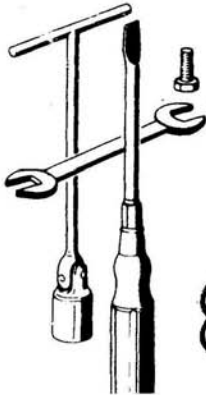




V 1000
G 5

850 Le Mans
II

WORKSHOP MANUAL



1000 SP

850-T3

ADDITIONS AND CHANGES FOR 850-T 3 MODEL

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2 MAIN FEATURES

2.1 MODEL V 1000 G 5

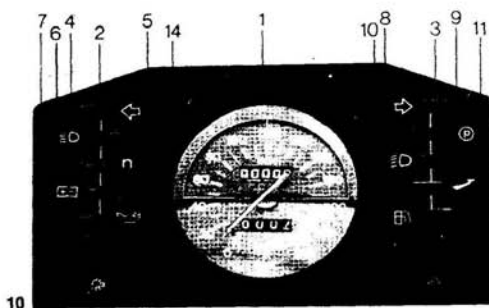
Engine	2-cylinder, 4-stroke
	Cylinder disposition «V», 90°
	Bore 88 mm
	Stroke 78 mm
	Displacement 948.8 cc
	Compression ratio 9.2 to 1
	Max torque 8.6 kgm at 5200 rpm
Valve gearing	OHV, push rod operated
Carburation	2 Dell'Orto carburetors VHB 30 CD (right), VHB 30 CS (left).
Lubrication	Pressure, by gear pump. Wire gauze and cartridge filters in oil sump. Normal lubrication pressure 3.8 ÷ 4.2 kg/sqcm (54-60 p.s.i.). Controlled by pressure relief valve.
Generator-alternator	Front, on crankshaft (14 V-20 A).
Ignition	Battery-coil ignition with twin contact breaker and automatic advance. Ignition data: <ul style="list-style-type: none">■ initial advance (fixed) 2°■ automatic advance 31°■ full advance (f. + a.) 33° Contact points gap: 0.37 ÷ 0.43 mm (.014-.016). Spark plugs: AC - 44 XL Bosch W 225 2 T Champion N 9 Y Lodge HLN Y Marelli CW 7 LP Plug points gap: 0.6 mm (.023") 2 ignition coils
Starting	Electric starter (12 V-0.7 KW) with electromagnetic ratchet control. Ring gear bolted on the flywheel. Starter button (START) on the right side of the handlebar.

TRANSMISSIONS

Clutch	Dry type, twin plates. Hand controlled by lever on the left side of the handlebar.
Primary drive	By gears. Ratio: 1.235 (Z = 17/21)

5 INSTRUMENTS AND CONTROLS

5.1 PANEL BOARD V 1000 G5 (fig. 10)



- 1 Speedometer in miles or km.
- 2 Warning light (green), left turn signal.
- 3 Warning light (green), right turn signal.
- 4 Warning light (blue), high beam on.
- 5 Warning light (orange), neutral indicator. It is lighted when the transmission is in neutral.
- 6 Warning light (red) indicating current delivery from generator. Should go out when the engine reaches a certain number of revolutions.
- 7 Warning light (red), oil pressure gauge. It goes out when the oil pressure is sufficient for normal engine lubrication. If it does not, this means that oil pressure is not correct and in such case the engine has to be stopped and the cause for the failure looked for.
- 8 Warning light (green) indicating side stand engaged. By turning the ignition key in position «A» (fig. 11) the light keeps on flashing. If the stand is not raised, the engine will not start.
- 9 Warning light (green) indicating parking lights «ON».
- 10 Warning light (red) indicating incorrect fluid level in the front left and rear brake reservoir. When this light is on, top up the fluid level and check if the braking circuit has any leakages.
- 11 Warning light (red), fuel reserve. To use the reserve fuel, bring the tap lever on the right fuel tank in position «RES» (fig. 19).
- 12 Courtesy light switch (available).
- 13 Switch, right and left rear emergency flashers.
- 14 Speedometer reset.

5.2 Ignition key V 1000 G5 (fig. 11)

The key has 3 positions:

«OFF» In line with panel mark - machine at standstill. Key removable.

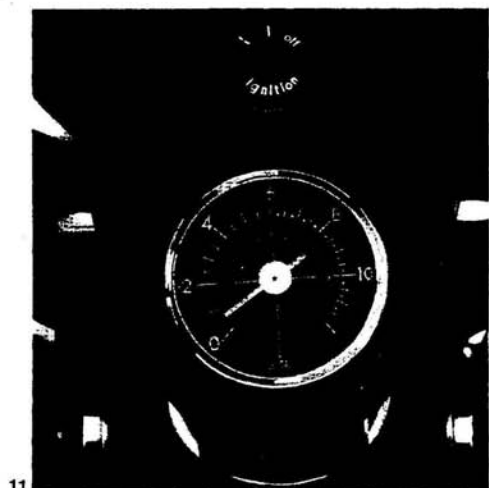
«A» In line with panel mark (turned clockwise). Machine ready to be started. All circuits «ON». Key not removable.

«B» Turned clockwise in line with panel mark. Machine at standstill. With switch «A» fig. 11 in position «O», parking lights «ON». Key removable.

2 Rev-counter.

5.3 PANEL BOARD 1000 SP (fig. 12)

- 1 Clock.
- 2 Rev-counter.
- 3 Speedometer.
- 4 Voltmeter.



7 LUBRICATION AND MAINTENANCE CHART

Monthly (or every 3000 km - abt. 2000 miles)

Check the electrolyte level in the battery.

Periodically

Check tire pressure

Every 500 km (300 miles)

Check the oil level in the crankcase.

After the first 500-1000 km (300-600 miles)

Replace the oil in the crankcase.

Replace the oil cartridge.

Check tightness of all nuts and bolts.

Check rocker clearance.

Check tightness of all wheel spokes and trueness of the rims. (Only for V1000 G5)

Every 1500 kms (abt. 900 miles)

Check that all wheel spokes are tight and the wheels true (only for model 1000 G5)

Every 3000 km (2000 miles)

Replace the oil in the sump.

Check level of oil in the gear box.

Check level of oil in the rear drive box.

Check rocker clearance.

Every 5000-6000 km (3000-4000 miles)

Check fluid level in the reservoir (master cylinder) for the right front brake. An incorrect fluid level in the reservoir for the left front brake and rear brake is indicated by a warning light (red) on the instrument panel.

Every 10000 km (6000 miles)

Clean the fuel tank, filters, and fuel pipes.

Replace the oil in the gearbox.

Replace the oil in the rear drive box.

Clean and grease all battery connections

Replace the air filter.

