End User Manual

For:

Paramotors equipped with the R 80/R 120 and R220 Engine.

Version Edition: V05.01

For information ONLY.
Without commitment to advise modifications

C/ Constitución – Nave Nº 6
28511 Valdilecha
Prov. Madrid – España
Tel. / Fax. + 34 918738835 – Mob. + 34 666454408
E-mail: paramotores.he@terra.es
Web: www.paramotores-he.com
Skype contact: paramotoreshe

Preface

All data and procedures are based on the state of knowledge at the time of publication and the manual has been drawn up to the best of our knowledge, however excluding any liability.

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Prov. Madrid – España
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Introduction

Thank you for choosing the HE Paramotor equipped with the R 80 / R 120 engine type. HE Paramotor has been specialised in the development of PPG (Powered paragliders) since 1998.

The engines and frames, manufactured in our workshops, are studied to meet the specific needs of Paramotor flying.

The paramotors that come out of our workshops benefit from all the attention and the experience of our team. They are exceptional flying machines built for performance and resistance.

HE Team:

The team consists today of five members:

- Hermesindo Lago Liares - CEO Responsible for the Development and the Motor Production.
- Pierre Julien Diet - Sales and Marketing Manager.
- Gulliano Azevedo Valerio - Chief Welder and Chassis Manufacturing Manager.
- Carlos Caizares - Test pilot and competition

Quality Chart and commitment:

Our common passion for paramotoring is the fundamental bond in our team. As dedicated paramotorists, we commit ourselves to develop machines always more performant and resistant, work to improve pilot's safety and security, listen and integrate our customer's pertinent remarks in order to develop this sport in a durable way.

You should also comply with all the flying rules in your country.

Warning: Before starting with installation and operation of the engine, observe the installation instructions and Operator's manual and follow all instructions.

Warning: This paramotor performs better as comparable products.

Repeating symbols

Warning: Identifies an instruction, which if not allowed may cause injury or endanger the life of the pilot, mechanic or third party.

Attention: Denotes an instruction which if not followed may severely damage the engine. Non-compliance might lead under certain conditions to health hazards.

Note: information useful for better execution and understanding of instructions.

⇨ Denotes a working operation

✓ Denotes a checking operation

Table of content

1. Your paramotor pack, your tool kit and gear.

a. Your tool kit

- Torque wrench;
- Spark plug key;
- Spare spark plugs;
- Cable ties with stainless steel dents;
- Spare lock nuts;
- A set of screw drivers;
- A set of Allen keys;
- A set of keys;
- Rope;
- A knife;
- A lighter;
- A jerry can with filtering system;
- A manual or electric pump;
- Cans of 100% synthetic oil for two stroke engine;
- Heavy protection mat to put on the ground.

b. Your gear

- A pole with a wing sock;
- A pair of free flying shoes;
- A flying suit;
- Winter and summer gloves;
- Sun glasses with safety chord;
- A certified flying helmet with or without communication system;
- An altimeter, a variometer, a compass, a map of your flying area;
- Your log book;
- A first aid kit;
- Survival rations;
- Aluminium blanket;
- Mobile phone with charged batteries;
- Credit cards and / or money ;
- Identification cards with contact numbers and vital information.

- The paramotor carton contains the following parts:

Qty.	Part-no	Description	Application
1		HE Paramotor with Motor R 80 / or R 120	
1		Workshop, Installation Instructions and Operator's Manual	
1		Paramotor end user manual	
1		Engine identity card	-
1		A propeller with mounting equipment	
1		Propeller covers	
2		Protection frame	
1		Mounting sets: 4 bolts, 4 screws and 1 plate	
1		HE stickers	
		Subject to change	

Thank you for disposing of your paramotor packaging in order to respect the environment and your neighbours.

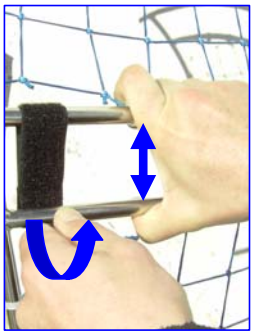
2. Frame mounting procedure

The first thing that you should do after unpacking your paramotor, is to mount your frame.

The HE chassis is made using a stainless steel T.I.G. welded with argon gas. Its simplicity should not let you forget its highly technical level of construction. The ratio between its weight and strength properties represent ideal protection for the pilot in case there is an impact because it property warps and smoothly absorbs the impacts. Its strength when inflating the wing is another advantage of this chassis, especially when there is little wind and the integrity of the chassis and the propeller could be compromised.
The chassis also helps to protect the pilot from the propeller.

That is why you should always mount your frame before starting the engine!

The netting is an important part of this protection disposal because it can prevent medium size objects going into your propeller (and therefore damaging or breaking it). But mostly, it is there to prevent any exposure of the pilot with the propeller.



That is why it is important for the netting to remain tensed and well maintained – make sure to have spare cable ties in your tool kit.

