

SAFARI125 MOTOR 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.

STARTING OF THE ENGINE

If the gasoline circuit is empty we will notice this right away because the knob (Fig. 13) offers little resistance and therefore we will have to pump up the gasoline until the knob hardens. If we pay attention we can hear the gasoline reach the carburetor and as so the gasoline circuit filled.

STARTING IN COLD WITH THE GASOLINE CIRCUIT FULL:

REMENBER USE THE SECURITY TAPE TO LOCK THE PROPELLER

Once checked that it is full we press the Primer of the carburetor (Fig. 14) and while we are pressing this we will act on the knob (Fig. 13) by pressing this just a few millimeters and as a result the flow of enough necessary fuel will fill the carburetor. We can also see the small gasoline filter which is under the carburetor being filled.

Give full throttle during the first pull of the starter rope. Like this the engine will start immediately without unnecessary drowning.

If we priming the engine too much, this will drown the engine and it will have difficulties too start and having to give several pulls on the starter rope. The same applies if we stay short. As a visual reference to know is when the small petrol filter is full. With practice we will easily know the fair amount (just a few millimeters of pressure on the knob (fig. 13) with the pear of the carburetor (fig. 14) pressed).

HOT START:

No action on the supply of fuel is needed.
It is not necessary to use the throttle of the starter; otherwise you will drown the propulsion hopelessly.


(fig. 13)


(fig. 14)

ATTENTION: before you start, verify that the gas cable is not blocked. To verify this a few gas actions are sufficient.

When starting and accelerating it is very important not letting the engine get too many RPM as it can push you too the sides. Do not forget to use the security tape to block the propeller when the engine has clutch.

Remenber use the security tape to lock the propeller.

NEVER START WITHOUT THE PROPELLER.

During the first seconds the engine can be a bit rich of gasoline while on low revs if you prime in excess.

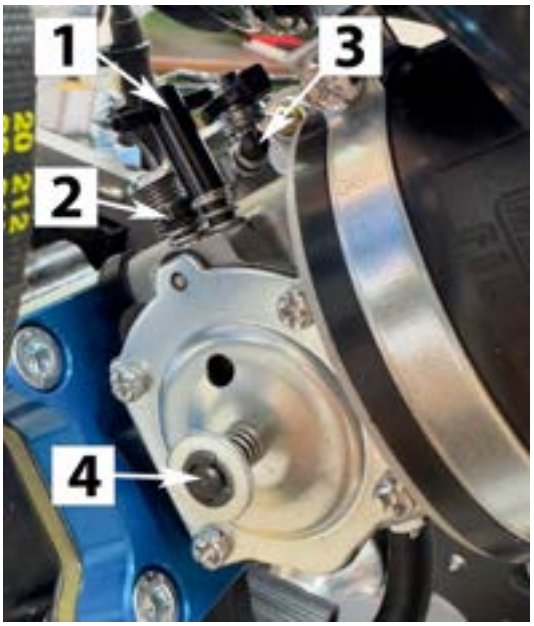
1 **Regulation screw low RPM;** Adjustment by default is 47 minutes out from fully screwed in.

2 **Regulation screw high RPM;** Adjustment by default is 45 minutes out from fully screwed in.

3 **Idle screw**; It adjusts the idling regime opening choker plate at is minimum. Adjust it while engine is hot and until it reaches 2100 – 2200 RPM.

THIS IS THE FACTORY SETTING. UNDER NO CIRCUMSTANCES SHOULD YOU MODIFY THIS SETTING, TO OPEN IT OR TO CLOSE IT, AS THE RISK IS HIGH OF DANGEROUSLY BORING A HOLE IN THE PISTON.

4 **Button to prime the carburetor (fig 17).**



RUNNING IN OF THE ENGINE

Each client receives his paraengine with approx. 15-20 min. Of having been run in on the ground, where each unit is regulated and carbureted at sea level. Also checked is that the propeller is perfectly balanced, as well as all the components of the engine (clutch, redactor, etc.)

Before running in we recommend that it should be warmed up for 15 minutes. Above 5000 RPM. Before you begin to fly with it (do not leave the engine in LOW REVS too much time because it GREASES IN EXCESS THE EXHAUST AND SILENCER WHICH WILL PRODUCE MORE NOISE AND DRENCH THE FIBER OF THE INSIDE OF THE SILENCER (This is the reason why the engine expels smoke in excess when having it in slow revs a few minutes and then accelerating. During the first hours we should not abuse to a maximum RPM of the engine. The entire running in is considered after 10 hours of use of the engine (on ground and during flight).

