

*California*  
**III**



**MOTO GUZZI**

**OWNER'S MANUAL**

**The illustrations and description in this booklet are indicative only and the manufacturer reserves itself the right to introduce any modification it may deem necessary for better performance or for constructive or commercial reasons without prior notice.**

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**Ignition**

*Dear rider*

*First of all we wish to thank you for choosing this motorcycle of our production. By following the instructions outlined in this manual you will ensure your bike a long and troublefree life.*

*Before riding, please read thoroughly this manual in order to know your motorcycle's features and how to operate it safely.*

*All major checking and overhaul jobs are best carried out by our dealers who have the necessary facilities to quickly and competently repair your Moto Guzzi.*

*Repairs or adjustments by any other than a Guzzi dealer during the warranty period could invalidate the warranty right.*



# CONTENTS

- 4** Specifications
- 10** Frame and engine numbers
- 11** Instruments and controls
- 19** Cleaning and storing
- 20** Riding your motorcycle
- 22** Running-in
- 23** Cleaning the windscreen
- 24** Maintenance and adjustments
- 29** Removing the wheels
- 32** Service schedule
- 34** Lubrication
- 38** Fuel system
- 42** Ignition system
- 45** Electrical equipment

## 4 SPECIFICATIONS

### Engine

4-stroke, twin cylinder  
Cylinder configuration: 90° V-twin  
Bore: 88 mm  
Stroke: 78 mm  
Capacity: 948.9 cc  
Compression ratio: 9.2:1  
Max. torque: 7.7 kgm at 5200 rpm

### Valve gear

O.H.V. push rod operated rocker arms

### Carburettors

2 Dell'Orto carburettors PHF 30 DD (right) and PHF 30 DS (left)

### Lubrication

Pressure fed by gear pump  
Wire mesh and cartridge filters on oil sump  
Normal lubrication pressure 3.8-4.2 kg/cm<sup>2</sup> (pressure valve on oil sump)  
Low oil pressure sensor (electrical) on oil sump

### Generator / Alternator

On front of crankshaft (14V-20A)

**Ignition**

Battery-coil ignition, double contact breaker with automatic advance.

**Ignition timing**

- Ignition advance (fixed)  $2^{\circ} \pm 1^{\circ}$
- Full advance (static and automatic)  $33^{\circ} \pm 1^{\circ}$

Contact breaker points gap: 0.37-0.43 mm

Spark plugs: Marelli CW 7 LP; Bosch W 7 D; Bosch W 7 DC; Champion N 9 Y; Lodge L 6 Y.

Spark plug gap: 0.6 mm

2 ignition coils mounted on frame.

**Starter**

Electric starter motor (12 V - 0.7KW) with electromagnetic ratchet control. Pinion fixed to flywheel. START push-button on right handlebar.

**Transmission****Clutch**

Dry, twin driven plates. Located on engine flywheel. Clutch lever on left handlebar.

**Primary drive**

By gears, 1:1.235 ( $Z = 17/21$ )

**Gearbox**

5-speed, front engaging, constant mesh. Incorporated Cush drive.

Control pedal on left side of machine.

Gear ratios

1st 1 : 2 (Z = 14/28)

2nd 1 : 1.388 (Z = 18/25)

3rd 1 : 1.047 (Z = 21/22)

4th 1 : 0.869 (Z = 23/20)

5th 1 : 0.750 (Z = 28/21)

### Final drive

Cardan shaft with gears

Ratio: 1 : 5.333 (Z = 6/32)

Overall ratios  
(engine-wheel)

1st 1 : 13.1764

2nd 1 : 9.1503

3rd 1 : 6.9019

4th 1 : 5.7289

5th 1 : 4.9411

### On request

Ratio: 1 : 4,714 (Z = 7/33)

Overall gear ratios  
(engine-wheel)

1st gear = 1 : 11,643

2nd gear = 1 : 8,080

3rd gear = 1 : 6,095

4th gear = 1 : 5,059

5th gear = 1 : 4,366

### Frame

Modular duplex tubular cradle

### Suspension

Front: «MOTO-GUZZI patented» hydraulically damped telescopic forks.

Rear: swinging arm with adjustable helical springs around adjustable hydraulic damper.



**Wheels**

Light alloy castings

Rim sizes:

- Front: 18 MT 2.50 H2
- Rear: 18 MT 3.00 H2

**Tyres**

Front: 110/90 V18

Rear: 120/90 V18

Type: TUBELESS or TUBE-TYPE

**Brakes**

Front: floating disc with fixed caliper, twin brake cylinder. Brake lever on right handlebar. Independent hydraulic circuit for rear brake.

- $\varnothing$  disc 300 mm;
- $\varnothing$  brake cylinder 38 mm;
- $\varnothing$  master cylinder 13 mm.

Rear: floating disc with fixed caliper, twin brake cylinder. Brake pedal on centre-right of motorbike;

- $\varnothing$  disc 270 mm;
- $\varnothing$  brake cylinder 38 mm;
- $\varnothing$  master cylinder 15.875 mm.

The rear brake is connected by a hydraulic circuit to the left front brake; the left front brake has the same dimensions as the right front brake controlled by the brake lever.

**Dimensions and weight**

Wheelbase	1.550 m
Overall length	2.330 m
Overall width	0.970 m
Height (with screen)	1.445 m
Weight (dry)	272 kg

**Performance**

Max. speed with one rider: approx. 190 kph  
Fuel consumption: 6.5 lt/100 km

**N.B. - This motorcycle is fitted with a large wind-screen thus ensuring a comfortable ride; large panniers are also fitted.**

**These items do however affect the aerodynamic features of the bike; it is advisable therefore not to exceed 140 kph especially when the bike is fully loaded.**

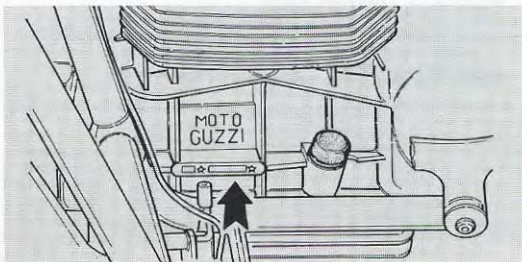
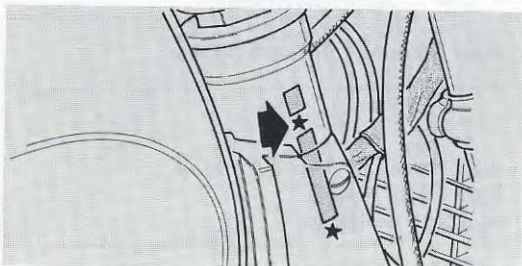
## Recommended fuel and lubricants.

<b>Part</b>	<b>Litres</b>	<b>Recommended product</b>
Fuel tank (reserve approx 6 lt.)	approx. 25	Super petrol (97 NO-RM/min.)
Oil sump	3	Agip nuovo Sint 2000 SAE 10W/40 oil
Gearbox	0.750	Agip Rotra MP SAE 80W/90 oil
Rear drive (bevel set lub.)	0.250 of which 0.230 0.020	Agip Rotra MP SAE 80W/90 oil Agip Rocol ASO/R or type A Molykote
Front forks (per leg)	0.150	Agip ATF Dexron fluid
Front and rear brake circuits		Agip Brake Fluid - SUPER HD

## 10 FRAME AND ENGINE NUMBERS

(fig. 2)

The frame number is stamped on the downtube; this number is entered in the motorcycle's log-book and is thus used to identify the vehicle for legal purposes. The engine number is stamped on the crankcase.



## Spare Parts

**Always use approved «Moto Guzzi Original Spares» only** when replacing or repairing parts. **Use of spares which are not approved will invalidate warranty rights.**

# INSTRUMENTS AND CONTROLS

## Instrument panel (fig. 3)

**1** Key switch with following positions:

«OFF» in line with «C», vehicle stopped, keys can be removed.

«A» in line with «C» (key turned clockwise); vehicle can be started. All circuits on; key cannot be removed;

«B» in line with «C» (key turned clockwise); vehicle stopped. With the switch «A» (fig. 5) in position 1 the parking lights are on and the key can be removed.

**2** Speedometer and mileometer.

**3** Mileometer zero reset.

**4** Electronic rev. counter.

**5** Green «Neut» warning light, lights up when vehicle is in neutral.

**6** Green warning light, left direction indicators.

**7** Green warning light, sidelights.

**8** Red warning light, oil pressure. Goes out when oil pressure is sufficient to lubricate engine. If this light does not go out, oil pressure is too low; stop the vehicle immediately and trace the cause of the fault.

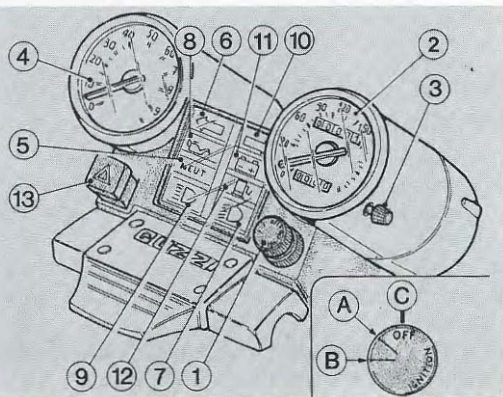
**9** Blue warning light, headlight, main beam.

**10** Green warning light, right direction indicators.

**11** Red warning light, generator. This should go out once the engine starts.

**12** Orange warning light, fuel on reserve.

**13** Switch, hazard warning lights.



3

## 12 Light switches (fig.s 4 & 5)

These switches are on the handlebar sides.

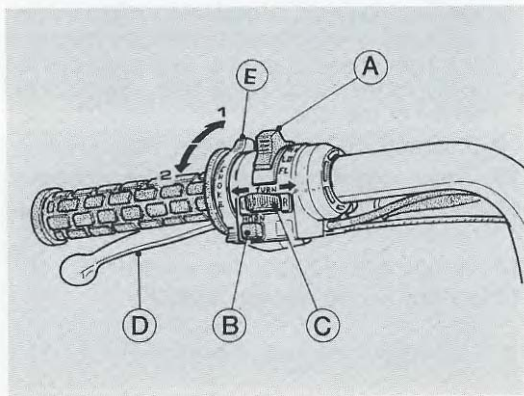
### Switch «A» (fig. 5)

- Position «O» lights off.
- Position «1» parking lights on.
- Position «2» twin-filament headlamp on.

