

905

**Thermal Protection
Buoyancy Control**

SYSTEM

User Guide



117 West Washington Street • Lake City, FL 32055 • USA

Phone (386) 752-1087 • Fax (386) 755-0613

www.diverite.com

Dive Rite 905 Dry Suit Limited Warranty

- ▶ Dive Rite will—at its sole discretion—repair or replace 905 Dry Suit components proved to be damaged by faulty manufacture or material, at no cost, for a period of up to three years from the date of purchase.
- ▶ This warranty applies only to the original retail purchaser. It does not cover commercial or rental use, nor does it extend to units purchased from other than an authorized Dive Rite dealer.
- ▶ This warranty specifically excludes damage to wrist and neck seals, boot punctures, zipper damage or failure, damage to the low-pressure inflator hose or damage due to improper “pee” valve installation. Damage to these items can be avoided through proper use and care.
- ▶ This warranty further excludes color changes, light fastness, or fading. Dive Rite does not accept responsibility for stains or transference or bleeding of color to other items.
- ▶ To make a claim under this warranty, the owner must have either completed and returned the Warranty Registration card at the time of purchase, or registered his/her warranty using Dive Rite’s website (www.diverite.com). He or she must then return the suit to Dive Rite for evaluation as to whether the problem is covered under warranty. The owner must also include a copy of the original purchase invoice or receipt; no warranty service will be performed for other than registered owners.
- ▶ This warranty becomes void if 905 Dry Suit components are damaged by anything other than normal diving use, or if they have been serviced or repaired by other than authorized Dive Rite dealers.
- ▶ Repairs made under this warranty will not extend the warranty period.
- ▶ All further claims, especially for damage after diving accidents, are excluded from coverage under this warranty.
- ▶ Dive Rite has no obligation to honor any extension of this warranty.

Table of Contents

Read This First	4
Make Certain It's All There	5
The Suit	6
Inflator Hose	7
Service/Repair Kit	8
Travel Bag	8
Preparing the 905 Dry Suit for Use	9
Trimming Wrist and Neck Seals	9
Donning Your 905 Dry Suit	14
Using Your 905 Dry Suit	17
Caring for Your 905 Dry Suit	19

Read This First

The most important thing you must understand about this User Guide is that it *does not* cover everything you need to know about using your Dive Rite 905 Dry Suit.

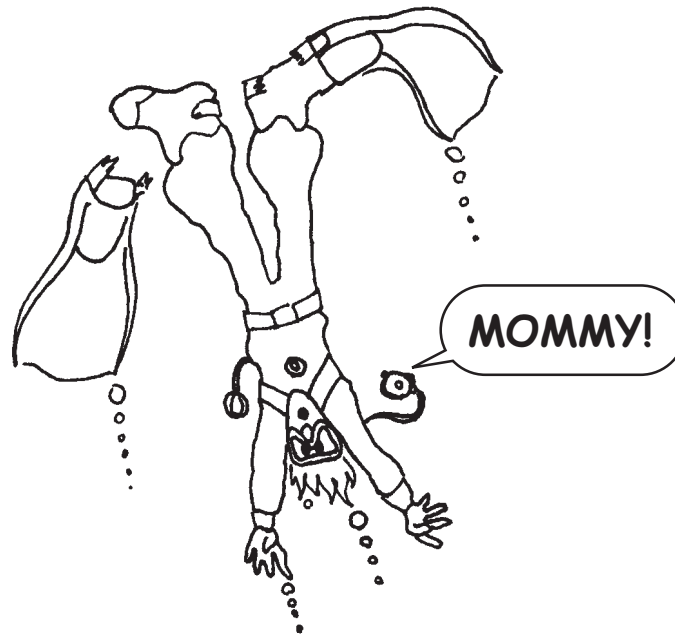


Figure 1 How to deal with situations such as this is covered in Dry Suit Diver specialty training. It is not covered in this User Guide.

