WORKSHOP

Capri 98

Scooter

Motor Cycles : Mopeds : Cycles

Instruction Booklet

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MONTICELLO
(COMO) ITALY

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Scooter

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INDEX

SCOOTER IDENTIFICATION NUMBERS

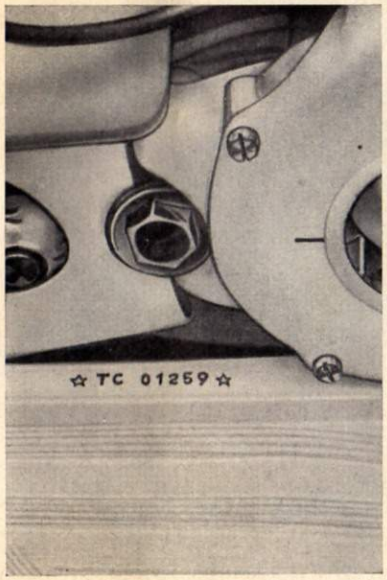

Fig. 1

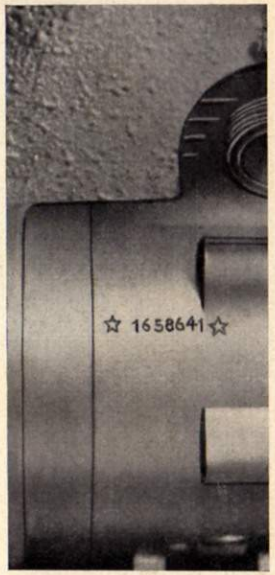

Fig. 2

The frame (Fig. 1) and engine (Fig. 2) numbers are stamped on the engine and frame in the positions as shown.

These numbers should be quoted on the vehicle licence application form and also when ordering spare parts.

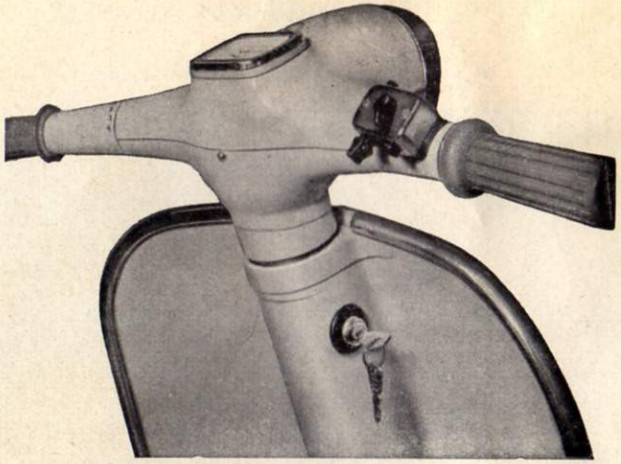

Fig. 3

ANTI-THIEF STEERING LOCK

Fig. 3 illustrates the position of the steering lock (1).

Before attempting to close the lock, the handlebars should be turned to the left after which the key should be turned in an anti-clockwise direction. The key can only be removed when the steering is locked.

Two keys are provided and **one should be kept in a safe place** so that it can easily be found should the first key be mislaid or lost.

N.B. When ordering a spare key indicate allways the required key number.

CONTROLS

The following figures show the scooter controls.

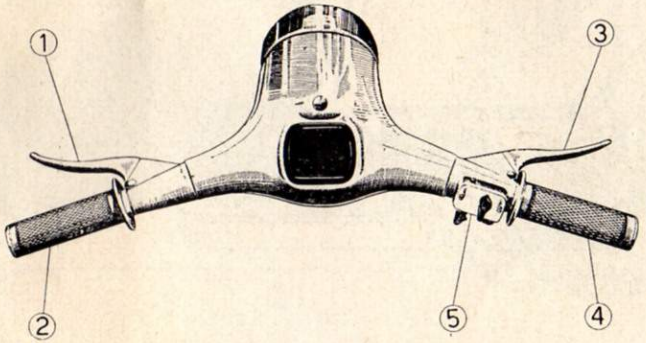

Fig. 4 - **HANDLEBAR**

On the Handlebar (Fig. 4)

1 - Clutch lever

2 - Gear change twist grip control

3 - Front brake lever

4 - Throttle twist grip control

5 - Lighting switch, including (see fig. 5):

On the head lamp cover in the middle of the handlebar is placed the speedometer.

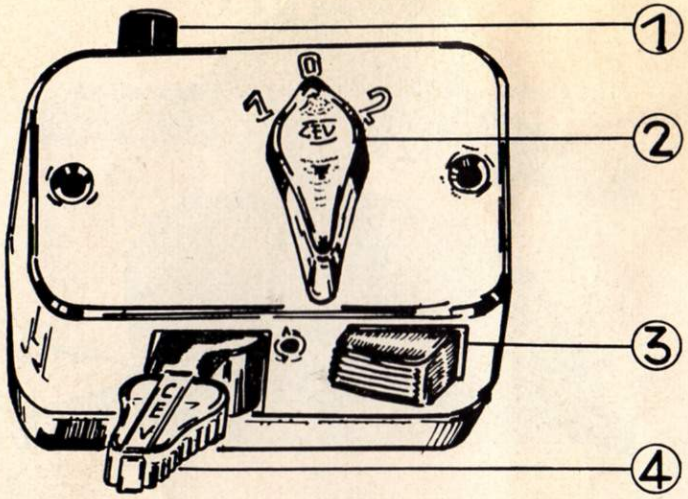

Fig. 5 - LIGHTING SWITCH

1) Cut-out button.

