

Bapa GS

OPERATION AND MAINTENANCE

FOR MODELS V.S.I, V.S.2, V.S.3, V.S.4 AND V.D.2T.S.







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This composite booklet covers 5 models:—V.S.I, V.S.2, V.S.3, V.S.4 and V.D.2T.S.

The main section 1. Pages 3 to 38 inclusive cover the V.S.4 series.

Section 2. Pages 39 to 42 inclusive covers the variations applicable to the V.S. 3 series.

Section 3. Pages 43 to 46 inclusive covers the variations applicable to the V.D.2T.S. series.

Section 4. Pages 47 to 50 inclusive covers the variations applicable to the V.S.2 series.

Section 5. Pages 51 to 56 inclusive covers the variations applicable to the V.S.I series.



DOUGLAS (SALES & SERVICE) LTD., KINGSWOOD, BRISTOL

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NOTICE

In order to keep their **Vespa G. S.** in perfect running conditions and not to invalidate the guarantee offered by the contract, always have your machines repaired by sale agents 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 in regard to fuel mixture which should be of a good quality petrol and oil of make, grade and in the amount prescribed in this booklet, page 21. Avoid

use of additives and vegetable oils.

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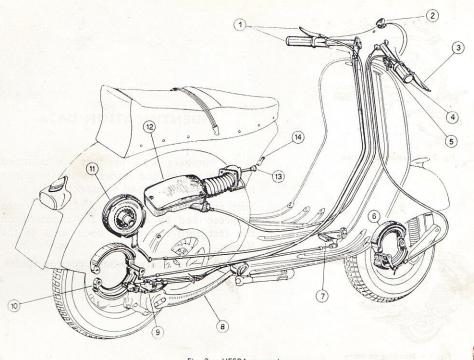


Fig. 2 - VESPA controls

1. Gear change twistgrip with clutch control lever - 2. Five-position switch and cut-out - 3. Front brake lever - 4. Throttle control grip - 5. Dip switch with horn button - 6. Front brake jaws - 7. Rear brake pedal - 8. Kickstarter - 9. Gear shifter - 10. Rear brake jaws - 11. Clutch - 12. Carburettor, air cleaner - 13. Choke control lever - 14. Fuel tap.



Fig. 3 - Stamping on engine



Fig. 4 - Stamping on frame

IDENTIFICATION DATA

Serial numbers with prefixes are stamped on both engine and frame in the positions indicated on Figs. 3 and 4 respectively.

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.

TECHNICAL DATA

Fuel consumption at economic speed	Wheel base 46.5 in.
95 miles per imp. gal.	Handlebars width 27 in.
Max. speed 62 m.p.h.	Max. length 67 in.
,	Max. height 41-3 in.
Carrying capacity Driver	Min. height of floorboard . 8.7 in.
and passenger	Min. turning circle 55 in.
Range 190 miles	Weight (without fuel) 230 lbs.

ENGINE

Single horizontal cylinder, two stroke, with reverse flow scavenge.

Bore		•	57	mm.	(2.24	in.)	
Stroke			57	mm.	(2.24	in.)	
Displace	. 14	15.45	cc. (8	-88 cu	in)		

Compression ratio: 6.7 to 1.

Ignition by battery (see Fig. 7); ignition circuit controlled by means of a key in the switch on top of head lamp housing.

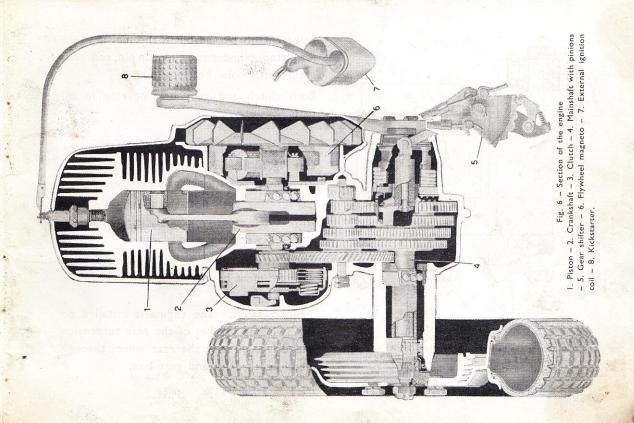
Sparkplug: Marelli CW 240 B. or Lodge 2 HLN or K.L.G FE 80.

Ignition timing with spark advance of $31^{\circ}\pm1^{\circ}$.



Fig. 5 - Engine installation and suspension

1. Steering column and front suspension - 2. Engine - 3. Engine bracket and rear wheel - 4. Rear suspension spring with hydraulic damper.



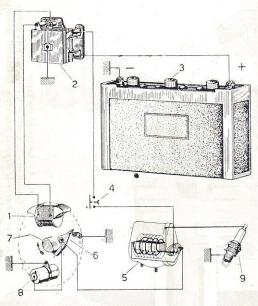


Fig. 7 – Ignition diagram

1. Coil feeding the battery – 2. Rectifier (2·5 A) – 3. Battery (6V – 12 Ah) – 4. Cut-out – 5. External ignition coil – 6. Breaker – 7. Rotor cam. – 8. Condenser – 9. Sparkplug.

Lubrication by the oil in the fuel mixture for piston, cylinder and gudgeon pin, con, rod, crankshaft, main bearings.

Both clutch and gear box operate in oil bath.

Feeding. Fuel feed to the carburettor (see Fig. 8) is provided for by gravity directly from the tank with petrol oil mixture.

