

BARE

MAY 2016
DRYSUIT MANUAL

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Reference Standards
EN 14225-2:2005

RINA Test Laboratory (notify body no.0474)

CE TYPE EXAMINATION CERTIFICATE
CERTIFICATE Nr. PPE334805CS

Maximum Depth:
Approved up to 200mt (656 ft)

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This manual reflects correct and current information about BARE drysuits as of December 2011. For your own safety and to ensure you are following the most up to date information and advice, please refer to www.baresports.com.

Les informations dans ce manuel sont courantes et exactes à partir de décembre 2011 aux spécifications des combinaisons étanches BARE. Pour s'assurer de votre sécurité et que vous suivez les informations et les avis courants, prière de vous référer à notre site web www.baresports.com

Ce manuel est aussi disponible en Français.

BARE

THE RIGHT PURCHASE

Thank you for purchasing a BARE drysuit. You should feel confident that it will provide you with many years of satisfaction. Our level of commitment is exemplified by the quality of workmanship of your new drysuit and our ability to offer a Lifetime Guarantee on it. It is our goal to ensure that everything we do is Done Right. That means continuing to exceed your expectations through unparalleled customer service, new product offerings and continued market innovations like our Guarantee.

Dive safely and enjoy yourself!

OUR COMPANY

For over 40 years BARE has been designing and producing wetsuits and drysuits for SCUBA diving, watersports, offshore safety and survival industries. Today, BARE is distributed and sold in over 54 countries making it a global leader in aquatic exposure protection. Headquartered on the coast of British Columbia, consistently voted the best coldwater diving in the world, BARE has easy access to extreme conditions that provide a demanding environment for testing products.

At BARE we constantly strive to advance the technology used to produce our products, so you can comfortably enjoy your favorite activity in the water even under the most extreme conditions.

BARE'S LIFETIME GUARANTEE

BARE is the **first and only drysuit** manufacturer to offer a Lifetime Guarantee on seams and workmanship. BARE will honor all seams and workmanship claims outside of normal wear and tear, misuse or negligence for the life of our drysuit - even if your customer is not the original owner. We stand behind our workmanship like no one else, because you and your customers deserve a product like no other.

DEFINITIONS

Certain aspects of SCUBA diving in general and SCUBA diving using a drysuit in particular can be inherently hazardous if ignored or misunderstood.

BARE uses certain captions throughout this DRYsuit MANUAL to emphasize the importance of following guidelines.

!!! DANGER !!!

Refers to an immediately dangerous situation that if not averted will result in death or serious injury.

!! WARNING !!

Refers to a potentially dangerous situation that if not averted could possibly result in death or serious or damage to the drysuit that could possibly result in death or serious injury.

! IMPORTANT !

Refers to a potentially dangerous situation that if not averted may result in minor to moderate injury or damage to the drysuit.

If there is any information in this manual that you do not understand, is unclear, or you feel is insufficient, please contact your nearest BARE dealer, or a BARE CUSTOMER SERVICE REPRESENTATIVE.

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CONSTRUCTION MATERIALS & METHODS

BARE offers divers a series of drysuits manufactured from a wide range of materials including Neoprene, Butyl Trilaminate and Polyurethane. This range offers the diver the choice of basic suit material and construction that best meets his or her requirements.

NEOPRENE

Neoprene is a man made rubber compound that when combined with the correct fabric laminates provides an excellent material for drysuits with stretch and durability. BARE offers three options in Neoprene material: compressed, compressed-density and standard.

Why compress Neoprene? Standard closed-cell neoprene foam sheets incorporate millions of very small gas filled cells or "bubbles" that incorporate inherent buoyancy and thermal insulation into the product. According to Boyle's Law - one of the fundamental physical principles that must be understood by all divers - "The volume of a gas is inversely proportional to the surrounding pressure".

The effect of Boyle's Law on the gas in the closed cells in neoprene sheets is that when ambient pressure increases on descent, the bubbles shrink due to compression and lose a percentage of the buoyancy and thermal insulation they provided at the surface. For divers this means that the undergarment they are wearing may well have been quite sufficient at the surface where the neoprene is full thickness, but at depth is not providing enough insulation to keep them warm.

Compressing the neoprene sheets at the factory before the suit is manufactured permanently alters the cell structure so that the effect of pressure at depth on the already compressed cells is reduced and in the case of the 2mm hyper-compressed product, almost eliminated. Now the suit itself varies very little in buoyancy and thermal efficiency at depth and acts more like a membrane or shell style suit with the advantage that some thermal protection and stretch always remains.

It is important to note that the air or gas present in the internal volume of the suit not occupied by the diver is still subject to Boyle's Law, and regardless of suit materials and construction will be compressed at depth. This loss of internal volume will also result in a loss of buoyancy as depth increases and the diver will experience "suit squeeze" (Similar to being "shrink wrapped"). To compensate for this, air or gas will always have to be added to the suit on descent, and removed as it begins to re-expand on ascent. Another factor of overall buoyancy control when diving is that the SCUBA tank itself gains several pounds of positive buoyancy as the air or gas mix inside is consumed throughout the dive. The diver must compensate for this.

2mm Compressed Neoprene. (Featured in XCS2 drysuits)

Following our specifications, the neoprene manufacturer first produces sheets of thick 7mm neoprene. These are then placed in a machine that uses a combination of heat, time and mechanical pressure to compress the 7mm sheet all the way down to 2mm thick. Then the inner and outer fabrics are laminated to the foam providing comfort inside and durability outside.

This extreme compression from 7mm to 2mm gives the material our best option for stability of inherent buoyancy and thermal insulation with varying depth, allowing the diver to choose the correct degree of thermal efficiency in the undergarment option for the specific dive being planned.

