



## STUDENT HARNESS-RETRACTABLE Y STRAP INSTALLATION



### ENGINEERING DEPARTMENT

1645 LEXINGTON AVENUE ♦ DELAND FL 32724-2106 ♦ TELEPHONE +1 386 736 7589 ♦ FAX +1 386 734 7537

UPT@UPTVECTOR.COM ♦ WWW.UPTVECTOR.COM

**Outline:**

This document covers two major areas:

1. Retrofit instructions for preparation of Y strap installation on Student Harness's.
2. Installation of the Y strap.

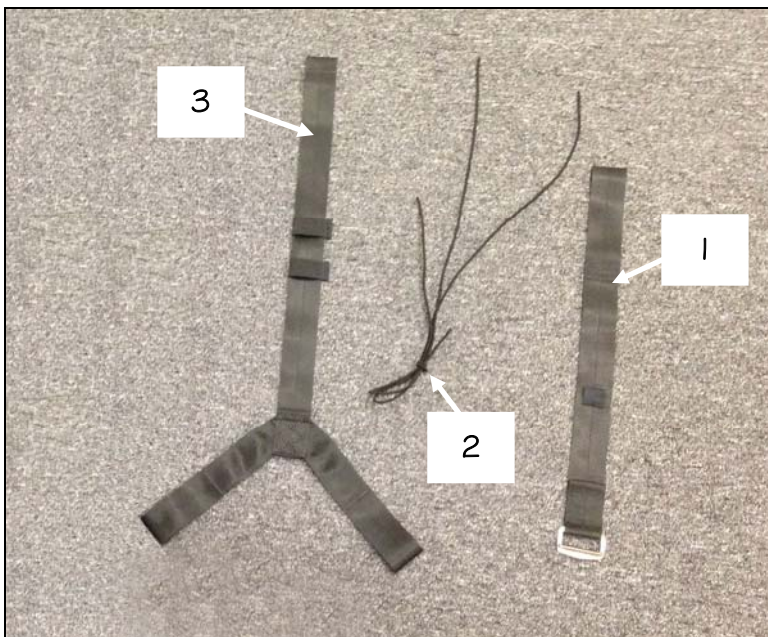
**Who can do this work:**

Qualified Senior Rigger, Master Rigger or Foreign equivalent

**Parts:**

Purchase UPT Part Number:

043-001-005 TANDEM STUDENT HARNESS-RETRACTABLE Y STRAP



The Y Strap system includes the following components:

1. Upper Y Strap
2. Bungee cords – 31" & 38"
3. Lower Y strap assembly with elastic keepers.

**Tools:**

Seam ripper

Rifle Cleaning rod or similar rigging tool

Snips

Scissors

Binding machine 301

Bartacker or Zigzag 304-308

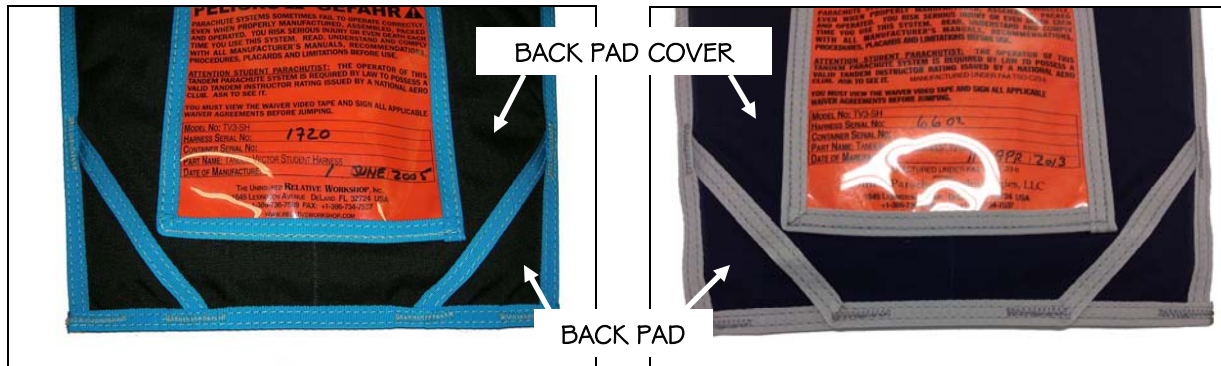
Hot knife

Basting Tip

Clamps

**Information:**

The Tandem Student Harness has 2 variations in back pad construction method. The specific area of this difference is on the harness back pad cover. Each one is compatible with the Y strap. The two versions are described below. The first part of this document will focus on modifying the first version. The second version requires no additional work.

