



(A Member of the Protective Engineering Concepts, Inc. Group)

“The Leaders in Tactical Flotation”

September 2018



***Auto-Inflate Tactical Flotation
Support System®TM***

(ATFSS)

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Table of Contents

<u>Section</u>	<u>Page</u>
Change Record	3
1. Introduction	4
2. Features	5
3. Visual Inspection	6
4. Maintenance	6
5. Storage	6
6. Annual/Water Use Inspection	7
Packing ATFSS (DOM 12-2016 and earlier)	10
7. Packing ATFSS (DOM 1-2017 and later)	13
8. Functional Inspectional	16
9. Service Life	16
10. Wearing the ATFSS	17
Appendix A. ATFSS Flotation Bladder Nomenclature	18
Appendix B. ATFSS Parts List	19
Appendix C. Bobbin Information	20
Appendix D. Inflator Technical Data Sheet	21
Appendix E. Inflator Drawing	22
Appendix F. Inflator Rearm Instructions	23
Appendix G. Inflator Assembly Instructions	24

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The following symbols are used throughout this manual:



WARNINGS indicate a procedure or situation that may result in serious injury or death if instructions are not followed correctly.



CAUTIONS indicate any situation or technique that will result in potential damage to the product, or render the product unsafe if instructions are not followed correctly.

NOTES are used to emphasize important points, tips, and reminders.

Change Record

Change No.	Date	Title or Description	Made By
1	8/23/18	ATFSS Packing (DOM 1-2017 and later)	TP

1. Introduction

The procedures outlined within this manual are to be performed only by personnel who have received Factory Authorized training through an PECI Service & Repair Seminar. If you do not completely understand all of the procedures outlined in this manual, contact PECI to speak directly with a Technical Advisor before proceeding any further.

The Auto-Inflate Tactical Flotation Support System®TM (ATFSS), is an inflatable aid to flotation device specifically designed for covert war fighters, combat swimmers, and/or maritime airborne operations personnel. The ATFSS is ideal for small boat operations, training events and recreation. The ATFSS was designed to provide 45lbs positive buoyancy in seawater at a depth of 33 ft., 57lbs of positive flotation at a depth of 15 ft., and 80lbs of flotation on the surface, allowing today's war fighter a maximum load-out of equipment.

Each ATFSS system consists of one each independent left and right hand units, which can be mounted on a belt. Each unit includes a welded flotation bladder, an inflation system, a pouch closure system, a pouch, and a firing handle. The bladder is a reusable welded fabric enclosure that deploys under the arm and is readily collapsed and stowed for future use. The inflation system utilizes an manual pull system for primary inflation, a auto-actuated CO₂ cartridge as a secondary inflation source and an oral inflation tube as a third inflation source.

The ATFSS pouch uses a unique nylon zipper closure system designed to separate upon inflation. This method prevents accidental pouch opening and allows for the smallest unit size when fully packed (approx 8.5" x 2.5" x 2.25"). A durable Cordura flap to further protect against damage and inadvertent actuation covers the entire closure mechanism.

The ATFSS pouch contains and protects the bladder, inflation system, and closure system. It includes a waist belt loop and clip loops to secure the pouch to the webbing belt. A firing handle attaches to the outside of each pouch and uses color-coded beads to help distinguish left and right hand units. The handle serves to release the closure system and actuate the CO₂ inflation system, if the auto system fails.

To manually actuate an ATFSS unit, the user pulls upward on the firing handle. This motion initiates two sequential actions. First the manual inflator lever is actuated, causing the firing pin to puncture the seal on the CO₂ cartridges to release the gas and completely fill the bladder. This action then separates the nylon zipper and deploys the filled bladders. Should this CO₂ inflation system fail to operate, the bladder can also be filled through an oral inflation tube. This is accomplished by depressing the oralock valve, then breathing into the tube.

Gas is released from the ATFSS bladder by pressing downward on the oralock valve and forcing the air out the oral inflation tube. Once all of the gas is evacuated from the bladder, the CO₂ cartridges are replaced, maintenance is performed, and the units are repacked for future use.

