



ASSEMBLY

OPERATION

MAINTENANCE



SNAP

MANUAL

FRESH  BREEZE
POWERED PARAGLIDER

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This manual has been compiled to provide pilots and instructors with information contributing to the safe and efficient operation of this paratrike. Apart from important statutory information, this manual also contains additional information provided by the motor paraglider manufacturer.

To fly this air vehicle, you need to have the pilot's licence for motor paragliders. In addition, it is only permitted to start and land at approved landing places. Flights outside the uncontrolled flight space require a permit, which is mostly requested and granted via radio.

Further legal requirements such as taking out third party liability insurance have to be observed. The pilot has to acquaint himself with the particular properties and peculiarities of the motor paraglider prior to starting a flight.

It is compulsory to read the manuals and operating instructions and to become acquainted with motor, equipment and all other particulars. It is not permitted to perform air acrobatics with this motor paraglider.

The legal basis for the operation of ultralight paragliders is governed by air traffic laws. Particulars may be gathered from the associated ordinances. The provisions and requirements contained therein have to be observed during operation. The Snap has been designed, constructed, tested and approved in accordance with the airworthiness requirements for motor paragliders. The DULV (German Ultralight Flight Association) is responsible in this respect.

PRECAUTIONS

Read the flight safety messages in the different publications, for instance:

- Aviation journals
- Aviator pocket diaries
- News for aeronauts (NfLf)
- Federal Aviation Office (LBA) and Federal
- Office for Flight Safety (BFS) communications, etc.

Do not carry out any flights during turbulent weather conditions as a paraglider in principle only obtains its shape because of its internal pressure. This internal pressure can only be maintained during normal oncoming flow conditions.

Exercise particular caution in case there is a thunderstorm tendency. At any rate, avoid to fly too close to the storm front to prevent being sucked into the cloud. In case of emergency, carry out an off-field landing. Obtain information about low level flight zones of military aircraft and avoid these.

INTRODUCTION

SNAP

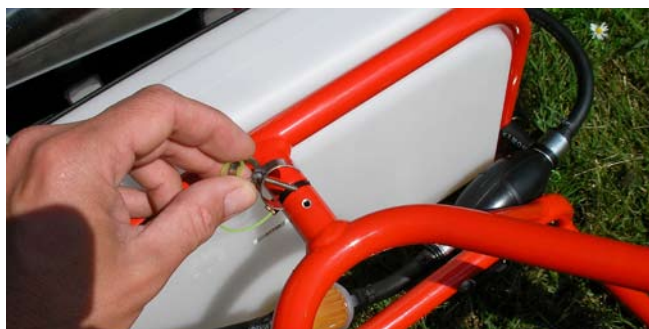
MANUAL



First of all, the pedestal should be pushed into the backframe and ...



... secured by means of the 3 clips. The motor can now stand on its own.



Now assemble respectively the left and right cage quarters and ...



... fasten them on the backframe.

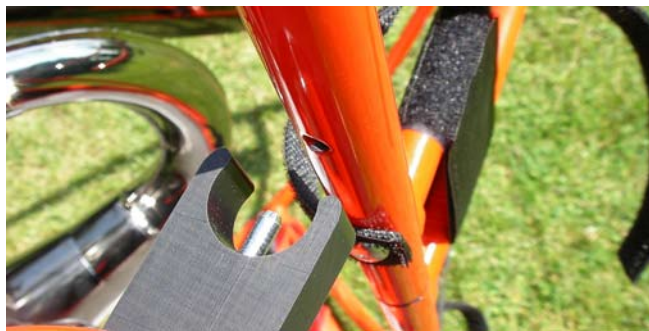


ASSEMBLING THE MOTOR

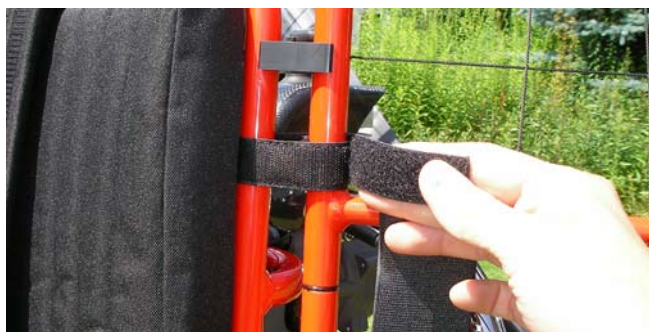
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The cage is anchored in the black clips by means of the internal pins.



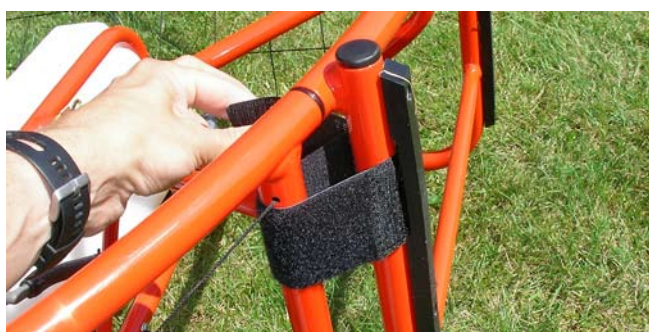
Fixation with the 4 Velcro® strips prevents the cage from unintentionally detaching from the frame.



The cage parts themselves are held together with the attached Velcro® strips.



The bottom Velcro® strip is passed through the guard rail and fastened.



ASSEMBLING THE MOTOR

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The starter handle is hooked into the steel loop that is located on the top right part of the cage.



For the backframe pedestal to be detachable, the shoulder straps are equipped with push-in buckles. These have to be pushed together again during assembly.



The back pad is also held by means of a Velcro® fastener that is folded over the top and bottom frame bracing.



Velcro® fasteners are also used to fasten the back pad laterally on the frame.



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This special back pad prevents the motor from twisting too badly on the pilot's back due to the high torsional force generated by the motor.



The photo on the right shows the vehicle tool kit provided that can be used to perform the most important operations on the motor.

Content:

- Allen wrench 4/5/6 mm
- Combination wrench 8/10 mm
- Plug spanner with screw driver



ASSEMBLING THE MOTOR

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7. REGULATION CARBURETTOR “ WG8 ”

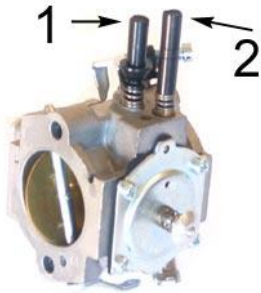


Fig.35

1. Regulation throttle cable

2. Regulation Min. gasoline

Standard regulation

In case of problems of wrong carburetion, replace the original levels.
Screw regulation of min. 1 to 1-1/4 turns from all closing. (Fig.35 point 2)

ATTENTION

Do not to change this lever position (Fig.36)
for not to cause refilling gasoline in the
engine.



Fig.36

Attention regulation carburettor must be made at warm motor.

To execute in sequence the below operations:

1. To regulate the screw of the min. to 1 to 1-1/4 of turn; (Fig.35 point 2)
2. To fill up the circuit of feeding with the appropriate pump;
3. To start the motor open the throttle(1/4-1/8) (the motor must set off);
4. To reduce the passage holes air of the filter airbox with one hand, in order to hold the rich carburation for some second ones;
5. To warm the motor for 4 or 5 minute to the regimen of spin of 3000rpm;
6. To regulate the screw of the minimal jet (Fig.35 point 2), to put the motor to 5000 rpm, to screw or to unscrew the screw until when the motor turns cleaned up and does not mutter;
7. To leave the motor for some second ones at minimum, to accelerating normally, now the motor must quickly accelerate without mumbling or to come less.

8. To regulate the lessened motor spin of the 2000/2200 rpm. (Fig.35 point 1)

When the carburettor is optimally regulated does not need ulterior regulations, but in the case in which it takes place a change of altitude (1000 meters)

Motor	Snap Cisco
Type	two-stroke, 1 cylinder
Cooling	fan cooling
Starter	manual
Carburettor	Walbro
Exhaust	Resonator
Propeller	2-blade
Diameter	120 cm
Weight	21 Kg
Tank capacity	8 litres
Max. start weight	130 kg



NEXT DATES ARE DEPEND FROM:

WEATHER, ALTITUDE, PILOTS WEIGHT, GLIDER AND SIZE AS WELL AS ATMOSPHERIC HUMITY:

Consumption	approx. 3 litres/hour
Flight duration	up to 2.5 hours
Rpm	8700 rpm
Propulsive force	up to 50 kg
Climbing rate	up to 2 m/sec

RESULT FROM THROTTLELEVER-POSITION, FLIGHT-LEVEL, GLIDER AND SIZE AND PILOTSWEIGHT FOR THE CONSUMTION:

Gas lever low output	low consumption	
Gas lever high output	high consumption	
Low flying altitude	low consumption	
High flying altitude	high consumption	
Small canopy	high consumption	high speed
Large canopy	low consumption	low speed
Light pilot	low consumption	low speed
Heavy pilot	high consumption	high speed

TECHNICAL SPECIFICATIONS

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The motor is supplied with 2 tank lids. The one with the vent hole is intended to be used for flying, while the closed lid is to be used for transport. Prior to a flight it has to be ensured that the vent lid has been screwed on, or else the motor will go out after a short flying time. This is because a vacuum is generated and the fuel flow is stopped. The closed lid create inside the fuel tank negative or positive pressure. This can deform the fuel tank. Before you start the engine check the fuel tank.



From the tank, the fuel is channelled to the petrol filter via the angled outlet (to be checked before every flight).



After that, the fuel is taken through the ball pump and to the ...



... fuel tap and finally to the carburettor.

**THE ENGINE RUNS WITH A FUEL-OIL MIX OF 1:50
(2 % CASTROL RS2T WITH 95 OCTAN GAS).**



FUEL AND OIL

SNAP MANUAL

The diaphragm carburettor has no special choke system. However, a cold motor requires more fuel. To facilitate the starting process, press the ball pump with one hand for approx. 1 second. This causes the fuel to be channelled to the carburettor. The ball pump is located underneath the tank. **At the same time**, you need to press the pin (No. 3 on the carburettor illustration on page 10) on the carburettor.



Now you should take the motor on your back and reach for the starter handle on the top right. While doing so, hold the gas handle in your hand. The motor can now be started with a firm pull.

As a rule, the motor is started with gas. If the motor does not start, the process with the ball pump should be repeated. If the motor has been flooded, it must be started at full throttle.

CAUTION. THE MOTOR MAY NEVER BE STARTED ON THE GROUND! THERE IS A HIGH RISK OF INJURY!



STARTING THE MOTOR

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POWERED PARAGLIDER

The Walbro WB 37 is a diaphragm carburettor offering the advantage of a completely position-independent operation.

HOW TO ADJUST THE CARBURETTOR?

First of all, start the motor and use the screw ⑤ to achieve a stable idling speed. Turning to the right increases the idling speed, while turning to the left reduces the idling speed.

- Warm up the engine.
- Hold full throttle and close the screw ① until the engine will reduce the rpm.
- Release full throttle and open the screw ① 3/4 turns. Setting for screw ① is now ready. Basic adjustment for screw ① is 1,5 turns out from being all the way in.

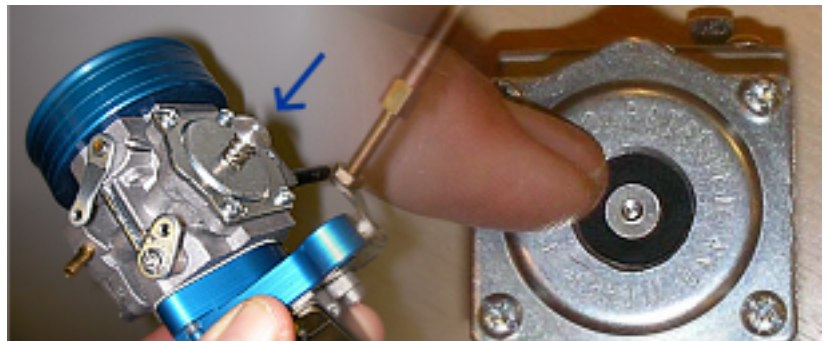
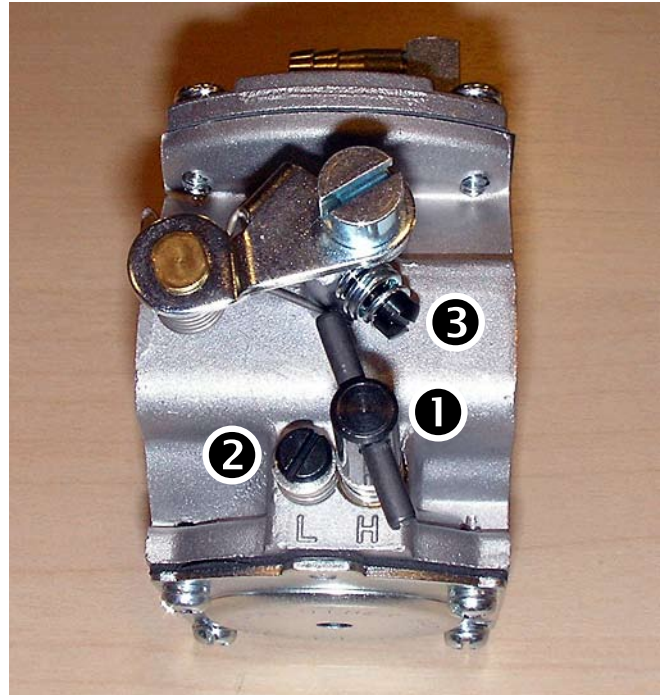
To adjust the part throttle range, the screw ② is gradually tightened by 1/16 turn. After every adjustment, abruptly apply full throttle from idling speed. The motor must not stall at this. This is repeated until the motor stalls or at least threatens to stall at the sudden application of full throttle. Now the screw ② is again slackened by 1/16 turn until the motor just permits an abrupt application of full throttle.

CHOKE

The WB 37 is not equipped with a choke lever. To start the motor in a cold state, you merely need to press the black diaphragm in the opening at the bottom of the carburettor with your finger (see picture). Keep depressed for approx. 2-3 sec. During this process, the carburettor is flooded with petrol. The excess petrol will allow the motor to start easier in a cold state. If the motor has been accidentally flooded for too long, it has to be started with the gas handle in the full throttle position. Otherwise, applying slightly more throttle is sufficient.

THE WB 37 IS EQUIPPED WITH 3 SETTING SCREWS:

- ① H for high. Controls the mixture at full load
- ② L for low. Controls the mixture in the lower and medium speed range
- ③ Controls the idle



WALBRO WB 37 DIAPHRAGM CARBURETTOR

SNAP MANUAL

FRESH BREEZE
POWERED PARAGLIDER

HOW DO I REPLACE THE MANUAL STARTER ROPE?

1. Remove the fan guard.



2. Unscrew the starter assembly.



3. Unscrew the rope pulley.



4. Remove the rope pulley while minding the return spring so as to avoid it being pulled out unintentionally.



MANUAL STARTER

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POWERED PARAGLIDER

5. Pull out old starter rope.



6. Insert new starter rope and secure in the recess with a knot.



7. Coil up the starter rope and let it end in the notch.

Carry out the remaining reassembly steps in reverse order. When inserting the rope pulley in the starter housing, you have to reapply pretension to the rope pulley.



8. When inserting the starter assembly, you have to spread the white starter catches apart against their spring tension. Thin rope ends are helpful in this regard.



MANUAL STARTER

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The propeller consists of two halves and when assembled has a length of 120 cm. Its weight is approx. 900 g. It is made of GRP, which allows you to carry out minor repairs. It is compulsory to rebalance the propeller in particular after repair.

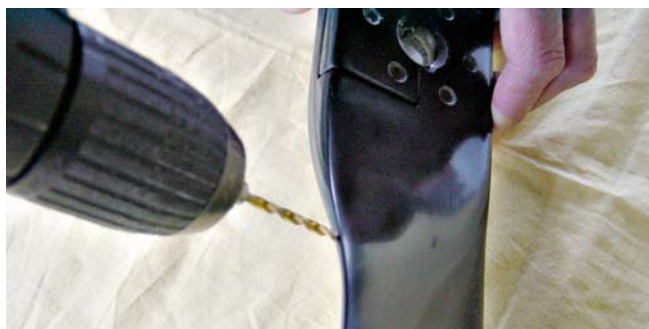


Fasten the propeller on the hub with 6 screws and tighten it with 12 Nm.



HOW DO I BALANCE THE PROPELLER?

Align the propeller vertically on the balancing device. If it turns to one side, drill a 3.5 mm hole into the lighter half of the propeller.



Now fill this hole with resin until the propeller no longer turns away to one side.



PROPELLER

SNAP

MANUAL

Now check the imbalance in the same manner in a horizontal position and if necessary, adjust the imbalance.



CAUTION: AN IMBALANCED PROPELLER SUBJECTS THE MOTOR TO UNNECESSARY VIBRATIONS SO THAT MANY COMPONENTS COULD BE DESTROYED WITHIN A SHORT SPAN OF TIME.



MATERIALS REQUIRED TO BALANCE THE PROPELLER:

Balancing resin with curing agent, syringe and a pivoted shaft to allow free turning of the propeller (balancing device).



WHAT DO I NEED TO REPAIR THE PROPELLER?

Fibre glass spatula, spatula, abrasive paper.

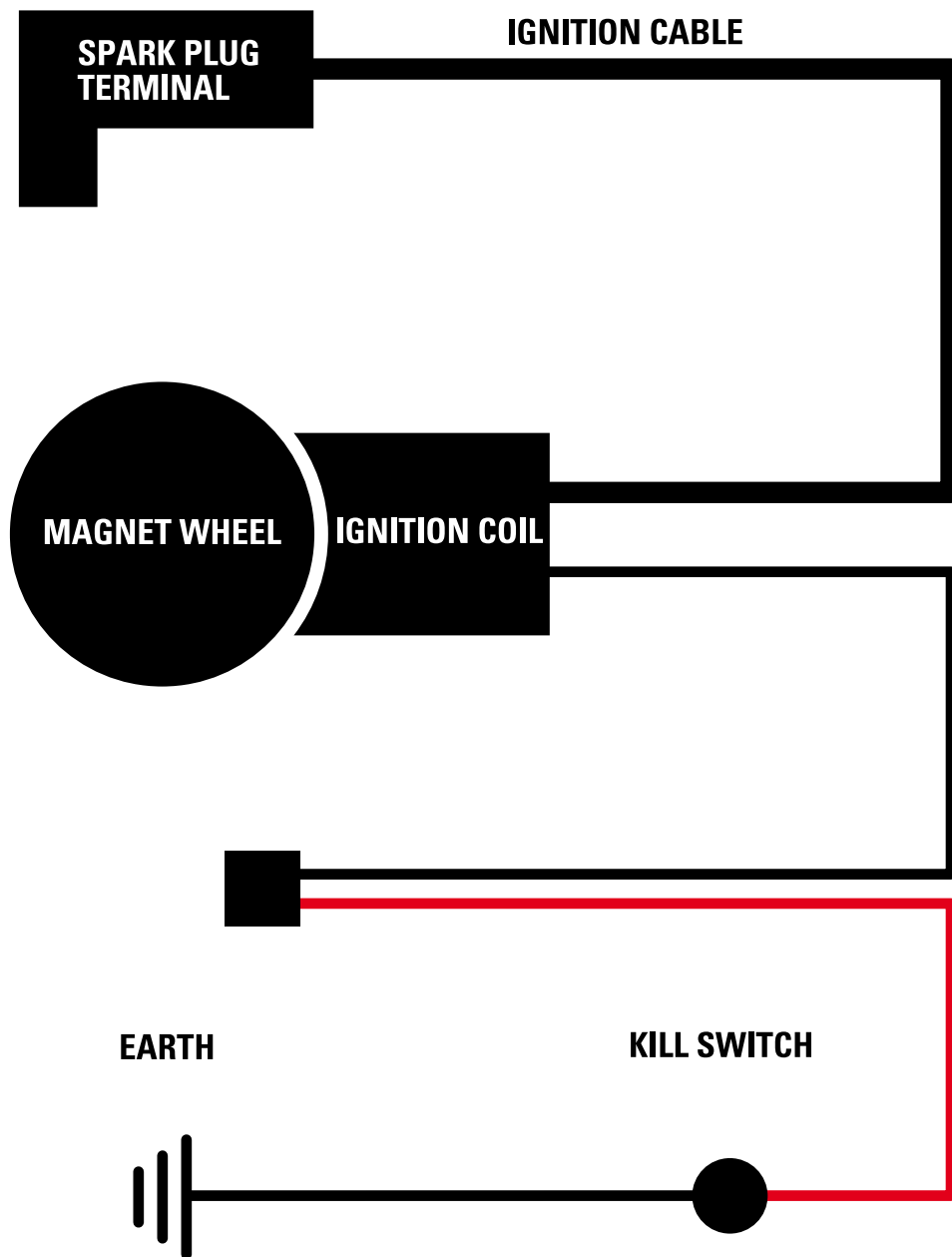
To the right an example of a propeller that may no longer be repaired. If the damage is too extensive, a repair would be dangerous. The repaired spot would have little adhesion and could detach from the propeller at high speeds – danger of injury.



