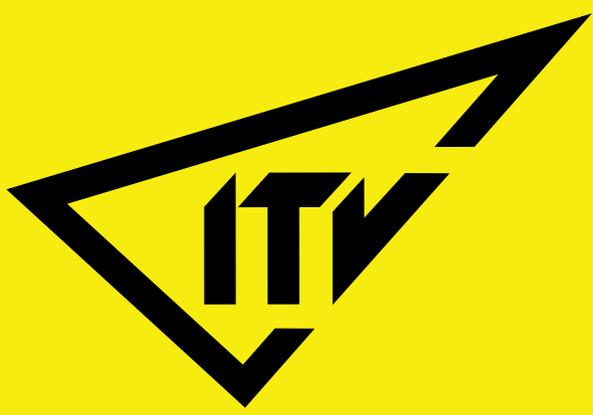


EN



BOXER 2

USER'S MANUAL
EDITION 1 /09-2017



THANK YOU FOR YOUR TRUST

The ITV Team thanks you for the confidence you have shown in us. We hope that this paraglider will give you a great deal of flying pleasure for many years to come. We recommend that you study this manual which is also the identification and inspection document as well as the logbook of your paraglider.

It is your responsibility to make sure this equipment was tested by your dealer, and with the test results recorded on the test sheet. We invite you to return the test results, and register your wing online at www.itv-wings.com We will then be able to contact you without delay to answer any question relating to your wing or its constituents.

Enjoy your flights
ITV team



SUMMARY

| | |
|---|-----|
| Thank you for your trust | ..3 |
| Summary | ..4 |
| Warning | ..6 |
| Default adjustments | ..7 |
| Weight range | ..7 |
| In flight weight | ..8 |
| Harnesses | ..8 |
| Maintenance | ..9 |
| Preflight | .12 |
| Inflation and take-off | .13 |
| Rapid descent techniques | .14 |
| Turning and avoiding action | .17 |
| Landing and collapsing the wing in case of wind | .17 |
| Flying turbulence and flying incidents | .18 |
| Radical manoeuvres | .19 |
| Alternative steering controls | .19 |
| Boxer 2 | |
| The Programme | .20 |
| Technical data | .21 |
| Materials | .21 |
| Risers | .22 |
| Technology | .24 |
| Pilot requirements | .25 |
| Lines schemes | |
| Size S | .26 |
| Size M | .27 |
| Size L | .28 |
| Size XL | .29 |
| Folding | .30 |
| Toggle adjustment | .31 |
| Power kit system | .32 |
| Warranty | .34 |
| After sale service | .35 |

WARNING

Designed and manufactured with safety in mind, the ITV glider with its performances, gives access to a huge range of flying. As with all aircraft, this equipment demands of its pilot, maturity, ability to analyse flying conditions, competence, good maintenance and care of the equipment.

Therefore, this manual cannot replace an appropriate education of paragliding and the indispensable familiarisation to this model that you can ask from your seller. We recommend to carry a rescue parachute.

Before being delivered, all ITV wings must be checked and controlled by an ITV dealer.

It is important to check your new BOXER2 risers upon reception to ensure their correct configuration. If you choose to practice Paragliding (PG), the POWER KIT* must be disconnected via the 2 Maillons and the 2 connection points (P1 and P2 - see diagram).

Make sure all the maillons are firmly tightened (1/4 wrench turn maximum), and check for correct risers length (A,B,C,D) which must be of equal heights.

The manufacturer cannot be held responsible in case of incorrect riser assembly depending on the chosen Powered Paragliding (PPG) or Paragliding (PG) practice. The final risers configuration must correspond to the DGAC certification setup.

* see riser diagram p22

DEFAULT ADJUSTMENTS

Upon delivery, the ITV wings conform to their certification requirements. Any modification or manipulation, such as altering the lines length or adding risers and/or connecting links, will void the certification validation.

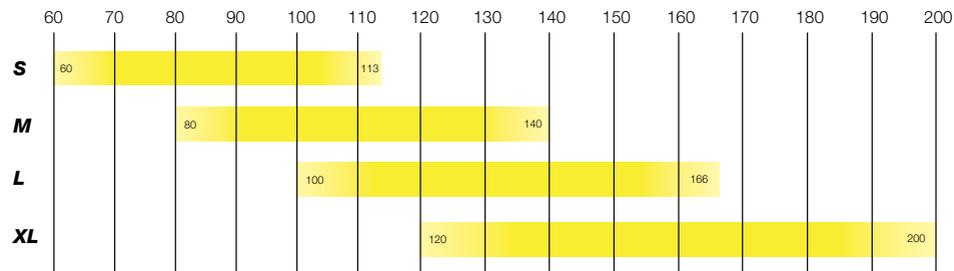
WEIGHT RANGE

Your paraglider is certified for a specific weight range. If you fly outside the stipulated numbers, you are then flying outside of the operating limits of your paraglider. Consequently, the paraglider no longer conforms to the flight characteristics determined at the time of its certification and hence no longer certified. Choosing your location within the weight range is a matter of personal choice.

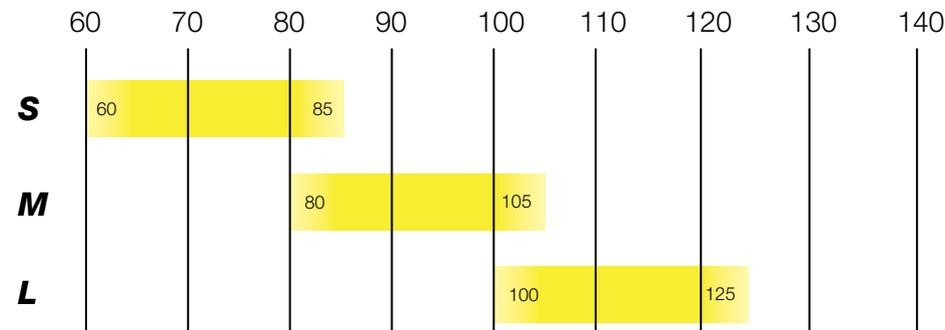
You can fly at the top, middle or bottom of the stipulated weight range. We recommend the mid-range. Being at the low end of the scale has advantages such as high damping, less dynamic feel, and a better climb rate. The disadvantages are a lower speed, less agile, and reduced internal wing pressurization.