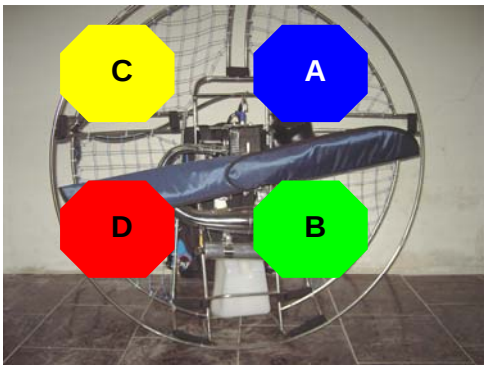
HE frames come in 1, 2, 3 or 5 parts

Tightening the Velcros: use one hand to press firmly the parts together and the other hand to secure the Velcros into place.

a. Two part frames

Place the top part of the frame onto the white male connectors of the bottom part of the frame. Then from left to right or right to left (to make sure that you don't forget anything), tighten the Velcros. Whilst tightening the Velcro in the middle, make sure that you put the pull start system in place.

b. Five part frame



- First of all assemble parts A and B together. Then assemble parts C and D. Velcros should be firmly tightened.
- Make sure that the throttle system is placed on the harness's side of the paramotor.
- Then take the A and B side to place it onto the top male connector of the body (Nº1). This helps to maintain parts A and B in an upwards position to facilitate the mounting.
- Connect C and D side to the A and B side.

- Then gently lift the cage (A, B, C and D) from the top male connector of the body (Nº1) to put it into position onto the top male connectors of the body (Nº1 and Nº2).
- Then turn around to the other side of you machine and proceed to connect the lower right and left parts of the cage to the main body.

- Starting from the lower right and left parts of the frame proceed to tighten the Velcros in a bottom to top order.
- Then turn around to the harness's side of your paramotor to secure the Velcro above the harness.
- Don't forget to put the pull start chord at this moment.
- Securely tightened the two remaining Velcros.

c. Three part frame

Start the previous mounting procedure from step two knowing that parts A and B should in the case of a three part frame be considered as the Right side (R) and that parts C and D should be considered as the Left side (L).

Your paramotor is now assembled. You may now check that your paramotor is properly mounted and fit to fly:

- Check that all the Velcros are tightened in the right place;
- Check the tension of the netting and also repair any eventual holes;
- Check that the prop is well clear from the cage and that the cage has not been damaged or bent.

If you spot a problem, fix it immediately before taking off. If you can't fix it on the spot, the wisest solution would be to postpone your flight until you have properly solved the problem.

3. Propeller Mounting procedure

Use the four bolts, four lock nuts and front plate provided. If you are going to mount and dismount your propeller often, then you should consider changing your lock nuts after every five use.

The propeller included in your paramotor pack is a double blade wooden propeller. Torque 1 kgm (10 Nm).
Always tight the propeller bolts following an "X" shape order.

After applying torque, it is very important to check the propeller TRACKING. Tracking is the difference between the tips of the propeller on its path. If this occurs, it means that the propeller bolts may have been tightened asymmetrically. To track the propeller properly, you have to:

- 1st: Use a long device (a shaft or a switch) and support it on the down part of the chassis, then turn the propeller and check that all the planes pass through by the same point.
- 2nd: in case they do not pass or touch the device at the same distance and on the same shaft, you will have 2 alternatives to work with.

You should prioritize the first one:

- Dismantle it again and turn % or % over the propeller support.
- Tighten a little more the side that is further away from this point of reference. Tracking tolerance 1 mm.

The reduction of your engine is 1/4, meaning that the small gear makes four turns whilst your propeller makes one turn. Also the engines designed by HE run at a set RPM, that is why only the propellers referenced by HE Paramotores should be mounted on your paramotor. During the tracking procedure, don't be surprised if the propeller is a bit hard to turn. This is due to the retention joints. When cold, the retention joints tend to slow down the movement of the propeller.

If you are unsure about a propeller that you are about to mount or if you want to reference your own propeller, please contact your local dealer or directly speak to us.

A carbon fibre propeller is optional. It dismantles into two parts and therefore is particularly interesting for those who travel often. It is quite resistant to impacts produced by small stones, pebbles, and sand. Also, it will give you a couple of kilos more of thrust and reduce considerably the noise made by your paramotor.

This is how it should be coupled:
The same torque pressure is required then the one applied on a wooden propeller.

■ **Attention:** When the Paramotor is brand-new, it is required to tighten the propeller again after a few hours of flight in order to avoid the screws unscrewing due to the centrifugal force. Every time you dismantle and assemble a propeller it is required to tighten screw the propeller screws after the next hour of flight.

Warning: if you do not have a torque wrench, just tighten it only a little bit more than the maximum pressure applied by the weight of your hand. Otherwise, the centre of the propeller against the propeller thrust hub could be damaged and cause rotation unbalances, introducing vibrations that could even damage the chassis.

Your propeller is now mounted; make sure that you protect it with the prop covers provided in your pack.

4. Balance of the paramotor and harness adjustment

Now that your paramotor has been properly assembled, you can now proceed to the balance adjustment test.

The low hang points with weigh shift system consist of two parallel arms that join the harness with the chassis. It includes two karabiners to attach the glider. It works as a lever balance between the pilot and the weight of the Paramotor. That is why it is so important to find the right static balance to your weight. You can do this by hanging yourself with the Paramotor out of a gantry (like a swing).

