

Lambretta

INNOCENTI

150
SPECIAL

**instruction
booklet**

INNOCENTI

MOTOR DIVISION



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INNOCENTI

motor division

*We are honoured and pleased to welcome you amongst the owners of a **Lambretta SX 150** and appreciate your choice of our product.*

*The **Lambretta SX 150** 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.*

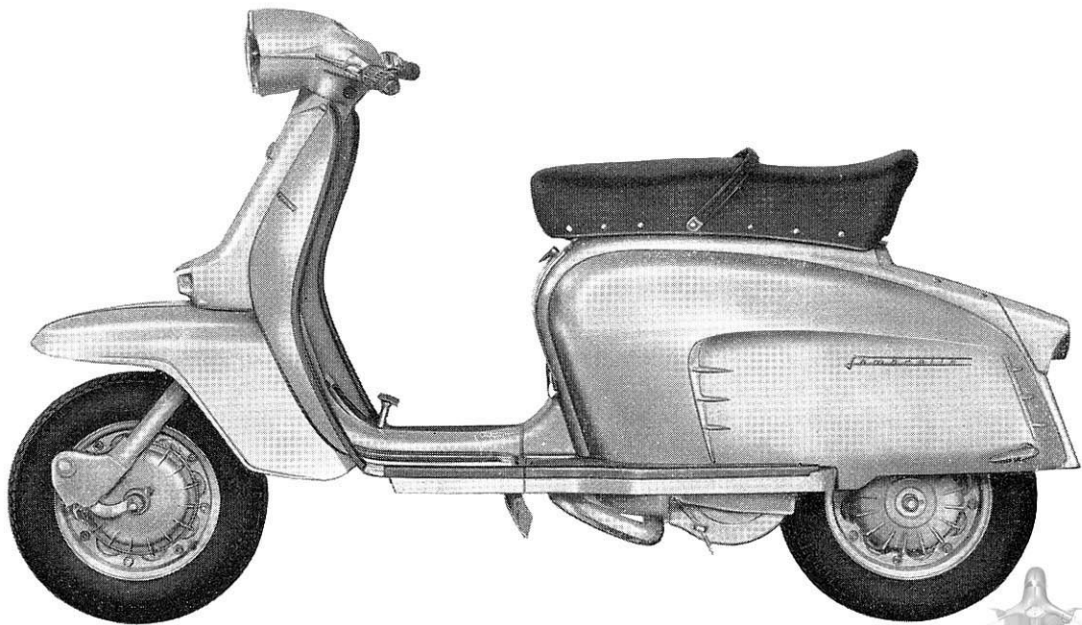
The life of your scooter depends very much on the care and maintenance you give it. We have here, briefly summarized some fundamental hints and instructions which we feel will help you in knowing and making the most of your new machine.

Remember we have created in this country and throughout the world a network of Authorized 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 Organisation is at your service.

*We wish you « Bon voyage » and a wonderful time on your new **Lambretta SX 150** aesigned for you, the connoisseur.*

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Lambretta SX 150

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IDENTIFICATION OF THE SCOOTER

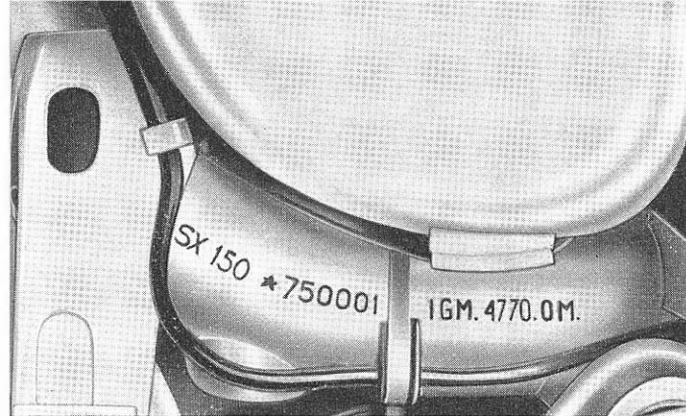
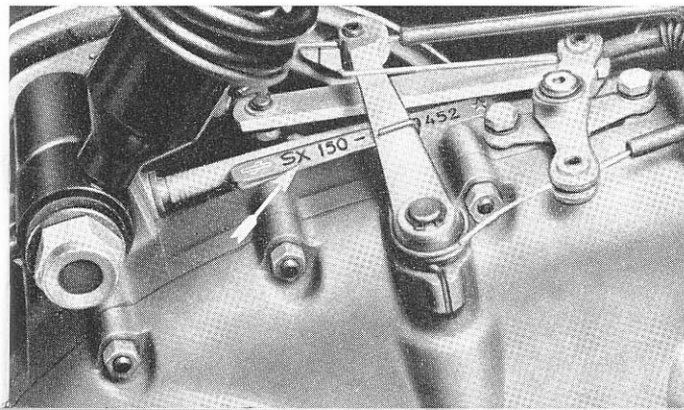


Fig. 1

Fig. 2



The frame and engine numbers, which serve to identify your scooter in accordance with the Rules and Regulations, are stamped as shown in figures 1 and 2. These numbers should always be quoted when requesting spare parts.