On the other end, a heavily loaded wing will fly faster, have a more taut canopy, which will increase the dynamic character of the wing.

IN FLIGHT WEIGHT PARAMOTOR



IN FLIGHT WEIGHT PARAGLIDING



HARNESSES

The BOXER2 was certified with harnesses equipped with an (ABS) Anti Balancing System. The distance between the connection points must ideally be 40 to 48cm.

MAINTENANCE

Check or have checked by your retailer, using an anemometer, the speed of your wing flying hands high. A result of 1,9 mph less than the lower end of the announced performance bracket requires a thorough inspection.

If necessary, wash your wing with cold water and soap. Do not stock your wing in humid or dirty conditions. In case of long storage, do not fold the wind too tight. To keep as long as possible the ease of inflation qualities, avoid folding flexible nylon rod(s) reinforcements at the ribs nose.

Every paraglider is prone to aging and must therefore be inspected regularly (about every 100 hours of flying time and at least once a year). Before reselling, a control will discharge your responsibility towards your buyer. We strongly recommend getting this control from our workshop or from an approved retailer.

We urge you to be extremely alert to all defects, damage or rupture discovered to the suspension lines or the sail and to repair the damage as soon as possible. In every pre-flight check pay attention to the tightening of the maillons rapids/carabiners, especially which link the lines to the risers and the risers to the harness.

If you return the wing to our work shop, please send the complete wing (risers and original bag, without harness) accompanied by the present manual. So we can fill in the interventions carried out by us. Please attach also a note giving your name and adress, the reason for returning the wing and the areas to be repaired (by marking the area with coloured tape). As a matter of fact, an important part of the repair time is wasted by having to search for the damage. Please return the wing folded correctly.



PREFLIGHT

The pilot is fully responsible for that all his equipment is in working order. We advise you to follow the following procedure before each flight:

1. Check your reserve parachute: container pocket properly and fully closed, and with the rescue handle securely fastened.
2. Helmet on with chin strap locked. All the harness straps must be connected and locked in place.
3. Check the leg straps once more.
4. The wing properly connected to the risers, carabiners and mail-lons.
5. Good handling of the front risers and toggles.
6. Fully open leading edge, untangled lines. Position yourself correctly relative to the incoming wind direction, and stay centered in the middle of your wing to ensure a progressive inflation.
7. Open space and good visibility.

When flying with a motor (PPG), make sure there is enough clearance in front of you for safe climbing while avoiding trees, power lines, and any other obstacle that could stand in your way if your motor was to suddenly stop working.

Always fly with enough safety margin. You should always be able to land without your motor on, in a suitable area.

INFLATION AND TAKE-OFF

The most suitable way of laying out a wing is in an arc, which enables the paraglider to fill up evenly, starting from the centre. It is essential to assure that every row of suspension lines is free of tangles and knots and that no line goes around the wing tip. In fact, any defect in the sail during the phase of take-off can have unpredictable effects on the trajectory.

The direction of the take-off, from the wing centre should be into the wind starting with taut lines and no jerk, leaning forwards for a progressive pull.

The pilot will limit the movements of his hands to simply accompanying the rising wing with front risers applying light traction. Too strong a traction can partly close the leading edge intakes.

In moderate winds (from 10 mph), in order to avoid a brutal take-off, it is recommended to use a back to wind technique, by going to the canopy during the raise to slow down the take off..

Taking off for a pilot unfamiliar with reversed inflation techniques should be forbidden in wind speeds over 20 km/h.

RAPID DESCENT TECHNIQUES

360° : In a 360° spiral, a sink rate of more than 10 m/s / 30 ft/s is attained. This manoeuvre can disorientate the pilot (loss of reference point and strong acceleration).

One should learn this technique progressively. In particular one should avoid the symmetrical mid braking position for coming out of the spiral. This is best obtained by raising both hands progressively.

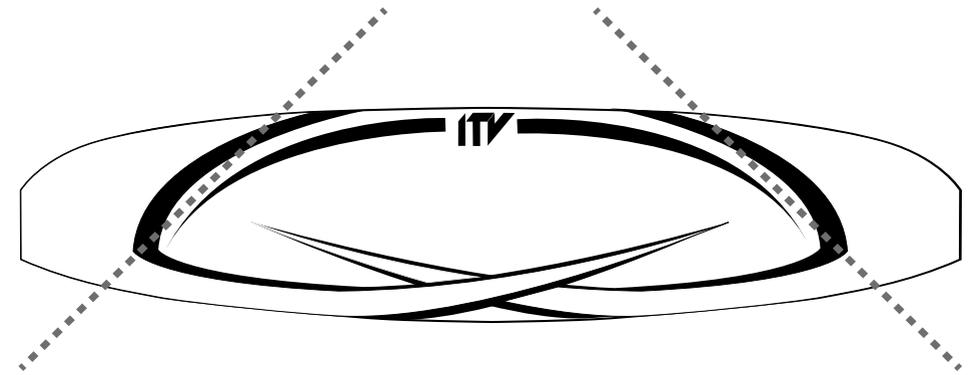
Big ears : Big ears are obtained by pulling on the external A line. Pulling on this line must be done progressively to avoid too big a closure. Once the big ears are in, the pilot can increase progressively their size by pulling more and more length on the line. One should make sure that the central half of the wing is kept open.

