Lambretta 125 li

second series

instruction booklet

INNOCENTI

motor division

INNOCENTI

SOC. GENERALE PER L'INDUSTRIA METALLURGICA E MECCANICA

DIVISIONE MOTORI

We are honoured and pleased to welcome you amongst the owners of a Lambretta 125 li *and appreciate your choice of our product.*
The Lambretta 125 li *was designed and built in our works and has reached you after exacting checks and tests, thus ensuring the perfection and warranty of our product.*
The life of your scooter depends very much on the use and maintenance you give it. We have here, briefly summarized some fundamental hints and instructions which we feel will help you in knowing and making the most of your new machine.
Remember we have created in this country and throughout the world a network of Authorised Lambretta Service Dealers, with trained personnel and fully equipped with tools and original spare parts to ensure the perfect functioning of your machine. Accept our advice and take advantage of their skill and expert knowledge at any time, bearing in mind that every member of this great Lambretta Organization is at your service.
We wish you «Bon voyage» and a wonderful time on your new Lambretta 125 li *designed for you, the connoisseur.*

Lambretta

LAMBRETTA CONCESSIONAIRES LTD

BEVERLEY WORKS, KINGSTON-BY-PASS, LONDON S. W. 20.

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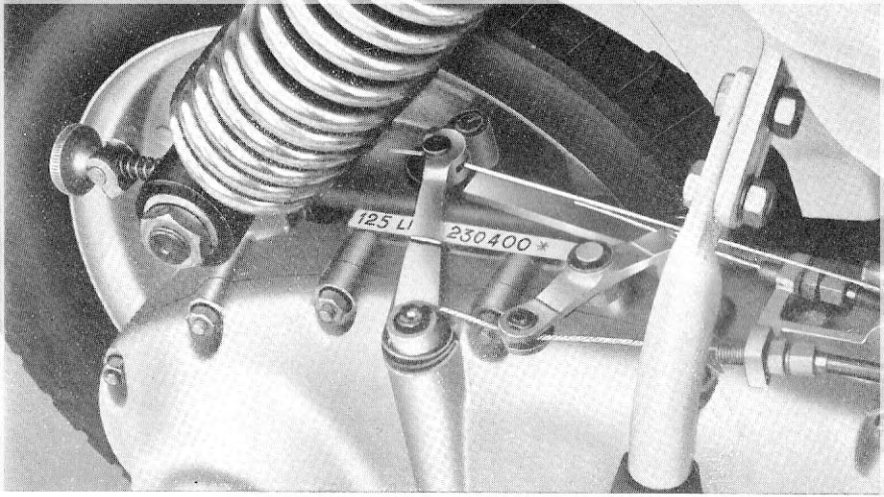
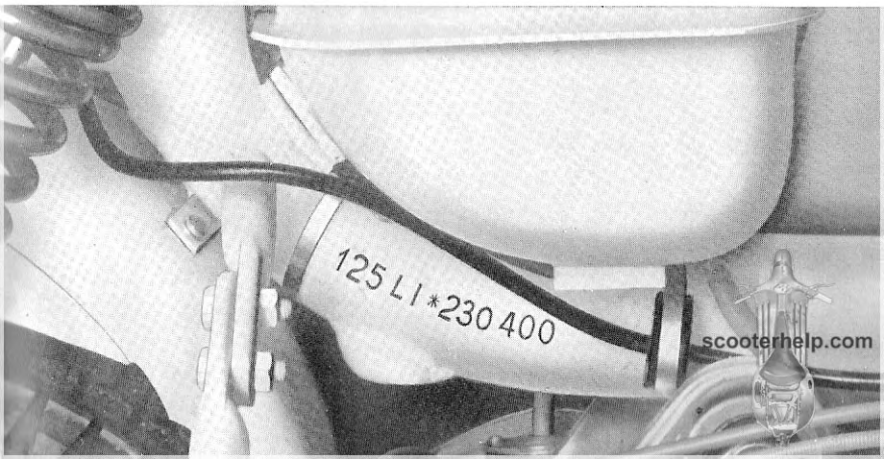


Fig. 1

IDENTIFICATION OF SCOOTER

The engine and frame numbers, which serve to identify your scooter in accordance with the Rules and Regulations, are stamped as shown in figures 2 and. 3. These numbers are repeated on the guarantee card, and should always be quoted when requesting spare parts.