2) Lighting switch lever.

Position **0:** lights off.

Position **1:** pilot and tail lamp on.

Position **2:** head lamp and tail lamp on.

3) Horn push button.

4) Head lamp switcher (mean beam or deam light) to operate whit lighting switch lever in position 2.

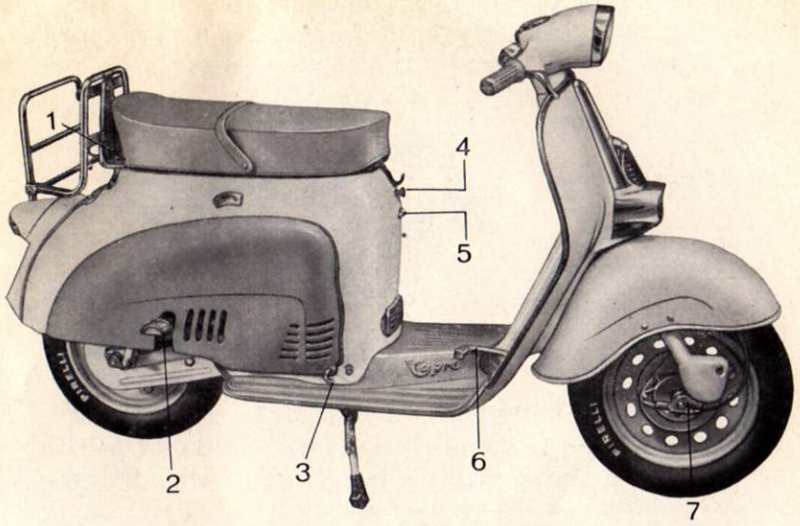

Fig. 6 - **SCOOTER VIEW FROM R.H. SIDE**

1 Dual seat catch (to push for open) - **2** Kickstart pedal - **3** R.H. side fairing fastener - **4** Choke operating rod - **5** Petrol tap operating lever - **6** Rear brake pedal - **7** Speedometer drive gearbox (grease nipple position).

On the foot board

On the right han side, the rear brake operating pedal.

On the center of the body and under the seat

(see fig. 6)

1) Chake operating rod (9) (to be used only when the engine is cold. Pull out to operate and then return it to its normal position).

2) Petrol tap operating lever (10) with three positions (see fig. 7). If the Scooter has to be left stading more than a few minutes always turn off the petrol tap.

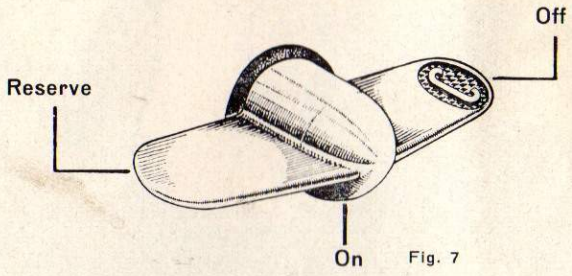

Fig. 7

On the right hand side

By the running board end is located the kickstart pedal (2). Before operating the kickstart make sure that the gear control is in the neutral position.

Part I.

TECHNICAL DATA

Dimensions etc. of Scooter

Wheel base	52	in.
Overall width	25	in.
Overall lenght	70	in.
Saddle height	30	in.
Weight	176	lb.

Petrol tank capacity 1 1/8 gallons (6=lt.) including 1/8 gallon reserve.

Maximum speed 45 mph

Fuel consumption approx 130 m.p.g.

Frame - Tubolar steel extrastrenght and welded pressed steel parts.

Body cover and fairing - In pressed steel plate.

Suspensione - Front: trailing pivoted fork on rubber suspension units (no maintenance reqiured). Rear: Swinging fork with telescopic suspension units.

Wheels - 12" interchangeable disc wheels in pressed steel.

Brakes - Internally expanding types in alloy brake drums and withdrawable wheel axles.

Tyres - 12 in. x 3.00 in. front and rear.

Tyre pressure:

front wheel 20 P.S.I.
rear wheel 28 P.S.I.
rear wheel 32 P.S.I. (with pillion passenger).

Engine

« Garelli 374 RC » sigle cylinder, 2 stroke, forced aircooled by fan, alloy cylinder head.

Bore 50 mm.

Stroke 48 mm.

Cubic capacity 94·25 cc.

Compression ratio 7·25 - 1

Brake horse power 5·2 B.H.P. at 6,500 R.P.M.

Ignition - by flywheel generator 28 W-6V feeding external high tension coil.

Ignition timing - 23 degrees or 2·4 mm. (·094 in.) B.T.D.C.

Petroil Mixture 20-1 (SAE 30 oil grade).

Primary transmission - by ratio 3·73 - 1.

Gearbox - 4 speed constant mesh gears.

Total Gear ratios		Final drive ratios	
1st. speed	12·45 - 1	1st. speed	21.5 - 1
2nd. speed	7·25 - 1	2nd. speed	12.5 - 1
3rd. speed	5·25 - 1	3rd. speed	9·1 - 1
4th. speed	4·18 - 1	4th. speed	7·23 - 1

Secondary transmission - drive by chain 1/2 in. x 3/16 in. completly enclosed in alloy casting chain box Final drive sprocket 15 teeth, rear wheel sprocket 26 teeth, secondary trasmission ratio 1·73 - 1.

Carburettor (fig. 9)

Dell'Orto type ME 18 BS.
Semi-automatic choke for cold weather starting.
Air silencer and filter attached to the carburettor.

