

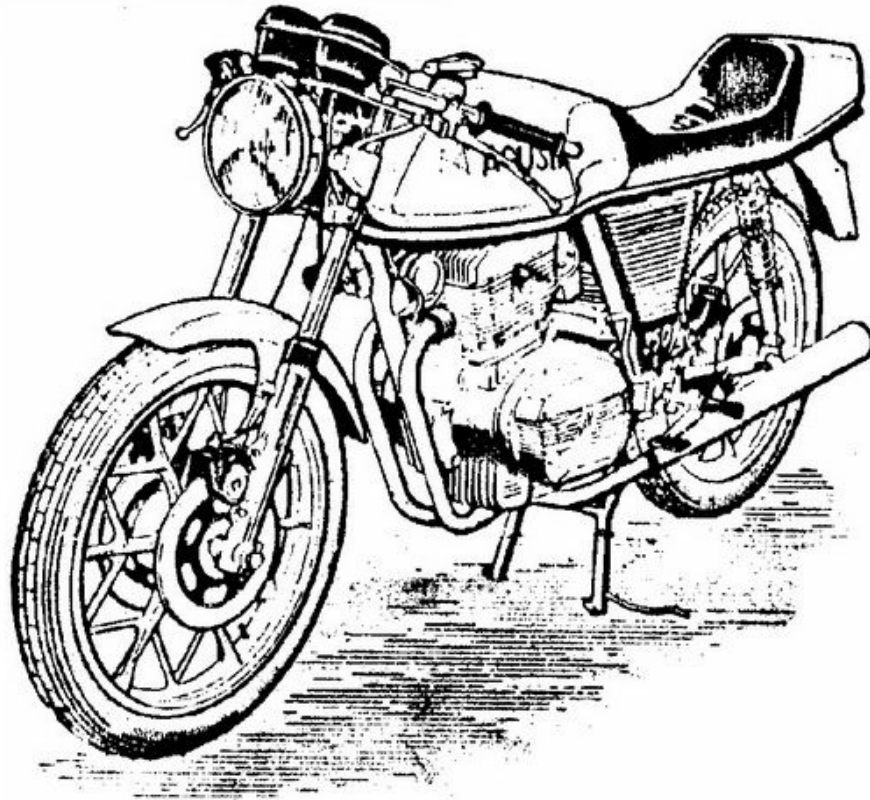
**350
Sport**

instructions for use

MV350S



350 Sport



Instructions for use

MECCANICA VERGHERA S.p.A
VIALE ADRIATICO 50

21010 Verghera- (VARESE) ITALY

1st EDITION 1975 Tel.0331-228200 Telex 31057 AGUSTA

www.rp.wolfe

TABLE OF CONTENTS

	PAGE
GENERAL CHARACTERISTICS.....	1
IDENTIFICATION DATA.....	3
GENERAL DESCRIPTION.....	5
INSTRUMENTS AND CONTROLS.....	7
RUNNING-IN.....	17
INSTRUCTIONS FOR USE.....	19
MAINTENANCE AND ADJUSTMENT.....	27
CONTROLS AND ADJUSTMENTS.....	33
CARBURATION.....	43
VALVE CLEARANCES.....	45
ELECTRICAL EQUIPMENT.....	46
IGNITION.....	53
ELECTRICAL DIAGRAM.....	59

GENERAL CHARACTERISTICS

ENGINE

Type	Four stroke, overhead valve
No. of cylinders	Parallel twin, with cast iron cylinders
Bore	63 mm
Stroke	56 mm
Cubic Capacity	349 cc
Compression ratio	9.5 : 1
Maximum power	34 BHP at 8500 RPM
Maximum torque	2.95 kg m.
Maximum revolutions	9000RPM
Valvegear	Pushrod and rockers.
Clutch	Wet multi-plate
Primary drive type	Gear, 27/63 teeth (1:2.33)
Final drive type	Chain, 15/42 teeth (1:2.80)
Gear change	pedal
Starter	Kick-start pedal
Gearchange	5 speed constant mesh, selected by pedal
Gear ratios	1st. 1:2.87 (16/46)
	2nd. 1:1.91 (22/42)
	3rd. 1:1.33 (27/36)
	4th. 1:1.06 (31/33)
	5th. 1:0.94 (33/31)
Engine lubrication	Forced, with oil pump and filter
Oil supply	capacity 2 Kg.
Carburettors	2 Dell'Orto type VHB24B left and right.
Ignition	Electronic

Sparkplug	CHAMPION N3 BOSCH W 260 T2 MARELLI C W 260 L
Generator	Flywheel Alternator 12V 80W
Battery	12V -9Ah

VALVES

Control point	0.2 mm.
Inlet Valve	Opens $43^{\circ} \pm 5^{\circ}$ Closes $68^{\circ} \pm 5^{\circ}$
Exhaust Valve	Opens $65^{\circ} \pm 5^{\circ}$ Closes $40^{\circ} \pm 5^{\circ}$
Valve clearances	Inlet 0.05 mm. Exhaust 0.10 mm.

FRAME

Type	Tubular and sheet steel structure
Front Suspension	Telescopic hydraulic forks
Rear Suspension	Swinging arm with hydraulic shock absorbers
Wheels	Cast alloy
Tyres	Front 2.75 x 18 ribbed Rear 3.25 x 18
Brakes	Front 2 x 230 mm discs Rear 1 x 230 mm disc With independent hydraulic control
Stand	Central stand

DIMENSIONS AND WEIGHTS

Overall length	1970 mm.
Wheelbase	1310 mm.
Dry weight	160 kg.
Number of persons	Rider and passenger

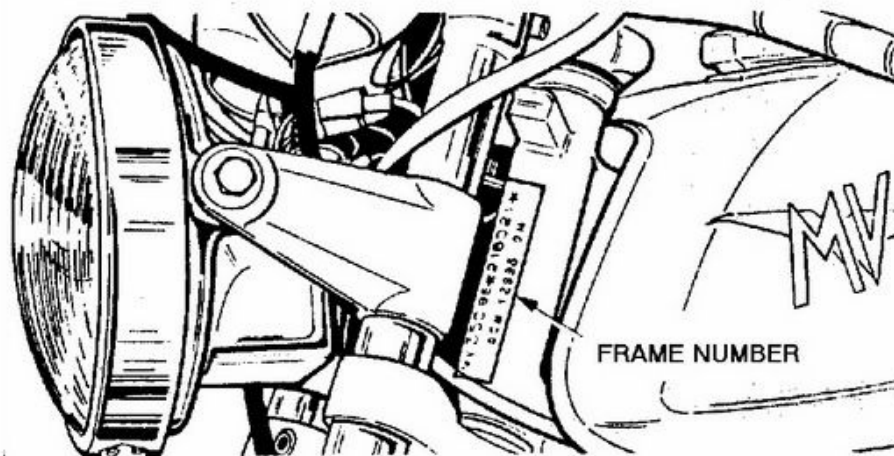
PERFORMANCE

Maximum speed	170 km/h
---------------	----------

IDENTIFICATION DATA

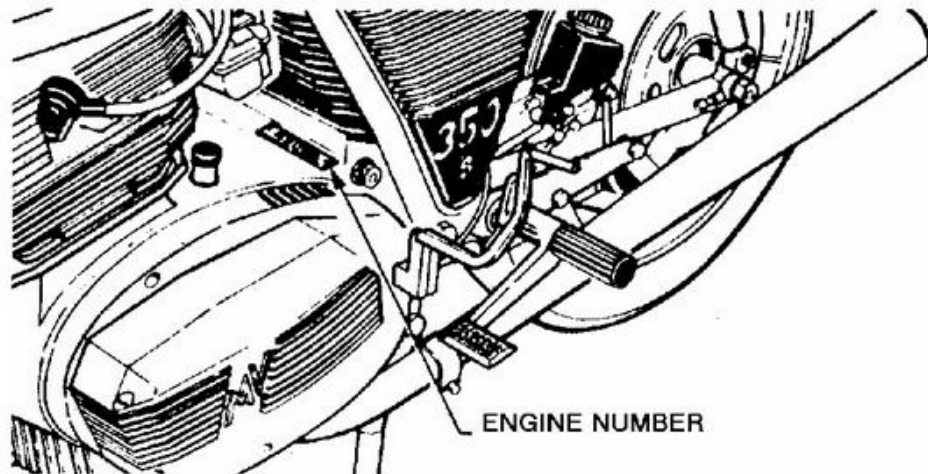
GENERAL

Each motorcycle is identified by a number stamped on the frame in the position shown in Figure 1. The data consists of a prefix and number. This number is recorded on the certificate of origin, freedom of circulation, and should always be quoted in case of a query or when buying spare parts.



SPARE PARTS

You are advised to use only original MV spares. The use of non-original spares will void the guarantee. The procedure for ordering spares is given in the SPARES CATALOGUE.



Note

When requesting technical assistance or when ordering spares, always quote the identification number of the motorcycle for which they are required, and if the spares are for the engine, the engine number should also be quoted

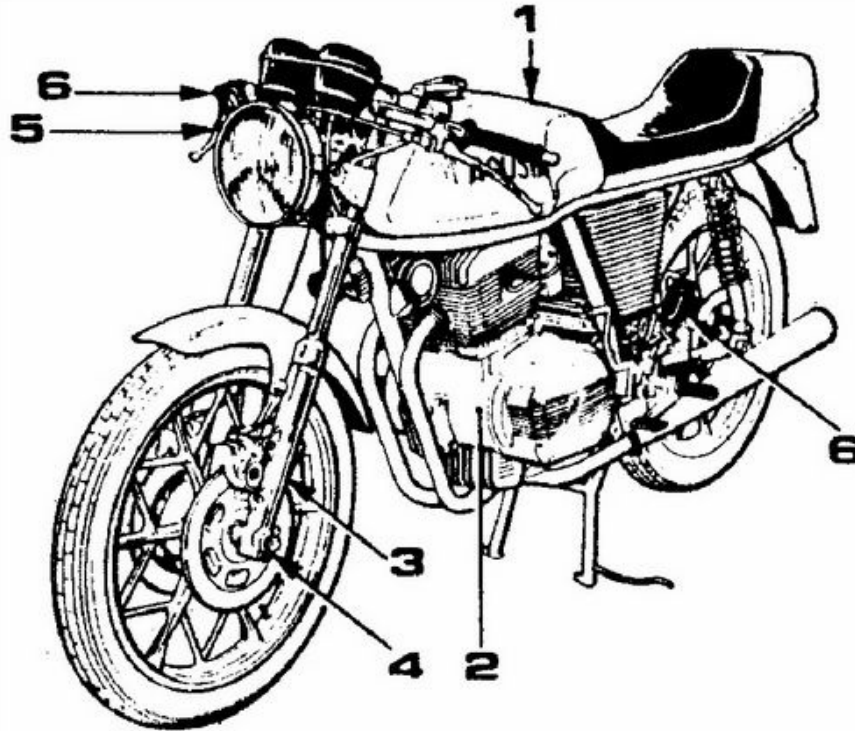
LUBRICATION

The new motorcycle is supplied with ELF lubricants. Use of other products during the guarantee period may render it invalid.

GENERAL DESCRIPTION

LUBRICATION POINTS AND QUANTITIES

Refer to tables 2 and 3 for full information on all lubrication points of the motorcycle, and the products and quantities used.



Position		Quantity	Lubricant	Note.
1	Fuel tank	19 L	Petrol 98-100 octane	
2	Engine oil	2 kg	ELF Sportigrade SAE 20/50 API-SE-CC oil.	See P.30
3	*Telescopic forks	125 cc.	ELF Transomatic ATF 1922A oil ELF ACANTIS 37 (Estate) oil	See P.31
4	Wheel bearings and moving parts of frame	As Req'd	ELF FB808 Grease	
5	Throttle cables	As Req'd	ELF MoS2 Speciale 1 Grease	
6	Brake master cylinders	3/4 of servo capacity	ELF Frelub 550 SAE J1703 c.	See P.29

* The quantity of oil indicated in the table is the amount required for one leg of the telescopic forks

Table 2. Service points, capacities, and products

TYRE INFLATION PRESSURES

The data for tyre inflation pressures is purely indicative, and valid only for the original METZELER tyres. When fitting different tyres from the originals fitted, refer carefully to the manufacturer’s information.

Front tyre22 - 26 psi
 Rear tyre solo25 - 28 psi
 Rear tyre with pillion35 - 38 psi

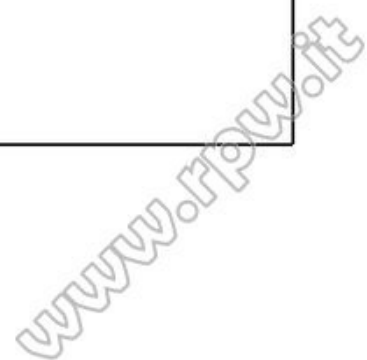
LUBRICATION

The new motorcycle is supplied with ELF lubrication products according to the LUBRICATION CHART.

DO NOT USE MIX DIFFERENT PRODUCTS; if you need to use another brand, drain the existing oil completely and use only the corresponding products indicated in Table 3.

