torque Receptacles (ISO13628-8 Figure 13 Type A, B and C)
- Dry weight: 7.7 kg
- Submerged weight: 5.6 kg
- Material: Body: Anodised 6061 T6 Aluminium Driveshaft: AISI316L or 630 Stainless Steel
The Velocious ROV Operable Torque Limiting Tool is a manipulator deployed device. The torque limiting function is preset on deck to the maximum operating torque of the valve to be operated and the actual output torque can then be set anywhere within the chosen range.

No matter how high the value of input torque applied to the tool by the manipulator, the internal mechanism will simply disengage once the predefined torque limit is reached to ensure that the actuator cannot be overloaded. The mechanism will then rotate 360 degrees and re-engage for continued subsea use as long as the input torque does not again exceed the preset limit. The tool resets automatically following any attempt to overload it without the need to recover to deck.

The torque limiting device ensures the safe operation of all low torque interfaces which is particularly valuable where the alternative output torque of a given manipulator or torque tool cannot be assured or verified. The tool is available in a variety of torque limit adjustment ranges and with a variety end effectors.

The Torque Limiting Tool can be readily configured for diver use if required.
AX–VX Gasket (Ring) Handling Tool

The Velocious AX–VX Gasket (Ring) Handling Tool is designed for problem free gasket insertion and removal. Designed around industry standard AX–VX gaskets, the tool can additionally be configured to accommodate specific client requirements.

During handling operations, the Gasket or Ring is secured into position using two spring-loaded guides which additionally provide controlled and fail-safe extension and retraction during deployment and recovery.

The framework for the tool incorporates the spring-loaded guides along with the bracket for the compliant ROV friendly handle. Hydraulic actuation of the tool can be via direct hosed connection to the ROV or via subsea hotstab which allows the tool to be independently deployed via a Velocious ROV tooling basket.

**FEATURES**
- Light and robust construction
- Easy handling and operation
- Reliable
- Fail-safe mechanism

**TECHNICAL SPECIFICATIONS**
- Overall Dimensions (LxWxH): 546 x 502 x 411 mm
- Maximum Working Pressure: 3,000 psi (207 bar)
- Operating Pressure: 1,450 psi (100 bar)
- Hydraulic Fluid: Mineral Oil / Glycol
- Jaw Compatibility: Parallel / Intermeshing
- Weight in Air: 22 kg
- Weight in Water: 20 kg
- Hydraulic Interface: Direct (JIC 4) or Hotstab
The Velocious Dual Port Isolation Panel (DPIP) has been designed to suit any number of subsea fluid management tasks, its general arrangement is shown below.

The DPIP provides the means to deliver and accurately monitor injection fluid to the device or devices connected to the output ports. Typical tasks being annulus seal bore tests, cavity tests, connector lock and unlock functions.

As supplied, outlet “A” is the nominated outlet for pressure test functions and as such should be connected to the control system pressure transducer for electronic datalogging of seal test. The ROV operable ball valve allows the ROV to isolate, bleed and open the test line.

The Stauff test point fitted to the output line allows a pressure gauge to be connected without loss of circuit integrity.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Dimensions (LxWxH):</td>
<td>400 x 250 x 215 mm</td>
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<tr>
<td>Weight in Air:</td>
<td>18 kg</td>
</tr>
<tr>
<td>Weight Subsea:</td>
<td>15.8 kg</td>
</tr>
<tr>
<td>Hydraulic Fluid:</td>
<td>Tellus 32 HW443 or equivalent</td>
</tr>
<tr>
<td>Safe Working Pressure:</td>
<td>10,000 psi max</td>
</tr>
<tr>
<td>Max flow:</td>
<td>20 L/min (cont.)</td>
</tr>
<tr>
<td>Depth Rating:</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Hydraulic Ports:</td>
<td>#4 JIC</td>
</tr>
</tbody>
</table>
Velocious produces a range of tools that can overcome serious access limitations to restore the damaged threads of subsea shafts or mating females to a usable condition. Typically these tools are developed for aging subsea fields where male or female threads on subsea hardware have been damaged and where recovery to surface is not an option or presents additional technical challenge.

The thread repair tools use a patented, intricate cam and spring mechanism engaging the segmental tap or die against the inner most threads before the tool cuts its way back along the shaft removing the damage along the way. The unique design ensures that unwanted material is ejected from the area to be repaired rather than driven further into or onto it.

Due to the wide variety of subsea stab plate configurations that exist, tools are designed and manufactured upon request, tools can be operated by ROV or Diver.

Thread repair systems make highly efficient and cost effective additions to work over or IMR tool kits, and present operators with a low risk contingency option that is frequently overlooked in favour of complicated/extended duration hardware recovery campaigns.

TECHNICAL SPECIFICATIONS

- Interface: Customer specified stabplate; capable of repairing typical thread materials such as High Strength Carbon Steels, Super Duplex, Nitronic or Aluminum Bronze
- Jaw Compatibility: Parallel / Intermeshing
- Dry weight: 15 Kg
- Submerged weight: 12 Kg
- Depth Rating: Unlimited
75mm Wire Rope Cutter

The Velocious adapted 75mm wire rope cutter is based around field proven technology. The unique Velocious deployment system has been specifically developed to allow the tool to be readily ejected by the host ROV in the unlikely event that the cutter becomes stuck during subsea operation.

The handle design additionally allows the cutter to be deployed without the ROV System Hydraulics powered up if the cutter is used with a Schilling Rigmaster and standard intermeshing jaws (this is achieved by avoiding the need for the jaws to positively grip the cutter).