### Switch «A» (fig. 4)

With switch A (fig. 5) in position «2»

- Position «LO» dipped beam.
- Position «Hl» main beam.
- Position «FL» headlight flasher.



## Horn Button and Headlamp Flasher

(fig. 4)

These are mounted on the left handlebar:

**Push-button «B»** (Horn) sounds the electric horn when pressed.

### Switch «C»

- Position «R»: right direction indicators
- Position «L»: left direction indicators.

## Starter Button and Engine Stop Switch (fig. 5)

These are mounted on the right handlebar.

With the key («1» in fig. 3) (position «A» in line with «C»), the vehicle is ready for starting. To start the engine:

- check that switch «B» is in position «1» (run);
- pull the clutch lever in to disengage the clutch fully;
- if the engine is cold, put the «CHOKE» control «E» in the starting position «1» (see fig. 4);
- press the starter button «C» (start).

To stop the engine in case of emergency:

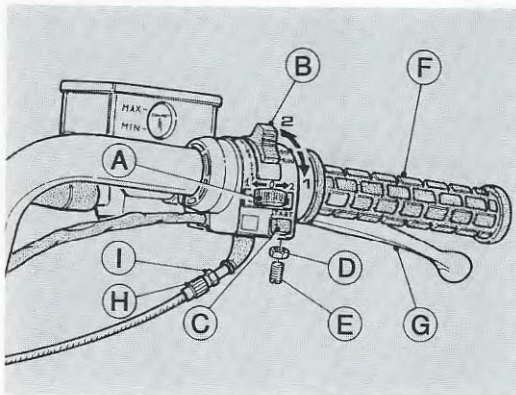
- turn the switch «B» to position «2» (off).

Once the engine has stopped, turn the key switch (fig. 3) anti-clockwise until «OFF» is in line with «C»; remove the key from the switch.

### Throttle twist grip («F» in fig. 5)

The throttle control is on the right handlebar; turning the twist-grip towards the rider opens the throttle, turning it away from the rider closes it.

The hardness of the twist grip return can be adjusted by means of the lock nut «D» and the grub screw «E».



5

### Clutch lever («D» in fig. 4)

13

This is on the left handlebar and is only to be used when starting or changing gear.

### Brake lever, r/h front brake («G» in fig. 5)

This is on the right handlebar and controls the master cylinder of the right front brake.

### «CHOKE» control («E» in fig. 4)

The «CHOKE» is on the left handlebar and is used for cold starts.

- Position «1» CHOKE on; starting position.
- Position «2» CHOKE off; engine running.

### Brake pedal for left front brake and rear brake («F» in fig. 16)

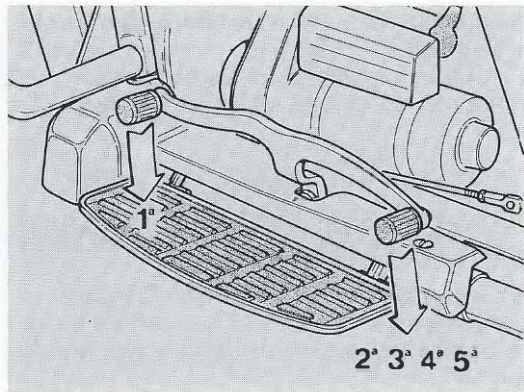
This is centrally located on the right side of the vehicle and is linked to the master cylinder by a tierod; this pedal operates the front left and rear brakes together.

## 14 Gear change pedal (fig. 6)

This is a double rocker arm type, situated on the left of the motorcycle.

- 1st gear: push front pedal down;
- 2nd, 3rd, 4th, 5th gears: push rear pedal down
- neutral: between 1st and 2nd gears.

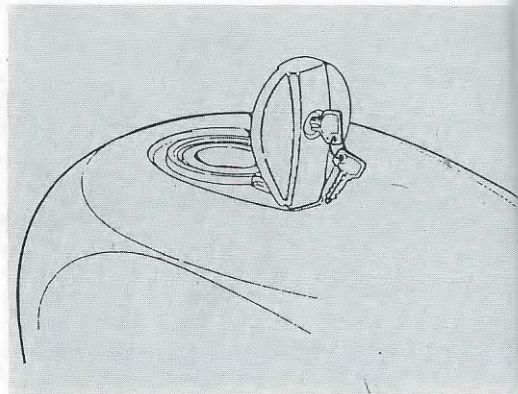
Before changing gear disengage the clutch fully.



## Fuel filler cap (fig. 7)

To open, turn the key anti-clockwise.

**N.B. - Fuel spillage caused during refuelling should be cleaned immediately to prevent damage to the fuel tank paintwork.**





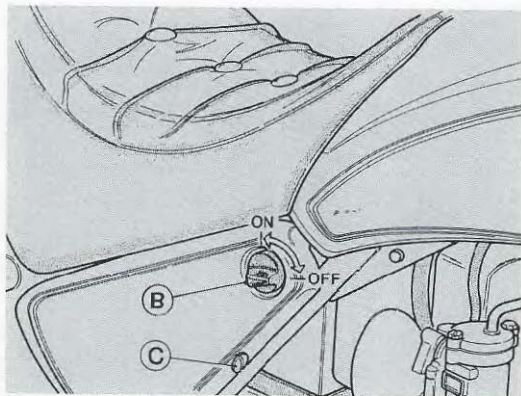
## Fuel tap (fig. 8)

This is situated under the rear part of the fuel tank and is controlled by a knob «B» on the right battery cover; tap and knob are linked by a flexible drive. The knob has two positions:

- «ON» fuel tap open
- «OFF» fuel tap closed.

A «reserve» position is not indicated on the knob but a warning light on the instrument panel lights up to indicate that the fuel tank is on reserve.

**N.B. - Do not leave the fuel tap on when the engine is stopped as this could cause petrol to flow into the engine.**



## Fuse box (fig. 9)

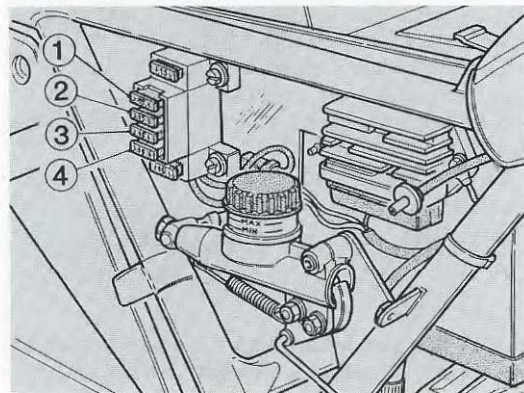
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This is located on the right side. To gain access to the fuse box remove the seat, undo the screws «C» (fig. 8) and remove the right side panel.

The fusebox has 6, 16 Amp fuses, two of these are spares.

Before changing a burnt fuse, trace and repair the cause of the trouble.

**Fuse «1»:** horn - starter relay;



- 16 **Fuse «2»:** warning lights (generator, oil pressure, neutral, main beam, dipped beam, headlamp flasher, stop light).  
**Fuse «3»:** side lights, direction indicators;  
**Fuse «4»:** hazard warning lights.

## Panniers (fig. 10)

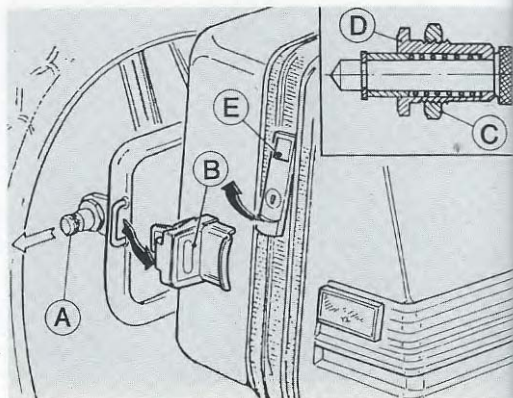
To remove the panniers from their supports, unlock and undo the retaining lever «B» and then pull the safety catch «A»; the pannier can now be removed.

To open the side covers, unlock «E» and pull the lower part of the lock.

To avoid damaging the fittings with lock «B» it is advisable to divide the load between fixing «A» and «B» by loosening the nut «C» and then adjusting the eccentric pin «D».

*This operation is best carried out by a Moto-Guzzi dealer.*

**N.B. - The maximum load for each bag is 10 kg.; loads should be equally distributed between the two bags.**



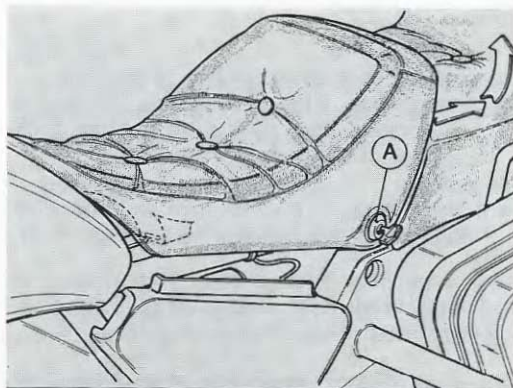
## Seat lock (fig. 11)

The rider's seat has a lock «A» to the rear on the left side of the bike.

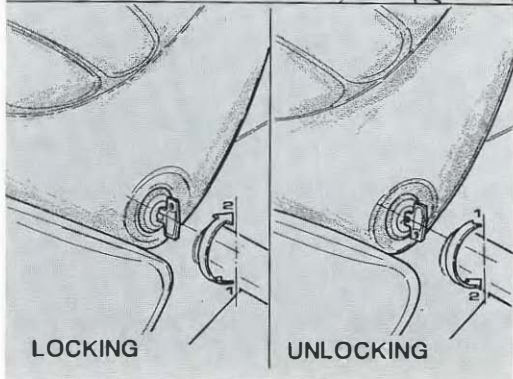
To unlock, insert the key and turn anti-clockwise; lift the rider's seat and remove.

To lock, lower the seat press down and turn the key half a turn clockwise.

The passenger's seat is fixed in place.