Type	Lubricants				
ELF	Sportigrade SAE 20/50 API-SE-CC oil.	Transomatic ATF 1922A oil	ACANTIS 37 (Estate) oil	FB808 Grease	MoS2 Speciale 1 Grease
AGIP	F1 SAE 30W	F1 Rotra SAE 90	F1 OSO 55	F1 Grease 33FD	F1 Grease 15
VALVOLINE	HP Super SAE 30	Valvoline X18 SAE 90			
TOTAL	SUPER HD SAE 30W	Total EP SAE 90	TOTAL Azolla 30		Totalgrease PG
SHELL	X100 SAE 30W	Shell Spirax EP SAE 90	Shell Tellus Oil 29	Shell Retinax AX DX	Alvania Grease 3
MOBIL	Mobiloil ARCTIC 30W	Mobilube GX SAE 90			Mobilgrease Special
GULF	Gulfpride 30W	Gulf Gear Lubricant SAE 90	Gulf Harmony 54AW		
FINA	DELTA 30W	Fina Pontonic N	Fina Arian Hytip	Fina Bentex A3	
ESSO	MOTOROIL 30W	Esso Gear Oil SAE 90	Esso Hydraulic Oil Medium	Esso Bearing Grease B2	Chassis Grease H
BP	ENERGOL 30W	BP Gear Oil EP SAE 90	BP Auto hydr Oil 65		Energrease L2 Multipurpose

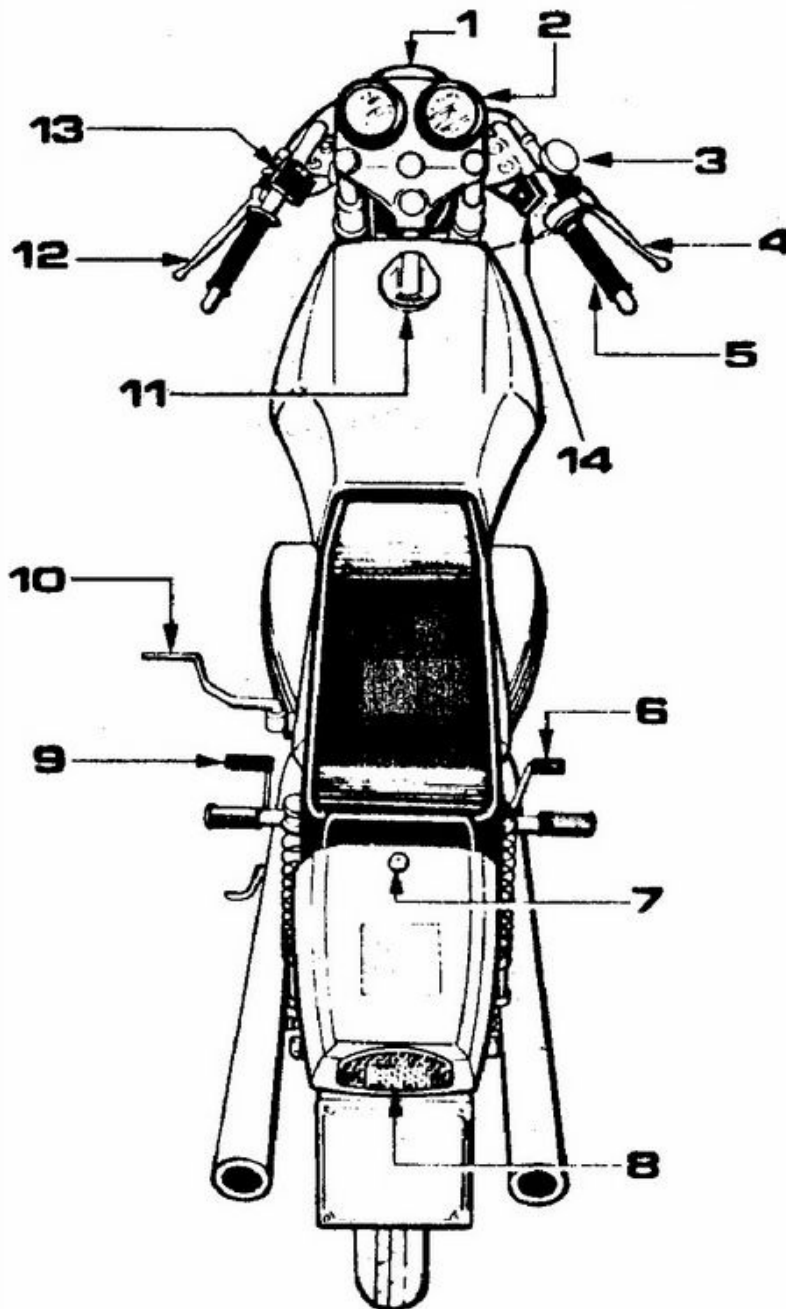
Table 3. Lubricants



EQUIPMENT AND CONTROLS**GENERAL**

The following pages describe the function of the various controls used to ride the motorcycle.

The figure shows a general view of the controls and instruments.



MOTORCYCLE CONTROLS AND INDICATORS
(SHOWN ON PAGE 7)

1. Front light
2. Instrument panel
3. Front brake fluid reservoir
4. Front brake lever
5. Throttle control
6. Gear change pedal
7. Rear storage compartment lock
(seat removal)
8. Rear light
9. Rear brake lever
10. Engine kick-start lever
11. Fuel tank cap.
12. Clutch lever
13. Left switches
14. Right switches.

INSTRUMENT PANEL

The area of controls shown in the figure consists of the following elements:

1. TACHOMETER

indicates the speed of rotation of the engine, expressed in revolutions per minute.

2. SPEEDOMETER - MILEOMETER

indicates the speed of the motorcycle in km/h and in the small window above, the total distance travelled.

3. KEY SWITCH

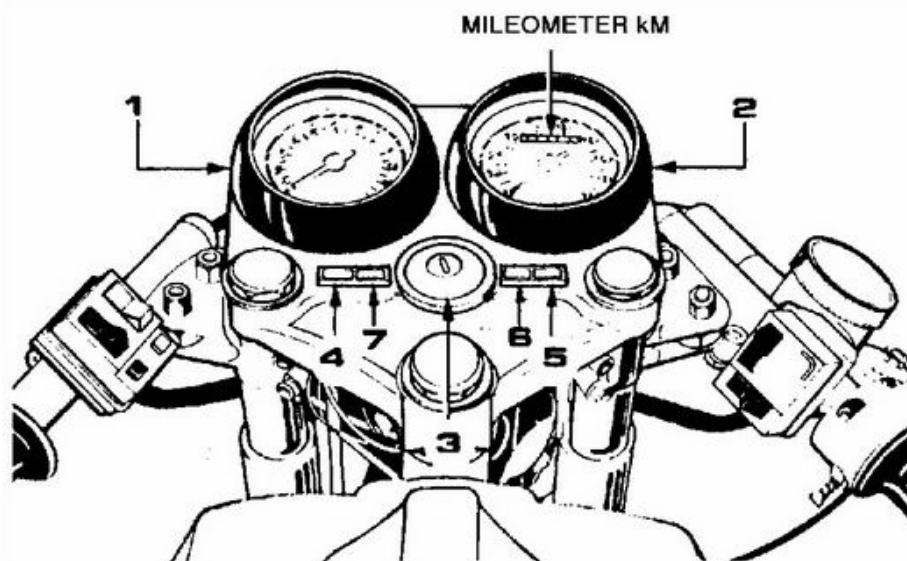
pos.1a. Key turned completely to the right enables engine and all services. (key cannot be removed).

pos.2a. First position to the left: ignition and services disabled, and parking light switched on. (key can be removed).

pos.3a. Second position to the left engine and all services disabled, steering locked. (key can be removed).

4. GREEN INDICATOR LIGHT

The light is illuminated when the low intensity lights are on.



5. BLUE INDICATOR LIGHT

The light is illuminated when the main beam of the headlight is switched on.

6. YELLOW INDICATOR LIGHT

The light is illuminated when the gear selector is in the 'NEUTRAL' position.

7. RED INDICATOR LIGHT

The light is illuminated when the alternator current is not sufficient to recharge the battery.

CONTROLS ON THE RIGHT HANDLEBAR

The right handlebar shown in the figure contains the following controls:

1. FRONT BRAKE LEVER

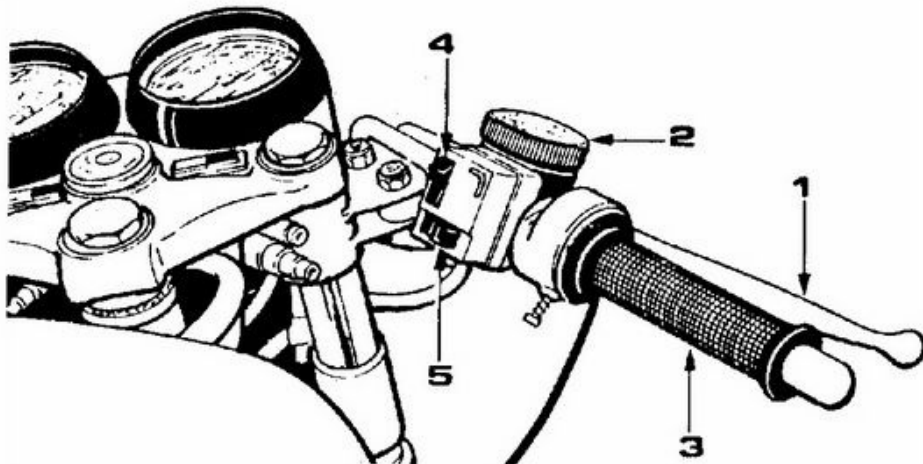
Actuates the piston of the pump mounted on the handlebar.

2. FRONT BRAKE PUMP

Hydraulically operates the two front wheel disk brakes

3. THROTTLE CONTROL

Rotating the grip opens the petrol valves in the carburettors. Releasing the control allows the valves to be returned to the closed position by the carburettor springs.



RIGHT SWITCH; comprises the following switches:

4. EMERGENCY SWITCH:

with 2 positions:

- ENGINE OFF: switches off the ignition.
- ENGINE START: position for normal running.

Note

The emergency stop switch must always be in the ENGINE START position. In case of emergency switch to the ENGINE OFF position.

5. DIRECTION INDICATOR SWITCH:

with 3 positions:

- TURN - L: actuates left turn indicators.
- OFF
- TURN - R: actuates right turn indicators.

CONTROLS ON THE LEFT HANDLEBAR

The left handlebar shown in the figure contains the following controls:

1. CLUTCH LEVER

Disengages the engine from the transmission; it must be used every time the gear change pedal is moved and when the motorcycle is being stopped.

2. CLUTCH ADJUSTER

Adjusts the free play in the clutch cable.

LEFT SWITCH; comprises the following switches:

3. LIGHTS SWITCH (BLUE):

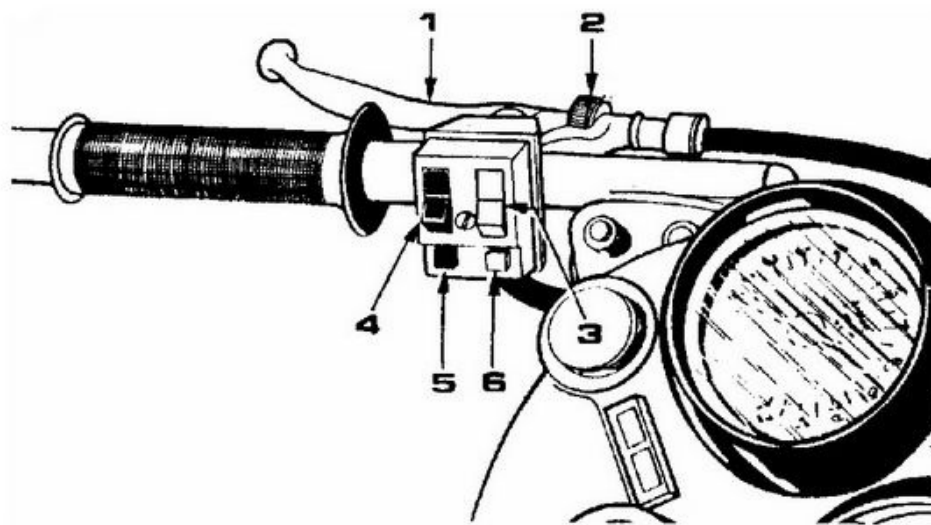
with 2 positions:

- ON: switches on lights.
- OFF: switches off lights.

4. LIGHTS SWITCH (BLACK):

with 3 positions:

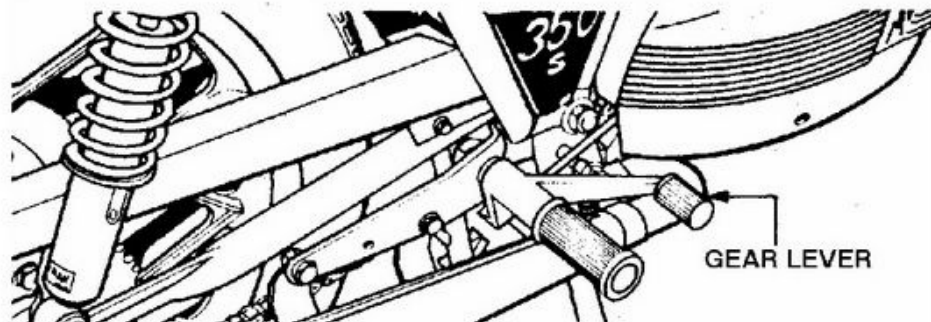
- Hi: switches on main headlamp beam.
- Park: switches on parking light
- Lo: switches on dipped headlamp beam.



5. HORN BUTTON (BLACK):
Sounds the horns.
6. FLASH BUTTON (BLUE):
Switches on main headlamp beam.

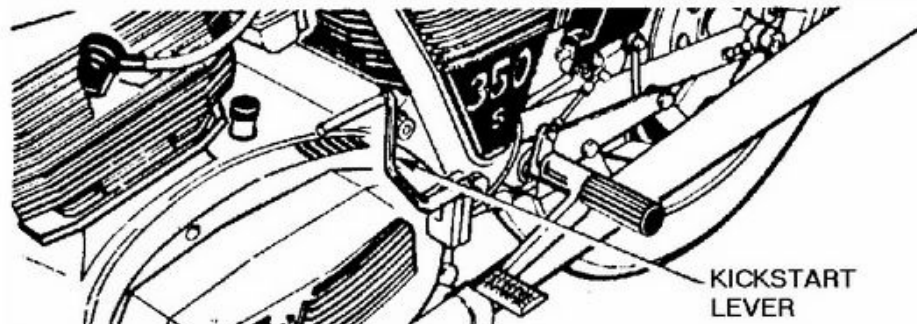
GEAR CHANGE PEDAL

The gear change pedal shown in the figure is situated on the right side of the motorcycle. See space 22 'USE OF THE MOTORCYCLE'.



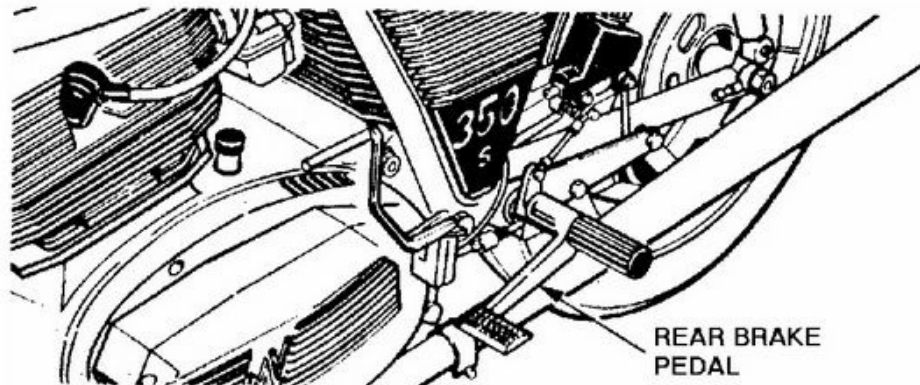
KICK-START LEVER

The kick-start lever is situated on the left side of the motorcycle. It is advisable to use the kick-start with the motorcycle on the centre stand by giving the lever a sharp downward kick with the foot. For full information on the use of the pedal see page 21 'USE OF THE MOTORCYCLE'.