Carburettor with float-chamber. Fuel tank with total capacity of 2·l imp. gals and emergency reserve.

Three way tap ("on,"—"off,"—"reserve,") with sediment bowl.

Transmission. The engine is installed on the swinging bracket of the rear suspension and drives directly the rear wheel through clutch, cush drive and gear box. Clutch. Wet type; steel plates with cork inserts.

Control by lever, on left hand side of handle-bars (see Fig. 2) and adjustable cable.

Gear box. 4 speed drive with mesh gears in oil bath.

Its adjustable twistgrip control is coupled with that of the clutch, on left hand side of handlebars.

Engine to wheel transmission ratios:

First: 14-72 to 1
Second: 10-28 to 1
Third: 7-61 to 1
Fourth: 5-84 to 1

Starting by means of kickstarter, right hand side of scooter.

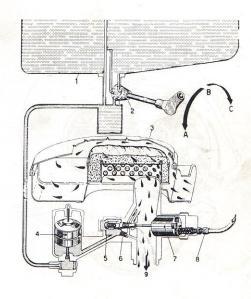


Fig. 8 - Feeding circuit

1. Fuel tank - 2. Fuel tap lever: A) Reserve, B) On, C) Off
3. Air cleaner - 4. Float - 5. Main jet - 6. Idling jet - 7. Throttle slide - 8. Idling and throttle control adjuster - 9. To the cylinder.

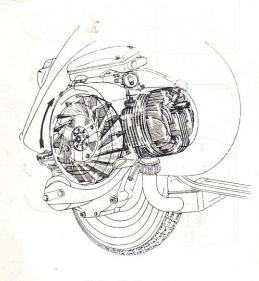


Fig. 9 - Cooling system

Cooling effected at all speeds by a centrifugal fan (see Fig. 9).

Silencer: Expansion and absorption combined type.

Air cleaner with silencing chamber and large intake tube.

Filter moistened by fuel mixture.

We recommend not to alter the air cleaner and the silencer but to keep them in perfect condition, in order to avoid an unnecessary noise.

FRAME

Stressed skin body of pressed steel sheet, with streamlined, monocoque type structure (see Fig. 1). 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 cowling and tool box.

Handlebars in light alloy, with arrangement for head lamp and speedometer. All control cables and electric wires, to be connected to the handlebars, are concealed therein.

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.

Front suspension with coil spring and double action hydraulic damper.

Rear suspension: swinging bracket for engine and rear wheel, variable rate coil spring tapering at both ends and coaxial, double action hydraulic damper.

The wheels are interchangeable with 10'' dia. rims of pressed steel sheet. Tyre dia.: 3.50:10''.

Central stand. A two-leg stand, easy to operate, is arranged under the floor-board. Two strong return springs hold it in contact with the floorboard and keep it from vibrating while the scooter is being ridden.

Saddle. Long dual seat which permits the driver to assume a crouched position and also provides ample and comfortable seating for a passenger. It gives remarkable comfort being packed with sponge rubber and having special steel springs. Access to the fuel tank filler cap is obtained by swinging the dual seat towards the front of the scooter (see Fig. 10).



Fig. 10 - Access to the fuel tank

Brakes. Expanding type with cable control, Front: lever on right hand side of handlebars. Rear: control pedal on right hand side of floorboard. This pedal also operates, through a switch, the STOP light in the tail lamp.

The brake jaws pivot separately on two pins.

Drums, in light alloy with cooling fins.

Steering lock. A suitable security lock 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. 11).

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

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

IMPORTANT

Please record the Serial Number of your Steering Lock Key as it is necessary to quote this if a replacement is required.

Speedometer. The speedometer has its housing in the middle of the handlebars (see Fig. 11).

It is driven by the front wheel, the flexible shaft being completely enclosed in the steering column.

The speedometer head is illuminated during rides at night by a bulb installed in suitable position in the head lamp. This applies to all models except V.S.I Series.

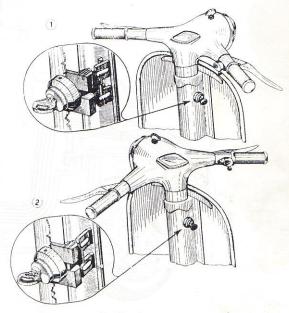
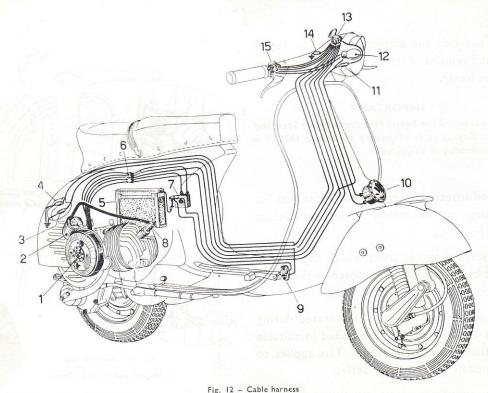
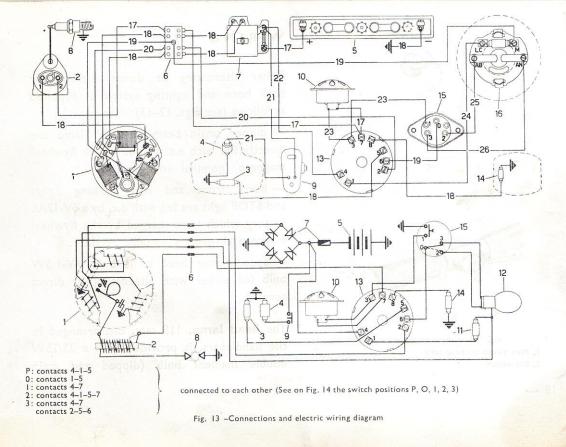