You may have realised that one or both arms of your low hang points with weigh shift system is or are curved. This is purposely done to integrate an Anti Torque System (IAT System). This system has been developed to counter act on the

torque (one of the negative forces developed by a rotating propeller). The objective is for a pilot to fly in a straight line whilst in level flight.

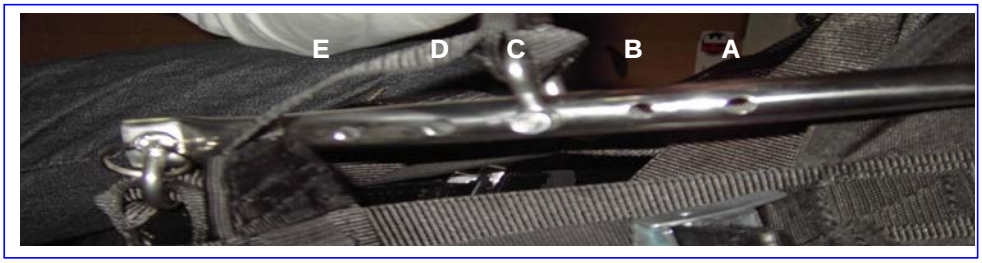
This means that the pilot may experience a bit of torque whilst taking off and a bit of counter torque whilst landing (this also depends on the weight of the pilot, his wings and the adjustment of his harness). Of course the pilot should have learnt to deal with those effects during his training.

The objective of the gantry exercise is for the pilot to feel comfortable in his harness (adjust what needs adjusting) and insure that he will be properly balanced in the air.

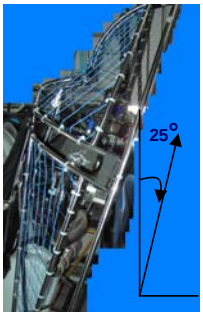
a. Balance adjustment

This procedure is better performed, if you are a pilot under instruction or if you are new to the paramotoring world, with the help of a qualified instructor or an experienced friend.

The first step is to adjust the balance system to your weight. Move the anchor points in parallel: lighter pilots backwards (A), and heavier pilots forwards (E). These 5 options (A, B, C, D, or E) will let you find the best tilting angle for the propeller to the ground, approximately 25° backwards to a vertical one, but it should never be tilted forwards. At this point do not secure the shackles with the safety rings.



HE: A > 50 kg; B > 60 kg; C > 70 kg; D > 85 kg; E > 95 kg and more. This previous information is approximately correct, the tilt angle also changes according amount of fuel carried in the tank, the extra weight of the gear of the pilot...



The second step, hang your paramotor out of a gantry (like a swing). Make sure that the gantry you us is a proper one: it should be strong enough to hold the paramotor with its pilot, well equilibrated and anchored to the ground. It should also have two ropes with loops to attach the karabiners at both ends. When the paramotor is attached, the ropes should come down at a similar angle to the lines of your paraglider. The paramotor should be hanging straight and the pivot axis of the arms should be parallel to the floor surface. Both ropes should be of the same length. Make sure that the harness is not hanging too high (you wouldn't

be able to get in easily) nor too low (you might damage both harness and paramotor on the floor).

The third step, take position in the harness and check that the tilting angle of the propeller regarding the ground should be of approximately 25° backwards to a vertical one. If so, you have correctly balanced your paramotor. You can now put the security rings in place. If not, come back to step 1 and 2 again.

b. Harness adjustment

We equip our paramotors with the prestigious Nirvana harness, worldwide pioneer on flying harnesses construction; your harness has been specially designed for HE Paramotors. Cordura is the material used, certainly the best fabric used for mountain and sports materials. Three different sizes (S, M and L) that include:

- 3 automatic clips, one ventral and two for the legs;
- External extension for the harness seat;
- Separate legs;
- Elastic straps on the shoulder taps;
- High-quality pulleys for the foot accelerator;
- Parachute pre-installation system;
- 2 side neoprene pockets;
- Austri Alpin automatic steel karabiners.

This harness is specially design to provide the best comfort for long-lasting flights.

Take this opportunity to familiarise yourself with your harness and adjust all the straps that can be adjusted. This is the moment to feel how easy it is to access both side pockets. For take off and landing convenience, some of the straps can be tightened or loosened. Check that the back belt of your harness is properly tightened around the body of your frame.

Make sure to respect a strict procedure to secure and clip the different buckles of the harness (Down to Up or Up to down). And stick to that procedure each time you position yourself in the harness.

c. Speed bar adjustment

The Speed bar is a simple device whose objective is to change the angel of attack of the paraglider to make it go faster. It is attached to the risers and is activated

when the pilot pushes the Speed bar with is feet. The more the pilot pushes the less the angle of attack is. Of course as there is a critical point not to pass for the angle of attack of your wing, the speed bar should be adjusted not to over pass this point. The action of pushing your speed bar is made easier by a couple of pulleys on both sides of the system.

When you are not using your speed bar, it should be stowed under your harness using the two elastic bands provided. In any case you should always properly stow our speed bar before take-off and landing.

Take the opportunity of the balance test to try to stow and unstow your speed bar from the bottom of your harness.

The adjustment of your speed bar system should be done for uncertified pilots under the supervision of a competent instructor.