Most of the knowledge and skills needed to use this, or similar products as safely and responsibly as possible can only be acquired through formal Dry Suit Diver specialty training, conducted under the supervision of a qualified instructor.

WARNING

Failure to obtain proper training prior to using the 905 Dry Suit can result in *equipment damage, serious personal injury or death.*

In creating this User Guide, we assume that you have, indeed, obtained proper training, and are interested only in learning about the features or procedures that may be unique to the 905 Dry Suit.

What Your 905 Dry Suit Will and Will Not Do

Your 905 Dry Suit is designed to help fulfill a variety of needs. Among them:

- ▶ When worn with appropriate undergarments, it can provide a diver with significantly better thermal protection than conventional wet suits provide.
- ▶ When divers are properly weighted, the act of maintaining a constant gas volume within the suit throughout the dive will also help divers maintain neutral buoyancy under water.

There are some things, however, that the 905 Dry Suit cannot do:

- ▶ The 905 Dry Suit will not necessarily keep users dry 100 percent of the time. As with all such systems, the potential for some degree of leakage through the wrist or neck seal exists. Additionally, punctures, tears, improper “pee” valve installation or zipper failure may result in a substantial amount of water entering the suit. Dealing with catastrophic flooding is covered in most Dry Suit Diver specialty courses. Ask your instructor or training center if you have questions concerning the proper course of action should this happen.
- ▶ The 905 Dry Suit is not designed to provide surface flotation. Divers should use a separate BC harness and air cell to accomplish this function.



The 905 Dry Suit *is not* a personal flotation device. It *will not* necessarily float an unconscious diver face up.

Make Certain It's All There

The first step in preparing to use your 905 Dry Suit for the first time is to check to make sure you have all the necessary components. These should include:

- ▶ The 905 Dry Suit.
- ▶ A low-pressure inflator hose.
- ▶ A service/repair kit.
- ▶ A carrying bag.

You will also need an appropriate thermal undergarment for use beneath the 905 Dry Suit. As the type of undergarment needed depends on factors such as water temperature and length of exposure, there is not a standard undergarment supplied with the suit. Consult with your local, authorized Dive Rite dealer or distributor to see what type of undergarment he or she recommends you purchase for use with your 905 Dry Suit in the environment in which you will be diving.

IMPORTANT

The 905 Dry Suit has no inherent insulation capabilities of its own. Thermal protection can only be provided when the suit is used with an appropriate undergarment.

The Suit

The 905 Dry Suit is composed of butyl rubber, encapsulated between layers of polyester fabric. Unlike most so-called “trilaminate” suits, the core material from which the 905 Dry Suit is made is inherently waterproof. It does not need a spray-on coating of urethane — or any other substance — to make it so. Further, 905 Dry Suit seams are ultrasonically (radio frequency) welded, making them stronger than the material they join. This is in direct contrast to the construction of most suits, in which panels are sewn together conventionally, resulting in thousands of needle-size punctures that must be repaired before the suit can be used. Additional suit features include:

- ▶ Reinforced wear areas at the knees, elbows and elsewhere.
- ▶ A protective zipper flap.
- ▶ Internal suspenders.
- ▶ A fixed thigh pocket for the left leg, and a removable pocket on the right leg. (Note: These *are not* to be used as weight pockets.)
- ▶ A neoprene flap into which users can tuck the bib of their hoods, providing additional insulation in the neck seal area.
- ▶ Insulated, slim-line boots that, in most instances, do not require the purchase of larger size fins.

Inside you will find the label shown in Figure 2. This contains the suit’s serial number and other important information. The label further provides a space in which you can write your name, using a permanent marker.

<h1>905</h1> <p>Thermal Protection Buoyancy Control</p> <h2>SYSTEM</h2>	Owner's Name [YOUR NAME HERE]
	Serial Number 12345678
	Inspected By AP

Serial Number

CAUTION


- ▶ Before each use, inspect all system components, including shell, power inflator, exhaust valve, neck seal, wrist seals, boots and zipper for proper operation.
- ▶ Repair or replace non-functioning, damaged or worn parts. Return to manufacturer for repairs.

