gruppo industriale agrati - GARELLI monticello brianza (como) - italy

MO - PEDS

GARELLI 50 cc

SINGLE SPEED AUTOMATIC CLUTCH

KATIA "M"

KATIA "MK"

TWO SPEED AUTOMATIC WITH AUTOMATIC CLUTCH

KATIA MATIC K 2V

INSTRUCTION BOOKLET

P. S. the letters:

GB - READ - ENGLAND

B - READ BELGIQUE

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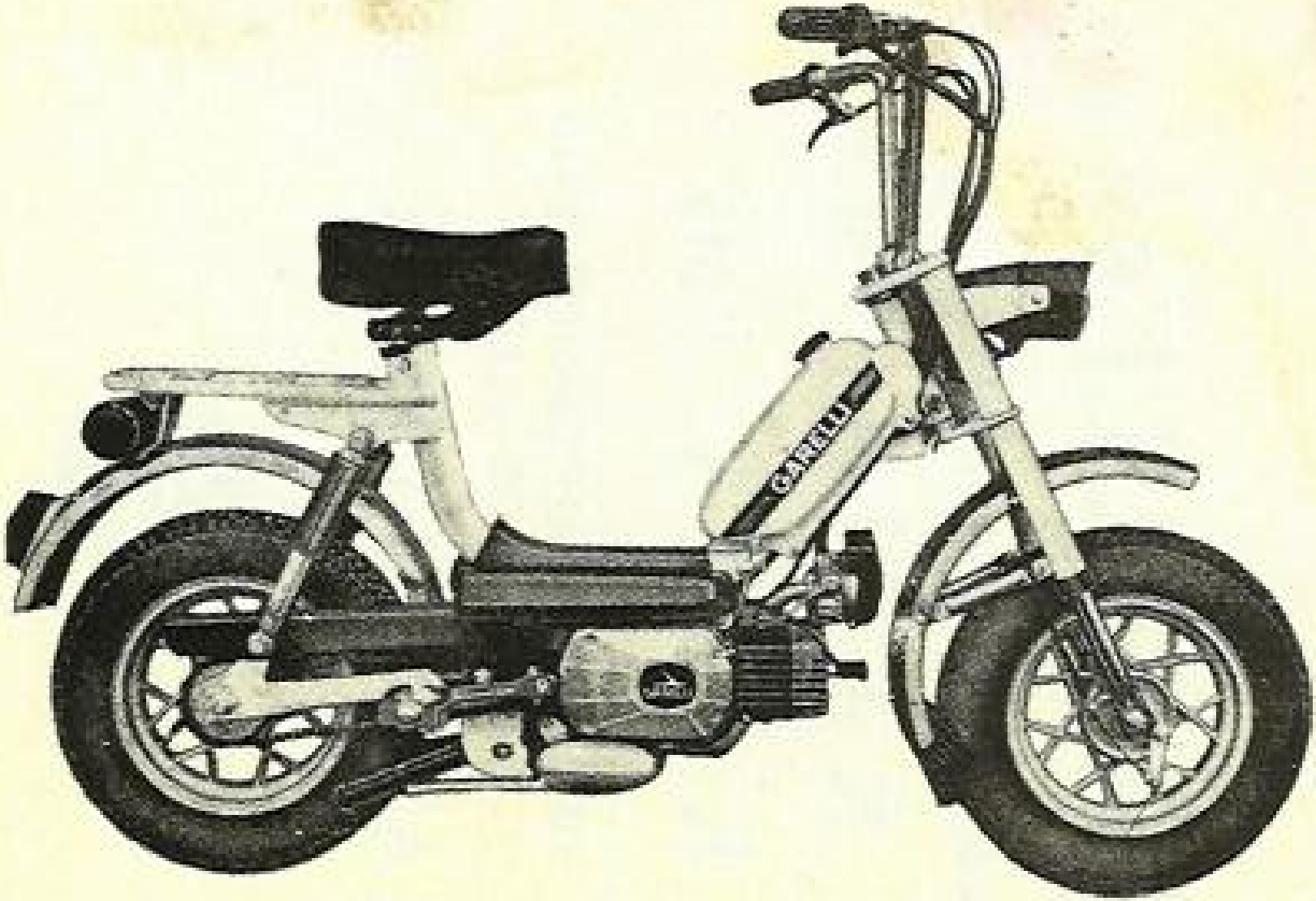