Fig. 11 - Security lock

1. Normal position - 2. Closed.



1. Flywheel magneto - 2. External ignition coil - 3. 6V-3W bulb for tail light - 4. 6V-10W bulb for STOP light - 5. 6V-12Ah battery - 6. Clamp board on the frame - 7. Rectifier with fuse - 8. Sparkplug - 9. STOP switch - 10. Horn - 11. Pilot light (6V-1:5W bulb) - 12. 6V-25/25W double filament bulb - 13. Switch - 14. 6V-1:5W bulb for speedometer light - 15. Dip switch with horn button - 16. Inside view of head lamp - 17. Red - 18. Black - 19. White - 20. Yellow - 21. Light blue - 22. Green - 23. Pink - 24. Blue - 25. Brown - 26. Violet.



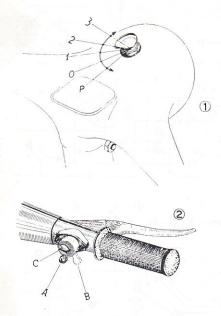


Fig. 14 - Light and dimmer switches

- I. Main switch on head lamp
- 2. Dip switch

WIRING

Either alternating or direct current for both horn and lighting system is supplied as follows (see Figs. 12–13):

- dipped, main beam, and tail lamp are directly fed with a.c. by the 6-pole flywheel magneto (nominal voltage: 6V).
- horn, front and rear parking lights and STOP light are fed with d.c. by a 6V-12Ah battery which is re-charged by the flywheel magneto through a metallic rectifier.
- speedometer head is lit by a 6V-I·5W bulb fed either with alternating or direct current.

The **head lamp**, 115 mm. dia. arranged in the handlebars, is provided with a 25/25W double filament bulb (dipped and main

beam), and with a 1.5W bulb (pilot and parking light).

The tail lamp with red reflecting glass has a 3W bulb, which also lights the number plate, and a 10W bulb (STOP light) that is operated through a suitable switch when the rear brake pedal is depressed. The main switch, in which a key must be inserted completely (position 0), is placed on top of the head lamp.

The key can be turned into the following positions (see Fig. 14):

- P) parking lights on, ignition off
- 0) lights and ignition off
- l) ignition circuit only connected
- 2) riding at night with pilot light, tail lamp and bulb for speedometer on

3) - riding at night with head lamp, tail lamp and bulb for speedometer on.

The dip switch (main beam and dipped beam; see Fig. 14, positions "A" and "B") with horn button ("C") is installed on the right hand side of the handlebars.

TOOL KIT

2 double-ended box spanners (11-14 and 21-22 mm), I double open-ended spanner (11-14 mm), 3 single open-ended spanner (7-8-10 mm), I Tommy bar for box spanners, I screw-driver.

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

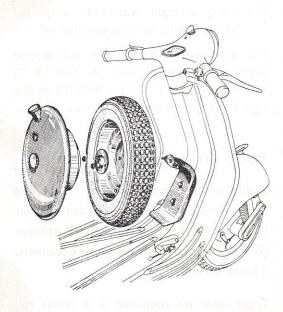


Fig. 15 - Spare wheel and auxiliary tank

A security lock is arranged on the lid of the tool box.

ACCESSORIES

On request the **Vespa G. S.** scooter can be equipped with:

- **Spare wheel and support.** The wheel support, with a packing in between, can be secured to the two holes in the middle of the longeron. It is very simple and holds the wheel in a vertical position, quite easy to reach (see Fig. 15).
- Reserve tank. It contains 1.15 imp. gals. and can be arranged into the recessed portion of the spare wheel (see Fig. 15).

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.

OPERATION

Fuel mixture to be used during and after running-in should be composed of petrol and Oil, Grade SAE 30) in proportion of $\frac{1}{2}$ pint per gallon. See chart on page 34.

Running-in. Important rules to be followed while running-in, 1800 miles.

— Do not exceed following speeds: in 1st gear: 15.

in 1st gear: 15.5 m.p.h. in 2nd gear: 25 m.p.h.

in 3rd gear: 34 m.p.h.

in 4th gear: 44 m.p.h.*

50 m.p.h.†

standard grade car petrol, and to mix oil with petrol thoroughly.

We recommend the use of good quality,

Keep the breather of filling cap clean.

^{*} For the first 1200 miles † From 1200 to 1800 miles

- Do not hold these max speeds for long If trouble comes from the battery being periods, neither use full throttle opening discharged, disconnect the black earthing up-hill.

 cable from the battery itself. The above
- Change oil in the gear box and check that nuts and bolts are not slack after the first 600 miles.

Starting the engine. See the fuel tap and main switch positions on Figs. 8 and 14 respectively.

Insert the key completely in the switch and turn it to the running position.

Open the fuel tap, put the gear box in neutral and the throttle in slow running position, depress the starting lever. With cold engine, pull the choke rod. Once the engine started, take care to push the choke rod back.

All these operations are clearly indicated on Fig. 16.

discharged, disconnect the black earthing cable from the battery itself. The above procedure is to be followed in emergency cases only, and consequently the speed of 37 m.p.h. should not be exceeded. The owner should, however, have the wiring of his machine checked at once by a sale agent. Instead of following the above mentioned procedure, "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.