A simultaneous use of the accelerator will avoid the risk of deep stall phasis. To re-open big ears, the pilot will pull symetrically and briefly on the brakes, being carefull not to slow down the wing.

The «B»-line stall : The «B»-line stall is easy . After a slight swin-ging, this will produce a vertical descent rate of about 8 m/s. There is a risk of entering a front horse shoe configuration.

To get out of it the pilot will slowly release the B branch and pull symetrically and briefly the brakes. The return to flight will cause a moderate surge which should be controlled on the brakes. Avoid a sudden release of the B risers.

For these 3 manoeuvres and for all other phases of flight, we strongly recommend keeping the toggles in the hands which enables an ins-



tant return to conventional piloting. The emergency manoeuvres should only be used when necessary. After a while they weaken the lines, the ribs and the attachment points.

Attention is drawn to the risk involved when spiralling with a lot of big ears pulled on. This can increase the load considerably on the front lines to the centre of the wing and weaken them prematurely : **therefore only use this technique when really necessary and have the strength tested subsequently in our work shop.**



TURNING AND AVOIDING ACTION

The most efficient turns are obtained by a transfer of weight in the harness towards the inside of the turn accompanied by action on the inner control.

Once in the turn the adjustment is easily managed using the outside control.

In thermal flight, the turns are corrected mainly from the harness :

- tipping weight to the outside: to flatten the turn and improve sink rate.
- tipping weight to the inside: to incline and accelerate the turn.

An avoiding action is taken by smoothly applying the control on the inside of the turn.

LANDING AND COLLAPSING THE WING IN CASE OF STRONG WIND

At the moment of landing in a strong wind, as soon as the wing is stable, the pilot should release the brakes and grab the «C» risers to pull down the wing symmetrically.

FLYING TURBULENCE AND FLYING INCIDENTS

Flying in turbulence should be avoided at all cost. Study the books on aerology to learn to predict turbulent conditions (strong winds, turbulence due to obstacles, wake turbulence, rotors, leeside thermals, foehn effect, over developed clouds, etc...).

If however you do get caught in turbulence, there is only one thing to do: reduce your speed (30 to 50% brakes).

- . incidence is increased (less risk of the leading edge going into negative incidence)
- . the pendular effect will be damped in the transition,
- . the wing, in the case of a deflation, will reinflate immediately

PARACHUTAL PHASE (DEEP STALL)

Even though it has never happened during the tests, should the phenomenon arise, to put the wing back into normal flight one should engage a moderate turn and then control the surge which follows by applying adequate braking.

If this phenomenon does occur it is a sign of ageing and requires a wing inspection. In the case of a deep stall close to the ground, it is better to land with the hands high than to try to get out of the deep stall.

CLOSURES

The reopening, on this model, is very generally spontaneous and immediate. Even though the likelihood of this has not been shown during the tests, it cannot be excluded that after a massive closure which causes a turn, if nothing is done, it could degenerate into auto-rotation . To correct for this the pilot should transfer his weight to the inflated side and brake on the outside of the turn. Once the rotation has been stopped, if the wing has not already reopened, pull on both controls briefly and simultaneously to open it, without slowing the wing excessively to avoid a stall.

RADICAL MANOEUVRES

Radical manoeuvres should be avoided. They have been done during the numerous test flights but are not within the normal flying limits of a paraglider.

- wingovers with more roll than 45° either side of the vertical,
- slowing and then releasing the controls producing pitching movement. Greater than 30° either side of the vertical.
- Stalling manoeuvres,
- sudden turns at very low speed, susceptible of degenerating into flat spin or asymmetric stalls,
- closing manoeuvres using the risers.

Doing aerobatic flying beyond the limits set out hereof, should not engage the manufacturer's responsibility.

ALTERNATIVE STEERING CONTROLS

In the event of a problem with the main controls (toggles), your wing can be piloted by moderately pulling the rear risers.

BOXER 2 | THE PROGRAMME

The BOXER2, was developed for Powered Paragliding (PPG), and Paragliding (PG): easy inflation and takeoff, optimum stability, good behavior in flight added to soft landings abilities. These characteristics are associated with moderate control efforts.

Constructive arrangements have been developed in view of preserving the lifespan of the glider at optimal level, both on terms of flight behavior and structural resistance (EN certification).

The POWER KIT system (see appendix added illustration) allows you to easily switch from a Paragliding (PG) to a Powered Paragliding (PPG) riser configuration.

TECHNICAL DATA

| BOXER 2 | S | M | L | XL |
|-------------------------------------|------------------|------------------|------------------|-----------|
| Flat surface area (m ²) | 23 | 26 | 29 | 32 |
| Weights (kg) | 4.7 | 5.1 | 5.4 | 5.7 |
| Aspect ratio | 4.8 | 4.8 | 4.8 | 4.8 |
| Span | 10.5 | 11.2 | 11.8 | 12.4 |
| Chord | 2.65 | 2.85 | 3.00 | 3.20 |
| Cell number | 34 | 34 | 34 | 34 |
| Trim speed (hands up) (km/h) | 39 | 39 | 39 | 39 |
| Maximum airspeed (km/h) | 49 | 49 | 49 | 49 |
| In flight weight (paragliding) | 60-85 | 80-105 | 100-125 | - |
| In flight weight (PPG) | 60-113 | 80-140 | 100-166 | 120-200 |
| Certification | EN - A / DGAC | EN - A / DGAC | EN - A / DGAC | DGAC |

