

OTTER DRYSUITS

INSTRUCTION MANUAL



MEMBRANE TRILAMINATE OTTER SKIN



NEOPRENE ULTIMATE COMPRESSED 7/8 MM STD

OTTER DRYSUITS FOR STYLE AND QUALITY
MADE WITH CARE TO LAST

Congratulations on purchasing an Otter Drysuit! This suit has been carefully manufactured from the best available materials, and with reasonable care it will give you many years of service. Please read the care, and maintenance information in this manual and follow the suggestions carefully.

IMPORTANT NOTE!

Drysuit diving can add immensely to the comfort, enjoyment, and safety of cold water divers. But while drysuits are easy to use, like any piece of diving equipment they require instructions in proper use and safety procedures.

If you are unfamiliar with diving in drysuits, or with the type of suit you have purchased, make sure you have received training in a confined water situation before attempting to dive in open water. A drysuit course is an excellent idea. At minimum, you should have some supervised confined water training in drysuit use that meets the standards of your certifying agency. Certain aspects of weighting, buoyancy control and emergency procedure must be handled differently in a drysuit, and while the techniques are easy to master for most divers (many feel diving in a drysuit is easier than diving in a wetsuit) proper instructions can make your initial open water experience more enjoyable and much safer.

**Please read this entire manual before diving.
Failure to follow these instructions in this manual can result in
Serious injury or death.**

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OTTER DRYsuit OWNER'S MANUAL

Before Diving:

Inspect the latex seals for damage. Pay particular attention to making sure that edges of the seals are not cracked or torn. If they are, it could indicate that the seals are damaged and could fail. Damaged seals should be replaced before diving with the suit. Cuff rings for quick “in the field” replacement of latex seals are available from your Otter dealer and are a helpful addition to a “Aqua drysuit repair kit”.

- Make sure you have removed watches, rings, or any jewellery with sharp points prior to donning the suit. Do not wear anything which could catch the seals and tear them.
- Make sure the zipper is lubricated. Use wax lubricants only. DO NOT use silicone, silicone sprays, or petroleum based lubricants. These products will damage the zipper and the suit. Check the teeth to make sure they are in good condition and that the slider operates freely.
- Lubricate the seals to ease entry into the suit. In a dry environment, Aqua dry seal powder or unscented talc makes a good lubricant. In a wet environment (rain or small boat) many divers prefer to carry a small bottle of a water based lubricant such as a weak soap solution or shaving cream. DO NOT use silicone or petroleum based lubricants, even those promoted for drysuit seals, as they will damage the suit.
- * When donning the suit make very sure that the undergarments do not catch in the zipper. Pulling the zipper closed over an obstruction can break the zipper.
- * Make sure both valves are securely screwed into the suit. Ensure that the inflator valve and exhaust valve work properly by operating them before every entry into the water.

Suit Exhaust Valve use:

The automatic adjustable exhaust valve is designed to vent excess air from the suit by simply positioning yourself underwater so that the valve is in the high position. The amount of air pressure the valve will retain inside the suit is adjustable. Rotating the valve flange clockwise will increase the air held inside the suit, rotating the flange counter clockwise will cause the suit to retain less air. Even when the valve has been rotated fully clockwise so as to retain the maximum air, pressing downwards on the flange will cause air to vent as if the valve were fully opened, so long as the pressure is maintained. Most divers find that diving with the valve completely or nearly completely opened (turned counter clockwise as far as possible) allows for the most precise buoyancy control while underwater. Turning the valve to a more closed position when on the surface (so as to retain more air) may make resting or swimming more comfortable. Your diving instructor or retailer can help you find the buoyancy and weighting combination that works best for you.

After Diving/Suit Storage

- * DO NOT use silicone sprays or lubricants on the latex seals or zipper. They will not help the seals last longer and will make seal or zipper replacement difficult or impossible if the silicone has soaked into the suit material. Seals should be cleaned with soap and water and then lubricated with Aqua dry seal powder or unscented talc.
- Rinse your suit after diving, taking particular care to clean sand and salt from the valves and zipper. The valves should be operated while being rinsed.
- Always dry the suit after diving, do not store it wet. If perspiration has made the interior of the suit damp it may be necessary to air the suit inside out, or hang it with the zipper completely open until dry.
- * Compressed Neoprene (CN) suits should not be hung for extended periods on narrow hangers, as the suit material may become stressed where it passes over the hanger. Extra wide hangers designed for dry or wetsuit storage may be used. Suits may be stored in their bag, but take care with the Compressed Neoprene suits not to repeatedly fold them in the same spot, as this may create permanent creases in the suit material.

