

COMMERCIAL DIVING HARNESSES



USER'S MANUAL

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Commercial Diving Harness
Owner's Manual P/N 18405**

**Commercial Diving Harness (H3) Size #1 (L) PN 400800
Commercial Diving Harness (H3) Size #2 (XL) PN 400801**

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TRADEMARK NOTICE

Aqua Lung® is a registered trademark of Aqua Lung America, Inc.

WARNINGS, CAUTIONS AND NOTES

Pay special attention to information provided in warnings, cautions and notes which are accompanied by these symbols:



A **WARNING** indicates a procedure or situation that may result in serious injury or death to the user.



A **CAUTION** indicates any situation or technique that will result in potential damage to the product.



A **NOTE** is used to emphasize important points, tips and reminders.

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Features

Description: Commercial Diving Harness (CDH) or H3 harness is a strength-rated equipment harness specifically designed for commercial diving, providing a working harness for any tended surface or saturation diving application.

Design: Jacket style harness with integrated weights and bailout cylinder straps.

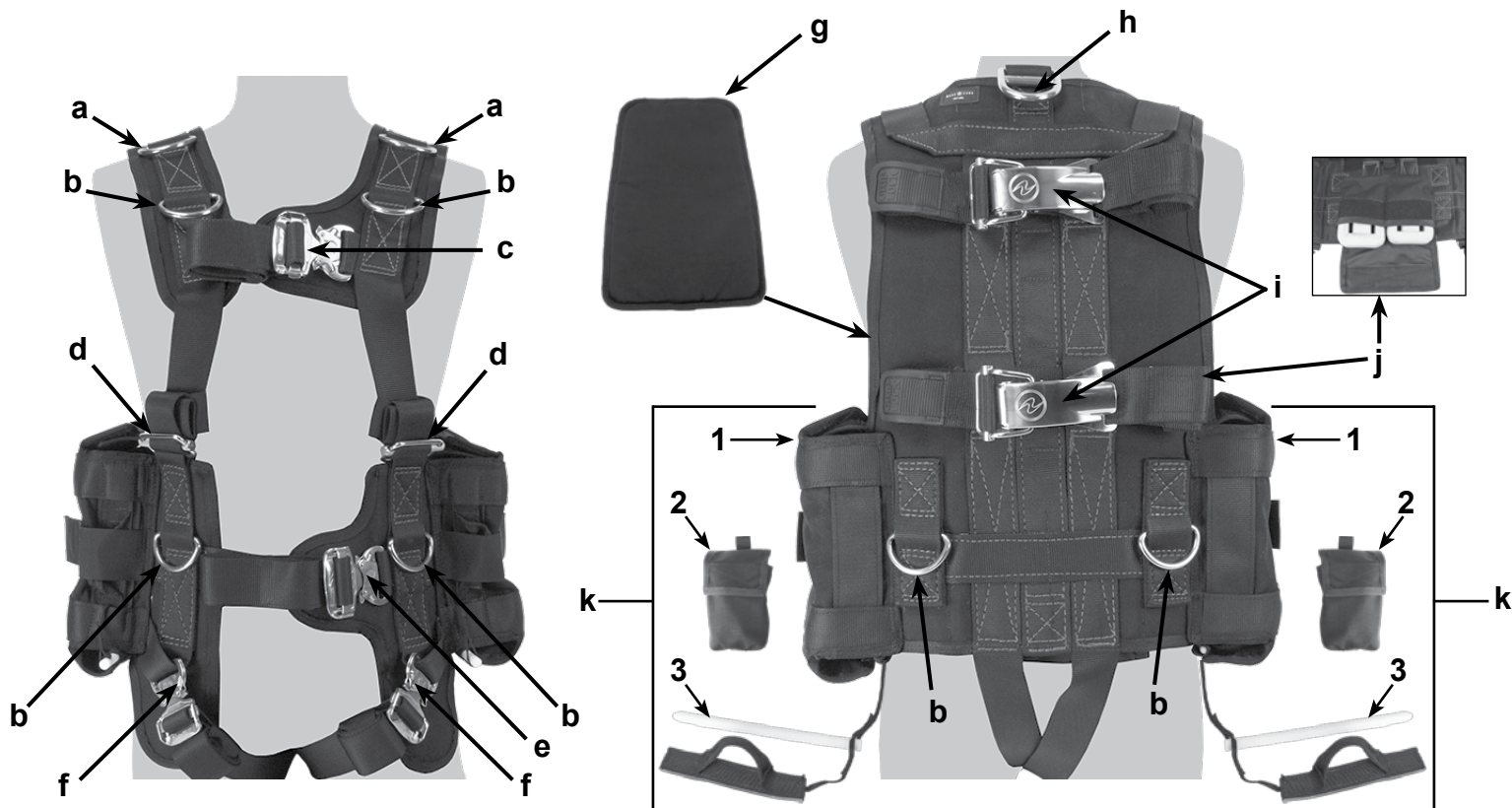
Functions:

1. Secure attachment of umbilical or lifeline to the diver.
2. Attachment of weights, emergency gas supply (bailout) or accessories.
3. Recovery/lift of diver and equipment from the water in an emergency.

Sizes: The harness is adjustable to fit a large spectrum of body shapes and sizes:
 SIZE #1 - LARGE - Waist size 30 - 38 inches (76 - 97 cm).
 SIZE #2 - EXTRA LARGE - Waist size 38 - 46 inches (97 - 117 cm).

CDH Components

- (a) Two point extraction D-rings
- (b) Attachment D-rings
- (c) Chest strap w/ Nautica® buckle
- (d) Torso slide adjuster
- (e) Waistband w/ Nautica® buckle
- (f) Crotch straps
- (g) Universal comfort pad
- (h) Single point extraction D-ring
- (i) Dual GripLock™ cylinder bands
- (j) Non-releasable weight (10 lb. max)
- (k) Double action weight release system
 1. Two 12.5 lb. weight pockets
 2. Two 12.5 lb. weight pouches
 3. Two securing rods w/ handle

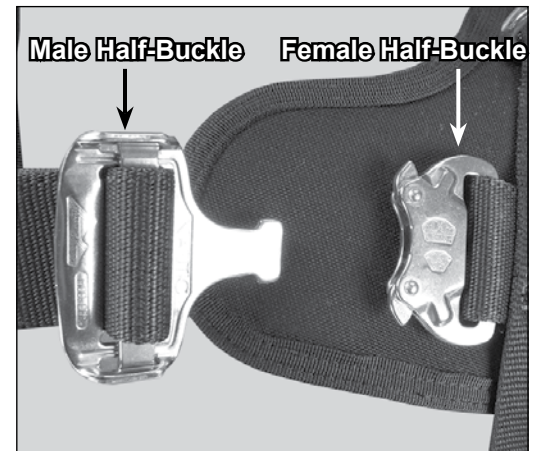


READ ALL INSTRUCTIONS PRIOR TO USE

The Commercial Diving Harness (CDH) is intended for individual use and it should be fitted to a specific individual diver. It is essential that the harness fits the diver correctly.

Using Nautica® Buckles

1. The buckle is fastened by pressing the male and female half-buckles together until they engage (i.e. snap) into position (*Fig. 1*).
2. The buckle is unfastened by squeezing the two movable release tabs together until the half-buckles disengage (*Fig. 2*).

**Figure 1****Figure 2****Donning and Adjustment Procedures**

CAUTION: A improperly adjusted or loose harness will be uncomfortable and may shift during use thereby compromising performance, particularly in an emergency.

The harness must be adjusted to fit snugly around the waist, over the shoulders and through the crotch.

1. Secure emergency gas supply (bailout) to the harness using the two GripLock™ cylinder bands (**Follow the procedure in the section: Securing the GripLock™ Cylinder Band**).
2. Don the harness and have the tender support the cylinder in the correct position on your back.
3. Connect the Nautica® buckles on the waist band by pushing the male and female half-buckles together until they snap into position. Tighten the waistband webbing strap by pulling the webbing through the male half-buckle until a snug fit is achieved. Tuck the webbing tail out of the way. Repeat the same process for the chest band.
4. Release the hook and loop retainer tabs on one of the vertical torso adjustment straps. Thread the webbing through the metal adjuster until a snug fit is achieved through torso. Re-fasten the hook and loop retainer tabs. Repeat the same process on the other vertical torso adjustment strap.