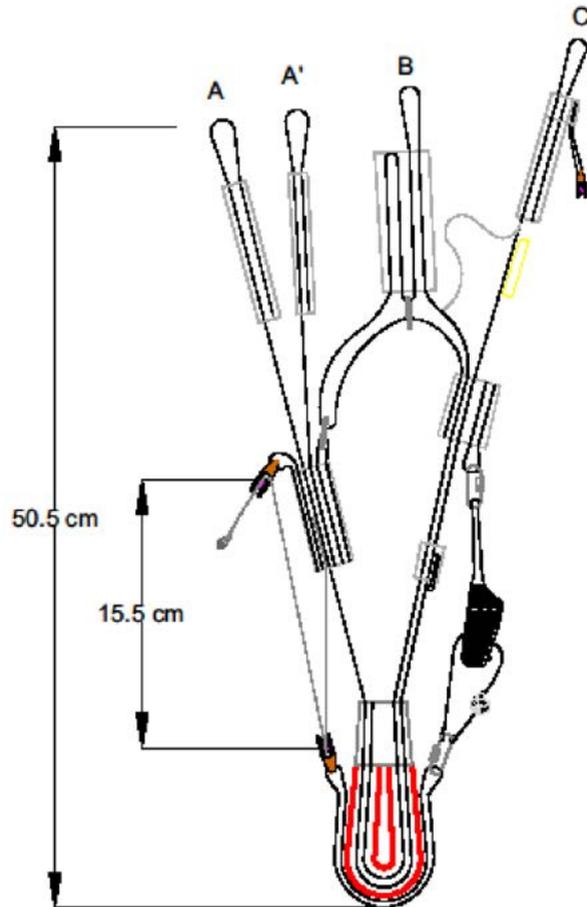
MATERIALS

Cloth : Dominico Tex 38 g/m² - Internal cells cloth : Dominico Tex 38 g/m² Hard Finish

Lines : Edelrid : sheath dyneema and sheath aramide

RISERS AND POWER KIT

BOXER 2 RISERS

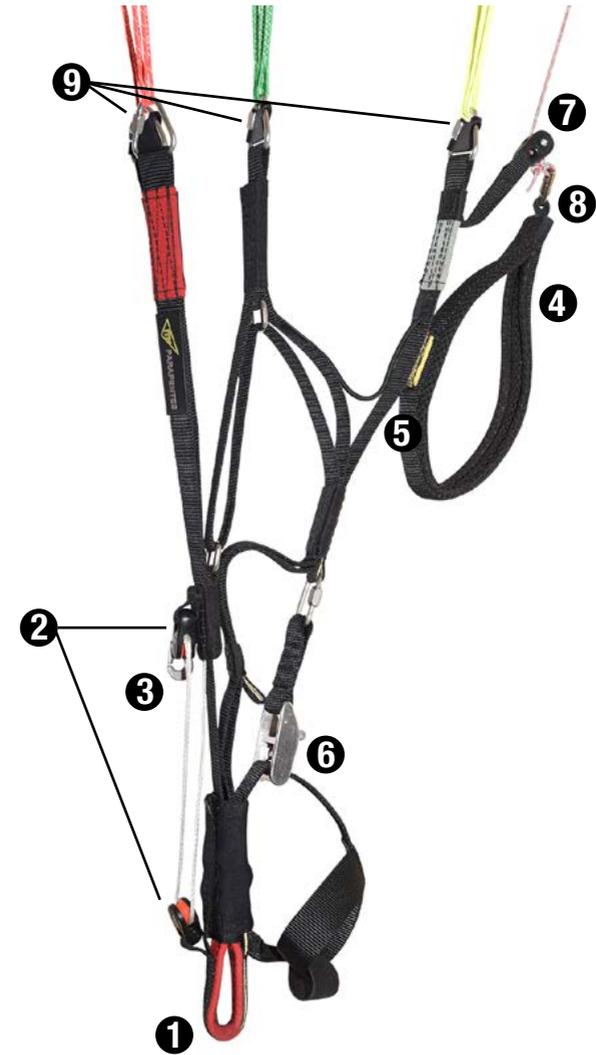


BOXER 2 (with power kit)

| | Neutral position | Accelerated position |
|----|------------------|----------------------|
| A | 50.5 | 36.5 |
| A' | 50.5 | 36.5 |
| B | 50.5 | 40.5 |
| C | 50.5 | 50.5 |

BOXER 2 (whitout power kit)

| | Trims pulled in | Trims relaxed |
|----|-----------------|---------------|
| A | 50.5 | 50.5 |
| A' | 50.5 | 50.5 |
| B | 50.5 | 53.5 |
| C | 50.5 | 60.5 |



1. Harness connection point
2. Speed-bar pulleys
3. Speed-bar quick connects
4. Toggles
5. Toggles magnetic clips
6. Trim adjustment
7. Pulleys
8. Swivels
9. Maillons Rapides

TECHNOLOGIES

ITV LASER TECHNOLOGY

All LASER precision cutting of the various pieces constituting your ITV wing.

3D SHAPING

Optimized panel cutting and assembly of the various panels constituting the leading edge.

ITV RENFORT SYSTEM

Structural leading edge reinforcement via flexible nylon rods.

PILOT REQUIREMENTS

To practice Paragliding (PG), and Powered Paragliding (PPG), training in a professional certified school, being certified and insured are preliminary requirements.

