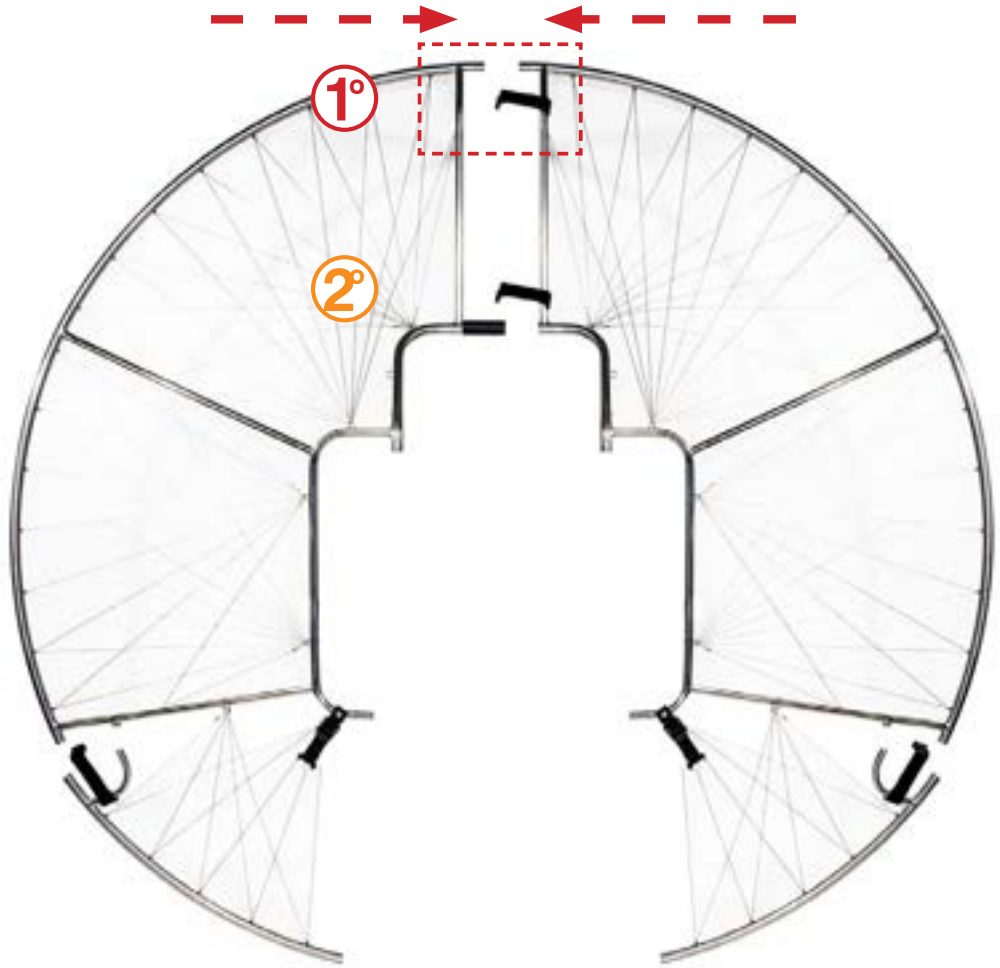


PARAMOTOR USER MANUAL

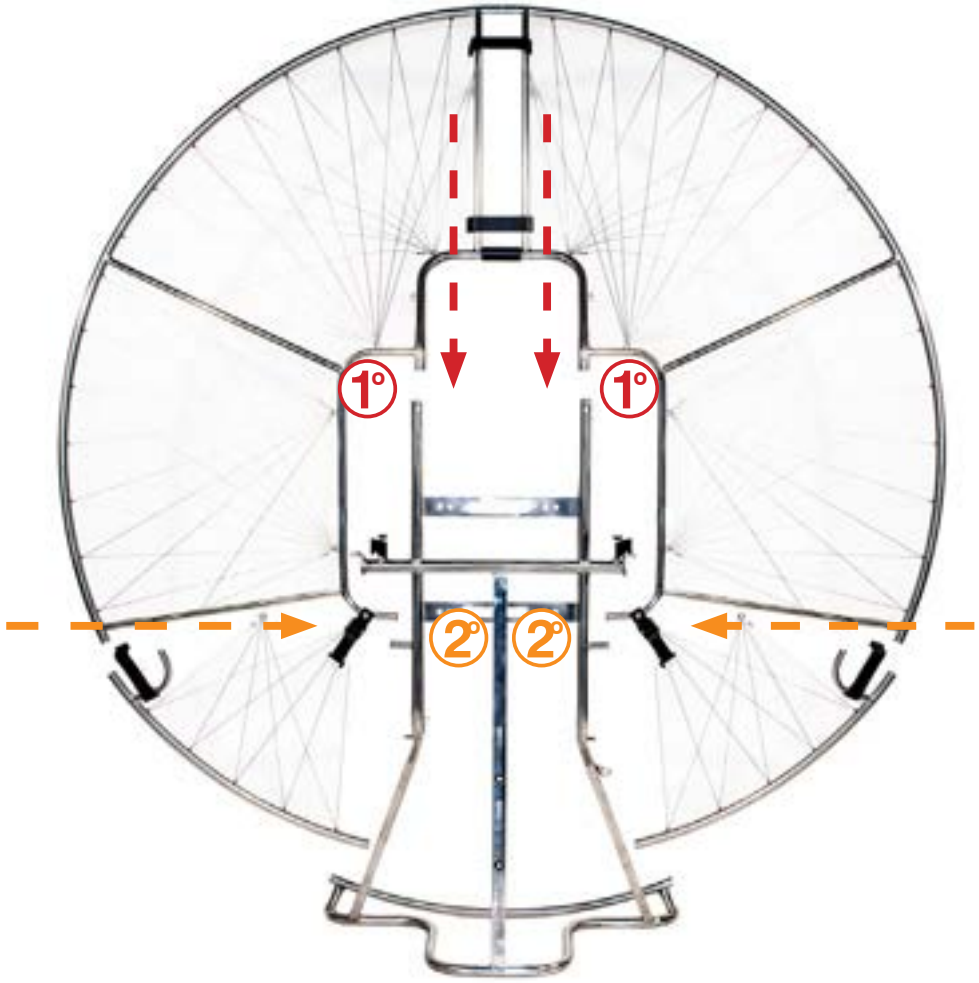
Thank you for purchasing a PAP machine and trusting in our experience. This will let you achieve and experience flight in a very simplistic form and let those childhood dreams of flight become a reality. If you do not want this dream to become a nightmare then please read and understand fully the following recommendations about its operation and use.
Enjoy your machine and always respect the flight rules.