Fig. 2



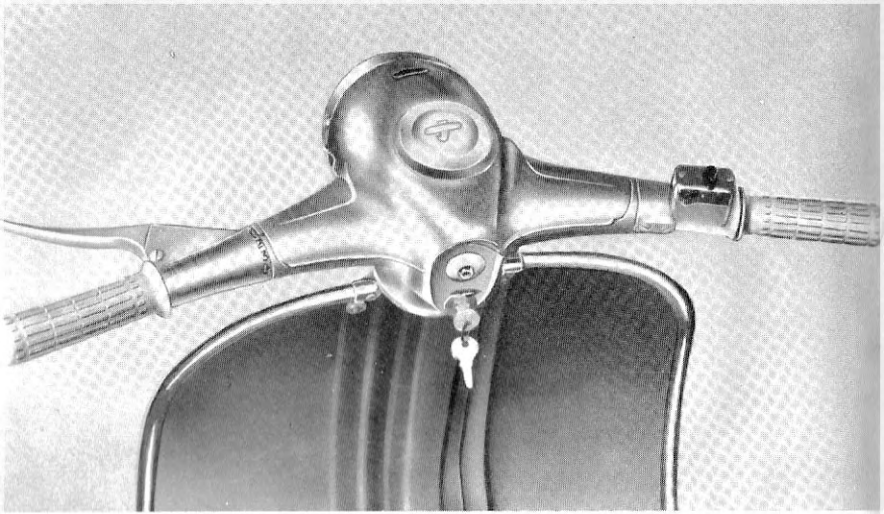


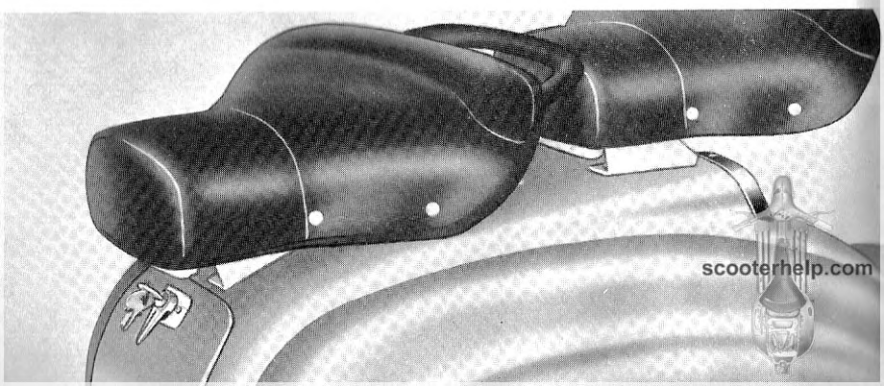
Fig. 3

KEYS

The sets of keys supplied with your scooter are for the main light switch in the centre of the handlebar facing the driver, see fig. 3, for the steering lock fitted under the main switch and for the luggage box situated in the central front rib of the frame (fig. 4).

Each key has a number stamped on it and the same number is stamped on the lock, so that in case of loss, a replacement can be obtained by quoting the appropriate number.

Fig. 4



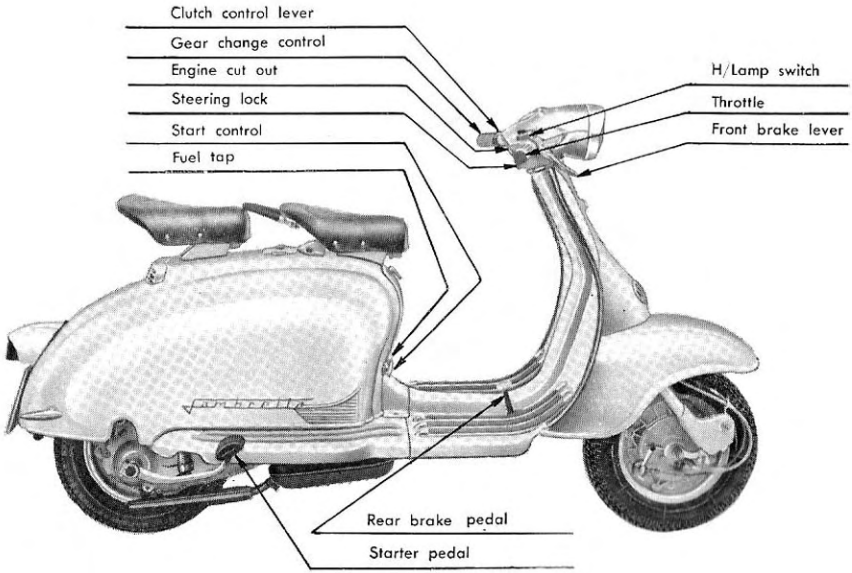


Fig. 5

CONTROLS

Fig. 5 shows the controls on your scooter. They are:

On the handlebar

Right hand: throttle twist grip and front brake lever, 3-way light switch, with headlamp beam control and horn button. The three positions of the switch are:

— 0: Lights off.

— 1: Pilot and rear light for night riding in town.

— 2: Headlamps and rear light for night riding in country areas.

Left Hand: clutch control lever and gear change control.

Centre: Facing driver; engine cut-out button ad steering lock. To lock machine, turn front wheel full lock, left or right and turn key ½ turn. The key can be extracted from lock whether in lock or unlocked position. On top of handlebar: A housing closed by marked plug is provided for the speedometer. Customer can fit up the speedometer as accessory equipment.

On the footboard

Right hand side: Rear brake pedal.

On the central frame rib, under the front part of saddle.

On left hand side: 3-way fuel tap (Closed, Open, Reserve) see Fig. 6.

When machine is at stand-still, it is advisable to turn tap to closed position. The fuel tank contains a total 1.9 gallons (8.5 Lt) of fuel. When riding, tap should be in open position, and when you switch over to reserve you still have 1 ¾ pints

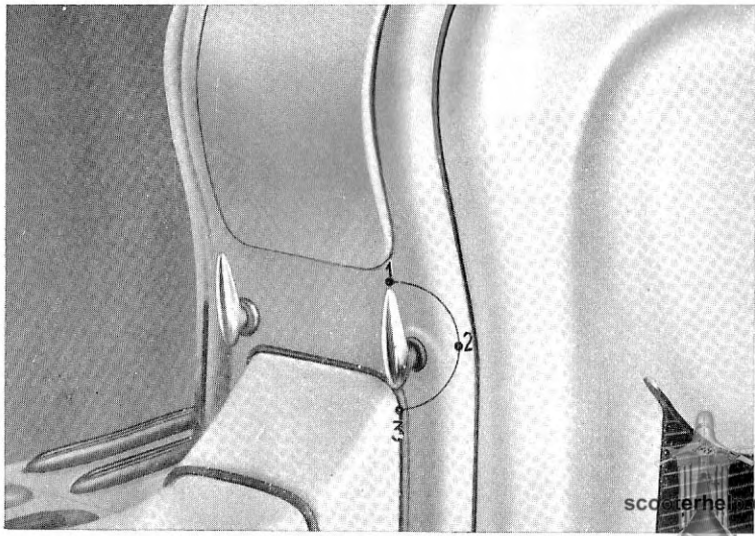
(0.75 Lt) available (in other words a further 16 ½ miles approximately).

On Right hand side: start control. Turn start control lever 180° clockwise (this **only** when starting on a cold engine). Return to original position as soon as engine is running steadily.

On Right hand side of machine

Kickstart pedal. Before kick starting, ensure that gear is in neutral.