The recommended service life is five (5) years. After five years of use PECI recommends replacement of the device.

2. Features

1. Minimum Buoyancy per Unit: 40 lbs. lift in seawater, at the surface, with air and water temperature of 70 degrees Fahrenheit (approximately 22 lbs. lift at 33 ft seawater)
2. Minimum Buoyancy per System: 80 lbs. lift in seawater, at the surface, with air and water temperature of 70 deg F (approximately 45 lbs. lift at 33 ft seawater)
3. Auto/Manual Inflation: Left and right automatically/manually operated CO2 systems



WARNING

PULLING THE HANDLE IS THE PRIMARY MEANS OF INFLATING THE ATFSS. THE AUTOMATIC FEATURE IS A BACK-UP. IMPROPER USE OR NEGLIGENT CARE OF THIS EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH.

4. Oral Inflation: Left and right oral inflation tubes
5. CO2 Cylinders: Left and right CO2 gas cylinders
6. Corrosion Resistance: All parts shall be corrosion resistant in fresh and salt water
7. Rot Resistance: All fabric, webbing, and binding shall be rot resistant
8. Approximate Size per Unit: 8.5" H x 2.5" W x 2.25" D
9. Maximum Weight per Unit: 15 oz. with full CO2 cartridge
10. Serialization: Each pair shall be assigned a unique serial number. Left side unit shall use suffix "LEFT SIDE"; right side unit shall use suffix "RIGHT SIDE". Each unit shall be marked individually.
11. Zipper Closure System

Lift Capabilities

All test data is in seawater

- 50 ft = 35lbs of lift
- 33 ft = 45 lbs of lift
- 15 ft = 57 lbs of lift
- 03 ft = 80 lbs of lift



3. Visual Inspection

It is the responsibility of the person using the ATFSS to perform the visual inspection. Perform a visual inspection prior to each use and at intervals not to exceed 30 days. If damage is found during an inspection, the flotation assembly must be grounded until repaired.

3.1 Inspect the outside of the case for:

- Cuts, tears, and abrasion damage
- Open seams and loose or broken stitching
- Contamination damage

3.2 Ensure that the beaded inflation handle is attached with 3 snaps fastened.

3.3 Try to bend the ATFSS in half to ensure a bottle is present



WARNING

A 38 GRAM, 3/8" THREAD CO2 BOTTLE, MUST BE PRESENT AND PROPERLY ATTACHED TO THE INFLATOR. IMPROPER CO2 BOTTLE OR ABSENCE OF CO2 CYLINDER CAN CAUSE SERIOUS INJURY OR DEATH.

4. Maintenance

Maintenance of the ATFSS consists of cleaning, service, and minor repair. The person's responsibility for maintenance is limited to inspecting the outside components of the device. If the device needs to be cleaned, only mild soap and water should be used. The device should then be hung to dry in a warm, dry place out of direct sunlight.

5. Storage

Store your ATFSS on a shelf away from direct sunlight in a dry, well ventilated place. Do not store your device near sources of heat such as a radiator, or in a warm, humid environment where mold or mildew can contaminate the device.



CAUTION

STORAGE AND CARE OF ATFSS IS EXTREMELY IMPORTANT

6. Annual/Water Use Inspection

An annual inspection should be performed annually or when exposed to water to ensure the ATFSS will perform when needed. It is the responsibility of qualified personnel to perform and log this inspection. The inspection can also be performed at the manufacturer. If damage is found during an inspection, the device must be grounded until repaired. Repairs are limited to replacement of snaps and inflator replacement. All other repairs must be completed at the manufacturer.

NOTE: If ATFSS has been submerged in water, the unit must be thoroughly cleaned by disassembling the inflator and rinsing the entire assembly with fresh water. Hang the unit in a warm dry place out of direct sunlight.

6.1 Inspect entire assembly for cuts, tears, abrasion damage, open seams, loose or broken stitching and/or contamination damage.

