DIVER RECOVERY VEST

In the commercial and military diving field it was recognised that too many individual pieces of equipment were required for a diver

The **Diver Recovery Vest** was designed to replace several cumbersome items of diver`s equipment into one easily donned vest by combining;

- a safety harness
- quick-release weight system
- buoyancy compensator and work vest into one body-hugging unit.

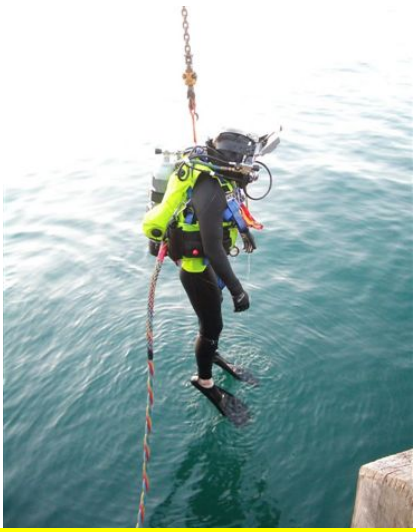
A diver can step into this vest, be ready to enter the water within 2 minutes compared to 15 minutes.

The integrated harness allows the wearer to be lowered into the water or in the case of an emergency, to be extracted using the front or rear lifting points.

This new safety equipment has provided diver's additional capability confidence and greatly improves diver safety, setting a new improved standard in diving.

Search & Rescue

The combination of high quality and the emergency situation capabilities has attracted search & rescue operations teams to use the Diver Recover y Vest for diverse operational requirements



SOS Marine

Survival Operations Specialist

23a Rochester Street, Botany NSW 2019 Australia

E: sales@sosmarine.com

T: +61 97000233 **F**: +61 97000277

www.sosmarine.com

Multi Award winning Diver Recovery Vest

What was the purpose of this project? What did the client request?

For some time, there has been no single item of diving equipment that would enhance safety and productivity. SOS Marine recognised this and sought to design that piece of equipment that divers needed.

SOS Marine also recognised that the market had not responded to this need and that we would be the only innovators in this area.

This project caught many potential clients unaware. Used to achieving their goals with multiple layers of often complex equipment; they had become resigned to that being the future standard of their industry.

SOS Marine have provided divers worldwide, with a new vision and greatly improved level of safety. The company has seen the need for this new standard of safety equipment required for commercial and military divers in a dangerous industry.

SOS Marine also took the idea further and included a back-up compressed air supply and an easily configured air/gas distribution system.

A diver can step into our device and be ready to enter the water, as well as being easily recovered if unconscious, overloaded with weights and equipment or in a confined space area.

Australian Designed and Manufactured

The Diver Recovery Vest was conceived, developed and manufactured at SOS Marine, Botany, Sydney, NSW, and Australia. It has has been rigorously tested by the Royal Australian Navy and found to meet the requirements of all regulations and safety aspects of SSBA diving.

What is unique or complex about the project?

There are several unique features of this product, the main being, the manner in which synthetic textiles have been used to construct the Diver`s Recovery Vest.

The device was made possible by the use of a number of textiles including 1000D air textured nylon and polyester web strapping. Flexibility of these textiles gave the designer the ability to properly shape and contour the device for fit, as well as the strength and durability to withstand the harshest environments.

Diver Recovery Vest

Operating in environment of salt water, temperature extremes, and UV light all significantly shorten the life of the materials, therefore, requiring the use of heavy-duty synthetic textiles and webbing which will resist the elements and allow the user full movement.

All textiles used are the highest quality for strength under environmental exposure in order to provide the most durable product as possible. Synthetic textiles and stainless steel fittings are used for most components, from the buoyancy bladder, to the releasable weights.

The harness has front bi-points for lifting and rear recovery lifting point. The safety 316 stainless steel inverted gate and winged safety catches are carefully designed to provide for quick disconnect with a gloved hand but not to allow unintentional detaching. The Cordura material is in a bright safety fluorescent green for high visibility.

Extensive Testing

The Diver Recovery Vest has been through extensive testing in a variety of working diving environments and has been developed through quite a number of prototype models to tailor and fine-tune the design and construction to minimise `snagging` and to make to as ergonomically efficient and as safe as possible.

