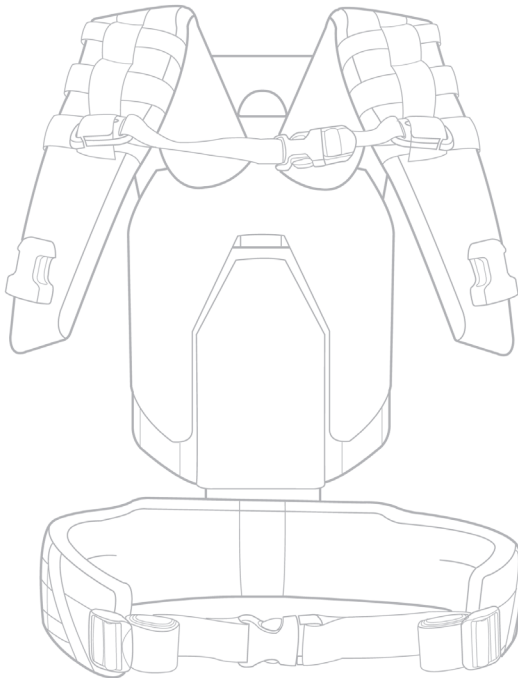




Switchblade™ Frameset Setup & Adjustments

Operator's Manual





Learn more about Switchblade System
at www.catoma.com/gear-overview

PROTECTED BY ONE OR MORE PATENTS:
US 8678258 B1, US 10231534 B1
D815981, D630011, D833749

Switchblade™ Frameset Setup & Adjustments

CONTENTS

FRAMESET FITMENT

1 Sizing Guide

COMPONENTS

3 Main Components

5 Attachment Points

MAKING ADJUSTMENTS

7 Overview

8 Frameset Removal

9 Shoulder Straps + Frame Pad

11 Pack Belt

OTHER INFORMATION

13 Wearing the Frameset

14 Care & Maintenance

SIZING GUIDE - THREE STEP PROCESS

FITMENT

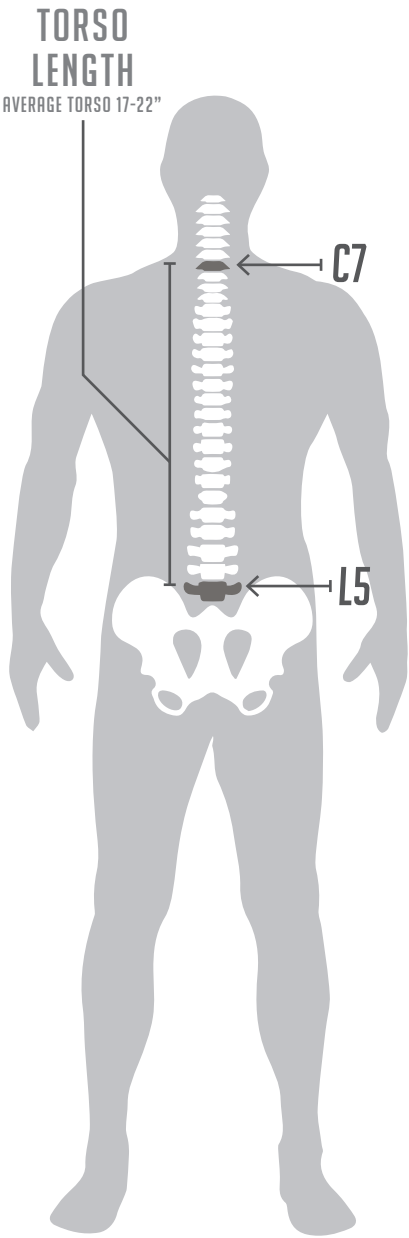
STEP 1: DETERMINE TORSO LENGTH

In order to begin fitment of your Switchblade Frameset, you'll need to measure your body in three areas:
1) neck, 2) torso and 3) waist.

Setting your pack to your correct torso length is crucial to getting the pack to fit properly. If it is set up too short, the Pack Belt will ride up your back and not effectively transfer weight to your hips; too long and the pack will pull back and not ride close to your body, creating sway and discomfort.

