



# Vigil® Installation Manual

ENG Version 1.1

# Vigil® is accepted for use by



Vigil® is also accepted by other manufacturer's  
who's Logo's are not represented here

## Introduction:

Your Vigil has been conceived and developed by a team of engineers and parachutists. Its function is to automatically activate the reserve parachute when the parameters reveal a dangerous freefall situation. It offers in a compact device robustness and reliability unequalled to this day. It is possible to programme in « PRO », « STUDENT » or « TANDEM » modes at the touch of a button.

- The concept :

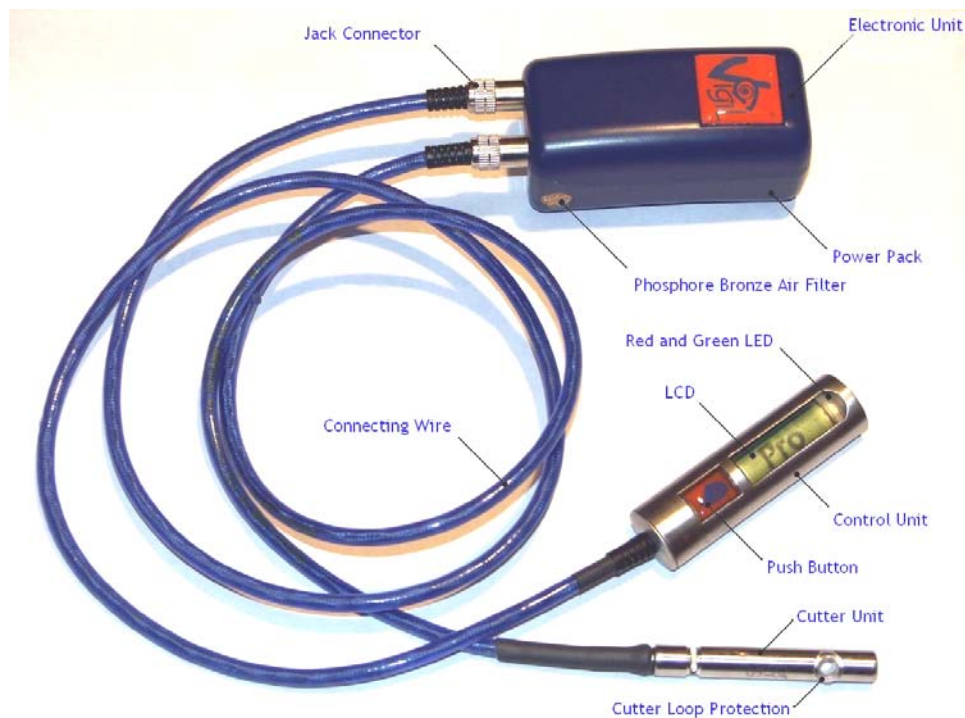
The principle of operation is the subject of two Patents and is based on the calculation of remaining freefall time before reaching activation height. The apparatus continuously calculates the remaining freefall time at a rate of 64 measurements per second. Peaks of speed caused by the rapid pressure changes due body position are taken into account by averaging and have little or no effect.

Thanks to this patented « time calculation method », the Vigil has an opening precision of  $\pm 20$  m or  $\pm 65$ ft in every mode.

## GENERAL INFORMATION

Like the majority of modern AAD's, the Vigil consists of 3 major parts :

1. The main unit housing the electronics and the power pack.
2. The control unit comprising the graphical display, two indicator LED's, one red one green and the command button. This control unit is linked to the main unit by a 69cm Kevlar® reinforced cable. A longer cable can be supplied on request.
3. The circular guillotine cutter, single or double. The cutter is linked to the main unit by a 65cm Kevlar® reinforced cable. Since August 2006 a new type of cutter without the interior plastic sleeve comes with all new Vigil's and is supplied as the replacement for cutters after activation. Original cutters can be replaced with the new type at cost price.



*European Patent (Applied for September 1999)*

*American Patent (Applied for September 2000)*

*Patent Granted 2002*

## VIGIL INSTALLATION

The majority of parachute containers on the market are "*AAD -ready*". That is with the components to accept the installation of an AAD built in. I.e.