THE ASSEMBLING OF THE 3 PART FRAME 2016 MODEL

1º

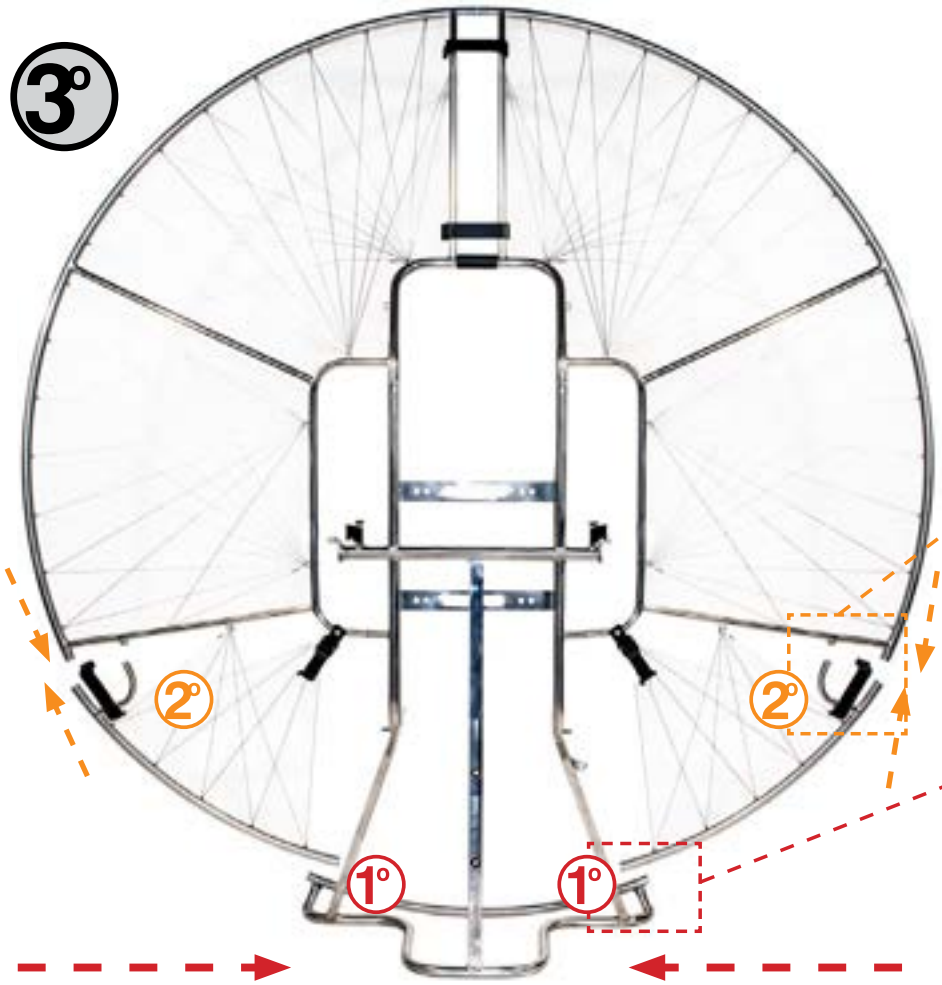


2º



THE ASSEMBLING OF THE 3 PART FRAME 2016 MODEL

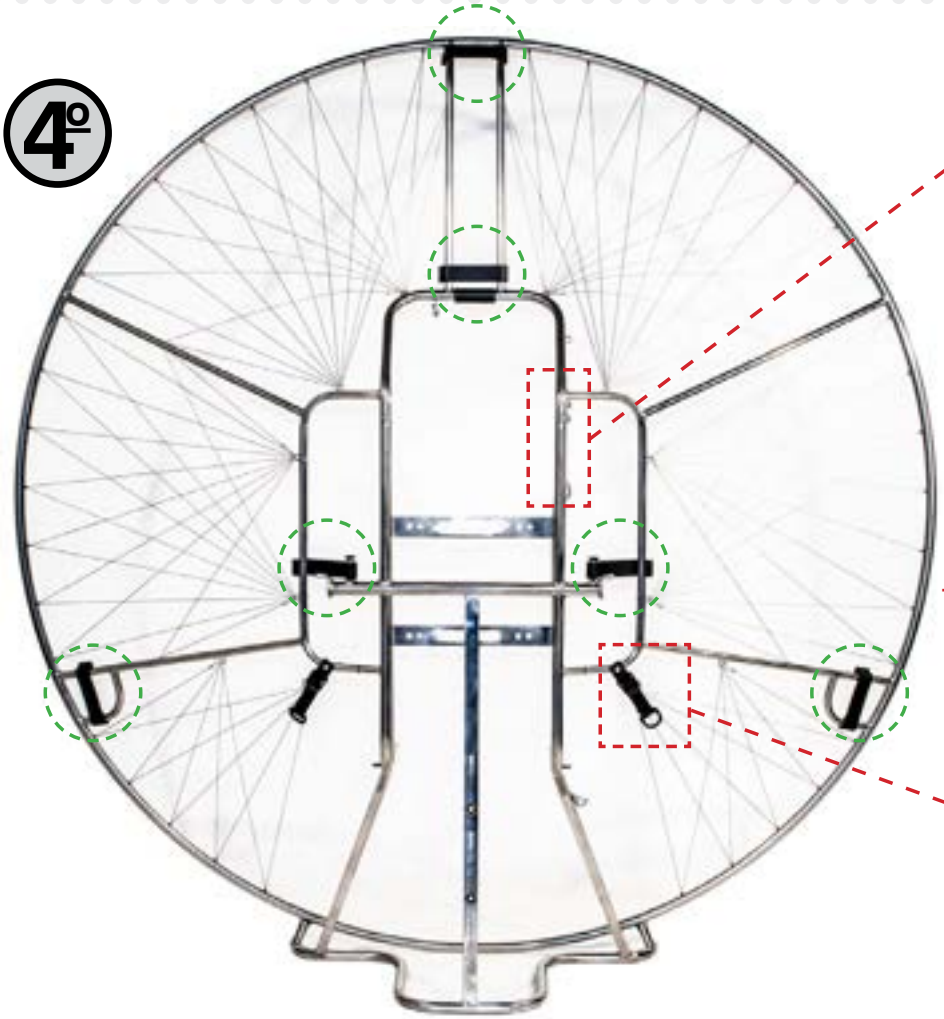
3º

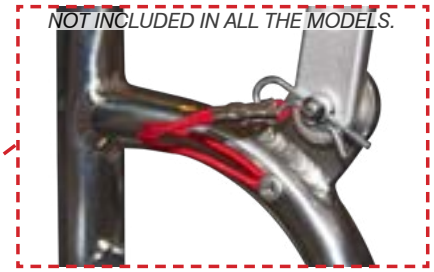






4º





NOT INCLUDED IN ALL THE MODELS.

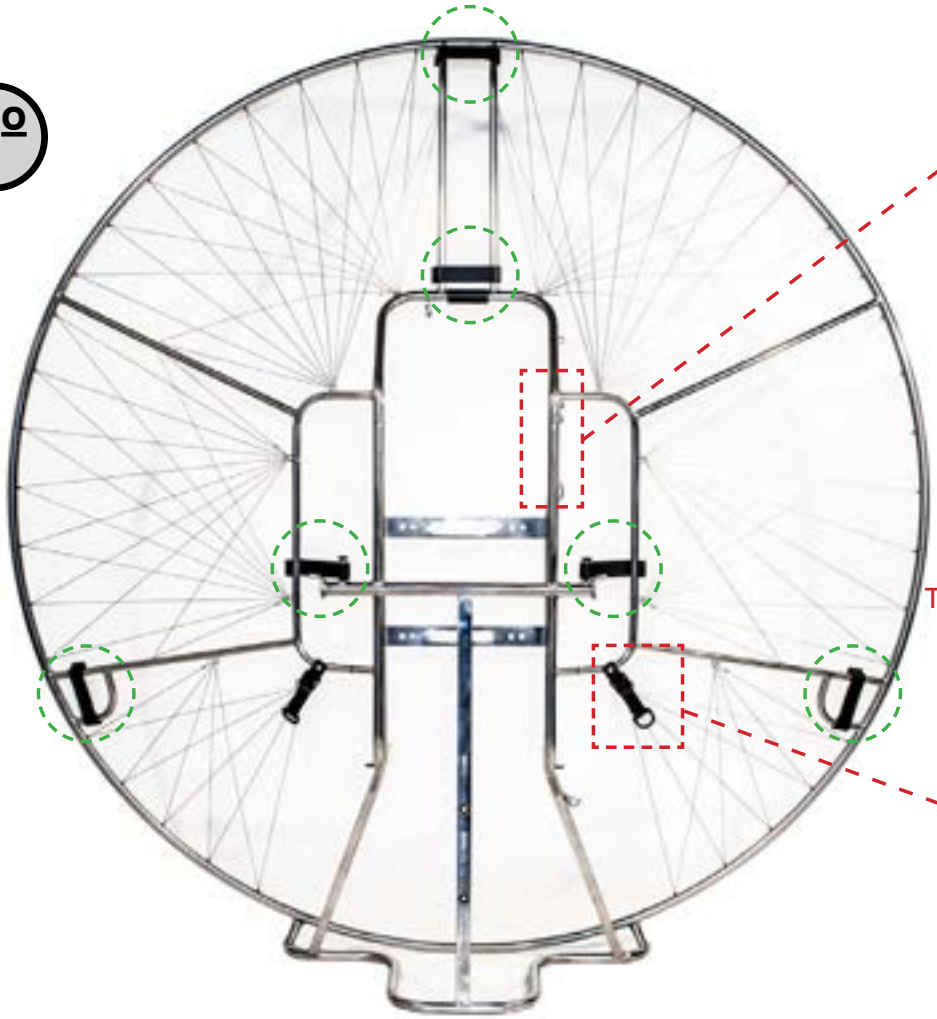
DO NOT FORGET TO PUT THE SECURITY CLIP OF THE REINFORCEMENT BAR.

DO NOT FORGET TO TENSE THE LOWER NETS TO ASSEMBLE.

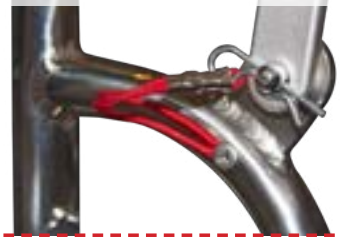


THE DISMOUNTING OF THE 3 PART FRAME 2016 MODEL

1º



NOT INCLUDED IN ALL THE MODELS

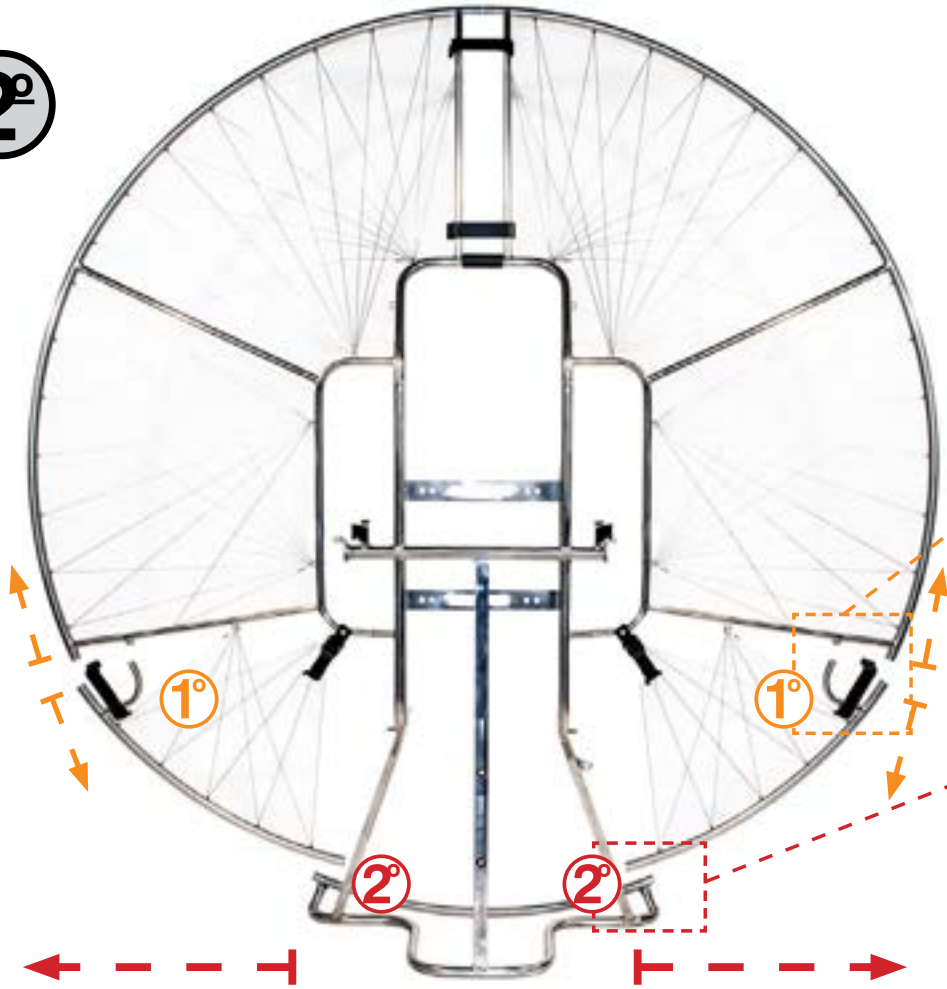


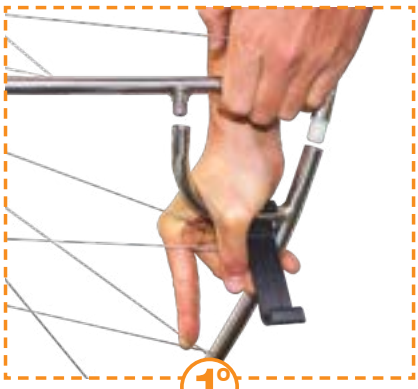
DO NOT FORGET TO REMOVE THE SECURITY CLIP OF THE REINFORCEMENT BAR.

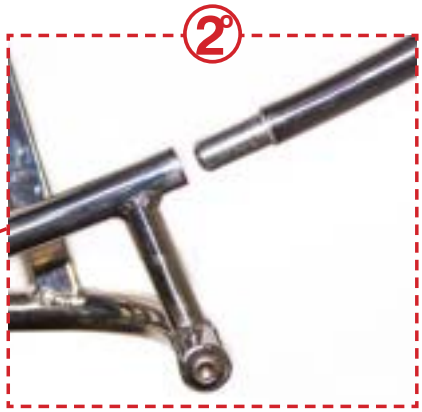
DO NOT FORGET TO LOOSEN THE LOWER NETS TO DISMANTLE.