The cutter has a 4 Port Hotstab and Hydraulic Intensifier integrated within the unit, allowing it to be independently deployed via a Velocious ROV Tooling Basket.

**FEATURES**
- Failsafe cutting mechanism
- Simple deployment via ROV or ROV basket
- Reliable

**TECHNICAL SPECIFICATIONS**
- Overall Dimensions (LxWxH) (including hotstab): 601 x 682 x 432 mm
- Weight (Air): 69 kg
- Weight (Water): 67 kg
- Maximum wire size: 75 mm
- Maximum Wire Tensile Strength: 1770 N/mm²
- Hydraulic Fluid: Mineral Oil (Tellus 32 or equiv)
- Jaw Compatibility: Parallel / Intermeshing
- Hydraulic Flow: < 5 lpm
- Hydraulic Pressure: 175 bar (Cutter blade), 190 bar (Anvil)

www.velocious.com.au
Velocious Hydraulic Actuators have been developed specifically for the subsea environment. Meticulous care has been taken to select materials which can safely and efficiently operate in these demanding conditions.

From precision fast operating 1” bore cylinders to high force 12” bore cylinders, Velocious can tailor a solution to any requirement. Designing cylinders for specific subsea tasks means that no compromise is made, as often occurs when using cylinders originally designed for agricultural applications.

TECHNICAL SPECIFICATIONS

- Subsea material construction: Super Duplex or 316 Stainless Steel (Other available upon request)
- 1” – 12” bore and any compilation of stroke
- Custom end and mounting configurations
- Multiple hydraulic port options
- Fluid medium: Potable water, sea water, water glycol & Hydraulic mineral oil
Velocious hydraulic power units (HPUs) are suitable for various applications but are supplied mainly for use with our range of subsea tooling. Meeting the highest industry standards, all Velocious HPUs are certified to DNV2.73 Lifting Standards and come complete with the certification necessary for offshore use.

Velocious Hydraulic power units can be custom made to Client specification or simply hired. Typical configurations include:

- Electrical Power 22KW
- Electrical Supply 440VAC
- Wired for Star/Delta with Breakers and Emergency Stop
- Offshore Certified Lifting Frame
- Operating Pressure 0–250Bar Maximum output flow 55L/min
- 2 Bank Directional Control Valve with separate pressure control
- 6 Micron Pressure Filter
- 25 Micron return filter
- Reservoir capacity 200L
- Baffled reservoir
- Stainless steel plumbing
- CJC Oil/Water Separator
- Oil Cooler
- Relief Valve
- Pressure Gauges
- Marine Grade Coating

**OPTIONAL FEATURES**

- Sound damping enclosures
- Containerized design (standard or custom sizes available)
- Explosion proof rating (Variable pressures up to 10,000 psi can be reached with suitable intensifier)
- Tarpaulin cover
- Quick connect couplings
Velocious supply industry leading Tritech pumps. Robust design and proven reliability ensures pump integrity is not compromised.

Superzip jet pump incorporates many features such as ROV mounting system, modular pump core & multiple handling configurations. The Super ZipJet is so compact that it may be mounted on most work class ROVs without the need for an additional dredging skid.

Reversible function for jetting or suction operation.

Low pressure jetting nozzle outlet.

TECHNICAL SPECIFICATIONS

- Hydraulic Supply Pressure max. 220 bar
- Hydraulic Supply Flow max. 60 lpm
- Pump Flow – Up to 500 lpm @ 4 bar
- Suction Hose ID 75 mm
- Discharge Hose ID 100 mm
- Weight in water 11 kg, weight in air 25 kg
- Suction Performance: 500-1000 lpm
- Jetting Performance: 500 lpm @ 4 bar
- Solids Removal: 5-10 tonnes/hour
**Stanley TP08 Trash Pump**

Velocious supply Stanley Trash pumps. Robust design and proven reliability ensures pump integrity is not compromised.

The Stanley TP08 Trash Pump is a lightweight, heavy duty pump capable of pumping high volumes of water, sand slurries, gravel, sludge and solids up to 3 in./75 mm in diameter. The TP08 is submersible, self priming and can run dry without damage to the motor, bearings or impeller. Supplied with ROV operable suction nozzle & reinforced suction hose as standard.

### TECHNICAL SPECIFICATIONS

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<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Hydraulic Supply Pressure</td>
<td>140 bar</td>
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<tr>
<td>Hydraulic Supply Flow</td>
<td>34 lpm</td>
</tr>
<tr>
<td>Pump Flow</td>
<td>3028 lpm</td>
</tr>
<tr>
<td>Discharge Diameter</td>
<td>100 mm camlock</td>
</tr>
<tr>
<td>Inlet diameter</td>
<td>100 mm</td>
</tr>
<tr>
<td>Weight in air</td>
<td>26.7 kg</td>
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<tr>
<td>Maximum solids diameter</td>
<td>3” (75 mm)</td>
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</tbody>
</table>
Velocious design and manufacture custom ROV operable jacks to suit differing client requirements, whether as a primary, contingency or emergency tool. Load, location & depth are insignificant obstacles for Velocious ROV operable Jacks.

Tailor made to suit whatever challenge you may have, Velocious over ride jacks utilise features such as hydraulic pressure intensification and high strength materials to design and manufacture robust, ROV operable jacking solutions.

Hotstab connections provide a simple hydraulic interface and ISO 13628-8 Grab points ensure the ROV can secure & manipulate the jack as per required. Jack designs can accommodate the tightest locations.