5. Bring the two crotch straps with male half-buckles between your legs and fasten them to the lower female half-buckles on the front of the harness.
6. Release the hook and loop retainer tabs on one of the crotch straps. Adjust the crotch strap by pulling the webbing through the male half-buckle until a snug fit is achieved. Re-fasten the hook and loop retainer tabs. Repeat the same process on the other crotch strap.
7. Load the weight release pockets.

Loading the Weight Release Pockets

1. Fill each 12.5 lb. weight pouch (four weights max) with equal amounts of weight for optimum balance, preventing the tendency to roll to one side during the dive.
2. Load each 12.5 lb. weight pouch into the left and right weight release pockets as follows:
 - a. Open the top flap on each weight release pocket (*Fig. 3*).
 - b. Slide the loaded weight pouch into the weight release pocket (*Fig. 4*).
 - c. Close the top flap and ensure that the hook and loop tab is closed correctly (*Fig. 5*).



Figure 3



Figure 4



Figure 5

Operating the Weight Release Pockets

1. Grab the pull tab on the side of the weight pocket and pull forward (*Fig. 6*). This will release the hook and loop retainer and expose the pull handle loop previously covered by the pull tab. (*Fig. 7*)



Figure 6



Figure 7

2. Insert thumb into pull handle loop and pull to the front. This will disengage the end tabs of the pull handle and extract the securing rod from the underside of the weight pocket, which in turn will release the weight pockets (*Figs. 8 - 10*).



Figure 8



Figure 9



Figure 10

Resetting the Weight Release Pockets

1. Re-insert the securing rod through the cylindrical loops on the underside of the weight pocket. The rod must be inserted all the way in until the end is visible through the end of the rear loop (*Figs. 11 - 13*).

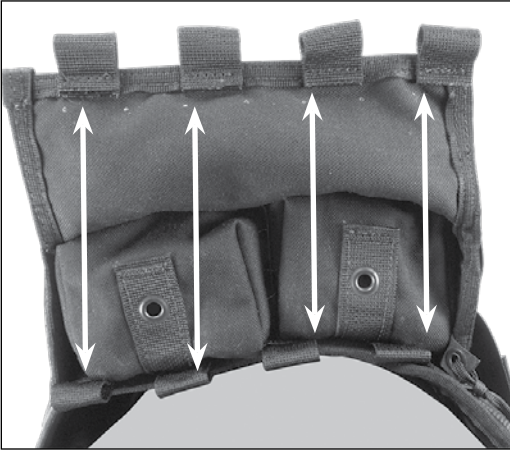


Figure 11



Figure 12



Figure 13

2. Re-insert the end tabs of the pull handle into the sleeves on the front of the weight pocket (*Fig. 14*). Ensure that the retention cords are tucked away (*Fig. 15*). Replace the pull tab over the pull handle and secure using the hook and loop retainers pads .



Figure 14



Figure 15

Non-Releasable Weight

The CDH is designed with two internal weight pockets capable of holding two block or soft weights. This pocket is located on the inside of the harness (under the comfort pad). Each pocket can hold a maximum of 5 lb. of weight. A hook and loop closure secures the weight in the non-release pocket.

1. Lift up the universal comfort pad to expose the non-release weight pocket. Open flap on weight pocket and insert weight into each side of the non-release pocket (*Fig. 16*).