6.2 Tighten knurled nut by turning counter clockwise until snug.



6.3 Inflate bladder to 3.0 psi

Let inflated bladder sit for a minimum of one (1) hour.

6.4 Check pressure. Pressure should be above 2.0 psi



IF PRESSURE DROPS MORE THAN 1.0 PSI, SUBMERGE THE BLADDER IN WATER OR USE LEAK DETECTION COMPOUND TO DETERMINE WHERE LEAKAGE IS OCCURRING. IF LEAKAGE OCCURS AROUND INFLATOR, REPLACE INFLATOR AND GASKETS AND PERFORM LEAK TEST AGAIN.

NOTE: If leak can not be detected or fixed, device must be taken out of service.

6.5 Deflate bladder completely.

NOTE: Unit must be completely dried before packing.

6.6 Ensure knurled nut is tight



6.7 Bobbin (yellow) must be installed into the HOUSING (**see picture), white side facing away from the inflator towards the cap (clear), aligning the slots on the bobbin with the ridges inside the threaded housing. The bobbin will slide in easily if installed correctly.



6.8 Install cap by screwing clockwise until it meets the housing shoulder.

6.9 Place indicator clip over red lever by aligning the arms on the clip with the slots in the inflator. Push firmly in the middle of the clip to snap in place.