2º

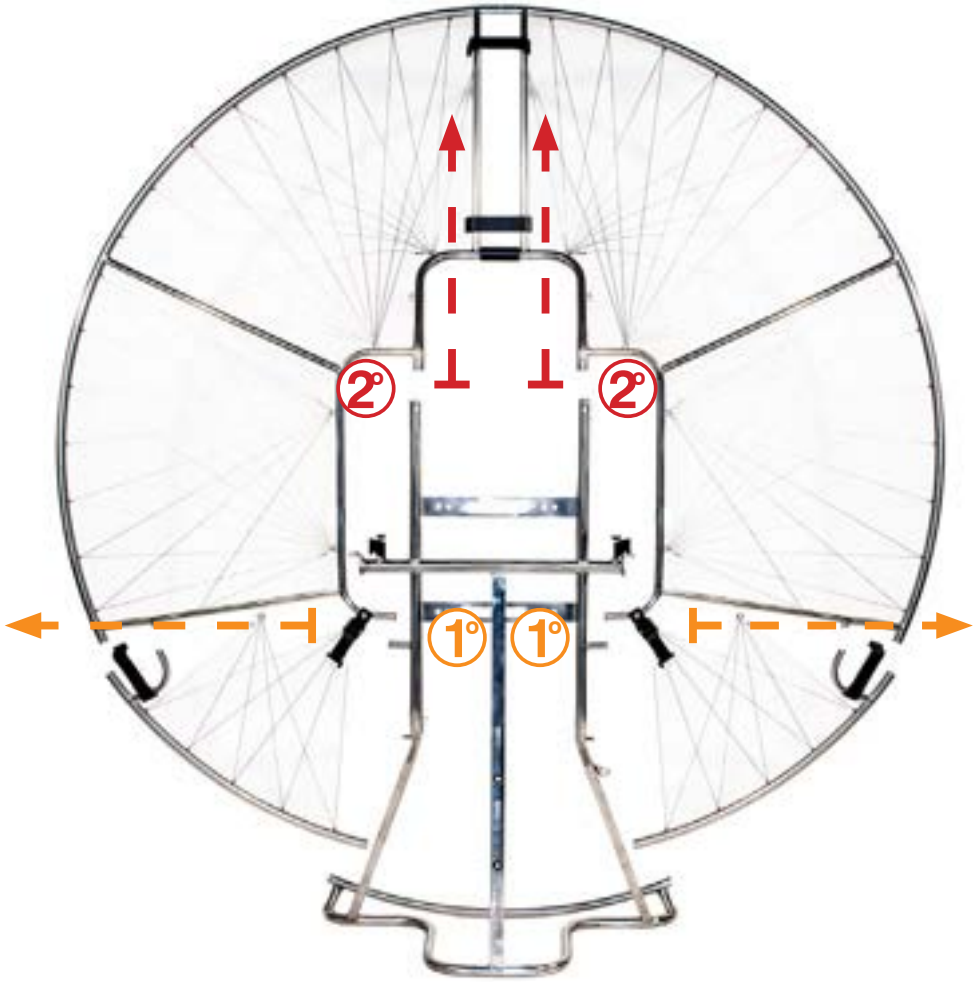




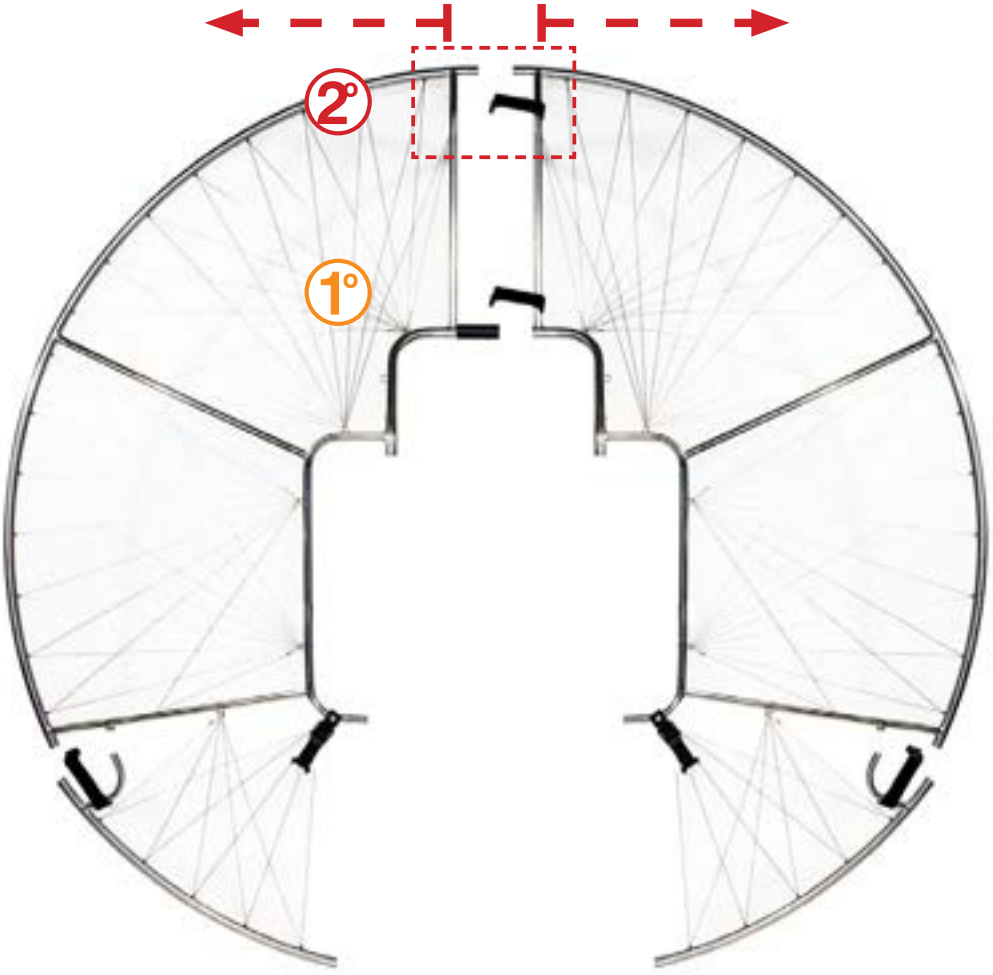


THE DISMOUNTING OF THE 3 PART FRAME 2016 MODEL

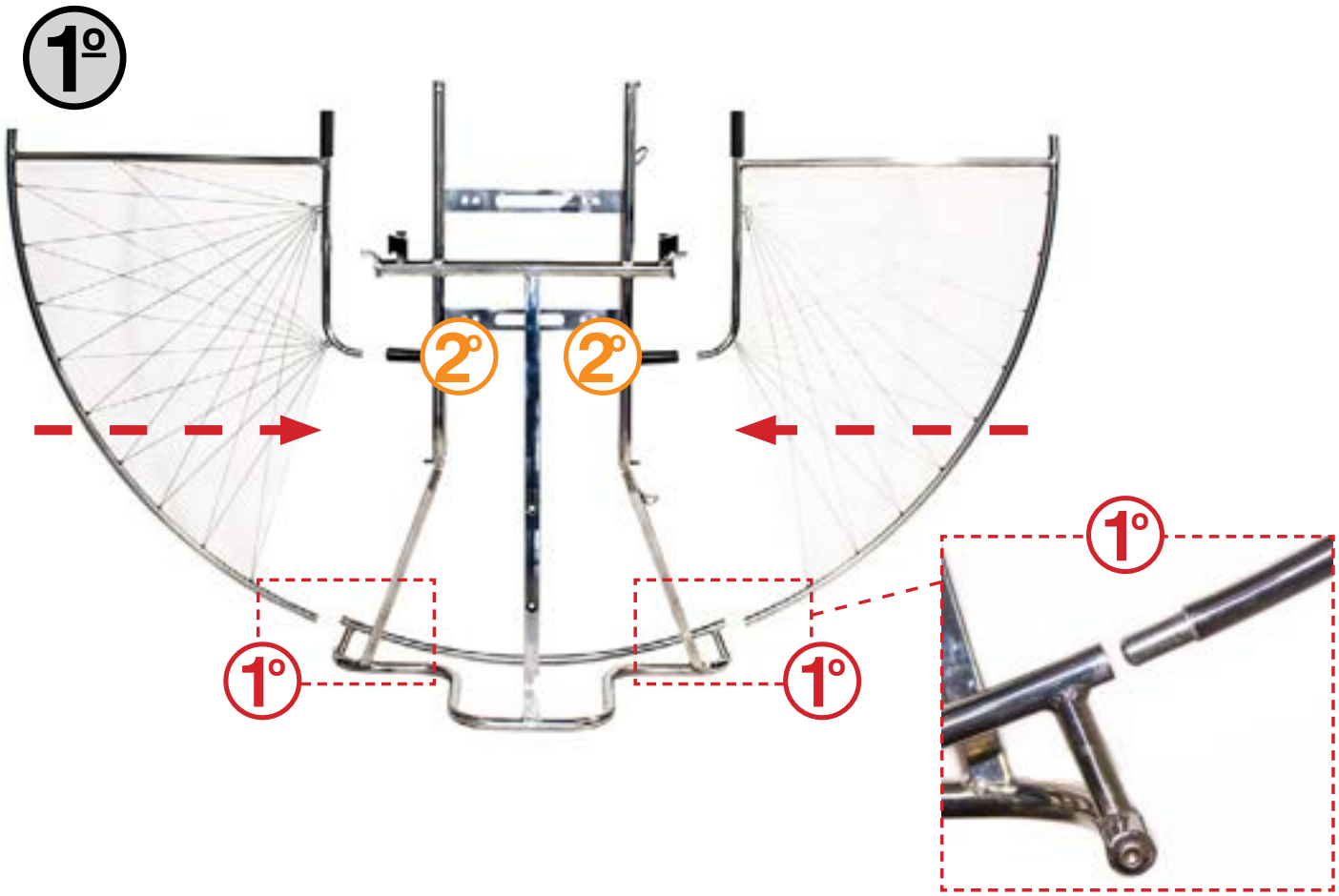
3º

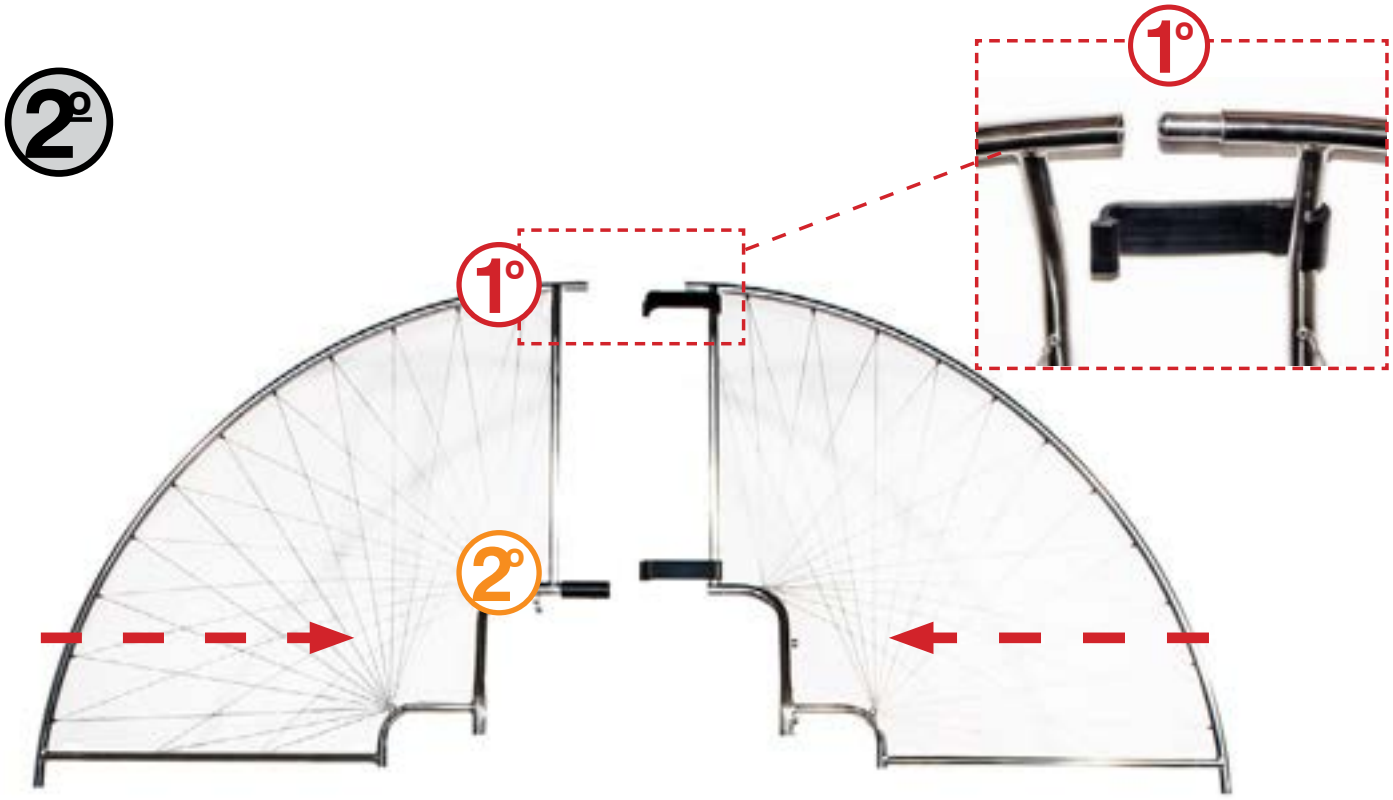


4º



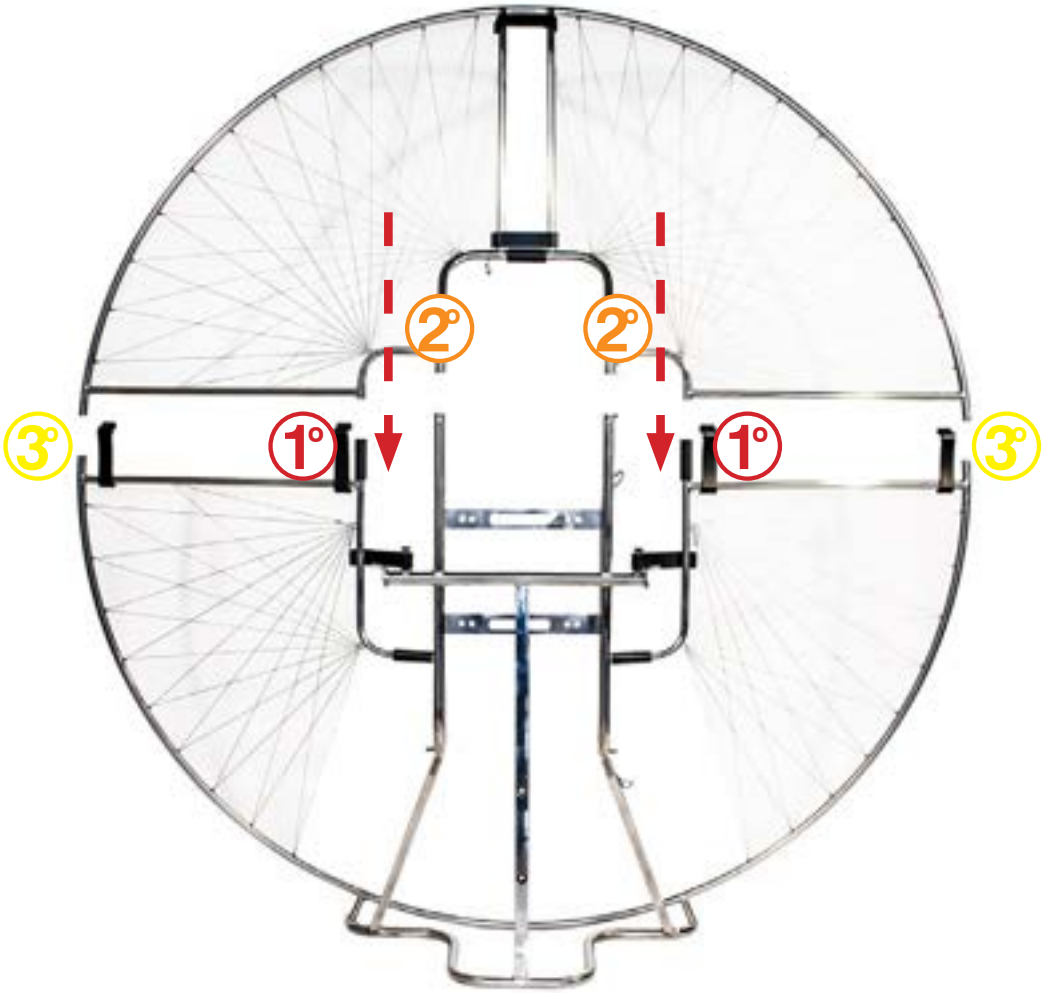