To determine your torso length, you'll measure the distance between your seventh cervical vertebra (**C7**) and the crest of your hipbones (**L5**) using a flexible tape measure. This length will determine where to attach the pivot point shoulder strap hardware on the framesheet.

TO MEASURE: While measuring, be sure to stand up straight with feet shoulders-width apart. The process may be easier with a helper, but can be done by yourself. Hold one end of the measuring tape by pressing it against the back of your neck at the most prominent bone at the base of your neck. Hold in place and proceed. Next, with the tape in your free hand, use your index finger to locate your lower measurement in the center of your lower back - this is typically near your waist line. Stop when your index finger resting on the crest of your hipbones and record the measurement your finger is on. On average, the human torso is between 17"-22" inches long.



YOUR TORSO LENGTH: _____

Record this measurement you'll need it later for adjusting the frameset - if needed.

STEP 2: DETERMINE TORSO WIDTH

Your neck circumference will determine whether you need to attach the shoulder straps to the framesheet in the regular or wide position. Having the shoulder straps set up in the wrong position will cause unnecessary discomfort and fatigue.

TO MEASURE: Start with the end of the tape measure held to the center of your throat and measure your neck's circumference, with the tape passing just above the C7 vertebrae on the back of your neck as located in step 1. The regular width setting is for neck sizes 17" or smaller and wide is for 17.5" and larger.

YOUR TORSO WIDTH:

☐ REGULAR: < 17" ☐ WIDE: > 17"

STEP 3: MEASURE WAIST SIZE

Use the size chart at the bottom and go by your regular pant size waist measurement. If you don't know this, take a measurement with a flexible tape measure with the tape next to your skin, around your waist. Measure the circumference at your hip points. Or, you can simply try on a hip belt if you have access to both sizes of belts.

A properly sized hip belt will wrap over your hip bones, extend past your hip points, and still leave a gap in the padding at the front. **NOTE: Pack Belt is offered in two sizes, initial issue of the pack will be with a regular belt - for a large belt see supply or contact Catoma directly to purchase your own.**

SIZE	WAIST SIZE
Regular	30" to 40"
Large	+ 40" Up
(Measured by circumference at hip crest)	

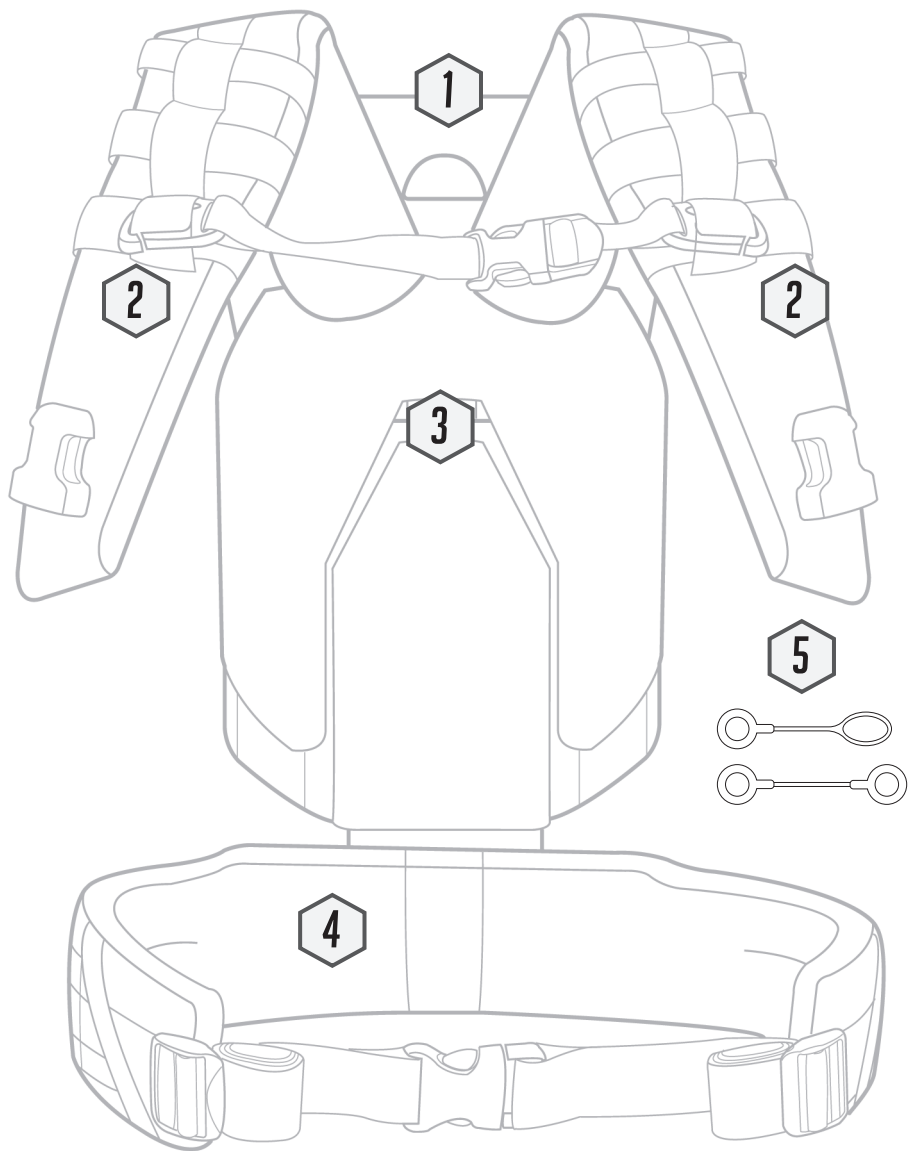
STEP 4: DISASSEMBLE AND ADJUST YOUR FRAMESET