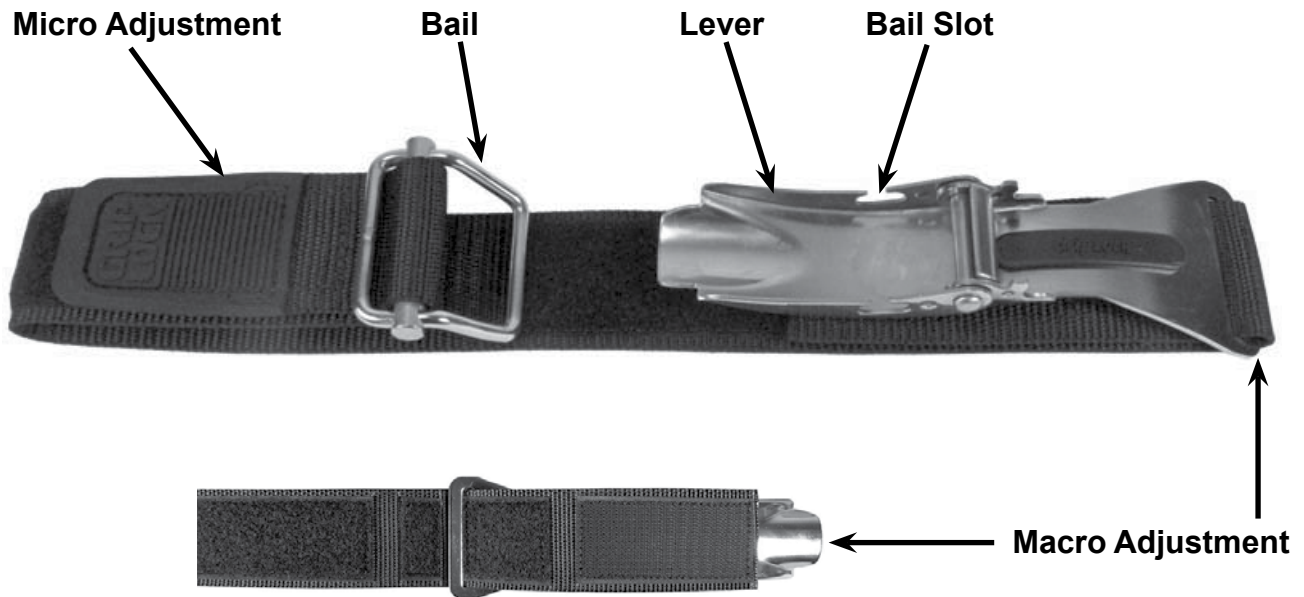
Figure 16

2. Secure hook and loop closure on non-release pocket. Place universal comfort pad back on harness, secure with hook and loop tabs to harness (*Fig. 17*).



Figure 17

GRIPLOCK™ CYLINDER BAND COMPONENTS



THREADING THE GRIPLOCK™ CYLINDER BAND

1. Remove the bail from both cylinder bands (*Fig. 18*). Face the GripLock™ patch up and insert the cylinder bands right to left through the upper and lower cylinder band retaining straps (*Fig. 19*).



Figure 18



Figure 19

2. Insert the open end of the cylinder band into the large opening of the bail, around the slide bar and out the small opening of the bail (Fig. 20). Secure the hook and loop on the band to hold the bail in place (Fig. 21). Repeat process for other cylinder band.

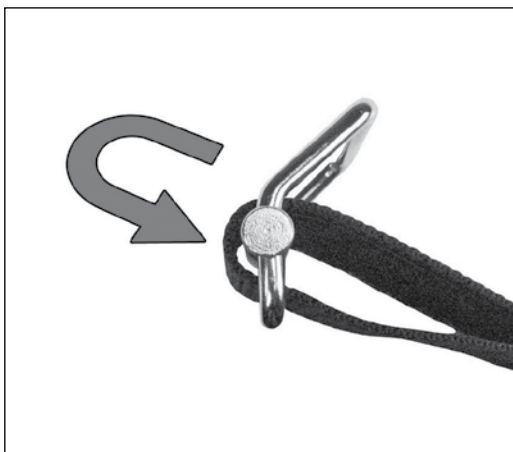


Figure 20



Figure 21

ADJUSTING THE GRIPLOCK™ CYLINDER BAND



NOTE: The GripLock™ cylinder band adjusts for all standard cylinder diameters and is ready for use with an aluminium 80 cf (7.25 inch / 184 mm) cylinder when the BC leaves the factory.