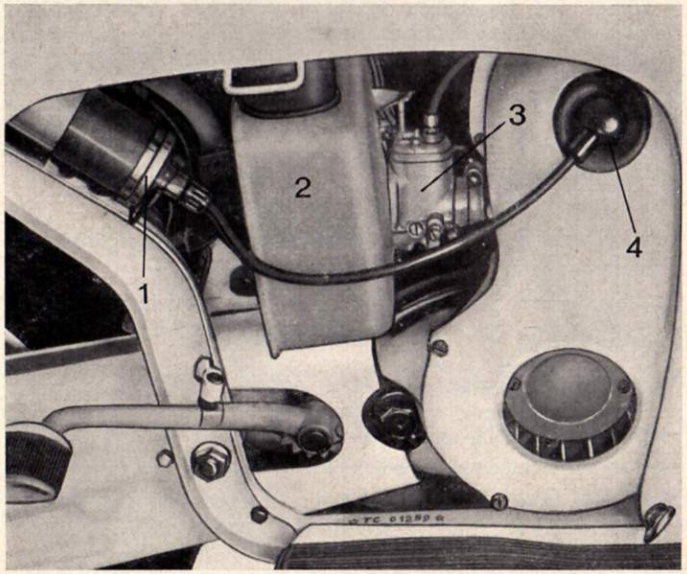

Fig. 8 - **ENGINE UNIT**

1 H. T. coil - **2** Air silencer - **3** Carburettor - **4** Sparking plug cover.

Regulation

1 Choke spindle, operated by pulling out the control rod

2 Throttle cable adjuster

3 Throttle valve adjusting screw

4 Main jet, size 75 ÷ 78

5 Needle jet Nr. 258/A and throttle needle G 3 positioned in third groove from top

6 Slow running jet adjusting screw 3/4 turn out

7 Petrol filter banjo fixing screw

9 Slow running jet, size 35

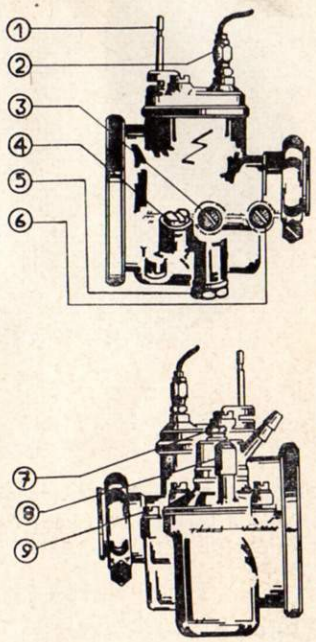

Fig. 9

Gearbox

Constant mesh type with gear coupling by a coaxial slide on the secondary shaft. Handlebar operated by dual cables running from the left hand twist grip control to an external selector pulley situated underneath the gearcase.

The gearbox and clutch are lubricated by S.A.E. 30 grade oil **(Approx 1 pint)** contained in the gearcase wich level is checked by a dipstick (1 - fig. 10).

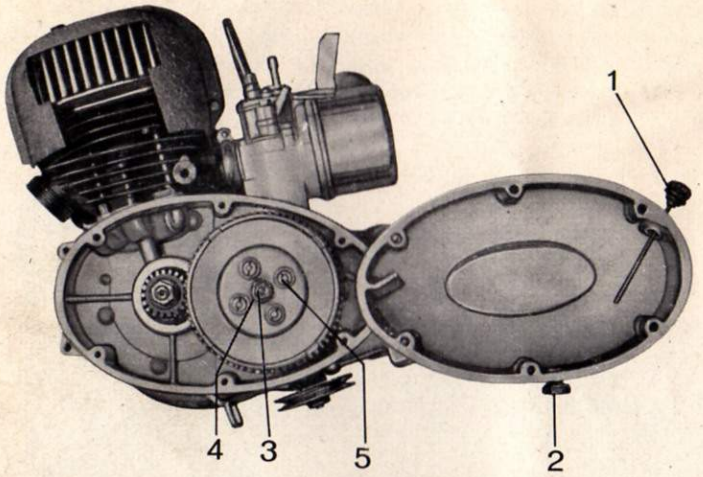

Fig. 10 - **CLUTCH VIEW**

1 Dipstick plug - **2** Gearcase oil draining plug - **3** Clutch adjusting screw - **4** Locknut - **5** Clutch spring adjusting screw.

Clutch

The clutch is of the multiple disc type running in oil. 4 Plates are used, 2 steel and 2 bonded with a special friction material.

Cable adjustment is provided by means of a cable adjuster situated on the gear case end of the cable, and the additional clutch adjustment is provided on the clutch pressure plate by a screw and locknut, which is accessible by removing the clutch cover (fig. 10) providing that the gearbox oil has been drained.

ELECTRICAL SYSTEM
(see wiring diagram)

Flywheel generator - 6 Volt 28 Watt (output).

Head lamp - 6 Volt 25/25 Watt.
(Double filament Bosch cap BA 20 D).

Pilot lamp - 12 Volt, 10 Watt.
(Festoon type 11 x 44 m/m).

Tail lamp - 6 Volt, 5 Watt.
(Festoon type 11.50 x 39 mm.).

Electric Horn - 6 Volt, 20/30 Watt.

High tension coil - External type.
RU nut, primary low tension feeding.
AL nut, primary earth connection.
Central bakelite bush, fixing H. T. spark plug cable.

Spark plug - The sparking plug to be used in the Garelli 374 RC engine should have a heat value of 240 degrees Bosch scale or therabouts.