1. Closed 2. Open 3. Reserve Fig. 6



SERVICE INSTRUCTIONS

During running-in period

(first 900 miles) keep strictly to the following rules:

— use a mixture of 4 % oil (**BP Energol Two Stroke**) and good standard petrol.

— do not exceed the following speeds:

	1st. gear.	2nd. gear.	3rd. gear.	4th. gear.
miles pour hour	11	17	23	31
hm/h	18	27	36	50

— do not maintain these speeds for long periods;

— do not climb hills on full throttle;

— do not accelerate at full throttle;

— take great care **not to overheat** your engine;

— take great care to have your machine fully serviced, as per the service schedule, at the correct time, by one of the authorised service agents.

Remember that the life of your scooter depends entirely on the running-in schedule being properly maintained.

Fuel - Fuel tank

After the running-in period, continue to use a 4 % petrol/oil mixture.

Fig. 7

To reach the fuel tank filler cap, open the lid situated on the central frame rib behind the driver's seat. See Fig. 7.

The tank contains a total of 1.9 galls (8.5 Lt) of which 1 $\frac{3}{4}$ pints (0.75 Lt) are reserve for the fuel tap, (see Page 7).

Wheels

Tyres 10" x 3.5".

Pressures: front 12 lbs per sq. inch (0.9 kg/sq. cm); rear 18 lbs per sq. inch (1,25 kg/sq. cm) with rider only; rear 32 lbs per sq. inch (2,25 kg/sq. cm) with pillion rider.

Wheels are interchangeable.

To dismantle, lift machine on its stand. The necessary tools will be found in the luggage box (see page 14).

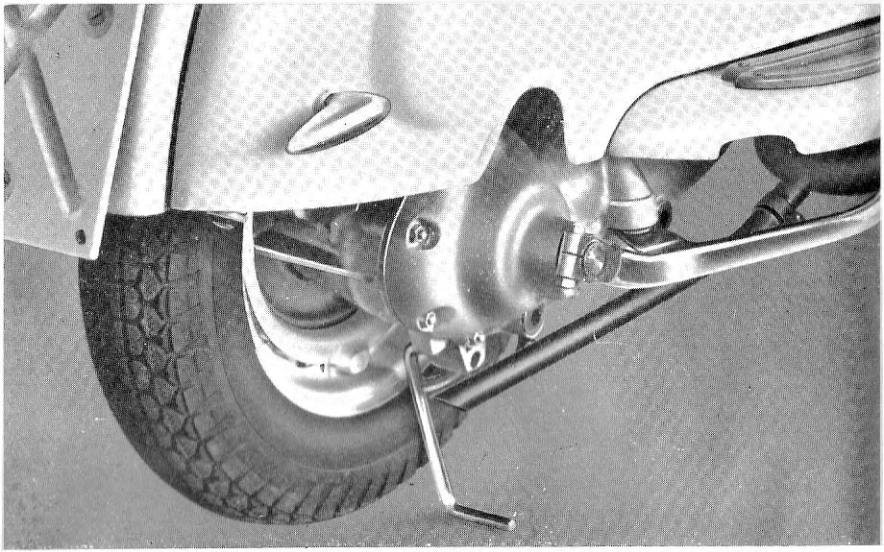


Fig. 8

To dismantle the front wheel:

— unscrew the four dome nuts fixing rim to hub (care must be taken **not** to unscrew the other nuts);
— unscrew the two nuts holding hub to trailing links;
— slip wheel from links and hub, taking care not to pinch or bend the front brake and speedometer drive cables.

To dismantle the rear wheel:

— fit the wheel lift stand, supplied in Kit, to the lug on crankcase (see Fig. 8);
— unscrew the four dome nuts and slip wheel from hub.

To dismantle tyre from rims:

— dismantle wheel (as above);
— ensure that tyre is deflated;
— unscrew the four nuts holding the rims.

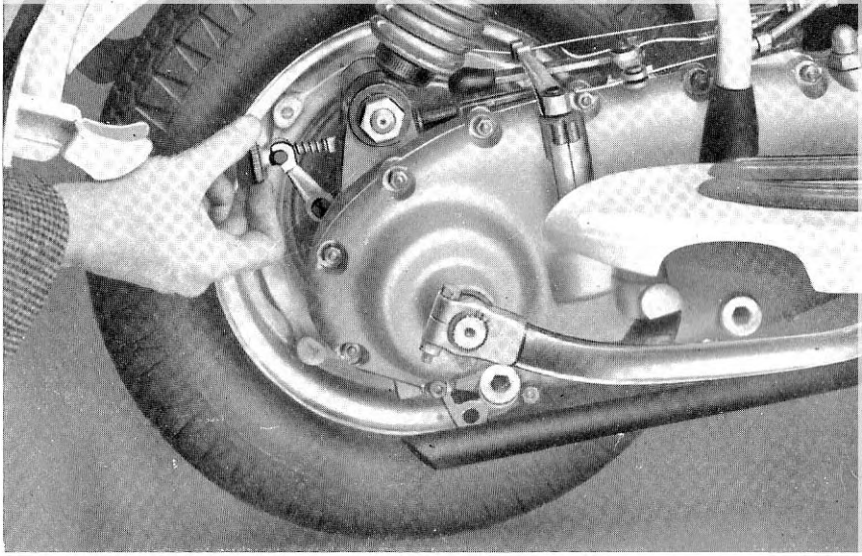
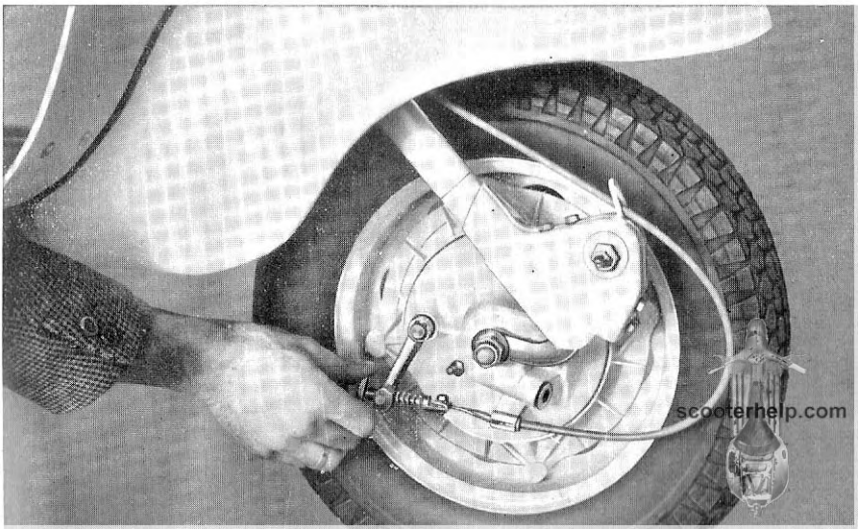