17



11

LOCKING

UNLOCKING

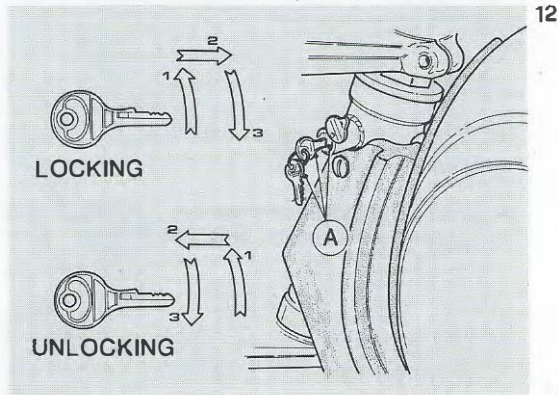
## 18 Steering lock («A» in fig. 12)

### To lock:

- Turn the handlebars full lock to the right.
- Insert the key in the steering lock; turn the key anti-clockwise then push down and turn clockwise; release and remove the key.

### To unlock:

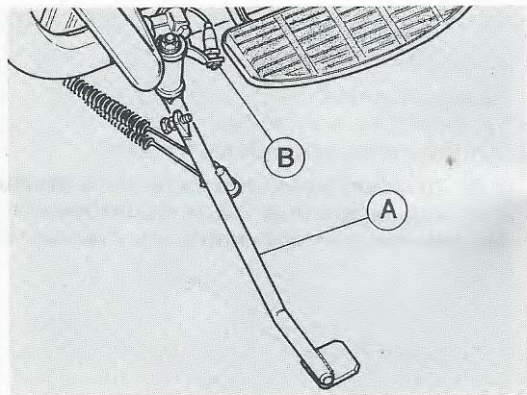
- Insert the key in the lock, turn anti-clockwise, release and then remove the key.



## Side stand («A» in fig. 13)

The motorcycle is fitted with a side stand for parking.

When the side stand is in use (i.e. in the out position) it activates a microswitch «B» controlling a relay which disables the ignition coil; it is therefore not possible to start the vehicle with the side stand in use.



## Cleaning

### Preparations for washing

Before washing the vehicle the following parts should be covered with an impermeable material: the rear part of the silencers; the clutch and brake levers and pedals, the throttle twist-grip and the ignition key switch.

### Washing

Avoid spraying water too much pressure on the instruments and the front and rear hubs.

### Drying

Remove the protective coverings.

Thoroughly dry the vehicle.

Test the brakes before using the vehicle.

**N.B. - To clean the painted parts of the engine unit (engine, gearbox, transmission box etc.) the following products may be used: diesel oil, petrol or water-based neutral detergents for car cleaning.**

**These products should be washed off immediately with water; do not use water at high temperatures or pressures.**

## Storage

If the vehicle is to remain idle for a considerable period of time (e.g. for the winter period) it should be stored in the following way:

- clean the vehicle thoroughly;
- empty the fuel tank and the carburettors;
- remove the spark plugs and put a few drops of SAE 30 oil into the cylinder. Turn the crankshaft for a few revolutions and then replace the spark plugs;
- reduce the tyre pressures by 20%;
- position the vehicle so that its wheels are not touching the ground;
- smear a layer of oil on unpainted parts to prevent rust;
- remove the battery and store in a dry place away from the direct sunlight and where there is not danger of frost; check the battery charge once a month;
- cover the vehicle but in such a way that the air can circulate.

## Preliminary checks

### Check:

- that there is sufficient fuel in the tank;
- that the engine oil level is correct;
- the ignition key is in position «A» (see fig. 3);
- that the following warning lights are on:
  - **red warning lights:** oil pressure and generator;
  - **green warning light:** «NEUTRAL» indicator;
- that the «CHOKE» control is in the starting position (if the **engine is cold**) («1», fig. 4).

## Cold Start

Once the preliminary checks are complete the vehicle can be started. Turn the throttle twist-grip until it is 1/4 open, disengage the clutch fully, check that the switch «B» (fig. 5) is in the run position; press the starter button «C» (fig. 5).

When the engine has started, *allow the engine to idle at low revs for a few minutes (in cold weather) or for a few seconds (in warm weather)* before switching the «CHOKE» control to the run (off) position («2» in fig. 4).

**If the «CHOKE» is left in the start position («1», fig. 4) when the vehicle is being used, carburation will be faulty, fuel consumption will be greatly increased and there will be a risk of seizing the engine caused by the washing of the cylinders by the excess fuel.**

### Caution!

If the green «Neutral» warning light does not come on when the ignition switch is on (see «A» in fig. 3) this means that a gear is engaged; starting the vehicle in this condition could be dangerous.

Before starting, always check that the engine is in neutral.

## Warm start

Follow the same procedure as that for the cold start but without the «CHOKE» control in the start position («1», fig. 4) otherwise the mixture will be too rich.

## On the road

To change gear, shut the throttle, disengage the clutch fully and engage the next gear; then engage the clutch gradually while opening the throttle.

The gear change pedal should be operated firmly and surely.

When changing down use the brakes gradually and close the throttle gradually **to avoid over-revving the engine.**

## Stopping

Close the throttle and use the brakes; just as the vehicle is about to stop disengage the clutch. These three operations should be carefully coordinated to maintain full control of the vehicle.

When slowing down in normal conditions, use the gearbox to provide engine braking to slow the vehicle; take care not to over-rev the engine. Use the brakes (especially the right front brake) with particular care when roads are slippery or wet.

To stop the engine, turn the ignition switch until «OFF» is in line with the «C» (see fig. 3).

**Do not forget to turn off the fuel tap.**

## Parking

On badly lit roads, leave the parking lights on. Turn the ignition switch until «B» is in line with «C» (see fig. 3); turn the light switch «A» (fig. 5) to position «1»; remove the ignition and lock the steering (see «Steering lock», page 18).

## 22 RUNNING-IN

The recommendations below should be followed when running-in:

- Before riding off, run the engine at low revs until it has warmed up.
- Do not exceed the rpm shown in the table; it is also advisable to run the engine at varying speeds rather than at a constant speed.
- Avoid subjecting components to sudden changes in temperature.
- Remember that components need several thousand kilometers before they are properly bedded in; care taken in this period will ensure prolonged vehicle life.

### After the first 500 ÷ 1500 km

- Change the engine oil.

**Should the oil level drop to the minimum level before the first 500 ÷ 1500 kilometers have been completed then carry out a complete oil change rather than just topping up. Recommended oil: «Agip nuovo Sint 2000 SAE 10 W/40».**

- Check that all nuts and bolts are tight.
- Check and reset the contact breaker gap.
- Check the spark plug gap.
- Check tyre pressures.

### RUNNING-IN

Kilometers	Max. RPM
From 0 to 1000	5000
From 1000 to 2000	6000
From 2000 to 4000	Gradually increase rpm until maximum permissible is reached.



The windscreen can be cleaned using most of the soaps, cleaners, waxes and polishes commercially available for glass and plastic.

The following precautions should be taken:

- **do not wash or polish the windscreen in direct or strong sunlight or when temperatures are high;**

- under no circumstances use solvents, lyes or similar products;

- do not use abrasive substances, pumice, sand/emery paper, files etc.;

- wash all dust and dirt away before polishing. Small superficial scratches can be removed using a mild polish;

- paint or sealing compound can be removed before harden by using diesel, isopropyl alcohol or butyl cellosolvent (do not use methyl alcohol);

- use soft cloths, sponges, chamois leathers or cotton wool; do not rub too hard. Do not use paper towels or man-made fibre cloths as they tend to scratch the windscreen.

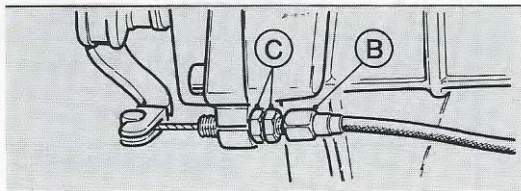
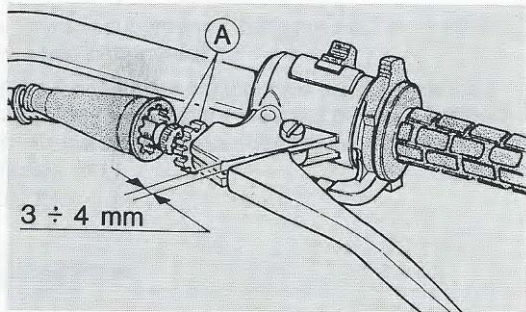
Deep scratches cannot be removed by hard rubbing or the use of solvents.

## 24 MAINTENANCE AND ADJUSTMENTS

### Adjusting the clutch lever (fig. 14)

There should be  $3 \div 4$  mm of free play at the lever; turn the adjuster screw «A» to obtain the desired play.

Play can also be adjusted on the cable adjuster «B» located on the right side of the gerabox. First loosen the lock nuts «C» and then adjust.



### Checking brake pad wear

Check brake pad thickness every 5000 km:

- new pads mm 9;
- wear limit approx. mm 6.

If the pads are below the wear limit they should be changed. It is not necessary to bleed the brakes when new pads have just been fitted; pumping the brake lever a few times will return the caliper pistons to their normal position.

When changing the pads also check the flexible hoses; if damaged they should be replaced immediately.

**N.B. - Treat new brake pads with moderation for the first 100 km until they are properly bedded in.**

## Checking and changing the brake fluid in the master cylinder reservoir (figs. 15 & 16)

To ensure efficient operation of the brakes:

**1** Make frequent checks of the fluid level in the front («A» in fig. 15) and rear («H» in fig. 16) reservoirs. The level should always be above the «Minimum» mark on the reservoirs.

**2** Top up the brake fluid when necessary or at regular intervals.

**Only use recommended brake fluid in sealed containers for topping up. Fluid containers should only be unsealed a moment before they are about to be used.**

**3** The fluid in the brake should be changed completely every 15,000 km or at least once a year. To ensure efficient braking there should be no air bubbles in the brake circuit; long lever travel, or a spongy brake lever response indicates that there are air bubbles in the brake circuit.

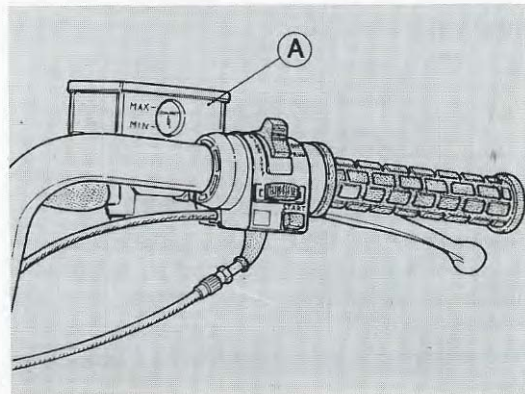
When flushing the circuit only use fresh brake fluid.