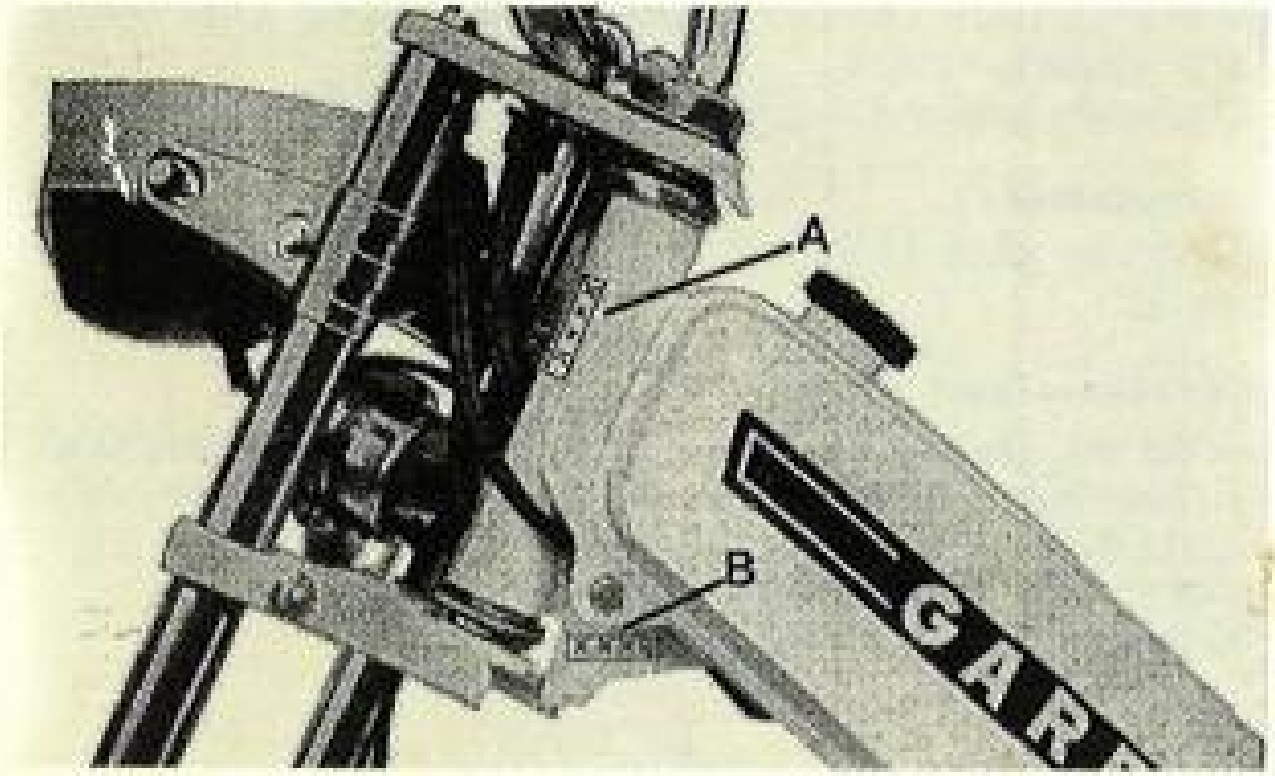
MO-PED KATIA «MK» Single Speed-Automatic Clutch
MO-PED KATIA «KICK» Two Speed-Automatic Clutch

PART I

IDENTIFICATION

Pict. 1 shows the serial and approval numbers on the left side (A-B).

When ordering spare parts it is necessary to state the correct model and serial number of the frame.



Pict. 1

TECHNICAL DATA

Engine:

GARELLI horizontal single cylinder, two stroke, air cooled

Capacity	49 cc.
Bore x Stroke	40 x 39 mm.
Power output	1,5 HP at 4500 rpm
Compression ratio	1 : 8

Ignition:

By flywheel magneto with inside HT coil, suitable to feed 6V-26W electrical equipment.
Sparking plug fires at 18° before TDC, corresponding to 1,3 mm. (.051") before TDC.

Sparking plug 14 x 1,25 thread Ø, 12,5 long, heat value 225° (Bosch scale).
Electrode gap 0,5 ÷ 0,6 mm. (.020" - .024").

Carburettor:

Dell'Orto SHA 14/12
Jet 52

Crankcase and drive:

— Sihgle speed automatic clutch (Katia M - Katia MK)
— Two speed automatic with automatic clutch (Katia K)
— Kick starting (Katia K - Katia MK)
— Pedals starting (Katia M)
— Gear Ratios:

Katia - K	1st speed	1 : 4.43
	2nd speed	1 : 2.78
Katia M - Katia MK	single speed	1 : 4.43

Fuel tank capacity: about 2 lts.
Rear sprocket Katia M Katia MK: 24 T

Rear sprocket Katia K: 38 T
Primary drive by gears
Final drive by roller chain 1/2" x 4.9 mm. - 7.8 mm. rollers ∅
Frame in welded steel tubes
Inside expansion type brake, front and rear.
Suspension: telescopic front fork
rear swing arm and shock absorbers
Tyres: 3,00" x 10"
Leght alloy wheels (GB)

Tyres pressure:
F. wheel 1 kg/sq cm. (14 P.S.I.)
R. wheel 1,7 kg/sq cm. (24 P.S.I.)
Starting sprocket: 10 T

Electrical equipment
6 V - 15 W headlamp (B)
6 V - 18 W front light (GB)
6 V - 6/10 W tail light (GB)
6 V - 5 W tail light (B)

Spark plug
The spark plug is a very important part and it should therefore receive regular attention.
Every 750 to 1000 miles (1000 - 1500 Km.) it must be cleaned by using a sharp-edged steel scraper and wire brusch or, better yet,

a sand blast type of spark plug cleaner as generally installed at most garages.
Reset the electrode gap at 0,5 ÷ 0,6 mm. (.020" - .024")
Check HT lead and plug cover for proper connection

Pict. 2

To check the plug spark, act as follows:

1. take the plug off
2. re-connect the lead
3. put the plug on the cylinder head
4. start the engine as usual

powerful, blue spark should jump the gap; if not, the spark plug should be replaced.

