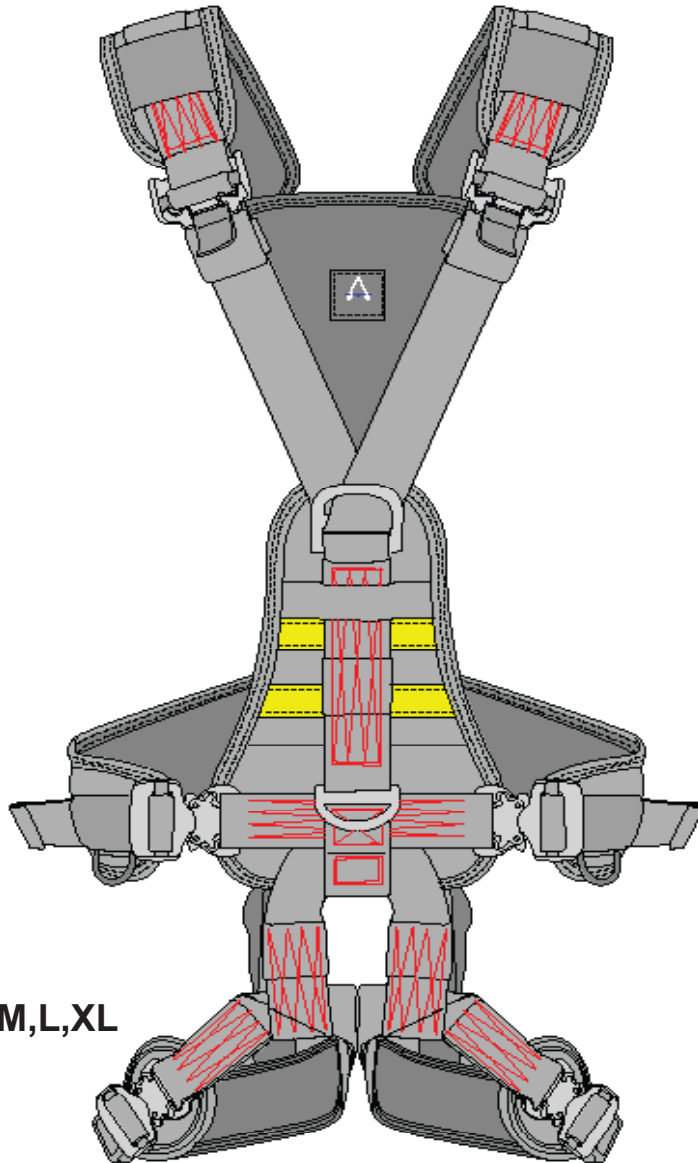


Chameleon Tactical Rescue Harness (CTRH)

User Manual and Instructions for
Continued Airworthiness (ICA's)



AMTC-H1037-BL / S,M,L,XL

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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.

1.0 INTRODUCTION

The Chameleon Tactical Rescue Harness (CTRH) is an innovative Class III full body Life Safety Harness designed to be used in a wide variety of tactical and rescue scenarios faced by heliborne law enforcement, public safety, and military personnel. This harness is a system component; materials arranged and secured on the body to support a person during human external cargo (HEC) operations. This harness meets all requirements set out in NFPA 1983 and TSO-C167.

NOTE: Additional Information concerning life safety harnesses can be found in NFPA 1500 (Standard on Fire Department Occupational Safety and Health Program), NFPA 1983 (Standard on Life Safety Rope and Equipment for Emergency Services), and FAA TSO-C167 (Personnel Carrying Device Systems, PCDS)

The CTRH is constructed of durable fire retardant materials to prevent melting.



Fire retardant materials do not protect user from flames or burns but merely prevent materials from melting onto user's skin. Fire retardant materials char when exposed to flame but do not support flame. Carry your harness carefully and do not expose your harness to flame or high temperatures as this could cause the harness to fail.

The harness incorporates four tether points; two in front and two in back. The waist belt incorporates standard one inch molle mounting and can accommodate a variety of attachments and pockets. The harness comes in sizes S, MED, LARGE, XL.

1.0 INTRODUCTION (Continued)

Your Chameleon Tactical Rescue Harness (CTRH) is an important piece of survival equipment. Proper care and maintenance will ensure your harness will accomplish the level of safety performance it is designed for. It is important that you become familiar with these instructions to safely use this harness.



Retain this manual and appendices for reference. Once removed from the package make a copy for your permanent records and a working copy to stay with your harness. Always refer to the inspection and use guidelines in this manual before and after every use. Record all inspections and damage found on harness inspection log sheet, Appendix A, once harness is placed into service.



Before placing into service and before the first use by an individual, your Chameleon Harness must be properly fitted to your torso height. To achieve proper fit a second person is needed to ensure the height adjustment as indicated in section 3.1.e, Adjust Torso Height. (Note, this adjustment is not for use during operations and is therefore inaccessible to the user when donned). Enter your fitting and place into service data in appendix A. Harness Inspection Log Sheet.



WARNING

KEEP YOUR HARNESS INSPECTED AND IN USABLE CONDITION. IMPROPER WEAR MAY RESULT INJURY OR DEATH. ALWAYS COMPLY WITH THE INSTRUCTIONS AND CARE PRESCRIBED IN THIS MANUAL. IMPROPER USE OR NEGLIGENT CARE OF THIS EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH.

1.1 Rescue Harness Limitations

Aerial has set life limits for rescue harnesses at seven (7) years service life from date harness is put into service. Life limit not to exceed ten (10) years from date of manufacture (DOM). Date of manufacture can be found on label. Record your date of manufacture and serial number in appendix A, Harness inspection log sheet.

The maximum weight limit is 450 pounds. The maximum operating weight is the total weight of the individual and all equipment supported by the harness.

Based on the rescue harness adjustments there is not a minimum height restriction. Proper harness sizing is based on waist size and maximum height.

Sizing:

S fits waist	29 to 34 inches	Maximum Height 72 inches
MED fits waist	30 to 36 inches	Maximum Height 74 inches
LARGE fits waist	34 to 40 inches	Maximum Height 76 inches
XLG fits waist	38 to 46 inches	Maximum Height 78 inches

This rescue harness does not exhibit any unique aspects of installation for the user.

The conditions and tests for TSO approval of this article are minimum performance standards. Those installing this article, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft.

The parts contained in the Chameleon harness form a complete harness and are not interchangeable.

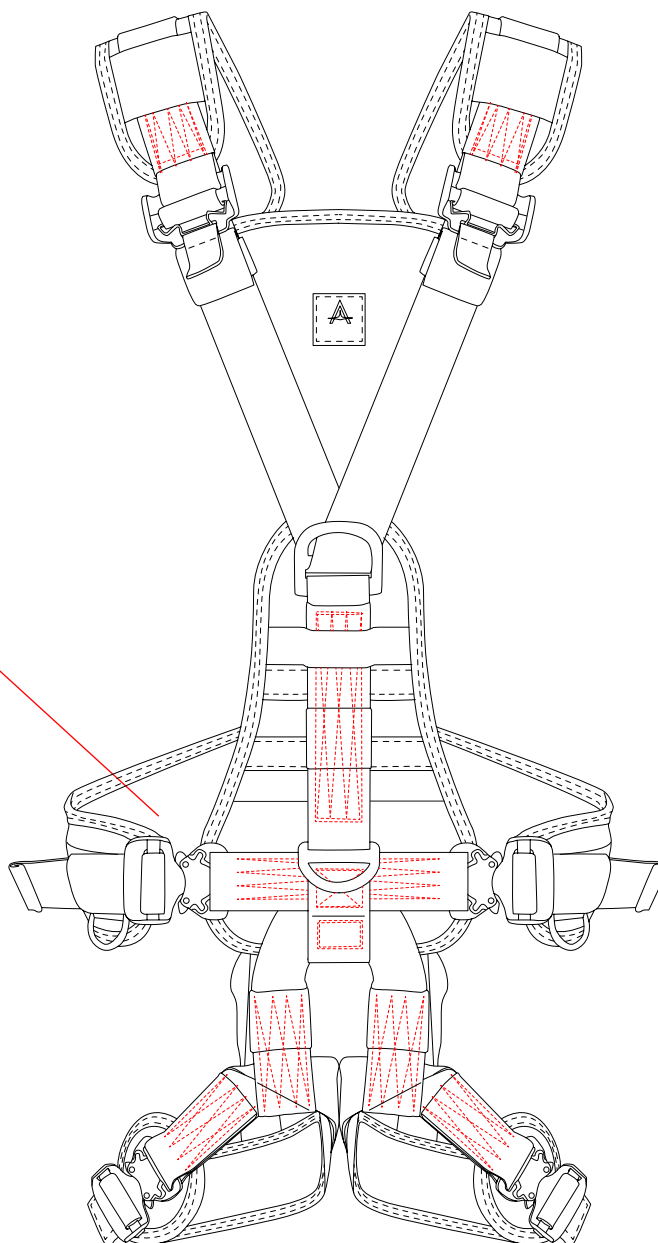
1.2 Labeling Information

The CTRH labeling information is located on mid-scapular back pad. Follow all warnings and guidance provided on label and in user guide. Important information such as data manufacture and serial number are located on label as shown below.



LABEL REQUIRED BY NFPA 1983-2006. DO NOT REMOVE LABEL.

AERIAL MACHINE AND TOOL CORP.
4298 JEB STUART HWY.
MEADOWS OF DAN, VA 24120
www.aerialmachineandtool.com
CHAMELEON TACTICAL RESCUE HARNESS
SIZE: AMTC-
WAIST SIZE: MAX HEIGHT:
SERIAL #: DOM:
MAXIMUM WEIGHT 450 LBS
THIS HARNESS MEETS THE LIFE SAFETY
HARNESS REQUIREMENTS OF NFPA 1983,
STANDARD ON LIFE SAFETY ROPE AND
EQUIPMENT FOR EMERGENCY SERVICES,
2006 EDITION; CLASS III.
MADE IN U.S.A.
TSO-C167



1.3 Instructions for Continued Airworthiness

The Instructions for Continued Airworthiness (ICA) as applied to the Chameleon CTRH harness are as follows:

- (a) When changes to the ICAs are made and approved, those changes will be published and distributed in a hard copy format to all current users as indicated in the company's sales and distribution records.
- (b) This User Manual and Instructions for Continued Airworthiness in its entirety constitute the ICAs for this harness.
- (c) This document provides a complete description of the Chameleon harness to include operational information along with any special procedures and limitations that apply.
- (d) This document contains the information required for the inspection of the harness that includes the frequency of inspection, inspection criteria, disposition of defects that may be noted during the inspection and life limitations.
- (e) There is no troubleshooting information applicable to this harness. The manufacturer does not permit removing or replacing harness parts or repairs to the harness.

1.4 Airworthiness Limitations

- (a) The mandatory replacement times for the Chameleon harness is seven years in service and ten years from the date of manufacture.
- (b) A preflight inspection shall be performed prior to the first flight of the day.
- (c) A preflight inspection shall performed every 30 days if the harness has not been used during any thirty day period.

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under FAR Parts 43.16 and 91.403 of the Federal Aviation Regulations unless an alternate program has been FAA approved.

2.0 PREFLIGHT INSPECTION

It is the responsibility of the user to inspect the CTRH before flight operations. Perform a preflight inspection prior to the first flight on the day of and at intervals not to exceed 30 days. If damage is found during an inspection, the harness shall be removed from service until repaired by manufacturer.

This rescue harness does not require any type of calibration.

2.1 Inspect All Tether & Load Bearing Points

Inspect front chest, front waist, rear back, rear waist, shoulder adjustment point, and leg strap attachment points for:

- Cuts, tears, and abrasion damage
- Open seams and loose or broken stitching
- Contamination damage such as petroleum products and corrosives



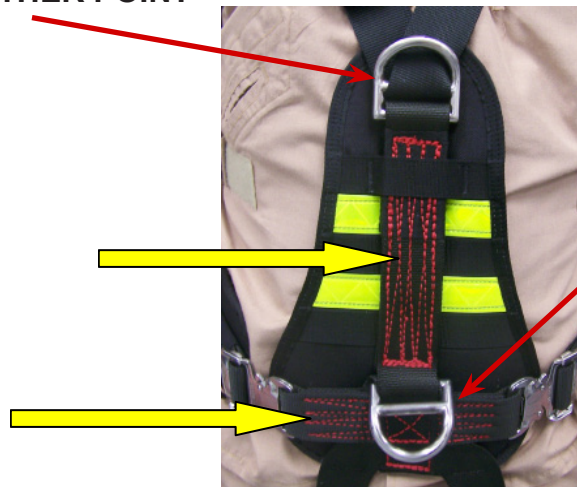
WARNING

BROKEN STITCHING - NO BROKEN STITCHING IS ALLOWED ON LOAD BEARING SEAMS IDENTIFIED IN PICTURES BELOW (YELLOW ARROWS). NO LOCAL REPAIRS ARE AUTHORIZED. IF DAMAGE TO LOAD BEARING SEAMS IS FOUND, HARNESS SHALL BE REMOVED FROM SERVICE AND SENT BACK TO AERIAL MACHINE AND TOOL FOR REPAIR.

CONTAMINATION - IF CHEMICAL CONTAMINATION, I.E. PETROLEUM, CORROSIVES, ETC, THEN EXAMINE FOR OBVIOUS DAMAGE AND DEGRADATION. IF DAMAGE FOUND THEN HARNESS IS BEYOND REPAIR AND SHALL BE DISPOSED OF. IF NO DAMAGE EVIDENT THEN CLEAN ACCORDING TO CLEANING PROCEDURES IN SECTION 4.1 OF THIS MANUAL.

FRONT CHEST TETHER POINT

FRONT WAIST TETHER POINT



2.1 Inspect All Tether & Load Bearing Points (Continue)



REAR (Lumbar) WAIST TETHER POINT

Be sure to inspect the stitching above and below the D ring for damage.



REAR BACK TETHER POINT



SHOULDER ADJUSTMENT POINTS (Right and Left)



LEG STRAP ATTACHMENT POINTS (Front and Rear)



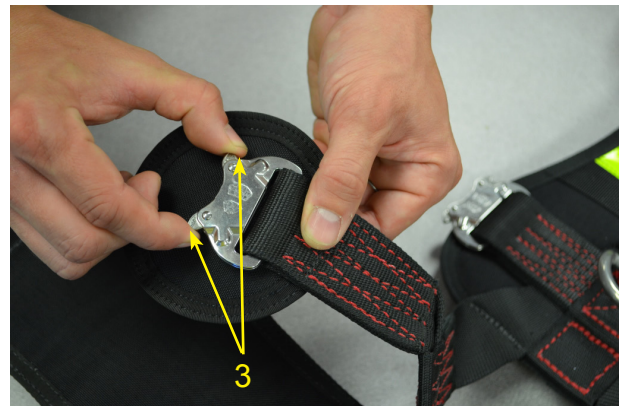
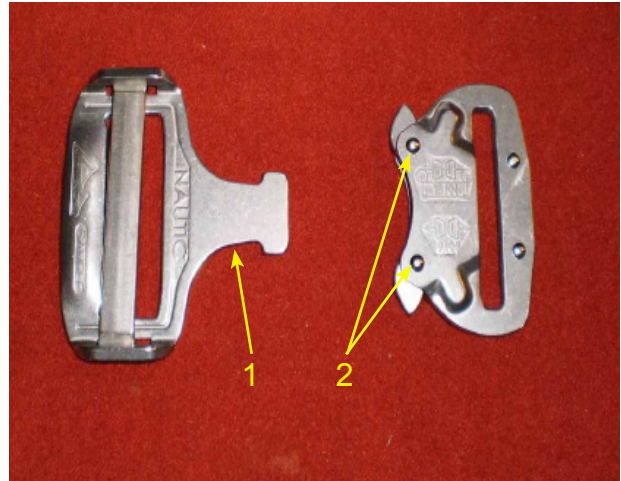
2.2 Inspect All Harness Hardware

Inspect all harness hardware for:

- Cracks and Deep Gouges
- Deformity and Corrosion

NOTE: On the stainless steel Nautic buckles, the male fitting (1) and the release tab post pins on the female fitting (2) should be inspected for cracks, deformities and corrosion to include the operation of the release tab springs (3). The hardware parts shall be free from burrs and sharp edges and are designed and located to minimize the possibility of injury to the user

NAUTIC STAINLESS STEEL BUCKLE (Located on waist and leg straps)



WARNING

HARDWARE DAMAGE - NO DAMAGE OTHER THAN MINOR SRATCHES AND SURFACE CORROSION OF A MINOR NATURE ARE ALLOWED. IF CRACKS, DEFORMITY, OR SEVERE CORROSION RESULTING IN DEGREDDATION OF METAL OR DEFECTIVE RELEASE TAB SPRINGS ARE FOUND THEN HARNESS IS TO BE REMOVED FROM SERVICE AND RETURNED TO AERIAL FOR INSPECTION AND EVALUATION.

2.3 Inspect All Webbing

Inspect all webbing for:

- Cuts, tears, and abrasion damage
- Contamination damage such as petroleum products and corrosives



WARNING

WEBBING DAMAGE - IF ANY LOAD BEARING WEBBING SHOWS ANY CUT, TEAR, OR SIGNIFICANT ABRASION BEYOND SLIGHT PILING, THEN THE HARNESS IS UNREPAIRABLE AND SHALL BE CONDEMNED.

CONTAMINATION - IF CHEMICAL CONTAMINATION, I.E. PETROLEUM, CORROSIVES, ETC., THEN EXAMINE FOR OBVIOUS DAMAGE AND DEGRADATION. IF DAMAGE FOUND THEN HARNESS IS BEYOND REPAIR AND SHALL BE DISPOSED OF. IF NO DAMAGE EVIDENT THEN CLEAN ACCORDING TO CLEANING PROCEDURES IN SECTION 4.1 OF THIS MANUAL.

2.4 Record Inspection

Record preflight inspection on harness inspection log sheet, appendix A.

NOTE: A detailed log of harness inspection, cleaning, and repair is crucial to the upkeep of your CTRH. Always log inspections, damage, and repairs during the service life of your CTRH.

3.0 USER OPERATION

Follow the instructions provided below to properly adjust and wear your chameleon harness.

NOTE: Refer to Rescue Harness Limitations, Section 1.1 for weight and size limitations.

3.1 Donning and Adjustment

Before you put on your harness, release all attachment buckles and make sure you let out the webbing slack in all adjustment buckles. Then follow the steps in this section to properly wear and adjust your harness.

3.1.a Place harness shoulders straps over right forearm with front tether points facing forward.



3.1.b Step through middle of harness with your right leg until right leg is completely through harness and foot is back on the floor.



3.1 Donning and Adjustment (Continued)

3.1.c Pull shoulder straps over head and center up harness on torso.



3.1.d Pull waist belt around waist with belt centered in lumbar (lower) area of back and mate waist buckles at front waist tether point.



3.1.e Adjust torso height by pulling on rear torso adjustment webbing and centering up rear back tether ring between upper half of user's shoulder blades, keeping back pad off user's neck. If rear torso adjustment is required and the user cannot reach and adjust the rear torso then remove the harness and adjust the rear torso adjustment and re-don the harness until proper adjustment is achieved. After final adjustment stow excess webbing using velcro keeper strap.



3.1 Donning and Adjustment (Continued)

3.1.f Mate the leg strap buckles and tighten snug but not so tight as to interfere with user's circulation.



3.1.g Adjust front shoulder strap webbing so harness rides snug on torso and chest. Stow excess webbing in elastic keepers.



3.1.h FINAL CHECK. Do a good head to toe and recheck all buckles and adjustments for proper fit and security. Recheck the following items:

- Rear Torso Height Adjustment
- Front Shoulder Adjustment
- Waist Adjustment & Buckles
- Leg Strap Buckles
- Excess Webbing Stowed



Always perform a final check of your equipment before entering the aircraft or starting the mission.

3.2 Optional Items for CTRH.

The pictures below show optional uses for the CTRH. A Complete list of optional Items are listed in Appendix B.



WARNING

USE SPECIFIED AERIAL OPTIONAL ITEMS ONLY. LISTED ITEMS ARE DESIGNED SPECIFICALLY FOR USE WITH THE CTRH AND ARE NOT INTENDED TO BE INTERCHANGEABLE WITH OTHER SYSTEMS.

3.2.a Dual Pick Up Strap. The dual pick up strap is an optional item designed to give the rescuer an option of connecting to survivor for a double pick up. It can be used on the front waist or front chest tether point. (Front Chest Recommended). Carabiner attaches to Rescuer's Chameleon. "V" ring attaches to hoist. Two way gated hook is for survivor or other SAR equipment hook up.



Dual Pick Up Strap is rated by manufacturer at 1000 lbs (454 kgs) operating load and 4500 lbs (2041 kgs) max load.

3.2 Optional Items for CTRH. (Continued)

3.2.b Shoulder Protector Pads. Shoulder protector pads are available for use during hoisting operations and are available in right and left configuration. Pads are intended for hoist operators who practice cable management with cable on their shoulder during helicopter hoisting operations. The pads protect expensive flight suits from grease and wear. Replacements can be ordered using part number in Appendix B.

Step 1: Mate pad hook to shoulder pad pile on bottom of pad.



Step 2: Fold protector pad back over harness shoulder pad.



Step 3: Put on and adjust harness. Mate the Shoulder Protector Pad plastic buckle and snug strap around arm.



4.0 CLEANING AND STORAGE

4.1 Cleaning procedures

NOTE: A detailed log of harness inspection, cleaning, and repair is crucial to the upkeep of your chameleon harness. Always log inspections and cleanings in appendix A, Harness Inspection Log Sheet.



WARNING

MANY CLEANING AGENTS CONTAIN CORROSIVE CHEMICALS WHICH MAY DAMAGE COMPONENTS ON YOUR HARNESS. USE MILD BIODEGRADABLE CLEANING AGENTS ONLY. AERIAL RECOMMENDS CLEANERS SUCH AS SIMPLE GREEN CLEANER, OR VERY MILD SOAP SUCH AS IVORY DISHWASHING LIQUID FOR THE REMOVAL OF CONTAMINANTS.

- 4.1.a** Before cleaning in water, brush all dirt and other contaminants from harness using a soft cleaning brush.
- 4.1.b** Mix cleaning solution according to manufacturer's recommendations.
- 4.1.c** Apply a generous amount of cleaning solution to the affected spot and lightly scrub with soft cleaning brush.
- 4.1.d** Immerse in fresh warm water and agitate until all cleaning solution is removed. Check spot and repeat steps 4.1.c and 4.1.d as necessary.



WARNING

IF STEPS 4.1.C AND 4.1.D ARE UNSUCCESSFUL REMOVING CONTAMINATION THEN HARNESS IS TO BE CONDEMNED AND REMOVED FROM SERVICE.

- 4.1.e** Hang harness out of direct sunlight to air dry.



WARNING

DO NOT ATTEMPT TO SPEED DRYING BY PUTTING HARNESS IN CLOTHES DRYER OR BY USING ANY ELECTRICAL HEATED DRYING DEVICE. HEAT DEGRADES THE NYLON FIBERS IN THE LOAD BEARING WEBBING.

4.1 Cleaning Procedures (Continued)

- 4.1.f** Once harness is dry it is recommended, using dry filtered shop air, to blow out female side of cobra nautics and spray coat with a light water displacing compound such as ACF-50 or WD40 on female fitting release tab posts taking care not to contaminate harness webbing.
- 4.1.g** Upon completion of cleaning procedure, log cleaning in harness inspection log sheet, Appendix A.

4.2 Storage Procedures

- 4.2.a** Store your CTRH in an environmentally controlled area out of direct sunlight. If you must store your Chameleon on an aircraft, place it in a protective storage bag or in a compartment out of direct sunlight where it is protected from contamination by petroleum products.
- 4.2.b** Do not expose your CTRH to flame or high temperature. If your CTRH is exposed to flame or high temperature conduct an inspection according to Section 2 to determine serviceability.
- 4.2.c** Retain a copy of your CTRH instructions with your harness in the appropriate storage location/container.

Appendix A. Harness Inspection Log Sheet

Harness Serial Number _____
Placed into Service _____

Date of Mfr _____

Placed into Service _____

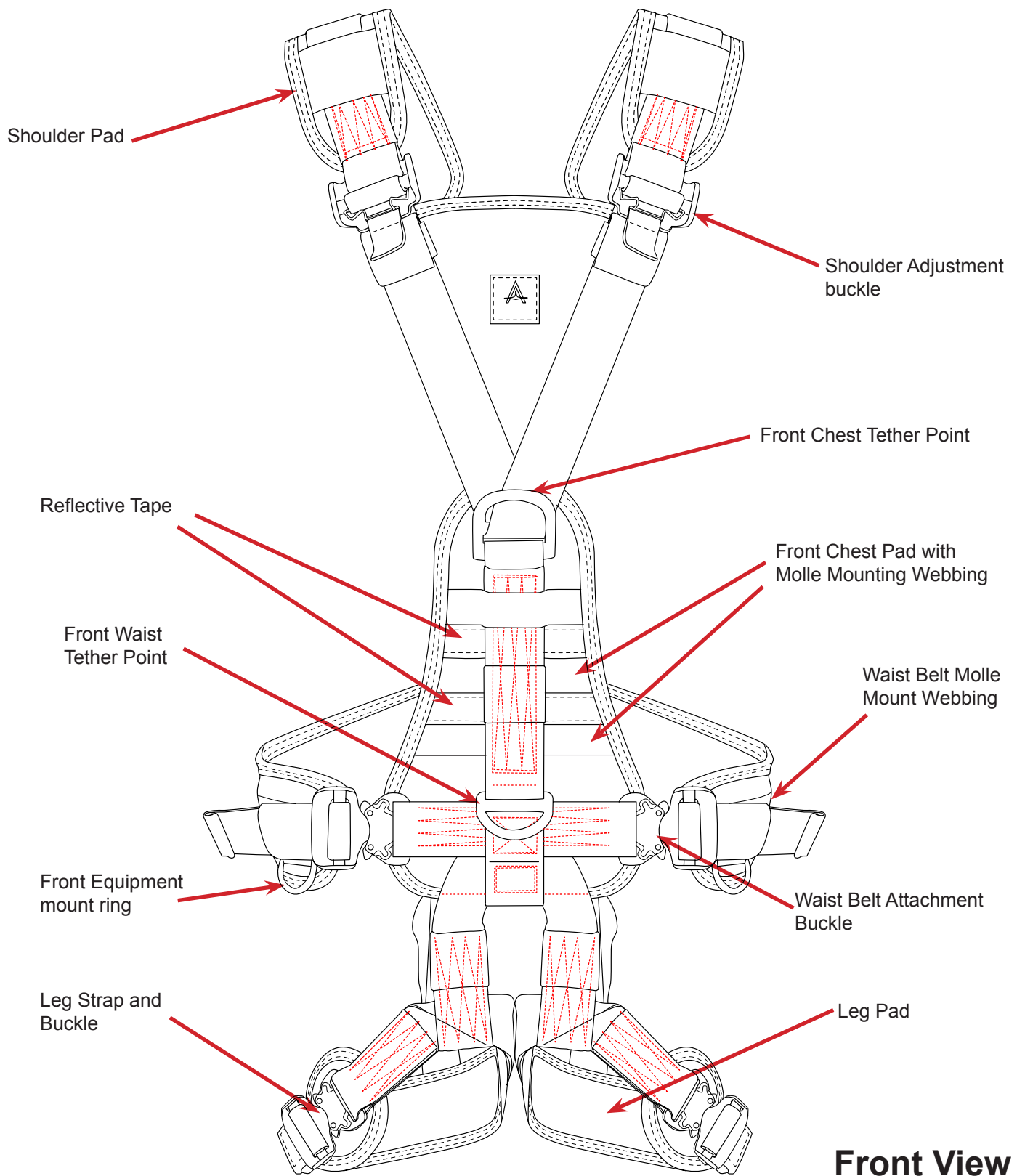
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Appendix B. Chameleon Harness Optional Items List

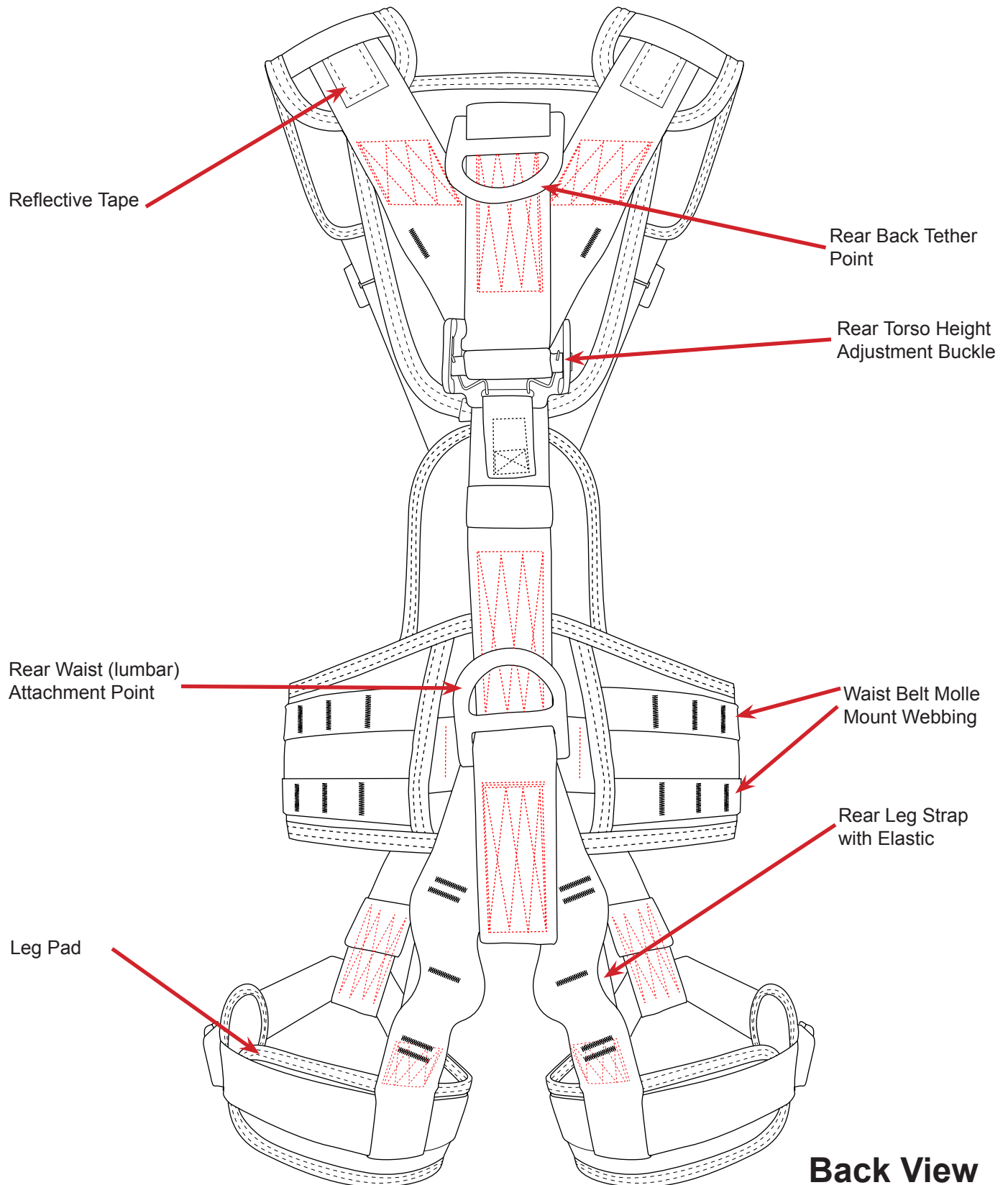
ITEM DESCRIPTION	AERIAL PART NUMBER
Shoulder Protector Pad (Right)	AMTC-S1229-BL/ R
Shoulder Protector Pad (Left)	AMTC-S1229-BL/ L
Dual Pick Up Strap	AMTC-S1230-BL
Thigh Holster Adapter	AMTC-S1267-BL
Handcuff Pouch	AMTC-P1247-BL
9mm Magazine Pocket (other sizes available)	AMTC-P1225-BL
Chemlite Pocket 3" x 7" x 0.75"	AMTC-P1223-BL
Utility Pocket 5" x 5" x 3"	AMTC-P1222-BL
1.5 CU/IN Aqualung SEA Bottle Pocket	AMTC-P1224-BL
Medical Pack with Front Mount Clips	AMTC-C1152-BL
Chameleon Harness, Size Small	AMTC-H1037-BL / S
Chameleon Harness, Size Medium	AMTC-H1037-BL / M
Chameleon Harness, Size Large	AMTC-H1037-BL/ L
Chameleon Harness, Size Extra Large	AMTC-H1037-BL / XL

NOTE: The BL at the end of the part number indicates color.
Currently CTRH are sold in Black only. Other colors are available on request and approval by FAA. Call Aerial for information and pricing 276-952-2006 (main office).

Appendix C. Chameleon Harness Nomenclature



Appendix C. Chameleon Harness Nomenclature (Continued)



Appendix D. Size Chart

S fits waist	29 to 34 inches	Maximum Height	72 inches
MED fits waist	30 to 36 inches	Maximum Height	74 inches
LG fits waist	34 to 40 inches	Maximum Height	76 inches
XL fits waist	38 to 46 inches	Maximum Height	78 inches

Appendix E. Parts List

<u>Component/Part Number</u>	<u>Description</u>	<u>QTY</u>	<u>Unit of Measure</u>
6742	SS D-Ring W/Bar	2	EA
MS51925-4	D-Ring A-A-59557-A4	2	EA
MS22007-2	Small Adjuster (with spring)	3	EA
MS22007-1	1 ¾ in. Adjuster Assembly, finished	1	EA
Cobra-Nautic-F	Cobra Buckle, SS, Female	4	EA
Cobra-Nautic-M	Cobra Buckle, SS, Male	4	EA
H1037-3	D-Ring, Bent, SS, 5000 lb	2	EA
Cordura, COM-BLP	Cordura, 1000D,	0.71	YD
Cordura, COMM-FR	1000 Denier, Cordura	0.70	YD
W3010300BL1-FR	Nylon Webbing, A-A-55301	3.05	YD
W265131ABL-R302	Nylon Webbing, PIA-W-27265	13.46	YD
W3370002BL2	Nylon Webbing, MIL-W-17337	0.79	YD
W6640201BL1	Nylon Elastic Web, MIL-W-5664	0.61	YD
T038031ABL1	Nylon Tape, MIL-T-5038	9.9	YD
F126L0201BL2	A-A-55126-Loop Fastener	0.66	YD
RRT1-Y	Reflective Tape, 1 in. wide	0.49	MTR
VT29502A6CRD	Thread, Nylon, A-A-59826	0.03	LB
VT29502A0EBL	Thread, Nylon, A-A-59826	0.03	LB
C9530002BL40	Cloth, Duck, Nylon, PIA-C-3953	0.64	YD
TECOM2BL	Elastic Tape, 2 in.	0.31	YD
AMTC-Label	Label, AMTC Logo, 1 ½ x 1 ½	1	EA
W088021ABL-302	Nylon Webbing, MIL-W-4088	0.53	YD
W088041ABL-FR	Nylon Webbing, MIL-W-4088	0.7	YD
W088081ABL-FR	Nylon Webbing, PIA-W-4088	0.34	YD
T038041ABL1-1/2	Nylon Tape, MIL-W-5038	0.73	YD
F126L0201BL1	A-A-55126 Loop Fastener	0.27	YD
F126H0201BL1	A-A-55126 Hook Fastener	0.27	YD
VT29502AFFBL	Thread, Nylon, A-A-59826	0.03	LB
C1152-3	Label, Chameleon, TSO-C167	1	EA