Fig. 9

Fig. 10



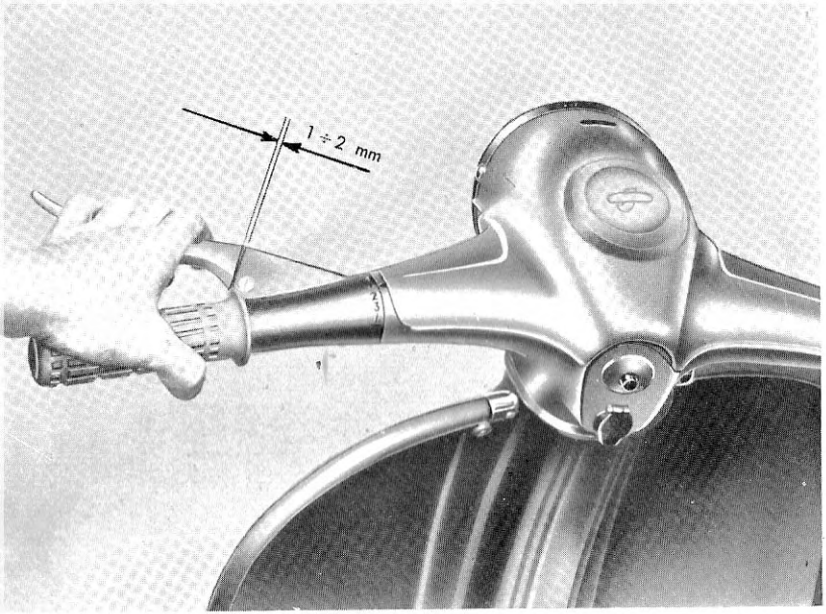
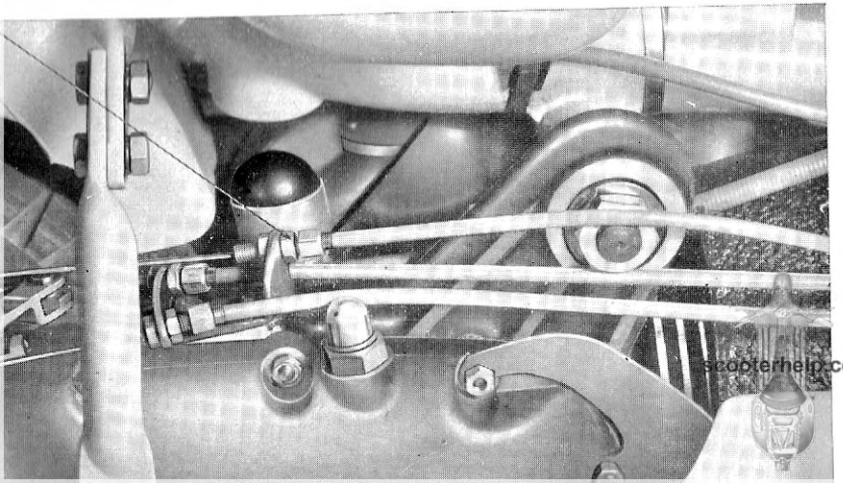


Fig. 11

1÷2 mm equal to 1/16'' approx.

Fig. 12



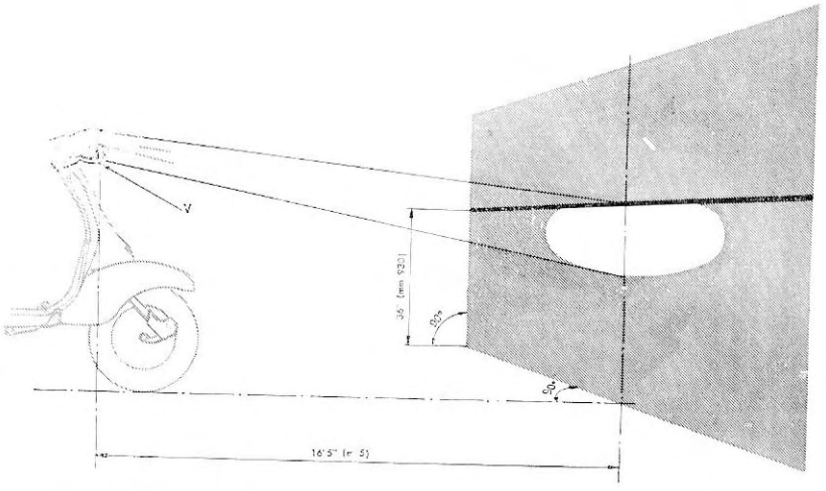


Fig. 13

Brakes

Ensure that the brakes are kept regularly adjusted so that the wheel is completely free to rotate, but the braking effect begins immediately the lever or pedal is used. Adjustment is carried out by means of two adjusters (see Fig. 9 and 10).

Clutch

Keep the clutch constantly adjusted, so that it begins to slip when the clutch lever is in the position shown on Fig. 11. The adjustment is carried out by turning the adjuster illustrated in Fig. 12.

Headlamp adjustment

— Check tyre pressures (see Page 9).
— Place a vertical screen as shown in Fig. 13.
— Put the scooter under the normal load conditions.