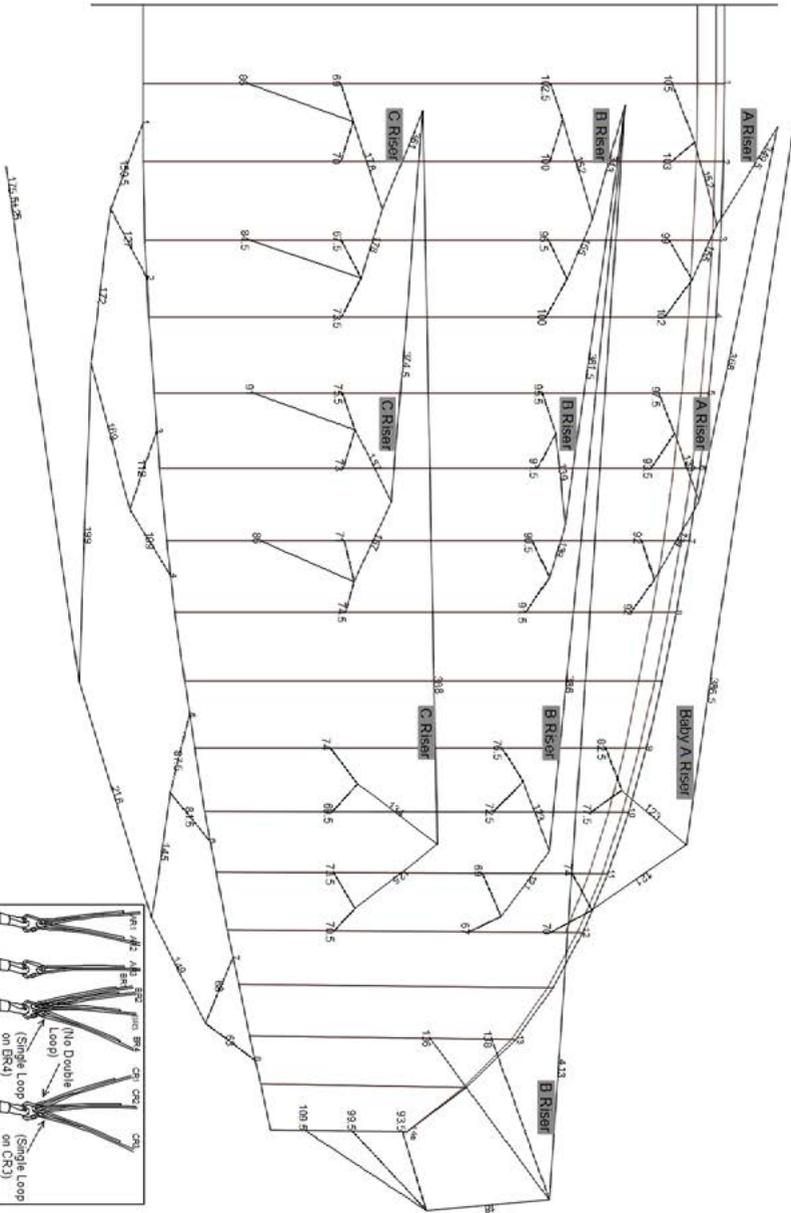
You must be able to properly assess the weather conditions prior each flight. Using a wing adapted to your level is strongly recommended. A thorough Pre-flight check must be performed before each takeoff.

You are responsible for your own actions and fully understand the dangers associated with the Paragliding (PG) and Powered Paragliding (PPG) activities.

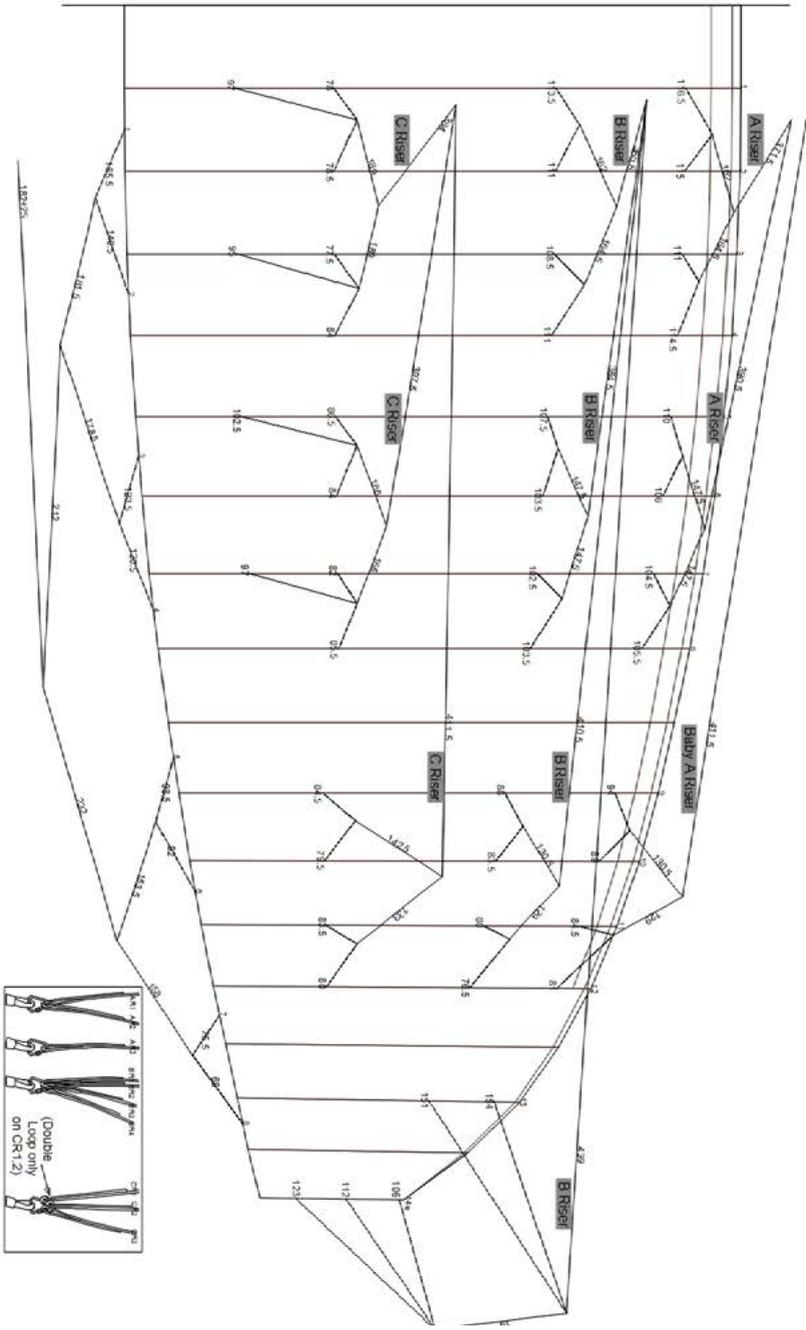
The manufacturer and/or retailer cannot be held responsible in any way, shape or form in case of an accident.

