

NORTHERN DIVER

DRYSUIT MANUAL

NORTHERN DIVER DRYSUIT MANUAL

Thank you for the purchase of your new Northern Diver drysuit. You have joined countless divers around the world - sport, technical, commercial and military - who use and trust our equipment. Within this manual you will find information on additional products, such as thermal protection, which you can use to configure your own ultimate drysuit system. To show our thanks for your custom, use the code **MANUAL18** online or over the phone to claim 10% off your next order.

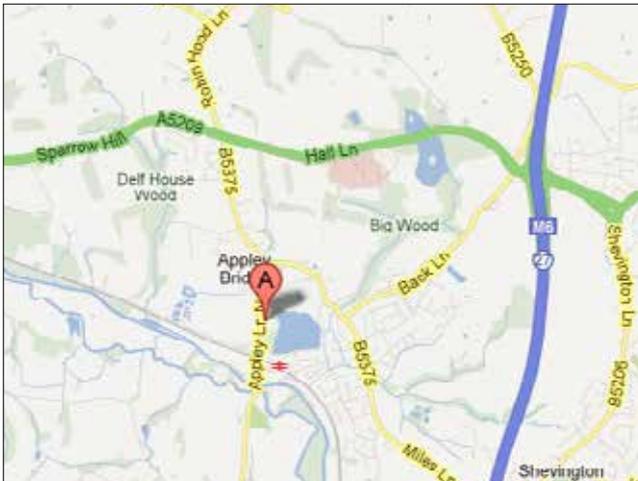
Code can be used for one order only, not valid in conjunction with any other offer.

This manual provides you with easy access to the key features and functions of our drysuits, along with recommendations on how best to service and care for your suit. Should you wish to know more about Northern Diver diving equipment, please visit our website **www.ndiver.com**. This drysuit manual is published in accordance to the requirements of **EN 14225-2.2005**. The products described in this manual are manufactured to the specifications prescribed by Northern Diver.

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We are happy to answer any questions you may have. We are located in Appley Bridge, Lancashire, UK - only 5 mins from the M6 motorway (J27). Manchester & Liverpool international airports are only 40 mins away. Wigan North Western rail station is 2 hours & 3 mins from London Euston.

We are more than happy to collect clients and return them after their visit.

Northern Diver Int. Ltd. East Quarry, Appley Lane North, Appley Bridge, Wigan, Lancashire, WN6 9AE, UK

Introduction

Congratulations on the purchase of a high quality Northern Diver drysuit. Whether you selected our neoprene or tri-laminate model, these products will open a new world of comfort and security in your diving adventures.

Drysuit diving demands specific techniques and training beyond those required for wetsuit diving. If you have not dived in a drysuit before, we strongly recommend you contact a local instructor for education and practice using your new drysuit under controlled conditions.

Both inexperienced and experienced users should thoroughly read and understand this manual before diving in the drysuit. If for any reason you have questions that are not covered by this manual or your instructor, do not hesitate to contact Northern Diver.



WARNING

ALL DIVERS MUST UNDERGO TRAINING AND FAMILIARISATION WITH A CERTIFIED INSTRUCTOR BEFORE USING THIS PRODUCT.

The following are important safety guidelines every diver should adopt before diving in a drysuit:

Undertake a complete drysuit diving course with a certified instructor and from an officially recognized approved training agency.

Always dive with a buoyancy compensator.

Become familiar with all your equipment before diving.

Practice drysuit diving skills in safe conditions until confident of your ability. Ensure your buddy/partner is completely familiar with and understands all your drysuit diving systems.

Weight should be set to achieve neutral buoyancy with an empty tank. Do not add more weight than this. You should be able to achieve a 5-minute safety stop at 3 meters (10 feet), neutrally buoyant with a tank containing around 30 bar (500 psi) or less.

Inspect the zip, seals and valves for damage before each dive.

Perform regular preventative maintenance on the suit, valves, zip and seals.

Only allow qualified individuals to perform service on the suit.

Understand your personal diving limitations. Do not exceed them.

Key Specifications

This manual describes two types of Northern Diver drysuit styles, neoprene and tri-laminate/membrane. All suits share several basic features, including the main waterproof zip, inflation and exhaust valves, low-pressure inflator hose, vulcanised neoprene boots or socks, neoprene hood, and storage bag/changing mat. Each model is equipped with a specific maintenance kit.

Neoprene

Neoprene suits are constructed from compressed foam neoprene, laminated on both sides. The exterior side is a heavier weave to better withstand wear and abrasion, while the inside is designed for comfort and heat reflection. The compressed foam neoprene is very dense, resisting compression at depth. This means the suit loses a smaller percentage of its surface buoyancy, requiring less air to be added via the inflation valve to remain neutrally buoyant. Neoprene also retains more thermal efficiency at depth, unlike tri-laminate material, neoprene has inherent thermal protection and buoyancy within the material structure and generally requires less added insulation worn under the suit than the tri-laminate, for most conditions. Every seam receives an application of three coats of neoprene adhesive. The outside is sewn with a two thread locking blind stitch, while the inside is reinforced with a proprietary liquid polymer that penetrates the interior nylon layer and fuses to the neoprene itself. This creates a tough and long lasting waterproof seam.

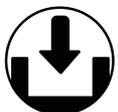
Tri-laminate/Membrane

The tri-laminate/membrane suits are constructed from a three-layer fabric (hence the name tri-laminate) consisting of a middle waterproof barrier of butyl rubber sandwiched between a tough nylon exterior and special polyester blend interior. The suit is sewn together with a purpose-modified sewing machine that provides a stitch that stretches. Then the inside surface of the seam is treated with a special heat reactive polymer, and sealed with a waterproof tape applied with a computer-controlled hot air welding machine. Some heavy duty suits are sealed with a rubber tape. This provides an extremely dry and reliable seam. The tri-laminate suit operates on a slightly different principle than the neoprene, as the tri-laminate material has neither inherent buoyancy nor thermal protection. This style, known as a “membrane” suit, simply provides a waterproof shell under which the diver can wear the correct choice of undergarments to suit the conditions. The suit is more flexible than neoprene, and allows the diver a broader comfort range (especially in the warmer temperatures) than neoprene.



WARNING

NEVER DEPEND ON ANY DRYSUIT AS YOUR SOLE SOURCE OF FLOTATION AND BUOYANCY CONTROL. ALWAYS DIVE WITH A SUITABLE BUOYANCY CONTROL DEVICE EQUIPPED WITH A SEPARATE INFLATION SYSTEM.



All of our brochures and manuals are available in various languages upon request and can be supplied on memory sticks or as a download from our website - www.ndiver.com

Drysuit Zip Information



Your drysuit will be fitted with either a BDM or YKK® Aquaseal® zip. Contact us if you are unsure as to which zip your drysuit is fitted with. The zip teeth must be kept clean to operate properly for long product life.

WARNING!

Do not lubricate the YKK® Aquaseal® zip with anything other than what is advised.



Your drysuit zip is situated either horizontally across the shoulders (rear entry), diagonal on the front section of the torso (front entry) or horizontally across the front waist (bib entry). It is usually positioned so that it closes from left to right. This is because most people are right handed and will be less likely to damage the zip, or catch clothes or foreign objects in the zip while closing it. You/your buddy must place one finger directly in front of the slider as it is closed, helping to guide the undergarment or foreign objects away from the zip teeth. Also make sure that you/your buddy fully tucks in the interior zip flap before closing the zip.

All drysuit zips should be washed after each dive and lubricated (**see page 7**). Always pull the slider slowly and in the direction it is travelling (never pull it at an angle). Ensure that there is no hair or clothing caught in the zip and that the zip has been fully opened before you put on your drysuit. Failure to open completely may result in the zip being damaged.

The zip must be fully opened before you remove your drysuit. Clean the zip with fresh clean water. If the zip is particularly dirty, a toothbrush can be used. If using a toothbrush, do so gently. Mild soapy water can be used for heavy soiling. Close the zip when you hang / store the drysuit. Do not fold, bend or apply pressure to the zip (other than the small amount of pressure required to open and close it).

Rear entry zips

Do not attempt to close the zip yourself. To close the zip with the least chance of damage, extend your arms level in front of you. Advise your buddy to draw the zip closed from left to right, keeping one finger in front of the slider to prevent clothing and foreign object damage to the teeth. Make sure the slider is drawn tight up against the rubber stop on the right hand side. If the slider is not tight against the stop, the zip will leak.

Front / bib entry zips

The closing-opening operation can be done without the help of your buddy. However, it is suggested to use the same precautions described for the rear entry zip configuration (above).

Zip Lubrication Information



WARNING

CLOTHING OR FOREIGN OBJECTS CAUGHT BETWEEN THE ZIP TEETH WILL CAUSE THEM TO SEPARATE, DESTROYING THE WATERPROOF INTEGRITY OF THE ZIP. THIS DAMAGE IS NORMALLY PERMANENT AND IS NOT NORMALLY REPAIRABLE. YOU/ YOUR BUDDY MUST EXERCISE CARE WHEN CLOSING/ OPENING THE ZIP. IF THIS HAPPENS GET A COMPETENT PERSON TO CHECK THE ZIP IS NOT DAMAGED BEFORE USING THE SUIT AGAIN.

A. BDM metal drysuit zip

Before using the drysuit you must close the zip and lubricate it using Northern Diver Zip Wax (supplied with the drysuit), applying the lubricant to the brass elements on the outside and the teeth on the inside. **Do not over lubricate the teeth, a light coating is sufficient.** It is important to do this. If not regularly lubricated, the zip may seize up and possibly fail. If your drysuit is fitted with an anti-magnetic zip, the zip slider is connected to the pull handle by a special bronze wire. We advise you to lubricate the zip before every use to prevent the wire from detaching from the slider. If too much force is applied, which can be caused by lack of lubrication, this can make the zip difficult to close.

Beeswax lube available to buy online at www.ndiver.com/zip-wax



B. YKK® Aquaseal® drysuit zip

Before using the drysuit check the zip is clean and was washed after previous use, apply only a suitable lubricant on the areas on the zip stop that the slider comes in contact with. **Northern Diver Zip Wax must not be used with this zip, nor should any other wax or silicone based lubricant.** McNett Ziptech™ has been tested by YKK® and is the lubricant that YKK® recommends. Slowly open and close the zip a few times. This will lubricate all the necessary zip components.

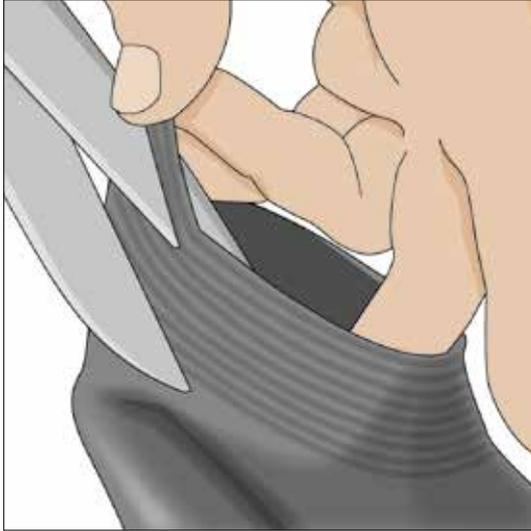
Buy Ziptech™ online at www.ndiver.com/drysuits/drysuit-maintenance



Maintenance/How To Adjust: Drysuit Seals

Latex / Neoprene Neck & Wrist Seals

Some models of Northern Diver drysuits are fitted with flexible latex neck and wrist seals for watertight integrity.