The plug heat value greatly depends on how the engine is employed: under certain conditions the most suitable heat value may be other than the suggested one.

Always remember to have the plug spanner and a clean spare plug in your tool bag.

Flywheel magneto

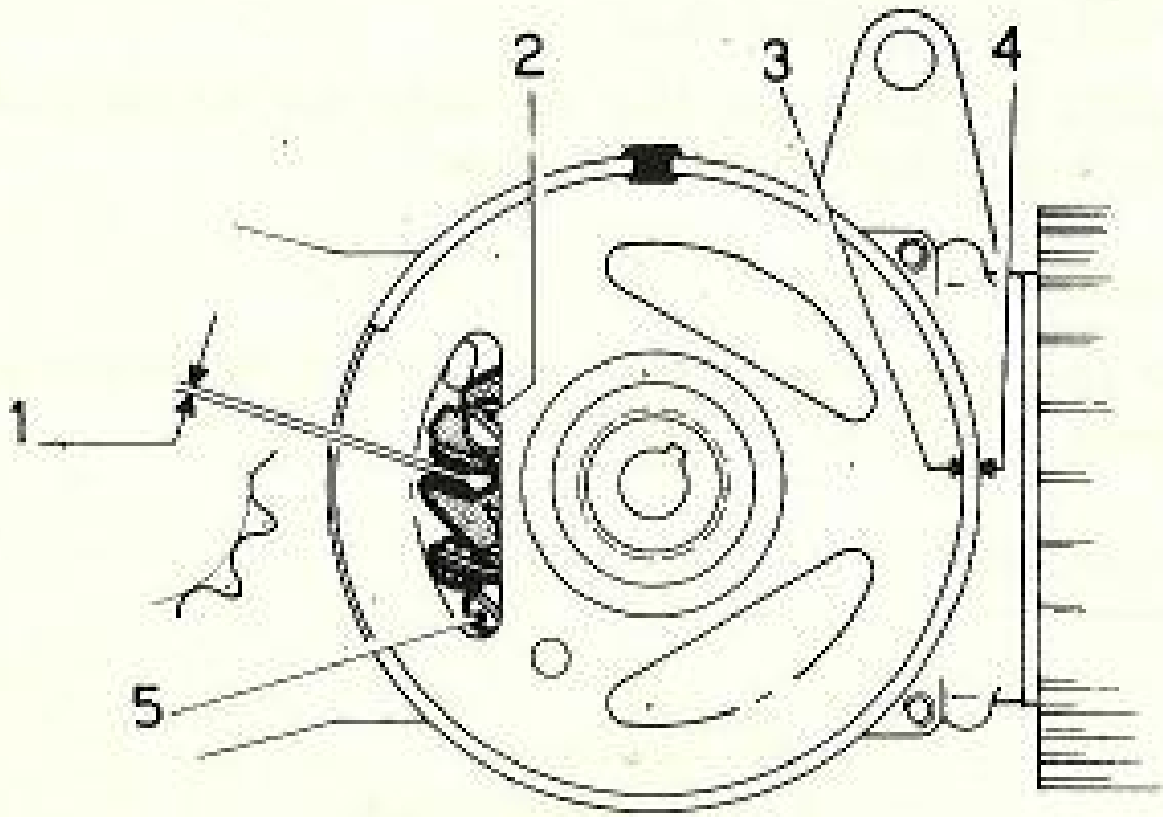
Located on the right hand side of the enigne and accessible for adjustment of contact breaker points and timing by removal of cover.

Spacing of the contact points may be accomplished with the aid of a screwdriver applied in the special notch of the contact breaker support, the locking screw having first been loosened.

Once proper spacing is obtained, be sure to securely retighten the locking screw.

The proper spacing of the contact points, in position of maximum opening, is 0,35 ÷ 0,45 mm. (.014" - .018").

The timing is correct when the contact points begin to open just as the reference mark on the flywheel comes into alignment with the mark on the crankcase housing or as the piston reaches 1,3 mm. (.051") below TDC.



Pict. 3

1. Contact breaker gap. .014" ÷ .018" (0,35 ÷ 0,45 mm.) - 2. Contact adjusting screw. - 3. Timing mark on the flywheel magneto. - 4. Timing mark on crankcase housing. - 5. Stator plate screw.

Clutch

The clutch is located in the crankcase housing on the left side of the engine, it is automatic and operates in an oil bath.

This automatic expansion type clutch consists of 1 ring (Katia M - Katia MK) 2 rings (Katia K) of special rubber having particular features in order to avoid any noise and increase its life. No adjustments are required even after a long use.

