



Drysuit Manual

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INTRODUCTION

This owner's guide describes the maintenance, operation, and use of your drysuit. The initial time that you invest becoming acquainted with your new drysuit will be returned as you enjoy your underwater activities.

By following the instructions in this guide, you will understand how to prepare your drysuit for use, how to correctly put on (Don) and take off (Doff) the drysuit, how to inflate and deflate it, and how to maintain and store it.

Although information relating to diving with a drysuit, buoyancy, and emergency situations is provided, it is not intended as instructional material or as a substitute for specialized training in diving with a drysuit.

Please read through the complete guide before preparing your suit for that first dry dive.

Read and understand thoroughly this owner's guide and the valve manufacturer's leaflet enclosed with this drysuit before using the drysuit.



Pay special attention to items marked with this warning symbol.

PINNACLE AQUATICS LIMITED WARRANTY

Pinnacle Aquatics, L.L.C. warrants all workmanship and materials to be free of defects for one year from the date of purchase by the original owner; with the exception of neck seals & wrist seals. Neck seals & wrist seals are covered for 90 days from date of purchase. Any defects shall be repaired or replaced at the expense of and at the discretion of Pinnacle Aquatics, L.L.C.

Proper care and storage of Pinnacle equipment is essential to maintaining satisfactory performance and durability of the product. Failure to care for your drysuit in accordance with its instructions will render the warranty null and void.

The boots or socks on this drysuit are designed and produced in materials that will offer the maximum in user comfort and performance during diving. Extensive walking on hard or abrasive surfaces whilst wearing this drysuit, if fitted with boots, will result in premature wear to the boots. Drysuits fitted with neoprene or latex socks are designed to be worn with protective overboots or footwear. Any walking on hard or abrasive surfaces whilst wearing this drysuit, if fitted with socks, will result in damage to and puncturing of the socks.

This warranty does not apply to damage caused by abuse, negligence, accident, modifications, non-authorized alterations, commercial use, lack of proper care and maintenance or improper use of the drysuit. Except where prohibited by law, this is the sole warranty and excludes all others, either expressed or implied.

This warranty is non-transferable and applies to the original purchaser only.

All correspondence concerning this warranty must be accompanied by a copy of the original sales receipt.

In consideration of the sale of this suit to you, you agree and understand that in no event will Pinnacle Aquatics, L.L.C., its distributors or retailers, be held liable for any personal injuries resulting from its operation, or for any other damages whether direct, indirect, incidental or consequential even if PINNACLE AQUATICS, L.L.C. is advised of such damages.

DRYSUIT GUIDELINES

Pinnacle Aquatics, L.L.C suggests following several universally accepted guidelines:

- Complete a drysuit course from a qualified instructor and stay current.
- The fit of your drysuit is extremely important. Ensure that you have full movement of all limbs and can reach, without restriction, all the manually operated valves. Ensure that you are able to crouch with arms extended over the head. Ensure that as you are standing you can lift your legs to a height that enables the hands to reach all areas of the lower legs & feet (approx. 18 inches/0.5 meters).
- Always use a BCD (buoyancy control device).
- Practice your drysuit skills under controlled conditions until they become second nature.
- Dive with a buddy who understands your drysuit system. Use a thermal undersuit with the correct thermal insulation for the water temperature you are in and your exercise rate.
- Do not weight yourself heavier than neutral buoyancy at the surface with an empty tank. Your weighting should allow you to make a safety stop for a duration of time and at a depth required by your training agency.
- Check your zipper and seals before immersion in water.
- Know your limitations and do not exceed them.
- We highly recommend the use of elastic suspenders that are supplied with your suit.

RESPONSIBLE DRYSUIT DIVING

- Always plan each dive.
- Always limit your dive to the level of your training and expertise.
- Always make your deepest dive first.
- Always make the deepest part of every dive first.
- Check your drysuit often during the dive.
- Complete a safety stop on every dive.
- Allow adequate surface interval between each dive.
- Allow adequate surface interval between each day of diving.



WARNING



Always use a BCD (buoyancy control device). Improper maintenance, use or misuse of this drysuit could cause loss of buoyancy control, exposure to thermal hazards, rapid ascents, resulting in drowning, air embolism, decompression sickness, stroke, seizure, and death.

- Read and understand this owner's guide and valve manufacturers leaflet included completely before diving with the drysuit.
- It must not be used by untrained persons that do not have knowledge of the potential risks and hazards of scuba diving and diving with a drysuit.
- You must obtain scuba certification and specialized training in diving with a drysuit before using the suit if you have not already done so.
- Note: a membrane drysuit does not offer thermal

protection. A neoprene drysuit will offer limited thermal protection. A thermal undersuit appropriate for the diving conditions and the activity being undertaken must be worn under this drysuit (Refer to "Drysuit Guidelines" section of this manual).

- This drysuit is designed for use by recreational divers who have successfully completed a recognized course in scuba diving, and speciality training in drysuit diving.
- This drysuit is fitted with latex or neoprene seals.
CAUTION These materials can cause allergic reactions in some individuals. Check by wearing the suit for about 30 minutes and assess for any signs and symptoms of an allergic reaction.
- This drysuit is for use in uncontaminated water in the water temperature range +2°C (35°F) to +35°C(95°F) when worn with the appropriate thermal undersuit.
- This drysuit should be inflated with AIR. Inflation with argon or oxygen-enriched gas mixes may affect the performance of the drysuit, its seals, and valves.
- As with all in-water and on-water life support equipment, improper maintenance, use or misuse of this product can cause serious injury or death.
- Conduct your dives in such a manner so as to insure that you continuously check the drysuit's integrity.
- This drysuit may be supplied with a quick disconnect low pressure hose. Ensure that you are able to connect and disconnect the hose with a one-handed operation. If gloves are to be worn during the dive, then this action must be able to be undertaken with a gloved hand.
- If you do not fully understand how to use this drysuit, or if you have any questions, you should seek instruction in its use from your authorized dealer before you utilize this product.
- Practice your drysuit diving skills under controlled conditions until they become second nature.

PERSONALIZING YOUR DRYSUIT FOR INITIAL USE

NECK SEALS

NOTE: Drysuits may have either a latex neck seal or a neoprene neck seal.

Your drysuit has been fitted with a neck seal that corresponds to the size of the drysuit. If you are new to wearing a drysuit with a latex neck seal, it may feel uncomfortable when initially worn. It should fit snugly but not be too tight. Try wearing the neck seal for some time to determine the 'comfort' factor. Also, latex has a tendency to relax after use.

Wear the neck seal so that it fits as low down on the neck as possible.



WARNING: An extremely tight neck seal can restrict the flow of blood through the neck, possibly causing injury or death.

If necessary, a latex neck seal can be trimmed to enlarge the opening. Remember that once a seal has been trimmed it cannot be made smaller. A neoprene neck seal should not be trimmed.

TRIMMING A LATEX NECK SEAL

- Use long/sharp scissors to make the cuts.
- Make as few cuts as possible.
- Cut evenly just above the first molding ring on the latex seal.
- Only trim one ring from the latex seal at a time, trying it on after each cut.
- Avoid leaving any jagged edges that could cause the seal to split.
- Do not cut past the last molding ring.

WRIST SEALS

All Pinnacle drysuits are equipped with latex wrist seals. These seals have a number of molding rings in order to accommodate enlarging the wrist opening.

TRIMMING A WRIST SEAL

- Follow the same trim procedure as for the neck seal as described previously. CAUTION: Do not cut past the molding ring.
- Neoprene wrist seals can be added to your drysuit as an option
- These seals can be trimmed but do not have molding rings.
- If these seals need to be enlarged, trim a very small amount and try it on. Cutting more if necessary.