Trimming latex seals to fit

Latex seals have concentric raised ridges functioning as cutting guides to assist you to accurately trim the seals to fit. The seals are slightly tapered so they get larger when trimmed. Using a sharp pair of scissors, trim one ring off at a time until the seal is comfortable but still snug on your neck and wrists. Use care and precision with sharp scissors when trimming ridges. Leave a smooth surface, as ragged edges can allow tears to form, which will require replacement of the seal.

If you are in any doubt regarding your ability to trim the seal correctly, call into Northern Diver or return your suit with instructions of how many rings you require to be removed. This work will be carried out free of charge, but may be subject to postage/courier charges.



WARNING

Do not trim too much, or the seals become too loose and may leak. Make sure you cut the seals cleanly and leave no nicks that can develop into a tear. Blood flow can be restricted by seals that are too tight, which can ultimately lead to injury or death. Do not wear the seals too tight.

Storage & maintenance

Store the drysuit so the seals are dry, cool (below 25°C) and out of direct sunlight. Ultraviolet light will degrade the latex over time. If the seals have been exposed to cold temperatures, they will become stiff and lose their flexibility. This condition is not permanent and can be resolved by a brief immersion in warm water. Before storing the suit for any length of time, dust the seals inside and out with pure talc (supplied in the maintenance kit) as a preservative. Do not use perfumed cosmetic talc, as it contains oils, which can damage the latex. Do not use oils or lotion on the seals. Avoid contact with copper.

Possible allergy risk

A small percentage of people have an allergic reaction to natural latex, the material from which the neck and wrist seals of some models are manufactured. This allergy can range from mild to severe skin rash and itching. It is the responsibility of the user to pre-determine if he or she has a latex allergy, or to recognise it during use, and discontinue use of the suit until the problem can be rectified. This usually means removing the latex seals, and installing new seals made of alternative materials.

How To Comfortably Put Your Drysuit On

What is a latex allergy?

A latex allergy is a reaction to certain proteins in latex rubber. The amount of latex exposure needed to produce sensitization or an allergic reaction is unknown. Increasing the exposure to latex proteins increases the risk of developing allergic symptoms. In sensitized persons, symptoms usually begin within minutes of exposure; but they can occur hours later and can be quite varied. Mild reactions to latex involve skin redness, rash, hives, or itching. More severe reactions may involve respiratory symptoms such as runny nose, sneezing, itchy eyes, scratchy throat and asthma (difficult breathing, coughing spells, and wheezing). Rarely, shock may occur; however, a life-threatening reaction is seldom the first sign of latex allergy.



WARNING

Determine if you have a latex allergy, and to what extent, before purchasing or using a drysuit with latex seals.

Neoprene neck & wrist seals

Neoprene seals can become more supple with use. If you find they are unpleasantly tight, the seals can be stretched simply by plugging the wrist and neck seals with objects of a suitable size and leaving for 12 to 24 hours.

Fitting Of A Drysuit

- First remove your watch and any rings/jewellery that could tear wrist seals.
- Drysuits in general and tri-laminate models in particular are designed to fit less snugly than neoprene wetsuits. However, a good fit is still required. You should be able to reach both hands over your head, and be able to squat on your knees without restriction, while wearing the drysuit and the heaviest undergarments you intend to wear.
- The suit should not be tight in the crotch, or too long.
- If legs are too long, air volume in the suit can dislodge the boots off your feet if you become inverted.

To ensure a good fit:

- Wear the bulkiest undergarment you are likely to wear under the suit.
- Make sure the suit is not restrictive in any area.
- Make sure you can raise both hands above your head, touch your toes, and squat to your knees without restriction.
- Make sure the crotch (with braces properly adjusted) is not more than 10cm (10 inches) below your crotch.
- Make sure you can easily reach both valves.

NOTE:

You will be considerably more bulky in a drysuit than with a wetsuit, and the boots are bigger. If you already own a BCD, make sure that it will properly fit over the drysuit. Also make sure that your feet in the drysuit boots fit all the way into your fins, or else purchase larger fins. Having fins that are too small to wear properly will result in foot cramps and lost fins, both potentially dangerous situations.

How To Comfortably Put Your Drysuit On

Donning the drysuit

First remove your watch as it could tear wrist seals, lay the suit out flat and do a quick overall inspection to ensure it is in good order.

Dust the inside of the latex seals with Northern Diver Talc or lubricate the neoprene seals using Northern Diver Drysuit Seal Lubricant (supplied in the maintenance kit).

Lubricate the zip with Northern Diver Zip Wax for BDM drysuit zips (supplied in the maintenance kit) or a suitable lubricant for YKK® Aquaseal® drysuit zips.

Remove all jewellery – sharp edges can destroy the seals.

Fold the torso of the suit inside out over the legs to about waist level, so the braces are exposed.

Make sure the braces are correctly attached, and are not tangled or twisted.

Sit down if possible and insert foot first into the suit, making sure you do not tangle foot in braces.

Grasp suit material at calf level and gently ease foot into boot. Pull up on leg.

Repeat with other leg.

Grasp torso and ease suit up so that the crotch of the suit is correctly positioned.

Raise braces over shoulders and adjust so they support the weight of the suit.

When present, fold the neoprene outer cuffs back away from the seals.

Insert first arm all the way, taking care with the seal when pushing hand through.

Repeat with second arm. Try to make sure the inside zip flap is not curled under during this process. Make sure that if the drysuit undergarment is equipped with thump loops, they are fully retracted, and not caught between the seal and your wrist. This will cause a leak.

Grasp the top edge of the neck seal with both hands, fingers on the inner surface, thumbs on the outside. Make sure your fingernails do not tear the latex or smooth skin neoprene. Spread the opening wide enough to draw the neck seal over your head, and adjust so it is comfortable. (Note: some divers prefer to don the neck seal first, inserting the arms after. This is a matter of personal preference).

If you have long hair, you may find it easier to wear a nylon stocking or similar over your head when pulling your head through the neck seal. If your drysuit has a neoprene neck seal, the neck seal should be inverted so that the smooth side is in contact with your skin; this forms the seal. Have your buddy make sure the drysuit undergarment is correctly positioned under the seal so that there will be no cold spots.

Fitting Of A Drysuit & Valve Functions

Instruct your buddy to draw the zip closed from left to right, keeping one finger in front of the slider to prevent clothing and foreign object damage to the teeth. Make sure the slider is drawn tight up against the rubber stop on the right hand side. If the slider is not tight against the stop, the zip will leak.

Attach the low pressure hose with quick disconnect fitting to the inflate valve by pulling back on the fitting and inserting it over the valve stem. Depress the side inflate button briefly to ensure the valve is working properly. Air will enter the suit, partially inflating it. Disconnect the low pressure inflate hose.

To check the proper function of the exhaust valve, turn it to the “OPEN” or “-” position and crouch to your knees. The suit should deflate and you should hear the air escaping from the valve.



Standard adjustable exhaust valve



Commercial double mushroom adjustable exhaust valve



Non magnetic adjustable exhaust valve



Locking cuff dump/exhaust valve

Removing the drysuit

To take off the drysuit, follow the same procedures for donning the suit, but in reverse order.

Removing a neoprene neck seal

Once your zip is undone you can remove your neck seal.



1. Pull the inverted section of the neck seal out.

DO NOT attempt to remove the neck seal whilst it is still inverted. This will damage the seal.



2. Make sure you pull the seal up with both hands and not just finger tips which may cause your nails to damage the seals. Whilst pulling up duck your head down into the neck seal.

Removing Neoprene Neck & Wrist Seals



3. Gently pull the seal up over your head in one continuous swift motion. You must try not to panic, if the seal went on it will come off.



4. Neck seal is now removed in the best way possible to avoid any damage.

Removing a neoprene wrist seals

Make sure you zip is undone and neck seal has been removed before attempting to remove the cuffs.



1. To remove the wrist seal pull on the lower arm to release your elbow inside the suit.

Push down allowing the suits arm to roll over the wrist seal creating a fold.



2. Using your other hand pull the fold down over the wrist and hand.

Get your buddy to help if you need assistance.

IMPORTANT! Cuff seals and neck seals are a consumable item and not covered within the 12 month warranty, so follow these instructions to achieve the best life expectancy.

Warning Notes



3. Make sure you fingers are together and pointed so the seal can slide over the hand without damage. Pull out the inverted wrist seal from the arm when hand is free.



4. Do not pull on the wrist seal!

Pulling directly on the wrist seal will damage them and is not advised.

Applications for Use

Our neoprene and tri-laminate drysuits are made of the finest materials and to extremely high standards of workmanship. However, they must be used within reasonable limits.

WARNING - DO NOT:

- Exceed the maximum depth to which you are currently certified.
- Use the drysuits in toxic or hydrocarbon-rich environments.
- Use the drysuit as a buoyancy-lifting device.
- Use the drysuit without a separate buoyancy control device.
- Use inflation gases other than air except argon (only use if you are qualified).
- Use the suit with any weight harness or other weight system that is not equipped with a quick-release system.

Pre-dive suit checks

Before **EVERY** dive, make sure the suit is in good condition by checking the following:

- No visible damage to materials or accessories anywhere on the suit.
 - Check latex or smooth-skin neoprene seals for small tears or holes.
 - Verify inflate and exhaust valves are intact and functioning properly.
- Check low-pressure hose and fittings are intact, undamaged and properly connected. Inspect waterproof zip for excess wear or any damage.

Post-dive suit checks

After **EVERY** dive, complete all the pre-dive checks listed above, and inspect suit for any possible new damage. Repair any damage immediately, or take the suit to Northern Diver for repair.

Warnings Of Diving Risks

When you have finished diving for the day, thoroughly rinse the outside of the drysuit with fresh clean water to remove any dirt, sand or salt. Any stubborn stains can be removed by rubbing the area gently with soapy water. Clean seals with fresh water. Occasionally rinse the inside, which can be treated with a proprietary deodoriser.

Always wear socks inside your drysuit, over a 1 hour dive i.e. kitting up to taking your drysuit off, you will perspire and produce an average half cup of liquid. If you are wearing light coloured under garments you may notice patches of liquid on the suit in the areas of the valves and zip where the perspiration condenses around these cold areas. Without socks your feet will become wet in some cases and this can make the suit smell. **Why not try our Drysox featured on page 35.**

Inspection intervals

In addition to the checks listed above to be performed before every dive, the valves should be inspected and serviced on an annual basis.