Engine flooding can be overcome with the "push-start" procedure, or with the following method:

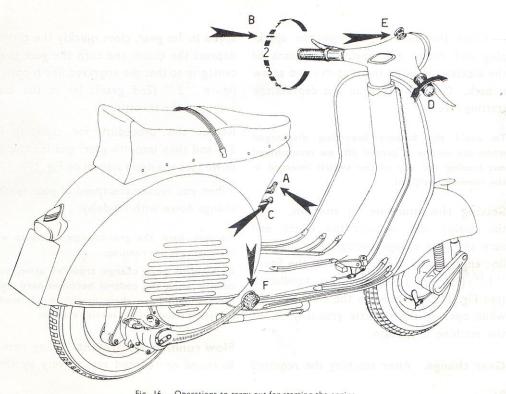


Fig. 16 - Operations to carry out for starting the engine.

A. Switch on Fuel – B. Select "neutral" – C. Choke (with cold engine) – D. Throttle control grip in idling position – E. Insert the key in the switch and turn it to the running position (see also Fig. 13).

— Close the fuel tap, remove the sparkplug and rotate the engine by means of the kickstarter, wipe the plug dry and screw it back. Open the fuel tap and depress the starting lever.

To avoid the battery becoming discharged when the engine is turned off, we recommend not leaving the key of the switch inserted in the running positions.

Setting the machine in motion. Let the engine idle, depress the clutch and turn the gear change twistgrip so that the line engraved on it coincides with the figure "I" (1st gear) engraved on handlebars (see Fig. 17). 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, close quickly the throttle, depress 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 and then into 4th gear, and for changing down (see the drive system on Fig. 17).

When you reduce the speed of your machine change down with no delay.

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

As soon as gear change troubles arise, particularly when the control becomes hard, customers should have their machines adjusted by a dealer or authorized service station.

Slow running adjustment. Idling revs can be raised or reduced respectively by simply

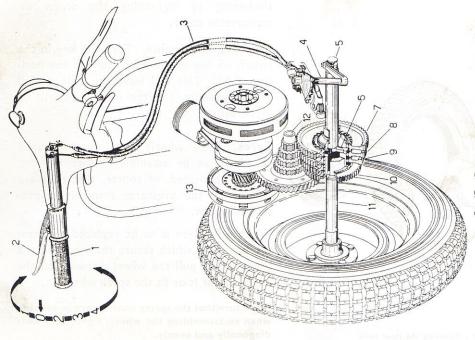


Fig. 17 - Drive system

Clutch control lever - 3. Gear change control cables - rod - 6. Selector - 7. Ist gear pinion - 8. 2nd gear - 10. 4th gear pinion - 11. Mainshaft and wheel - Gear change twistgrip - 2.
 Gear shifter - 5. Selector pinion - 9. 3rd gear pinion 12. Cush gear - 13. Clutch. 3rd.

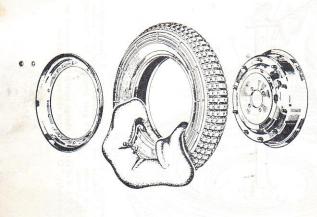


Fig. 18 - Removing the inner tube

slackening or tightening the screw on carburettor cover.

Stopping the engine. Turn the key in the switch on top of the head lamp to the position "0." This will leave the cylinder full of fuel vapours, and the next start will be much 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 respectively prescribed below.

When a flat tyre is to be replaced, unscrew the four nuts which secure the wheel to the brake drum, pull the wheel sideways off the studs, repair it or fit the spare wheel on.

Make sure that the spring washers are in position when re-assembling the wheel; tighten the nuts diagonally and evenly.

For removing the inner tube, deflate it first, then unscrew the ten nuts on the wheel, so that the two halves of the rim will fall apart (see Fig. 18).

Tyre pressure should be 25 psi on rear wheel and 17 psi on front wheel.

When the Vespa is ridden by both driver and passenger, the pressure of rear tyre should be increased to 35.5 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 achieved adjusting the cables by means of screws indicated with an arrow in Fig. 19.

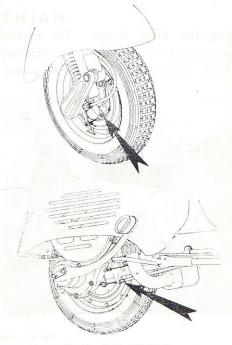


Fig. 19 - Brake adjustment

MAINTENANCE

Setting the head lamp. The corrects as follows. orientation of the main beam can be obtained — Make sure that front and rear tyres

on both vertical and horizontal planes, are inflated to 17 and 35.5 psi respectively.

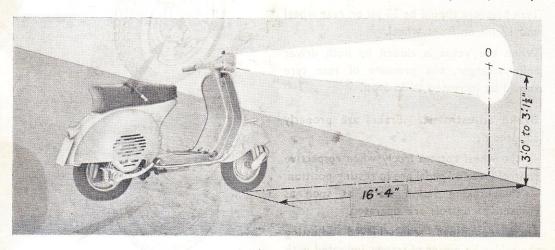


Fig. 20 - Head lamp adjustment N. B. - The adjustment must be carried out with driver and passenger on the machine.

— Place the scooter on a level floor in front of a white wall where a point "O" has been marked as seen on Fig. 20.

— Start the engine, hold the throttle control twistgrip at about 1/3 and switch on "main beam."