Every 15000 km (9000 miles)

Replace the fluid in the braking circuits.

Replace the oil filter cartridge and clean the wire gauze filter.

Every 20000 km (12000 miles)

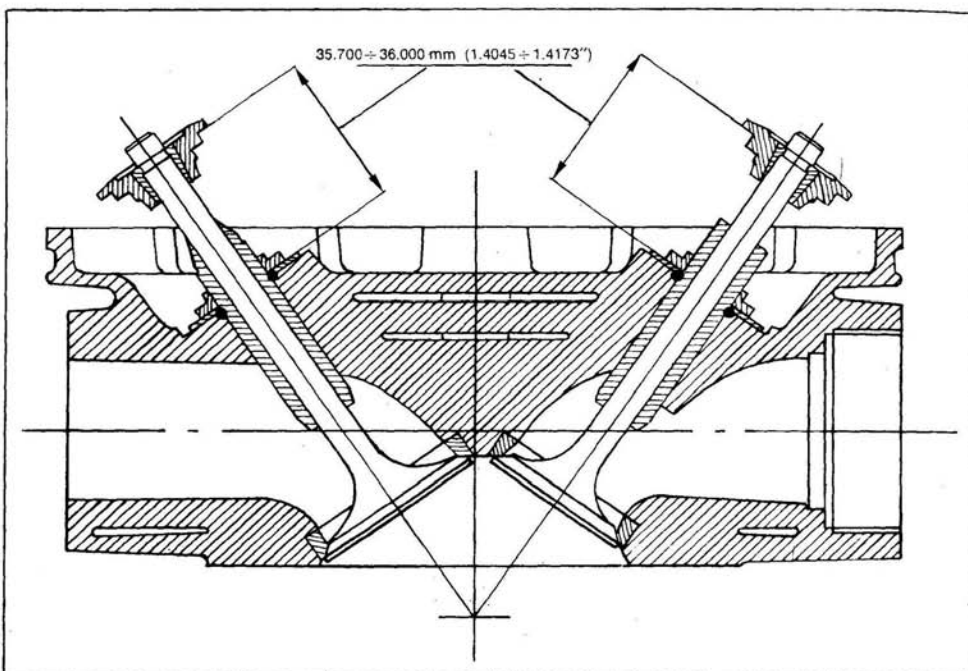
Check condition of the wheel bearings.

Check if the steering bearings are sufficiently greased and in good condition.

Replace the oil in the fork legs.

Clean starter motor and generator commutators using a clean rag lightly moistened with petrol.

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12.7 CHECKING THE INLET AND EXHAUST VALVE OPENING (fig. 47)

After refacing the valve seats, after assembling the valve spring, it is well to ensure that the valve spring compression is in between 35.7-36 mm (1.405-1.417"). When fully stretched the spring should have a run of 1-1.75 mm (.039-.068") before the outer spring compresses fully.

12.8 INSPECTING THE VALVE SPRINGS (fig. 48)

Ensure the springs are not deformed or have lost their load. Spring details:

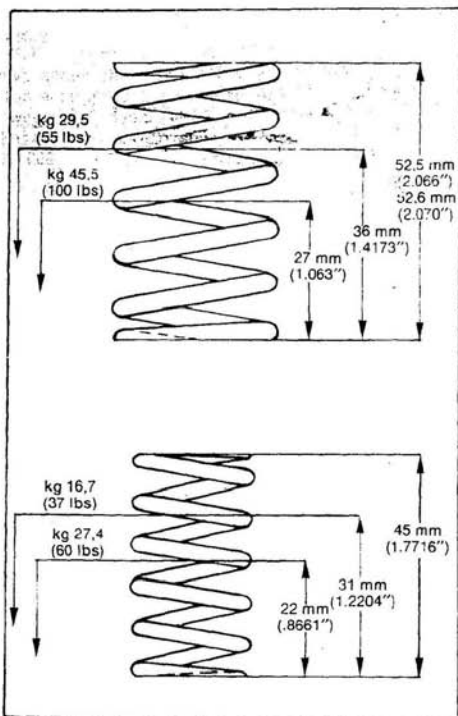
Outer spring

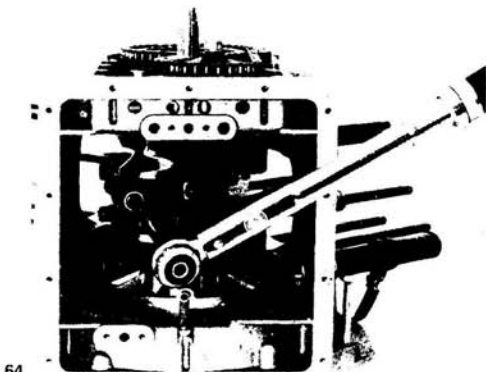
- free length: 52.5-52.6 mm (2.06-2.07");
- with valve closed: length 36 mm (1.417") - load 29.5 ± 3% kg (abt. 65 lbs);
- Open valve: 27 mm (1.06") - Load 45.5 kg ± 3% (100 lbs).
- fully compressed: 22.75-23.25 mm (.895-.915").

Inner spring

- free length: 45 mm (1.77").
- valve-closed: 31 mm (1.22") - load 16.7 ± 3% kg (37 lbs ± 3%).
- Open valve: 22 mm (.866") - Load 27.4 ± 3% (61-62 lbs).

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Mainshaft diameter, drive side

ORIGINAL PRODUCTION	UNDERSIZE		
	0.2 mm (.0078")	0.4 mm (.01574")	0.6 mm (.02362")
53.970 mm (2.1248")	53.770 (2.1169")	53.570 (2.1093")	53.370 (2.1011")
53.951 mm (2.1240")	53.751 (2.1162")	53.551 (2.1083")	53.351 (2.1004")

Mainshaft diameter, timing side

ORIGINAL PRODUCTION	UNDERSIZE		
	0.2 mm (.0078")	0.4 mm (.01574")	0.6 mm (.02362")
37.975 (1.4951")	37.775 (1.4872")	37.575 (1.4793")	37.375 (1.4715")
37.959 (1.4944")	37.759 (1.4866")	37.559 (1.4787")	37.359 (1.4707")



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12.18 CHECKING WEIGHT FOR ENGINE BALANCING

The con-rods complete with nuts and bolts should be of same weight. Max permissible difference: 3 grams.

The crankshaft is statically balanced by adding a weight of 1.650-1.680 kg (3.6-3.99 lbs).

12.19 FITTING THE FLYWHEEL ON THE CRANKSHAFT (fig. 68 and 68/1)

When fitting the flywheel on the crankshaft, ensure that the mark on the shaft (see arrow «A») is in line with the TDC mark on the flywheel (see arrow «B» - fig. 68 1).