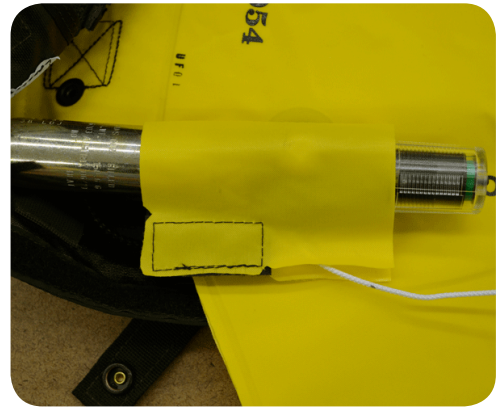
CAUTION

INSPECT BOBBIN AND VERIFY SHELF LIFE. BOBBIN SHOULD BE CHANGED AT EVERY ANNUAL INSPECTION. **SEE APPENDIX C**



6.10 Weigh CO2 bottle. Cylinder should weigh a minimum of 147 grams.

6.11 Install CO2 cylinder by rotating clockwise into inflator until cylinder is secured firmly in inflator



6.12 Check to be sure service indicator is green and green indicator clip is firmly attached

6.13 Close cover

NOTE:
Continue to page 13 if ATFSS
is manufactured on or after
January 2017



6.14 Fold bladder in half, behind inflator even with clear cap



6.15 Fold one side outer edge towards center



6.16 Tightly roll bladder and position next to inflator/bladder



6.17 Fold excess bladder material back onto itself (towards CO2) even with CO2 cylinder



6.18 Repeat steps 9-11 with opposite side



6.19 Pull bottom flap over bladder, fold top flap down and mate hook and loop tape



WARNING

ENSURE ACTIVATION LANYARD GOES DIRECTLY TO THE HANDLE
AND NOT WRAPPED AROUND THE CO2 CYLINDER



6.20 Secure three snaps located on top of ATFSS



6.21 Start zipper from bottom, mate hook and loop tape



6.22 Continue zipping closed, slide fastener will separate. Mate top zipper hook and loop



6.23 Stow slider in cover flap



6.24 Close protector flap. Perform overall inspection of unit.

Continue to page 16

7. Packing ATFSS (DOM 1-2017 and later)



7.1 Lay out bladder with inflator up and able to see attachment stitches.



7.2 Fold bladder over so inflator is underneath then fold bladder in half, even with CO2 bottle (underneath)



7.3 Fold top of bladder so all folds are approximately the size of the case.



7.4 Starting on oral inflator side, tightly roll bladder past CO2.

7.5 Place rolled portion into container alongside of CO2.

*Inflator should be exposed



WARNING

ENSURE ACTIVATION LANYARD GOES DIRECTLY TO THE HANDLE
AND NOT WRAPPED AROUND THE CO2 CYLINDER



7.6 Fan fold other side of bladder on top of rolled portion and CO2.



7.7 Pull bottom flap over bladder, fold top flap down and mate hook and loop tape.



7.8 Secure three snaps located on top of ATFSS.

7.9 Start zipper from bottom or top, mate hook and loop tape.



7.10 Continue zipping closed, slide fastener will separate. Mate zipper hook and loop tape.

7.11 Stow slider in cover flap.



7.12 Close protector flap.

7.13 Perform overall inspection of unit.

8. Functional Inspection (optional)

A functional inspection can be performed every two years. Functional inspection consists of manually or automatically inflating the device to ensure proper inflation. It is the responsibility of qualified personnel to perform and log this inspection. The inspection can also be performed at the manufacturer. If damage is found during an inspection, the device must be grounded until repaired. Repairs are limited to replacement of snaps and inflator. All other repairs must be completed at the manufacturer.

9. Service Life

The recommended service life is five (5) years. After five years of use PECI recommends replacement of the device

10. Wearing the ATFSS

The ATFSS is a one size fits all system and has been designed to accommodate the personal preference of the user for ease of wearing and comfort.

The ATFSS is designed to be worn on specific sides of the body. The right unit worn on the users right side, is marked with a **RED** bead on the handle and also a marking on the back which states “RIGHT SIDE” and “UP”.



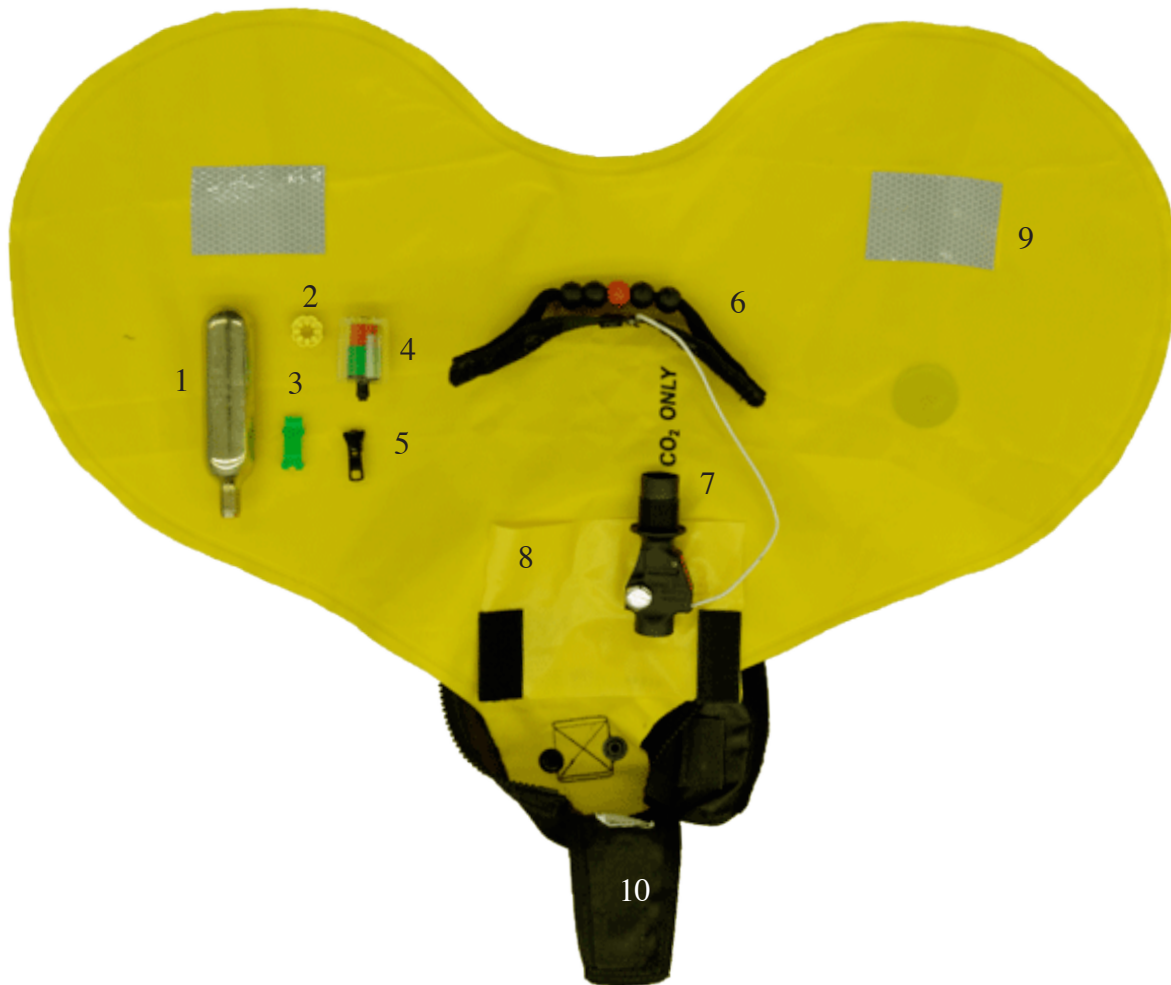
ORIENTATION OF THE UNITS IS VERY IMPORTANT FOR PROPER OPERATION.
RED BEAD = USERS RIGHT SIDE