Once you've reviewed the diagrams and components on pages 6-9, turn to page 10 to begin disassembling your Frameset for adjustment.



MAIN COMPONENTS OF THE FRAMESET

The Switchblade™ is a modular load carriage system. Each unit includes an identical frameset (shown below) consisting of the following: 1) framesheet, 2) set of shoulder straps, 3) adjustable framepad, 4) adjustable waist belt, and 5) washers and leashes. Thanks to this framset design, the user then has the capability to configure additional pack pieces to their needs.



1

FRAMESHEET

Our carbon fiber frame is designed to fit Switchblade™ packs. The upper zone is rigid, allowing the load lifters to pull the whole load close to your back. The frame can flex but always returns to it's original shape - never deforming like aluminum stays frequently do.

2

SHOULDER STRAPS

The shoulder straps are contoured to fit the neck and torso in an ergonomic way. Each strap attaches to the framesheet using pivot point hardware system, and to the pack/ panel of your choice via snap-on buckles. The pivot point hardware allows the straps to articulate for a more comfortable and active fit.

3

ADJUSTABLE FRAMEPAD

The two-piece adjustable frame pad allows for custom-fit to any wearer. The Frame Pad is designed so that it can be moved apart or together to accommodate any user's torso length fitting. See Page 13 for instructions on adjusting the Frame Pad. The Frame Pad can also be removed completely for a better fitment with body armor.

4

PACK BELT

The belt is attached using the same pivot point hardware as the shoulder straps. With this system, the belt is allowed to pivot with the natural movement of your hips. The downward contour of the belt allows it to hug the users hips ergonomically for more efficient load transfer. The belt uses dual-density foam & multi-layer construction.