TECHNICAL SPECIFICATIONS

- Manufactured from high yield strength materials
- Hydraulic supply pressure: 207 bar
- ROV Interfaces as per ISO13628-8
- Configurable for multi orientation usage
- Safe working loads up to and in excess of 50 Tonne
Velocious designed and built MQC (Multi Quick Connect) Plates represent the pinnacle of subsea interface reliability. MQCs have been developed following thorough evaluation of extensive feedback from offshore installation teams and experienced ROV crews.

Velocious MQCs are designed to allow safe and efficient deployment / recovery without any degree of compromise to function or long term integrity.

MQC Plates can incorporate any electrical / hydraulic configuration and are populated to allow the minimum of attenuation through the interface connectors. Hydraulic connectors can be customised to accommodate high flow requirements as required.

The testing regime applied to Velocious MQC Plates is exhaustive and demanding, the units can be deployed with confidence and relied upon to deliver the highest levels of subsea performance.
The Improviser Class 1-4 torque tool is supplied by Velocious and is recommended for all common torque tool operations.

The Improviser torque tool features high and low torque settings and a proprietary self-adjusting end effector. This enables the tool to adapt to Class 1 & 2, Class 3 and Class 4 square drives without the necessity of returning the tool to the surface to change end effectors.

This tool is widely recognised as the leader of its class and affords the appropriate level of respect to the integrity critical tasks being carried out.

TECHNICAL SPECIFICATIONS

- API 17D Class 1-4 (ISO 13628-8)
- Latching
- Weight in water 37.36 kg, weight in air 46.3 kg
- Depth rating 3000 msw
- Torque Output max. 2711 Nm
- Hydraulic Supply Pressure – 207 bar
- Rotational Speed max. 20 rpm
- ROV Handle: D-Handle or Fishtail
Class 1–4 17D Torque Tool

The Oceanworks Tornado Class 1–4 Torque Tool is supplied by Velocious and recommended for all common torque tool operations. This robust subsea unit is the product of a detailed design process that affords the appropriate level of respect to the integrity critical tasks being carried out.

This tool incorporates a clear integrated electronic display at the rear so that torque output and turns count can be continuously monitored and recorded during any given valve actuation, the unit is compact and easily stowed for simple ROV or Diver deployment.

The Tool is typically supplied in a fully calibrated condition with a Velocious calibrated torque verification unit and delivers the highest level of torque repeatability across it’s entire range. With a maximum output torque of 2700Nm the Tool is easily reconfigured without disassembly of the gearbox.

Offering the highest level of subsea operability and reliability, the Tornado Torque Tool represents the very latest in subsea Torque Tool Technology and comes rated to 4000 metre water depth as standard. This tool should be used in conjunction with a Subsea Control System for full proportional control and datalogging of valve operations.

TECHNICAL SPECIFICATIONS

**Torque Tool**
- Weight in air: 68 lbs (30.8 kg)
- Weight in water: 53 lbs (25.9 kg)
- Depth Rating: 4,000 meters
- Interface: API 17D and H, Class 1–4
- Torque output:
  - Class 1: 0 to 50 ft lbs (0 to 69 Nm)
  - Class 2: 0 to 200 ft lbs (0 to 270 Nm)
  - Class 3: 0 to 1000 ft lbs (0 to 1360 Nm)
  - Class 4: 0 to 2000 ft lbs (0 to 2700 Nm)
- OWI Class 1-4: 0 to 2000 ft lbs (0 to 2700 Nm)

**Subsea LED Display & Electronics**
- Dual simultaneous display of torque / turn count
- Programmable character height (0.2” to 0.8”)
- Battery charge indicator
- Torque mode indicator (Class 1-4)
- Torque readout w/rotational sign (+/-) in Nm or ft-lb
- Number of turns w/rotational sign (+/-)
- Light activated
- Automated sleep mode (programmable)
- Bi-directional RS-232 and RS-485 communications with topside
- Topside readout of torque, turns, RPM, battery charge; operator reset of number of turns
- 12v-24v external power supply w/internal hot swap battery backup
- Torque readout accuracy +/- 10%
- Oil compensated electronics / torque transducer
- Rechargeable battery:
  - 100 hour battery life (display on)
  - 2 month battery life (sleep mode)
- Ruggedized battery charger – IP 67 rating
- Environmental: 20°-140° F (-28° to 60° C)
Velocious design and manufacture Installation lift frames as per client requirements.

In accordance with DNV, Velocious lift frames provide safe, easy lifting solutions. Hydraulically actuated lift pins enable remote connection/release of loads.

Installation lift frames can be supplied for installation of subsea or surface equipment. When configured for subsea structure installation lift frames are equipped with accumulators and an ROV intervention panel.

**FEATURES**

- Hydraulically operated lift pins
- WLL 85T @ 2.4 DAF
  (Or as per client requirements)
- Reversible quick disconnect system
- Easy disassembly for road/air transportation
Velocious offer a linear override tool that is operated without the assistance of a torque tool.

The Velocious Linear Valve Override Tool relies on hydraulic pressure to directly drive the stem of linear valves. As a result of its linear design, there is no requirement for the tool to be accompanied by a torque tool. The ROV interfaces with the Linear Override Tool by means of a 4 port hotstab and D-Handles, allowing for ease of operation with all popular ROV manipulator designs.

Designed in accordance with ISO 13628-8 interface standards the Linear Override Tool is capable of a maximum stroke of 7”, making it adaptable across a wide range of applications, and is capable of indefinitely holding actuation forces up to 80T.