THE ATFSS SHOULD BE WORN IN A MANNER NOT TO HINDER THE
ACTIVATION OF THE UNIT.



Appendix A. ATFSS Flotation Bladder Nomenclature



- 1. 38 gram, 3/8" thread CO2
(147 gram min. weight)
- 2. Bobbin (Yellow)
- 3. Green Indicator Clip
- 4. Cap

- 6. Handle
- 7. Housing
- 8. Cover
- 9. Bladder
- 10. Case

Appendix B. ATFSS Parts List

ATFSS Parts List	
Item	Part Number
Coyote Case/Black Bladder	PECIF- R1105-CY
Camo Green Case/Black Bladder	PECIF- R1105-CA
Universal Camo Case/Black Bladder	PECIF- R1105-UC
Black Case/Black Bladder	PECIF- R1105-BL
Gray Case/Black Bladder	PECIF- R1105-CR
Coyote Case/Yellow Bladder	PECIF- R1105-CY/R
Camo Green Case/Yellow Bladder	PECIF- R1105-CA/R
Universal Camo Case/Yellow Bladder	PECIF- R1105-UC/R
Black Case/Yellow Bladder	PECIF- R1105-BL/R
Gray Case/Yellow Bladder	PECIF- R1105-CR/R
CO2 Cartridge, 38 Gram, 3/8" Thread (1 ea)	PECIF- 86121Z2W134
*CO2 Cartridge, 38 Gram, 3/8" Thread (case)	PECIF- 36121-101
**ATFSS Re-Arming Kit	PECIF-K2013
ATFSS Bobbin (1 ea)	PECIF-707100B
Inflator Gasket	PECIF-13226
Green Indicator Clip	PECIF-V707100-1
Manifold O-Ring	PECIF-V90113
Manual Cap	PECIF-BLA-040

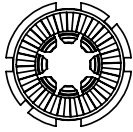
* 96 Cartridges per case

** Consists of two CO2 cylinders, two bobbins, 2 green clips and a brush

Appendix C. Bobbin Information

HALKEY | ROBERTS®

V80040 Super Bobbin



Cat. No.: V80040

Instructions for Use

V80040 Super Bobbin for Manufacturers and Service Stations

- ⚠ Cautions:**
- Carefully follow the directions below to maintain the bobbin integrity.
 - Intended for use in Halkey-Roberts Corp. products only.

Safely Handling:

1. The white pill material is a pharmaceutical grade Microcrystalline Cellulose, typically used as the filler in medicine tablets, ill. 1. The pill formulation is considered proprietary.
2. The MSDS for the yellow bobbin is provided under separate cover.