Reccommended plugs are:

Lodge HN	Bosch W240 T1
KLG F 80	Marelli CW240A

The correct setting for the electrodes gap is ·020" ÷ ·024" (mm 0,5 ÷ 0,6).

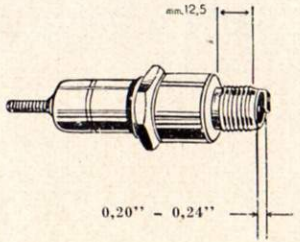

Fig. 11 - **Spark Plug**

ELECTRICAL SYSTEM
(see wiring diagram)

Flywheel generator - 6 Volt 28 Watt (output).

Head lamp - 6 Volt 25/25 Watt.
(Double filament Bosch cap BA 20 D).

Pilot lamp - 12 Volt, 10 Watt.
(Festoon type 11 x 44 m/m).

Tail lamp - 6 Volt, 5 Watt.
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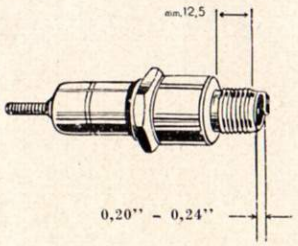
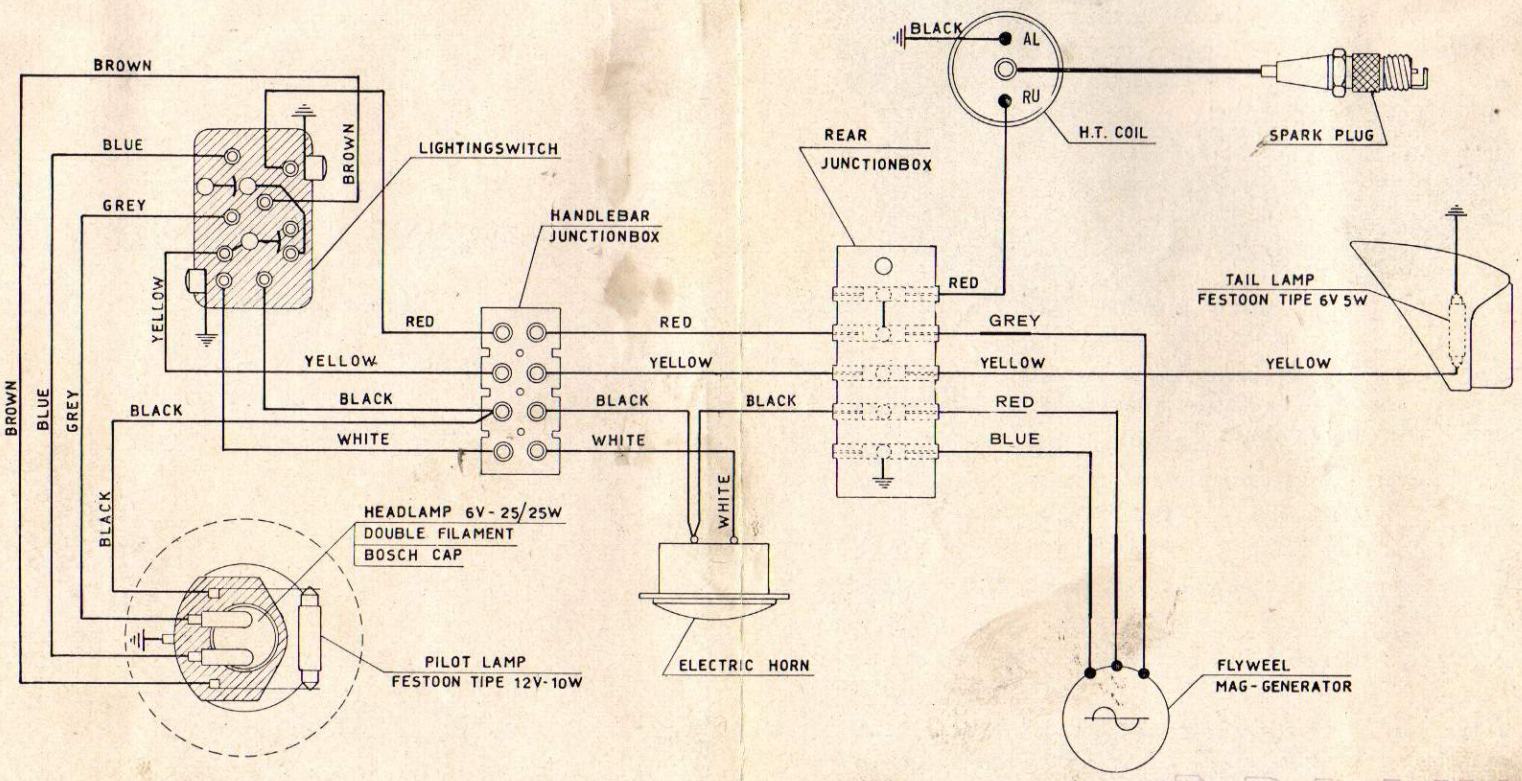
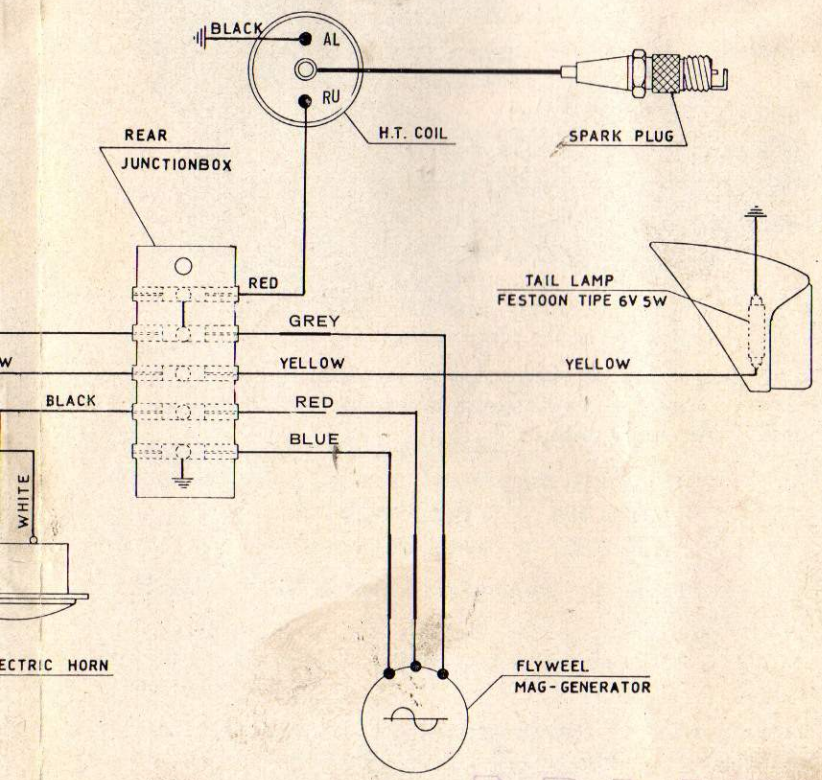