WARNING

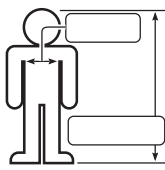
- ▶ This unit is not a surface flotation device; it will not turn an unconscious user face up.
- ▶ Rubber parts may produce symptoms in allergic persons.
- ▶ Failure to follow these instruction can result in equipment damage, serious personal injury and/or death.

Special Instructions

- ▶ Read and understand the Owner's Manual before using this unit.
- ▶ Users must obtain training and be certified by a recognized agency.
- ▶ Don legs first. Adjust suspenders. Put hands through sleeves. Pull neck seal over head. Have diving partner close zipper.
- ▶ After use, rinse with fresh water, lubricate zipper with wax provided in spare parts kit, store hanging in dark, cool, dry place.



Manufactured for Lamartek, Inc., dba Dive Rite by Polarsafety Oy, Lahti, Finland
Made in Finland • Material from CE
Material Content: 49.5% Polyester and 50.5% Butyl Rubber







CE 0426     SIZE: LG

Figure 2 The label you'll find on the inside of the suit provides the serial number — and a place to write your name.

Inflator Hose

The 905 Dry Suit inflator hose (see Figure 13 on page 17) features two large “wings” on quick-release collar, which make it easier to connect or disconnect the hose when wearing thick gloves. The connections, however, are the same type as are found on most BCs. This means that, if need be, a standard BC inflator hose can be used in place of the one provided with the suit.

Service/Repair Kit

The 905 Dry Suit service/repair kit contains a number of valuable items, and should accompany the suit everywhere it goes.



Figure 3 905 Dry Suit service/repair kit.

Among these items:

- ▶ Zipper lubricant.
- ▶ Patching material and butyl rubber cement.
- ▶ Talc.

Use of these items is covered later in this User Guide.

Travel Bag

Your 905 Dry Suit ships with a Travel Bag, designed to help protect the suit while in transit to and from dive sites. A code appearing on the handle indicates suit and boot size. To place the suit inside the Travel Bag:

- ▶ Begin by unzipping the zipper and laying the suit flat.
- ▶ Turn the boots so that the toes point toward each other, then overlap on boot on top of the other.
- ▶ Roll the suit up, beginning with the boots.
- ▶ When you reach the arms, fold them inward. *Do not*, however, put any bends or kinks in the zipper when doing so..

- Finish rolling the suit so that the zipper lays across the outside of the roll, as flat as possible.
- Insert the rolled suit inside the Travel Bag.

Remember that the Travel Bag is for transporting the suit only. It is not for long-term storage. See page 19 for information on proper storage procedures.

Preparing the 905 Dry Suit for Use

Before you can use your 905 Dry Suit components for the first time, there are three things you must do:

- Confirm that the intake and exhaust valve fittings are tightened as far as they can go by hand.
- Attach the inflator hose to your regulator's first stage.
- Trim the wrist and neck seals for proper fit.

Attaching the inflator hose is something you can have your local authorized Dive Rite dealer do at time of purchase. The hose may be attached to any standard regulator low-pressure port. Because the inflator connection swivels 360 degrees, it does not matter whether the inflator hose is mounted on the left or right.

Trimming Wrist and Neck Seals

If divers were all the same size, we could make the 905 Dry Suit with wrist and neck seals that would fit everyone, right out of the bag. The world does not work that way, however. Divers come in a wide variety of shapes and sizes. As a consequence, we have to make the 905 Dry Suit with seals that will fit those divers with the smallest possible wrists and necks. The rest of us are forced to trim our wrist and neck seals to ensure proper fit.

Just what constitutes "proper fit?" It is when the seals fit as snugly as possible, *without* causing discomfort, or interfering with breathing or circulation.



Do not use a 905 Dry Suit whose wrist and/or neck seals are too tight. Improperly trimmed wrist and/or neck seals can interfere with circulation and breathing, and can result in *serious personal injury or death*.