THE ASSEMBLING OF THE 5 PART FRAME 2016 MODEL



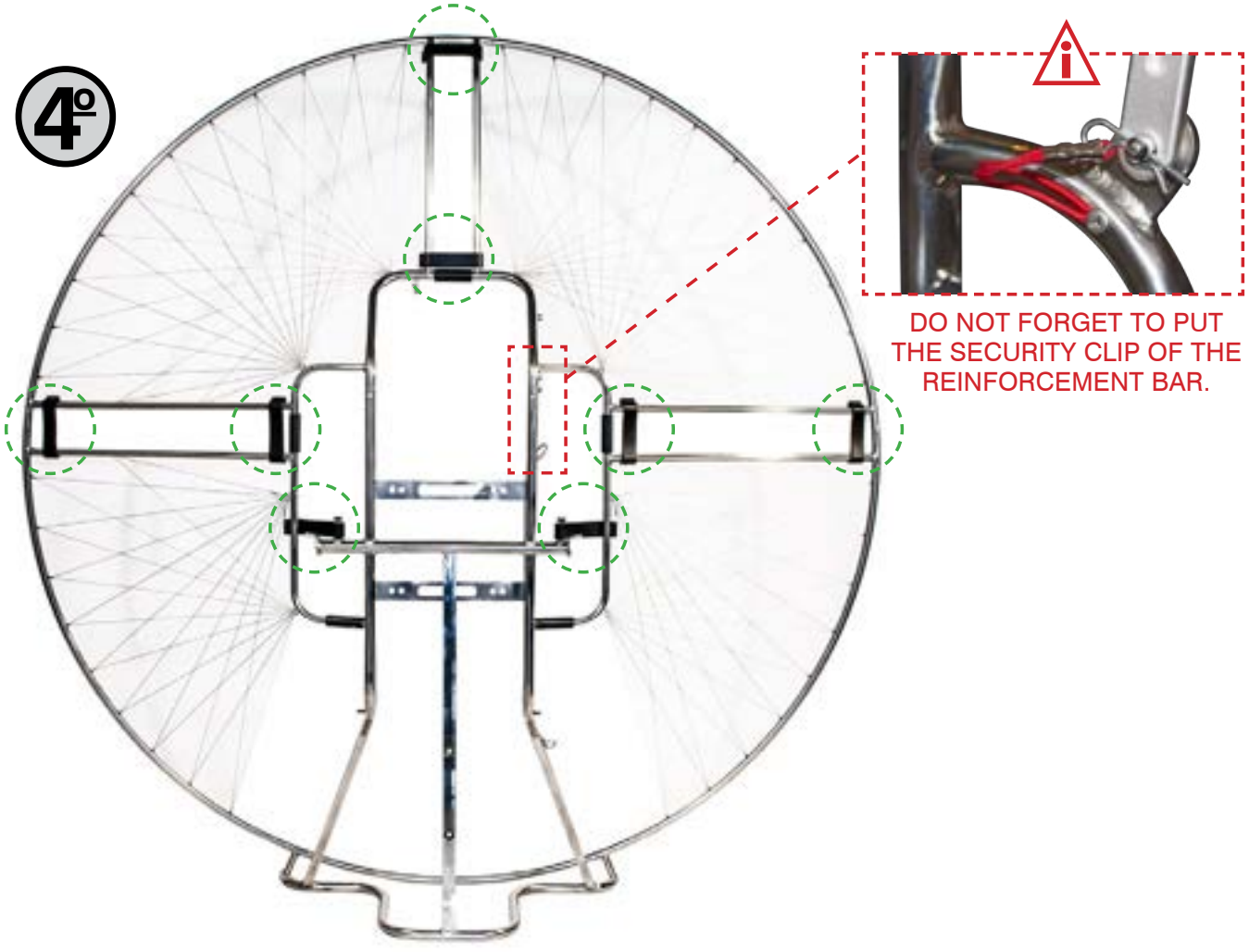


THE ASSEMBLING OF THE 5 PART FRAME 2016 MODEL

3º



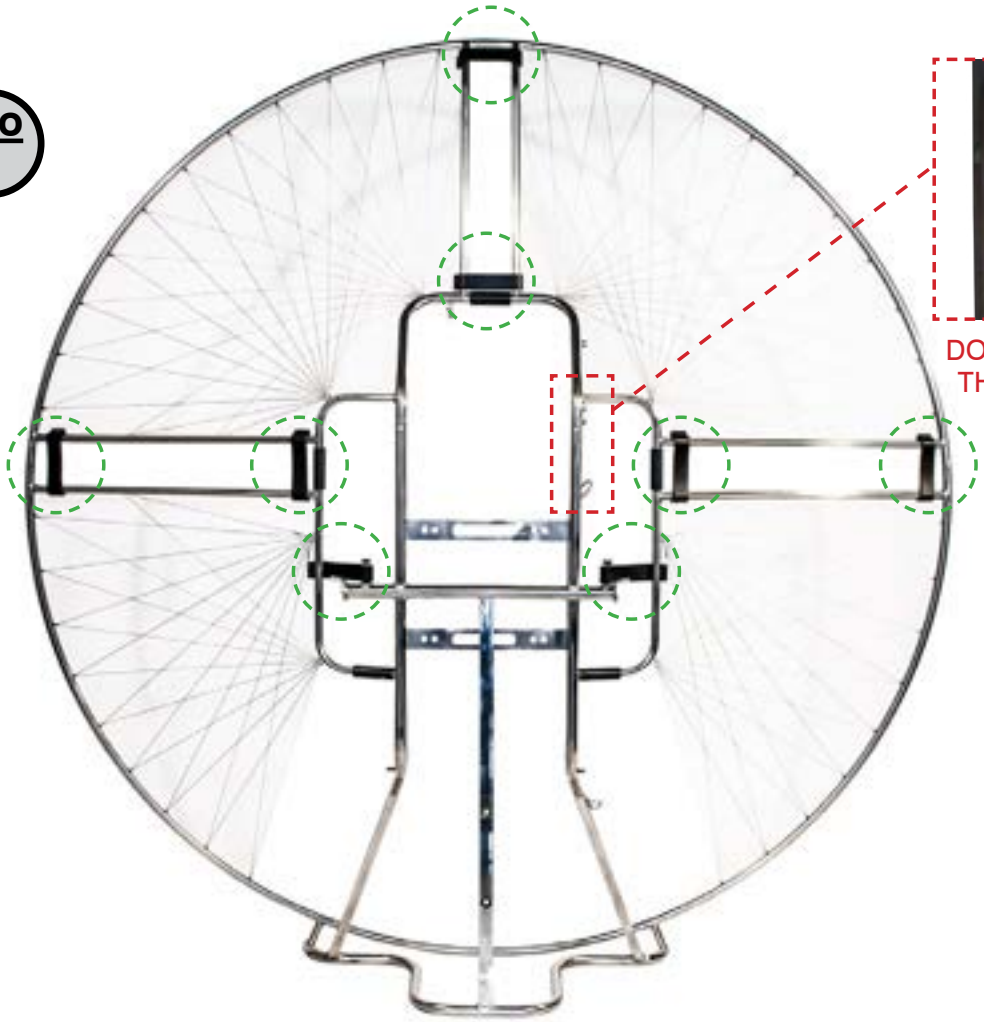
4º

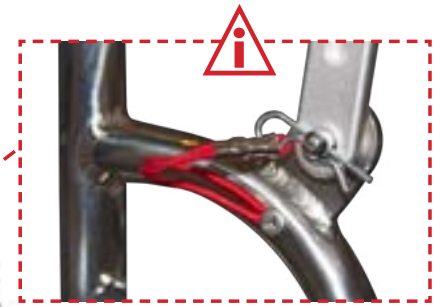


DO NOT FORGET TO PUT THE SECURITY CLIP OF THE REINFORCEMENT BAR.