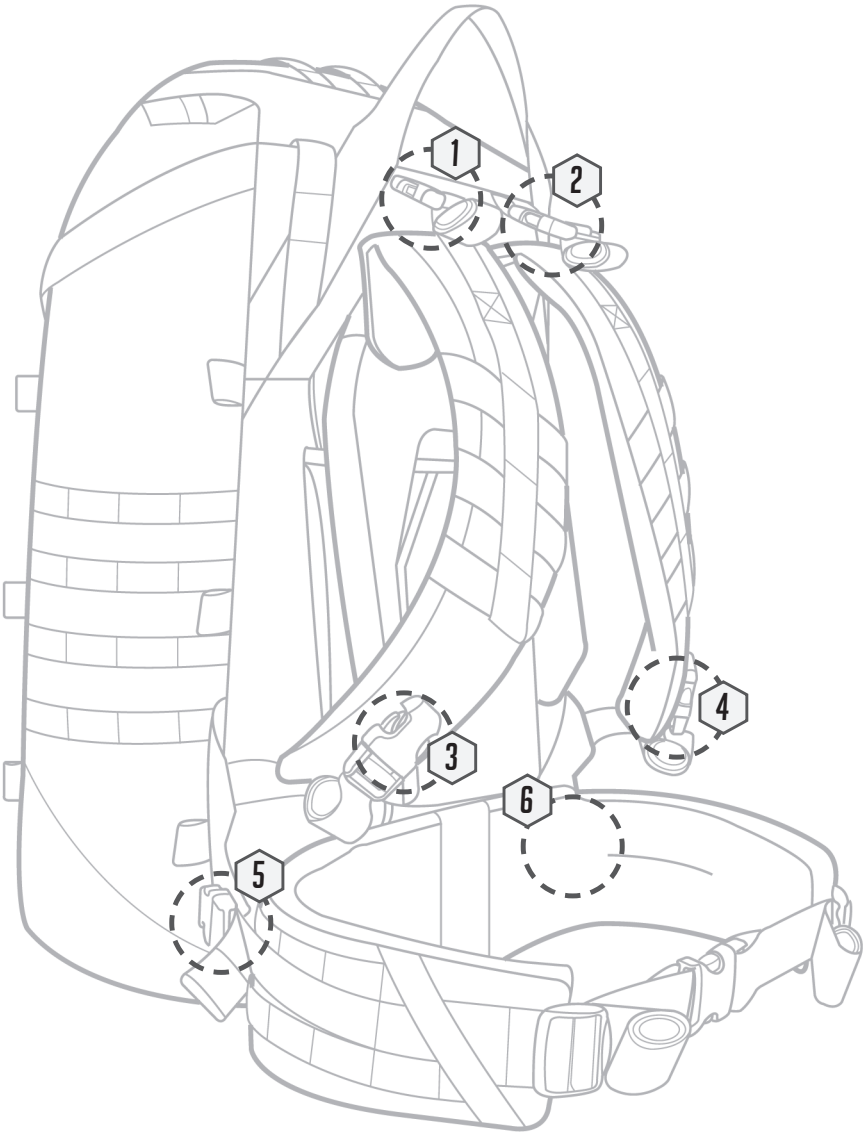
5

PIVOT PINS & SAFETY LEASHES

Each frameset comes with 2 metal safety leashes to completely secure the pivot pins to the framesheet. Wearing the frameset without the safety leashes can result in a loose or broken framesheet which can result in personal injury or death.

ATTACHMENT POINTS

COMPONENTS



**Shown with the frameset secured to a Raid pack body.
The attachment points are the same for the Assault
pack and the Molle Panel Frame.*

BE SURE TO CONNECT ALL
6 ATTACHMENT BUCKLES

1

2

TOP LOAD LIFTERS
(SNAP-ON LOOPS)

+

3

4

SHOULDER STRAPS

+

5

6

PACK BELT STABILIZER STRAPS

=

FULLY SECURED PACK TO FRAMESET

OVERVIEW OF CUSTOM FITMENT

MAKING ADJUSTMENTS

The following page will show you how to disassemble your frameset so you can make fine-tuned adjustments. Below are a few things you need to know before beginning the adjustment process. **If your pack is configured properly and no adjustments are needed you are all set. See page 16 for wearing and removing the pack.**

NO TOOLS NEEDED

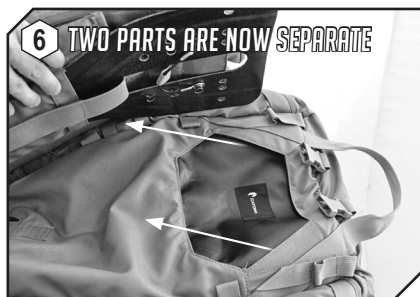
**AN EMPTY PACK IS
RECOMMENDED**

**DISCONNECTING
FRAMESET IS
REQUIRED.**



FRAMESET REMOVAL

STEP-BY-STEP INSTRUCTIONS



NOTE: Removing and inserting the frameset is much easier when the pack is completely empty. To do any sizing adjustments or part replacements, you'll need to disconnect the frameset harness. When removing the frameset leave the shoulder straps and belt attached to the framesheet until it is removed to simplify the process.

