

Section

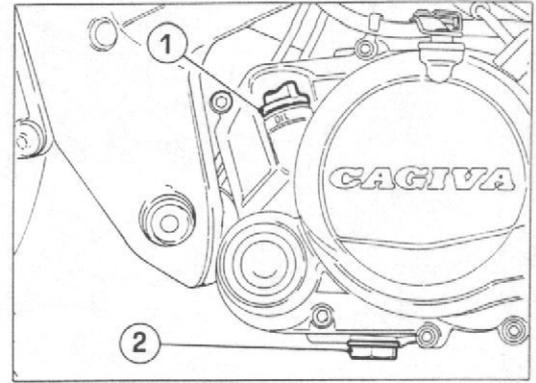
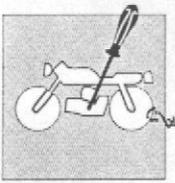
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## SETTINGS AND ADJUSTMENTS

Change gear and main transmission lubrication .....	D.5
Lubrication pump delivery setting .....	D.7
Cooling liquid level control .....	D.8
Cooling liquid drain and top up .....	D.9
Throttle control cable adjustment .....	D.11
Idling adjustment .....	D.12
Starter control cable adjustment .....	D.13
Clutch control lever adjustment .....	D.14
Front brake control lever adjustment .....	D.16
Rear brake pedal position adjustment .....	D.17
Rear brake adjustment .....	D.18
Chain tension adjustment .....	D.19
Rear damper adjustment .....	D.21
Front fork adjustment .....	D.22
Air filter cleaning .....	D.23
Adjustment of the electronic valve control cables tension .....	D.24
Compression ratio control .....	D.26
Adjustment of the gearbox control pedal position .....	D.28
Check and oil change in the front fork .....	D.29



1) level gauge  
2) Drain plug

Filler plug and

**Change gear and main transmission lubrication.**

The lubrication of the change gear and main transmission is carried out by the oil contained in the engine block. In order to check its level, carry out the following operations keeping the motorcycle upright:

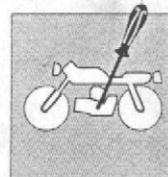
- turn OFF the engine and wait some time to let the engine cool down and the oil uniformly level out in the engine block;
- STREAMLINED VERSION; remove the lower fairing as described in the chapter "GENERAL OPERATION";
- unscrew the filler plug (1) with the rod, clean and put this one in place again without screwing;
- pull out the plug and check the oil level; if necessary, top it up.

The oil quantity in the crankcase must never exceed 48.8 cu.in. In case any topping up is made, it is necessary to suitably warm up the engine, then turn it off and check the oil level again as described above. This checking should be carried out every 1860 ml.

After the first 620 ml, and afterwards every 3100 ml. it is necessary, after warming up the engine, to change the engine oil.

In order to carry out this operation, remove the drain plug (2) located in the bottom of the crankcase, and fully drain the exhausted oil. Then screw the plug again by inserting the relevant gasket.



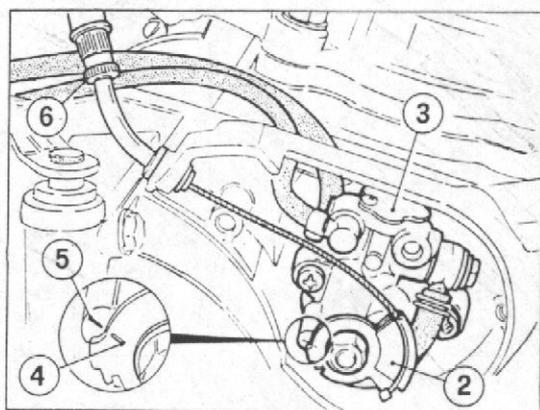
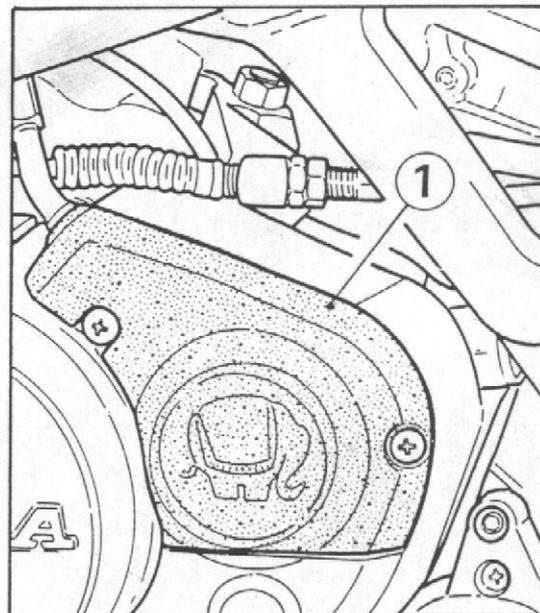