Your paramotor is now almost ready for flying.

d. Safety Parachute Device

The Safety Parachute Device is the air bag of the paramotor. In the event of a loss of control of your paramotor, it gives you an extra chance to save the day. So every pilot should consider flying with an SPD. Of course, as the deployment of the SPD is not automatic and requires a bit of practise, it is most recommendable that you follow a course on how to deploy, fold and maintain a safety parachute.

The SPD can either be placed to the front of the pilot, to the side of the pilot or behind his head.

We will describe, here after, the steps to install your SPD in the emplacement reserved for this purpose behind the pilot's head.

Simple, comfortable, and easy to use thanks to its location that properly distributes the weight of the parachute over the structure and provides the best inertia lever for fast and/or delicate releases.
The HE SPD container is included with the Paramotor and you only need to install your safety parachute (it is required that the main riser ends in an H form). In order to do this, you should attach the parachute handle to your inside container on its front side, and with the help of two separate lines, pack the parachute on its container as specified below:
1. Place the safety parachute on its container with the flaps spread out (be sure to choose the right position according to the rear straps that will attach the safety parachute to the chassis subsequently).

2. First insert the side flaps, then the lower flap (where the white cord loops are located), and finally the top flap. When operating, the parachute handle should remain between the two loops,
3. With the help of two separate lines insert the cord loops through the holes of the lower and top flaps and use both curved pins to secure the flaps under the release handle panel.
4. Once the safety parachute is installed inside the container, close the front side of the safety parachute handles using the Velcro. Press the "package" where necessary in order to give it an aesthetic shape. Then, attach it to your Paramotor chassis following the next chapter instructions.
5. We recommend simulating a partial safety parachute release in order to be sure the installation of the safety parachute is correct on both container and chassis.
6. Repeat these steps for a definitive installation, and...
7. We wish you'll never have to use this system on your HE!!!

Warning: it is advised to seek to help of a qualified and/or an experienced person to install your SPD. THIS COULD BE YOUR INSTRUCTOR, LOCAL DEALER, PILOT FRIEND, ETC. AS LONG AS HE/SHE IS FAMILIAR WITH the installation of safety parachutes.

Your paramotor is now completely ready for flying.

5. Safe ground handling advice and recommendations

If you are new to Paramotoring, it is extremely important to get used to use the Paramotor on the ground in order to be safe and avoid accidents. Our experience as pilots, and by comments provided by our beginners and advanced clients, tells us to be cautious with the Paramotor from the very moment you buy it until you are ready to fly with it. Therefore, please read carefully the following lines.

Having acquired an HE Paramotor, you should take a course by an authorized professional flying instructor qualified by your local air federation or similar organization. They will be responsible for your training and providing you with all the safety tips and standard procedures. This is, without any doubt, the most reasonable option...

If after acquiring your HE Paramotor from your local dealer you have chosen not to take a paramotor course because:

- You count on the help of a good experienced Paramotor pilot friend and on your own expertise as a free-flight pilot. This would be enough to acquire the necessary level to fly and enjoy the flight with Safety...
- You have decided to acquire your experience and technique by yourself because you are a very experienced free-flight pilot

If these latter two are your options, you must be warned that you are not making the right decision.

Warning: Most Paramotor accidents take place while operating on the ground.

When ever possible, you should drive your paramotor as close to the take-off site as possible.
We now consider that your paramotor is properly mounted with the frame, SPD and Speed bar System.

6. Fuelling up procedure.

Always fuel up your paramotor according to your flight plan. If you are going to do an half an hour flight, there is no need to fill your tank to the brim.
Always do the oil and fuel mixture before going to the air field. Never bring unmixed fuel to the airfield. (In the event you do, make sure that it is stored in a distinctive tank and always use the same distinction marks.) Using unmixed fuel will surely damage your paramotor engine.

Always respect the proportions of fuel and oil in the mixture (see motor manual).
Always use the type of oil recommended by the engine manufacture and when ever possible, use the same brand and reference (see motor manual).
Always use clean and uncontaminated fuel. Make sure that your tank is clean and when ever possible use filters to prevent any residues or dirt going into the fuel system of your paramotor.

You should bring your paramotor away from your car and put it on a clean and flat surface (we recommend a thick and heavy mat so it is not sucked by the propeller). Bring the jerry can containing the fuel/oil mixture as close as possible to the opening of the paramotor's fuel tank. Unscrew the lip of the paramotor's fuel tank and place it cautiously upside down on a clean and stable surface. This caution is to prevent dust or dirt entering the fuel system.

Then a mobile manual or electric pump and placed the out take inside your paramotor tank. Then open your jerry can making sure that no incandescent, inflammable and /or toxic substance is around. Place the intake part of the pump into the jerry can and start pumping. Make sure not to splatter the fuel/oil mixture onto the harness or parts of your paramotor.

Warning: Beware of external disturbance that may perturb you during this delicate procedure. Your paramotor is now properly fuelled up. You now have to carry it close to your wing. It is preferable to previously lay out your wing on the take off site.

On a breezy day, be careful not to lay out your paraglider into wind. It may be blown away…

7. Handling and carrying techniques

As your paramotor now weighs with a full tank around 33 kgs, if your wing is far away the best way to carry it is by putting it on your back. It is important to carry your paramotor with caution in order to protect your back and also to protect your paramotor.