With two persons on the Vespa, the beam axis should coincide with point "O" on the wall. If not, slacken the three screws which secure the head lamp, then move the latter as required. Tighten the three screws again.

This operation can be carried out also with driver only sitting on the saddle. In such a 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 outside cleaning of engine. All painted surfaces should be washed with water, deterged by means of a sponge and wiped dry with chamois leather. Do not use paraffin on such surfaces, since it damages paint and turns it dull.

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

Before setting the machine in motion. Check oil level in gear box by unscrewing from the crankcase the level screw marked "OLIO" (see Fig. 22). The scooter standing upright, oil should just be about to flow out.

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 readily make the rectifier inefficient and damage the battery.

Screw down the cell caps firmly to avoid entrance of impurities.

After the first 600 miles. Warm up the engine and drain off all oil through the hole provided (see Fig. 22). Pour some fresh oil in and run the engine for a few seconds; drain again and refill with new oil.

See also page 21.

Every 1200 miles

1) - Remove the air cleaner from the car-

burettor and shake it in a 30% oil-petrol bath.

- 2) Check oil level in the gear box.
- 3) Clean the lubricators of front wheel hub and refill them by means of a grease gun.
- 4) Grease all joints on the brake controls and the ratchet quadrant of the gear shifter.
- 5) Clean the sparkplug electrodes with very fine emery cloth or suitable files and adjust the gap to 0.023".

Inspect the insulation material of sparkplug; replace if the porcelain is cracked.

Wash with neat petrol.

Use the sparkplug type prescribed by the Firm. We remind customers that using

the proper type of sparkplug constantly will eliminate many an engine trouble.

The operation indicated hereunder and those in the next paragraphs should be carried out by authorized Service Stations.

6) - Clean and adjust the breaker points of the flywheel magneto (see Fig. 21) to 0.4 mm. gap (0.015 in.).

Every 1800 miles

1) - Clean the silencer and decarbonize the engine as explained hereunder. Remove the silencer, the colling hood, the cylinder head and the cylinder. Decarbonize the piston crown and the cylinder ports. Carefully remove all carbon deposits from cylinder.

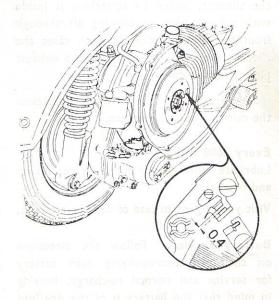


Fig. 21 - Breaker points

Heat and clean the exhaust pipe of the silencer, either by scratching it inside with a hook wire or blowing air through from the other orifice, in both cases the silencer should be held so that the exhaust pipe is turned downwards.

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

Every 3600 miles

Lubricate the speedometer drive pinion and flex drive.

Visit your Agent in case of damper troubles.

Battery service. Follow the directions on the card accompanying each battery for service and normal re-charge, bearing in mind that the battery is of the dry lead type and does not contain therefore any

free acid around the plates. The electrolyte is absorbed by a special material which fills the space between the plates.

Once a month add distilled water until the level is visible and keeps unaltered, which means that the battery has absorbed the required water amount.

Let the battery stand for 15 minutes, then remove the excess water either by syphoning or turning the battery upside down.

It is advisable to add distilled water after and not before a ride.

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

1. Clean the scooter thoroughly (see page 29).

- 2. Start the engine and run it at low revs. in neutral. Pump 60 cc. of Motor Oil SAE 30 into the carburettor intake through the hole on the air cleaner cover by means of an oil can.
- 3. Rest the floorboard on two wooden blocks in order to take weight off the tyres.
- 4. Drain all fuel from both tank and carburettor.

- 5. Grease all unpainted metal parts.
- 6. Disconnect the cables from the battery; clean the terminals of the latter and wipe dry.

IMPORTANT. - In case of long storage or Lay-up the carburation may become faulty, though said above precautions have been taken, because of oil deposits in the pilot jet due to the evaporation of the petrol contained in the fuel mixture. You should then visit your Agent.

Parts to be When to be Lubricated Lubricated		Lubrication Instructions	Type of Lubricant to be used					
		Eudrication Instructions	Shell	B.P.	Esso			
ENGINE	At every Re-Fuelling	FOR ALL VESPA MODELS 125 c.c.— 150 cc. and G.S. Always during and after running-in we recom- mend $\frac{1}{2}$ pint of SAE.30 Grade Oil (2T. Two- Stroke Oil or Energol Two-Stroke Oil) to every gallon of Petrol.	2T. Two- Stroke Petroiler Mix or 2T. Two- Stroke Oil	Energol Two-Stroke Petroiler Mix or Energol Two-Stroke Oil	Essolube SAE.30			
neceme faul ty ave bee <mark>n taken</mark> et jet due to the	ration may precausions i successions pli	FOR VESPA MODELS 125 c.c. and 150 c.c. EXCLUDING G.S. MODELS As above, or the mixture as delivered by Shell and B.P. Petroilers in the ratio of 1:20 (4.76%)	no chacci		ni pisald na pisald			
GEARBOX	After first 600 miles Every 1,250 miles	Drain Oil when warm, flush with fresh Oil and Refill up to Inlet Hole Check Oil level and top up as necessary	2T. Two- Stroke Oil or X-100 30	Energol Two-Stroke Oil or Energol 30	Essolube SAE.30			
TRANSMISSION DRIVE FOR SPEEDOMETER	Every 1,250 miles	Grease Guide Tube and Cables	4					
CONTROL CABLES	Every 1,800 miles	Lubricate						
BOWDEN CABLE OPERATING MECHANISM	Every 1,250 miles	Lubricate	Retinax "A"	Energrease L.2	Esso Multi- Purpose Grease '' H '			
LUBRICATION FELT PAD FOR F/W CAM	Every 1,800 miles	Apply a spot of Grease						
FRONT WHEEL HUB	Every 1,250 miles	Lubricate with Pressure Gun						
HYDRAULIC DAMPERS	When Damper	is not working efficiently, consult your Dealer	Always ret	urn to works for	· Servicing.			