Trimming wrist and neck seals is a simple procedure. It requires care and patience, however, and should be done at a time when you are not distracted or rushed. You will also need a tape measure (the kind used in sewing, not carpentry), and a sharp pair of scissors.

As a general guideline, when in doubt, always err on the side of trimming too little, rather than too much. If you do not trim away the proper amount of material the first time, you can always take off more. If you take off too much material, however, there is no way to put it back, and your 905 Dry Suit will have to be returned to the factory to have new seals installed. This is a costly and time-consuming process.

Guide Rings To help you trim your 905 Dry Suit wrist and neck seals correctly, the seals come equipped with several evenly spaced guide rings (Figure 4).

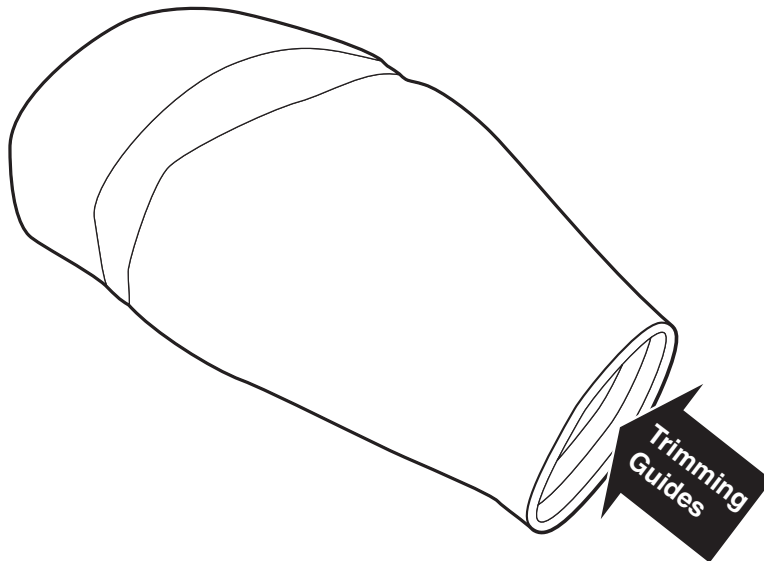


Figure 4 *Guide rings are located on the inside of the wrist seals, and on the outside of the neck seal.*

Determining Where to Cut You can speed the process of trimming your wrist and neck seals by first determining where to cut. This is where you will use your tape measure.

Start by measuring your wrists and neck at their smallest circumference (Figure 5). This is the point at which the wrist and neck seals will make contact with your skin. Write this information down so that, if need be, you can refer to it later.



Figure 5 *Measuring contact points.*

Next, hold the appropriate seal against a flat surface. Using the measuring tape, find the point at which the diameter of the flattened seal matches *one half* the circumference you measured (Figure 6). In other words, if the circumference of your wrist, at its narrowest points is 7.0 inches/18 cm, find the point at which your flattened wrist seal is 3.5 inches/9 cm (one half of 7.0 inches/18 cm) across.

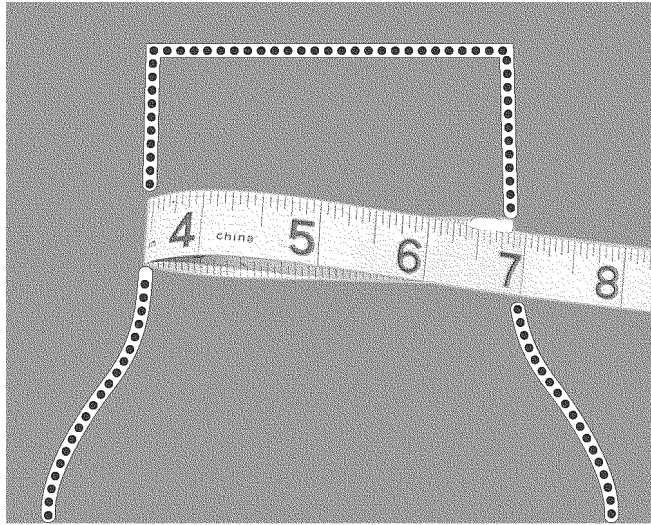


Figure 6 *Determining where to cut.*

Is this the point at which you will want to cut? Not really. Remember that, to work properly, the diameter of the seal must be slightly smaller than that of the wrist or neck with which it will come in contact. For this reason, you will need to make your initial cut *at least two to three guide rings out* from the point your measurements indicated was the same diameter as the matching wrist or neck.