**Lubrication pump delivery setting.**

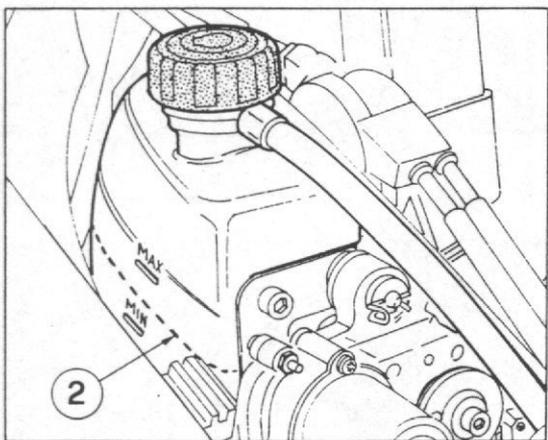
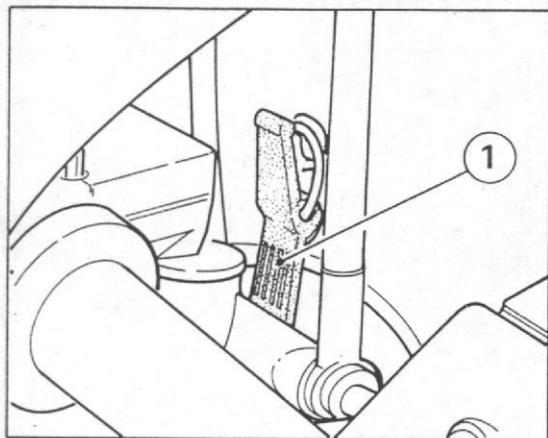
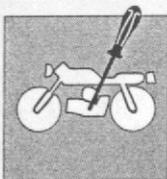
The oil flux delivered by the pump and arriving to the carburetor changes in relation with engine speed and throttle valve opening. In order to operate on the oil pump (3) it is necessary to remove the plastic protection cover (1).

Adjustment is correct when a check shows that conditions are as follows:

- with the throttle twist grip completely closed, the mark (4) stamped on the oil pump control lever (2) is in line with the reference mark (5) situated on the oil pump body. Effect any adjustment necessary using the adjuster (6) at the oil pump cover exit. Keep in mind that, by unscrewing the adjuster (6), the oil delivery increases, by screwing the adjuster the delivery decreases.



- 1) Oil pump compartment cover
- 2) Pump control lever
- 3) Oil pump
- 4) Mark on the lever
- 5) Mark on the pump body
- 6) Adjustment on the pump control lever



1) front tank

Belt to fix.

2) Liquid level

**Cooling liquid level control.**

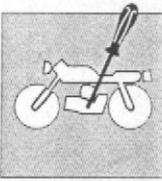
Perform the check every 930 miles, **with cold motor**, as follows:

- unblock front belt (1) and lift the fuel tank fixing it with the special rod;
- place the motorbike in vertical position;
- check that the level (2) inside the expansion tank is set between the two notches for MIN and MAX.

If not, top up through the load plug of this tank.



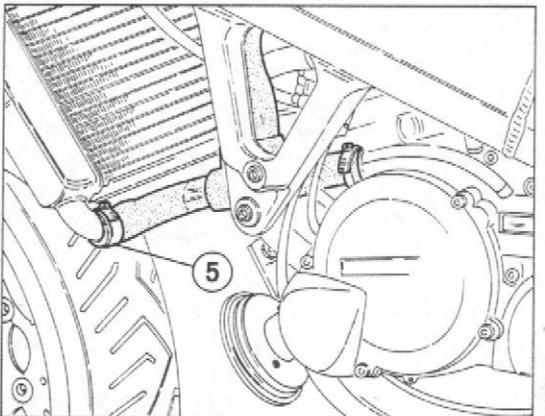
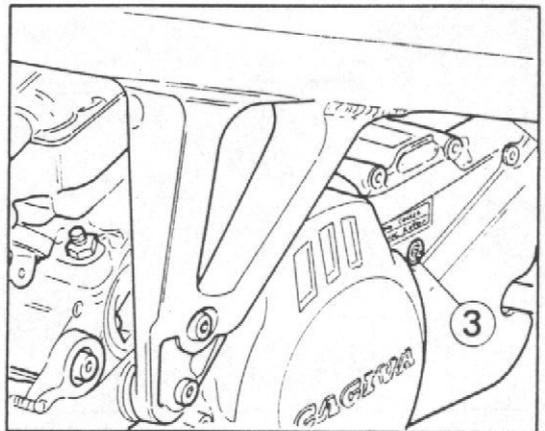
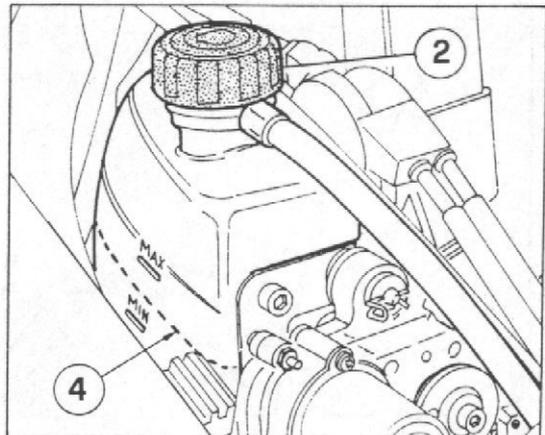
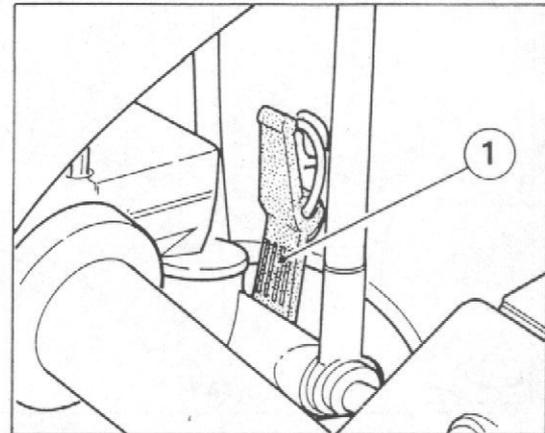
**If a large quantity of water is needed, replace the cooling liquid completely.**