To carry your paramotor to the launch sight, you don't have to buckle everything up. Just kneel on the floor and take place into the harness. Tighten your straps well. Then bend forward and put both hands on the floor for extra stability. Bring one knee up and use that leg to stand up. Both arms should be free for extra stability.

If you are lucky to have the help of a friend, this is how you should carry your paramotor:

Make sure not to step on the throttle cable when picking your paramotor off the ground.
To keep your harness tidy and clean it is better to keep the seat folded.

You can now walk towards your wing. Use the same technique but reversely to gently position your paramotor onto a flat and clean surface. Be particularly careful that no volatile objects could get caught into the propeller during the engine warm up procedure. It would damage your propeller and also it may be propelled onto an onlooker and cause injury.

The propeller during the engine warm up procedure should never be facing your wing, onlookers. Be particularly careful with the axis in line with you propeller since any object sucked in the propeller would be batted along this axis.

To position and orientate your paramotor, this is how you should carry it:

Make sure not to step on the throttle cable when picking your paramotor off the ground.
To keep your harness tidy and clean it is better to keep the seat folded.

8. Pre flight check

According to our experience as manufacturers since 1998, we can state that most incidents, failures, mistakes, etc., on a Paramotor could be easily avoided, or at least, minimized if the pilot would regularly go through a pre-flight check.

In fact, all other air disciplines go through a COMPULSORY pre-flight check by means of a check-list. This works as a previous procedure against failures and, most important, to avoid accidents. Therefore, we recommend apart from a pre-flight check, also a post flight check of the Paramotor in general, engine, and all other parts.

Now that your unit is well positioned for the warming up of your engine, before starting it, this is the ideal time to do your pre-flight check:

Do a physical inspection of all the following parts:

a. Harness check:

- Karabiners should be in working order and well positioned;
- Harness to frame connections: back belt tightened and locked, look for the stitches at the top connection of your harness, connection of harness and weight shift system should be tight and secured with rings;
- Pockets should be closed and filled with the necessary (energy bars, couple of tools and spares, first aid kit…);
- Check the bottom of your harness for any damage;
- Check all stitches, straps and buckles are in working order;
- Check that your seat can move properly to pick you up upon take off;
- Check your SPD;
- Check your speed bar system: it should be well stowed under your harness, and ready to be coupled with your wing.

b. Frame check:

- Check pivot arms: maillons should be well tightened and secured;
- Arms should be well tightened to pivot point in order not to move horizontally;
- Check that the frame has been well mounted and that the welds are not damaged:
- Check that your frame has not been bent;
- Check that your netting is intact and well tensed.

c. Prop check:

- Check that your propeller is not damaged and correctly mounted (leading edges of your prop should be penetrating the air before the trailing edges);

- Prop to frame check: distance between prop tips and frame should be equi-distant in all parts of the frame and run parallel;
- Take the prop as shown on the picture whilst standing firmly on the frame and gently lift up the prop. This is to test the bearings in the reduction casing and also to check that the engine is properly mounted and firmly fixt onto the frame.

d. Engine check:

- Air filter should be secured to the frame and well connected to the carb;
- Carb settings (see engine manual- carb should be kept clean);
- Ignition and spark system – check that spark plug is properly put on the spark, that the cable leading to the coil is well connected;
- Exhaust system check – check that all the safety cables are in place to prevent things going into the prop. Place on foot on the lower frame and take the exhaust system with both hands. Then shake gently the exhaust system to see if it is well fixed.

e. Fuel system check:

- Follow the fuel line to see if it not strangled at any point;
- Check that the filter is clean;
- Check that the tubing is well connected and tightly secured;
- Make sure that the venting valve is operating.

f. General check:

- Check that there are no loose objects nearby or that any article of clothing can get sucked into the propeller, and that the Paramotor is properly placed on a mat (we recommend a thick and heavy mat so it is not sucked by the propeller) this will keep stones, grass, and/or ground dirt from the propeller;
- Check, as told by your instructor, that your environment is adequate for taking off (weather conditions, take off area);
- Piloting position: Harness, pockets, flying accessories (variometer, GPS,

wind line, radio, antennas, map-holder, mirrors, etc.), throttle, paraglider accelerator, carabineers, S.P.D. system, paraglider steering lines, and all fastening parts.

- Finally check whether you are fit to fly or not. Make sure that you have all your kit at disposal (helmet, gloves, glasses, warm clothing...)

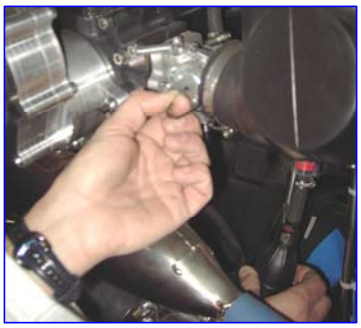
Fill in your log book and note down any intervention you might have done on your paramotor. If you have any doubt, do not go flying and check with your instructor, local dealer, and/or manufacturer.