LINES SCHEMES

Size S - 23 m²



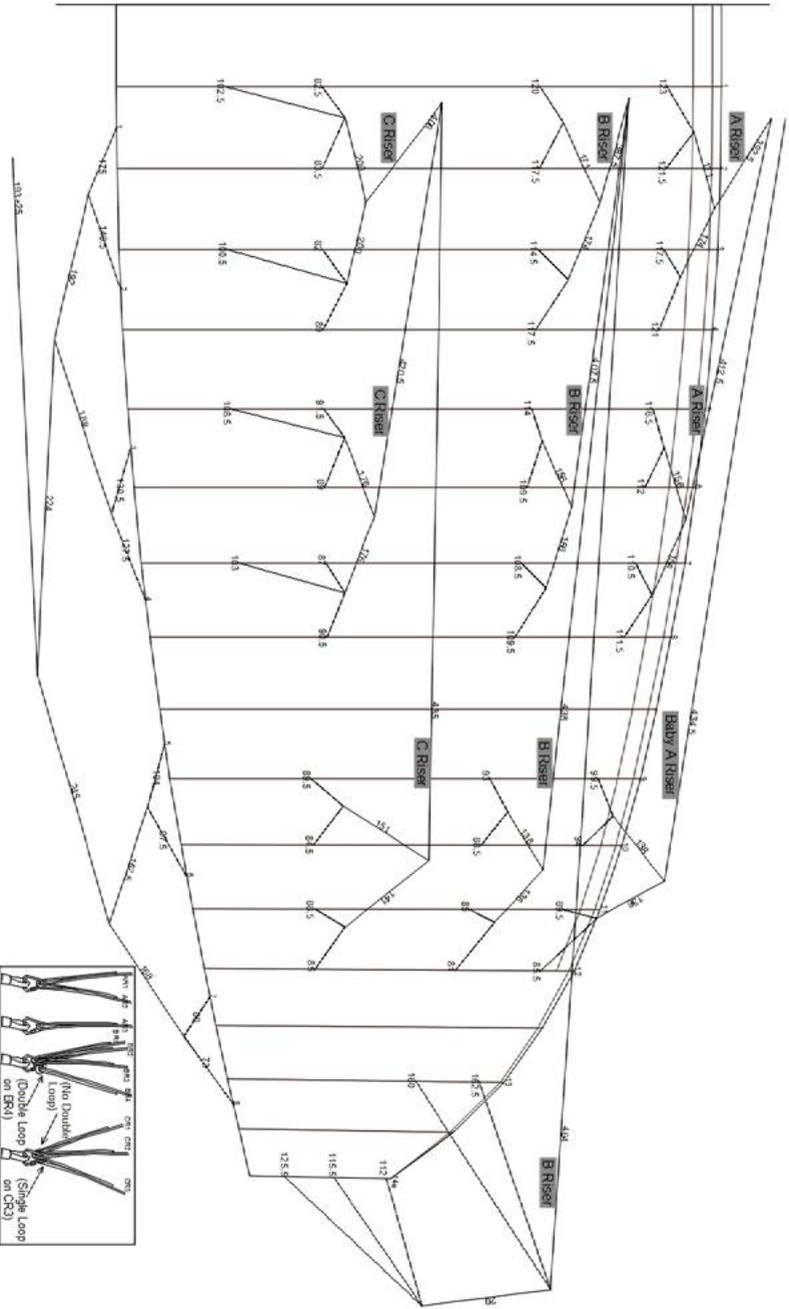
Size M - 26 m²



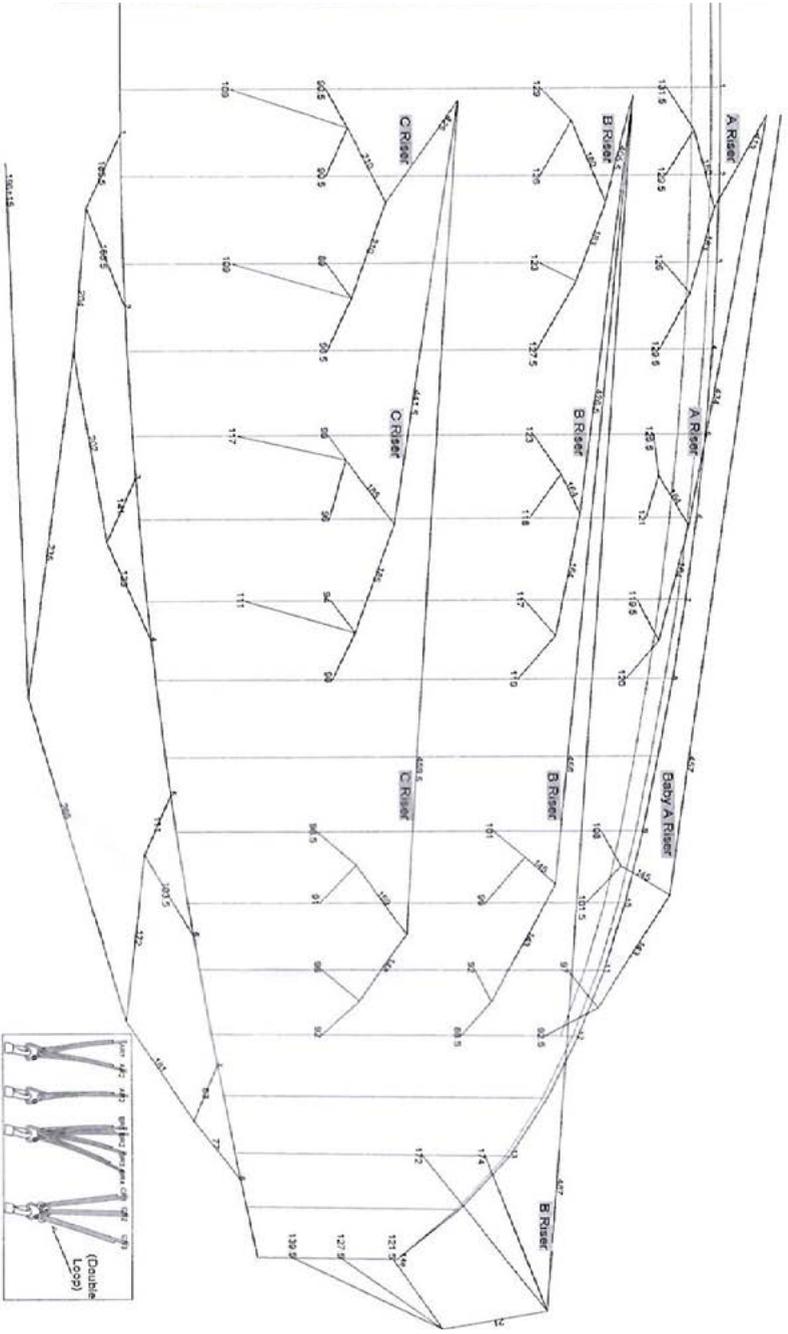
ITV - Boxer 2 - 26
31.07.2017 - Ref 7

ITV - Boxer 2 - 23
01.08.2017 - Ref 7

Size L - 29m²



Size XL - 32m²



ITV - Boxer 2 - 32
01.08.2017 - Ref 10

ITV - Boxer 2 - 29
01.08.2017 - Ref 10

FOLDING

To prolong the lifespan of your glider, it is very important to take a few precautions.

- Make sure that your wing is completely dry before starting.
- Always stow away your glider inside a bag designed for this purpose: Stuff-sack, Concertina bag, Quickpack, Innerbag...