- * It is important to store the suit away from sources of ozone (electric motors, gas water heaters, home furnaces, etc.) and away from sources of UV radiation (mainly sunlight), as both of these will degrade the latex seals more rapidly. Suits stored for extended periods will be well protected if stored inside sealed plastic bags. With seals and rubber boots dusted with Aqua dry seal powder or unscented talc.
- * Lubricate the zipper with bee's/paraffin wax before storage. When the suit is stored or transported in its bag the zipper must be open. When the zipper is open it is very flexible, when closed it becomes stiff and could be damaged or broken if inadvertently bent.
- * Before storage dust the latex seals rubber boots with Aqua dry seal powder or unscented talc (available from an Otter dealer). This will help prevent the latex from sticking to itself and will make the suit easier to put on the next time. Be sure to use only unscented talc, as scented varieties contain oils that might damage the latex.

Adjustments of Seals

On a new suit, or one that has had new neck or wrist seals installed, the Seals will most likely need adjusting. The seals need not be uncomfortable to seal properly. They only need to be snug against the skin for a proper fit. If you are not familiar with the proper fitting or trimming of seals contact your Drysuit dealer before cutting. If neck and/or wrist seals are too tight cut a little (1/4 inch/6mm or less) off the end/length of the seal. Be sure to remove suit seal trimmings. A pair of sharp regular household scissors will cut the seal easily. Latex seals are marked with rings for cutting guides. Cut only a small amount (1/4 inch/6mm or less) at a time, then check fitting over wrists or neck. If you cut too much you may cause a seal to leak and it will have to be replaced.

Care of the Latex Seals

Latex seals are standard on Otter membrane drysuits, neoprene seals are available as an option. Most divers find that latex provides a dryer and more comfortable seal, however the nature of the latex material means that more care is required than for neoprene seals and after some time the latex seals may need to be replaced. Seal replacement is not difficult but must be done correctly. Classes in seal replacement are offered by some dealers if you want to learn to “do it yourself” however we recommend that you take your suit to a Otter dealer experienced in drysuit repair.

You can help your seals to last by following these suggestions:

- * Store the suit away from sources like Ozone and UV radiation or Sunlight.
- * Rinse latex seals with fresh water and dry before storage.
- * Always dust dry latex seals with Aqua dry seal powder or unscented talc (available from your Otter dealer) before storage.
- * Take care not to catch the seals on sharp objects.
- * Periodically wash the seals with soap and water to remove body oils that may accumulate and cause degradation of the material.

Care of the Dry Zipper

The Dry zipper is the heart of your drysuit and it’s most expensive component. With care the zipper can last for the life of the suit. All zippers are examined and pressure tested before leaving the factory. The drysuit zippers can only be damaged by mishandling. Please treat with care. We can not take responsibility for zippers damaged by misuse.

- * Lubricate the zipper (on the outside of the teeth only) with paraffin wax, available from your Otter dealer or beeswax, DO NOT use silicone or petroleum based lubricants. Avoid “sticky” waxes, as they will tend to attract sand and grit. A small amount of wax is sufficient. Clean zipper with fresh water after diving being sure to remove any debris from between zipper teeth. Dry zipper before storage. Rub wax on outside of zipper teeth after every 4th or 5th dive and before storage. Always store folded or bagged suit with zipper open.

- * When storing or transporting the suit keep the suit unzipped. When opened the zipper is much more flexible, when closed the zipper becomes semi-rigid and might be damaged if it is folded, or if a heavy object were inadvertently placed on it.
- * When opening and closing the zipper be sure the teeth are in alignment and that the supporting tape is not kinked. This will normally require two hands. Take great care not to zip undergarment material into the dry zipper, as this is the most common way the zipper gets broken.

Care of Valves

The inlet and exhaust valves require little maintenance besides keeping them clean. They should be periodically (at least annually) checked by a qualified service facility. DO NOT attempt to disassemble the valves yourself.

- * Rinse the valves after diving to remove sand and foreign material.
- * Use only undergarments that do not produce excessive lint. Lint can become caught in the exhaust valve and cause it to leak.

Care of the Drysuit Undergarments

One of the most important parts of your drysuit system, and the one most often overlooked, is the drysuit undergarment. Care in selection and use of undergarments will greatly increase your comfort.

- * Anytime you are in the drysuit your body is likely to be producing perspiration. Wash your drysuit underwear regularly to keep it from building up salt in the fibres, which can cause it to become less efficient.

A few tips to help you stay warm and comfortable

Use proper undergarments.