9. Starting your engine and warm up procedure.

Starting the engine and the warm up procedure is also part of the pre-flight check. You will find that in the winter, as your engine will cool down more rapidly, you may have to repeat the priming and warm up procedure if you do not take off rapidly after having concluded the procedure.

a. Priming procedure

Priming is necessary to get the fuel mixture up to the carburettor. Over priming will surely flood your engine so please do not be over zealous.



Take the priming pump in on hand and give it one or two good squeezes. Then with your other hand, gently press the carburettor's diaphragm decompressor using the tip of the black cable tie provided.

Squeeze the priming pump gently one more time and press the carburettor's diaphragm decompressor again. The priming procedure is over.

If your paramotor is equipped with a Walbro Carburettor WG-8 -1 or WG 24 now is the time to us the choke.

b. Starting your engine

Now you should be standing on the harness's side of your paramotor.

From phase 4.2. and after, please handle the Paramotor with maximum caution. Your own safety depends on that!!!

The Paramotor becomes unstable on the ground due to its inertia, vibrations and movement, especially when you press the throttle. Therefore, it is ESSENTIAL to place the Paramotor on a flat surface so it is stable and steady. Then, you should securely hold the Paramotor during the start-up, acceleration, and warming-up phases. This will help you avoid the Paramotor falling over or produce any sudden movements and risk of accidents

Always make sure that the speed control device on the throttle is completely unlocked. Then take and put your left hand in the throttle handle. Check that the throttle is not sticking by squeezing it several times. Put your left foot on the bottom of the frame and place your right foot firmly so you will nave a strong support in order to avoid falling down or unbalancing when you pull the start rope.

Your left arm holding the throttle should be positioned across the top of the harness or on the SPD whilst you grab hold of the pull start handle with your right hand. Do not leave the throttle hanging from the net, on its original location, or on the ground.

Your all body should be exercising a gentle pressure against the paramotor. Gently pull down the start chord till you find a resistance point. This point is called the minimum point of compression. Starting pulling from that point helps to start the engine more easily and also will give a longer life your pull start system.

Before starting up the Paramotor, you should look around for any incoming person and warn everybody around by shooting load and clearly: Clear prop!

Do not put your hands inside the Paramotor when the engine is running and the propeller is not turning!

Low cubic capacity motors need a small amount of throttle to start-up. So the R80 hardly needs any acceleration when the R120 requires a bit of throttle. Do not exceed doing this, since the Paramotor could get out of balance and fall over you if you nave not held it tight

Once the minimum compression point found, pull firmly the pull start chord downwards. Start again this procedure from step 1 till you fill that the engine is running. Hold the chassis against the ground when pulling the starting rope.

If the choke is on, the engine will start but die out almost immediately. Wait for the prop to stop turning and put the choke on his off position. Start procedure from step 1.

c. The warm up

Your engine should now be running on Tick over.

If your propeller is turning it means that either your clutch is badly adjusted or broken or either that the idle is set to high.

Set your idle or tick over by firstly switching off your engine. With a small screw driver, turn the idle screw till tick over is reached (For tick over setting turn to page of you engine manual). Repeat the start procedure again.

Have your engine running on tick over and below 4000 RPM during 5 minutes. You can gently accelerate your engine to check engine response, but there is no point revving your engine at full RPM. You can only damage your propeller, yourself or any incoming person by doing so.

WARNING: At full revs, be aware that a propeller turns at 700 km/h becoming a giant blade/hammer!

Always remain close to your paramotor during the warm up procedure, do not let people approach your paramotor whilst running and always keep a finger very close to the kill switch (if the kill switch is not operating properly, you can kill your engine by simply taking your spark plug off).

Your engine is now warmed up and ready for flying. Do not wait too long to get yourself ready for take off or you may have to repeat the warm up procedure again. You should now stop the engine to check that the stop switch is functioning.

I have flooded my engine, fuel mixture is dripping off the carburettor. How do I drain my engine to get it ready to start again?

First make sure that all the fuel mixture is emptied from the air box and put it back in place. If there is a hole at the bottom of your air box then it should empty itself without your intervention.

Using your spark plug key, remove your spark plug. Pull three to five times the start chord to drain the engine. You can put your thumb on the spark plug hole to prevent fuel mixture splattering your engine. Then, after having dried and cleaned your spark plug, put it back on again (if you are unsure, it is better to use a new spark plug. Make sure in this case that the spark spacing is correct – see engine manual). Put the spark plug cap on again and immediately, following the start procedure try to start your engine. It should start on the first pull;

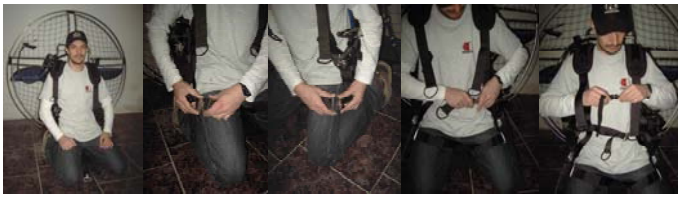
10. Strapping procedure, last check and pre-flight power test.

a. Last check

Prepare the harness by opening the seat and making the straps available for you. Put on your helmet and safely buckle it to your head size. Put on your gloves and check that your flying suit is properly zipped and tied. Make sure that you shoes laces are tied up and that no obstacle will make you trip during the take off. Never ware scarves or loose clothing that could get sucked by the propeller!

b. Strapping procedure

Like when you are about to carry you Paramotor, kneel down turning your back to your Paramotor. Get inside your harness and start strapping yourself using a bottom up procedure. First put your leg straps, then the belly straps and then the chess strap.