How to Cut Figures 7 and 8 show some important points to bear in mind when trimming wrist and neck seals. They include:

- ▶ Cut through only a single thickness of material at a time.
- ▶ Try to make a single, smooth, continuous cut.
- ▶ Avoid puncturing the seal with the point of the scissors.
- ▶ Leave an edge that is smooth and straight; avoid any of the potential problems shown in Figure 8.

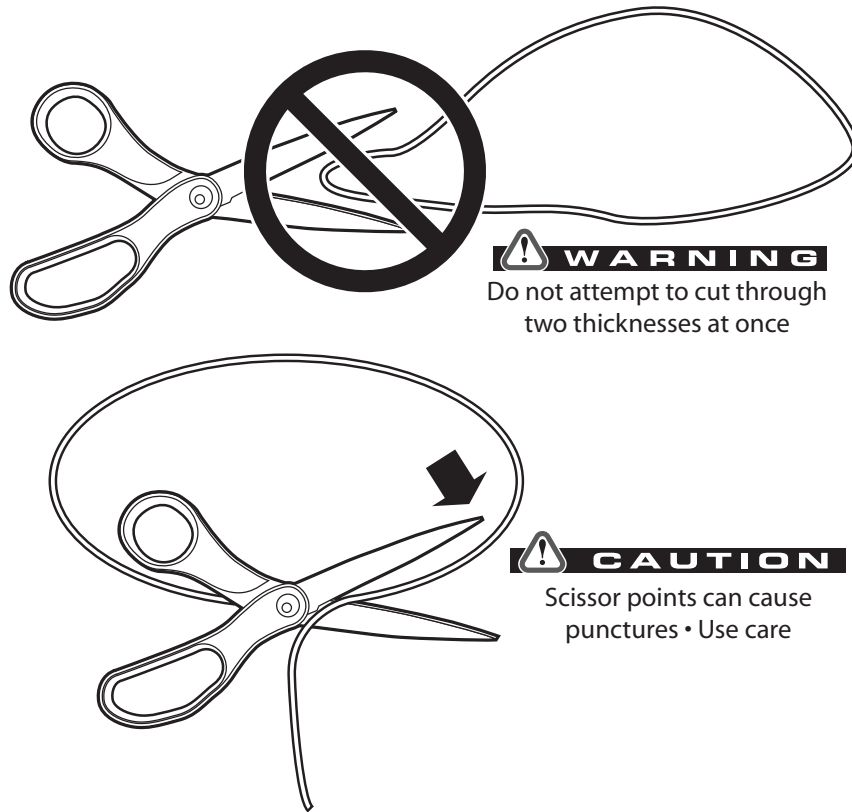


Figure 7 Things to do (and not do) when trimming wrist and neck seals.

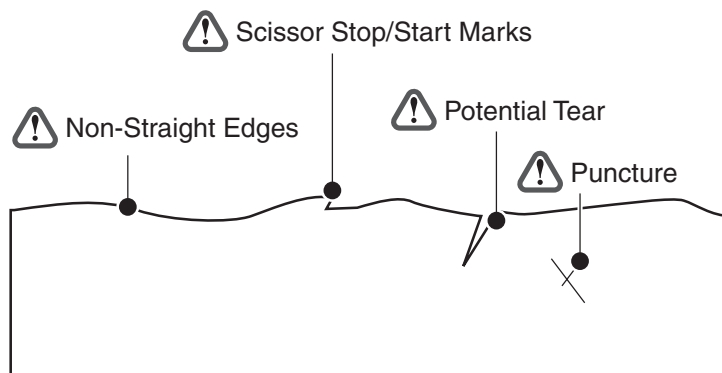


Figure 8 Avoid leaving seal edges that look like any of the above.