- A pocket to accept the main unit. Placed in the reserve container, in most cases on the partition wall between the main and reserve sections of the container.
- Channels to route the cables from the cutter and control units to the main unit.
- An elastic cutter retainer (two in the case of double cutters) to hold the cutter in the correct position for the reserve closing loop to pass through.
- A windowed pocket to accept the control unit. The window allows viewing of the display and is supple enough to allow operation of the control button for switching on, changing settings or turning off the Vigil.
- A washer is usually included to attach the closing loop. Suitable washers are also available from Vigil.

Careful consideration has been given to the positioning of the AAD components to obtain the best operation of the AAD whilst not compromising the correct operation of the reserve deployment.

The Vigil must always be installed in according with the manufacturers instructions. Normally the harness manufacturer's instructions will provide the necessary information to install the Vigil into the equipment. However if you have any questions do not hesitate to contact us at [Info@Vigil.aero](mailto:Info@Vigil.aero) where we will be pleased to advise you.

## FITTING THE VIGIL

1. Pass the cables for the control unit and cutter respectively through the hole in the pocket flap.
2. Feed the cables through the channels; install the control unit in the windowed pocket and the cutter in to the elastic cutter retainer. Position the cutter so the hole for the loop to pass through is perpendicular to the grommet.
3. Position the main unit in the elastic pocket with the cables against the base of the pocket.



✓ correct



✗ incorrect

4. Thanks to the flexibility of Vigil cables the excess may be coiled up and stowed under the flap or may be stowed alongside the main unit in the elastic pocket.



## RESERVE CLOSING LOOP

All types of polyamide braid on the market which have equivalent characteristics to Spectra CSR style #9512-300 are compatible for use with the Vigil. However for Parachutes de France containers with double RSL you must use the double loops supplied by Parachutes de France.

Loops must have been impregnated with non acidic silicone, at least over the part in contact with the grommets through the closing flaps of the reserve container. A pre-siliconed braid with suitable characteristics of diameter and breaking strain will soon be available from A.A.D SA and its retailers.

### **Setting the length of the loop and using the Vigil washer**

Before attaching the loop to the washer it is necessary to pre stretch it. To do this hold both ends of the loop using a 'T' bar or similar and apply a few sharp jerks.

Mark the loop at the desired length referring to the manufacturer's manual and then attach the loop to the washer as shown on the Vigil washer instructions page. Then repeat the stretching operation to tighten the knot.

Install the loop into the container as per the manufacturer's instructions.



## VIGIL INSTALLATION KIT

If a Vigil is to be installed in equipment which is not "AAD-ready" A.A.D SA can supply a Vigil installation kit.

The fitting of the Installation kit must be carried out by an Advanced/Master rigger installer and carried out in accordance with the manufacturers written instructions.

The Vigil can also be installed into any pocket approved by the manufacturer.

The Vigil Installation kit is comprised of the following items:

1. Pocket



2. Sleeve  
Type 4 - 1.5 » MIL-T-5038



3. Elastic Cutter retainer



4. Window



5. 2 Closing loops



6. 1 Pull-up



7. 2 Vigil Washers





## USE OF THE INSTALLATION KIT

In order to proceed with the installation of the different components of the kit, it is essential to ensure you adhere to the following conditions:

- The installation is carried out in accordance with the instructions in this manual as well as the instructions issued by the harness/container manufacturer.
- The positioning of the components of the Vigil installation kit does not affect in any way the manual opening and function of the reserve parachute.
- The positioning of the components of the Vigil installation kit does not affect in any way the structural integrity of the reserve container and or harness.

In the unlikely event that the manufacturers instructions, or the instructions in this manual, are not sufficient to install your Vigil **DONT IMPROVISE**. Contact us and we will with the container manufacturer's advice provide you with instructions on the best way to install your Vigil.

## MOUNTING THE COMPONENTS OF THE INSTALLATION KIT

### A. Mounting the pocket for the main electronic unit

The Vigil pocket must be stitched in the reserve container on the partition wall separating the reserve and main sections. The pocket must be stitched in all the way round whilst still allowing the cable covers to open.

The position of the pocket must be as central as possible, on the partition wall, in both height and width.

Mark the centres of each side of the pocket to help you align the pocket with the centre of the partition wall in the container.