Risk Assessment

Drysuit diving, as with any other aspect of advanced SCUBA diving activity, carries a degree of inherent risk. These include:

Hyper/hypothermia

Drysuits are often used in extreme temperature conditions, where there may be combinations of cold surface conditions and cold water, or hot surface conditions and cold water. It is important to know your own personal thermal safe range, to avoid over heating, or becoming chilled. While a drysuit and warm undergarment have excellent thermal protection, they do have limits and your safe and enjoyable time in the water is variable based on water temperature and condition, workload, and your own body type. Hypothermia is the cooling of the body core to unsafe levels. Hyperthermia is the overheating of the body core to unsafe levels. Hyperthermia in drysuit use is most often experienced during surface intervals in hot weather, or during periods of excessive workload in warm, shallow water.



WARNING

Learn your own limitations and learn to recognise discomfort as a danger signal. Avoid Hyperthermia & Hypothermia as both can be harmful or fatal. Monitor your work rate during all diving activities to avoid excessive air consumption, fatigue, over heating and other symptoms.

Change of buoyancy with depth

Neoprene: all neoprene products used in scuba diving incorporate closed cell foam to provide thermal protection. Under increasing pressure as depth increases, these bubbles diminish in size, resulting in a loss of buoyancy as the diver descends. **Learning to compensate for this loss of buoyancy is one of the vital skills that must be learned in the proper use of a drysuit.**

Tri-laminate: as the tri-laminate material is a membrane and lacks a closed cellular structure, the material itself does not change buoyancy with depth.

However, the air trapped within the suit by the thermal undergarment will be compressed and the diver compensates for this by adding air during descent and venting air during ascent, to remain neutrally buoyant.



WARNING

Buoyancy control in a drysuit is more complex than in a wetsuit and is a vital skill to be learned during the instruction in the use of a drysuit.

Loss of thermal insulation at depth

Drysuits in general provide thermal insulation by creating an air space between the diver and the cold water.

Neoprene: in a neoprene suit, the neoprene material becomes thinner under pressure and loses not only buoyancy at depth, but also some insulation value. Divers planning to spend time at greater depths must account for the diminished thermal protection at depth by wearing added undersuit protection.

Tri-laminate: as the material is a membrane only, the thermal insulation value of the material alone is minimal and does not change with depth. However, divers planning to spend time at greater depths must account for the colder temperatures normally found there by wearing added undersuit protection.

Fitting the suit

Proper fit in a drysuit is very important. Too loose a fit will allow such hazards as too much air moving around in the suit, difficult buoyancy control and if the legs are too long, the boots can slip off the divers' feet. Seals that are too loose will leak. Too tight a fit can result in restriction of blood flow causing loss of feeling in the extremities, or lack of oxygen to the brain. Seals that are too tight will also restrict blood flow.

Inflation gases

We recommend using air for inflation. Properly trained divers can use argon. Do not use gas mixes with elevated oxygen levels, or with helium (Tri-Mix, etc.). Helium is an excellent heat conductor, and will significantly reduce the thermal efficiency of the suit, risking hypothermia.

Correct maintenance

A drysuit is a complex piece of equipment designed to keep a diver comfortable in extreme conditions. Treat it with respect, maintain it correctly, and inspect it for wear and damage BEFORE & AFTER each dive. Failure to take these precautions may be hazardous.

Allergies

In addition to the possible allergic reaction to latex used in the neck and wrist seals, a small percentage of people are known to experience allergic reaction to neoprene. Although this is less of a problem with drysuits than with wetsuits, as the diver normally wears an undersuit to separate the drysuit from his or her body. Some exposure can still result. Be sure to determine you are free from neoprene allergy before purchasing any neoprene product.

Troubleshooting & Suit Testing

Troubleshooting

NOTE: A properly functioning drysuit is a closed environment and a certain amount of condensation on the inside of the suit is natural. Divers exerting a lot of energy or spending time above water on a warm day with the suit closed will notice this more.

Zip leaks

Slider not closed all the way – have your buddy check for full closure.

Zip has failed – inspect for split in closed teeth.

Zip material failed – can either be punctured or damaged by abrasion.

Foreign material caught in teeth – dirt, sand, debris, or the drysuit undergarment is frequently the trouble.

The zip is old, worn out, or damaged in some other way – have it replaced.

Improper or inadequate lubrication of the zip.

Valve leaks

Installation has loosened. Check back plate screw for tightness. This sometimes happens in neoprene suits, as the neoprene may continue to compress over time. Tighten if needed.

The exhaust valve may be improperly adjusted, or there may be debris (sand, hair, etc.) under the seal.

Valve parts may need servicing or replacement due to use and wear.

Seal leaks

Seals leak for two reasons, damage or interference.

Check the seals for holes or tears caused by sharp objects, wear and tear, or chemical damage.

Check that there are no foreign objects such as hair and sections of undergarment.

Check for over trimming.

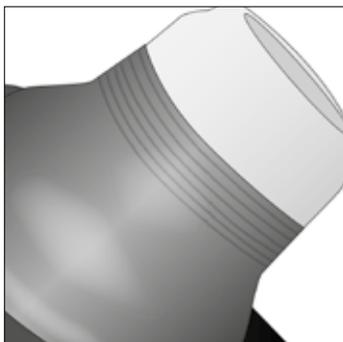
Check they adjusted properly and do not have folds that can create leaking channels, especially around the tendons in wrists.

Damage to suit fabric

The suit fabric may leak due to wear, abrasion, puncture or tearing.

Avoid sharp and abrasive objects.

Divers exposed to corrosive chemicals must take extra care cleansing and rinsing the suit after each exposure. Some chemicals can degrade or de-laminate the suit materials to the point of failure.



Leak testing your suit

Your drysuit can be tested for leaks by plugging the wrist and neck seals with objects of suitable size, closing the zip and using the low-pressure inflation hose attached to the inflate valve to inflate the suit. Wrap an elastic band around the seal to help the plug stay in place under pressure. Start with the adjustable exhaust valve set at the lowest release pressure, and gradually increase until the suit is firm, but not hard. This way you will not stress the seals, fabric or seams of the suit.



WARNING

DO NOT use GLASS objects to plug the neck or wrist seals. Occasionally, the internal pressure will blow the plug out of the seal. Glass can shatter, causing injury.

Once the suit is inflated, submerge it a section at a time in the bathtub, and inspect for leaks. Small bubbles will appear if a leak is present. Alternately, lay the inflated suit down outside, and slowly pour warm soapy water over the suspected areas. The soap solution will blow small bubbles, or create fine foam over the leak. Once the leaks are located, mark the area, rinse and dry the suit thoroughly, and repair the leak or book your suit in for a professional repair service at Northern Diver. In some cases if your suit is dry we can repair it immediately if you call to see us.

Repairing a Leak

Ensure the drysuit is completely dry. Wear protective gloves, such as latex gloves. Mark the puncture on the outside of the drysuit, and use this mark to mark the same area on the inside of the drysuit, always make the repair on the inside of the suit. Clean the puncture area by rubbing with sandpaper or a stiff brush, and remove any loose particles. Apply 3 layers of Suit Seal (supplied in the maintenance kit), allowing 15 minutes' drying time between each application.

Note: Rub the first coat of Suit Seal in thoroughly until it soaks into the material – ensure the Suit Seal isn't just 'floating' on the material's surface, as this will make the repair less effective.

Apply 3 layers of Suit Seal to a repairs patch (supplied in the maintenance kit), again allowing 15 minutes' drying time between each application. Place repairs patch on the damaged area of the drysuit and use a roller to push out any air bubbles and ensure the patch and suit are firmly bonded together.

Allow 3 hours for the Suit Seal to dry, once dry test your suit again to ensure the leak has been repaired.

If you prefer, Northern Diver can provide this service.

With over 25 years' experience, our repairs and alterations department has your drysuit in safe hands. When suits come in for repair they are inspected, tested, worked upon and tested again before they return to the customer.

Custom options are also available on Northern Diver drysuits if you wish to add different elements to what you have purchased. We can change neck, wrists, socks, and boots to suit your requirements or add pockets, reflective panels and Kevlar® reinforcement on high wear areas.

Visit www.ndiver.com/drysuits/drysuit-parts for more details.

If you would like your suit repairing please use our online booking service, visit our website www.ndiver.com

Emergency Procedures



Emergency procedures: diving should never be undertaken without adequate training under qualified supervision. We offer some suggestions for rectifying problems here, but this is merely scratching the surface and may not be suitable for any particular situation. Remember, training in a safe environment with a suitably qualified instructor is essential.

Inflator valve is stuck open

If your drysuit inflator valve becomes stuck open, meaning the drysuit is inflating uncontrollably, disconnect the inflation hose and press your dump valve at the same time. This exercise should be practised in a safe environment while wearing normal diving gloves. If you have a cuff dump, you will be able to dump the excess air by raising your arm. In an extreme case, such as when you can't vent sufficient air through the exhaust valve, raise your arm while lifting your wrist seal, or pull the neck seal away from your skin (no need to raise your arm). These procedures will allow air to quickly escape from the drysuit, but will also allow water to enter the drysuit.

If you experience an uncontrolled ascent due to over inflation, it is important to exhale as you ascend. We recommend that you do not undertake any diving without adequate backup or redundancy in your buoyancy device (ensure you are trained in the use of your buoyancy device) to ensure a safe return to the surface.

Inflator valve is stuck closed

Use your training to ascertain the correct method for returning to the surface, such as buoyancy control, ditching of weights etc.

Exhaust valve is stuck open

If your drysuit exhaust valve becomes stuck open, your drysuit will not retain air and will therefore not give proper buoyancy. Water is very likely to enter the drysuit via the valve. Abort the dive and use your buoyancy device to return to the surface, and follow what was learned in your training.

Exhaust valve is stuck closed

If your drysuit exhaust valve becomes stuck closed, it may not be possible to vent air from your drysuit. This could result in an uncontrollable ascent. Air can be dumped by pulling the wrist or neck seals away from the skin, allowing air to escape. This action may cause water to enter the drysuit.

Water enters through exhaust valve

This may be caused by dirt etc. under the valve or a damaged diaphragm. Abort the dive immediately and use your buoyancy device to return to the surface.

Air leaks through inflator valve

If this occurs, you should disconnect the inflator hose from your drysuit and use your buoyancy device to return to the surface. Air will need to be dumped as usual when ascending.

Other Important Information

Drysuit becomes flooded

In the unlikely event of this occurring (probably caused by a tear, seal failure or zip failure etc.), use your buoyancy device to return to the surface.

It may help to keep the leaking area as low in the water as possible - this will help keep any remaining air inside the drysuit. Cold water in the drysuit means that it should be removed as soon as possible after surfacing.

Be aware that it is normal for the inside of a drysuit to be damp with perspiration, and a small amount of water should not be assumed to be because of a leak or drysuit failure.

Dropped or lost weight belt

To practise this procedure, do so with consultation and supervision from a suitably qualified instructor in a controlled environment – they will guide you through what to do.

Do not attempt to drop your weight belt until you are absolutely clear about the procedure. You must be thoroughly trained.

Remember, dropping your weight belt can injure other divers and marine life.