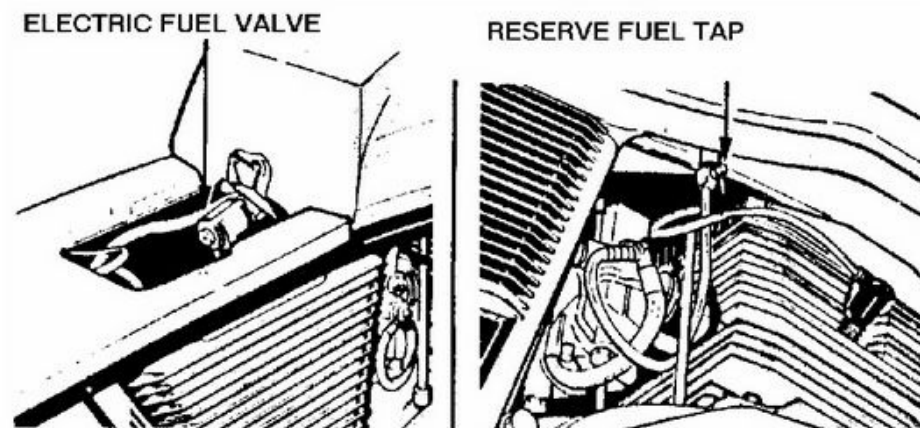
REAR BRAKE PEDAL

The rear brake pedal is situated on the left side of the motorcycle. Pressing the pedal with the foot actuates the hydraulic pump which transmits oil, exerting pressure on the brake pads installed in the rear disk calliper.



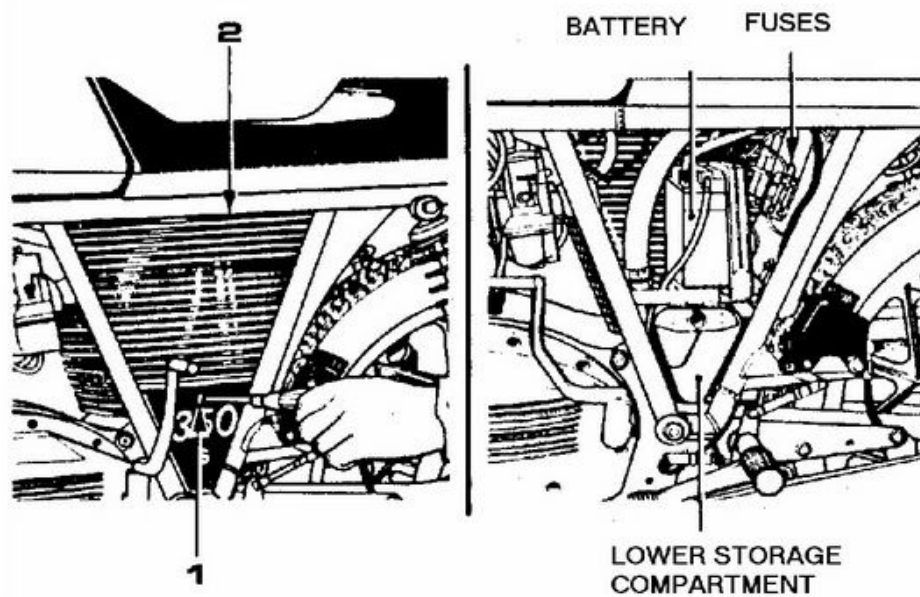
FUEL VALVES

The motorcycle is equipped with two fuel valves: one electromagnetic valve situated under the rear of the fuel tank (and operated automatically when the key is in position 1), the other, situated under the right side of the tank, is a manual valve used for the reserve fuel supply. See figure.



BATTERY - FUSES - TOOL STORAGE COMPARTMENT

To access the battery, fuses, and tool storage compartment, remove the left and right side covers situated in the centre of the frame. To remove the side covers see figure below.

**OPERATION 1**

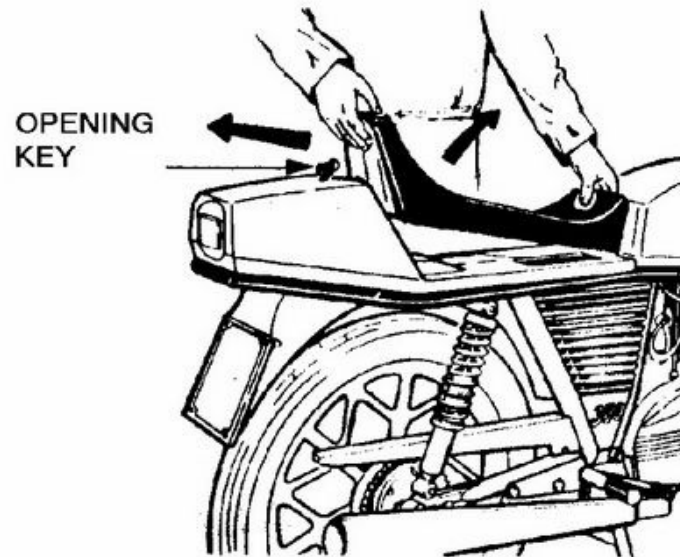
Open the fastener (1) by turning to the left with a screwdriver or coin.

OPERATION 2

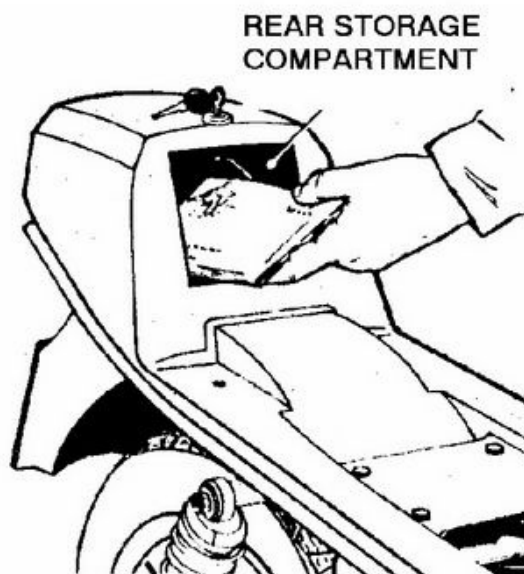
Remove the side cover (2) by pulling the lower part outwards and downwards to disengage it from the two pivots on the frame.

SEAT REMOVAL - REAR STORAGE COMPARTMENT

The figure below shows the removal of the seat for access to the rear storage compartment.



1. Insert the key and rotate to the right, lift the back of the seat upwards and slide the seat towards the rear as indicated in the figure.



RUNNING-IN INSTRUCTIONS

GENERAL

The motorcycle is delivered without any limitations to the normal function of the carburettor. It is advised that the engine is not run at maximum power or speed. To allow the various components to settle-in the limitations listed in Table 1 should be strictly adhered to.

ENGINE

For a new motorcycle a running-in period of at least 3,000 km. is necessary. The engine regime can be gradually increased towards normal throughout the running-in period.

Do not maintain the speeds indicated in Table 1 for long periods. Do not warm-up the engine by running at high speeds (2000 - 3000 recommended).

RUNNING-IN - MAXIMUM SPEEDS					
DISTANCE	MAXIMUM CONTINUOUS SPEED KM/H (MAX. RPM)				
	1st.	2nd.	3rd.	4th.	5th.
km					
0 - 1500	34 (5500)	50 (5500)	73 (5500)	91 (5500)	103 (5500)
1500 - 3000	40 (6500)	60 (6500)	86 (6500)	107 (6500)	121 (6500)

Table 1. Maximum continuous speeds during running-in

ENGINE OIL

After the first 500 km change the engine oil with a the engine warm, and clean the oil filter. At 1000 km perform a second oil change and clean the oil filter again. After 3000 km change the oil again, and thereafter follow the routine shown under PERIODIC LUBRICATION ROUTINE.

CAUTION

Ensure that all fixed components are secure. Failure to adhere to the above will affect the reliability of the motorcycle.

USE OF THE MOTORCYCLE

PERIODIC CHECKS

Before using the motorcycle it is necessary to perform a series of operations and checks to ensure correct operation of all the parts which are important for riding safely.

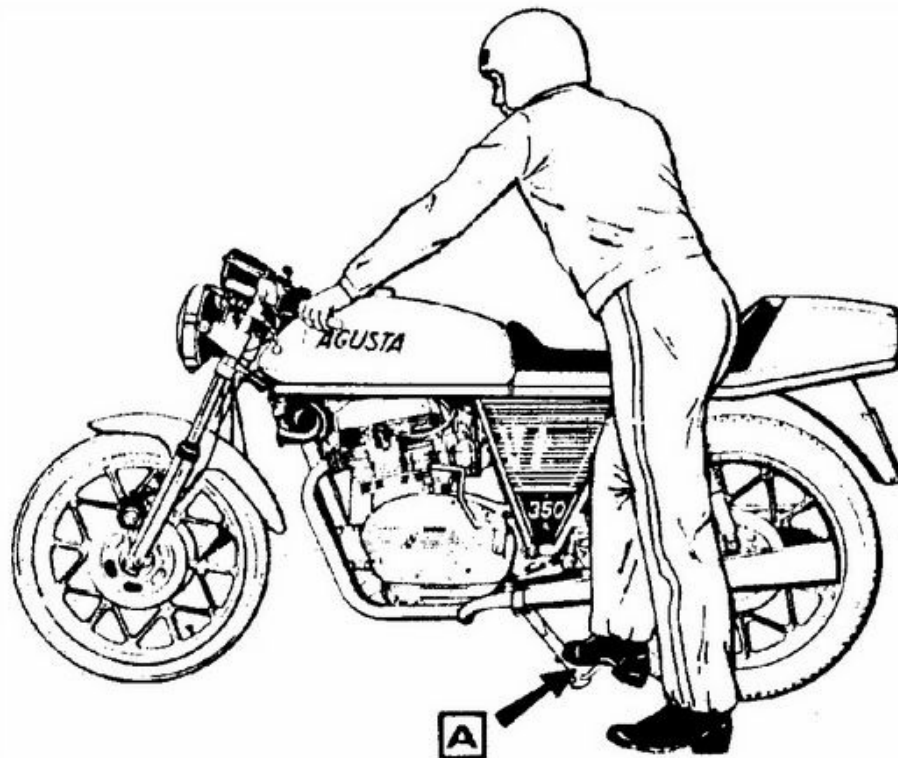
- **BATTERY**
Check the electrolyte level and top-up with distilled water as required. Check that the connections are clean and secure. Protect the terminals from oxidisation with vaseline.
- **ENGINE**
Check the oil level as shown on page 30.
- **BRAKES**
Check the efficiency of the brakes and the brake fluid level in the front and rear reservoirs.
- **TYRES**
Check the tyre pressures as shown on page 6.
- **SUSPENSION**
Check the efficiency of the suspension and the settings of the rear shock absorbers as shown on page 37.
- **ELECTRICAL EQUIPMENT**
Check the electrical equipment and various indicators and switches (lights, horn, rear light, stop light).

CAUTION

Ensure that the gear change pedal is in the neutral position (the yellow light will be illuminated) when the key is in position 1a.

STANDING THE MOTORCYCLE ON THE CENTRAL STAND

Before starting the engine it is advisable to place the motorcycle on the central stand for safety. Press the central stand lever (A) downwards with your foot while using your right hand to lift by the frame tube near the rear shock absorber.



STARTING THE ENGINE

Follow this sequence of operations:

OPERATION 1

Insert the key and turn the key fully to the right.

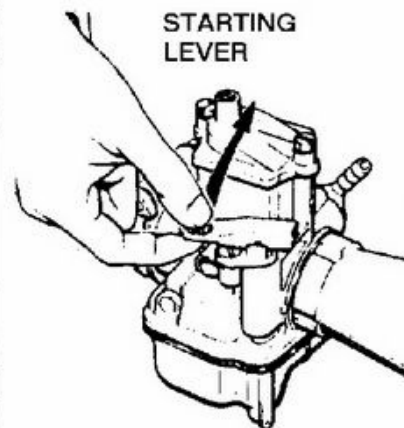
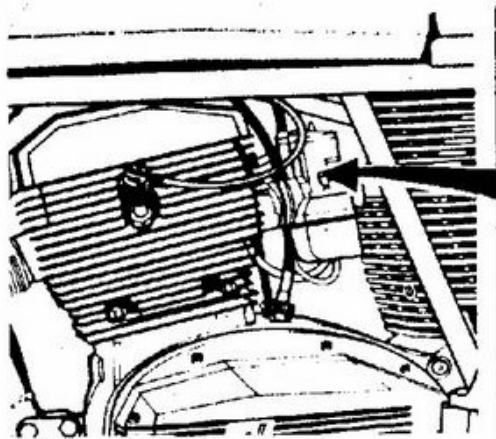
OPERATION 2

Hold the throttle in the minimum position (see page 10).

OPERATION 3

Kick down sharply on the kick-start lever and allow it to return to the top position. If the engine is running return the lever to the storage position.

When the engine is cold lift the starter levers on both carburetors. Leave them in position until the engine has started. When the engine is warm it may be necessary to open the throttle fully, lowering gradually as soon as the engine starts.