This neoprene is an excellent choice for deeper dives.

4mm Compressed Density Neoprene. (Featured in CD4 drysuits)

Compressed Density 4mm neoprene is not the same as compressed neoprene. A different process using an altered chemical formula results in a very dense foam, that although not compressed from a thicker original sheet, still offers a greater degree of compression resistance than the standard foam product.

This neoprene is excellent for people who dive for pleasure or work in medium range depths.

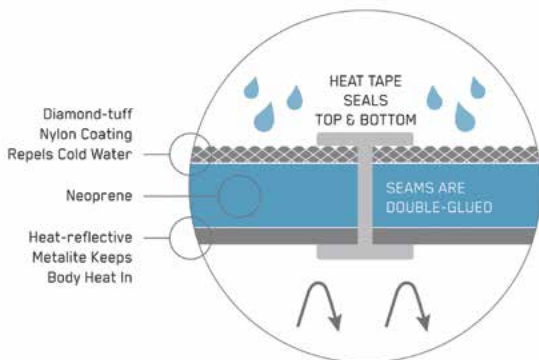
6mm Standard Neoprene. (Featured in D6 drysuits)

BARE is all about choice. Drysuits that utilize conventional non-compressed neoprene have been an industry standard for many years, and BARE heavy duty drysuits have been the work horse of the professional and commercial diver for decades. Even though the neoprene is less stable in buoyancy and thermal efficiency with increasing depths, many experienced divers still prefer the feel and fit of a conventional neoprene suit.

This material provides maximum thermal protection for commercial divers working for long periods in shallow to medium range depths.

**Illustration:
BARE
neoprene (NST)
construction.**

NO STITCH TECHNOLOGY (NST) This new technology makes suits without a single stitch. Instead, seams are double-glued and heat taped inside and out. This BARE exclusive delivers superior performance and maximizes the life of your drysuit.



LAMINATE FABRICS

Butyl is a synthetic rubber, or elastomer, that is an excellent choice for drysuit membranes as it is impermeable to air, resistant to many chemicals and remains flexible even at very low temperatures.

BARE assembles our Trilaminate suits using a “felled” seam – the strongest kind of seam we can produce. A special folder rolls the two seam sides together, then sews them securely using a double needle machine. Then we incorporate our proprietary seam taping technology to provide a waterproof seam so reliable we Guarantee it for Life.

- a) Antron nylon/high tenacity nylon/spandex outer shell, waterproof stretch breathable polyurethane membrane and nylon interior lining. (featured in the SB SYSTEM drysuit)

Exclusive to BARE, this STRETCH BREATHABLE trilaminate fabric breathes and stretches offering incomparable comfort and flexibility underwater and a balanced body temperature on the surface.

- b) High Tenacity Nylon/Butyl/ Polyester Trilaminate.
(Featured in Trilam HD Tech dry suits and Trilam HD Pro dry suits)

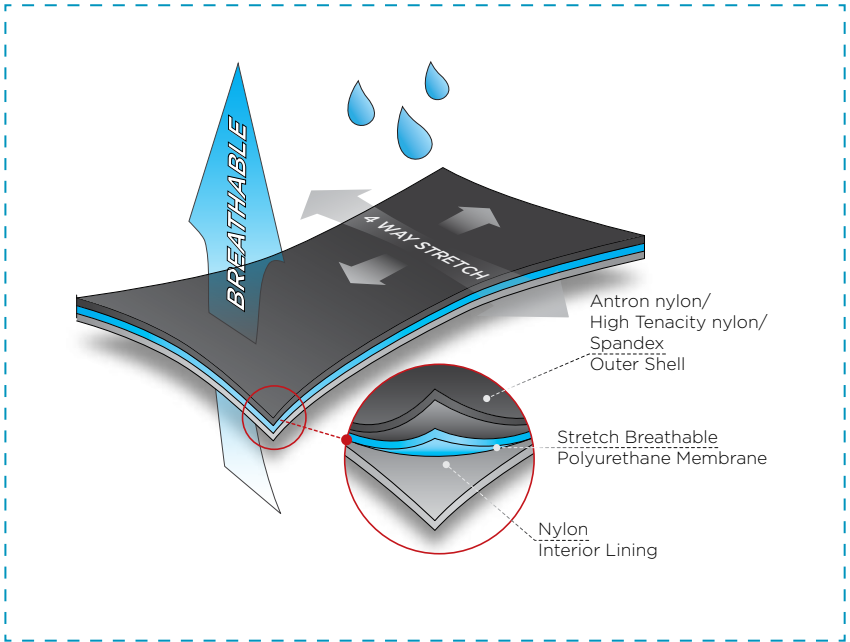
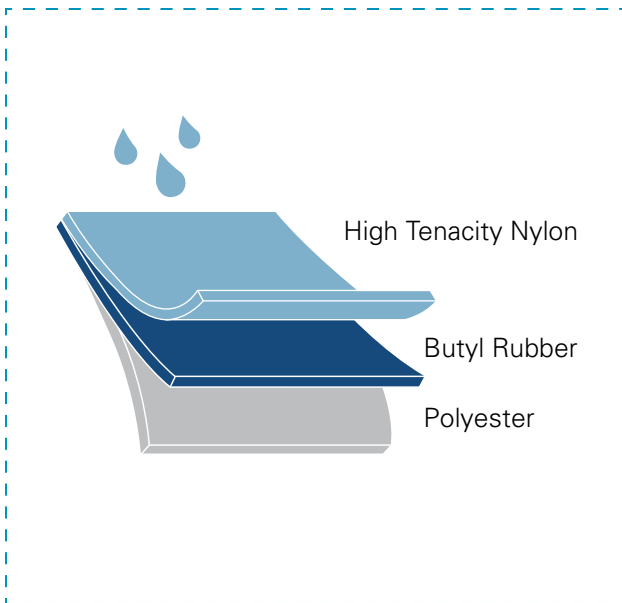


Illustration: BARE SB SYSTEM Fabric.