Fit the flywheel using tool N. 12 91 18 01 (21 fig. 41) and tighten to a load setting of 4.2 kg (30 ft/lbs).

If the crankshaft needs replacing and there is no «A» mark on it, it is necessary to paint it on it, ensuring it is in line with the hole at the center of the crankpin and the drive pinion key.

12.20 FLYWHEEL FLANGE COMPLETE WITH MAIN JOURNAL AND PIN

Ensure that the union faces of the crankcase are perfectly smooth, with no scoring marks or nicks, also the main bearing is not excessively worn (see table «I D of journal, drive side»).

In fitting it on the crankcase, ensure oil passage «A» is in line with oil passage «B» in the crankcase (fig. 69) and that tool N. 12 91 20 00 (24 in fig. 70) and 14 92 71 00 (16 in fig. 70) are set up on the crankshaft. This will allow the flange seal to be fitted on the shaft without damaging its inner surface.

82/4



14.3 REPLACING THE OIL FILTER CARTRIDGE

(fig. 82/3)

Should be changed every 15.000 km (9000 miles or 5 oil changes) proceeding as follows:

- Undo the drain plug with aluminium washer «B» and remove the filter cap. Let all the old oil drain from the sump.
- Undo the sump securing screws and remove the complete sump unit (C).
- Screw out cartridge «A», wire gauze filter «D» and the oil pressure relief valve «E».
- Blow compressed air on all these items after having washed them in petrol.
- Using a pressure gauge, check if oil relief valve «E» starts operating at the normal specified pressure i.e. 3.8-4.2 kg/sqcm (54-60 lbs). If not see section «Oil pressure relief valve».

Then refit all removed parts and the pump itself (change its gasket), tightening all securing screws. Introduce about 3 liters (abt. 3 qts.) of AGIP Sint 2000 oil, SAE 10 W 50. Refit the plug with dipstick on the crankcase, after ensuring the oil level is up to the top notch.

14.4 WIRE GAUZE FILTER (fig. 82/3)

Wire gauze filter «D» is fitted in the oil sump (C) and is retained by a small bolt with lockplate. When changing the cartridge, it is well to clean also this filter and to dry it off with compressed air.

14.5 OIL PRESSURE RELIEF VALVE (fig. 82/3)

This valve (E) is screwed in the oil sump and is calibrated at the factory for a pressure of 3.8-4.2 kg/sqcm (54-60 lbs/sq. in). In case of a higher pressure this valve opens bringing it down to the specified limits. To dismantle the valve see «E» in fig. 82/3 and fig. 82/4.

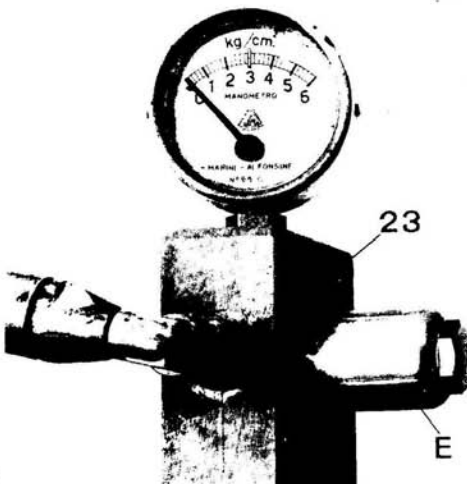
Checking this valve («E» in fig. 82/3)

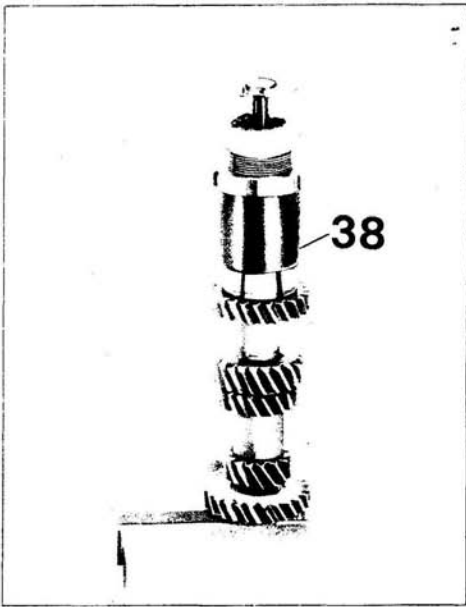
To check if this valve opens at the specified pressure, it is necessary to set it up on a special tool (part N. 17 94 97 60 23 in fig. 82/5) fitting a manometer and watching by blowing compressed air through it if the valve opens at the specified pressure. If for any reason the valve opens before normal pressure is reached, it is necessary to remove it and to fit one or more shim «G» on top of the spring. If the pressure is higher than specified, remove the valve and take one or more shims «F» from the spring top.

14.6 OIL PRESSURE SOLENOID

It is fitted in the crankcase and it is connected by cable to the warning light on the panel. Its purpose is to warn about insufficient oil pressure in the circuit.

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- 4th speed gear with roller cage and bushing;
- sliding sleeve for 3rd and 4th speed;
- fixed sleeve on the shaft;
- 3rd speed gear with roller cage and bushing;
- shim;
- 2nd speed gear with roller cage and bushing.

Main shaft («2», fig. 92)

Slip out the shaft from the gear box. All gears on this shaft are fixed except the high speed gear which is floating in its roller bearing; and the high speed sliding muff, also the throwout bearing and shim. The main shaft inner bearing race is removed using tool 14 92 85 00 (38, fig. 93).

Clutch shaft («3» in fig. 92)

Using tool 14 91 28 00 (36 in fig. 94) and hook wrench 14 91 26 00 (37, fig. 94) and after flattening the ears of the safety washer, remove the fixed clutch body retaining ring from the clutch side and then the fixed body itself.

When dismantling the fixed clutch body observe the position of the seal between body and bearing. Slide off the clutch shaft from the bearing and, if necessary, use a hide mallet to lightly tap it, making sure not to mislay the oil scoop between shaft and bearing and the washer in the shaft spline.

Removing the clutch shaft components

Use puller 14 92 85 00 (38 in fig. 95) to remove the inner race of the roller bearing and the spacing nut. Then set up the complete shaft in a vice and using puller 12 90 59 00 (29 in fig. 96) compress the spring to the point where the cush drive plate retainers can be taken out.