Other Important Information

1. Follow all instructions. Improper use of a drysuit can cause loss of buoyancy control, including uncontrolled descents and ascents, and a risk of serious injury or death.
2. Improper use or misuse of a drysuit can result in exposure to thermal hazards and rapid body overheating or cooling, which could result in stroke, seizure, hypothermia and death.
3. This manual is **NOT** a substitute for proper qualified drysuit instruction and is **NOT** supplied as such. This manual is supplied as a guideline for drysuit maintenance only.
4. Diving in conditions that contain chemical, biological or nuclear contaminants is extremely hazardous and should **NOT** be attempted without being specially trained and equipped. In most cases, the Northern Diver drysuit you have purchased has **NOT** been adapted for use in polluted or abnormal conditions and is therefore **NOT** covered under warranty. Some drysuits that we manufacture are suitable for these conditions, but prior to use you **MUST** seek advice from us to ensure the drysuit will fully protect you.
5. Military drysuits – if the drysuit is to be used in conditions where the drysuit requires a non-magnetic signature, please carry out adequate checks to confirm that the zips and valves fitted to the drysuit comply with the directive relating to this use. Non-magnetic inflation and exhaust valves can be identified with this symbol -



To use the non-magnetic symbol for our diving suits and equipment we have our products independently tested at QinetiQ, Portland. We advise you to ensure your kit has been tested before entering any hazardous area.

Other Important Information

Maintenance, Repair & Modification

It is not within the scope of this manual to provide complete and detailed repair instructions for all the situations that may be found. Basic maintenance for the suit, the materials and individual components such as zip, seals, and valves, etc., may be found under those individual headings.

Cleaning, disinfection & decontamination

After each use:

Rinse outside of suit with clean fresh water.
Wipe seals clean with clean fresh water.
Rinse valves with clean fresh water.
Hang suit upside down to dry.



If the suit got wet inside:

Clean inside with clean fresh water, or a disinfectant solution to prevent bacterial development.

Latex seals

Lightly dust with non-perfumed talc (supplied in the maintenance kit).

Buy talc online at www.ndiver.com/talc

Degreasing

If the suit is exposed to oil or grease, clean with a mild grease cutting detergent and a soft brush. Rinse with clean fresh water.

DO NOT ALLOW OIL OR GREASE RESIDUE TO REMAIN ON SUIT FOR ANY LENGTH OF TIME – IT MAY DEGRADE THE MATERIAL.

Decontamination

Recreational divers should take care to avoid exposure to contaminated water and environments. Professional, commercial, rescue and military divers who may be forced to dive in contaminated conditions must identify the contaminant and take appropriate steps to remove the contaminant from the suit before it can be used again. **Do not enter any contaminated area or water unless you have the required training and additional Personal Protective Equipment (PPE).**

Storage & Transport

Once the suit is thoroughly clean and dry with the zip lubricated, store in a cool dry place out of the sun. Many suits have been damaged by cats and rodents nesting in them when in storage, take care to store the suit away from areas accessible to them. Keep copper away from the latex seals. Drysuits are best stored on the Northern Diver Multi Purpose Hanger (see page 27) that hangs the suit upside down by the feet with the zip closed. Additional advice may be found in specific sections above. Transport the suit in the storage bag / changing mat provided. Try to clean excessive dirt and sand from the suit before placing it in the bag.

Notes Regarding Suit Disposal & Labels

Safe Disposal

If you need to destroy the drysuit please make sure to follow local regulations and prescriptions.

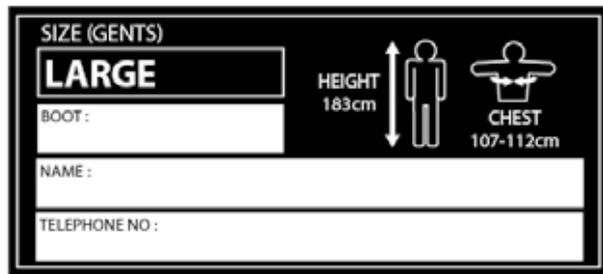
Suit Labels & Your Drysuit Details



Drysuit inner labels

The drysuits primary internal label, located on the internal zip flap, is marked with the measurements that the drysuit has been designed to fit (see below example).

The secondary internal label is located on the back panel of the drysuit, clearly visible when the zip is opened. This label gives more information on the suit and includes washing instructions, manufacture date and repairs/ service log (your label may differ slightly).



Your Drysuit Details

Please note your drysuit details for future reference.

Drysuit serial number
Date of purchase
Colour(s)
Drysuit type
Suit Size
Boot size
Notes

What's Included With My Suit?



Hood style will vary from photo depending on type of suit purchased

Neoprene hood (supplied with selected suits)

All hoods combine vent technology with the added comfort of super-stretch neoprene. The vent system allows trapped air to escape from the inside of the hood, increasing comfort and ensuring a perfect fit throughout the duration of the dive. Hoods are manufactured from various thickness's dependant on the suit you purchase. All are produced with super-stretch neoprene, increasing flexibility and comfort and including our unique Ti-Ax® heat reflective technology, for superior thermal properties. Hoods are suitable for use with wetsuits or drysuits.

Not happy with your hood? We are more than happy to change on the understanding it has not been used, only tried on and is in as new condition.



Valve style will vary from photo depending on type of suit purchased

Valves and inflation hose (supplied with selected suits)

The valves should be periodically examined and tested by an authorised service technician. We recommend that this is undergone at least yearly – more if the drysuit is heavily used. Under no circumstances should you attempt to service the valves yourself as this may result in damage not covered by the warranty. If you experience problems with the operation or performance of your valves, please return them to Northern Diver for inspection.



Make sure the low pressure hose is free from contamination before connecting.

For maximum life and performance rinse the valves with fresh clean water and allow to dry after every dive. When dry, lubricate the o-rings in your inflation valve with silicone spray. You can do this by spraying a few times into the coupling end of your drysuit inflation hose, connecting the hose to the valve and air supply, and pressing the inflation button on the valve – the o-rings will now be lubricated.

Maintenance kit (supplied with the suit)

You will receive a variation of the maintenance products listed below depending on the type of drysuit you have purchased and the zip it is fitted with.



Drysuit Seal Lubricant - This specifically designed water based seal lubricant will extend the life of your drysuit's neoprene seals and ease getting in and out of your drysuit. Supplied in a handy ergonomic 200ml tube, an essential item in every diver's kit box. **Do not use on latex seals.**

Suit Seal - Used for repairs to holes and tears in drysuits and for use when sealing the Northern Diver Dry Glove Ring System to neoprene cuffs. Supplied in 21g tube.

Buy Suit Seal and Drysuit Seal Lubricant at www.ndiver.com/drysuits/drysuit-maintenance

Accessories (Lubrication, Hood, Hose Etc)



Zip Wax - Easy, effective drysuit zip lubrication. Simply apply to dry, clean drysuit zips to ensure smooth action and prolonged zip life. For use with BDM metal zips only.



Talc - Specially formulated to lubricate latex neck and/or wrist seals, to assist getting in and out of any drysuit featuring latex seals. This talcum powder should also be applied to dry seals, prior to storage, to help extend the life of your drysuit's latex seals. Consists of pure (unscented) talcum powder, supplied in a handy 100g container, with a twist-lock dispenser. **Buy Zip Wax and Talc at www.ndiver.com/drysuits/drysuit-maintenance**

Repair items - Each maintenance kit will be supplied with a rubber and/or cell neoprene length of tape for use when repairing damaged internal seams. Circular neoprene repair patches are also included for use on the interior of your drysuit when it has a puncture or tear.



Drysuit Storage Bag/Changing Mat (supplied with selected suits)

Manufactured from ultra durable fabric that unzips and opens up for use as a changing mat and has a water resistant lining.

Supplied with colours/artwork to match the relevant drysuit.



Packaging

All Northern Diver packaging is supplied from sustainable sources wherever possible.

Drysuit & undersuit boxes have been redesigned to be more robust and take up as little space as possible. Where viable all packaging is recyclable.

Northern Diver is leading the way with BSEN ISO 14001 Environmental Management Systems status.



12 Month Guarantee

If you experience a fault within the guarantee period you can have the drysuit collected or call in with your suit.

We aim to have the problems resolved within a week of booking in the suit.

apollo Bio Seals & Dry Glove Ring Systems

For all drysuit accessories that are available to buy separately visit www.ndiver.com/categories/drysuits/drysuit-accessories



Apollo Bio-Seals

Heralded by DIVER magazine as “truly keeping the water out”. Some divers may experience a trickle of water down their seals now and again, usually as a result of a channel caused by a tendon. Hopefully not for much longer. Apollo has launched this innovative product to combat water ingress, which works excellently. The seals simply slide over your neck and wrists, and form an effective bond with your drysuit seal, whether you use neoprene or latex seals.

The Cosmo-gel that the seals are made from is super soft and super stretchy (1300% - 1500% stretch). As you could deduce, they are very comfortable and mould to your skin brilliantly. On top of this, durability isn't compromised. This product is latex free.



Cuff Ring System (glued to the suit).

With the wrist seal removed, the ring is glued in place in the suit meaning you can easily remove, fit and replace seals.



Has excellent resistance to acids, alkalis, abrasion, chemicals, cutting oils, petrol and gasoline. Excellent option for those interested in replacing seals quickly and easily. Permanent wrist rings mate with Dry Glove Ring System or Latex Wrist Seals.

Buy Cuff Ring System online at www.ndiver.com/fixed-cuff-system



Cuff Ring Gloves.

Can fit on the cuff ring system over the seal giving completely dry hands. Fleece glove liners are available to go under these gloves. The Ansell Extra™ gloves are cut, tear and puncture resistant. They are flexible allowing far greater dexterity whilst still offering wear, chemical resistance and thermal insulation. Conforms to the requirements of European Directive 89/686/EEC and to the European standards EN420: 2003 + A1: 2009 and EN374: 2003, EN388: 2003.

Revolutionary Blowgun Drysuit Inflation System

A NEW WAY TO INFLATE YOUR DRYSUIT . . .

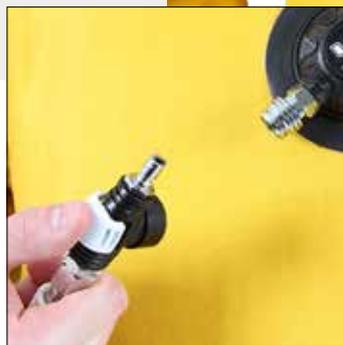
The system consists of a 1m long hose with a push button blow gun. This is connected to the swivel valve on the suit by a quick connector which seals when the blow gun is disconnected underwater.

It can be used to inflate lifting bags etc.

The systems other uses include:

Air sharing, by simply connecting to a low pressure hose with a compatible connector.

For users that have difficulty reaching their drysuit push button inflation valve, the blowgun is much easier to find and operate.



A great addition to your dive kit!