The tool is capable of mechanically holding the load using a unique reversible locking mechanism incorporated into the nose of the tool. The tool removes the need for a bulky & separate locking tool.

The tool’s titanium construction affords a high degree of protection against corrosion and mechanical impact, and results in a tool that is light in weight. During operation the resultant stroke of the actuator can be clearly monitored on a dual scale indicator.

The tool is supplied with a top-side calibration unit that allows the operator to verify actuation forces generated under various hydraulic inputs and to test the integrity of the locking mechanism prior to deployment.

**FEATURES**
- Titanium construction
- 7” Actuator stroke
- 80T Max. Actuation Force
- Visual Stroke Indicator
- ISO 13628-8 Interfaces Type A, B or C Interfaces
- Mechanical lock for permanent hold open
Velocious Linear hold open tools provide the ability to hold open XT valves.

Constructed from high strength alloy steel and utilising a bolt in spigot, the Velocious Linear hold open tool provides a cost effective fit for purpose solution for holding open XT valves during rigless XT installation.

Spigots of various lengths are available and are easily changed out to suit linear actuators of various lengths.

FEATURES
- ISO13628-8 ROV Interfaces
- Spigot easily changed out to suit various actuation strokes
- Single direction, high strength locking interface with internal stop prevents accidental release.
Interface Skid

Velocious design and manufactured custom ROV operable Interface Skids. These skids are capable of supplying a hydraulic, electrical and data connection between the WROV and attached tool.

The Interface Skid can be fitted with an onboard isolated hydraulic power unit (IHPU). This ensures the WROV's hydraulic circuit is safely isolated from the tool's hydraulic circuit. It includes compensation to accommodate any expected changes in hydraulic volume throughout operations.

The Interface Skid uses the WROV auxiliary hydraulic controls to operate the tool engagement pins and stab plate. The Skid is equipped with visual indicators to display the state of both the engagement pins and stab plate. The stab plate is equipped with any number of Hi Flow dry break couplings and a wet-mate electrical connections.

In the event of a power failure to the WROV, the Skid can be configured to either remain attached to the tool or to release after to specified length of time. This ensures that the WROV can be recovered in such situations.

The interface Skid can accommodate most WROVs through adjustable interface pins. Its low profile maximises the reach of the manipulators to the underslung tool. It is neutrally buoyant and can be easily trimmed with adjustable ballast and buoyancy.

**FEATURES**
- Neutrally buoyant in sea water
- Supplies hydraulic and electrical power to WROV
- Configurable safety release mechanism from tool

**TECHNICAL SPECIFICATIONS**
- Compatible with most leading WROVs including:
  - Perry Triton XLX
  - Schilling UHD
  - Quantum XP
- Maximum water depth: 1500 msw
- Temp range: 2.5°C to 20°C in water
  - 50°C maximum in air
- HPU specifications:
  - Nom. supply pressure: 210 bar
  - Max flow rate: 82 lpm
  - Filtration: NAS class 8
  - Interfaces to suit customer specified tooling
Velocious design & manufacture topside, diver and diverless operated intervention/control panels.

Velocious ROV & Diver Operated Control Panels incorporate Manual or ROV Operated Valves and can be designed to be compatible with Water/Glycol, Seawater or Mineral Oil.

Built to withstand high pressure hydraulic systems in excess of 20,000 psi, Panels are typically used for seal testing, locking and datalogging.

Whatever your control/intervention panel needs may be Velocious can design an ROV/Diver compatible unit that provides all required functionality.

FEATURES

- Hydraulic pressures up to 20,000 psi
- Swagelok, Autoclave or Colson Valving (As per client specifications)
- User friendly high vis interfaces
- ROV interfaces as per ISO 13628-8
- Completely customisable
Velocious design and manufacture ROV operable 2 & 3 way ball valves for subsea use.

Panel mount interface ensures easy fitment in any application. A xylan coated bucket actuator and an UHMPE self cleaning bush design will keep the Velocious ROV operable valves running free and reliably without the need for grease or lubricant. Fitted with Swagelok, Autoclave or Colson high pressure valves and fittings the Velocious ROV operable valve can work in and subsea application.

TECHNICAL SPECIFICATIONS

- Swagelok valve & fittings
- Self cleaning bucket design
- 316 Stainless Steel housing
- Positive engagement actuation
- 2 & 3 way versions available
- Panel mount
- Valve size optional: 1/4” thru to 2”
- Pressure rated up to 20,000 psi
  (valve selection dependant)
Velocious supply Span liquid filled pressure gauges. A Tough, corrosion resistant, impact resistant, Zytel nylon case ensures the reliability of these gauges.

Removable bezel design allows repair or recalibration.

The internal “breathing diaphragm” eliminates the need for an air bubble in the mid-range of the gauge, which can distort readings and looks unsightly. The IBD is standard on some 2-1/2” and all 3-1/2” and 4-1/2” models. (Available as an option when not standard.

The IBD compensates the case (to 150°F) for changes in internal case pressure caused by fluctuations in ambient temperature. (Especially important in lower pressure and vacuum gauges.)

SPAN Gauges are built to ANSI/ASME B40 Standards, this is the easiest reading gauge on the market.
ROV Friction Disk Cutter

Velocious supply and support ROV operable friction disc cutting equipment.

With the capability to install up to a 9" Cutting disc, the Velocious Friction disc cutter is the ideal tool for cutting through smaller subsea infrastructure such as flow lines, drill strings, chain, cable & guide posts.