— Losen the three **V** screws shown on the headlamp, Fig. 13, rotating it on the remaining two screws until the upper edge of the zone illuminated by the dipped beam coincides with the horizontal line traced on the screen.

Luggage box and tools

The luggage box is moulded into the central frame rib under the front part of the driver's seat. A pair of keys for this box are supplied with the scooter (see page 4). In the luggage box, a tool kit is supplied consisting of:

1 double ended box spanner 21 - 14 mm for the spark plug and wheel nuts;

1 hexagon spanner (10 mm) to be used for unscrewing the plugs of the crankcase;

1 spanner 14 - 27 mm for rear wheel nut;

1 double ended spanner 8 - 10 mm;

1 screwdriver;

1 rear wheel lifting stand;

1 points file;

1 4 mm allen key spanner for cable nipple grub screws.

Starting - Running - Stopping

To start the scooter:

— place on centre stand;
— ensure that gear is in neutral;
— open fuel tap (see page 9);
— turn starting control lever - **only** when engine is cold (see Page 7);

— **keeping throttle to minimum,** kick start machine;
— as soon as engine is turning over, give slight acceleration to warm up;
— if the starting control lever has been used, return to original position;
— during cold weather, run engine a few minutes to warm up before using machine.

To move off:

— bring machine off its stand;
— with engine ticking over, pull clutch lever and put into 1st gear by rotating left twist grip;
— let clutch lever out slowly, accelerating engine gradually to maintain constant revolutions;
— continue to accelerate until you have reached the correct speed to change up to a higher gear.

To change gear:

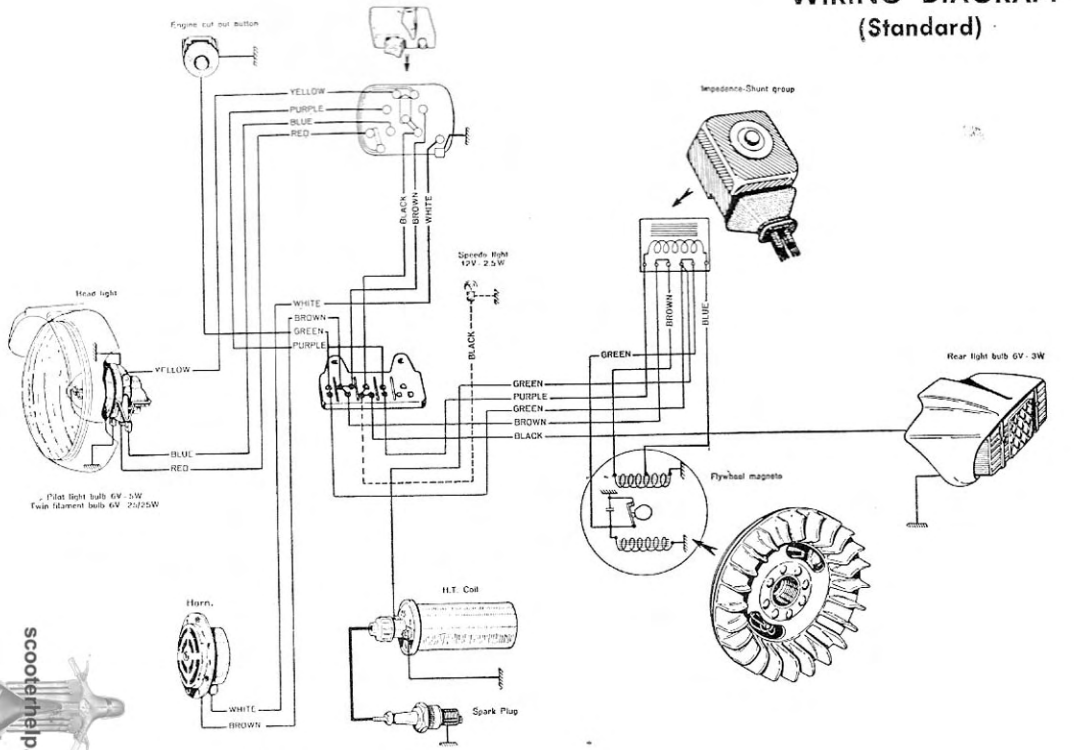
— close throttle;
— pull clutch lever;
— insert next gear;
— let clutch lever out slowly, accelerating gradually at the same time.

Do not hesitate to drop the lower gear, although it will reduce speed.

To stop engine:

— close throttle;
— pull clutch lever;
— put gear into neutral;
— cut out engine by pressing engine cut out button.

WIRING DIAGRAM
(Standard)



PERIODIC MAINTENANCE

Every 1250 miles (2000 km)

Brakes: check adjustment (see page 13).

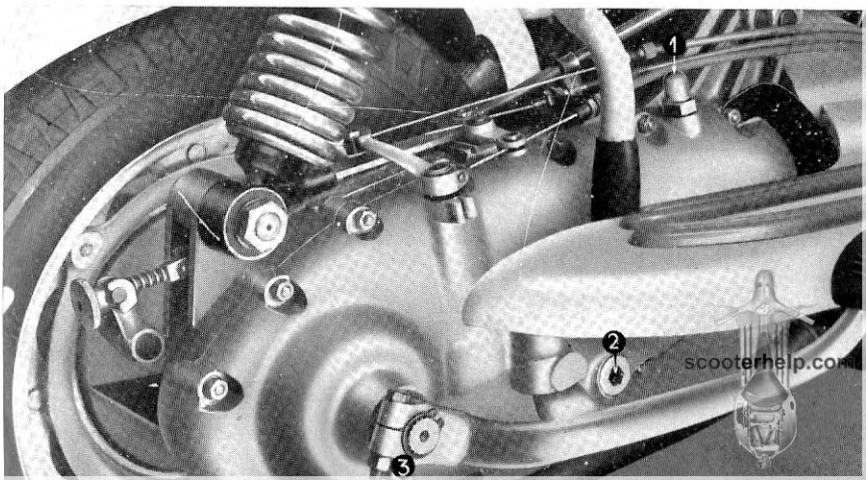
Spark plug: check, clean electrodes with kit file and adjust gap to 0.020''-0.025'' (mm. 0.5-0.6).