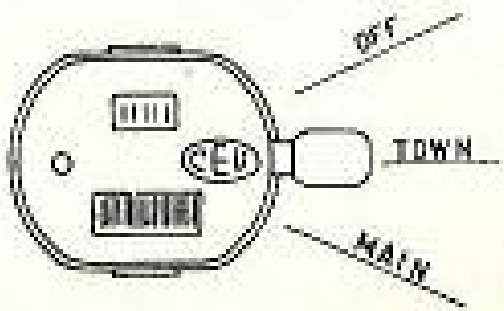
Every (3.000 miles) 5.000 km. check the rubber rings: if worn out, replace them.

KATIA K - Make sure that the white dot on the 2 nd speed ring faces outside the engine.

Controls

All the operation controls are on the handlebar as shown in Pict. 4.

SWITCH GB



KATIA MATIC K2V
KATIA MK

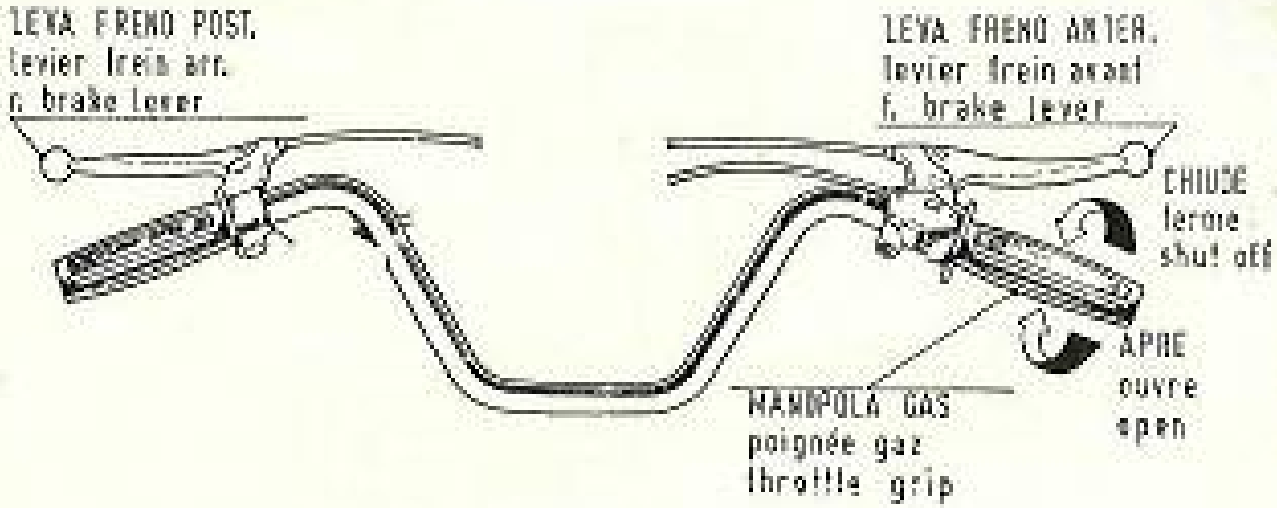
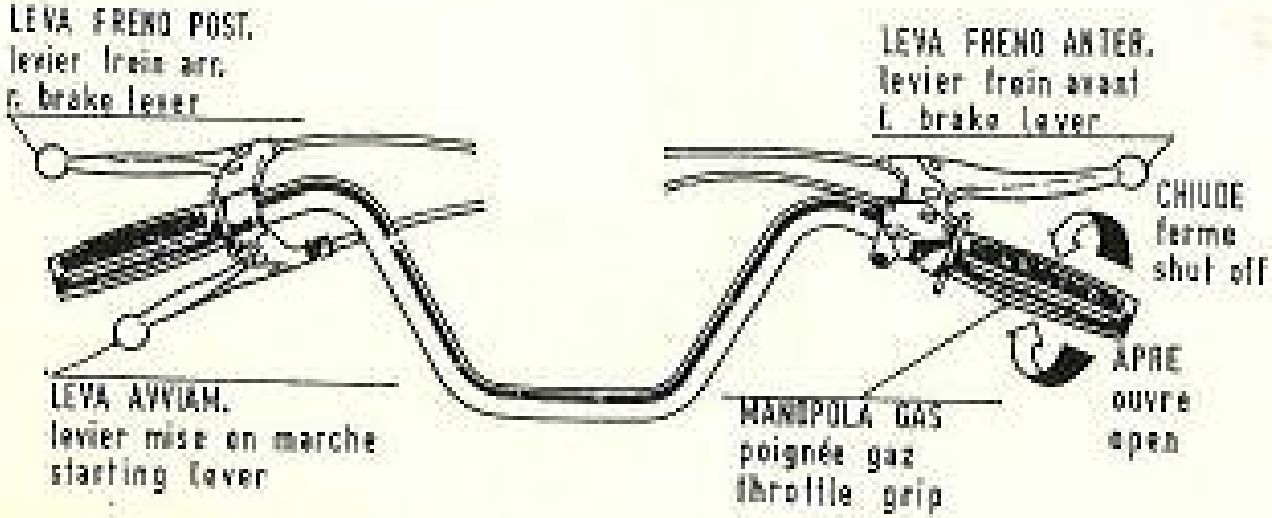