Hydraulically driven and actuated the Friction disc cutter is a robust tool that is reliable and proven.

FEATURES

- Up to 9" Friction Disc compatibility
- Robust, proven design
- Hydraulic drive motor 80cc
- Hydraulic feed and clamp mechanism
- Typ. Hydraulic supply pressure 207 bar
- Typ. Hydraulic flow 30 – 80 lpm
- Typ. cutting head speed 400 – 1000 rpm
Velocious are exclusive agents for the V-Lock stabplate.

Reliability is achieved through a unique actuation mechanism which results in a smaller and lighter stabplate design.

Reduced installation times are achieved due to the outstanding misalignment capability.

Reliable and robust secondary release system not reliant on any form of shearing mechanism reduces risk of accidental damage due to over-torquing.

Features to mitigate against calcareous and coral cementation.

Unique technical and project support package to complement the engineering design and product hardware.

**FEATURES**
- Class 4 ROV Torque receptacle
- High strength lock shaft
- Fully welded super duplex stainless steel tubing
- Optional parking for electrical or optical flying leads
- Depth rating to 4000 msw
- 8, 16 & 28 Hydraulic coupling versions available
- Emergency release tool available
- Available terminated to thermoplastic jumpers or loose steel tube flying leads.
- Mate and de-mate with all functions at full design pressure
- Working pressure: 1034 bar
- Excellent misalignment capability
Velocious supply Webtool softline cutters. Robust design and proven reliability ensures cutter integrity is not compromised.

Hydraulically operated soft and fibre line cutting tool incorporates a lightweight aluminium and stainless steel construction.

Diver or ROV operable and long blade life ensures that tool maintenance is kept to a minimum.

**TECHNICAL SPECIFICATIONS**

Can be used at any water depth

Hydraulic supply pressure max. 210 bar

Cutting capacity Max. Dia 54 mm

Weight in air 4.7 kg
Velocious provide & support laser leak detection tools manufactured by Smart Light Devices.

The Smart Light Devices LDS3 is a compact system designed to be readily used with any ROV including eyeball ROV.

The LDS3 now includes multiple laser wavelength options, which allows enhanced detection of a wider range of leaking materials such as hydraulic fluids, hydrocarbon and injection dyes and tracers.

Since the first deployment of the LDS1 system eight years ago for BP in the west of Shetland oil field, the LDS series of laser leak detection systems have been successfully used by most of the major Oil and Gas operator and service companies.
The Velocious Electrical Flying Lead (EFL) Receptacle Repair Tool enables the repair of a EFL Receptacle to a intervention panel. ROV deployed, the repair tool allows for a retro fittable receptacle clamp.

The EFL Receptacle Repair Tool has been designed to gain easy access to the rear of an intervention panel and minimise the need for the ROV to view the installation task from awkward camera angles. The repair tool restores integrity to the receptacle when the receptacles own compliant mount has failed. Supplied either for short term repair or permanent installation.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Overall Dimensions (LxWxD)</th>
<th>930 x 270 x 195 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight in Air</td>
<td>15.5 kg</td>
</tr>
<tr>
<td>Weight in Water</td>
<td>13.3 kg</td>
</tr>
<tr>
<td>Operating torque</td>
<td>80Nm min to 150Nm max</td>
</tr>
<tr>
<td>Turns from fully open to fully closed</td>
<td>27</td>
</tr>
<tr>
<td>ROV manipulator interface</td>
<td></td>
</tr>
<tr>
<td>Design life</td>
<td>25 years</td>
</tr>
</tbody>
</table>
Mock **ROV**

Velocious Mock ROV enables the replication of every function a Work class ROV would carry out in a subsea environment.

Primary function of Mock ROV is SIT simulation to ensure safety and operational integrity. Intervention tooling can also be operated and designs proved out.

Mock ROV is designed to be configurable to represent various industry standard Work Class ROV’s.

Onboard hydraulic and electrical systems provide a seamless interface for various 3rd party tooling and control systems.

Velocious Mock ROV is transported in a purpose built 20 ft container which provides operator controls, workshop facilities and secure equipment storage.

**TECHNICAL SPECIFICATIONS**

- Configurable structure allows MROV to accurately represent various Work Class ROV’s
- High strength aluminium structure capable of 1775 kg through frame lift
- 15kW HPU (210 bar, 34 lpm)
- Mounting for various Schilling manipulators
- Onboard pan & tilt cameras
- Fully equipped 20 ft storage/control container
- Multiple lifting configurations for easy/safe MROV orientation
Velocious supply Schilling T3/T4 & Rigmaster manipulators. These manipulators offer superior dexterity and strength which are needed to withstand the harsh industry environment day after day.

Robust power/signal connectors ensure unrivalled reliability and along with easy diagnostics allow the operator to carry out tasks quickly and with confidence.

5 & 7 function manipulators are designed using best field proven technologies, this enables many parts to be interchangeable reducing the requirement to carry excess spare parts.

When used for suction pile installation Velocious also provide the control system, orifice plates and transducers to monitor pile pressure, penetration rate and flow, full systems are customised for the WROV and Suction Pile Interface.

TECHNICAL SPECIFICATIONS

| Depth rating from 4000 msw to 7000 msw (7F) |
| Depth rating 6500 msw (5F) |
| 122 kg payload at full extension (7F) |
| 181 kg payload at full extension (5F) |

FEATURES

- Acute precision control
- Titanium construction
- Large operating envelope
- High lift to weight ratio
- Interchangeable Jaw configurations (provided with all standard jaw types)
Velocious supply industry leading Tritech pumps. Robust design and proven reliability ensures pump integrity is not compromised.