RIDING THE MOTORCYCLE

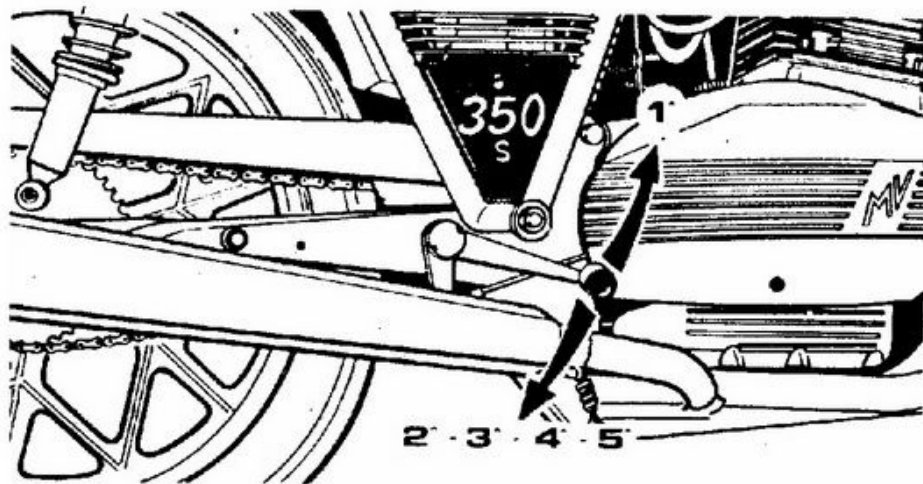
After starting the engine and placing the motorcycle in the riding position off the stand, perform the following sequence of operations:

OPERATION 1

Pull the clutch lever fully (see page 12) and select first gear. For this and successive operations refer to the figure.

OPERATION 2

Slowly release the clutch while progressively opening the throttle, increasing the engine speed until ready to change to a higher gear.



NOTE

During the running-in period refer to Table 1. After the running-in period refer to Table 4

USE OF GEARCHANGE

- a. To change from a lower gear to a higher gear, when it is necessary to accelerate without exceeding the maximum engine speed, close the throttle, pull the clutch lever fully, and select a higher gear. Slowly release the clutch lever and adjust the throttle. Proceed in a similar way for the other gears.
- b. To change from a higher to a lower gear, close the throttle, pull the clutch lever fully, increase the engine speed briefly, and slowly release the clutch lever.

Speed after 3000 km					
	Gear				
	1st.	2nd.	3rd.	4th.	5th.
Max. Speed [km/h]	55	82	119	149	168*
Max. Engine Revs. [RPM]	9,000	9,000	9,000	9,000	9,000
* The engine however exceeds the maximum RPM indicated in 5th. gear which corresponds to a speed greater than 168 km/h					

Table 4. Maximum speeds after running-in

- c. To stop the motorcycle pull the clutch lever fully and select neutral. (The yellow indicator will be lit).

STOPPING THE ENGINE

To stop the engine, rotate the key fully anticlockwise

PARKING THE MOTORCYCLE

Place the motorcycle on the centre stand. Avoid parking against a wall or footpath. To activate the steering lock turn the handlebars to the left and turn the key fully anticlockwise. Extract the key.

To park at night or in poorly lit places it may be necessary to use the parking light. Rotate the key to position 2 and extract it.

INSTRUCTIONS FOR USE

- Do not maintain the maximum speeds indicated in table 4, (or 1 for running-in) for long periods, especially in lower gears.
- For increased life of the rear tyre avoid unnecessary fast acceleration.
- Do not exceed the maximum engine RPM.
- The red battery charge indicator should always be off. It will only light when the engine speed drops below 1500 RPM.
- Never use the motorcycle with the engine oil below the MIN level.
- When riding, do not hold the clutch lever more than necessary
- Avoid riding with the engine speed below 2000 RPM.
- It is not advisable to slip the clutch for rapid acceleration or travel downhill in neutral or with the clutch disengaged'
- When travelling downhill it is better to use the friction of the engine and if the slope is severe, engage the lowest gear.

STOPPING THE MOTORCYCLE

To stop the motorcycle, follow this sequence of operations:

- a. Close the throttle.
- b. Press the back brake pedal and front brake lever.

NOTE

Always use the front and back brakes together

MAINTENANCE AND ADJUSTMENT

The efficiency and durability of the motorcycle depends mainly on the care taken in maintenance operations.

Note

Before proceeding to maintenance operations it is necessary to clean the motorcycle thoroughly

LUBRICATION AND PERIODIC CHECKS

Lubrication and periodic checks of the various parts of the motorcycle should be performed at the intervals indicated in the chart on page 34.

If a sudden loss of oil is noticed, check the area from which it is being lost.

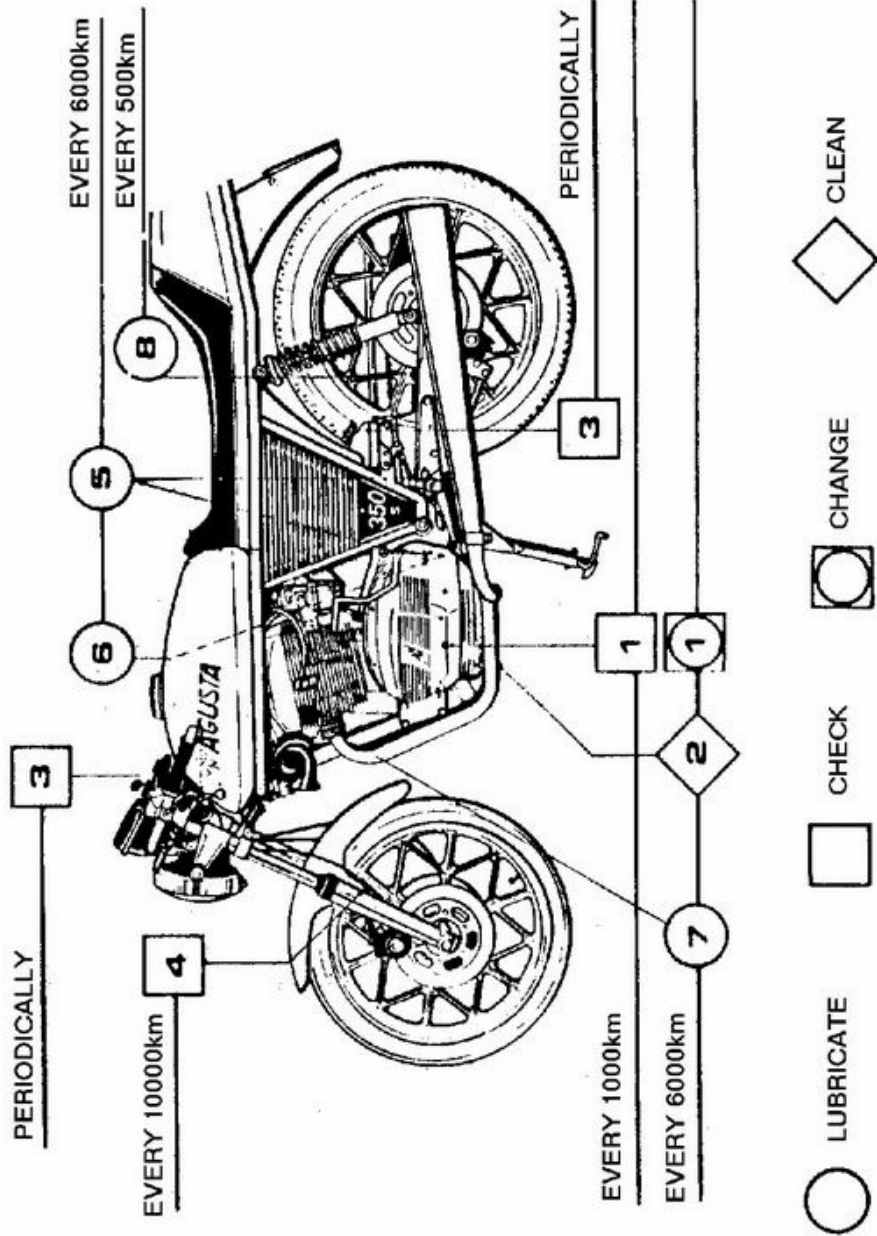
CLEANING THE MOTORCYCLE

To clean the bottom of the engine and the chain use a brush and petrol and dry with a jet of air.

Painted parts can be washed with water and a sponge and dried with a chamois leather.

Use of petrol will damage the paintwork.

Periodic lubrication chart



www.wolfe

LUBRICATION CHART TABLE			
Pos.	Description	Products	Note
1	ENGINE: Oil Check level every 1000km and top-up as necessary. * Every 6000km change oil.	ELF Sportigrade oil SAE 20W/50 API-SE-CC	see page 30
2	OIL FILTER • Clean every 6000km	Petrol	see page 31
3	BRAKE FLUID (front and rear) Periodically check level and top-up as necessary.	ELF FRELUB 550 SAE J 1730c.	
4	FRONT FORK: Check level every 10000km and top-up as necessary.	ELF Transomatic ATF 1922A ACANTIS 37	see page 31
5	BRAKE AND GEAR PEDAL BEARINGS: * Lubricate every 6000km	ELF FB08 Grease	
6	GEAR PEDAL LINKAGE * Lubricate every 6000km		
7	THROTTLE CABLE: * Every 6000km lubricate the adjuster and cable.	ELF MoS2 Grease	see page 38
8	CHAIN Every 500km lubricate and clean.	ELF MoS2 Grease	see page 32

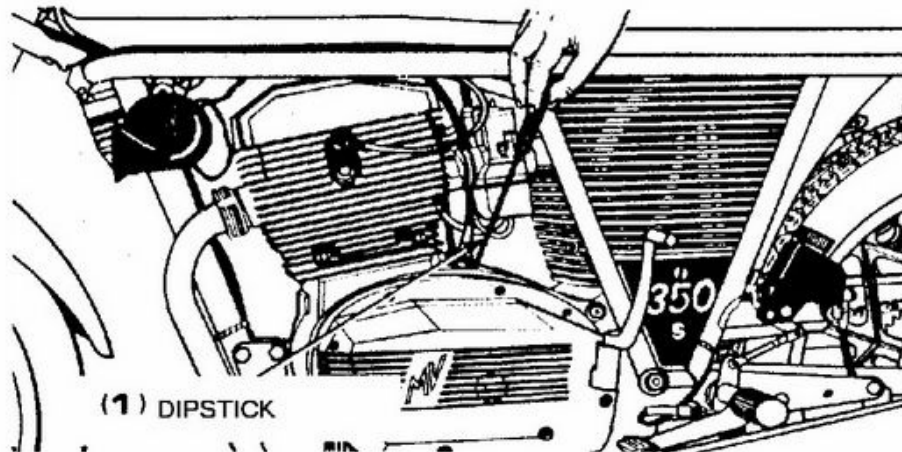
Note

* The operations indicated should also be performed after the first 1000 km. For the engine, see also the running-in instructions.

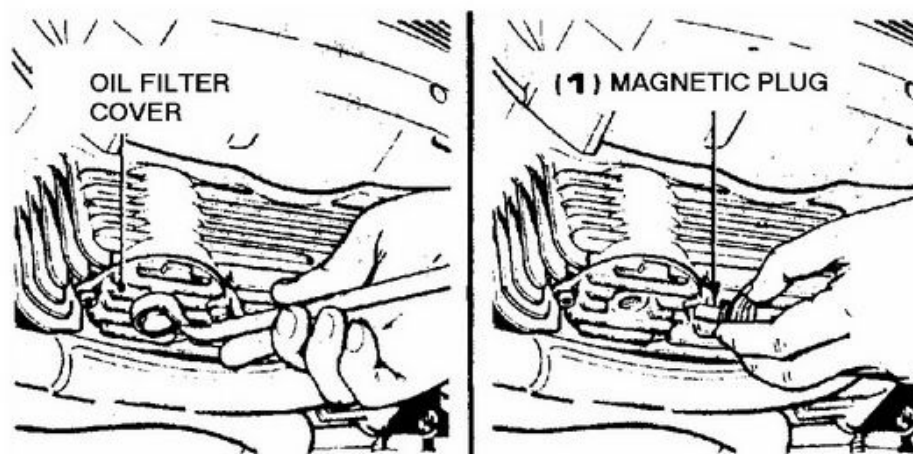
• The operations indicated should also be performed after the first 2000 km.

ENGINE - GEARBOX**OIL LEVEL CHECK**

To check the oil level withdraw the dipstick (1) and check that the oil level approximately at the MAX. level.

**ENGINE OIL CHANGE**

Oil changes should be performed every 6000 km after the running-in period. With the engine warm, remove the magnetic oil plug (1) located in the centre of the oil filter.

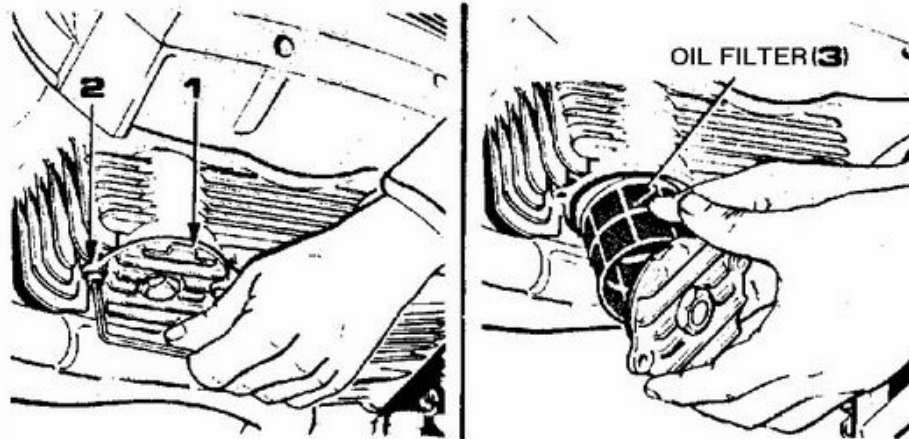


OIL FILTER

To clean and replace the oil filter proceed as follows :

OPERATION 1 Remove the cover (1) by removing the retaining screws (2)

OPERATION 2 The oil filter can be cleaned with petrol and dried with a jet of air every second oil change.

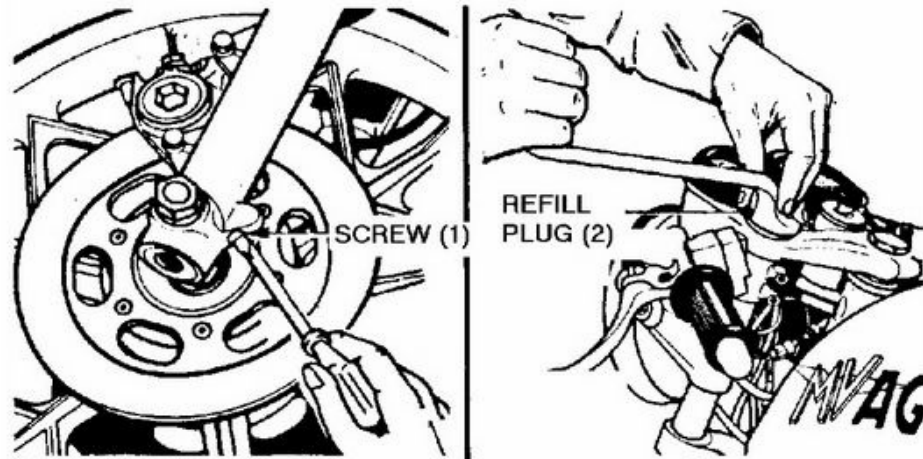


FRONT FORKS

The telescopic forks do not need special maintenance. It is advisable to check the oil condition in each leg every 10000 km. as follows.