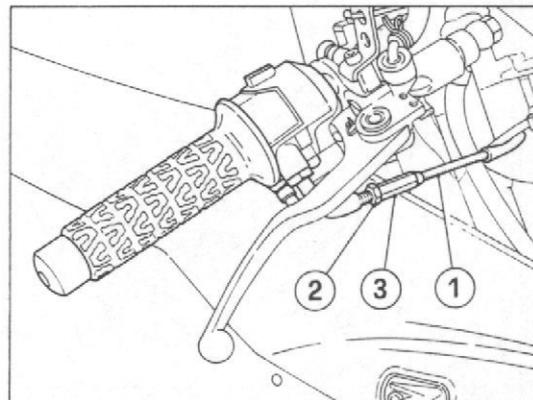
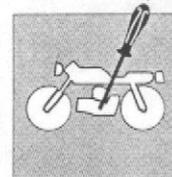
**Cooling liquid drain and top up.**

The cooling liquid replacement is needed every 6200 miles or every 2 years and must be performed **with cold motor**, as follows:

- STREAMLINED VERSION; remove the lower fairing as described in the chapter "GENERAL OPERATION";
- unblock front belt (1) and lift the fuel tank fixing it with the special rod;
- remove the expansion tank plug (2);
- remove the drain screw (3) on the left side of the crankcase and, in order to speed up the draining operation, unloose the clamp (5) on the radiator/engine connection sleeve and take it out from the radiator side;
- slope the motorbike on the left, to make the liquid come out easily;
- let the liquid drain completely;
- reassemble the drain screw and the radiator/engine connection piping;
- pour the required quantity of fluid in the expansion tank; close the plug (2);
- get the motor temperature to 70° ca. in order to eliminate any possible air bubble;
- fit the motorcycle upright and make sure that the fluid level (4) in the expansion tank is between the MIN and MAX notches; otherwise top up;
- reassemble the removed parts.



- 1) Belt to fix. front tank
- 2) Expansion tank cap
- 3) Drain screw
- 4) Liquid level
- 5) Clamp on the radiator

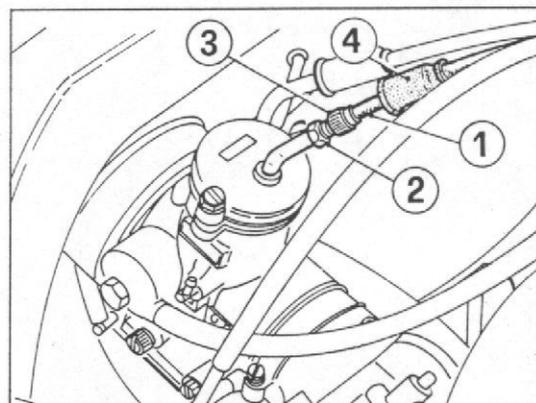


**Throttle control cable adjustment.**

Check proper adjustment of the throttle control cable by operating as follows:

- move the flexible cable (1) forward and backward to make sure that 0.039 in. approx. clearance is provided;
- if it is not so, release the conical lock nut (2) and suitably rotate the turnbuckle (3) (by unscrewing it the clearance decreases, by screwing the clearance increases);
- lock the conical lock nut (2) again.

A clearance of 1 mm approx. is to be provided also on the cable located on the carburettor cover; otherwise make the adjustment as described above, after removing the protection cap (4).

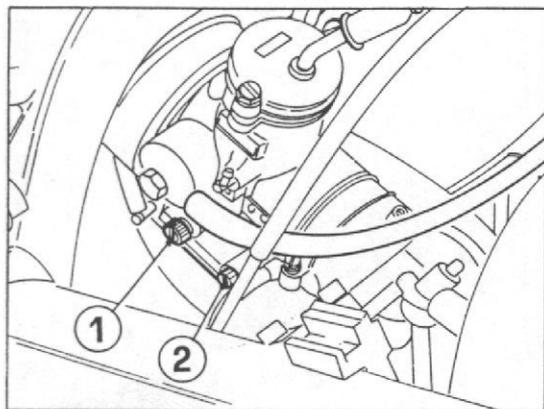


- 1) Flexible cable
- 2) Conical lock nut
- 3) Turnbuckle (adjuster)
- 4) Protection cap





## SETTINGS AND ADJUSTMENTS



1) Throttle valve adjusting  
screw

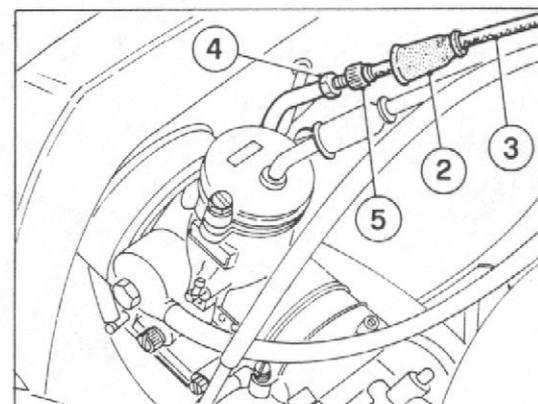
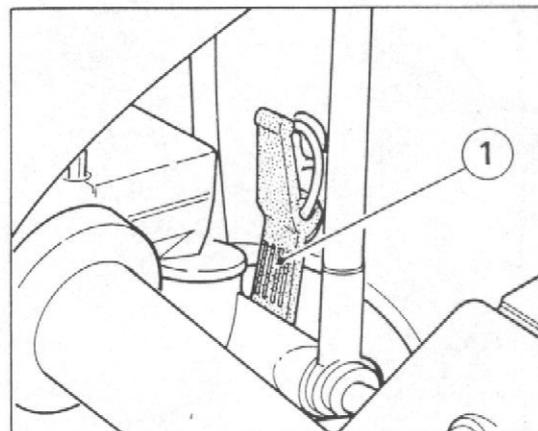
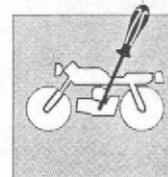
2) Mixture ratio adjusting  
screw