The AnchorZip 10 is designed as a high efficiency water pump for moving large quantities of water at relatively low pressures. Its main application is in the deployment and retrieval of suction anchors and piles. The AnchorZip10 has been designed to close couple to a flange plate to provide the minimum of flow restrictions. Switching the flow from suction to blowing is achieved by sliding the whole pump and motor body. The AnchorZip10 also incorporates a suction break relief valve which, on the latest version, can be preset for pressures between 0.81 and 9.27 bar.

TECHNICAL SPECIFICATIONS

- Hydraulic Supply Pressure max. 276 bar
- Hydraulic Supply Flow max. 70 lpm
- Pump Flow – Up to 80 m³ @ 7.5 bar
- Differential Pressure max. 140 psi @ 9.5 bar
- Water hose ID min 72 mm
- Weight in water 14 kg, weight in air 30 kg
**Octans Fibre Optic Gyroscope**

**TECHNICAL SPECIFICATIONS**

- Complete gyrocompass and motion sensor
- Titanium construction
- Small, portable plug and play system
- Optional full featured Inertial Navigation System
- Fibre Optic Gyroscope (FOG), unique strap-down technology
- Depth rating 3000 msw
- Communications protocol RS232/RS422

**OCTANS** subsea survey-grade gyrocompass and complete motion sensor for water depths up to 3,000m.

Based on FOG technology it outputs heading, roll, pitch, surge, sway and acceleration. OCTANS 3000 can be easily upgraded to full INS mode (i.e. ROVINS).

OCTANS 3000 features high-performance real-time outputs of true heading, roll, pitch, heave, surge, sway, acceleration and rate of turn.
The Fathom iVP Subsea Control System sets benchmark standards within the subsea industry and takes user friendly interface to new levels. The unit combines rugged resilience with precision control to deliver repeatability levels that should be demanded for functioning torque tools, fluid injection systems and other bespoke subsea tooling.

The control system is incredibly powerful and can be readily configured to deliver customised requirements with ease. It can accommodate interface with all standard industry torque tools but can be supplied as a matched system with Velocious tooling. iVP reliability and simplicity will reduce the both set-up and execution times for offshore operations, the unit is quickly establishing itself as an essential part of any ROV intervention toolkit.

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS</th>
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<tbody>
<tr>
<td>Modular intelligent valve pack</td>
</tr>
<tr>
<td>Proportional control throughout</td>
</tr>
<tr>
<td>Cost effective field proven technology</td>
</tr>
<tr>
<td>“1 to 12” functions – expandable, flexible</td>
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<tr>
<td>Embedded Processor for instant start-up</td>
</tr>
<tr>
<td>Software configurable</td>
</tr>
<tr>
<td>External sensor capability</td>
</tr>
<tr>
<td>Single channel video overlay</td>
</tr>
<tr>
<td>Standard and bespoke software screens</td>
</tr>
<tr>
<td>Integrated Comms Link</td>
</tr>
<tr>
<td>Fully self-contained system</td>
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</tbody>
</table>
The Velocious Torque Multipliers are purpose built for the actuation of subsea torque buckets by a diver using a torque wrench.

With a 5:1 multiplication ratio, torque buckets can be safely and effectively operated by a diver using a ½” SQ drive torque wrench. The handle is positioned above the tool centre of gravity as to reduce operator fatigue and strain. The interfaces are also customisable to suit operator requirements.

**TECHNICAL SPECIFICATIONS**

- Ergonomic diver handle
- Multiplication Ratio: 5:1
- API 17D bucket interface
- ½” SQ drive torque wrench interface
- Weight in air: 22 kg
- Weight in water: 19 kg
Velocious supply industry leading control systems. A single valve pack with fully integrated proportional controls provide an accurate & repeatable solution.

Compactly designed & adaptable to any Work class ROV, Jupiter control systems are supplied with all parts required to operate from a standard PC or laptop using the powerful Jupiter GUI software.

Onboard data logger featuring auto calibration provides useful functionality.

Velocious configure Jupiter control systems to operate Torque tools, Fluid Injection systems, suction pile skids & other ROV tools.

Higher flow valve packs for other applications can be provided upon request.

FEATURES

- Depth rating 3000 msw
- Proportional hydraulic control
- Real time feedback
- AC or DC Power compatibility
- Strain gauge interfaces accurate to 0.5%
- Typical Max Output Pressure: 210 bar
- Typical Max Output Flow: 24 lpm

Velocious supply industry leading control systems. A single valve pack with fully integrated proportional controls provide an accurate & repeatable solution.

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Onboard data logger featuring auto calibration provides useful functionality.

Velocious configure Jupiter control systems to operate Torque tools, Fluid Injection systems, suction pile skids & other ROV tools.

Higher flow valve packs for other applications can be provided upon request.
An ROV deployable, hydraulically actuated Padeye Tester to assist with critical risk management of subsea lifts. The tester can be configured to apply accurate and repeatable loads that impart appropriate over-pull margins to allow safe recovery of subsea hardware under dynamic loading conditions.

Velocious can retrospectively design and build Padeye Testers to interface with any type of traditional or industry standard Padeyes but alternatively, can design Padeyes with life-offield subsea testing in mind.