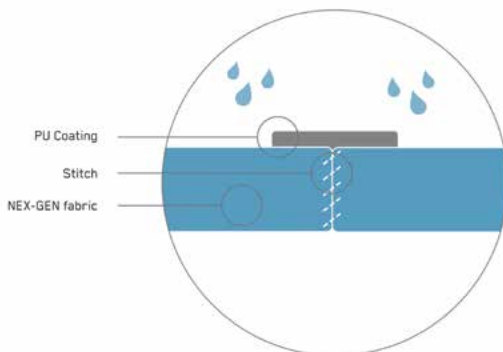
This fabric is constructed of a layer of Butyl rubber sandwiched between and inner layer of nylon, and an outer layer of extremely durable Cordura material. This is our strongest, toughest suit material.



**Illustration:
BARE
Trilaminat
Fabric.**

**Illustration:
BARE
Bilaminat
(SWT)
construction.**

SEAM-WELDED TECHNOLOGY (SWT) Using hot air, a polyurethane coated tape is applied to a sewn seam. This activates the glue on the tape, combining the seam and tape into a weld. The combination actually becomes stronger than the surrounding material—creating an unbreakable seam.



c) **Bilaminate Fabric**

(Featured in NEX-GEN drysuits)

The Nex-Gen suit is made from a rugged but comfortable nylon inner layer, with an extremely durable embossed Polyurethane laminate on the exterior. Seam construction uses our tried and true Flatlock method, taped on the outside with PU tape using our Seam Welded Technology. This seam is also Guaranteed for Life.

WATERPROOF ZIPPER

BARE offers the choice of drysuits with front (TECH DRY) or shoulder (PRO DRY) entry zippers. Donning and doffing procedures for each style of drysuit are different.

!!! DANGER !!!

It is extremely important to handle the zipper with care when entering a diving drysuit of any kind. Spreading the open ends too far can damage the zipper.

Always lubricate the zipper with the supplied lubricant. This reduces friction and corrosion and helps prolong the life of the zipper. Replacing the zipper in a diving drysuit is an expensive procedure.

!! WARNING !!

Only pull the slider in a direction parallel to the zipper chain. Do not pull the slider to either side or away from the suit.

This puts a great deal of strain on the teeth and over time could cause the teeth to loosen.

!! WARNING !!

Pull the slider closed slowly. If you feel undue resistance closing the zipper. DO NOT FORCE IT!

Ensure that drysuit undergarments and zipper flaps do not interfere with the zipper slider as it is being closed.

Grasp the slider loop with your index finger and insert your middle finger between the slider and inner zipper flap or undergarment. This assures that the slider is isolated from the undergarment material and prevents it from getting caught. You will find that donning your drysuit will soon become easy and straightforward. You must always be careful not to put unnecessary stress on the zipper or seals.

CONFIGURATION OPTIONS

NECK SEAL OPTIONS

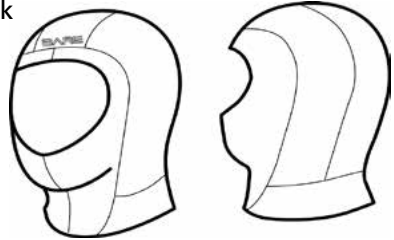
a) Neoprene 3mm N1S Fold Over Neck Seal

! IMPORTANT !

Folding over the neoprene neck seal creates the watertight seal.

Fold the neoprene neck seal inward about 2 ½ to 3 ½ inches so that the smooth skin surface is next to your skin. Ensure no hair or clothing extends under the neck seal.

If your drysuit is equipped with a neoprene warm collar, tuck the neck portion of your Drysuit Hood under the collar for the warmest, driest fit.



b) Latex and Silicone Neck Seals

!! WARNING !!

Never use your fingernails and always use caution when pulling on the neck seal. Do not pull on the thin sealing layer as it might tear with excessive force or become damaged by your fingernails.

! IMPORTANT !

It is not necessary or recommended to fold over seals.

You will notice that there are concentric circular raised ridges near the top of the neck seal. This is to adjust the sizing if it is too tight.

Carefully cut off one section at a time with a sharp pair of scissors until the neck seal is still snug, but not uncomfortable.

! IMPORTANT !

Cutting off too many rings will render the neck seal too big for you, and will leak. The only solution is replacement of the neck seal.

WRIST SEAL OPTIONS

a) Neoprene 3mm N1S fold over wrist seals

! IMPORTANT !

Folding over the neoprene wrist seal creates the watertight seal.

After pushing your hand all the way through, fold over the wrist seal. Pinch the neoprene of the wrist seal between your index finger and thumb about an inch or so up from your hand. Pull the material away from your wrist and using your middle finger tuck in about 1 ½ to 2 inches of the wrist seal.

Repeat the process around the entire circumference of the seal. You will notice that if you tuck in more of the material, the seal around your wrist will become tighter. If you dive with the suit and find that water is entering the suit through the wrist seals, try tucking in more of the wrist seal.

b) Neoprene 5mm N1S Straight Through Seals

! IMPORTANT !

The 5mm straight through neoprene wrist seal creates the watertight seal WITHOUT BEING FOLDED OVER.