INSTALLING FRAMESET: Reverse the steps above. Be sure to install the frameset with a weightless pack / panel.

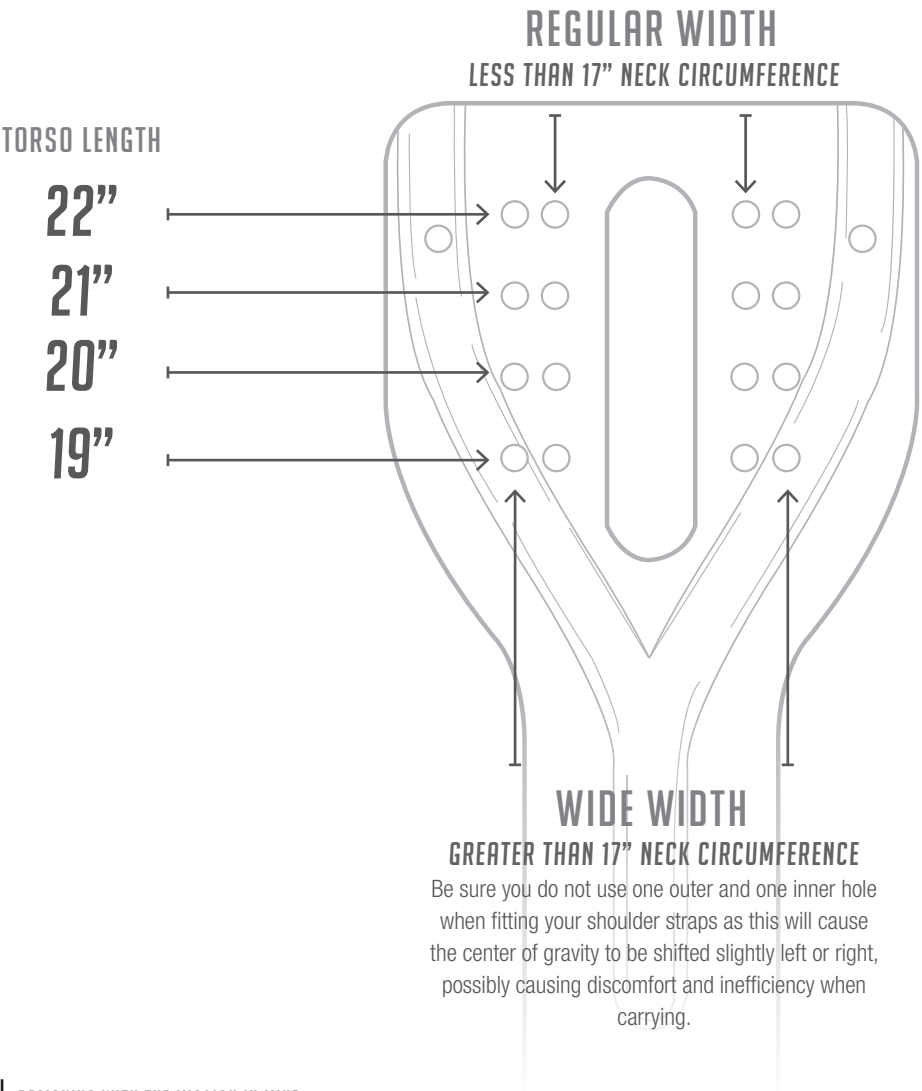
SHOULDER STRAPS & FRAME PAD FITMENT

MAKING ADJUSTMENTS

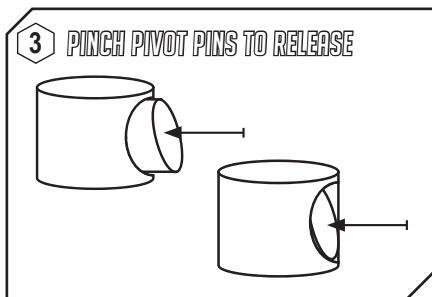
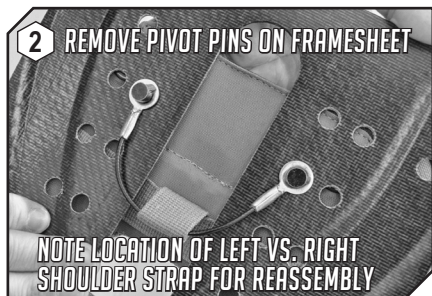
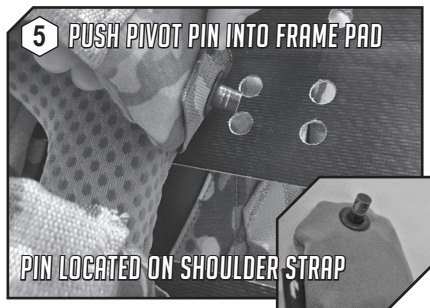
The sizing component of the frameset is the framesheet, and it is designed with several fitment points for a fine-tuned fit for the end user, made possible by removing and relocating the shoulder straps and frame pad (see page 13). Each framesheet has torso adjustment settings spaced vertically in one inch increments and horizontally in two intervals (See illustration below).

ADJUSTING TORSO LENGTH AND WIDTH

Refer to your size measurements that you recorded on pages 4. and 5. Find your measurements on the illustration below, then follow the steps on page 13 to remove and relocate your shoulder straps and frame pad to the holes that correspond with your measurements.