**Version 1:**

The back pad cover has the bottom edge captured in the binding tape at the bottom of the back pad.

**Version 2:**

The back pad cover has the bottom edge taped. It is then aligned with the bottom taped edge of the back pad with 2 bar tacks installed. This back pad was designed for easy installation of the Y strap.

**Before you begin:**

Unthread the diagonal back straps from the lower junctions and remove the elastic keepers. This applies to both versions.

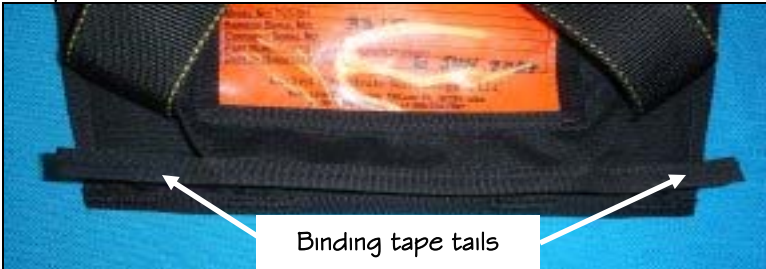
For Back pad Version 1 only:

## Step 1



Using scissors or hot knife, carefully separate the back pad cover below warning label at the binding tape edge.

## Step 2

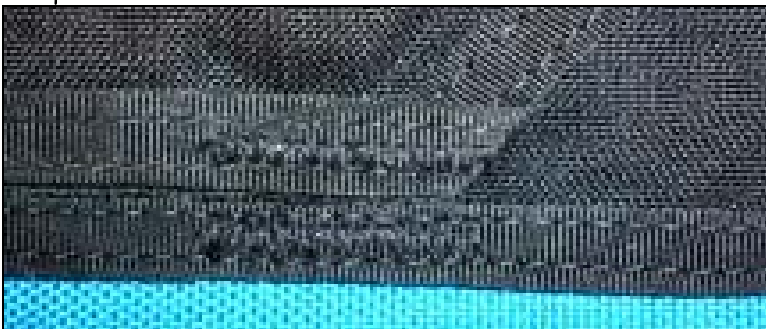


Tape the raw edge of the back pad cover, leaving approx  $\frac{3}{4}$ " tails.



Fold back the tape ends and tack down using a basting tip or hot glue as shown.

## Step 3



Install 2 bar tacks at the corners of the back pad cover.

The back pad is now ready for Y strap installation

## Install the Y strap

### Step 1



Thread one of the diagonal straps back through the back pad cover, exiting out of the other side.



Pull the strap all the way out as shown.

### Step 2



Identify the adjuster strap which is part of the Y strap assembly. Make sure both the bungee loops are facing down wards.



Thread the loop end inside the opening at the bottom of the back pad cover.

## Step 3



Exit the loop at the same location as both the diagonal back straps. Thread each diagonal strap through the loop from different sides making sure there are no twists.



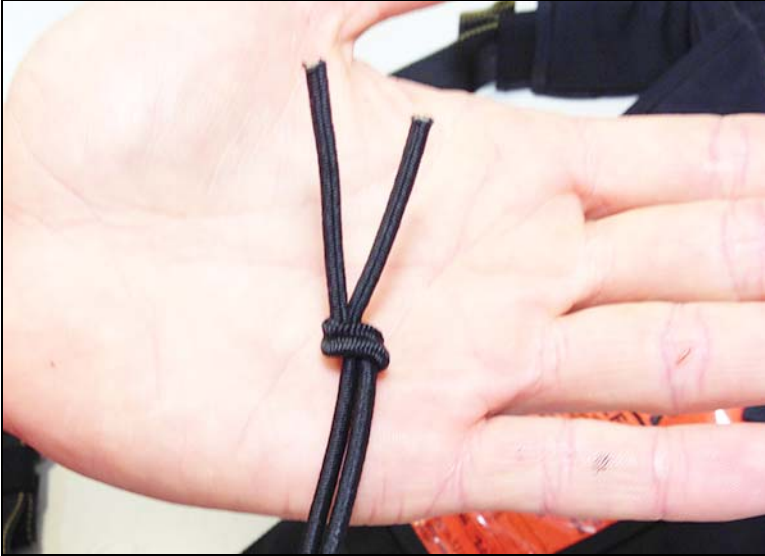
Carefully return the diagonal through the back pad cover to its original location, feeding the loop of the Y Strap adjuster with it.