### Idling adjustment.

After making sure that the control cable has 0.03937 in. clearance at least in the cable terminal on the carburettor and control, when the throttle control knob is in close position, idling adjustment can be made as follows:

- STREAMLINED VERSION: remove the R.H. side half fairing as described in the chapter "GENERAL OPERATION";
- screw the adjusting screw (1) of the throttle valve until quite high r.p.m. are attained (2000 r.p.m.); by rotating clockwise the speed increases, by rotating counterclockwise the speed decreases;
- screw or unscrew the screw (2) adjusting the mixture ratio until the engine rotation is as even as possible;
- progressively unscrew the adjusting screw (1) of the throttle valve until 1000 rpm are obtained.

For high speed, mixing is automatic and it is not possible to operate manually. In case of irregular running of the engine, clean the carburettor.



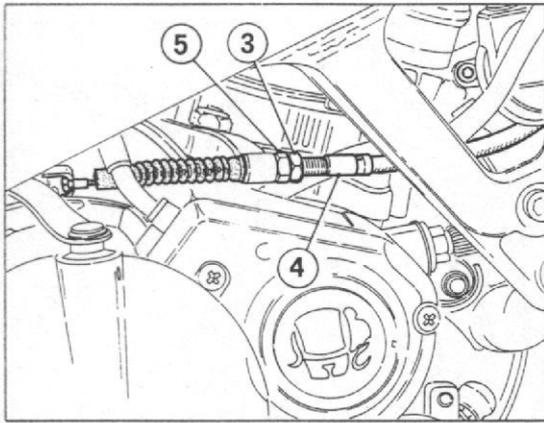
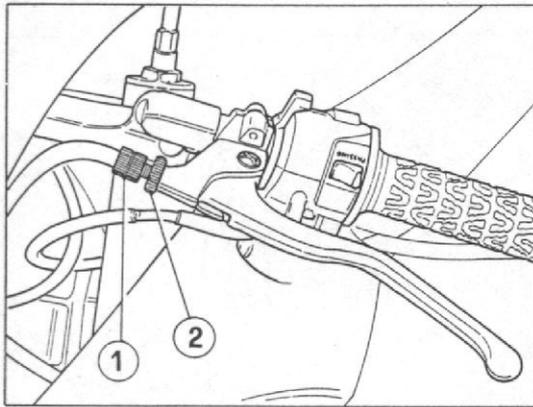
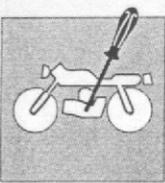
**Starter control cable adjustment.**

The starter cable can be only adjusted on the carburettor as follows:

- release the belt (1) and lift the fuel tank by holding it with the suitable rod;
- remove the rubber cap (2);
- move the cable (3) forward and backward to make sure that 0.03937 in. approx. clearance is provided;
- if it is not so, release the counternut (4) and suitably rotate the adjuster (5);
- tighten the counternut again and put the rubber cap on the adjuster;
- finally fasten the fuel tank.

- |    |                       |            |
|----|-----------------------|------------|
| 1) | fastening belt        | Tank front |
| 2) | Cap                   |            |
| 3) | Starter control cable |            |
| 4) | Counternut            |            |
| 5) | Adjuster              |            |





**Clutch control lever adjustment.**

The idle stroke of the control lever must be always 0.118 in. approx. before starting to disengage the clutch. Small adjustments must be made by means of the adjuster located on the control as follows:

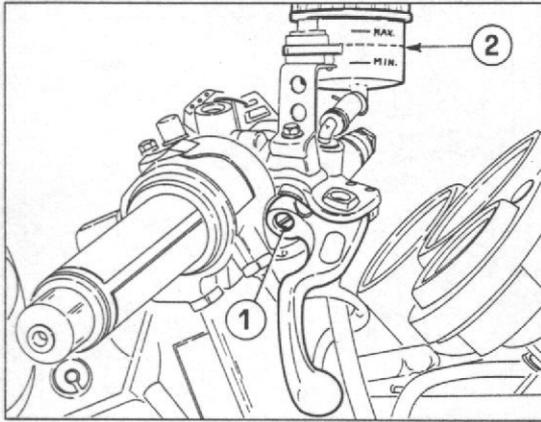
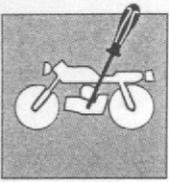
- unloose the counternut (2) and operate on the adjuster (1); by unscrewing the clearance decreases, by screwing the clearance increases;
- tighten the counternut again.

Should the adjuster on the control be not enough to take up the required clearance, operate on the other adjusting unit located near the disengagement lever, on the right side of the engine:

- unloose the counternut (5);
- operate on the nut (3) of the control cable (4) until the proper clearance is obtained;
- lock the counternut (5) against the nut (3).

Check the clearance on the control lever.