Respecting the first 15 minutes, please do the rest of the hours flying. In the case of heavy pilots they are advised to do, at least 1 hour on the ground before flying.

The optimal regime for good running in is to keep the engine between 6,000 to 7,500 RPM. From time to time rising above the 7,500 RPM for a few seconds. The regime must vary frequently and in progressive increase. Not giving full gas blows continuously, since the centrifugal clutch will be exposed to abnormal loads.

It is important, that after 1 or 2 hours of flight, we check the clamping screws of the cylinder head which must be tightened using a wrench (see the table of corresponding wrench tightness). Usually when the cylinder head loosens we can hear deaf 'shotgun' noises (heard when starting up the engine) or oil stains can be seen in its Union with the cylinder.

Revisions and checks during this phase are detailed in the maintenance section, (10 hours). If you notice symptoms of power loss, it may be caused by a poor engine fuel due to the regulation or that the filter has been dirtied. It Is always more desirable an engine with rich engine fuel than poor; at least we exclude risks of gripe...With the following table we can check visually if the mixture (we refer to gasoline - air, not oil-gasoline) is poor or rich in function of the color of the spark plug.

COLOR OF SPARK PLUG	**YELLOW / GREY**	**COFFEE WITH MILK**	**BROWN / BLACK**
MOTOR FUEL	POOR	**FAIR**	RICH

THE PERCENTAGE OF OIL IN THE MIX WILL NEVER VARY AND IT WILL ALWAYS BE INDICATED ACCORDING TO THE MODEL OF ENGINE, NEVER ADD MORE OIL AS INDICATED IN THIS TABLE NEITHER DURING THE PHASE OF RUNNING IN. We recommend Castrol Power 1 Racing.

ENGINES	**Gasoline**	**Synthetic oil**
SAFARI 125	**Unleaded 98 or 95**	**During the engine running 2,5 % (100 ml per five liters of petrol)**
		After the engine running 2 % (100 ml per five liters of petrol)

A well run in engine can increase life 100% and minimize the mechanical problems that you may have. Otherwise you have high probability of significant damage in its first hours, which will be irreversible for their useful life.

BASIC RECOMMENDED CHECKS

Is essential to tight the head cylinder after the first flight hour
It is necessary to tight the head cylinder nuts after the first flight hour accorded with the table of pairs of tightens and using for it a dynamometric key. For the **SAFARI125** the head cylinder pair of tightens is of **1.6 KGM** / **16 NM**.

BELT TENSION

THE BELT ALWAYS HAS TO HAVE THE ADEQUATE TENSION.
ITS OBLIGATORY TO CHECK THE TENSION OF THE BELT PERIODICALLY .

How do we check the tension?. 2 ways:



(fig. 18)

1.- Manual check (fig. 18)**.**
To do this its essential to check the tension of the belt when receiving the engine. This will be your reference by checking it manually, as the tension when receiving the engine can have a variation of about 8mm. when trying to move it sideways.

2.- Using the free App called EASY TENSION.

After having downloaded the app on your phone , we bring the telephone close to the belt and we strike the belt with our thumb as striking a guitar string. (fig.19) .

The vibration/ sound of the belt is then captured by the phone app and will indicate the parameters which will show the tension . From these parameters we will look at the Hertz . The belt should be in between 300 and 350 hrz (fig.20)


(fig. 19)



(fig. 20)

BELT WITH LITTLE TENSION. YOU NEED TO TIGHTEN.



(fig. 20)

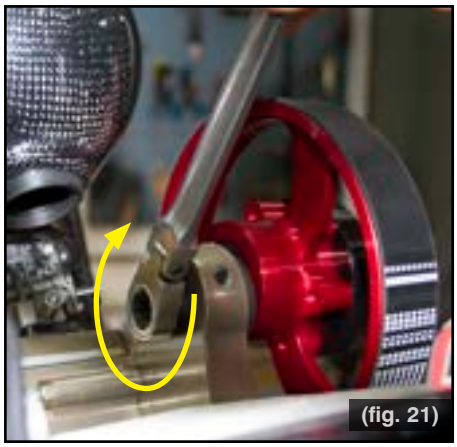
CORRECT TENSION. VALUE LOCATED BETWEEN 300 Y 350 HRZ