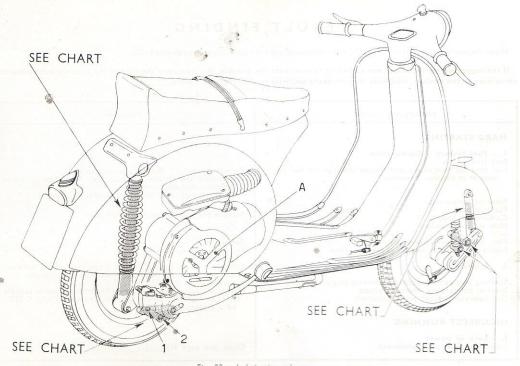


Fig. 22 – Lubrication scheme A: engine lubricated by the fuel mixture -1: filling hole -2: draining hole.

100

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 dealers, who have the necessary facilities to undertake this work.

Locating the trouble	Remedies		
HARD STARTING			
Fuel system - Carburation Fuel tank empty Fuel does not flow to the carburettor although the fuel tap is open or in position "reserve" Filter on carburettor	Turn to "reserve." Refill as soon as possible a) Unscrew and remove the main jey. If the fuel system is efficient, fuel will come out b) Blow through jet orifice to ensure that it is clear.		
Fuel tap body clogged, Carburettor body dirty Main jet and atomizer	Remove and wash in petrol - Blow dry		
Float needle valve sticking in its seating Engine flooding; air cleaner choked or dirty	Release See pages 22 and 30.		
2 Ignition	Disconnect the plug lead. Check if sparking occurs between lead and crankcase when the kickstarter is operated.		
Sparking plug dirty; porcelain of sparking plug cracked Breaker points dirty, worn or pitted Gap between breaker points incorrect	See page 30 Have the points cleaned (with very fine emery paper or suitable files), or replaced, or the gap adjusted to 0.4 mm (0.015") by a dealer.		
INCORRECT RUNNING			
I. – Lack of power Silencer exhaust pipe carbonized	Clean (see page 31).		

Locating the trouble	Remedies			
Sparkplug not tightly screwed into cylinder head. Cylinder head not fitting properly on top of cylinder	Tighten with 21 mm box spanner. Set the head properly and tighten the nuts.			
2 Explosions at silencer and carburettor	Replace or clean the plug and correct the gap to 0.6 mm (0.023 in) see page 30.			
3 High fuel consumption				
a) Air cleaner choked or dirty. Flap of coke valve sticking in closed or partially closed position	Clean with pure petrol and blow dry; dip the gauze into a 30% petrol-oil bath.' Release operating and lubricating the choke lever.			
b) Other troubles (faulty carburettor, poor compression, etc.)	Consult your dealer.			
 Engine noisy - Clutch troubles - Gear pinions disengage of own accord - Starter assembly not engaging - Controls not operating properly - Steering column becomes stiff - Inefficiency of suspension 	Consult your dealer.			
5 Poor braking				
Stroke of pedal or lever too long Brake linings oily or worn down	Adjust (See Fig. 19) Wash with petrol and dry in air, or replace Consult the sale agent about oil leakage. Replace.			
Brake drums and linings scratched				
6 Faulty electric wiring				
Lead terminals loose or wrongly connected	Re-connect properly (See Fig. 12–13) or replace and tighter the screws.			
Fuse of rectifier burnt Incorrect adjustment of the headlamp	Re-set properly (See pages 28-29).			

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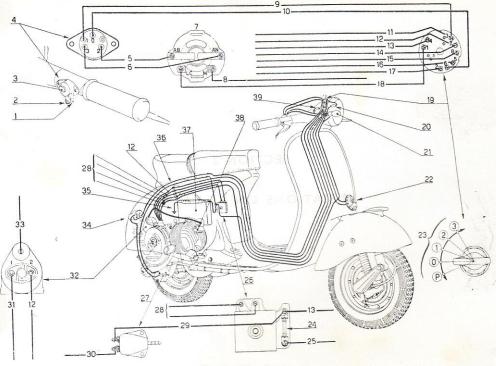
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VARIATIONS ON V.S.3 SERIES