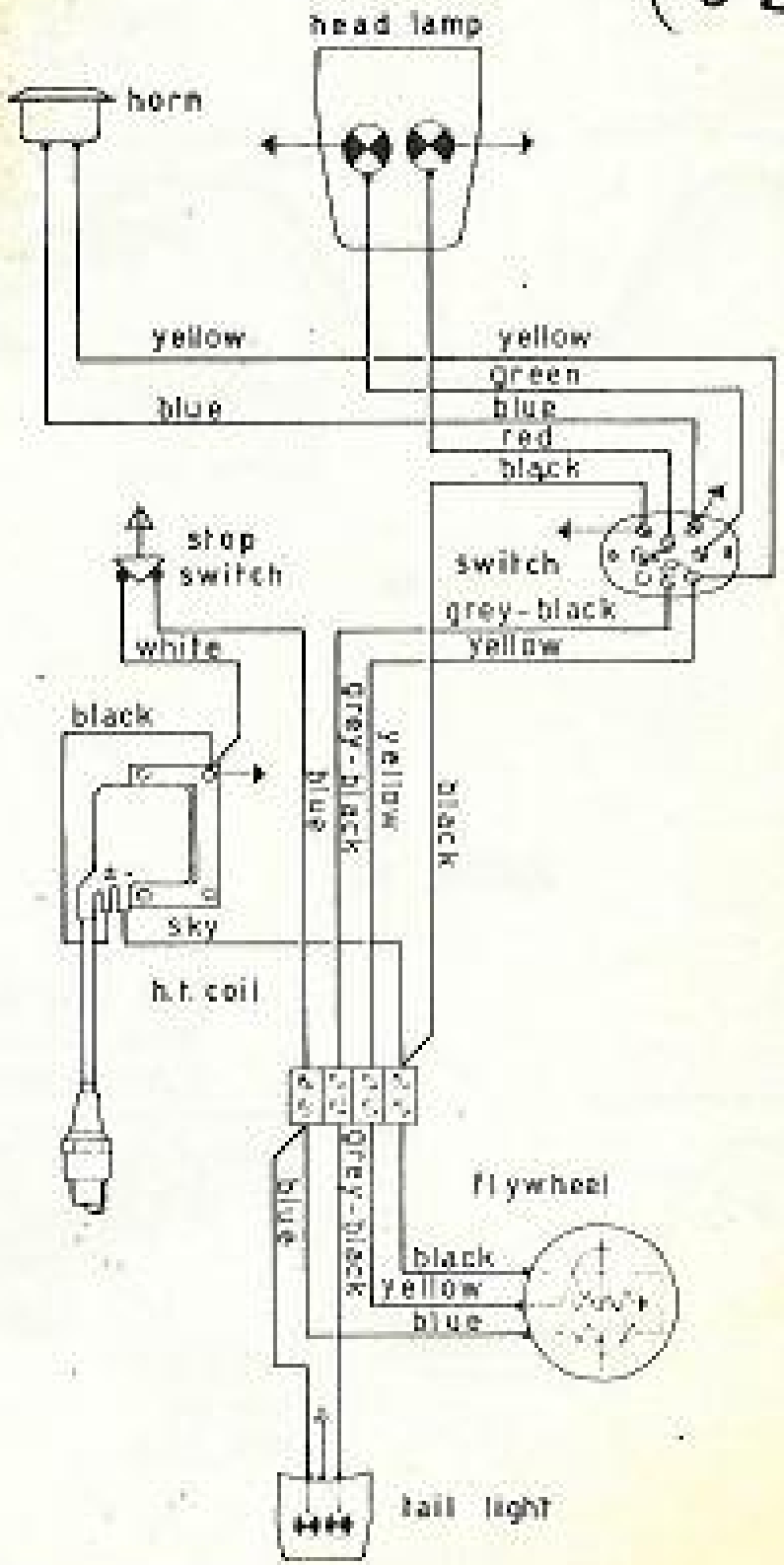
Fig. 4 a

KATIA M

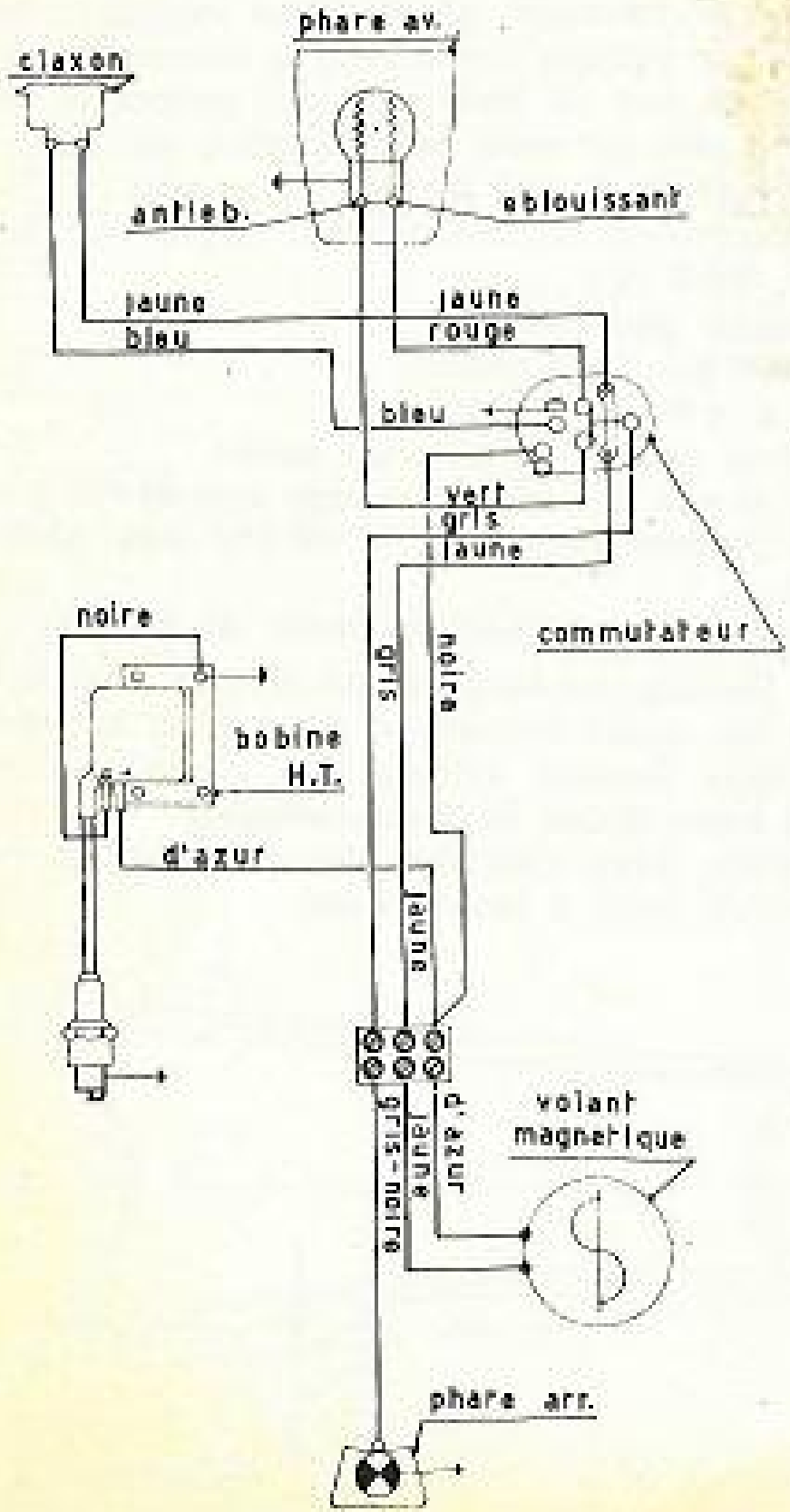


SCHEMATIC LAYOUT OF ELECTRIC WIRING

(GB)



SCHEMATIC LAYOUT OF ELECTRIC WIRING (BELGIQUE)