MAIN FEATURES

Overall length	71" (1800 mm)
Overall width	27 1/2" (700 mm)
Overall height	40" (1030 mm)
Wheel base	51" (1290 mm)

Central frame in steel tube.

Bodywork in pressed steel sheet.

Front suspension by means of trailing links, carrying two helical springs.

Rear suspension, swinging engine unit with shock absorber carrying two helical springs.

Centre stand with two arms.

Unladen weight	264.6 lbs. (120 kg)
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Fuel tank capacity	1.8 imp. gals
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Maximum speed (according to the CUNA standard)	
driver normally sitting	56 mph (90 km/h)
driver bent forward	60.5 mph (97,7 km/h)

Fuel consumption (according to CUNA standard)	118 m. p. imp. gal. 2,55 Lt./100 km
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Uphill	4th gear 9 %
	3rd gear 15 %
	2nd gear 23 %
	1st gear 36 %



Engine

Two stroke single cylinder. Forced air cooled.

Bore	57 mm
Stroke	58 mm
Capacity	148 cc
Compression ratio	1 : 7
Maximum output IGM at 5.600 r.p.m.	9,38 HP
Lubrication	Petroil mixture
Starting	Kickstart pedal

Carburettor

DELLORTO SH 1/20 automatic, with central float chamber; no needle. Silencing air filter.

Ignition

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

Clutch

Multi-disc in oil bath.



Transmission

Double row chain.

Gear box

Four speed constant mesh in oil bath.

Rear wheel/driving shaft R.P.M. ratio:

1st	.	.	.	.	.	.	.	.	.	.	0,0652
2nd	.	.	.	.	.	.	.	.	.	.	0,0932
3rd	.	.	.	.	.	.	.	.	.	.	0,1254
4th	.	.	.	.	.	.	.	.	.	.	0,1770

Wheels and brakes

Interchangeable wheels.

Rims: in pressed sheet, split in two halves.

Brakes: internal expansion.

Tyres: 3.50-10.

Tyre Pressures:

Front: 12.8 lbs/sq.in.

Rear (rider only): 18 lbs/sq.in.

Rear (with pillion): 32 lbs/sq.in.

Electrical equipment

The electrical equipment is fed directly by the six-pole flywheel magneto with a rated power of 30 Watt.

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Bulbs

Location	Use	No.	Characteristics		
			Electrical data	Bulb	Socket
Head lamp	main beam and dipped beam	1	6 V - 25/25 W	Spherical	BA 20 d
Head lamp	pilot light	1	6 V - 5 W	Festoon $\varnothing = 11$ mm length = 39 mm	S 8,5/9,5
Speedometer	speedometer light	1	12 V - 3 W	Cylindrical	BA 9 s
Rear light	number plate light/stop light	1	6 V - 3/15 W	Spherical	BAY 15 d/19



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 left hand of the handlebar 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 or switch itself, so that in the case of loss, a replacement can be obtained by quoting the appropriate number.