Electric wiring diagram

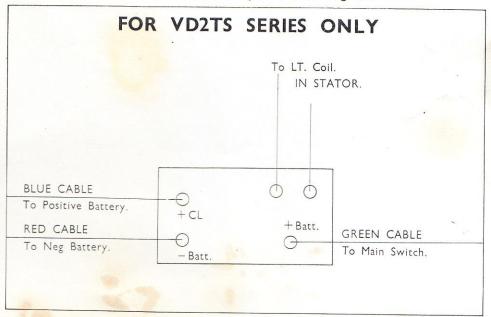
1. Main beam - 2. Dipped beam - 3. Horn button - 4. Dip switch with horn button - 5. From dip switch to head lamp (brown) - 6. From dip switch to head lamp (violet) - 7. Inside view of the head lamp - 8. Earthing cable from head lamp to the stator (white) - 9. From main to dip switch (pink) - 10. From main switch to dip switch (white) - 11. From main switch to horn (pink) - 12. From main switch to ignition coil (red) - 13. From main switch (green) to rectifier - 14. From main switch to horn (red) - 15. From main switch to speedometer bulb (black) - 16. From main switch to tail lamp (black) - 17. From main switch to flywheel magneto (yellow) 18. From main switch to head lamp (blue) - 19. Five-position main switch - 20. 6V - 1.5W bulb for pilot light -21. 6V - 25/25W double filament bulb - 22. Horn - 23. Main switch positions. P: parking lights on, ignition off; 0: lights and ignition off; 1: riding during the day; 2: riding at night with speedometer bulb, pilot light and tail lamp on; 3: riding at night with speedometer bulb, ead and tail lamps on - 24. IOA fuse - 25. From rectifier to battery (red) - 26. 6V - 215A rectifier - 27. STOP switch - 28. Cables connected to the stator - 29. From rectifier to STOP switch (sky blue) - 30. From STOP switch to STOP bulb in the tail lamp (sky blue) - 31. From ignition coil to the contact breaker (black) - 32. Ignition coil - 33. Plug lead from ignition coil to sparkplug -34. Tail lamp with 6V - 3W bulb (which lights the licence plate as well) and 6V - 15W bulb for STOP light -35. Battery earthing cable (black) - 36. Terminal board - 37. 6V - 12Ah battery - 38. Sparkplug - 39. 6V - 1.5W speedometer bulb.

Subsection) to the AV Confidence IV STOP switch - 18. Capter on normal techniques - 29. From

VARIATION ON V.D.2T.S. SERIES

VARIATION ON V.D.2T.S. SERIES

As V.S.3 Model except for this diagram.



Note:—For V.D.2T.S. series the paragraph in column I page 30 beginning "Be sure that the positive pole" should be as follows:—"Be sure that the positive pole (+) of the battery is connected to the blue cable and the negative pole (-) is connected to the red cable and attached to the chassis."

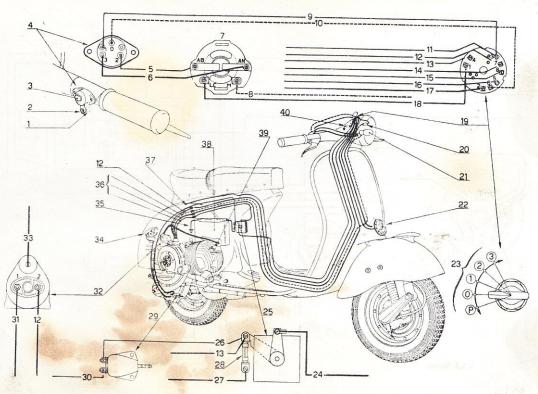
Viguer—got V.D. It is consisted by the republic column I page 30 beginning." De sure that the positive pole ""
froutd colar follows " Be sure that the most the pole (++) of the battery is connected to the blue cable and the charge pole (--) is connected to the charge in the charge."

WITH VARIATIONS FOR V.S.2 SERIES

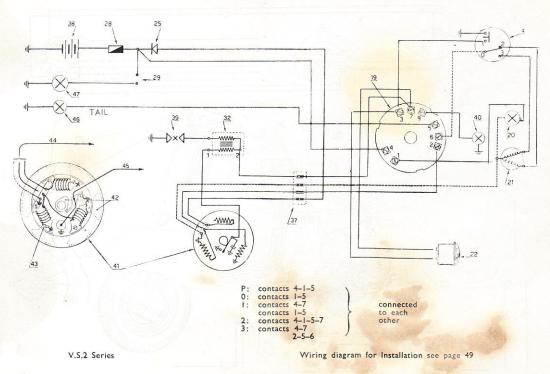
Note: COMPRESSION RATIO IS 6.5: I

- I. Main beam
- 2. Dipped beam
- 3. Horn button
- 4. Dip switch with horn button
- From dip switch (clamp 3) to head lamp (main beam)
- From dip switch (clamp 2) to head lamp (dipped beam)
- 7. Inside view of the head lamp
- 8. From head lamp to flywheel magneto (white)
- 9. From main switch (clamp 3) to dip switch (clamp 1)
- 10. From main switch (clamp 6) to dip switch (clamp 0), white
- 11. From main switch (clamp 3) to horn-
- 12. From main switch (clamp 7) to ignition coil (clamp 2)
- 13. From rectifier to main switch (clamp 4)
- 14. From main switch (clamp 7) to horn
- 15. From main switch (clamp 8) to speedometer bulb
- 16. From main switch (clamp 5) to tail lamp
- 17. From flywheel magneto to main switch (clamp 2)
- 18. From main switch (clamp I) to pilot light
- 19. Five position main switch
- 20. Bulb for pilot and parking light, 6V 3W
- 21. 6V 25/25W double filament bulb (main and dipped beam)
- 22. Horn
- 23. Switch positions. P: parking lights on, ignition off;