- Stow away your wing in a dry place away from moisture and any heat source.
- Do not subject your wing to excess heat (car trunk).

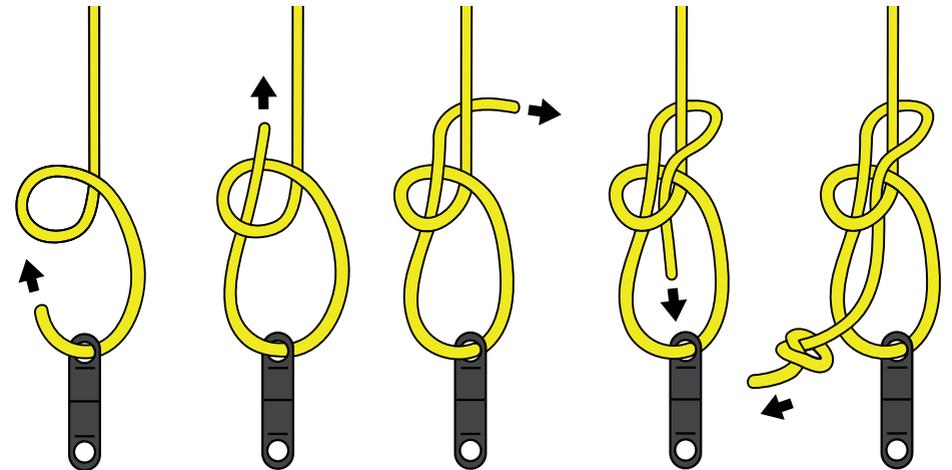
ITV strongly recommends using an accord folding method, so to keep all the ribs grouped side by side and prevent bending of the reinforcements (plastic rods).

TOGGLE ADJUSTMENT

The toggles are adjusted at the factory for optimal piloting control. However, if you do not like this setting, you can adjust the brake lines length.

To adjust the brake lines length, we recommend using a bowline knot, and limit your modifications to small increments (not more than 5cm).