**Never use alcohol for flushing or compressed air for drying; we recommend trichloroethylene for metal parts.**

**Never use mineral oils or greases for lubricating parts;** if no suitable lubricant is available then rubber and metal parts can be lightly greased with brake fluid.

Recommended brake fluid: «Agip brake Fluid SUPER HD».

*These operations are best carried out by a Moto-Guzzi dealer.*



## 26 Adjusting the brake pedal the rear and left-hand front brakes (fig. 16)

Check the play between the master cylinder actuator and the brake rod as follows:

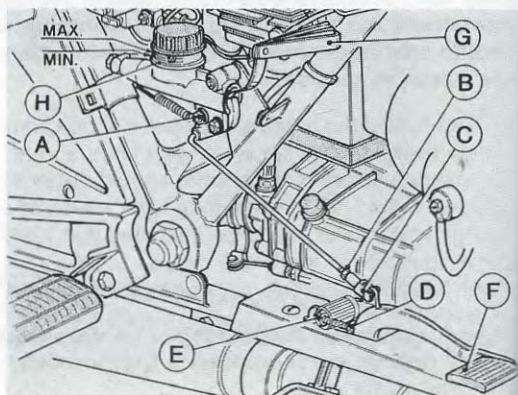
- place a feeler gauge «G» between the cylinder actuator and the brake rod, the gap between the two parts should be 0.05 - 0.15 mm. Turn the eccentric screw «A» to obtain the desired gap;
- if the gap is not correct, remove the split pin, remove the pin, unscrew the lock nut «B» and then screw or unscrew the fork «C» to obtain the desired position for the brake pedal «F»; replace the brake rod retaining pin and the split pin.

Now undo the lock nut «E» and adjust the lever return stop screw «D».

## Bleeding the brake system

The brake system requires bleeding when there are air bubbles in the system and when the travel of the brake pedal and lever becomes long and spongy.

*This operation is best carried out by a Moto-Guzzi dealer.*



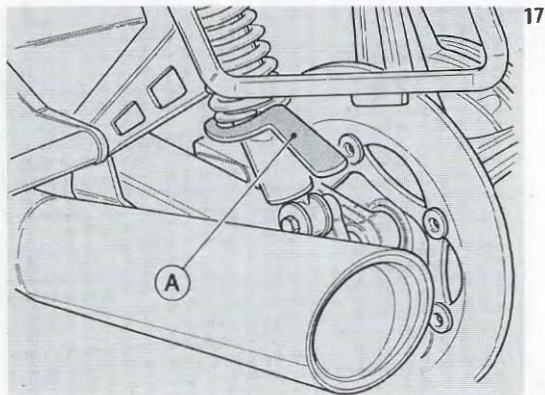
## Adjusting the rear shock absorbers

(figs. 17 & 18)

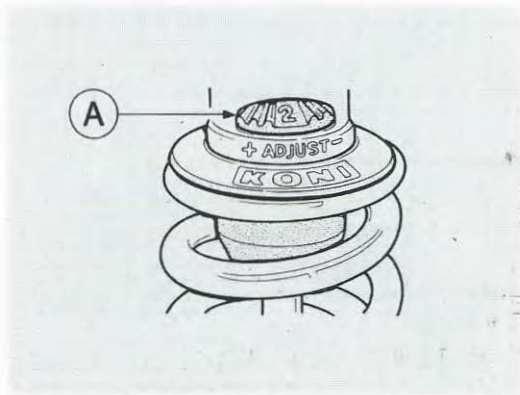
The loading of the rear suspension springs can be adjusted to one of the three settings by using the special spanner «A» (fig. 17).

It is also possible to adjust the damping effect of the shock absorbers by turning the disc «A» (fig. 18). There are four settings corresponding to different loads and riding conditions:

- position 1 - very soft, for light loads;
- position 2 - one or two riders on good roads (e.g. motorways);
- position 3 - one or two rider with luggage, sport/touring use;
- position 4 - very hard, two riders, heavily loaded bike.



17



18

28 With the passing of time, when the vehicle has covered a considerable mileage it will be necessary to select a setting which is higher than that indicated above.

If the damping effect of the shock absorbers becomes noticeably irregular they should be checked by a Moto-Guzzi dealer.

**N.B. - Each shock absorber should have the same spring loading and damper setting as the other shock absorber to ensure maximum stability of the vehicle.**

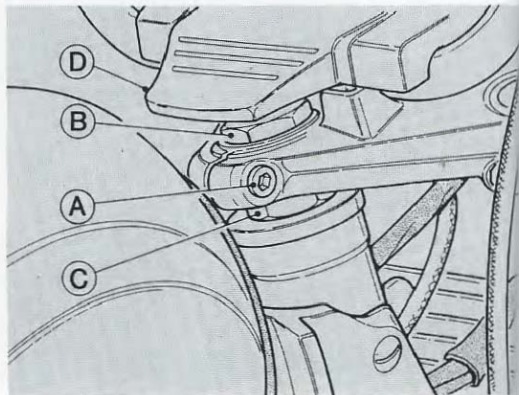
## Adjusting the steering (fig. 19)

To ensure safe riding, the steering should be adjusted to allow free movement of the handlebars without any play.

- loosen the steering head fixing bolt «A»;
- undo the steering head nut «B»;
- turn the adjuster nut «C» to take up any play.

When play has been adjusted tighten the nut «B» and the steering head fixing bolt «A».

*This operation is best carried out by a Moto-Guzzi dealer.*



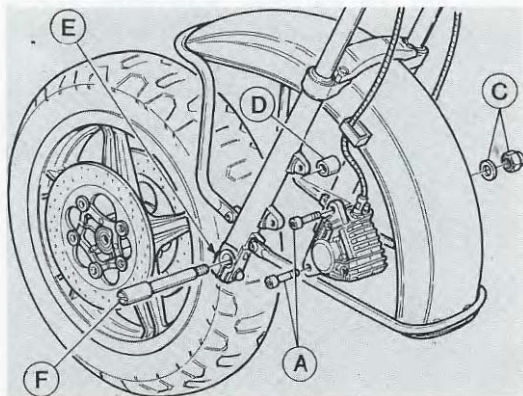
## REMOVING THE WHEELS

### Front wheel (fig. 20)

Remove the wheel as follows:

- place the machine securely on its centre stand, place a support under the crank casing so that the front wheel is raised from the ground;
- undo the bolts «A» holding the brake calipers to the fork legs and remove the calipers complete with hoses;
- unscrew the spindle retaining nut on the left side;
- loosen the pinch bolts «E»;
- remove the wheel spindle «F» paying attention to the position of the spacers and then remove the wheel;
- refitting the wheel is the reverse of the above procedure; care should be taken to fit the spacers in the correct position; pump the brake lever and pedal a few times to return the caliper pistons to t

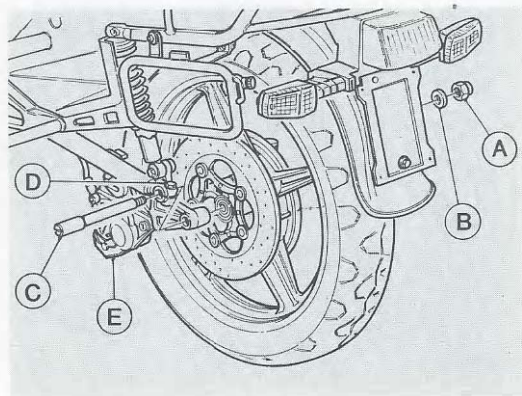
20



## 30 Rear wheel (fig. 21)

To remove the rear wheel from the swinging arm and from the final drive box proceed as follows:

- place the machine securely on its centre stand;
- remove the left side silencer;
- undo the spindle nut «A» and washer «B» on the final drive box side;
- loosen the pinch bolt «D» on the swinging arm;
- slide the spindle «C» out from the final drive box, the hub, and the swinging arm;



- remove the plate assembly complete with caliper «E» from the torque arm and fix this assembly to the frame;

- lean the machine to the right just enough to be able to disengage the wheel from the swinging arm and the final drive box and remove.

*Refitting the wheel is the reverse of the above procedure; remember to insert the plate assembly complete with caliper onto the torque arm of the left swinging arm.*

## Wheel Balancing

Wheels should be correctly balanced to improve stability and to reduce vibration at high speed.

To balance the wheels:

- remove the wheel from the machine and place on a fork assembly;
- spin the wheel slowly several times and check to see if a particular point on the rim always stops in a different place; this indicates that the wheel is correctly balanced;
- if a particular point on the rim always stops at the bottom, place a balance weight opposite this point;
- repeat this procedure until the wheel is correctly balanced.

*This operation is best carried out by a Moto-Guzzi dealer.*



## Tyres

Tyres are among those machine components which require regular checking.

Machine stability, rider comfort and safety all depend on good tyre condition.

Do not use tyres with less than 2 mm of tread. Incorrect tyre pressures can cause instability and excessive tyre wear.

Tyre pressures:

- front wheel: with one or two riders 2.2 BAR.
- rear wheel: with one rider 2.4 BAR; with two riders 2.8 BAR.

**These pressures are for normal touring use. For continuous high speed cruising (e.g. on motorways) the above pressures should be increased by 0.1 BAR.**

## Tyre fitting

This machine is fitted with cast, light-alloy rims; even though these are very strong they can be damaged both aesthetically and mechanically by the use of incorrect tools when removing and fitting tyres. Tyre levers should not have sharp edges or ribbing in those places where they come into contact with the rim; lever contact surfaces should be smooth and edges should be rounded. Use of a suitable com-

mercially available lubricant facilitates tyre removal and fitting therefore making strenuous use of the levers unnecessary. It is important to ensure that the tyre beads settle properly into the centre rim groove.

Some tyres have an arrow moulded on the sidewall, in these cases the tyres should be fitted as follows:

- rear wheel: arrow pointing in the direction of rotation;
- front wheel: arrow pointing against the direction of rotation.