Visit our website to buy it now:
www.ndiver.com/blowgun-drysuit-inflation-system



Northern Diver Drysuit Exhaust Systems



Locking Cuff Dumps

Buy online at www.ndiver.com/locking-cuff-dump

Free from maintenance and requires no adjustment. Designed to fit in the suit cuff and allows venting air to escape from the suit by simply raising the arm. Simple and swift opening/closing operation. It turns 45° from open to closed. Mushroom silicone seal stops water ingress when open. Locking the cuff dump is only necessary when working on a sandy or silty sea bed. The lock keeps contamination out. It is also useful if you need to put your arms above your head, the locking dump stops the airflow from the valve. Our dive team all use locking cuff dumps.



V-Tech Valves

The lowest profile drysuit valves on the market, with 5 star air flow and improved ergonomics. Fully adjustable auto dump exhaust valves, with an additional manual override facility. Our very own in-house engineering team has developed our high performance drysuit valves.



Non-Magnetic Valves

For special use by the military, our non-magnetic inflation and exhaust valves are only available in black and the inflation valve has a CJEN connector.

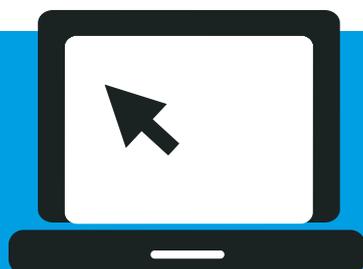


Commercial Valves

Contaminated water valves are chemical, impact and heat resistant. The exhaust valve contains an extra diaphragm than a standard valve.



All our drysuit valves have passed the strict testing at TUV-RHEINLAND with a 100% rating and are fully CE approved.



Check out our full product range online. Video review's and "how to" tutorials for fitting cuff ring systems / dry glove ring systems to your suit, instructions and manuals are all also available at www.ndiver.com

Inflation Valve & Hose Information

Inflation Valve Connections

Northern Diver uses three types of inflation valve connection. Fig 3. Shows the CJEN fitting, Fig 4. Shows the Standard fitting and Fig 5. Shows the V-Tech fitting. The Standard fitting is the same fitting found on buoyancy device direct feeds and tends to be more widely used.



*Fig 3. (CJEN fitting)
Normally used for
commercial & military*



Fig 4. (Standard fitting)



*Fig 5. (V-Tech fitting)
Useful in cold environments
when thick gloves are worn
the large sliding collar is
easier to grip.*



Hose Connections

There are three types of hose coupling to go with the inflation valve connections. Again these are CJEN couplings (fig 6.), Standard couplings (fig 7.) & V-Tech couplings (fig 8.) All fittings need to have the collar on the coupling pulled back whilst pushing it onto the inflation valve connection.



Fig 6. (CJEN coupling)



Fig 7. (Standard coupling)



Fig 8. (V-Tech coupling)



Drysuit Accessories

All hoses are suitable for use with any Northern Diver drysuit and will also fit most other brands of drysuit. The hoses come with a standard 3/8" UNF male thread so they can be fitted to the medium pressure port of any 1st stage regulator, ensure the O-ring is lightly lubricated and tighten.

Please note a Drysuit Valve/Hose manual is available for download and contains more information regarding valve fitting and positioning.
Visit www.ndiver.com/pages/downloads



Hose Protectors

Made from a very durable material with a high wear factor.

Used to reinforce all types of hose and extend the life span of your equipment. Three types of hose protector available.

Buy online at
www.ndiver.com/black-hose-protector-2



Internal Braces

Come in handy post-dive, if you wish to roll down the top half of your drysuit, without removing your suit completely.

Standard on all membrane suits and can be fitted at nominal cost to a neoprene suit.

Buy online at
www.ndiver.com/internal-braces



Drysuit Hanger

Drysuit boots are placed in the hanger head and the suit is then suspended upside down, allowing all the excess water to drain away.

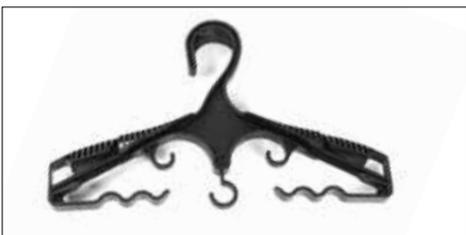
Buy online at
www.ndiver.com/drysuit-hanger-2

Multi Purpose Hanger

Northern Diver have designed a universal hanger, for the upright storage of a drysuit, wetsuit or BCD.

This type of hanger allows the upright drying of a wetsuit, drysuit, BCD or stab jacket, allowing all the excess water to drain away.

Buy online at
www.ndiver.com/multi-purpose-hanger-2





Custom. Tailoring & Repairs

Custom options are available on drysuit's for those who want to add different elements to what is fitted to the suit.

We can change neck, wrists, socks, and boots to suit your requirements or add pockets, reflective panels and Kevlar® reinforcement in high wear areas.

Our full list of custom tailored options can be found on our website or call us to discuss your requirements.

Custom tailoring options are dependant on the type of suit you have purchased. Check the availability of tailoring options on specific suits with us.

Need an instant repair?

A fast track service is available. Contact us on the telephone number below for more information.

Repairs Department : +44 (0) 1257 25 69 37
Opening Times : Mon - Fri 8.30am to 5.00pm

Visit our website www.ndiver.com/repairs

Louise Ball, our long serving repairs and suit customising manager, 26 years service.

In-House Drysuit & Equipment Personalisation

Our new Mimaki cutter/printer allows us to originate and print logos, names, pictures etc. The print can be mono, full colour or plain on a reflective background. We can use your existing artwork or create something new.



Visit our website www.ndiver.com/custom-branding



Northern Diver Undersuits

Neil Tordoff

- Military & Commercial Sales Director

Undersuits provide crucial thermal protection when diving, trapping air and maintaining body heat during the dive and also between dives. Modern undersuits can range from simple fleece type garments to advanced suits with anti-compression panels or even built-in heating.

Your thermal requirements will depend on water temperature, your suit type and how much you feel the cold. Water transfers heat from the body up to 25 times faster than air which means a diver will quickly start to feel the cold without protection. The colder the water, the quicker the onset and the greater the need for undersuits and base layers.

Drysuits have their own thermal properties; some are much better than others. neoprene suits are much warmer and require thinner undersuits, but membrane suits provide very little thermal protection and therefore require thicker or even layered undersuits.

Too much insulation can lead to dangerous overheating. Too little insulation can lead to the effects of hypothermia and death. Always ensure that body extremities are also well insulated-wear suitable gloves, hood/hat and socks or boots.

Undersuits are available in a wide range of styles, thickness grades and materials, with our own spanning from the thinnest Thermalskin up to the much thicker and more thermally insulating Metalux® Arctic. Keep in mind that you can use different combinations of undersuits and base layers to find the thermal protection that works for you.

If you're unsure on what thermal protection to wear, feel free to call us for expert advice on **+44 (0) 1257 25 44 44**. You can email if you prefer – **info@ndiver.com**. Or if you are nearby, feel free to visit us.

Guides for which Northern Diver undersuits to wear with each drysuit can be found online or in the **Northern Diver drysuit catalogue** available in store or downloadable online.

www.ndiver.com/undersuits

THERMALUX UNDERSUITS

Thermalux undersuits offer a lightweight solution to keeping warm. A high tech fleece / Lycra mix provides superb insulation & incredible flexibility.

The microfibre and fleece layers help retain body heat without excessive bulk. Flexible panels in the lower back, shoulders, cuffs and feet provide additional flexibility, allowing exceptional freedom of movement without sacrificing warmth.

Ergonomically designed stretch leg and foot stirrups ensure the garment stays in position during use, keeping material movement to a minimum and avoiding uncomfortable creasing between the outer garment and your skin.

- 100% microfibre outer shell
- Absorbent micro-fleece lining
- Comfortable & flexible
- Ultra lightweight & breathable
- Lies smoothly under suit seals
- Quick-drying design
- Bacteria & fungus resistant
- Two way YKK® zip
- Drawstring mesh bag supplied

TOG rating of 2.3

Sizes available:

S, M, ML, MLR, L, LR, XL, XLR, XXL, XXLR, XXXL



Visit our website www.ndiver.com/thermalux-undersuit



Black fleece internal lining



Elasticated thump loops & thermal-skin cuffs



Stretch Lycra panels for extra flexibility



2x hip pockets

Metalux undersuits are constructed from one of the most lightweight, high-performance insulating materials available. It's designed to reflect thermal radiation and reduce air movement, even when wet or compressed.

It retains its thermal integrity throughout the life of the garment, which is hard-wearing and machine washable.

Flexible panels in the lower back, shoulders, cuffs and feet give exceptional freedom of movement, without sacrificing warmth.

- Lightweight
- Fleece-lined
- Quick-drying design
- Bacteria and fungus resistant
- Zipped chest pocket
- Pockets on hips
- Elastic foot stirrups
- Two way YKK® zip
- Drawstring mesh bag supplied

**Metalux Temperate.
100gsm**

This model is most commonly used for UK summer diving conditions and/or with drysuits that have thermal properties.

TOG rating of 4.2

**Metalux Arctic.
200gsm & 300gsm**

This thicker variant is suited to more extreme diving conditions and/or drysuits without thermal properties.

200gsm TOG rating of 4.3

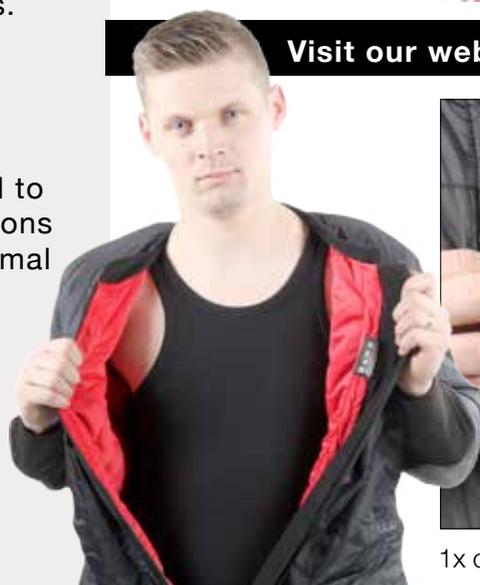
300gsm TOG rating of 4.4

Available sizes:

S, M, ML, MLR, MR, MLT,
L, LR, LT, XL, XLR, XLT,
XXL, XXLR, XXXL, XXLR



Visit our website www.ndiver.com/undersuits



1x chest pocket



2x hip pockets

THERMICORE & THERMICORE SUB ZERO

The Thermicore 3-piece undersuit provides fantastic thermal protection, above or below the surface. This undersuit is available to buy in 2 thicknesses. The **Thermicore** and the thicker version the **Sub Zero**.

The 3-piece system is comprised of a top, bottoms and socks. Each garment fits closely to the body to maximise its thermal performance and ensure that you remain comfortable when diving.