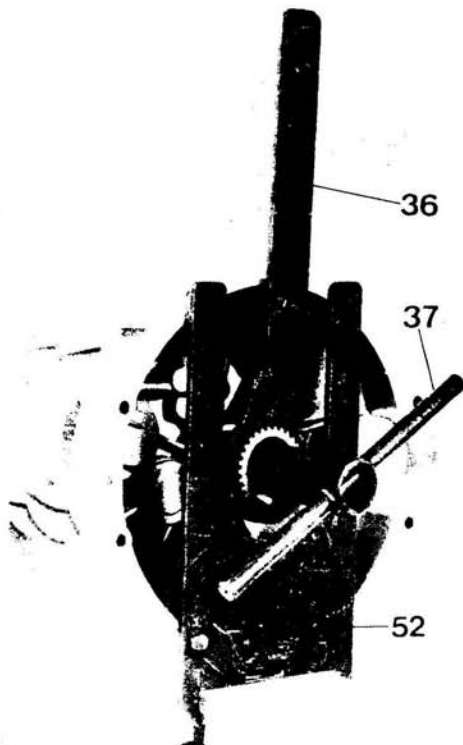
Then remove:

- cush plate;
- spring;
- sliding muff;
- Intermediate gear;

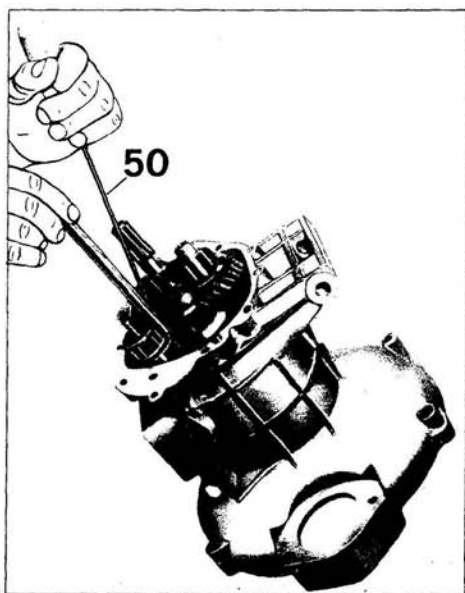
Removing the bearings from the gearbox

Proceed as follows:

- place the complete gearbox with bearings in an oven and heat up to 150-160° C (300-350° F);
- using puller 14 91 31 00 (39 in fig. 97) remove the main shaft bearing;
- take out the outer race from the layshaft bearing using tool 17 94 50 60 (40 in fig. 98);
- remove the clutch shaft seal;
- undo the safety plate retaining screws;
- remove safety plate;
- remove the clutch shaft bearing using tool 17 94 92 60 (41 in fig. 99).



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Shimming the layshaft

Fit adjusting washer at the 4th speed gear side and add shims until between these and the high speed gear there is a distance of 144.7-145.2 mm (5.692-5.715").

For this measurement remove "O" ring in between the 1st and 2nd gears (see fig. 97).

Fit roller bearing on shaft at the 4th speed gear side (fig. 90).

Tighten the nut on the shaft at the 4th speed gear side smearing its thread with Loctite and hammering on the nut tang with a chisel in correspondence with the shaft groove in order to form a stop for the nut. Fit now the complete layshaft in the gearbox

Gear selection forks and selector drum in gearbox

Before re-fitting the splined drum, it is necessary to measure the distance existing between the two side shoulders from box to cover. This measurement is taken with a depth gauge and should include the gasket thickness as well.

After fitting the striker fork spindle the 1 mm standard washer on the clutch housing side (See fig. 119) and the spindle retainers on the other side, measure the overall length of the complete drum assembly. On the spindle retainer add a shim of such a size as to obtain an overall length of the clutch assembly lower than 0.2 - 0.3 mm (.0078 - 0.0118") the previously measured backlash.

Introduce now the complete drum assembly in the box and fit:

- The low, 2nd, 3rd, and 4th speed selector forks on the layshaft sliding muff.

- The splined selector drum complete with rod in its housing in the gear box with a 1 mm spacer (.0039").

Looking through the orifice in the ratchet pawl, it should be ascertained that one of the 6 slots in the drum is in axis with the pawl hole.

- The fork fingers in the drum grooves. To position these in the grooves, use special tool part N. 14 92 93 00 (50 in fig. 115).

- The dowel in the gearbox drilling, also the spring, and screw on the plug provisionally.

- The fork retaining rod into the fork holes

- Assemble the neutral indicator unit in the gearbox, ensuring that the blade contacts the button in the drum and the bent side is facing the clutch shaft.

Refitting the clutch shaft

First of all assemble the following parts on the shaft:

- idle gear with engaging teeth facing the gearbox cover;

- coupling sleeve with its engaging dogs facing the idle gear;

- spring on muff;

- cushion spring plate;

- using special tool 12 90 59 00 (29 fig. 96) positioned on the spring pressure plate, compress the spring until the 2 retainers can be inserted in the slot machined in the clutch shaft;

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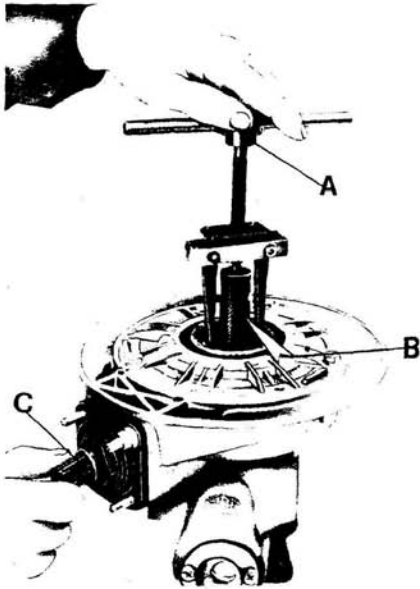
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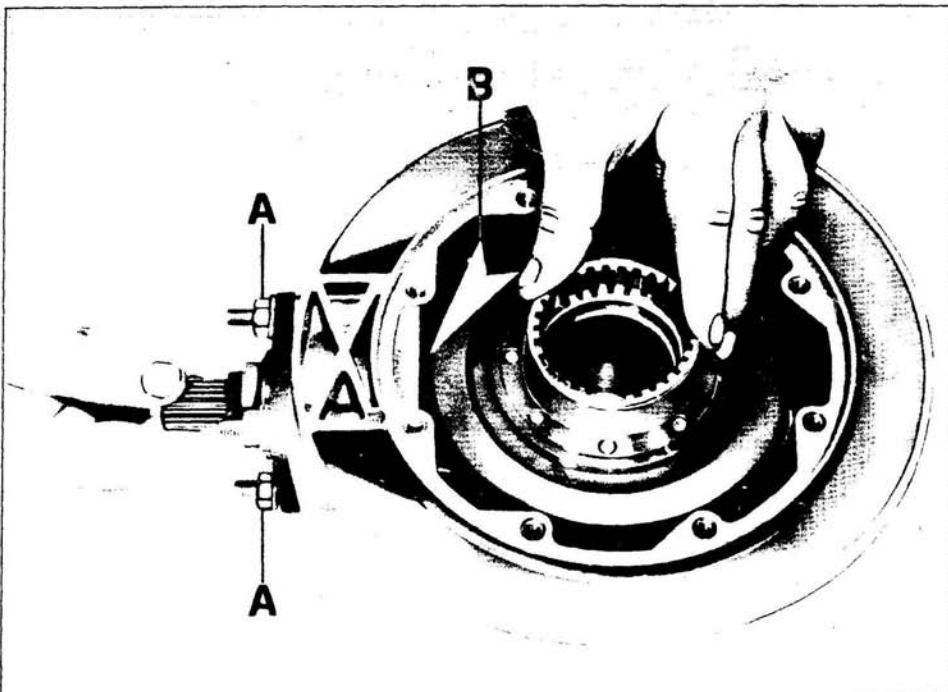
- Tighten the housing complete with pinion to the drive box using a couple of nuts «A», washers, and spacers and this only provisionally.
- Smear the crown teeth with lead oxide.
- Now provisionally set up this group (crown wheel-hollow spindle-cover gaskets and spacer) in the box, heading to the arrow and the wording «BASSO» (low side).
- Insert the legs of universal puller «A» (fig. 133) and secure them inside the drilled pin.
- In this fit a piece of light alloy «B» and screw the extractor on it.
- Now evenly rotate pinion «C», holding the crown in such way that the rotation leaves a contact trace on the painted section of the crown gear.
- Different size shims are available for this adjustment.

