

# **zeagle**®

**SYSTEMS, INC.**



Zeagle BCs

## **Buoyancy Control System Inspection and Service and Service Procedure for Power Inflators**

Power Inflator



**Applies to all Zeagle Buoyancy Control Systems and Zeagle Power Inflators, p/n 112-1001 (standard) and p/n 112-2001 (high-flow)**



# Service Procedure for the Zeagle Power Inflator p/n 112-1001

**IMPORTANT NOTE:** The Zeagle 112-1001 Power Inflator was improved in 2002. Changes to the Valve Insert Assembly (p/n 112-1010), the Inflate Shaft (p/n 112-1005) and the Button Spring (p/n 115-4019) improve the Zeagle Power Inflator's feel, durability and resistance to sand contamination. Although the parts have changed, the part numbers have remained the same. This is because the parts have the same fit and function and are fully backwards compatible with all Zeagle 112-1001 Inflators made. The new parts are contained in the Service Kit (p/n 145-1000). Removing the old parts and replacing them with the new parts in the kit will transform an older 112-1001 Power Inflator to the latest version. The Inflator Button Sticker on the newer inflators and in the kits, has been changed from a red to a white background color to visually identify the latest version of Zeagle 112-1001 Power Inflators. Follow the included exploded view diagram of this inflator when using this instruction sheet. Read this procedure thoroughly, to familiarize yourself with the steps required before proceeding. See the last page of this manual for a cutaway view showing the internal differences between the older and revised inflators.

BCD Inflators are gas control devices that are subjected to free floating sand, grit and salt deposits. It is not unusual for an Inflator to develop a hissing leak when particles jamb the valve. It is standard practice to overhaul all diving gas control devices at least annually and even more often with severe use such as rental or training. Zeagle strongly recommends that BCDs and Inflators be serviced by a trained technician at least annually. Standard service for the BCD inflator includes the installation of the service kit p/n 145-1000.



**! Warning !** Never install a new Valve Core (Schrader Valve) into a used Valve Insert Assembly (16). The plastic threads on the Valve Insert Assembly are only intended to be engaged once at the factory. Always use a complete new Valve Insert Assembly (16) from Zeagle when overhauling a Zeagle 112-1001 Inflator.

## **Tools & Items Needed**

- Zeagle Inflator Service Kit p/n 145-1000
- 3/16" Allen Wrench (at least 3" long)
- 1/4" Allen Wrench
- Small Philips Screwdriver
- 5/16" Nut Driver
- 1/2" Wrench
- Pliers
- Pick
- Loctite 380 Thread Sealant (for ABS Plastic) (Zeagle p/n 347-0380)
- Lubricating Grease (LTI Christo-Lube 111® recommended) (Zeagle p/n 347-0111)
- Clean lint-free rag.

## **1. Disassembly**

- 1.1 Remove the Quick Disconnect fitting (12) from the body (9) with a 1/2" wrench
- 1.2 Remove and discard the O-ring (13) from the QD fitting.
- 1.3 Use a 1/4" Allen wrench to loosen the valve insert assembly (16).
- 1.4 Use pliers to pull the valve insert assembly out of the body (9).
- 1.5 Discard the valve insert assembly (16).
- 1.6 Carefully remove and discard the label sticker (5) from the inflate button (7) with a sharp pick.  
Note: If the old label sticker is red and the replacement sticker in your service kit is white, you will be upgrading the Power Inflator during your servicing.

- 1.7 Use a small Phillips screwdriver to remove the screw (6) from the button. While removing the screw, use a 5/16" nut driver to hold the inflate shaft (15). Remove the button spring  
Note: If the old label sticker you removed was red and the replacement sticker in your service kit is white, the old style curved washer spring will be discarded.
- 1.8 Discard the O-ring (14) and the inflate shaft (15).
- 1.9 Use a 3/16" Allen wrench (**at least 3" long**) inserted through the body (9) into the hex of the dump valve (11) to loosen and remove the dump valve (11) from the dump button (1).
- 1.10 Remove and discard the O-rings (10 and 2).