1. There are three diameter settings (Fig. 22) for cylinder size: **A. (large cylinder)**, **B. (AL 80 cf; 7.25 in / 184 mm)**, **C. (smaller cylinder)**. Adjust the macro adjustment for the proper size cylinder. Secure hook and loop on the band to retain macro preset (Fig. 23).

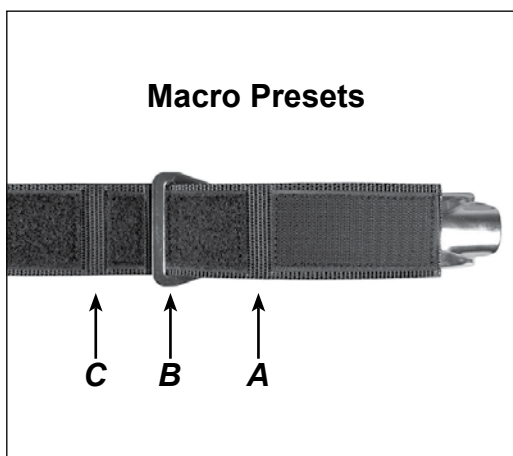


Figure 22



Figure 23

SECURING THE GRIPLOCK™ CYLINDER BAND



NOTE: There is no need to wet the GripLock™ cylinder band prior to securing it to the cylinder. When properly adjusted, the cylinder band will retain its tension. If adjustment is necessary for a larger or smaller size cylinder (pre-set for use on an aluminum 80 cf cylinder 7.25 inch / 184 mm), follow the procedure in the section: **Adjusting the GripLock™ Cylinder Band**.



WARNING: Check that the macro adjustment is set for the appropriate size cylinder. Failure to do so may result in the cylinder slipping during the course of a dive.



NOTE: Pull the micro adjustment **only until it is snug** against the cylinder. If the lever is difficult to close, the micro adjustment is too tight. Loosen the micro adjustment and close the lever to secure GripLock™ band to cylinder. If it is difficult to remove the GripLock™ band from the cylinder, this is an indicator that the micro adjustment was too tight when installed.

1. Make sure the cylinder valve air outlet is facing the back of the harness. Secure the upper GripLock™ band first to check for proper cylinder placement followed by the lower GripLock™ band. For optimum cylinder retention, center the GripLock™ buckle assembly on the curve of the cylinder. Connect the bail into the bail slot of the lever. Hold the lever and pull the GripLock™ patch end of the webbing to tighten the micro adjustment (*Fig. 24*). Secure the hook and loop webbing on the micro adjustment (*Fig. 25*).

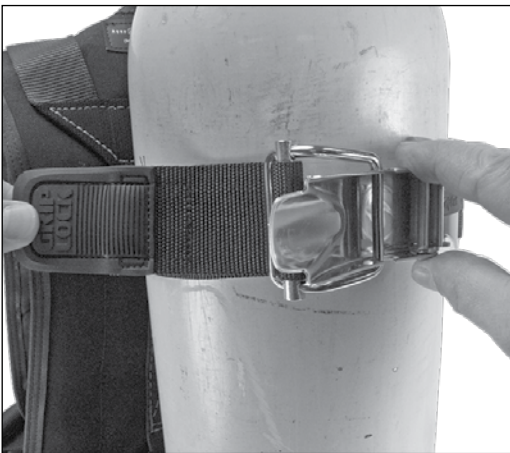


Figure 24



Figure 25

2. Push the lever forward until it stops in the **pre-locked position** (this keeps your fingers from being caught in the lever) (*Fig. 26*). Push the lever down into the **locked position**. Verify the lever is secured in the **locked position** (*Fig. 27*). Once the cylinder band is set up, further adjustment is typically not needed. Repeat procedure to secure lower cylinder band.