Checking the crown-pinion clearance

If the pinion crown contact is correct, the mark on the pinion teeth will be as shown in «1», pinion seen from driving side (fig. 134).

If the contact is as shown at «2» (fig. 134), this means the crown is too near the pinion. Move the crown wheel away from the pinion and increase the shim thickness.

If the contact is as shown at «3», the pinion is too near the rotational axis of the crown. Move away the pinion and reduce thickness of the bearing-pi-



Original rod-cover clearance

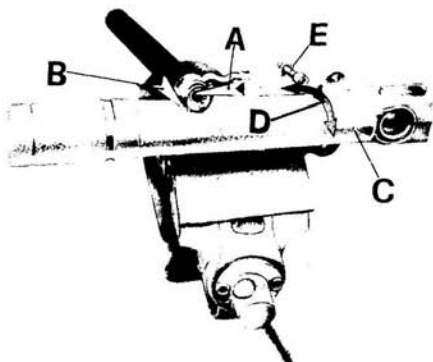
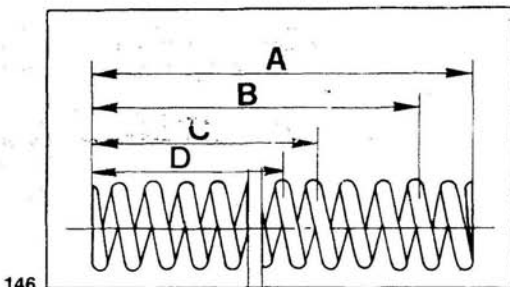
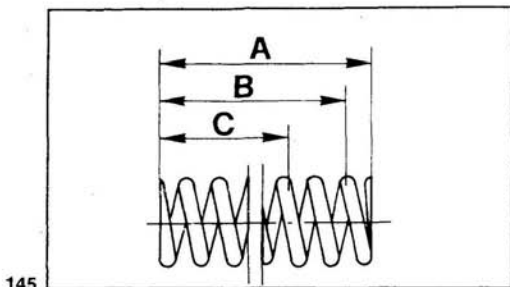
0.045-0.100 mm (.00177-.0039").

Make sure the short spring in the fork has following sizes and loadings (fig. 145):

- A Free length 95 ± 1.5 mm ($3.74 \pm .0059$ ").
- B When compressed to 91.5 mm (3.60") should give a load of $9.3 \text{ kg} \pm 3\%$ (20 lbs).
- C When compressed to 60.9 mm (2.39") should give a load of $90.7 \pm 3\%$ (199 lbs).

Fork long spring (fig. 146)

- A Free length 336 ± 1.5 ($13.22 \pm .0059$ ").
- B When compressed to 328 mm (12.91") should give a load of $9.3 \text{ kg} \pm 3\%$ (20 lbs $\pm 3\%$).



C When compressed to 257 mm (10.11") should give a load of $90.7 \text{ kg} \pm 3\%$ (199 lbs).

D When compressed to 219 mm (8.62") should give a load of $134 \text{ kg} \pm 3\%$ (293 lbs).

- After an accident make sure the fork is not bent. See sizes in drawing fig. 143.
- Ensure the dust guard on the fork covers are not cracked
- Check if the circlip is still efficient.
- Ensure the seals on the bottom covers are not crumbled or excessively hardened.
- Check if the plastic ring on the damper rod is crushed or crumbled.
- Check if both dampers are equally loaded. If not, replace them.
- Check if the threaded portion of the fork tube and bottom yoke is stripped. If so, replace.
- Ensure the steering bearings are still in good state. If not, replace.

Re-assembling the dampers with rods and springs the fork covers (fig. 147)

- Ensure that the two slots on the inner pawls are a proper fit (on bush "A") and that the outer pawl "B" of this bushing is a proper fit into the inner slot of leg cover "C".

To ensure if they are properly inserted (after fitting the damper assembly on the cover "C"), it is necessary to gently turn the leg cover to the right or left (see arrow "D") until the pawls are heard to click home. At this stage, screw in aluminium screw and washer "E" on the bottom end of the cover to secure the damper rod-spring-nut assembly on the cover itself.

Re-assembling the fork and refitting it on the steering column

Reverse the dismantling sequence bearing in mind to finally fill up the legs with oil.

Quantity required for each leg 0.080 lts (2 oz) for V 1000 G5 and 0.090 (3 oz) for 1000 SP of AGIP F 1 fluid ATF Dexron or equivalent.