## 2. Cleaning and Inspection

- 2.1 Clean the parts that can be re-used (1,3,4,6,7,8,9,11 and 12) in warm soapy water.
- 2.2 Rinse and blow all parts dry.
- 2.3 Look closely at plastic parts for wear and cracks. Look particularly closely at areas under stress from threading and clamping. Discard any part that shows signs of cracking.

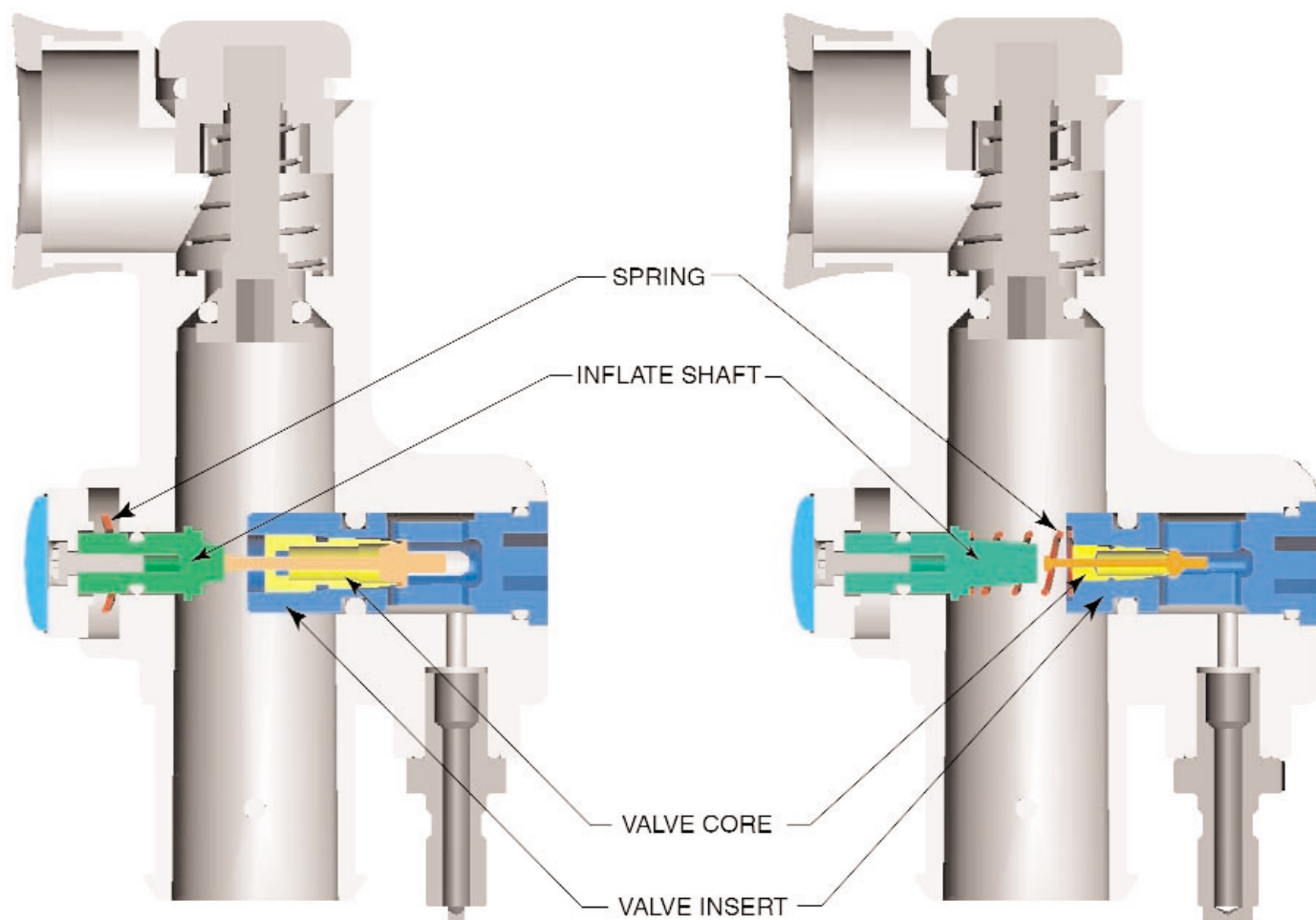
## 3. Re-assembly

- 3.1 Open Service Kit # 145-1000. Remove and inspect all parts in the kit.
- 3.2 Lubricate all loose kit O-rings with Lubricating Grease. (LTI Christo-Lube 111® recommended)
- 3.4 Install O-ring (10) onto the dump valve (11). Install O-ring (2) onto the dump button (1).
- 3.5 Lubricate the threads on the dump valve (11) with grease.
- 3.6 Place the dump valve (11) onto the end of a long 3/16" Allen wrench.
- 3.7 Insert the dump valve into the body (9) through the BC inflator hose end.
- 3.8 Install the spring (wide end first) over the dump valve from the dump button end. Turn the spring onto the shaft.
- 3.9 Screw the dump valve (11) into the dump button (1). Stop turning as soon as you feel the shoulders of the two parts meet.
- 3.11 Install the smallest O-ring in the kit (14) on the new inflate shaft (15) that also came in the kit (sometimes this O-ring will come pre-installed on the shaft).
- 3.12 Use the 5/16" nut driver to push the new inflate shaft (15) with its new O-ring, into the body (9)
- 3.13 Use a small Phillips screwdriver to install the screw (6) through the inflate button, into the new inflate shaft (15). Hold the inflate shaft from turning by using the 5/16" nut driver. The screw is turning new threads into the inflate shaft so some force will be required.
- 3.14 Just tighten the screw (6) snugly. Stop turning when you feel the shoulders of the parts meet.
- 3.15 Install the new white sticker (5) onto the inflate button (7).
- 3.16 Turn the body so that the white sticker (5) is facing down. Drop the new coil spring (8) into the threaded hole of the body where the valve insert assembly will be threaded. It will fall over the new longer inflate shaft stem (15).
- 3.17 Lubricate the threads and O-rings (in place) on the valve insert assembly (16) that came with the service kit. Look at the end of the valve insert where the valve core is pre-installed. Notice that the valve core lies in a slight recess. This recess is where the coil spring must fit when the valve insert is installed into the body.