THE DISMOUNTING OF THE 5 PART FRAME 2016 MODEL

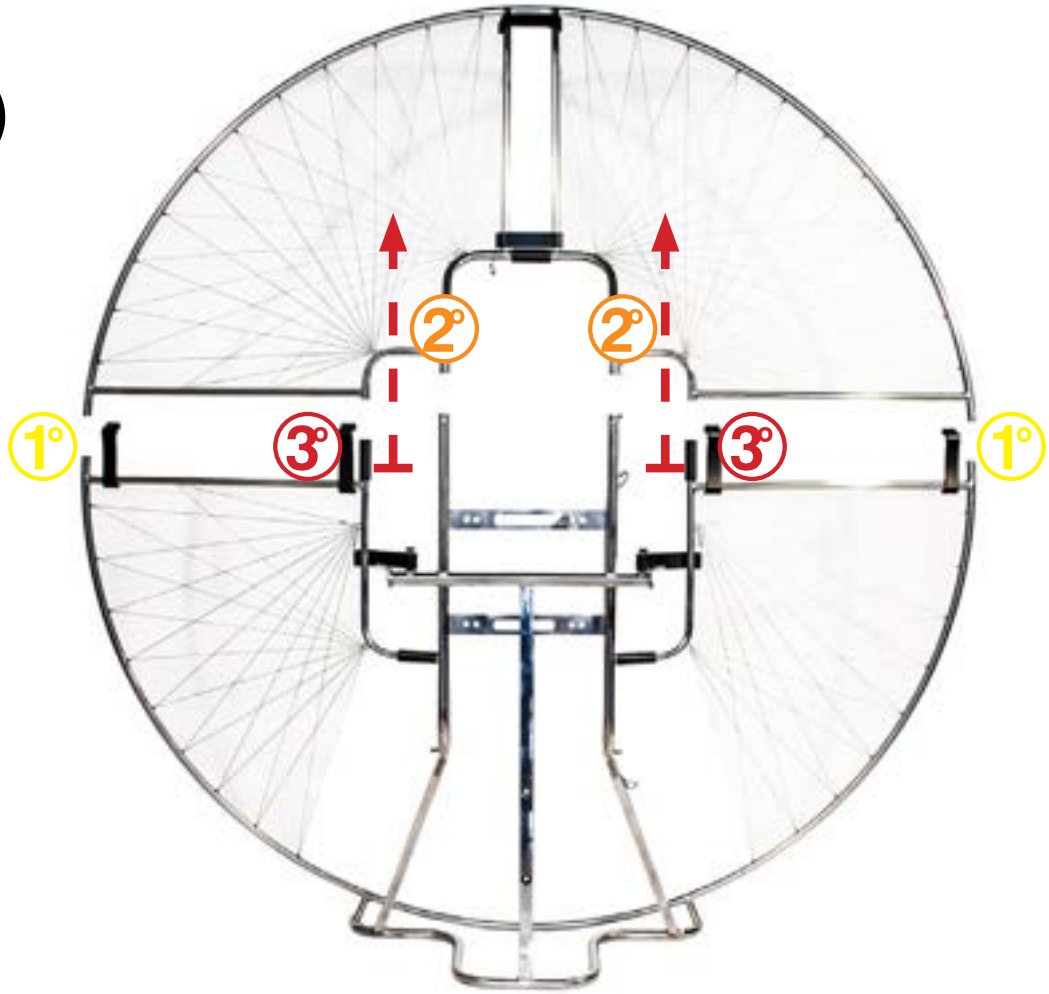
1º





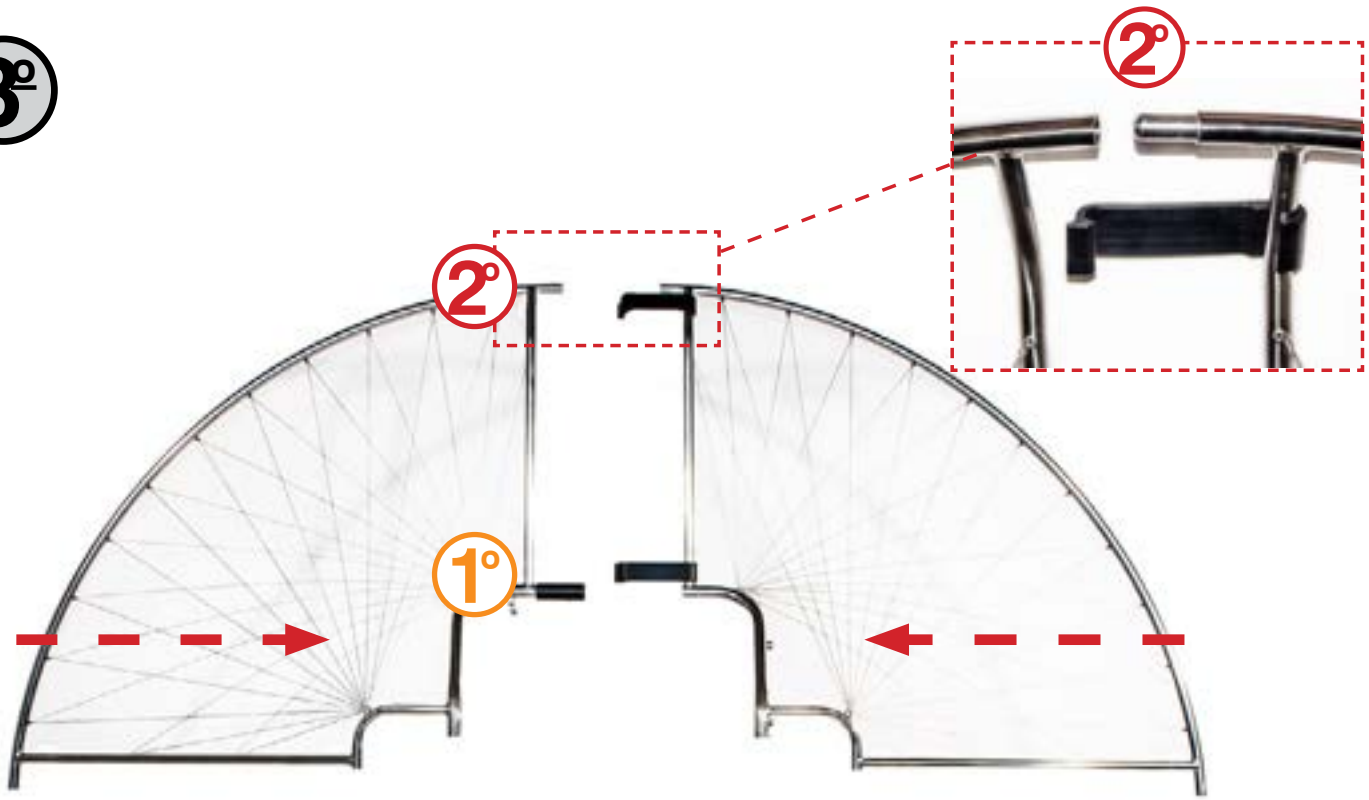
DO NOT FORGET TO REMOVE THE SECURITY CLIP OF THE REINFORCEMENT BAR.