- 1) Adjuster on the control
- 2) Counternut on the control
- 3) Nut on disengagement side
- 4) Control cable
- 5) Counternut on disengagement side



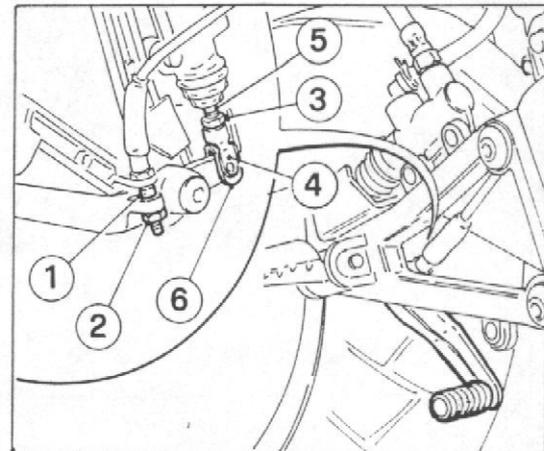
**Front brake control lever adjustment.**

Make sure that the clearance between the float and the lever tip on the pump is  $0.00196+0.0059$  in.; otherwise operate on the adjusting screw (1). Periodically lubricate the scraper ring and the float rod with the required fluid.

The level (2) of the fluid in the tank must be always included between the MIN and MAX notches. Any lowering of the fluid level can allow the inlet of air in the system, resulting in a longer lever stroke.

- 1) Adjusting screw
- 2) Level of the fluid





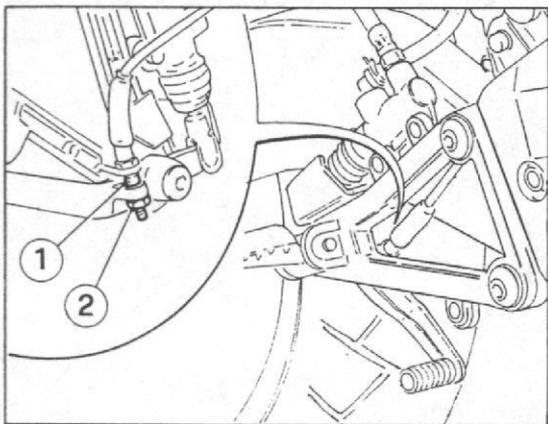
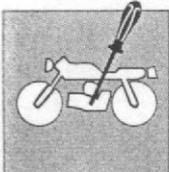
**Rear brake pedal position adjustment.**

The position of the rear brake pedal as to the foot-rest can be modified according to the pilot's requirements as follows:

- STREAMLINED VERSION: remove the lower fairing as described in the chapter "GENERAL OPERATION";
- unloose the counternut (2) in the inner part of the pedal;
- screw or unscrew the adjusting screw (1) depending on whether you wish to move away from or approach the foot-rest;
- unloose the counternut (3) on the pump control rod and release the fulcrum pin (4) of the lever;
- by screwing the rod (5) on the fastening hook (6) the lever will lower and vice versa;
- tighten the counternut (3) and put in place the pin (4) with the relevant fastening hook (6) on the lever.

Adjust the clearance as described in the following paragraph.

- |    |  |
|----|--|
| 1) | Adjusting screw                                      |
| 2) | Counternut   |
| 3) | Counternut on<br>the pump control rod<br>de la pompe |
| 4) | Rod fulcrum pin                                      |
| 5) | Pump control rod                                     |
| 6) | Fastening hook                                       |



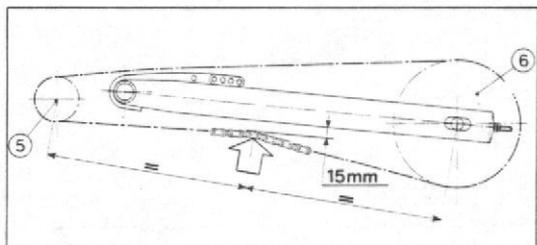
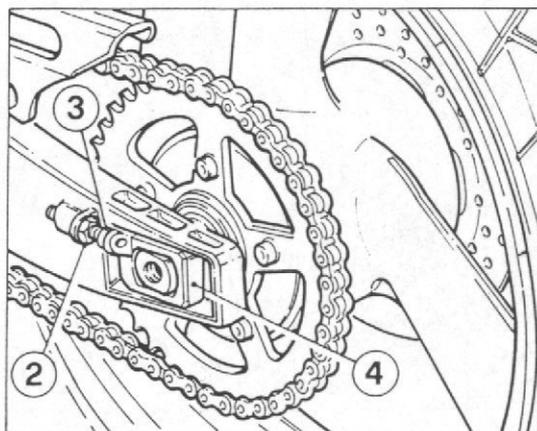
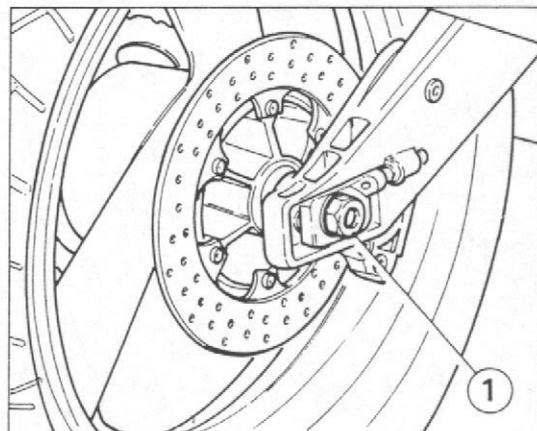
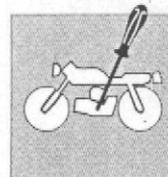
**Rear brake adjustment.**

The adjustment of the rear brake is carried out by operating on the adjusting unit located in the bottom of the pedal.