Recovery of aged subsea hardware presents the subsea industry with an issue that has to be managed if risk exposure is to be appropriately mitigated. Padeyes that are “out-of-test” simply cannot be relied upon without subsea re-testing. Velocious can provide the most cost effective subsea methods and equipment to restore confidence in subsea integrity and ensure compliance with industry standard lifting practice.

### TECHNICAL SPECIFICATIONS

- Operated / Controlled via ROV deployed Hotstab
- Adjustable subsea load from 0–10Te
- Tool Dimensions (LxWxH): 580 x 515 x 740 mm
- Jig Dimensions (LxWxH): 600 x 820 x 450 mm
- Depth Rating: 2000 m
- Fully compatible with ISO13628-8
- Tool Weight in Water: 67 kg
Velocious Pressure Compensators are built to cope with any subsea application. Traditionally accommodating volume between 0.2 and 16 Litres, they can be built to accommodate any volume as required.

Compensators are robustly manufactured and designed to cope with the most demanding conditions, they can be customised to prevent over pressurisation and to trigger alarm conditions (High Level, Low Level, Over Pressure etc) as necessary. As such all compensators also include visual indicators to identify low and critical fluid levels.

Compensator components are designed to tolerate all commonly used fluids encountered in subsea construction, installation and testing scenarios.

TECHNICAL SPECIFICATIONS

- Diaphragm based unit, easy to strip / refurbish / maintain
- Vented Body design to prevent build up of suspended sediments
- Variable Pressure Relief
- Available in all commonly used volumes (adjustable)
- Can be custom built for specific volumes/applications
- Robust design
Velocious Soft Landing Systems are built for reliable and repeatable performance in the most arduous subsea conditions. Designed to protect the integrity of critical subsea components, Velocious Soft Landing Systems render precision control wherever and whenever needed and can be customised to incorporate multi stage functions to assist insertion / extraction where space is restricted.

Velocious can incorporate smart but passive features into their Soft Landing Systems to enhance deployment life and/or build in contingency options. Typically two systems can be provided, one working on seawater displacement through a fixed orifice and alternative systems consisting of environmentally sealed hydraulic circuits that are completely passive or rely on interaction with ROV or Diver.

Velocious can supply any range of soft landing or passive damper systems to suit custom exact requirements.

**TECHNICAL SPECIFICATIONS**

- Nominal Hold Back Force: 41 KN
- Max Hold Back Force: 48 KN
- Max Compression Speed @ 1200 kg: 1 m/s
- Min Compression Speed @ 1200 kg: 40 mm/s (adjustable)
- Min Extend Speed: 100 mm/s
- Remote Retract Pressure: >130 bar
The Velocious Diamond Wire Cutter is a compact but powerful tool capable of cutting through a variety of material. It is easy to operate and can be directly connected to most WROV auxiliary manifolds.

The diamond wire cutter is supplied with a range of cutting wires to suit the work piece material. This gives it the ability to cut a broad range of materials including hard steel, reinforced concrete, umbilicals and fibre reinforced plastics. The design of the tool allows for easy wire change within minutes.

The cutting envelope is 2" - 8 5/8" Ø. The replaceable jaw inserts allow for easy adjustment to suit different work piece shapes and materials.

Use of robust off-shelf hydraulic components to ensure its reliability in demanding situations. The cutting process is self regulating for ease of operation. It minimises cutting time whilst preventing wire stall, which can be an issue when cutting under compression.

The tool can be deployed via ROV or ROV basket. The configurable ROV handle position allows for different cutting orientations. If required a custom handle position can be accommodated.

**FEATURES**

- Can cut a broad range of materials; e.g. hard steel, concrete, umbilicals etc.
- Self regulating cutting force for optimised cutting speed
- Configurable ROV handle for different cutting orientations
- Deployment via ROV or ROV basket

**TECHNICAL SPECIFICATIONS**

- Cutting Envelope: 2" - 8 5/8" Ø
- Overall Dimensions (LxWxH): 1065 x 260 x 450 mm
- Weight in air: 43kg
- Weight in water: 31kg
- Maximum working depth: 3000m
- Hydraulic requirements: 50lpm @ 210bar

www.velocious.com.au
Velocious supply industry leading Crosby ROV Hooks. Robust design ensures load lifting capability is not compromised.

For efficient handling and attachment by Remote operating vehicles for subsea and other hard-to-reach loads. Developed in conjunction with major North Sea subsea operators.

**FEATURES**

- Hook identification code stamped on each hook
- Tip extension allows for easy handling
- High cycle, long life spring
- Heavy duty stamped latch interlocks with the hook tip
- Quenched and Tempered.
- SWL 1.5T – 200T
Velocious supply industry standard Kongsberg cameras. The Kongsberg Maritime OE14-376 (PAL) (OE14-377 (NTSC)) fixed colour camera has small dimensions making it suitable for general purpose viewing and manipulator arm applications.

The integral LED lighting allows the camera to be used in applications that previously required a separate camera and lamp. Auto shuttering, together with a wide AGC range, give excellent light compensation at minimum cost. The lack of any moving parts and robust construction makes the camera extremely resistant to shock and vibration.

The professional features associated with all Kongsberg Maritime cameras have been built into a compact and rugged housing, ideally suited for operator and vehicle deployment.

The Right Angle Viewing Adaptor provides the user with a cost effective solution for inspection of pipe walls or for obtaining video of the sides of chambers or cavities where space is restricted.