Proceed to stand up as shown in the carrying procedure. Be careful not to step on your throttle system whilst standing up.

Now that you are standing, adjust the shoulders straps and place correctly the seat.

c. Engine start and full power test

Take your throttle in your right hand, putting and tightening the strap around your hand. With your left hand, reach the pull start chord.

Step forward with your right foot and keep your left foot firmly camped on the ground.

Then proceed to search for the minimum compression point. Once you have found it, using both hands, firmly pull the chord away from you making sure that your upper body remains straight.

If your paramotor has been properly warmed up it should start the first time. If there is a long interval since you turned the engine off, we recommend following the cold start instructions.

Then lean forward as shown on the picture and proceed to steadily rev up your engine till you reach full power. If full power is obtained (this information is obtained by looking at your tiny Tach instrument - see engine manual) then you are ready to go!

If full power is not obtained, you are not ready to go. Find out why and fix the problem.

If you have the slightest doubt before taking off, then there is no doubt, you should stop to think it over to understand the problem and find a solution. If no solution is found then the wisest thing to do is to put off your flight to another day. Always solve the problem before going out to fly.

It is better to be on the ground wishing you where flying, then be flying wishing you would be on the ground.

11. Recommendation and advice concerning the take off, flying and landing procedures

During these phases of the flight, please follow your instructor's advice and teachings and respect all the rules of the visual flying. If you do not know the VFR rules then seek training with the BMAA or BHPA and/or read appropriate literature.

Before take off, check one last time that the leg straps of your harness are fastened. If you are a newly trained pilot choose easy wind conditions and sites not too high above the sea level.

- Remember that when you fly you do it under your own and only responsibility;
- Be aware of your flying ability and your knowledge of the weather;
- Do not fly over air restricted or forbidden areas (airports, cities, etc.) unless your countries laws allow it;
- Fly under appropriate weather conditions for paragliding and paramotoring;
- If you are already a paragliding pilot, please consider a small period of adaptation to the Paramotor, since the thrust slightly modifies the reactions of the wing and, therefore, your flying sensations and also the take off procedure is completely different. Seek the advice and/or training of a paramotor instructor;
- The extra weight of the Paramotor at your back will also make you feel 'different' when taking off and landing;
- If you are learning to fly a Paramotor from scratch and you are not familiar

with free flying, you will nevertheless be able to feel the best flying sensations thanks to the low hang points with weight shift system. This system will also help you on your safely learning of free flight;

- Do NOT fly when tired or under the influence of alcohol, drugs, and/or medicines.
- Please check with your flight instructor, local dealer, and/or local training school. If you are already a paragliding pilot you should feel almost the same sensations as in free-flight, especially in thermal conditions...
- However, we DO NOT recommend learning without an instructor, especially if you do not nave any previous experience. Remember that the Paramotor engine could stop at any time you should ALWAYS have an alterative landing and a safe glide to a landing spot. If you are flying low, do it always into the wind direction.
- On your first flights, we you stop the engine before landing so the propeller is not working when you touch the ground, and thus avoiding breaking it.
- Remember you are carrying a weight of almost 30 kg on your back. Please take it into account when you decide to take off and to land.
- Do not let the circumstances to take you by surprise
- MOST OF THE DANGER Coming FROM THE PARAMOTOR OCCURS ON THE GROUND
- WATCH OUT ALL YOUR surroundings and DO NOT LET ANYBODY HELP YOU, UNLESS IT is ANOTHER Experienced PARAMOTOR Pilot
- If you want to re-start during flight, please be sure you are high enough and that you have a landing spot within gliding distance. Release your left steering line and you will notice that starting up is easier when flying since there is no balancing;
- After a couple of flights, flying with a paramotor might be perceived as being easy. This perception may induce you to lower your vigilance. Keep in mind that each flight is a new experience. If you start to feel over confident remember to come back to the basics. Don't hesitate to read this manual and our instructor's course every now and then.

After a few hours flying, (depending on your pilot expertise and skills), you will feel happy and comfortable aboard your HE Paramotor.

Thank you for reading and following these recommendations.

12. Back on the ground

You are now safely back on the ground.

In order not to be dragged on the ground by your wing, immediately disconnect your wing from your carabineers and place it out of wind. Do not touch your exhaust system or put it in contact with your wing. The temperature of the metal after flight could cause damage or injury.

If you are not far away from your car or stowing place carry your paramotor on your back. If you are too far away, gently place your paramotor to the ground in order not to damage your back. See pictures.

Un-strap yourself and come out of your harness. Put your throttle in the netting so that it cannot be stepped on. Also fold back your seat to protect it from dirt. Seek the assistance of a friend to come and pick you up or bring your car as close as possible to your landing site.

13. Post flight check and stowing

Your paramotor is now on its protection mat. After your flight, clean your engine and propeller for possible oil, dust, etc. with a clean cloth.

a. Post flight check

This is the best way of finding possible faults and the ideal time to do your post flight check. Follow the same procedure as in the pre flight check. If you spot a problem, fix it immediately or note it down in your log book. Besides, you are doing your post flight check more relaxed than when you decide to fly.