Operation:

1. The V80040 Bobbin Assembly is designed to disintegrate when exposed to water. This allows the firing mechanism to puncture the CO₂ cylinder and fill the inflatable chamber.
2. To insure consistent service from your manual/automatic inflator the bobbin should be changed at regular Halkey-Roberts recommended intervals or replace bobbin more frequently in extreme conditions, i.e. high temperature and high humidity.
3. Install V80040 Bobbin Assembly with the white pill facing the cap of the inflator, ill 1. The Bobbin Assembly will slide in easily if installed correctly.
4. Shelf life plus service life not to exceed six (6) years from Date Code, ill 2. Replace (Discard) bobbin within a maximum of six (6) years from Date Code.

Shelf life:

1. See tables below, use Date Code printed on side, ill. 2.
2. Bobbin must be stored in a cool dry environment. (65 °F to 85 °F , 19 °C to 29 °C; Maximum 60 %RH)
3. Service life begins when bobbin is removed from a cool dry environment or when bobbin is installed in an inflator, which ever comes first.

Recreational use:	<u>Shelf Life (years)</u>	<u>Service Life (years)</u>
V86000 Pro -1F® Inflator	three (3)	three (3)
V85000 Mark IV	three (3)	three (3)
V90000 Alpha Inflator®	three (3)	three (3)

Commercial use:	<u>Shelf Life (years)</u>	<u>Service Life (years)</u>
V86000 Pro -1F® Inflator	four (4)	two (2)
V85000 Mark IV	five (5)	one (1)
V90000 Alpha Inflator®	five (5)	one (1)

illustration 1

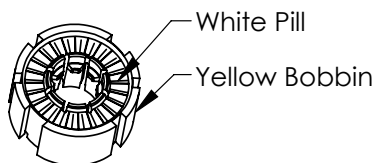
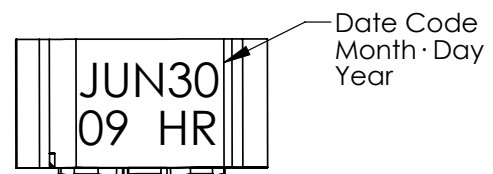


illustration 2



US Patent 7,572,161 and Foreign Patents Pending or Issued.


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IFU-V80040-B Rev. A

Appendix D. Inflator Technical Data Sheet

HALKEY ROBERTS	ALPHA SERIES INFLATOR
-------------------------	------------------------------

ALPHA SERIES INFLATOR

<p style="text-align: center;">GENERAL CHARACTERISTICS</p> <ul style="list-style-type: none"> • Designed for use on life vests where automatic (immersion) back up is desirable • Easy and inexpensive to rearm – requires only a CO₂ cylinder and a bobbin • Improved splash resistance • Improved humidity resistance • Unit body design for increased strength • Left or right side mounting • Uses the super bobbin • Manifold O-rings assembled on unit • Higher flow over previous model for quicker vest inflation • Exceeds all UL, CEN, and ISO standards • UL recognized as a USCG Code 6 device • Meets UL 1191 1F humidity standard – highest in the industry 	 <p style="text-align: center;">V90000 ALPHA INFLATOR</p>
<p style="text-align: center;">PERFORMANCE CHARACTERISTICS</p> <ul style="list-style-type: none"> • Operating temperatures: 0°C. – 70°C • Corrosion resistance (720 hours of salt spray) • UV protection – 300 hours of accelerated weathering • Tested for 100 inflations 	
<p style="text-align: center;">QUALITY CRITERIA</p> <ul style="list-style-type: none"> • 100% inspected for leak and functionality • ISO 9001-2000 	<p style="text-align: center;">ALPHA SERVICE PART NUMBERS</p> <p>V90113 – Manifold O-Ring (2) V87403L – ½" Threaded Gasket V90124 – Indicator Clip V80040 – Bobbin</p>
<p style="text-align: center;">MATERIALS</p> <ul style="list-style-type: none"> • Glass reinforced nylons • All metal components – stainless steel for the marine environment 	<p style="text-align: center;">PACKAGING AND SHIPPING</p> <ul style="list-style-type: none"> • Minimum shipping – one box • 100 units per box • Box size – 12" x 10" x 8" • Weight – 16 pounds