PART II
OPERATING INSTRUCTIONS

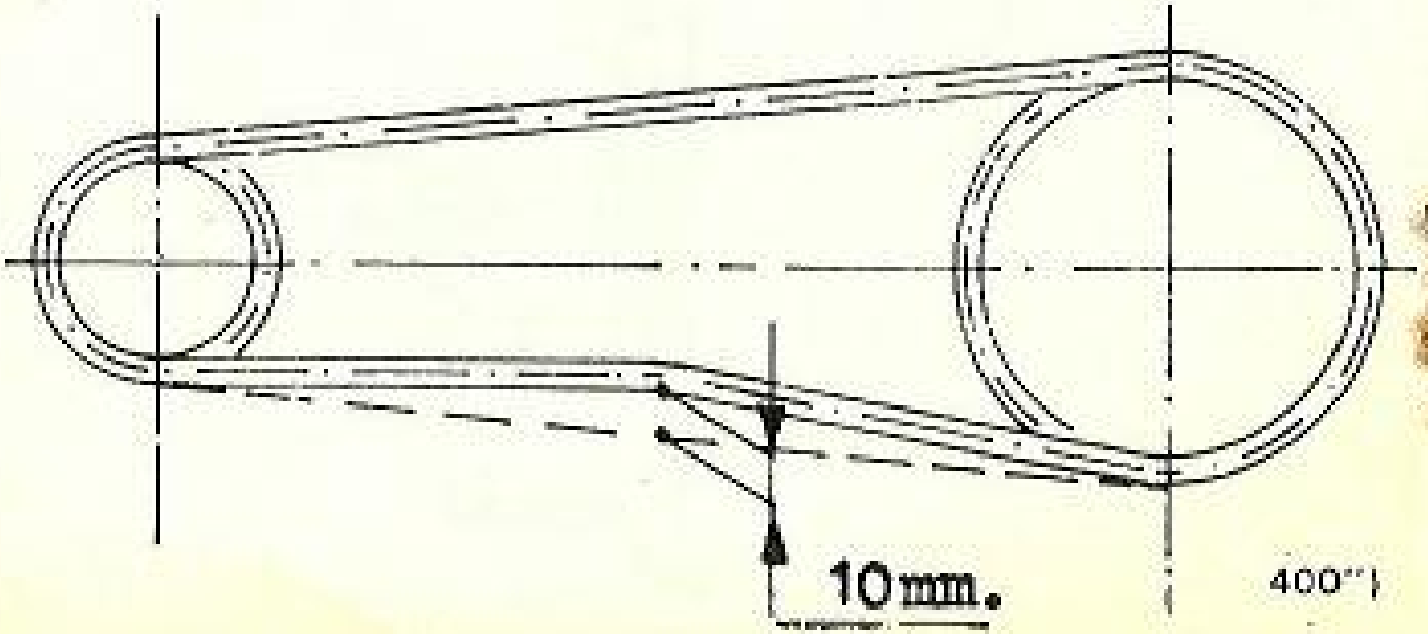
Fuel mixture

For the preparation of the fuel mixture, do not use « ethyl » or petrols containing a tetra-ethyl of lead additive. The use of fuel mixtures prepared with « regenerated » oil, or with poor quality oil, may endanger the performance and life of the engine.
It is suggested to use normal petrol and oil at 3% (SAE 30).

Running-In procedure

first 1000 km (600 miles)
— use a 4% fuel mixture
— do not exceed 30 km. (20 mph)
— do not run the engine at high speeds for long periods and do not open throttle all the way while climbing hills.
— Thereafter, use fuel mixture of 3% oil.

Note During the first period of operation take care to adjust the chain tension as soon as it appears loose.
With fully loaded vehicle the chain bottom section should have about 10 mm. swinging.
Thereafter, keep checking the tension and avoid using the vehicle with a loose chain.



Lubrication of clutch and primary gears

The mo-ped is normally delivered with about 350 cc of oil (SAE 30).

Check the oil level unscrewing the filler plug (left side cover) and observe il through the hole: the level has to reach the botton edge.

To start the engine (Katia M)

The engine can be started either standing still or in motion by pedalling:

a) **Starting while at rest (Katia M)**

— Place the machine on the stand, thus raising the rear wheel of the ground.
— Open the fuel tap - Depress the choke lever.
— Twist the throttle grip to about 1/5 open.
— Bring a pedal just over it's top center, kick it down quickly and, as the rear wheel begins to rotate, operate the starting lever (Pict 4 B) while counting action on pedal.

— Release lever.

— Once the engine runs, to place the moped in motion raise the stand, get astride the seat and accelerate the engine sufficiently to make the automatic clutch expand and begin to transmit the motion to the outer drum.
Note: adjustment of the starting lever is accomplished through the screw and locking nut fitted on the lever

b) Pedals start (Katia M)

— Open the fuel tap, depress the choke lever and twist grip in start position.

— Start cycling the normal way. Once having, obtained sufficient speed, operate the lever (Pict 4 B) and twist the throttle grip. As the engine starts, release the lever and simply keep operating the throttle grip To slow down (at traffic signals, intersections, etc.) just close the throttle, and when necessary apply the brakes: the engine will de-clutch itself automatically and continue to idle. Opening the throttle will set the machine in motion again.

Hills (Katia M)

When going up a steep hill, the clutch will start to slip. In that case it is advised to assist the engine by pedalling.

Starting the engine (Katia K - Katia MK)

— Open the fuel tap.

— Twist the throttle grip to about 1/5 open.

— Depress the choke lever.

— Operate the kickstarter and don't accelerate too much.

To stop the engine

— Close the throttle and press the cut out button down.
— If the engine is to remain indle for more than a short halt, it is advisable to close the fuel tap.

PART III

MAINTENANCE

The simplest among the following operations may be performed by the owner himself, provided he has sufficient experience and the necessary tools. All the other operations should be entrusted to an authorised Agrati-Garelli dealer. The mileages indicated for the maintenance echedule are to be taken as an average.

Upon delivery

— check the tyre pressure:

F. wheel 1 kg/sq cm. (14 P.S.I.)

R. wheel 1,7 kg/sq cm. (24 P.S.I.)

After the first 500 km. (300 miles)

— check the tightness of all screws and nuts, especially the cylinder head nuts and spokes wheel
— check the exhaust pipe flange nut for tightness
— check and adjust the play in the starting assembly
— drain the oil from the crankcase and refill with new oil (SAE 30),
— clean the intake filter
— adjust idling speed
— remove and inspect the spark plug; if necessary clean it and adjust the electrode gap to 0,5 ÷ 0,6 mm. (.020" - .024")

Every 2.000 km. (1.200 miles)

— repeat the operations outlined in the preceding paragraph
— have an authorised Agrati-Garelli dealer check the timing and set the contact breaker points of the magneto at 0,35 ÷ 0,45 mm. (.014" - .018") gap spacing
— inspect and adjust the tension of the brake cables by means of the tensioning screw at the cables end
— clean and grease (moderately) the chain and, if necessary, increase the tension by means of the adjuster on the rear axle.