- * Use only undergarments made from non-absorptive materials such as polyester fleece or Thinsulate. Don’t wear cotton sweatshirts, t-shirts, or other garments under your drysuit, particularly next to the skin. Cotton is highly absorptive and will soak up like a sponge any moisture your body puts out. This creates a thermal conduit which will conduct heat away from your body and make you feel clammy.

* Use undergarments that are not restrictive. Tight fitting or confining undergarments that restrict motion detract from both comfort and safety. Otter underwear is designed as a system to compliment the Otter drysuit range

* In diving as in other active sports, layering undergarments is generally preferable to a single thick layer. Otter's drysuit underwear is designed as such a system with five grades of warmth. Grade 1 for under Neoprene suits, to grade 5 for arctic conditions. Grade 2 being standard for all membrane kits. This allows the diver to match insulation to the conditions on a given dive. Many divers find that polyester long underwear commonly used for skiing makes an excellent additional layer for extremely cold conditions.

Weight yourself properly:

* Proper weighting and diving technique allows the drysuit to automatically compensate for most buoyancy shifts during diving. Spend some time getting your weight right, work with your dealer and/or instructor to become relaxed and comfortable with your diving system.

If you have a leak

Almost everyone who dives actively in a drysuit sooner or later experiences a leak. Most of these are minor and result only in slight dampness, however, if you notice water entering your suit during a dive, end the dive and surface to determine the cause, do not "tough it out". A serious leak could cause loss of buoyancy, chilling, rapid air consumption, or other problems. The most likely causes are easy to fix and you can be back in the water soon.

While major leaks or seal failures are extremely rare, you will probably at some point come up from a dive with an area of dampness that seems more than would be accounted for by normal perspiration. Carefully note the location of the dampness. Check to see it is near a wrist or neck seal, a valve, or the location of the zipper. This will give you an excellent clue as to the location of the leak. The most common causes of leaks in drysuits are:

1) Failure to get a good seal before entering the water. Hair or undergarments might be trapped under the seals or the seal might be folded in such a way as to make an entry point for water.

2) Failure to completely close the zipper before entering the water. Make sure double checking the zipper closure is part of your pre-dive procedure.

3) Valve leaks can be caused by loose valves, connecting the inflator hose while in the water can cause a very small amount of water to enter the suit, or foreign material could have become lodged in the exhaust valve. If the latter the case it can often be corrected by flushing the valve with water to wash out the foreign material.

4) Something might have punctured the suit. Sea urchin spines, sharp shells, and wire, hooks, or sharp metal on boats or wrecks are common offenders.

5) You might have a tear or a pinhole in one of the seals. Check the latex material carefully, particularly along the edges.

If a leak is found you should take your drysuit to a dealer that is qualified in drysuit servicing, but the patching of small leaks can be an easy do-it-yourself project with a couple of readily available items. Locating a very small puncture is sometimes difficult. If the puncture is not visually obvious, the best procedure is to seal the wrist and neck seals with cans or by folding, zip the suit up, and inflate it fully. A soapy water solution can then be sprayed or sponged on the suspect area. Small leaks show themselves by producing bubbles. Mark the spot and dry the suit before repairing the leak. Most small holes and tears (1/2 inch/12mm or less) in either trilaminate or neoprene suits can be temporarily repaired with an Aquapatch type product that is sold in dive equipment stores. Similar size cuts or tears in latex seals can easily be repaired with the rubber patching materials used in fixing the leaks in bicycle tires. These types of small repairs can last for years even though they are considered temporary. It is recommended that before your next dive trip that you have the repairs inspected by a dealer that is familiar with drysuit servicing.

For your nearest Otter dealer contact:
OTTER WATERSPORTS
OTTER GROUP
911 WAKEFIELD ROAD
DUDLEY HILL SLIP ROAD
BRADFORD
WEST YORKSHIRE
BD4 7QA
TEL: (44) 0 1274-307555
FAX: (44) 0 1274-730993
E-MAIL: SALES@DRYSUITS.CO.UK
WEB : www.drysuits.co.uk

THE OTTER WARRANTY

Otter warranties these drysuits against defects in materials and workmanship to the original purchase for a period of one year. This warranty does not cover damage due to abuse, neglect, improper usage, lack of proper maintenance or normal wear and tear. Lack of proper maintenance will cause abnormal deterioration. Damage due to normal wear and tear or misuse will be repaired at a reasonable charge.

EC Type Examination (Article 10) by:
SGS Yarsley International Certification Services Ltd
SGS House, 217-221 London Road
Camberley, Surrey, GU15 3EY
Notified Body no.0120

CE Certification

Your Local Otter Dealer **(Dealer to stamp name & Address here)**

Date Purchased