OPERATION 1 Remove the plug (1) at the bottom of each fork leg.

OPERATION 2 Remove the upper plug (2) and ensure that all liquid has drained out. Replace the lower plug (1) refill the fork, and replace the upper plug (2).



LUBRICATING THE CHAIN

Periodically wash with petrol, dry carefully and grease with ELF MoS2 Special 1 grease. It is very important to do this regularly.

CHECKS AND ADJUSTMENTS

GENERAL

The diagram on page 34 identifies the checks and their appropriate details and intervals. Adhere closely to the checking, cleaning and adjustment procedures will prevent the majority of problems, while maintaining the motorcycle in optimum condition and efficiency.

FILTERS AND FUEL PIPES

Every 10,000 km approximately, or when you find the fuel supply to the carburettors is irregular:

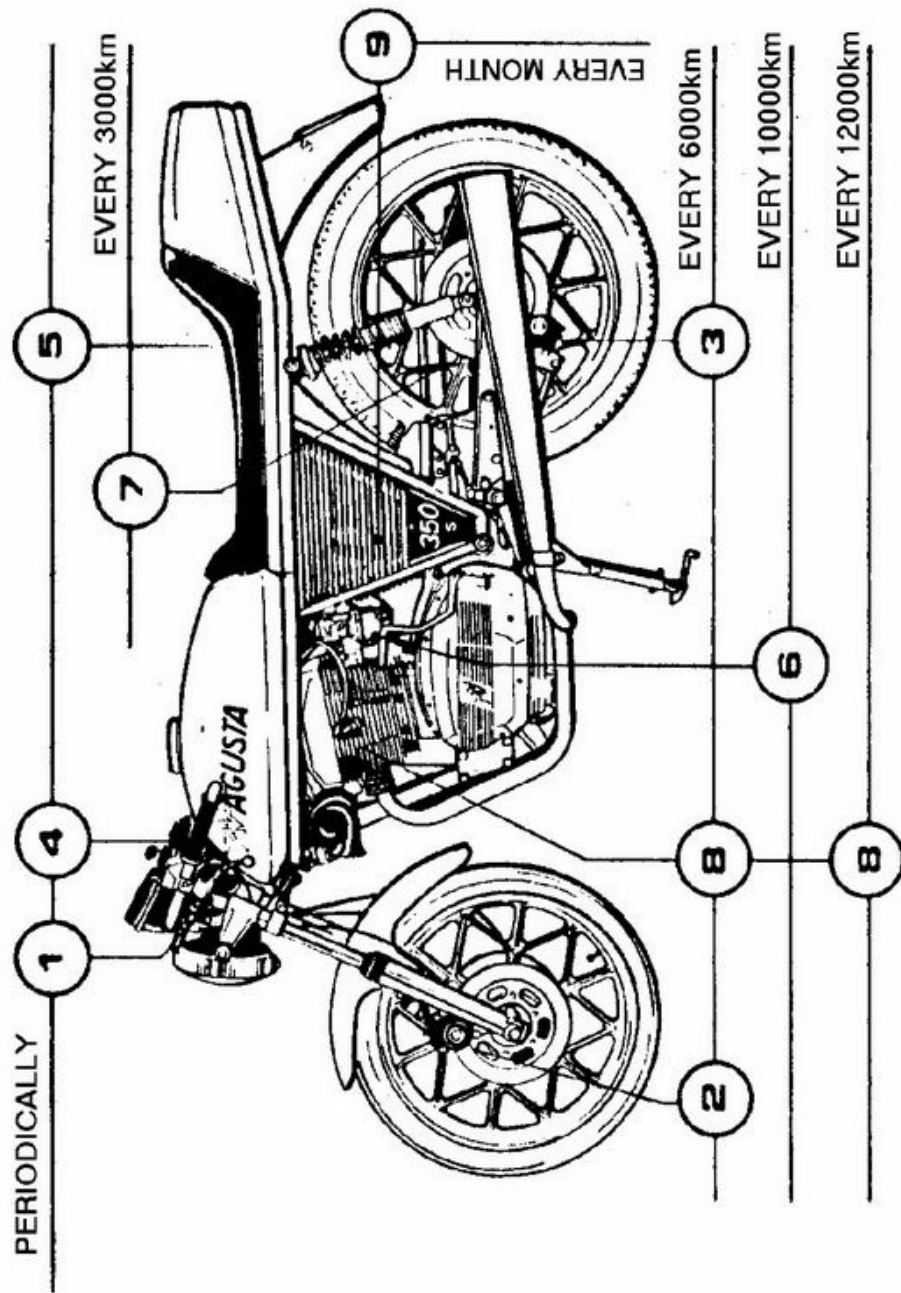
- That the fuel pipes are clear
- That the filters in the carburettors and fuel tank are clean

These filters can be cleaned with petrol and dried with an air jet. If the tubes have become hardened they should be replaced.

FUEL TANK

When cleaning the carburettors it is a good idea to also clean the fuel tank. To do this follow this sequence of operations.

- Put some petrol from the tank and shake it.
- Empty the petrol from the tap area at the bottom of the tank which is where most of the impurities will be found.



* The operations indicated should also be performed after the first 1000 km. For the engine, see also the running-in instructions.

The operations indicated should also be performed after the first 2000 km.

www.rpworld.it

PERIODIC CHECK CHART		
Position on drawing	Description	Note
1	CLUTCH LEVER When necessary adjust the clutch cable using the adjuster on the clutch lever	see page 36
2	FRONT BRAKES Every 6000 km check the condition of the brake pads	
3	BACK BRAKES Every 6000 km check the condition of the brake pads	
4	THROTTLE Periodically check for tightening of the rotation	see page 37
5	REAR SHOCK ABSORBERS Periodically check the efficiency.	see page 37
6	FUEL PIPES AND FILTERS Every 10000 km check the condition and replace if necessary	see page 33
7	CHAIN Every 3000 km check the chain tension	see page 40
8	SPARK PLUG Every 6000 km clean and check the gap. Change every 12000 km.	see page 56
9	BATTERY Every month check the level of electrolyte	see page 46
	BOLTS Every 6000 km check connections and attachment of the major parts.	

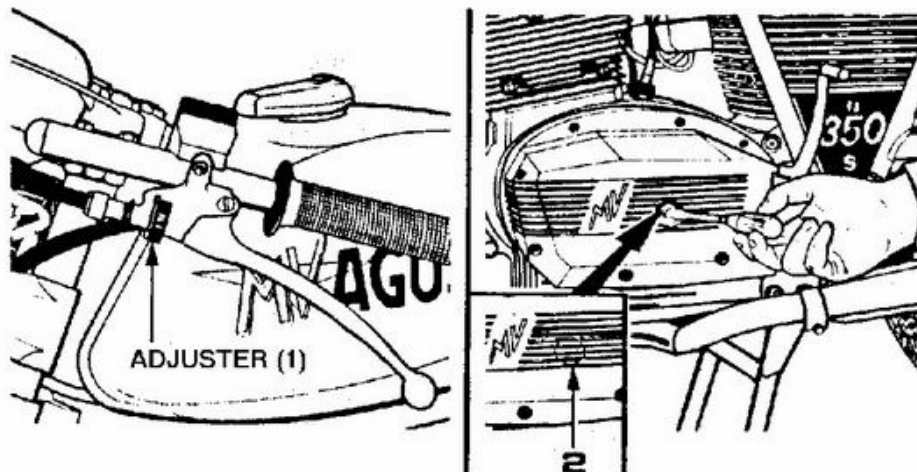
CLUTCH LEVER

Adjust the clutch lever to ensure 3 - 4 mm of play in the cable using the adjuster (1).

ADJUSTMENT OF THE CLUTCH

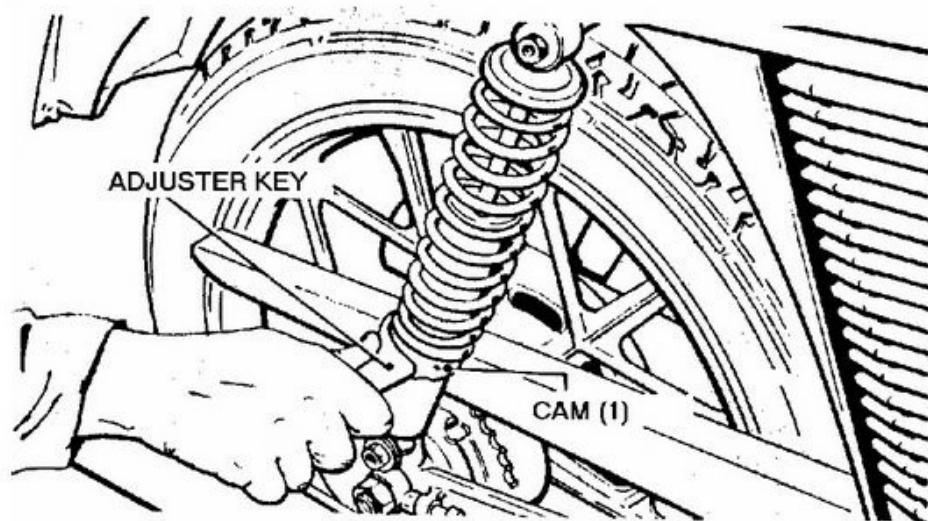
When the lever adjustment is insufficient, adjust the clutch as follows:

- OPERATION 1 Remove the plug (2) from the left cover.
- OPERATION 2 Loosen the central nut with a tube spanner.
- OPERATION 3 Adjust the clutch with a screwdriver (turn right if the gap is excessive, turn left if no gap).
- OPERATION 4 Tighten the nut while preventing the adjustment screw from turning, and replace the plug (2). Check the condition of the O ring on the cover.



HYDRAULIC SHOCK ABSORBERS

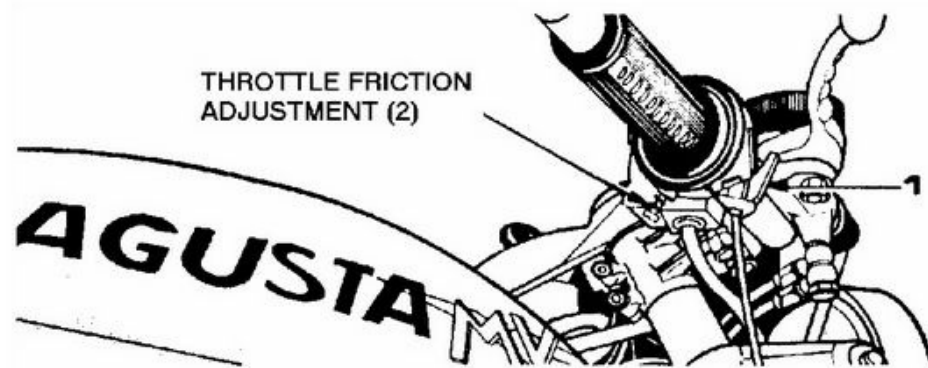
The strength of the rear shock absorbers can be adjusted to compensate for the weight of the rider and possible passenger. To increase the strength of the springs turn the cam (1) (with the correct key) anticlockwise.



THROTTLE CONTROL

The throttle control should turn easily. Occasionally lift the cover (1) on the handlebar and lubricate the inside with grease.

The free play in the cable should not exceed 0.5 - 1 mm, otherwise adjust the tensioners on the carburetors. If the throttle is stiff, adjust screw (2)



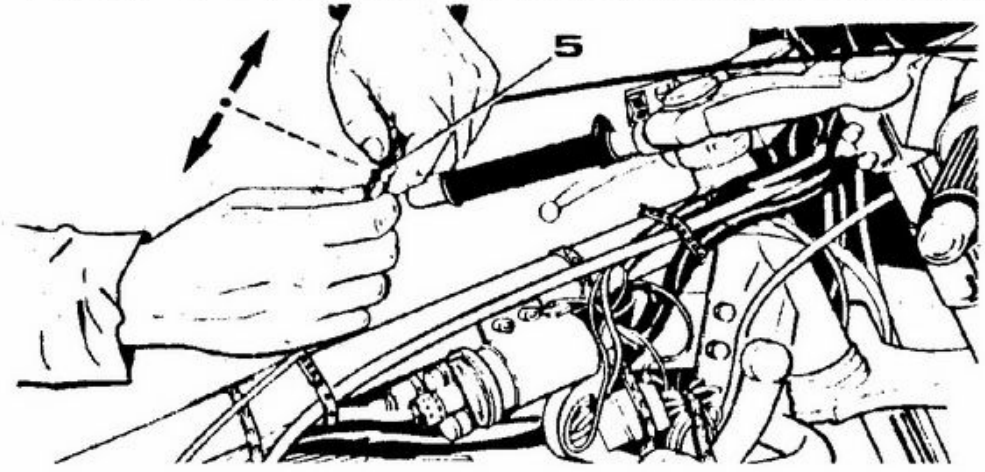
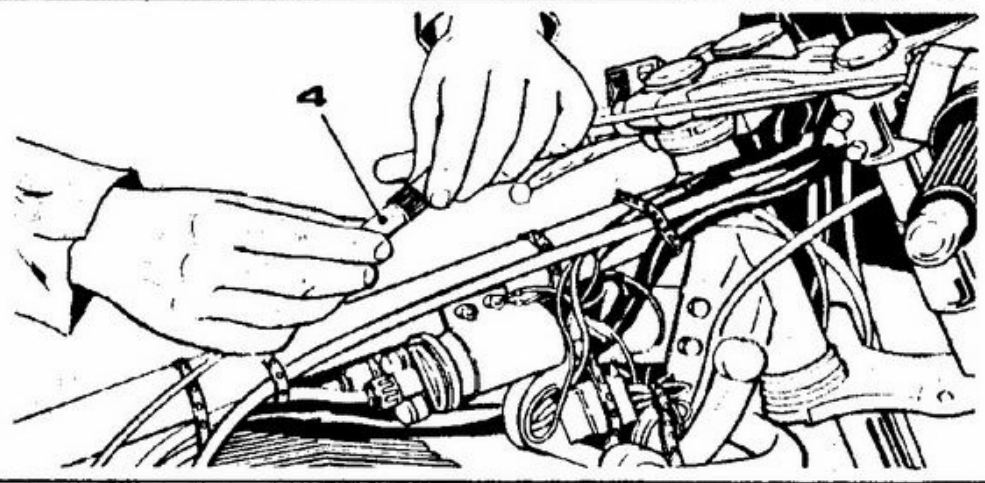
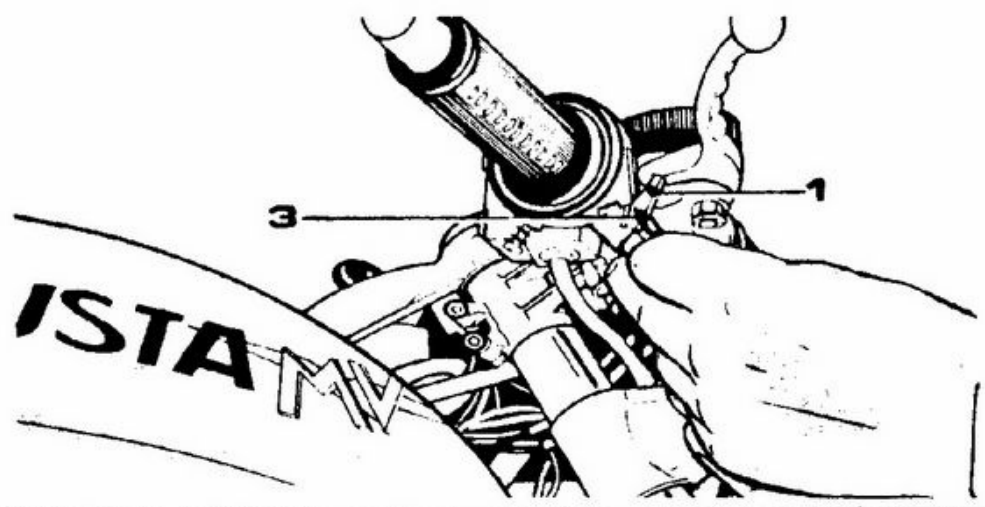
CHANGING THE THROTTLE CABLE