Thermicore and Sub Zero features:

- Durable outer shell
- Super-soft fleece interior lining
- Seams are flat-lock stitched
- Super-soft fleece comfort collar
- Integrated foot stirrups
- Elasticated adjustable waistband
- Elastic thumb stirrups
- Abrasion resistant overprinting
- Low profile sock seams
- Supplied with drawstring bag

It's well-known that when diving, some feel the cold much more than others. Depending on the depth that you go to and the time of year in which you are diving, temperature also fluctuates. With this in mind, we have developed the **Sub Zero**, a thicker version of the Thermicore.

The **Sub Zero** features an additional zipped arm pocket and a second layer of super-soft fleece inner lining, making the undersuit thicker and perfect for more extreme conditions.

Thermicore TOG rating 0.6
Sub Zero TOG rating 1.4

Sizes available:

S, M, ML, L, XL, XXL, XXXL

For protection to the core, dive Thermicore!



Visit our website www.ndiver.com/thermicore-undersuit



Arm pocket on the Sub Zero only



Overprinting for extra protection and abrasion resistance



Comfortable integrated foot stirrups keep undersuit in place

BODYCORE & BODYCORE SUB ZERO

The **Bodycore undersuit** is suitable for general use in warmer months and as an additional base layer in colder months. In colder months the undersuit is also suitable as a single base layer for vigorous activity such as manual labour or aggressive swimming.

The Bodycore is manufactured from wicking fleece and has a protective exterior finish. It's an all-in-one garment, secured at the front with a YKK® zip and a velcro closing neck collar.

The undersuit features foot stirrups, which are worn when the undersuit is in use to help keep it in place. The Bodycore also features handy thumb stirrups to be worn when pushing your arms through the arms of your drysuit, this stops the undersuit's arms from rucking up.

- Velcro closing collar
- Protective exterior finish
- Wicking fleece construction
- Comfort and flexibility
- Ultra Lightweight
- Foot and thumb stirrups
- Two-way zip

Bodycore TOG rating 0.6
Sub Zero TOG rating 1.4

Sizes available:

S, M, ML, L, XL, XXL, XXXL



The Bodycore undersuit is also available in a thicker Sub-Zero version for more extreme conditions.



Elasticated thumb loops

Integrated foot stirrups

Visit our website www.ndiver.com/bodycore-undersuit

TECHNICAL BASE LAYER

SO COMFORTABLE IT FEELS LIKE A SECOND SKIN

Northern Divers 2-piece superstretch technical base layer is designed to ensure you stay comfortable in even the most demanding conditions and can be worn under any drysuit. It has outstanding moisture wicking properties keeping your body temperature regulated.

In warmer climates the Base Layer fabric draws perspiration away from the skins surface keeping you dry and comfortable. In cooler climates these same moisture wicking properties help maintain skin temperature keeping you warmer for longer.

Can be worn on its own or layered up with other undersuits.

- Breathable
- Moisture wicking
- Ergonomic design
- Lightweight and durable
- Thumb and foot stirrups
- Helps maintain core body temp
- Machine washable

Material content

- 67% polyamide
- 30% polyester
- 3% spandex

Sizes available:

S, M, L, XL

Visit our website www.ndiver.com/technical-base-layer





**breathable
waterproof
protection**



A multi-purpose, moisture-wicking, 100% waterproof sock designed for everyday comfort and ultimate performance.

Never slow down your run, your game, your fun or your work with wet feet. Perfectly fits any shoe, trainer or boot and keeps your feet dry.

Mid length waterproof sock perfect for a multitude of activities and conditions where an equal balance of warmth and breathability are required.

OUTER SHELL:

95% abrasion resistant nylon, 3% elastane, 2% spandex

INTERLINING:

Waterproof breathable membrane

INNER LINING:

38% coolmax, 38% cotton, 20% nylon, 4% spandex

Sizes available:

Small - 4-6 Boot

Medium - 6-8 Boot

Large - 8-10 Boot

X-Large - 10-12 Boot

Visit our website www.ndiver.com/drysox-waterproof-sock

CE APPROVED DRY GLOVE RING SYSTEM



Photograph by Steve Smith - ND customer



Sizes available:
S, M, L, XL

Photograph by Sara Rogers - ND customer

Loss of movement or manual dexterity, due to cold hands, can be dangerous during a dive, as well as being uncomfortable for the diver. Maintaining hand warmth and a diver's ability to efficiently operate their essential diving equipment are vital to safe diving and maintaining a high level of dive comfort.

This unique system is trusted by technical divers on deep dives, recreational divers in cold water environments, commercial divers in more extreme diving environments and Environment Agency divers all over the world, in an incredibly diverse range of diving conditions and even in contaminated water environments.

Fitting this dry glove system to your own drysuit is easy, as the package includes the unique bespoke fitting tool, sealing adhesive and a sealing adhesive application brush, all combined in one 'complete' dry glove system package.

[Ansell Extra™ glove]*

- Extremely high resistance to many ketone's, salts, detergents, alcohols, alkalis and fats
- 100% cotton flock-lining provides a softer, more comfortable glove that helps absorb perspiration
- 100% natural rubber with no filters
- Excellent resistance to mechanical hazards plus increased chemical protection
- Chlorinated for better grip and increased chemical resistance
- Heavy duty handling where sensitivity is also required

[Thermal fleece inner glove]

- Thermal 4-way stretch fleece
- Flat-lock stitched seams for comfort
- Snug fit around wrist area for additional thermal protection
- Removable for warmer waters or for use post dive



Visit the website to view items in more detail www.ndiver.com



Ansell glove Cut, tear and puncture resistant. For more information please see page to the left*



Gloves conform to the requirements of European Directive 89/686/EEC and to the European standards EN420:2003 + A1:2009 and EN374:2003, EN388:2003

Our unique Dry Glove Ring System has been designed for use in conjunction with neoprene or membrane drysuits, using latex or neoprene wrist seals. Once fitted to a diver's suit, the unique twin-safe locking ring mechanism allows quick and easy glove engagement and the equally quick release of the dry gloves, without the need for assistance.

For your convenience, we have also created an instructional video, available to view on Northern Diver's dedicated YouTube channel.

Tried to fit the Dry Glove Ring System and failed?
 We will help you rectify the problem, call our repairs department +44 (0) 1257 25 69 37.



Supplied with inner fleece gloves



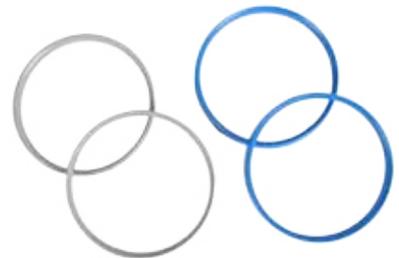
Dry glove rings (supplied)



Suitseal (supplied)



Locking tool (supplied)



Sealing rings (supplied)

Northern Diver's Dry Glove System is suitable for both arctic conditions & contaminated water environments.

All system components are available to buy separately.

Package includes:- Ansell Extra™ gloves, thermal fleece inner gloves, 2 dry glove modules, 3 sealing rings, locking tool, adhesive sealant. Instructional video available online on our YouTube channel or website.

Technical Gloves

Visit our website for the full glove range
www.ndiver.com/diving-equipment/gloves



SUPERSTRETCH 2MM, 5MM & 7MM

SUPERB COMFORT & WARMTH

These gloves are manufactured from our unique 4-way superstretch neoprene. They are reported to be the easiest of all our gloves to put on and take off.

These gloves are available in 2mm, 5mm and 7mm neoprene. For warmer water or surface use, we recommend the 2mm option. Our 5mm and 7mm options are ideal for cooler conditions, where thicker gloves are essential. Even at top thickness, these gloves don't compromise dexterity.

Sizes available:

2mm - S, M, L, XL

5mm - XS, S, M, L, XL

7mm - S, M, L, XL



SUPERSTRETCH HEAVY DUTY

2MM, 5MM & 7MM GLOVES

These gloves are manufactured from our unique 4-way superstretch neoprene, extra features include liquid taped seams and reinforced glass powder printing in high wear areas, making these gloves perfect for heavy duty uses.

The inside of the gloves are lined with a Ti-Ax™ super-warm titanium inner lining and they are available in 3 thicknesses.

Sizes available:

2mm - S, M, L, XL

5mm - S, M, L, XL

7mm - S, M, L, XL





SUPERSTRETCH WITH KEVLAR® PALM GLOVES, 2MM & 5MM

When diving incorporates more extreme conditions, these DuPont™ Kevlar® enhanced gloves give extra strength and protection, without compromising on hand comfort, ease of use or underwater hand dexterity.

The 3mm thickness provides flexibility and luxurious comfort, with ultra hard-wearing Kevlar® protection, perfect for warm water wreck diving. The 5mm thickness, designed for more extreme diving conditions or colder waters, are ideal when additional thermal protection is required, resulting in the ultimate hard-wearing neoprene commercial diving glove.

Sizes available:

2mm - S, M, L, XL

5mm - XS, S, M, L, XL



5MM ARCTIC SURVIVOR SEMI DRY GLOVES

5mm neoprene gloves suitable for a wide range of diving conditions where you want to keep your hands warm and your gloves securely in place for the duration of the dive.

Neotex wrist seals on the Arctic Survivor gloves form a 'water lock' system. This seal system ensures no flush from the gloves, keeping your hands warm. The neoprene ensures a comfortable, close fit for optimal dexterity - in or out of the water. The textured finish on the palms gives additional support.

Sizes available: S, M, L, XL, XXL



DRY SEAL 500 SUPERSTRETCH NEOPRENE GLOVES, 5MM

A 5mm superstretch neoprene glove with an internal dry seal ring to keep water out and a thermal fleece internal liner. The liner improves the flexibility of the glove but also adds an efficient insulating layer that is quick drying and very smooth against the skin.

The internal dry seal ring keeps your hands drier for longer to keep them warm. Silicone printed palms add extra grip to hold onto things. External seams are sealed for protection to stop them from unpicking or coming loose.

Sizes available: S, M, L, XL, XXL

Technical Gloves

OPTIMUM 3-5

Available in 3mm and 5mm options and featuring Ti-Ax® Thermacote® heat-reflecting lining. These gloves are manufactured from a high-grade polymer, with additional protective Diamondflex and our Super-Tack embossed palms and fingers for heightened control and grip.

A tight-fitting wrist seal is essential to minimise water migration, but it can make the glove difficult to pull on over your hand. Our Optimum gloves feature a wrist zip to allow the necessary expansion when required.

Sizes available:

3mm - S, M, L, XL, XXL

5mm - S, M, L, XL, XXL

KEVLAR® & NEOPRENE MILITARY GLOVES



The 5 finger glove is available with 3mm and 5mm thickness options making it suitable for most conditions. The glove has pre bent fingers for improved fit and a Kevlar® palm for maximum strength and durability. A glide skin seal allows for easy use.

Gloves are designed for Military usage, the long plastic zip makes for quick and easy expansion when required. Additional glass fibre reinforcement on finger pads and improved polymer coating on finger tip seams give the glove extra protection.

Sizes available:

3mm - S, M, L, XL, XXL

5mm - S, M, L, XL, XXL

SPECIALIST RESCUE GLOVES WITH AMARA PALM EQUIPMENT

Designed specifically for rescue services. Manufactured from 2mm neoprene, with Amara type faux suede on the palm and finger area for grip. Palm area is double reinforced.