The Integral Lifting Harness is tested and meets the **Australian Standard AS.1891.** Synthetic textiles and stainless steel fittings are used for most components, from the buoyancy bladder, to the releasable weights. **The stainless steel inverted gate and winged safety catches are carefully designed to provide for quick disconnect with a gloved hand, but not to allow unintentional detaching.**

Features include six point safety harness (tested to AS.1891)

- Adjustable webbing straps for shoulders, chest, torso, waist and legs
- Suspension frontal lifting bi-points for working-
- Injured diver, rear recovery lifting point
- Stainless steel inverted gate quick disconnect winged safety catches (does not allow unintentional attaching)
- One piece moulded vest – pliable gussets and easy drain cushioned back support
- Integral rear mounted buoyancy aid with inverted dumps, adaptable left/right configuration, one hand operated inflator/dump valve 18 kg lift, quick bladder removal for servicing
- Dual stainless steel cylinder clamp cam lock, multi size cylinder moulder polymer bracket-Both left and right umbilical securing points
- All metal equipment attachment fittings are 316 stainless steel
- Integrated weight system-four independent quick release pouches with 10 x 2 kg lead shot satchels, two front 6 kg & two rear 4 kg. Progressively ditch able to control rate of ascent. Purpose stowage bag and divers clip on tool bag.

What were the results of the project?

After being trialled, tested and used by varying occupational diving bodies, it works exceptionally well in terms of its configuration; comfort and ease of fitting; easy adjustments for modification to fit varying body shapes and sizes; buoyancy control/compensation; compatibility to varying tasks adaptable to all types of tasks including SCUBA and SSBA; durability, maintenance and serviceability.

Proof of Concept

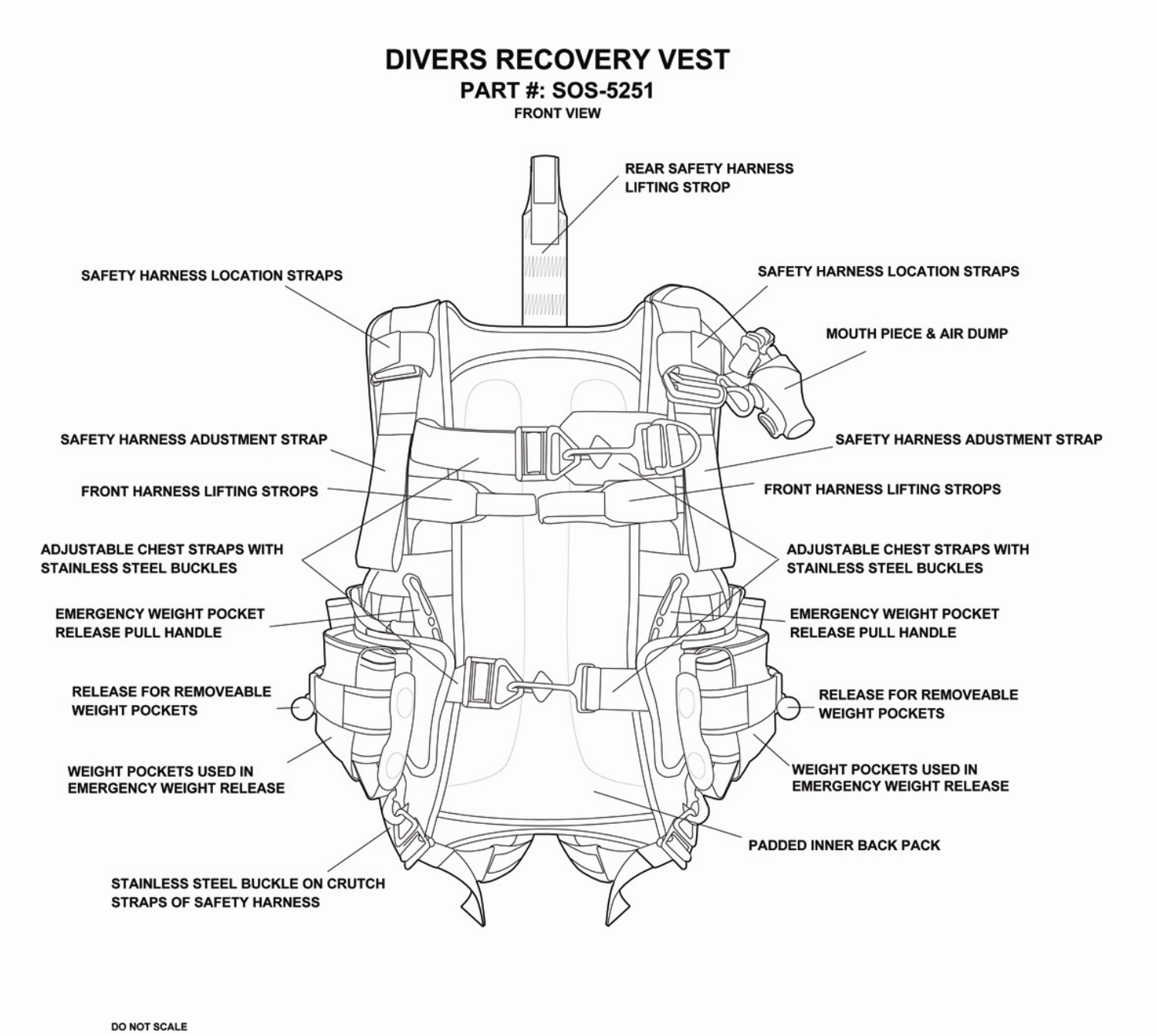
Having completed 'proof of concept' and safety trials with the Royal Australian Navy Clearance Divers. The Royal Australian Navy have purchased, the Research Divers of the Australian Antarctic Division used the Diver Recovery Vest for a very successful Antarctic summer season under the sea-ice.