Before performing this operation, first remove the seat (page 16) and the fuel tank, having first disconnected the fuel pipes and electromagnetic valve, then proceed as follows:

- | | |
|--------------------|---|
| <u>OPERATION 1</u> | Remove the cover (1) and unclip the end of the throttle cable (3). |
| <u>OPERATION 2</u> | Unscrew the upper end of the cable splitter (4). |
| <u>OPERATION 3</u> | Remove the other end of the throttle cable (5) as shown. |
| <u>OPERATION 4</u> | Insert the new cable and proceed in reverse order to reassemble. Replace the tank and seat. |

Note

When installing the new cable in the cable splitter, lubricate the inside with a little grease.



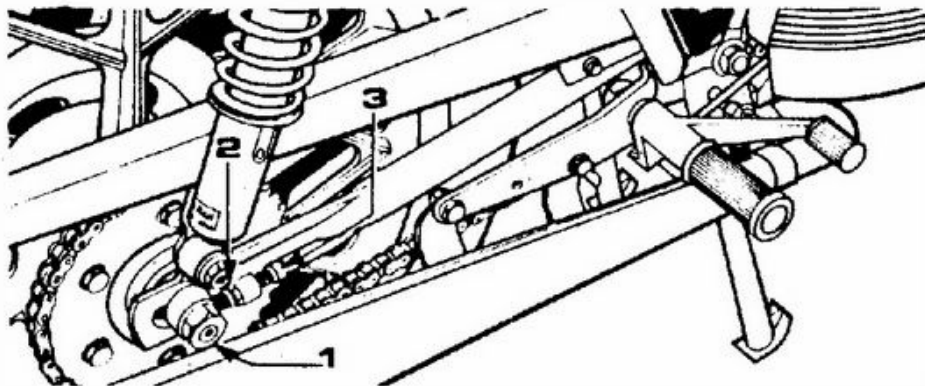
WHEEL BALANCING

After replacing either front or rear tyres the wheels should be re-balanced. This is necessary to avoid vibration and ensure the stability of the motorcycle at all speeds.

CHAIN TENSION ADJUSTMENT

Adjust the chain tension so that with two people on the motorcycle there is about 1 cm of vertical movement in the chain. If necessary adjust the chain as follows:

- OPERATION 1 Loosen the nuts on the rear axle (1)
- OPERATION 2 Loosen the tensioners (2)
- OPERATION 3 Adjust the chain tension (3) as above.
- OPERATION 4 At the require tension, tighten the adjusters and fully tighten the rear axle nuts.
- OPERATION 5 Verify the correct alignment of the front and rear wheels as shown on page 41.

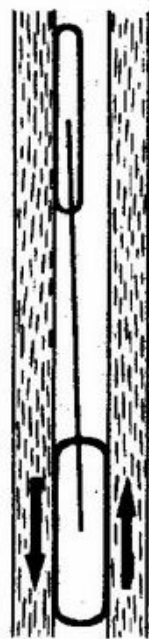


WHEEL ALIGNMENT

After removal of the rear wheel it is advisable to align the front and rear wheels following the operation described.

ALIGNMENT PROCEDURE

Position two battens approximately 2 m long at the sides of the motorcycle. The motorcycle may not be supported on the centre stand. The battens must be raised about 10 cm off the floor and pressed against the sides of the rear wheel. In this position the front wheel should be perfectly centered between the battens. (see case B in the figure). If the alignment is incorrect (see case A or C in the figure) adjust the chain tensioners accordingly.



CASE A



CASE B



CASE C

FUEL SYSTEM

GENERAL

The fuel supply is gravity fed from the fuel tank. It consists of the fuel tank, electromagnetic valve, reserve valve, connecting tubes, and the carburetors.

CARBURETTORS

Type Dell'ORTO VHB24B left and right . Throttle control on right handlebar. Starting lever on carburettor body.

ADJUSTMENT OF THE MINIMUM FUEL MIXTURE

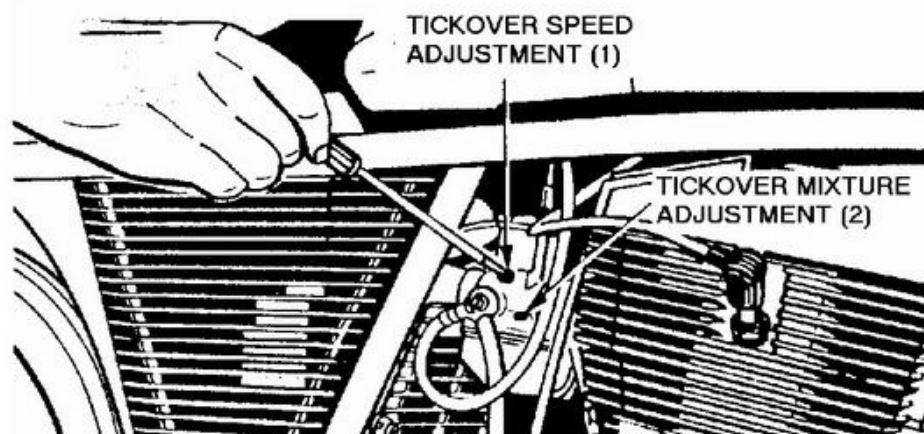
This adjustment should be done with a warm engine in the following sequence.

OPERATION 1

Start the engine and adjust the idling speed screws (1) until the engine runs at 1500-1700 RPM.

OPERATION 2

Tighten the Idling Mixture screws (2) fully and loosen 1-2 turns.



OPERATION 3

Fine-tune screws (1) and (2) to obtain the desired minimum.

CAUTION

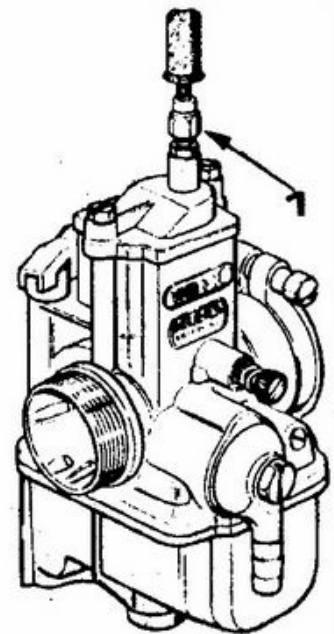
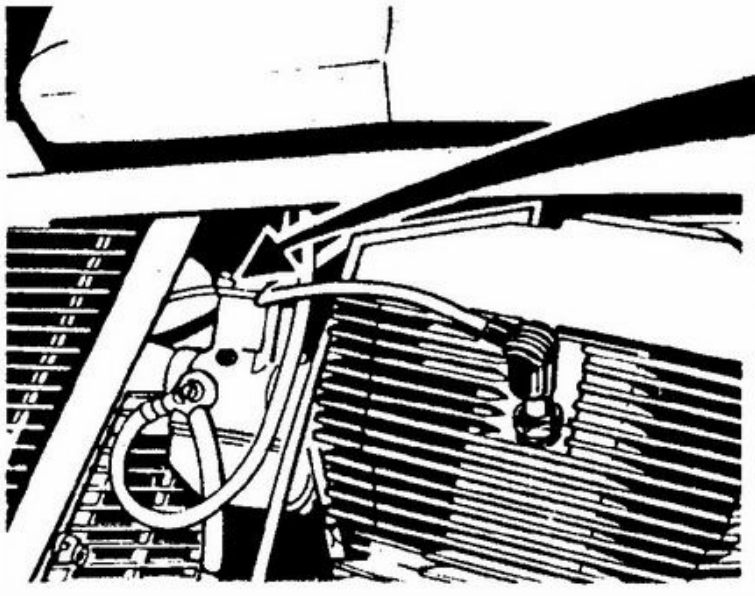
It is advisable to have other carburettor adjustments performed by an authorised agent.

SYNCHRONISATION OF CARBURETTORS

To synchronise the carburettors proceed as follows:

OPERATION 1

Adjust the throttle cables to the same length using adjuster (1) leaving 2-3mm of free-play in the cables.



VALVEGEAR

VALVE CLEARANCES

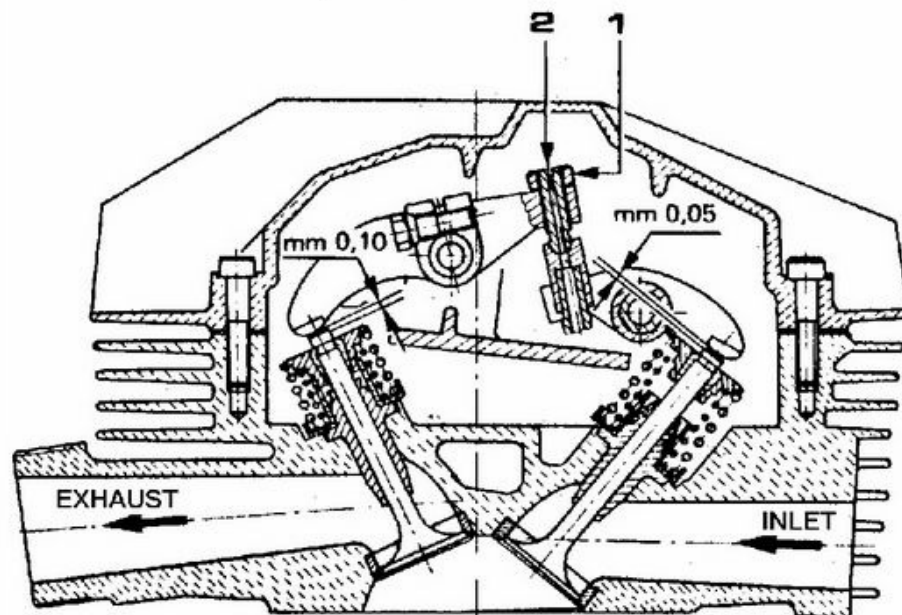
Every 3000km, or when the valves become a little noisy, adjust the clearance between the valves and rockers.

The adjustment is made with a COLD ENGINE with the piston at top dead centre, with the valves closed at the very end of the compression stroke.

OPERATION 1 Loosen the nut (1) and tighten or loosen the adjustment screw (2).

OPERATION 2 The gap is measured with a feeler gauge and should be set to :

- Inlet valve 0.05mm
- Exhaust valve 0.10mm



ELECTRICAL EQUIPMENT

GENERAL

The circuit diagram on page 59 shows the connections to the electrical equipment.

The nominal voltage of the system is 12V

The flywheel generator which has a capacity of 80W supplies power to all of the equipment directly, or indirectly via the battery, which is charged via a rectifier.

GENERATOR

The generator is brushless and uses permanent magnets. The stator is divided into three sections:

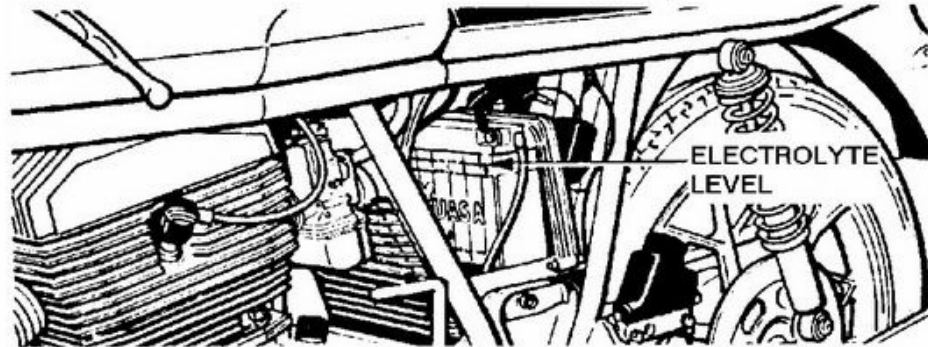
1. THE FIRST SECTION generates the power which is rectified to supply all of the electrical equipment
2. THE SECOND SECTION generates power at 300V to charge the capacitors of the electronic ignition system.
3. THE THIRD SECTION (PICK-UP) generates an electrical signal which causes the discharge of the capacitors and produces the ignition spark.