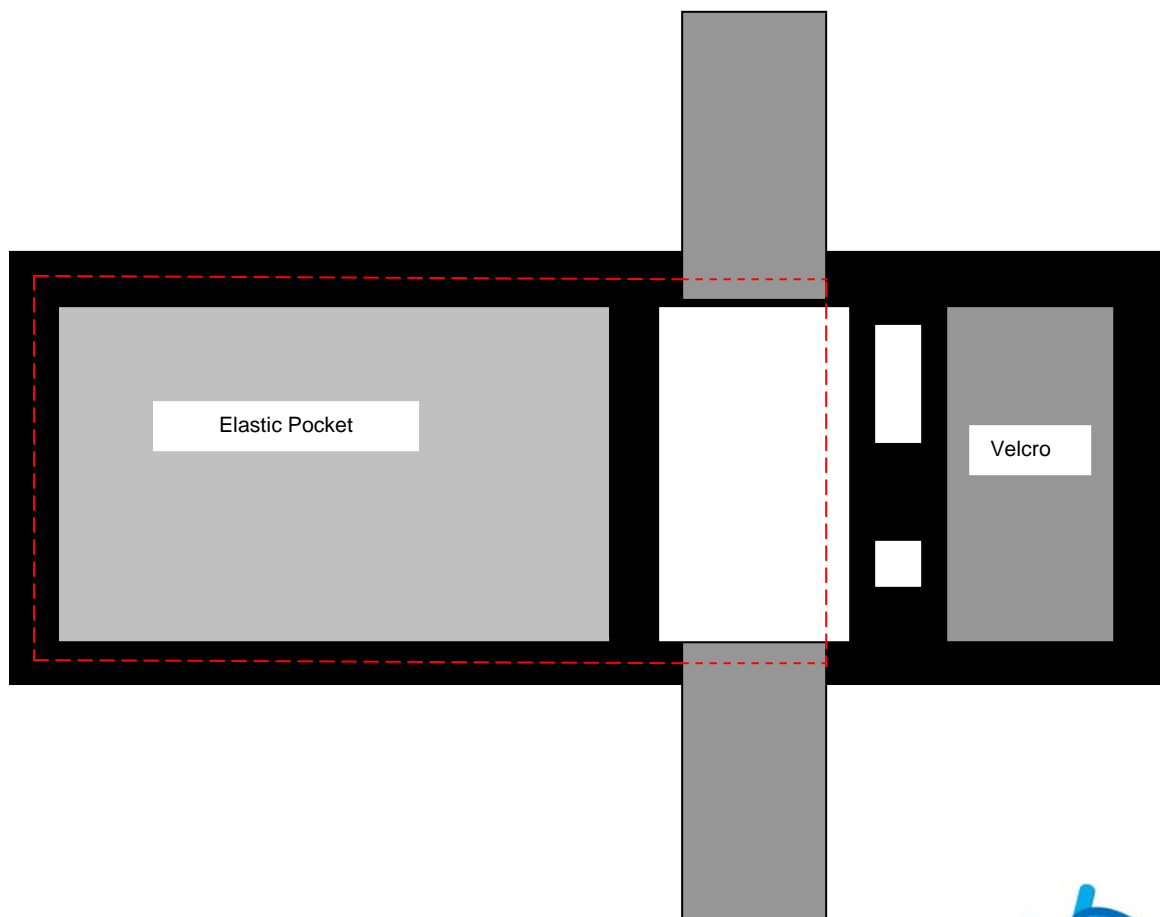
Mark the centre of the partition wall in both height and width. Centre marks are often visible, leftover from the construction of the container.

To position the pocket align the marks on the pocket and container (It may help to use double sided sticky tape to temporarily hold the pocket in position).



The orientation of the opening of the pocket towards the left or the right will depend on the type of equipment (See the addendum to this manual of manufacturer/model specific installation details).

Stitch the pocket on to the partition wall ensuring that the stitching is on the binding tape as close as possible to the outside edge, taking particular care with the corners, so as to reduce the risk of suspension lines catching.



## **B. Mounting elastic cutter retainer/s**

The position of the cutter/s varies for the type of equipment.

Depending on the type of equipment used the cutter/s will be placed in the bottom of the reserve container (Javelin, Tear Drop, Vortex, Wings, Advance Out ....) or on one reserve closing flaps ( Atom, Icon, Omega, Vector, Advance In ....)