After making your initial cuts, check the seals for fit. If need be, trim away additional material on ring at a time, checking for fit again after each cut.

Donning Your 905 Dry Suit

“TGIF.” (*Toes Go In First.*) It’s about that simple. The actual steps are:

- ▶ As with all equipment, inspect all 905 Dry Suit components prior to use. Repair or replace damaged components before using them.
- ▶ Check to ensure that inflation, deflation and “pee” valves have not loosened since the last dive, due to compression. Hand tighten these connections as far as they will go, but do not force them.
- ▶ Remove any wrist watches, bracelets, ear/nose rings or any other jewelry that might interfere with or tear a wrist or neck seal when donning the suit.
- ▶ Begin by donning the appropriate undergarment.
- ▶ With the undergarment in place, don the suit feet first.
- ▶ Pull the suit all the way up to your waist, then adjust the suspenders for proper fit (Figure 9).
- ▶ Attach “pee” valve to catheter hose, if so installed.
- ▶ Put your hands through the wrist seals. Use the talc supplied in the service/repair kit to help lubricate the seal openings. To relieve stress on the seals, use the fingers of the opposite hand to help stretch the seal open (Figure 10).
- ▶ When both hands are through their respective wrist seals, put your head through the neck seal. Again, use talc to help lubricate the seal opening.



Figure 9 *Don the suit legs first, then adjust the suspenders for proper fit.*



Figure 10 *While putting your hand through the wrist seal, use the fingers of the opposite hand to help stretch wrist seals open. This reduces the potential for tearing.*

- ▶ As shown in Figure 11, use the fingers of both hands to stretch the neck seal opening as you put your head through. Do not simply force your head through, as this can lead to tearing of the seal.



Figure 11 *Stretch the neck seal with your fingers while putting your head through.*

- ▶ Have your dive partner close the zipper, using a smooth, non-jerking motion. Take care not to get undergarment material caught in the zipper.
- ▶ Close the exhaust valve (by turning it all the way clockwise), then squat down while pulling outward on the neck seal to expel excess air from the suit. This is a good time to check the exhaust valve for leakage. If air appears to escape through the fully closed exhaust valve, open the valve and force air through it to dislodge and particles or sand that may be trapped there.
- ▶ Don your scuba unit and attach the 905 Dry Suit inflator hose to its connection point on the front of the suit (see Figure 13 on page 17).



Figure 12 *All set to dive!*

Using Your 905 Dry Suit

If your Dry Suit Diver specialty course covered the same information and skills as most such courses do, there is nothing further you need to learn to use your 905 Dry Suit.

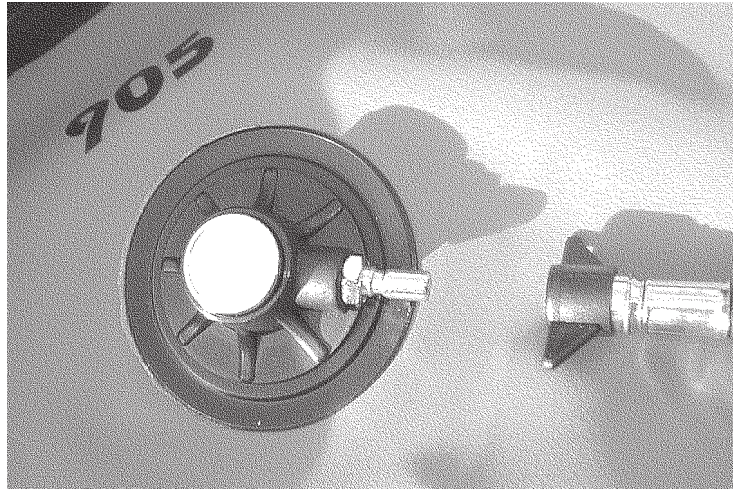


Figure 13 *905 Dry Suit inflator assembly.*

The inflator assembly works exactly as you expect (i.e., push the button, air goes in). The only thing worth noting is that the assembly swivels 360 degrees, so that you can position it in whatever way is most comfortable and convenient.