Variables for 1000 SP

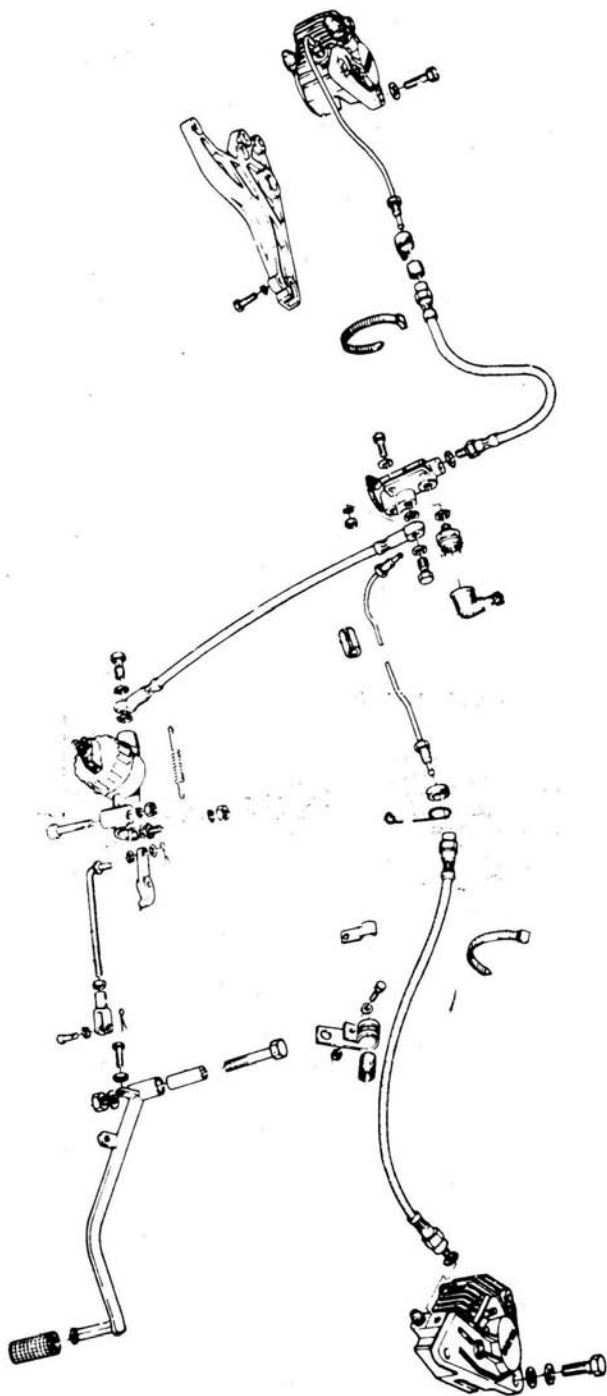
Controls:

- Ensure the long spring (fig. 146) has the following features:

- A Free length 336 ± 1.5 (13.22 ").
 - B When compressed to 327.5 mm (12.893") should give a load of $8 \text{ kg} \pm 3\%$ (16.3 lbs).
 - C When compressed to 239 mm (9.40") should give a load of $90.7 \text{ kg} \pm 3\%$ (199.993 lbs).
 - D When compressed to 219 mm (8.62") should give a load of $109.5 \pm 3\%$ kg. (231 lbs).
- Check fork sizes against drawing fig. 144. Ensure the voltmeter and clock are in good conditions.

Assembly

Reverse the dismantling operations.



CAUSE	REMEDY
<p>High pad wear</p> <p>Pad locked in housing, braking disc constantly touching Pistons jammed Disc deeply scored</p>	<p>Clean pad housing in caliper, check if properly housed in guides Restore sliding condition Grind or replace disc</p>
<p>Irregular or slantway pad wear</p> <p>Dirty pad housing Poor sliding of pistons Defective pad spring Caliper mounted slantways</p>	<p>Clean pad housings Restore proper sliding condition Replace spring Check and mount properly</p>
<p>Control lever or pedal too long</p> <p>Brake disc floating more than 0.2 mm (.0078") Air bubbles in braking circuit Brake disc deeply scored</p>	<p>Grind or replace disc Bleed the air Grind or replace disc</p>
<p>Non-return of master cylinder floater</p> <p>Staple securing screws too tight Lever securing bolt too tight (non original bolt) Lever-housing incorrectly coupled in master cylinder Scraper ring deformed by etching liquid Dirty brake fluid</p> <p>Defective floater return spring</p>	<p>Partially slacken screws Partially slacken bolt Replace lever</p> <p>Replace scraper ring Strip, check and clean master cylinder components (no seizing or scoring marks admitted), replace fluid Replace spring</p>
<p>Fluid leakages from reservoir</p> <p>Gaiter not properly positioned</p> <p>Damaged gaiter Damage fluid reservoir rim</p>	<p>Fit gaiter properly in its housing and gently close cap Replace gaiter Repair or replace reservoir</p>

23.19 RECOMMENDATIONS

All rubber parts of the braking circuits (for master cylinder: gaskets, scraper ring and gaiter; for caliper halves: gasket and dust guard cap) are made of a special compound resisting to brake fluid. These parts, however, cannot stand the etching action of mineral oils, solvents and/or diesel oil which are sometimes used to wash down the machine.

Accordingly, it is strongly recommended to avoid contact of these liquids with the rubber parts in the circuit. For instance, it may occur that the master cylinder scraper, with contact with gasoline or diesel oil, will melt and glues to the floater, affecting its sliding action.

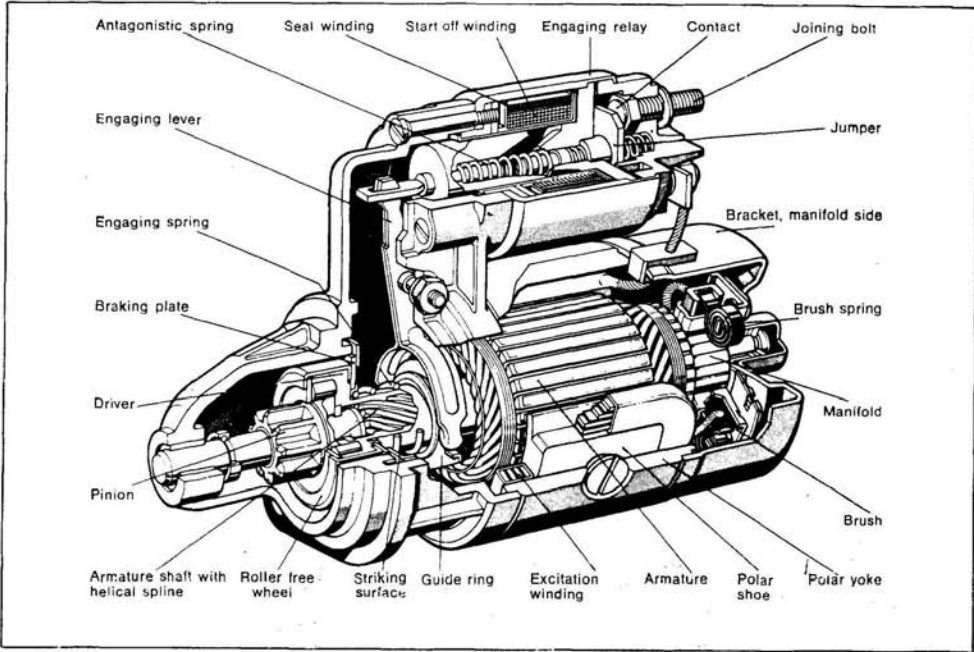
The caliper gaskets are subject to sticking to the piston

It is sometimes possible that during storage of the calipers before assembly or when the machine itself is left unused for long periods of time, in a relative short period (for instance 2-4 months according to the influence of negative factors such as machining tolerances, tolerances in the compound, ambient conditions etc.) this phenomenon may occur, non may occur.