Fig. 11 - **Spark Plug**

WIRING DIAGRAM

(see inside)


BROWN
BLUE
GREY
BLACK
BROWN
BLUE
GREY
BLACK
YELLOW
BROWN
LIGHTINGSWITCH
HANDLEBAR
JUNCTIONBOX
RED
YELLOW
BLACK
WHITE
RED
YELLOW
BLACK
WHITE
WHITE
HEADLAMP 6V-25/25W
DOUBLE FILAMENT
BOSCH CAP
PILOT LAMP
FESTOON TIPE 12V-10W
ELECTRIC HORN
BLACK
AL
RU
H.T. COIL
SPARK PLUG
REAR
JUNCTIONBOX
RED
GREY
YELLOW
RED
BLUE
TAIL LAMP
FESTOON TIPE 6V 5W
YELLOW
FLYWEEL
MAG-GENERATOR



Magneto Flywheel (Fig. 12)

The flywheel Mag-Generator is situated on the right hand side of the engine and is fitted with a fan to assist cooling of the engine.

After removing the flywheel inspection cover, which is attached to the flywheel by two screws, it is possible to chek the amount of opening of the contacts with a feeler gauge. Before making any adjustment ascertain that the contacts are in the fully open position. The gap should be ·014" - ·018". The contacts should commence to open at 2·4 mm. (·094 in.) B.T.D.C. when the timing marks 7 and 8 are in line (fig. 12).

It is advisable to check the contact breaker gap after the first 300 miles and thereafter at intervals of 1.500 miles.

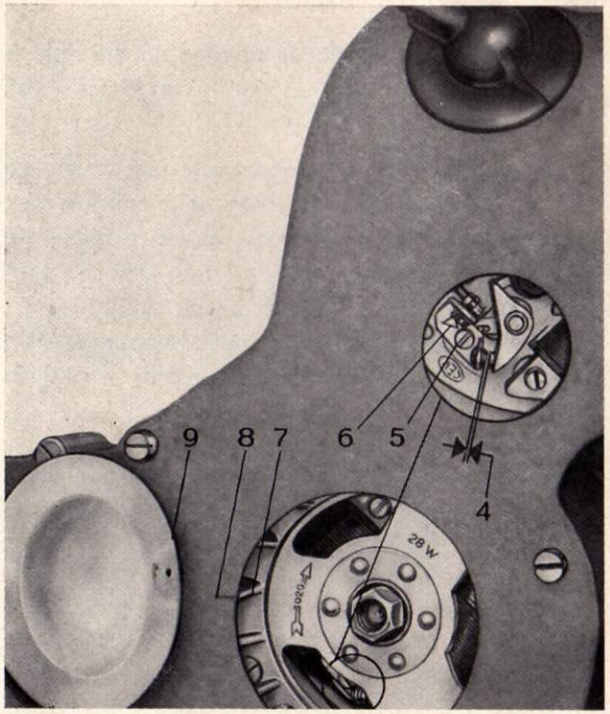


Fig. 12 – **FLYWHEEL MAGNETO**

4 Contact breaker gap. · 014 - · 018 in. - **5** Contact adjusting screw - **6** Gap for contact adjusting - **7** Timing mark on flywheel - **8** Timing mark on engine cowling - **9** Flywheel inspection cover.

Part II.

USE OF THE MACHINE

Running in

During this period (first 1,250 miles) it is strongly recommended that the following petroil ratios and speeds are adhered to

— Use petrol in the ratio 20-1 i.e. 1 1/4 gallons of petrol to 1/2 pint of S.A.E. 30 grade oil (during and after the running in period). Ready mixed petroil can obtained at most garages from petroil dispensers in this ratio.

— Do not exeed the following speeds:
1st gear 10 m.p.h.; 2nd gear 18 m.p.h.; 3rd gear 24 m.p.h.; 4th gear 30 m.p.h.

— Do not run too long at the maximum permitted speeds.

— Do not climb hills with fully open throttle.

— Change down as soon as the engine begin to labour.

— Do not accelerate with fully open throttle.