ELECTRICAL SYSTEM

All of the electrical equipment is powered by the battery. When the engine is running, power is generated and rectified to charge the battery which powers the equipment.

BATTERY

The battery is installed in the compartment below the seat. To access the battery, remove the side covers as described on page 15.



To remove the battery it is necessary to remove the battery strap. The battery is a rechargeable lead acid type (YUASA 12V Volt 9Ah).

The battery and electrical system will benefit from regular attention.

- Check the electrolyte level monthly (or more often in warm weather).
- Keep the connections tight and clean. If necessary remove any oxide and protect the terminals with vaseline grease.
- If the motorcycle is not used for long periods ensure that it is charged monthly or it will deteriorate rapidly.

NOTE

Perform these operations with the engine stopped and the electrical equipment switched off.

WARNING

Use only distilled water in the battery, do not overfill above the maximum mark which could damage it in certain circumstances.

LIGHTING EQUIPMENT AND HORN:

The battery supplies the current to the following equipment, protected by a fuse (see page 15).

FRONT LIGHT: Main headlight, dipped headlight, and position light

REAR LIGHT: Position light and brake light.

DIRECTION INDICATORS (OPTIONAL): Front and rear indicators.

HORN: Dual horns.

The lighting equipment also includes the indicators on the instrument panel.

- Main beam indicator
- Speedometer lamp
- Tachometer lamp
- Motorcycle function indicator lamps
- Position light indicator.

BULB REPLACEMENT

To change the various bulbs refer to table 5

REPLACING LIGHT BULBS		
A	REAR LIGHTS	see page 49
B	FRONT LIGHTS	see page 50

Table 5 Bulb Replacement

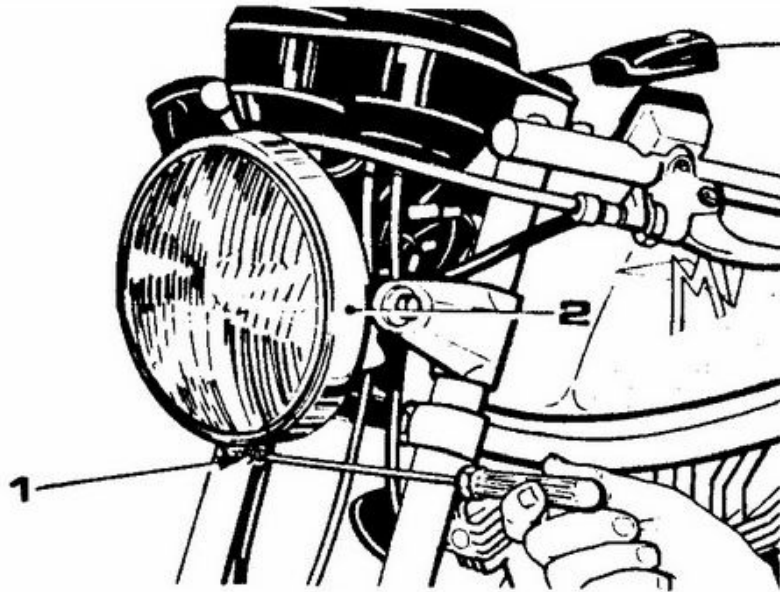
DISASSEMBLY OF FRONT LIGHT

OPERATION 1

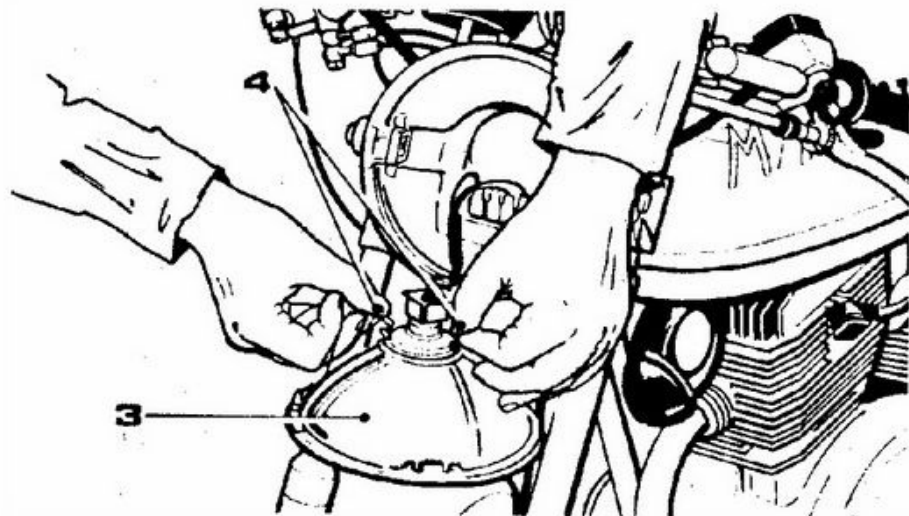
Loosen the screw (1) and remove the lamp rim (2).

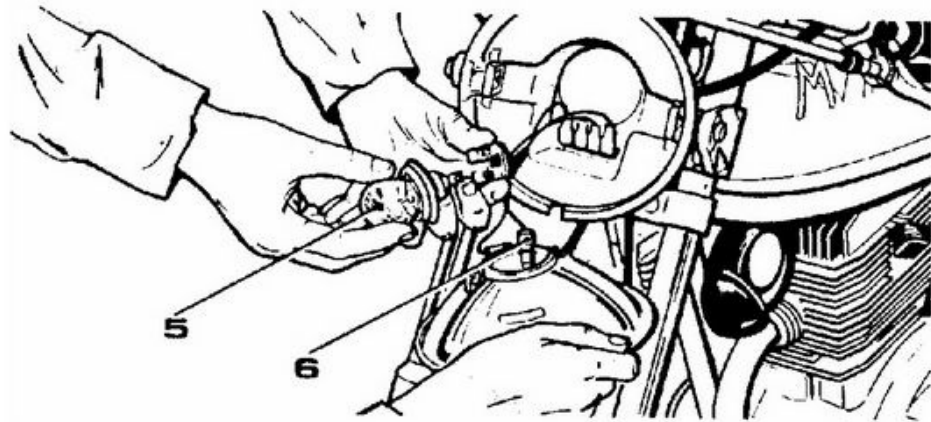
OPERATION 2

Remove the reflector (3) complete with its attachments.

OPERATION 3

Loosen the clips (4) and remove the main and dipped beam lamp (5).



OPERATION 4

Remove the position light bulb (6)
Reassemble the light in the reverse order.

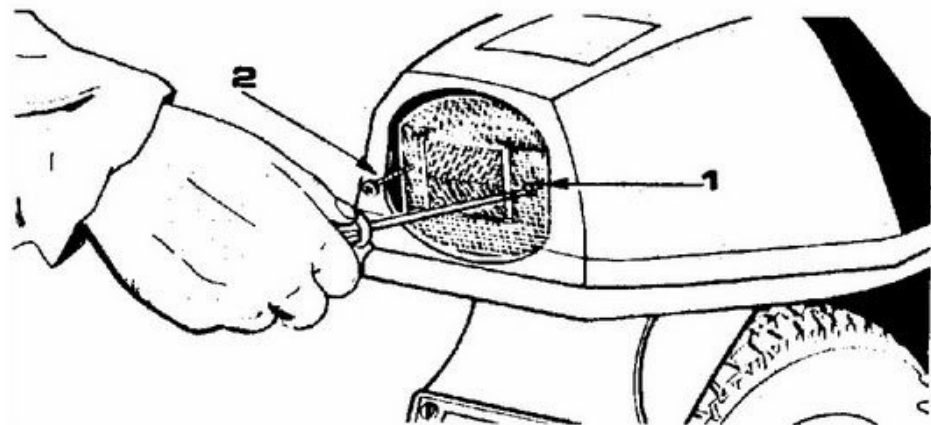
NOTE

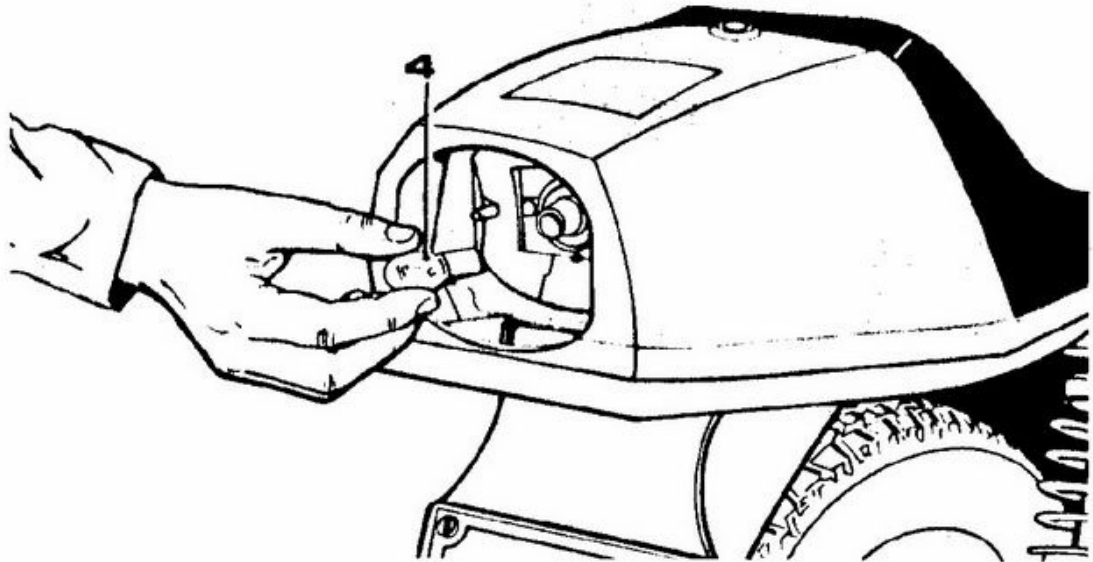
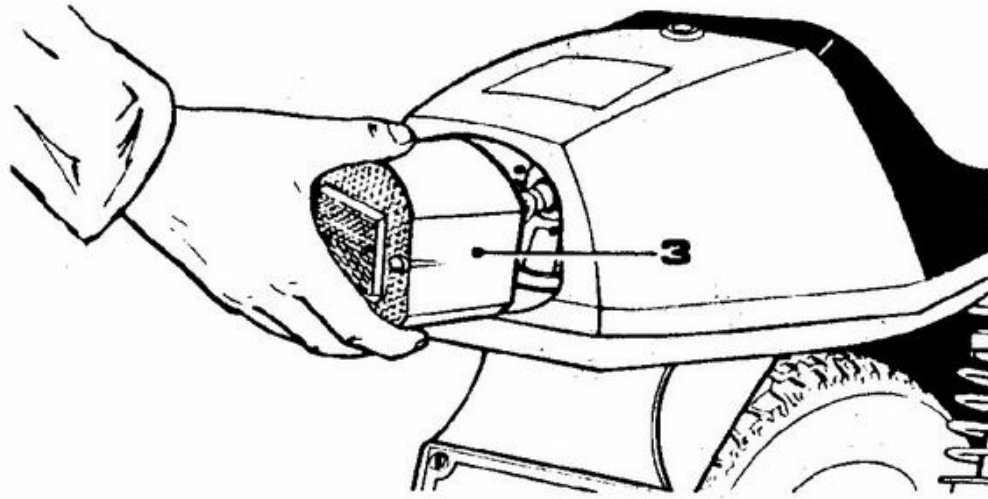
Be careful to reassemble each part in its correct position

DISASSEMBLY OF REAR LIGHT

OPERATION 1

Loosen the screws (1) and (2) and remove
the lens (3) complete with attachments.





OPERATION 2

Remove the position and stop bulb (4) (bayonet clip bulb).

NOTE

Reassemble the light in the reverse order taking care not to overtighten the screws in the lens.

HEADLAMP ADJUSTMENT

The headlight is adjusted horizontally and vertically as follows:

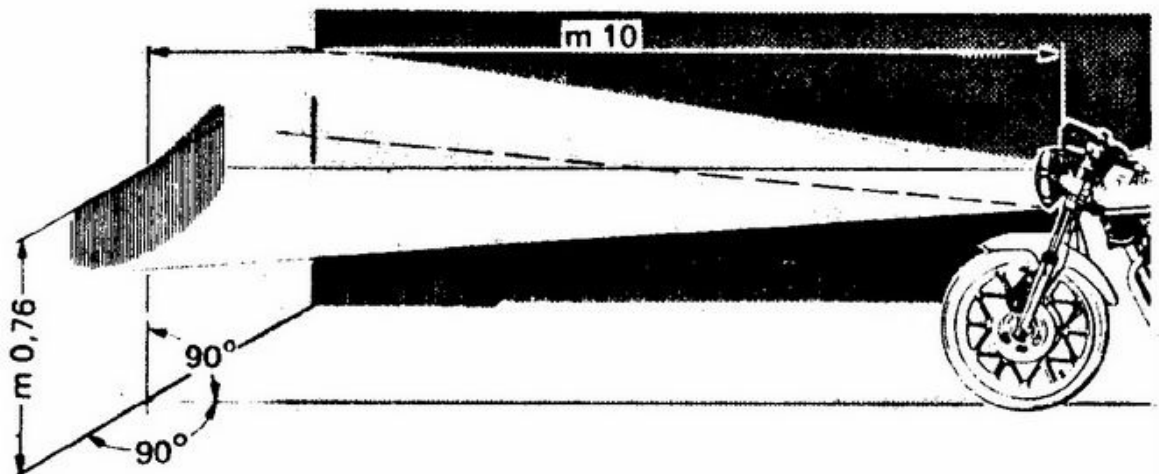
OPERATION 1 Place the motorcycle off the centre stand in the running position, vertical on a flat surface. in front of a white wall.

OPERATION 2 Align the wheel according to the diagram and adjust the main beam horizontally and vertically.

OPERATION 3 Adjust the height of the main beam as shown in the figure.

NOTE

To make these adjustments use the screws on the sides of the headlamp.



IGNITION

The electronic ignition system is characterised by 3 factors:

1. Absence of a cam and contact breaker. The cam is inconvenient, subject to wear, contact bounce and contamination. The contact breaker is replaced by a pick-up which does not wear and has no moving parts.
2. Absence of automatic timing advance, using a centrifugal mechanism with delicate springs and weights. This is replaced by a protrusion on the flywheel which does not wear and has no moving parts.
3. Ignition spark generated by the discharge of a capacitor. This has the advantage of being insensitive to electrical variations (like condition of spark plug) and supplying a higher voltage to the spark plug electrodes at all speeds.