By moving the pedal up and down, manually make sure that a clearance of 1 to 2 mm is provided. Should the clearance be greater, unloose the conternut (2) and screw the adjusting screw (1). If the clearance is less operate in the opposite way.

1) Adjusting screw

2) Conternut



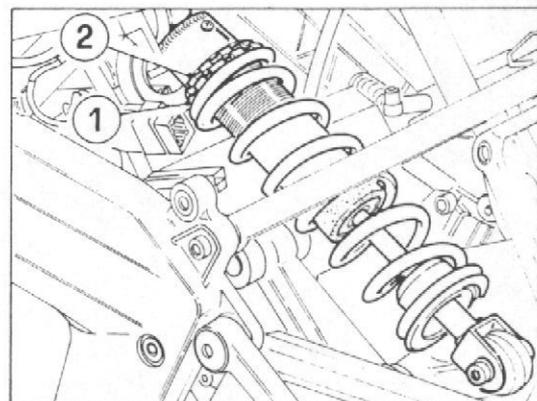
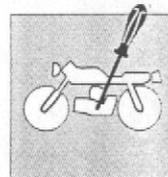
**Chain tension adjustment.**

The chain is correctly adjusted when, with motorbike in vertical position and completely drained, reflects the condition shown in the figure below. If not, it is necessary to perform its adjustment as follows:

- loosen the nut (1) of the wheel pin;
- release the lock nut (2);
- insert a 0.196 in. setscrew wrench in the suitable hole on the chain tightener and operate on the adjusting screws (3) until the proper tension is restored;
- make sure that the notches marked on the chain tighteners (4) are aligned, on both the sides, with those located on the fork;
- lock the counternut (2);
- lock the nut (1) of the wheel pin;
- check the chain tension again.

- 1) Wheel pin nut
- 2) Counternut
- 3) Adjusting screw
- 4) Chain tightener
- 5) Chain pinion
- 6) Rear ring gear





**Rear damper adjustment.**

In order to change the damping action of the rear damper, it is necessary to operate on the preloading of the damper spring as follows:

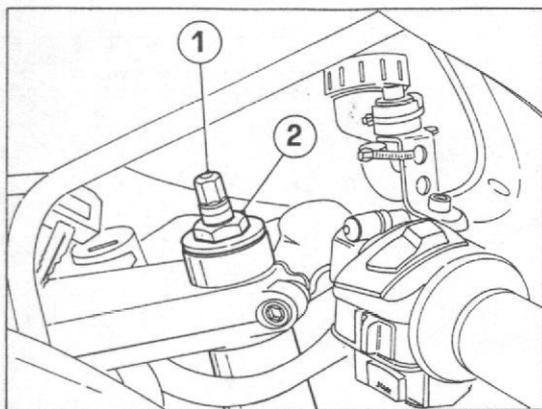
- remove the rear fairing as described in the chapter "GENERAL OPERATION";
- measure the length of the preloaded spring by means of a gauge in order to restore the standard operating conditions set by the manufacturer;
- unloose the upper lock ring nut (2);
- operate on the adjusting ring nut (1), unloosing it to obtain a softer action of the spring and tightening to get a stronger action;
- tighten the lock ring nut.

In case of defective operation or oil leakage, replace the damper.

- 1) Adjusting ring nut
- 2) Lock ring nut



## SETTINGS AND ADJUSTMENTS



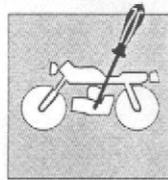
- 1) Adjuster
- 2) Bearing pipe cap

### Front fork adjustment.

The front fork is provided with adjusters to change the preloading of the springs inside the rods. These adjusters (1) are provided with reference notches in order to find out the using position as to the top of the caps (2) of the bearing pipes.

By screwing these adjusters, a stronger damping action is obtained; by unscrewing them the action got is softer.

It is necessary that both the adjusters are located on the same reference notch. The manufacturer locates these adjusters on the 3rd notch.



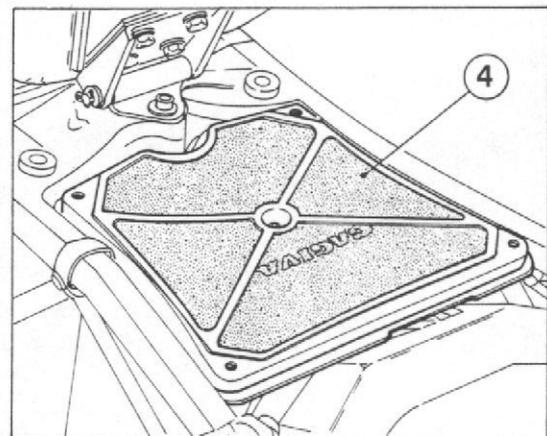
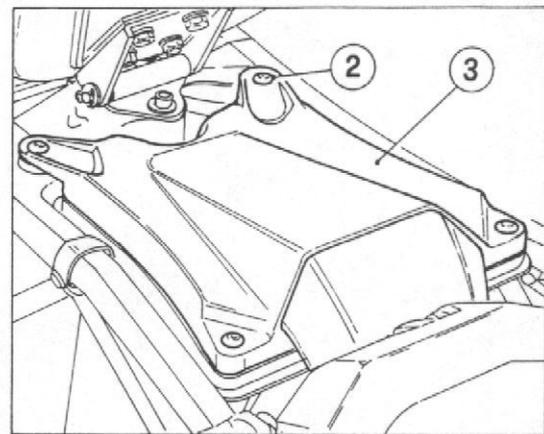
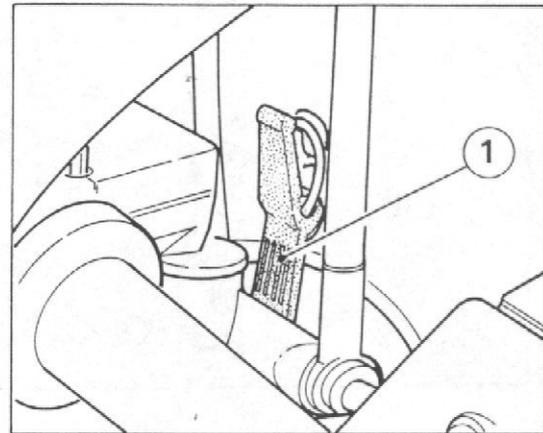
**Air filter cleaning.**