PROPELLER

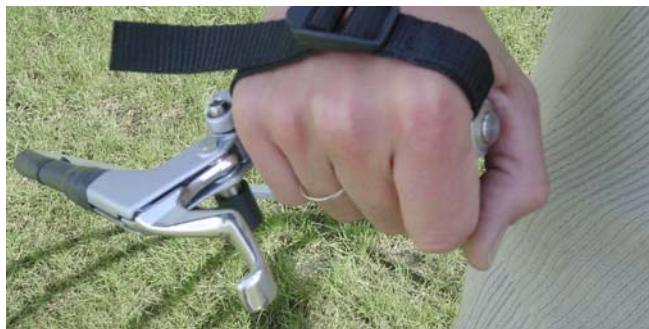
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CIRCUIT DIAGRAM

Depending on the type of mounting, the gas handle is gripped with the right or left hand. The retaining strap has a variable size adjustment. Before take-off, the strap should be firmly tightened.



The Respect gas handle is equipped with a switch at every end of the pipe. One is used for starting ...



... the other one for switching off the motor.



The gas handle is also equipped with a cruising speed lock. Once the cruising altitude is reached, it is possible to secure the gas handle by means of the clamping lever. As holding the gas lever in your hand for a long time is very strenuous, it can be put across your legs when it is in a locked position. Your hands are now free for other things.



GAS HANDLE RESPECT

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The Airboss gas handle is also equipped with a button to switch off the motor and where applicable a start button if an E-starter is available.



First take the gas handle in your hand ...



... then grab the steering line and finally the A-line.



This photograph shows how to handle the lines and the gas handle during take-off.



GAS HANDLE AIRBOSS

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This harness has been specially designed for motor operation. Care has to be taken that no loose parts can get into the propeller during operation. The pilot suspension can permanently remain in the snap hooks.



The harness is secured with 3 catches - two leg catches and one chest catch. It offers two different means of adjustment. The first one consists of the clasps attached to the front seat that are used to adjust the lowering and lifting of the seat. During take-off, these should be slightly tightened to facilitate sitting down into the harness after take-off. It is recommended to completely lower the seat before landing so as to be able to assume the most favourable landing stance. It is not necessary to tighten the leg loops very firmly.



The harness is in addition equipped with 2 pockets that are easy to reach while flying.



The other means of adjustment regulates the sitting stance during the flight. If it is very firmly tightened you sit more upright, if you slacken it somewhat you can achieve a slightly supine position.



HARNESS AND SUSPENSION

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Now kneel in front of the motor and pull the shoulder straps over your shoulders.



After that, the pilot suspension is hooked into the motor's dropping device. Usually, the hindmost hole is used. The dropping device should be activated in case of imminent danger, e.g. water landing, fire at great altitudes or tree landing. The device is triggered by pulling the two ribbons on the dropping shackle outwards. As the motor is now no longer connected to the canopy by means of the suspension, the pilot is moved into an extremely supine position. Now the motor easily slips off your shoulders. The landing is then carried out without motor.



HARNES AND SUSPENSION

SNAP

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Now get up with the entire motor and walk over to the canopy, which is hooked into the snap hook on the pilot suspension.

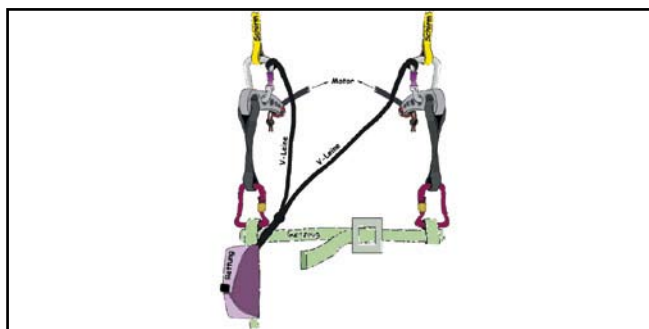


Now take the gas handle and the brake loops in your hand, start the motor, check the wind and commence your take-off run.



RESCUE SUSPENSION

To the right a sample drawing of how to fasten the rescue device using the V-line. The rescue device should be connected to the pilot suspension by means of the V-line. Thus, an optimum landing stance would be possible if the device was triggered. The rescue device should not be hooked into the harness snap hooks so that in case of an emergency release you are not at peril of being moved into a supine position.



HARNESS AND SUSPENSION

SNAP MANUAL

HOW TO FASTEN THE HARNESS WINGMAN CB

Attach the harness with the velcro on the frame.



This picture show's the attached harness.



At next insert the cb bars into the frame ...



... and secure with the quickpins.



WINGMAN CB

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The lateral and adjustable belt's from the harness goes outside the cb bar's.



The rear pilotsuspension must fixed in the metal-eyelet.



The rear pilotsuspension is adjustable. For basic position pull the loop until the carabiner. Heavy pilots should open and light weight pilots should close the belt.



Here you must fix the carringsstraps from harness to the frame.



WINGMAN CB

SNAP
MANUAL

The glider should be fixed into this carabiner.

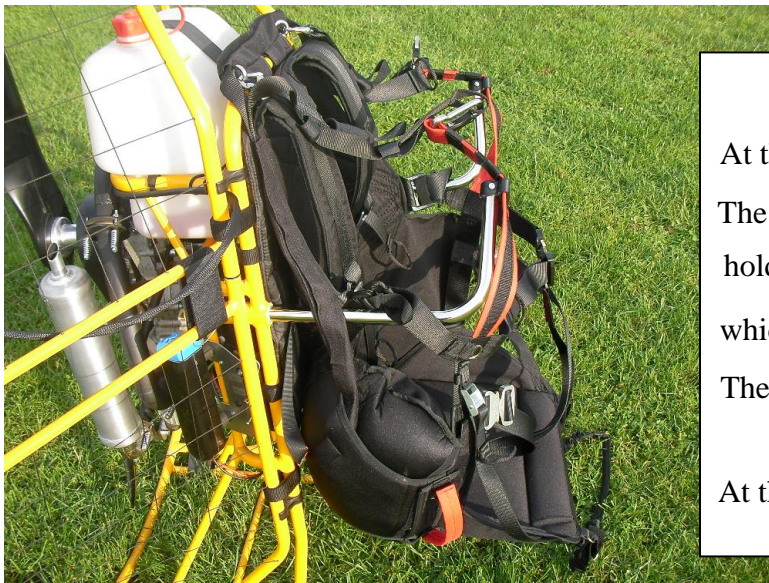


WINGMAN CB

SNAP

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New features at the Wingman Cbi (integrated rescue)



At the Wingman Cbi the rescue is intergated.
The neoprene outer container
holds the rescue system,
which is fitted with a zipper onto the wingman.
The V cord is runs behind the Pilot.
At the Wingman Cbi the rescue is intergated.



As you can see the Vcord runs
around the pilot from behind.



The V cord is led to the carabines
from behind and fixed with the
Velcro loops.



The carrying belts go through the back of the wingman.

Wingman CBi

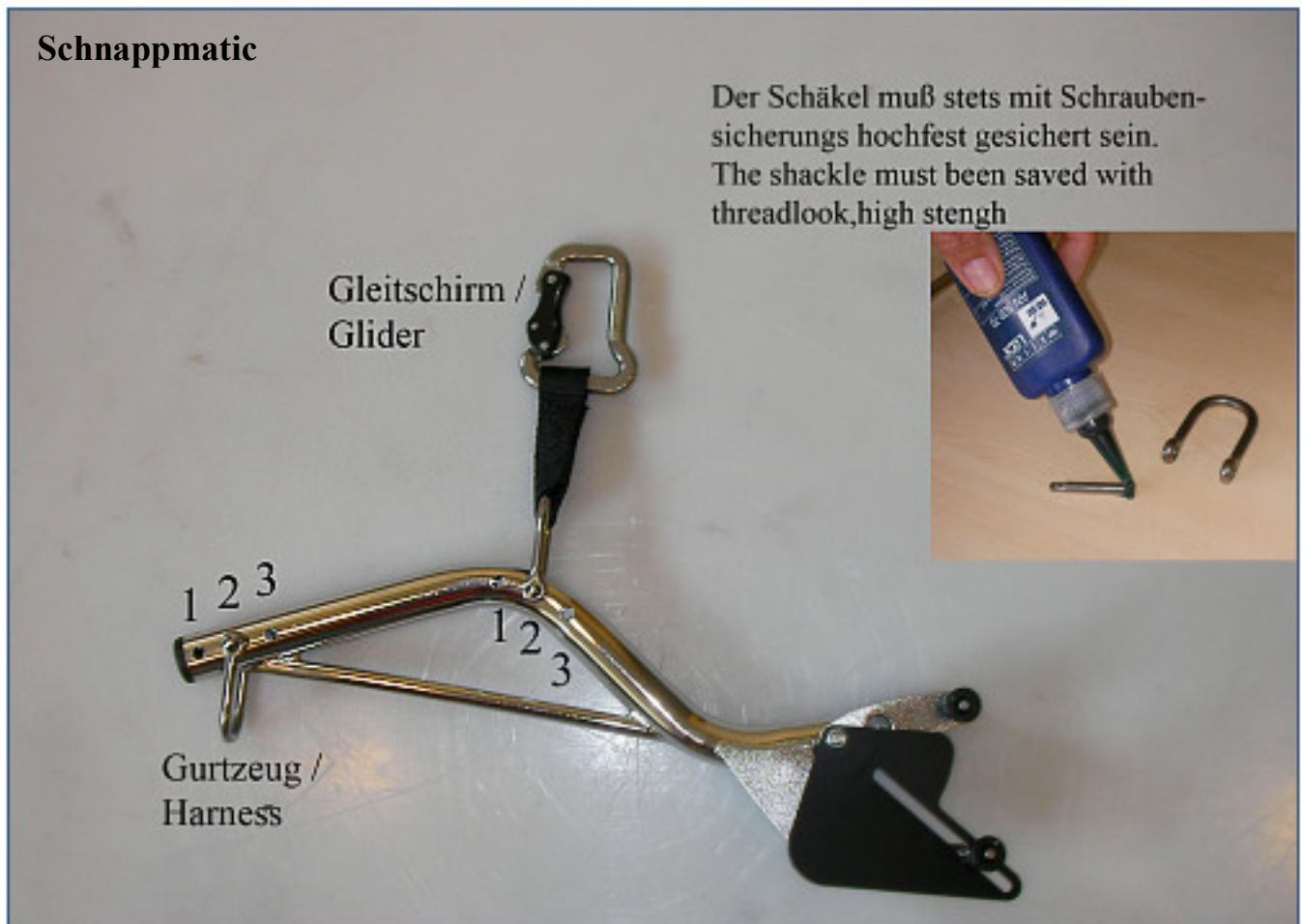
WINGMAN CBi

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The glider and harness can be mounted in various positions on the flexible push bars. This adjustment is necessary to guarantee the most comfortable seat position to all the different pilots weights.



- The prefigured factor settings of the harness seat is in position number 2. (75 kg - 85 kg)
- Heavy Pilots should choose the position 1 for the wing and/or the position 3 for the harness.
- For the lightweight pilots it is necessary to configure the position 3 for wing and position 1 for the harness

SportiX 122

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The harness is attached with velcro on the upper bar of the back-frame (as in the shown in the picture)



The flexible push bars are fixed with quickpins at the frame. At first you attached the lower quickpin and then the upper one.



The carrying straps will be mounted on the backframe (as again shown in the picture)



SportiX 122

MANUEL □

FRESH BREEZE
POWERED PARAGLIDER

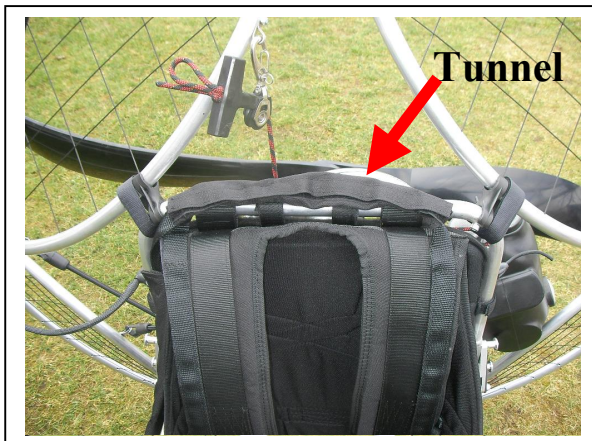
The integrated system rescue gives you most possible comfort. Also build in is an extra storage container on the opposite side of the rescue system.

Very important is to transfer the V-line (as shown on the picture)



on the outside of the the push-rod.

Starting from the push rod the V-line runs upwards to the shoulder.



The rescue-line splits to the right and left side of the carrying straps,

where it is fastened with velcro.



The end of the V-line is mounted in the carabiner

The extra seat foam can help to adjust the height of the seat. It is also fastened with velcro on the very front, -and on the backside with two velcros.



The cage has to be secured on the right side (in flight position) with the help of the extra rubber strap. If your engine is equipped with



e-starter rubbercord isn't necessary

The starter rope is fastened into the right cage part. Start the engine only on your back.



Seat position in flight



Landing position



After the start it is recommended to use the supine, to slip into the harness very easy and to take end flight position.

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FRESH BREEZE
POWERED PARAGLIDER

THE FOLLOWING POINTS SHOULD BE CARRIED OUT BEFORE EVERY START!

01. CHECK ALL PARTS FOR TIGHTNESS, CHECK ALL FASTENERS!
02. VISUAL INSPECTION OF CAGE AND FRAME FOR FRACTURES!
03. PROPELLER HUB WITHOUT CLEARANCE?
04. EXHAUST SPRINGS OK?
05. EXAMINATION OF EXHAUST RUBBER ELEMENTS!
06. PETROL FILTER NOT SOILED?
07. MOTOR, CARBURETTOR AND TANK LEAK-PROOF?
08. SUFFICIENT SUPPLY OF PETROL?
09. PILOT SUSPENSION UNDAMAGED?
10. CANOPY UNDAMAGED?
11. GAS LEVER POSITION?
12. TRAVELLING LOCK RELEASED?
13. FUEL TAP OPEN?
14. VENTILATED TANK LID ON TANK?
15. PROPELLER CLEAR – START MOTOR!
16. CARRY OUT A TEST AT FULL THROTTLE!
17. TEST THE OFF-SWITCH FUNCTION
18. PILOT PROPERLY HOOKED IN?
19. WIND DIRECTION AND WIND FORCE?
20. FUEL TANK IS FIXED AND THE GAP BETWEEN EXHAUST-FUEL TANK ASSURED
21. TAKE-OFF STRETCH CLEAR?

EVERYTHING O.K.? CLEAR FOR TAKE-OFF!



PREFLIGHT CHECK

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THE FOLLOWING INSPECTIONS HAVE TO BE CARRIED OUT BEFORE THE START:

- CAGE SECURED ON FRAME
- LOOK FOR POSSIBLE CAGE DEFORMATIONS
- PROPELLER HUB WITHOUT CLEARANCE, PROPELLER WITHOUT DAMAGE AND SCREWS TIGHTENED
- CHECK RUBBER ELEMENT OF FLEXIBLE PILOT SUSPENSION FOR CRACKS
- CHECK STOP SWITCH AT FULL LOAD
- FULL LOAD TEST MIN. 8500 RPM
- USE PETROL WITH MIN. 95 OCTANE
- CHECK FUEL SYSTEM FOR LEAKS
- CHECK PILOT SUSPENSION FOR WEAR
- VENTILATED TANK LID SCREWED ON
- CHECK CANOPY, LINES AND SHOULDER STRAPS FOR DAMAGE

THE FOLLOWING INSPECTIONS HAVE TO BE CARRIED OUT AT LEAST 10 HOURS:

- PETROL FILTER SOILING
- CHECK EXHAUST SPRINGS FOR WEAR
- CHECK SUCTION SILENCER AND ESPECIALLY THE RUBBER ELEMENTS
- CHECK EXHAUST SYSTEM FOR FORMATION OF CRACKS
- CHECK TANK FOR CHAFE MARKS

THE FOLLOWING INSPECTIONS HAVE TO BE CARRIED OUT AT LEAST 50 HOURS:

- REPLACEMENT OF RUBBER ELEMENT ON REAR PILOT SUSPENSION
- CHECK CABLE JOINTS
- CHECK BOWDEN CABLE ON TOP THREADED NIPPLE FOR WEAR
- CHECK TANK FOR CHAFE MARKS
- REPLACE THE SPARK PLUG
- REPLACE THE EXHAUST'S RUBBER METAL JOINTS
- VISUAL INSPECTION OF SUCTION SILENCER, ESPECIALLY OF RUBBER PARTS
- CHECK ALL SCREWS AND BRACKETS FOR FIRM SEAT

INSPECTION CICLES

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THE FOLLOWING INSPECTIONS HAVE TO BE CARRIED OUT AT LEAST 100 HOURS:

- ☑ CHECK THE PISTON RINGS ON THE CYLINDER OUTLET SIDE FOR SMOOTH RUNNING
- ☑ CHECK OIL CARBON DEPOSITS IN CYLINDER HEAD AND CLEAN IF NECESSARY
- ☑ OPEN GEARBOX AND EXAMINE GEAR WHEELS
- ☑ REPLACE KARABINER FROM PILOTSUSPNSION

PARAGLIDER

EVERY TWO YEARS, THE PARAGLIDER HAS TO BE SUBJECTED TO AN INSPECTION AT THE RESPECTIVE PARAGLIDER MANUFACTURER OR AT ANOTHER ACCREDITED AGENCY

MOTOR

ONCE A YEAR, THE MOTOR HAS TO BE EXAMINED IN ACCORDANCE WITH THE POINTS DESCRIBED ABOVE WITH RESPECT TO WEAR OR PREMATURE MATERIAL FATIGUE IRRESPECTIVE OF THE NUMBER OF OPERATING HOURS.

THE ANNUAL INSPECTION MAY ONLY BE CARRIED OUT AT THE FACTORY, AT OUR SALES PARTNERS OR BY CLASS 5 INSPECTORS. APART FROM THE REPLACEMENT OF SPARE PARTS, UPDATES ON THE MOTOR ARE PARTLY ALSO CARRIED OUT FREE OF CHARGE DURING THE FACTORY INSPECTION. THIS MAY CONSIDERABLY INCREASE THE MOTOR'S RELIABILITY.



WITHOUT THESE CHECK'S NO WARRENTY OR OTHER CLAIMS!



PLEASE USE ONLY FRESH BREEZE GENUINE SPARPARTS. THIS WILL TAKEN POSSESSION ALL SAFETY AND STIFFNESS WHICH IS REQUIERED FROM DULV.



**Unexperienced pilot's should have minimum 65 kg (143 lbs).
Otherwise you risk a stall or twist in while of full throttle**

INSPECTION CICLES

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BE SURE TO FOLLOW THIS SAFETY ADVICE EVERY TIME YOU USE FRESH BREEZE MOTORS !

- USE YOUR ENGINE CAREFULLY. DISREGARDING ANY SAFETY ADVICES AND INCAUTIOUS BEHAVIOUR MAY LEAD TO SERIOUS INJURIES.
- NEVER COME CLOSE OR GRAP INTO THE SPINNING PROPELLER. HIGH RISK OF SERIOUS INJURIES.
- THE ENGINE MAY NOT BE STARTED WHEN IT IS STANDING ON THE GROUND. HIGH RISK OF SERIOUS INJURIES.
- NEVER TOUCH HOT PARTS (ENGINE, EXHAUST). HIGH RISK OF BURNING.

Maintenance specially engine

SAFETY ADVICE

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FRESH BREEZE
POWERED PARAGLIDER

SNAP 100

MAINTENANCE MANUAL

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1. OPERATING INSTRUCTIONS

FUEL

- Snap 100 has a two-stroke engine that requires a gasoline-oil mixture.
- Use gasoline with a pump octane number of 92 or higher .If “knocking” or “pinging” occurs, try a different brand of gasoline or a higher octane grade.
- Premix gasoline and oil in a ratio of 40:1. Prepare the fuel mixture in a clean container fig.1 , and shake until thoroughly mixed before filling the fuel tank.
- USE A GOOD QUALITY OF SYNTHETIC 2-STROKE OIL

CAUTION:

To much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear. Mix fuel in a ratio of 40 parts gasoline to 1 part oil (40:1)

- Vegetable oils separate from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use synthetic oil.

CAUTION:

- Do not mix vegetable and mineral based oils.

WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stores and where the fuel tank is refueled.

FUEL 92/98 octane	Synthetic oil
liters	cl
0,5	0,125
1	0,25
2	0,50
3	0,75
4	10
5	1,5
10	25

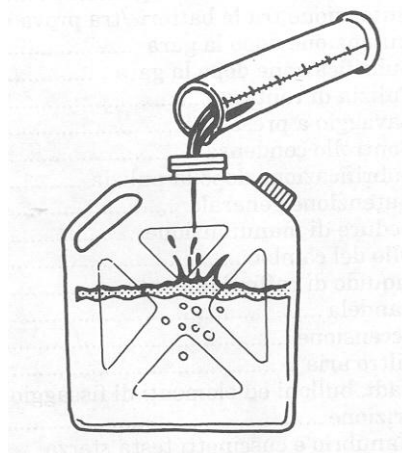


fig.1

1.1 BASIC OPERATION

- In the 2-stroke motors like the Snap100, is of absolute importance the corrected carburation to avoid seizure to the piston (not covered from guarantee).