Figure 26

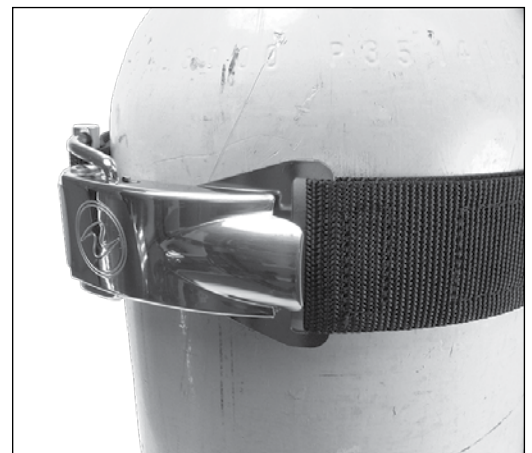


Figure 27



WARNING: Verify the tension of the GripLock™ cylinder band prior to every dive. Failure to do so may result in the cylinder slipping during the course of a dive.

CDH Pre-Dive Checklist

Diver Name _____ Date _____

CDH Number _____



WARNING: Before each use, the CDH must be given a thorough visual inspection and functional test. NEVER dive with a harness that shows signs of damage until it has been repaired and reinspected.

Initials

_____ 1. Visually inspect harness thoroughly to ensure all components are in good condition.



NOTE: Pay particular attention to lifting points including support webbing and stitching.

_____ 2. Connect and disconnect each Nautica® buckle to confirm proper operation.

_____ 3. Inspect all stitching, webbing and hook/loop material for cuts, tears and abrasion damage.

_____ 4. Confirm that weight release rod is inserted correctly at bottom of each weight pocket.

_____ 5. Don harness and adjust for proper fit.

_____ 6. Install weights into weight pouches as needed.

_____ 7. Install loaded weight pouches into weight release pockets.

_____ 8. Verify that all harness straps are connected properly and operate correctly.



WARNING: DO NOT use a damaged or deteriorated harness.

Remarks _____

Divers Signature

Diving Supervisor Signature

CDH Post-Dive Checklist

Diver Name _____ Date _____

CDH Number _____



NOTE: Avoid prolonged exposure to sun, extreme heat and heavy pool chemicals to prevent deterioration. To prevent premature damage, thoroughly rinse the CDH with fresh water at the end of each diving day using the following procedures.

Initials

- _____ 1. Remove weight pouches from weight release pockets.
- _____ 2. Visually examine harness thoroughly to ensure that all components are in good condition.



NOTE: Pay particular attention to lifting points including support webbing and stitching.

- _____ 3. Thoroughly rinse harness and pouches with fresh water. Ensure buckles are clear of debris.
- _____ 4. Hang harness to air dry, out of direct sunlight, before storing.
- _____ 5. If dirty, clean using a solution of warm water and household grade mild soapy detergent. A soft brush may be used as required. Thoroughly rinse with fresh water. Hang to air dry.

Remarks _____

Divers Signature

Diving Supervisor Signature

Harness Storage

- Harness must be completely dry for storage. Do not store in a damp condition or area.
- Store the harness on a hangar away from direct sunlight in a dry, well ventilated area.
- Do not store near sources of heat such as radiators.
- Do not store in a warm, humid environment where mold or mildew can contaminate the harness.
- Avoid prolonged exposure to sun, extreme heat and heavy pool chemicals to prevent deterioration.

Harness Service Life

- Every in-use harness (i.e. which has been used in-water) is to be discarded **after 5 years** or earlier if dictated by poor physical condition.
- When discarded the harness should be destroyed to prevent re-use.

Harness Shelf Life

- Each unused harness is to be discarded **after 10 years** regardless of use.
- When discarded the harness should be destroyed to prevent re-use.



NOTE: *More stringent discard criteria may be applied depending on conditions of use.*

CDH Part Numbers and Spare Parts List

AQA PART #	DESCRIPTION
400800	Harness (H3), w/ 4 x 12.5 lb. weight pouches, Size 1
400801	Harness (H3), w/ 4 x 12.5 lb. weight pouches, Size 2
400806	Weight Pouch, 12.5 lb.
428230	Tank Band, GripLock™ / Wrapture, Pckgd
769148	Comfort Pad, Pckgd

CDH ACCESSORIES



AQA PART #	DESCRIPTION
400807	Accessory Pouch



AQA PART #	DESCRIPTION
400803	Bridal, Diver Recovery



AQA PART #	DESCRIPTION
388345	Wing, WTX4, Apeks w/ Retract Option

Technical Data

Breaking Strength: Complete Harness - 2200 lb. / 1000 kg / 9800 N.
All D-rings and Hardware - 2200 lb. / 1000 kg / 9800 N.