2º

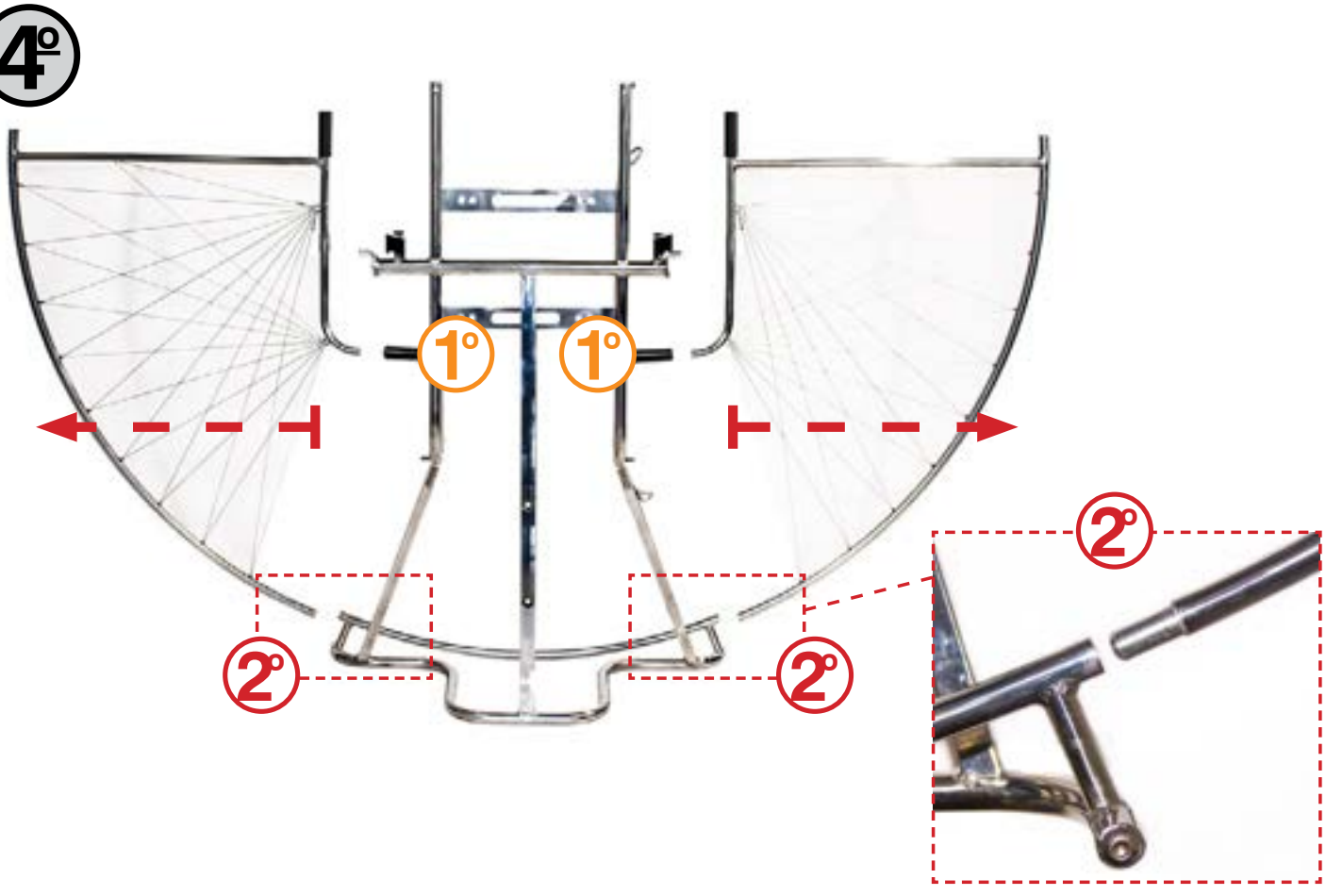


THE DISMOUNTING OF THE 5 PART FRAME 2016 MODEL

3º



4º

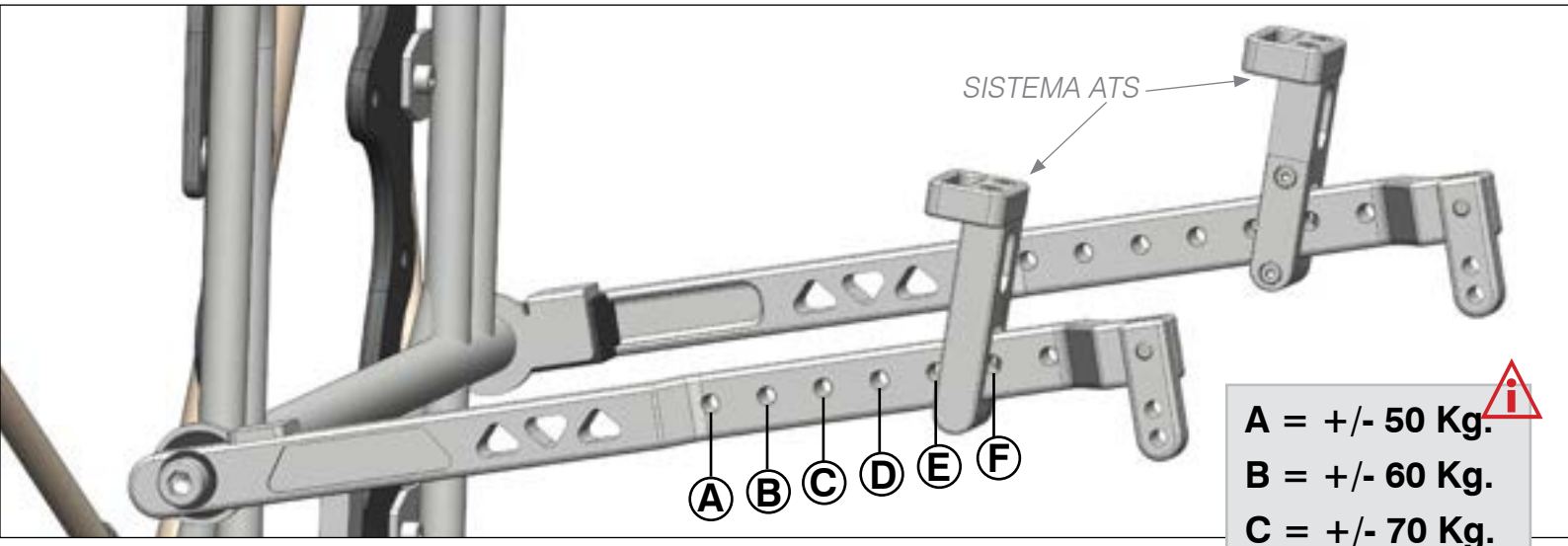


1 ACTIVE SYSTEM ARMS

The active system arms connect the harness to the frame. Carabiners are located on the harness where the paraglider risers are attached. The active arm connections points on the active arms work on a scale from A-F.

Before your first flight witf the PAP machine it is necessary to find your ideal static balance when seated in the harness in the normal flight position, wearing your flight suit and equipment.

This is best achieved by suspending yourself & the machine from a static frame. Moving the attachment points on the active arms forwards and backwards equally (**A**, **B**, **C**, **D**, **E** or **F**), you can find the optimum tilting angle (20 degrees) off the propeller to the ground. For lighter pilots move the shackles backwards and for heavier pilot's move forwards.



A = +/- 50 Kg.
B = +/- 60 Kg.
C = +/- 70 Kg.
D = +/- 80 Kg.
E = +/- 100 Kg.
F = + 140 kg.

ALL THESE OPTIONS ARE ORIENTATE.
The position can vary depending on the constitution of the pilot. Remembering that this acts as a roman scale, it is not the same a pilot who is 1.90 m and weighs 95kg, as a pilot who is 1.65m and weighs 95 kg.

Although the recommended angle is 20o regarding the propeller to the ground. Also take in mind the subjective factor of the flight position, there are pilots who prefer a more upright position or the contrary.

If the position is too upright you have to pay special attention when releasing the breaks while in flight , as there is a possibility that they can be aspired by the propeller .

If the position is too inclined forwards, then we will have difficulty getting out of the harness when landing.

2 ATS SYSTEM

The Active Arms System which conect the harness to the frame, where the paraglider risers are attached.These arms have 6 connection points, the function of these points are to have the option to find the ideal static balance when flying together with the ATS System.

These arms work as a roman scale with it's different connection points, leaning forwards or backwards in function of the ATS system. it is necessary to find your ideal static balance, wearing your flight suit and equipment, This is best achieved by suspending yourself & the machine from a static frame, moving the attachment points on the active arms forwards or backwards (B,C,D,E,F,) to find the optimum tilting angle 20 degrees of the propellor to the ground. The lighter weight pilots will move the ATS backwards, and the heavier pilots forwards.

The ATS System is the result of some study work done in the beginning of the Winter of 2012, which had the objective of improving the engine torque effect. With this system the light and heavy pilots can now fly comfortably with more powerful engines, and therefore have more thrust. PSince the PAP paraengine units were first made in 1989 they have been characterized for its low hang point design. Nowadays this is a huge achievement due to the weight of the pilot and the engine power which is no longer directly proportional. Because of this difficulty many manufacturers who followed our steps with the low hang point have gone back to the high hang point system to improve the engine torque effect.

With the ATS System we have achieved without changing the height of the attachment point, where the the paraglider risers are attached , reducing the anti torque effect and therefore ensuring a comfortable and precise flight. We could say that the ATS System works as a stabilizer as the rotation point is about 90mm higher ontop of the arms where the paragliders risers are attached, just underneath the carabiner of the glider. Preventing with this the horizontal and vertical movements.

Another advantage of the ATS System is to be able to slide this on the paraengine arm until finding the exact position for the flight, a approximate angle of 20 degrees from the propeller to the ground.

B = +/- 55 Kg.
C = +/- 65 Kg.
D = +/- 75 Kg.
E = +/- 85 Kg.
F = + 100 Kg.

REMEMBER THAT NOW THE BALANCING POINT IS THE TOP PART OF THE ATS WHERE THE PARAGLIDERS ATTACHMENT LOOP GOES THROUGH , SO MOVING THE SHACKLE HAS NO INFLUENCE IN YOUR POSITION DURING FLIGHT.

2.1. ATS INSTALATION



1.- Remove the carabiner where the paragliders risers are attached.

2.- Place the ATS on the arm with the regulation screws looking towards the inside of the harness (fig 01).

3.- Pull the paragliders attachment loop through the hole on the top part of the ATS (fig 02).

4.- Put back the carabiner in its position. (fig 03).

5.- Pull the arm to its maximum, by pulling the carabiner upwards (fig 04).

6.- Sliding the ATS forwards or backwards, seeking the best verticality of the paraglider attachment Loop (fig05) and (fig06).

7.- Once having done this, fasten the 2 screws on the side (fig07).


(fig 01)


(fig 02)


(fig 03)


(fig 04)


(fig 05)


(fig 06)


(fig 07)

REMEMBER THAT NOW THE BALANCING POINT IS THE TOP PART OF THE ATS WHERE THE PARAGLIDERS ATTACHMENT LOOP GOES THROUGH , SO MOVING THE SHACKLE HAS NO INFLUENCE IN YOUR POSITION DURING FLIGHT. (fig 05) (fig 06).

3 HARNESS

The harness is a Sup' Air harness designed specially for PAP and will give provide optimum comfort during flights. Included: carabiners and automatic clips with safety closing. External articulate extension board for additional leg support. Pulleys for speedbar system. Large Neoprene side pockets. Emergency Parachute and Engine Rev Counter mounting system. Airbag and side container for the parachute, exchangeable for right and left side removing the pocket.

Even though all parts of the engine have gone through quality checks before being sent, we recommend to check that the seat is correctly fixed to the frame, also check that the automatic buckles and accelerator pulley are working properly











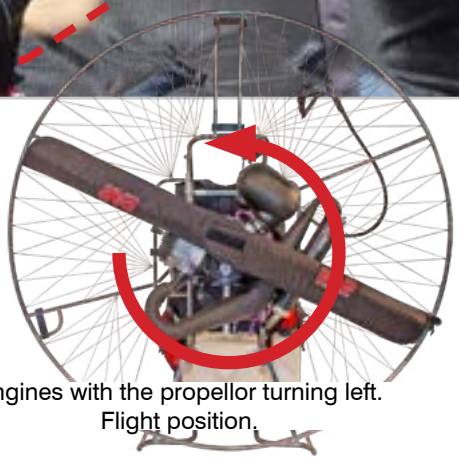


3.1. ANTITORQUE STRAP FOR THE HARNESS

DO NOT FORGET PROPER INSTALLATION BEFORE TAKEOFF.

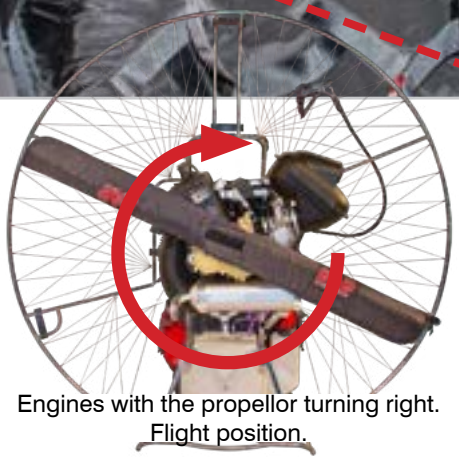
We call this the anti torque tape , which is included standard on all the PAP engines of more than 180 cc. To contrast the torque effect of the engine. It can be used on engines with less cylinder if the pilot finds it appropriate. On the pictures you can see the position and how it is to be fixed depending on the engine and the turn of the propellor.





Engines with the propellor turning left.
Flight position.





Engines with the propellor turning right.
Flight position.











3.3. INSTALACION DEL ACELERADOR DEL PARAPENTE

Para instalar el acelerador de pie que actua en el parapente basta con pasar el cordino por las poleas que trae la silla tal y como muestra la imagen (fig 9).