If your BARE dry suit is equipped with 5mm N1S straight through seals, the skin surface is on the inside of the seal, facing your own skin. This skin-to-skin seal is effective, quick and simple, requiring no fold over procedure. Simply push your hand through the seal, and ensure no clothing or underwear is caught underneath the seal. If it is difficult, talc powder or soapy water will lubricate the seal.

c) Latex or Silicone Wrist Seals

!! WARNING !!

When positioning latex wrist seals be careful not to use your finger nails and always use caution when pulling on the seal. Do not pull on the thin sealing layer as it might tear with excessive force or become damaged by your fingernails.

! IMPORTANT !

It is not necessary or recommended to fold over latex or silicone seals.

Coat the inside of your seals with talc from the provided talc bag. Talc reduces friction and will help with sliding your hand through the seal.

Once the seal is over your hand and positioned on your wrist, remove any folds and wrinkles so that the seal is smooth and lays flat on your wrist with the end of the seal just over the wrist bone.

d) Dry Gloves, Quick Clamp Set, Glove Lock Set, Cuff Ring Set

!! WARNING !!

If your suit is equipped with Dry Gloves, Quick Clamp Set, Glove Lock Set, Cuff Ring Set, please refer to the instructions included with those products.

BOOT OPTIONS

Heavy Duty Attached Boots

Many divers prefer a full thickness heavy-duty boot that is permanently attached to the suit. The BARE Boot provides a rugged outsole and stable platform for a variety of terrain. The HD BARE Boot comes standard on many BARE drysuit styles.

4mm Compressed-density Attached Socks & TREK Boots

An option worth considering is to have your BARE drysuit equipped with neoprene “soft boots” while also purchasing the BARE Trek Boot. The Trek Boots are specifically designed to accommodate the soft boots, ensuring the most comfort and protection. The TREK boot provides ankle support and a solid sole on land and fits well into most strap style fins. A combination of lace up front and a Velcro closure at the ankle helps prevent any excess air or gas from entering the foot area while diving.



This option offers the ability to completely turn the lower leg of the suit inside out, speeding up the drying process after rinsing the suit.

BARE "PRO DRY" DRYSUITS

XCS2 Pro Dry • CD4 Pro Dry • D6 Pro Dry
• Trilam HD Pro Dry • NEX- GEN Pro Dry

DONNING INSTRUCTIONS

! IMPORTANT !

Refer to the pages in the manual that describe and explain the specific style of neck and wrist seals, or cuff rings and gloves, as well as the boot options that are specific to your suit. Read and understand the instructions regarding the correct procedures for donning, doffing, care and maintenance of your option choices before proceeding further.

!!! DANGER !!!

Failing to understand the correct procedures can result in damage to the suit, component failure during the dive, and serious or fatal injury.

Ensure the waterproof zipper across the shoulder is completely open. Step into the suit with one leg and pull the boot all the way onto your foot and then work the suit leg up to your thigh. Do the same with the other leg. ***Do not put excessive force on the zipper ends.***

Pull the suit up until the arms and neck seal hang at chest level making sure that the suit is pulled all the way up in the crotch and waist area.

Once the suit is properly positioned from the chest down, pull the suit up to neck level, grasp the wrist segment of the undergarment, and slip one arm into the sleeve of the suit. Let go of the sleeve of the undergarment just as your hand reaches the wrist seal. Ensure no portion of the undergarment extends under the wrist seal of the suit. Repeat with the other arm.

! IMPORTANT !

When putting your arms into the suit do not put excessive force on the zipper.

Holding the suit by the upper edge of the zipper with one hand on each side of the neck seal, bend your head forward and pull the neck seal over your head. Straighten up and let the neck seal slide down completely over your head.

! IMPORTANT !

Use the palms of your hands to help slide the neck seal all the way down under your chin. Never use your fingernails.

Closing the Shoulder Entry Zipper

! IMPORTANT !

Never attempt to close the shoulder entry zipper by yourself.

Always ask your buddy to assist with closing the zipper of your shoulder entry drysuit. Provide these instructions to your buddy to ensure they understand the correct procedures. After several uses you will find closing and opening the zipper will become much easier.

! IMPORTANT !

Only pull the slider in a direction parallel to the zipper chain. Do not pull the slider to either side or away from the suit.

This puts a great deal of strain on the teeth and over time could cause the teeth to loosen.

! IMPORTANT !

Pull the slider closed slowly. If you feel undue resistance closing the zipper. DO NOT FORCE IT!

Ensure that drysuit undergarments and zipper flaps do not interfere with the zipper slider as it is being closed.

Grasp the slider loop with your index finger and insert your middle finger between the slider and inner zipper flap or undergarment. This assures that the slider is isolated from the undergarment material and prevents it from getting caught.

You will find that donning your drysuit will soon become easy and straightforward. You must always be careful not to put unnecessary stress on the zipper or seals.

DOFFING INSTRUCTIONS

Ask your buddy to carefully open the main waterproof zipper

! IMPORTANT !

When doffing a shoulder entry drysuit do not put any excessive force on the ends of the zipper.

Once the suit is down to your knees, withdraw your legs from the suit one at a time.

Try not to let the upper portion of the suit drag on the ground while withdrawing your legs from the suit.

Be cautious when doffing not to step on the wrist seals or zipper. Standing on a dry clean mat when removing your suit keeps your feet dry and prevents any dirt from the ground contaminating the suit and zipper.