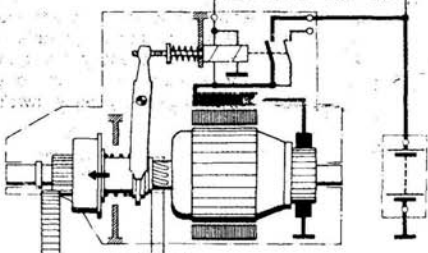
Should this happen, operate as follows:

- a Actuate the control lever or pedal several times until the correct pad-disc clearance is restored.
- b If this leads to no results:

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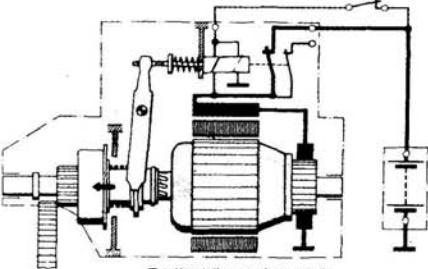
Seal and start off winding alive: pinion engages immediately. Condition just preceding the input of the main current.



Driver actuated by lever (translation).
Tooth finds a space

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Engaging lever at end of travel. Engaging spring in compressed position. Start off winding without current. Current from mains arrives, the armature turns. The pinion is looking for a space between the teeth and engages completely, the engine is rotated.



Tooth strike against tooth.

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the pressure resulting from the screwing in action, engages into the space of the next teeth.

At the end of this translation movement, that is just before the complete cycle, the contacts of the engaging relay close and the starting current is inserted. The rotor is now revolving and because of the helical groove pushes the pinion (which cannot now turn) deeper into the crown wheel right against the armature spindle.

When the pinion is fully home it cannot move forward any further and is so forcibly coupled with the rotor shaft through the free wheel and the entrainer. The starter motor can now spin the engine (fig. 188/8).

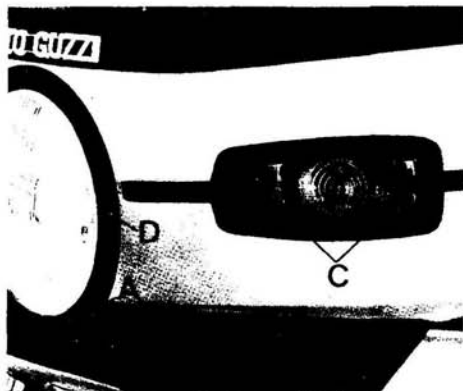
Disengagement

When starting, the engine rotates faster than the starter motor, the forced pinion-armature shaft coupling is accordingly taken off the free wheel thus protecting the armature from an inadmissible number of revolutions. The pinion will stay engaged until the engaging lever stays in its engaged position.

Only when the starter button is disconnected, the coupling lever, entrainer, and the pinion return to their idle position till the next starting operation, and this irrespective of the vibrations caused by the running engine.

Free roller wheel

For safety's sake, translation type starter motors are equipped with a free wheel (188/9) to engage the pinion with the driving device (entrainer) so that when the armature shaft rotates the pinion is driven



b Front turn signals (fig. 202)

Loosen screws «C» securing the reflectors to the housing. Push in the bulb and twist it at the same time to remove it from the holder.

c Tail light (fig. 202)

Loosen screws «A» securing the reflector to the tail light housing, press the bulb inwards and twist it at the same time to remove it.

d Rear turn signals (fig. 202)

Undo screws «B» securing the reflector to the housing, push the bulb inwards turning it at the same time to take it out.

Caution - When re-fitting the reflectors, do not screw in too tightly to avoid breakages.

e Tachometer/speedometer, rev-counter, voltmeter, clock, panel

Take out bulb holders, and remove the bulbs.

f Bulbs

Headlight:

- high and low beam 45/40 W;
- town driving or parking light 4 W.

Tail lamp:

- Parking and stop light 5/21 W.
- Turn signals: 21 W.
- Panel indicators: 1.2 W.
- Tachometer and rev-counter: 3 W.
- Voltmeter: 3 W.
- Clock: 3 W.

g Electric horns

The horns circuit includes:

- high pitched tone horn;
- low pitched tone horn;
- ground on frame.

Horn features

Combined horn, Belli make.

High pitched horn (90/12/2), absorption 3 A.

Low pitched horn (90/12/4), absorption 4 A.

Total combined absorption: 7 A.

Overhaul and repair instructions

If one of the horns loses its tone or fails altogether, check if this is not due to some fault in the electric system.

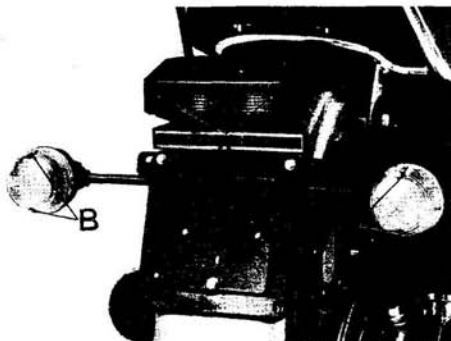
If the horn does not work, ensure the pushbutton is not faulty or any wire is disconnected in the terminal block.

If the horns give an irregular sound, check if the securing bolt is well tight.

If the horn sounds uninterruptedly, inspect the grounded contact between button and horns.

Should these inspections fail to determine the trouble, the fault lies obviously in the horns themselves and they should be repaired or replaced by a specialized workshop.

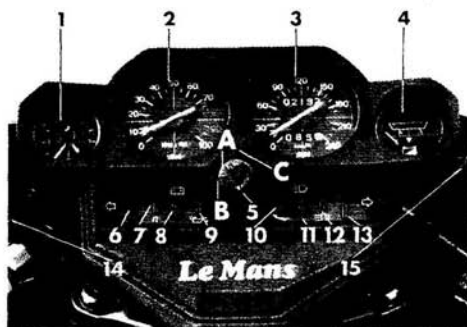
201



202

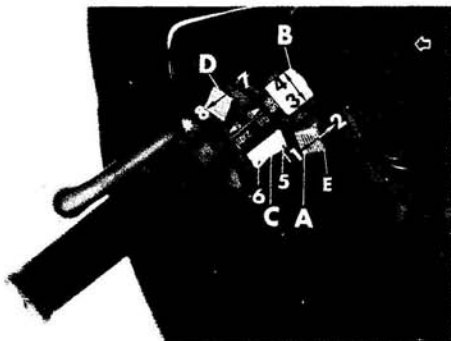
27.1 PANEL BOARD (fig. 207)

207



- 1 Clock.
- 2 Rev-counter.
- 3 Speedometer.
- 4 Voltmeter.
- 5 Ignition key:
 - «OFF» In line with mark «C» on the panel: machine at standstill. Key removable.
 - «A» In line with mark «C» on the panel (turned clockwise): machine ready to be started. All contacts «on». Key not removable.
 - «B» In line with mark «C» on the panel (turned clockwise). With switch «A» (fig. 5) in position «O» parking light is «on». Key removable.
- 6 Warning light (green), L/H turn signal.
- 7 Warning light (orange or green), gearbox in neutral position when lit.
- 8 Warning light (red) indicating insufficient current from generator. Should go out when the engine has reached a certain number of revs.
- 9 Warning light (red). Oil pressure indicator. Goes out when pressure is sufficient for normal engine lubrication. If not, the pressure is incorrect and the engine has to be stopped immediately and oil level topped up. The lubrication system should also be checked over.
- 10 Warning light (red) indicating low level of oil in the reservoir-master cylinder for the front left and rear brakes. When this light comes on, top up the reservoir ensuring there are no leakages in the hydraulic circuit.
- 11 Warning light (blue) indicating high beam on.
- 12 Warning light (green) indicating parking lights on.
- 13 Warning light (green) right turn signal.
- 14 Switch for emergency flashers.
- 15 Zero reset for speedometer.

208



27.2 LIGHT SWITCHES (fig. 208)

Are fitted on the L/H side handlebar.

Switch «A»:

- «E» parking light;
- «1» dual filament bulb lighting;
- «2» lights off.

36.1 WITH UNPRINTED PANEL CIRCUIT
(fig. 222)

- 1 Tachometer speedometer (3 W bulb)
- 2 Rev-counter (3 W bulb)
- 3 High beam warning light (1.2 W bulb)
- 4 Oil pressure warning light (1.2 W bulb)
- 5 Neutral warning light (1.2 W bulb)
- 6 Parking light, warning light (1.2 W bulb)
- 7 Generator charge, warning light (1.2 W bulb)
- 8 Low beam (40 W) } (40/45 W bulb)
- 9 High beam (45 W) }
- 10 Front turn indicator, right (21 W bulb)
- 11 Front turn indicator, left (21 W bulb)
- 12 Engine starting and stopping button
- 13 Flashing light, turning lights, horn switch
- 15 Horn (consumption 3.5 A)
- 16 Front brake cutout switch
- 17 Flashing light relay
- 18 Rear brake switch
- 19 Battery
- 20 Regulator
- 21 Rectifier
- 22 Alternator
- 23 Starter motor relay
- 24 Starter motor
- 25 Turn signal, rear, left (21 W bulb)
- 26 Stop light (21 W + 21 W)
- 27 Number plate and parking light (5 + 5 W bulb)
- 28 Turn indicator, right, rear (21 W bulb)
- 29 Flasher unit, turn signals
- 30 Oil pressure switch
- 31 Neutral indicator switch
- 32 Terminal block with fuses (16 A)
- 33 Contact breaker
- 34 Coils
- 35 Ignition switch (3 positions)
- 36 Spark plugs
- 37 Parking lights, front (4 W bulb)
- 38 Warning light, brake fluid level (1.2 W)
- 39 Brake fluid level indicator
- 40 Flashing light bracket
- 41 Voltmeter (3 W bulb)
- 42 Clock (3 W bulb)
- 43 Warning light, left turn indicator (1.2 W bulb)
- 44 Warning light, right turn indicator (1.2 W bulb)
- 45 4-way connector
- 46 3-way connector
- 47 Switch for simultaneous turning on of all flashers



850-T3

ADDITIONS AND CHANGES FOR 850-T 3 MODEL

MAINTENANCE, INSPECTION AND ADJUSTMENT OF DOUBLE CONTACT BREAKER

Contacts gap for 850-T3 model must be within mm $0,37 \div 0,43$.

For descriptions and adjustments see Chapter «Maintenance Inspection and Adjustment of Double Contact Breaker».

CHECKING AND ADJUSTING IGNITION TIMING (FIXED ADVANCE)

See chapter «Checking and adjusting ignition timing» considering the following changes:

TIMING OF THE R/H CYLINDER

In this position, fixed advance mark 2 is 2° from P.M.S. (TDC) «D» and so at the commencement of the point separation (see A in fig. 164).

TIMING OF THE L/H CYLINDER

In this position fixed advance mark 3 is 2° from P.M.S. (TDC) «S» and so at the commencement of the point separation (see B in fig. 164).

CHECKING THE IGNITION TIMING (FIXED ADVANCE) WITH THE ENGINE ASSEMBLED ON THE MOTORCYCLE (See fig. 165)

Only the mark «A.F.» (fixed advance) changes, namely 2° instead of 13° .

CHECKING THE IGNITION ADVANCE (FIXED AND AUTOMATIC) BY MEANS OF A STROBOSCOPE LAMP (See fig. 64 and diagram fig. 188)

Ignition data

- fixed advance: 2°
- automatic advance: 31°
- full advance (fixed and automatic): 33°

CHECKING THE FULL ADVANCE (FIXED AND AUTOMATIC)

Changes:

- A. F. (fixed advance) 2° at 1000 r.p.m. ± 200 r.p.m.
- A. T. (full advance) 33° at 6000 r.p.m. ± 200 r.p.m.

SPARK PLUGS

The 850-T3 model fits spark plugs: Marelli CW 7 L; Bosch W 225 T 2; AC - 44 x L. For other description see chapter «Spark Plugs».

ALTERNATOR

Main Features:

- Brand: Bosch (G1 - 14V - 20A - 21")
- Drive: directly from crankshaft
- Max. output: 280 W - 14 V
- Max. amperage: 20
- Charge starting: 1000 rpm
- Peak charge: 10000 rpm
- Rotation: clockwise
(as seen from collector side)

ELECTRICAL EQUIPMENT

Starter motor

- Brand: BOSCH DF - 12 V - 06 PS
- Voltage: 12 V
- Output: 0,6 HP
- Current Intensity Ah.: 35
- Pinion: Z = 8 - mod. 2.5
- Pinion rotation: counterclockwise

ELECTRICAL TESTS

RUNNING	VOLTAGE	CURRENT	SPEED	TORQUE
Unloaded	11.5 V	$20 \div 40$ A	$6500 \div 8500$ rpm	—
Loaded	9 V	170 A	$3200 \div 3500$ rpm	kgm 0.15
Short circuit	8 V	$280 \div 360$ A	—	kgm 0.75

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