- 0: lights and ignition off; 1: riding during the day;
- 2: riding at night with speedometer light, pilot light and tail lamp on; 3: riding at night with speedometer light, head and tail lamp on.
- 24. From flywheel magneto to rectifier
- 25. Rectifier
- 26. From rectifier to STOP switch
- 27 From rectifier to positive pole of battery
- 28. Fuse
- 29. STOP switch
- From STOP switch to respective bulb in the tail lamp housing
- 31. From ignition coil to breaker in flywheel magneto
- 32. Ignition coil
- 33. Plug lead (from ignition coil to sparkplug)
- 34. Tail lamp
- 35. Earthing cable for battery
- 36. To flywheel magneto
- 37. Clamp board
- 38. Battery 6V I2Ah
- 39. Sparkplug
- 40. Speedometer bulb, 6V 1.5W
- 41. Flywheel magneto
- 42. Flywheel rotor
- 43. Stator
- 44. To the clamp board
- 45. To the ignition coil (clamp 1)
- 46. Bulb for number plate light, 6V 5W
- 47. Bulb for STOP light, 6V 15W

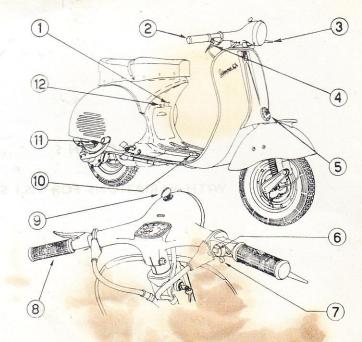


Electric wiring installation, for diagram see page 50



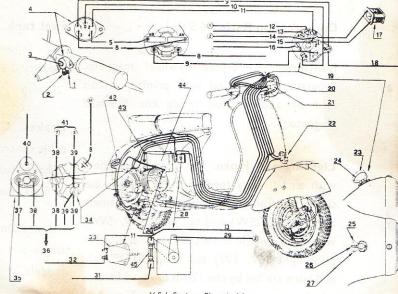
SECTION 5 WITH VARIATIONS FOR V.S.I SERIES

- I. Fuel tap
- 2. Throttle control grip
- 3. Clutch control lever
- 4. Front brake lever
- 5. Horn
- 6. Horn button
- 7. Dip switch
- 8. Gear change twistgrip
- 9. Three position switch
- 10. Rear brake pedal
- 11. Kickstarter
- 12. Choke rod



V.S.1 Series—Controls

- I. Main beam
- 2. Dipped beam
- 3. Horn button
- 4. Dip switch with horn button
- 5. Violet
- 6. Brown
- 7. Inside view of head lamp
- 8. Head lamp earthing cable (white)
- 9. Pink 10. White
- II. Blue
- 12. To the low tension socket (red)
- 13. To the horn (green)
- 14. To the low tension socket (yellow)
- 15. To the rectifier (violet) 16. To the tail lamp (black)
- 17. Impedance 1.8-1.85 Ohm at 1 A. 50 Hz.
- 18. To the horn (pink)
- 19. Three position main switch
- 20. Pilot light, 6v, 3w
- 21. Double filament bulb, 6v. 25/25w
- 22. Horn
- 23. Cut-out, earth 24. Running position
- 25. Head lamp and tail lamp
- 26. Lights off
- 27. Pilot light and tail lamp
- 28. Rectifier, 6v, 2A
- 29. To the main switch (violet)
- 30. Sparkplug
- 31. From positive pole of battery (red)
- 32. To the STOP light (blue)
- 33. STOP switch



V.S.I Series-Electrical Layout

- 34. Low tension socket and earthing tag
- 35. Ignition coil
- 36. To the flywheel magneto
- 37. Black 38. Red
- 39. Yellow

- 40. To the sparkplug
- 41. To the main switch
- 42. Tail lamp 6v, 5w, with STOP light 6v, 15w
- 43. Negative pole of battery (black)
- 44. Battery, 6v, 12 Ah
- 45. Fuse

Compression Ratio: 6.5 to 1

Ignition. By 6-pole flywheel magneto. Separate Ignition Coil with primary circuit feed by another coil inside the flywheel magneto.

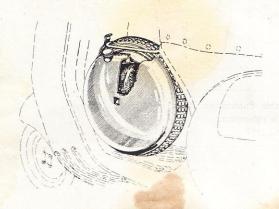
Lighting and Horn. By flywheel magneto with a.c. directly feeding the 115 mm dia. three position head lamp (double filament bulb, 6V, 25/25W) and tail lamp (6V, 5W.), when the switch is in position "2". The pilot light (6V, 3W) tail lamp, STOP light and horn are fed by the 12 Ah dry lead battery which is constantly re-charged through a metallic rectifier (with fuse) and impedance when the key of the switch is in either position "0" or "1" (see page 53).

Fuel tank. With sediment bowl and three way tap:—open—closed—reserve. Total capacity 2-64 imp. gals. Emergency reserve: 26 imp. gals.

Brakes. Expanding type with cooling ribs; cable control. Front: lever on right hand side of handlebars. Rear: pedal on right hand side of floor board.

Note: On this series the brakes pivot on a single pin not on separate pins as on other models.

Speedometer. The speedometer on this model has a luminous face and is not illuminated by a bulb as on other models.



Accessories: On request the Vespa G. S. scooter can be equipped with:

- Spare wheel and support. The wheel support can be secured to the hole in the middle of the longeron. It is very simple and holds the wheel in a vertical position, quite easy to reach (see fig. on left).
- Reserve tank. It contains I-I imp. gal., and can be arranged into the recess portion of the spare wheel.

Spare wheel and tank

Accessories: On request the Vespa Goscocer can be equipped with:

Spare wheel and support. The wheel sufficient can be secured to the hole in the initial of the longeron. It is very simple and holds the wheel in a vertical position, quite may to reach (see for on left).

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