NOTE: To adjust the shoulder straps, you will need to disconnect the frameset from the pack, see page 8 for removal instructions. Be sure to complete sizing guide at the beginning of this manual before completing the following steps. Your measurements are crucial for proper fitment.



NOTE: The Frame Pad is Adjustable and made up of two pieces. The Frame Pad is secured together by hook and loop (velcro) you can adjust this if needed.

BODY ARMOR COMPATIBILITY: FRAME PAD REMOVAL FOR BETTER FITMENT WITH BODY ARMOR

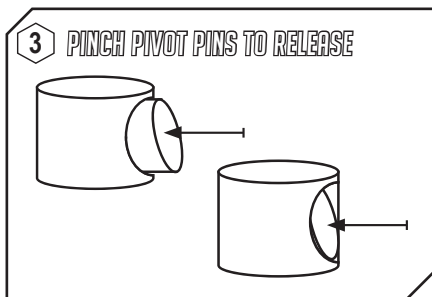
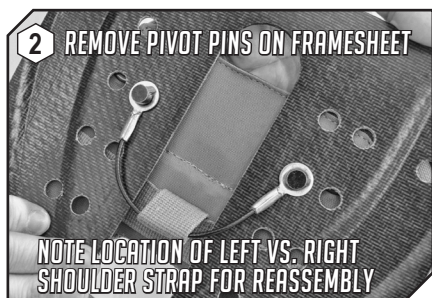
Depending on your body type, you may find it beneficial to remove the frame pad from the frameset in order for the pack to sit more flush against your rear armor plates. It is necessary to remove the frameset from the pack (shown on page 8) in order to disassemble it and remove the frame pad.