— Change the gear case oil after the first 300 miles.

Running-in is the most important period, as the further life of the engine **depends on this operation.**

Starting - Running - Stopping

Starting engine from cold.

1) Turn on the fuel tap (see fig. 6).
2) Pull out the air control rod to its fullest extent and then return it to its original position.
The air control valve will now remain closed until the twist grip throttle control is considerably opened when it will return to its normal position.

3) Make sure that gear change twist grip control is set in the neutral position.
4) Open the throttle (R.H. twist grip) approximately 1/2 in.
5) Start the engine by means of the kickstarter which should pushed gently down wards until the mechanism engages, then give a sharp thrust to the end of its travel.

NB. During the cold season let the engine warmup itself by running free for a minute or so before using the Scooter.

Starting when the engine is warm.

The method of starting when the engine is warm is similar to the foregoing instructions, except that instruction 2 is omitted and slightly more throttle opening is used.

To ride away:

— with the engine already running, withdraw the clutch lever (L.H. handlebar) and engage first gear.
— gradually release the clutch lever and at the same time open the throttle further.
— accellerate slightly to reach the necessary speed for changing into the next higher gear.

To change gear.

The gear change twist grip control have 5 positions: Neutral (AVV), 1st, 2nd, 3rd, and 4th.

Changing up.

— Close the throttle.
— Withdraw the clutch lever.
— Turn the gear operating twist grip to the desidered position.
— Release the clutch and re-accellerate the engine.

Changing down.

Operate in a similar manner, but instead of closing the throttle when the clutch is released, leave it partially open, so that the engine revolutions increase to the correct speed of the machine.

Warnings.

When pulling up at traffic lights etc. it is advisable to move the twits grip gear control to the neutral position just before you come to a stop. Never stand at traffic lights with the engine running and the first gear engaged, always select the neutral position. When descending steep hills do not completely close the throttle and occasionally give the throttle an extra « blip » to assist lubrication.

This is most important as when the throttle control is completely closed the engine is being starved with lubrication. Never descend hills at speeds in excess of the designed maximum speed as this will result in excessive wear of the working parts.

To stop the engine.

Close the throttle (R.H. twist grip) select the neutral position (L.H. twist grip) then press the earthing button located on the top of the lighting switch.

Always turn the petrol tap off after stopping the engine, unless, of course, it is intended to restart immediately.

WHEELS

Tyres 12 in. x 300 in.

Tyres pressure

front wheel 20 p.s.i.
rear wheel 28 p.s.i.
rear wheel 32 p.s.i. (with pillion passenger).

WHEEL REMOVAL

Front wheel. (Fig. 13) Slacken off the axle nut (19 mm. spanner) sufficiently ta allow the axle locating washers to be drawn away from their locations in the fork ends, the front wheel can then be completely withdrawn from the fork ends.

Then remove the axle nut and withdraw the axle and both the brake plate and speedometer drive plate con be lifted away from the hub without disconnecting the cables. Remove the four nuts and spring washers retaining the wheel to the hub and the wheel can be lifted off the hub.

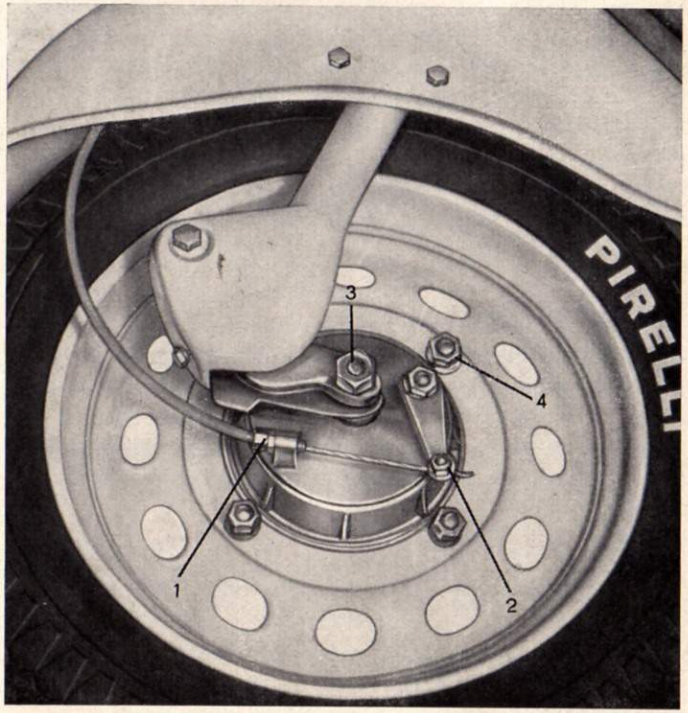


Fig. 13 - **FRONT WHEEL**

1 Front brake Cable adjuster - **2** Brake cable clamp bolt
3 Wheel retaining nuts.

To refit, reverse the foregoing procedure and when refitting the assembly into the forks, ascertain tat the speedometer drive pegs locate in the drive slots in the hub and that the speedometer cable is correctly positioned.

Rear Wheel remove the rear wheel axle nut (19 mm. spanner) and completely withdraw the axle, then remove the aluminium brake anchor distance piece from the brake plate. The wheel and hub can now be moved over to the right hand side of the rear fork until the cush drive rubbers disengage. Now lift the wheel upwards as far as possible, this will enable the brake plate complete with cable to be withdrawn from the hub and the wheel and hub can be lifted clear. Remove the four nuts and spring washers (17 mm. spanner) retaining the wheel to the hub and the wheel can be lifted off the hub. To refit the wheel reverse the above procedure and make sure that the drive blocks locate in the cush drive rubbers when locating the hub on the sprocket carrier.