The New Zealand Navy have purchased the vests to provide safety, productivity and functionality, making it beneficial in emergency situations. The Queensland Police have purchased them for the highly diverse operations of Police Diving Squad the vest has been subject to the extreme rigours of use by commercial dive students at the underwater Centre Tasmania.

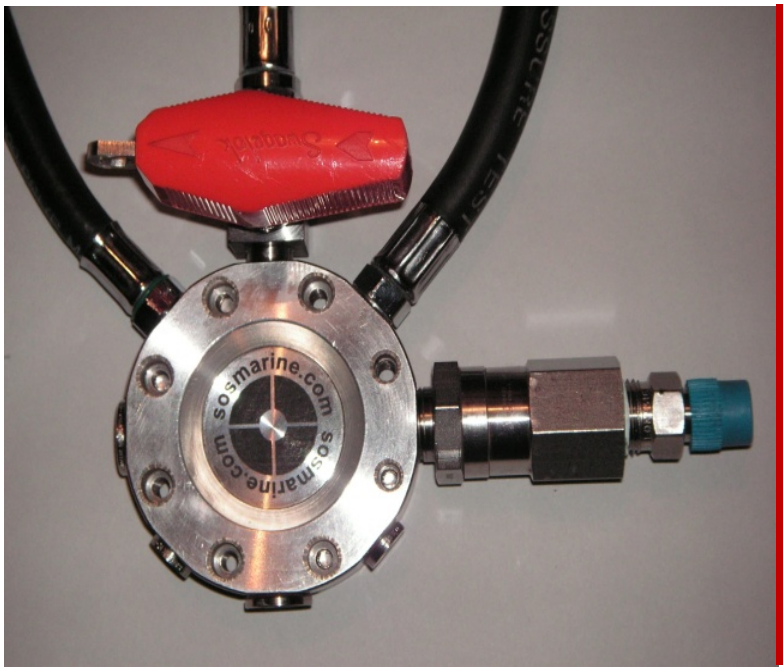
Every feature has been put in place to make the job of the diver easier and safer, whether on the surface, in mid-water or on the bottom. Our manufacturing team have produced a complex unit with skill and accuracy not often found today.

Purpose stowage bag and Divers clip on tool bag

Diver Recovery Vest



The Diver Recovery Vest is a well thought out combination of design, innovations/enhancements, that had one expert refer to it as the “Rolls Royce of buoyancy devices”.



The Radial Air Manifold (Rams) is a purpose designed air distribution device. Manufactured from 316 Stainless Steel, the **RAM** is designed to give the diver easy distribution of air and other gasses to the Breathing Device and Buoyancy Compensator

All fittings to the RAM are "Swage lock", and the block is machined for the main supply check valve.

Three *i*nlet *ports* for available for the emergency supply ball valve (latch lock handle, lock On/Off) or other gas supplies

- 316 Stainless Steel –Radial Air Manifold System (RAMS)
- Radial attachment system for optimal position, safety and ergonomic.
- One piece construction-flow tested main body – engineered for weight reduction, extreme durability & professional appearance.
- Complete fit out “***Swagelok***” world class stainless steel valves fittings and adaptors.
- Emergency ¼ turn ball valve-(optional) “latch lock handle” lock on and lock off.
- High flow checks valve-multiple choice of umbical connections (JIC, Tema, Oxygen fitting etc.)
- Multiport inlet selection (check valve plus three emergency bailout positions or fitted to suit requirement –spare air)
- Multiple outlets (four ports as required)
- Optional –jetted restrictor adaptor (for service other than the breathing loop)
  Four outlet ports are available to service breathing devices, buoyancy compensators and other fittings.