The OE14-376/377 is compatible with Kongsberg Maritime’s Industrial CCTV Range of Portable Video Inspection Systems and is also available with an electro-polished stainless steel housing and non-browning glass option.
Kongsberg Zoom Camera

Velocious supply industry standard Kongsberg cameras. The Kongsberg Maritime OE14-366 (PAL) (OE14-367 (NTSC)) Colour Zoom Camera uses the latest super HAD CCD technology to give excellent light sensitivity and image definition.

The Kongsberg Maritime OE14-366 (PAL) (OE14-367 (NTSC)) Colour Zoom Camera uses the latest super HAD CCD technology to give excellent light sensitivity and image definition.

A water compensated optical zoom lens provides a close-up inspection capability combined with the flexibility of an 18x (72x with digital) magnification for powerful stand off inspections.

The unique Kongsberg Maritime IR remote control allows long line drive and camera control set-up. Camera control can be single wire (tri-state) two wire (bi-polar) and RS485. RS232 is available as a factory set option. It is possible to set the white balance to 3,200K, 5,600K or to auto tracking and back light compensation can be switched on or off using the remote control. The inclusive Kongsberg Maritime Graphical User Interface provides the control of extensive camera functionality via the serial link. An addressable feature has been included allowing control of more than one camera over the same serial control line.

**TECHNICAL SPECIFICATIONS**

- Depth rating 3000 msw
- Titanium construction
- 18:1 Zoom lens
- Angle of View 5.2° – 63° diagonal in water
- Text insertion
- Addressable serial control

Velocious supply industry standard Kongsberg cameras. The Kongsberg Maritime OE14-366 (PAL) (OE14-367 (NTSC)) Colour Zoom Camera uses the latest super HAD CCD technology to give excellent light sensitivity and image definition.
Velocious hydraulically driven ROV operable Parting tool makes light work of the difficult job that is cutting high hardness alloys such as Super duplex, Inconel or other low grade stainless steels in tight locations.

Primarily focussed on the cutting of hydraulic control lines on subsea structures, the compact design ensures Velocious parting tool can access the tightest of areas. A high tensile mill or drill bit delivers a neat perpendicular cut whilst the internal clamping mechanism ensures the tool remains fixed to the tube.

Parting tool cutting method ensures full flow is maintained from the cutting loop once parting is complete.

TECHNICAL SPECIFICATIONS
- Hydraulic supply pressure 207 bar
- Self aligning to ensure perpendicular to tube cut
- Inbuilt tube clamp
- ROV Interfaces as per ISO13628-8
- Bi-directional drill bit rotation
- Suitable for 1/8” – 2” OD Tubing
Velocious manufactures a range of clamps that are used to create an electrical connection between two subsea structures. This is usually done to connect the cathodic protection system of an existing structure to a newly deployed structure; hence they are referred to as ‘Anode Clamps’.

Typically a clamp is attached to a piece of equipment that is to be deployed by means of an electrical cable and a threaded fastener, and the clamp is stowed on the equipment. The anode clamps manufactured by Velocious have a large hole to facilitate stowing and fastening by sacrificial zip-tie.

After the equipment is deployed a WROV collects the clamp from the stowed location and locates the open portion (‘mouth’) over a flange or plate section of the equipment with which an electrical connection is to be made.

The connection is accomplished by the extreme high axial forces in the clamp screw thread and body, which will penetrate any existing corrosion or paint and force itself into the base steel of the structure by the hardened steel teeth providing a high structural strength and excellent electrical connection between the structure and the sacrificial anodes.

**TECHNICAL SPECIFICATIONS**

- Easy to install
- Flexible anode arrangement
- Standardised manipulator interfaces
- Excellent electrical contract/grounding
- Customizable to suit and application
Hydraulic Subsea Shackles

Velocious hydraulically operated subsea shackles represent the ultimate in payload security under the most demanding of dynamic conditions. The design has been repeatedly proven as completely dependable and is easily able to comply with the most exacting of deployment and recovery risk assessments.

Designed in-house, these shackles address all of the issues that have been responsible for repeated “dropped object” scenarios that have plagued the subsea industry, issues that remain associated with many of the alternative and commonly available subsea rated shackles that still exist.

Velocious hydraulically operated shackles can be made to any size and specification with the current range spanning the 55Te to 200Te range. Can you afford not to use them given the consequences of dropped objects during subsea lifts?

Contact Velocious for a demonstration of capability.

Hydraulic shackles can be configured to be ROV operated and supplied with ISO 13628-8 Hotstab Receptacles or Snaptite Quick Disconnect for downline operation.

TECHNICAL SPECIFICATIONS
(200Te Version)

<table>
<thead>
<tr>
<th>Overall Dimensions (LxWxH):</th>
<th>1516 x 854 x 288 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Capacity:</td>
<td>200 Te</td>
</tr>
<tr>
<td>Maximum Working Depth:</td>
<td>3000 m</td>
</tr>
<tr>
<td>Weight In Air:</td>
<td>328 kg</td>
</tr>
<tr>
<td>Weight In Water:</td>
<td>283 kg</td>
</tr>
</tbody>
</table>

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www.velocious.com.au
Standard spherical buoyancy is the obvious low cost choice for applications that do not require specific or custom built shapes or sizes. Our standard product range includes units that can handle low pressure surface applications to units that can be reliably utilised at the current frontiers of sub sea exploration. Pre formed spheres range in dry weight from 5kg to tens of tonnes.

Typical sizes for sub sea ROV related applications are 25 kg dry weight yielding 28 kg of in-water uplift. Rated to 1000 msrw and only 350 mm in diameter, these spheres are extremely useful for jumper deployment operations and compensating for heavy rigging.