Appendix E. Inflator Drawing

DRAWING NO. CV90000XN135	REV B	Customer Drawing		Revision History	
		REV	DESCRIPTION (ECO)	DATE	APPROVED
		A	NEW DRAWING ECN 3989	5/12/09	A.K.
		B	UPDATE NOTES, ADD CORD LENGTH & DIMS ECN 4189	9/29/09	AK

(13.5 ± 0.25
34.3 cm)

TOOLING:	PART NO.	IFU:
----	----	IFU -V80040B

NOTES:

- INDICATOR CLIP AND LABELS PACKED SEPERATELY.
- FIRST SUFFIX "X" INDICATES THREAD TYPE:
S - 3/8"
- CRITICAL DIMENSIONS ARE CIRCLED AND SUBJECT TO INSPECTION.
- DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY.
- ALL DIMENSIONS ARE IN INCHES WITH THE NOMINAL DIMENSION IN METRIC BELOW.

DRAWN BY DMC	DATE 5/12/09	APPROVED BY A.K	DATE
MATERIAL		FINISH	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: ANGULAR: ± 1° HOLE POSITION: ± 0.1 HOLE PLACEMENT: ± 0.05			
THIRD ANGLE PROJECTION			

DR	Haikley-Roberts	TITLE ALPHA INFLATOR	SIZE A	REV B
		DRAWING NO. CV90000XN135	SCALE 1:1	SHEET 1 OF 1
DO NOT SCALE DRAWING				

Appendix F. Inflator Rearm Instructions

DISASSEMBLY (see figure)

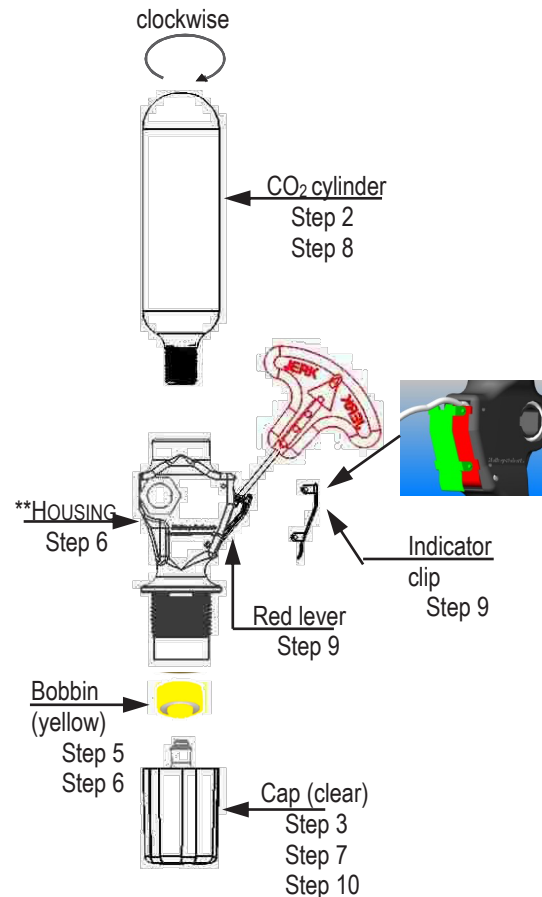
- Step 1: Unpack or open the life vest so that the manual / automatic inflator is visible.
- Step 2: Remove gas CO₂ cylinder by firmly rotating cylinder counterclockwise. **Discard cylinder.**
- Step 3: Remove clear cap by turning counterclockwise.
- Step 4: Remove bobbin from cap or housing unit. **Discard bobbin** (yellow). Check the housing to be sure it is clear and dry.
- Note: The bobbin (yellow) body may remain in the housing or in the cap assembly when you remove the cap. The bobbin body must be removed prior to assembly.