**NOTE:** It is important that the configuration of the webbing under the back pad cover is correct.

\*Picture shows a lifted back pad cover for instructional purposes only.

## Step 4



Identify the bungee cords; 2 pieces of 1/8" black braided shock cords that are included with the kit.

1 x 31"

1 x 38"

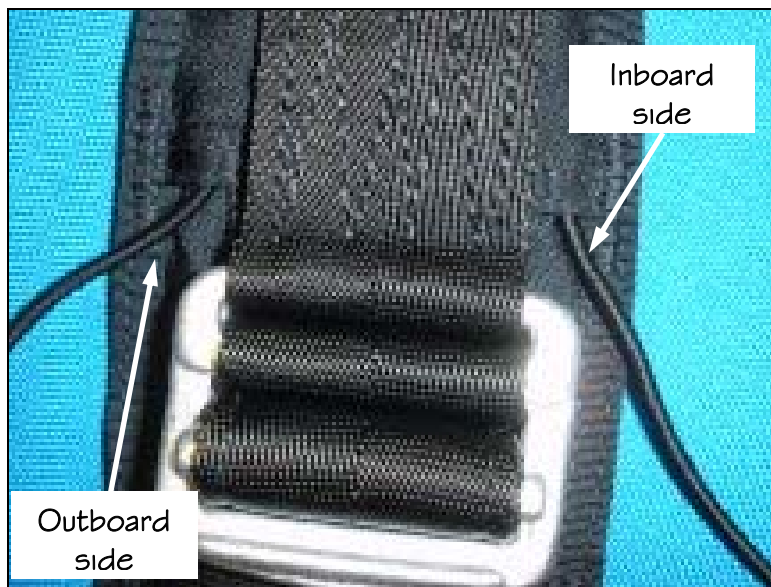
Tie one end of each together with an overhand knot as shown. The knot **MUST** be cinched down tight

## Step 5



Locate a rifle cleaning rod of similar rigging tool. Pass the rod up through the back pad starting the opening where the adjuster strap is located.

Exit the rod from under the cover at one of the shoulder pad area's as shown. Exit on the outboard side first.



**NOTE:** The short bungee (31") will be installed inboard side and long bungee (38") will be installed outboard side.

Step 5 (Cont)



Attach the 38" bungee to the rod and pull down through the back pad as shown exiting on the outboard side of yoke.

The knot should remain in the same side and bottom out against the cover as indicated.



Pass the rod back through the back cover, exiting on the inboard side. Attach the 31" bungee and repeat.

Make sure that the Bungees are UNDERNEATH the diagonal webbing.

Step 6



With both bungees installed under the cover, they are now attached to the Y strap adjuster assembly. Thread the 38" bungee through the Type-8 Loop closest to the adjuster as indicated and the 31" through the Type-4 loop.

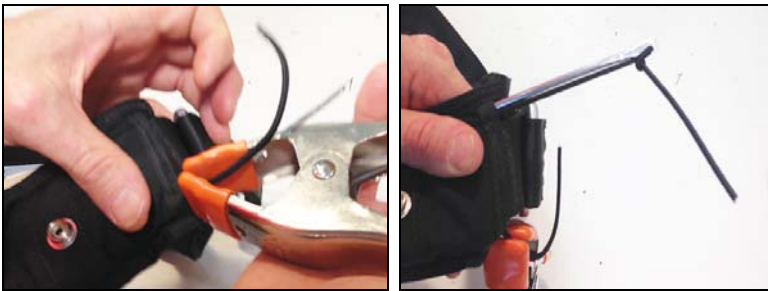




## Step 7



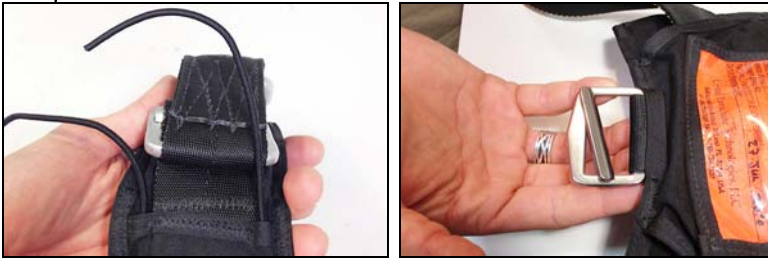
Using the cleaning rod, the other ends of the bungees are now installed into the back pad cover, exiting on the other shoulder pad.



Secure the first bungee you install with a clamp or something similar so stop it from retracting back inside.

As before, make sure the short bungee (31") will exit on the inboard side and long bungee (38") will be exit on the outboard side.