**N.B. - These instructions should be followed unless otherwise directed by the tyre manufacturer.**

## 32 SERVICE SCHEDULE

ITEMS ▼	MILEAGE COVERED ▶	900 mi. (1500 km)	1800 mi. (3000 km)	3700 mi. (6000 km)	5600 mi. (9000 km)
● Engine oil		R	R	R	R
● Oil filter cartridge		R			
● Wire gauze oil filter		C			
● Air filter				C	R
● Ignition timing		A	A	A	A
● Spark plugs		A	A	A	R
● Rocker clearance		A	A	A	A
● Carburetion		A	A	A	A
● Nuts and bolts		A			
● Fuel tank, filters and pipes					C
Gear box oil		A	A	A	R
Rear drive box oil		A	A	A	R
Wheel and steering bearings					
Fork legs oil					
Starter motor and generator					
Brake systems fluid		A	A	A	A
Brake pads		A	A	A	A

A = Inspections - Adjustments - Possible replacements - Servicing. / C = Cleanings. / R = Replacements.

● Operation required for maintaining the vehicle according to emission regulations (USA).

Occasionally, check the electrolyte level in battery, lubricate joints and cables; every 500 km (300 miles) check the engine oil level. In any case, renew this oil at least once a year.

7500 mi. (12.000 km)	9400 mi. (15.000 km)	11.300 mi. (18.000 km)	13.200 mi. (21.000 km)	15.100 mi. (24.000 km)	17.000 mi. (27.000 km)	18.900 mi. (30.000 km)
R	R	R	R	R	R	R
	R					R
	C					C
	C	R			R	
A	A	A	A	A	A	A
A	A	R	A	A	R	A
A	A	A	A	A	A	A
A	A	A	A	A	A	A
	A					A
		C			C	
A	A	R	A	A	R	A
A	A	R	A	A	R	A
			A			
			R			
			A			
A	R	A	A	A	A	R
A	A	A	A	A	A	A

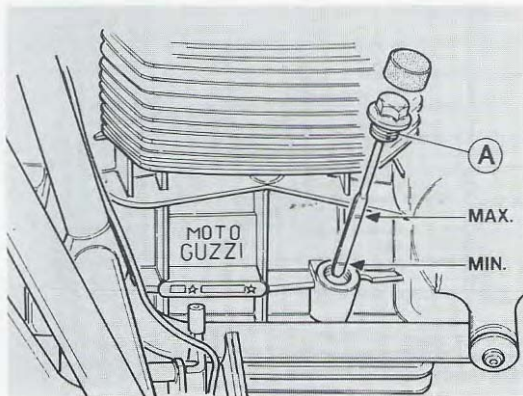
## 34 LUBRICATION

### Engine lubrication

#### Checking the oil level (fig. 22)

Check the crankcase oil level every 500 km; the oil should reach the «Max» mark on the dipstick «A». If the oil is below this level, top up with the recommended type and grade of oil.

**The oil level check should be carried out after the engine has run for a few minutes: the dipstick plug «A» should be screwed fully home.**



#### Oil change (figs. 22 & 23)

The oil should be changed after the first 500 ÷ 1000 km and every 3000 km thereafter. Change the oil when the engine is warm.

Allow the sump to drain fully before filling with new oil.

«A» Oil filler plug with dipstick (fig. 22);

«B» Oil drain plug (fig. 23).

Oil required: 3 litres of Agip nuovo SINT 2000 S 10W/40.

#### Changing the filter cartridge, and cleaning the mesh filter (fig. 23)

The filter cartridge «A» should be changed every 15,000 km (every 5 oil changes) as follows:

- unscrew the drain plug «B» and allow the surplus oil to drain off fully;
- undo the screws and remove the sump cover «C» from the crankcase: this assembly includes the filter cartridge «A», the mesh filter «D» and the

pressure valve «E»;

■ Unscrew the filter cartridge «A» and fit a new approved filter cartridge.

When changing the filter cartridge «A» it is also a good idea to remove the mesh filter «D» and wash it in petrol; dry by blowing with compressed air. Blow the oil ducts in the sump out with compressed air and refit the mesh filter.

Do not forget to fit a new sump gasket when refitting the sump.

*This operation is best carried out by a Moto-Guzzi dealer.* 35

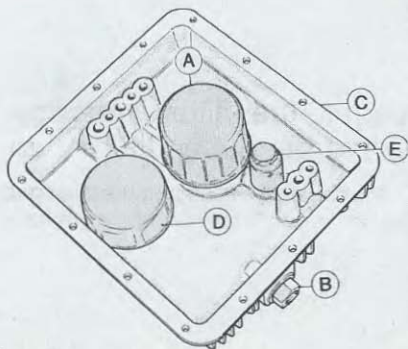
## Gearbox lubrication

**Checking the oil level** (fig. 24)

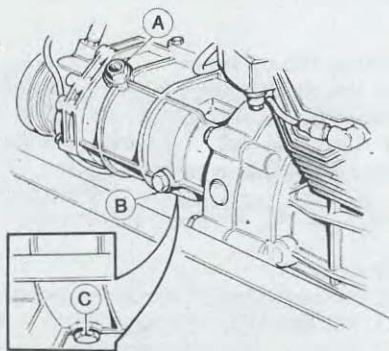
Check the oil level every 3000 km; the oil should just reach the level plug hole «B».

If the oil is below this level top up with the recommended grade and type of oil.

23



24



## 36 Oil change (fig. 24)

The gearbox oil should be changed every 10,000 km. Drain the oil when the gearbox is warm as the oil is more viscous and drains more easily.

Allow the gearbox to drain fully before filling with new oil.

- A» Filler plug.
- B» Level plug.
- C» Drain plug.

Oil required: 0.750 litres of Agip Rotra MP SAE 80W/90.

## Rear transmission box lubrication

(fig. 25)

### Checking the oil level

Check the oil level every 3000 km; the oil should just reach the level plug hole «A».

If the oil is below this level top up with the recommended grade and type of oil.

### Oil change

The transmission box oil should be changed every 10,000 km. Drain the oil when the box is warm as the oil is more fluid and drains more easily.

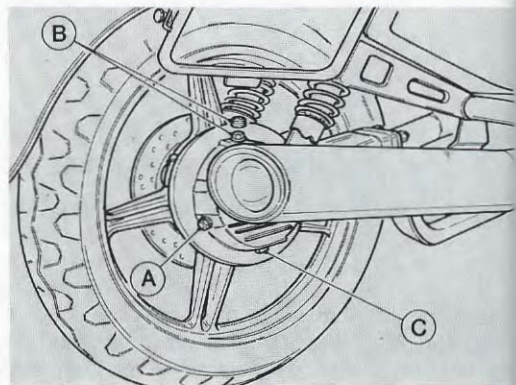
Allow the box to drain fully before filling with new oil.

«A» Level plug.

«B» Filler plug.

«C» Drain plug.

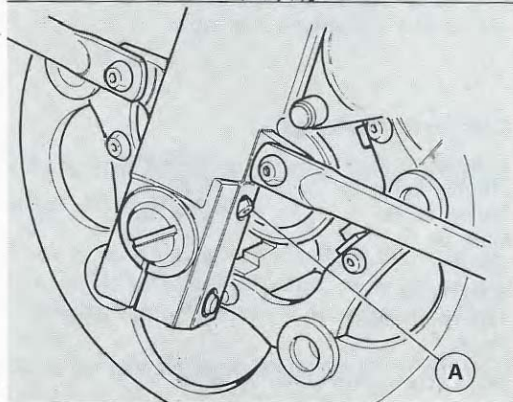
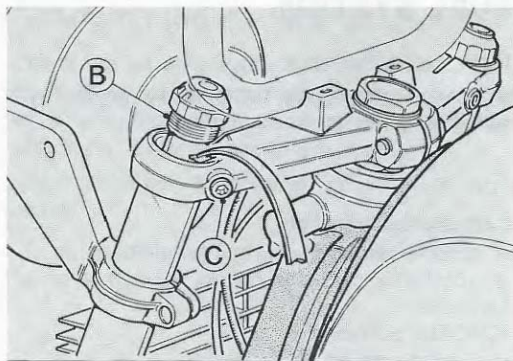
Oil required: 0.250 litres of which: 0.230 lt. is Agip Rotra MP SAE 80W/90, and 0.020 lt. is Agip Rocol ASO/R or Molykote type A.



## Front fork lubrication (fig. 26)

To change the fluid in the front forks proceed as follows:

- place the machine on the centre stand, dismantle the handlebar clamping plate and the instrument panel;
- loosen the side clamp bolts «C» holding the steering head and the fork together;
- undo the top nut «B»; remove the drain plug «A»;
- push the front of the machine downwards, this will force the top nut «B» out of the tube since the top nut is attached to the damper assembly;
- replace the drain plug «A» and fill the fork with 150 cc of Agip ATF Dexron; pour the fluid into the space between the fork and the damper assembly;
- release the front of the machine, refit the top nut «B» and then tighten the side clamp bolts. Repeat the whole operation for the other fork leg.



## Greasing

To grease:

- steering bearings;
- swinging arm bearings;
- control rod joints;
- centre/side stand fittings.

**Use: Agip Grease 30.**

## 38 FUEL SYSTEM

### Carburettors (fig. 27)

2 Dell'Orto carburettors, PHF 30 DD (right) and PHF 30 DS (left)

### Carburettor controls

- throttle twist grip on right handlebar;
- «CHOKE», cold start control, «E» (fig. 4) on left handlebar.

«CHOKE» positions:

- «1» **cold engine** start position
- «2» choke off, engine running.

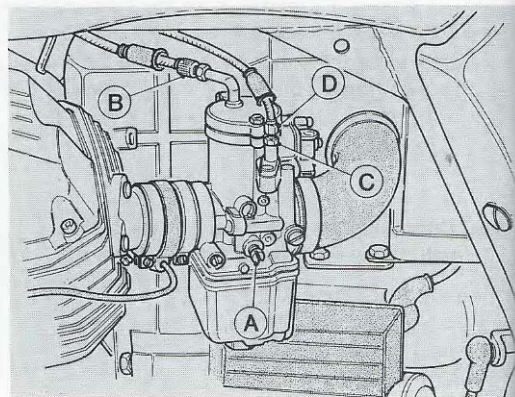
### Carburettor settings

Diffuser	∅ 30 mm
Throttle valve	50/3
Spray nozzle	264 AB
Main jet	125
Idle jet	50
Starting jet	75
Tapered needle	K 23 (3 <sup>rd</sup> notch)
Float	10 gr.

Idling screw: open by 1 1/2 turns.