The electronic ignition system consists of:

CAPACITOR CHARGING COIL (mounted on the stator of the generator).

PICK-UP (mounted on the stator of the generator).

ELECTRONIC CONTROL contains the capacitors which are discharged.

TWO IGNITION COILS.

PRINCIPAL OF OPERATION

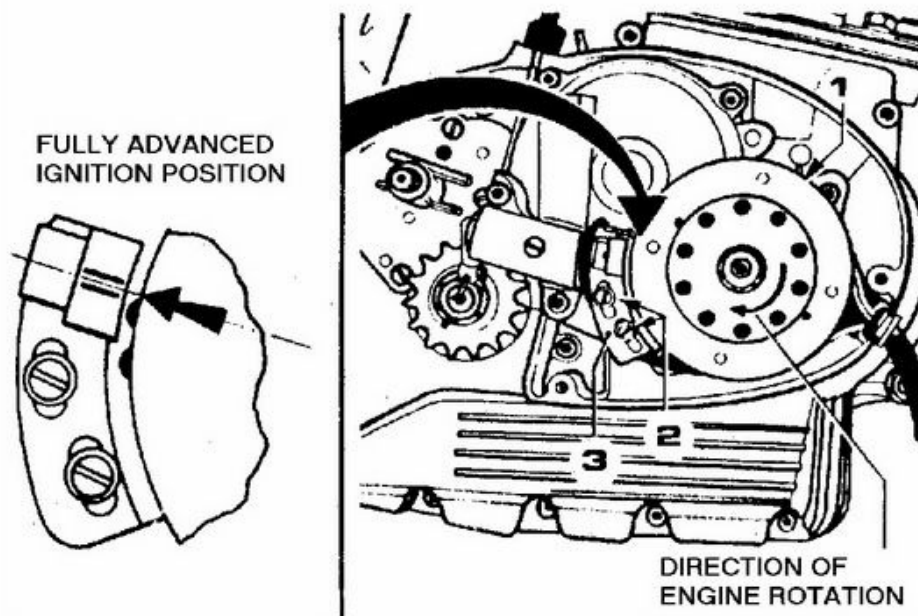
The pickup coil supplies a pulse to the electronic control for every revolution of the engine. The capacitors, which have been charged by the coil, are discharged into the ignition coils connected in parallel. Thus a spark is generated for both cylinders at the same time. One cylinder will be on the compression stroke and will fire and the other on the exhaust stroke will not.

ADJUSTMENT OF THE ELECTRONIC IGNITION

The symptoms which may indicate improper functioning of the ignition system are:

1. Difficulty in starting
2. Running on one cylinder.
3. Irregular running at high or low revs.
4. Complete breakdown of ignition system.

1. **DIFFICULTY IN STARTING**, assuming that the problem is ignition and not carburation, a possible cause is the gap between the pickup and the rotor. For correct operation this should be set to 0.2 to 0.3mm. If this is correct check that the spark plug gap is between 0.5 and 0.6mm and replace if necessary.



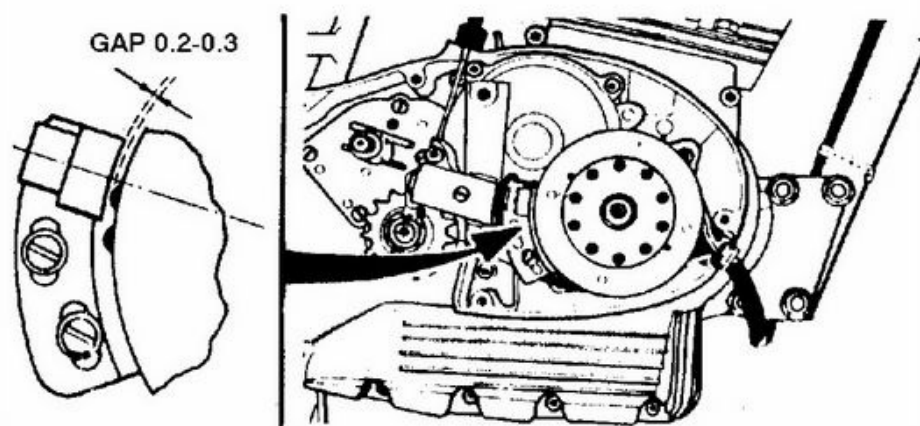
2. RUNNING ON ONE CYLINDER, If not caused by a faulty spark plug is probably due to the ignition coil, since the other parts (pickup, electronics, charging coil) are common to both cylinders. Check for loose low tension connections to the ignition coil. If the problem persists, swap the HT leads. If the fault remains on the same cylinder, change the ignition coil.
3. IRREGULAR RUNNING (engine stalls, difficulty in exceeding a certain speed etc.) at high or low revs. could be due to incorrect timing of the spark. At this point check the ignition timing as follows:

OPERATION 1

Remove the spark plug and insert a comparator to find the top dead centre of the piston stroke.

OPERATION 2

Rotate the flywheel backwards 35° by hand. (this corresponds to 33mm measured around the circumference of the flywheel and is the maximum advance position).



- OPERATION 3 Holding the rotor in this position ,loosen the pickup screws (2) and align the pickup (3) as shown in the figure.
- OPERATION 4 Tighten the screws (2) securely and verify the alignment.

TOTAL FAILURE OF THE IGNITION SYSTEM requires a complete check of all connections in the system. With a multimeter, check the continuity of the sensor between the green wire and ground. Check also the continuity of the charging coils between the red wire and ground. If open circuit replace the part in question.. If the above does not work then replace the electronic controller.

SPARK PLUG

Removal of the sparkplug is done using the spanner supplied with the motorcycle.

If the spark plug is dirty, clean it with a wire brush or sandpaper. Replace if cracked or damaged.

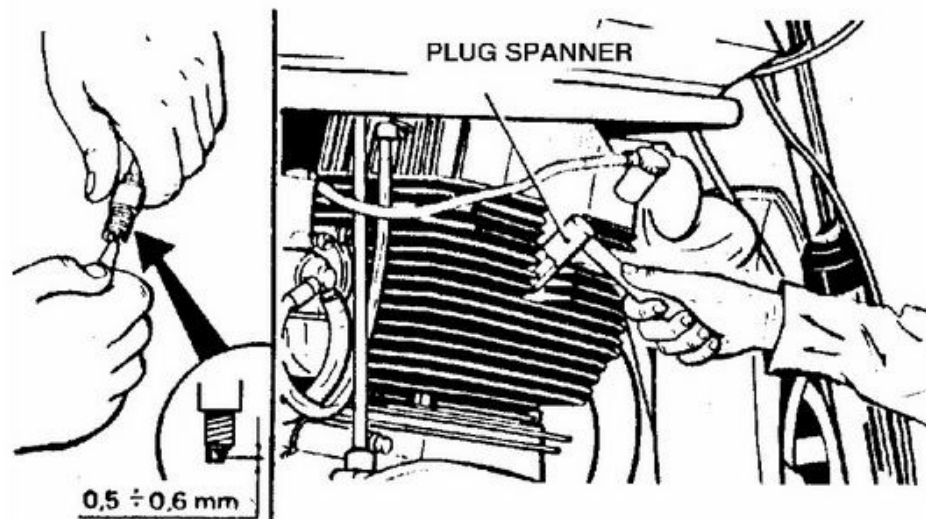
NOTE

The spark plug should be replaced every 12,000 km

The spark plug gap should be 0.5 to 0.6mm

It is not advisable to change the spark plug to a different type. The engine will be more reliable if the correct type is always used. Do not return the spark plug to the head before:

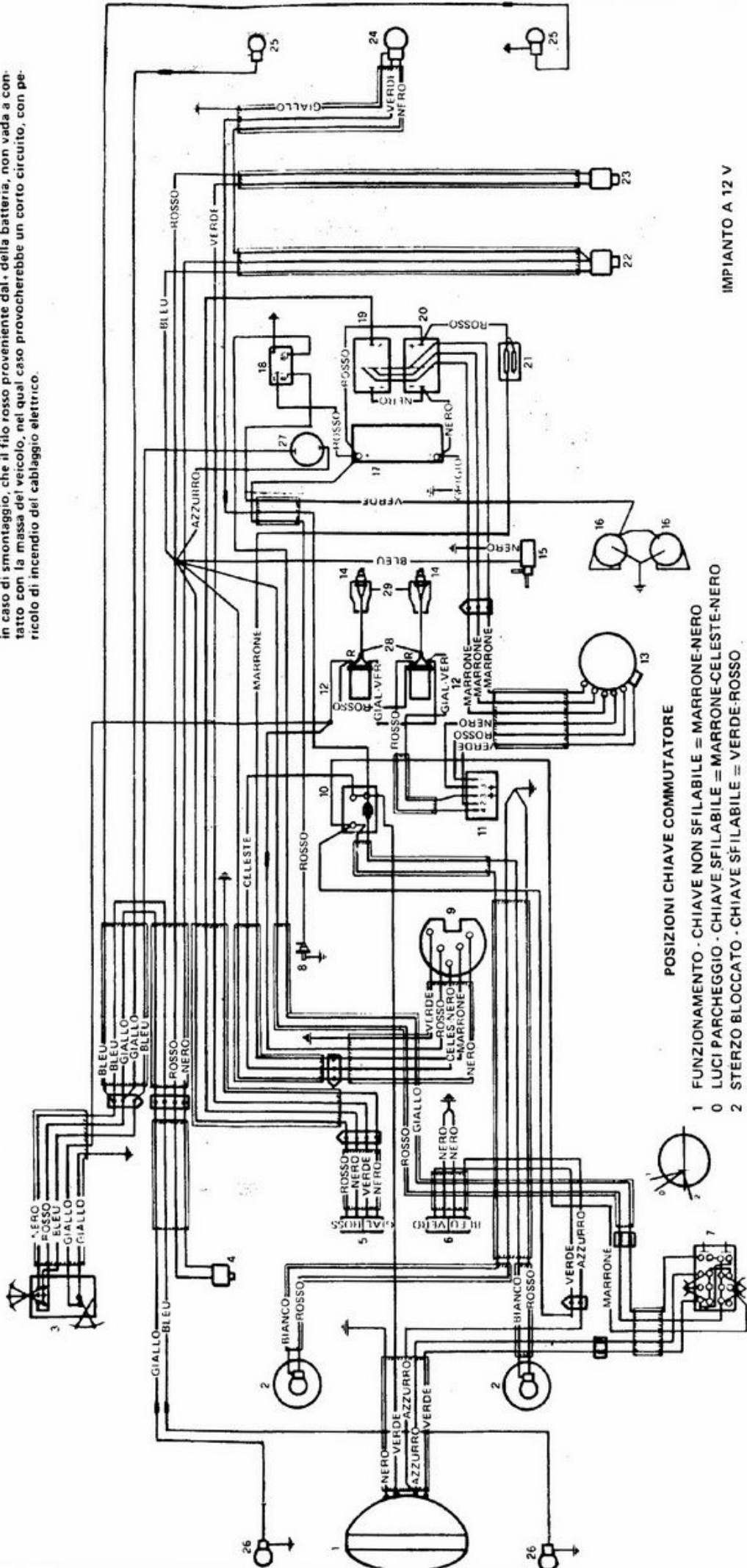
- Checking that the round electrode at the bottom of the plug is in good condition, otherwise replace.
- Lubricating the threads with grease or oil .
- Screw the plug back into the head by hand for the first few turns to ensure that the thread is properly started.
- Use the plug spanner to tighten the plug, avoid overtightening.



LONG-TERM STORAGE OF MOTORCYCLE

- OPERATION 1 Empty the fuel tank and carburettor reservoirs completely.
- OPERATION 2 Clean the fuel tank filters and carburettor filters.
- OPERATION 3 Remove the battery and store in a dry place. Each month discharge the battery completely and recharge to avoid sulphurisation of the plates.
- OPERATION 4 Introduce a little vaseline oil into the cylinders through the spark plug hole, and turn the engine over slowly three or four times to leave a protective coating on the cylinders.
- OPERATION 5 Place the motorcycle on the centre stand , raise the tyres off the ground, clean them and reduce the inflation pressure.
- OPERATION 6 Coat all unpainted metal surfaces with grease.

Lo ZENER è collegato direttamente in parallelo alla batteria. Occorre fare attenzione, in caso di smontaggio, che il filo rosso proveniente dal della batteria, non vada a contatto con la massa del veicolo, nel qual caso provocherebbe un corto circuito, con pericolo di incendio del cablaggio elettrico.



IMPIANTO A 12 V

- 1 FANALE ANTERIORE CON LAMPADA 45/40 E 3W
- 2 LAMPADA ILLUMINAZIONE STRUMENTO 2,2W
- 3 DISPOSITIVO DESTRO
- 4 INTERRUOTTORE STOP ANTERIORE
- 5 SPIA RICARICA FOLLE
- 6 SPIA LUCI ABBAGLIANTE-POSIZIONE
- 7 DISPOSITIVO SINISTRO
- 8 ZENER
- 9 COMMUTATORE
- 10 DIODO
- 11 CENTRALINA ELETTRONICA
- 12 BOBINA
- 13 ALTERNATORE
- 14 CANDELA
- 15 RUBINETTO BENZINA
- 16 TROMBE
- 17 BATTERIA
- 18 RELAIS TROMBE
- 19 ACCENDITORE SPIA RICARICA
- 20 RADDRIZZATORE
- 21 FUSIBILE 15 A
- 22 INTERRUOTTORE STOP POSTERIORE
- 23 INTERRUOTTORE SPIA FOLLE
- 24 FANALE POST. CON LAMPADA 5/21W

POSIZIONI CHIAVE COMMUTATORE

- 1 FUNZIONAMENTO - CHIAVE NON SFILABILE = MARRONE-NERO
- 0 LUCI PARCHEGGIO - CHIAVE SFILABILE = MARRONE-CELESTE-NERO
- 2 STERZO BLOCCATO - CHIAVE SFILABILE = VERDE-ROSSO

- 25. LAMPADA INDICATORE DIREZIONE POST. 21W
- 26. LAMPADA INDICATORE DIREZIONE ANT. 21W
- 27. INTERMITTENZA
- 28. SOPPRESSORE 5 k Ω
- 29. CAPPUCCIO CANDELA SCHERMATO METALLICO 5 k Ω

APPLICAZIONI EVENTUALI A RICHIESTA