<p>Start the Engine</p> <p>WARNING</p> <ul style="list-style-type: none"> • Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death. • Attempting to start the engine without the riducer provokes the outbreak of the clutch and can cause injury or damages. • Never run the engine without propeller. • The starter attempt can carry to the spin of the propeller and therefore to possible lesions. • The motor running emits disturbs electromagnetic. <p>Cold Engine Starting:</p> <ol style="list-style-type: none"> 1. To carry in pressue the circuit of the gasoline, to help itself pressing the push-button (fig.2). 2. To appeal the starter and to delicately pull iust after the harder point (to try repeatedly for being sure). 3. To pull the grip with energy, without throttle in. . 4. In case of lacked starter to repeat the procedere without to accelerate . 5. Allow the engine to warm up for at least 2 minutes before riding off, 6. . Slowly increase rpm and don't grip the throttle warming the engine is important to prevent cold seizures 	<p>Warm Engine Starting:</p> <ol style="list-style-type: none"> 1. To appeal the starter and to delicately pull hardly after the harder point 2. To pull the grip with energy, without throttle in. <p>Stopping The Engine</p> <ol style="list-style-type: none"> 1. Depress and hold the engine stop button until the engine stops completely <p>Break-in Procedure : Following proper break-in procedure helps censure that some of the most important and expensive components on your new Snap100 will provide maximum performance and service life. (Also follow proper break-in procedure for a newly rebuilt engine)</p> <ol style="list-style-type: none"> 1. Do not hold the throttle in one position for more than a few seconds. It's better to roll the throttle on and off, without gaining too much,height and forcing too much at the motor. 2. Use the motor for features of 10 minutes at a time and to leave to cool it. 3. After two hours of use or approximately 10 liters of gasoline the motor should be broken in. 4. This same procedure should be followed each time <ul style="list-style-type: none"> • Piston is replaced • Cylinder is replaced • Crankshaft or crank bearings are replaced
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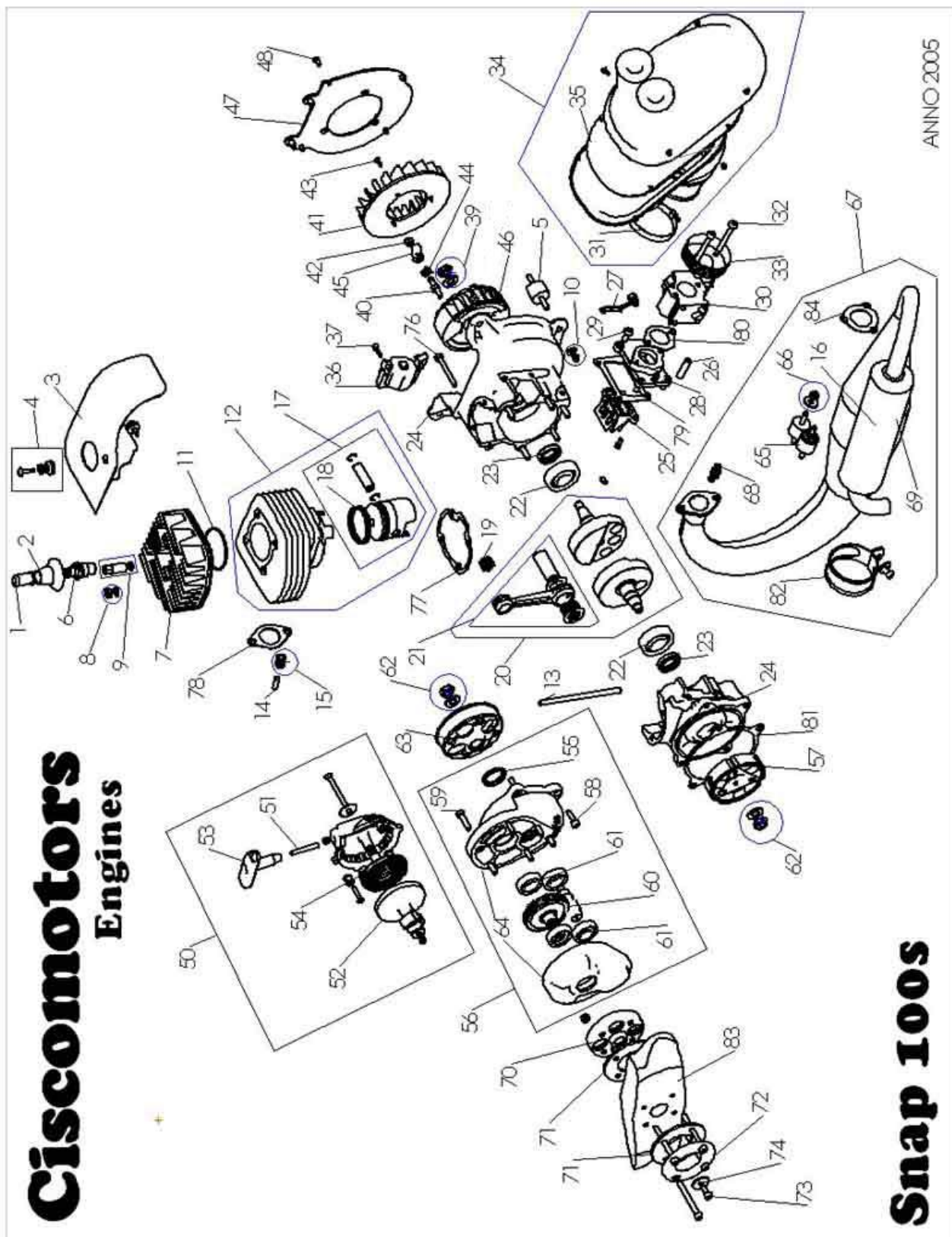


Fig.2

2. SPECIFICATIONS

2.1 ENGINE INSTALLATION ON CHASSIS

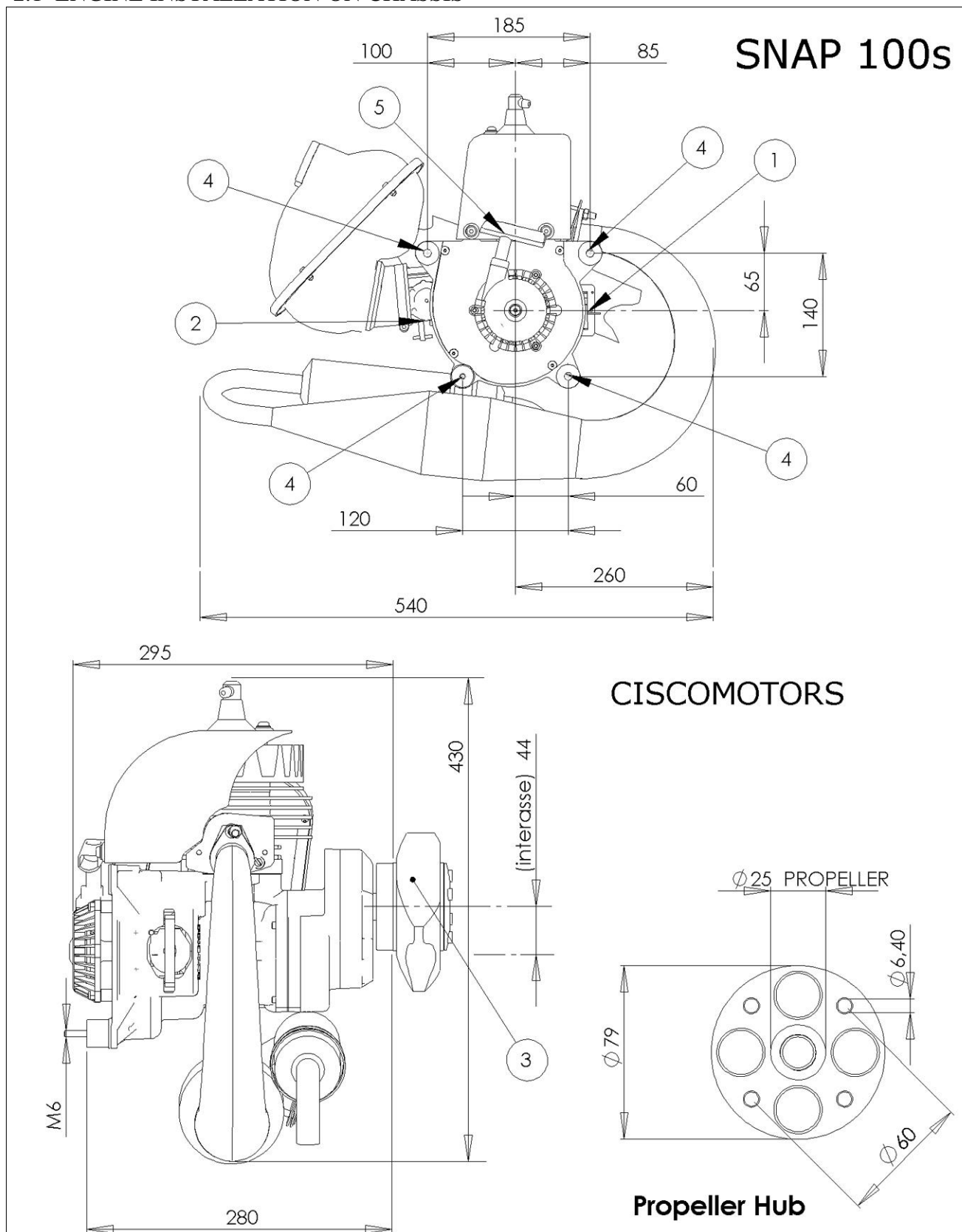


Fig.3

1. Engine stop connector

2. Throttle cable

3. Propeller

4. Support engine

5. Manual starter

CAUTION:

To use antivibrating of optimal quality not superior 70s

2.2 TECHICALS CHARATTERISTICS

Motor SNAP 100S	
Type	2 strokes cooled to air
Disposition cylinder	Monocylinder vertical
Bore max	51mm
Stroke max	47mm
Displacement	96 cc
Compression ratio	11,2 : 1
Maxim Power	12,5 kw (17cv) 9400 rpm
Max Torque	14 Nm 8800 rpm
Lubricating reducer	25cc
Electrical sistem	
Ignition	Elettronic ignition
Rotor	Variable Advance
Spark plug standard	Ngk br9hs
Winter spark plug	Ngk br8hs
Starter	Manual
Carburettor	
Type	Walbro wb32(Ciscomotors) / Dell'orto
Walbro* Setting screw min	1/2
Walbro* Setting screw max	1
Trasmission	
Clutch Type	Centrifuge 3 shoe
Reduction	Gears helicoidal
Reduction ratio	1/3,63
Exhaust	
Type	Expansion Chamber
Silencer	Glass wool
Support engine	
Type	N.4 silent-block

*The standard carburation
 Temperature 10°C
 P 1024 Mb
 UR 50%
 Altitude (S.L.M.) 50 m

3. MAINTENANCE

3.1 GENERAL SERVICE INFORMATION:

- Wear gloves and glasses when you make the maintenance;
- Do not perform maintenance while engine is running. Injury to your fingers, hands or head may result ;
- Perform maintenance on firm, level ground, using hard workstand, and not directly on chassis;
- Always install new gaskets, o-rings, piston pin clips, snap rings ect..when disassembling
- When tightening bolts, nuts or screw, start with the larger diameter or inner fasteners, and tighten them to the specified torque using a criss-cross pattern;
- Use genuine Ciscomotors parts when maintenance your Snap100
- Clean parts in non-flammable cleaning solvent when disassembling. Lubricate any sliding surface, O-rings and seals before reassembling.

WARNING

Gasoline or low flash point solvents are highly flammable or explosive and must never be used for cleaning parts . Fire or explosion could result.

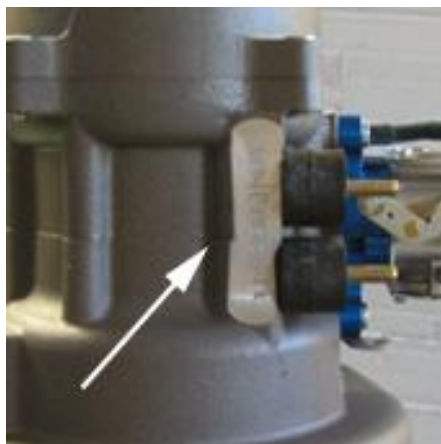
- After reassembling, chek all parts for proper installation and operation

NOTE:

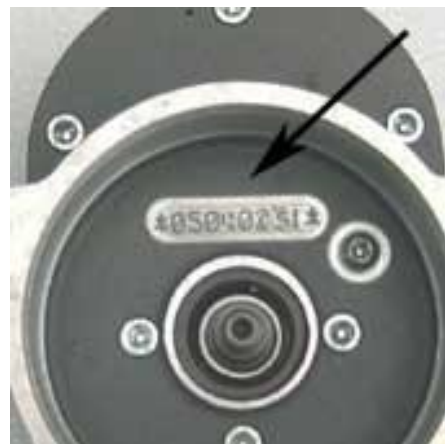
- Specification are listed chapter 2.

3.2 ROUTINE CLEANING

- If the SNAP100 were only little dirty to clean up it with clean dusts cloth without dissolvents
- If the SNAP100 were much dirty to clean up it with biodegradable detergents and not with dissolvents, lubricate where is necessary.



Number engine



Number reducer

3.3 MAINTENANCE SCHEDULE

FREQUENCY	INSPECT	REPLACE
Before and after each use	All screw nuts, bolts correctly tighten, silent-block in, and check carburation.	
Every 100 hours	Cylinder head decarbonizing and cleaning sponge filter	Complete piston Reducer's lubricant
Every 200 hours	Diameter clutch, usury of the bell clutch, and glass wool of the silencer	Crankshaft bearing ,bearing reducer, oil reducer, crankshaft seals, thermal group, connecting rod.
Each year	All rubber and plastic components.	Fuel diaphragms of carburettor , spark plug.

4. STORAGE

Extended storage such as for winter, requires that you take certain steps to reduce the effects of deterioration from nonuse of your Snap100. In addition necessary repairs should be made BEFORE storing your Snap100: otherwise these repairs and clean may be forgotten by the time your Snap100 is removed from storage.

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5. SPARE PARTS & EQUIPMENT

5.1 SPARE PARTS

COD.		DESCRIZIONE	COD.		DESCRIZIONE
000001.0		SPARK PLUG CUP	000040.0		SCREW GRAFT STARTER
000001.1		SPARK PLUG CUP	000041.0		COOLING FAN
000002.0		SHAFT SPARK PLUG	000042.0		NUT GRAFT
000003.0		CARBON FIBER COOLING AIR DUCT	000043.0		CAP SCREW COOLING FAN
000004.0		WIRE LEADS/CAP SCREW	000044.0		SPRING GRAFT STARTER
000005.0		SILENT-BLOCK MOTOR	000045.0		GRAFT STARTER
000006.0		SPARK PLUG NGK BR9HS	000046.0		IGNITION COMPLETE
000006.1	OPZ	SPARK PLUG BR8HS	000047.0		IGNITION CRANKCASE COVER
			000048.0		CAP SCREW
000007.0		CYLINDER HEAD	000050.0		MANUAL STARTER
000008.0		NUTS CYLINDER HEAD	000051.0		CHORD 3 M/M
000009.0		SPECIAL NUTS/WASHER CYLINDER HEAD	000052.0		PULLEY STARTER
			000053.0		HANGRIP STARTER
000011.0		OR VITON CYLINDER HEAD	000054.0		SPRING MANUAL STARTER
000012.0		CYLINDER + PISTON	000055.0		OIL SEAL CLUTCH BELL
000013.0		STUDBOLT CYLINDER	000056.0		REDUCER
000014.0		STUDBOLT EXHAUST	000057.1		CLUTCH
000015.0		NUTS/WASHER EXAUST	000058.0		CAP SCREW
000016.0		GLASS WOOL	000059.0		CAP SCREW REDUCER
000017.0		PISTON COMPLETE	000060.0		PAIR GEAR
000018.0		PISTON RING	000061.0		BEARING
000019.0		NEEDLE BEARING	000062.0		NUT AND WASHER CLUTCH
000020.0		CRANKSHAFT	000063.0		CLUTCH BELL 2005
000021.0		CONNECTING ROD	000064.0		CRANKCASE REDUCER
000022.0		BEARING	000065.0		SILENT-BLOCK EXHAUST
000023.0		OIL SEAL	000066.0		NUT AND WASHER EXHAUST
000024.0		CRANKCASE ENGINE	000067.0		EXHAUST-PIPE EXPANSION
000025.0		REED VALVE	000068.0		SPRINGS EXHAUST
000026.0		PIPE DEPRESION CARBURETTOR	000069.0		SILENCER
000027.0		THROTTLE BRACKET	000070.0		PROPELLER HUB
000028.0		MANIFOLD WB32C	000070.1		PROPELLER HUB 6 FIX
000028.2	OPZ	MANIFOLD INTAKE DELL'ORTO	000071.0		RUBBER DISK PROPELLER
000028.2R	OPZ	MANIFOLD RUBBER	000072.0		PROPELLER FLANGE
000029.0		CAP SCREW	000072.1		PROPELLER FLANGE 6 FIX
000030.0		CARBURETTOR WB32	000073.0		CAP SCREW HUB
			000074.0		WASHERS
000030.2	OPZ	CARBURETTOR DELL'ORTO	000076.0		CAP SCREWS SET CRANKCASE ENGINE
000031.0		BAND AIRBOX	000077.0		CYLINDER GASKET
000032.0		CAP SCREW	000078.0		EXHAUST GASKET
000033.0		FLANGE CARBURETTOR	000079.0		MAINFOLD IMMISSION GASKET
000034.0		AIRBOX	000080.0		CARBURETTOR GASKET
000035.0		FILTER	000081.0		REDUCER GASKET
000036.0		IGNITION SPOOL	000082.0		SILENCER RING
000037.0		CAP SCREW SPOOL	000083.0	OPZ	PROPELLER 1250
			000083.1	OPZ	PROPELLER 1100
000039.0		WASHER AND NUT WOODRUFF	000084.0		SILENCER GASKET

5.2 EQUIPMENTS

COD		DESCRIPTION
100.200		FLYWHEEL CLUTCH
100.201		FLYWHEEL BELL CLUTCH
100.300		SOCKETS HEX 17 m/m
100.301		SOCKETS HEX 11 m/m
100.302		SOCKETS HEX 10 m/m
100.310		MALE HEXAGON KEY 3m/m
100.311		MALE HEXAGON KEY 4m/m
100.312		MALE HEXAGON KEY 5m/m
100.315		SCREWDRIVERS-BLADE 1XL
100.316		SCREWDRIVERS PHILLIPS 1-2
100.320		HUMMER PLASTIC HEAD
100.321		PLIERS FOR SPRINGS
100.325		TORQUE WRENCH
100.330		PRESSURE GAUGE CARBURETTOR

6. DISASSEMBLY/ASSEMBLY

WARNING

Modification of the motor, or removal of original equipment may make the motor unsafe.

6.1 DISASSEMBLY CARBURETTOR

This section covers maintenance of the carburettor.

- Replace diaphragm fuel pump

1. Remove the 4 screw (Fig.4)
2. Remove the diaphragm
3. Clean the filter
4. To replace the diaphragm with a new one. (Fig.5)
5. Install the cover and tighten the screw to specified torque

TORQUE: 4Nm (0.4 Kg/m)



Fig.4



Fig.5

6.2 DISASSEMBLY TERMICAL GROUP

This section covers maintenance of the cylinder and piston. These service can be done with the engine installed in the frame.

The cylinder has a nicasil coating and cannot be rebored. If it is demaged, it must be replaced. Before disassembling, clean the engine througly to keep dirt from entering the engine. Remove any gasket material from the mating surfaces.

Do not use a screwdriver to remove the cylinder head.

Clean all parts before inspecting.

Before assembling, apply clean 2 stroke engine oil to all sliding surfaces.

1. Disassembly the motor from the chassis
2. Disconnect the spark plug cap
3. Remove the spark plug
4. Remove 3 caps screw and the cooling air duct
5. Remove 2 nuts exhausts fixing (fig.6)
6. Remove 2 springs (Fig.7)

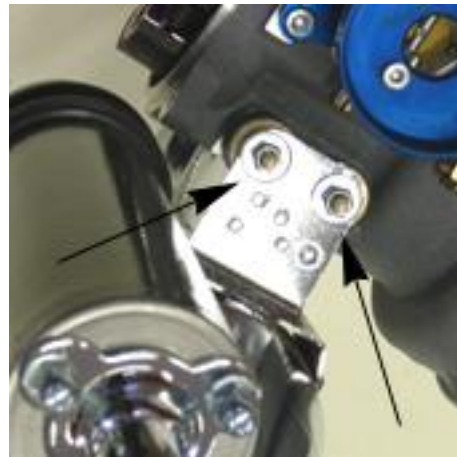


Fig.6



Fig.7

7. Pull the exhaust with resolution (Fig.8)

* Apply silicon gasket high temperature.



Fig.8



Fig.9

8. Remove the 4 cylinder head nuts (Fig.9)

9. Remove the cylinder head o-ring gasket (Fig10)

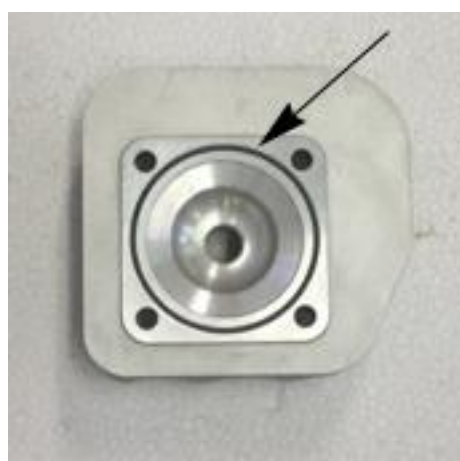


Fig.10

NOTE

To avoid warping the cylinder head, use a criss-cross pattern to loosen each nut about 1/4 turn, then remove the nuts.

DISASSEMBLY PISTON



Fig.11

10. Remove the piston pin clips using a pair of needle-nose pliers (Fig.11)

11. Press the piston pin out of the piston and remove the piston.(Fig.12)



Fig.12

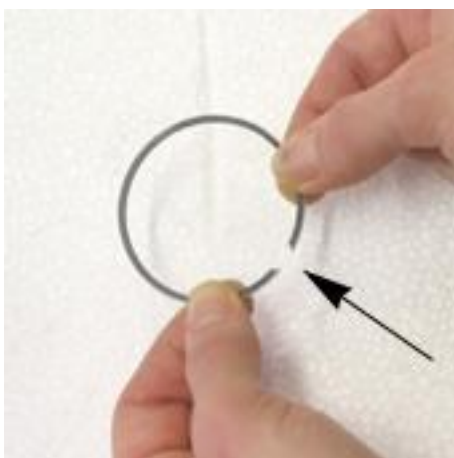


Fig.13

12. Spread each piston ring end remove by lifting it up a point just oppisite the gap (Fig.13)

CAUTION:
do not damage the piston ring by spreading the ends too far.

Decarbonizing

COMBUSTION CHAMBER

Remove the carbon deposits from the combustion chamber. Clean the head gasket surface of any gasket material

CAUTION:

Use care not to scratch the combustion chamber or the head gasket surface.

CYLINDER

Clean carbon deposits from the exhaust.

CAUTION:

Do not damage the cylinder bore.

INSTALLATION PISTON

1. Install the piston rings like (Fig.14)
2. Lubricate the piston rings and piston ring grooves with clean 2 stroke oil
3. Install the piston with the sign turned towards the exhaust (Fig.15)
4. Install the piston pin (Fig.12)
5. Install the piston rings on the piston (Fig.11)

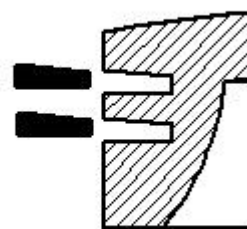


Fig.14



Fig. 15

CAUTION:

- Use new pin clips. Never use old clips
 - Do not let the clips fall into the crankcase.
-

INSTALLATION CYLINDER

6. Install the new cylinder gasket

7. Align each ring and gap with the piston ring pins in the ring groves (Fig.16)



Fig. 16

8. Lubricate the piston with 2-stroke oil

9. Slip the cylinder over the top of the piston while compressing the rings. (Fig.17)



Fig. 17

10. Then, install the cylinder on to the crankcase

INSTALLATION CYLINDER HEAD

1. Install the new cylinder head gasket o-ring (Fig.10)
2. Install the cylinder head and nuts (Fig.9), tighten the nuts to the specified torque.

TORQUE : 12Nm(1,2 kgf/m)

NOTE:

Tighten the cylinder head nuts in a criss-cross pattern in 2 or 3 steps

INSTALLATION EXHAUST

1. Insert the antivibrating pins thread in the support exhaust (Fig. 6)
2. Pull the exhaust with resolution and insert the spherical entrance on the cylinder (Fig. 8)
3. Install the springs (Fig.7)
4. Tighten the 2 nuts to specified torque (Fig.6)

TORQUE: 10Nm(1 kgf/m)

INSTALL COOLING AIR DUCT

1. Replace the cooling air duct on the cylinder head
2. Tighten the 2 crankcase cap screw, and then the cylinder head cap screw to the specified torque

TORQUE: 8Nm(0.8 kgf/m)

INSTALLATION SPARK PLUG

1. Lubricate the sparks plug thread
2. Tighten the spark plug to the specified torque

TORQUE : 18Nm(1.8 kgf/m)

3. Install the spark plug cap.
-

6.3 DISASSEMBLY/ASSEMBLY STARTER

1. Remove the air duct see the chapter 6.2
2. Remove 4 screw (Fig.18)
3. Remove the nut (Fig.19)
4. Remove the pulley
5. Replace chord 3 m/m diameter

CAUTION

NOT REMOVE THE SPRING (fig.21)

1. Install the pulley and tighten the screw (Fig. 19) to the specified torque
TORQUE : 15Nm(1,5 kgf/m)
2. Insert the starter into the cooling fan with open grafts (Fig.20)
3. Tighten the screw (Fig.18) to the specified torque
TORQUE: 6Nm(0.6 kgf/m)



Fig.18

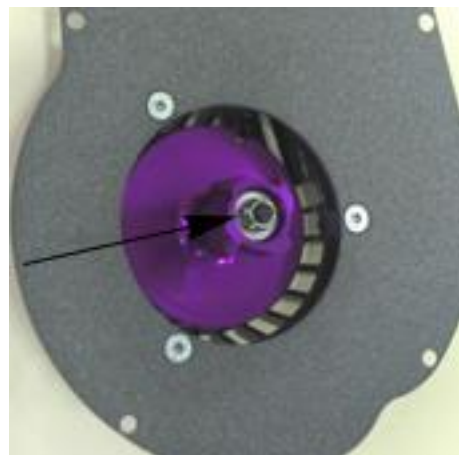


Fig.19



Fig.20

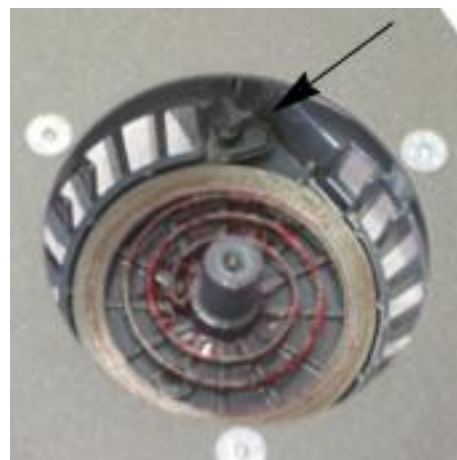


Fig.21

6.4 DISASSEMBLY/ ASSEMBLY SILENCER

1. Remove the exhaust like chapter 6.2
2. Remove the 3 bolts and cap screw fixing silencer (Fig,.22)
3. Remove the glass wool
4. Remove the carbon deposite from the inner pipe using the wire brush



Fig.22

-
1. Replace the glass wool
 2. Install the new glass wool packing material, opening the incision of the glass wool

NOTE :

be carefull not to damage the glass wool

- 3 . Tighten the 3 bolts and cap screw to the specified torque

TORQUE : 12Nm(1,2 kgf/m)

6.5 DISASSEMBLY/ASSEMBLY SPONGE FILTER

1. Unscrew the filter band (fig.23)
2. Remove the airbox from the motor
3. Remove 4 screw (Fig.24)
4. Remove the sponge filter (Fig.25)
5. Cleaning with biodegradable detergents (don't use gasoline)and dry the sponge filter.
6. Lubricate the sponge filter.(Fig.25)
7. Assembly all of the airbox

CAUTION
INSTALL THE SECURITY CABLE
(fig.23)



Fig.23



Fig.24



Fig.25

* Foam filter , help combat the ingress of sand and dust repels water without affecting engine breathing. Only apply to clean, dry filter. Ensure complete penetration and coverage. Allow to dry before refitting. (Fig.25)

6.6 ASSEMBLY/ DISASSEMBLY THE PROP HUB

1. Unscrew the cap screw (fig.26)
2. Unthread the hub from the reducer (Fig.27)



Fig.26

1. Replace the hub on rapid graft DIN 5482 15x12 Z9 (Fig.27)
2. Tighten the cap screw with the washer in the equipment at the specified torque.

TORQUE : 12Nm(1,2 kgf/m)



Fig.27

6.7 DISASSEMBLY / DISASSEMBLY THE INGNITION

DISASSEMBLY



Fig.28

1. Disassembly the engine from the chassis
2. Remove the 4 cap screw on the ignition crankcase(Fig.18)
3. Remove the 3 cap screw of the ignition fan (Fig.28)
- 4.Remove the 2 cap screw of the coil (Fig.29)



Fig.29

IGNITION COIL ASSEMBLY

1. Insert the coil into seat
2. Screw the 2 cap screw
3. Insert between the ignition magneto and the iron coil, some that distances them in plastic material like 0,25/0,3 mm (Fig. 30)
4. Tighten the cap screws at the specified torque

TORQUE : 12Nm(1,2 kgf/m)

5. Assembly the ignition fan tightening the 3 cap screws with locking agent at the specified torque

TORQUE : 12Nm(1,2 kgf/m)

**ATTENTION : REPLACE THE GRAFT
STARTER TIGHTENING THE SPRINGS
LIKE Fig.31**

6. Assembly the ignition crankcase cap see capter 6.3

ATTENTION: In case of taking off the nuts graft to replace them with hexagonal stop nut news.



Fig.30



Fig31

6.8 REDUCER

1. Disassemble the prop hub like chapter 6.6
2. Disassemble the reducer from the engine and remove the 4 fixing cap screw
3. Remove the bolt from clutch bell (Fig.32) with impact tool.
4. Take off the clutch bell with the exstactor indicated (art. 100.201 Two-Jaws pullers)
5. Tighten the 2 cap screw in the position into (Fig.33) and tap gently
6. For disassembling the bearing utilize a air heater of 150° (hair-dryer)
7. Clean all and utilize a silicone gasket at thin thickness.
8. Assembly the 2 carter in the right position with gear and pin

CAUTION: Utilize manual press to get together the crankcase

9. Tighten the screw at the specified torque
 - TORQUE: 12Nm (1,2 kgf/m)
10. Insert into the hole indicated (Fig.34) with lever operated grease pumps, 25 cl. of fat* . Utilize a balance to verify if you insert the correct quantity of fat Approximately 30 Gr.
11. Tighten the cup at the specified torque
 - TORQUE: 12Nm (1.2 kgf/m)
12. Assemble the clutch bell into the clutch tightening the bolt with locking agent at the specified torque
 - TORQUE: 300Nm (30 kgf/m)

*Grease type:

SINTOFLON GS2211NLGI classe00
 BECHEM Berulub FG 8 EP NLGI classe00



Fig.32



Fig. 33

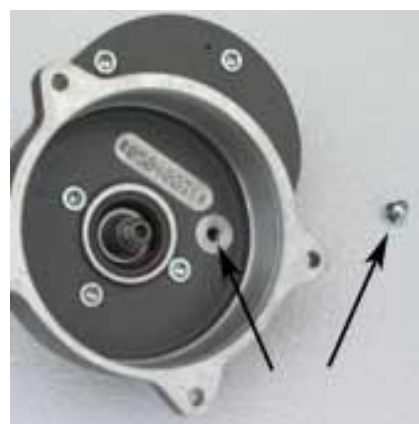


Fig. 34

7. CARBURATION REGULATION

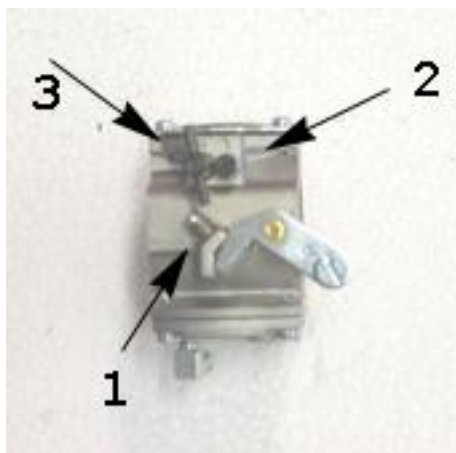


Fig.35

1. Regulation throttle cable

2. Regulation Min. gasoline

3. Regulation Max gasoline

Standard regulation

In case of problems of wrong carburetion, replace the originals levels.

Screw regulation of min. 1/4 turns from all closing. (Fig.28 point 2)

Screw regulation max. remove 1.1/4 turns from all closing. (Fig.28 point 3)

Attention the carburation regulation must be made at warm motor.

To execute in sequence the below operations:

1. To regulate the screw of the max. to 1 turn; (Fig.28 point 3)
2. To regulate the screw of the min. to 1/4 of turn; (Fig.28 point 2)
3. To fill up the circuit of feeding with the appropriate pomp;
4. To start the motor without accelerating (the motor must set off);
5. To reduce the passage holes air of the filter airbox with one hand, in order to hold the rich carburation for some second ones;
6. To warm the motor for 4 or 5 minute to the regimen of spin of 4000 rpm;
7. To regulate the screw of the minimal jet, to put the motor to 5500 rpm, to screw or to unscrew the screw until when the motor turns cleaned up and does not mutter;
8. To leave the motor for some second ones at minimum, to riaccelerate brusquely, now the motor must quickly accelerate without mumbling or to come less.

Attention the turn screw is many sensitive (1/4 regulation standard)

9. To regulate the lessened motor spin de of 2000/2200 rpm. (Fig.28 point 1)

When very regulated the carburetor does not need ulterior regulations, but in the case in which it takes place a change of altitude (1000 meters)

8. TROUBLESHOOTING

1. THE ENGINE DOES NOT START OR IS HARD TO START

CHECK	POSSIBLE CAUSES	SOLUTION
Check if fuel is jetting to the carburettor	No fuel in tank	Fill tank per fueling
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (fig .27)
Try spark test	The engine stop switch is to ON	Move it on OFF
	Faulty spark plug	Replace
	Broken or shorted ignition coil	Replace

2. ENGINE LACKS POWER

CHECK	POSSIBLE CAUSES	SOLUTION
Check the carburation	Fuel air mixture too lean	Turn the screw max out (fig.26 punto 3)
	Fuel air mixture too rich	Turn the screw max in (fig.26 punto 3)
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (fig.27)

3. THE ENGINE VIBRATES EXCESSIVE

CHECK	POSSIBLE CAUSES	SOLUTION
Silent-block engine	Excessive wear, holder rubber	Repalce (Max 70 Sh)
	Prop out of balance	Balance or replace

9. TORQUE VALUES ENGINE

ITEM	Thread diam x pitch	Torque gf*m
Cap screw propeller hub	M 6 x 1,0	1,2
Spark plug	M14 x 1,25	1,8
Cap screw cooling air duct	M 5 x 0,8	0,6
Cap screw crankcase starter	M 5 x 0,8	0,6
Bolt cylinder head	M 7 x 1,0	1,2
Cap screw riducer/engine	M 6 x 1,0	1,1
Cap screw crankcase reducer	M 6 x 1,0	1,2
*Bolt clutch bell	M 10 x 1.25	3,8
*Bolt clutch	M 10 x 1.25	3,8
All bolts	M 6 x 1,0	0,9
*Bolts ignition	M 10 x 1.25	4,0

* Apply locking agent

Snap ego

MAINTENANCE MANUAL

All information in this publication is based on latest specification's product available at the time of approval for printing.

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1. OPERATING INSTRUCTIONS

FUEL

- Snap ego has a two-stroke engine that requires a gasoline-oil mixture.
- Use gasoline with a pump octane number of 92 or higher .If “knocking” or “pinging” occurs, try a different brand of gasoline or a higher octane grade.
- Premix gasoline and oil in a ratio of 40:1. Prepare the fuel mixture in a clean container photo 1 , and shake until thoroughly mixed before filling the fuel tank.
- USE A GOOD QUALITY OF SYNTHETIC 2-STROKE OIL

CAUTION:

To much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear. Mix fuel in a ratio of 40 parts gasoline to 1 part oil (40:1)

- Vegetable oils separate from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use synthetic oil.

CAUTION:

- Do not mix vegetable and mineral based oils.

WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stores and where the fuel tank is refueled.

FUEL 92/98 octane	Synthetic oil
liters	cl
0,5	0,125
1	0,25
2	0,50
3	0,75
4	10
5	1,5
10	25

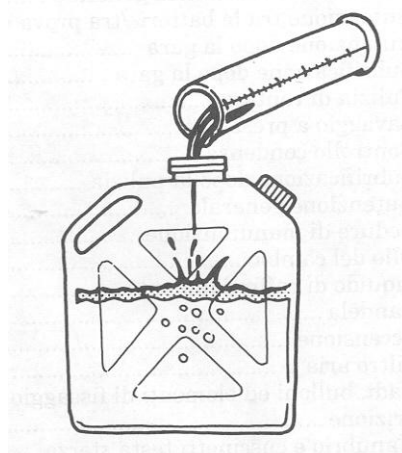


Photo 1

1.1 BASIC OPERATION

<p>Start the Engine</p> <p>WARNING</p> <ul style="list-style-type: none"> • Never run the engine in an closed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death. • Attempting to start the engine without the reducer provokes the outbreak of the clutch and can cause injury or damages. • Never run the engine without propeller. • The starter attempt can carry to the spin of the propeller and therefore to possible lesions. • The motor running emits disturbs electromagnetic. <p><u>Cold Engine Starting:</u></p> <ol style="list-style-type: none"> 1. To carry in pressue the circuit of the gasoline, to help itself pressing the push-button (fig.2). 2. To appeal the starter and to delicately pull iust after the harder point (to try repeatedly for being sure). 3. To pull the grip with energy, without throttle in. . 4. In case of lacked starter to repeat the procedere without to accelerate . 5. Allow the engine to warm up for at least 2 minutes before riding off, 6. . Slowly increase rpm and don't grip the throttle warming the engine is important to prevent cold seizures 	<p><u>Warm Engine Starting:</u></p> <ol style="list-style-type: none"> 1. To appeal the starter and to delicately pull hardly after the harder point 2. To pull the grip with energy, without throttle in. <p><u>Stopping The Engine</u></p> <ol style="list-style-type: none"> 1. Depress and hold the engine stop button until the engine stop completely <p><u>Break-in Procedure :</u> Following proper break-in procedure helps censure that some of the most important and expensive components on your new Snap ego will provide maximum performance and service life. (Also follow proper break-in procedure for a newly rebuilt engine)</p> <ol style="list-style-type: none"> 1. Do not hold the throttle in one position for more than a few seconds. It's better to roll the throttle on and off, without gaining too much,height and forcing too much at the motor. 2. Use the motor for features of 10 minutes at a time and to leave to cool it. 3. After tree hours of use or approximately 10 liters of gasoline the motor should be broken in. 4. This same procedure should be followed each time <ul style="list-style-type: none"> • Piston is replaced • Cylinder is replaced • Crankshaft or crank bearings are replaced
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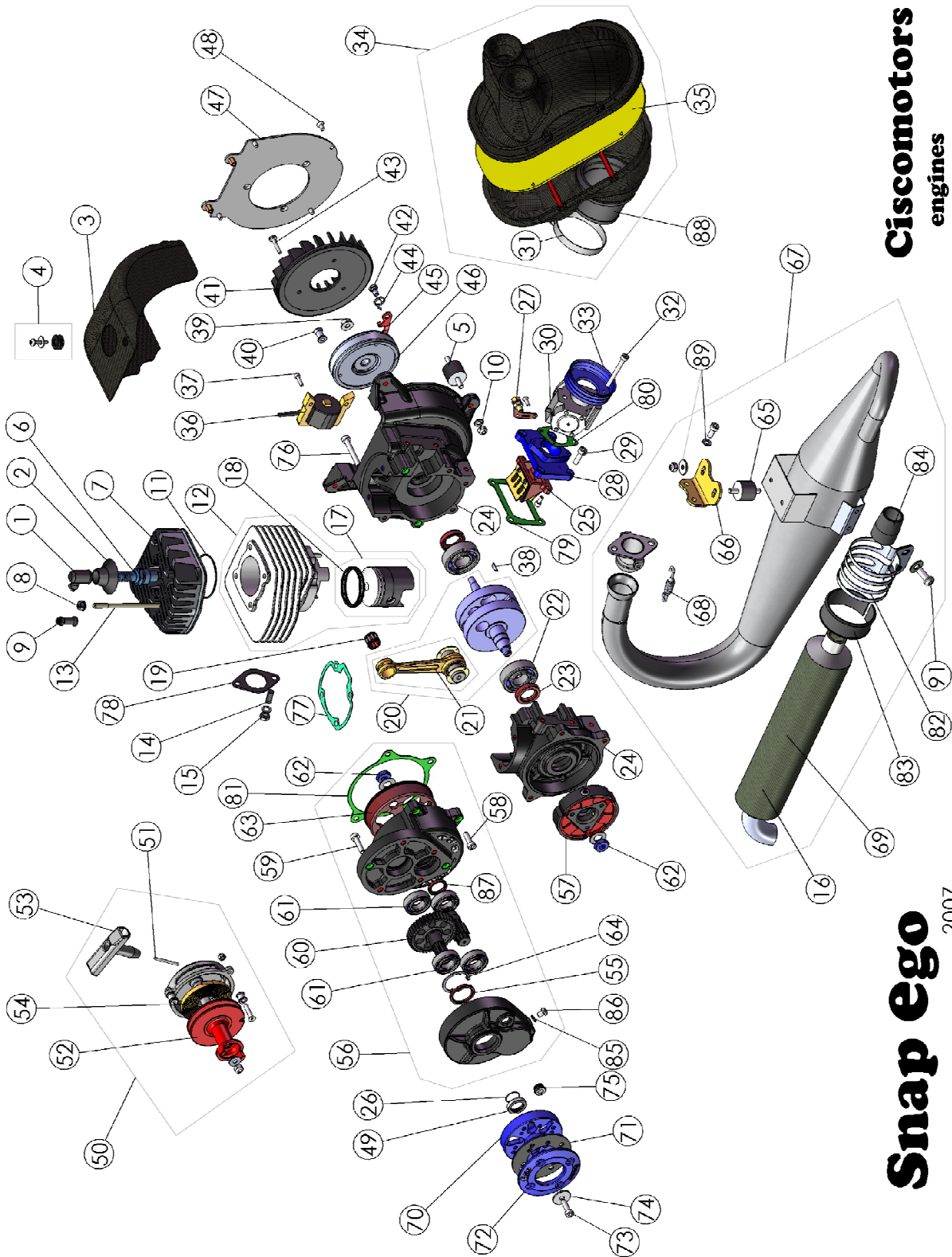
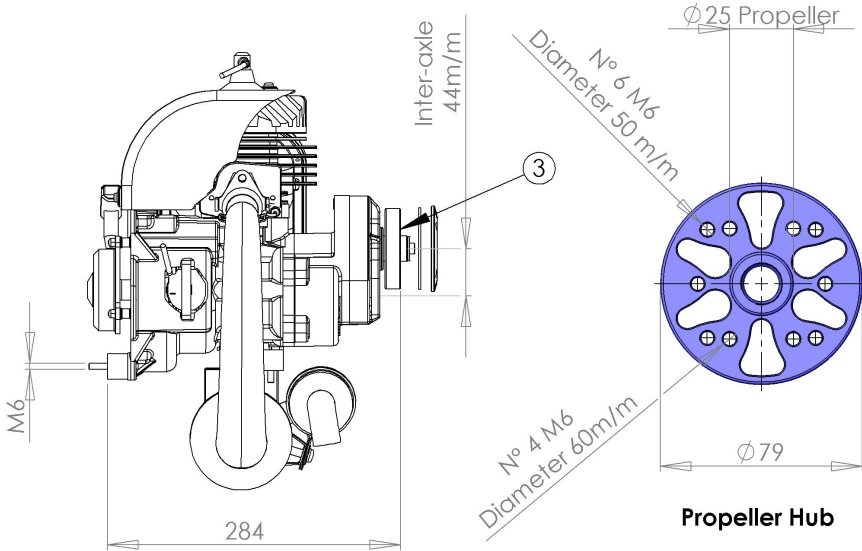


Photo 2

2. SPECIFICATION

2.1 ENGINE INSTALLATION ON CHASSIS

**Ciscomotors
Engines**



Snap ego

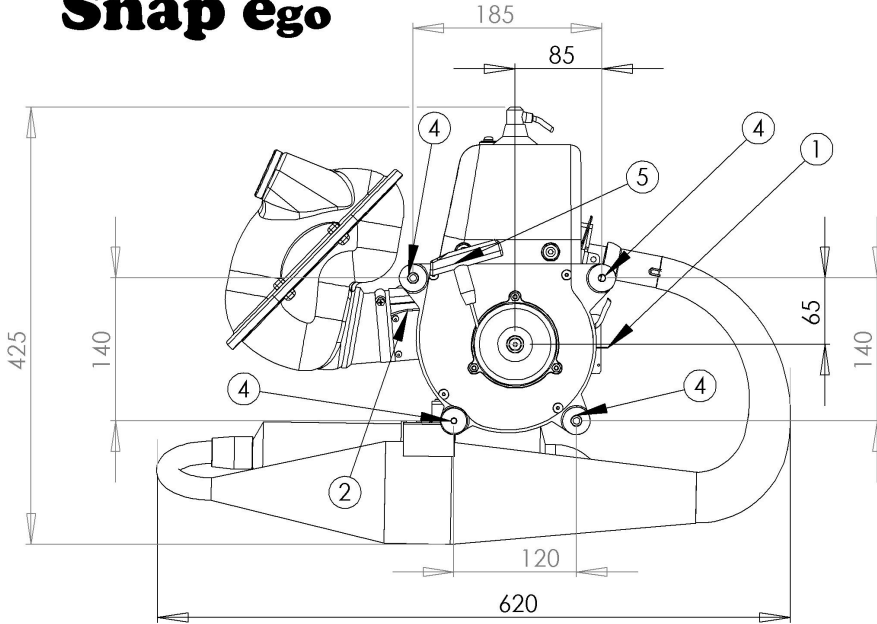


Photo 3

- 1. Engine stop connector
- 2. Throttle cable
- 3. Propeller Hub
- 4. Support engine
- 5. Manual starter

CAUTION:

To use antivibrating of optimal quality not superior 70s

2.2 TECHNICAL CHARACTERISTICS

Motor Snap ego	
Type	2 strokes cooled to air
Disposition cylinder	Monocylinder vertical
Bore max	51mm
Stroke max	47mm
Displacement	96 cc
Compression ratio	11,0 : 1
Maxim Power	12,5 kw (17cv) 8500 rpm
Max Torque	14 Nm 8400 rpm
Lubricating reducer	25ml
Electrical sistem	
Ignition	Elettronic ignition
Rotor	Variable Advance
Spark plug standard	Ngk BR8HS / B8HS
Spark plug summer +30° c	Ngk BR9HS / B9HS
Starter	Manual
Carburettor	
Type	Walbro wg8
Walbro WG8* Setting screw min	1 turn
Transmission	
Clutch Type	Centrifuge 3 shoe
Reduction	Gears helicoidal
Reduction ratio	1/3,63
Exhaust	
Type	Expansion Chamber
Silencer	Glass wool
Support engine	
Type	N.4 silent-block

*The standard carburation
 Temperature 10°C
 P 1024 Mb
 UR 50%
 Altitude (S.L.M.) 50 m

3. MAINTENANCE

3.1 GENERAL SERVICE INFORMATION:

- Wear gloves and glances when you make the maintenance;
- Do not perform maintenance while engine is running. Injury to your fingers, hands or head may result ;
- Perform maintenance on firm, level ground, using hard workstand, and not directly on chassis;
- Always install new gaskets, o-rings, piston pin clips, snap rings ect..when disassembling
- When tightening bolts, nuts or screw, start with the larger diameter or inner fasteners, and tighten them to the specified torque using a criss-cross pattern;
- Use genuine Ciscomotors parts when maintenance your Snap ego
- Clean parts in not-flammable cleaning solvent when disassembling. Lubricate any sliding surface, o-rings and seals before reassembling.

WARNING

Gasoline or low flash point solvents are highly flammable or explosive and must never be used for cleaning parts . Fire or explosion could result.

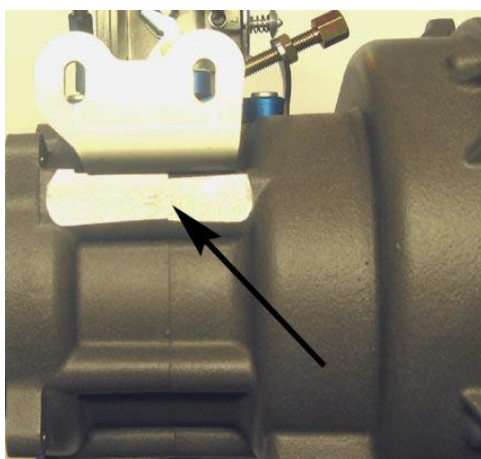
- After reassembling, chek all parts for proper installation and operation

NOTE:

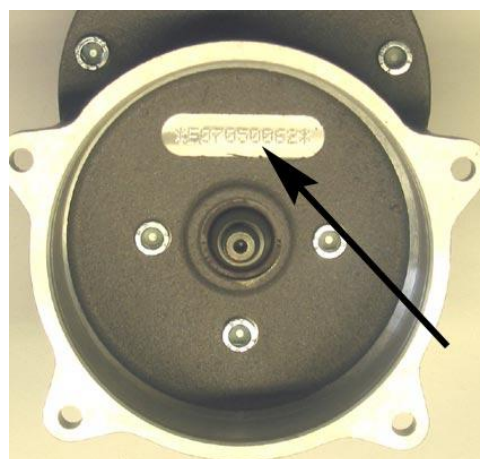
- Specification are listed chapter 2.

3.2 ROUTINE CLEANING

- If the Snap ego were only little dirty to clean up it with clean dusts cloth without dissolvents
- If the Snap ego were much dirty to clean up it with biodegradable detergents and not with dissolvents, lubricate where is necessary.



Number engine



Number reducer

3.3 MAINTENANCE SCHEDULE

FREQUENCY	INSPECT	REPLACE
Before and after each use	All screw nuts, bolts correctly tighten, silent-block in, and check carburation.	
Every 100 hours	Cylinder head decarbonizing and cleaning sponge filter	Reducer's lubricant
Every 200 hours	Diameter clutch, usury of the bell clutch, and glass wool of the silencer	
Every 1000 hours	Thermical group . Connecting rod	Crankshaft bearing ,bearing reducer, crankshaft seals.
Each year	All rubber and plastic components.	Fuel diaphragm carburettor , spark plug.

4. STORAGE

Extended storage such as for winter, requires that you take certain steps to reduce the effects of deterioration from not use of your Snap ego. In addition necessary repairs should be made before storing your Snap ego: otherwise these repairs and clean may be forgotten by the time your Snap ego is removed from storage.

.

5. SPARE PARTS & EQUIPMENT

5.1 SPARE PARTS

0000E1.0	1	SPARK PLUG CUP	000E48.0	4	CAP SCREW
0000E2.0	1	SHAFT SPARK PLUG	000E49.0	1	SPACER PROPELLER HUB
0000E3.0	1	CARBON FIBER COOLING AIR DUCT	000E50.0	1	MANUAL STARTER
0000E4.0	3	WIRE LEADS/CAP SCREW	000E51.0	1	CHORD 3.5 M/M
0000E5.0	4	SILENT-BLOCK ENGINE	000E52.0	1	PULLEY STARTER
0000E6.0	1	SPARK PLUG NGK BR8HS	000E53.0	1	HANGRIP STARTER
0000E6.1	OPZ	SPARK PLUG NGK BR9HS	000E54.0	1	SPRING MANUAL STARTER
0000E7.0	1	CYLINDER HEAD	000E55.0	1	OIL SEAL CLUTCH BELL
0000E8.0	3	NUT CYLINDER HEAD	000E56.0	1	REDUCER* COMPLETE
000009.0	1	SPECIAL NUT CYLINDERHEAD	000E57.1	1	CLUTCH
000E10.0	8	NUTS/WASHERS SILENT-BLOCK ENGINE	000E58.0	4	CAP SCREW CRANKSHAFT
000E11.0	1	OR VITON CYLINDER HEAD	000E59.0	6	CAP SCREW REDUCER
000E12.0	1	TERMICAL GROUP	000E60.0	1	PAIR GEAR
000E13.0	4	STUDBOLT CILINDER	000E61.0	4	BEARING REDUCER
000E14.0	2	STUDBOLT EXHAUST	000E62.0	1	NUT AND WASHER CLUTCH
000E15.0	2	NUTS AND WASHER EXHAUST	000E63.1	1	CLUTCH BELL
000E16.0	1	GLASS WOOL	000E64.0	1	SEEGER REDUCER*
000E17.0	1	PISTON COMPLETE	000E65.0	2	SILENT-BLOCK EXHAUST
000E18.0	2	PISTON RING	000E66.0	1	SUPPORT OF EXHAUST
000E19.0	1	NEEDLE BEARING	000E67.0	1	EXHAUST COMPLETE
000E20.0	1	CRANKSHAFT	000E68.0	2	SPRINGS EXHAUST
000E21.0	1	CONNECTING ROD	000E69.0	1	SILENCER
000E22.0	2	BEARING CRANKSHAFT	000E70.0	1	PROPELLER HUB
000E23.0	2	OIL SEAL CRANKSHAFT	000E71.0	2	RUBBER DISK PROPELLER
000E24.0	1	CRANKCASE ENGINE*	000E72.0	1	PROPELLER FLANGE 4 HOLE
000E25.0	1	REED VALVE	000E72.1	1	PROPELLER FLANGE 6 FIX
000E26.0	1	OR SPACER PROPELLER HUB	000E73.0	1	CAP SCREW HUB
000E27.0	1	THROTTLE BRACKET	000E74.0	1	WASHERS PROPELLER HUB
000E28.0	1	MANIFOLD WG8	000E75.0	1	SPY OIL LEVEL
000E28.2	OPZ	MANIFOLD INTAKE DELL'ORTO CARB.	000E76.0	6	CAP SCREWS SET CRANKCASE ENGINE
000E28.2R	OPZ	MANIFOLD RUBBER	000E77.0	1	CYLINDER GASKET
000E29.0	4	CAP SCREW MANIFOLD	000E78.0	1	EXHAUST GASKET
000E30.0	1	CARBURETTOR WG8	000E79.0	1	MAINFOLD IMMISSION GASKET
000E30.2	OPZ	CARBURETTOR DELL'ORTO	000E80.0	1	CARBURETTOR GASKET
000E31.0	1	BAND AIRBOX	000E81.0	1	REDUCER GASKET
000E32.0	2	CAP SCREW CARBUR. FLANGE	000E82.0	1	SILENCER BAND
000E33.0	1	FLANGE CABURETTOR	000E83.0	1	RUBBER SILENCER BAND
000E34.0	1	AIRBOX	000E84.0	1	RUBBER EXHAUST
000E35.0	1	FILTER	000E85.0	1	WASHERS COPPER REDUCER
000E36.0	1	IGNITION COIL	000E86.0	1	SCREW REDUCER
000E37.0	2	CAP SCREW COIL	000E87.0	1	OIL SEAL PINION
000E39.0	1	NUT WOODRUFF	000E88.0	1	RUBBER AIRBOX
000E40.0	3	SPACER COOLING FAN	000E89.0	1	SET SCREW BRACKET EXHASUT
000E41.0	1	COOLING FAN	000E90.0	1	ADAPTER HUB 6 FIX
000E42.0	1	NUT GRAFT	000E91.0	2	NUT/WASHER BAND SILENCER
000043.0	3	CAP SCREW COOLING FAN	100.101	1	KIT REPAIR CARBUR. WG8
000E44.0	2	SPRING GRAFT STARTER	100.102	1	KIT DIAGRAM WG8
000E45.0	2	GRAFT STARTER	100.121	1	LUBRIFICATION REDUCER
000E46.0	1	IGNITION COMPLETE			
000E47.0	1	IGNITION CRANKASE COVER			

5.2 EQUIPMENTS

COD		DESCRIPTION
10E.200		FLYWHEEL CLUTCH
100.201		FLYWHEEL BELL CLUTCH
100.300		SOCKETS HEX 17 m/m
100.301		SOCKETS HEX 11 m/m
100.302		SOCKETS HEX 10 m/m
100.310		MALE HEXAGON KEY 3m/m
100.311		MALE HEXAGON KEY 4m/m
100.312		MALE HEXAGON KEY 5m/m
100.315		SCREWDRIVERS-BLADE 1XL
100.316		SCREWDRIVERS PHILLIPS 1-2
100.320		HUMMER PLASTIC HEAD
100.321		PLIERS FOR SPRINGS
100.325		TORQUE WRENCH
100.330		PRESSURE GAUGE CARBURETTOR

6. DISASSEMBLY/ASSEMBLY

WARNING

Modification of the motor or removal of original equipment may make the motor unsafe.

6.1 DISASSEMBLY CARBURETTOR

This section covers maintenance of the carburettor.

- Replace diaphragm fuel pump

1. Remove the 4 screw (photo 4)
2. Remove the diaphragm
3. Clean the filter
4. To replace the diaphragm with a new one. (photo 5)
5. Install the cover and tighten the screw to specified torque

TORQUE: 4Nm (0.4 Kgf/m)

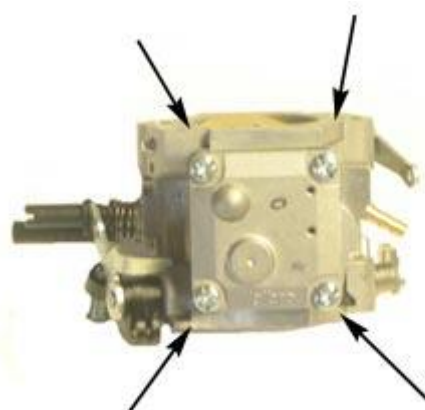


Photo 4



Diaphragm fuel pump

Photo 5

6.2 DISASSEMBLY TERMICAL GROUP

This section covers maintenance of the cylinder and piston. These service don't can be done with the engine installed in the frame.

The cylinder has a nicasil coating and cannot be rebored. If it is demaged, it must be replaced.

Before disassembling, clean the engine througly to keep dirt from entering the engine. Remove any gasket material from the mating surfaces.

Do not use a screwdriver to remove the cylinder head.

Clean all parts before inspecting.

Before assembling, apply clean 2 stroke engine oil to all sliding surfaces.

1. Disassembly the motor from the chassis
2. Disconnect the spark plug cap
3. Remove the spark plug
4. Remove 3 caps screw and the cooling air duct
5. Remove 2 nuts exhaust fixing (photo 6)
6. Remove 2 springs (photo 7)

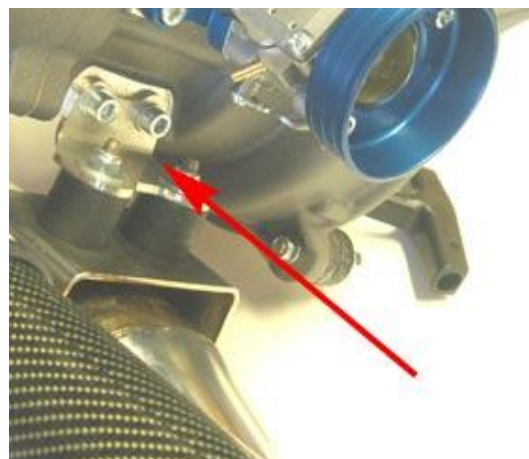


Photo 6



Photo 7

7. Pull the exhaust with resolution (photo 8)

* Apply silicon gasket high temperature.



Photo 8



Photo 9

8. Remove the 4 cylinder head nuts (photo 9)

9. Remove the cylinder head o-ring gasket (photo 10)

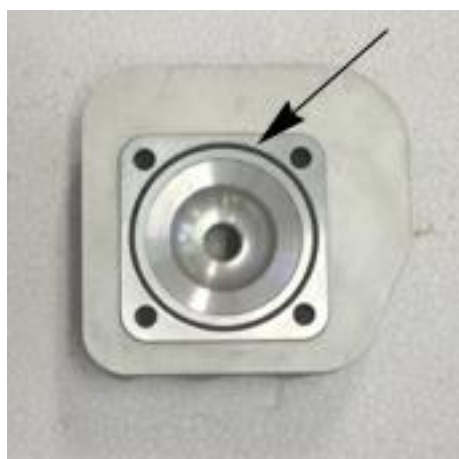


Photo 10

NOTE

To avoid warping the cylinder head, use a criss-cross pattern to loosen each nut about $\frac{1}{4}$ turn, then remove the nuts.

DISASSEMBLY PISTON



Photo 11

10. Remove the piston pin clips using a pair of needle-nose pliers (photo 11)

11. Press the piston pin out of the piston and remove the piston.(photo 12)



Photo 12

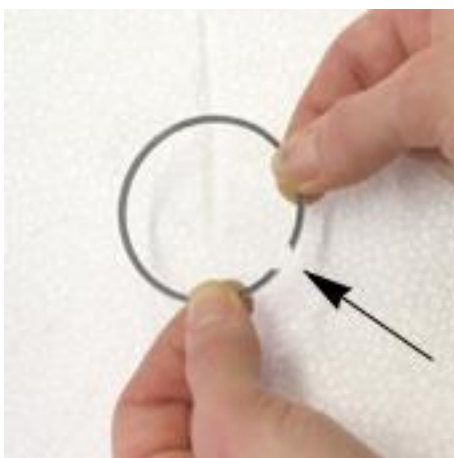


Photo 13

12. Spread each piston ring and remove by lifting it up a point just oppisite the gap (photo13)

CAUTION:
Do not damage the piston ring by spreading the ends too far.

Decarbonizing

COMBUSTION CHAMBER

Remove the carbon deposits from the combustion chamber. Clean the head gasket surface of any gasket material

CAUTION:

Use care not to scratch the combustion chamber or the head gasket surface.

CYLINDER

Clean carbon deposits from the exhaust.

CAUTION:

Do not damage the cylinder bore.

INSTALLATION PISTON

1. Install the piston rings like (photo14)
2. Lubricate the piston rings and piston ring grooves with clean 2 stroke oil
3. Install the piston with the sign turned towards the exhaust (photo 15)
4. Install the piston pin (photo 12)
5. Install the piston rings on the piston (photo 11)

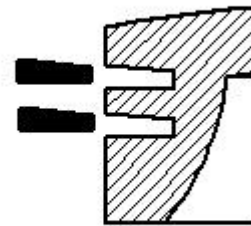


Photo 14



Photo 15

CAUTION:

- Use new pin clips. Never use old clips
 - Do not let the clips fall into the crankcase.
-

INSTALLATION CYLINDER

6. Install the new cylinder gasket

7. Align each ring and gap with the piston ring pins in the ring grooves (photo.16)



Photo 16

8. Lubricate the piston with 2-stroke oil

9. Slip the cylinder over the top of the piston while compressing the rings. (photo 17)



Photo 17

10. Then, install the cylinder on to the crankcase

INSTALLATION CYLINDER HEAD

1. Install the new cylinder head gasket o-ring (photo 10)
2. Install the cylinder head and nuts (photo 9), tighten the nuts to the specified torque.

TORQUE : 12Nm(1,2 kgf/m)

NOTE:

Tighten the cylinder head nuts in a criss-cross pattern in 2 or 3 steps

INSTALLATION EXHAUST

1. Insert the antivibrating pins thread in the support exhaust (photo 6)
2. Pull the exhaust with resolution and insert the spherical entrance on the cylinder (photo 8)
3. Install the springs (photo 7)
4. Tighten the 2 nuts to specified torque (photo 6)

TORQUE: 10Nm(1 kgf/m)

INSTALL COOLING AIR DUCT

1. Replace the cooling air duct on the cylinder head
2. Tighten the 2 crankcase cap screw, and then the cylinder head cap screw to the specified torque

TORQUE: 8Nm(0.8 kgf/m)

INSTALLATION SPARK PLUG

1. Lubricate the sparks plug thread
2. Tighten the spark plug to the specified torque

TORQUE : 18Nm(1.8 kgf/m)

3. Install the spark plug cap.
-

6.3 DISASSEMBLY/ASSEMBLY STARTER

1. Remove the air duct see the chapter 6.2
2. Remove 4 screws (photo 18)
3. Remove the nut (photo 19)
4. Remove the pulley
5. Replace chord 3 m/m diameter

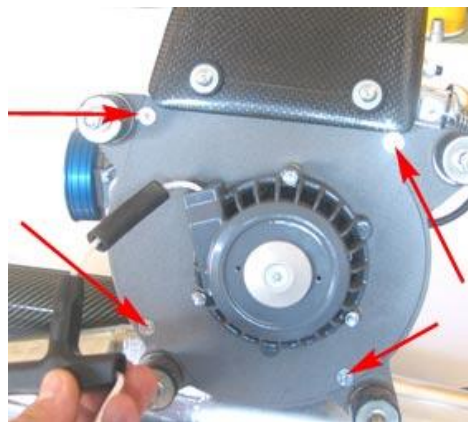


Photo 18

ATTENTION
NOT REMOVE THE SPRING (photo 21)

1. Install the pulley and tighten the screw (photo 19) to the specified torque
TORQUE : 15Nm(1,5 kgf/m)
2. Insert the starter into the cooling fan (photo 20)
3. Tighten the screw (photo18) to the specified torque
TORQUE: 6Nm(0.6 kgf/m)

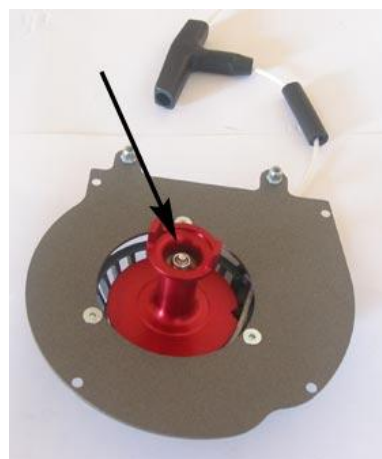


Photo 19

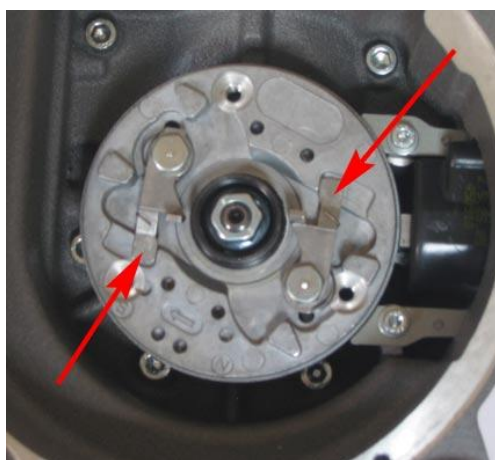


Photo 20

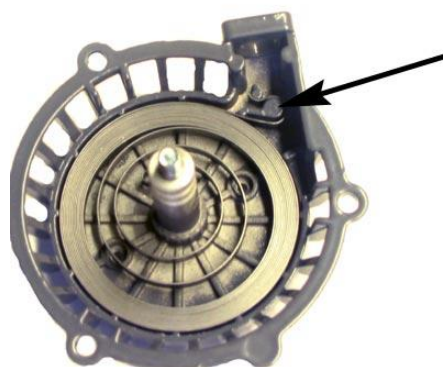


Photo 21

6.4 DISASSEMBLY/ ASSEMBLY SILENCER

1. Remove the exhaust like chapter 6.2
2. Remove the 2 bolts and cap screw fixing silencer (photo 22)
3. Remove 4 rivets (photo 22-1)
4. Remove the glass wool
5. Remove the carbon deposite from the inner pipe using the wire brush



Photo 22

1. Replace the glass wool
2. Install the new glass wool packing material, open glass wool with incision.
3. Assembly 4 new rivets (photo 22-1)
4. Tighten the 2 bolts and cap screw to the specified torque

TORQUE : 12Nm(1,2 kgf/m)

CAUTION
Control anti-leak rubber

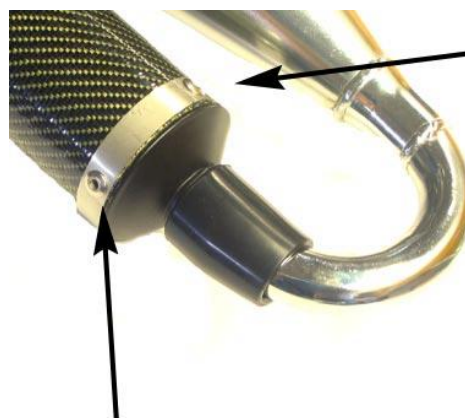


Photo 22-1

6.5 DISASSEMBLY/ASSEMBLY SPONGE FILTER

1. Unscrew the filter band (photo 23)
2. Remove the airbox from the motor
3. Remove 4 screw (photo 24)
4. Remove the sponge filter (photo 24)
5. Cleaning with biodegradable detergents (don't use gasoline) and dry the sponge filter.
6. Lubricate the sponge filter.(photo 25)
7. Assembly all of the airbox

CAUTION
INSTALL THE SECURITY CABLE
AIRBOX

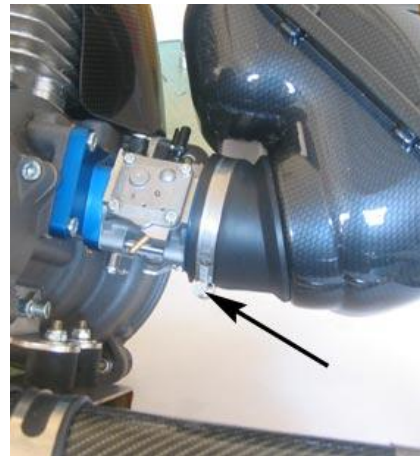


Photo 23



Photo 24



Photo 25

* Oil spray filter , help combat the ingress of sand and dust repels water without affecting engine breathing. Only apply to clean, dry filter. Ensure complete penetration and coverage. Allow to dry before refitting. (photo 25)

6.6 ASSEMBLY/ DISASSEMBLY THE PROPELLER HUB

1. Unscrew the cap screw (photo 26)
2. Unthread the hub from the reducer (photo 27)



Photo 26

1. Replace the hub on rapid graft DIN 5482 15x12 Z9 (photo 27)
2. Tighten the cap screw with the washer in the equipment at the specified torque.

TORQUE : 12Nm(1,2 kgf/m)

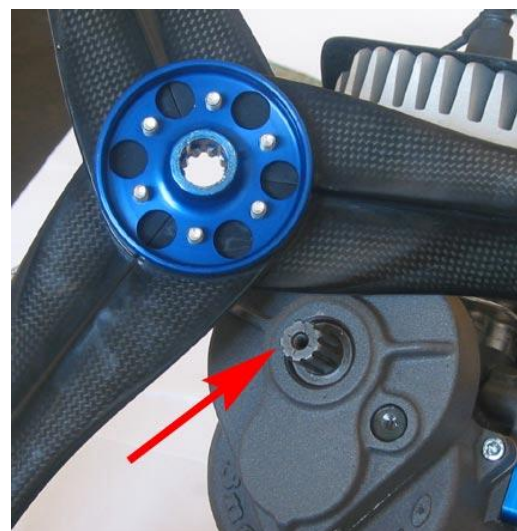


Photo 27

6.7 ASSEMBLY / DISASSEMBLY THE IGNITION

DISASSEMBLY

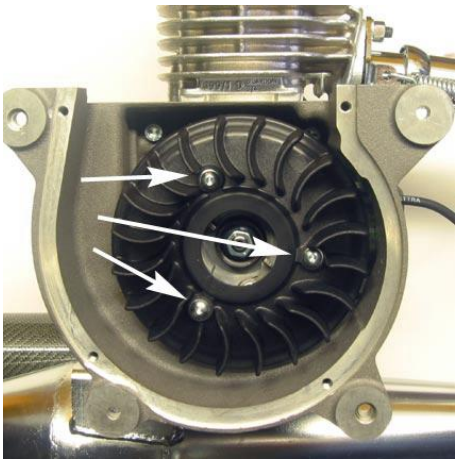


Photo 28

1. Disassembly the engine from the chassis
2. Remove the 4 cap screw on the ignition crankcase (photo 18)
3. Remove the 3 cap screw of the ignition fan (photo 28)
4. Remove the 2 cap screw of the coil (photo29)

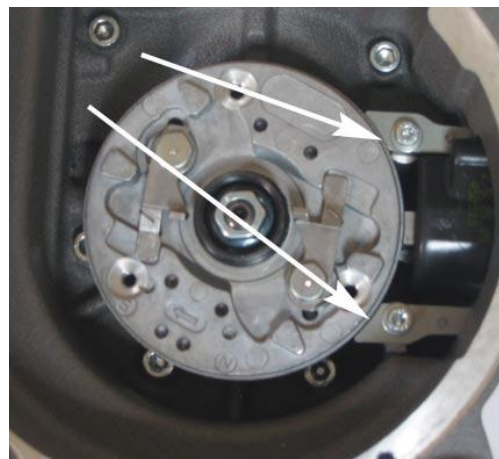


Photo 29

IGNITION COIL ASSEMBLY

1. Insert the coil into seat
2. Screw the 2 cap screw
3. Insert plastic spacer between ignition magneto and iron coil like 0,25/0,3 mm (photo 30)
4. Tighten the cap screws at the specified torque

TORQUE : 12Nm(1,2 kgf/m)

5. Assembly the ignition fan tightening the 3 cap screws with locking agent at the specified torque (Photo.29)

TORQUE : 12Nm(1,2 kgf/m)

6. Assembly starter cover (capter 6.3)

ATTENTION: In case of disassembly screws graft starter to use agent of blocking between assembly them being made attention to render them flowing.

Photo.31

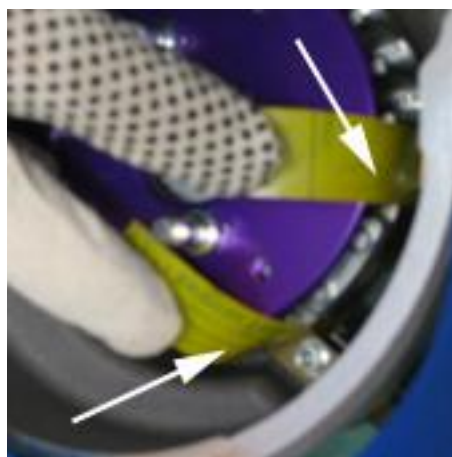


Photo 30



Photo 31

6.8 REDUCER

1. Disassembly the prop hub like chapter 6.6
2. Disassembly the reducer from the engine and remove the 4 fixing cap screw
3. Remove the bolt from clutch bell (photo 32) with impact tool.
4. Take off the clutch bell with the extractor indicated (art. 100.201 Two-Jaws pullers)
5. Tighten the 2 cap screw in the position into (photo 33) and tap gently
6. For disassembling the bearing utilize a air heater of 150° (hair-dryer)
7. Clean all and utilize a silicone gasket at thin thickness.
8. Assembly the 2 carter in the right position with gear and pin

CAUTION: Utilize manual press to get together the crankcase

9. Tighten the screw at the specified torque
 - TORQUE: 12Nm(1,2 kgf/m)
10. Insert into the hole indicated (photo 34) with pump 25 ml. of oil* .
11. Tighten the cup at the specified torque
 - TORQUE: 12Nm (1.2 kgf/m)
12. Assemble the clutch bell into the clutch tightening the bolt with locking agent at the specified torque
 - TORQUE: 300Nm (30 kgf/m)

*oil type:

- BP Energear EP SAE 80W-90 (mineral)
- BP Energear SGX SAE 75W-90 (synthetic)
- Castrol EP 80W-90 (mineral)
- Castrol TAF-X 75W90 (synthetic)



Photo 32



Photo 33

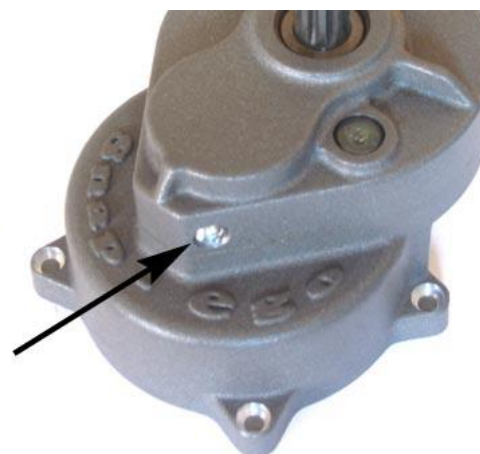


Photo 34

7. REGULATION CARBURETTOR “ WG8 ”

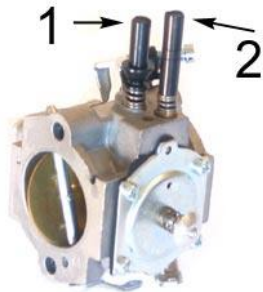


Photo 35

1. Regulation throttle cable

2. Regulation Min. gasoline

Standard regulation

In case of problems of wrong carburation , replace the originals levels.
Screw regulation of min. 1 turn from all closing. (photo 35- 2)

ATTENTION

Not to change this lever position (photo 36)
for not to cause refilling gasoline in the
engine.



Photo 36

Attention: regulation of carburation must be made at warm motor.

To execute in sequence the below operations:

1. To regulate the screw of the min. to 1 turn from all closing (photo 35- 2)
2. To fill up the circuit of feeding with the appropriate pump;
3. To start the motor open the throttle(1/4-1/8) (the motor must set off);
4. To reduce the passage holes air of the filter airbox with one hand, in order to hold the rich carburation for some second ones;
5. To warm the motor for 4 or 5 minute to the regimen of spin of 3000rpm;
6. To regulate the screw of the minimal jet (photo 35- 2), to put the motor to 5000 rpm, to screw or to unscrew the screw until when the motor turns cleaned up and does not mutter;
7. To leave the motor for some second ones at minimum, to accelerating normally , now the motor must quickly accelerate without mumbling or to come less.
8. To regulate the lessened motor spin of the 2000/2200 rpm. (photo 35-1)

When the carburettor is optimally regulated does not need ulterior regulations, but in the case in which it takes place a change of altitude (1000 meters)

8. TROUBLESHOOTING

1. THE ENGINE DOES NOT START OR IS HARD TO START

CHECK	POSSIBLE CAUSES	SOLUTION
Check if fuel is jetting to the carburettor	No fuel in tank	Fill tank per fueling
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (photo 5)
Try spark test	The engine stop switch is to ON	Move it on OFF
	Faulty spark plug	Replace
	Broken or shorted ignition coil	Replace

2. ENGINE LACKS POWER

CHECK	POSSIBLE CAUSES	SOLUTION
Check the carburation	Fuel air mixture too lean	Turn the screw min out (photo 35- 2)
	Fuel air mixture too rich	Turn the screw max in (photo 35- 2)
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (photo 27)

3. THE ENGINE VIBRATES EXCESSIVE

CHECK	POSSIBLE CAUSES	SOLUTION
Silent-block engine	Excessive wear, holder rubber	Replace (Max 70 Sh)
	Prop out of balance	Balance or replace

9. TORQUE VALUES ENGINE

ITEM	Thread diam x pitch	Torque gf*m
Cap screw propeller hub	M 6 x 1,0	1,2
Spark plug	M14 x 1,25	1,8
Cap screw cooling air duct	M 5 x 0,8	0,6
Cap screw crankcase starter	M 5 x 0,8	0,6
Bolt cylinder head	M 6 x 1,0	1,2
Cap screw riducer/engine	M 6 x 1,0	1,2
Cap screw crankcase reducer	M 6 x 1,0	1,2
*Bolt clutch bell	M 10 x 1.25	3,8
*Bolt clutch	M 10 x 1.25	3,8
All bolts	M 6 x 1,0	1,0
*Bolts ignition	M 8 x 1.25	3,0

* Apply locking agent

Snap ego

MAINTENANCE MANUAL

All information in this publication is based on latest specification's product available at the time of approval for printing.

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1. OPERATING INSTRUCTIONS

FUEL

- Snap ego has a two-stroke engine that requires a gasoline-oil mixture.
- Use gasoline with a pump octane number of 92 or higher .If “knocking” or “pinging” occurs, try a different brand of gasoline or a higher octane grade.
- Premix gasoline and oil in a ratio of 40:1. Prepare the fuel mixture in a clean container photo 1 , and shake until thoroughly mixed before filling the fuel tank.
- USE A GOOD QUALITY OF SYNTHETIC 2-STROKE OIL

CAUTION:

To much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear. Mix fuel in a ratio of 40 parts gasoline to 1 part oil (40:1)

- Vegetable oils separate from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use synthetic oil.

CAUTION:

- Do not mix vegetable and mineral based oils.

WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stores and where the fuel tank is refueled.