Before tightening the axle nut, be sure that the wheel is correctly lined up in the fork ends by means of the cam type adjusters, otherwise premature chain wear, will occur. This last operation also applies when adjusting the rear chain. (See page 24).

N.B. It is not necessary to disconnect the brake cables when removing either the front or rear wheels. The wheels are interchangeable, but not hubs.

When either wheel is replaced on its hub great care shauld be taken to tighten down the 4 retaining nuts evenly.

Part III.

MAINTENANCE

OIL LEVEL IN GEARBOX

Check the oil level in the gearbox by means of the oil filler plug with dipstick (1 - see fig. 10), and if necessary « top up » with oil having a viscosity of S.A.E. 30. The correct oil level is immediatly below the mark on the dipstick.

Do not overfill, as this will cause loss of power and clutch drag.

OIL CHANGE

It is preferable to drain the oil whilst the engine is hot. Remove the drain plug from the gearcase (2 - fig. 10) and allow the oil to drain into a suitable tin. Then after draining is complete, refit the drain plug and refill with approx. 1 pint S.A.E. 30 oil grade to the correct level.

The gearcase oil shauld be changed after the first 300 miles and at end of the running-in period (1,250 miles) and there after every 2,500 miles.

REAR CHAIN ADJUSTMENT

The correct adjustment for the rear chain is when approximately 1/8 inch of slack can be felt in the rear chain where it is visible. This is the tightest position for the chain and when weight s applied to the machine it slackens off. Adjustment is made by slackening off the rear axle nut and the large nut (24 mm. spanner) situated immediately behind the axle nut, then moving the cam type adjusters in the required direction. Afterwards tighten both nuts check the rear brake for adjustment.

CONTROL CABLES ADJUSTMENT

Gear change cables adjustment is made by means of two cable adjusters situated underneath the crankcase (see fig. 14). The adjustment must be made with reference to the marked positions on the gear change twist grip (18 - see fig. 16).

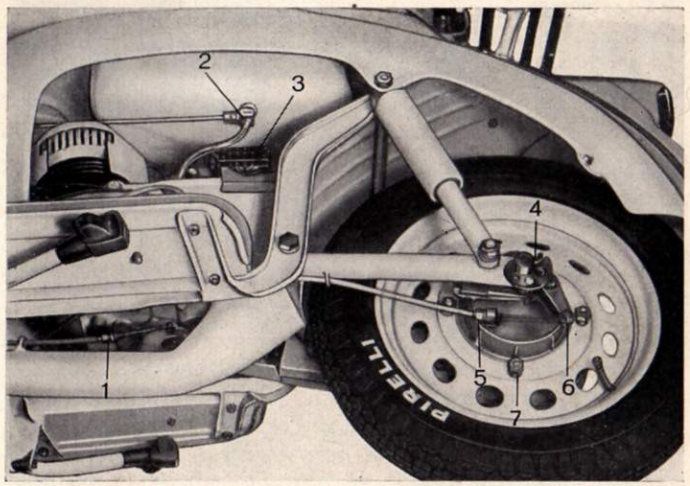


Fig. 14 - **L. H. VIEW REAR WHEEL**

1 Gear change cable adjuster - **2** Petrol tap - **3** Rear junction box - **4** Chain cam type adjuster - **5** Rear brake cable adjuster - **6** Brake cable clamp bolt - **7** Wheel retaining nut.

CLUTCH CABLE

Adjustment is provided by means of a cable adjuster situated on the left hand side engine mounting support bracket and is accessible by removing the left hand engine fairing. The clutch cable is correctly adjusted when

1/8 in. of « freeplay » can be felt at the clutch operating handlebar lever (see fig. 16).

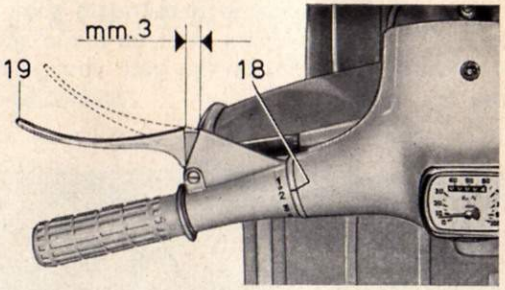


Fig. 16

18 Gear change twist grip control positions
19 Clutch lever.

BRAKE ADJUSMENT

Front and rear brake are adjusted by means of a cable adjuster situated on the alloy brake plates (see fig. 12 and. 13). Do not adjust too tightly.

CABLE LUBRICATION

All the exposed sections of the control cables should be lubricated occasionally with oil, and internal lubrication of the throttle and gear change can be carried out by removing the lamp front and introducing a few spots of oil to the cables at the point where they connect to the operating pulleys.

FRONT AND REAR SUSPENSION

The front and rear suspension pivots run on nylon bushes and no lubrication is required.

SILENCER

The silencer should be dismantled for cleanig purposes at intervals of approximately 1,000-2,000 miles depending on running conditions. To dismantle the silencer, remove the screw from the end of the silencer body, withdraw the

baffle, remove all carbon and oil deposits and re-assemble. A clogged silencer will considerably reduce engine power and cause overheating of the engine.

PERIODE MAINTENANCE

After the first 300 miles and at intervals of approximately 1,250 miles

Check the tightness of all nuts, bolts and screws, particularly the cylinder head nuts.

Check the tightness of the exhaust pipe union nut and the silencer fixing nuts and bolts.

Check the free movement in the clutch, gear change and throttle control cables and lubricate with oil, check and adjust the brake control cables.

Clean the fuel filter in the carburettor (see fig. 9).

Adjust the engine idling speed by turning the adjusting screw on the carburettor (see point 3 fig 9) in the required direction.

Check the sparking plug gap, clean and adjust it if necessary to ·020 in. — ·024 in.

Check the contact breaker gap and if necessary adjustit (the gap should be ·014 in. — ·018 in.).

Lubricate the speedometer drive gearbox using a grease gun on the nipple provided (one shot only).

Apply a **small** quantity of high melting point grease to the felt lubricating pad situated on the stator plate. This operation can be carried out through the aperture in the flywheel. Do not overlubricate.

Check the rear chain for adjustment and lubricate, using a good proprietary brand of chain lubricant.

After every 2.500 miles

Decarbonize the engine by removing the cylinder head, exhaust pipe and silencer assembly.

Carefully remove all the carbon deposits from inside the head, the top of the piston, the exhaust port and the silencer,. When cleaning the piston which is made of light alloy, take great care not to scratch or damage it.

When refitting the cylinder head the nuts must be tightened down evenly.

Clean the carburettor fuel filter, float chamber, jets, air cleaner and silencing system.

The sparking plug should be cleaned and the gap reset.

Part IV.

TROUBLES —

THEIR CAUSE AND CURE

LOCATING THE TROUBLE	REMEDY
IF "A" *The engine fails to start, or stops while running*	
1. The fuel tap is turned off, or the tank is empty.	Open the fuel tap or turn it on to the reserve position. Refil the tank with the correct petroil mixture.
2. The engine is flooded with fuel.	Turn off the fuel tap, open the throttle wide and continue to operate the kickstarter until the engine starts. If it fails to start, remove the spark plug and dry it. Before replacing turn over the engine several times by operating the kickstart in order to eject the excess fuel.
3. The petroil pipe is clogged or the carburettor filter is dirty.	Remove the pipe and carburettor filter and clean. Before replacing the pipe on the carburettor connection turn on the tap to ascertain that fuel is flowing.
4. The spark plug is fouled.	Clean and adjust. Replace.

TROUBLES —
THEIR CAUSE AND CURE

LOCATING THE TROUBLE	REMEDY
IF "B" *The engine lacks power, or fails to reach its normal speed*	
1. Exhaust note is weak. The engine tends to « four stroke ».	Engine and exhaust system need decarbonizing. (see Maintenance — every 2,500 miles).
2. Intermittent running of the engine. Engine misfires and back fires out of carburettor.	Defective spark plug or ignition contacts require adjusting. Defective coil or condenser.
3. The engine tends to «slow off» when the throttle is opened.	Choked main carburettor jet, remove clean and replace. Spark plug defective or fouled. Air leaks occuring between carburettor inlet pipe and cylinder head joint or cylinder base and crankase. Check all nuts for tightness and if necessary replace gaskets. Petrol tank filler cap vent hole blocked or restricted - clear hole.

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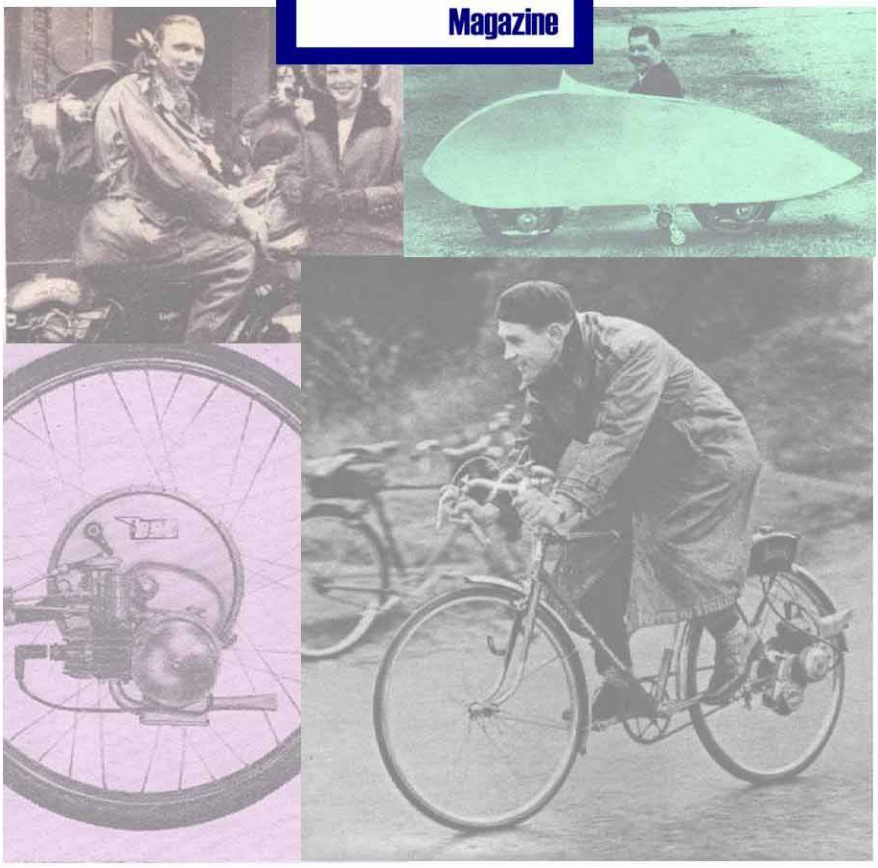

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