NOTE: *Breaking Strength is defined here as the maximum tensile load that the harness can lift, when the load is applied correctly (i.e. directly in-line and as a static load), without sustaining damage that would render it inoperable or unsafe to use.*

Weight Release: Two double action weight release pockets, one fitted on each side (L & R).
Weight pockets are top loading and may be loaded after the harness is donned.

Weight Capacity: Max 25 lb. (11.3 kg.) releasable weights in each side pocket.
Each side pocket contains two 12.5 lb. (5.67 kg) weight pouches.
Max 10 lb. (4.5 kg) non-releasable weight in rear pockets.
Each rear pocket can hold 5 lb. of non-releasable weight
Total weight capacity: 60 lb. (27.2 kg).

Diver Recovery: One D-ring (rear neck location) for single point extraction.
Two D-rings (upper chest/shoulder) for two point extraction.



NOTE: *A spreader bar must be used for two point extraction.*

Labeling: Each harness is marked with a unique serial number, date of manufacture (MM/YY), strength rating, part number/description and manufacturer details.

Part Numbers: Commercial Diving Harness (CDH), Size #1 complete 400800
Commercial Diving Harness (CDH), Size #2 complete 400801

Materials: All metal hardware is stainless steel.
All D-rings are drop forged not welded.
All stitching is high visibility (red) thread to assist visual inspection.

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Warranty Information - Military & Commercial

All requests for warranty transactions must be accompanied by an in-service date and by documentation of Aqua Lung America Inc. factory recommended inspection/maintenance* in accordance with this Manual whenever returning your military or commercial product for warranty service.

The Aqua Lung® One Year Limited Warranty™

Aqua Lung America, Inc. warrants to the original purchaser for a period of one year from the purchase date that the product will be free from defects in material and workmanship; provided that it receives normal use, proper care and prescribed maintenance subject to those restrictions stated below. This limited warranty is extended only to the original purchaser for purchases made from Aqua Lung America, Inc.™ an authorized Aqua Lung® dealer, and is not transferable. With this warranty, Aqua Lung America, Inc. reserves the right to repair or replace the product at its sole discretion.

ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES, OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO A PERIOD ENDING ONE YEAR FROM THE DATE OF PURCHASE OR IN-SERVICE DATE.



WARNING: It is dangerous for untrained and uncertified persons to use the equipment covered by this warranty. Therefore, use of these products by an untrained person renders any and all warranties null and void. Use of Surface Supplied or SCUBA equipment by anyone who is not a certified diver or receiving training through a recognized training certification agency (either military or commercial), shall render void all warranties, expressed or implied.

AQUA LUNG AMERICA, INC. DISCLAIMS AND EXCLUDES ANY LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. IN SOME STATES WHICH DO NOT ALLOW EXCLUSION OF LIABILITY, THIS MAY NOT APPLY TO YOU.

Restrictions

The following restrictions apply to this warranty:

- This warranty does not extend to abrasion or seam separation caused by chemical attack, including prolonged exposure to chlorine.
- This warranty does not extend to damages caused by improper use, improper maintenance, neglect, unauthorized repairs, modifications, accident, fire or casualty.
- Cosmetic damage, such as scratches, fraying, and nicks are not covered by this warranty.
- This warranty does not extend to products that have been not properly inspected or maintained in accordance with the recommended Aqua Lung America, Inc. factory requirements.
- Failure to meet any of the above requirements will render the warranty null and void.



WARNING: Failure to maintain this equipment and perform the required Aqua Lung America, Inc. factory maintenance in accordance with the factory manual renders any and all warranties expressed or implied, null and void.

* Reference Annual Inspection & Service Record provided in manual



Commercial Diving Harness

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