BARE "TECH DRY" DRYSUITS

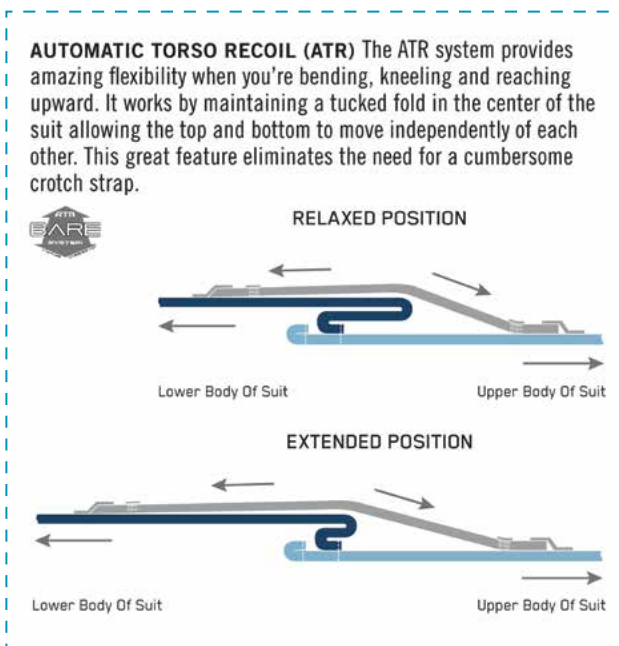
**X-Mission • HDC Expedition • Trilam HD Tech Dry • XCS2 Tech Dry
Trilam Tech Dry**

Many divers prefer the independence and convenience of self-entry drysuits. BARE Tech Dry suits offer this feature.

ATR (Automatic Torso Recoil) System Applies to Trilam HD Tech Dry

Front-entry drysuits require extra length in the torso to allow you pull the neck seal over your head without placing stress on your neck or over-extending the zipper opening. Extra length can be accomplished by BARE's patented ATR system, a traditional crotch strap, or the latest in advanced materials that provide a high degree of stretch. BARE's Trilam HD Tech Dry incorporates a unique and patented design that provides the extra material required for donning and doffing, while automatically controlling and retracting it while you are wearing the suit.

This suit is constructed with upper and lower sections. The lower half that extends almost up to the diver's chest incorporates extra material that is folded at the midsection. This fold is held in place by an internal elasticized waistband that is attached to the entire circumference of the suit at the upper and lower sections. The waistband allows the extra length to unfold when needed and to "recoil" back into a folded position when not needed. This action is automatic and does not require the use and frequent adjustment of suspenders and an external crotch strap. The design provides the extra length needed when donning a drysuit that requires the neck seal to be pulled over the back of the divers head



DONNING INSTRUCTIONS

! IMPORTANT !

Refer to the pages in the manual that describe and explain the specific style of neck and wrist seals, or cuff rings and gloves that are specific to your suit. Read and understand the instructions regarding the correct procedures for donning, doffing, care and maintenance of your seal choices before proceeding further.

!!! DANGER !!!

Failing to understand the correct procedure can result in damage to the suit, component failure during the dive, and serious or fatal injury.

Make sure the protective outer zipper cover is open completely and open the main waterproof zipper all the way. Enter the suit through the zipper, one leg at a time. Pull the suit as far up your leg as possible and then repeat with the other leg.

Pull the suit all the way on so that the two halves of the zipper chain rest across your chest in front and your shoulder blades in back.

First put your left arm into the sleeve using your right hand to help lift the zipper chain over your left shoulder. Go slowly and methodically and do not put excessive force on the zipper. You may find it easier to bend your knees slightly while lifting the zipper over your left shoulder.

Push your left hand through the wrist seal while holding the sleeve close to the wrist with your right hand. Once your fingers are through the wrist seal (use the fingers of your right hand) push the seal over your left hand. At this point the neck seal should be directly behind your head.

Now put your right arm (elbow first) through the zipper opening, extend it into the sleeve and bring the zipper over your right shoulder. Once you have positioned the wrist seal make sure the suit is pulled up in the crotch as high as it will go.

Position the zipper so that the upper chain (the one nearest the neck seal) is running across the back of your neck and the lower half, across your chest. The neck seal should be standing straight up behind your head. Bend your head forward and to the right as if you are attempting to touch your chin to your right collarbone.

Bending slightly at the knees, reach over both shoulders and take hold of the upper portion of the zipper so that one hand is on either

side of the neck seal. Pull the suit upward and forward at the same time. This will stretch the suit vertically using the extra length available in the midsection and the Automatic Recoil System.

When the neck seal is in position over your head, stand up straight and slide the neck seal as far as possible over your head. Using both hands, reach into the top of the neck seal and push it down over your head in a similar fashion as you pushed the wrist seals onto your hands. Position the neck seal and adjust it as you did with the wrist seals. Make sure that your hair and clothing are removed from under the neck seal.

To close the zipper, extend your chest outward and rotate your left shoulder backward slightly. This will help the zipper to lay flat along the length of your torso.

Holding the top of the zipper with your left hand, pull the slider in a downward direction that follows the zipper's natural orientation.

! IMPORTANT !

Only pull the slider in a direction parallel to the zipper chain. Do not pull the slider to either side or away from the suit. This puts a great deal of strain on the teeth and over time could cause the teeth to loosen.

! IMPORTANT !

Pull the slider closed slowly. If you feel undue resistance closing the zipper. DO NOT FORCE IT!

Ensure that drysuit undergarments and zipper flaps do not interfere with the zipper slider as it is being closed.

Grasp the slider loop with your index finger and insert your middle finger between the slider and inner zipper flap or undergarment. This assures that the slider is isolated from the undergarment material and prevents it from getting caught.

You will find that donning your drysuit will soon become easy and straightforward. You must always be careful not to put unnecessary stress on the zipper or seals.

DOFFING INSTRUCTIONS

Removing a front entry of any kind is similar to removing a pair of coveralls. The first step is to make sure the protective outer zipper cover and waterproof zipper are open all the way.

Unfold the neck seal so that the nylon inner surface is against your neck and rests just under your chin.