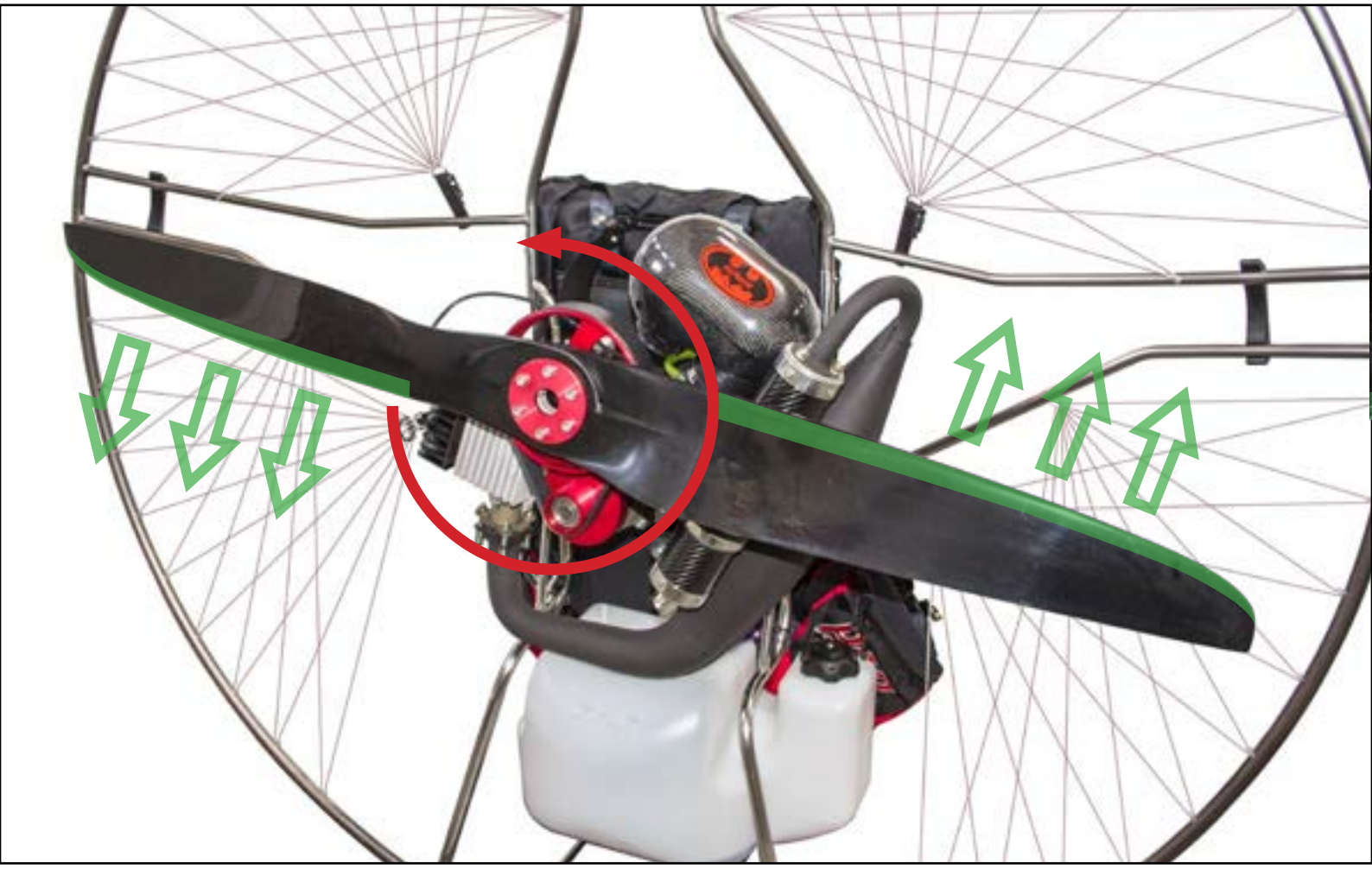


(fig 9)

4 HÉLICE

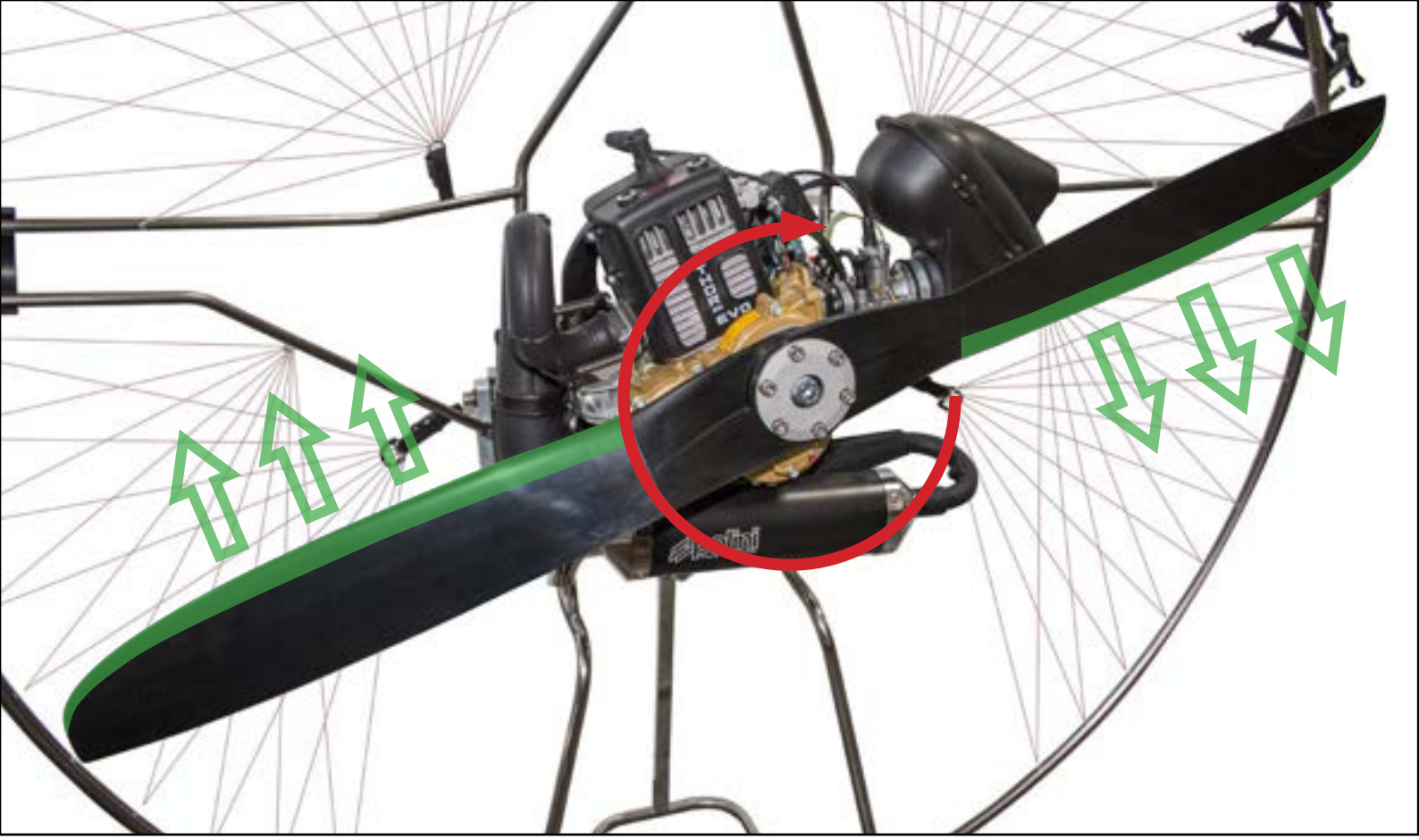
IT IS VERY IMPORTANT TO ASSURE THAT THE PROPELLOR IS PROPERLY INSTALLED:

Both edges of the propellor propellor should be opposite the direction of the turn of the engine. Towards the right in flight position for the engines with mechanical reduction(for example: Thor200 y 250) . and to the left in flight position with engines with belt reduction(for example: Safari 125 and Moster 185).



Engines with the propellor
turning left
In flight position.

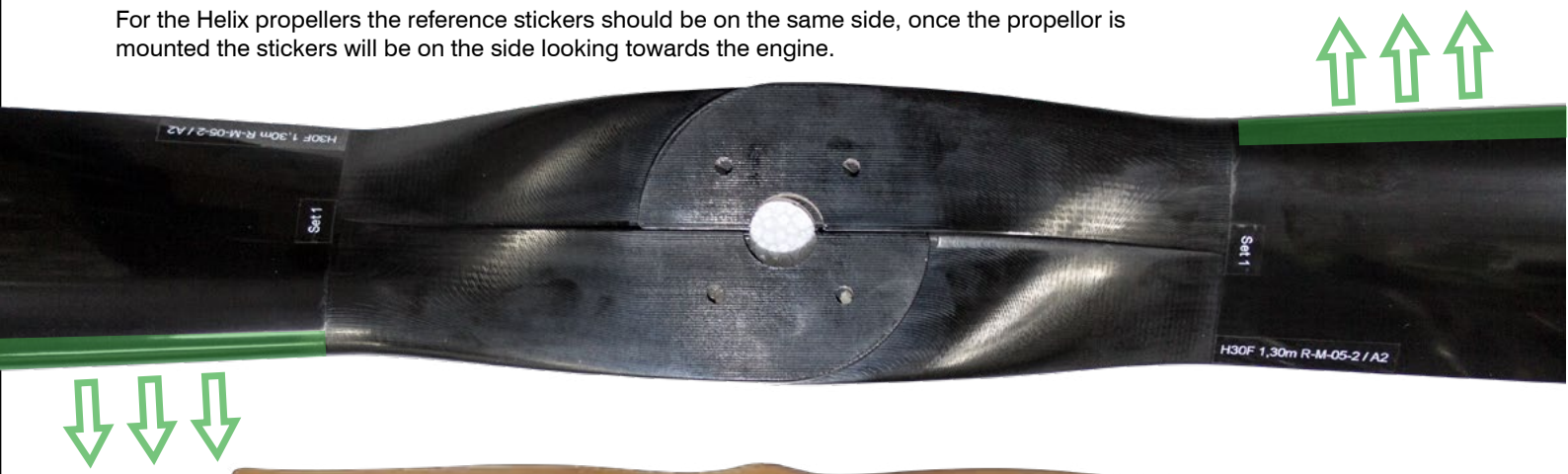
- PAP **SAFARI 125**
- VITTORAZI **MOSTER 185**
- CORSAIR **BLACK DEVIL 175**



Engines with the propeller ***turning right***. In flight position:

· POLINI **THOR 80** · POLINI **THOR 130** · POLINI **THOR 200** · POLINI **THOR 250**

For the Helix propellers the reference stickers should be on the same side, once the propellor is mounted the stickers will be on the side looking towards the engine.





Torque setting 1,1 Kgm (11 Nm)



Torque setting 0,8 Kgm (8 Nm)

If you do not have a torque wrench just tighten the bolts slightly more than the maximum pressure.

NEVER START THE ENGINE WITHOUT PROPELLER OR GEARBOX FITTED.

Its very important to check the propeller tracking. This is the difference between the tips of the propeller on its path during rotation. If the tracking of the propeller occurs it means that the propeller bolts may have been tightened asymmetrically. On engines without clutch: Take away the spark plug so that the propeller can turn easily. Turn the propeller, and make sure the tips of the propeller pass through the same axis during rotation.