The Velcro closure wrist system keeps flushing to a minimum.

- Amara Suede Palms and Fingers for Enhanced Grip
- Double Reinforced Palm Area
- Durable and Super Comfortable

Sizes available: S, M, L, XL, XXL



Illustration may differ slightly from stocked glove. Visit the website to view current style.



Underwater Lighting

Visit our website
www.ndiver.com/varilux-u-xhp70-4000-lumen-rechargeable-cable-lamp

4000 LUMEN'S VARILUX QUAD CORE VARIABLE RECHARGEABLE CABLE LAMP

- 280 - 4000 lumen's
- Burn time (high): 3.5h
- Burn time (low): 25h
- 500m (Beam Distance)
- 20000cd (Peak Beam Intensity)
- 1m (Impact Resistant)
- 100 meters (depth tested)
- Anodised aircraft 6061 aluminium
- LED: 1 x CREE XHP70
- LED lifespan: 100000h
- Brightness: 4000 lm
- Mode: High/dimming
- Magnetic slide switch
- Lens: Coated glass lens
- Size (torch): 110mm x 60mm diameter
- Size (battery canister): 260mm x 50mm diameter
- Size (cable): 1000mm
- Weight (torch): 900 g
- Weight (torch and batteries): 1.5kg
- Weight (torch, batteries, charger and box): 2.2kg

What's included?

- Battery 18650 x 12 (12.6V, 10.4AH)
- Battery charger x 1
- Spare O ring x 1
- Lubricant x 1
- Wrist/hand mount x 1
- Canister mount x 1

STANDARD	HIGH	MID	LOW
	4000 LUMENS	3200-280 LUMENS	280 LUMENS
	3.5 hrs2	.75 - 25 hrs2	5 hrs
	100m (beam distance)		
	36500 cd (peak beam intensity)		
	1m (impact resistance)		
	100 Meters (depth rating)		

Colours/styles may vary visit the website for the most up to date information.

VARIABLE
 BURNTIME HOURS
 3.5 ← TO → 25

LUMENS
 LOW - 280
 HIGH - 4000

RECHARGEABLE
 BATTERY



The hand/wrist mount can be used with many dive torches in the Varilux range.

Rechargeable Varilux TEC With quick-release wrist mount

The classic-shaped Varilux Tec packs a mighty 4000 lumens, produced by a CREE quad LED – four LEDs in one! This output is possible for 1.5 hours, and if you move the magnetic slide switch down to the lowest setting (80 lumens), you're good for 24 hours.

We supply the Tec with a wrist mount, which features two webbing hook and loop fastening straps for a comfortable fit, a sturdy plastic torch base and a removable, adjustable rubber strap for securing the torch.

What's included?

- 26650 batteries (x2)
- 26650 battery charger
- Spare O ring
- Tail cap lubricant
- Lanyard
- Wrist mount

- 80 - 4000 lumen's
- Burn time (high): 1.5h
- Burn time (low): 24h
- 500m (Beam Distance)
- 20000cd (Peak Beam Intensity)
- 1m (Impact Resistant)
- 100 meters (depth tested)
- Anodised aircraft 6061 aluminium
- LED: 1 x CREE XHP70
- LED lifespan: 100000h
- Brightness: 4000 lm
- Mode: High/dimming
- Battery: 26650 3.7 V, 4000 mAh
- Magnetic slide switch
- Lens: Coated glass lens
- Size: 224x64x40mm
- Weight (torch): 404g
- Weight (torch+batteries): 589g
- Weight (torch, batteries and charger): 794g

VARIABLE
BURNTIME HOURS
1.5 ← TO → 24

LUMENS
LOW - 80
HIGH - 4000

RECHARGEABLE
BATTERY

Length: 224mm
Reflector: 64mm



Visit our website www.ndiver.com/varilux-tec-torch



The wrist mount is also available separately.

It will equally work well with the Varilux Micro R and Travel II R torches.



1. Hard case
2. Torch
3. Wrist mount
4. Charger
5. Batteries
6. Lanyard
7. O-rings
8. Lube
9. Instructions

Varilux 3500 lumen's Super powerful aluminium torch

The Varilux 3500's output is, you guessed it, an incredible 3500 lumens. This output is supplied by four CREE XM-L2 LEDs.

Output is varied with the top-mounted magnetic slide switch. You're good for one and a half hours of burn time on the highest setting and 40 hours on the lowest setting.

Just like the other torches in the Varilux family, the Varilux 3500 is manufactured from aircraft grade aluminium and is supplied with rechargeable batteries and a useful carry case.

What's included?

- 26650 battery (x2)
- 26650 battery charger
- Spare O ring
- Tail cap lubricant

- 200 - 3500 lumen's
- Burn time (high): 1.5 h
- Burn time (low): 40 h
- 1000m (Beam Distance)
- 90000cd (Peak Beam Intensity)
- 0.5m (Impact Resistant)
- 100 meters (depth tested)
- Anodised aircraft 6061 aluminium
- LED: 4x CREE XM-L2
- LED lifespan: 100000 h
- Brightness: 3500 lm
- Mode: High/dimming
- Battery: 26650 3.7 V, 4000 mAh
- Magnetic slide switch
- Lens: Coated glass lens
- Size: 217 x 69 x 130 mm
- Weight (torch): 586g
- Weight (torch+batteries): 772g
- Weight (torch, batteries and charger): 924g

**VARIABLE
BURNTIME HOURS**
1.5 ← TO → 40

LUMENS
LOW - 200
HIGH - 3500

**RECHARGEABLE
BATTERY**

Length: 217mm
Reflector: 69mm



Visit our website www.ndiver.com/varilux-3500-torch



4x CREE XM-L2 LEDs

Magnetic sliding switch

Batteries removed from the bottom

All underwater lights & torches depth tested to 100m.

varilux^{FAMILY}

Varilux Travel (Rechargeable) 1000 lumen's dive torch

The new Varilux Travel has an increased output, useful new features and the same car charging capability that made the original Varilux Travel so popular.

The Varilux Travel II R's output is controlled via a magnetic induction switch. Pressing once switches the light on at full power – 1000 lumens' worth. At this point, output can be gradually decreased by pressing and holding the switch. When the required output is reached, releasing the switch will maintain this output. Pressing once more switches the light off.

What's included?

- Intelligent USB battery charger with car adapter
- 26650 rechargeable Li-ion battery (3.7V, 4000 mAh)
- Lanyard
- Spare O-ring
- Tail cap lubricant

- 80 - 1000 lumen's
- Burn time (high): 2h
- Burn time (low): 40h
- 1000m (Beam Distance)
- 30000cd (Peak Beam Intensity)
- 1m (Impact Resistant)
- 100 meters (depth tested)
- Anodised aircraft 6061 aluminium
- LED: 1x CREE XM-L2
- LED lifespan: 100000 h
- Brightness: 1000 lm
- Mode: High/dimming
- Battery: 26650 3.7V, 4000 mAh
- Magnetic slide switch
- Lens: Coated glass lens
- Size: 161 x 45 mm
- Weight (torch): 232g
- Weight (torch+batteries): 324g

VARIABLE
BURNTIME HOURS
2.0 ← TO → 40

LUMENS
LOW - 80
HIGH - 1000

RECHARGEABLE
BATTERY

Length: 161mm
Reflector: 45mm



Full power



20% power remaining



Battery fits in tail cap



In car charging



Visit our website: www.ndiver.com/varilux-travel-2-1000-lumen-rechargeable-torch

Varilux Micro 800 lumen's aluminium torch

The new Varilux Micro is rechargeable and capable of producing 800 lumens for 1.5 hours. Being part of the Varilux family, the Varilux Micro R of course has a variable output, producing the lowest output of 80 lumens for 24 hours. Like other models in the range, output is varied via the top-mounted magnetic slide switch.

Producing much more power than its small and slim profile might suggest, you may wish to use this torch as either a backup or primary lighting source.

What's included?

- Xtar MC1 Plus Intelligent USB battery charger
- 18650 rechargeable Li-ion battery (3.7V, 2200 mAh)
- Lanyard
- Spare O-ring
- Tail cap lubricant

- 80-800 lumen's
- Burn time (high): 1.5h
- Burn time (low): 24h
- 500m (Beam Distance)
- 20000cd (Peak Beam Intensity)
- 1m (Impact Resistant)
- 100 meters (depth tested)
- Anodised aircraft 6061 aluminium
- LED: 1x CREE XM-L2
- LED lifespan: 100000 h
- Brightness: 800 lm
- Mode: High/dimming
- Battery: 18650 3.7V, 2200 mAh
- Magnetic slide switch
- Lens: Coated glass lens
- Size: 147 x 35 mm
- Weight (torch): 153g
- Weight (torch+batteries): 197g

VARIABLE
BURNTIME HOURS
1.5 ← TO → 24

LUMENS
LOW - 80
HIGH - 800

RECHARGEABLE
BATTERY



Visit our website www.ndiver.com/varilux-micro-r-torch

Length: 147mm
Reflector: 35mm



Moulded textured grip handle



Intelligent USB battery charger



Left to right: lube, torch and charger



Variable magnetic slide switch

Underwater Lighting With Batteries

Fusion X4 310 lumen's dive torch

Our Luxeon underwater torch, with cutting-edge technology and excellent build quality.

- Super high 310 lumen's output
- Natural daylight colour temperature 5300K
- 8.5hr total continuous burn time
- New optically enhanced reflector
- Philips Lumileds T3w Luxeon LED
- Depth tested to 95 metres
- Tough poly carbonate body with aluminium head
- Double O-ring seals
- External magnetic on/off switch
- 4 x AA alkaline batteries (supplied)
- Weight : 0.462kg
- Packed dimensions : 6x6x18cm



Magnetic on/off switch



Aluminium torch head

Visit our website www.ndiver.com/fusion-x4-torch

Mini Quest 230 lumen's - pure power!

Long burn underwater LED torch is now even brighter - 230 lumens output. 100% full power output for 3.5hrs, which then gradually decreases over the remaining 5hrs burn time.