### Adjusting the «CHOKE» cable play (fig. 27)

With the «CHOKE» in position «2» check that there is approx. 3 mm play between the cable ends and the cable adjuster screws «D». To adjust, loosen the lock nuts «C» and turn the cable adjuster screws «D» in the direction required. With the adjustment complete, tighten the lock nuts «C».





## Balancing the carburettors and adjusting the idle setting (fig. 27)

### **Balance carburettors using a vacuum gauge**

Precise adjustment of carburation can be carried out by a Moto-Guzzi dealer using a vacuum gauge.

### **Adjusting the idle setting**

- To set the idling speed to  $900 \div 1000$  rpm, turn the both idle screws «A» by the same amount.
- Open and close the throttle a few times to check that idling remains constant.

**N.B. - The idle setting should be adjusted when the engine is at working temperature.**

### **Adjusting throttle cable play** (figs. 5 and 27)

With the throttle twist grip in the rest position, there should be  $1 \div 1.5$  mm play between the cable ends and the cable tensioners «B» (fig. 27) of both carburettors; if necessary adjust by loosening the nut «I» and turning the cable tensioner «H» to obtain the desired play; tighten the nuts «I» (see fig. 5).

## Changing the air filter (fig. 28)

39

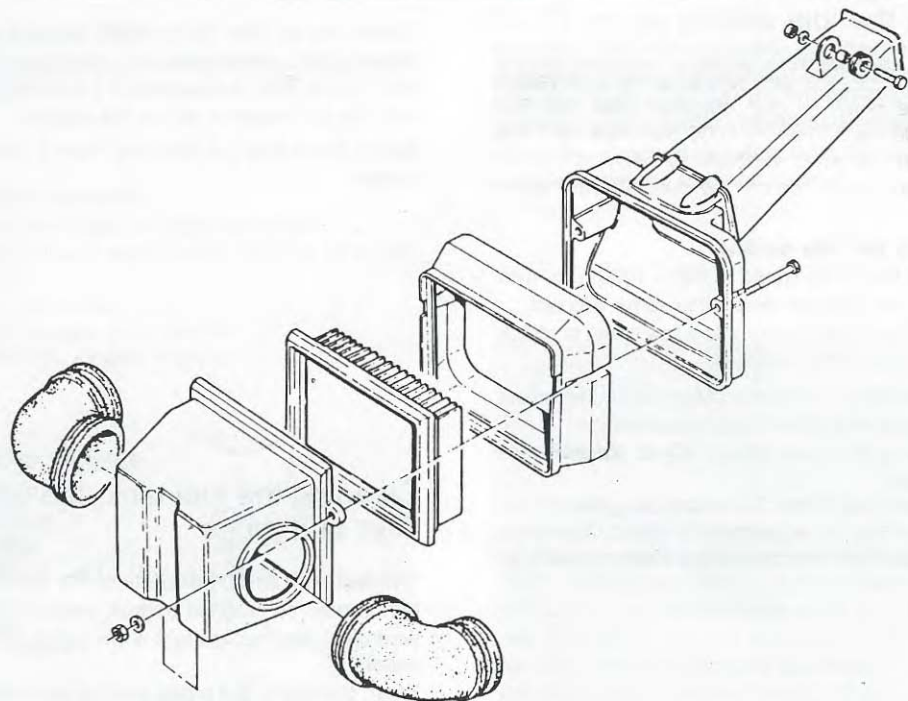
Check the air filter every 6000 km and clean by blowing with compressed air; change every 9000 km. The air filter is mounted in a housing together with the oil breather above the engine.

*Spare filters may be obtained from a Moto-Guzzi dealer.*

## Cleaning the fuel tank, the fuel tap, filter and pipes

The fuel tank and other parts of the fuel feed system should be cleaned approx. every 9000 km or whenever the carburettors show signs of fuel starvation.

Wash the filters, the pipes and the tap channels in petrol and blow with compressed air.



## VALVE GEAR

### Valve clearances (fig. 29)

The clearance between rocker arms and valves should be checked and adjusted after the first 500 ÷ 1000 km and every 3000 thereafter or if the valve gear becomes excessively noisy.

Adjustment should be carried out with the engine cold and the piston at TDC in the compressions phase (valves closed).

Remove the rocker box cover and proceed as follows:

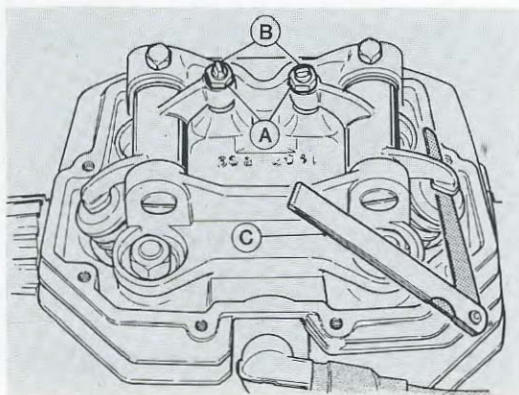
- 1 loosen nut «A»;
- 2 turn the adjuster screw «B» to obtain the clearances:

- inlet and exhaust valves: 0.22 mm;

Use a suitable feeler gauge «C» to measure the clearances.

Remember that if the clearances are greater than those specified, valve gear will be noisy; if the valves do not close fully this can cause problems such as:

- loss of compression
- engine overheating
- valve burn-out, etc.



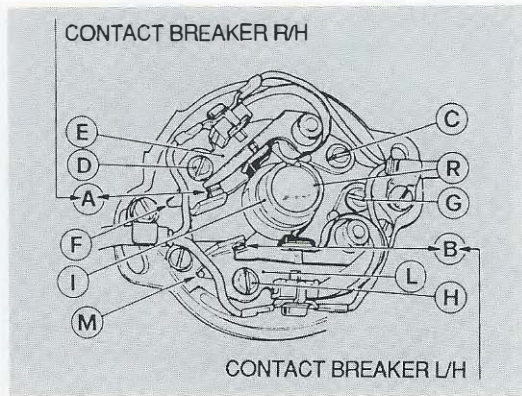
## 42 IGNITION

### Checking and adjusting the twin contact breakers (fig. 31)

#### Maintenance

##### Every 3000 km.

Slightly moisten the felt pad «R» on the cam body with a few drops of engine oil.



### Checking the points

- Remove the retaining screws and remove the distributor cover.
- If the contact breaker points «A» (right cylinder) and «B» (left cylinder) are dirty or greasy clean with a petrol soaked cloth. If the points are pitted otherwise damaged they should be replaced.
- Check the points gap of «A» (right cylinder - red wire) and «B» (left cylinder - green wire): contact breaker gap: 0.37 ÷ 0.43 mm.

### Adjusting the points

#### Contact breaker «A», right cylinder

Bring the cam «I» to its maximum lift, loosen screws «C» and «D» and move the plate «E» using the tab «F».

Adjust to the correct setting and tighten the screws «C» and «D».

### Contact breaker «B», right cylinder

Bring the cam «I» to its maximum lift, loosen the screws «G» and «H» and move the plate «L» using the tab «M».

Adjust to the correct setting and tighten the screws «G» and «H».

Checking and adjustment of the contact breaker points should be followed by an ignition timing check.

## Checking and adjusting the ignition timing, «static advance» (fig. 31)

### Checking the timing

- Remove the rubber plug covering the inspection hole on the left side of the gearbox where the fly wheel is;
- to check the start of contact breaker opening («A» and «B» in fig. 30), use a timing light connected up between the feed of the contact breaker being checked and earth.

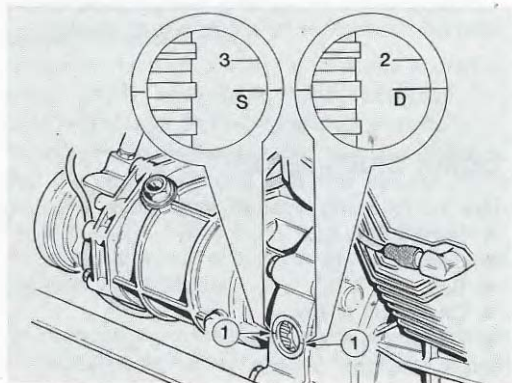
### Timing the right cylinder (fig. 31)

- Turn the flywheel anti-clockwise until the piston is at the end of the compression phase (valves closed). At this point the mark «D» on the flywheel (TDC of the right cylinder) should be aligned with the mark «1» on the edge of the inspection hole;

- Turn the flywheel clockwise until the mark «2» (static advance) is perfectly aligned with the mark «1» on the edge of the inspection hole. With this setting the contact breaker «A» in fig. 30 should be open.

### Timing the left cylinder (fig. 31)

- Turn the flywheel anti-clockwise until the piston is at the end of the compression phase (valves closed). At this point the mark «S» on the flywheel (TDC of the left cylinder) should be aligned with the mark «1» on the edge of the inspection hole;



- 44 ■ Turn the flywheel clockwise until the mark «3» (static advance) is perfectly aligned with the mark «1» on the edge of the inspection hole.  
With this setting the contact breaker «B» in fig. 30 should be open.

## Ignition advance

- Initial advance (static)  $2^{\circ} \pm 1^{\circ}$
- Full advance (static and automatic)  $33^{\circ} \pm 1^{\circ}$
- Contact breaker points gap  $0.37 \div 0.43$  mm

*Contact breaker and ignition timing adjustment can best be carried out by a Moto-Guzzi dealer.*

## Spark plugs (fig. 32)

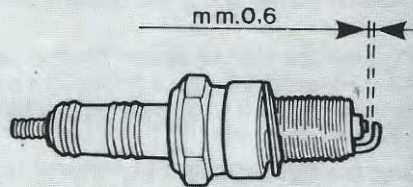
Use the following types of spark plug:

- Marelli CW 7 LP
- Bosch W 7 D
- Bosch W 7 DC
- Champion N 9 Y
- Lodge L 6 Y

Spark plug gap: 0.6 mm.

Remove the spark plugs for cleaning and checking at the intervals indicated in the **Maintenance and Lubrication Table**.

Refit the plugs by hand taking care not to cross-thread them, they should screw home easily. Tighten when the **engine is cold**. Even if used plugs appear to be in good condition, they should be replaced every 9000 km.