Lubrification

Crankcase: re-establish level with **oil BP Energol Gear Oil SAE 90.**

To do this, unscrew oil level and filler plugs, pour in oil until begins to flow from level plug (see Fig. 14).

Fig. 14 1. Oil filler plug 2. Oil level plug 3. Oil drain plug



Clutch cable knuckles
Gear change cable knuckles, twin lever
Rear brake knuckles
Rear brake cam pin
Front brake knuckles

Lubricate with **BP Energol Gear Oil SAE 90**

Rear brake cam pin
Handlebar control lever knuckles
Rear brake pedal pin

Grease with **BP Energrease A1**

Every 2500 miles (4000 km)

Clutch control: check adjustment (see page 13).

Flywheel magneto contact breaker points: clean and set gap 1/64" (mm 0.35-0.45): we suggest that adjustment on this part should be carried out by authorised Service Agent.

Flywheel magneto cam oil pad: lubricate.

Carburator air filter; dismantle (see Fig. 15-16) the cartridge, shake and blow using low pressure air. Do not wash with petrol. Clean frequently after running on dusty roads.

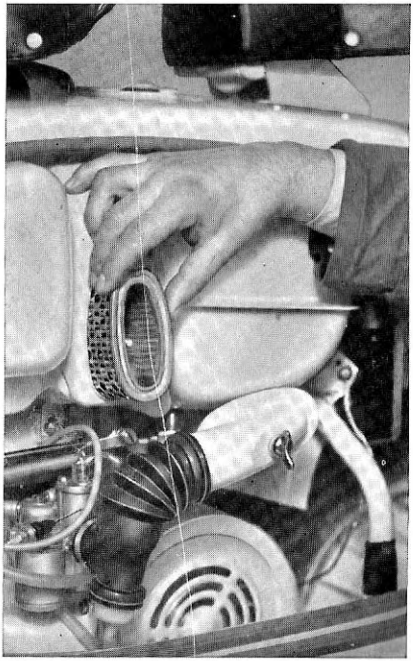


Fig. 15

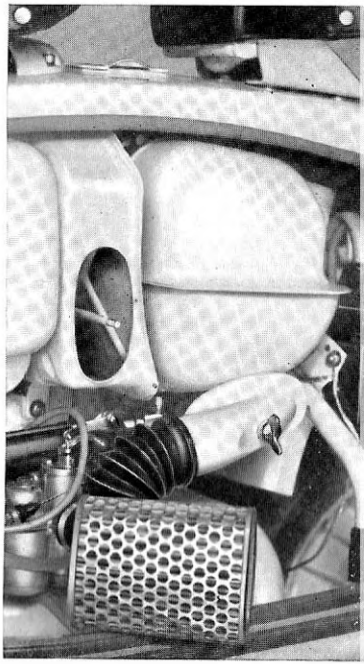
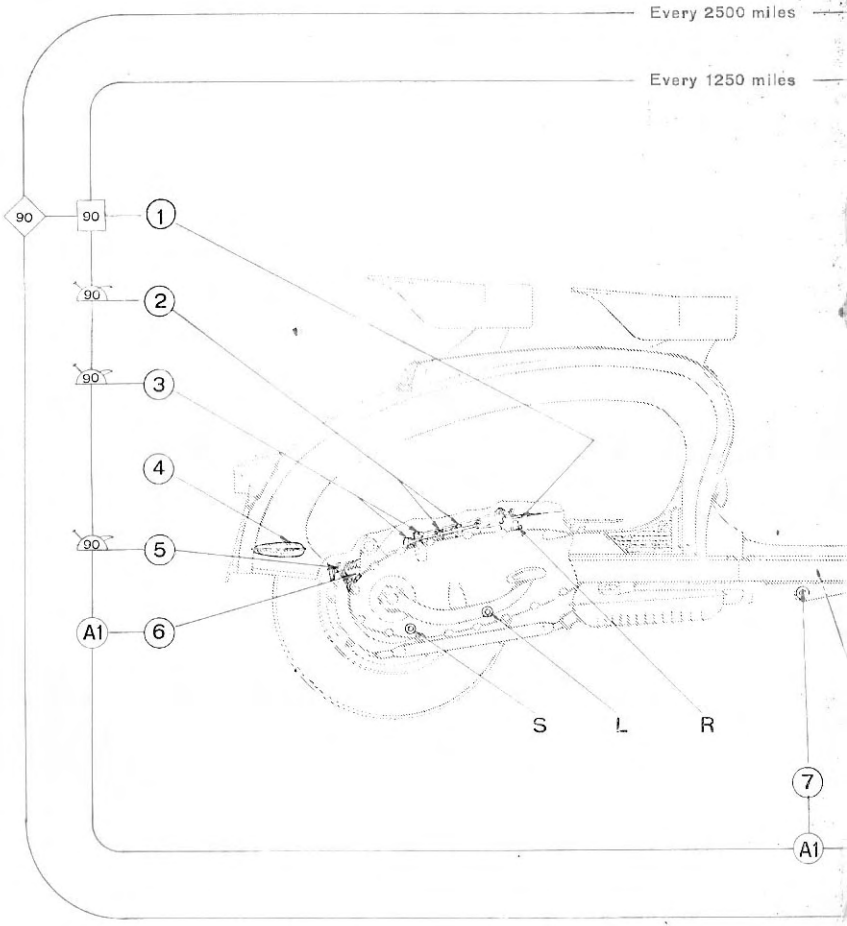


Fig. 16

Decarbonise cylinder, cylinder head, piston head and silencer. We strongly recommend that this work be carried out by the Authorised Service Agent.