The exact position of the cutter/s for each type of equipment will be specified in the manufacturers manual for each type of equipment and in the addendum to this manual of manufacturer/model specific installation details.

The exact position of the elastic cutter retainer to support the cutter in relation to the grommet depends on the location of the cutter :

- If the cutter is installed in the bottom of the container, the elastic cutter retainer will be installed in such a way that (when the cutter is in place) the channel through the cutter for the loop will be centred in relation to the grommet.
- On the other hand if the cutter is installed on one of the closing flaps, the elastic cutter retainer will be installed in such a way that (when the cutter is in place) the channel through the cutter for the loop will be offset in relation to the grommet towards the open side of the flap.



With the cutter in the elastic cutter retainer, mark the position then remove the cutter and sew.



## C. Installation of the control unit

### 1. installing in SPORT or TANDEM equipment

The majority of sport parachute equipment has a pocket designed to receive the control unit of the AAD. Very often this pocket is situated on the upper section of the back pad. This position has the advantage of protecting the control unit but is inconvenient as it is inaccessible while the parachute is being worn. An alternative position is in the yoke of the equipment but this time facing outwards rendering the control unit accessible



If no such windowed pocket exists on the rig, it is possible to install the windowed pocket supplied in the vigil installation kit. The most likely position for this pocket is horizontally at the top of the last reserve closing flap under the pin protection flap. One exception: for pop top type (Racer, Chaser, Wings, Tear Drop 1 and 2 pins ...); the pocket will be positioned on the back pad parallel to the reserve cable under the pin protection flap. (See the addendum to this manual of manufacturer/model specific installation details).

In the case where the pocket will be installed under the pin protection flap it will be necessary to ensure that its position does not interfere in any manner with the manual opening of the reserve (Interference with the reserve cable) or with the activation of the reserve by the RSL.



## 2. Installation in STUDENT equipment

While in the case of PRO and TANDEM usage it is not essential to have access to the control unit it is necessary in STUDENT mode.

In STUDENT mode, the speed of decent necessary to activate the Vigil is markedly lower (20 m/sec or 72 km/h) against (35 m/sec or 126 km/h in mode PRO or TANDEM).

It is therefore essential to turn the Vigil off, In order to avoid risk of activation, if descending in the aircraft because the jump for some reason cannot take place. For that reason it is preferable that the control unit be accessible without removing the rig to access the control.

Most modern equipment used by training centres place the pocket on the yoke facing the outside (see photo on previous page) but certain others have chosen to position the control unit on the front of the harness above the reserve handle.

To install the control unit on the front of the harness a long Vigil cable is required as the standard length of cable between the control unit and the main unit is insufficient. Alternatively, if the Vigil is not equipped with a long cable a solution would be to add, on the outside of the last closing flap under the pin protection flap, a supplementary pocket where one can place the control unit. This will be accessible whilst wearing the parachute by lifting the pin protection flap.



#### D. Positioning of the cable sleeve

If suitable channels are not already fitted position the sleeve for the cable between the main and control units on the bottom of the reserve container. Stitch the sleeve in place or if machine stitching is not possible the sleeve can be held in place by gluing with reinforcement in several places by wax thread.



Position the sleeve for the cable between the main unit and the cutter/s appropriate to their position and fix in an adequate manner (Machine stitch if possible or if not glue and reinforce at several points with wax thread).





# Vigil washer instructions

## Installation and adjustment of locking loops:

The fixing of the loop must be made with the oval Vigil stainless steel washer with one hole and two cut-outs.

Mark A = length desired for the loop

Mark B = place of first knot

### Knot:

1) Mark the loop twice: the first mark A at the desired length of the loop; the second mark B at 4cm of mark A.

Make a double knot and tighten it on top of mark B.

2) Make a second knot and tighten it against the first one.

### Washer:

3) Route the loop through the right cut-out, then follow through the left one.

4) Pass the loop through the hole (you can use a thinner thread to ease the routing of the loop through the hole).

5) Pass the knot in the loop as shown.

6) Pull on the loop while placing the knot against the washer.

## Montage et ajustement de la bouclette de fermeture :

La fixation de la bouclette est réalisée avec l'ovale Vigil en inox possédant un trou et deux encoches.