- Powerful 'spot' beam
- 8.5hr total continuous burn time using specially developed variable output technology
- NEW Philips Lumileds 3w Luxeon LED
- Depth tested to 95 metres
- Tough poly carbonate body with an aluminium torch head
- Double O-ring seals
- Magnetic on/off switch
- 4 x AA alkaline batteries (supplied)



Available with red and white diffusers



The Mini Quest can be used in conjunction with our Scorpion II helmet. Side mounted clips on both sides of the helmet fit the torch

Visit our website www.ndiver.com/mini-quest-torch



170mm

Northern Diver Specialist Masks



Also available in metallic, purple & green
Full range of Apollo products at
www.apolloscubadiving.uk

apollo BIO METAL PRO MASKS

- Strong, slim-line Aluminium Frame
- Soft Silicone Skirt
- One-touch buckles for easy adjustment
- Low 100cc volume
- Slim centre pillar for increased field of vision
- Supplied with a plastic box



PHANTOM CLEAR VISION MASK

- Rounded lens gives a superb field of vision
- Coated lenses
- Anti-fog technology
- Soft silicone facial skirt and strap
- Double feather-edge seal for comfortable fit
- Patented push-button adjustment buckles
- Supplied with a plastic box



4 WINDOW (413) MASK

- Unique twin split lens design
- Panoramic field of vision
- Surgical grade silicone
- Fits a wide range of face shapes
- Supplied with plastic box
- Available in a range of colours



MILITARY (235) MASK

- Twin extended lens
- Low volume design
- Excellent field of vision
- Surgical grade silicone
- Fits a wide range of face shapes
- Supplied with a plastic box



DEEP VISION MASK

- Twin extended lens
- Low volume design
- Extended field of vision
- Surgical grade silicone
- Fits a wide range of face shapes
- Supplied with a plastic box



Visit our website www.ndiver.com/diving-equipment/masks

Northern Diver Specialist Masks & Snorkels

PRO VISION 'GO PRO' MASK

High performance, innovative designed diving mask, offers a unique diving experience to users allowing them to shoot wonderful underwater scenes. The mask features an integrated three-prong mount for attaching your sport camera.

The ergonomic mount ensures no contact of camera with forehead.

Suitable for all adult faces, its optimal sealing ensures a perfect waterproof performance due to the flex and soft silicone skirt

Film underwater adventures from diver's perspective Super-soft black silicon skirt Tempered glass lenses for added impact resistance Adjustable buckle for comfortable fit and seal Compatible with: GoPro Hero 2 3 3+ 4/ Xiaoyi/ Sony AS15 AS30 Available in black colour only.

Please note: camera is not included



Visit our website www.ndiver.com/pro-vision-mask



DRY TOP PURGE

- Hinged valve
- Quick-release clip
- Crystal silicone flex section
- One way purge valve
- Various colour options

SNAKEHEAD

- Splash guard
- Replaceable mouthpiece
- Drop away non return valve
- Flexi-tube
- Various colour options

DUAL FLEX

- Twin coiled silicone hose
- Self draining regulator
- Silicone mouthpiece
- Adjustable mask clip
- Various colour options

Visit our website www.ndiver.com/diving-equipment/snorkels

Northern Diver Fins

Visit our website
www.ndiver.com/coda-dual-fins



Capernwray,
Carnforth, UK



CODA SPLIT FINS

Standard Military Issue

High power is delivered through these fins, with less effort required from the diver.

The patented design allows water flow to interact with each fin blade, producing independent thrust from each fin. The fins also produce thrust on each up AND down stroke, improving finning efficiency.

The polymer was developed to ensure a stronger fin action in currents. The elastomer has a soft feel, with good spring, and retains its unique shape even in arctic waters.

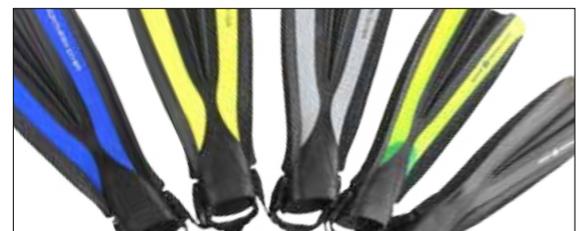
- Patented dual split-fin design
- Unique 'nature's wing' shape
- Superb power and performance
- Heavy duty build quality
- Efficient finning on up/down strokes
- Lightweight
- Boot size:
 - M fits 4-6 UK
 - L fits 7-10 UK,
 - XL fits 11+ UK



POWER FINS

Twin blades joined with a soft middle section, allowing independent movement of each blade.

- Powerful thrust with easy manoeuvring
- Comfortable foot pocket
- Adjustable fin straps
- Available in a range of colours
- Boot size: S, M, L, XL, XXL



Visit our website www.ndiver.com/power-fins

BCDs - 20 Year's Of Excellence



GUARDIAN

- Build: 1680D/1000D nylon
- Dry weight: 3.9kg (M), 4kg (L), 4.3kg (XL)
- Lift: 12.2kg (M), 22.4kg (L), 27.5kg (XL)
- Ergonomically designed power inflator system
- 3 pull dumps: shoulder, power inflator and kidney
- 13 D-rings: 9 stainless steel, 4 CETL plastic
- 2 integrated quick-release weight pockets
- Weight pocket capacity: 4kg lead block, 5kg lead shot
- 2 rear trim weight pockets (2kg lead block/2.3kg lead shot)
- Single cylinder housing
- Removable pocket for the Northern Diver Flexi-Light
- 2 large zipped pockets

FLIGHT



- Lightweight and perfect for diving holidays abroad
- Build: 420D nylon
- Dry weight: 2.7kg (M), 2.7kg (L), 2.9kg (XL)
- Lift: 12.2kg (M), 22.4kg (L), 27.5kg (XL)
- Ergonomically designed power inflator system
- 3 pull dumps: shoulder, power inflator and kidney
- 15 CETL plastic D-rings
- 2 integrated quick-release weight pockets
- Weight pocket capacity: 4kg lead block, 5kg lead shot
- Single cylinder housing
- Removable pocket for the Northern Diver Flexi-Light
- 2 large zipped pockets

eve



- Build: 1680D/420D nylon
- Dry weight: 3.2kg (S), 3.4kg (M), 3.6kg (L), 3.8kg (XL)
- Lift: 11.2kg (S), 13.2kg (M), 14.2kg (L), 16.3kg (XL)
- Ergonomically designed power inflator system
- 3 pull dumps: shoulder, power inflator and kidney
- 12 D-rings: 6 stainless steel, 6 CETL plastic
- 2 integrated quick-release weight pockets
- Weight pocket capacity: 4.5kg lead block, 5.5kg lead shot
- 2 rear trim weight pockets (2kg lead block, 2.3kg lead shot)
- Single cylinder housing
- Removable pocket for the Northern Diver Flexi-Light
- 2 large zipped pockets

Visit our website www.ndiver.com/bcds-buoyancy-control-devices



WEIGHT & TRIM HARNESS

A unique approach to managing weight and buoyancy allowing fine tuning your weight distribution.

- Padded shoulder straps for increased comfort and support
- Independent quick-release weight system
- Includes 2 detachable thigh pockets with drains
- Each weight pocket is capable of holding up to 9kgs
- Suitable for lead block or lead shot
- S / M (34 - 44" chest - measured over a suit)
- L / XL (44 - 54" chest - measured over a suit)
- XXL (Over 54" chest - measured over a suit)

For more photos and full details of the weight and trim harness visit www.ndiver.com/weight-trim-harness

Visit our website www.ndiver.com/weight-trim-harness



TECHNICAL DIVERS SIDEMOUNT

We have already received excellent feedback from divers testing the Side Mount.

This type of BCD is preferred by those who want their diving cylinders mounted by their side, rather than on their back. You will also receive the necessary equipment for mounting up to two cylinders. Available in one adjustable size.

- Build: 1680D nylon
- Dry weight: 4.2kg
- Lift: 18.3kg
- Ergonomically designed power inflator system
- Kidney pull dump
- 10 stainless steel D-rings
- 2 rear trim weight pockets (2kg lead block, 2.3kg lead shot)
- Adjustable buckled webbing waist strap
- Adjustable webbing crotch, chest and shoulder straps
- Neoprene-padded shoulder straps and back rest
- Subtle reflective piping on wing back panel
- Removable bungee cord with split ring attachment point
- Removable zipped access bag
- Supplied with Northern Diver carry bag
- Rigging kit
- 2 Reinforced webbing cylinder cam bands
- 4 snap bolts and 2 bungee cords, bungee cords have snap bolts at one end and quick links at the other

Visit our website www.ndiver.com/42lb-side-mount

NORTHERN DIVERS 5TH GENERATION HYDRA REGULATOR

Hydra Regulator CE marked & approved to EN250-A

The Hydra regulator is designed and tested for cold water use and more extreme diving.

The Hydra is supplied with regulator case and computer case, and it's available with a DIN or A-clamp connection. See below for the regulator's specification.



What's included with the HYDRA?

Second stage (orange)

Emergency auxiliary second stage (octopus-yellow)

Environmentally sealed first stage: DIN convertor supplied as standard, option for A-clamp upon request

Regulator case and computer safe.



Visit our website www.ndiver.com/hydra-din-regulator-set
(or) www.ndiver.com/hydra-a-clamp-regulator-set

Northern Diver Gauges

ALL GAUGES
INCLUDE HOSES



CLASSIC CONTENTS

0 - 450 bar contents gauge with built-in thermometer. 63mm face size.

Hose length 32"/81cm.

INST 1



COMPACT CONTENTS

A 400 bar compact contents gauge.

42mm face size.
Hose length 32"/81cm.

INST 10



CLASSIC CONTENTS & DEPTH

Console includes a 450 bar contents gauge with built-in thermometer and 80 metre MDI depth gauge with calibration wheel. 63mm face size.

INST 3



COMPACT CONTENTS & DEPTH

Compact console with a 400 bar contents gauge and 70 metre MDI depth gauge. 42mm face size. Hose length 32"/81cm.

INST 12



CLASSIC CONTENTS, DEPTH & COMPASS

2+1 console - 450 bar contents gauge with built-in thermometer, 80 metre MDI depth gauge, compass and bezel. Hose length 32"/81cm. 63mm face size.

INST 4



COMPACT CONTENTS, DEPTH & COMPASS

Compact 2+1 console including 400 bar contents gauge, 70 metre MDI depth gauge, compass and bezel. 42mm face size. Hose length 32"/81cm.

INST 13



CLASSIC CONTENTS & COMPASS

Console includes 400 bar contents gauge. Complete with swivel-hose, compass and bezel. 40mm face size. Hose length 32"/81cm.

INST 2



COMPACT CONTENTS & COMPASS

A compact console with a 400 bar contents gauge, compass and bezel. 42mm face size. Hose length 32"/81cm.

INST 11

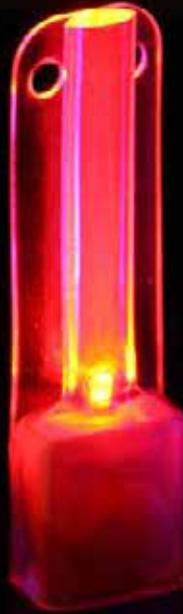
NORTHERN DIVER

flexi-light

www.flexiblelightsticks.com

2
MODES

Mode 1 Flash
36 hrs burn time
Mode 2 Constant
20 hrs burn time



FLEXIBLE
GLOW
STICK

PRESS
TO
OPERATE

HIGH
INTENSITY
LED

FIVE
COLOURS
+ IRR

DEPTH
RATED
60M



CHOOSE FROM 3 OPTIONS OF FLEXI-LIGHT STICKS

1



Flexi-Light with separate 3M™ adhesive tape

2



Flexi-Light with attached hook fastening

3



Flexi-Light with removable nylon clip

www.ndiver.com | +44 (0) 1257 25 44 44 | info@ndiver.com

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