Fill in your log book and note any modification you have done to your paramotor.

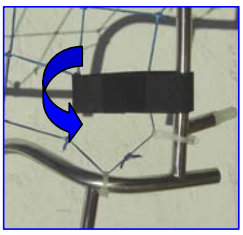
b. Dismantling procedure

Same as frame mounting procedure but in reverse order. Start undoing the Velcros from bottom to top, then disconnect the frame. For disconnecting the lower frame parts, the easiest technique is to use your eel as shown on the picture.

Stow the frame parts in its container bag making sure not to damage the netting. Put the prop covers back on.

It is very important whilst transporting your paramotor in your car to secure it and stow it properly so that it does not get damaged in the transport. Prefer a tying belt to a bungee.

Make sure that oil residues do not stain your wing or your car during the transport. Stow your paramotor in its container bag.



Always tie your velcros around the netting to keep them from hanging around and getting damaged.

For long term stowing and winter maintenance, turn to your engine manual

14. WARRANTY

This following section is related and attached to the motor warranty section in your motor manual. Please read it carefully.

To fill in your warranty card, please turn the warranty section in your engine manual.

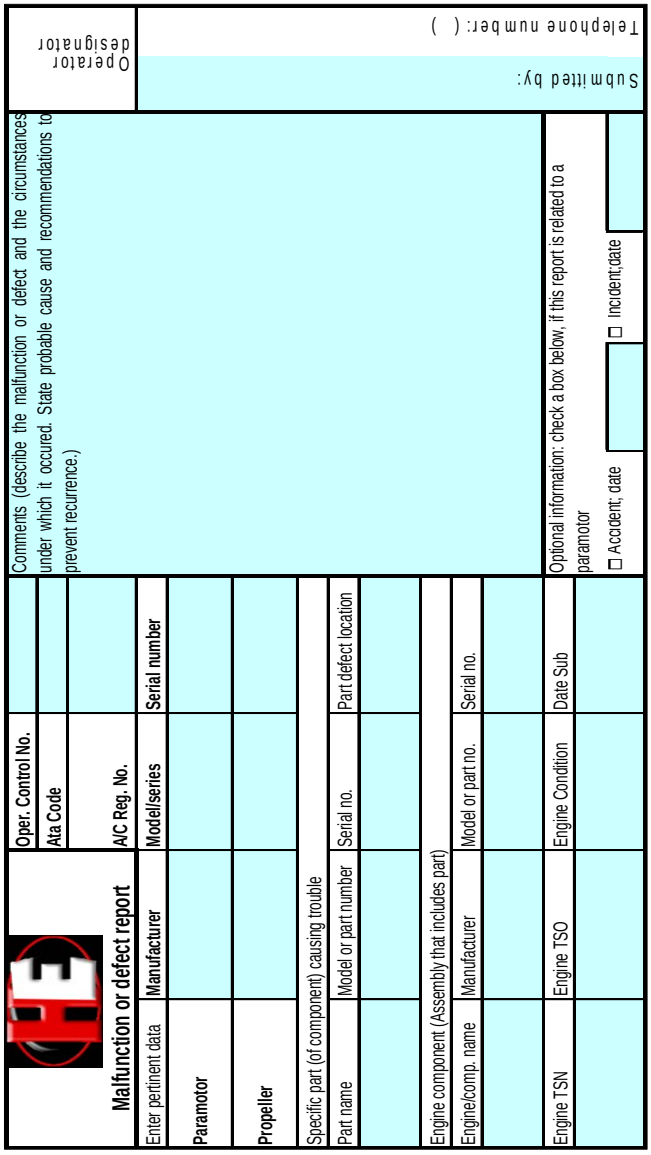
A HE Paramotor includes a 1 (one) year warranty in chassis welding and engine (manufacturing and/or assembly faults). Seizing of the engine not included in warranty. In the event of a problem, please contact your dealer and then please send the faulty parts to factory. When requested by the manufacturer you will have to include pictures of the faulty parts of the engine and/or Paramotor. For more information on your engine guaranty please read the guaranty section in your engine manual.

NOTE: The owner or client will be liable for the courier and/or mail expenses.

ⓘ Warning: Modifications on engine or equipment are not allowed.

15. Reporting

In case of a malfunction or a defect the form below should be filled out and should be sent to the responsible HE Paramotor authorized distributor.



Malfunction or defect report

			Oper. Control No.						
			Ata Code						
			A/C Reg. No.	Serial number					
Enter pertinent data	Manufacturer		Model/series						
Paramotor									
Propeller									
Specific part (of component) causing trouble									
Part name	Model or part number		Serial no.		Part defect location				
Engine component (Assembly that includes part)									
Engine/comp. name	Manufacturer		Model or part no.		Serial no.				
Engine TSN	Engine TSO		Engine Condition		Date Sub				

Comments (describe the malfunction or defect and the circumstances under which it occured. State probable cause and recommendations to prevent recurrence.)

Optional information: check a box below, if this report is related to a paramotor

☐ Accident; date ☐ Incident;date

Submitted by:

Telephone number: ( )

Operator designator

Notes: