SNAP 100

MAINTENANCE MANUAL

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 extremly 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 reflued.

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

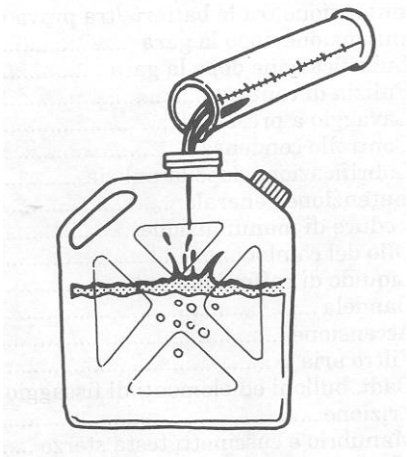


fig.1

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).

Start the Engine

WARNING

- 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.

Cold Engine Starting:

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 procedure 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

Warm Engine Starting:

1. To appeal the starter and to delicately pull hardly after the harder point
2. To pull the grip with energy, without throttle in.

Stopping The Engine

1. Depress and hold the engine stop button until the engine stops completely

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)

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

- Piston is replaced
- Cylinder is replaced
- Crankshaft or crank bearings are replaced

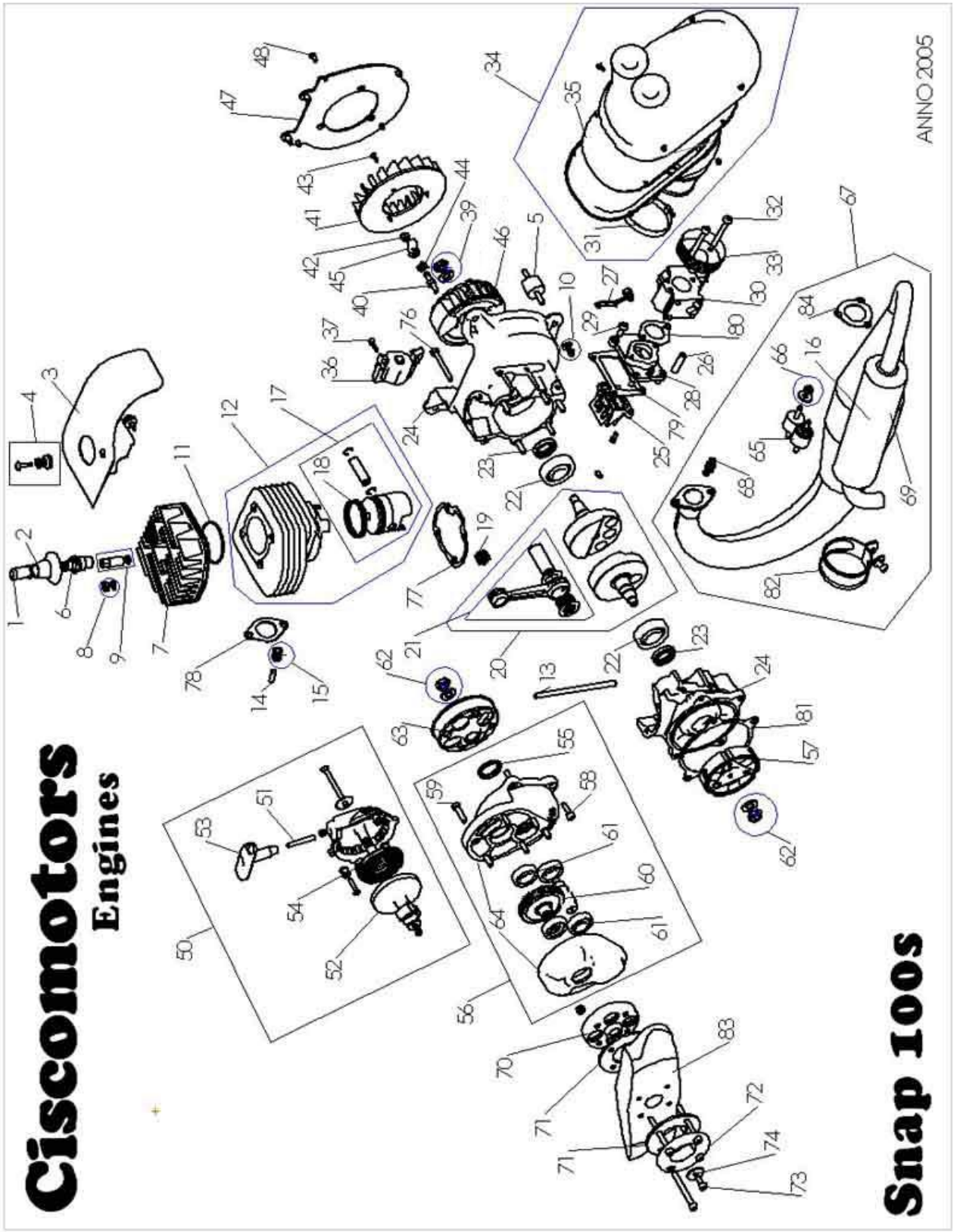


Fig.2

2. SPECIFICATIONS

2.1 ENGINE INSTALLATION ON CHASSIS

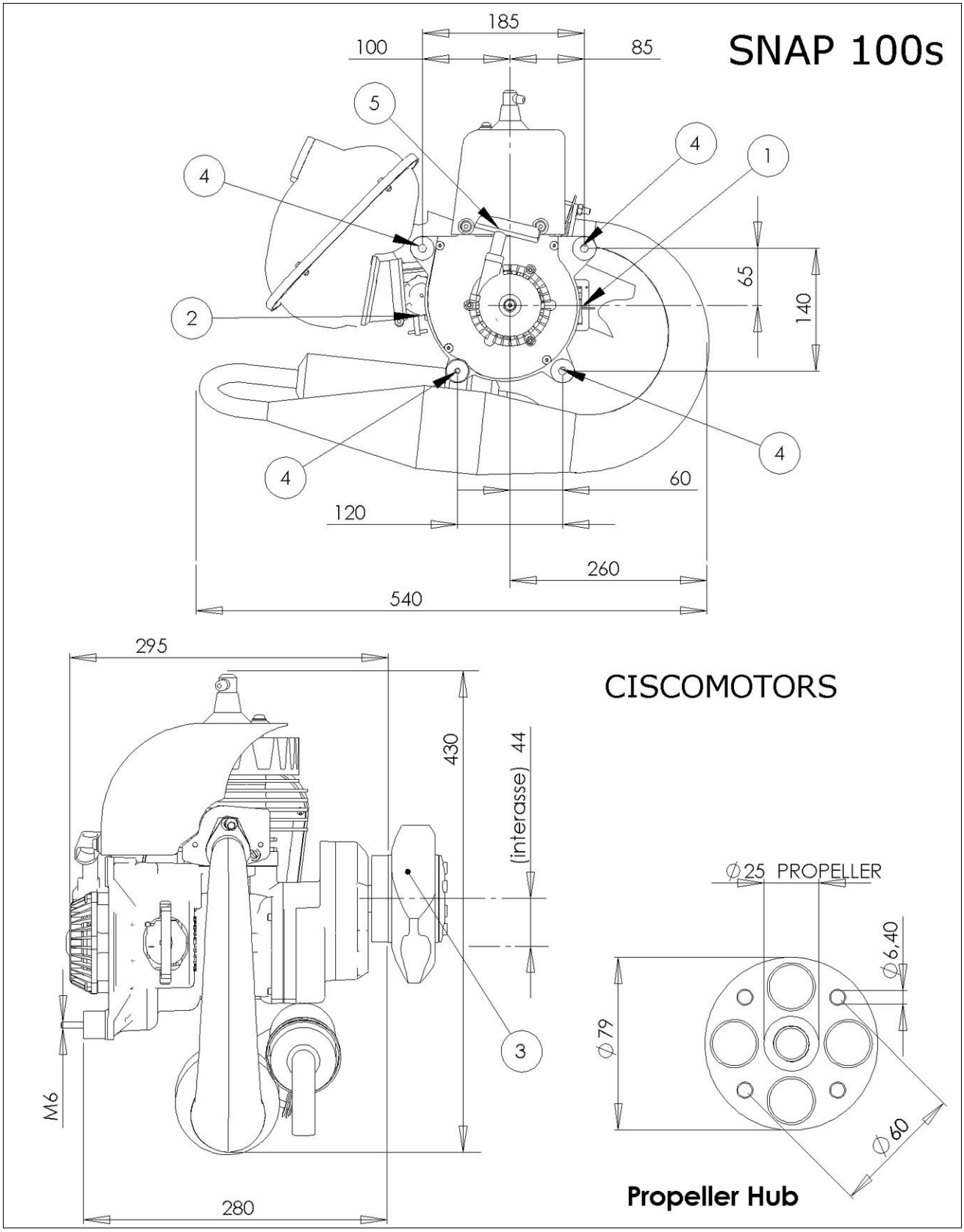


Fig.3

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 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 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.

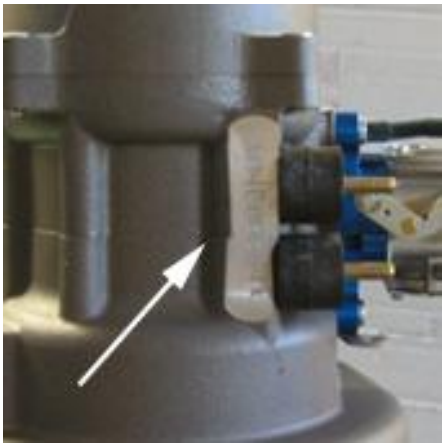
- After reassembling, chek all parts for proper installation and operation

NOTE:

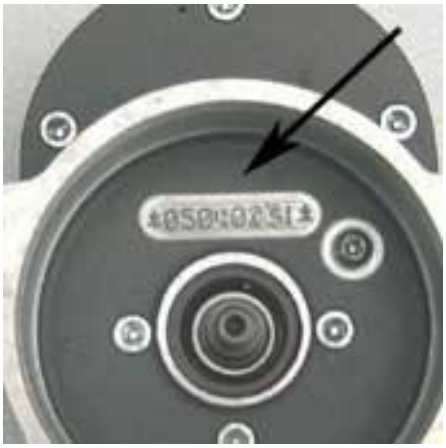
- Specification are listed chapter 2.

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 nececessary.



Number engine



Number reducer

3.3 MAINTENANCE SCHEDULE

FREQUENCY	INSPECT	REPLACE
Before and after each use	All screw nuts, bolts correctly tigthen, 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, thermical group, connecting rod.
Each year	All rubber and plastic components.	Fuel diphragms 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
000001.0		SPARK PLUG CUP
000001.1		SPARK PLUG CUP
000002.0		SHAFT SPARK PLUG
000003.0		CARBON FIBER COOLING AIR DUCT
000004.0		WIRE LEADS/CAP SCREW
000005.0		SILENT-BLOCK MOTOR
000006.0		SPARK PLUG NGK BR9HS
000006.1	OPZ	SPARK PLUG BR8HS
000007.0		CYLINDER HEAD
000008.0		NUTS CYLINDER HEAD
000009.0		SPECIAL NUTS/WASHER CYLINDER HEAD
000011.0		OR VITON CYLINDER HEAD
000012.0		CYLINDER + PISTON
000013.0		STUDBOLT CYLINDER
000014.0		STUDBOLT EXHAUST
000015.0		NUTS/WASHER EXAUST
000016.0		GLASS WOOL
000017.0		PISTON COMPLETE
000018.0		PISTON RING
000019.0		NEEDLE BEARING
000020.0		CRANKSHAFT
000021.0		CONNECTING ROD
000022.0		BEARING
000023.0		OIL SEAL
000024.0		CRANKCASE ENGINE
000025.0		REED VALVE
000026.0		PIPE DEPRESION CARBURETTOR
000027.0		THROTTLE BRACKET
000028.0		MANIFOLD WB32C
000028.2	OPZ	MANIFOLD INTAKE DELL'ORTO
000028.2R	OPZ	MANIFOLD RUBBER
000029.0		CAP SCREW
000030.0		CARBURETTOR WB32
000030.2	OPZ	CARBURETTOR DELL'ORTO
000031.0		BAND AIRBOX
000032.0		CAP SCREW
000033.0		FLANGE CARBURETTOR
000034.0		AIRBOX
000035.0		FILTER
000036.0		IGNITION SPOOL
000037.0		CAP SCREW SPOOL
000039.0		WASHER AND NUT WOODRUFF

COD.		DESCRIZIONE
000040.0		SCREW GRAFT STARTER
000041.0		COOLING FAN
000042.0		NUT GRAFT
000043.0		CAP SCREW COOLING FAN
000044.0		SPRING GRAFT STARTER
000045.0		GRAFT STARTER
000046.0		IGNITION COMPLETE
000047.0		IGNITION CRANKCASE COVER
000048.0		CAP SCREW
000050.0		MANUAL STARTER
000051.0		CHORD 3 M/M
000052.0		PULLEY STARTER
000053.0		HANGRIP STARTER
000054.0		SPRING MANUAL STARTER
000055.0		OIL SEAL CLUTCH BELL
000056.0		REDUCER
000057.1		CLUTCH
000058.0		CAP SCREW
000059.0		CAP SCREW REDUCER
000060.0		PAIR GEAR
000061.0		BEARING
000062.0		NUT AND WASHER CLUTCH
000063.0		CLUTCH BELL 2005
000064.0		CRANKCASE REDUCER
000065.0		SILENT-BLOCK EXHAUST
000066.0		NUT AND WASHER EXHAUST
000067.0		EXHAUST-PIPE EXPANSION
000068.0		SPRINGS EXHAUST
000069.0		SILENCER
000070.0		PROPELLER HUB
000070.1		PROPELLER HUB 6 FIX
000071.0		RUBBER DISK PROPELLER
000072.0		PROPELLER FLANGE
000072.1		PROPELLER FLANGE 6 FIX
000073.0		CAP SCREW HUB
000074.0		WASHERS
000076.0		CAP SCREWS SET CRANKCASE ENGINE
000077.0		CYLINDER GASKET
000078.0		EXHAUST GASKET
000079.0		MAINFOLD IMMISSION GASKET
000080.0		CARBURETTOR GASKET
000081.0		REDUCER GASKET
000082.0		SILENCER RING
000083.0	OPZ	PROPELLER 1250
000083.1	OPZ	PROPELLER 1100
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 removall of original equipment may make the motor unsafe.

6.1 DISASSEMBLY CARBURETTOR

This section covers maintenance of the carburettor.

- Repalce 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 Kgf/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 higt temperature.

Fig.8

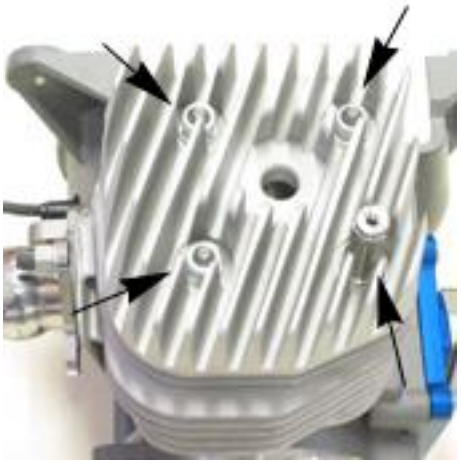

Fig.9

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

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

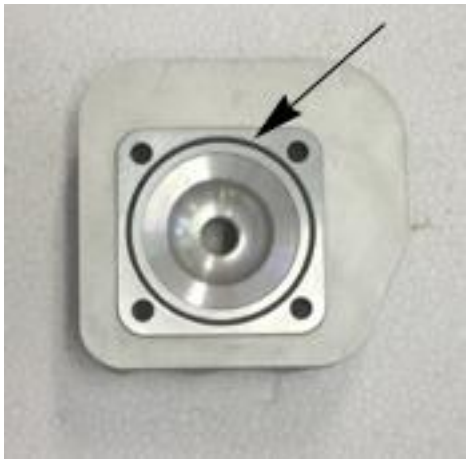

Fig.10

NOTE
To avoid warping the cylinder head, use a criss-cross pattern to loosen each nut about ¼ 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)

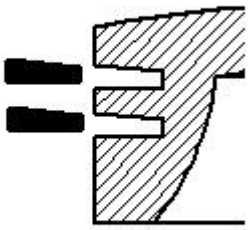

Fig.14

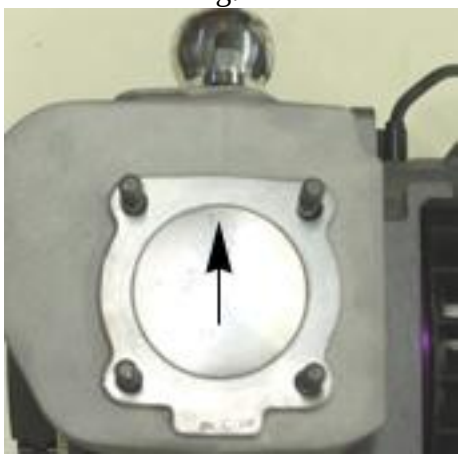

Fig. 15

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)

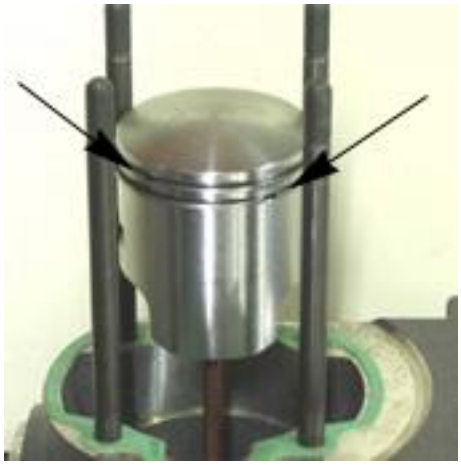

Fig. 16

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 specifed 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 spcified torque

TORQUE: 8Nm(0.8 kgf/m)

INSTALLATION SPARK PLUG

1. Lubricate the sparks plug thread
2. Tigthen 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

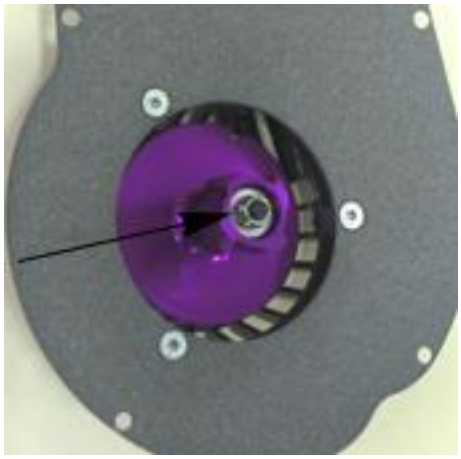

Fig.19

Fig.20

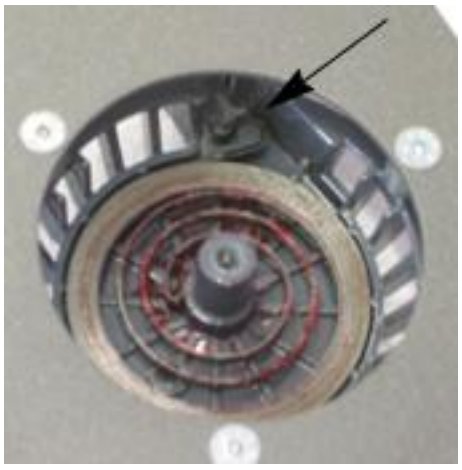

Fig.21

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

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1. Repalce 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

Fig.23

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.24

Fig.25

* Foam filter , help combat the ingress of sand and dust repels water without affecting engine breating. 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

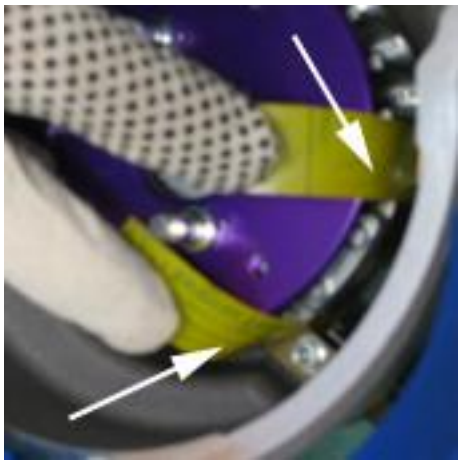

Fig.30

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.

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

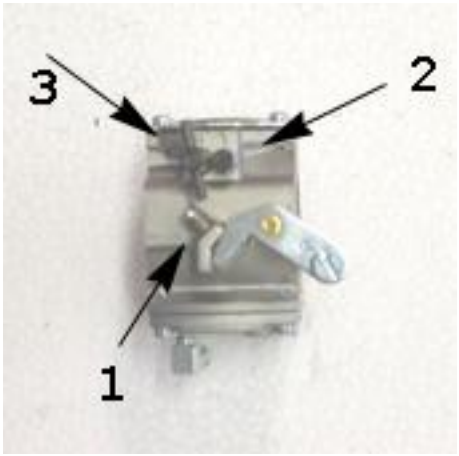

Fig.35

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 ENGENE 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 LACHS POWER

CHECK	POSSIBLE CAUSES	SOLUTION
Check the carburation	Fuel air mixture to lean	Turn the screw max out (fig.26 punto 3)
	Fuel air mixture to reach	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