Every time the propeller is fitted it is necessary too tighten the bolts before the next flight. Check that the propeller is not damaged fixed properly and turns correctly and smoothly. Listen for any unusual noises that might come from the engine or the gearbox.

6 CONTAINER FOR THE PARACHUTE SRS (SIDE RESCUE SYSTEM)

The side parachute container is designed to carry the parachute on either side of the harness. Just remove the pocket (fig.11) and put it in its place (fig.12)

The strap of the parachute to the harness should be placed on the outer-side of the paramotor arm (fig.13)




(fig 12)



(fig 11)


(fig 13)

7 THROTTLE



Before starting the engine , check that the gas throttle comes back properly and that the gas roulette lock is loosened (1). To loosen we will turn anti clockwise completely until getting to its top , as shown on the image.

On top is the Stop button (2) , pressing it we will stop the engine .


(fig 10)

We will pass the accelerator on the forearm as shown on the bottom image (fig 10)

8 SECURITY ON THE GROUND

The biggest danger is on ground so it is very important to get into a good habit of checking that surrounding area is clear to avoid incidents/accidents:

Never start without the propeller or gear box.

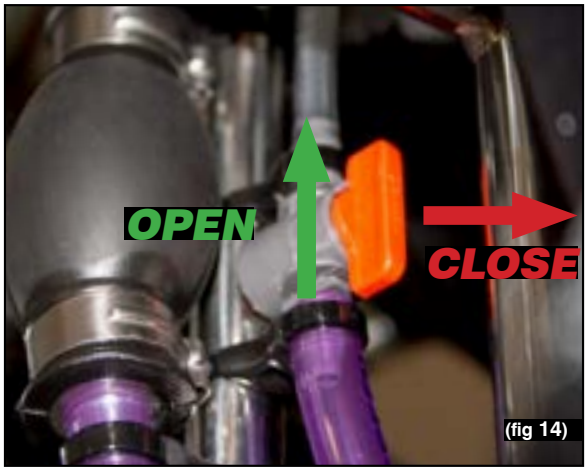
Moving the engine: Always lift the machine using the strongest and most stable part of the chassis. Do not lift or move using the cage.

Follow the manufacturer's instructions for running in using the correct % of oil mix, and always filter the fuel when filling the tank.

Make sure that there is nothing or no one around the area of the propeller during starting and that you have placed the engine on a level surface and a mat to avoid contact between the propeller and loose items on the ground. i,e small stones or sand.

Never turn the engine towards people, animal's, paragliders.

Only close the breather line valve when lying the machine to prevent fuel spillage. Otherwise this valve must be in the open position for flight (fig 14).



(fig 14)

IF THE FUEL TANK DOES NOT "BREATHE" THE ENGINE WILL STOP.

8.1. SECURITY TAPE TO LOCK THE PROPELLER IN THE COLD START. ONLY FOR ENGINES WITH CLUTCH

A new security measure to avoid the possibility of the engine falling towards us when starting in cold giving gas.

We start with the covers of the propellers on, as the tape has been stitched on to the covers and its function is to block the propeller should we not give enough gas when the engine of transmission with centrifugal clutch. Has already started. (fig 15).


(fig 15)

ATTENTION: DO NOT USE THIS TECHNIQUE TO WARM UP THE ENGINE

This security measure is intended above all to minimize risk and nerves of those who are new to the paraengine and aren't familiar with the manual startup.

It is a good option to get used to using this system which would also block the propeller, in case we do not notice that the roulette of the gas lever is blocked or that the gas lever does not return correctly **(remember that it is very high importance to methodically perform these checks before starting)**

We must fix the Ribbon on the principal outside ring of the frame so that the propeller moves as little as possible See photo. Remind you that all engines with mechanical reduction clutch turn to the right depending on the position of flight.

There are other techniques that exist in the world of the paramotor for long time for this purpose. We have incorporated it as simple and efficient without using other elements.

Remind that the propellor turns right in flight position for the engines with mechanical reduction (ex: Thor200 and 250), and left in flight position for the engines with belt reduction (ex: Safari 125 and Moster 185)

9 PRE FLIGHT CHECK

BEFORE STARTING IT IS IMPORTANT TO DO A PRE FLIGHT CHECK

Check the tightness of all bolts and screws on the engine. Nothing should be loose in flight as it can come off and go through the propeller causing extensive damage.

Check the welding especially where the engine is fixed.

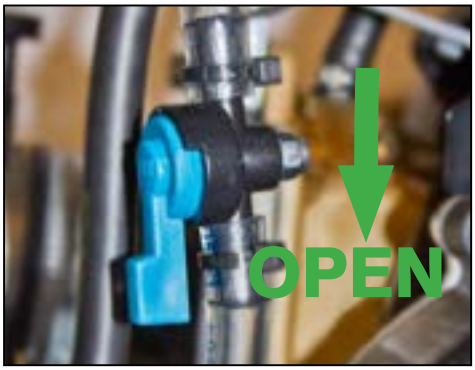
Check that the safety net is fastened tightly, and that the paragliders speed trim system does not have spare lines hanging, as these can get into the propeller.

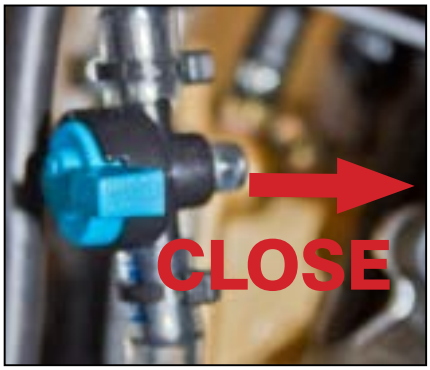
Check the condition of the anti-vibe rubber mounts.

After flying, clean the engine and the propeller with a cloth (it's the best way to find anomalies)

10 GASOLINE TAP

ONLY IN ENGINES WITH FLOAT CARBURETOR (THOR80 / 200 / 250)





CLOSE WHEN TRANSPORTING THE PARAMOTOR IS LYING DOWN.

11 POREX FILTER

This filter **(fig16)** is included in all our engines. It is placed inside the fuel tank and and works to filter the gasoline to avoid bubbles and humidity in the circuit, and too avoid dirt in the carburetor.


(fig 16)

We recommend to replace it every 100 hours.

If the fuel is not filtered, the Porex filter will get dirty early and there will be difficulty for suctioning the fuel.

You will notice this when it affects the primer, when pressing it, it will take longer to come back to its inicial position.

In consequence the mix of fuel and air will be poor which can lead to seize the engine.

12 INFLATING THE GLIDER WITH ENGINE

The frames are prepared to resist the pressure of the lines on the outer ring when taking off. We advise to use between 30 and 50% of power before the glider is on top of pilot. When the glider is up and stable we can use all the power necessary to take off (this power always depends on atmospheric conditions, weight, glider, power off engine etc.

Another important factor to keep in mind is the inclination of the back of the pilot when tacking off forwards, because if we lean forwards the lines will give longer pressure to the ring.

Also take care when heating up the engine as the lines are not tense they could be aspired by the propeller with the consequence that this could have. It is important that the lines are far away from the frame during the process.

It is also important that the rest of the brake line is not longer than 10cm. when inflating this could be aspired by the propeller and pull our hand backwards.

13 STARTING THE ENGINE WITH THE PARAMOTOR ON THE BACK

FOOT STARTING SYSTEM (F.A.S.)

CHECK THAT THE GAS THROTTLE COMES BACK TO ITS INITIAL POSITION.

A foot strap is used to start PAP machines with manual start only. This system allows you to turn off the engine during flight, and be able to restart using the foot strap fitted on the left foot:

- Place the strap on the left foot ensuring the loop is protruding behind your heel.
- Then look for a support (such as a person or a car) (fig 18). With the engine on the back and without support, it is easy to become unbalanced and fall and this may cause physical injury and damage to the paramotor.
- Once supported, raise the left heel, take the Starter handle and insert it into the loop of the pedal right at the heel (fig. 19).
- Support yourself adequately then move your foot downwards and forwards in a constant kicking motion. Once started release the starter handle from the foot strap and allow it to retract back to its initial position.

During flight, with sufficient altitude, you can practice stopping & restarting the engine (this will be easier to do as there is no balancing required).

















NEVER TURN THE ENGINE TOWARDS PEOPLE ANIMALS OR PARAGLIDERS.

14 STARTING THE ENGINE WITH THE PARAMOTOR ON THE GROUND

CHECK THAT THE GAS THROTTLE COMES BACK TO ITS INITIAL POSITION.

USE THE SECURITY TAPE OF THE PROPELLOR COVERS (SEE 8.11)

Make sure that there is nothing or no person around the area of the propeller during starting and that you have placed the engine on a level surface and a mat in order to avoid contact between the propeller and loose items on the ground. For example stones or sand.

Place your left foot on the curve at the bottom of the frame next to the tank and look for a good support for your right foot so that you do not lose your balance when starting the engine.







NEVER TURN THE ENGINE TOWARDS PEOPLE ANIMALS OR PARAGLIDERS.

Examples of incorrect ways of manipulating the paraengine, during starting and warming up phases.









15 GUARANTEE

1.- The warranty is for a period of 2 years from the time of delivery.

2.- It ensures product conformity according to the use for which it is intended.

3.- Within the warranty period of the first 6 months, we will evaluate without charge, any malfunction of the unit due to manufacture error, either by repairing, or the replacement of damaged parts. If this is not possible, we will then replace the complete unit, provided that the chosen option is feasible, and not economically disproportionate to the replacement of the faulty part, this decision will be decided at our discretion. To qualify for repair, the owner should contact an authorized service dealer, alternatively please contact the factory directly.

FOR MORE INFORMATION ON THE WARRANTY OF POLINI THOR 200 SEE THE ENGINE MANUAL

4.- The guarantee, referred to in paragraph 1, is suspended during repair. The suspension period will start from when the consumer delivers the unit to our dealer, and ends with the delivery of the unit to the customer. Consequently, the warranty is extended for the repair period.

Excluding the responsibility of guarantee:

This warranty is void in cases of : misuse, improper use , tampering, deterioration of the unit due to external agents such as harmful products , chemicals, corrosive obstructive, or due to improper maintenance, lack of cleaning or the use of non-original spare parts for our brand.

Also not covered under this warranty, any failures from misuse, as understood due to the situations described below:

1.- The use of propellers which are not supplied by PAP or repaired by particulars or professionals who are not the manufacturers who supply the propellers to PAP, will mean the cancellation of all guarantee rights. (This norm is due to the vibration produced by propellers which do not correspond to the engine model or unbalanced due to an incorrect reparation, all this can produce imperfection on the engine or frame, which in no way are imperfections from the manufacturer.)

2.- The guarantee does not contemplate the seize-up of the cylinder. (Mechanically this is understood as the engine goes through a quality control at the manufacturer and the tests done at the PAP workshop., it should never seize-up unless there is not enough oil in the mixture or that the mix of air and gasoline is disproportioned, due to dirt in the carburettor, a defective joint or a sparkplug not tightened properly. Resuming, due to the loss of stagnation on the engine blocks, factors which can always be avoided following the recommendations and most important of all revising periodically the engine).

Shipping costs to the factory will be borne by the customer.

We remind you, that as the law says, the paramotor fuel tank need to be empty for transport