Lubrication

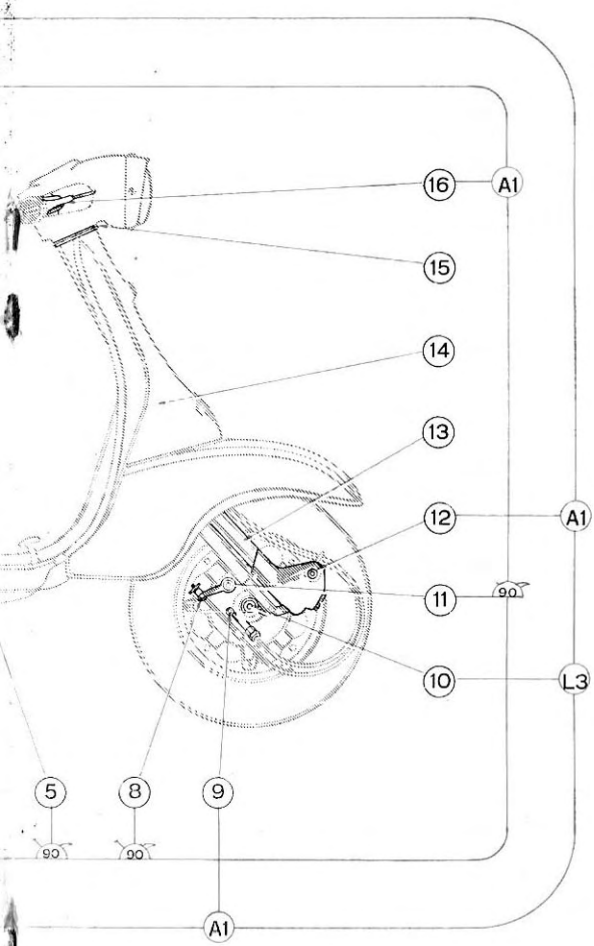
Crankcase: drain oil completely through drain plug (see Fig. 14) when the engine is warm.



PERIODIC LURICATION — **(1)** Crankcase: change oil after first 1000 miles (1500 km.) using BP Energol Gear Oil SAE 90. **(2)** Gear change knuckles, twin lever. **(3)** Clutch and gear change knuckles. **(5)** Rear brake knuckles. **(6)** Rear brake cam pin. **(7)** Rear brake pedal pin. **(8)** Front brake knuckles. **(9)** Speedometer drive box. **(10)** Front wheel bearings. **(11)** Front brake cam pin. **(12)** Suspension link boxes. **(16)** Handlebar control lever knuckles (front brake, throttle, clutch).

R = oil filler plug. **L** = oil level plug. **S** = oil drain plug. 90 means BP E

LUBRIFICATION DIAGRAM



Grease

Oil

Change oil

Re-establish level

LUBRICATE THESE PARTS WHEN ASSEMBLING SCOOTER AFTER OVERHAUL

1. Part (**2**), (**3**), (**5**), (**8**), (**12**) should be lubricated with Energrease A1.
2. Steering ball bearings, parts **(14)** **(15)** should be lubricated with Energrease L3.
3. Side panel hooks **(4)** and handlebar control lever knuckles **(16)** should be lubricated with Energrease A1.
4. Front suspension helical springs **(13)** should be smeared with Energrease L3.
5. Introduce a little BP Energrease A1 in control cable coating before mounting wires.

ergol Gear Oil SAE 90 **A1** means BP Energrease A1. **L3** means BP Energrease L3

Front wheel Bearings:
grease with gun through nipples. **BP Energrease L3**

Suspension Link Boxes:
grease with gun through nipples. **BP Energrease A1.**

Replace drain plug, unscrew filler and level plugs, pour in oil until this flows from level plug. Quantity of oil needed 1 $\frac{3}{4}$ points of **BP Energol Gear Oil SAE 90.**

Cleaning of scooter

— Wash engine with petroleum, using a brush. Dry with clean rags.

— Wash cellulosed and plastic parts with water, using a sponge. Dry with chamoise leather. **Do not use petrol or petroleum,** otherwise damage will result.

When washing with water bolt protect the suction hose under the saddle in order to avoid water wetting in suction box and filter cartridge.

When the scooter remains out of use some time:

— wash and dry carefully as above;

— drain all petroil from tank and carburettor;

— clean tank and carburettor filters;

— unscrew spark plug, insert few drops of engine oil, rotate engine by hand two or three times to ensure a protective oil film in cylinder barrel. Replace spark plug;

— coat with anti-rust grease all non-painted parts;

— lift machine off the ground by placing blocks carefully under frame, tyres should not reach the floor;

— clean and deflate tyres;

— cover machine.

TROUBLE CHART
A GUIDE TO ASSIST IN TRACING AND RECTIFYING COMMON FAULTS

Engine fails to start, or stops immediately

Possible cause:	Remedy:
Irregular flow of fuel to the carburettor	clean fuel lines and filters clean out jet
Flooded carburettor . . .	close fuel tap, open throttle and endeavour to kick start. Or, unscrew and dry out spark plug, replace plug and kick start the motor

Damaged carburettor float .	have it replaced at Service Agent
(if current is reaching H. T. Lead)	
— dirty spark plug . . .	unscrew and clean
— electrodes non adjusted .	adjust to 0.020" - 0.025" (0.5 - 0.6 mm)
— faulty spark plug . . . **(if current does not reach H.T. Lead)**	replace with a new one
— contact breaker points faulty	take machine to Authorised Service Agent
— Flywheel magneto or H.T. coil circuits shorting . .	take machine to Authorised Service Agent

Engine knocking

Incorrect mixture	darwn out and replace with correct fuel mixture
Pre-ignition	clean spark plug. Decarbonise cylinder head
Ignition too far advanced . .	see Authorised Service Agent

Engine misfires

Irregular flow of fuel to the carburettor	check and clean out fuel line

Spark plug electrode gap too wide	re-adjust to correct gap
Dirty spark plug	unscrew and clean out
Contact points dirty or not adjusted	clean and adjust gap between points

Explosion in carburettor

Pre-ignition due to excessive overheating of spark plug .	change spark plug for one with a higher heat range
Carbon deposits on spark plug	clean out spark plug

Loss of power or excessive overheating

Weak Mixture	adjust by closing slightly the carburettor air screw
Incorrect timing	adjust timing. Take machine to an authorised service Station
Exhaust port or silencer partially obstructed	clean out port or silencer
Cylinder Head loose . . .	tighten cylinder head nuts

MAIN FEATURES

Overall length	71 3/4" (m. 1.825)
Overall width	28" (m. 0.710)
Overall height	41 3/4" (m. 1.060)
Ground clearance	6 1/2" (m. 0.165)
Wheelbase	51" (m. 1.290)

Central frame in steel tube.