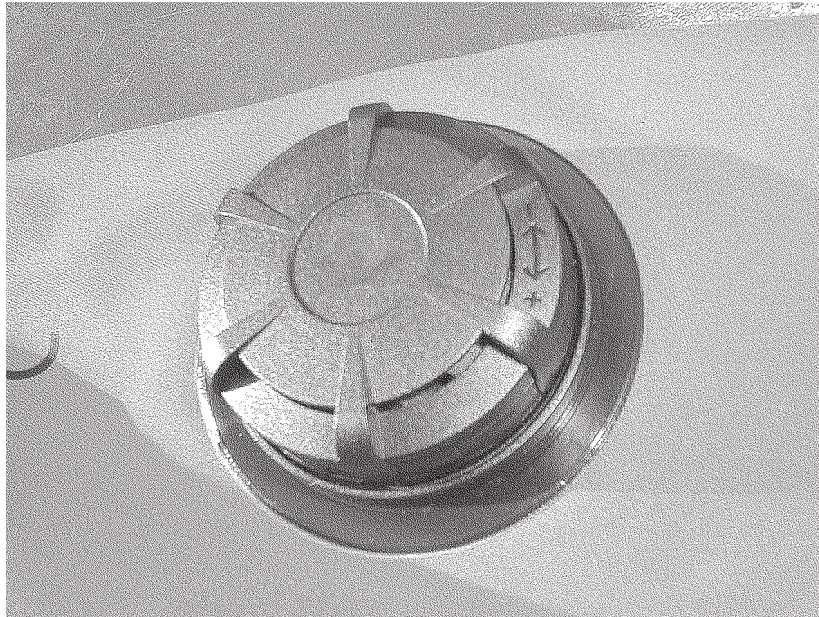


Figure 14 *905 Dry Suit deflation assembly.*

Similarly, you will find operation of the 905 Dry Suit's deflation assembly to be fairly standard as well. Rotating the assembly counterclockwise makes it easier for air to escape. Turning the assembly clockwise as far as it will go prevents air from escaping. Pressing down on the assembly allows you to vent air manually.

Caring for Your 905 Dry Suit

This, too, is an area you will find entirely consistent with your training. Key points include:

- ▶ To remove your 905 Dry Suit, simply reverse the process by which you put it on. Remember to stretch wrist and neck seals outward with your fingers, to reduce stress and the risk of tearing.
- ▶ Rinse the suit thoroughly with fresh water and allow it to dry. Store the suit hanging up, in a cool, dark, dry place. Be sure to use a wide hanger designed specifically to hold the weight of this type of thermal protection.



Should the suit come in contact with contaminated water or petroleum products, wash with mild detergent. *Do not* use solvents, as they will *severely damage* or *destroy the fabric*.



Figure 15 Zipper lubricant and UV protector.

- ▶ Prior to storage, lubricate the zipper with the “Zip Tech” zipper lubricant provided in the service/repair kit. This not only helps prevent oxidation, it pre-lubricates the zipper for the next dive.
- ▶ Also prior to storage, spray the wrist and neck seals with the “UVTech” surface protectant and rejuvenator provided in the service/repair kit. This helps prolong wrist and neck seal life.
- ▶ To repair punctures or tears, cut a piece of patch material to fit, from those supplied in the service/repair kit. Apply butyl rubber cement to both the patch and the *inside of the suit*. When the cement is dry to the touch, press the patch firmly in place. The suit is now ready to use.

Questions? Contact your local authorized Dive Rite dealer, or Dive Rite, using the contact information appearing on the front of this User Guide.