## ELECTRICAL EQUIPMENT

The electrical equipment consists of the following:

- Battery
- Starter motor with electro-magnetic ratchet
- Generator-alternator fitted to the front of the crankshaft
- Twin contact breakers with automatic advance
- Ignition coil
- Side stand microswitch
- Voltage regulator
- Fuse box (No. 4, 15 A fuses)
- Horn switch
- Starter switch
- Headlight
- Tail light
- Direction indicators
- Selector switch
- Light switch
- Direction indicator, horn and headlamp flasher switch
- Hazard warning lights, switch
- Starter device
- Electric horns
- Warning lights on instrument panel for: neutral indicator (green), side lights on (green), oil pressure (red), main beam (blue), generator (red),

fuel reserve (orange), direction indicators (green). 45

### Battery

The 12 V/24 Ah battery is charged by the generator. To gain access to the battery:

- raise the seat;
- lift out the tool box;
- unhook the rubber straps and disconnect the battery cables.

### Battery maintenance

Batteries which are already in service (i.e. dry batteries which have been filled, activated and charged) should be maintained as follows:

- top up with **distilled water** (never use acid) so that the liquid level is 5 mm over the top of the plates;
- battery terminals should be kept tight, clean and greased with Vaseline;
- keep the top of the battery clean, avoid spillage of electrolyte as this will reduce insulation and will corrode the battery holder and cover;

- 46 ■ check that the charging equipment is not under or overcharging the battery; battery liquid specific gravity should be  $1.24 \div 1.27$ . If this is not the case it will be necessary to check the insulation and efficiency of charging and starting equipment;
- batteries which are stored should be charged at regular intervals at 1/10th of capacity, should be kept topped up and with a specific gravity of 1.27 at 25°C;
  - the battery should be clamped firmly in place complete with anti-vibrations devices.

**N.B. - N.B. In tropical climates (average temperature above 33°C) electrolyte specific gravity should be reduced to 1.23.**

## Replacing bulbs

### Headlight (fig. 33)

To change the bulbs, unscrew the retaining screw «A» under the headlight unit; remove the light unit and remove the lamp holder.

**N.B. - When changing the headlight bulb (main/dipped beams) take care not to touch the glass part of the bulb with your fingers.**

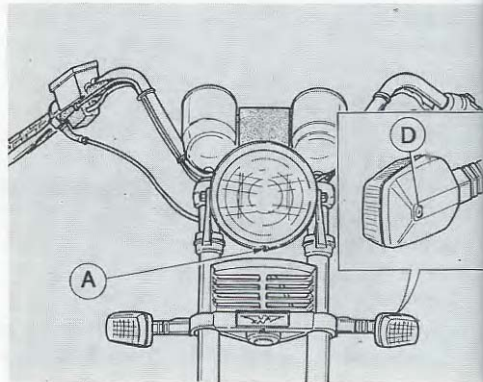
### Tail light (fig. 34)

Undo the screws «A» holding the reflector to the unit. To remove the bulb from the bulb holder, press in and turn.

### Front and rear direction indicators (figs. 33 & 34)

Undo the screws «D» holding the reflector to the direction indicator unit. To remove the bulb from the bulb holder, press in and turn.

**N.B. - Do not overtighten the reflector retaining screws as this will break the reflector.**



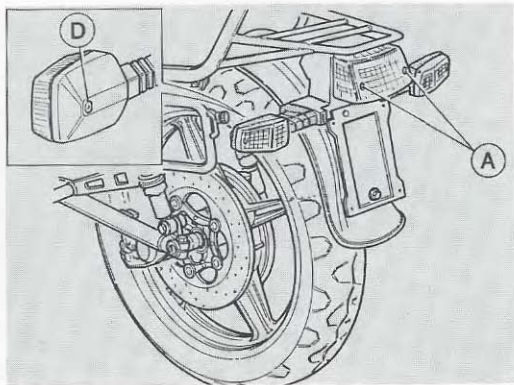


### Instrument panel (fig. 35)

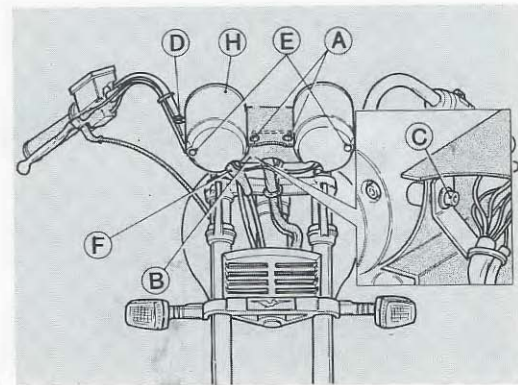
- remove the windscreen;
- remove the headlight;
- undo the screws «A»;
- remove the cover «B»;
- remove the bulb holders to replace bulbs.

### Speedometer and Rev. Counter (fig. 35)

- remove the windscreen;
- remove the headlight;
- undo the screws «A»;
- remove the cover «B»;
- remove the warning light holders near to the screws «C»;



34



35

- undo the screws «C»;
- remove the zero set pin «D»;
- undo the screws «E»;
- remove the instruments from their holders «H» and replace the bulbs.
- Reassembly is the reverse of the procedure just described; **take care not to inadvertently disconnect any electrical connections.**

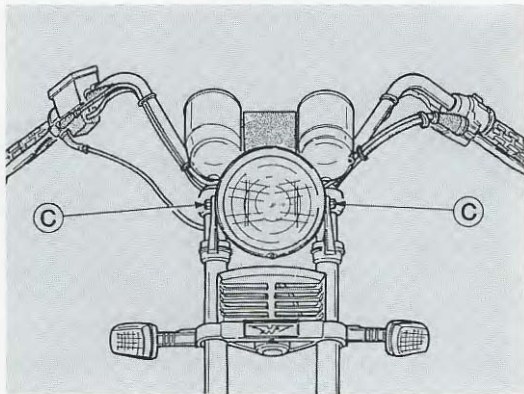
*This operation is best carried out by a Moto-Guzzi dealer.*

47

## 48 Adjusting the headlight beam (fig. 36)

The headlight beam should always be kept adjusted at the correct height to ensure good visibility and to avoid dazzling oncoming traffic. To adjust the beam height, loosen the two headlight retaining screws «C» and move the light up or down as required.

With the bike in a riding position with one rider and at a distance of 3 metres, the main beam should not be any higher than 0.870 metres.



36

## Bulbs

### Headlight:

- Dipped and main beam 60/55
- Side/parking lights

### Tail light:

- Number plate, stop light 5/2

### Direction indicators

1

### Speedo, rev. counter warning lights

### Instrument panel warning lights

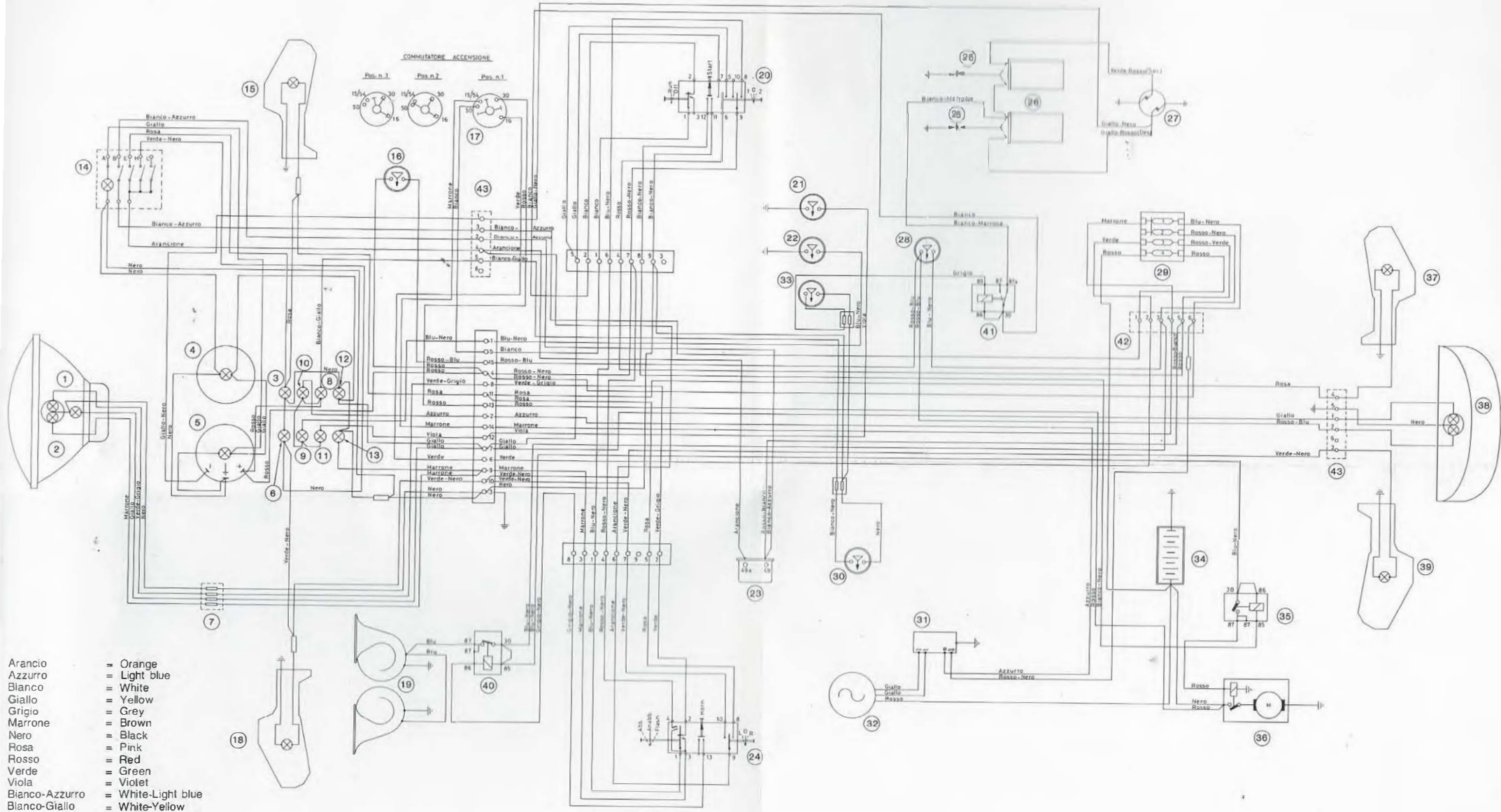
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## 50 Key to wiring diagram

- |           |  |           |                                   |
|-----------|--|-----------|-----------------------------------|
| <b>1</b>  | Bulb, main/dipped beam 60/55 W                   | <b>28</b> | Rear brake stop switch            |
| <b>2</b>  | Bulb, front sidelights 4 W                       | <b>29</b> | Fuse terminal board               |
| <b>3</b>  | Bulb, r/h direction indicator warning light.     | <b>30</b> | Low fuel level warning sensor     |
| <b>4</b>  | Bulb, speedometer light                          | <b>31</b> | Voltage regulator                 |
| <b>5</b>  | Bulb, rev. counter light                         | <b>32</b> | Alternator 14 V - 20 A            |
| <b>6</b>  | Bulb, l/h direction indicator warning light.     | <b>33</b> | Side stand microswitch            |
| <b>7</b>  | Connector, 4-way Molex                           | <b>34</b> | Battery 12 V - 24 Ah              |
| <b>8</b>  | Bulb, fuel level warning light                   | <b>35</b> | Starter solenoid                  |
| <b>9</b>  | Bulb, oil pressure warning light                 | <b>36</b> | Starter motor                     |
| <b>10</b> | Bulb, generator warning light                    | <b>37</b> | R/H rear direction indicator      |
| <b>11</b> | Bulb, neutral warning light                      | <b>38</b> | Bulb, number plate and stop light |
| <b>12</b> | Bulb, sidelight warning light                    | <b>39</b> | L/H rear direction indicator      |
| <b>13</b> | Bulb, main beam warning light                    | <b>40</b> | Two-note horn switch              |
| <b>14</b> | Flasher switch                                   | <b>41</b> | Solenoid for side stand.          |
| <b>15</b> | R/H front direction indicator                    | <b>42</b> | Connector, 6-way AMP              |
| <b>16</b> | Front brake stop switch                          | <b>43</b> | Connector, 6-way Molex            |
| <b>17</b> | Starter switch                                   |           |                                   |
| <b>18</b> | L/H front direction indicator                    |           |                                   |
| <b>19</b> | Two-note horn                                    |           |                                   |
| <b>20</b> | Control switch: start/stop engine, lights        |           |                                   |
| <b>21</b> | Neutral switch                                   |           |                                   |
| <b>22</b> | Oil pressure switch                              |           |                                   |
| <b>23</b> | Blinker unit (12 V - 46 W)                       |           |                                   |
| <b>24</b> | Control switch: lights-horn-direction indicators |           |                                   |
| <b>25</b> | Spark plugs                                      |           |                                   |
| <b>26</b> | H.T. coil  |           |                                   |
| <b>27</b> | Contact breaker                                  |           |                                   |

- Aranco = Orange
- Azzurro = Light blue
- Bianco = White
- Giallo = Yellow
- Grigio = Grey
- Marrone = Brown
- Nero = Black
- Rosa = Pink
- Rosso = Red
- Verde = Green
- Viola = Violet
- Bianco-Azzurro = White-Light blue
- Bianco-Giallo = White-Yellow
- Bianco-Marrone = White-Brown
- Bianco-Nero = White-Black
- Blu-Nero = Blue-Black
- Giallo-Nero = Yellow-Black
- Nero-Grigio = Black-Grey
- Rosso-Bianco = Red-White
- Rosso-Blu = Red-Blue
- Rosso-Giallo = Red-Yellow
- Rosso-Nero = Red-Black
- Rosso-Verde = Red-Green
- Verde-Grigio = Green-Grey
- Verde-Nero = Green-Black



# ELECTRONIC IGNITION

## Ignition data

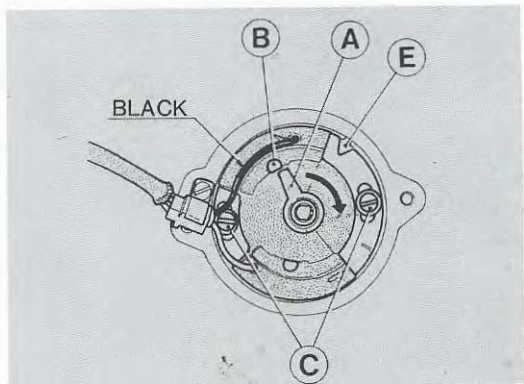
Electronic ignition; the advance is electronically controlled.

- Initial advance (fixed)  $2^{\circ} \div 3^{\circ}$
  - Maximum advance (fixed + automatic)  $34^{\circ} \div 35^{\circ}$
- Pick-Up to rotor gap mm  $0,2 \div 0,4$

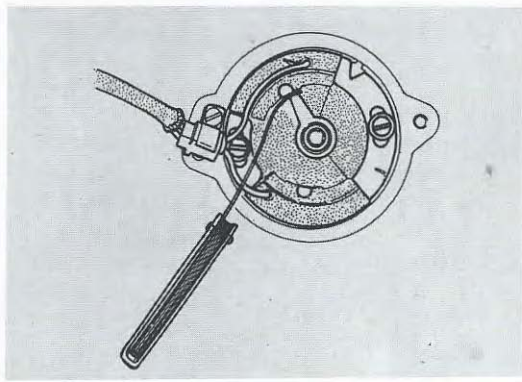
Ignition of electronic type doesn't require any maintenance.

## Ignition timing (fig. 31-33)

Engine has been timed when (with the right cylinder to the T.D.C. in combustion phase) the left side of the rotor «A» is approximately on the middle of the sensor «B» on pick-up (right cylinder identifiable by the black cable). If necessary, undo the screws «C» and act on groove «E» using a screwdriver in order to rotate the pick-up plate.



31



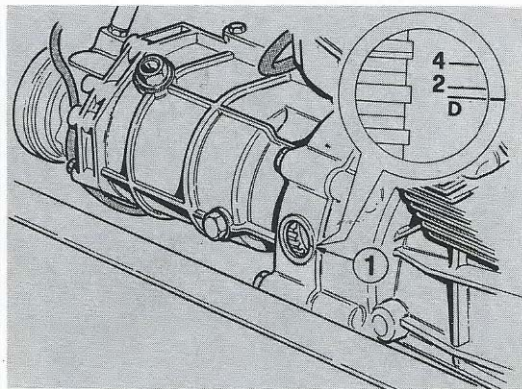
33

Alternately the adjustment can be made by rotating the external body of the ignition device after unscrewing the two lower retaining screws.

For a more precise checking of advance, use a stroboscopic light.

With the engine at 4.500 rev./min. the mark «4» (max. advance) on the flywheel (see on fig. 33) should be in line with mark «1» on the checking hole edge. The mark «D» on the flywheel indicates the T.D.C. The mark «2» on the flywheel indicates the fixed advance.

*For these operations it is advisable to apply to a Moto Guzzi dealer.*



## ATTENTION

**In order not to cause damages to the electronic ignition system, follow the precautions hereunder:**

- **In case of battery removal or refitting, be sure that the ignition switch is in position «OFF».**
- **Do not disconnect the battery with engine on.**
- **Be sure of the perfect efficiency of earth cables of electronic boxes.**

## Adjustable telescopic fork (fig. 17)

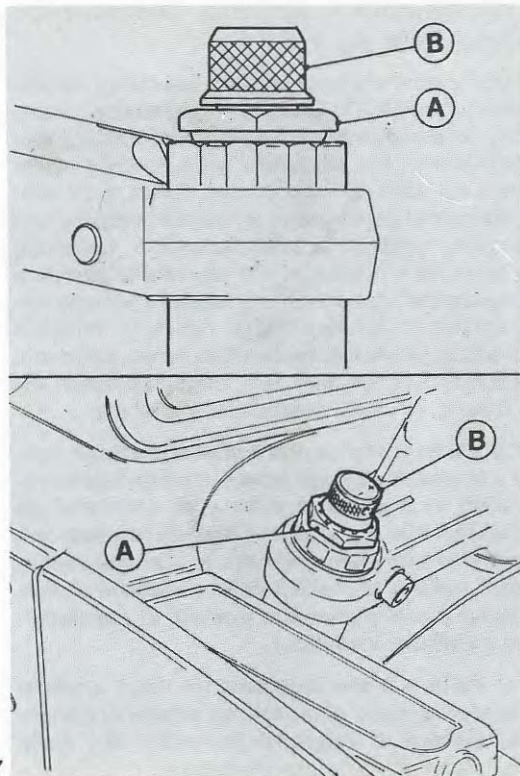
This motorcycle is equipped with a new telescopic fork MOTO GUZZI with separate adjustment of springs pre-loading and of dampers operation. To adjust springs pre-loading, turn nut «A» through a 32 mm wrench. Turning it clockwise the spring pre-loading is reduced; turning it counterclockwise, the pre-loading increases.

To adjust the damper hydraulic operation, turn knob «B».

Turn it clockwise, the hydraulic operation decreases; turning it counterclockwise, it increases. Do not force the knob «B» and the nut «A» to the extreme positions.

**N.B. - It's important that spring pre-loading and damper operation are equally adjusted on both forks prongs, (equally turn both pre-loading adjustment nuts, beginning from end of stroke position, as well as the two hydraulic operation adjustment knobs).**

**To avoid the damaging of the shock-absorbers when riding on uneven roads, do not adjust them (knob «B») in position of maximum braking.**





## Registrazione forcella telescopica regolabile (fig. 17)

Il motociclo è equipaggiato con una nuova forcella telescopica **MOTO GUZZI** con regolazione separata del precario molle e della frenatura degli ammortizzatori. Per regolare il precario delle molle, agire sul dado «A» usando una chiave di 32 mm. Ruotando in senso orario si riduce il precarico della molla; ruotando in senso antiorario, viceversa, si aumenta il precarico. Per regolare la frenatura idraulica dell'ammortizzatore, ruotare il pomello «B». Ruotando in senso orario si riduce la frenatura idraulica, viceversa, ruotando in senso antiorario, si aumenta la frenatura. Non forzare il pomello «B» e il dado «A» nelle posizioni di fine corsa.

**N.B. - È importante che il precarico delle molle e la frenatura degli ammortizzatori siano regolate in maniera uniforme su entrambi gli steli forcella, (entrambi i dadi di regolazione precarico dovranno essere ruotati dal medesimo valore, partendo dalle posizioni di fine corsa, e così pure i due pomelli di regolazione frenatura Idraulica).**

**Per evitare il danneggiamento degli ammortizzatori in caso di marcia su strade sconnesse, evitare di regolarli (pomello «B») nella posizione di massima frenatura.**