Access to the air filter is allowed as follows:

- remove the rear fairing as described in the chapter "GENERAL OPERATION";
- release the front belt (1) and lift the fuel tank holding it by means of the suitable rod;
- remove the four fastening screws (2) of the filter box cover (3);
- remove the above-said cover;
- remove the filtering element (4) and clean it.

This operation is to be made every 3100 ml. Under particularly heavy conditions, for example a prevailing use on dusty roads, clean more often.

As regards reassembly, follow the rules stated above in the opposite way.

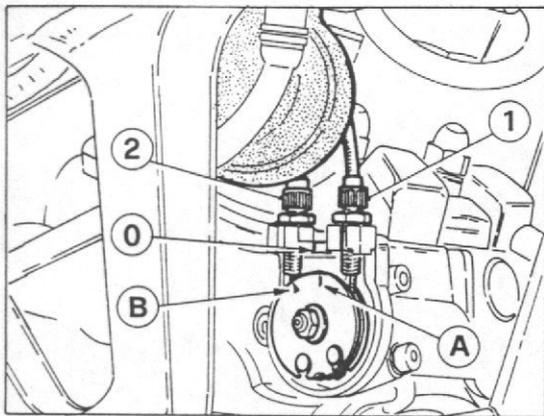
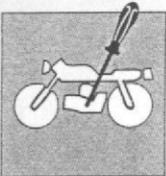


1) fastening belt Tank front

2) Cover fastening screw

3) Filter box cover

4) Filtering element



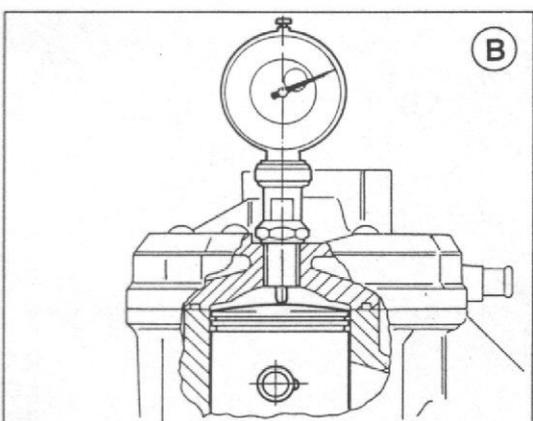
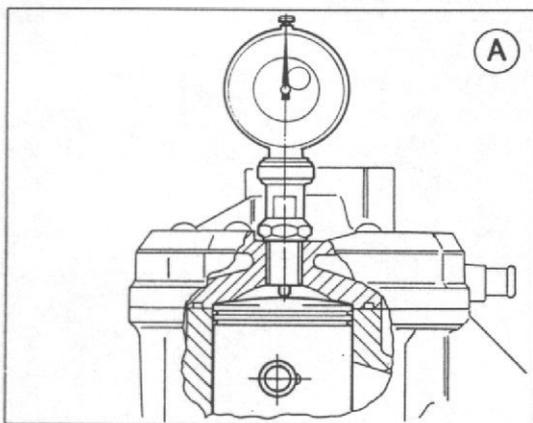
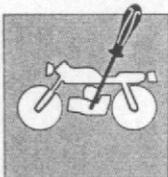
1-2) Adjuster  
 0) Fixed index on the cover  
 A-B) Index on the pulley

**Adjustment of the electronic valve control cables tension.**

This adjustment must be performed at each replacement of one of these cables or one of the elements which can affect the valve control. In order to correctly adjust the tension, act as follows:

- STREAMLINED VERSION: remove the lower fairing as described in the chapter "GENERAL OPERATION";
  - let slide the registers protection caps and the control protection upwards;
  - unloose both registers by unscrewing the nuts;
  - act on the register (1) so that the index (0) on the cover and the index (A) on the pulley are aligned: in such condition the valve will be at closure limit stop;
  - fasten the register lock-nut (1) after having completely eliminated the clearance;
  - turn the ignition key in "ON" position; turn it again in "OFF" position and, by acting on the register (2), check that the pulley index (B) is aligned with the cover fixed index (0);
  - screw the register lock-nut (2) after having eliminated any possible clearance.
- Place the protections again.

**WARNING** - By turning the ignition key in ON position, check the presence of the two acoustic alarms for the exhaust valve opening and closing. This "CHECKING TURN" shows that the valve is neither encrusted nor jammed, thus the motor turns regularly.