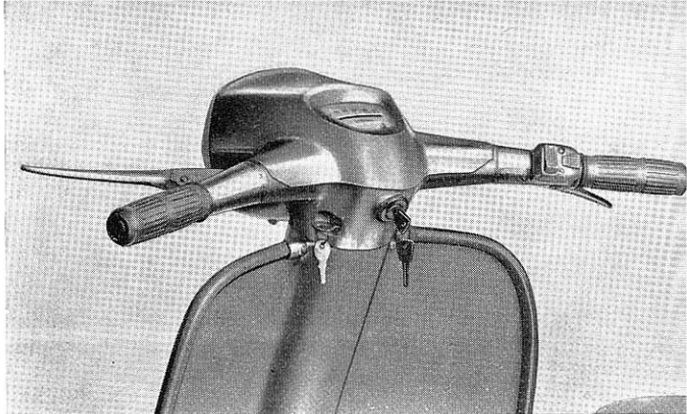


Fig. 3

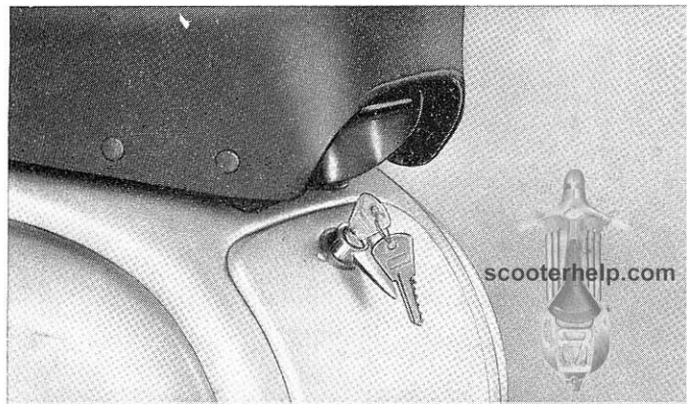


Fig. 4

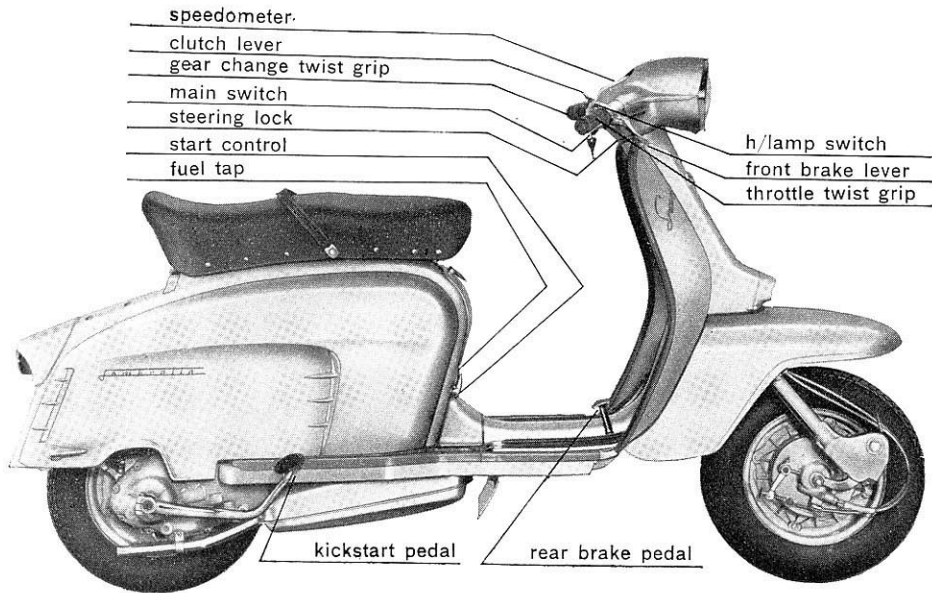


Fig. 5

CONTROLS

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



On the handlebar

Right hand: front brake lever, throttle twist grip and headlamp dip switch with horn button.

Left hand: Clutch control lever and gear change control.

Centre: on top: speedometer and head-lamp; facing driver: main switch and steering lock. The main switch key has 4 positions; clockwise:

— (key vertical) machine at standstill - lights out;

— day riding-lights out;

— night riding (in town) - pilot light, speedometer light and rear light on;

— night riding (in country areas) - headlamp, speedometer light and rear light on.

The headlamp dip switch, with horn button, is fitted near to the right and twist grip. In the first position, the key can be extracted from main switch.

Under left hand handlebar arm: steering lock.

To use steering lock, turn handlebar full lock to either right or left and then turn key half a turn.

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 machines is at stand-still, it is advisable to turn tap to closed position. The fuel tank contains a total of 1.9 galls. (8,3 Lt) of fuel. When riding, tap should be in open position, and when you have to switch to reserve you still have 1 1/2 pints (0,8 Lt) available (in other words a further 20 miles approximately).



1. Closed

2. Open

3. Reserve

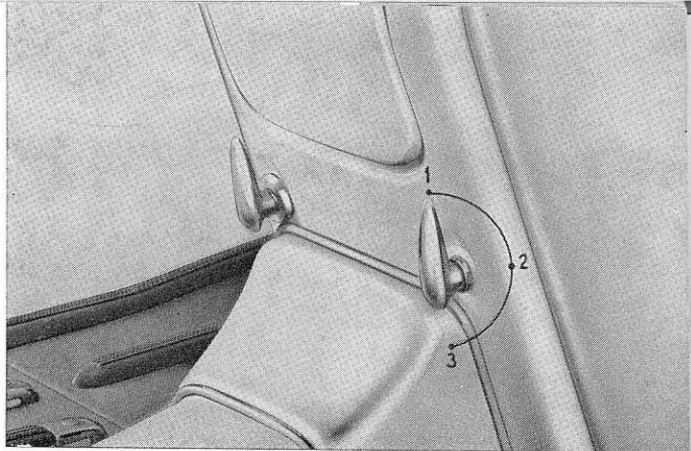


Fig. 6

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, insert key into main switch, turning it to day riding position.



SERVICE INSTRUCTIONS

During running-in period

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

- use a mixture of 4 % oil (1 part in 25) **AGIP F.1 2T** and good standard petrol;
- do not exceed the following speeds:

	1st gear	2nd gear	3rd gear	4th gear
miles per hour	12	19	24	34
km/h	20	30	40	55

- 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 authorized 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, use mixture of 2^o% oil (1 part in 50) **AGIP F.1 2T**.

- To reach the fuel tank filler cap:
- free the saddle hold by pressing on rear portion (see fig. 7);
 - lift saddle forward and open lid on frame rib (see fig. 8).

The tank contains a total of 1.9 galls (8,5 Lt) of which 1 ½ pints (0,8 Lt) are reserve (for the fuel tap, see page 11).