Insert your fingers of each hand between the neck seal and your neck on either side of your neck. With your fingers spread, stretch the neck seal outward while pulling upward and bringing your elbows together.

While pulling the neck seal straight up, bend your knees slightly and bend your head forward and out of the seal. At this point the suit will be in the same position as when donning the suit just before you put your head into the neck seal.

Withdraw your arms from the sleeves ***starting with the right arm.*** Begin by inserting the fingers of your left hand into the wrist seal of the right sleeve as far as possible.

Withdrawing your hand from the wrist seal is similar to removing the neck seal except only one hand is used to pull off the wrist seal. It is easier to remove the seal if your hand and the seal are dry.

With your fingers inserted into the seal, pull the seal in such a way as to increase its diameter while pulling it off your hand.

Do not try to remove the sleeve completely until the zipper is pushed over your right shoulder. Use your left hand to gently, and without stress to the zipper, push the zipper over your right shoulder.

Now reach behind your back with both arms and pull the right sleeve with your left hand. While pulling on the right sleeve work the suit off of your right shoulder and withdraw your arm from the sleeve. You may need to help the suit over your shoulder with your left hand a few times before you can remove your arm from the sleeve.

Repeat the procedure for removing the left sleeve. Once the suit is down to your knees, the boots can be removed by standing on the heel and withdrawing your legs from the suit one at a time.

Be cautious when doffing not to step on the wrist seals or zipper. Also, try not to let the upper portion of the suit drag on the ground while removing your legs from the suit. Standing on a dry clean mat protects the zipper from debris and keep your feet dry.

OPERATING THE INLET & EXHUAUST VALVES

! IMPORTANT !

Note: Please check to ensure your valves are screwed down tight on new drysuits.

Both valves have been mounted onto a urethane port, which maintains a watertight seal. This arrangement allows removal of either valve if necessary.

a) Inlet Valve

The orientation of the inlet valve nipple can be rotated 360 degrees to accommodate the orientation of the inflator hose that is configured on your regulator. The inflator hose uses a 3/8" thread to fit your regulator low-pressure port and should be installed by an authorized scuba technician.

Once your suit is zipped up, the seals are properly tucked in and before donning your SCUBA unit, you may want to add some air to the suit to expand it. This allows you to shift your body inside the suit and helps to let the undergarments move into a more comfortable position. Adding some air to your suit at this point can be done by connecting the inflation hose from your scuba unit to the inlet valve on your suit and depressing the button until sufficient amount of air has been added.

- Make sure that the quick-connect fittings on valve and hose are cleaned and free of any grit before attempting to connect.
- To connect the low pressure supply hose to the inlet valve, slide back the locking slider and push the hose onto the inlet valve connection nipple and release the locking slider. You should hear a click as the slider locks the hose to the valve.
- When connecting the inflate hose to the valve nipple, make sure that the hose is secure to the valve. If you pull on the hose without touching the locking slider and it comes free from the valve, it was not connected properly.
- Before donning the SCUBA unit, vent any excess air from your drysuit by squatting to force the air to the upper part of the suit and then depress the exhaust valve button.

Performing this entire pre-dive “ritual” is a habit among experienced drysuit divers because it helps to increase the pre-dive comfort of your suit and is a good way to confirm the valves are functioning properly before entering the water.

b) Exhaust Valve

All BARE diving drysuits are equipped with an adjustable automatic exhaust valve, which is designed to maintain a constant internal suit volume. If the valve is adjusted fully clockwise, the internal suit pressure will be allowed to reach its maximum before the valve vents. When the exhaust valve is adjusted fully counter clockwise, it will maintain a very slight increase in internal suit pressure and any excess air that is added to the suit will directly pass through the exhaust valve. Understanding the function of the exhaust valve is an important step in learning to use and control your new drysuit.

c) Descending

When you are surface swimming or wanting to maintain positive buoyancy, the exhaust valve should be adjusted fully clockwise. To descend, dump air from your buoyancy compensator and adjust the valve counterclockwise until you feel less buoyant and begin to descend.

! IMPORTANT !

Remember: To exhaust air from your drysuit, raise your arm to position the exhaust valve so that it is the highest point on the suit. This allows all of the air in your suit to flow to the exit point.

You can also manually dump the air from your suit by pushing on the button of the exhaust valve with your free hand. As you descend and the volume of air in your suit begins to decrease, add air by pushing the button of the inlet valve. At this point, you should look at the exhaust valve to see if the air you are adding is escaping. If it is, adjust the exhaust valve clockwise until the bubbles stop flowing. You will very quickly develop the ability to work the exhaust and inlet valves while descending.

d) Ascending

When ascending with the exhaust valve fully open, the exhaust valve will automatically vent air from the suit as the internal suit volume increases. This “hands-free” feature helps you keep your ascent rate relatively constant.

You may find that the air inside your suit can expand during a rapid ascent at a rate that exceeds the maximum “automatic venting” capacity of the exhaust valve. To avoid this situation, slow your ascent rate and manually vent the valve. Manual venting significantly increases the volume of air that the valve exhausts.

Once you reach the surface, adjust the exhaust valve clockwise so that you can maintain positive buoyancy. With a little practice and after a few dives, you will find that using the valves of your drysuit becomes second nature and you will quickly appreciate how comfortable diving in a BARE drysuit can be.

DRYSUIT CARE & MAINTANENCE

All BARE drysuits are produced using the highest quality materials with state of the art construction technology. The materials from which your drysuit is made have been developed specifically to withstand the demands of diving and the elements to which diving drysuits are exposed. There are, however, some basic care and maintenance considerations for your drysuit, which will greatly contribute to its life and function. ***We recommend your drysuit valves be checked annually, by an authorized SCUBA technician, to ensure proper function and performance.***

a) Zipper Care

!! WARNING !!