Tracé A = longueur désiré pour le loop

Tracé B = position du premier nœud

### Nœud :

1) Faire deux tracés sur la bouclette : le premier tracé A à la longueur correspondant au type de voile à plier; le second tracé à 4cm du tracé A.

Effectuer le double nœud et le bloquer au tracé B.

2) Effectuer un second nœud et le bloquer contre le premier.

### Rondelle métallique :

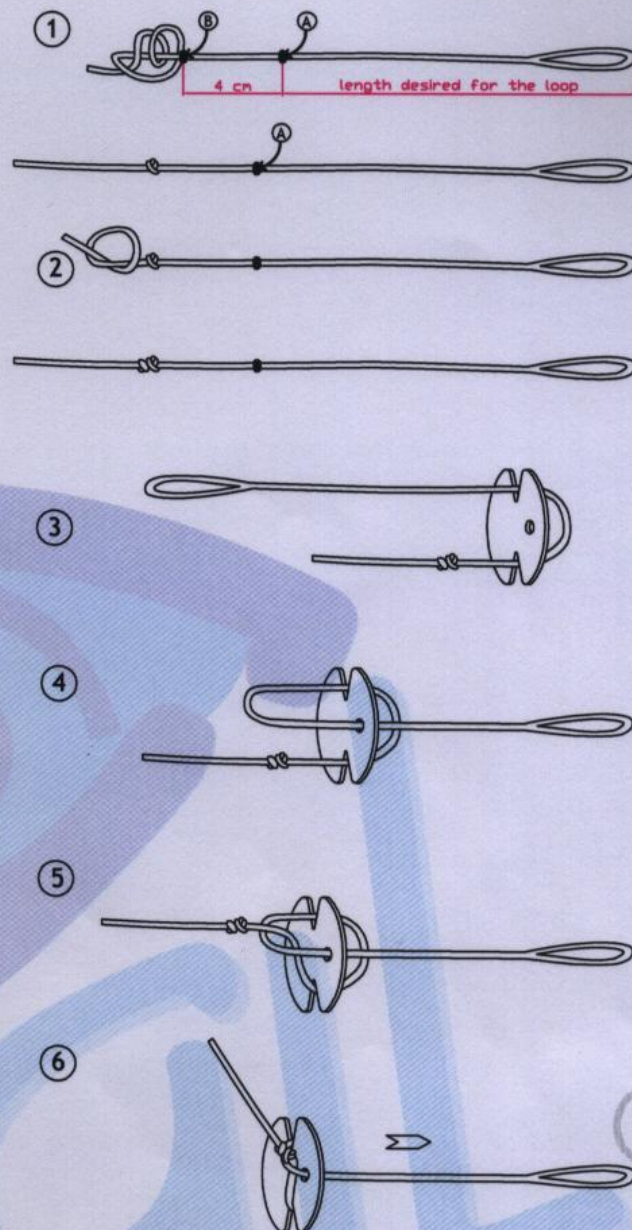
3) Passer la bouclette dans l'encoche de droite et poursuivre en passant dans celle de gauche.

4) A l'aide d'un fil, passer la bouclette à travers le trou puis retirer le fil.

5) Passer le nœud dans la boucle tel qu'indiqué.

6) Effectuer une traction en ajustant la marque et l'ovale.

Le nœud doit être coincé sous la boucle et doit toucher l'ovale.



### IMPORTANT NOTE

- Do not use any other type of loop material than those supplied with the harness/container
- Do not make any other knots than those which are shown above

### RAPPEL IMPERATIF

- Ne pas utiliser d'autre bouclette de fermeture que celles fournies avec le sac harnais.
- Ne pas effectuer de nœuds de blocage différents de ceux expliqués ci-contre.

NOTA: - The explanations concerning the installation and packing of your harness contained in its user manual must be respected.  
 - The explanations concerning the installation and use of your Vigil contained in the manual provided with the item must be respected.  
 - Les instructions concernant le montage et le pliage de votre sac harnais contenus dans son manuel sont à respecter.  
 - Les instructions concernant le montage et l'utilisation du Vigil contenus dans le manuel AAD fourni avec l'appareil sont à respecter.





This manual has been produced to answer your questions  
If you have any problems please contact us.

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