Every 4.000 km. (2400 miles)

— remove the cylinder head, exhaust pipe and silencer
— carefully remove any carbon deposits on:
the inside of the cylinder head
the top of the piston
the inlet and exhaust ports.
— when screeping the top of the piston, which is made of light alloy ,take care not to scratch or damage it; to clean the exhaust port, run the piston down to its lowest point so that the port opening be completely accessible
— when remounting the cylinder head the nuts must be tightened down gradually ,shifting back and forth in the form of a cross between nuts on opposite sides of the head
— clean the exhaust silencer
— clean the carburettor (fuel filter screen, float chamber, air filter, etc.)
— check and, when necessary, adjust the lateral alignment of the wheels; to obtain proper alignment, loosen the outside axle locking nuts and regulate the adjustment nut located inside the fork arm.

PART IV

TROUBLES - Causes and cure

A) Engine fails to start or stops while running:

1. The fuel tap is turned off or the tank is empty.	Open the fuel tap. Refill the tank with the proper petroil mixture.
2. The engine is « flooded ».	Turn off the fuel tap, open full throttle and operate the pedal repeatedly until the engine starts. If this is not successful, push the machine forward as rapidly as possible. Failing again, the spark plug must be removed, dried and cleaned. Before refitting it, operate the starting pedal several times to expel the excess fuel from the cylinder.
3. The fuel pipe is clogged or the filter is dirty.	Remove the fuel pipe and filter, then clean. Before refitting make sure that the fuel flows by opening the tap for a moment
4. The spark plug is dirty.	Clean and adjust as previously indicated. When refitting, make sure that the gasket is in place and take care to screw the plug in straight (one should be able to screw it by hand).

B) The engine lacks power or fails to reach its normal speed:

1. Exhaust noise is weak. The engine runs irregular (so-called «four-stroking»)	Excess carbon deposits, ports partially blocked or dirty exhaust silencer. Decoke (see «Maintenance» under « Every 4000 km » 2400 ml).
2. Intermittent running of the engine. Engine misses and carburettor backfires out.	Defective spark plug or contact breaker points which fail to open all the way. Have them checked and adjusted. May also be caused by a defective coil or condenser.
3. The engine tends to stop when the throttle open wider.	Dirty main jet: remove and clean. Or the carburettor mixture is too lean. Replace with a larger size jet, after checking first: a) that the jet is not partially dirty, oxidized, etc.; b) that the spark plug is not defective or dirty; c) that the carburettor is clean inside (by dismantling the float chamber); d) that fuel flows steadily to the carburettor and that no air leak exists in the connections between the carburettor and the cylinder and the crankcase; check that all nuts are tight and all gaskets sound, including the cylinder head gasket.

4. Exhaust is irregular. Exhaust noise is smooth and constant only when accelerating or climbing.	The fuel mixture is too rich. Change to lower size jets until operation is smooth and regular. This condition may also be caused by dirt in the fuel supply which lodges between the float needle and its seat in the float chamber cover (this is a valve that maintains the fuel level in the carburettor). Another possible cause is the improper seating of the float needle point in its seat due to excess wear. In this case the needle and the float chamber cover must be replaced.

C) The following troubles may occur to the spark plug:

1. Cracked insulation	The plug does not spark. Replace it.
2. Too close tips	The spark is short and cannot fire the fuel. Adjust the electrode gap.
3. Too wide tips	The plug cannot spark. Adjust the electrode gap.
4. Oil wet tips	Oil is an insulating element, and the current cannot flow. Clean and dry.
5. Fouled tips	Fouling makes « bridge » between the tips and the current flows without sparking. Polish with the appropriate wire brush.

GUARANTEE

(taken from the General Sale Conditions)

The KATIA M - KATIA MK - KATIA K mopeds are guaranteed for six months from the date of delivery against any faults in materials and/or workmanship.

Under the terms of this guarantee, all the parts which are proved to be defective will be repaired or replaced free of charges, provided they have not been subject to abuse and provided the moped has not been employed for other purposes than those for which it was intended, By the manufacturer as indicated in his catalogue. The cost of transportation, of assembling and disassembling and of any fuels and lubricants used will be to the owner's charge.

The guarantee is a void whenever:

— non original parts have been employed;

— the engine unit shows signs of abuse by incompetent people or gives evidence of repairs not properly performed;

— the machine has been used in races of competitions;

— the oil and lubricant as used were not of the perschibed quality, quantity and grade;

— the running-in instructions have not been followed.

With respect to the parts not manufactured by Gruppo Industriale Agrati-Garelli S.p.A. (such as: ball bearings, cables. oiectrical equipment, tyres, etc.) the guarantee applies only to the same extent as the manufacturers of such parts assume obligations for them.

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CARBURANT ET LUBRIFIANTS RECOMMANDES

RECOMMENDED FUEL AND LUBRIFICANTS

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