- 3.18 Push the valve insert assembly (16) into the body (9). Use the 1/4" Allen wrench to tighten the valve insert snugly into the body. Stop turning the insert when you feel the shoulders of the parts meet. Look into the body at the coiled spring (3). If it is not sitting evenly in the recess of the valve insert, use a finger or a small screwdriver to push the spring into position. Work the inflate button several times and observe the action of the parts for correct fit and operation  
Correct any problems seen.
- 3.19 Lubricate and install the new O-ring (13) onto the QD fitting (12).
- 3.20 **Important:** Place one drop of Loctite 380 Thread Sealant (Zeagle p/n 347-0380) onto the outer two threads of the QD fitting (12)

3.21 install the QD fitting into the body (9). Tighten the fitting snugly with a 1/2" wrench. Stop turning the fitting when you see and feel the shoulders of the parts meet.

#### 4. Testing

- 4.1 Push and release both the inflate and deflate buttons. Check for smooth operation. Look into the opening where the corrugated hose will attach. There should be a very slight gap between the end of the inflate shaft (15) and the valve core tip of the valve insert assembly (16). No gap may produce slow leaks of intermediate pressure air into the BCD later on.
- 4.2 Before hooking the Power Inflator up to the corrugated BC hose, install it on a pressurized BC inflator hose.
- 4.3 Immerse the entire Power Inflator under water for at least 5 minutes. Look for leaks. Replace necessary parts if any leaks are found.
- 4.4 Install the Power Inflator onto the corrugated hose of the BCD, and to a pressurized inflator hose.
- 4.5 Check the buttons for proper operation and feel. Fully inflate the BCD and again submerge the Power Inflator underwater for 5 minutes. Look for leaks. Replace necessary parts if any leaks are found.



OLD VERSION

NEW VERSION

### ZEAGLE POWER INFLATOR REVISION

# **Buoyancy Control System Inspection and Service**

This procedure applies to all Zeagle Systems Buoyancy Control Systems.

Note: For normal recreational usage, an annual inspection interval is recommended. For severe service (military, search and recovery, training, etc.), inspection intervals should be decreased to six months.