REARMING

Note: Rearming must follow the sequence below.

- Step 5: Check the date on the bobbin in the rearm kit. The date should not be over four (4) years from today's date.
- Step 6: **IMPORTANT!** Bobbin (yellow) must be installed into the **HOUSING** (**see figure), white side down facing away from the inflator towards the cap (clear), aligning the slots on the bobbin with the ridges inside the threaded housing. The bobbin will slide in easily if installed correctly.
- Step 7: Install cap by screwing clockwise until it meets the housing shoulder.
- Note: No gap.**
- Step 8: Install cylinder by rotating clockwise into inflator until cylinder is secured firmly in inflator.
- Step 9: Place indicator clip over red lever by aligning the arms on the clip with the slots in the inflator. Push firmly in the middle of the clip to snap in place.
- Step 10: Check to be sure service indicator is green and green indicator clip is firmly attached.

ALPHA V90000 INFLATOR SERVICE INSTRUCTIONS



Service Indicator – Step 10



If red, stop and service unit.



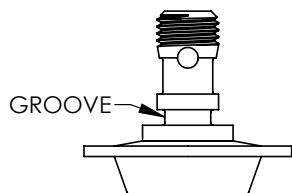
If green and clip is present, unit is operable.

HRC Rev D 11-2006

Appendix G. Inflator Assembly Instructions

HALKEY | ROBERTS®

830011001 Brass Manifold



Instructions for Use
830011001 Brass Manifold for
Manufacturers and Service Stations

Cat. No.: 830011001, 830010101, 830013001, 830014001,
830AOE, 830AOEU, 833AOI, 8491AM, 8492AM, 830AOISC, 831AOISCLN

Cautions:

- To prevent valve damage, Follow proper torque settings.
- Carefully follow the directions below to maintain the valve integrity.

Installation 840 Inflator (ill. 1):

1. Install valve core (P/N 832AO) in manifold and torque to 1.5 - 2 in-lb., with a calibrated torque wrench.
2. Install bottom gasket (P/N 8492AM) on manifold until it is retained in groove. * Note always use new gaskets when installing inflator.
3. Install 840 inflator on manifold, aligning flats.
4. Install top gasket (P/N 8491AM) on manifold.
5. Screw cap on manifold.
6. Retain (secure) inflator and torque Cap to 24 - 30 in-lb., with a calibrated torque wrench.

Installation Alpha Inflator® (ill. 2):

1. Install valve core (P/N 832AO) in manifold and torque to 1.5 - 2 in-lb., with a calibrated torque wrench.
2. Check inflator to make sure o-rings are installed on both sides.
3. Install Alpha Inflator® on manifold, aligning flats.
4. Screw cap on manifold.
5. Retain (Secure) Inflator and torque cap to 24 - 30 in-lb. with a calibrated torque wrench.

illustration 1

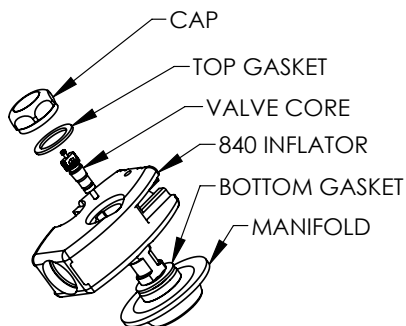
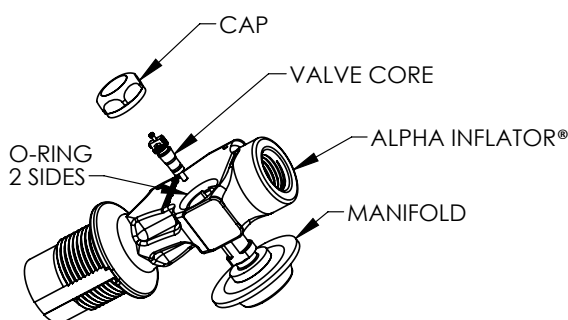


illustration 2



Made in the USA
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