Always inspect the zipper for any foreign material that may affect its ability to close and create a watertight seal.

Before each dive lubricate the zipper, follow the instructions on the container of zipper lubricant supplied with your suit.

Open and close the zipper a few times after the lubricant is applied to the zipper chain. The friction caused by the slider traveling over the teeth heats the lubricant causing it to flow into the teeth

!! WARNING !!

Never use aerosol or petroleum based lubricants on your drysuit zipper. These products can adversely affect the zipper and suit materials.

b) After Diving

Close the zipper and rinse the outside of your drysuit with clean, fresh water. Rinse any of the inner surfaces that may have come in contact with salt water, such as the neck seal and wrist seals. Make sure that any sand, dirt, or gravel is washed away from the teeth of the zipper.

Open the zipper and hang the suit (if possible) over a piece of plastic pipe. A drysuit hanger can easily be made by passing a rope through a plastic pipe of about 3 to 4 inches in diameter and fastening both ends of the rope to an area where you can leave your suit to dry.

!! WARNING !!

Never leave your drysuit in direct sunlight. Ultraviolet radiation from the sun or florescent lighting will deteriorate neoprene and rubber materials (seals) very quickly. Prolonged exposure to direct sunlight will substantially lessen the life of all scuba equipment.

c) Drysuit Storage

The best way to store your drysuit is to leave it on its drying hanger in a cool, dry, dust-free area. If the suit must be stored otherwise; once it is **completely dry inside and out** lay it on the floor with the zipper facing downward. Turn the boots inward and loosely roll-up the legs and torso to the base of the neck seal. Bring the arms together over the top of the rolled suit so that the **open zipper** forms an arch as it does while you are wearing the suit. Slide the suit into its carrying bag and store it so that **nothing else will be put on top of the bag.**

! IMPORTANT !

Both Neoprene and Butyl and Butyl Trilaminate materials can be damaged by exposure to petrochemical products such as gasoline/petrol, many industrial solvents, and cleaning solutions containing solvents. Avoid exposure to these chemicals during use of the drysuit and when cleaning.

Should the suit become heavily soiled, or exposed to grease, oil, etc., DO NOT CLEAN THE SUIT WITH SOLVENTS OR SOLVENT BASED CLEANERS OR DEGREASERS. You may use warm water and detergent based soaps to remove the stains. Be sure to rinse all the soap residue out with clean fresh water. Failure to follow these instruction can result in delamination and degradation of the materials.

DRYSUIT DIVING TIPS & TROUBLESHOOTING

a) “Leaks” – some causes and cures

There are many variables that must be investigated when dealing with leaks in a drysuit. Very often a leaking drysuit is not the fault of the suit itself. Usually, but not always, the cause of a leak can be determined when all of the events related to the doffing, donning, and diving with the drysuit are carefully and objectively reviewed.

For example, a diver may discover that her left foot is wet after a dive. The immediate and natural conclusion is that the suit is leaking in the left boot. The suit is checked for a leak in the left boot but no leak is found. The next time the suit is used the divers left foot stays dry. This is a very common occurrence. What often happens in this situation is that the undergarment, either a sock or an attached underwear bootie is wet prior to putting it into the boot of the drysuit. During the dive the moisture eventually travels through the layers and appears as if it became wet during the dive.

The underwear boot could have become wet from being in contact with a wet piece of equipment during transport, or from stepping on wet ground prior to putting on the drysuit. Another possible cause could be water that entered the suit when it was rinsed after the last dive. Often a leak in a drysuit is clearly visible when the suit is tested, but sometimes other factors that may be determined from objective analysis are the cause.

b) Troubleshooting Leaks

Zipper

Problem: Wet arm, shoulder area, and crotch

Possible Cause: Zipper not totally closed
Undergarment caught in zipper teeth
Zipper dirty (grit, lint, sand, salt, etc.)
Zipper is worn-out, damaged or broken

Other Causes: Leaking wrist seal
(water is migrating to zipper area)
Leaking neck seal
Leaking exhaust valve

Possible Solutions:

Make sure zipper is completely closed
Check undergarment for signs of being caught in the zipper
Make sure the zipper (inner teeth and outer chain) are free from debris and well lubricated
Check zipper for missing teeth, worn-through areas, or if the zipper is broken

Seals

Problem: **Wet arm(s), chest and shoulder area, and crotch**

Possible Cause: Neoprene seal not tucked inward enough or at all
Undergarment disrupting the integrity of the seal
Seals may not be the correct size
Seals may be torn, split, delaminated from suit or punctured
Hair under the neck seal
May be other leak, see rest of troubleshooting

Possible Solutions:

Review instructions in the “Donning and Doffing” section of this manual
Replace the seals if they are damaged or stretched far beyond their original size, or have them altered to fit correctly

Valves

Problem: **Wet arm(s), chest and shoulder area, and crotch**

Possible Cause: Valve not tightened securely to suit
Valve port delaminating from the suit
Valves are dirty or contaminated with lint from underwear
Internal diaphragm of exhaust valve damaged or displaced
May be another leak, see rest of troubleshooting

Possible Solutions:

Tighten the valve to the suit by holding the outer section and turning (clockwise) the inner section
Re-glue the valve port to the suit or return the suit for service

Possible

Solutions:

Remove the valve from the suit and submerge it completely in warm water and work the valve several times as you would while diving; repeat this procedure under running warm/hot water
Return the valve for service

Leaks in Seams or Through Fabric

Possible Cause: Punctured, torn, worn through

Seam split or delaminated

Neoprene cellular degradation-material old and worn out

May be other leak, see rest of troubleshooting

Possible

Solution:

Repair damage if possible or, return suit for repair.

c) Condensation

Condensation can be a significantly misleading factor when investigating suspected leaks in your drysuit.