## **Before beginning Inspection:**

Dry the BC thoroughly before inspection so that the condition of all materials can be seen clearly. Conduct the inspection under brightly-lit conditions so that the details of the materials can be closely inspected.

## **Inspection:**

Inflate the BC fully and inspect the condition of all seams and panels. Look very closely at the areas in the lower part of the BC subject to wear when the BC is dragged across rough surfaces. Examine all seams for torn material and threads. While inflating the vest fully check the operation of the over-pressurization valve for release and re-sealing.

Deflate the BC and examine areas where the tank bands attach to the vest section of the BC. Look closely around all grommets for material separation and tearing. While deflating the BC, check all dump valves (oral inflator, shoulder wire pull dump and bottom dump valve) for proper operation and resealing. Inspect all zippers for missing pull-tabs and teeth. Examine the stitching holding the zipper in place. Inspect all cylinder band buckles for cracks. Replace entire Band Assembly if any cracks are found. Check the entire band assembly for tears, missing Velcro and broken stitching. Inspect the corrugated hose for tears, pinholes, cracking, or deterioration of the material. Replace the hose if defects are found.

If the BC has a Ripcord® type weight release system, don the BC and pull the Ripcord® to check for the proper dropping of the weights. There should be a lead clamp on the middle area of the cord that prevents the cord from being pulled completely out of the BC. Examine the Ripcord® cable. If the Ripcord® cable comes completely free from the BC the entire BC must be returned to Zeagle for repair. Examine the weight drop pocket area of the BC. Check the grommets and white hang loops for wear and deterioration. For directions on re-threading the Ripcord® System, refer to the Zeagle BC Owner's manual or go to the Product Support section of the Zeagle web site at [www.zeagle.com](http://www.zeagle.com).

Check the Power Inflator Valve for proper operation and leaks. To overhaul the Power Inflator see the Service Procedure for Power Inflators.

Fully inflate the BC and set it aside for 20 minutes. After that time, the bladder should still be firmly inflated. If the BC has deflated, inflate the BC again and listen closely for leak points. If leakage is too slow to be heard, immerse the BC in water to locate leak(s).

Note: If during this BC Inspection any problems are found that you (the Authorized Zeagle Service Technician) cannot repair, contact Customer Service in the US at (813) 782-5568.

**Order Form** (sample)

This is a copy of the Service Parts Request Form. The actual form is a three-page carbon copy that is available by request from Zeagle Customer Service. If you do not have any forms on hand, you may photocopy this page and use it to receive warranty parts credit.

## Service Order / Parts Request Form



This form must be used by the Service Center  
for ANY Warranty Servicing

You MUST contact Zeagle for an RA  
Number to receive any Warranty Credit

37150 Chancey Rd.  
Zephyrhills, FL 33541  
(813) 782-5568  
Fax (813) 782-5569  
www.zeagle.com

Zeagle Service Center: City, State (Prov), Country: Phone / E-mail:			
Date Serviced:		Technician Name (PRINT): Technician Number:	
Customer Name: Address: City, State (Prov), Country: Phone / E-mail:			
RA # (call Zeagle): _____			
1st Stage Model: _____		Serial #: _____	
2nd Stage Model: _____		Serial #: _____	
BCD Model: _____			
Comments:			
<b>Part # Installed</b>	<b>Description of Part</b>	<b>Warranty Item? Y/N</b>	<b>Customer Price</b>
145-1000	Inflator Service Kit		
112-1010	Valve Insert Assembly		
Note: If a body or housing is replaced, note the new serial # in "Description of Part"			<b>Total:</b>

I am the original (first) owner of this equipment being serviced. Yes \_\_\_\_ No \_\_\_\_

Customer's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

The customer must provide proof of original ownership (receipts, etc.) before any "in Warranty" service can be performed.  
Service Center: Be sure this form is completely filled out, signed by the customer and returned to Zeagle for credit on warranty parts.





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U. S. A.

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Zeagle Web Site [www.zeagle.com](http://www.zeagle.com)  
Contact Zeagle Technical Services by E-mail at [tech@zeagle.com](mailto:tech@zeagle.com)

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Printed in USA

Part Number for this Manual (p/n 147-2000 Rev C)

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