FUEL 92/98 octane	Synthetic oil
liters	cl
0,5	0,125
1	0,25
2	0,50
3	0,75
4	10
5	1,5
10	25

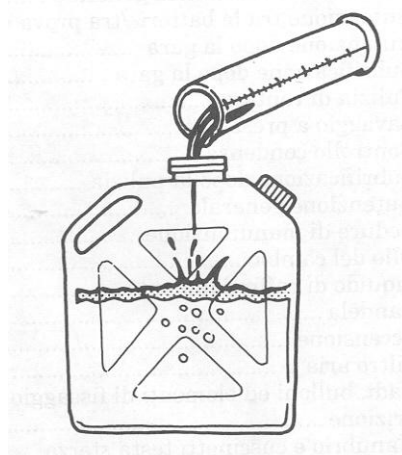


Photo 1

1.1 BASIC OPERATION

<p>Start the Engine</p> <p>WARNING</p> <ul style="list-style-type: none"> • Never run the engine in an closed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death. • Attempting to start the engine without the reducer provokes the outbreak of the clutch and can cause injury or damages. • Never run the engine without propeller. • The starter attempt can carry to the spin of the propeller and therefore to possible lesions. • The motor running emits disturbs electromagnetic. <p><u>Cold Engine Starting:</u></p> <ol style="list-style-type: none"> 1. To carry in pressue the circuit of the gasoline, to help itself pressing the push-button (fig.2). 2. To appeal the starter and to delicately pull iust after the harder point (to try repeatedly for being sure). 3. To pull the grip with energy, without throttle in. . 4. In case of lacked starter to repeat the procedere without to accelerate . 5. Allow the engine to warm up for at least 2 minutes before riding off, 6. . Slowly increase rpm and don't grip the throttle warming the engine is important to prevent cold seizures 	<p><u>Warm Engine Starting:</u></p> <ol style="list-style-type: none"> 1. To appeal the starter and to delicately pull hardly after the harder point 2. To pull the grip with energy, without throttle in. <p><u>Stopping The Engine</u></p> <ol style="list-style-type: none"> 1. Depress and hold the engine stop button until the engine stop completely <p><u>Break-in Procedure :</u> Following proper break-in procedure helps censure that some of the most important and expensive components on your new Snap ego will provide maximum performance and service life. (Also follow proper break-in procedure for a newly rebuilt engine)</p> <ol style="list-style-type: none"> 1. Do not hold the throttle in one position for more than a few seconds. It's better to roll the throttle on and off, without gaining too much,height and forcing too much at the motor. 2. Use the motor for features of 10 minutes at a time and to leave to cool it. 3. After tree hours of use or approximately 10 liters of gasoline the motor should be broken in. 4. This same procedure should be followed each time <ul style="list-style-type: none"> • Piston is replaced • Cylinder is replaced • Crankshaft or crank bearings are replaced
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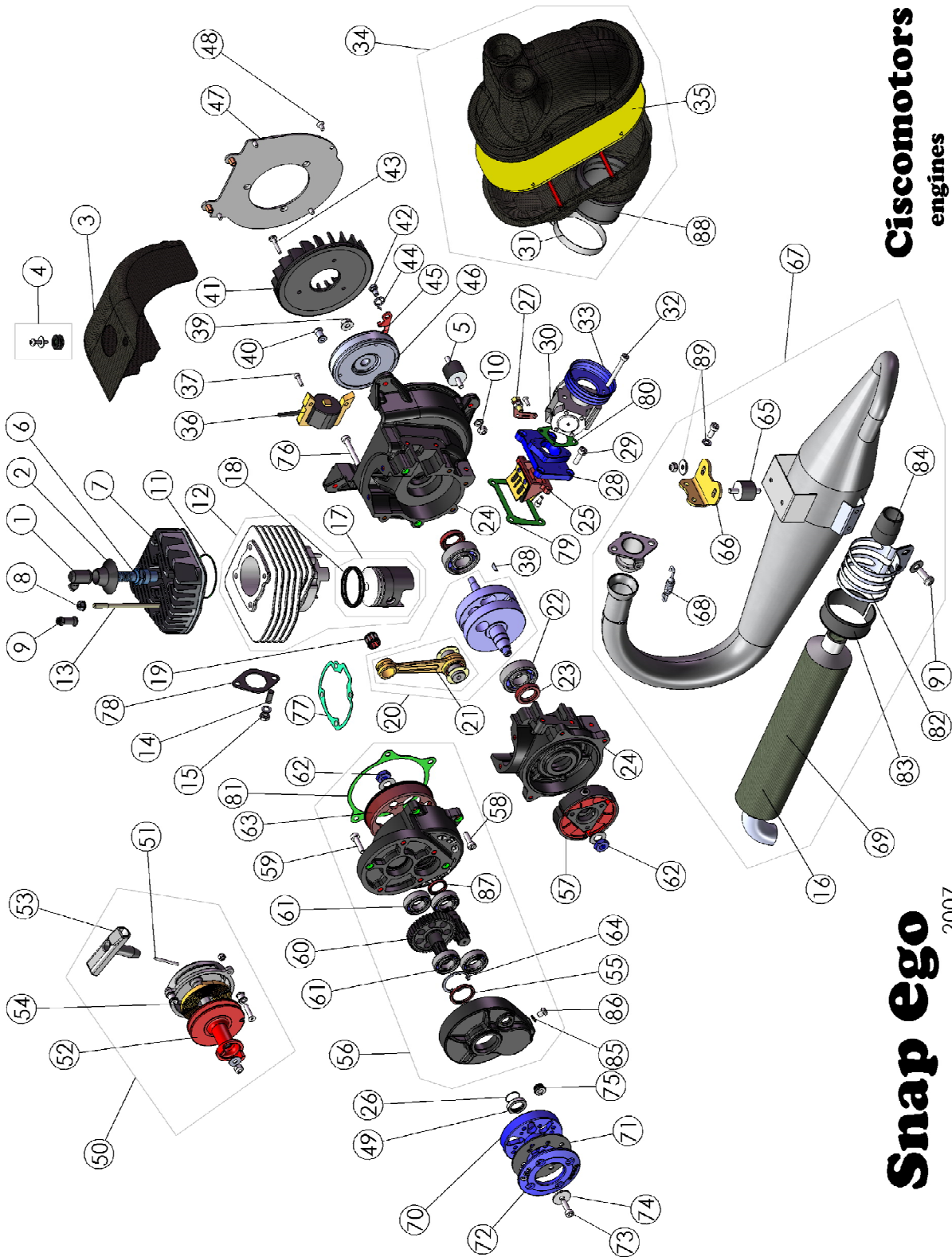
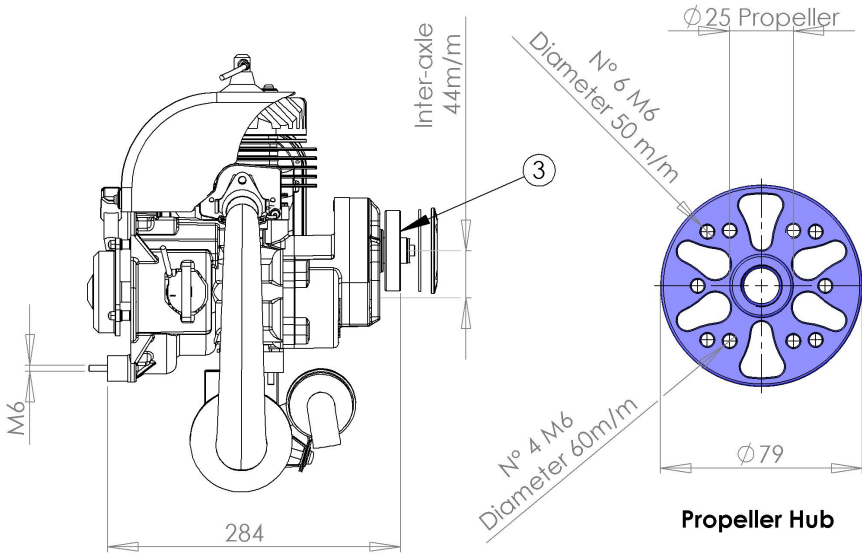


Photo 2

2. SPECIFICATION

2.1 ENGINE INSTALLATION ON CHASSIS

**Ciscomotors
Engines**



Snap ego

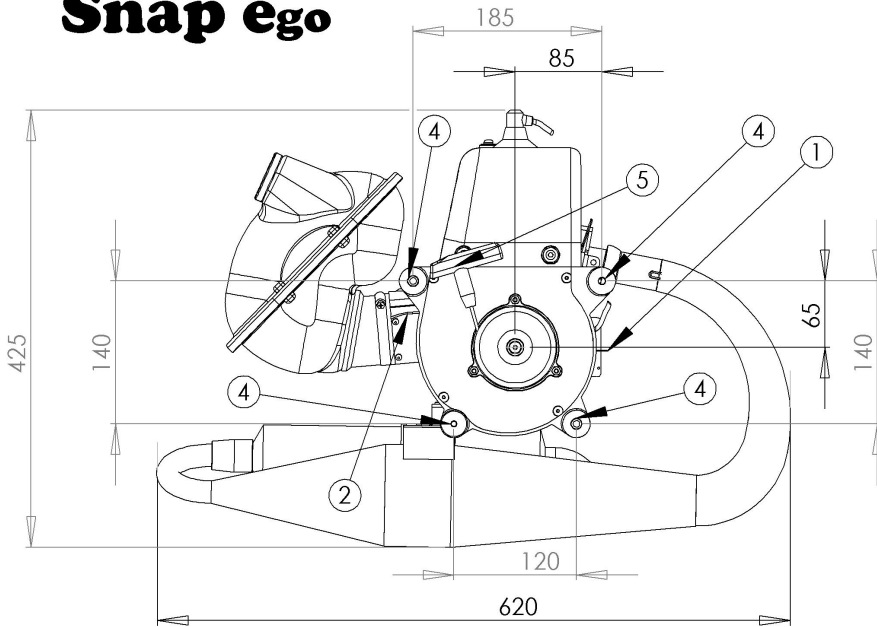


Photo 3

- 1. Engine stop connector
- 2. Throttle cable
- 3. Propeller Hub
- 4. Support engine
- 5. Manual starter

CAUTION:

To use antivibrating of optimal quality not superior 70s

2.2 TECHNICAL CHARACTERISTICS

Motor Snap ego	
Type	2 strokes cooled to air
Disposition cylinder	Monocylinder vertical
Bore max	51mm
Stroke max	47mm
Displacement	96 cc
Compression ratio	11,0 : 1
Maxim Power	12,5 kw (17cv) 8500 rpm
Max Torque	14 Nm 8400 rpm
Lubricating reducer	25ml
Electrical sistem	
Ignition	Elettronic ignition
Rotor	Variable Advance
Spark plug standard	Ngk BR8HS / B8HS
Spark plug summer +30° c	Ngk BR9HS / B9HS
Starter	Manual
Carburettor	
Type	Walbro wg8
Walbro WG8* Setting screw min	1 turn
Transmission	
Clutch Type	Centrifuge 3 shoe
Reduction	Gears helicoidal
Reduction ratio	1/3,63
Exhaust	
Type	Expansion Chamber
Silencer	Glass wool
Support engine	
Type	N.4 silent-block

*The standard carburation
 Temperature 10°C
 P 1024 Mb
 UR 50%
 Altitude (S.L.M.) 50 m

3. MAINTENANCE

3.1 GENERAL SERVICE INFORMATION:

- Wear gloves and glances when you make the maintenance;
- Do not perform maintenance while engine is running. Injury to your fingers, hands or head may result ;
- Perform maintenance on firm, level ground, using hard workstand, and not directly on chassis;
- Always install new gaskets, o-rings, piston pin clips, snap rings ect..when disassembling
- When tightening bolts, nuts or screw, start with the larger diameter or inner fasteners, and tighten them to the specified torque using a criss-cross pattern;
- Use genuine Ciscomotors parts when maintenance your Snap ego
- Clean parts in not-flammable cleaning solvent when disassembling. Lubricate any sliding surface, o-rings and seals before reassembling.

WARNING

Gasoline or low flash point solvents are highly flammable or explosive and must never be used for cleaning parts . Fire or explosion could result.

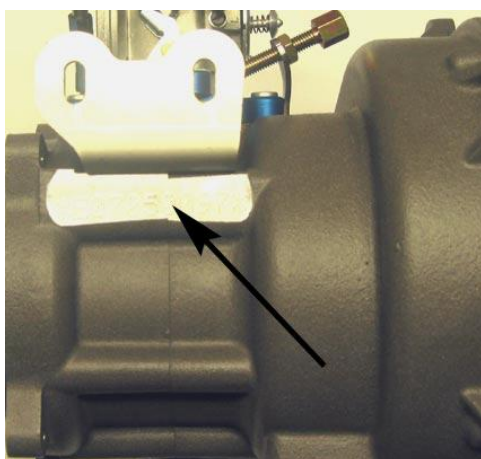
- After reassembling, chek all parts for proper installation and operation

NOTE:

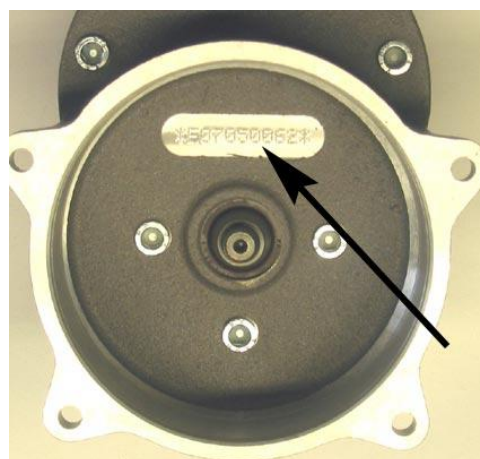
- Specification are listed chapter 2.

3.2 ROUTINE CLEANING

- If the Snap ego were only little dirty to clean up it with clean dusts cloth without dissolvents
- If the Snap ego were much dirty to clean up it with biodegradable detergents and not with dissolvents, lubricate where is necessary.



Number engine



Number reducer

3.3 MAINTENANCE SCHEDULE

FREQUENCY	INSPECT	REPLACE
Before and after each use	All screw nuts, bolts correctly tighten, silent-block in, and check carburation.	
Every 100 hours	Cylinder head decarbonizing and cleaning sponge filter	Reducer's lubricant
Every 200 hours	Diameter clutch, usury of the bell clutch, and glass wool of the silencer	
Every 1000 hours	Thermical group . Connecting rod	Crankshaft bearing ,bearing reducer, crankshaft seals.
Each year	All rubber and plastic components.	Fuel diaphragm carburettor , spark plug.

4. STORAGE

Extended storage such as for winter, requires that you take certain steps to reduce the effects of deterioration from not use of your Snap ego. In addition necessary repairs should be made before storing your Snap ego: otherwise these repairs and clean may be forgotten by the time your Snap ego is removed from storage.

.

5. SPARE PARTS & EQUIPMENT

5.1 SPARE PARTS

0000E1.0	1	SPARK PLUG CUP	000E48.0	4	CAP SCREW
0000E2.0	1	SHAFT SPARK PLUG	000E49.0	1	SPACER PROPELLER HUB
0000E3.0	1	CARBON FIBER COOLING AIR DUCT	000E50.0	1	MANUAL STARTER
0000E4.0	3	WIRE LEADS/CAP SCREW	000E51.0	1	CHORD 3.5 M/M
0000E5.0	4	SILENT-BLOCK ENGINE	000E52.0	1	PULLEY STARTER
0000E6.0	1	SPARK PLUG NGK BR8HS	000E53.0	1	HANGRIP STARTER
0000E6.1	OPZ	SPARK PLUG NGK BR9HS	000E54.0	1	SPRING MANUAL STARTER
0000E7.0	1	CYLINDER HEAD	000E55.0	1	OIL SEAL CLUTCH BELL
0000E8.0	3	NUT CYLINDER HEAD	000E56.0	1	REDUCER* COMPLETE
000009.0	1	SPECIAL NUT CYLINDERHEAD	000E57.1	1	CLUTCH
000E10.0	8	NUTS/WASHERS SILENT-BLOCK ENGINE	000E58.0	4	CAP SCREW CRANKSHAFT
000E11.0	1	OR VITON CYLINDER HEAD	000E59.0	6	CAP SCREW REDUCER
000E12.0	1	TERMICAL GROUP	000E60.0	1	PAIR GEAR
000E13.0	4	STUDBOLT CILINDER	000E61.0	4	BEARING REDUCER
000E14.0	2	STUDBOLT EXHAUST	000E62.0	1	NUT AND WASHER CLUTCH
000E15.0	2	NUTS AND WASHER EXHAUST	000E63.1	1	CLUTCH BELL
000E16.0	1	GLASS WOOL	000E64.0	1	SEEGER REDUCER*
000E17.0	1	PISTON COMPLETE	000E65.0	2	SILENT-BLOCK EXHAUST
000E18.0	2	PISTON RING	000E66.0	1	SUPPORT OF EXHAUST
000E19.0	1	NEEDLE BEARING	000E67.0	1	EXHAUST COMPLETE
000E20.0	1	CRANKSHAFT	000E68.0	2	SPRINGS EXHAUST
000E21.0	1	CONNECTING ROD	000E69.0	1	SILENCER
000E22.0	2	BEARING CRANKSHAFT	000E70.0	1	PROPELLER HUB
000E23.0	2	OIL SEAL CRANKSHAFT	000E71.0	2	RUBBER DISK PROPELLER
000E24.0	1	CRANKCASE ENGINE*	000E72.0	1	PROPELLER FLANGE 4 HOLE
000E25.0	1	REED VALVE	000E72.1	1	PROPELLER FLANGE 6 FIX
000E26.0	1	OR SPACER PROPELLER HUB	000E73.0	1	CAP SCREW HUB
000E27.0	1	THROTTLE BRACKET	000E74.0	1	WASHERS PROPELLER HUB
000E28.0	1	MANIFOLD WG8	000E75.0	1	SPY OIL LEVEL
000E28.2	OPZ	MANIFOLD INTAKE DELL'ORTO CARB.	000E76.0	6	CAP SCREWS SET CRANKCASE ENGINE
000E28.2R	OPZ	MANIFOLD RUBBER	000E77.0	1	CYLINDER GASKET
000E29.0	4	CAP SCREW MANIFOLD	000E78.0	1	EXHAUST GASKET
000E30.0	1	CARBURETTOR WG8	000E79.0	1	MAINFOLD IMMISSION GASKET
000E30.2	OPZ	CARBURETTOR DELL'ORTO	000E80.0	1	CARBURETTOR GASKET
000E31.0	1	BAND AIRBOX	000E81.0	1	REDUCER GASKET
000E32.0	2	CAP SCREW CARBUR. FLANGE	000E82.0	1	SILENCER BAND
000E33.0	1	FLANGE CABURETTOR	000E83.0	1	RUBBER SILENCER BAND
000E34.0	1	AIRBOX	000E84.0	1	RUBBER EXHAUST
000E35.0	1	FILTER	000E85.0	1	WASHERS COPPER REDUCER
000E36.0	1	IGNITION COIL	000E86.0	1	SCREW REDUCER
000E37.0	2	CAP SCREW COIL	000E87.0	1	OIL SEAL PINION
000E39.0	1	NUT WOODRUFF	000E88.0	1	RUBBER AIRBOX
000E40.0	3	SPACER COOLING FAN	000E89.0	1	SET SCREW BRACKET EXHASUT
000E41.0	1	COOLING FAN	000E90.0	1	ADAPTER HUB 6 FIX
000E42.0	1	NUT GRAFT	000E91.0	2	NUT/WASHER BAND SILENCER
000043.0	3	CAP SCREW COOLING FAN	100.101	1	KIT REPAIR CARBUR. WG8
000E44.0	2	SPRING GRAFT STARTER	100.102	1	KIT DIAGRAM WG8
000E45.0	2	GRAFT STARTER	100.121	1	LUBRIFICATION REDUCER
000E46.0	1	IGNITION COMPLETE			
000E47.0	1	IGNITION CRANKASE COVER			

5.2 EQUIPMENTS

COD		DESCRIPTION
10E.200		FLYWHEEL CLUTCH
100.201		FLYWHEEL BELL CLUTCH
100.300		SOCKETS HEX 17 m/m
100.301		SOCKETS HEX 11 m/m
100.302		SOCKETS HEX 10 m/m
100.310		MALE HEXAGON KEY 3m/m
100.311		MALE HEXAGON KEY 4m/m
100.312		MALE HEXAGON KEY 5m/m
100.315		SCREWDRIVERS-BLADE 1XL
100.316		SCREWDRIVERS PHILLIPS 1-2
100.320		HUMMER PLASTIC HEAD
100.321		PLIERS FOR SPRINGS
100.325		TORQUE WRENCH
100.330		PRESSURE GAUGE CARBURETTOR

6. DISASSEMBLY/ASSEMBLY

WARNING

Modification of the motor or removal of original equipment may make the motor unsafe.

6.1 DISASSEMBLY CARBURETTOR

This section covers maintenance of the carburettor.

- Replace diaphragm fuel pump

1. Remove the 4 screw (photo 4)
2. Remove the diaphragm
3. Clean the filter
4. To replace the diaphragm with a new one. (photo 5)
5. Install the cover and tighten the screw to specified torque

TORQUE: 4Nm (0.4 Kgf/m)

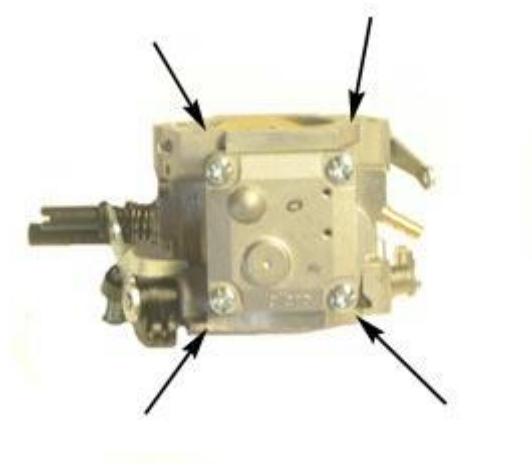


Photo 4



Diaphragm fuel pump

Photo 5

6.2 DISASSEMBLY TERMICAL GROUP

This section covers maintenance of the cylinder and piston. These service don't can be done with the engine installed in the frame.

The cylinder has a nicasil coating and cannot be rebored. If it is demaged, it must be replaced.

Before disassembling, clean the engine througly to keep dirt from entering the engine. Remove any gasket material from the mating surfaces.

Do not use a screwdriver to remove the cylinder head.

Clean all parts before inspecting.

Before assembling, apply clean 2 stroke engine oil to all sliding surfaces.