Fig. 7

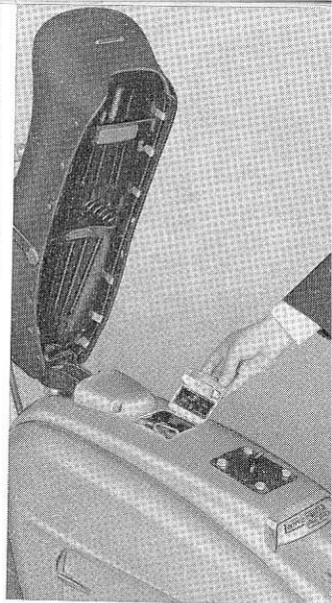


Fig. 8

Wheels

Tyres 3.5-10".

Pressure: front 12.8 lbs per sq. inch; rear 18 lbs per sq. inch with rider only; rear 12 lbs per sq. inch with pillion rider.

Wheels are interchangeable.



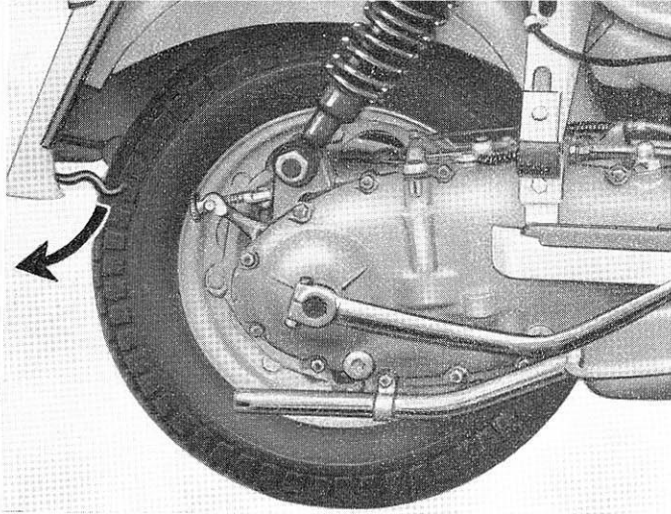


Fig. 9

To dismantle the rear wheel:

- turn downwards the locking spring of the side panel (see fig. 9);
- 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.

To dismantle, lift machine on its stand. The necessary tools will be found in the luggage box (see page 18).

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.



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. 10 and 11).

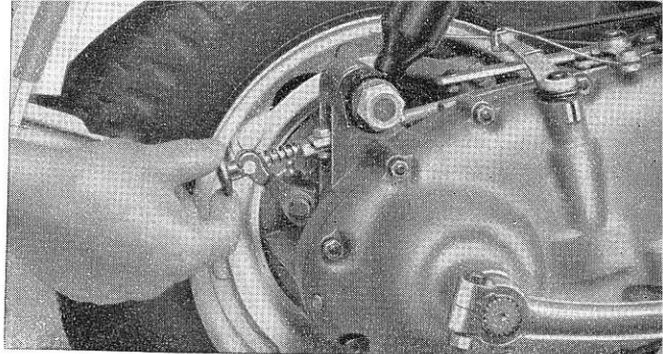


Fig. 10

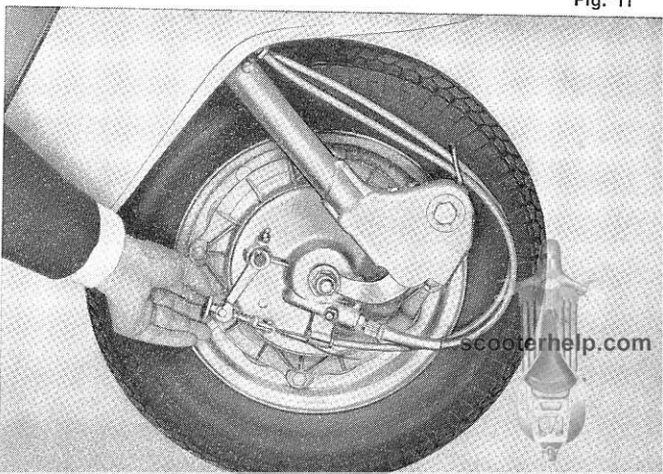


Fig. 11

Clutch

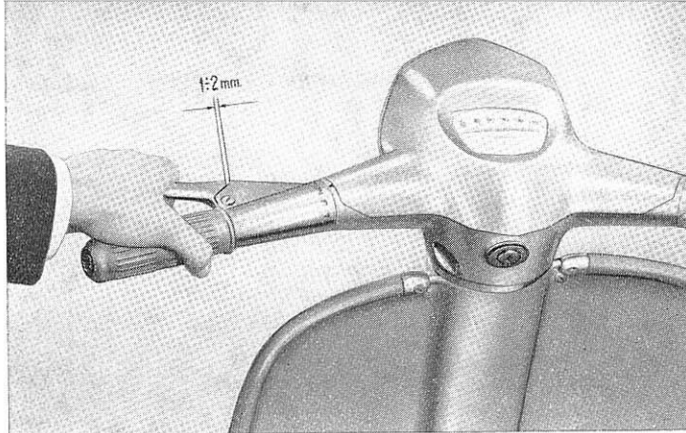
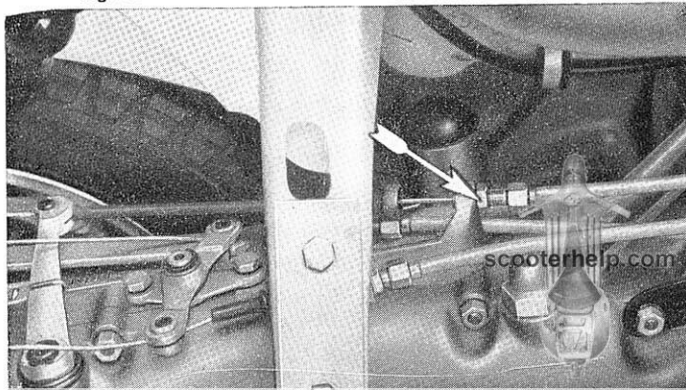


Fig. 13

Fig. 12



Keep the clutch constantly adjusted, so that it begins to slip when the clutch lever is in the position shown on fig. 12. The adjustment is carried out by turning the adjuster illustrated in fig. 13.

Headlamp adjustment

Check tyre pressures (see page 13).

Place a vertical screen as shown in fig. 14.

Put the scooter under the normal load conditions.

Turn adjustment screw V shown on the headlamp, rotating it clockwise or counter clockwise until the upper edge of the zone illuminated by the dipped beam coincides with the horizontal line traced on the screen.

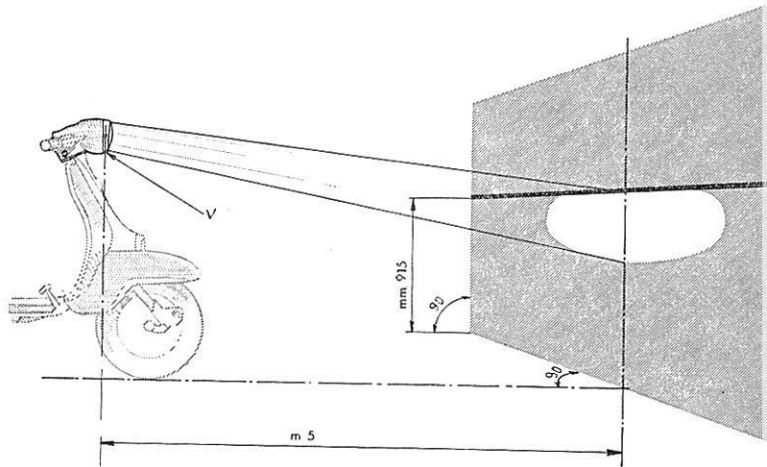


Fig. 14

Luggage box and tools

The luggage box is moulded into the central frame rib under the front part of the dual seat. A pair of keys for this box are supplied with the scooter (see page 8). In the luggage



box, a tool kit is supplied consisting of:

- 1 double ended box spanner 21 - 14 mm for the spark plug and wheels nuts;
- 1 10 mm allen spanner for oil plugs;
- 1 double ended spanner 8 - 10 mm;
- 1 screwdriver;
- 1 points file.

Starting - Running - Stopping

To start the scooter:

- place on centre stand;
- ensure that gear is in neutral;
- insert key into main switch and turn to position of day riding;
- open fuel tap;
- turn starting control lever - **Only** when engine is cold;
- 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.



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 in;
- insert next gear;
- let clutch lever out slowly, accelerating gradually at the same time;
- do not hesitate to change down, when wanting to appreciably reduce speed.

Top stop engine:

- close throttle;
- pull clutch lever in;
- put gear into neutral;
- cut out engine by turning main switch key to vertical position.



PERIODIC MAINTENANCE

Every 1250 miles (2000 km)

Brakes: check adjustment.

Spark plug: check, clean electrodes with kit file and adjust gap to 0.016".

Lubrication:

Crankcase: re-establish level with **oil AGIP F.1 Rotra SAE 90**. To do this, unscrew oil level and filler plugs, pour in oil until this begins to flow from level plug (see fig. 17).

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

Grease with **AGIP F.1 Grease 15**

Every 2500 miles (4000 km)

Clutch control: check adjustment.

Flywheel magneto contact breaker points: clean and set gap 1/64"; we suggest that adjustment of this part is carried out by Authorized Service Agent.

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Flywheel magneto cam oil pad:
lubricate.

Carburettor air filter: take out
filter cartridge from air inlet box
(see fig. 15-16), clean by shaking
and blowing with low pressure air.

Do not wash in petrol.

We strongly recommend to re-
change the filter cartridge every
6.500 miles (km 10.000).

Decarbonise cylinder, cylinder
head, piston head and silencer.

We strongly recommend that this
work be carried out by an Autho-
rized Service Agent.



Fig. 15

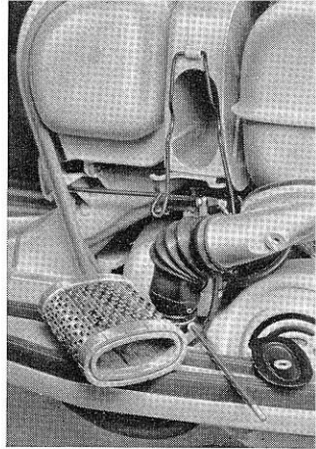


Fig. 16

Lubrication

Crankcase: drain oil completely through drain plug (see fig. 17) when the engine is warm. Replace drain plug, unscrew filler and level plugs; pour in oil until this flows from level plug. Quantity of oil needed 1 ¼ pint of **AGIP F.1 Rotra SAE 90**.

Speedometer drive box: grease with gun through nipple (about 1 gr) **AGIP F.1 Grease 15**.

Front wheel bearings: grease with **AGIP F.1 Grease 30**.

Front suspension knuckles: grease with gun through nipples **AGIP F.1 Grease 15**.



ONLY FOR SCOOTER WITH BATTERY

Every 4 weeks:

Add distilled water to parking light battery until water is about $\frac{1}{4}$ " (mm 5) over the top of cells. To do this it is necessary to take battery out from its seat.

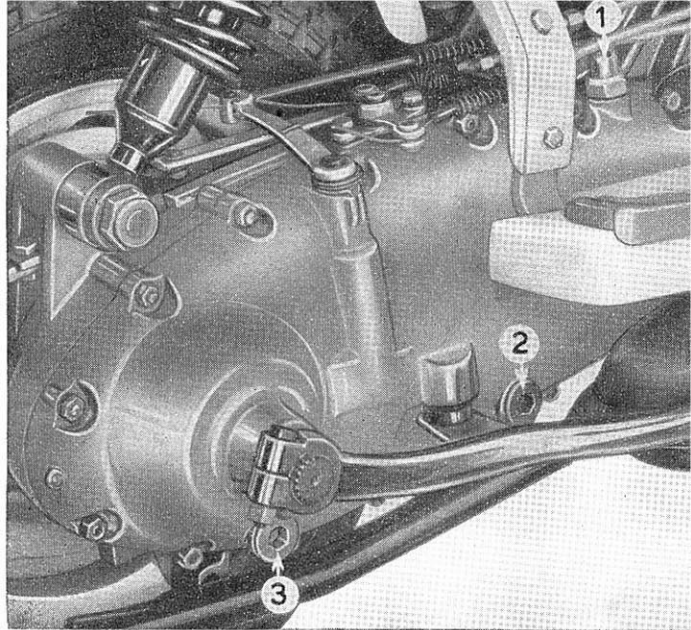
Grease battery terminals with vaseline.

Cleaning of scooter

- Wash engine with paraffin, 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 the scooter with water, protect the air intake scoop under the saddle in order to avoid water wetting suction box and filter cartridge.



1 - oil filler plug 2 - oil level plug 3 - oil drain plug

Fig. 15



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When the scooter remains out of use for some time:

- wash and dry carefully;
- drain all petrol 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 time 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 THE TRACING AND RECTIFYING COMMON FAULTS

Engine fails to start, or stops immediately

Irregular flow of fuel to the carburettor

Flooded carburettor

Damaged carburettor float

clean fuel lines and filters; clean jets.
close fuel tap, open throttle and endeavour
to kick start. Or, unscrew and dry out spark
plug, replace plug and kick start the motor.
have it replaced by Service Agent.



Ignition faults

(If current is reaching H.T. Lead)

- **dirty spark plug**
- **electrodes non adjusted or worn**
- **faulty spark plug**

(If current does not reach H.T. Lead)

- **contact breaker points faulty**
- **Flywheel magneto or H.T. coil circuits shorting**

adjust to 0.016"-0.020".
unscrew and clean.
replace with a new one.

take machine to Authorized Service Agent.
take machine to Authorized Service Agent.

Engine knocking

Incorrect mixture

draw out and replace with correct fuel mixture.

Pre-ignition

clean spark plug. Decarbonise cylinder head.

Ignition too far advanced

see Authorized Service Agent.

Engine misfires

Irregular flow of fuel to the carburettor

Spark plug electrodes gap too wide

Dirty spark plug

Contact points dirty or not adjusted

check and clean out fuel passages.
re-adjust to correct gap.
unscrew and clean out.
clean and adjust gap between points.

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Explosion in carburettor

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

Loss of power or excessive overheating

Weak mixture	adjust by opening slightly the carburettor air screw.
Incorrect timing	adjust timing. Take machine to an Authorized Service Station.
Exhaust port or silencer partially obstructed	clean out port or silencer.
Cylinder head loose	tighten cylinder head nuts.



LUBRICATION DIAGRAM (See page 30)

PERIODIC LUBRICATION

1. Rear brake knuckles
2. Rear brake cam pin
3. Clutch and gear change knuckles
4. Gear change knuckles, twin lever
5. Crankcase (change oil after 500 miles)
6. Rear brake pedal pin
7. Rear brake knuckles
8. Levers and controls on the handlebar: lubricate the clutch and brake cable nipples, throttle and gear control knuckles
9. Front brake knuckles and front brake cam pin
10. Speedometer drive box and front suspension knuckles
11. Front wheel bearings

LUBRICATE THESE PARTS WHEN ASSEMBLING SCOOTER AFTER OVERHAUL

1. Parts 1 - 2 - 3 - 4 - 6 - 7 - 8 - 9 - 10 should be lubricated with AGIP F.1 Grease 15
2. Side panel hooks should be lubricated with AGIP F.1 Grease 15
3. Parts 13 - 14 (steering ball bearings) should be lubricated with AGIP F.1 Grease 30
4. Front wheel bearings 11 should be lubricated with AGIP F.1 Grease 30
5. Front suspension helical springs 12 should be smeared with AGIP F.1 Grease 15
6. Introduce a little AGIP F.1 Grease 15 in control cable coating before mounting wires.

15 means AGIP F.1 Grease 15

30 means AGIP F.1 Grease 30

90 means AGIP F.1 Rotra SAE 90



Grease



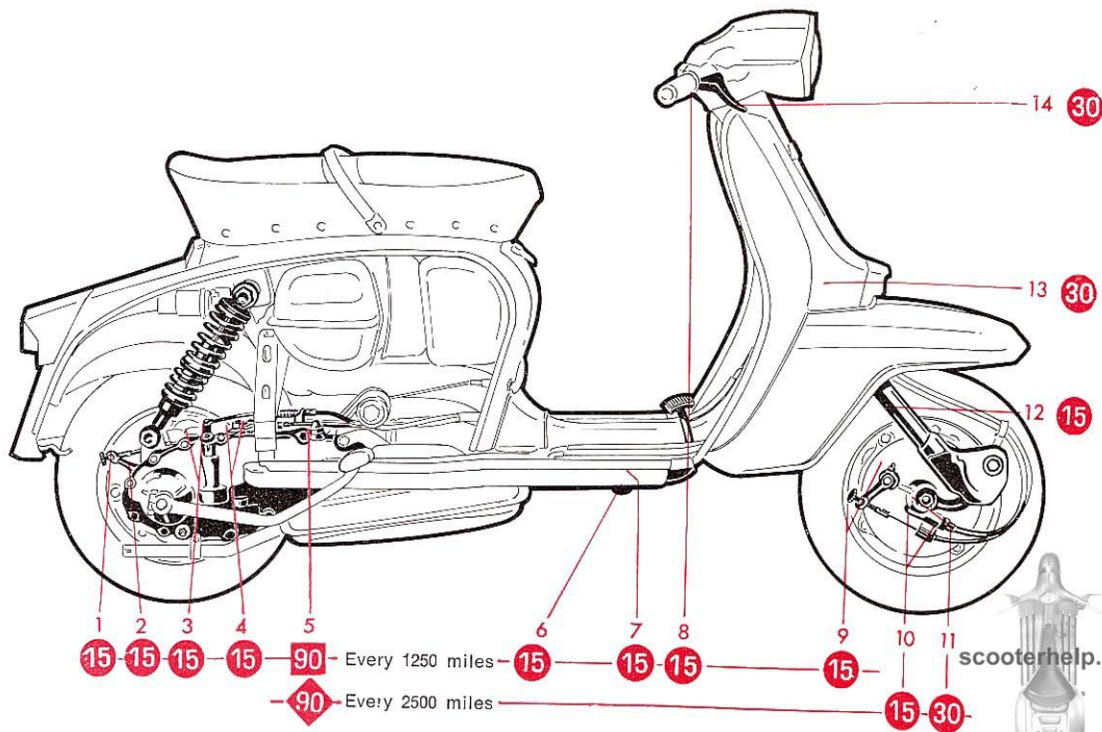
Change oil



Re-establish level



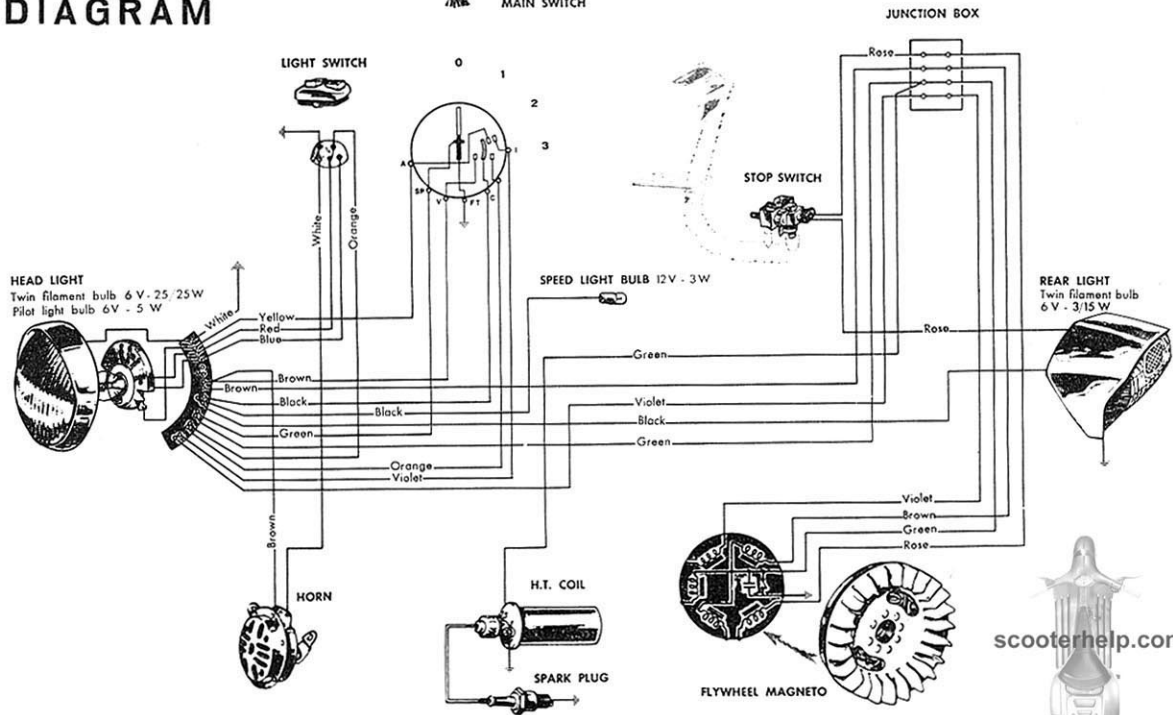
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WIRING DIAGRAM

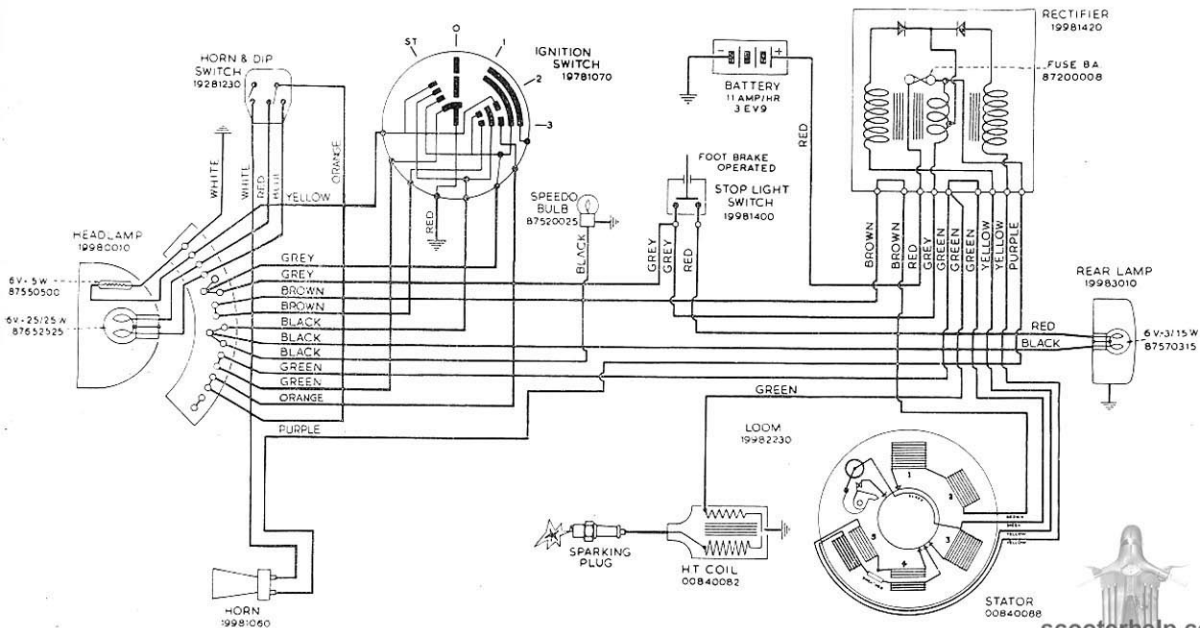


MAIN SWITCH



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WIRING DIAGRAM (scooter equipped with battery)



SLIMSTYLE 150 SPECIAL


WIRING DIAGRAM, 6 POLE MAGNETO

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LUBRICATION (See pages 26-27)

In case it should not be easy to find **AGIP** products, we recommend, in relation to the various parts, the following lubricants:

<p>For fuel mixture</p> <p>(5) Crankcase</p> <p>(4) Gear change knuckles twin lever - (3) Clutch and gear change knuckles - (1) (7) Rear brake knuckles - (9) Front brake knuckles - Front brake cam pin - Side panel hooks - (2) Rear brake cam pin - (6) Rear brake pedal pin - (10) Speedometer drive box - (12) Front suspension helical springs - (8) Levers and controls on the handlebar</p> <p>(11) Front wheel bearings - (13) (14) Steering ball bearings</p>	<p>Energol two stroke</p> <p>Energol Gear Oil SAE 90</p> <p>Grease with Energrease A1</p> <p>Grease with Energrease L3</p>  <p>scooterhelp.com</p>
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