## Step 8



Before the bungees are tied together, make sure the adjuster is located correctly so the hardware sits/rests just below the bottom edge of the back pad.

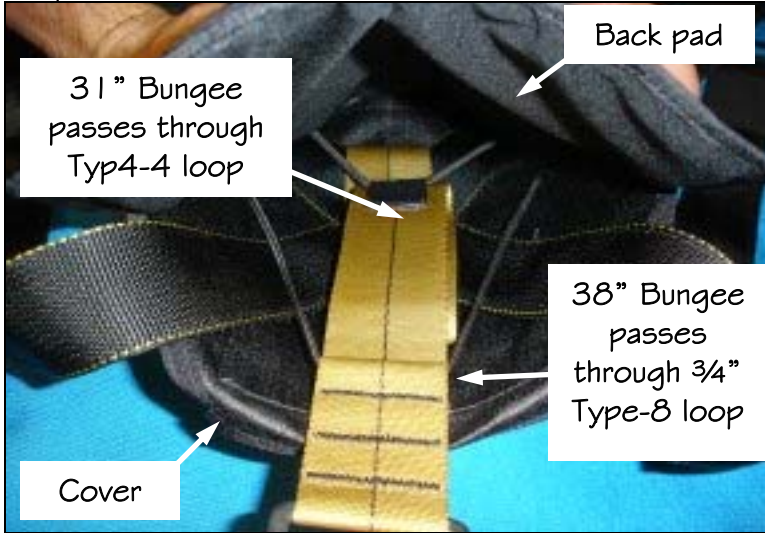


The ends of the bungees are now tied together using an overhand knot. You may have to do this step multiple times to get the adjustment of the adjuster correct. The knot **MUST** be cinched down tight



Once the adjustment is set, trim any excess bungee cord leaving 1 1/2" to 2" as shown.

## Step 8 (Cont)



**NOTE:** The configuration of the Bungees and the Type-8 shows how it "S-folds" behind the diagonal straps.

\*Picture shows a lifted back pad for instructional purposes only.

## Step 9



Reconnect the diagonal back straps to the lower harness. Do not forget the elastic keepers removed earlier.

## Step 10



The lower part of the Y strap is now installed. Thread the running end through the adapter and back through the 2 elastic keepers as shown.

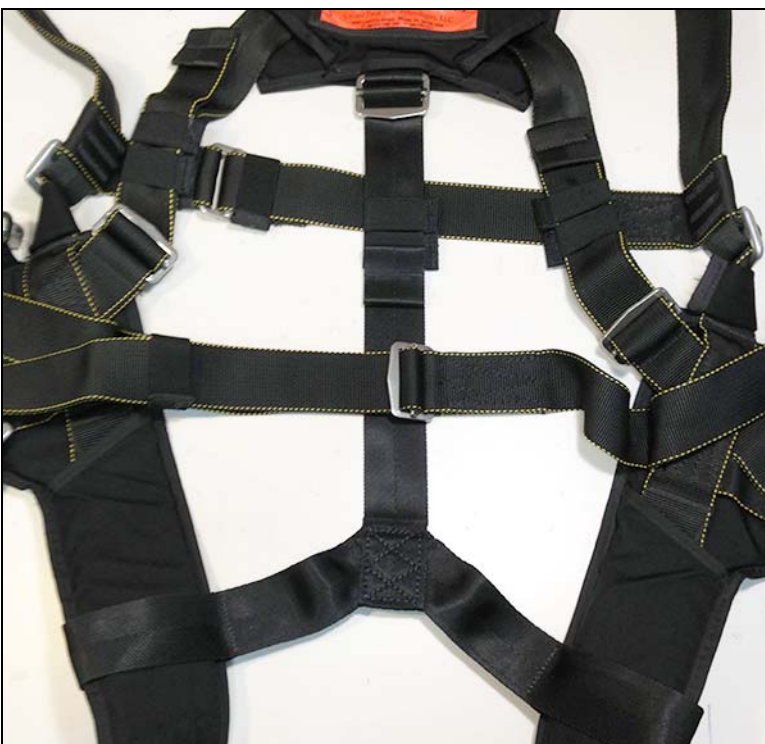
## Step 10 (Cont)



Disconnect the leg straps of the harness and thread the entire leg pad through the loop of the Y strap. Repeat this on the other side.



Confirm that the Y strap functions by extending and releasing. If there is any issue, double check that the bungees or straps are not entangled or crossed incorrectly.



The leg straps should be reconnected, completing installation of the Y strap.

The horizontal back strap must pass over the Y strap