1. Disassembly the motor from the chassis
2. Disconnect the spark plug cap
3. Remove the spark plug
4. Remove 3 caps screw and the cooling air duct
5. Remove 2 nuts exhaust fixing (photo 6)
6. Remove 2 springs (photo 7)

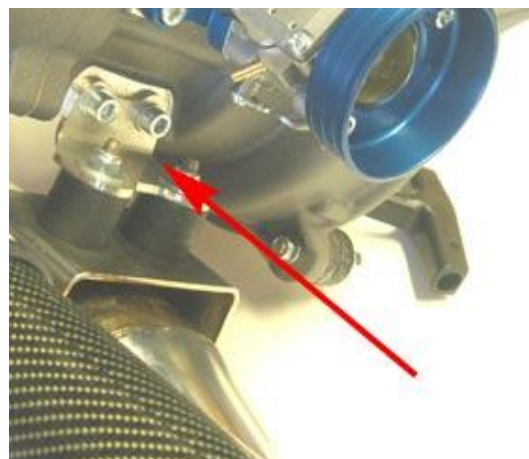


Photo 6



Photo 7

7. Pull the exhaust with resolution (photo 8)

* Apply silicon gasket high temperature.



Photo 8



Photo 9

8. Remove the 4 cylinder head nuts (photo 9)

9. Remove the cylinder head o-ring gasket (photo 10)

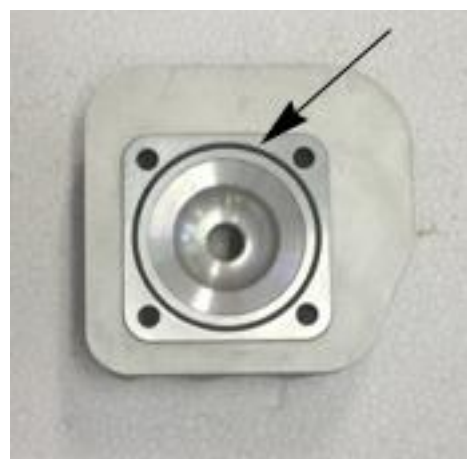


Photo 10

NOTE

To avoid warping the cylinder head, use a criss-cross pattern to loosen each nut about $\frac{1}{4}$ turn, then remove the nuts.

DISASSEMBLY PISTON



Photo 11

10. Remove the piston pin clips using a pair of needle-nose pliers (photo 11)

11. Press the piston pin out of the piston and remove the piston.(photo 12)



Photo 12

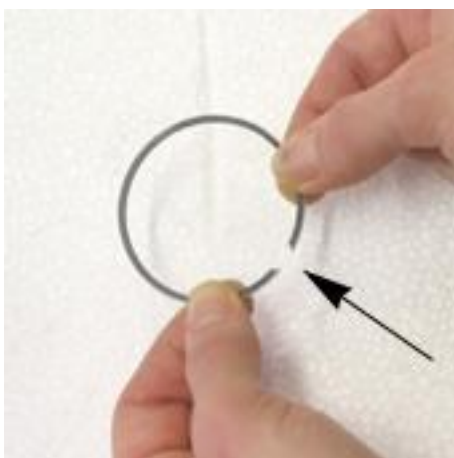


Photo 13

12. Spread each piston ring and remove by lifting it up a point just oppisite the gap (photo13)

CAUTION:
Do not damage the piston ring by spreading the ends too far.

Decarbonizing

COMBUSTION CHAMBER

Remove the carbon deposits from the combustion chamber. Clean the head gasket surface of any gasket material

CAUTION:

Use care not to scratch the combustion chamber or the head gasket surface.

CYLINDER

Clean carbon deposits from the exhaust.

CAUTION:

Do not damage the cylinder bore.

INSTALLATION PISTON

1. Install the piston rings like (photo14)
2. Lubricate the piston rings and piston ring grooves with clean 2 stroke oil
3. Install the piston with the sign turned towards the exhaust (photo 15)
4. Install the piston pin (photo 12)
5. Install the piston rings on the piston (photo 11)

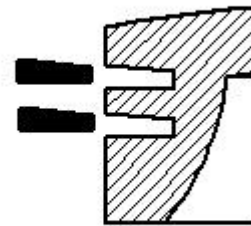


Photo 14



Photo 15

CAUTION:

- Use new pin clips. Never use old clips
 - Do not let the clips fall into the crankcase.
-

INSTALLATION CYLINDER

6. Install the new cylinder gasket

7. Align each ring and gap with the piston ring pins in the ring grooves (photo.16)



Photo 16

8. Lubricate the piston with 2-stroke oil

9. Slip the cylinder over the top of the piston while compressing the rings. (photo 17)



Photo 17

10. Then, install the cylinder on to the crankcase

INSTALLATION CYLINDER HEAD

1. Install the new cylinder head gasket o-ring (photo 10)
2. Install the cylinder head and nuts (photo 9), tighten the nuts to the specified torque.

TORQUE : 12Nm(1,2 kgf/m)

NOTE:

Tighten the cylinder head nuts in a criss-cross pattern in 2 or 3 steps

INSTALLATION EXHAUST

1. Insert the antivibrating pins thread in the support exhaust (photo 6)
2. Pull the exhaust with resolution and insert the spherical entrance on the cylinder (photo 8)
3. Install the springs (photo 7)
4. Tighten the 2 nuts to specified torque (photo 6)

TORQUE: 10Nm(1 kgf/m)

INSTALL COOLING AIR DUCT

1. Replace the cooling air duct on the cylinder head
2. Tighten the 2 crankcase cap screw, and then the cylinder head cap screw to the specified torque

TORQUE: 8Nm(0.8 kgf/m)

INSTALLATION SPARK PLUG

1. Lubricate the sparks plug thread
2. Tighten the spark plug to the specified torque

TORQUE : 18Nm(1.8 kgf/m)

3. Install the spark plug cap.
-

6.3 DISASSEMBLY/ASSEMBLY STARTER

1. Remove the air duct see the chapter 6.2
2. Remove 4 screws (photo 18)
3. Remove the nut (photo 19)
4. Remove the pulley
5. Replace chord 3 m/m diameter

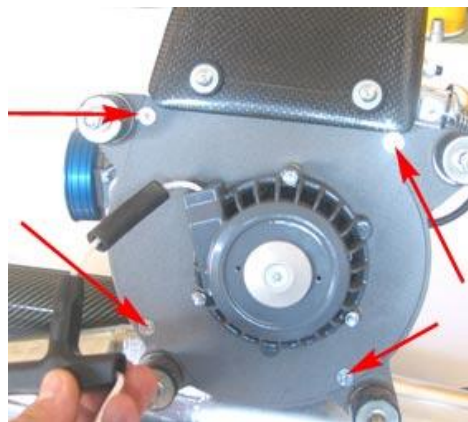


Photo 18

ATTENTION
NOT REMOVE THE SPRING (photo 21)

1. Install the pulley and tighten the screw (photo 19) to the specified torque
TORQUE : 15Nm(1,5 kgf/m)
2. Insert the starter into the cooling fan (photo 20)
3. Tighten the screw (photo18) to the specified torque
TORQUE: 6Nm(0.6 kgf/m)

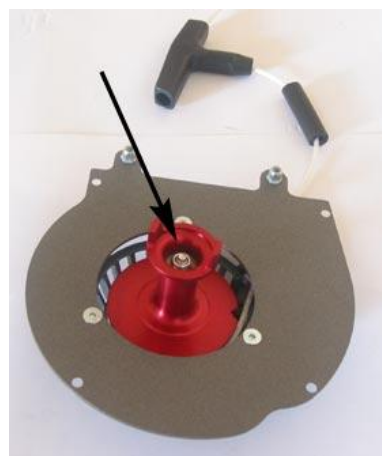


Photo 19

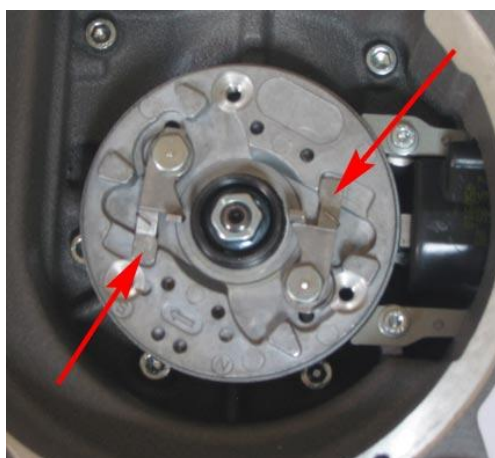


Photo 20

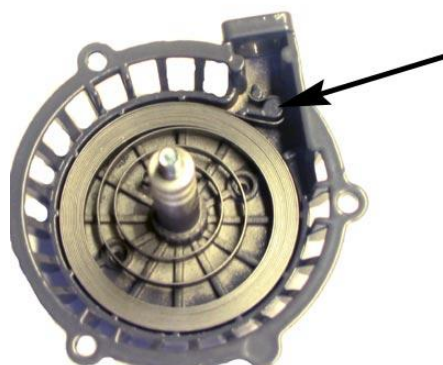


Photo 21

6.4 DISASSEMBLY/ ASSEMBLY SILENCER

1. Remove the exhaust like chapter 6.2
2. Remove the 2 bolts and cap screw fixing silencer (photo 22)
3. Remove 4 rivets (photo 22-1)
4. Remove the glass wool
5. Remove the carbon deposite from the inner pipe using the wire brush



Photo 22

1. Replace the glass wool
2. Install the new glass wool packing material, open glass wool with incision.
3. Assembly 4 new rivets (photo 22-1)
4. Tighten the 2 bolts and cap screw to the specified torque

TORQUE : 12Nm(1,2 kgf/m)

CAUTION
Control anti-leak rubber

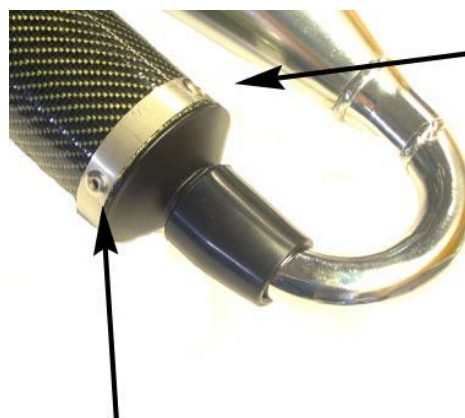


Photo 22-1

6.5 DISASSEMBLY/ASSEMBLY SPONGE FILTER

1. Unscrew the filter band (photo 23)
2. Remove the airbox from the motor
3. Remove 4 screw (photo 24)
4. Remove the sponge filter (photo 24)
5. Cleaning with biodegradable detergents (don't use gasoline) and dry the sponge filter.
6. Lubricate the sponge filter.(photo 25)
7. Assembly all of the airbox

CAUTION
INSTALL THE SECURITY CABLE
AIRBOX

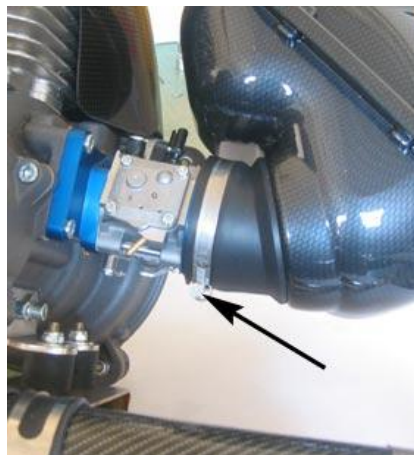


Photo 23



Photo 24



Photo 25

* Oil spray filter , help combat the ingress of sand and dust repels water without affecting engine breathing. Only apply to clean, dry filter. Ensure complete penetration and coverage. Allow to dry before refitting. (photo 25)

6.6 ASSEMBLY/ DISASSEMBLY THE PROPELLER HUB

1. Unscrew the cap screw (photo 26)
2. Unthread the hub from the reducer (photo 27)



Photo 26

1. Replace the hub on rapid graft DIN 5482 15x12 Z9 (photo 27)
2. Tighten the cap screw with the washer in the equipment at the specified torque.

TORQUE : 12Nm(1,2 kgf/m)



Photo 27

6.7 ASSEMBLY / DISASSEMBLY THE IGNITION

DISASSEMBLY

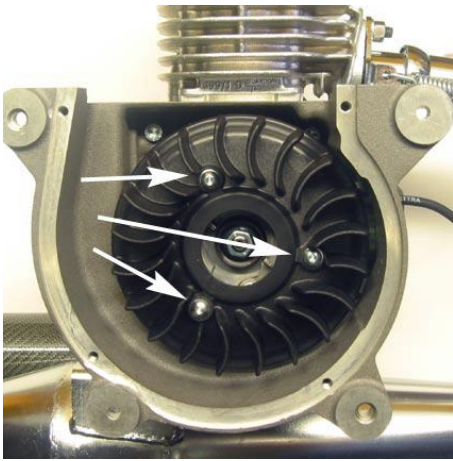


Photo 28

1. Disassembly the engine from the chassis
2. Remove the 4 cap screw on the ignition crankcase (photo 18)
3. Remove the 3 cap screw of the ignition fan (photo 28)
4. Remove the 2 cap screw of the coil (photo29)

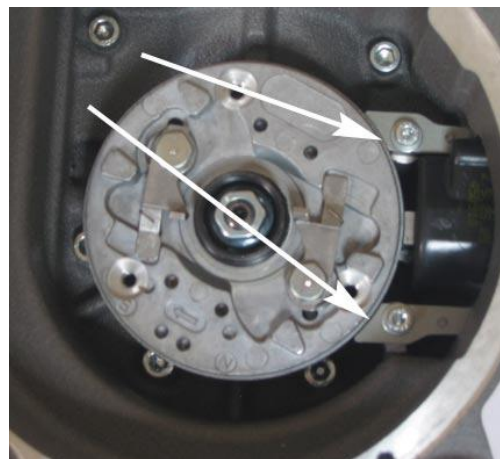


Photo 29

IGNITION COIL ASSEMBLY

1. Insert the coil into seat
2. Screw the 2 cap screw
3. Insert plastic spacer between ignition magneto and iron coil like 0,25/0,3 mm (photo 30)
4. Tighten the cap screws at the specified torque

TORQUE : 12Nm(1,2 kgf/m)

5. Assembly the ignition fan tightening the 3 cap screws with locking agent at the specified torque (Photo.29)

TORQUE : 12Nm(1,2 kgf/m)

6. Assembly starter cover (capter 6.3)

ATTENTION: In case of disassembly screws graft starter to use agent of blocking between assembly them being made attention to render them flowing.

Photo.31

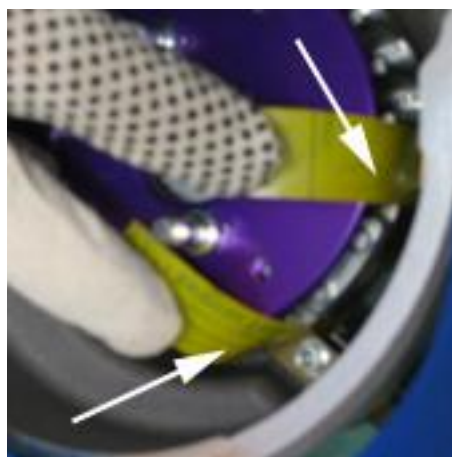


Photo 30

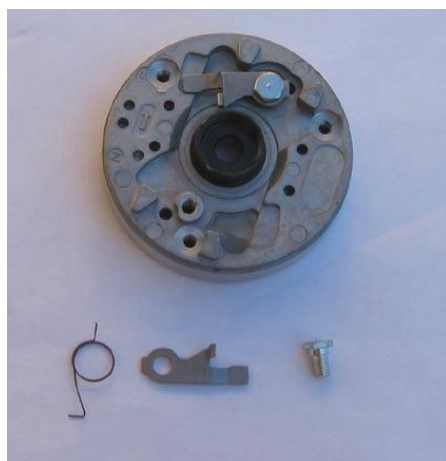


Photo 31

6.8 REDUCER

1. Disassembly the prop hub like chapter 6.6
2. Disassembly the reducer from the engine and remove the 4 fixing cap screw
3. Remove the bolt from clutch bell (photo 32) with impact tool.
4. Take off the clutch bell with the extractor indicated (art. 100.201 Two-Jaws pullers)
5. Tighten the 2 cap screw in the position into (photo 33) and tap gently
6. For disassembling the bearing utilize a air heater of 150° (hair-dryer)
7. Clean all and utilize a silicone gasket at thin thickness.
8. Assembly the 2 carter in the right position with gear and pin

CAUTION: Utilize manual press to get together the crankcase

9. Tighten the screw at the specified torque
 - TORQUE: 12Nm(1,2 kgf/m)
10. Insert into the hole indicated (photo 34) with pump 25 ml. of oil* .
11. Tighten the cup at the specified torque
 - TORQUE: 12Nm (1.2 kgf/m)
12. Assemble the clutch bell into the clutch tightening the bolt with locking agent at the specified torque
 - TORQUE: 300Nm (30 kgf/m)

*oil type:

- BP Energear EP SAE 80W-90 (mineral)
- BP Energear SGX SAE 75W-90 (synthetic)
- Castrol EP 80W-90 (mineral)
- Castrol TAF-X 75W90 (synthetic)



Photo 32



Photo 33

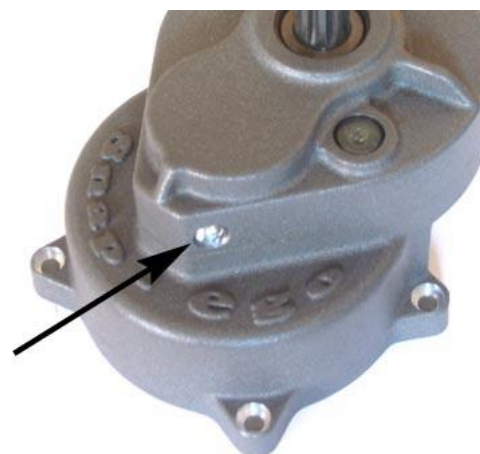


Photo 34

7. REGULATION CARBURETTOR “ WG8 ”



Photo 35

1. Regulation throttle cable
2. Regulation Min. gasoline

Standard regulation

In case of problems of wrong carburation , replace the originals levels.
Screw regulation of min. 1 turn from all closing. (photo 35- 2)

ATTENTION

Not to change this lever position (photo 36)
for not to cause refilling gasoline in the
engine.



Photo 36

Attention: regulation of carburation must be made at warm motor.

To execute in sequence the below operations:

1. To regulate the screw of the min. to 1 turn from all closing (photo 35- 2)
2. To fill up the circuit of feeding with the appropriate pump;
3. To start the motor open the throttle(1/4-1/8) (the motor must set off);
4. To reduce the passage holes air of the filter airbox with one hand, in order to hold the rich carburation for some second ones;
5. To warm the motor for 4 or 5 minute to the regimen of spin of 3000rpm;
6. To regulate the screw of the minimal jet (photo 35- 2), to put the motor to 5000 rpm, to screw or to unscrew the screw until when the motor turns cleaned up and does not mutter;
7. To leave the motor for some second ones at minimum, to accelerating normally , now the motor must quickly accelerate without mumbling or to come less.
8. To regulate the lessened motor spin of the 2000/2200 rpm. (photo 35-1)

When the carburettor is optimally regulated does not need ulterior regulations, but in the case in which it takes place a change of altitude (1000 meters)

8. TROUBLESHOOTING

1. THE ENGINE DOES NOT START OR IS HARD TO START

CHECK	POSSIBLE CAUSES	SOLUTION
Check if fuel is jetting to the carburettor	No fuel in tank	Fill tank per fueling
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (photo 5)
Try spark test	The engine stop switch is to ON	Move it on OFF
	Faulty spark plug	Replace
	Broken or shorted ignition coil	Replace

2. ENGINE LACKS POWER

CHECK	POSSIBLE CAUSES	SOLUTION
Check the carburation	Fuel air mixture too lean	Turn the screw min out (photo 35- 2)
	Fuel air mixture too rich	Turn the screw max in (photo 35- 2)
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (photo 27)

3. THE ENGINE VIBRATES EXCESSIVE

CHECK	POSSIBLE CAUSES	SOLUTION
Silent-block engine	Excessive wear, holder rubber	Replace (Max 70 Sh)
	Prop out of balance	Balance or replace

9. TORQUE VALUES ENGINE

ITEM	Thread diam x pitch	Torque gf*m
Cap screw propeller hub	M 6 x 1,0	1,2
Spark plug	M14 x 1,25	1,8
Cap screw cooling air duct	M 5 x 0,8	0,6
Cap screw crankcase starter	M 5 x 0,8	0,6
Bolt cylinder head	M 6 x 1,0	1,2
Cap screw riducer/engine	M 6 x 1,0	1,2
Cap screw crankcase reducer	M 6 x 1,0	1,2
*Bolt clutch bell	M 10 x 1.25	3,8
*Bolt clutch	M 10 x 1.25	3,8
All bolts	M 6 x 1,0	1,0
*Bolts ignition	M 8 x 1.25	3,0

* Apply locking agent