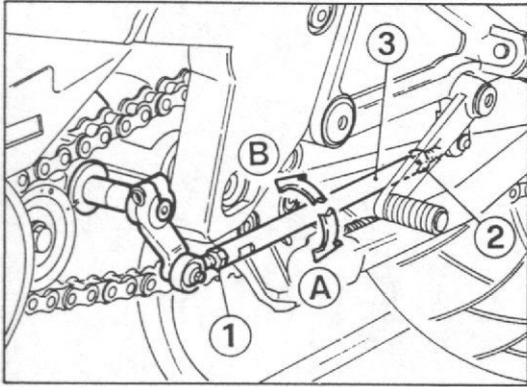
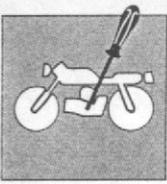


### Compression ratio control.

To check if the compression ratio is correct, proceed as follows:

- remove the cylinder together with the heads from the block;
- remove the piston from the connecting rod, properly clean it, insert it in the cylinder till it touches the corresponding profile on the explosion chamber (this chamber too must be free from incrustations);
- screw a comparator in the sparking plug hole and reset it in the piston position shown in figure A;
- remove the piston and reassemble it on the connecting rod;
- remount the cylinder together with the head by placing a 0.0196 in. gasket on the block;
- place the piston at the top dead center and control the reading on the comparator, which must be included between 0.053 in. (not less) and 0.059 in. (figure B);
- in case of different readings, reset the right condition by using a cylinder base gasket having the right thickness.

B-A = 1,35+1,50 mm  
B-A = 0.053+0,059 in.

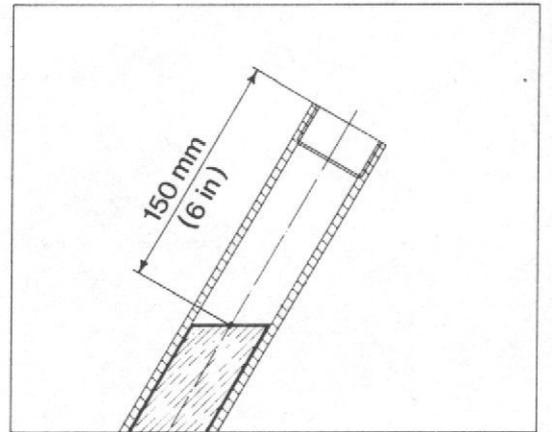
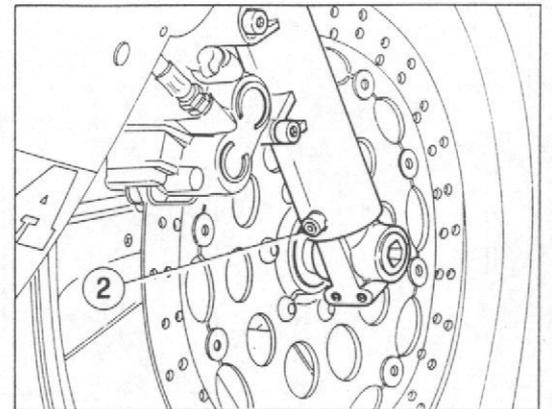
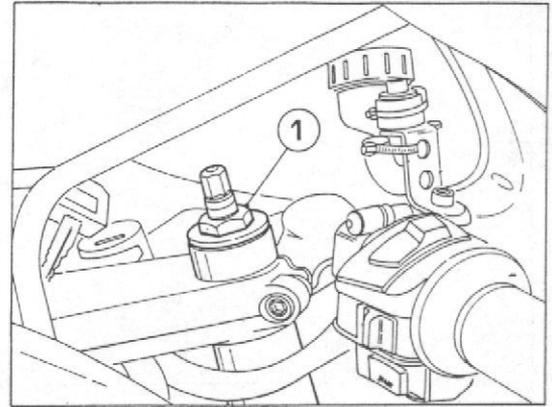
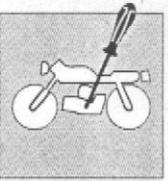


- 1-2) Counternut
- 3) Rod

**Adjustment of the gearbox control pedal position.**

The position of the gearbox control pedal can be changed according to the piloting requirements as follows:

- STREAMLINED VERSION: remove the lower fairing as described in the chapter "GENERAL OPERATION";
- release the counternuts (1) and (2);
- rotate the rod (3) in the direction indicated by the letter (A) to lower the pedal position;
- rotate the rod (3) in the direction indicated by the letter (B) to raise the pedal position;
- at completion of the adjustment, tighten the counternuts (1) and (2) again.



**Check and oil change in the front fork.**

For the proper operation of the fork, it is indispensable that both the fork legs contain the same quantity of oil.

Check the oil level inside the fork legs as follows:

- remove the caps (1) from the top of the bearing pipes;
- remove the preloading tubes and the springs from the inside of the bearing pipes and drain the oil inside the preloading tubes;
- make the legs reach their end of stroke and make sure that the level is at 5.905 in. from the upper end of the bearing pipes.

Should the oil be changed, follow the above-said procedure, then:

- unscrew the drain screws (2) located on the bottom of the legs and let the exhausted oil flow out;
- reassemble the drain screws making sure that the gaskets are in good conditions;
- pour 17.08 cu.in. oil in each leg; the oil must be of the type indicated at paragraph "SUPPLIES";
- make sure that the level is at 5.905 in. from the upper end of the bearing pipes;
- put springs and preloading tubes in place and screw the caps (1) again.

1) Bearing pipe cap  
2) Drain screw