Bodywork in pressed steel sheet.

Front suspension by means of trailing links, variable pitch helical springs.

Rear-suspension, swinging engine unit with shock absorber carrying two helical springs of different pitch.

Centre stand with two arms.

Unladen weight	230 lbs. (104 kg)
Fuel tank capacity	1.9 imp. gals (2.3 U.S. gals 8,5 Lt)
Maximum speed	
— driver bent forward (according to the CUNA standard)	47/48,5 pmh (75/77 km/h)
— driver sitting	42,5/43,5 mph (68/70 km/h)

Fuel consumption (according to CUNA standard)	121 m. p. imp. gal (75 m. p. U. S. gal - 2,1 Lt/100 km)
Uphill	4th. gear 1 in 14,3 (7 %)
	3rd. gear 1 in 7,7 (13 %)
	2nd. gear 1 in 4,75 (21 %)
	1st gear 1 in 2,85 (35 %)

Engine

Two stroke single cylinder. Forced air cooled.

Bore	52 mm
Stroke	58 mm
Capacity	123 cc.
Compression ratio	7.0 : 1
Maximum output	5.2 HP. at 5200 r.p.m.
Lubrication	Petroil
Starting	Kickstart pedal

Carburettor

Dell'Orto MA 18 - BS 5. Silencing air filter - calm air - intake.

Ignition

By flywheel magneto and external H.T. coil - Spark Plug. 225 Heat Range. Bosch scale, long react. Fixed advanced ignition.

Clutch

Multi-disc in oil bath.

Transmission

Double row chain.
Four speed constant mesh in oil bath.
Gear ratio:

— 1st. 1: 17,40 (0,0575)
— 2nd. 1: 10,71 (0,0931)
— 3rd. 1: 7,47 (0,1337)
— 4th. 1: 5,65 (0,1770)

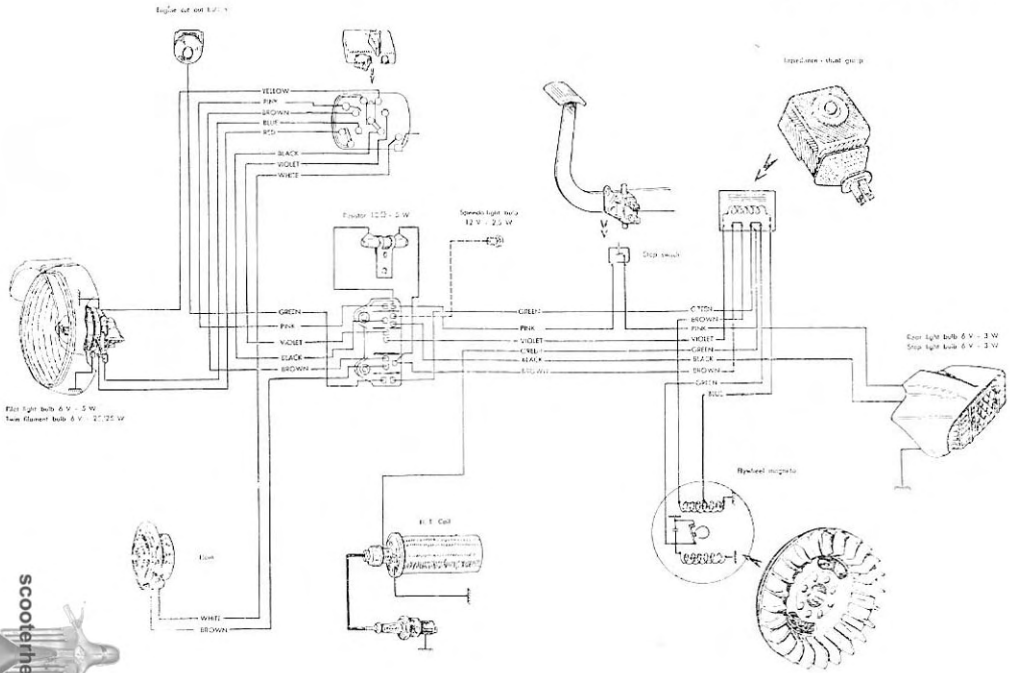
Wheels and brakes

Interchangeable wheels.
Rims: in pressed sheet, split in two halves.
Brakes: internal expansion.
Tyres: 3.5" x 10".
Tyre Pressures:
Front: 12 lbs./sq.in. (0.9 kg/cmq)
Rear (rider only): 18 lbs./sq.in. (1.25 kg/cmq)
Rear (with pillion): 32 lbs./sq.in. (2.25 kg/cmq)

Electrical equipment

Generator: flywheel magneto 27 W - 4 pole.
Lights: 1 twin filament headlamp bulb 6 V, 25/25 W
1 pilot light bulb in headlamp 6 V, 5 W
1 rear lamp bulb 6 V, 3 W
1 speedometer bulb 12 V - 2,5 W (if speedometer is fitted)

WIRING DIAGRAM
(with stop lights)



WIRING DIAGRAM
(with stop lights)

If your Lambretta scooter is equipped with stop lights, see wiring diagram on page 28. Stop lights are on when the rear brake pedal is depressed. For these machines the electrical equipment is modified as follows:

rear light bulb 6V - 3W

stop light bulbs 6V - 3W

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