FRAMESET FOR USE
WITHOUT ARMOR

FRAMESET FOR USE
WITH ARMOR



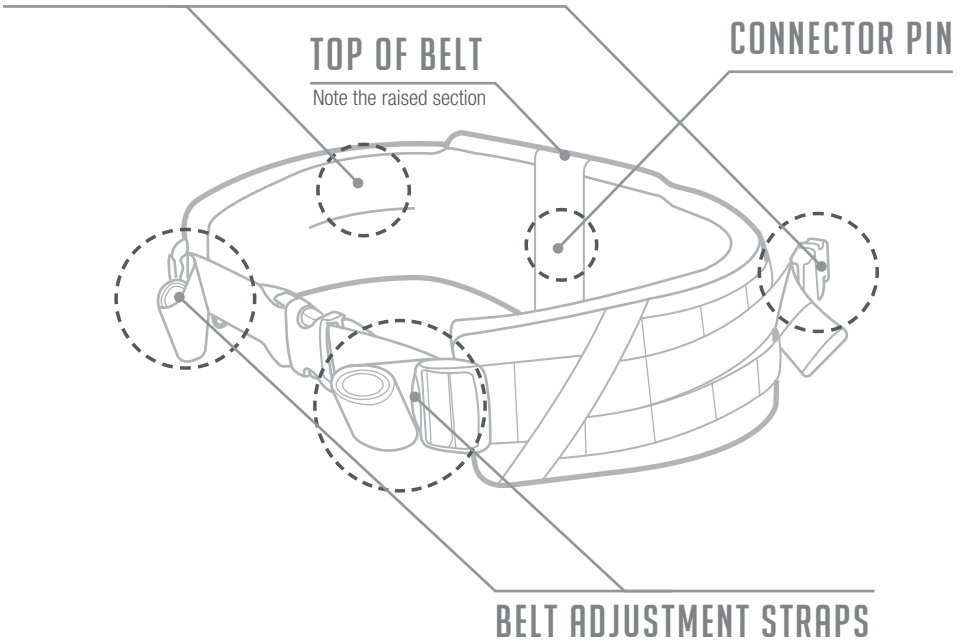


PACK BELT FITMENT

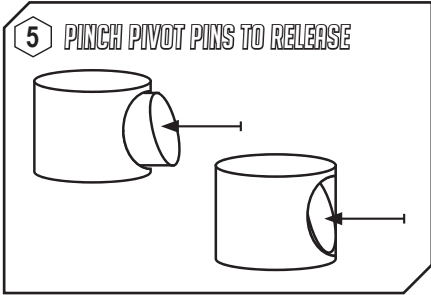
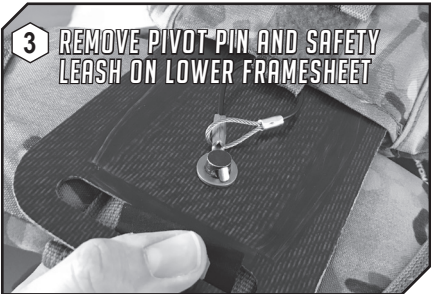
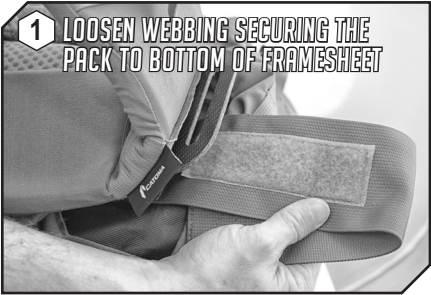
MAKING ADJUSTMENTS

The Switchblade belt is adjustable from waist sizes 30"-40" by simply extending or tightening the adjustment straps at its front. However, if a larger belt is needed, the standard belt can be removed and replaced with our large belt.

PACK BELT STABILIZER STRAPS



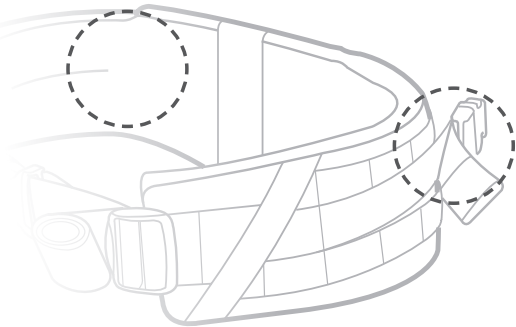
NOTE: It is not necessary to completely remove the framset from the pack to swap the pack belt. However, we highly recommend starting this process with an empty pack to make the swap much easier. When re-mounting the pack belt make sure it is right side up and the raised section is arcing upward (see illustration to left for reference).



NOTE: Installation of the pack belt is reverse of the steps above. To be sure you have it installed in the correct orientation, mount it so that the pack belt is flat on the bottom and the raised portion is at the top. (See illustration on opposite page for reference)

PACK STABILIZER STRAPS

The pack stabilizer straps attach your pack or panel to the waist belt and prevent load sway. These straps also limit the amount of pivot your belt is allowed. When the stabilizer straps are tight, load sway is minimized, but movement is more restricted. When the pack stabilizer straps are loose, your waistbelt will offer more pivot and freedom of movement, but may allow your load to sway more. Use your judgment on how tight to set these straps when fine tuning your fitment.