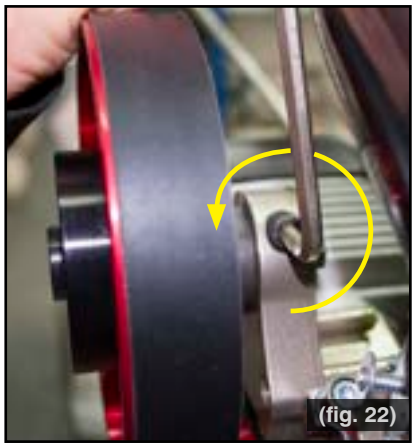
HOW TO TIGHTEN THE BELT:

Step 1: loosen the black bolt ø13 clockwise (fig. 21).

Step 2: loosen the bolt anti clockwise with a ø6 wrench (fig. 22).

Step 3: with a ø10 wrench tight the belt anticlock wise (fig.23) you can give a small knock with a hammer on the ø10 wrench to remove the pulley axe.


(fig. 21)


(fig. 22)


(fig. 23)

DONT FORGET TO TIGHTEN THE BOLT AND SCREW OF Step 1&2.

Step 4: Re tighten the black bolt ø13 of Step 1 (fig. 21).

Step 5: Re tighten the screw with a ø6 wrench of Step2 (fig. 22).

The consequences of tightening too much the belt we can damage the crank bearings which could break.

The consequences of having the belt to loose is that the belt can wear out . Another consequence of having the belt to loose , is that the revs of the engine go to high which could affect on all the mechanics in general.
If we have a tachometer on our engine we should bear this in mind and check that the engine at its max revs is adjusted for the revs for which it is designed around 9.800 RPM.

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.

We recommend to replace it every 100 hours.

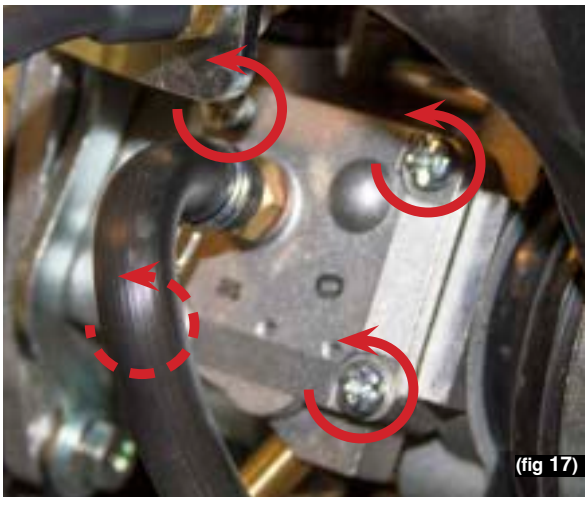
We advice to check that there is no dirt in the interior carburater filter (fig17) every 10 hours. In case there is clean it.

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.


(fig 16)


(fig 17)


(fig 17)

BASIC RECOMMENDED CHECKS

First 10 Hrs (running-in)	Every 50 Hrs	Every 100 Hrs		Every 200 Hrs
1. Check torque of all screws and nuts of the engine, exhaust, frame, and cylinder head; with a cold engine too avoid malformation. **2.** Check the sparkplug, the inner part should be a brown light colour and have a 0.5mm. **3.** On engines with pulley check the correct belt tension. **4.** Check that there is no dirt in the interior carburater filter (fig17). In case there is clean it.	**1.** Replace sparkplug and check contact between spark plug cable and cap. **2.** Replace membrane kit. **3.** Check thickness of clutch del ferodo. **4.** Piston rings. **5.** Clean carbon residue from clutch and exhaust manifold, piston head cylinder manifold. Check needle-bearing set by vertically moving the piston. **6.** Replace cylinder gasket and and cylinder head gasket.	**1.** Replace reduction gear oil and check the state of all engine mem-branes and replace if necessary. **2.** Replace piston rings and membranes. **3.** Exhaust and engine antivibes. **4.** Change piston		**1.** Check the state of all engine bearings and change if necessary. **2.** Replace piston and engine membranes. **3.** Replace throttle cable and sleeve if necessary. **4.** Check general state of electric elements and engine dampers and petrol circuit and replace if necessary. **5** Replace main petrol tube. **6.** Check general state of reed valve sheets and replace those that are worn or not elastic.

PAP WARRANTY COVERAGE

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.

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.