



Buoyancy Compensator

Owner's Manual



Introduction

Thanks for Choosing Zeagle!

We value your decision to invest in a Zeagle Buoyancy Control System. Please have your authorized Zeagle Dealer familiarize you with the operation and care of your new Zeagle Buoyancy Compensator* (BC) and go over your Owner's Manual with you. Have your Dealer sign the appropriate line on the service record at the end of this manual, after he has performed this service. Before you use your BC for the first time, be sure your Dealer has performed the Dealer prep check list. Please save and refer to this Owner's Manual from time to time to enable you to fully understand and benefit from this fine product.

SCUBA Diving is an extremely enjoyable pastime when done with proper training, good equipment, and knowledge of both your equipment and your diving environment. **This Zeagle Buoyancy Control System is intended for use only by individuals practicing safe diving principles.**

*Buoyancy Compensator (BC) and Buoyancy Control Device (BCD) are synonymous for the same piece of SCUBA diving equipment.



Contents

| | |
|--|----|
| Introduction | 1 |
| Warranty Information | 3 |
| General Information and Specifications | 4 |
| Function of the Zeagle System | 7 |
| Fitting and Assembly | 9 |
| Pre-dive Assembly and Inspection | 15 |
| Donning Procedures | 19 |
| Diving with the Zeagle System | 20 |
| Emergency Procedures | 21 |
| Maintenance | 23 |
| Service Record | 24 |
| Local Dealer | BC |



Warranty Information



Owner's Responsibilities

- Zeagle Systems, Inc. requires that the end user of this system be certified by a nationally or internationally recognized SCUBA certification agency and adequately trained in its use by a certified SCUBA instructor with thorough knowledge and experience in the use of Zeagle Systems, Inc. equipment.
- An annual inspection performed by an authorized Zeagle Dealer is required for safe operation of this system.
- **Your Zeagle BC is NOT a personal flotation device and should not be used as a life jacket. The BC does NOT guarantee a heads up position of the wearer at the surface.**
- All emergency procedures should be practiced periodically in shallow water (3 m or 10 feet) to maintain preparedness in the event an actual emergency should occur.
- The owner shall complete and mail the Warranty Registration Card to Zeagle Systems, Inc. within 30 days of purchase.
- For assistance with preparation, questions or service, contact your local authorized Zeagle Dealer or Zeagle Systems, Inc.



LIFETIME GUARANTEE TO THE ORIGINAL OWNER

Your BC is guaranteed against defects in materials and workmanship. This guarantee does **not** cover damages from accident, abuse, neglect, alterations, improper usage, or failure to provide reasonable care. To validate your warranty you must fill out and return your warranty registration card within 30 days. All warranty claims will be handled through an authorized Zeagle Dealer.



General Information and Specifications

IMPORTANT

This Buoyancy Compensators Owner's Manual contains important safety, maintenance, and operation information.

Read this manual thoroughly before diving.

Important information on the assembly, operation, and maintenance of your BC is designated throughout this manual with the 'IMPORTANT' graphic and symbol above.

This owner's manual also uses the following "WARNING" graphic and symbol to designate that special attention needs to be given to the manual, otherwise, a potentially hazardous situation which, if not avoided, may result in injury or death.

WARNING

WARNING

SCUBA diving is an adventuresome activity, some risks are involved. Please be sure that you and your dive partner have current certifications and follow all recommendations of your certifying agency and that all equipment is used and maintained according to the manufacturer's recommendations. Failure to follow these guidelines can result in serious injury or death.



General Information & Specifications

SCUBA Cylinder Selection and Configuration

Your buoyancy depends on the combination of all your diving equipment added to your own buoyancy. The Zeagle System is designed to work with a variety of tank sizes and configurations.



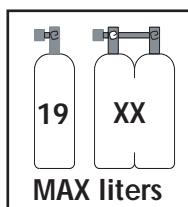
WARNING

Failure to comply with the following information may result in an improper buoyancy configuration. You must maintain neutral buoyancy while diving to prevent injury or death.



IMPORTANT

The maximum single and double cylinder size specifications (in liters) for the BC is found on a tank pictogram on the warning label. This label is found on the BC, inside the vest. If the double cylinder pictogram has a "XX" in it, then the BC has been designed for single cylinder use only. If the single and double cylinder pictograms have numbers in them, then the BC has been designed for either single or double cylinder use. The number in the pictogram indicates the largest cylinder size recommended, in liters.



Tank Pictogram

Cylinder **dimensions** and **capacity** are two quantities which are important to understand when configuring your equipment. Cylinder dimensions are the actual, outside dimensions of a SCUBA cylinder (also called the tank). Zeagle BC's are designed specifically for SCUBA cylinders which have a maximum diameter of 20.3 cm (8 in) and maximum height of 78.7 cm (31 in). Consult your local authorized Zeagle Dealer if you have any questions regarding cylinder **dimensions**.

Cylinder **capacity** is the volume of the SCUBA cylinder. When expressed in cubic feet, the volume is given for compressed gas. When expressed in liters, the volume is given for the actual volume of the cylinder based on the interior dimensions of the cylinder. Zeagle Systems, Inc. maximum recommended cylinder capacity is 19 liters (120 ft³). Once again, if you have a question, consult your local authorized Zeagle Dealer.

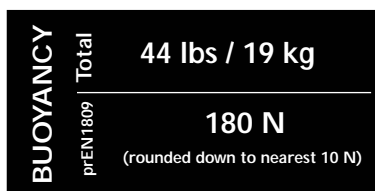


General Information and Specifications

Surface Buoyancy of BC's

Your BC's buoyancy, has been rated by Zeagle Systems, Inc. Buoyancy figures were measured in fresh water at sea level, and were rounded down to the nearest pound. For buoyancies listed in the metric system, buoyancy is measured in multiples of 10 Newtons, then rounded down to the next lowest multiple.

The buoyancy of your BC is printed on a label, located on the bladder assembly, as shown on page 8. A typical label for a BC will look like the example below. This particular label indicates that the bladder assembly is rated at 19 kg (44 lbs) buoyancy.



Operating Temperature Range

Table 1.0

| | | |
|-------|-----------------|----------------|
| Air | -4° to +122° F | -20° to +50° C |
| Water | +28° to +104° F | - 2° to +40° C |



WARNING

Special Instruction in cold water diving methods, and the specific use of this product is required prior to cold water diving (temperatures below 10° C/ 50° F). This instruction is beyond the scope of this Owner's Manual. Diving without this instruction could result in injury or death. Consult your SCUBA instructor for this instruction prior to using this product in cold water.

Shelf Life

The shelf life for a new, unused BC when deflated and stored in a dry place at room temperature, with no exposure to ultraviolet (UV), light is seven years. Refer to page 23 for Storage and Post Dive BC Cleaning information.



Function of the Zeagle System

The Zeagle Buoyancy Control System

The function of the Zeagle buoyancy control system is to add to your diving enjoyment. It is designed to provide you with a comfortable way of “wearing” your SCUBA system, a resting platform while on the surface, and an easy means of controlling your buoyancy while diving.

Vest

With the exception of the Speed-Pac, Scout, and Tech Pac, the vest portion of the system should fit so that it wraps partially around the front of the diver. The Speed-Pac is made with a harness which does not come around in front of the diver. See Illustration on page 14. You should be able to tighten the waist strap (the vest should fit quite snugly around the waist) in order to prevent the BC from shifting during the dive. If you can draw the two sides of the vest together you need a smaller size vest.

Side Panels

The side panels should fit around the waist (top of the hip) NOT over your rib cage or diaphragm, with at least a four inch overlap on the touch fastener closure. The side panels are attached using six (6) plastic screw fasteners, and can be adjusted by moving the side panels to a different set of grommets on the vest section. See Illustration on page 9. **It is imperative that the BC not be worn too high on the body** as this will create an undesirably high center of gravity and could restrict the ability of your diaphragm to move freely, resulting in discomfort or shortness of breath.

Shoulders

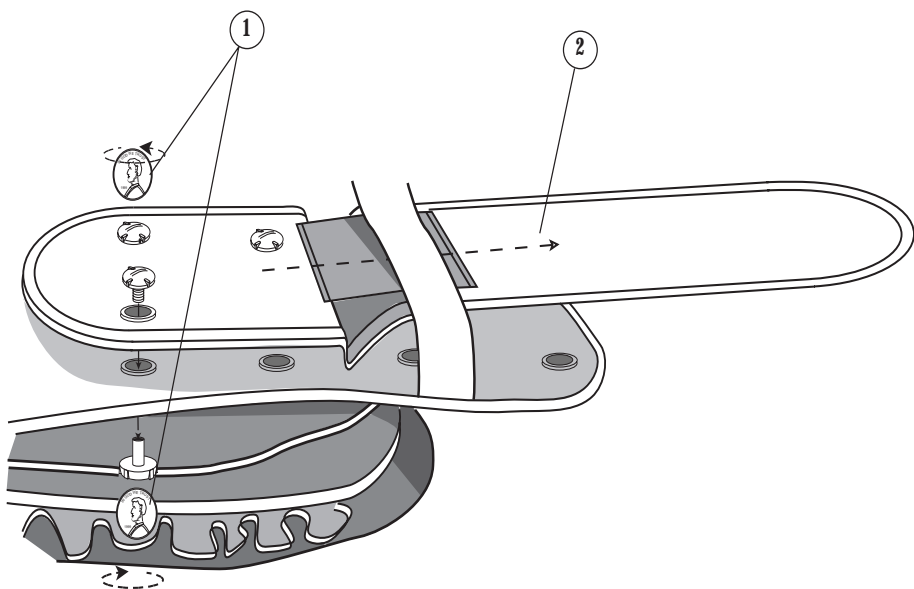
Length of the shoulder strap depends on personal comfort and the length of your torso. Take into consideration different suits you may be wearing with the system, and be sure to allow enough length so the pack may be worn low as described above. The sternum strap should be just above the breast line as shown on page 14. You should easily be able to reach the quick release buckles.



Fitting and Assembly

Adjusting Side Panels

1. Using two coins, unscrew the plastic screw fasteners.
2. Move the side panel to different set of grommets on vest and reinstall.





Fitting and Assembly

Threading The Standard Single Cylinder System

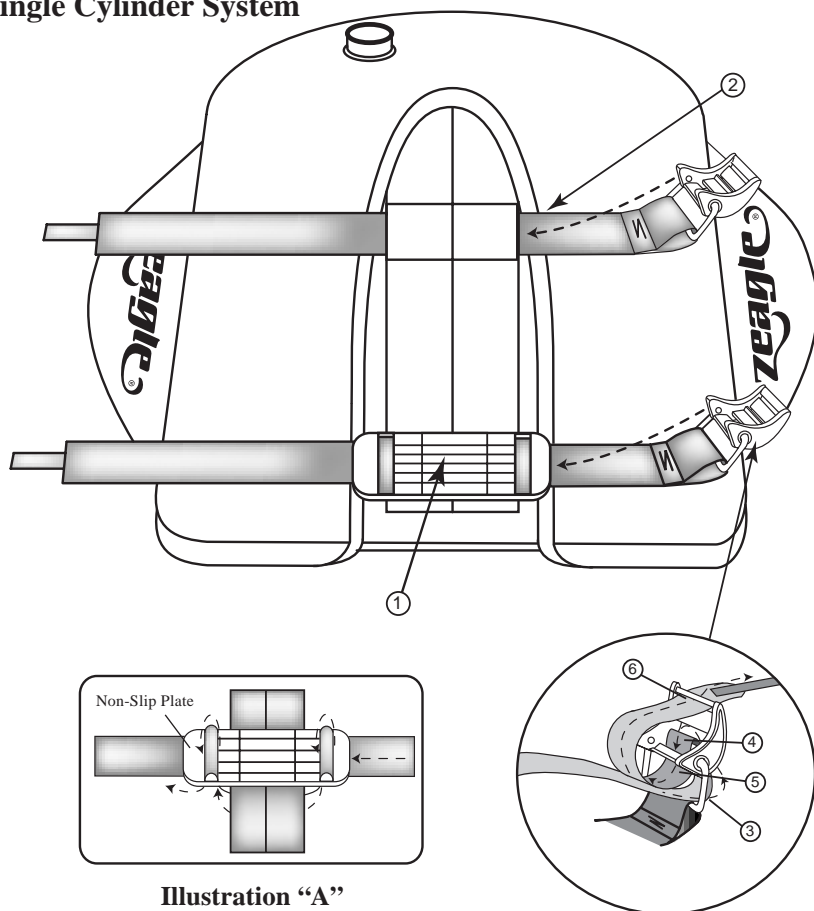


Illustration "A"

(Single Cylinder Band Assembly)

Illustration "B"

(Standard System Only)

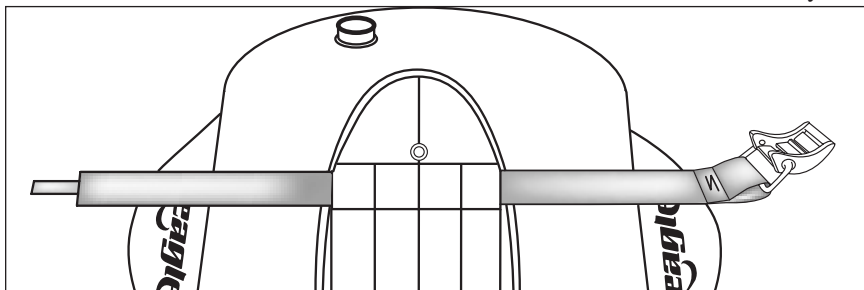
1. Thread cylinder band through non-slip plate and then under the bottom center backplate straps as shown in Illustration "A."
2. Thread cylinder band under the top center backplate strap on BC.
3. After threading bands through BC begin threading bands through bottom of buckle as per Illustration "B".
4. Threading it through the center slot.
5. Thread through slot closest to metal bail, pull to tighten around cylinder.
6. Loop webbing through final slot in buckle. Check to be sure that your cylinder is lined vertically on the BC. "Cam" the buckle over for extra tension, and lock buckle by engaging touch fastener material on cylinder strap.



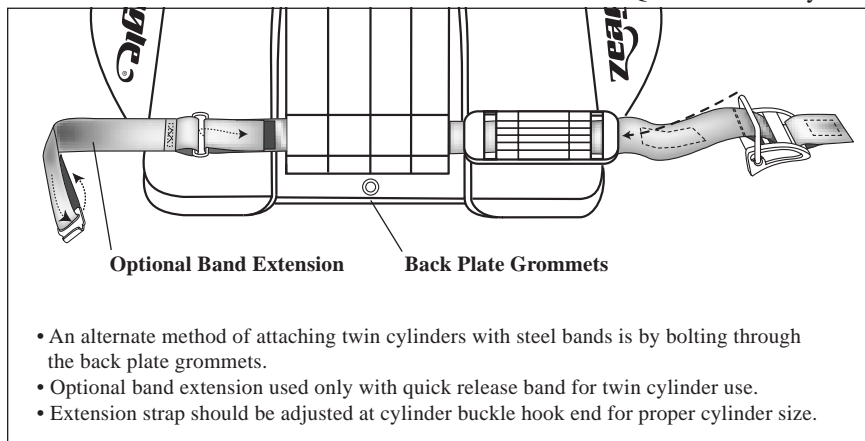
Fitting and Assembly

Threading The Standard & Quick Release System On A Twin Cylinder Back Plate

Standard System



Quick Release System

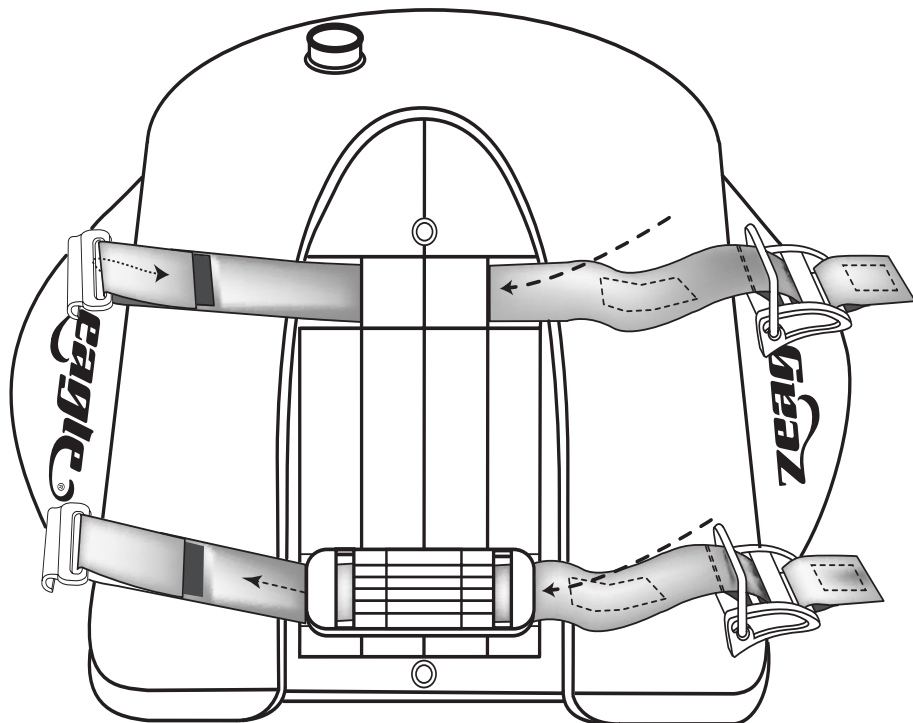


There are only minor differences on a twin cylinder model. The rubber “non-slip” plate should be completely installed on the bottom band opposite the touch fastener material on the band, before inserting the band under the webbing on the pack. The bands go under the vertical webbing on the back plate. If your system has only two pieces of vertical webbing, it is not a twin cylinder model and should not be used with twin cylinders. If you are setting up a double pack for single cylinders, please note that the single size cylinder bands only go under the center 10.2 cm (4 in) of vertical webbing on the back plate and the rubber plate is installed as illustrated on pages 10 and 12.



Fitting and Assembly

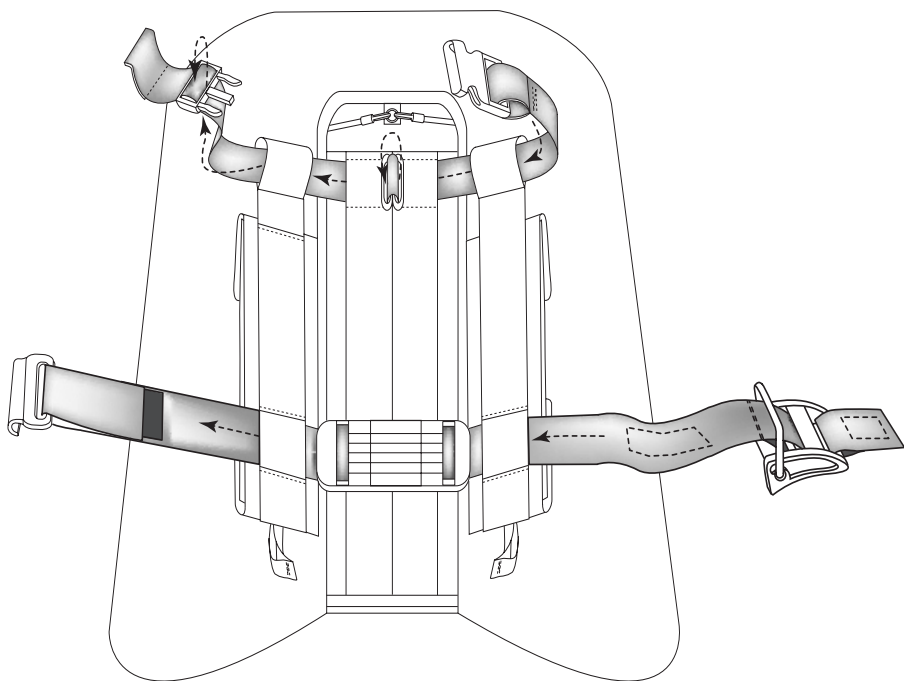
Threading The Quick Release System For A Single Cylinder On Twin Cylinder Back Plate



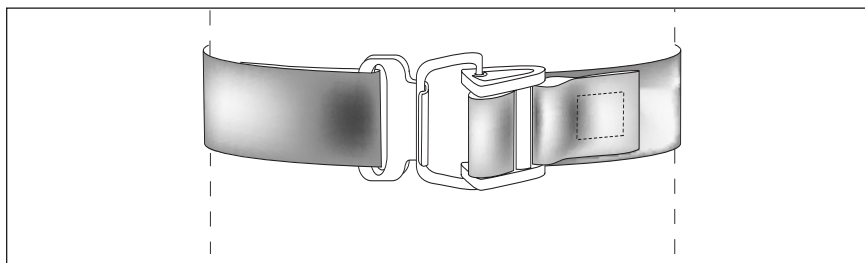


Fitting and Assembly

Scout Single Cylinder Band System



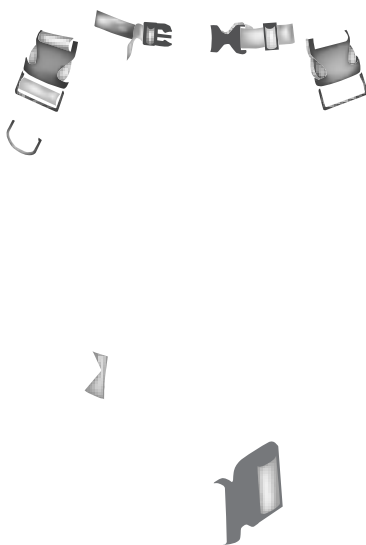
Quick Release fully closed





Proper Fit

The Zeagle System allows the diver to size each component of the buoyancy system independently for a true custom fit. For proper performance please be sure that your system fits as described below. Put BC on (before attaching to SCUBA cylinder) and adjust shoulders and waist as follows.



1. Loosen shoulder straps before donning. Put it on like you would a jacket. If your system is equipped with side panels, stretch the elastic by extending each side panel as far as possible before wrapping it around you and fastening the touch fastener material.

2. The system should be worn low with the bottom of the vest at the top of your hips, once side panels are secure. Clip waist strap and tighten snugly.

3. Fasten the sternum strap. It should be just above the breast line. If wearing a dry suit, be sure that sternum strap does not obstruct drysuit inflator hose or valve.

4. Adjust shoulder straps



Pre-dive Assembly and Inspection



WARNING

Adjust the BC so that it does not restrict your breathing. Restriction of normal breathing while wearing your BC could result in injury or death. Before each dive, check all bands, straps, clips, and/or waist panels for proper adjustment.

Over Pressure (OP Valve)/ Dump Valve

The over pressure/ dump valve is typically located on the lower front of the bladder assembly. As its name implies, the OP Valve prevents over inflation of the bladder. The valve automatically releases air when the internal bladder pressure exceeds the valve's spring pressure. The valve will automatically close when the internal bladder pressure is less than the valve's spring pressure. This valve may also be used to "dump" air when you are diving, by pulling the knob/string that is attached to the valve. **The OP Valve should be inspected before every dive for proper operation.**

Remote Exhaust Valve (RE Valve)

Your BC may be equipped with a remote exhaust valve. If it is, it is located on the upper left, just behind the shoulder, on the bladder assembly. The RE Valve allows you to "dump" or exhaust air manually as you adjust for neutral buoyancy. The RE Valve operates by simply pulling on the power inflator mechanism and corrugated rubber hose.



IMPORTANT

The RE Valve should be inspected before every dive for proper operation. Also, inspect that both threaded caps on the RE Valve, are tightened securely. The exhaust cap must be tightened a minimum 1/12 turn (3/8 inch) after it first contacts the body. The RE Valve was designed to be maintained, but without proper tightening of these caps, they may loosen over time.

Power Inflator/ Oral Inflator Mechanism

Your BC may also be equipped with a power inflator/ oral inflator mechanism. This unit consists of an Oral Valve Mouthpiece, Oral Valve Button, and Pneumatic Inflation Valve (PIV) and connects directly to the RE Valve via a steel cable (inside the corrugated hose). The PIV operates over a pressure range of 6.5-13.8 bar (95-200 psi). To inflate the BC using the PIV, attach a low pressure hose to the quick disconnect (QD) fitting and depress the PIV button. To inflate the BC using the oral inflator, depress the Oral Valve Button and breathe into the Oral Valve Mouthpiece.

CHECK ALL MECHANISMS BEFORE EVERY DIVE FOR PROPER OPERATION.



Pre-dive Assembly and Inspection

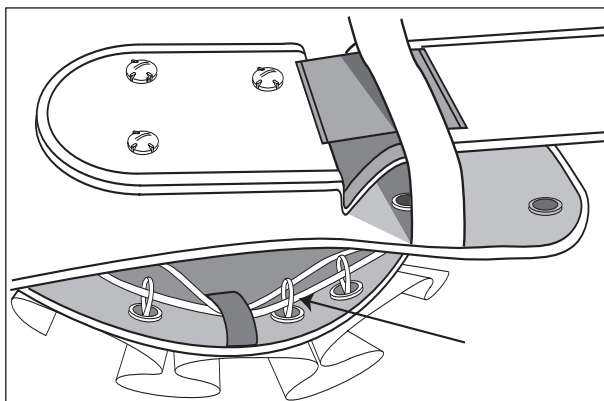
Weight System Inspection



WARNING

Check to see that weight release system is secure.

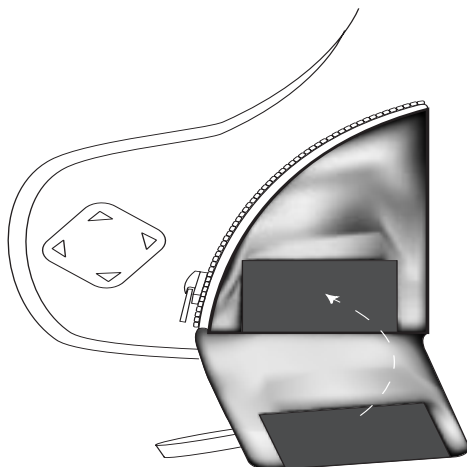
Ripcord™ release system - check bottom of weight pockets to be sure they are held closed by the ripcord. If the Ripcord has been pulled, rethread the system. (Refer to the rethreading section on following page).



WARNING

Check to see that weight release system is secure.

ZIP Touch™ fastener pocket system - Check to see that the touch fastener material flap on the bottom of each weight pocket completely overlaps and is secure.





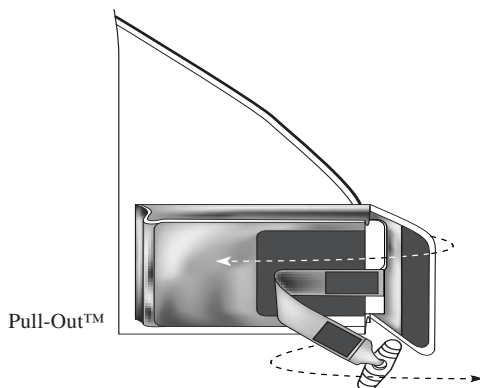
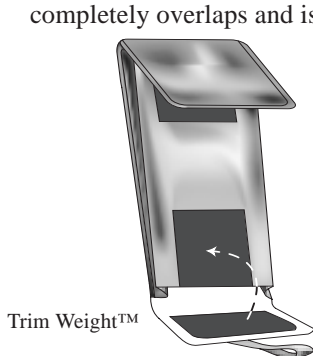
Pre-dive Assembly and Inspection



WARNING

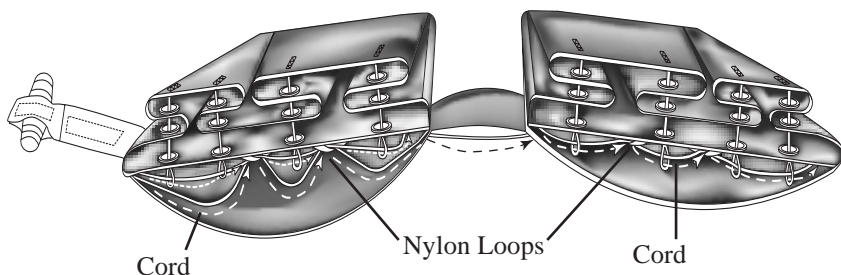
Check to see that weight release system is secure.

Trim Weight™, Pull-Out Pocket™ Touch Fastener System - Check to see that the touch fastener material flap on the bottom and sides of each weight pocket completely overlaps and is secure.



Rethreading The Ripcord™ System

If the Ripcord is not completely secure, rethread using the following procedure.



- Return Ripcord handle to secure position.
 - Pull cord through for the right weight pocket.
 - Start with the loop closest to the Ripcord handle.
 - Each white nylon loop is threaded through three grommets. The cord is then threaded through the end of the white loop.
 - Thread cord under webbing that is between the grommets.
 - Repeat for all nylon loops.
 - Finish by pushing cord between pocket and vest.
 - Repeat on opposite pocket.
-



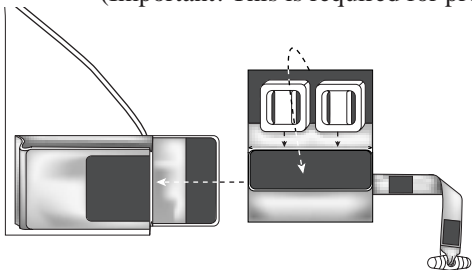
Pre-dive Assembly and Inspection

Loading the Zeagle Integrated Weight System:

Loading:

Weights can be loaded after the system is donned as shown or the weights can be loaded before the system is donned. Considerations include the amount of weight and the distance to enter the water. Ask your buddy for help in either case. To load the weight system:

- Unfasten buckles securing bladder assembly to side of vest to allow for easy access to weight pockets.
- Load Ripcord™ or Ziptouch™ pouches through zippered opening on pocket top. Be sure zipper is fully closed after loading.
- Pull-Out™- load pouch through Touch Fastener opening. Close opening and load pouch into pocket according to illustration.
- Refasten buckles securing bladder to side of vest.
(Important! This is required for proper BC performance)





Donning Procedure



WARNING

Diving equipment is heavy! To avoid injury or fatigue and to become familiar with each other's equipment, have your buddy assist you! Take this opportunity to be sure your buddy understands how your weight release works.

Be sure you have read and performed the Proper Fit page in the Fitting and Assembly section of this manual first.

- Open cylinder band buckles and loosen bands.
 - Align system so that the top of the bladder assembly is even with the cylinder valve (slightly higher or lower may be required depending on the diver's size and the type of tank, this is a good starting point).
 - Make sure that the two sets of bands are in vertical alignment with your tank and not twisted to one side.
 - Pull bands snug and close buckles. Secure loose end of bands on touch fastener.
 - Connect regulator to cylinder valve and finish assembling system per manufacturer's instructions.
 - Be sure you are familiar with the low pressure inflator system on your Zeagle BC. Inflate the system and check for leakage.
 - Weights can be installed in the weight pockets before the BC is donned or after. It may be easier to add your weights after you have the system on avoiding lifting the tank and weights together. Considerations include the amount of weight and the distance to enter the water. Ask your buddy for help in either case.
 - Loosen shoulder straps.
 - Have your buddy balance the system while you put it on like a jacket.
 - Remember, the system should be worn low with the bottom of the vest at the top of your hips
 - Fasten side panels and/or waist band.
Extend the side panels as far as possible before wrapping around your body
Be sure to get the waist tight.
 - Fasten the sternum strap and adjust.
If wearing a drysuit, be sure that the sternum strap does not obstruct the drysuit inflator hose or valve.
 - Adjust shoulder straps.
 - Fasten split saddle strap if your system is so equipped.
-



Diving with the Zeagle System

Pre-Dive Check:

Prior to each dive always check to make certain your BC has no obvious leaks by inflating the bladder until the over pressure relief valve vents. Listen for air leaks. If any are found, then service is necessary by an authorized Zeagle technician. Check the Ripcord™, Ziptouch™, or Pull-Out™ weight systems. (See Illustrations on page 18)

Diving

- Start descent by releasing air slowly either through the inflator by holding the exhaust over your head and pushing on the exhaust button or by pulling gently (approximately 1/2 inch) on the inflator to open the remote exhaust valve on the shoulder if your system is so equipped. **DO NOT USE EXCESSIVE FORCE AS THIS COULD SERIOUSLY DAMAGE THE SYSTEM.** Let out just enough air to start your descent. As you descend and when you reach your desired depth you will need to add air to your Zeagle BC by pressing on the air inlet button of your low pressure inflator to attain “neutral” buoyancy.
- It may be necessary to adjust the waist during the dive due to the compression and expansion of your diving suit.
- You will need to add air to the BC as you descend and exhaust air from the BC as you ascend to maintain neutral buoyancy throughout your dive.
- When you begin your ascent at the termination of your dive you must release air from your BC either through the exhaust on the inflator or through the remote exhaust, if your system is so equipped. Be sure you are vertical with your left side slightly higher than your right side to vent the BC. You should release air so as to maintain rate of ascent of one foot per second or less.
- Inflate your Zeagle BC when you reach the surface to attain a comfortable degree of buoyancy and lay back against the tank .





Emergency Procedures

Problem Management

Inflator problem

Inflators may fail due to foreign material in the mechanism, damage from impact by tanks or weights, or other causes. Practice the procedures below for your safety.

Inflator fails to operate

Check to see that the low pressure hose is properly connected. Orally inflate the bladder if necessary to establish proper buoyancy.

Inflator valve sticks open

Should the inflator valve stick open causing an uncontrolled filling of the bladder and/or excessive leakage of air at the inflator, hold exhaust valve open and over your head to vent excess air as you disconnect the low pressure hose from the inflator. Abort the dive.

Exhaust valve or over pressure valve sticks open

If the exhaust valve on the inflator sticks open, hold the inflator in the lowest position possible so as to allow the bladder to hold air from that level up. Abort the dive and attempt to swim slowly, 0.3 m/2 sec (1 ft per 2 second), or less, to the surface. Should excessive negative buoyancy be created, your weights may need to be released. Weight release at depth should only be done according to the standards set by your certification agency.

Failure to hold air

If for any reason the system should fail to hold an adequate amount of air to provide necessary buoyancy, abort the dive and attempt to swim slowly, 0.3 m/2 sec (1 ft per 2 seconds) or less, to the surface. Should excessive negative buoyancy be created, your weights may need to be released. Weight release at depth should only be done according to the standards set by your certification agency.

Above based on recreational no decompression diving. Decompression divers must have complete redundant systems to handle all problems underwater.



IMPORTANT

If at any time abnormal performance or malfunction is experienced, the system must be serviced by an authorized Zeagle Dealer prior to any further use.





Service Record

SERVICE RECORD

| DATE | SERVICE PERFORMED | SERVICE CENTER | TECHNICIAN # |
|------|---|----------------|--------------|
| | Dealer Preparation Owner Orientation | | |

Notes:

Locating Service and Support

The Dealer that sold you your Buoyancy Compensator will be able to assist you with additional questions regarding product operation, warranty, and service.

Your Local Zeagle Dealer:

(Dealer to affix stamp here)



Zeagle Systems, Inc.

**37150 Chancey Road
Zephyrhills, FL. 33541
Phone: (813) 782-5568
Fax: (813) 782-5569
www.zeagle.com**

FOR THOSE PRODUCTS BEARING THE MARK:

EC Type Examination by:
SGS Yarsley International Certification Services Ltd.
SGS House, Portland Road
East Grinstead RH19 4 ET England
Notified Body No. 0120