WEARING THE FRAMESET

OTHER INFORMATION

We've put together steps to highlight the importance of safely removing the pack. It's best to follow these guidelines so that they become a habit and can be performed in an emergency. Incorrect removal of the pack can result in severe injury or even death.

NORMAL PACK REMOVAL / NON-EMERGENCY

- » SLIGHTLY LOOSEN THE LOAD STABILIZER STRAPS.
- » SLIGHTLY LOOSEN HIP STABILIZER STRAPS.
- » UNCLIP STERNUM STRAP IF IN USE.
- » SLIGHTLY LOOSEN SHOULDER STRAPS.
- » UNCLIP PACK BELT.
- » WHILE KNEELING, REMOVE RIGHT OR LEFT ARM FROM UNDER SHOULDER STRAP AND SLIDE PACK AROUND TO YOUR FRONT AND ON TO THE OPPOSING KNEE.
- » GRAB HOLD OF THE HAUL LOOP LOCATED BETWEEN THE SHOULDER STRAPS TO LOWER THE PACK TO THE GROUND.

EMERGENCY USE TO QUICKLY SHED THE PACK FROM THE WEARER

- » UNCLIP STERNUM STRAP IF IN USE.
- » UNCLIP PACK BELT.
- » UNCLIP LOWER SHOULDER STRAP ATTACHMENT POINTS. BE SURE TO DO THIS ONLY AFTER YOU HAVE UNCLIPPED THE STERNUM STRAP - OR SEVERE INJURY COULD RESULT.
- » GRAB HOLD OF THE HAUL LOOP LOCATED BETWEEN THE SHOULDER STRAPS TO DRAG THE PACK IF NEEDED.

CARE & MAINTENANCE

REPLACEMENT PARTS

If something breaks and you need a replacement part contact us by phone at 800.826.0446 or online at www.catoma.com.

MAINTENANCE

The pack bag and framesheet do not require special maintenance. Try to keep the framesheet free of oils which may cause squeaking. DO NOT APPLY ARMORALL or any other oil-based solution to the framesheet. KEEP away from open flames. The pack's nylon fabric can get singed or melted.

FEEDBACK

If you have feedback using our gear and would like to buy it for yourself, visit www.catoma.com and be sure to take advantage of our military / law enforcement discount.

SWITCHBLADE LOAD CARRIAGE SYSTEM

The Switchblade is a truly modular load carriage system. Each user gets the same frameset, consisting of a carbon fiber framesheet (Patent #US 8,678,258 B1), shoulder straps, waistbelt, and frame pads. The fitment of a pack's frameset is critical to reducing fatigue, enabling the warfighter to carry more, and travel further. Once the frameset of the Switchblade is fitted to the user, additional pieces can be stacked and combined to increase the warfighter's carrying capability, or reduced and skeletonized to minimize weight and bulk as the mission demands.



Care & Maintenance of Your Gear

HAND WASH CARE

The Switchblade system can be spot cleaned effectively using a mild detergent solution applied with a small stiff bristle brush. After washing, rinse thoroughly with water, and hang dry. A water-repellent such as Nikwax or Scotchgard can be sprayed on according to the waterproofing manufacturer's instructions. Allow the water -repellent treatment to dry before using.

MACHINE WASH CARE

DO NOT WASH IN A TOP-LOADING MACHINE - The center agitator on a top-loading machine can cause damage to the packs straps and fabric especially during a spin cycle. Once the pack's frame has been removed, the pack can be machine washed in a heavy duty front-loading machine with a mild detergent . Stains can be pre-washed with a brush. After washing, hang dry. A water-repellent such as Nikwax or Scotchgard can be sprayed on according to the manufacturer's instructions. Allow the water-repellent treatment to dry before using.

Learn more about Switchblade System
at www.catoma.com/gear-overview



6101 Brewbaker Blvd.
Montgomery, AL 36116

800.826.0446 // 334.286.0700

WWW.CATOMA.COM

AN **MMI** BRAND
OUTDOOR

PROUDLY DESIGNED AND MADE IN THE U.S.A.