DUOTONE

UNIT 2023
UNIT D LAB 2023

User Manual

TIPS & TRICKS

WATCH OUT FOR USEFUL TIPS & TRICKS REGARDING OUR PRODUCTS UNDER WWW.DUOTONESPORTS.COM.



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1. RELEASE OF LIABILITY

RELEASE OF LIABILITY, CLAIM WAIVER, ASSUMPTION OF RISK

By assembling and/or using this DUOTONE product, you agree that you have read and understood the entire DUOTONE product owner's manual, including all instructions and warnings contained in that manual, prior to using the DUOTONE product in any way. You additionally agree that you will ensure any additional or subsequent user of your DUOTONE product will read and understand the entire DUOTONE product Owner's Manual, including all instructions and warnings contained in that manual, prior to allowing that person to use your DUOTONE product.

ASSUMPTION OF RISK

Use of the DUOTONE product and any of its components involve certain inherent risks, dangers, and hazards that can result in serious personal injury and death to both the user and to nonuser third parties. In using the DUOTONE product, you freely agree to assume and accept any and all known and unknown risks of injury to you and to third parties while using this equipment. The risks inherent in this sport can be greatly reduced by abiding by the warning guidelines listed in this owner manual and by using common sense.

RELEASE AND WAIVER OF CLAIMS

IN CONSIDERATION OF THE SALE OF THE DUOTONE PRODUCT TO YOU, YOU HEREBY AGREE TO THE FULLEST EXTENT PERMITTED BY LAW, AS FOLLOWS:

To waive any and all claims, that you have or may in the future have against Boards & More GmbH and all related parties resulting from use of the DUOTONE Product and any of its components.

To release Boards & More GmbH and all related parties from any and all liability for any loss, damage, injury or expense that you or any users of your DUOTONE product may suffer, or that your next of kin may suffer, as a result of the use of the DUOTONE product, due to any cause whatsoever, including negligence or breach of contract on the part of Boards & More GmbH and all related parties in the design or manufacture of the DUOTONE product and any of its components. In the event of your death or incapacity, all provisions contained herein shall be effective and binding upon your heirs, next of kin, executors, administrators, assigns, and representatives. Boards & More GmbH-related parties have not made and expressly deny any oral or written representations other than what is set forth herein and the DUOTONE product User's Manual.

2. SAFETY AND PRECAUTIONS

DUOTONE STRONGLY RECOMMENDS::

If you are not yet able to foil wing foiling or if you feel insecure, you must attend a licensed school to learn the basics of this fantastic sport. Get familiar with the safety precautions, which are indispensable for safe foil wing foiling.

Foil wing foiling creates a heavy strain on your body. You should only go foil wing foiling if you are in good physical condition and suffer from no medical conditions that may prevent you from wing foiling. Always act carefully to not endanger yourself or anyone else. Do not endanger the safety of uninvolved third parties! Be aware of the risks you take and limit them to a minimum level!

Before going on the water make sure you are familiar with your DUOTONE equipment. For your own safety, read the following instructions as well as product descriptions very carefully.

2.1. FOIL WING SAFETY

- Only use on unobstructed stretches of water.
- Only fly the Foil Wing if you are a good swimmer and you are wearing a life jacket.
- Use a leash equipped with a quick-release system so that you can completely detach yourself from the Foil Wing in an emergency.
- Avoid power lines, telephone lines, airports, roads, buildings and trees.
- If you are using a board with a board leash, you must wear a helmet! Be aware of the general risks associated with water sports, such as stones and rocks, waves, sunburn, hypothermia, jellyfish, etc.

2.2. DANGERS FROM THE FOIL WING

WHEN FOIL WING FOILING YOU MIGHT FACE THE EXTREME FORCES OF THE ELEMENTS.

In rare cases the Foil Wing can cause dangerous situations:

- You can hurt yourself through uncontrolled water take-offs caused by gusty conditions, and the danger of collision with obstacles.
- Risk of injury due to an inability to control the Foil Wing in gusty conditions.
- Use a leash that allows you to keep the Foil Wing under control.
- When not in use, inflated wing must be secured with sand or heavy objects. A wing filled with air can fly away at any time, injuring people and in extreme cases even kill them.

2.3. DANGERS FROM THE BOARD OR FOILBOARD

The use of a hydrofoil board is a high-risk activity and can be extremely dangerous if implemented incorrectly. This can result in serious injury or even death for the user or other individuals in the vicinity. All users of the DUOTONE Foil Wing must be aware of the associated risks. These include loss of control, collision with the board and even drowning. Some of the foil components are extremely sharp and thus pose a potential risk. To protect the rider and others against injury, the foil must be handled with special care from the point at which it is constructed until it is used. We recommend using a certified helmet at all times and an appropriate collision-proof or protective vest as well as a wetsuit and neoprene shoes. Do not exceed your capabilities and maintain control over the Foil Board and the Foil Wing at all times. Do not push beyond your limits when using the Foil Wing, and ride at a speed that is commensurate with your ability level. Be aware of your surroundings, and familiarise yourself with them. Do not endanger others by coming too close to swimmers, boats, jetties and other objects that could be damaged by you or the foil. Do not use the foil in shallow waters. This could also result in injury to you and damage to your foil. You should also be aware that individual components on this product are exposed to natural forces and may be subject to wear.

2.4. DANGERS TO UNINVOLVED THIRD PARTIES

- It is within your responsibility to check whether uninvolved people or other athletes may be endangered or injured by your actions or your gear.
- Do not foil wing foiling at places where uninvolved third parties might get injured.
- Avoid flying the foil wing in the vicinity of other water users such as swimmers, kayakers, windsurfers, water-skiers and boaters.

2.5. WEATHER RELATED DANGERS

- Avoid offshore wind.
- Be careful with onshore wind.
- Get information on tidal and sea current conditions at your spot!
- Get information from both the weather report and the locals on prevailing weather conditions.
- Never use the foil wing with wind forces so strong that you are unable to maintain precise control.
- Do not use the foil wing when wind conditions are likely to change dramatically.
- Never use this foil wing when thunderstorms are nearby or when such storms have a good chance of developing (check the weather report!).
- Leave the water immediately when a storm is approaching. You are in a life threatening situation since you may be struck by lightning!

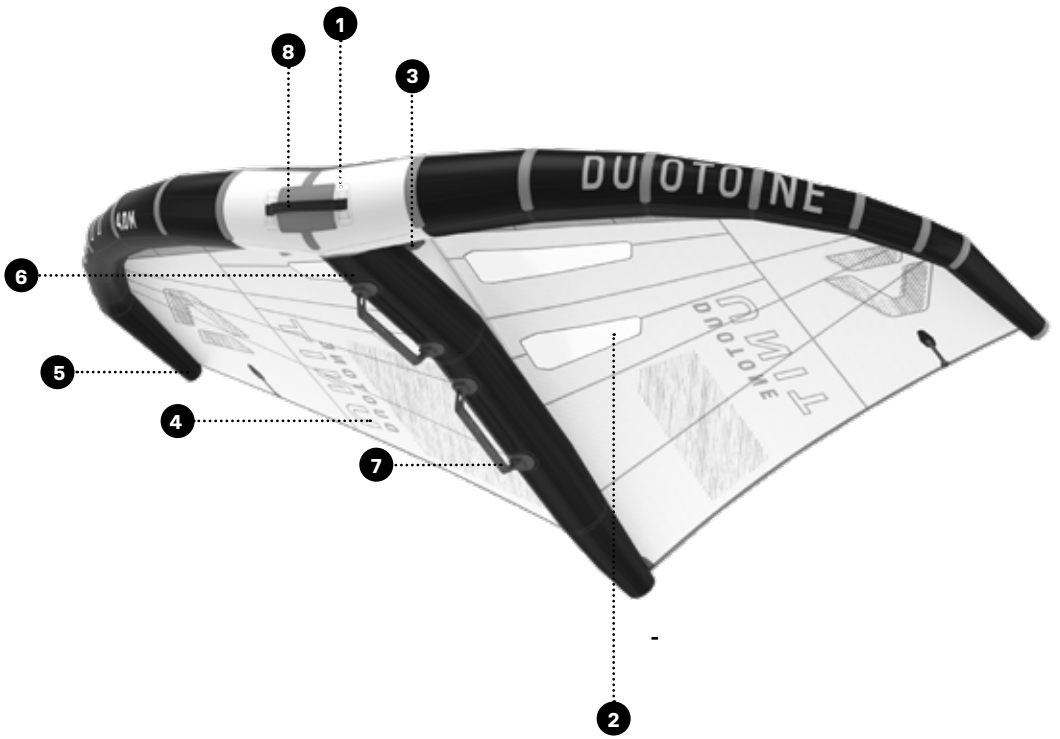
BFT	M/S	KM/H	MPH	KNOTS	DESIGNATION
0	0 – 0.2	0 – 0.8	0 – 0.6	0 – 0.5	Calm
1	0.3 – 1.5	0.9 – 5.5	0,7 – 3.5	0.6 – 3.0	Light Air
2	1.6 – 3.3	5.6 – 12.1	3.6 – 7.5	3.1 – 6.5	Light Breeze
3	3.4 – 5.4	12.2 – 19.6	7.6 – 12.2	6.6 – 10.5	Gentle Breeze
4	5.5 – 7.9	19.7 – 28.5	12.3 - 17.8	10.6 – 15.5	Moderate Breeze
5	8.0 – 10.7	28.6 – 38.8	17.9 – 24.0	15.6 – 20.9	Fresh Breeze
6	10.8 – 13.8	38.9 – 49.8	24.1 – 31.0	21.0 – 26.9	Strong Breeze
7	13.9 – 17.1	49,9 – 61.7	31.1 – 38.3	27.0 – 33.3	Near Gale
8	17.2 – 20.7	61.8 – 74.6	38.4 – 46.4	33.4 – 40.3	Gale
9	20.8 – 24.4	74.7 – 88.0	46.5 – 54.7	40.4 – 47.5	Strong Gale
10	24.5 – 28.4	88.1 – 102.0	54.8 – 63.6	47.6 – 55.3	Storm
11	28.5 – 32.6	102.1 – 117.0	63.7 – 73.0	55.4 – 63.4	Violent Storm
12	32.7 +	117.1+	73.1+	63.5+	Hurricane

THE LISTED RISKS CANNOT BE COMPLETE.

The basic rules for foil wing foiling comply with those of common sense and are valid for all outdoor sports.

3. RIGGING THE UNIT

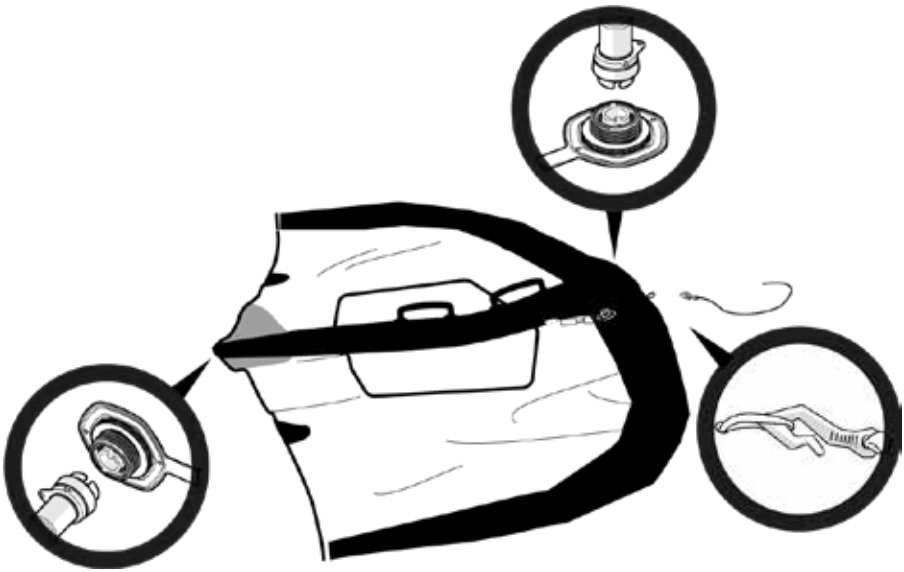
3.1. OVERVIEW OF THE UNIT



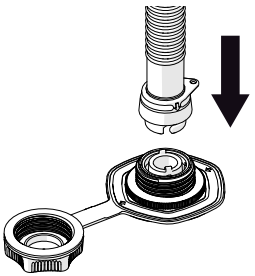
1 Leading Edge
2 Window
3 Airport Valve
4 Canopy
5 Tip
6 Middle Strut
7 Handles
8 Leash Attachment Loop

3.2. INFLATING THE FOIL WING

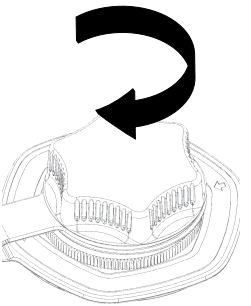
1. Lay the foil wing down on sand, grass or a surface free of hard or sharp objects as they could damage it.
2. Turn the Foil Wing with the leading edge into the wind. The bottom side of the foil wing is facing upwards
3. Connect the hook on your pump to the safety leash loop on your Foil Wing.



4. Close the outlet valve on the strut and tip and pump the foil wing according to the label next to the valve (see Section 4 on using the Air Port valve). Do not exceed the maximum pressure specified for your foil wing as this can result in damage to the wing. Reduce the pressure by 0.5 - 1 PSI for more comfort.



5. Close the valve



6. Connect the leash with the Foil Wing using the loop provided at the front tube.



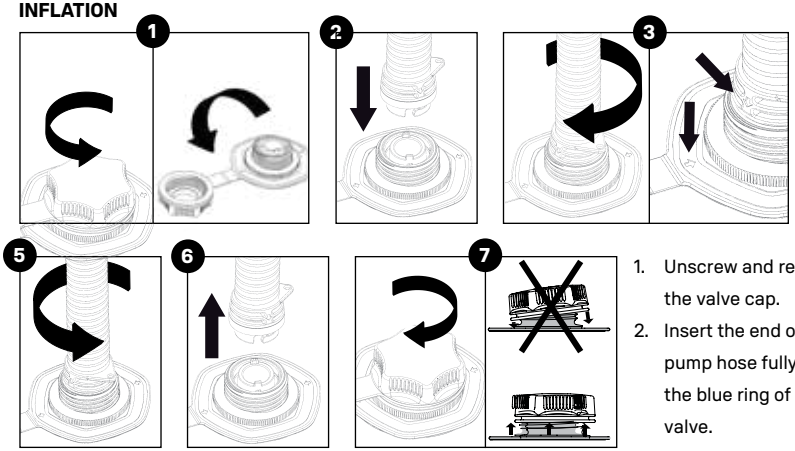
3.3. Securing the FOIL WING on the Beach

When the foil wing is not in use it has to be secured so it won't fly away.

1. Lay the foil wing down in areas without any sharp objects.
2. Turn the foil wing around so that the leading edge lies on the ground and points into the wind.
3. Attach the leash to a fixed object, like a pole, tree or alternatively weigh the foil wing down with sand or any other soft and heavy object.

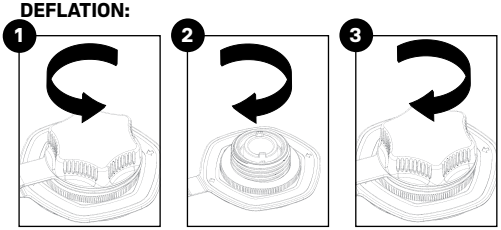
4. HOW TO USE THE AIR PORT VALVE II

INFLATION



1. Unscrew and remove the valve cap.
2. Insert the end of the pump hose fully into the blue ring of the valve.
3. Turn the end of the pump hose, including the blue ring clockwise by approximately 90˚. Excessive overturning of the valve may cause internal damage to the valve system. The arrow markers on the disc and the adapter of the pump indicate how far you should turn.
4. Pump up the foil wing NOTE: Due to the manufacturing tolerances of the pump hose (in particular third-party pumps), some air might escape from the valve while pumping. This however does not effect the inflation of the foil wing.
5. After inflation, turn the end of the hose (and the blue ring) approximately 90˚counterclockwise. This will activate the non-return function of the valve.
6. Remove the end of the hose from the blue ring.
7. To achieve an airtight seal, screw the valve cap onto the thread. Take note to place the valve cap correctly onto the thread for accurate fastening and sealing.

DEFLATION:

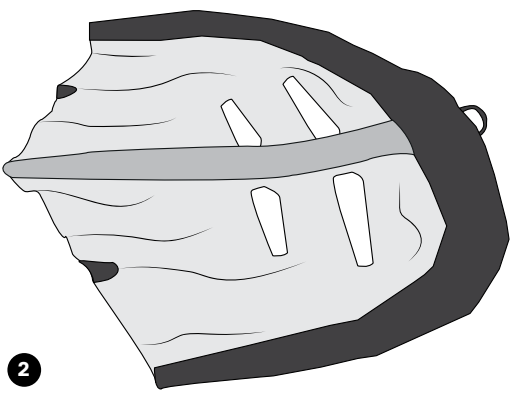


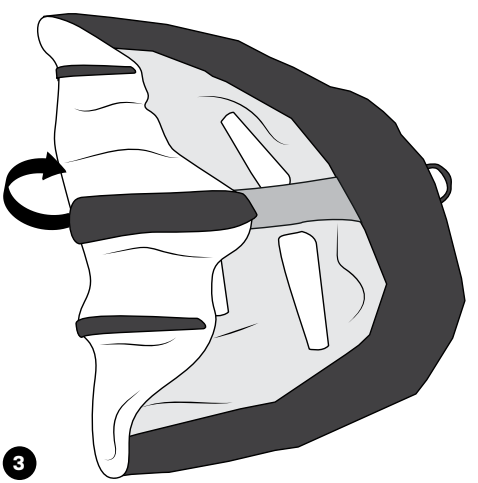
1. Remove the air from the Foil Wing via the Dump valve or the Air Port valve II.
2. Turn the blue ring as far as possible in a clockwise direction. The foil will now be deflated.
3. Close the valve with the cap to avoid dirt from entering the valve.

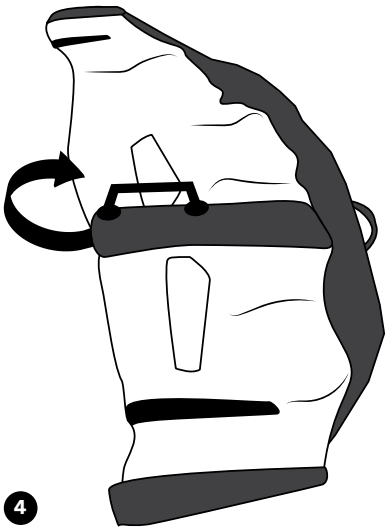
5. PACKING UP THE FOIL WING

1. Remove the air from the Foil Wing via Air Port Valve II and from the deflation valve on the middle strut.
2. Spread the wing on the ground, handles facing down.
3. Fold the trailing edge towards the front.
4. Fold the back of the wing a second time towards the front.
5. Fold the tips towards the middle.
6. Roll the wing up from both sides into the middle.
7. Store the Foil Wing in the bag.

ATTENTION: DO NOT FOLD THE WINDOW. FOLDING WILL LEAD TO CRACKS/TEARS OF THE MATERIAL. NO WARRANTY IF DAMAGE IS CAUSED BY WRINKLES AND TEARS.



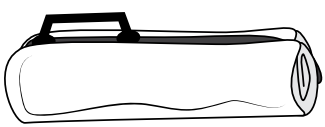




4



5



6

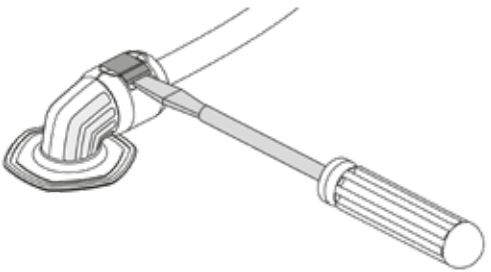
6. FOIL WING CARE

- Avoid bringing the foil wing into contact with sharp-edged rocks, thorns, wood and other objects that may damage, puncture or tear the cloth.
- Do not expose the foil wing to excessive sun as it ages the material unnecessarily.
- Deflate the bladders if the foil wing is to be left unattended for any length of time.
- Avoid leaving your foil wing on the beach for extended lengths of time as small wind movements may quickly cause wear and tear to the cloth.
- Try to pack up the foil wing without cuttlings into the bag to avoid tearing the canopy.
- To carry a foil wing, turn it so that the leading edge is upwind and the underside faces upwards. Grab the centre of the leading edge tube. If the wind is blowing, it will hold the foil wing clear of the ground. Be sure not to drag the tips of the foil wing across the ground.
- A coating that results from using the foil wing in salt water will not damage the foil wing. However, rinsing in fresh water and drying doesn't hurt.
- When cleaning the foil wing be sure that no water, dirt, or sand gets inside the bladders.
- Be sure that the foil wing has dried completely before packing it up. Otherwise changes of color or mildew could occur. Such bleeding is not covered under the DUOTONE warranty.
- Do not dry the foil wing in direct sun!
- Keep sand and water out of the air pump.

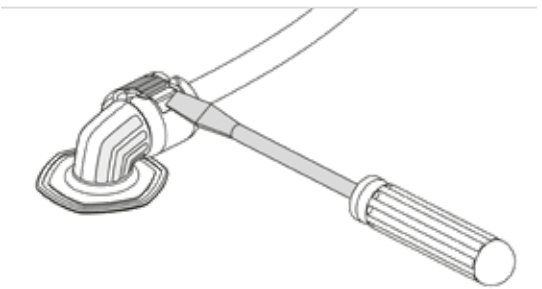
7. HANDLING OF THE LAZY PUMP CLIP

7.1. REMOVAL OF LAZY PUMP CLIP

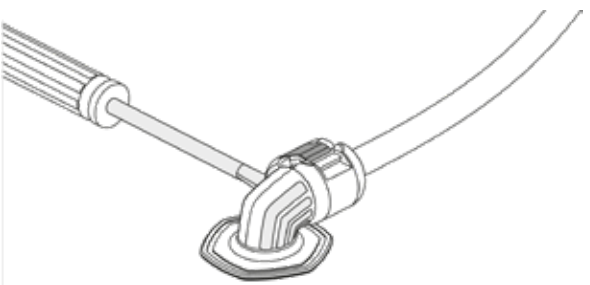
1. Use a small screwdriver to remove the Lazy Pump Clip. Slide the tip of the screwdriver carefully under one of the snap arms of the Lazy Pump Clip.



2. Rotate the tip of the screwdriver 90 degrees. The snap arm will spring open.

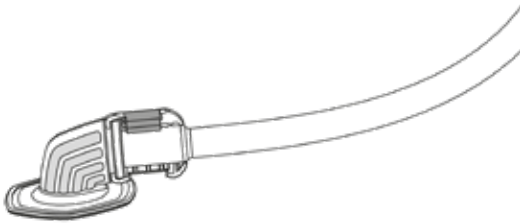


3. Repeat steps 1 and 2 on the opposite side of the clip.

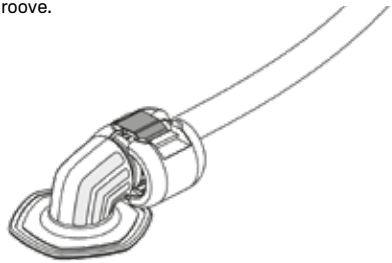


7.2. ATTACHING THE LAZY PUMP CLIP

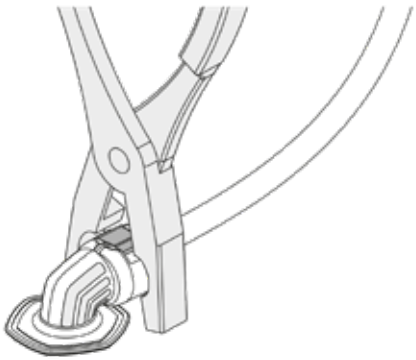
1. Place one half of the Lazy Pump Clip on the valve so that the lower edge of the Lazy Pump Clip fits into the groove of the valve.



2. Place the second half of the Lazy Pump Clip on the valve so that the snap arms face the corresponding groove.



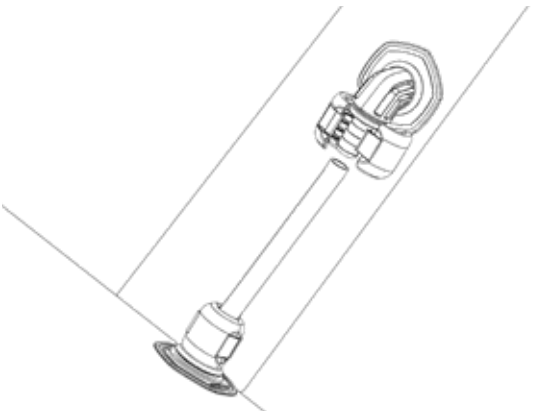
3. Press the two halves carefully together with the help of a pair of pliers. Both snap arms must be fully engaged so that the Lazy Pump clip is securely closed.



8. Bladder Repair

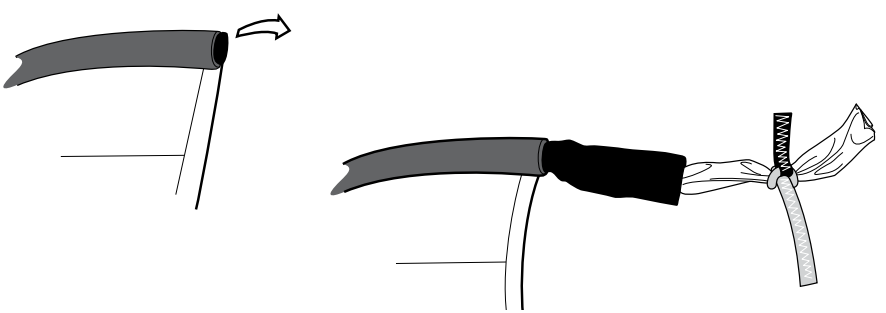
8.1. REMOVING THE LEADING EDGE BLADDER

1. Lay the foil wing down flat on the ground with the struts facing upwards and deflate all the struts.
2. Remove all rubber hose from the leading edge valves.



3. Open the end of the leading edge at the wing tips and pull out the bladder a few centimetres.
4. Attach a kite line to it using a larks head.

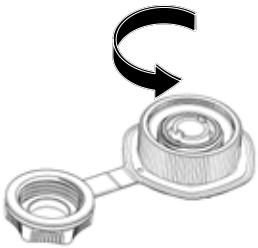
4. Open the zipper at the centre of the leading edge.



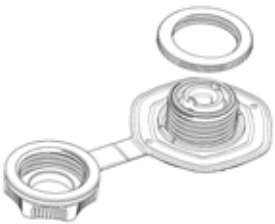
5. Push the bladder valve in the leading edge cavity.
6. Unscrew the secure ring from the
   Air Port Valve II using the provided tool.

7. Unscrew the secure ring from the Air Port Valve II using the provided tool.





8. Push the Air Port Valve II in the leading edge cavity.



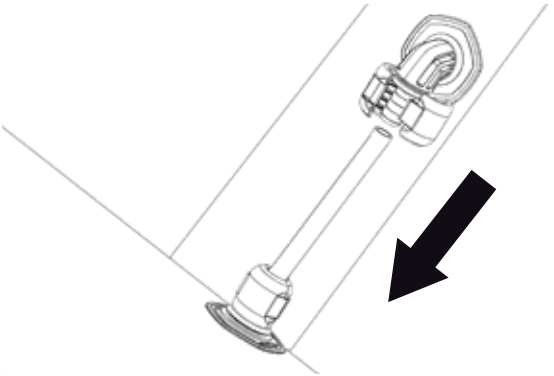
9. Remove each side of the bladder through the zipper from the leading edge, leaving the kite line inside the leading edge for re-insertion.

8.2. REMOVING THE STRUT BLADDERS

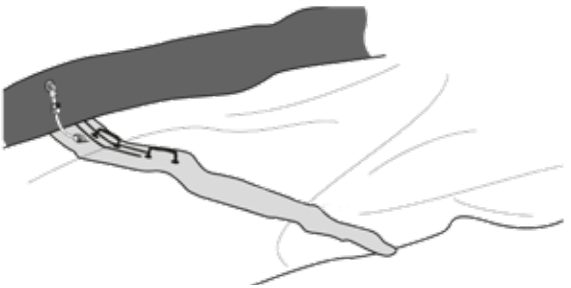


1. Remove the rubber hose form the strut valve.

2. Push the bladder valve in the strut cavity.



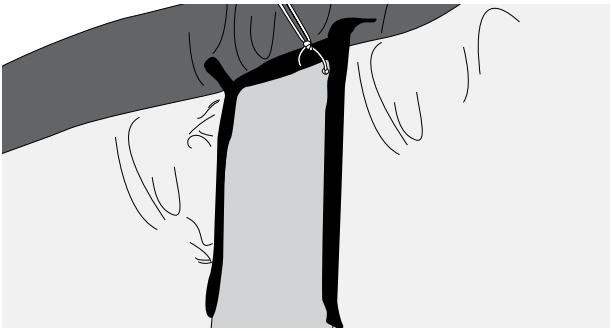
3. Turn it sideways and have a close look at the front part of the strut.



4. Disconnect the small white rope from the loop webbing.
5. Pull out the white rope carefully.



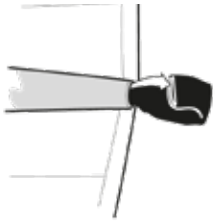
6. Take one of the flying lines and halve it. Connect the white rope to this line and secure it with two knots.

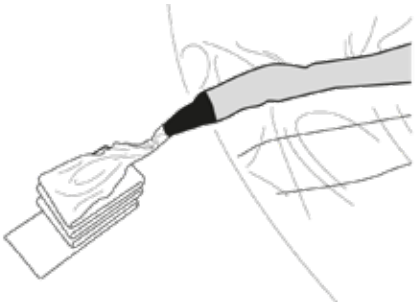


7. Turn the strut over to the other side and push the valve into the strut.
8. Ensure that the valve can move inside the strut freely.



9. Now have a look at the strut end.
10. Remove the strut flap and pull carefully on the bladder.





11. Ensure that the flying line you attached at the front of the strut can slide through the strut hole easily.
12. Pull out the entire bladder through the strut end.

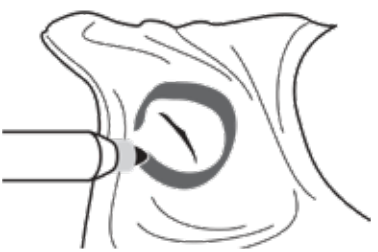


13. Remove the flying line from the bladder, ensuring that you keep the flying line inside the strut in order to be able to replace the bladder again.
14. To reinstall please follow the above steps backwards.

8.3. BLADDER REPAIR

For repairing small holes we recommend using the repair kit from DUOTONE.

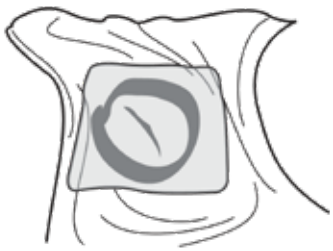
1. Inflate the bladder and wipe it with a sponge soaked in soapy water or submerge portions of the bladder in a tub of water. Air bubbles indicate holes.
2. Mark the hole and deflate the bladder.
3. Dry the bladder around the hole.



4. For small holes use the self-adhesive repair patches.

5. For bigger holes: cut a round patch out of the enclosed tube material.
6. Spread the patch and the damaged area with a thin layer of contact glue and let both sides begin to dry.
7. Now press both sides together.

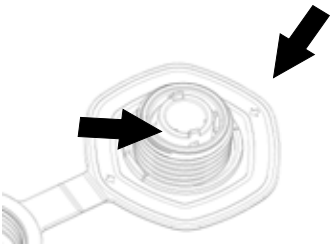
8.4. RE-INSERTING LEADING EDGE BLADDER



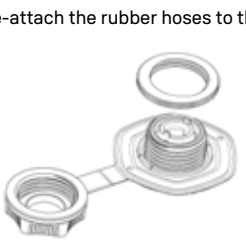
1. Before you begin to reinsert the bladder make sure the air valves are aiming in the direction of the valve opening.
2. Fold the bladder according the picture and lay the folded bladder in front of the zipper of the leading edge.

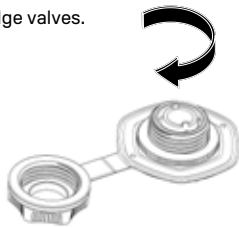


3. Pull carefully on the line coming out of the middle of the leading edge and feed the bladder back into the cavity.
4. Be sure that it is inserted correctly without twisting.
5. When the bladder is completely inserted, make sure that the air valves are positioned correctly in the valve opening.
6. Screw the secure ring back onto the valve.

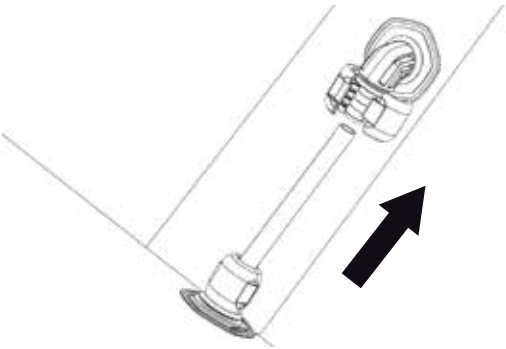


7. Re-attach the rubber hoses to the leading edge valves.





8. Close all lazy-pump-cleats.
9. Fill the leading edge with air carefully.
10. Check that the bladder has been correctly inserted and look for wrinkles in the material. If you detect any irregularities in the air tube or if the valve is not positioned correctly, deflate and start over again.
11. Roll up the excess bladder and close the flaps at the wing tips.



9. WINDSPEED AND FOIL WING SIZE

This foil wing is superbly easy to water re-launch and offers easy, predictable performance. Only a few knots of wind speed is required to fly this foil wing. Foil wing foiling however, generally requires more wind, depending not only on rider ability but also the size of foil wing, rider and board.

The following table demonstrates the approximate average wind speeds in which foil wing of different sizes can be used by riders of various skill levels and weights. Riders who are significantly heavier or lighter should use, for a given wind speed range, foil wing that are one size bigger or smaller respectively. These represent a rough guide only.

UNIT 23	SIZE	WIND RANGE [KN]
	2.0	30 - 50
	2.5	25 - 45
	3.0	20 - 40
	3.5	16 - 35
	4.0	13 - 30
	4.5	11 - 28
	5.0	9 - 25
	5.5	8 - 22
	6.0	7 - 20
	6.5	6 - 18

UNIT DLAB 23	SIZE	WIND RANGE [KN]
	3.5	15 - 35
	4.0	12 - 30
	4.5	10 - 28
	5.0	8 - 25
	5.5	7 - 22
	6.0	6 - 20
	6.5	5 - 18

10. WARRANTY POLICY

- DUOTONE Warrants this product to be free of major defects in material or workmanship to the original purchaser for a period of six months from the original date of purchase. This warranty is subject to the following limitations: The warranty is valid only when the product is used for foil wing foiling on water and does not cover products used in rental or teaching operations.
- DUOTONE will make the final warranty determination, which may require inspection and/or photos of the equipment, which clearly show the defect(s). If necessary, this information must be sent to the DUOTONE distributor in your country, postage prepaid.
- If a product is deemed to be defective by DUOTONE, the warranty covers the repair or replacement of the defective product only.
- DUOTONE will not be responsible for any costs, losses or damages incurred as a result of loss of use of this product. The warranty does not cover damage caused by misuse, abuse, neglect or normal wear and tear including but not limited to, rigging with other than DUOTONE components, damage
  due to excessive sun exposure, damage caused by improper handling or storage, damage caused by use in the waves or shore break and damage caused by anything other than defects in material and workmanship.
- This warranty is voided if any unauthorized repair, change or modification has been made to any part of the equipment.
  The warranty for any repaired or replaced equipment is good from the date of the original purchase only.
  The original purchase receipt must accompany all warranty claims.
  The name of the retailer and date of purchase must be clear and legible.
  There are no warranties that extend beyond the warranty specified herein.

WARRANTY CLAIMS

- Warranty claims must be processed and be issued a return authorization prior to shipping to DUOTONE.