LOW PRESSURE (LP) INFLATION HOSE

Connect the low pressure (LP) inflation hose to a low pressure port of your regulator first stage. Select a port that will allow suitable and unencumbered routing of the hose. This should be done by a service technician at a Pinnacle authorized dealer or authorized service center.

PRE-DIVING PREPARATION

Prior to putting on your drysuit, always:

- Check that all valves are correctly tightened to the drysuit. When tightening (or removing) either an automatic dump or exhaust valve, always grab the collar of the valve and NOT the outer cap before turning the valve. The outer cap is for valve adjustment only.
- Check that neck and wrist seals are free from nicks, cracking, or any other sign of deterioration. Also check that they are not sticky (due to exposure to excessive heat or chemicals).
- Lubricate the neck and wrist seals with either pure talcum powder, or a mild solution of soap or shampoo (5 parts water to 1 part soap).



CAUTION: Do not use scented talcum powder. The oils may cause damage to the seals.

- Check that the teeth of the zipper are clear of any debris and that the zipper operates smoothly. Ensure that clothing worn under the drysuit does not become trapped in the zipper. For rear-entry suit models, always ensure your buddy checks that your undersuit is well

away from the zipper when closing. Do not use excess force when opening and closing.

To lubricate the zipper, close it and apply a drysuit zipper lubricant following package instructions (available from your local dive shop).



CAUTION: Never use aerosol lubricants.
They may cause damage to drysuit fabric.

- Inspect the entire drysuit for any cuts, tears, or other damage that would affect the integrity of the suit.
- Check inflator valve operation by connecting your low pressure inflation hose to the quick disconnect fitting and depressing the button on the valve.
- To check operation of the adjustable exhaust valve, close the zipper completely and block the neck and wrist seals with smooth, cylindrical containers. Close the adjustable exhaust valve by turning the knob clockwise, inflate the suit then depress the exhaust valve's outer cap to release air.
- To check the automatic exhaust feature, turn the exhaust valve counter-clockwise ½ turn, and continue to inflate the suit until air vents through the valve.



CAUTION: DO NOT continue inflation if the valve displays any indication of being stuck in the closed position and unable to relieve pressure.

DONNING/DRESSING

A membrane drysuit does not offer thermal protection and a neoprene drysuit will offer limited insulation. Primary thermal protection (underwear) should be worn in an amount that will keep you comfortable for the dive. In addition to water temperature and dive duration, the weather conditions, your physical condition and anticipated activity rate should be taken into consideration to avoid potential thermal hazards.



CAUTION: To help avoid overheating prior to water entry, we recommend preparing and setting up all of your equipment prior to putting on your thermal wear and drysuit.

- Remove any items such as rings, watches, earrings and other jewelry that could damage the seals.
- Open the zipper completely and fold the suit open. Use care not to get sand or debris in the zipper.
- While sitting down, put your feet into the suit.
- As you stand up, ease the suit up your legs, ensuring there is no slack material along the length of each leg.
- Pull the suit snugly up into your crotch.
- Pull the suspenders over each shoulder.
- Put one arm through the sleeve of the suit and ease your hand through the wrist seal. Avoid putting pressure on the seal with your fingernails.
- Repeat the above for the other arm.
- Pull the suit up your torso as much as possible.
- Adjust suspenders to comfortably hold the suit into the crotch.
- Insert both hands into the top opening of the neck seal, and simultaneously spread the opening as you pull the seal down over your head. Avoid putting pressure on the seal with your fingernails.

NECK SEAL ADJUSTMENT:

- Latex neck seal: Adjust the seal so it lays flat against your neck in a comfortable position low on your neck.
- Neoprene neck seal: Adjust the seal by folding its edge inward so that 1 ½ to 2 inches of the smooth rubber surface is against your neck.

CLOSING THE ZIPPER:

- Rear-entry suit: Extend your arms outward and curved slightly forward at shoulder level and have someone close the zipper completely using a steady even pull while ensuring that your underwear does not get caught in the zipper teeth.
- Front-entry suit: Hold the top of the zipper with the left hand (for a suit where the zipper goes from left shoulder to right hip) or right hand (where the zipper goes from right shoulder to left hip). Use a steady downward pull along the line of the zipper ensuring clothing does not get caught in the zipper teeth. Ensure the slider is fully against the end stop when in the closed position.
- Vent any excess air from the suit by inserting two fingers of each hand between the neck seal and your neck, and crouching down.

DOFFING/UNDRESSING

- Rinse any sand or debris off the suit, paying particular attention to the zipper area.

OPENING THE ZIPPER:

- Rear-entry suit: with your arms stretched forward, have someone open the zipper completely using a steady, even pull.
- Front-entry suit: hold base of zipper with one hand and steadily pull the zipper lanyard upwards until the slider makes contact with the rubber stop.

- Insert both hands into the top opening of the neck seal, and simultaneously spread the opening as you drop your head down and out of the opening while simultaneously lifting up on neck seal. Avoid putting pressure on the seal with your fingernails. Avoid straining the zipper when pulling the suit over the head and make sure the zipper is fully open.
- To remove a wrist seal, insert two fingers between the seal and your wrist with your nails against your wrists until your fingers are past the seal.
- To avoid putting undue stress on the seal, hold the sleeve material between your fingers and thumb as you simultaneously pull your hand out of the seal opening.
- Lift your arm up and out of the sleeve.
- Repeat the previous steps with the other wrist.
- Using care not to get sand or debris on the zipper and seals, slide the suit down until it is below your crotch, then sit down to remove the suit from your legs and feet.

OPERATION AND USE



WARNING: Your BCD (buoyancy control device) should be used for surface flotation. On the surface, your drysuit should be used for backup flotation in the event of an emergency. Always use a BCD (buoyancy control device).

Prior to water entry, vent all air from suit and ensure that you are properly weighted for the dive.

Check that you are slightly negatively buoyant at the surface with a full tank. Your weighting should allow you to make a safety stop for a duration of time and at a depth required by your training agency.

With no air in the suit, the suit will tend to cling to your body. However, once you are underwater you will be inflating the drysuit to maintain neutral buoyancy which will relieve this effect.



WARNING: DO NOT attempt to use both the drysuit and BCD (buoyancy control device) for controlling buoyancy underwater. Refer to your training agency's guidelines.

- Start your descent feet first by fully deflating your BCD (buoyancy control device).
- As your depth increases, add small amounts of air to your suit by briefly depressing the button on the inflator valve located in the center of the chest to maintain a comfortable descent rate until reaching your desired depth.
- To vent air from the suit's adjustable exhaust valve, lift your left elbow so the valve is higher than the suit body, or if necessary, depress the valve's outer cap.
- Once at depth, adjust the amount and distribution of air in the suit to maintain comfortable neutral buoyancy.

- Horizontal positioning with the head, torso, and feet at the same level affords the least amount of lateral effort.



WARNING: As your depth decreases, as during a multi-level dive or during your ascent to the surface, the air in the suit will expand, creating positive buoyancy that must be controlled.

- To maintain neutral buoyancy while ascending, vent air from the exhaust valve by lifting your left arm, or depressing the valve's outer cap.



WARNING: Maintain neutral buoyancy during the ascent, and do not exceed the ascent rate as recommended by your training agency.

We recommend performing a safety stop prior to surfacing from each dive as recommended by your training agency.

- On the surface, inflate your BCD (buoyancy control device) and vent excess air from your drysuit to achieve comfortable positive buoyancy.

EMERGENCY SITUATIONS



WARNING: DO NOT use this drysuit unless, or until you have received proper training in drysuit diving and have thoroughly practiced all skills, including emergency skills in a controlled environment, and under the direct supervision of a diving instructor certified by a recognized training agency to instruct divers in the proper use of drysuits.

- Although 'handling' of emergency situations is extremely important to a drysuit diver, it is not presented within this product manual.
- The content of this manual is not intended as 'diver training' material, or as a substitute for the specialized training required for diving with a drysuit.
- We advocate proper training for drysuit diving prior to using a drysuit.
- The following section describes some of the possible indications and causes that may result in emergency situations.
- Management of the following situations should be applied in accordance with your formal training, practice, and experience with drysuit diving.

INDICATIONS OF EMERGENCIES

Leaking inflator valve:

Indication – air leakage at the power inflator valve.

Inflator valve stuck (open):

Indication – air flow into the suit continues after release of the inflator valve button.

Inflator valve stuck (closed):

Indication – air does not flow into the drysuit upon activation of the inflator valve button.

Leaking exhaust valve:

Indication – water leakage into the drysuit at the exhaust valve.

Exhaust valve stuck (open):

Indication – air flows out of the valve continuously, or water enters the drysuit through the valve.

Exhaust valve stuck (closed):

Indication – air cannot be vented out of the valve.

Flooding of the suit:

Indication – air is not retained in the drysuit, and entrance of a large quantity of water into the suit (possibly a zipper that is not fully closed or large puncture in the drysuit).

Uncontrollable descent:

Indication – inability to slow a very rapid descent & cannot establish positive buoyancy (possibly a flooded drysuit).

Air trapped in feet of suit:

Indication – slowly ascending feet first or inability to return to an upright position.

Uncontrollable ascent:

Indication – ascending much faster than 60 fpm (18 MPM).

CARE AND MAINTENANCE

CLEANING AND STORAGE

- As soon as possible after using the drysuit, thoroughly rinse the outside of the drysuit and flush the zipper with running fresh water.
- Carefully sponge the neck and wrist seals with a mild solution of soapy water and rinse thoroughly.



WARNING: Any contamination due to exposure to petroleum products, paraffin or other solvents may affect the latex seals and/or materials of the drysuit and must be washed off immediately.

- Ensure that the zipper is clean and free of sand or debris. If necessary, clean with a soft toothbrush and a mild solution of soapy water.
- Close the zipper and lubricate the outside of the teeth with a drysuit zipper lubricant following package instructions (available from your local dive shop).
- After rinsing, hang the drysuit on a wide padded hanger to dry naturally with the zipper open.



CAUTION: Do not use heat to dry the suit, or hang the suit in direct sunlight.

- Once the drysuit is thoroughly dry inside and out, dust the neck and wrist seals with unscented talcum powder.
- Store the drysuit by hanging on the wide padded hanger, in a cool, dry location away from electric motors or other ozone-producing devices that can adversely affect the latex seals.
- Avoid storing the suit in excessively hot places for extended periods (e.g. car trunk on hot days, etc.).

- If folding the drysuit for storage, ensure that the zipper is open and on the outside protected from damage and contamination.



WARNING: DO NOT disassemble or attempt to repair the inflator or exhaust valves. Doing so could affect valve performance, resulting in serious injury or death. It will also void the warranty.

REPAIRS AND SERVICE

In the event that your drysuit requires any form of service or repair, return it to your local Authorized Dealer who will be able to arrange this.

Provide the Dealer with a copy of the original sales receipt as proof of purchase for warranty consideration. A service log page in this manual has been provided for ease of reference



CAUTION: Attempts to make temporary repairs in the field that alter the drysuit may void the limited warranty.

Inspection and service of the drysuit and valves should be conducted by a trained agent of Pinnacle Aquatics, L.L.C. annually. More frequent inspection is suggested if you use the drysuit often. Costs of inspection and services are not covered by the limited warranty.

DRY SUIT RECORDS

Serial number
Date of purchase
Dealer name
Dealer telephone number

INSPECTION AND SERVICE

Date	Service Performed	Dealer
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APPROVAL OF NOTICE

E.C. type approved by:
S.G.S. Yarsely. I.C.S. Ltd.
Portland Road
East Grinstead
West Sussex
U.K.

RH19 4ET

Notified Body: No 0120

Undertaken to Health and Safety P.E.P. directives
Annex 11