BOWLINE KNOT

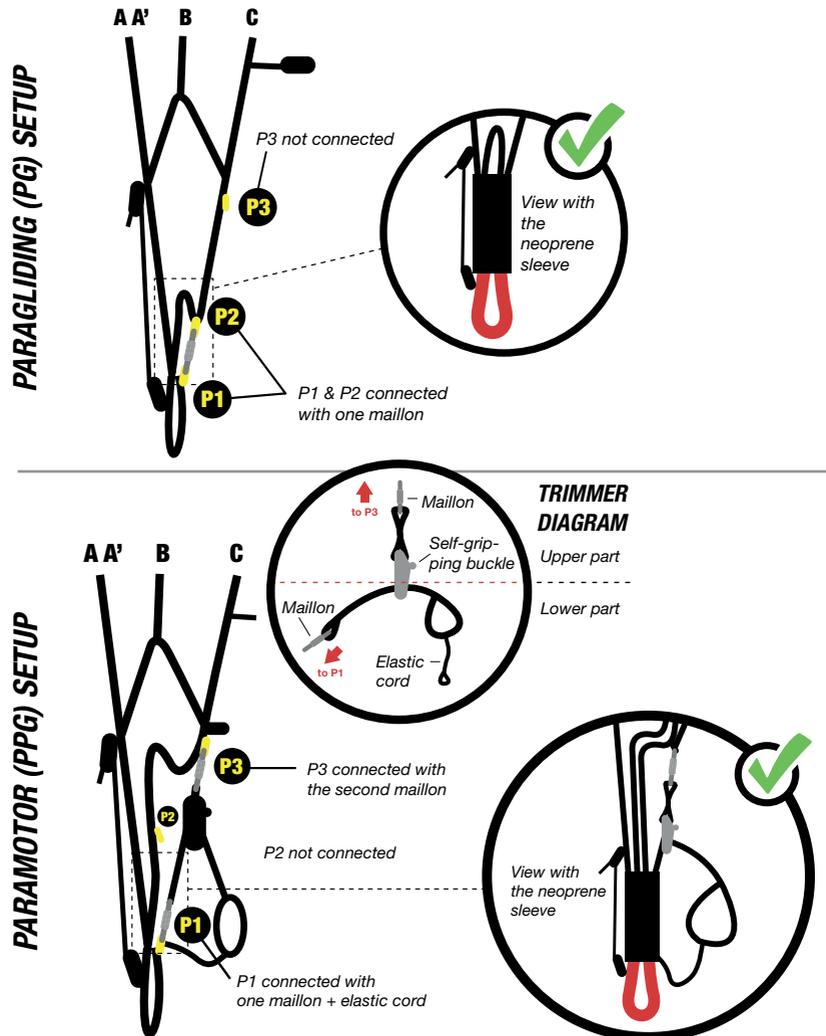


If you modify the original knot assembly, have it validated by a professional.

*POWER-KIT SYSTEM

Your ITV glider is delivered with risers equipped with the (POWER KIT). This exclusive ITV system makes it easy to switch from a Powered Paragliding (PG) to Paragliding (PG) mode.

It is important to check your new glider risers upon reception to ensure their correct configuration.



PARAGLIDING (PG) SETUP (without trims)

**The POWER-KIT must be disconnected via the 2 maillons.
The 2 connection points (P1 and P2) must be connected with one maillon.**

- Remove the neoprene sleeve
- Disconnect the POWER-KIT completely by loosening the 2 links (P1 and P3)
- Use one of the links to connect P1 and P2
 - Lock the links without excessive force, using a pliers if necessary. (0.70 N.m)
- Replace the neoprene sleeve and take with it:
 - The riser strap
 - Link P1 and P2 with the link

- Position the Velcro® behind the accelerator pulley
- Keep the accelerator line tangle free

PARAMOTOR (PPG) SETUP (with trims)

The POWER-KIT must be connected to the 2 connection points (P1 and P3) via the 2 maillons.

- Remove the neoprene sleeve
- Disconnect the maillon connecting P1 and P2
- Using the maillon, connect the bottom part of the trimmer to P1 (the self gripping metal clamp must be facing reward)
- Connect both the elasticated loop and the trimmer to P1
- With the second link, connect the top of the trimmer with P3
- Make sure your trimmer is properly connected to P1 and P3 without any twist in the webbing (P2 must be tangle free)
- Lock the links without excessive force, using a set of pliers if necessary. (0.70 N.m)
- Reinstall the neoprene sleeve as follows:
- Align the P2 strap against the riser bridle and include the following items with it:
 - The trimmer strap
 - The strap where P2 is located
 - The riser strap

- Position the Velcro® behind the accelerator pulley
- Keep the accelerator line tangle free

WARRANTY

ITV is confident in its product line quality and offers an additional extended warranty. However, if a product proves to have a manufacturing defect (except if due to normal wear), we will honor the warranty and cover the costs or repairs. This warranty is valid for two (2) years from the purchase date, which must be validated on the report card upon product reception.

Please return the product registration form to us as soon as possible.

ITV-WINGS
195 Z.A Bout du Lac
74210 LATHUILE - FRANCE

You also have the option to obtain an additional extended one (1) year warranty by registering your wing on our website at :
www.itv-wings.com

Negligent or inappropriate use of your wing, such as inadequate storage, exposure to extreme heat, UV, overloads, etc... will void its warranty.

ITV recommends you to follow a regular maintenance schedule, and have your wing inspected once a year or every 100 flight hours at our workshop or a qualified repair/inspection center.

S.A.V

ITV has a maintenance facility to perform complete wing controls and repairs. Our workshop is located in the French Alps (Savoie region), has a renown reputation for top of the line workmanship, and repairs / inspections are made by a highly skilled staff.

For more information about annual controls and repairs, do not hesitate to contact us :

e-mail : sav@itv-wings.com
téléphone : + 33 6 85 95 53 05

| Propriétaire Successifs Successive Owners | | |
|--|--------------|------------------|
| Nom-Name | Adresse- Tel | Date Transaction |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Fiche Essai Vol Flight Test |
|---|
| <p>MODELE: BOXER 2</p> <p>N° de serie – Serial N° :</p> <p>Date de Fab. Date of manufacture</p> <p>Nom et adresse propriétaire – Owner's name and adress : </p> <p>Nom et adresse du testeur - Testeur's name and adress : </p> <p>E-mail :</p> |
| <p><i>Exemplaire valant bon de garantie à retourner à This copy to be returned to validate the guarantee :</i></p> <p>ITV Wings ZA Bout du Lac 74210 Lathuille – France</p> |

Carnet D'entretien – After Sale Service

| Date | Nbr de vols/ durée estimée Number of flights/ estimated flying time | Intervention | Cachet du réparateur Stamp of repairer |
|------|---|--------------|---|
| | | | |

CONCEPTEUR DE PLAISIR DEPUIS 1981



www.itv-wings.com

ITV-WINGS
195 Z.A Bout du lac
74210 LATHUILE - FRANCE

info@itv-wings.com | +33 4 50 64 52 40