This occurs frequently with non-insulating drysuit materials such as polyurethane coated nylon and Trilaminates. The formation of condensation on the inside of the suit is due to the colder exterior temperature.

It is very common for the inside of the suit to be very damp after a dive. You can check the moisture on the inner surface of the suit to see if it is condensation and not moisture from a leak by examining the spread of pattern of the wet areas. If the entire inner surface of the suit is evenly damp, it is most likely due to moisture from condensation. If the dampness is greater in one area when compared to that of another, and your undergarment is also noticeably wet in the same area, then the suit may have a leak.

DRYSUIT INSULATION & UNDERGARMENTS

All drysuits are designed to be used with an insulating undergarment. The required insulating value of the undergarment will vary depending on the drysuit material. For example, an undergarment suitable for a neoprene drysuit may not provide enough insulation for use with a Trilaminate or NEX-GEN membrane drysuit. Generally, the higher the insulation value of the drysuit material, the lower the insulation requirements of the undergarment.

The most important consideration when selecting an insulating undergarment for use with your drysuit is to **maximize the insulation and minimize the bulk**. The goal is to avoid adding buoyancy to the drysuit by trapping a large volume of air within the insulating material of the undergarment. It is much easier to “maximize the insulation and minimize the bulk” when using a neoprene drysuit because neoprene is an effective insulator so thinner undergarments can be used.

Regular density neoprene compresses with depth, losing both insulation value and buoyancy. Compressed neoprene is denser and more resistant to the effects of increased water pressure at depth and provides a more constant insulation value and buoyancy throughout the dive.

Laminated drysuit materials don't provide the same insulation, therefore must be used with an undergarment that provides maximum insulation. Drysuits made from laminated materials provide greater undergarment flexibility with changing environmental conditions.

Several fabrics available are very effective insulators and are relatively thin. These materials work well when used in a “layering” fashion. Selecting an appropriate undergarment for the type of drysuit that you have, and **using the idea of layering will give you the most adaptable and effective insulating combination**. Below are some examples of insulating undergarments offered by BARE, and guidelines for understanding different combinations of insulating fabrics to help you choose the best undergarment(s) for the various diving environments.

UNDERGARMENT OPTIONS

BARE offers a wide variety of layering options. This enables divers to create modular layered systems that allow the assembly of one, two, or more layers to meet the thermal protection requirements over a broad range of water temperature, dive duration and comfort level based on personal metabolism.

When choosing your drysuit layers, remember that each layer consumes some of the available room inside the suit. Make sure the chosen drysuit has enough room to allow freedom of movement even when wearing the thickest combination of undergarments. It is not at all uncommon for a diver to wear a suit size one up from the undergarment size.

For layering options, selection and sizing, please visit www.baresports.com for more information.

UNDERGARMENT INSULATING FABRICS

a) Thinsulate

3M Thinsulate is used as a layer in BARE's Super Hi-Loft & Hi-Loft Polarwear Extreme, CT-200 Polarwear Extreme and T-100 Polarwear Extreme, Thinsulate provides about 1.5 times the warmth of down and about twice the warmth of other high-loft insulating materials. Thinsulate insulation absorbs less than 1% of its weight in water so it retains its insulating ability even if it becomes damp. Hi-Loft Thinsulate is designed to provide the ultimate warmth and comfort while diving any BARE drysuit. Type B, used in the CT-200 Polarwear Extreme is designed to resist compression and maintain maximum warmth under pressure. Type C, used in the T-100 Polarwear is designed for use where a thin compressible insulation is important. It is lightweight, breathable and moisture resistant.

Polarwear is designed for use where a thin compressible insulation is important. It is lightweight, breathable and moisture resistant.

b) Polyester

There are several garments made from polyester. The most common of these is known as "polyester fleece". Used as the inner layer in the Hi-Loft, CT-200, and T-100 Polarwear Extreme. Brushed polyester fabrics are very effective at transporting moisture away from the body. The "wicking" properties of polyesters, keep you warm and dry even while perspiring heavily. Garments made of 100% spun polyester or polyester/lycra blends such as our Comfort Extreme come in various weights and are considered to be the best at providing effective insulation when used as layers.

c) Face Fabric

The Thermal glide fabric package used in our Hi-Loft, CT-200 and T-100 Polarwear Extreme series enables easy donning and does not restrict movement inside the drysuit due to its low friction characteristics.

The Comfort Extreme uses a high performance Nylon / Lycra laminate. All of the Bare Face Fabrics ensure the diver never has to worry about pilling or zipper snags while donning or doffing their drysuit.

d) Polartec® Power Stretch® Fleece Fabric

The SB SYSTEM Mid Layer garments are built from the first and only fleece fabric designed specifically to be worn under a drysuit. This advanced compression resistant, four way stretch, breathable Polartec® Power Stretch® fabric offers tremendous warmth even at depth. The fleece fabric is highly breathable and quick drying and because of its compression resistance, maintains insulating value at changing depths. The SB SYSTEM Mid Layer includes a form-fitting mid layer top, pant, one-piece suit, and vest.

e) Polartec® Power Dry® Fabric

The SB SYSTEM Base Layer garments are designed specifically to be worn next-to-skin. This advanced stretch breathable fabric draws moisture away from the body creating a dry zone next-to-skin barrier and then disperses the moisture over a large surface allowing it to evaporate quickly.

For thermal and moisture control, BARE recommends the use of the SB SYSTEM Base Layer to enhance the performance of ALL BARE drysuit undergarments.

NOTES:
