



Vespa 150

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OPERATION AND MAINTENANCE





Fig. 1 - Vespa 150

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NOTICE

To keep your VESPA in perfect running order and not to invalidate the guarantee offered by the contract, it is advisable to entrust repairs only to retailers or authorized service stations.

Demand original **Piaggio** spare parts exclusively. All PIAGGIO spares are made of the same material, have undergone the same machining steps and inspections as the components of your VESPA. This means guarantee for long life and normal performance of your machine and for your personal safety.

Special care should be taken with regard to fuel mixture which should consist of a good quality gasoline and oil of make, grade and in the amount prescribed in this booklet, page 20.

INDEX OF MAIN DIRECTIONS

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The descriptions and illustrations in this booklet are not to be taken as binding on the Manufacturer. The essential features of the model described and illustrated herein remaining unaltered, the PIAGGIO Firm reserves therefore the right to carry out at any moment, without being obliged to bring this booklet up-to-date in due course, modification that may occur concerning machine units and parts, or delivery of accessories, that the Firm deems to be convenient on improvement purposes or for what may concern manufacturing or commercial requirements.

INTRODUCTORY NOTE

The « Piaggio Co. » welcoming your in the family of the Vespa owners, wishes to thank your for your preference, trusting that this scooter will be of your satisfaction.

For its characteristics (comfort, low fuel consumption, noiseless running, neatness etc.) the Vespa can have a large field of use: for work purpose as well as tourist trips, both along large highways and narrow farm roads.

Long and hard rides will not worry you and, driving the Vespa, you will soon realize its excellent performance.

This booklet, in which the simple instructions for operation and maintenance can be found, will enable you to know better your own Vespa and use it in the most suitable way.

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TECHNICAL DATA

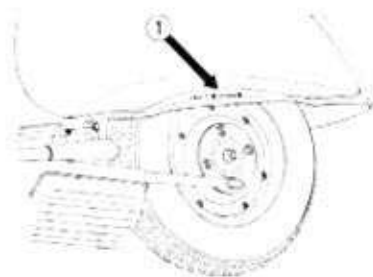


Fig. 2 - Stamping on frame (1)

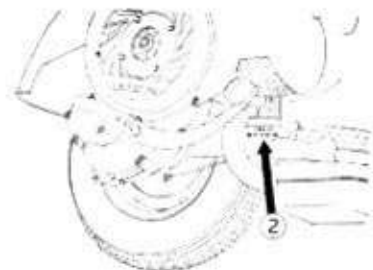


Fig. 3 - Stamping on engine (2)

Fuel consumption (CUNA Standards)

2.2 liters to 100 Km (107 miles per USA gals; 128 miles per imp. gals).

Max speed (CUNA) 85 Km/h (53 m.p.h.)

Carrying capacity 2 persons and 10 Kg. (22 lbs) of luggage.

Range 360 Km (225 miles)

Wheel base 1180 mm (46.4")

Handlebars width 710 mm (27.9")

Max length 1735 mm (68.3")

Max height 1020 mm (40.1")

Ground clearance 130 mm (5.1")

Min. turning circle 1500 mm (59")

Weight (without fuel) 86 Kg (191 lbs)

IDENTIFICATION DATA

Serial numbers with prefix VBA are stamped on both frame and engine in the locations indicated on Figs. 2 and 3 respectively.



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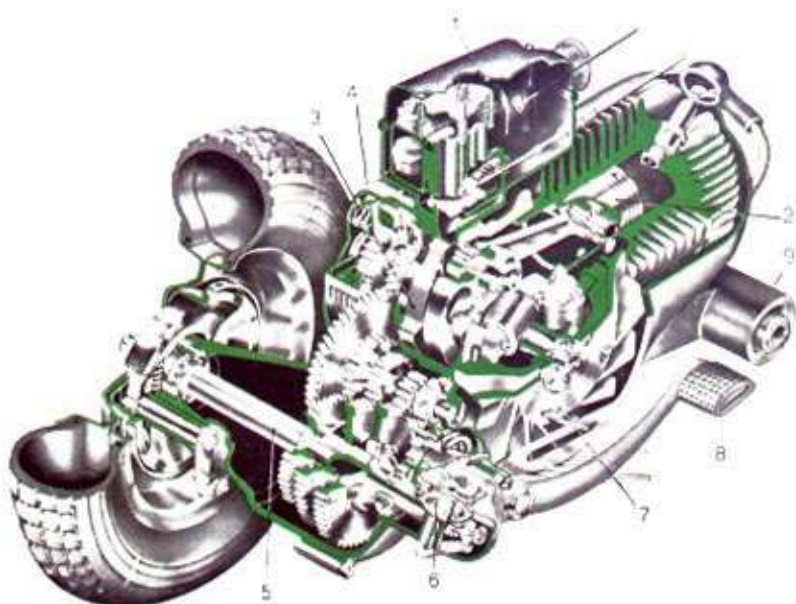


Fig. 4 - Section of engine

1. Air cleaner and carburettor - 2. Piston - 3. Crankshaft - 4. Clutch - 5. Mainshaft with gear pinions
 6. Gear shifter - 7. Flywheel magneto - 8. Kick-starter - 9. Crankcase arm (clutch side), pivoted to the frame

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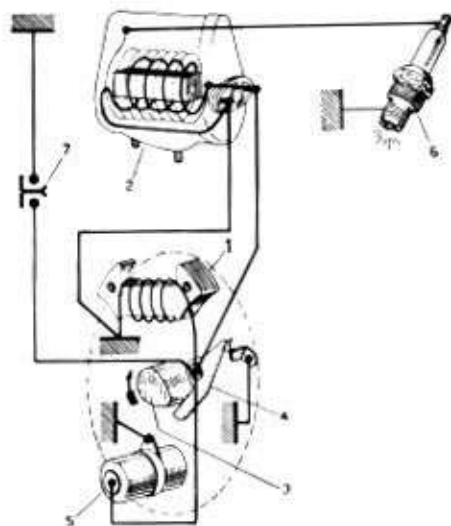


Fig. 5 - Ignition diagram

1. Ignition coil in flywheel magneto - 2. External H. T. coil - 3. Rotor cam - 4. Breaker - 5. Condenser - 6. Sparkplug - 7. Engine cut-out on switch.

Such numbers and prefixes identify the Vespa as prescribed by law and are repeated on the test card and other documents of the Vespa.

They must be quoted when ordering spares.

ENGINE

Single horizontal cylinder, two-stroke, with deflector piston and rotary valve, i. e.: fuel mixture flow to the cylinder is controlled by the rotation of a crankweb (see Fig. 4).

The engine works on a 2⁵⁰/₁₀₀ gasoline-oil mixture.

Bore 57 mm (2.24")

Stroke 57 mm (2.24")

Displacement 145.45 cc (8.88 cu.in)

Compression ratio 14.8 to 1.

The engine is pivoted to the chassis of scooter through the cylindric arm of the crankcase half, clutch side, provided with a spindle and two bushes (see scooterhelp.com). Its vibrations are damped by the rear su-



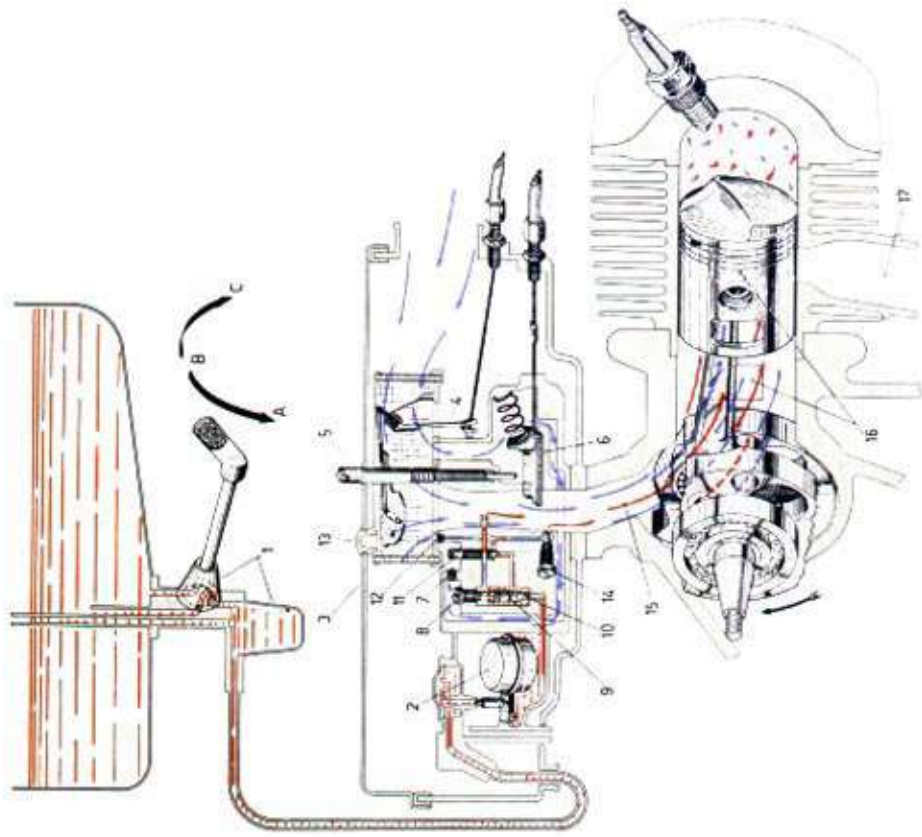


Fig. 6 - Feeding circuit

1. Float
2. Sediment trap
3. Float
4. Needle valve
5. Throttle slide
6. Main jet
7. Mixer
8. Main jet
9. Intake manifold
10. Transfer port
11. Transfer port
12. Cylinder
13. Intake valve
14. Transfer port
15. Transfer port
16. Exhaust valve
17. Exhaust port

suspension with variable rate coil spring and hydraulic damper (see also page 13).
The rear wheel is secured to the end of mainshaft.

Ignition by an external H.T. coil with primary winding fed by another coil inside the flywheel magneto (see Fig. 5).
Sparkplug: Marelli CW 240 A - T, AC 42 F, Champion L. 5, Bosch W 240 T1.
Ignition timing with spark advance of $28 \pm 1^\circ$.

Lubrication of piston, cylinder, wrist pin, connecting rod, crankshaft, main bearings is attended to by the content of oil in the fuel mixture.
Both clutch and gear box operate in oil bath.

Fuel supply by gravity with gasoline-oil mixture.
The carburettor is embodied in the air cleaner case, has a plate-shaped slide valve and immersed jets.

Fuel tank with total capacity of 7.7 liters (2.03 USA gals; 1.7 imp. gals) and emergency reserve of about 1.4 l (0.37 USA gals; 0.3 imp. gals).
Three way tap («off» - «on» - «reserve»).

Transmission. The engine (see Fig. 4) directly drives the rear wheel through clutch, cush drive and gear box.

Engine to wheel transmission ratios:

First:	12.2 to 1
Second:	7.46 to 1
Third:	4.73 to 1

Clutch. Multiplate, with lining bonded to the driving discs (see Fig. 4).
Control by lever, on left hand side of handlebars (see Fig. 8), and adjustable cable.

Gear box. 3-speed drive with mesh gears in oil bath (see Fig. 4).
Its adjustable twistgrip control is coupled with that of the clutch, on left hand side of handlebars (see Fig. 8).

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Starting. By means of kickstarter, right hand side of scooter. The multiplate gear and consequently the engine are set in motion through a ratchet sector and a gear by operating the kick-starter.

Cooling effected at all engine speeds by a centrifugal fan (see Fig. 7).

Muffler. Expansion and absorption combined type with very high silencing efficiency.

Air cleaner mounted inside the body. Air goes to the carburettor through a large flexible inlet tube, a silencing chamber and porous filtre, which ensures a very quiet air intake.

We recommend not to alter the muffler and the air cleaner but to keep them in perfect efficiency, in order that the noise level does not exceed the limits prescribed by law.

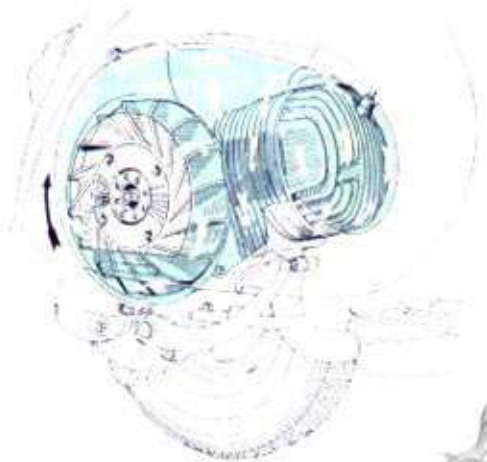


Fig. 7 - Engine cooling scheme



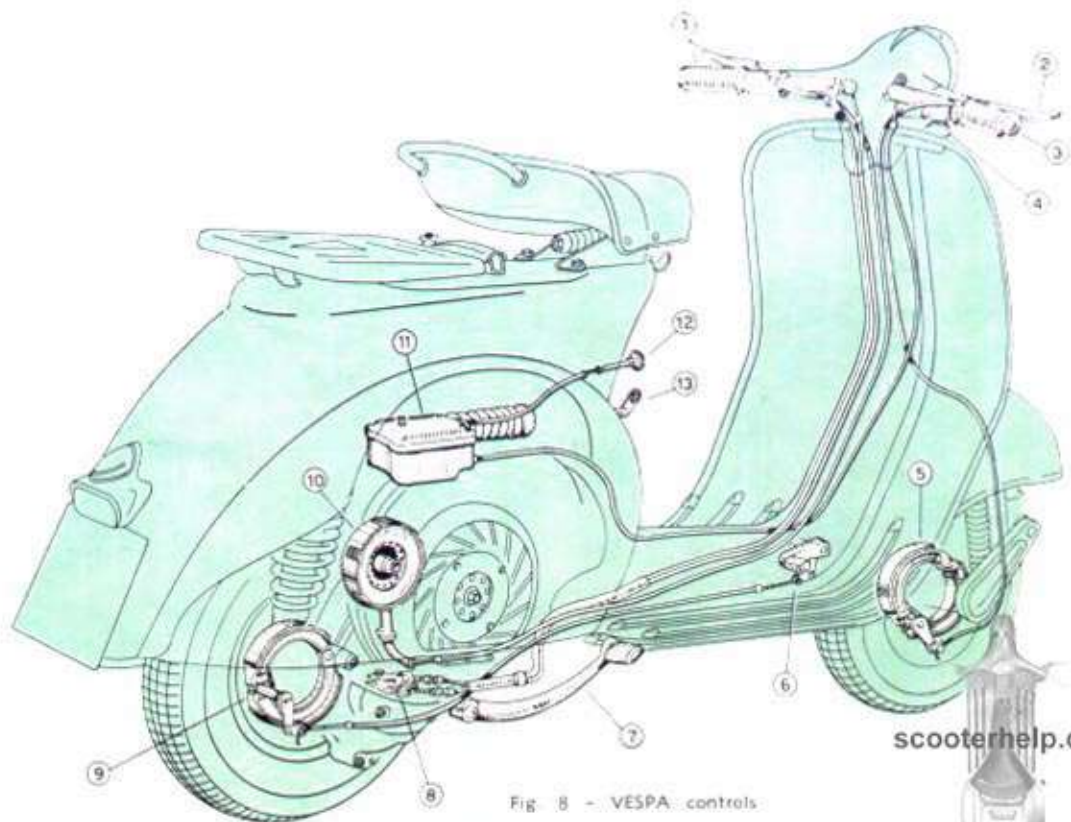


Fig. 8 - VESPA - controls

1. Gear change twistgrip with clutch control lever - 2. Front brake lever - 3. Throttle control grip and dip switch - 4. Front brake cable - 5. Front brake shoes - 6. Rear brake pedal - 7. Kickstarter - 8. Gear shifter - 9. Rear brake shoes - 10. Clutch - 11. Carburettor, air cleaner - 12. Choke control lever - 13. Fuel tap.



FRAME

Stressed skin body of pressed steel sheet, (see Fig. 1), with streamlined, monocoque type structure. It gives full protection to the driver, to the passenger and to the machine units; it is completed in this function by the mudguard and, on the two sides, by the steel sheet engine bonnet and tool box.

Handlebars in light alloy, with arrangement for head lamp and speedometer. All control cables and electric wires, connected to the handlebars, are concealed inside them (see Fig. 8).

Steering column, suspension and wheels. The steering column bears the handlebars, clamped on its top end, and the front wheel swinging hub, pivoted at its bottom end through a stub axle (see Fig. 9). Front suspension with variable rate coil spring and double action hydraulic damper. Rear suspension: swinging bracket for en-



Fig. 9 - Engine and suspension

1. Steering column and front suspension
2. Engine
3. Pivoting arm of crankcase half, clutch side
4. Rear suspension spring and hydraulic shock-absorber

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is arranged on the frame, near the handlebars. Turning the key anticlockwise and the handlebars to the left, the lock engages the lugs welded on the steering column, so that the machine can only turn around. Turn the key clockwise for releasing the steering system (see Fig. 10).

We recommend not to lubricate the steering lock, even if it does not function properly.

Do not attempt to ride the machine unless the key is in, and remains in, the lock and the handlebars move freely.

Speedometer. The speedometer is housed in the central portion of the handlebars (see Fig. 10) and adds to the appearance of the scooter.

It is driven by the front wheel, the flex drive being completely enclosed in the steering column.

The speedometer dial is lit during night riding by a bulb installed in suitable position in the head lamp.

WIRING

Either alternating or direct current for both horn and lighting system is supplied as follows (see Figs. 11-12).

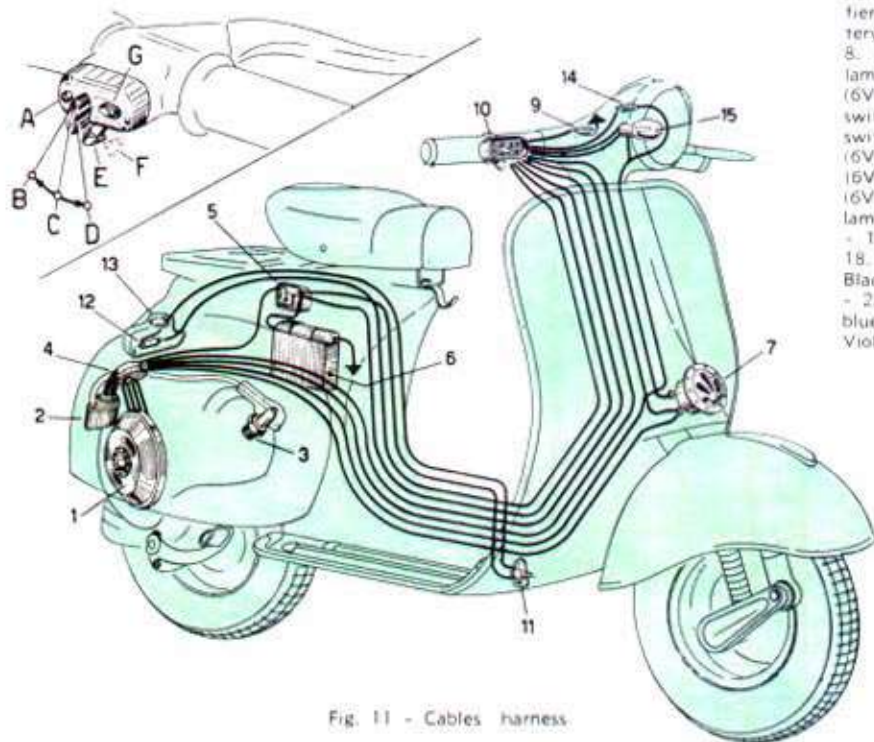
- Main and dipped beam, tail lamp and horn are directly fed with a.c. by the six-pole flywheel magneto (nominal voltage: 6 V).
- Parking lights, front and rear, and the Stop light are with d.c. by a 6V-7Ah battery which is re-charged by the flywheel magneto through a metal rectifier.
- The 6V - 0.6W speedometer bulb is fed by either a.c. or d.c.

The **head lamp**, Ø 115 mm (4.5"), installed in the handlebars, has a 25/25 W double filament bulb (main and dipped beam), and with a 1.5 W bulb (pilot light and parking light).

The **tail lamp**, with red reflector, has a 1.5 W bulb which also illuminates the number.



A. Engine cut-out - B. Parking lights and speedometer bulb on - C. Lights off - D. Head lamp, tail lamp and speedometer bulb on - E. Main beam - F. Dipped beam - G. Horn button.



1. Flywheel magneto - 2. External ignition coil - 3. Sparkplug - 4. Low tension terminal - 5. Rectifier with 8A fuse - 6. Battery (6V-7Ah) - 7. Horn - 8. Inside view of head lamp - 9. Speedometer bulb (6V - 0.6W) - 10. Main switch - 11. STOP light switch - 12. Tail lamp (6V - 3W) - 13. STOP light (6V - 5W) - 14. Pilot light (6V - 1.5) - 15. Double filament bulb (6V - 25/25W) - 16. Black - 17. Grey - 18. Red - 19. Yellow - 20. Black-yellow - 21. White - 22. Green - 23. Light blue - 24. Pink - 25. Violet - 26. Brown.

Fig. 11 - Cables harness



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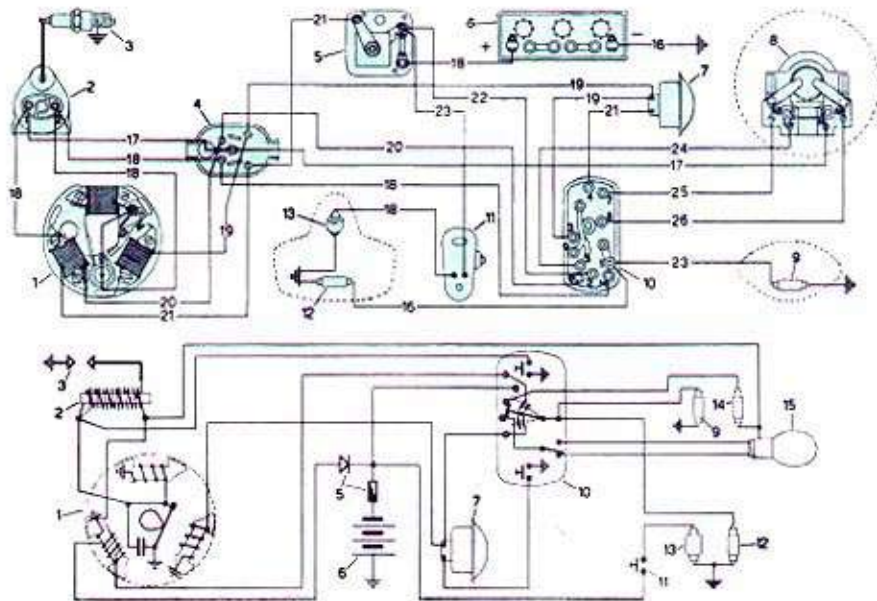


Fig. 12 - Electric wiring diagram



plate and a 5 W bulb for the STOP light. The light and dip **switch** unit, with two levers is installed on the right hand side of the handlebars (see Fig. 11); one of the control levers has three positions:

- pilot light, tail lamp and speedometer bulb on;
- lights off;
- head lamp, tail lamp and speedometer bulb on;

the other one gives the two lighting conditions of the head lamp (main and dipped beam with tail light).

The switch has also two push buttons for cut-out and horn respectively.

TOOL KIT

1 four-ended box wrench (11-14-21-22 mm); 2 double open-ended wrenches (11-14 and 7-10 mm); 1 single open-ended wrench (8 mm); 1 screwdriver.

These tools are contained in a canvas roll which is placed in the left wing together with this booklet and the test card.

ACCESSORIES

On request the **Vespa 150** can be equipped with following accessories.

Rear saddle of the nose pivoted, sprung type, to be secured to three chassis holes after removing the luggage rack.

The central spring is adjustable to the driver's weight.

A foam rubber **pillion seat** can be used instead of the rear saddle. The seat can be secured to the rear luggage rack of the scooter.

Both rear saddle and foam rubber seat are small and attractive looking and give remarkable comfort to the passenger, thus completing the efficiency of suspension (see Fig. 13).

Spare wheel and bracket. The wheel can be secured in two ways to the scooter:



- a. in front, by a light alloy bracket secured to the scooter longeron by means of two screws.
- b. at the rear, by a steel sheet pressing, provided with spacers, to be clamped onto the frame, under the luggage carrier or the rear saddle, by means of the three screws securing the latter.

A ready re-starting of the scooter after a puncture is made possible by the spare wheel; the latter is held by either bracket in such a position where it is easily accessible and does not inconvenience the driver at all.

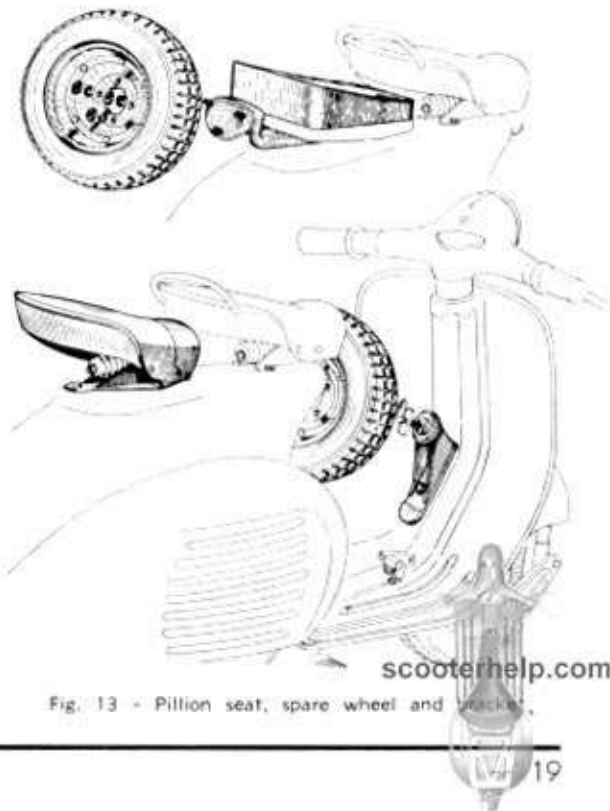


Fig. 13 - Pillion seat, spare wheel and bracket

Owing to the simple and rational design of **Vespa** scooter, no particular experience is required for its **operation**, nor skilled personnel for its **maintenance**. The tasks can be carried out by any customer, even unexperienced, by following some general rules.

O P E R A T I O N

Fuel to be used during and after running-in should be a **2%** mixture of gasoline and **ESSO SAE 30 2 T. Two-Stroke Oil**, i.e.: 20 cc of oil per liter of gasoline, or $\frac{1}{4}$ pint per $1\frac{1}{2}$ gallon resp.

We recommend to use good quality, standard grade car gasoline, and to mix it with oil thoroughly. Keep the breather of filling cap clean.

Running-in. Important rules to be followed while running-in 2000 Km (1200 miles):

- Do not exceed following speeds:
 - 1st gear: 20 Km/h (13 mph)
 - 2nd gear: 35 Km/h (22 mph)
 - 3rd gear: 55 Km/h (34 mph)
- Do not hold these speeds for long periods neither use full throttle up-hill.

— Change oil in the gear box and check that nuts and bolts are not slack after the first 1000 Km (600 miles).

— Check that carburettor is well blocked on crankcase so that no air infiltrations may occur.

Starting the engine. See (Fig. 6) the three positions of the tap: on, off, reserve.

Open the fuel tap, put the gear box in neutral (Fig. 14-15) and the throttle in slow running position, then depress the starting lever.

Lift the choke rod when the engine is cold; push said rod back as soon as the engine starts.

In case of starting troubles due to engine

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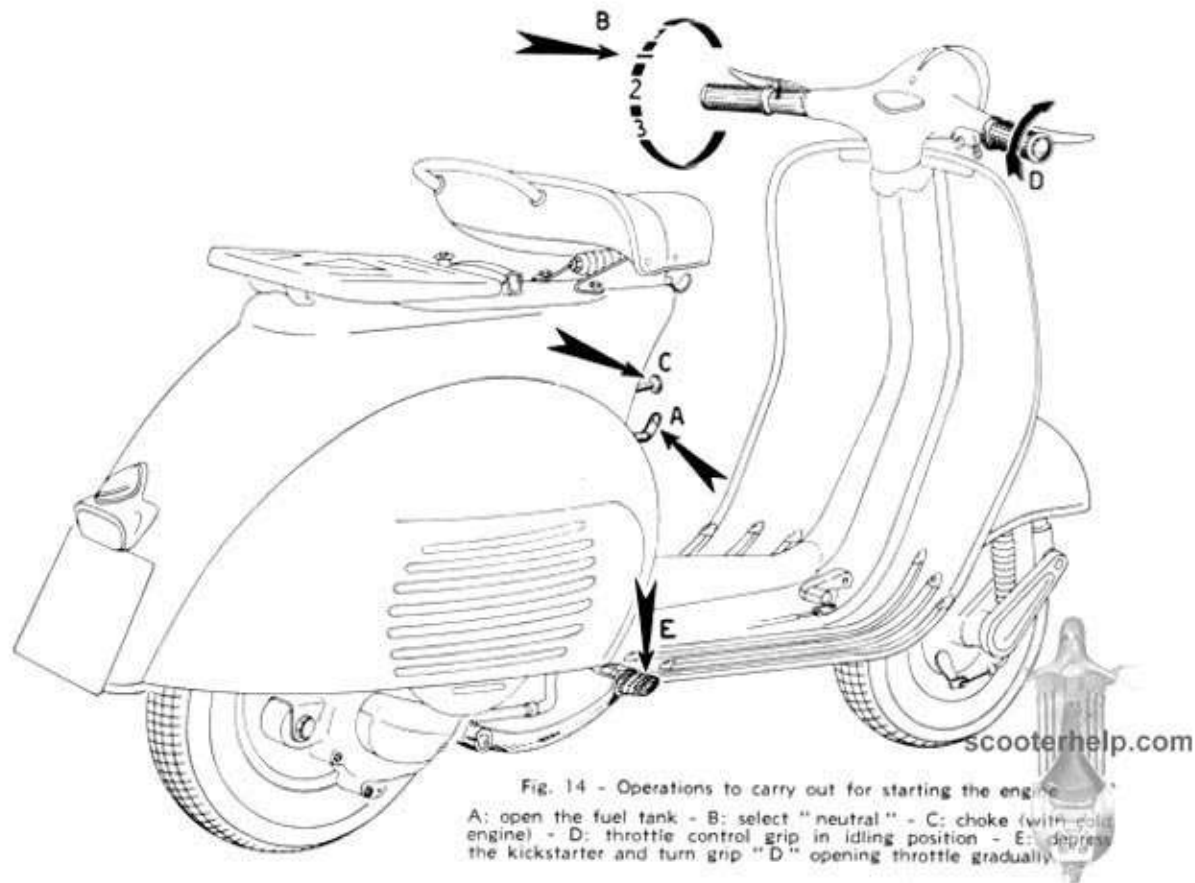


Fig. 14 - Operations to carry out for starting the engine

A: open the fuel tank - B: select "neutral" - C: choke (with cold engine) - D: throttle control grip in idling position - E: depress the kickstarter and turn grip "D" opening throttle gradually.

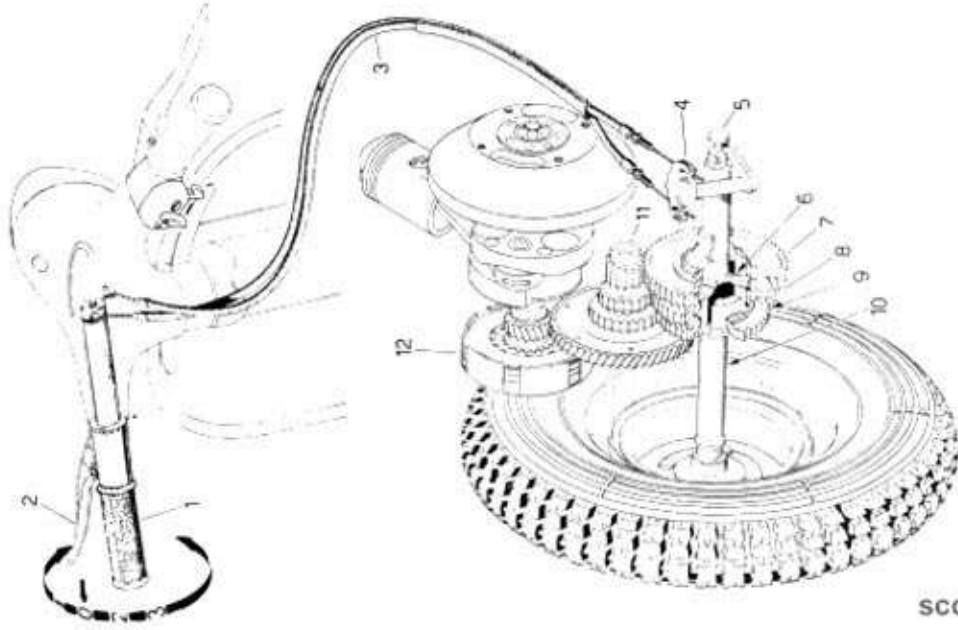


Fig. 15 - Drive system

1. Clutch lever - 2. Clutch control lever - 3. Gear change control cable - 4. Selector pinion - 5. Selector stem - 6. 1st gear pinion - 7. 2nd gear pinion - 8. 3rd gear pinion - 9. Mainshaft - 10. Clutch - 11. Clutch pinion - 12. Clutch.

N.B. Positions 1-2-3 of the gear change twistgrip correspond to 1st, 2nd and 3rd gear respectively; "0" indicates the neutral position.

being flooded (unvaporized fuel mixture has reached the cylinder, and combustion becomes therefore very difficult), proceed according to either one of following methods.

— Push-start the scooter: engage second gear, depress the clutch and push the machine to a certain speed; suddenly release the clutch lever and pull it back as soon as the engine fires.

— Close the fuel tap, remove sparkplug and action the engine by means of the kick-starter; wipe the plug dry and screw it back. Open the fuel tap and depress the starting lever.

Be careful while re-assembling the sparking plug: start screwing it by hand at the proper angle to avoid damaging the cylinder; use the box wrench just for the last turns.

Setting the machine in motion. Let the engine idle, lift the clutch and turn the gear change twistgrip (L.H.) so that the line engraved on it coincides with the figure «1» (1st gear) engraved on handlebars (see

Fig. 15). Now let in the clutch gently, while opening the throttle gradually to set the machine in motion.

Gear change. After reaching the required speed in 1st gear, quickly close the throttle, lift the clutch and turn the gear change twistgrip so that the engraved line is opposite figure «2» (2nd gear); let in the clutch and open the throttle.

Repeat this procedure for changing into 3rd gear and for changing down.

When you reduce the speed of your machine, change down without delay.

See the drive system on Fig. 15.

Do not turn the gear change twistgrip while the engine is not running.

As soon as gear change troubles arise, customers should have their machines adjusted by a Retailer or authorized service station.

Slow running adjustment. Idling revs can be raised or reduced respectively by simply tightening or slackening, either with a screwdriver or by hand, the knurled lock screw on air cleaner steel sheet cover (see

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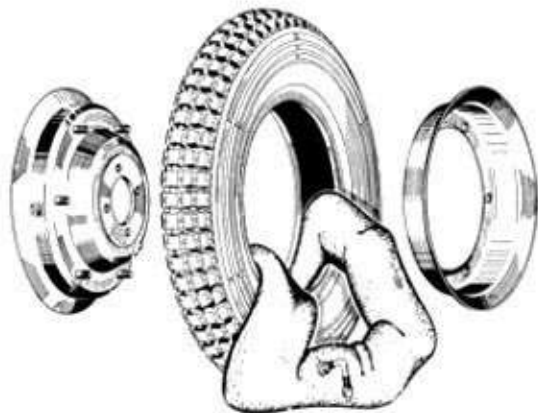


Fig. 16 - Removing the inner tube

Fig. 6, No. 9). The screw controls the slide valve of throttle.

The adjuster screw for the throttle control cable is installed on the air cleaner case (see Fig. 6, No. 11). This screw is to be re-set only if necessary and while dismantling and re-assembling.

Opposite to said adjuster screw there is on the air cleaner case a plugged hole for access to another screw (spring-loaded) with a tapering end (see Fig. 6, No. 7). This screw controls the flow of carburated air through the duct from the idling jet, and consequently the idling revs. We recommend to the customer to keep from re-setting this screw, unless strictly indispensable or during dismantling and re-assembling operations that should, anyway, be entrusted to a Service Station.

Stopping the engine. Push the earth button; this will leave the cylinder full of fuel vapours, and the next start will be easier.

Tyres. The wheels are interchangeable, i. e. they can be assembled either in front or rear, provided, of course, that they are inflated to the pressures subsequently prescribed.

For replacing a flat tyre, unscrew the four nuts which secure the wheel; pull the latter sideways off the studs, replace it with the spare wheel, and fit on the spare wheel.



Make sure that the spring washers are present when re-assembling the wheel: tighten the nuts diagonally and evenly.

For removing the inner tube, deflate it first, then unscrew the six nuts on the wheel, so that the two halves of the rim fall apart (see Fig. 16).

Tyre pressure should be 1.25-1.4 Kg/cm² (17.7-20 psi) on rear wheel, and 0.8-1 Kg/cm² (11.3-14.2 psi) on front wheel. When the Vespa is ridden by two persons, the pressure of the rear tyre should be increased to 2-2.2 Kg/cm² (28.5-31.3 psi).

Brake adjustment. Brakes are properly adjusted if:

- the wheel rotates freely when respective control lever or pedal are in resting position.
- the braking action starts as soon as respective controls are operated.

These conditions are obtained adjusting the cables by means of screws indicated with an arrow in Fig. 17.

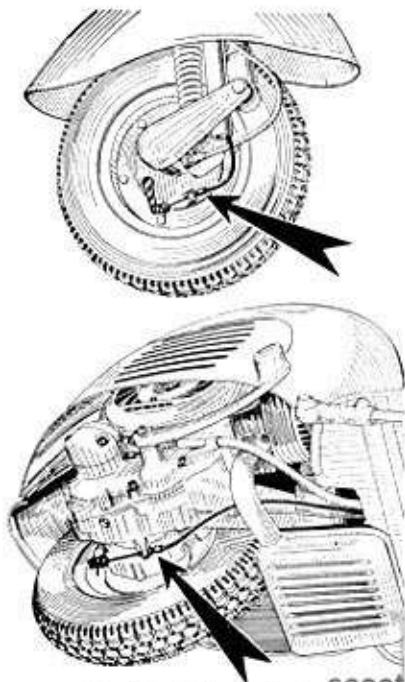


Fig. 17 - Brake adjustment



MAINTENANCE

Setting the head lamp. The correct orientation of the main beam can be obtained both horizontally and vertically as follows.

Check that both front and rear tyres are inflated to 1 and 2.2 atm (14.2 and 31.3 psi) respectively.

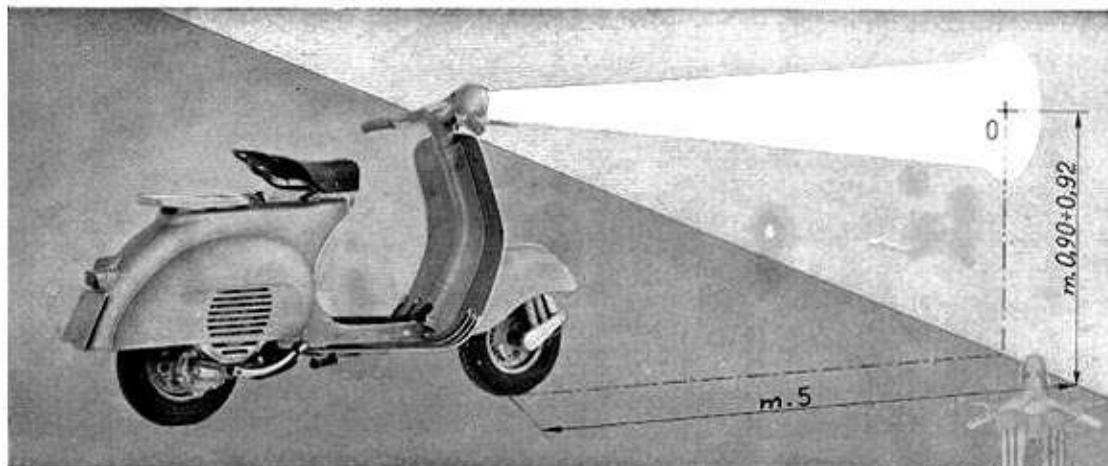


Fig. 18 - Adjustment of head lamp

N. B. - Dimension «O» relates to adjustment carried out with driver and passenger on the machine.

Place the scooter on a level floor in front of a white wall as seen on Fig. 18. Start the engine, hold the throttle control twistgrip at about 1/3 and set the switch on « main beam ».

With two persons on the Vespa, slacken the two screws securing the head lamp, then move the latter as required in order that the beam axis coincides with point « O » on the wall.

Tighten the screws firmly.

This operation can be carried out also with driver only sitting on the saddle.

In this case, of course, the beam alignment should be altered whenever the scooter is being ridden by both driver and passenger.

Cleaning the scooter. Brushing with paraffin and wiping dry with clean rags is advisable for external cleaning of engine. All painted surfaces should be washed with water, cleaned using a sponge and wiped dry with chamois leather. Do not use pa-

raffin on such surfaces as it damages paint and turns it dull.

If necessary, blow the head lamp reflector clean or wipe off dust with a very soft feather brush. Do not use a cloth and keep fingers off the reflector surface.

Before setting the machine in motion

1) - Check oil level in gear box by unscrewing on the crankcase, the level screw marked « OLIO » (see Fig. 20, No. 1). With the scooter standing upright, oil should just be about to flow out.

2) - Be sure that the positive pole (+) of the battery is connected to the red cable, and the negative pole (—) is connected to the black cable.

A wrong connection will cause the rectifier to be inefficient and entirely damage the battery

Screw down the cell caps firmly. scooterhelp.com
entrance of impurities.



After the first 1000 Km (600 miles)

Warm up the engine and drain off all oil through the hole provided.

Pour some fresh oil in and run the engine for a few seconds. Drain again and refill with about 0.18 Kg (0.4 lbs) of ESSO MOTOR OIL 30.

See also page 20.

Every 4000 Km (2500 miles)

1) - Remove the air cleaner from the carburettor and agitate in a 30% oil-gasoline bath.

2) - Check oil level in the gear box.

3) - Clean the two lubricators of front wheel hub and refill them using a grease gun.

4) - Grease all joints on the brake controls.

5) - Grease the felt which lubricates the cam of flywheel magneto.

6) - Clean the sparkplug electrodes with a metal brush or very fine emery cloth, and adjust the gap to 0.6 mm (0.023 in).

Inspect the insulation material of sparkplug, replace if the porcelain is cracked. Wash with neat gasoline.

Use the type sparkplug prescribed by the Company. We remind owners that the use of an approved sparkplug will prevent many engine troubles.

7) - Lubricate the speedometer drive pinion and flex drive.

All operations indicated hereunder should be carried out by authorized Service Stations.

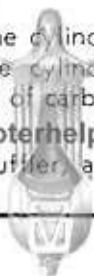
8) - Clean the muffler exhaust pipe and decarbonize the engine as explained in following notes.

Remove the muffler, the cooling hood, the cylinder head and cylinder.

Decarbonize the piston crown, the cylinder ports and the inner side of the cylinder head. Carefully clear the cylinder of carbon deposits.

Heat the exhaust pipe of the muffler and

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clean it either by scraping it internally with a hooked wire or blowing air through from the opposite end; in both cases the muffler should be held so that the exhaust pipe is pointing downwards.

Every 8000 Km (5000 miles)

1) - Clean the breaker points.

In order to avoid ignition troubles or abnormal running, have the breaker points adjusted in a service station: the gap (see Fig. 19, "A") should be 0.3-0.5 mm (0.011" to 0.019"), and the points should begin to open when the current in the primary ignition circuit has reached its peak value.

2) - Lubricate the control cables and the gear shifter.

3) - Change the oil in the gear box (see page 28).

4) - In case of damper troubles contact your authorised service station.

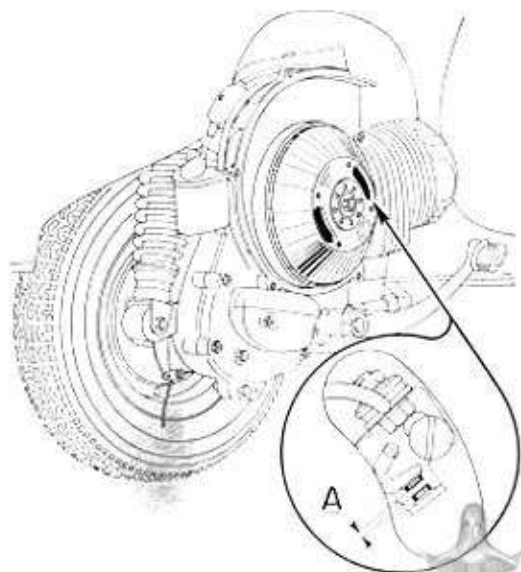


Fig. 19 - Breaker points scooterhelp.com

A = Max gap: 0.3-0.5 mm (0.011-0.019")

LUBRICATION CHART

PARTS TO BE LUBRICATED		TYPE OF LUBRICANT
Every 4000 Km (2500 miles)	Every 8000 Km (5000 miles)	
Gear box (Top up oil level)	Gear box (Change the oil completely)	Esso Motor Oil 30 Esso Multi-purpose Grease
Brake levers	Gear shifter	
Front suspension	Control cables	
Felt of the flywheel cam		
Speedometer flex drive and pinion		
Engine: at every refilling (lubricated by the oil in the fuel mixture)		Esso Sae 30 2T. Two Stroke Oil (20 cc of oil per liter of gasoline, or 1/4 pint per 1 1/2 gallon tank)
Shock-absorbers: only when not working efficiently		Esso Uniwis

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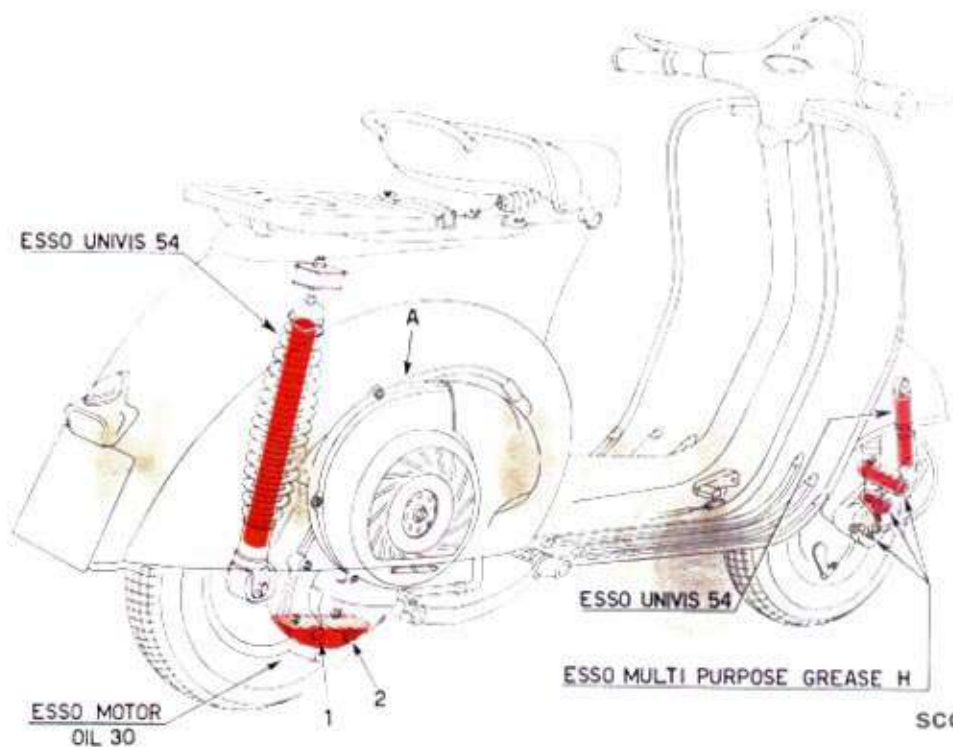


Fig. 20 - Lubrication scheme

A: engine lubricated by fuel mixture - 1: filling hole - 2: draining hole.



Battery service. Follow the directions on the card accompanying each battery for service and normal re-charge.

Laying up. In such a case, proceed as follows.

1. Clean the scooter thoroughly (see page 27).

2. With engine not running, rotate the throttle control twistgrip to its fullest extent, then pump 40 cc. (2.5 cu.in) of Esso Motor Oil 30, by means of an oil can into the carburettor intake through the hole (see

fig. 6 No. 13) on the air cleaner cover.

Depress the kickstarter three or four times.

3. Support the chassis of the machine on two wooden blocks ensuring that the tyres are clear of the ground.

4. Empty the fuel tank.

5. Grease all unpainted metal parts.

6. Disconnect the cables from the battery, clean the terminals of the latter and wipe dry.



FAULT FINDING

When the machine does not run properly, make all inspections and rectifications as explained below.

If the suggested remedies are not sufficient to eliminate the trouble, the customer should not try to carry out operations pertaining to the retailers, who have the necessary facilities to undertake this work.

Locating the trouble	Remedies
<p>HARD STARTING</p> <p>1. - Fuel system - Carburation</p> <p>Fuel tank empty</p> <p>Filter on carburettor fuel tap body Carburettor body jets</p> <p>Engine flooding</p> <p>Air cleaner choked or dirty</p> <p>2. - Ignition</p> <p>Spark plug dirty</p> <p>Porcelain of sparking plug cracked</p> <p>Breaker points dirty, worn or pitted; gap between breaker points incorrect</p>	<p>Turn to "reserve". Refill as soon as possible.</p> <p>Remove and wash in gasoline. Blow dry.</p> <p>See page 23.</p> <p>See page 28, No. 1.</p> <p>Disconnect the plug lead. Check if sparking occurs between lead and crankcase when the kickstarter is operated.</p> <p>Clean (see page 28, No. 6). Correct gap to 0.6 mm (0.023").</p> <p>Replace the plug (see "Notice", page 23, and page 28).</p> <p>Ask the Retailer either to have them cleaned (with very fine emery paper or suitable glass), replaced, or to have gap adjusted.</p>

Locating the trouble	Remedies
<p>INCORRECT RUNNING</p> <p>1. - Lack of power Muffler outlet pipe carbonised Sparkplug not well screwed into cylinder head Cylinder head not fitting properly into the spigot on top of cylinder</p> <p>2. - Explosions at muffler and carburettor</p> <p>3. - High fuel consumption a) Air cleaner choked or dirty; flap of choke valve sticking in closed or partially closed position b) Other troubles (faulty carburettor, poor compression, etc.)</p> <p>4. - Engine noisy - Clutch troubles - Gear pinions disengage of own accord - Starter assembly not engaging - Controls not operating properly - Steering column becomes stiff - Inefficiency of suspensions.</p> <p>5. - Poor braking Stroke of pedal or lever too long Brake linings oily or worn down Brake drums and linings scratched</p> <p>6. - Faulty electric wiring Lead terminals loose or wrongly connected Fuse of rectifier burnt Incorrect adjustment of the head lamp</p>	<p>Clean (see page 29). Tighten with 21 mm box wrench. Set the head properly and tighten the nuts uniformly</p> <p>Replace or clean the plug and correct the gap (see page 28, No. 6) to 0.6 mm (0.023 in).</p> <p>Clean with pure gasoline and blow dry. Dip the filter into a 30% gasoline-oil bath. Release and lubricate the choke control lever. See your Retailer</p> <p>See your Retailer</p> <p>Adjust (see Fig. 17, page 25) Wash with gasoline and dry in air, or replace See your Retailer about oil leakage Replace</p> <p>Re-connect properly (see Figs. 11-12) or replace and tighten the screws. Replace Re-set properly (see page 26).</p>