

aprilia

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00/2004-10

SPORTCITY 125 - 200

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workshop manual



8140811

INTRODUCTION

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0.1. FOREWORD

0.1.1. FOREWORD

- This manual provides the information required for normal servicing.
- This publication is intended for use by **aprilia** Dealers and their qualified mechanics; many concepts have been omitted on purpose as their inclusion would be superfluous. Since complete mechanical explanations have not been included in this manual, the reader must be familiar with basic notions of mechanics, as well as with basic repair procedures. Without such familiarity, repairs and checks could be ineffective and even hazardous. Since not all vehicle inspection and repair procedures are described in details, pay utmost attention to avoid damages to components or people. **aprilia s.p.a.** undertakes to constantly improve the design of its products and their literature to ensure that the customer is satisfied of the product. The main technical modifications and changes in repair procedures are communicated to all **aprilia** dealers and agencies worldwide. These changes will be applied to the next issues of this manual. Should you need assistance or clarifications about the inspection and repair procedures, please contact the **aprilia** SERVICE DEPT., they will be glad to give you any information on the matter, or supply you with any detail on updates and technical changes applied to the vehicle.

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For further details, see (REFERENCE MANUALS).

First edition: October 2004

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0.1.2. REFERENCE MANUALS

SPARE PARTS CATALOGUES

aprilia part# (description)					
6710	I	F	D	E	UK

OWNER'S MANUALS

aprilia part# (description)					
8104886	I				
8104887	F	E	E	UK	DK

ENGINE WORKSHOP MANUAL

aprilia part# (description)	
8140680	I
8140681	E
8140682	F
8140683	D
8140684	UK

CD FOR THE NETWORK

aprilia part# (description)					
8CM0063	I	E	F	D	UK

CHASSIS WORKSHOP MANUAL

aprilia part# (description)	
8140807	I
8140810	E
8140808	F
8140809	D
8140811	UK

0.1.3. ABBREVIATIONS/SYMBOLS/CONVENTIONS

#	= number
<	= less than
>	= greater than
≤	= equal or less than
≥	= equal or greater than
~	= approximately
∞	= infinite
°C	= degrees Celsius (centigrade)
°F	= degrees Fahrenheit
±	= more or less
a.c	= alternating current
A	= Ampere
Ah	= Ampere per hour
API	= American Petroleum Institute
AT	= high voltage
AV/DC	= Anti-Vibration Double Countershaft
bar	= pressure measurement (1 bar = 100 kPa)
d.c.	= direct current
cc	= cubic centimetres
CO	= carbon monoxide
CPU	= Central Processing Unit
DIN	= German industrial standards (Deutsche Industrie Norm)
DOHC	= Double Overhead Camshaft
ECU	= Electronic Control Unit
rpm	= revolutions per minute
HC	= unburnt hydrocarbons
ISC	= Idle Speed Control
ISO	= International Standardisation Organisation
kg	= kilograms
kgm	= kilogram metre (1 kgm = 10 Nm)
km	= kilometres
km/h	= kilometres per hour
kΩ	= kilo Ohm
kPa	= kiloPascal (1 kPa = 0.01 bar)
KS	= clutch side (from the German "Kupplungsseite")
kW	= kilowatt
l	= litres
LAP	= racetrack lap
LED	= Light Emitting Diode
LEFT SIDE	= left side
m/s	= metres per second
max	= maximum
mbar	= millibar (1 mbar = 0.1 kPa)
mi	= miles
MIN	= minimum
MPH	= miles per hour
MS	= flywheel side (from the German "Magnetoseite")
MΩ	= MegaOhm
N.A.	= Not Available
N.O.M.M.	= Motor Octane Number
N.O.R.M.	= Research Octane Number
Nm	= Newton metre (1 Nm = 0.1 kgm)
Ω	= ohm
PICK-UP	= pick-up
BDC	= Bottom Dead Centre
TDC	= Top Dead Centre
PPC	= Pneumatic Power Clutch
RIGHT SIDE	= right side
SAE	= Society of Automotive Engineers
SAS	= Secondary Air System
TEST	= diagnostic check

T.B.E.I.	= crown-head Allen screw
T.C.E.I.	= cheese-head Allen screw
T.E.	= hexagonal head
T.P.	= flat head screw
TSI	= Twin Spark Ignition
UPSIDE- DOWN	= inverted fork
V	= volt
W	= watt
Ø	= diameter

GENERAL INFORMATION

1

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1.1. STRUCTURE OF THE MANUAL

1.1.1. CONVENTIONS USED IN THE MANUAL

- This manual is divided in sections and subsections, each covering a set of the most significant components. Refer to the index of sections when consulting the manual.
- Unless expressly specified otherwise, assemblies are reassembled by reversing the dismantling procedure.
- The terms "right" and "left" are referred to the rider seated on the vehicle in the normal riding position.
- Motorcycle operation and basic maintenance are covered in the "OWNER'S MANUAL".

In this manual any variants are identified with these symbols:

	optional
	catalytic version
-	all versions
11kw	derated version 11 kw
80km	speed 80km/h
f.p	full-power version
MP	national certification
SF	European certification (EURO 1 limits)

VERSION:

	Italy		Greece		Malaysia
	United Kingdom		Holland		Chile
	Austria		Switzerland		Croatia
	Portugal		Denmark		Australia
	Finland		Japan		United States of America
	Belgium		Singapore		Brazil
	Germany		Slovenia		South Africa
	France		Israel		New Zealand
	Spain		South Korea		Canada

1.1.2. SAFETY WARNINGS

The following precautionary warnings are used throughout this manual in order to convey the following messages:



Safety warning. This symbol appears, whether in the manual or on the vehicle itself, to indicate a personal injury hazard. Non-compliance with the indications given in the messages preceded by this symbol may result in serious risks for you and other people's safety and for the vehicle!

**DANGER**

Indicates a potential hazard which may result in serious injury or even death.

**WARNING**

Indicates a potential hazard which may result in minor personal injury or damage to the vehicle.

CAUTION The word "CAUTION" in this manual identifies important information or instructions.

1.2. GENERAL RULES

1.2.1. BASIC SAFETY RULES

CARBON MONOXIDE

Should it be necessary to perform some operations with the vehicle running, make sure to work outdoors or in a well-aerated room.

Avoid starting the engine indoors.

In case you are working indoors, use a gas exhaust system.



DANGER

Exhaust gases contain carbon monoxide, which is extremely toxic if inhaled and may cause loss of consciousness or even lead to death.

FUEL



DANGER

The fuel used in internal combustion engines is highly flammable and can become explosive under particular conditions.

Refuelling and engine service should take place in a well-ventilated area with the engine stopped. Do not smoke when refuelling or in the proximity of sources of fuel vapours, avoid flames, sparks and any element that could ignite fuel or provoke explosions.

DO NOT DISPOSE OF FUEL IN THE ENVIRONMENT.

KEEP AWAY FROM CHILDREN.

HIGH-TEMPERATURE COMPONENTS

The engine and the components of the exhaust system become very hot and remain hot for some time after the engine has been stopped.

Before handling these components, wear insulating gloves or wait until the engine and the exhaust system have cooled down.

USED GEARBOX AND FORK FLUIDS



DANGER

Wear latex gloves when servicing.

Gear fluid may cause serious damage to the skin if handled daily and for long periods.

Wash your hands carefully after handling engine oil.

Take it to the filling station where you usually buy it or to an oil salvage centre.

Wear latex gloves when servicing.

DO NOT DISPOSE OF FLUID IN THE ENVIRONMENT

KEEP AWAY FROM CHILDREN.

BRAKE FLUID



WARNING

When handling the brake fluid, take care not to spill it on the plastic, rubber or painted parts, since it can damage them. When carrying out the maintenance operations on the braking system, use a clean cloth to cover these parts.

Always wear safety goggles when working on the braking system.

The brake fluid is highly irritant. Avoid contact with your eyes.

If the brake fluid gets in contact with your eyes, carefully wash them with fresh water and immediately seek medical advice.

KEEP AWAY FROM CHILDREN.

HYDROGEN AND BATTERY FLUID

**DANGER**

The battery electrolyte is a toxic, caustic substance containing sulphuric acid and thus able to cause severe burns in case of contact with the skin.

Always wear tight gloves and protective clothes when handling this fluid.

In case of contact with skin, rinse with plenty of fresh water.

Always use a protection for your eyes since even a very small amount of the battery fluid can cause blindness. In the event of contact with your eyes, carefully wash them with water for fifteen minutes and then consult immediately an eye specialist.

Should you accidentally drink some fluid, drink abundant water or milk, then drink magnesia milk or vegetable oil and immediately seek medical advice.

The battery gives off explosive gases and must be kept away from flames and sources of ignition or heat; do not smoke near the battery.

Make sure the room is well-aerated when servicing or recharging the battery.

KEEP AWAY FROM CHILDREN.

Battery fluid is corrosive.

Do not spill it, especially on plastic parts.

Make sure that the electrolyte acid is suitable for the type of battery used.

GENERAL PRECAUTIONS AND INFORMATION

Follow these instructions closely when repairing, disassembling or reassembling the motorcycle or its components.

**DANGER**

Using bare flames is strictly forbidden when working on the motorcycle. Before servicing or inspecting the motorcycle: stop the engine and remove the key from the ignition switch; allow for the engine and exhaust system to cool down; where possible, lift the motorcycle using adequate equipment placed on firm and level ground. Be careful of any parts of the engine or exhaust system which may still be hot to the touch to avoid scalds or burns.

Never put any mechanical parts or other vehicle components in your mouth when you have both hands busy. None of the motorcycle components is edible. Some components are harmful to the human body or toxic.

Unless expressly specified otherwise, assemblies are reassembled by reversing the dismantling procedure. Where a procedure is cross-referred to relevant sections in the manual, proceed sensibly to avoid disturbing any parts unless strictly necessary. Do not polish matt-painted surfaces with polishing paste.

Never use fuel instead of solvent to clean the motorcycle.

Do not clean any rubber or plastic parts or the seat with alcohol, petrol or solvents. Clean with water and mild detergent.

Always disconnect the battery negative (-) lead before soldering any electrical components.

When two or more persons service the same motorcycle together, special care must be taken to avoid personal injury.

For further warnings, see (DANGEROUS ELEMENTS)

BEFORE REMOVING THE COMPONENTS

- Clean off all dirt, mud, and dust and clear any foreign objects from the vehicle before disassembling any components.
- Use the model-specific special tools where specified.

DISASSEMBLING THE COMPONENTS

- Never use pliers or similar tools to slacken and/or tighten nuts and bolts. Always use the suitable spanner.
- Mark all connections (hoses, wiring, etc.) with their positions before disconnecting them. Identify each connection using a distinctive symbol or convention.
- Mark each part clearly to avoid confusion when refitting.
- Thoroughly clean and wash any components you have removed using a detergent with low flash point.
- Mated parts should always be refitted together. These parts will have seated themselves against one another in service as a result of normal wear and tear and should never be mixed up with other similar parts on refitting.
- Certain components are matched-pair parts and should always be replaced as a set.
- Keep away from heat sources.

REASSEMBLING THE COMPONENTS**DANGER**

Never reuse a circlip or snap ring. These parts must always be renewed once they have been disturbed.

When fitting a new circlip or snap ring, take care to move the open ends apart just enough to allow fitment to the shaft.

Make it a rule to check that a newly-fitted circlip or snap ring has located fully into its groove.

Never clean a bearing with compressed air.

CAUTION All bearings must rotate freely with no hard spots or noise. Replace any bearings that do not meet these requirements.

- Use ORIGINAL **aprilia** SPARE PARTS only.
- Use the specified lubricants and consumables.
- Where possible, lubricate a part before assembly.
- When tightening nuts and bolts, start with the largest or innermost nut/bolt and observe a cross pattern. Tighten evenly, in subsequent steps until achieving the specified torque.
- Replace any self-locking nuts, gaskets, seals, circlips or snap rings, O-rings, split pins, bolts and screws which have a damaged thread.
- Lubricate the bearings abundantly before assembly.
- Make it a rule to check that all components you have fitted are correctly in place.
- After repairing the motorcycle and after each service inspection, perform the preliminary checks, and then operate the motorcycle in a private estate area or in a safe area away from traffic.
- Clean all mating surfaces, oil seal edges and gaskets before assembly. Apply a thin layer of lithium grease along the edges of oil seals. Fit oil seals and bearings with the marking or serial number facing outwards (in view).

ELECTRICAL CONNECTORS

To disconnect the electrical connectors, follow the procedures below. Failure to comply with these procedures may lead to irreparable damage to the connector and the wiring as well.

If present, press the special safety hooks.

**WARNING**

Do not pull cables to disconnect the two connectors.

- Grasp the two connectors and disconnect them by pulling them in the two opposite directions.
- In case of dirt, rust, moisture, etc., thoroughly clean the inside of the connectors with compressed air.
- Make sure that the cables are correctly fitted inside the connector terminals.

CAUTION The two connectors have just one correct positioning. Make sure to position them in the right direction.

- Then fit the two connectors. Make sure they are correctly coupled (a click will be heard if hooks are present).

TIGHTENING TORQUE SETTINGS**DANGER**

Always remember that the tightening torque settings of all wheel, brake, wheel shaft and other suspension parts play a fundamental role to ensure vehicle safety. Make sure that these values are always within the specified limits.

Check fastening parts tightening torque settings at regular intervals. Upon reassembly, always use a torque wrench.

Failure to comply with these recommendations could lead to the loosening and detachment of one of these parts with a consequent locking of the wheel or other serious troubles affecting the vehicle manoeuvrability, and thus the risk of falls and serious injuries or death.

1.3. DANGEROUS ELEMENTS

1.3.1. WARNINGS

FUEL

**DANGER**

The fuel used to operate engines is highly flammable and becomes explosive under particular conditions.

Refuelling and engine servicing should take place in a well-ventilated area with the engine stopped. Do not smoke when refuelling or in the proximity of sources of fuel vapours, avoid flames, sparks and any element that could ignite fuel or provoke explosions.

Take care not to spill fuel out of the filler, or it may ignite when in contact with hot engine parts.

In the event of accidental fuel spillage, make sure the affected area is fully dry before starting the engine. Fuel expands from heat and when left under direct sunlight.

Never fill the fuel tank up to the brim. Tighten the filler cap securely after each refuelling.

Avoid contact with skin. Do not inhale vapours. Do not swallow fuel. Do not transfer fuel between different containers using a hose.

DO NOT DISPOSE OF FUEL IN THE ENVIRONMENT.

KEEP AWAY FROM CHILDREN.

Use only unleaded petrol with 95 RON and 85 MON octane rating minimum.

LUBRICANTS

**DANGER**

A good lubrication ensures the vehicle safety.

Failure to keep the lubricants at the recommended level or the use of a non-suitable new and clean type of lubricant can lead to the engine or gearbox seizure, thus causing serious accidents, personal injury or even death.

Gear fluid may cause serious damage to the skin if handled daily and for long periods.

Wash your hands carefully after use.

Do not dispose of oil in the environment.

Take it to the filling station where you usually buy it or to an oil salvage centre.

**WARNING**

When filling the vehicle with this oil, take care not to spill it out. Immediately clean spilt oil, or it might damage the vehicle paintwork.

In case of contact with oil, the tyre surface will become very slippery, thus becoming a serious danger for your safety.

In case of leaks, do not use the vehicle. Check and trace the cause of leaks and proceed to repair.

Engine oil

**DANGER**

Engine oil may cause serious damage to the skin if handled daily and for long periods.

Wash your hands carefully after use.

Do not dispose of oil in the environment.

Dispose of engine oil through the nearest waste oil reclamation firm or through the supplier.

Wear latex gloves when servicing.

FRONT FORK FLUID

**DANGER**

Front suspension response can be modified to a certain extent by changing damping settings and/or selecting a particular grade of oil. Standard oil grade is: SAE 20 W. Choose suitable viscosity grades according to the desired set-up (SAE 5W softer, 20W less soft).

The two grades can also be mixed in varying solutions to obtain the desired response.

BRAKE FLUID

CAUTION This vehicle is fitted with front and rear disc brakes. Each braking system is operated by an independent hydraulic circuit. The information provided below applies to both braking systems.

**DANGER**

Do not use the vehicle in case brakes are worn out or do not work properly. The brakes are the parts that most ensure your safety and for this reason they must always be perfectly working. Failure to comply with these recommendations will probably lead to a crash or an accident, with a consequent risk of personal injury or death.

A wet surface reduces brakes efficiency.

**DANGER**

In case of wet ground the braking distance will be doubled, since both brakes and tyre grip on the road surface are extremely reduced by the water present on the road surface.

Any water on brakes, after washing the vehicle or driving on a wet road surface or crossing puddles or gips, can wet brakes so as to greatly reduce their efficiency.

Failure to comply with these recommendations may lead to serious accidents, with a consequent risk of severe personal injuries or death.

Brakes are critical safety components. Do not ride the vehicle in case brakes are not working at their best.

Check for brakes proper operation before every trip.

Brake fluid is an irritant. Avoid contact with eyes or skin.

In the event of accidental contact, wash affected body parts thoroughly. In the event of accidental contact with eyes, contact an eye specialist or seek medical advice.

DO NOT RELEASE BRAKE FLUID INTO THE ENVIRONMENT.

KEEP AWAY FROM CHILDREN.

When handling brake fluid, take care not to spill it onto plastic or paint-finished parts or they will damage.

**DANGER**

Do not use any brake fluids other than the specified type. Never mix different types of fluids to top up level, as this will damage the braking system.

Do not use brake fluid from containers which have been kept open or in storage for long periods.

Any sudden changes in play or hardness in the brake levers are warning signs of problems with the hydraulic circuits.

Ensure that the brake discs and brake linings have not become contaminated with oil or grease. This is particularly important after servicing or inspections.

Make sure the brake lines are not twisted or worn.

Prevent accidental ingress of water or dust into the circuit.

Wear latex gloves when servicing the hydraulic circuit.

DISC BRAKES**DANGER**

The brakes are the parts that most ensure your safety and for this reason they must always be perfectly working; check them before every trip.

A dirty disc soils the pads.

Dirty pads must be replaced, while dirty discs must be cleaned with a high-quality degreaser.

Perform the maintenance operations with half the indicated frequency if the vehicle is used in rainy or dusty areas, on uneven surfaces or for racing.

Check brake pads for wear.

When the brake pads wear out, the level of the fluid decreases to automatically compensate for their wear.

The front brake fluid reservoir is located on the right handlebar, near the front brake lever.

The rear brake fluid reservoir is located under the right fairing.

Do not use the vehicle if the braking system leaks fluid.

COOLANT

**DANGER**

Coolant is toxic when ingested and is an irritant, contact with eyes or skin may cause irritation. In the event of contact with your skin or eyes, rinse repeatedly with abundant water and seek medical advice. In the event of ingestion, induce vomiting, rinse mouth and throat with abundant water and seek medical advice immediately.

**DO NOT RELEASE INTO THE ENVIRONMENT.
KEEP AWAY FROM CHILDREN.**

**DANGER**

Take care not to spill coolant onto hot engine parts. It may ignite and produce invisible flames. Wear latex gloves when servicing. Do not ride when coolant is below the minimum level.

Coolant mixture is a 50% solution of water and antifreeze. This is the ideal solution for most operating temperatures and provides good corrosion protection.

This solution is also suited to the warm season, as it is less prone to evaporative loss and will reduce the need for top-ups.

In addition, less water evaporation means fewer minerals salts depositing in the radiator, which helps preserve the efficiency of the cooling system.

When the temperature drops below zero degrees centigrade, check the cooling system frequently and add more antifreeze (up to 60% maximum) to the solution, if needed.

Use distilled water in the coolant mixture. Tap water will damage the engine.

Refer to the chart given below and add water with the quantity of antifreeze to obtain a solution with the desired freezing point:

Freezing point C° (-°F)	Coolant % of volume
-20° (-4)	35
-30° (-22)	45
-40° (-40)	55

CAUTION Coolants have different specifications. The protection degree is written on the label.

**WARNING**

Use only nitrite-free antifreeze and corrosion inhibitors with a freezing point of -35°C (-31°F) as a minimum.

TYRES

**WARNING**

If tyres are excessively inflated, the vehicle will be hard, difficult and uncomfortable to ride. In addition, the roadworthiness, mainly on wet surfaces and during cornering, will be impaired. Flat tyres (insufficient pressure) can slip on the rim and make you lose the control of the vehicle. In this case too, both vehicle roadworthiness, manoeuvrability and brake efficiency will be impaired. Tyres changing, repair, maintenance and balancing must be carried out by specialized technicians using suitable equipment. When new, tyres can have a thin slippery protective coating. Drive carefully for the first kilometres (miles). Never use rubber treating substances on tyres. In particular, avoid contact with fluid fuels, leading to a rapid wear. In case of contact with oil or fuel, do not clean but change the tyres.

**DANGER**

Some of the factory-assembled tyres of this vehicle are provided with wear indicators. There are several kinds of wear indicators. For more information on how to check the wear, contact your Dealer. Visually check if the tyres are worn and in this case have them changed. If a tyre deflates while driving, stop immediately. Avoid hard brakings or moves and do not close throttles too abruptly. Slowly close the throttle grip, move to the edge of the road and use the engine brake to slow down until coming to a halt. Failure to comply with these recommendations may lead to accidents, with a consequent risk of personal injuries or death. Do not install tyres with air tube on rims for tubeless tyres and vice versa.

1.4. RUNNING-IN

1.4.1. RUNNING-IN

Correct engine running-in is essential to ensuring proper performance and durability.

Twisty, hilly roads are ideal for an effective running-in of engine, suspension and brakes.

Vary speed frequently during the running-in period.

This will allow engine parts to be alternately loaded and unloaded, allowing them to cool down when unloaded.

While it is important to put some stress on engine components during running-in, it is equally important to avoid extreme load conditions.



WARNING

Only after the first 500 km (312 mi) of running-in is it possible to obtain the best acceleration performance from the vehicle.

Follow these recommendations:

- Never accelerate completely and harshly when the engine is running at low rpm, either during or after running-in.
- Until you have covered the first 100 km (62 mi), use the brakes gently and avoid harsh, prolonged braking. This will help the brake pads bed in properly against the brake discs.
- During the first 500 km (312 mi), do not exceed the 80% of the maximum allowed speed.
- Avoid driving at constant speed for long distances.
- During the first 1000 km (621 mi), progressively increase the speed until reaching the highest performance levels.



WARNING

After the first 1000 km (625 mi), carry out the checking operations indicated in the column "After running-in", see REGULAR SERVICE INTERVALS CHART, in order to avoid hurting yourself or other people and/or damaging the vehicle.

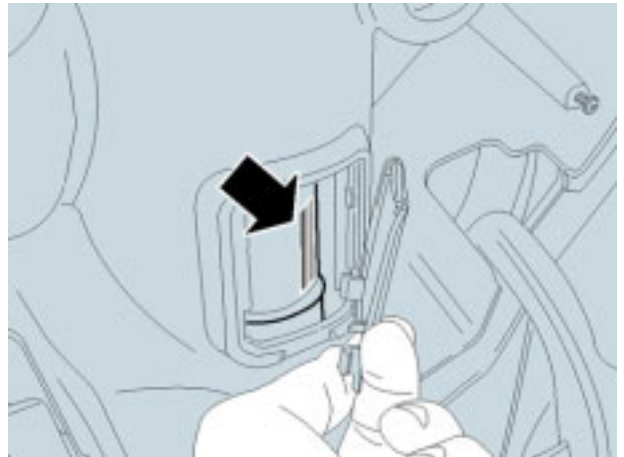
1.5. VEHICLE IDENTIFICATION

1.5.1. POSITION OF THE SERIAL NUMBERS

CAUTION Altering the vehicle identification numbers is a legal offence. Altering the frame number invalidates the warranty.

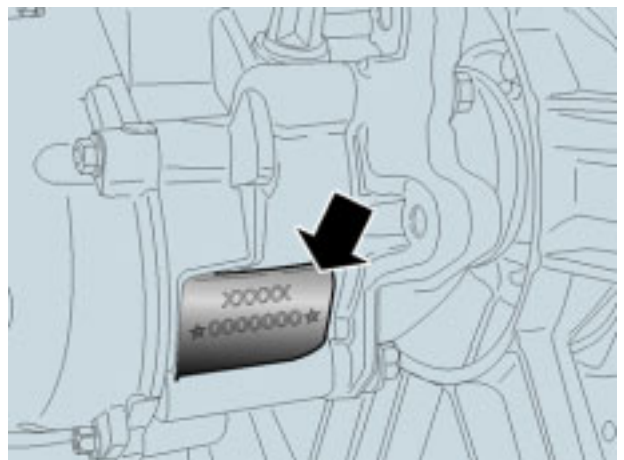
FRAME NUMBER

The frame number is stamped on the frame central tube. To read it, remove the indicated plug inside the front glove compartment.



ENGINE NUMBER

The engine number is stamped near the lower support of the rear shock absorber.



PERIODIC MAINTENANCE

2

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2.1. TECHNICAL INFORMATION

2.1.1. TECHNICAL DATA

DIMENSIONS	
Max. length	1965 mm (77.36 in.)
Max. width	730 mm (28.74 in.)
Max. height (to the headlight fairing)	1130 mm (44.49 in.)
Seat height	790 mm (31.10 in.)
Wheelbase	1360 mm (53.54 in.)
Minimum ground clearance	130 mm (5.11 in.)
Weight in running order	148 kg (328.28 lb)
ENGINE	
Model 	M281M
Model 	M282M
Type	One-cylinder, 4-stroke engine with 4 valves, forced lubrication with wet sump, one overhead camshaft.
Total displacement 	124 cu. cm (7.57 cu in.)
Total displacement 	198 cu. cm (12.08 cu in.)
Bore / stroke 	57 mm /48.6 mm (2.24 in /1.91 in).
Bore / stroke 	72 mm /48.6 mm (2.83 in /1.91 in).
Compression ratio 	12.5 ± 0.5 : 1
Compression ratio 	11.5 ± 0.5 : 1
Starting	Electric starter
Engine idling speed	1600 ± 100 rpm
Clutch	Automatic dry centrifugal clutch
Gearbox	Automatic
Cooling	Liquid cooling, forced circulation with centrifugal pump.
Intake valve clearance	0.10
Exhaust valve clearance	0.15
CAPACITY	
Fuel (reserve included)	8.6 litres (2.27 gal)
Fuel reserve	1.4 litres (0.37 gal)
Engine oil	
- changing engine oil and oil filter	1100 cu. cm (67.12 cu in.)
- change for engine overhaul	1150 cu. cm (70.18 cu in.)
Transmission fluid	250 cu. cm (15.25 cu in.)
Front fork fluid	135 ± 1 cu cm (8.24 ± 0.06 cu in) per leg
Coolant	1.5 litres (0.39 gal) (50% water + 50% antifreeze with ethylene glycol)
Seats	2
Vehicle max. load (rider + passenger + luggage)	210 kg (463 lb)
TRANSMISSION SYSTEM	
Converter	Stepless automatic converter
Primary	V-belt
Final	Gear-type
Total engine/wheel ratio 	
- minimum	36.5
- maximum	10.95
Total engine/wheel ratio 	
- minimum	22.36
- maximum	7.88
CARBURETTOR	
Model  	CVK7 30 Keihin
FUEL SYSTEM	
Type	Vacuum pump
Fuel	Premium grade leaded petrol (4 Stars ) or unleaded petrol with 95 RON and 85 MON octane rating minimum.
FRAME	
Type	One beam at the front, split in two overlapping cradles at the rear, in steel tubes with high yield point
Steering head angle	26.5°

SUSPENSIONS	
Front	hydraulically operated telescopic fork
Stroke	100 mm (3.94 in.)
Rear	no. 1 hydraulic, double-effect shock absorber with preload adjustment
Stroke	80 mm (3.15 in.)
BRAKES	
Front	Disc - Ø 260 mm (10.24 in) with hydraulic transmission.
Rear	Disc - Ø 220 mm (8.66 in) with hydraulic transmission.
WHEEL RIMS	
Type	in light alloy
Front	2.75 x 15"
Rear	3.00 x 15"
TYRES	
Type	tubeless
Front	120/70 - 15" 56 P
Rear	130/80 - 15" 63P
STANDARD INFLATION PRESSURE	
Front	200 kPa (2.0 bar)
Rear	230 kPa (2.3 bar)
INFLATION PRESSURE WITH PASSENGER	
Front	200 kPa (2.0 bar)
Rear	230 kPa (2.3 bar)
IGNITION	
Type	Capacity discharge ignition with variable advance
Spark advance 	Variable, managed by ECU. 5° minimum - 24° > 4000 rpm.
Spark advance 	Variable, managed by ECU. 5° minimum - 15° > 6000/8000 rpm.
SPARK PLUG	
Standard spark plug	NGK CR7EB
As an alternative	NGK CR8EB - NGK CR9EB - CHAMPION RG6YG - CHAMPION RG4HC
Spark plug gap	0.7 mm / 0.8 mm (0.027 in / 0.031 in).
ELECTRIC SYSTEM	
Battery	12 V - 12 Ah
Fuses	20 - 15 - 7.5 A
Generator (with permanent magnet)	12 V - 180 W
LAMPS	
Low/high beam	12 V - 55 W - H7
Parking light	12 V - 3 W
Turn indicator light	12 V - 10 W
Rear parking light/stoptlight	12 V - 5 W / 21 W
Number plate light	12 V - 5 W
Instrument panel lighting	LED
WARNING LIGHTS	
Turn indicators	LED
High beam	LED
Fuel reserve	LED
Alarm light	LED

2.1.2. SCHEDULED MAINTENANCE CHART



























Component	After running- in [1000 km (621 mi)]	Every 6000 km (3728 mi) or 8 months	Every 12000 km (7456 mi) or 16 months
Rear shock absorbers	1	1	-
Battery - terminals	1	1	-
Spark plug	1	1	3
Carburettor - idling	4	-	1
Air filter	-	2	-
Throttle operation	1	1	-
Brake locking operation	1	1	-
Converter grease	-	3	-
Stop light switch	-	1	-
Coolant	1	Every 1000 km (621 mi) 1. Every sixteen months: 3	
Engine oil	3	Every 1000 km (621 mi) 1. Every 6000 km (: 3728 mi): 3	
Transmission fluid	3	Every 6000 km (3728 mi): 1. Every 24000 km (14913 mi): 3	
Headlight beam direction - operation	-	1	-
Tyres – Inflation pressure	every month: 1		
Battery terminals tightening	1		
Front suspension	1	1	-
Brake pad wear	1	every 2000 km: 1	
Idle mixture (CO)	-	1	
Converter belt	-	1	3
Steering tube bearings	1	1	-
Engine oil filter	3	3	-
Wheel bearings	-	1	-
Secondary air scoop filter	-	2	-
Converter cover air filter	-	2	-
Clutch jaws	-	-	1
Valve clearance	-	1	-
Brake fluid	1	1	Every 2 years: 3
Front suspension fluid	1	1	3
Engine oil filter screen and magnetic screw	1	1	-
Converter rollers and converter plastic guides	-	1	3
Wheels - tyres	-	1	-
Nut, bolt, screw tightening	1	1	-
Cylinder head nut tightening	1	-	-
Draining brake fluid	1	-	-
Fuel hose	-	1	Every two years: 3

1 = check and clean, adjust, lubricate or change, if necessary; 2 = clean; 3= change; 4= adjust.

Carry out the maintenance operations more frequently if you use the vehicle in rainy and dusty areas or on uneven ground.

() = OPERATIONS THAT CAN BE CARRIED OUT BY THE USER

2.1.3. LUBRICANT CHART

LUBRICANT	PRODUCT
Engine oil	<p>RECOMMENDED:  SUPERBIKE 4, SAE 5W - 40 or  4T FORMULA RACING, SAE 5W - 40.</p> <p>As an alternative to the recommended oils, it is possible to use select oils having properties in compliance with or even above CCMC G4 A.P.I. SG specifications.</p>
Transmission oil	<p>RECOMMENDED:  F.C., SAE 75W 90 or  GEAR SYNTH, SAE 75W - 90.</p> <p>As an alternative to the recommended oil, use select oils having properties in compliance with or even above A.P.I. GL4 specifications</p>
Fork oil	<p>RECOMMENDED:  F.A. 5W or  F.A. 20W, as an alternative  FORK 5W or  FORK 20W.</p> <p>Should you wish to reach an average behavior between those offered by  F.A. 5W and by  F.A. 20W or  FORK 5W and by  FORK 20W, mix the products as follows:</p> <p>SAE 10W =  F.A. 5W 67% of the volume, +  F.A. 20W 33% of the volume.  FORK 5W 67% of the volume +  FORK 20W 33% of the volume.</p> <p>SAE 15W =  F.A. 5W 33% of the volume, +  F.A. 20W 67% of the volume.  FORK 5W 33% of the volume +  FORK 20W 67% of the volume.</p>
Bearings and other lubrication points	<p>RECOMMENDED:  BIMOL GREASE 481 +  GREASE SM2.</p> <p>As an alternative to the recommended product, use select oil for rolling bearings, useful temperature range -30°C...+140°C (-22°F...+284°F), dripping point 150°C...230°C (302°F...446°F), highly anticorrosive, water and oxidization resistant.</p>
Battery terminals	Neutral grease or vaseline.
Brake fluid	<p>RECOMMENDED:  F.F. DOT 4 (DOT 5 compatible) -  BRAKE 5.1 DOT 4 (DOT 5 compatible).</p> <p>As an alternative to the recommended fluid, use fluids having properties in compliance with or even above SAE J1703, NHTSA 116 DOT 4, ISO 4925 specifications.</p> <p>NOTE Before mixing different makes or types of oil, check their compatibility.</p>
Engine coolant	<p>RECOMMENDED:  ECOBLU - 40° C (-40°F) +  COOL.</p> <p>As an alternative to the recommended fluid, use fluids having properties in compliance or even above basic ethylene glycol CUNA NC 956-16 specifications.</p> <p>NOTE Use only nitrite-free anti-freeze and corrosion inhibitors with a freezing point of -35°C (-31°F) as a minimum.</p>

2.1.4. TIGHTENING TORQUE SETTINGS

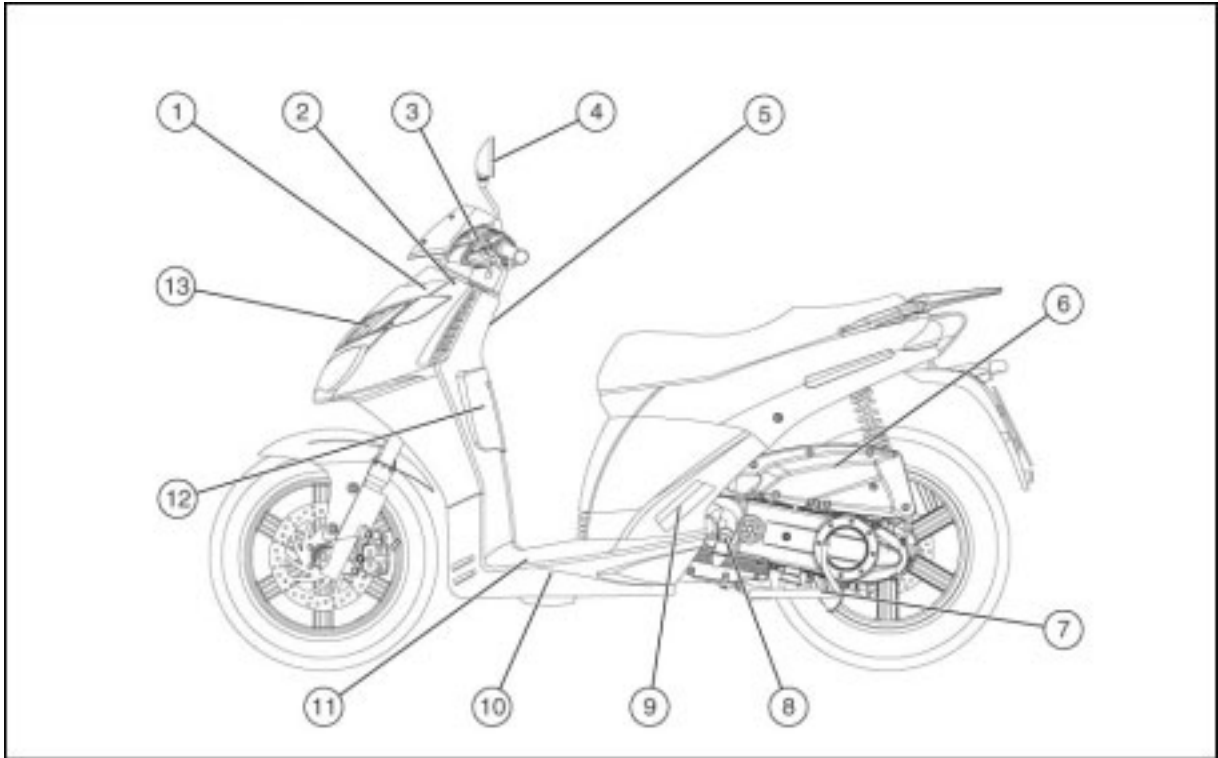
DESCRIPTION	QUANTITY	SCREW / NUT	TIGHTENING TORQUE SETTINGS (Nm)	Notes
HANDLEBAR				
Handlebar to fork fastener	1	10x70	48±20%	
Safety screw	1	8x50	20±20%	
Steering adjuster nut	1	M36x1	15±20%	Adjust steering play
Steering lock nut fastener	1	-	110±20%	
FRAME				
Number plate holder arch to frame fastener	2	8x16	25±20%	
Grab handle to frame fastener	4	8x25	25±20%	
Horn to frame fastener	1	6x16	10±20%	
Regulator to frame fastener	2	6x25	10±20%	
Switch to frame fastener	1	6x16	10±20%	
Control unit to frame fastener	2	6x16	10±20%	
Fuel tank to frame fastener	2	6x16	10±20%	
Helmet compartment to frame fastener	2	5x16	5±20%	
Conveyor to frame fastener	1	6x16	5±20%	
Coil to frame fastener	1	5x25	5±20%	
ELECTRIC SYSTEM				
Starter motor cable fastener	1	NUT M6	5±20%	
Battery to relay fastener	1	NUT M6	4±20%	
Starter motor to relay fastener	1	NUT M6	4±20%	
Battery wiring ground cable fastener	1	6x16	10±20%	
SEAT				
Hinge to seat fastener	4	NUT M6	7±20%	
LOCKS				
Glove compartment lock to door fastener	1	-	4±20%	
Seat latch fastener to right and left tail guards	2	5x16	3±20%	
Seat latch to helmet compartment fastener	2	6x16	5±20%	
INSTRUMENT PANEL				
Right handlebar cover to left handlebar cover fastener	2	3.9x14	1±20%	
Headlight fairing glass to handlebar cover fastener	4	3.9x14	1±20%	
Instrument panel to instrument panel support fastener	4	5x20 self-tapping	2±20%	
Instrument panel support onto inner handlebar cover fastener	4	3.9x14	1±20%	
Inner handlebar cover fastener onto handlebar	2	5x16	3±20%	
Outer handlebar cover to headlight fairing fastener	2	5x16	3±20%	

REAR BODYWORK				
Cat's eye to number plate holder fastener	2	NUT M4	1.5±20%	
Number plate to number plate holder fastener	1	4.2x16	1±20%	
Tail light fastener to right and left tail guards	4	3.9x14	1±20%	
Right and left tail guards to helmet compartment fastener	2	5x16	4±20%	
Tail light cover to number plate holder fastener	1	4.2x16	1±20%	
Number plate holder to right and left tail guards fastener	2	5x16	3±20%	
Number plate holder to rear mudguard frame fastener	1	6x16	5±20%	
Luggage rack cover to luggage rack fastener	4	3.9x14	1±20%	
Right and left tail guards to helmet compartment fastener	2	3.9x14	1±20%	
Fuel sensor door fastener onto helmet compartment	1	3.9x14	1±20%	
Right and left tail guards lower cover fastener to right and left tail guards	6	5x16	3±20%	
CENTRE BODYWORK				
Central inspection cover fastener onto helmet compartment	2	3.9x14	1±20%	
Central inspection cover fastener onto right and left side body panels	2	5x16	3±20%	
Left side inspection cover fastener	3	5x16	3±20%	
Right side inspection cover fastener	3	5x16	3±20%	
Battery cover fastener	2	5x16	3±20%	
Footpeg platform fastener	4	5x16	3±20%	
Right to left lower shield fastener	3	5x16	3±20%	
Glove compartment door fastener to inner front shield	4	3.9x14	1±20%	
Inner front shield fastener to outer front shield	6	3.9x14	1±20%	
Inner front shield fastener to outer front shield	2	4.2x25	1±20%	
Multipurpose net fastener to inner front shield	4	3.9x14	1±20%	
Glove compartment door reinforcement fastener	4	3.9x14	1±20%	
Bag hook fastener	2	4.2x25	1±20%	
Air vent fastener onto inner front shield	2	3.9x14	1±20%	
FRONT AND REAR BRAKE				
Calliper fastener onto fork	2	8x30	25±20%	with grease
Calliper fastener onto muffler plate	1	8x20	25±20%	with grease
Cable guide tube fastener onto connecting rod	1	6x16	10±20%	
Cable guide tube fastener onto conveyor	1	6x16	5±20%	
Right and left master cylinder fasteners onto handlebar	4	M6	10±20%	
Rear calliper support fastener to muffler plate	2	8x60	25±20%	
Rear calliper support fastener to muffler plate	1	8x60	25±20%	with grease
Cable guide tube fastener onto fork	1	6x16	10±20%	

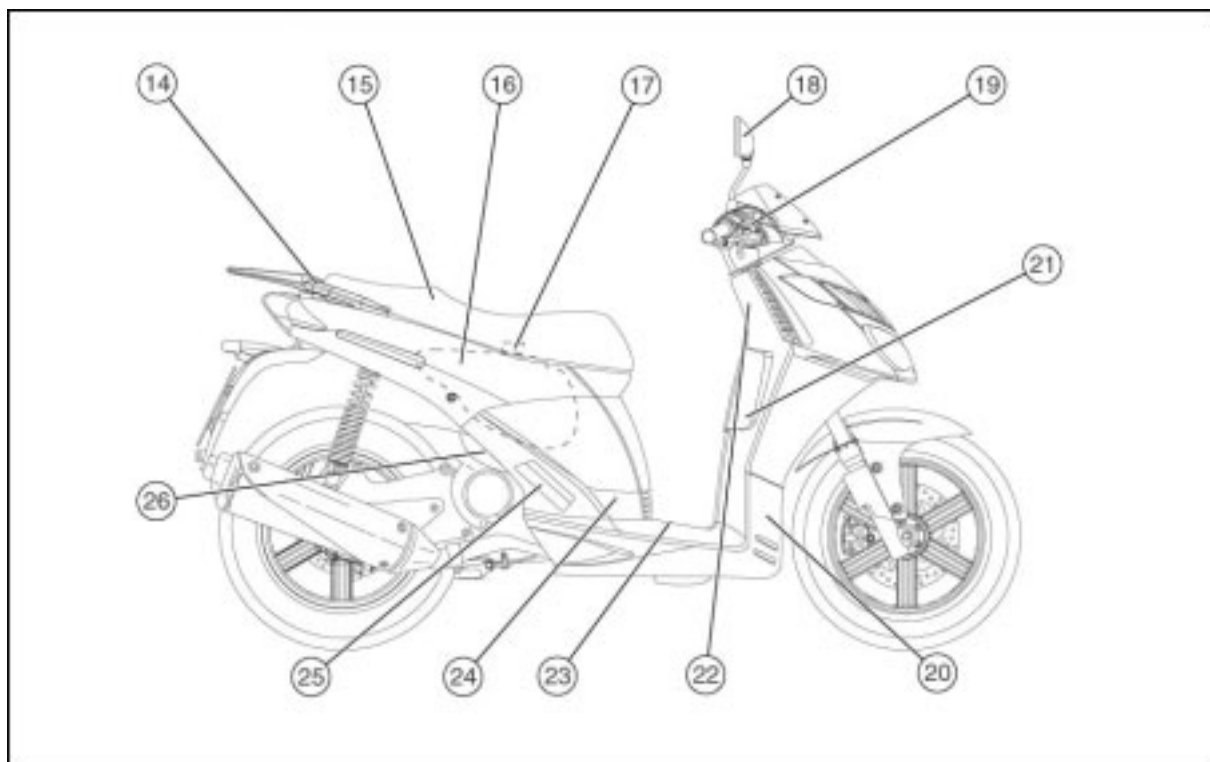
FRONT BODYWORK				
Right and left air vents fasteners onto inner front shield	2	3.9x14	1±20%	
Right and left turn indicator fasteners onto outer front shield	4	3.9x14	1±20%	
Headlight fastener onto outer front shield	4	3.9x14	1±20%	
Outer front shield fastener onto cap	3	3.9x14	1±20%	
Outer front shield fastener onto lower shield	4	3.9x14	1±20%	
Front mudguard clamp fastener onto fork	8	3.9x14	1±20%	
Outer front shield fastener onto plate under platform	1	5x16	3±20%	
Front mudguard fastener onto clamps	4	5x12	5±20%	
Cover fastener onto inner front shield	2	5x16	2±20%	
FILTER BOX				
Hose fastener onto carburettor	1	tie	2±20%	
Hose fastener onto filter box	1	tie	2±20%	
Filter box fastener onto engine	1	6x40	8±20%	
Filter box fastener onto engine	1	6x50	8±20%	
COOLING UNIT				
Thermal switch fastener	1	-	20±20%	
Head pipe fastener onto radiator	2	tie	2±20%	
Pump pipe fastener onto radiator	2	tie	2±20%	
Radiator fastener onto sidewall	1	5x12 flang.	7±20%	
Electric fan fastener onto radiator	2	4.2x20	1±20%	
Electric fan fastener onto radiator	1	4.2x22	1±20%	
Expansion tank fastener onto conveyor	2	6x16	4±20%	
FRONT WHEEL				
Shaft fastener	1	M14	50±20%	
Safety screw fastener	1	M6	10±20%	
CONNECTING ROD				
Connecting rod fastener onto frame	1	M12	60±20%	
Connecting rod fastener onto engine	1	M10	40±20%	
Frame con-rod fastener onto engine con-rod	1	M12	60±20%	
Silent block fastener onto frame	1	M12	50±20%	
EXHAUST				
Manifold fastener onto engine	2	NUT M7	15±20%	
Muffler fastener onto manifold	1	tie 40.43 W 4	16±20%	
Muffler fastener onto plate	3	8x25	25±20%	
Protection fastener onto muffler	3	5x12 flang.	7±20%	

REAR WHEEL				
Rear wheel fastener	1	-	110±20%	
Speed sensor screw fastener	2	6x12	10±20%	
Speed sensor fastener onto muffler plate	1	6x16	10±20%	
STAND				
Stand fastener onto engine	1	M10	27±20%	-
ENGINE				
Muffler plate fastener onto engine	2	8x45	25±20%	-
Fuel breather hose cable guide onto casing	1	6x25	10±20%	-
REAR SUSPENSION				
Right and left shock absorbers fastener to frame	2	M10x40	40±20%	
Shock absorber fastener onto engine bracket	1	M10x45	40±20%	
Shock absorber fastener onto muffler plate	1	NUT M10	40±20%	
Shock absorber bracket fastener onto engine	2	2x50	25±20%	
REAR SUSPENSION				
Sensor to tank fastener	4	NUT M4	1.5±20%	
Fuel coupling clamp fastener	1	tie	1±20%	
Fuel tank fastener onto helmet compartment	2	5x20 self-tapping	2±20%	
Fuel pump fastener onto helmet compartment	2	M2x50	2±20%	

2.1.5. ARRANGEMENT OF THE MAIN ELEMENTS

**Key:**

1. Expansion tank
2. Coolant expansion tank plug
3. Rear brake fluid reservoir
4. Left rear-view mirror
5. Bag hook
6. Air filter
7. Centre stand
8. Engine oil filler plug
9. Left passenger footpeg
10. Battery
11. Fuse carrier
12. Frame number
13. Front cover

**Key:**

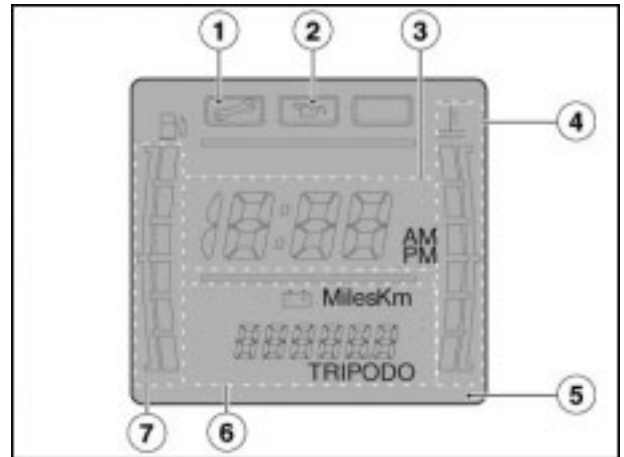
- 14. Passenger grab handle
- 15. Seat
- 16. Fuel tank
- 17. Fuel tank filler plug
- 18. Right rear-view mirror
- 19. Front brake fluid reservoir
- 20. Warning horn
- 21. Glove compartment
- 22. Ignition switch/steering lock
- 23. Battery compartment cover
- 24. Spark plug
- 25. Right passenger footpeg
- 26. Antitheft hook (for the **aprilia "Body-Guard" shielded cable OPT**)

2.1.6. INSTRUMENT PANEL OPERATION

1 - DISPLAY

Key:

- 27. Service warning
- 28. Oil pressure indicator
- 29. Digital clock
- 30. Coolant temperature indicator
- 31. Multifunction digital computer
- 32. Multifunction indicator: odometer (ODO) / trip meter (TRIP) / battery voltage (□)



2 - USER'S INTERFACE

Multifunction indicator functions

Using the Mode button (2), located on the handlebar right-side, it is possible to choose many functions: clock setting, odometer function (ODO), trip meter (TRIP), battery voltage measurement and resetting the trip meter.

Odometer (ODO)

When the instrument panel is switched on, the multifunction display (1) shows the odometer function (ODO). TRIP function (TRIP)

With the odometer display (ODO), press the Mode button (2) once to display the function (TRIP). Hold down the Mode button (2) for at least three seconds to reset stored trip value.

Battery voltage

With the odometer display, press the Mode button (2) twice to display the battery function.

Conversion of unit of measurement - Km/Mi

When battery voltage is displayed on multifunction display (1), hold down the Mode button (2) for more than ten seconds to change the unit of measurement from kilometres (Km) to miles (Mi).

While pressing the button, the current unit of measurement is flashing.

Should the button be pressed for less than ten seconds, the conversion will not take place.

Setting the clock

CAUTION For safety reasons, it is possible to set this function when vehicle is stopped only.

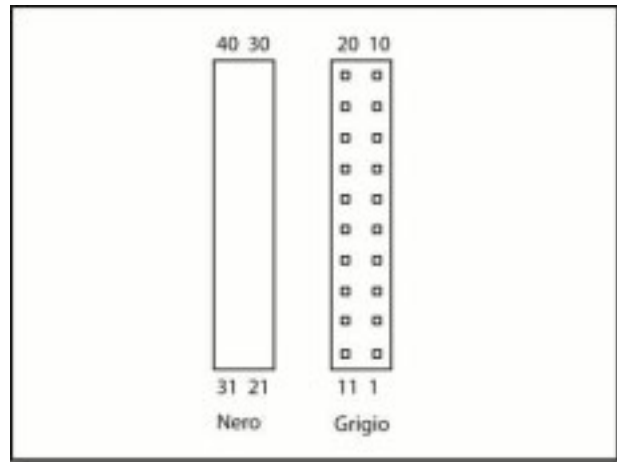
- Hold down the Mode button (2) for at least three seconds. The column dividing hours and minutes will start flashing.
- Set the hour value, it will increase by one unit every time you press the Mode button (2).
- Hold down the Mode button (2) again for at least three seconds to shift to minute setting. The indicated value will increase by one unit every time the Mode button (2) is pressed.

Hold down the Mode button (2) for at least three seconds to go back to hour setting.

If no key has been touched for three seconds, the display will automatically quit the clock setting function.

3 – PINOUT

The connector layout seen on the instrument panel and the relevant pinout are shown on the side:



The numbers are printed on the plastic element of the pins and on the connector body.

Pin	Service	Pin	Service
1	Key Positive	11	Battery Positive
2	RH indicator input	12	LH indicator input
3	Speed sensor power	13	High beam input
4	RPM	14	Speed sensor input
5	Speed sensor ground	15	EFI input
6	General ground	16	K-line
7	Neutral input	17	Oil pressure sensor
8	Functions ground	18	Fuel level sensor
9	Functions ground (option)	19	Water Temperature Sensor
10	Functions ground (option)	20	Mode

4 – SERVICE

Upon vehicle start-up, just after the ignition check sum, if there are less than 300 km (200 mi) to go before next Service, the relevant icon will flash for 5 seconds.

Once the mileage for Service has been reached, the icon is kept on until Service reset is carried out. It is possible to reset the light even if the mileage is lower, up to 300 km (200 mi), than the mileage for Service. During the 300 km (200 mi) before the Service warning light comes on, the light flashes for 5 times at every key-ON.

The warning should first come on at 1000 km (625 mi). Then it is preset to come on at 6000 km (3750 mi), 12000 km (7500 mi), and so on.

5 – SERVICE RESET

Hold down the MODE button.



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Turn the key to ON, and allow 10 seconds.

During this operation, the service icon will flash at a frequency of 1 Hz.

**6 - FUEL LEVEL INDICATOR**

1) Every time the battery is connected, the fuel indicator indicates full tank regardless of the quantity of fuel inside the tank and it takes it about 80 seconds to refresh. After the refresh, the indicator indicates the correct value.

2) If the fuel tank is emptied with engine off and using an external pump, when the vehicle is being started, the instrument will display the fuel quantity that was in the tank before emptying. Even in this case, allow 80 seconds to read the correct fuel level.

In fact, the multifunction digital computer keeps in the memory the fuel available when turning the key to OFF; when the battery connection is restored, the computer does not have any valid value in memory and it is therefore not able to detect if the tank is emptied with an external pump.

7 – DIAGNOSTICS

When battery is reconnected the instrument panel software code is displayed and the pointer makes one full turn, from 0 to full scale and back.

With key ON for 3 seconds all segments of the display (apart from Miles, Km) and all relevant warning lights are on. Backlighting is always on.

The analogue instrument will set to zero. After the check routine, all instruments immediately set to measured values.

**Oil pressure sensor**

It is a normally open contact, that signals an alarm on oil pressure value; in case of fault, a ground signal is output and the general alarm light and the icon come on.

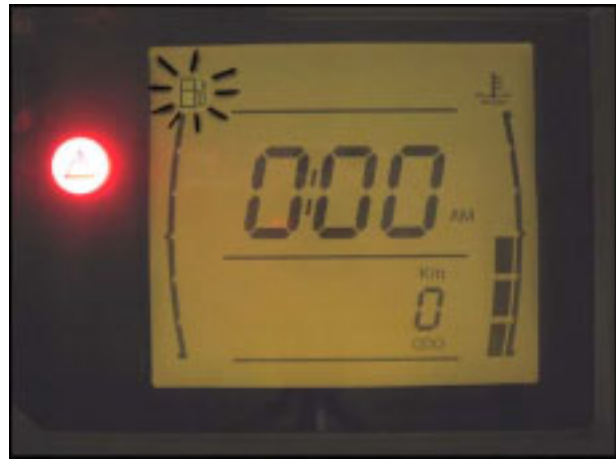


Battery fault

If the battery voltage drops below 10.0 V or is higher than 16 V, the "battery" icon will flash at a frequency of 1Hz. The general alarm light will not turn on.

Fuel sensor

Should the instrument panel detect an infinite resistance (broken circuit), the general alarm light comes on and the relevant icon flashes on the display (the reserve fuel light does not come on).



Should the instrument panel detect zero resistance (short-circuit), all segments turn on but no other indication is given.

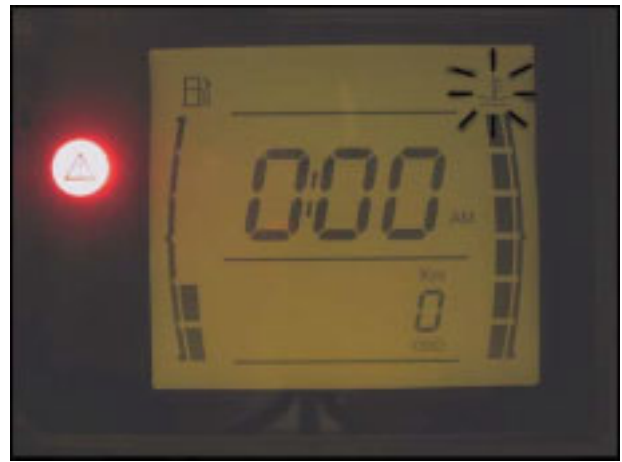
**Temperature sensor**

The general alarm light turn on when temperature is over 115°C (approx. 25ohm).

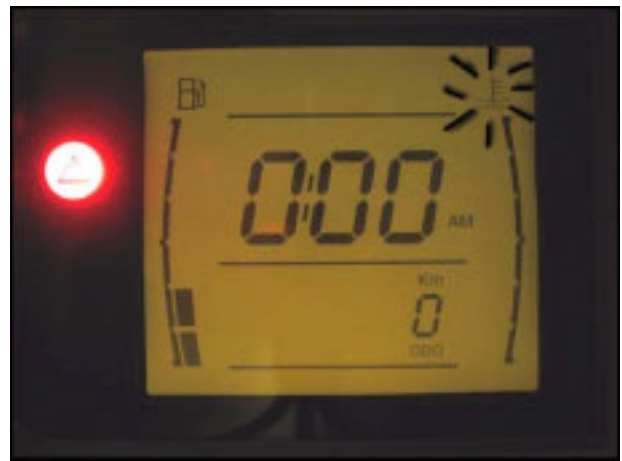


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Should the instrument panel detect an infinite resistance (broken circuit), the general alarm light comes on and the relevant icon flashes on the display.



Should the instrument panel detect zero resistance (short-circuit), all segments turn on, the general alarm light comes on and the relevant icon flashes on the display.



Summary table

AFFECTED ELECTRIC CIRCUIT	FAULT	GENERAL ALARM LIGHT ON	ICON	INDICATION SEGMENTS	Notes
OIL PRESSURE	low oil pressure	YES	on	-	Engine oil is really missing
	broken circuit	NO	off	-	It is recommended to periodically check for correct operation
BATTERY VOLTAGE	voltage below about 10 V or above about 16 V	NO	flashing	-	Useful indication mainly in case of voltage regulator outputting excessive voltage to the battery
FUEL LEVEL	short-circuit	NO	normal	all on	It indicates full tank even if tank is empty
	broken circuit	YES	flashing	off	The orange reserve light does not turn on
WATER TEMPERATURE	temperature above 115 °C	YES	normal	all on	
	short-circuit (or above 140 °C)	YES	flashing	all on	
	broken circuit	YES	flashing	off	

2.2. SCHEDULED MAINTENANCE

2.2.1. BRAKING SYSTEM

**WARNING**

In case of excessive stroke of the brake lever, excessive elasticity or air bubbles, bleed the air out of the circuit.

Do not use or mix different types of silicone or oil fluids.

Prevent water or dust from accidentally getting into the circuit.

CAUTION The following procedure refers to both braking systems.

Check

CAUTION Place the vehicle on a firm and flat surface.

- Position the vehicle on the centre stand.
- Make sure that the fluid in the reservoir is above the "MIN" level mark.

If the fluid does not reach at least the "MIN" mark, proceed as follows:

**WARNING**

Brake fluid level decreases as the brake pads wear down.

- Check brake pads for wear.
- If the pads and/or the disc do not need replacing, provide for topping up.

TOPPING UP

**WARNING**

Danger: brake fluid could leak out. Do not operate the front brake lever if the screws are loose or, most important, if the brake fluid reservoir cover has been removed. Use a cloth under the brake fluid reservoir.

- Release and remove the two screws.



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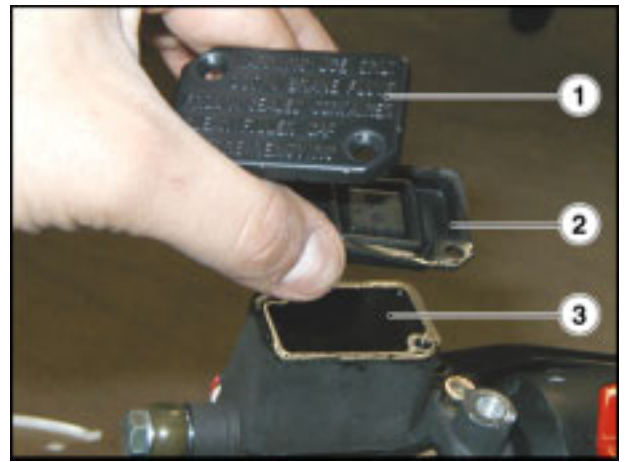


WARNING
 Avoid long exposure of brake fluid to air. Brake fluid is hygroscopic and will absorb moisture from the air. Keep the brake fluid reservoir open **JUST LONG ENOUGH** to top up level.

- Raise and remove cover (1).
- Remove the gasket (2).

CAUTION In order not to spill the brake fluid while topping up, do not shake the vehicle.

- Top up tank (3) with brake fluid to correct level.



WARNING
 Never top up to maximum level, just top up until level is above "MIN" mark. It is advisable to top up until reaching the "MAX" level only with new pads. Brake fluid level decreases as the brake pads wear down. Do not reach the "MAX" level with worn out pads, since this will cause a fluid outflow when the pads are changed.

- To refit components, follow the disassembly procedure in reverse order.



CHANGING THE BRAKE FLUID

CAUTION These procedures apply to both braking systems.

- Remove the bleed valve rubber cap (4-5).
- Insert one end of a transparent plastic tubing inside the calliper bleed valve (4-5) and the other end in a container for collection.
- Loosen the bleed valve (4-5) of about one turn.



CAUTION While carrying out this operation, check that some fluid is always present inside the tank. If this is not the case, once the operation is over, the air must be bled out.

- Check that the fluid is flowing off the tank and, before emptying, tighten the bleed valve (4-5).
- Top up.
- Loosen again the bleed valve (4-5) by about half of a turn.
- Check that the fluid comes out of the plastic tubing and, as soon as the fluid colour changes (from a darker to a lighter colour) tighten the bleed valve (4-5) and remove the tubing.



- Refit the rubber cap.
- Top up fluid inside tank.

CHECKING THE BRAKE PAD WEAR

CAUTION *The following instructions apply to both brakes.*

Outlined below is a quick brake pad inspection procedure:

- Position the vehicle on the centre stand.
- Using a lamp and a mirror located in-between brake calliper and pads, visually check as follows:

FRONT BRAKE CALLIPER

- From below, on the front part, for the left pad;
- From above, on the front part, for the right pad.



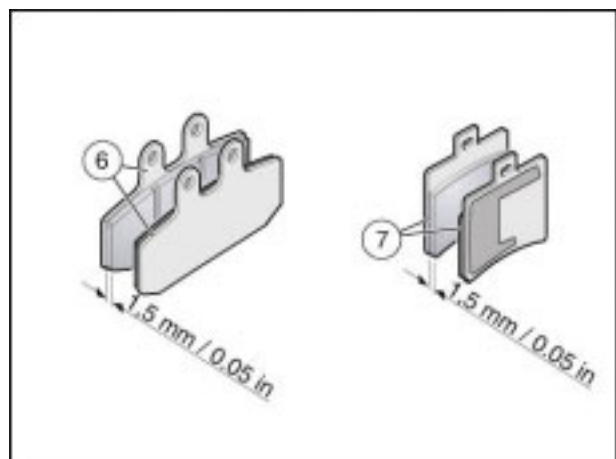
REAR BRAKE CALLIPER

- From above, on the rear part, for both pads.



If the thickness of the friction material (even of a single pad) has reduced to about 1.5 mm (0.05 in), have both pads changed.

- Front brake pads (6).
- Rear brake pad (7).



BLEEDING THE BRAKING SYSTEM

The air, if any, present inside the hydraulic circuit will serve as "pad" by absorbing most of the pressure coming from the brake master cylinder and thus reducing the calliper efficiency during braking. If some air is present inside the circuit, the brake control is "spongy" and the braking efficiency is reduced.



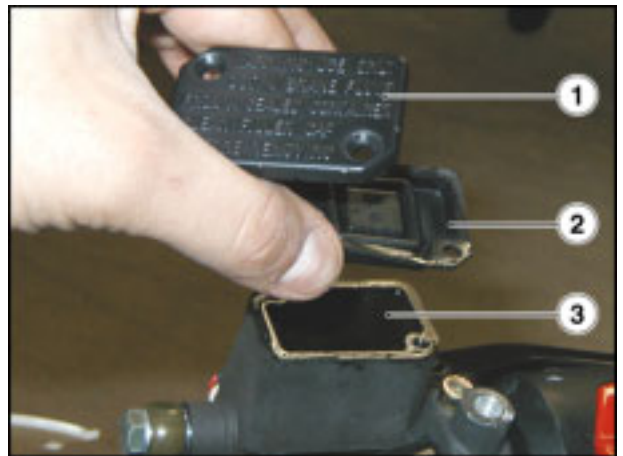
DANGER

It is fundamental that air is bled off the hydraulic circuit after the brakes have been refitted and the braking system has been restored to its standard operating conditions, since it would be very dangerous for the vehicle and the rider not to do so.

- Loosen the two brake fluid tank screws (3).
- Remove the cover (1).

CAUTION It is recommended to keep the fluid parallel to the tank edge (horizontal) in order not to spill fluid when topping up.

- Remove the gasket (2).
- Top up fluid, if necessary.



- Remove the bleed valve rubber cap (4-5).
- Connect a clear tube section to the bleed valve (4-5).



WARNING

Do not soil brake pads or disc with brake fluid.

- Put the free end of the hose into a receptacle.
- Slowly pull the brake lever completely two or three times, then keep it pulled.
- Loosen the bleed valve (4-5), press the lever and check if air bubbles are coming out of the tube together with the fluid.



WARNING

Tighten bleed valve (4-5) before releasing the lever in order to prevent air from getting in the brake circuit.

- When air is no longer coming out, tighten the bleed valve (4-5) and release the brake lever.

CAUTION Repeat the last three steps until completely eliminating the air bubbles.



WARNING

After reassembly, repeatedly pull the brake lever and check the braking system for correct operation.



2.2.2. AIR FILTER

The air filter should be inspected and cleaned every 6000 km (3750 mi), depending on the conditions of use.

Carry out the maintenance operations more frequently if you use the vehicle in rainy and dusty areas or on uneven ground. It is possible to clean the air filter partially after riding the vehicle on this kind of roads.



WARNING

The partial cleaning of the filter does not exclude or postpone the replacement of the filter itself. Do not start the engine when the air filter is not in place. Do not clean the filtering element with petrol or solvents, since they may cause a fire in the fuel supply system, with serious danger for the persons in the vicinity and for the vehicle.



CLEANING

- Remove the air filter, see (REMOVING THE AIR FILTER)
- Wash the filtering element with clean, non-inflammable solvents or solvents with high volatility point, then let it dry thoroughly.
- Apply a filter oil on the whole surface of the filtering element.



WARNING

The partial cleaning of the filter does not exclude or postpone the replacement of the filter itself. Do not start the engine when the air filter is not in place. Do not clean the filtering element with petrol or solvents, since they may cause a fire in the fuel supply system, with serious danger for the persons in the vicinity and for the vehicle.

- Check if there are residues in the lower part of the drain hose (1).

CAUTION If there are residues coming from the air box, remove them by proceeding as follows:

- Remove the caps (2).
- Drain the contents into a container and deliver it to a waste collection centre.



WARNING

Do not use filters that have already been used.

- Change the air filter with a new one of the same type.

2.2.3. COOLANT

CHECKING AND TOPPING UP THE COOLANT LEVEL

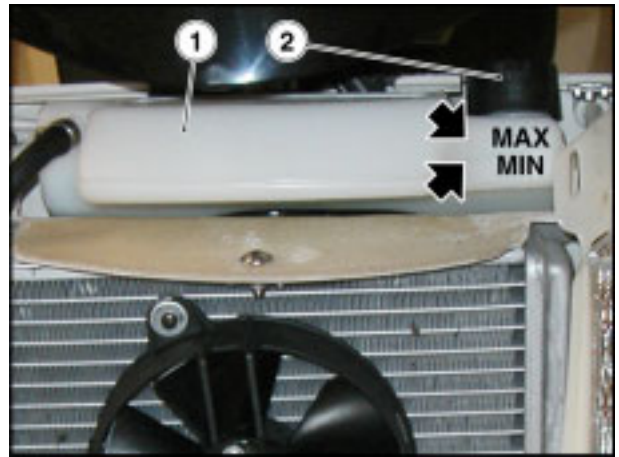
**WARNING**

Wait for the engine to cool down before checking or topping up coolant level.

- Stop the engine and wait until it has cooled down.

CAUTION Place the vehicle on a firm and flat surface.

- Remove the front cover, see (REMOVING THE FRONT COVER).
- Make sure that the level of the fluid contained in the expansion tank (1) is included between the "MIN" and "MAX" marks.



MIN = minimum level.

MAX = maximum level

If not so:

- Loosen the filler plug (2) (by turning it anticlockwise by two turns), without removing it.
- Wait a few seconds in order to release any residual pressure.
- Unscrew and remove the plug.

**WARNING**

Do not put additives or other substances into the fluid.

- Top up the expansion reservoir by adding coolant, see (LUBRICANT CHART), until this almost reaches the "MAX" level.
- Do not exceed this level, otherwise the fluid will flow out while the engine is running.
- Refit the filler plug (2).

**WARNING**

In case of excessive consumption of coolant and in case the expansion reservoir remains empty, make sure that there are no leaks in the circuit.

CLEANING THE RADIATOR

CAUTION The radiator can be cleaned without being removed from vehicle.

- Remove the front cover.
- Wash the radiator with a pressurised water jet.
- Blow the radiator with compressed air.

2.2.4. CHECKING AND TOPPING UP TRANSMISSION OIL LEVEL

CAUTION Use the recommended oil only, see (LUBRICANT CHART).

- Ride until covering several kilometres to warm up engine up to operating temperature and then stop the engine.

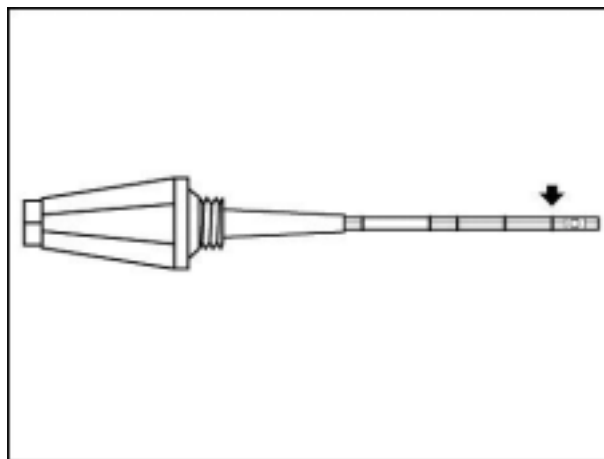
Check

- Position the vehicle on firm and flat ground.
- Position the vehicle on the centre stand.



WARNING
Allow several minutes for the engine and exhaust system to cool down.

- Unscrew and extract the plug/dipstick.
 - Clean the part in contact with the oil with a clean cloth.
 - Tighten the plug/dipstick fully into the filler opening.
 - Extract the plug/dipstick again and check oil level on the dipstick.
-
- Correct level is achieved when the oil reaches approximately the first mark over the dot.
 - If necessary, provide for topping up.



TOPPING UP

- Pour a small quantity of oil into the filler opening. Allow one minute for oil to flow into the crankcase.
- Check the oil level and top up if necessary.
- Top up by adding small quantities of oil, until reaching the prescribed level.
- When finished, tighten the plug/dipstick.

NOTE Do not use the vehicle when lubricant levels are low or lubricant has become contaminated. Use specified lubricants only. Improper lubrication will lead to moving parts fretting, resulting in irreparable damage.

2.2.5. CHANGING TRANSMISSION OIL

- Position the vehicle on firm and flat ground.
- Position the vehicle on the centre stand.



WARNING

Allow several minutes for the engine and exhaust system to cool down.

- Stop the engine and let it cool down, in order to allow the oil to flow into the crankcase and to cool down.
- Remove the rear wheel, see (REMOVING THE REAR WHEEL).

- Unscrew and extract the plug/dipstick (1).



- Place a container holding over 300 cu cm (18.3 cu. in) under the drain screw.
- Release and remove the drain screw.



WARNING

Used oil contains substances that are very dangerous for the environment. Dispose of used oil in accordance with applicable regulations.

- Fit and tighten the drain screw.



- Pour oil through the transmission oil filler hole.
- Screw and tighten the plug/dipstick.
- Start the engine and let it run for a few minutes. Stop the engine and let it cool down.
- Check transmission oil level, see (CHECKING AND TOPPING UP TRANSMISSION OIL LEVEL).

2.2.6. ENGINE OIL

CHECKING AND TOPPING UP

CAUTION Use the recommended oil only, see (LUBRICANT CHART).

When topping up the engine oil, never exceed the "MAX" level.

Check

- Position the vehicle on firm and flat ground.
- Position the vehicle on the centre stand.

**WARNING**

Allow several minutes for the engine and exhaust system to cool down.

Stop the engine and let it cool down, in order to allow the oil to flow into the crankcase and to cool down.

CAUTION Failure to perform the operations described above may result in the incorrect measurement of the engine oil level.

- Unscrew and extract the plug/dipstick (1).
- Clean the part in contact with the oil with a clean cloth.
- Tighten the plug/dipstick (1) completely, screwing it into the filling hole (2).
- Withdraw the plug/dipstick (1) again and read the oil level on the dipstick itself.



MAX = maximum level;

MIN = minimum level.

- The level is correct if the oil reaches approx. the "MAX" mark on the dipstick.

**DANGER**

Never exceed the "MAX" mark or let oil level drop below the "MIN" mark, as this may lead to severe engine damage.

- If necessary, provide for topping up.

TOPPING UP

- Pour a small quantity of oil in the filling hole (2) and wait about one minute, so that the oil flows into the crankcase.
- Check the oil level and top up if necessary.
- Top up by adding small quantities of oil, until reaching the prescribed level.
- When finished, tighten the plug/dipstick (1).

CAUTION Do not use the vehicle when lubricant levels are low or lubricant has become contaminated. Use specified lubricants only. Improper lubrication will lead to moving parts fretting, resulting in irreparable damage.

CHANGING ENGINE OIL AND OIL FILTER

CAUTION Place the vehicle on a firm and flat surface.

- Position the vehicle on the centre stand.

**WARNING**

Allow several minutes for the engine and exhaust system to cool down.

- Stop the engine and let it cool down, in order to allow the oil to flow into the crankcase and to cool down.
- Unscrew and extract the plug/dipstick (1).
- Place a container under engine oil filter.

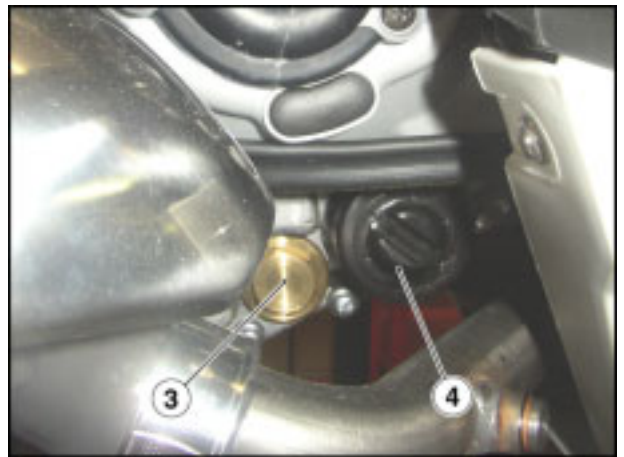


- Loosen and remove the cartridge filter (4).

**WARNING**

Used oil contains substances that are very dangerous for the environment. Dispose of used oil in accordance with applicable regulations.

- Loosen and remove the oil drain plug (3) and let engine oil fully drain inside the container.
- Smear with oil the filter O-rings and install a new cartridge filter (4).
- Tighten oil drain plug (3).



- Fill up with about 1100 cu.cm of engine oil (67.12 cu.in.).
- Screw and tighten the plug/dipstick (1).
- Start the engine and let it run for a few minutes. Stop the engine and let it cool down.
- Check engine oil level, see (CHECKING AND TOPPING UP).

FUEL SYSTEM

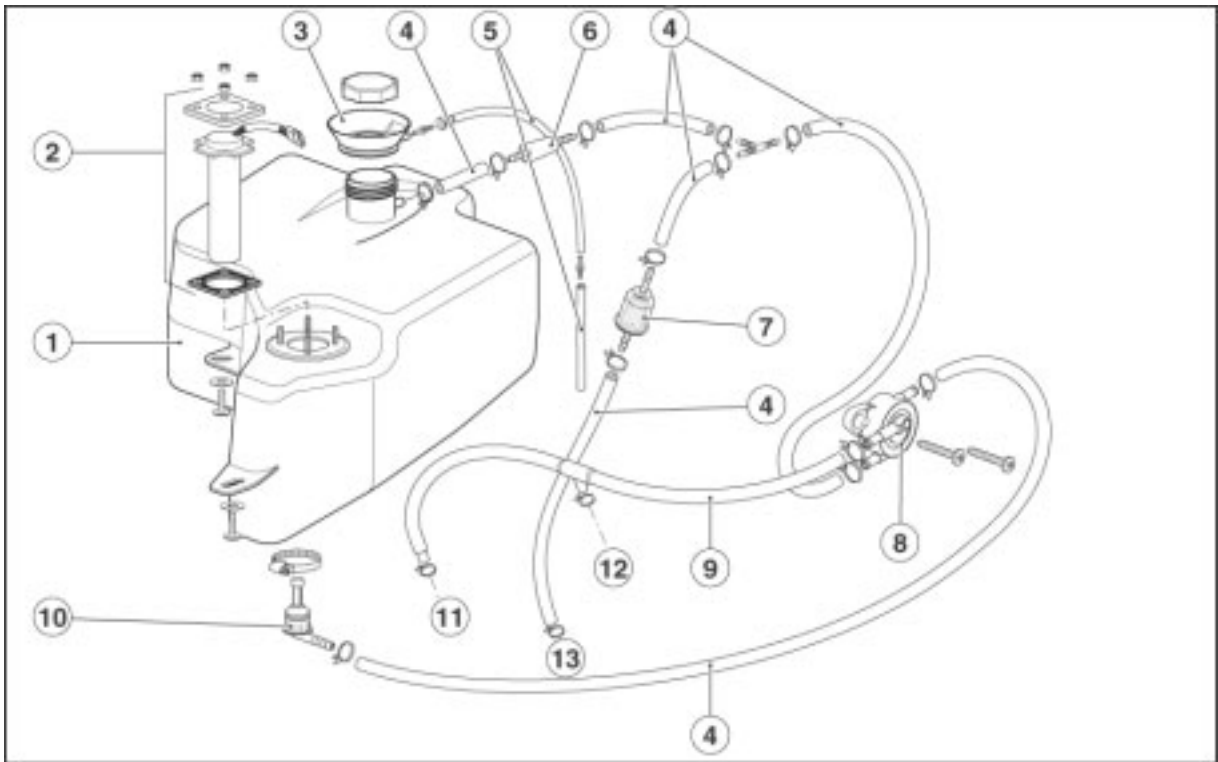
3

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3.1. FUEL TANK

3.1.1. FUEL SUPPLY SYSTEM DIAGRAM

**Key:**

1. Fuel tank;
2. Fuel level sensor;
3. Fuel collection rubber element;
4. Fuel hose;
5. Hose;
6. Valve preventing downflow;
7. Fuel filter;
8. Fuel pump;
9. Vacuum hose;
10. Complete coupling;
11. SAS valve cut-off;
12. Vacuum pick-up point;
13. Carburettor delivery

3.1.2. REMOVING THE FUEL TANK

- Insert the key in the seat latch and turn it anticlockwise.
- Remove the seat, see (REMOVING THE SEAT).
- Release and remove the two screws.



- Remove the tail guard, see (REMOVING THE TAIL GUARD).
- Remove the two fuel pump securing screws.



- Move aside the tie.



- Disconnect the fuel pump vacuum hose.



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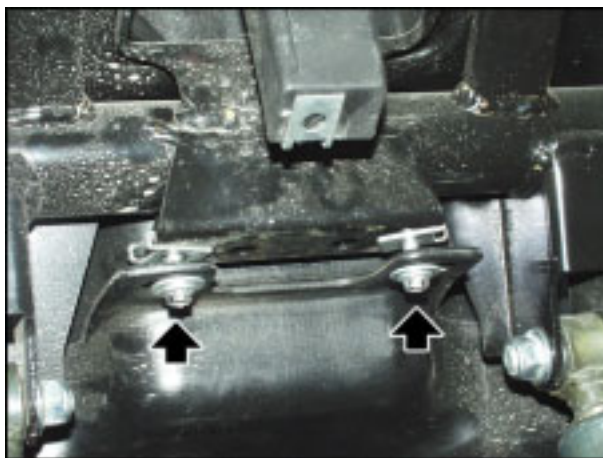
- Loosen the screw and remove the fuel sensor inspection cover by sliding it out. Pay attention to the tang and its housing.



- Disconnect the fuel sensor.



- Remove the passenger grab handle, see (REMOVING THE PASSENGER GRAB HANDLE).
- Remove the rear mudguard, see (REMOVING THE REAR MUDGUARD).
- Loosen and remove the two screws and collect the washers.



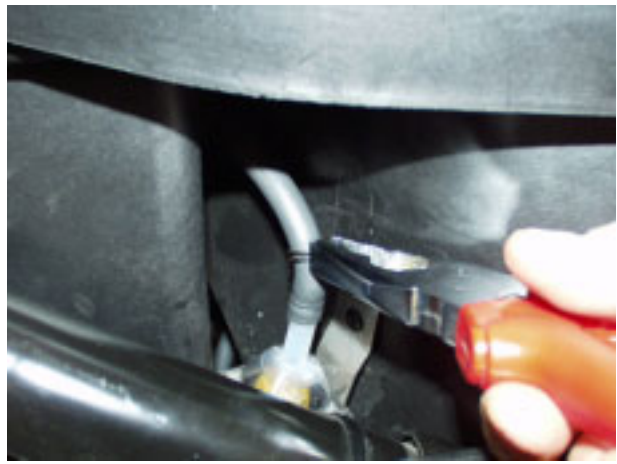
- Remove the filter holder (1) from key (2).



- Loosen and remove the clamp.

CAUTION Place a cloth under the hose and the filter to avoid spilling fuel.

- Remove the hose and plug it.



- Release the breather hose from the clips on the frame.
- Remove the tank with helmet compartment and fuel pump in a forward motion.



To separate the tank from the helmet compartment, proceed as follows:

- Turn the fuel tank over.
- Loosen and remove the two screws and collect the washers.



- Remove the fuel tank filler cap (3).
- Remove the seal (4) and slide it out the breather hose (5).
- Tighten the fuel tank filler cap (3).





- Separate the helmet compartment from the tank and slide it out.
- Remove the fuel tank.



3.1.3. REMOVING THE FUEL SENSOR

- Insert the key and turn it anticlockwise.
- Raise the seat.



- Unscrew and remove the screw.



- Remove the fuel sensor inspection cover from its fasteners and slide it out.



WARNING
Pay attention to the tabs and their housings.



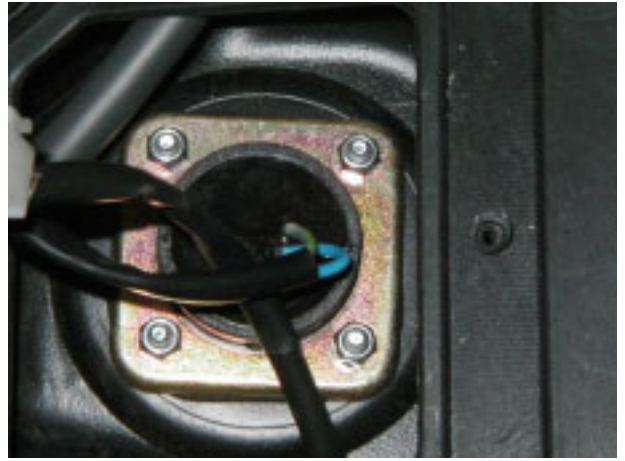
- Disconnect the fuel sensor.



**WARNING**

Ensure that the tank is not full since the sensor housing is lower than the tank overflow level.

- Loosen and remove the four nuts.



CAUTION Take a cloth to avoid fuel spillage

- Remove the sensor from the tank.

**WARNING**

Remove the sensor and immediately plug the sensor inlet opening with a rag so to avoid breathing fuel vapours.



3.2. AIR FILTER

3.2.1. REMOVING THE AIR BOX

- Remove the left underseat panel.
- Loosen intake manifold clamp.
- Remove the intake manifold.

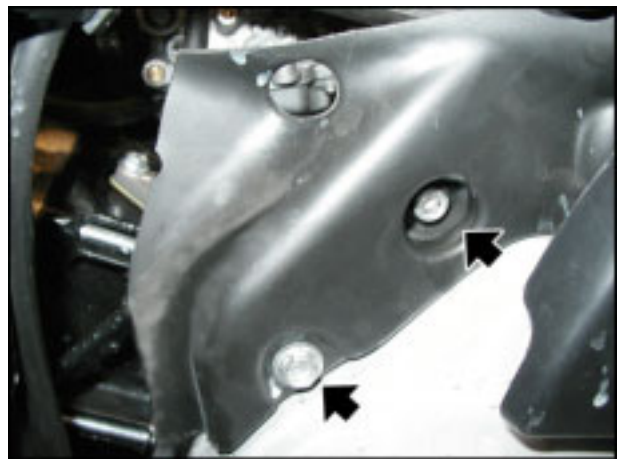


- Loosen the three air box screws.





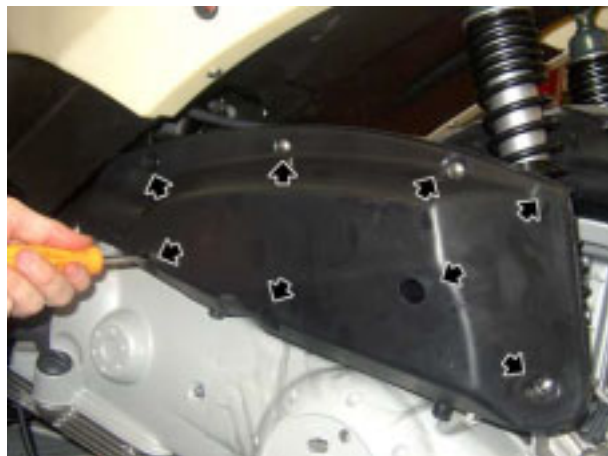
- Loosen and remove the two screws and remove the air box front cover.



- Move the air box to the left.
- Release the oil breather hose clamp.
- Remove the oil breather hose.
- Remove the air box.

3.2.2. REMOVING THE AIR FILTER

- Loosen and remove the eight air box screws.

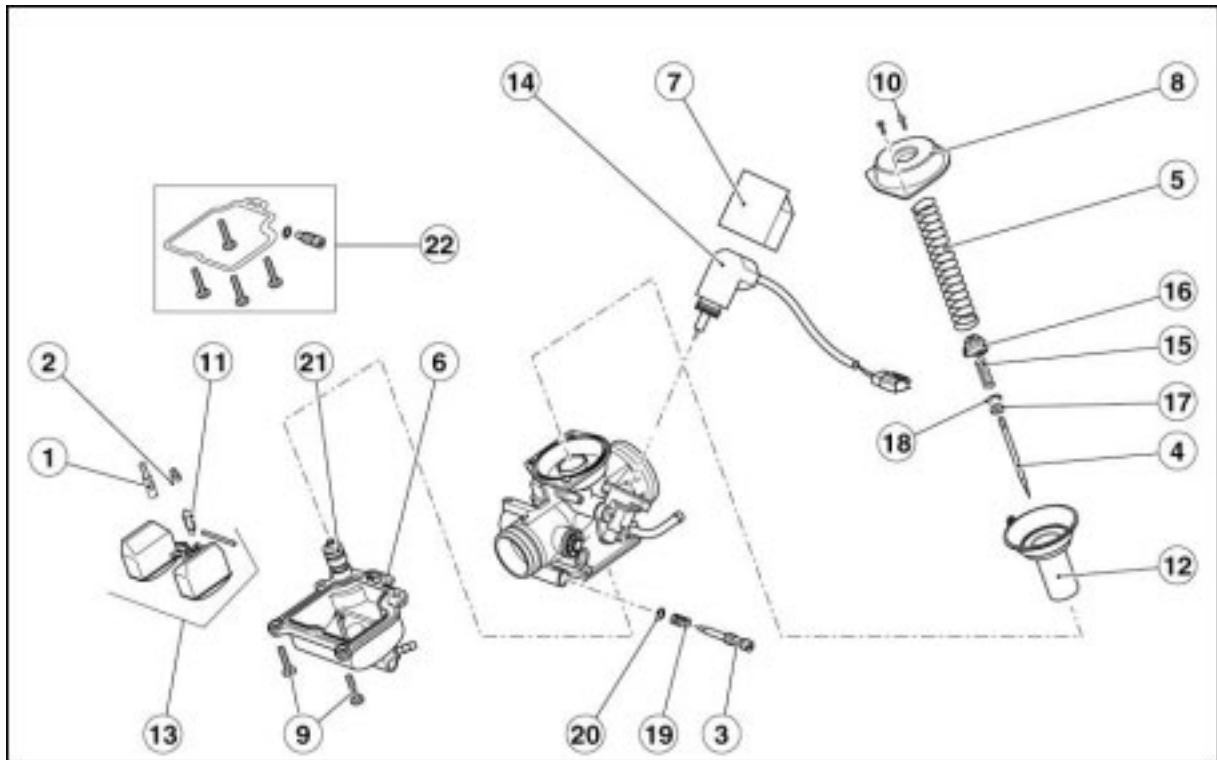


- Remove the air box cover.
- Remove the filter.



3.3. CARBURETTOR

3.3.1. CARBURETTOR DIAGRAM



Key:

- | | | | |
|-----|------------------------------|-----|-----------------------------|
| 1. | Minimum jet | 12. | Diaphragm |
| 2. | Maximum jet | 13. | Float kit |
| 3. | Idle air adj. screw | 14. | Complete automatic choke |
| 4. | Tapered needle | 15. | Spring |
| 5. | Throttle valve return spring | 16. | Retainer |
| 6. | Compl. float chamber | 17. | Washer |
| 7. | Choke cover | 18. | Circlip |
| 8. | Cover | 19. | Spring |
| 9. | Screw | 20. | Washer |
| 10. | Screw | 21. | Acceleration pump kit |
| 11. | Fuel closing pin | 22. | Float chamber component kit |

Component	SPECIFICATIONS	
	125 cc	200 cc
Model	Kehin CVK7 30	Kehin CVK 7 30
Throttle	Ø 29 mm	Ø 29 mm
Engine-side fitment	Ø 40 mm	Ø 40 mm
Float	-	-
Fuel inlet valve - pin housing	1.2	1.2
Starter air inlet hole	150	150
Starter nozzle	42	42
Minimum jet	35	38
Idle screw - choke on - rpm	2	2 ½
Minimum air hole	130	115
Maximum air hole	70	70
Maximum jet	105	100
Throttle valve	Standard	Standard
Atomiser	Ø 2.8 mm	Ø 2.8 mm
Tapered needle	NDVA	NDVA
Notch	-	-

3.3.2. REMOVING THE CARBURETTOR

- Remove the fuel tank, see (REMOVING THE FUEL TANK).
- Remove the right inspection cover, see (REMOVING THE RIGHT INSPECTION COVER).
- Remove the central inspection cover, see (REMOVING THE CENTRAL INSPECTION COVER).
- Disconnect the connector.



- Remove the clamp and slide out the heater hose (1).
- Plug the heater hose (1) to prevent coolant from spilling.



- Loosen clamp (2) on intake manifold (3).

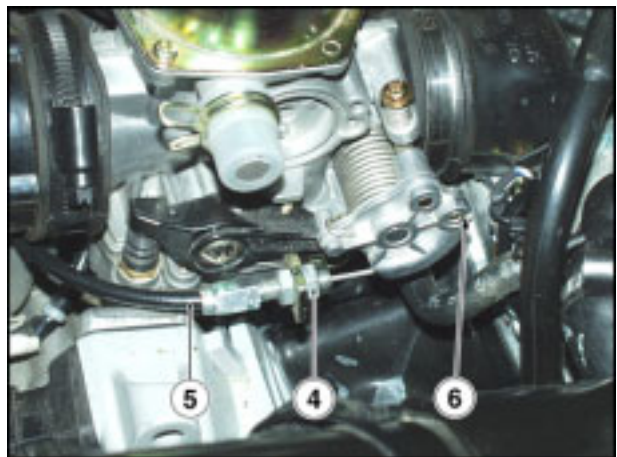
CAUTION At this point the carburettor is still connected to the throttle cable. Proceed carefully to avoid damaging the components.

- Detach the carburettor from manifold (3) and partially remove it.



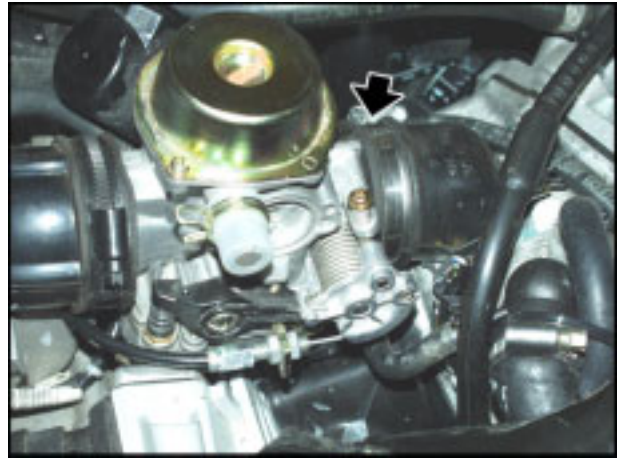
WARNING
 Proceed with care.
 While removing, do not damage the tabs.

- Completely loosen nut (4) locking throttle cable (5).
- Remove the throttle cable from its housing (5).
- Slide out the throttle cable head (6) from the lever fastener.



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- Loosen the clamp and remove the carburettor.



- Remove the clamp.
- Remove the heater hose (7).
- Remove the carburettor.



ENGINE

4

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4.1. ENGINE

4.1.1. REMOVING THE ENGINE FROM THE FRAME

- Before removing the crankcase, remove all outer structures, the fuel tank, the air box, the exhaust silencer.
- Pull up the platform lower protection and turn it to remove it.



- Take a container of suitable capacity and set it under the cooling system pump.
- Remove the expansion tank plug.
- Loosen the clamp and remove the radiator-pump hose, let the coolant flow in the container.



- Remove the clamp and the head-pump hose.



- Loosen the clamp and remove the head-radiator hose.



- Loosen and remove the two screws onto rear brake calliper plate.



- Carefully slide the rear brake calliper plate out of the brake disc, together with rear brake calliper and speed sensor.



- Loosen the screw and remove the cable guide.



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- Remove the spark plug cap and release its cable of any fasteners.



- Remove the throttle cable.



- Loosen and remove the nut.
- Remove the starter motor power cable.



- Disconnect the automatic choke connector.



- Unscrew and remove the screw.
- Remove the two ground cables.



- Disconnect and release the ignition connector.



- Disconnect the connector on water temperature sensor end.



- Support the vehicle frame using a suitable lift.
- Working on the left side, loosen and remove the nut, slide out the shock absorber securing pin.



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- Working on the right side, loosen and remove the nut, slide out the shock absorber securing pin.



- Release connecting rod spring.



- Working on the right side, loosen and remove the nut.



- Slide out the pin from the left side and collect washer and spacer.
- Remove the engine from behind.



4.1.2. INSTALLING THE ENGINE

CAUTION Take new clamps to be used upon installation.

- Place the engine on the frame.
- Working from the left side, fit the washer, the spacer and the pin.



- Working on the right side, tighten the nut onto the pin.



- Hook the connecting rod spring to the frame.



- Working on either side of the vehicle, fit the shock absorber, the pin and tighten the nut.

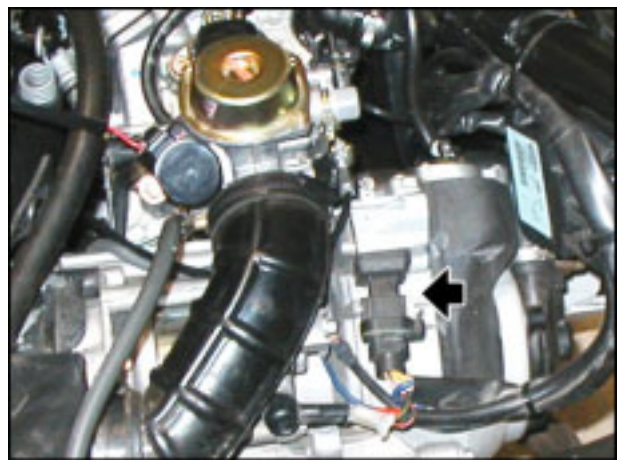




- Connect the connector to water temperature sensor.



- Connect the ignition connector.



- Connect the automatic choke connector.



- Position the ground cables and tighten the screw.



- Position the starter motor power cable and tighten the nut.



- Connect the throttle cable to the carburettor.



- Position the spark plug cap.



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- Fit the rear brake calliper plate with rear brake calliper and speed sensor, tighten the two screws.



- Fit the rear brake line and the speed sensor cable and secure them to the frame by fitting the cable guide.



- Fit the head-radiator hose and tighten the clamp.



- Fit the head-pump hose and tighten the clamp.



- Fit the radiator-pump hose and tighten the clamp.
- Reassemble the other components, following the same procedure as described for removing the engine from the frame but in reverse order.



4.2. SECONDARY AIR SYSTEM

4.2.1. SECONDARY AIR SYSTEM GENERAL INFORMATION

General notes

The way the SAS operates on 200cc Euro 2 leader engine is similar to SAS standard operation.

The main different points are the following:
the secondary air enters directly in the exhaust pipe on the head and not through the muffler.



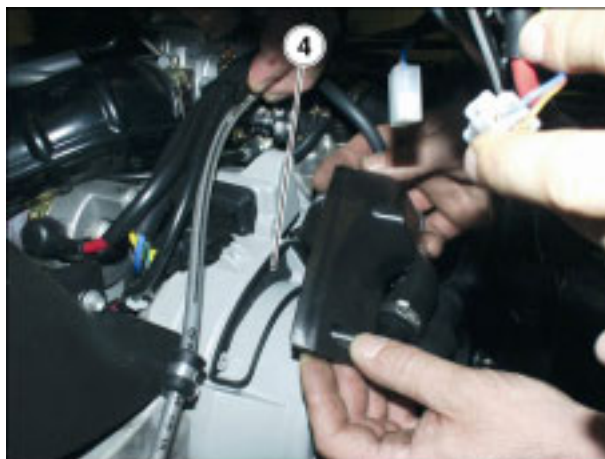
The unit, arrowed in the figure, features a cut-off connected to the intake manifold vacuum pick-up that cuts air out while vehicle is decelerating, to avoid bursts at the muffler.

DESCRIPTION OF THE SYSTEM

- Air is taken in through hole (1), it then flows through the first filter (2) and goes to hole (3), under the rubber seal.



- Air gets to the second filter (4), flowing through the second hole indicated.
- Filtered air now enters the reed device, and is brought to the head.



- It flows through the tube flanged onto the head and gets to the exhaust coupling, where it releases oxygen to the unburnt gas before the catalytic converter, thus helping converter operation.



4.2.2. TROUBLESHOOTING

FAULT	POSSIBLE CAUSE	REMEDY	SEE
Too much noise at the exhaust	Secondary air reed valve does not close correctly and wears out the rubber hose between the device and the head pipe	Change device and hose	Removing the secondary air device
	Rubber seal missing on first filter	Insert the missing seal	
Bursts at the exhaust when releasing the throttle	Vacuum hose from secondary air device disconnected or cracked	Change the hose	
	Secondary air device cut-off valve	Change the secondary air device	Removing the secondary air device

CYCLE PARTS

5

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5.1. OUTER STRUCTURES

5.1.1. REMOVING THE SEAT

- Insert the key in the seat latch.
- Turn the key anticlockwise.
- Raise the seat.



- Release and remove the four screws.
- Remove the seat.



5.1.2. REMOVING THE PASSENGER GRAB HANDLE

- Insert the key in the seat latch
- Turn the key anticlockwise.
- Raise the seat.
- Release and remove the four screws.



- Remove the screw cap.



- Unscrew and remove the screw.

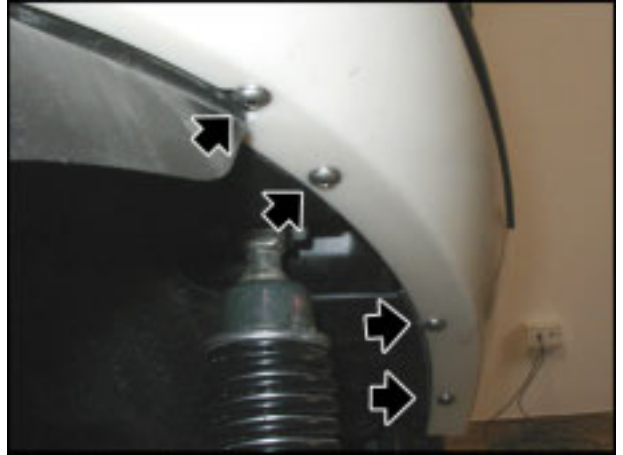


- Remove the passenger grab handle.

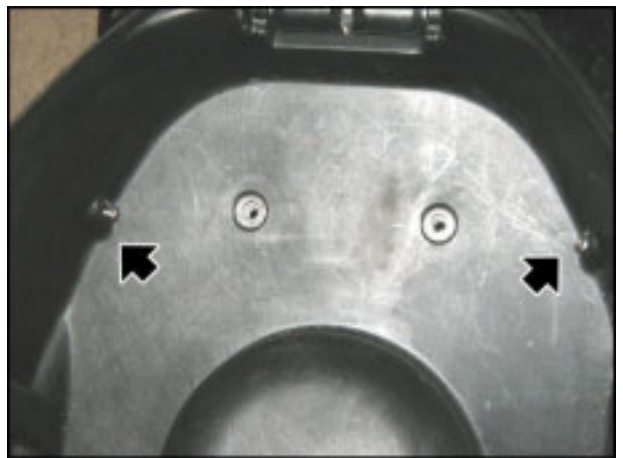


5.1.3. REMOVING THE TAIL GUARD

- Remove the central inspection cover, see (REMOVING THE CENTRAL INSPECTION COVER).
- Working on either side, loosen and remove the four lower screws.



- Loosen and remove the two screws inside the helmet compartment.



- Working on either side, loosen and remove the screw.

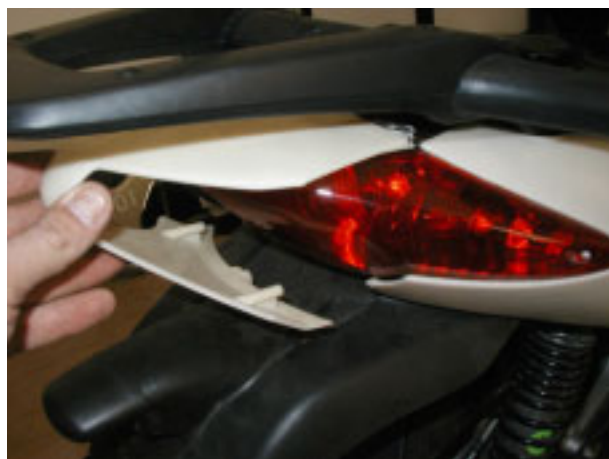


- Loosen and remove the three screws.





- Remove the tail light guard.



- Move the tail guard away from the fasteners on side body panels.
- Slide the tail guard backward and disconnect the tail light connector.



- Loosen the two screws and remove the seat latch.



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- Remove the tail guard sliding it backward.



5.1.4. REMOVING THE CENTRAL INSPECTION COVER

- Raise the seat.
- Release and remove the two screws.



- Release and remove the two screws.



- Remove the central inspection cover from its fasteners and slide it out.

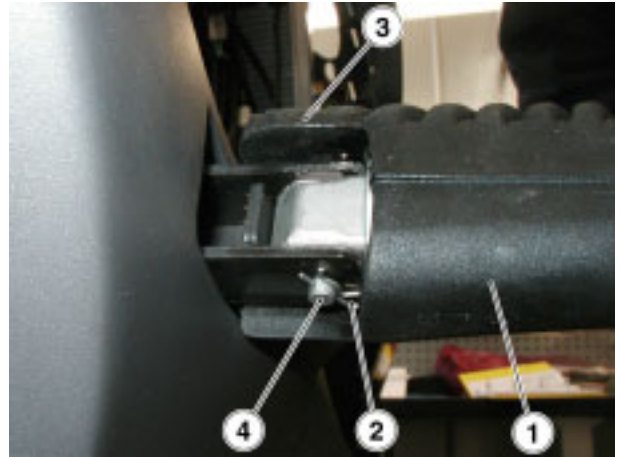


5.1.5. REMOVING THE PASSENGER FOOTREST

CAUTION The following procedure applies to both passenger footrests.

CAUTION This operation is necessary for removing the metal element of the footrest only. For removing the side body panels it is enough to remove the passenger footrest rubber pad.

- Turn the passenger footrest (1) ready for use.
- Remove the split pin (2).
- Raise the footrest rubber pad upper edge (3).
- Remove the pin (4).
- Remove the passenger footrest (1).



5.1.6. REMOVING THE RIGHT AND LEFT SIDE BODY PANELS

CAUTION The following procedure is valid for both sides of the vehicle.

- Remove the central inspection cover, see (REMOVING THE CENTRAL INSPECTION COVER).
- Unscrew and remove the screw.



- Loosen the two screws and remove the passenger footrest rubber pad.



- Unscrew and remove the screw.



- Unscrew and remove the screw.



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- Move the tail guard outward.
- Remove the side body panel by disengaging it from the hooks, pay attention not to damage the tabs and their housings.



5.1.7. REMOVING THE RIGHT INSPECTION COVER

- Remove the right side body panel, see (REMOVING THE RIGHT AND LEFT SIDE BODY PANELS).
- Disengage the inspection cover, do not damage the tabs and their seats.

5.1.8. REMOVING THE FOOTREST

- Remove the central inspection cover.
- Remove both side body panels.
- Working on either side, loosen and remove the footrest rear screw.



- Working on either side, loosen and remove the two screws on the footrest.



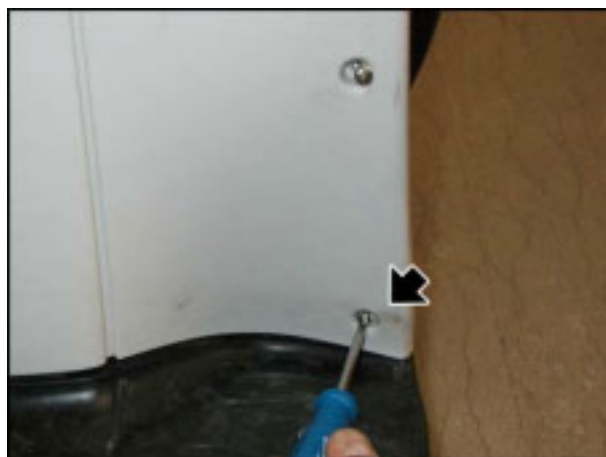
- Remove the battery.
- Loosen and remove the bolt inside the battery compartment.
- Working on either side, loosen and remove the lower screw securing the inner front shield.
- Remove the footrest, do not damage the tabs and their housings.



5.1.9. REMOVING THE LOWER SHIELD

CAUTION The following information applies to both sides of the vehicle.

- Unscrew and remove the rear screw.
- Release and remove the two side screws.
- Release and remove the two screws.
- Release and remove the front shield screw, on front wheelhouse.
- Unscrew and remove the screw.



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- Lift the footrest, disengage the lower shield, do not damage the tabs and their housings.



CAUTION It is possible to detach the lower shield in two shells, right and left.

Proceed as follows:

- Release and remove the two screws.
- Separate the right and left lower shield, by sliding one onto the other.



5.1.10. REMOVING THE INNER FRONT SHIELD

- Remove the front cover, see (REMOVING THE FRONT COVER).
- Working on either side, loosen and remove the screw.



- Remove the handlebar cover, see (REMOVING THE INSTRUMENT PANEL).
- Release and remove the two screws.
- Remove the bag hook.



- Insert the key in the glove compartment lock, turn it clockwise and open the compartment.
- Release and remove the four screws.



- Close the glove compartment.
- Working on either side, loosen and remove the four side screws.



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- Disconnect the auxiliary power socket inside the glove compartment.
- Move the handlebar, move forward the inner front shield to disengage it, pay attention not to damage the tab housings.



5.1.11. REMOVING THE INSTRUMENT PANEL

- Working on either side, loosen and remove the screw.



- Working on either side, loosen the mirror.

**WARNING**

The right mirror can be released by turning clockwise.



- Remove the headlight fairing, see (REMOVING THE HEADLIGHT FAIRING).
- Disconnect the instrument panel connector.



- Working on either side, loosen the lower screw.



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- Disengage the handlebar cover.



- Release and remove the four screws.



- Slide the instrument panel out in a rearward motion.



- Loosen the three screws.



- Slide the instrument panel out in a forward motion.



5.1.12. REMOVING THE FRONT COVER

- Working on either side, loosen and remove the screw.



- Remove the front cover by disengaging it from the hooks, pay attention not to damage the tabs and their housings.



5.1.13. REMOVING THE EXTERNAL FRONT SHIELD

- Remove the front mudguard, see (REMOVING THE FRONT MUDGUARD).

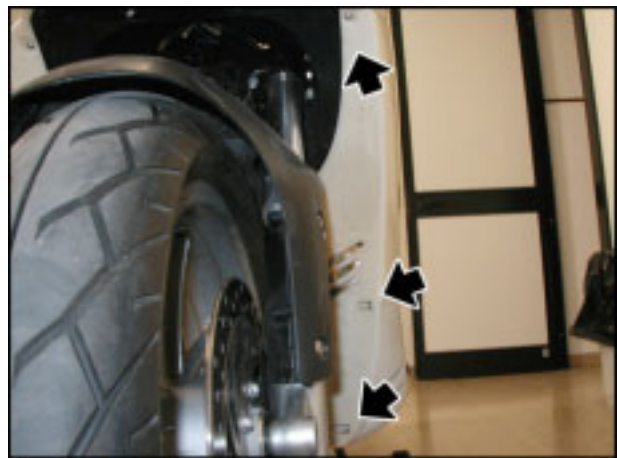
**WARNING**

Set a support under the frame so to keep the front wheel raised from the ground.

- Remove the front wheel, see (REMOVING THE FRONT WHEEL).
- Remove the front cover, see (REMOVING THE FRONT COVER).
- Working on either side, loosen and remove the five screws.



- Working on either side, loosen and remove the three screws.



- Release and remove the two screws.



- Move the external front shield forward and disconnect the headlight connector.



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- Working on either side, loosen the two screws and remove the front turn indicators in a rearward motion.



- Slide the external front shield out of the front fork.

5.1.14. REMOVING AND DISASSEMBLING THE HEADLIGHT FAIRING**REMOVING THE HEADLIGHT FAIRING**

- Working on either side, loosen the two screws.



- Remove the front handlebar cover.



- Working on either side, loosen and remove the two rear screws.



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- Remove the headlight fairing.

**DISASSEMBLING THE HEADLIGHT FAIRING**

- Working on either side, loosen and remove the screw.



- Separate the front right handlebar cover from the left one.



5.1.15. REMOVING THE FRONT MUDGUARD

- Working on either side, loosen and remove the two screws.

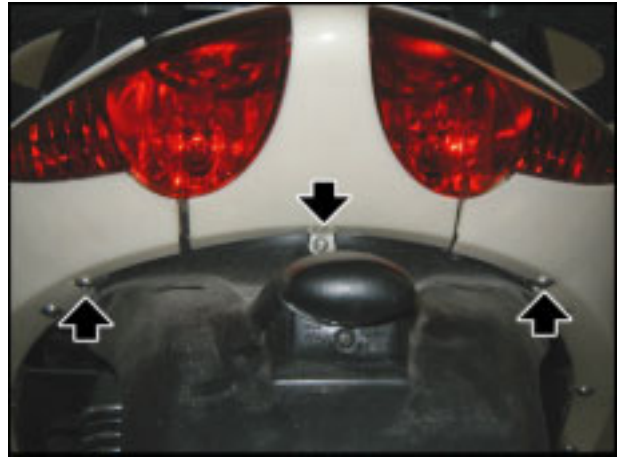


- Slide the front mudguard in a forward motion.



5.1.16. REMOVING THE REAR MUDGUARD

- Release and remove the three screws.



- Loosen the three screws and remove the number plate.



- Unscrew and remove the screw.



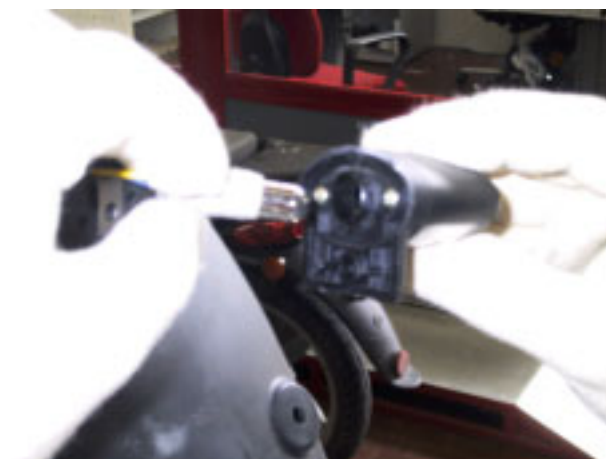
- Unscrew and remove the screw.



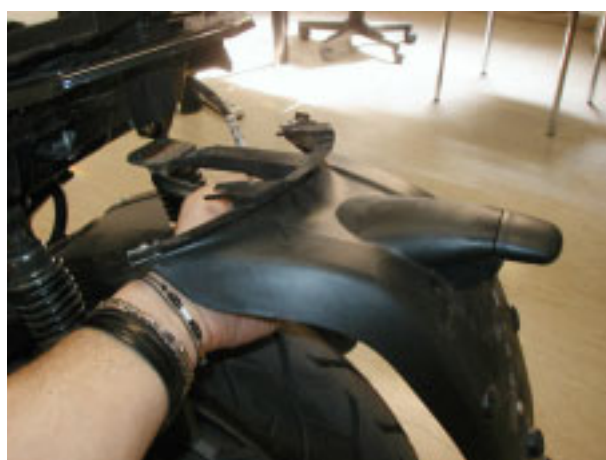
- Loosen the screw and remove the number plate light in a rearward motion.



- Slide out the lamp and leave it connected to the cables.



- Remove the rear mudguard.



Should it be necessary to remove the rear mudguard supporting frame, proceed as follows before removing the mudguard:

- Release and remove the two screws.



5.2. EXHAUST SYSTEM

5.2.1. REMOVING THE EXHAUST SILENCER

- Position the vehicle on the centre stand.

**DANGER**

Allow for the engine and exhaust silencer to cool down completely before proceeding.

- Loosen the clamp (1) securing the exhaust silencer to the manifold.
- Loosen and remove the three screws (2).
- Remove the exhaust silencer.



5.2.2. REMOVING THE EXHAUST SYSTEM**DANGER**

Allow for the engine and exhaust silencer to cool down completely before proceeding.

- Remove the central inspection cover.
- Loosen and remove the two nuts securing the exhaust manifold.



- Loosen and remove the three silencer screws.
- Remove the exhaust system.



5.3. FRAME

5.3.1. REMOVING THE HANDLEBAR

- Remove the front handlebar cover, see (REMOVING THE HEADLIGHT FAIRING).
- Remove the rear handlebar cover, see (REMOVING THE INSTRUMENT PANEL).
- Remove the inner front shield, see (REMOVING THE INNER FRONT SHIELD).
- Remove the clamps.

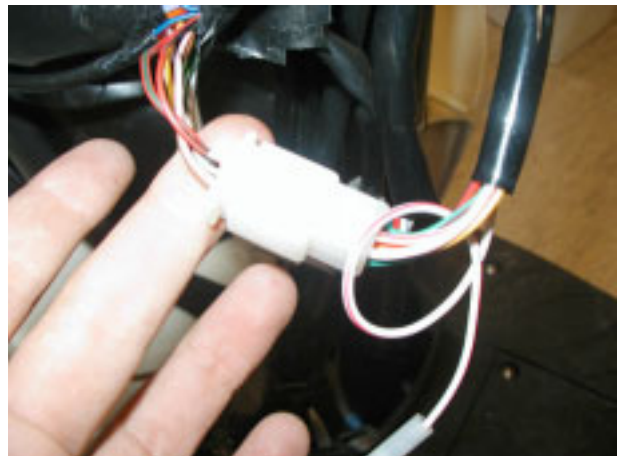
CAUTION Take some new clamps to be used upon reassembly.



- Release and remove the two screws.
- Remove the U-bolt, slide out the rear brake master cylinder and leave it connected to the fluid line.



- Disconnect the connectors for the electric controls on the handlebar.





- Release and remove the two screws.
- Push down the brake master cylinder U-bolt to remove it.



- Remove the brake master cylinder, keep it connected to the brake line.



- Disconnect the throttle cable.
- Remove the brake master cylinder U-bolt.



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- Remove the throttle control.
- Remove the safety screw (2).
- Loosen the screw (1).

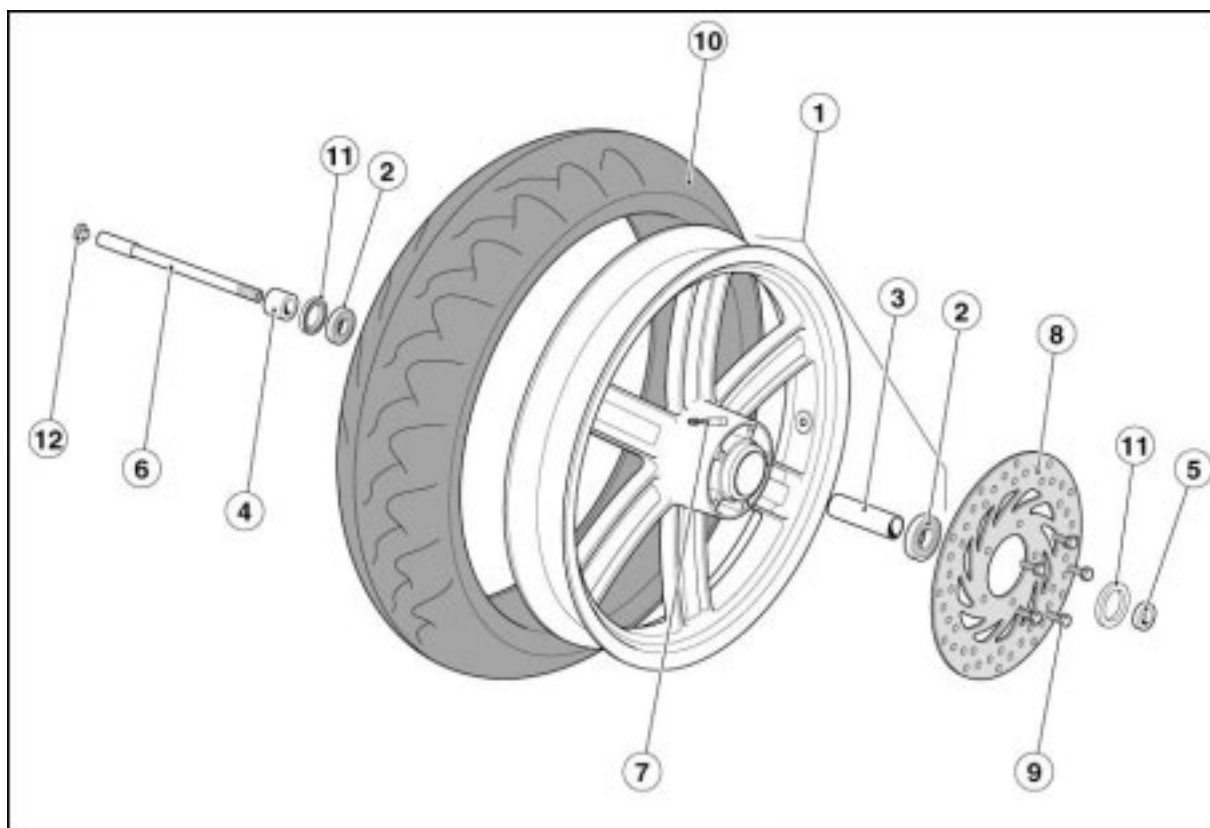


- Pull up the handlebar to remove it.



5.4. FRONT WHEEL

5.4.1. FRONT WHEEL DIAGRAM

**Key:**

1. Bare grey front wheel;
2. Bearing;
3. Spacer;
4. Front wheel left spacer;
5. Front wheel right spacer;
6. Front wheel shaft;
7. Tubeless valve;
8. Front brake disc;
9. Flanged screw;
10. Front tyre;
11. Oil seal;
12. Cap.

5.4.2. REMOVING THE FRONT WHEEL

**WARNING**

When removing/refitting, pay utmost attention not to damage the brake line, disc and pads.

- Position the vehicle on the centre stand.
- Set a support under the frame.
- Remove the brake calliper, see (CHANGING THE FRONT AND REAR BRAKE PADS).
- Loosen the shaft screw.



- Loosen and remove the wheel shaft.
- Collect the spacers on either side of the wheel.



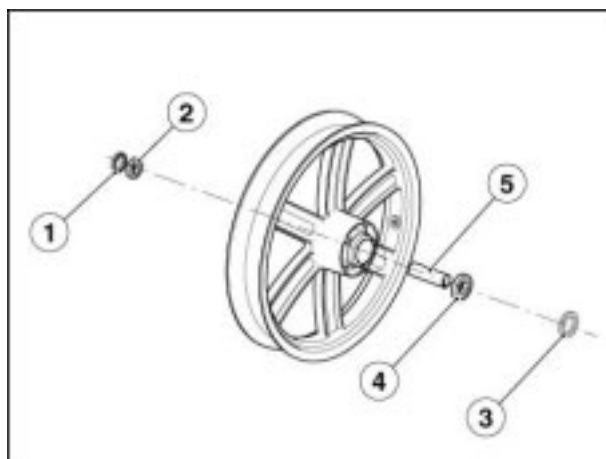
- Slide out the wheel.

**WARNING**

Do not operate the front brake lever when the wheel is not in place or the calliper piston might come off its housing, thus causing brake fluid leakage.

5.4.3. DISASSEMBLING THE FRONT WHEEL

- Remove the front wheel.
- Clean the two sides of the hub with a cloth.
- Remove the right oil seal (1).
- Using a suitable puller, remove the right bearing (2).
- Remove the left oil seal (3).
- Using a suitable puller, remove the left bearing (4).



- Carefully check the bearings.
- Collect the inner spacer (5).
- Carefully clean inside the hub.
- Wash all components with clean detergent.

**WARNING**

When reassembling, use a drift having the same diameter as the bearing outer ring to seat the bearings in place. Do not tap on the balls and/or onto the inner ring. Ensure that the following parts are fully home:

- the left bearing (4) on the hub;
- the spacer (5) on the left bearing (4);
- the right bearing (2) on the spacer (5).

5.4.4. CHECKING THE FRONT WHEEL COMPONENTS

**WARNING**

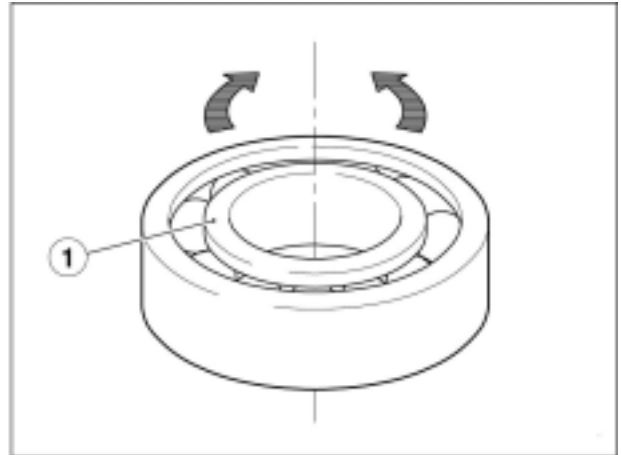
Ensure that all components are intact and especially the following ones.

BEARINGS

Manually turn the inner ring (1), it should turn smoothly with no noise and/or hard spots.

No axial play should be noticed.

Faulty bearings should be changed.

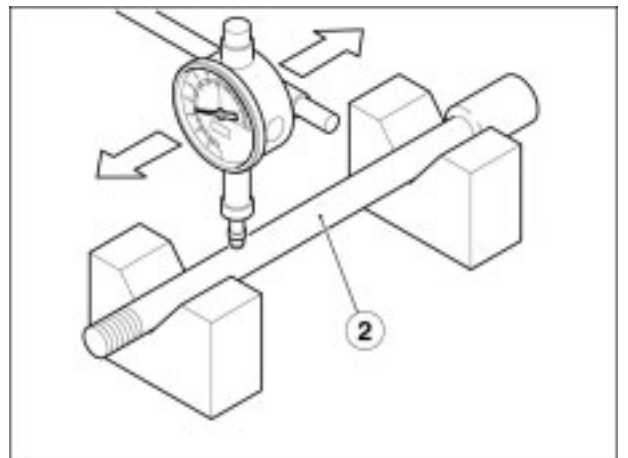
**SEALS**

Check that all seals are intact; change them if they are damaged or worn.

WHEEL SHAFT

Using a dial gauge, check shaft runout (2). If runout exceeds the limit, change the shaft (2).

Maximum runout: 0.25 mm.

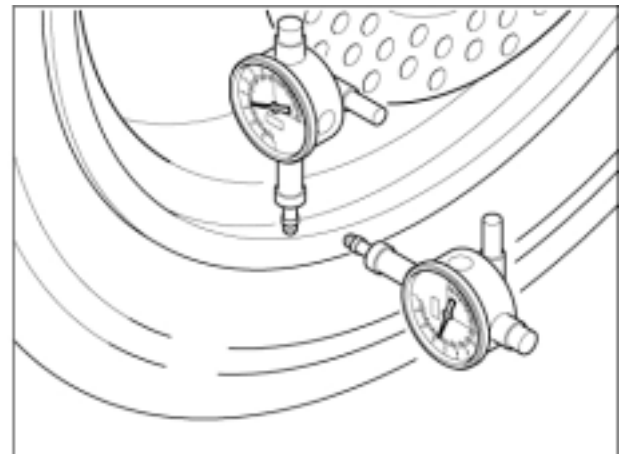
**WHEEL RIM**

Using a dial gauge, check that rim (3) radial (A) and axial (B) runout does not exceed the specified values.

Excessive runout is usually due to worn or damaged bearings.

If the value does not go back to specified values after replacing the bearings, change the rim (3).

Maximum radial and axial runout: 2 mm.

**Tyre**

Check tyre condition.

**WARNING**

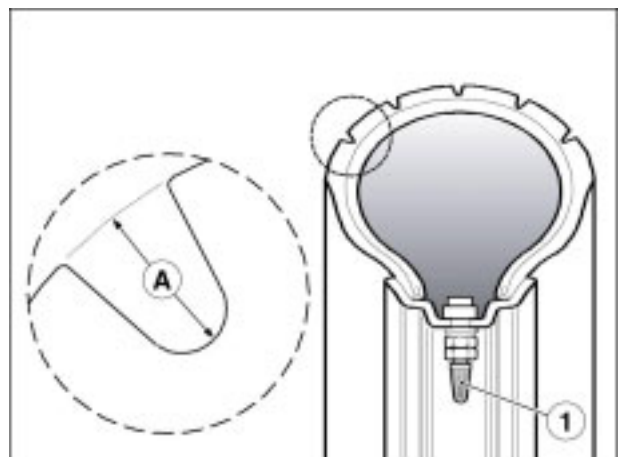
Inspect tyre surface condition and check for wear, as worn tyres lead to poor road holding and handling.

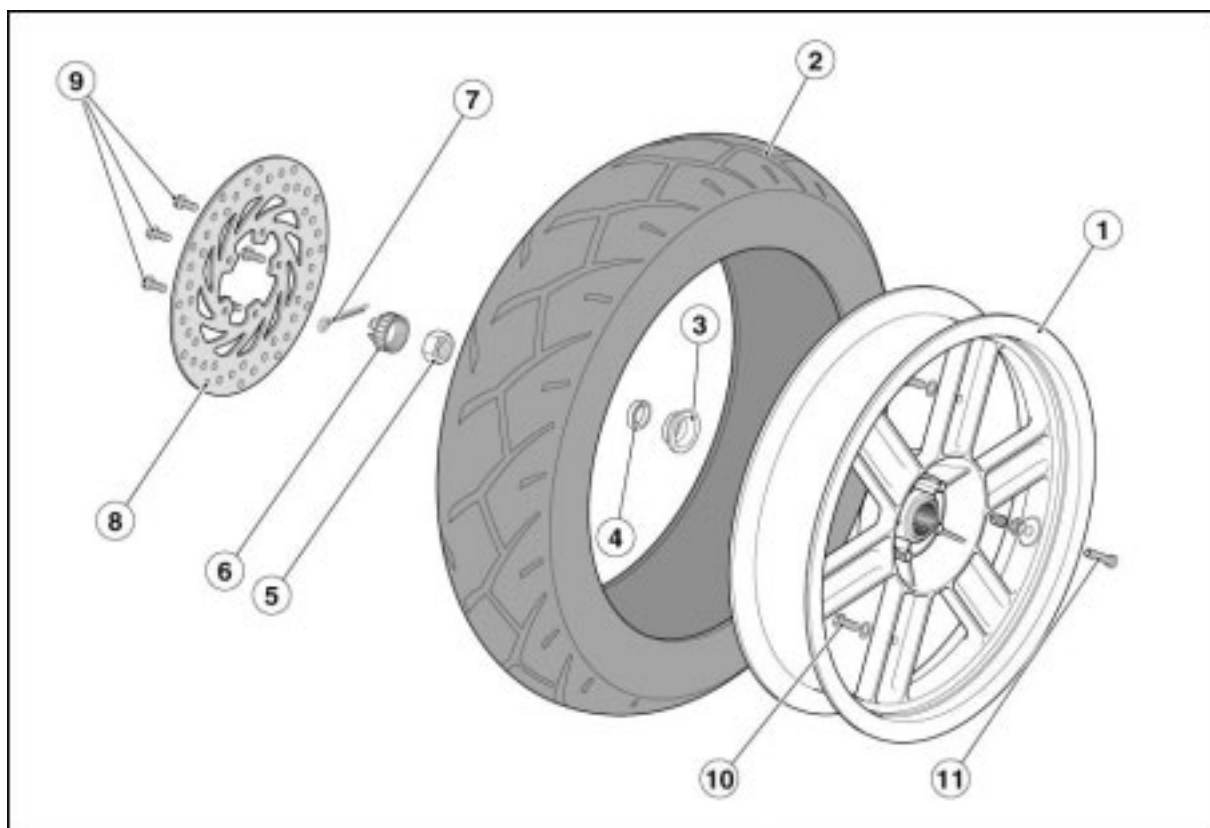
Change the tyre when worn or punctured, if the puncture in the tread is larger than 5 mm.

Some of the tyres approved for this vehicle are equipped with wear indicators.

Always check that the caps are in place on the valves (1), or the tyres may deflate suddenly.

Have the wheel balanced after repairing a tyre.



5.5. REAR WHEEL**5.5.1. REAR WHEEL DIAGRAM****Key:**

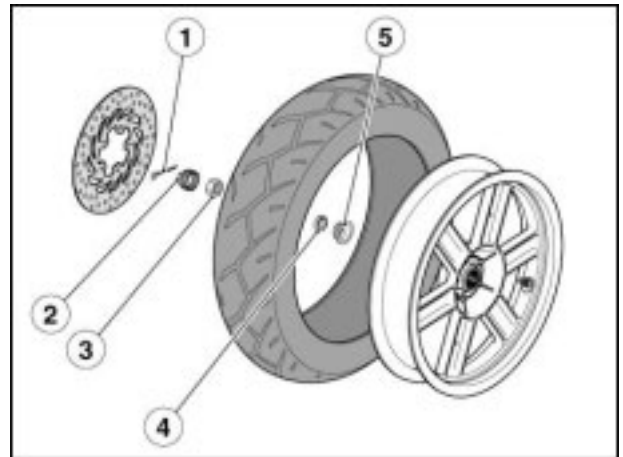
1. Bare grey rear wheel;
2. Rear tyre;
3. Wheel inner spacer;
4. Wheel outer spacer;
5. Nut;
6. Cap;
7. Split pin;
8. Brake disc;
9. Flanged screw;
10. Speed sensor screw;
11. Tubeless valve.

5.5.2. REMOVING THE REAR WHEEL

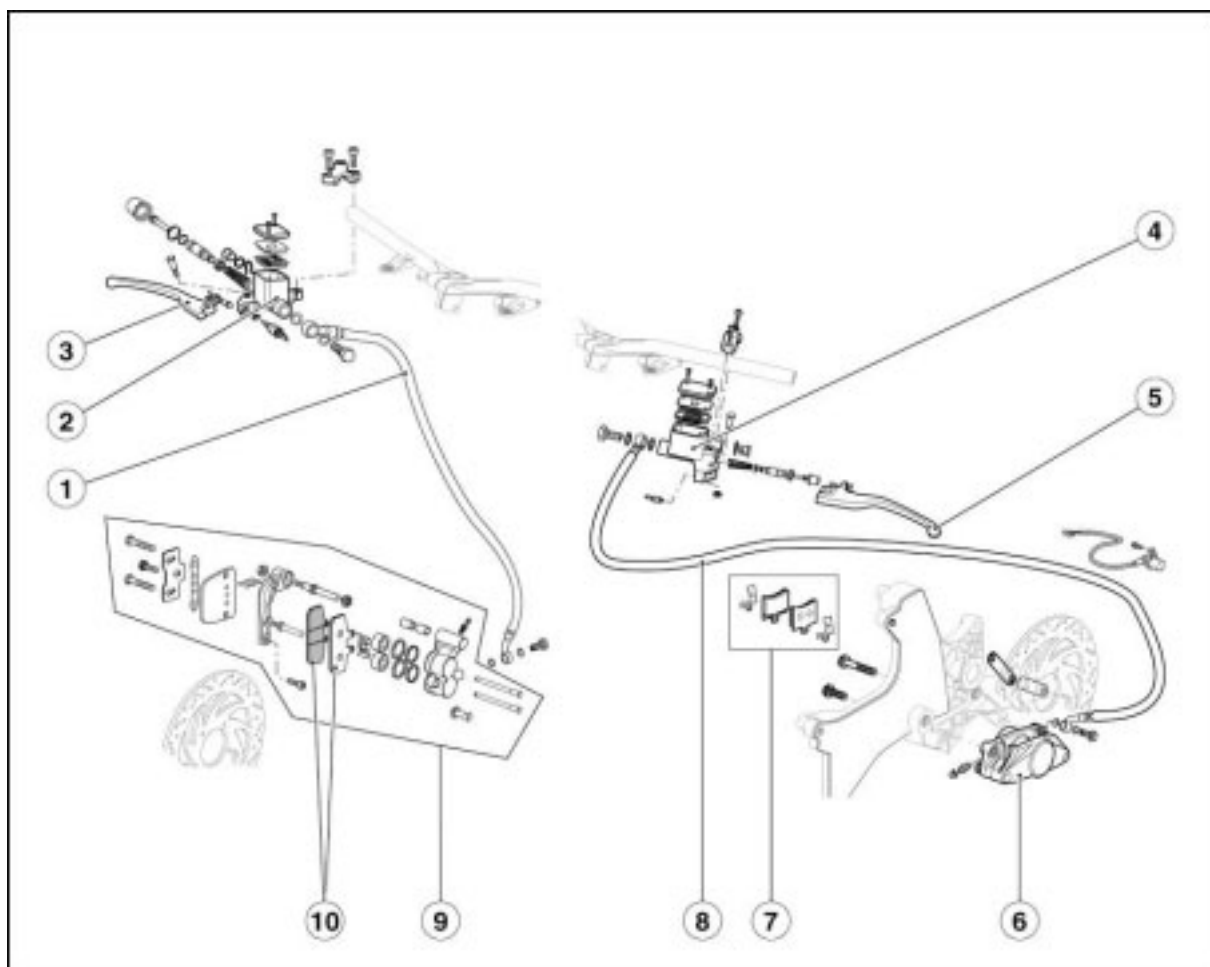
**WARNING**

When removing/refitting, pay utmost attention not to damage the brake line, disc and pads.

- Position the vehicle on the centre stand.
 - Remove the silencer, see (REMOVING THE EXHAUST SILENCER).
 - Remove the rear right shock absorber, see (REMOVING THE SHOCK ABSORBER).
 - Slide out the rear brake calliper, keep it connected to the fluid line, see (CHANGING THE PADS).
 - Remove the split pin (1) on the wheel shaft.
 - Remove the lock nut (2).
 - Loosen and remove the wheel shaft nut (3) and shim (4).
-
- Loosen and remove the two screws and the muffler support plate.
-
- Remove the spacer (5) on the wheel shaft.
 - Remove the rear wheel, sliding it out from the right side.

**WARNING**

Do not operate the rear brake lever when the wheel is not in place or the calliper piston might come off its housing, thus causing brake fluid leakage.

5.6. BRAKING SYSTEM**5.6.1. BRAKING SYSTEM DIAGRAM****Key:**

1. Front brake lever–front brake calliper line
2. Front brake fluid pump/tank
3. Front brake lever
4. Rear brake pump/tank
5. Rear brake lever
6. Rear brake calliper
7. Rear brake pads
8. Rear brake lever–rear brake calliper line
9. Front brake calliper
10. Front brake pads

5.6.2. CHANGING THE PADS

FRONT BRAKE

- Position the vehicle on the centre stand.
- Loosen and remove the two screws securing the brake calliper.
- Remove the calliper from the disc.

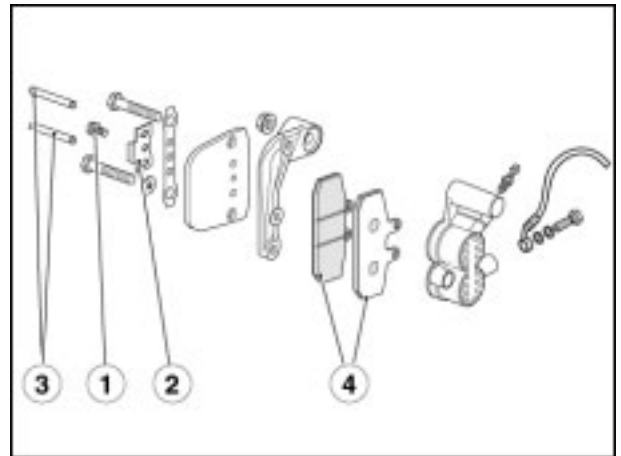


- Release and remove the centre screw (1).
- Release the fastener (2).
- Remove the two pins (3).
- Remove the brake pads (4).



WARNING

Always change both pads and ensure they are correctly in place inside the calliper. Do not reverse fastener position upon reassembly.



WARNING

Do not operate the brake lever when the pads are not in place or the calliper piston might come off its housing, thus causing brake fluid leakage.

- Fit two new brake pads (4).
- Fit the two pins (3).
- Refit the fastener (2).
- Tighten the centre screw (1).
- Fit the brake calliper to the disc in the correct position.
- Check brake fluid level.

REAR BRAKE

- Loosen and remove the two screws.
- Remove the calliper from the disc.
- Remove the retaining ring (1).
- Remove the pin (2).
- Remove the spring (3).

**WARNING**

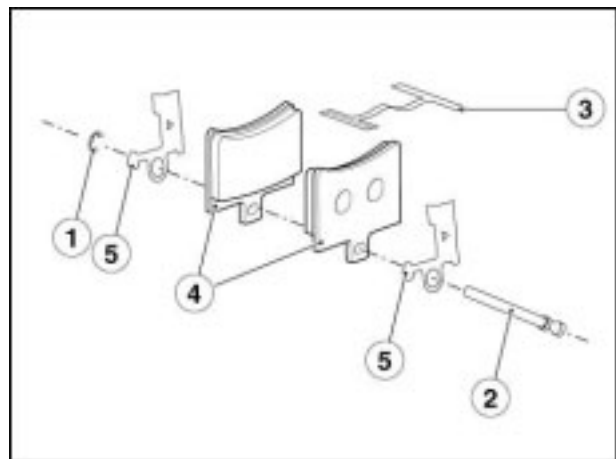
On spring (3) is an arrow that should always face the direction of rotation.

- Remove the pads (4) with vibration dampers (5).

**WARNING**

Do not operate the brake lever when the pads are not in place or the calliper piston might come off its housing, thus causing brake fluid leakage.

- Change the brake pads (4).
- Change the vibration dampers (5) if worn.

**WARNING**

Upon reassembly, ensure that the arrows on the vibration dampers face the direction of rotation.

- Correctly seat the spring (3).
- Correctly seat the pin (2).
- Fit the snap ring (1).
- Check brake fluid level.

**WARNING**

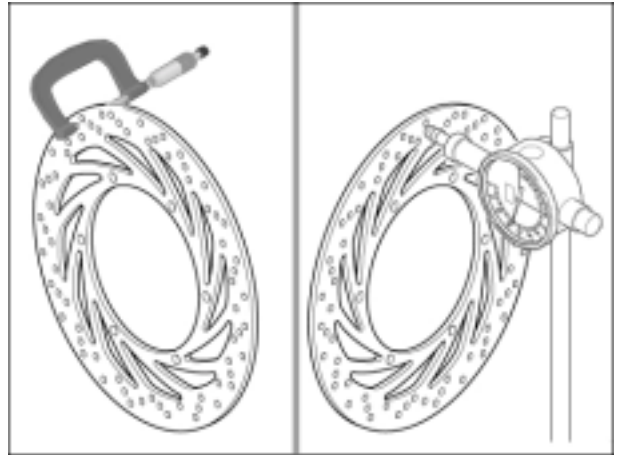
Always change both pads and ensure they are correctly in place inside the calliper.

5.6.3. CHECKING THE BRAKE DISC**WARNING**

These operations are to be carried out with the brake disc installed to the wheel.

- Visually inspect the brake disc. Change the disc if scratched or damaged, see (REMOVING THE FRONT AND REAR BRAKE DISC).
- Check brake disc wear by measuring the minimum thickness with a micrometer at several points. Change the disc if minimum thickness, even at one point only, is lower than the limit value.

Brake disc minimum thickness: 3.6 mm



- Using a dial gauge, check that disc oscillation does not exceed the allowed value, if so, change it.

Brake disc oscillation tolerance: 0.3 mm

5.6.4. REMOVING THE BRAKE DISC**FRONT BRAKE DISC**

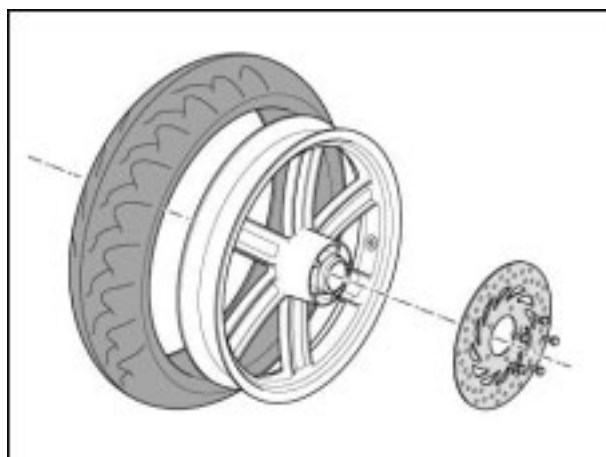
- Remove the front wheel, see (REMOVING THE FRONT WHEEL).
- Loosen and remove the five brake disc screws.

CAUTION Start all screws by hand and tighten proceeding in a cross pattern.

**WARNING**

Upon reassembly, smear **LOCTITE® 243** on the brake disc screw thread.

- Remove the brake disc.

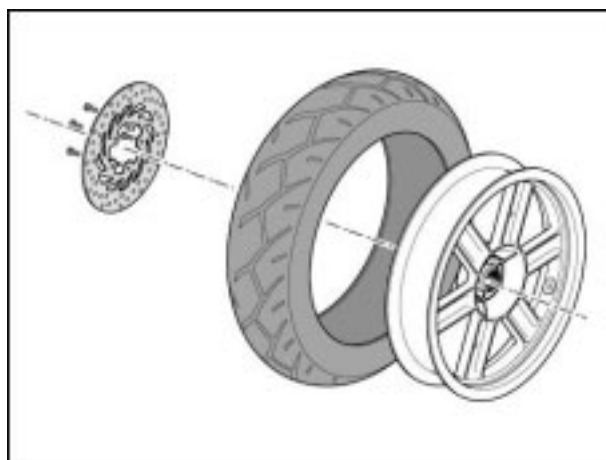
**REAR BRAKE DISC**

- Remove the rear wheel, see (REMOVING THE REAR WHEEL).
- Loosen and remove the five brake disc screws.

**WARNING**

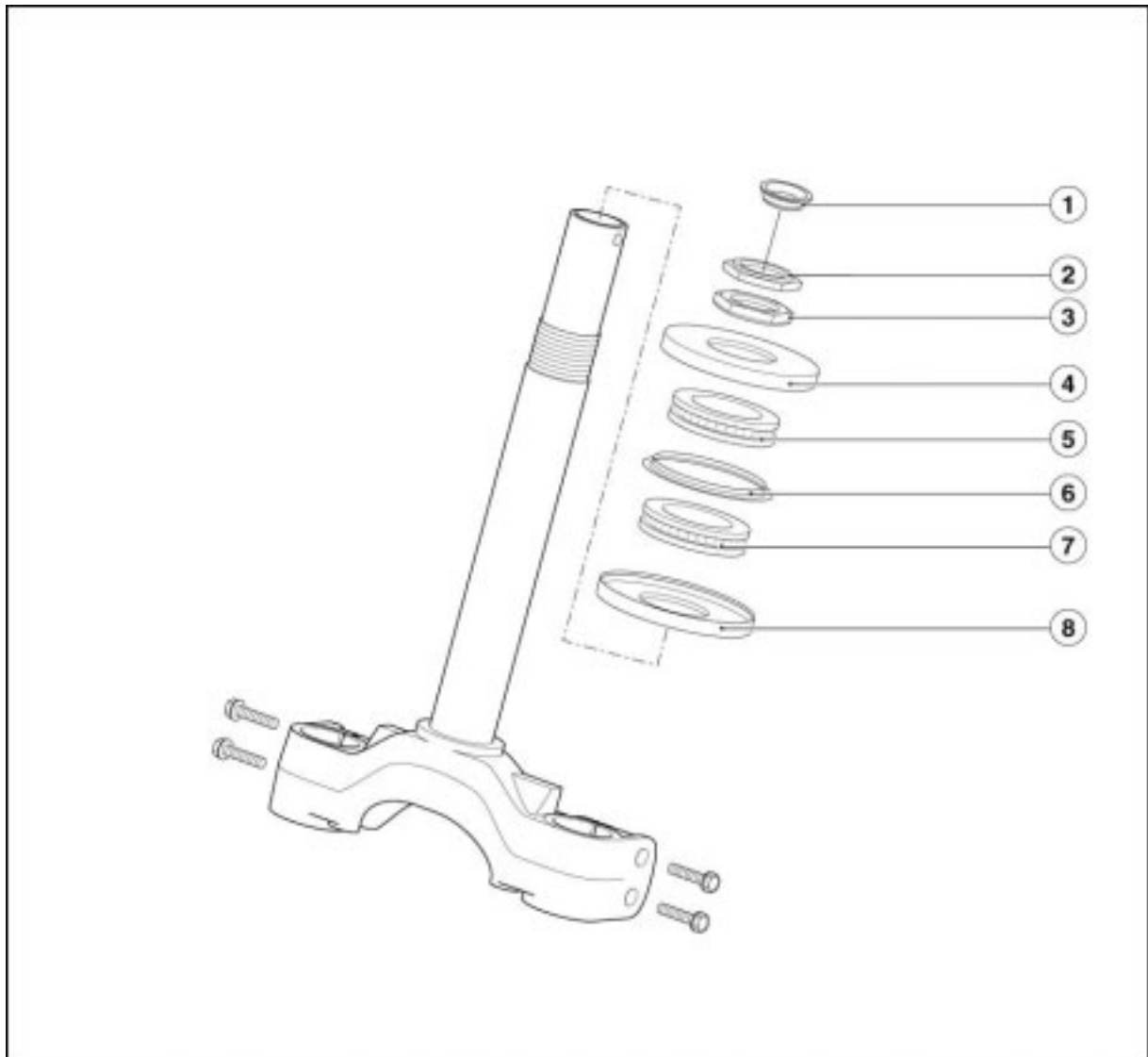
Upon reassembly, smear **LOCTITE® 243** on the brake disc screw thread.

- Remove the brake disc.



5.7. STEERING

5.7.1. STEERING DIAGRAM

**Key:**

1. Cap;
2. Lock nut;
3. Adjuster nut;
4. Top dust seal
5. Upper bearing
6. Spacer
7. Lower bearing
8. Bottom dust seal

5.7.2. CHECKING THE COMPONENTS

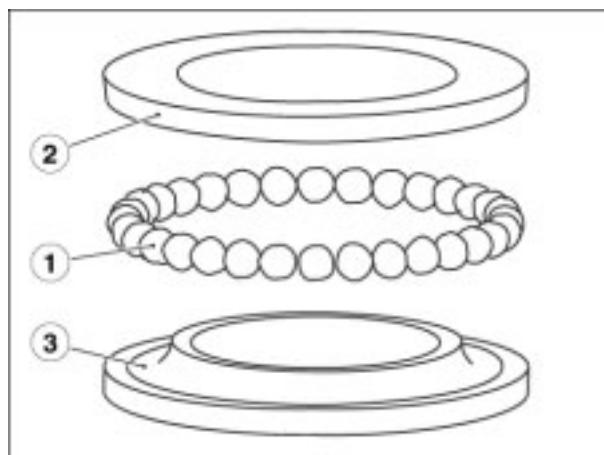
**WARNING**

Check that components are intact.

- Check that the surface of rotary housing (2) and of fixed housing (3) mating with the balls (1) is not damaged or excessively worn. Change the complete bearing if necessary.

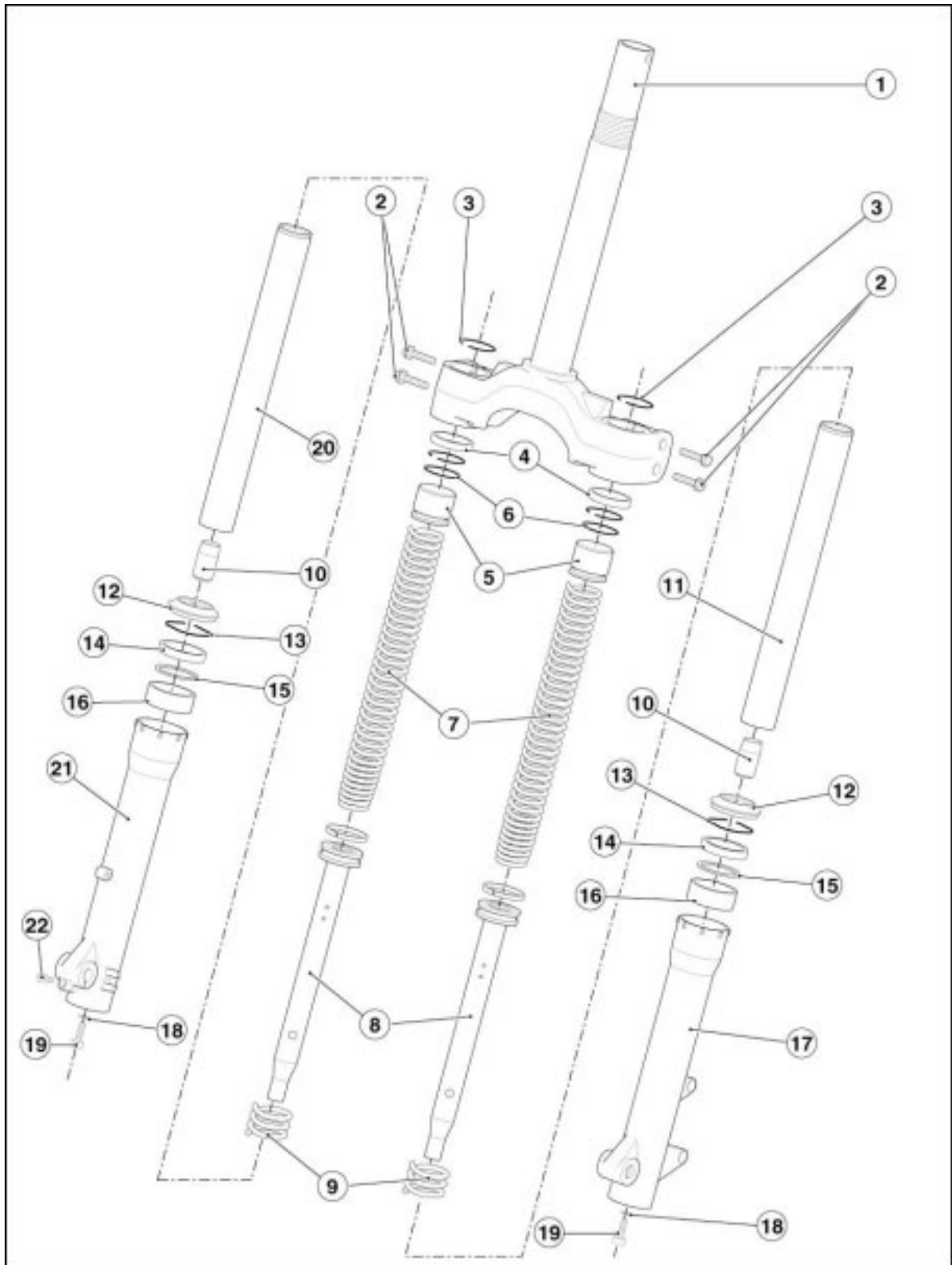
**WARNING**

Smear grease on the surface mating with the balls (2-3), see (LUBRICANTS CHART).



5.8. FRONT FORK

5.8.1. FRONT FORK DIAGRAM



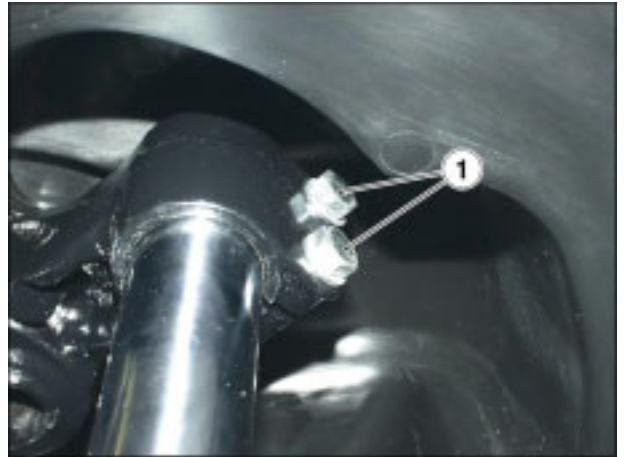
Key:

1. Steering stem and bottom yoke
2. Fork clamp bolts
3. Snap ring
4. Rubber cap
5. Sealing cap
6. O-ring
7. Spring
8. Damping cylinder
9. Counter spring
10. Buffer
11. Left slider
12. Dust seal
13. Snap ring
14. Seal
15. Retainer
16. Bush
17. Left stanchion tube
18. Sealing washer
19. Capscrew
20. Right slider
21. Right stanchion tube
22. Pinch bolt

5.8.2. REMOVING THE FORK LEGS

CAUTION The procedures described below apply to both fork legs.

- Remove the front wheel, see (REMOVING THE FRONT WHEEL).
 - Remove the front mudguard, see (REMOVING THE FRONT MUDGUARD).
 - Unscrew and remove the two screws (1).
-
- Remove the inner front shield, see (REMOVING THE INNER FRONT SHIELD).
 - Remove the upper circlip (2).
 - Remove the stanchion tube and slider assembly.



5.8.3. DISASSEMBLING THE STANCHION TUBES AND SLIDERS

- Remove the stanchion tubes and sliders, see (REMOVING THE FORK LEGS).
- Drain all oil, see (DRAINING THE FRONT FORK).
- Place the fork leg in a vice with soft (aluminium) jaws.



- Release and remove the capscrew (1).

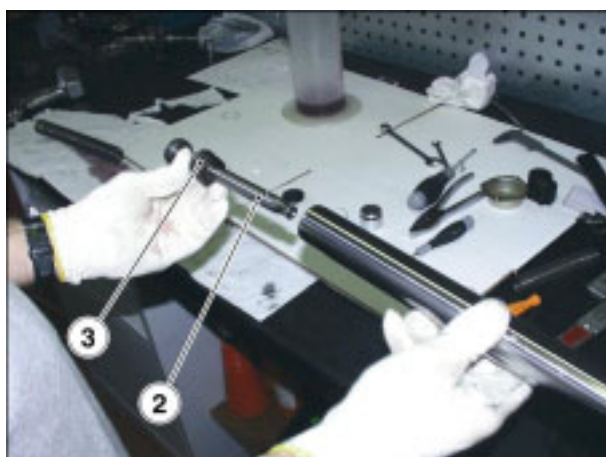


- Remove the fork leg and collect the centring bush.

CAUTION Proceed carefully when removing the different components, or you might damage the inner seating surface of the slider.



- Remove damping cylinder (2) and spring (3) from the slider.



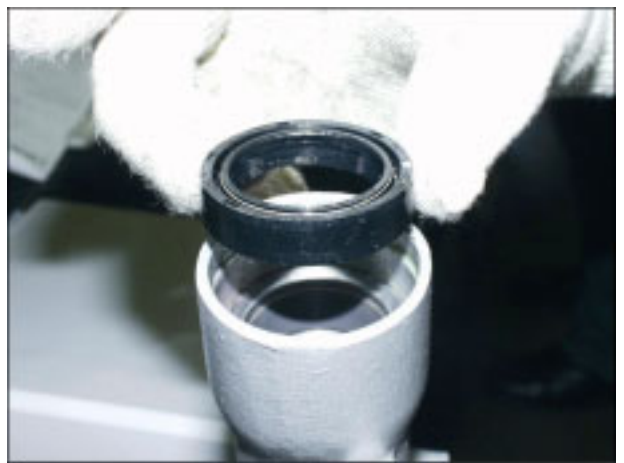
- Prise the dust seal off the slider.



- Prise out the snap ring.



- Remove the oil seal.



- Remove the washer.



- Remove the spacer (4) if needed.



5.8.4. DRAINING THE FRONT FORK

CAUTION Make sure to have a container ready at hand before proceeding.

Place the slider in a vice with soft (aluminium) jaws.



WARNING
The stanchion-and-slider assembly contains oil.
Do not turn it over or tilt it during removal.



- Remove the top cap.



- Push down the damping cylinder just enough to give access to the circlip (1).
- Remove the circlip (1).



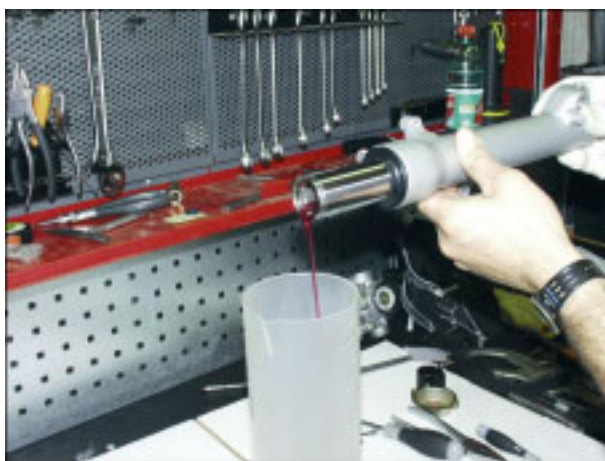
- Remove the cap complete with O-ring.



- Remove the spring and allow some time before extracting it to let oil drip back into the slider.



- Drain oil into the container. Pump the slider back and forth to facilitate draining.

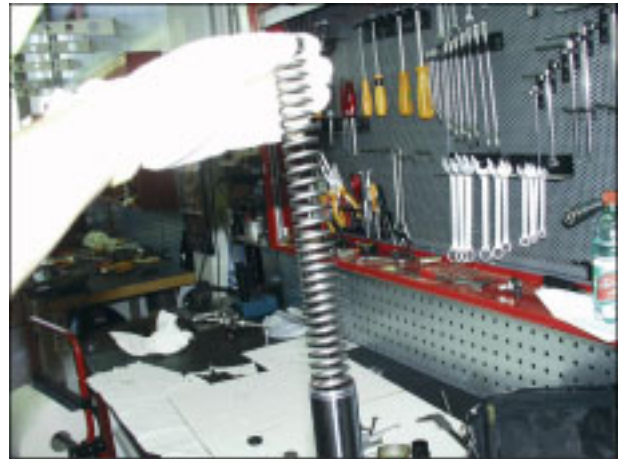


5.8.5. FILLING THE FORK

- Place the stanchion-and-slider assembly in a vice with soft (aluminium) jaws.



- Insert the spring.



- Pour oil into the fork, see (TECHNICAL INFORMATION).



WARNING
Never reuse the oil you have drained previously.



- Insert the top cap complete with O-ring.



- Insert the damping cylinder (1).



- Push down the damping cylinder until exposing the circlip (2) groove.
- Insert the circlip (2).



- Fit the top cap.



5.8.6. CHECKING THE COMPONENTS

STANCHION TUBE

- Inspect the sliding surface for scoring and/or scratching. Eliminate minor scoring with wet sand paper (grain finest size).
- Replace the stanchion if badly scored.
- Check for stanchion buckling using a dial gauge.
- Replace the stanchion if buckled beyond the service limit.

Service limit: 0.2 mm.



DANGER

NEVER attempt to straighten a buckled stanchion as this would weaken the overall structure leading to a dangerous riding condition.

SLIDER

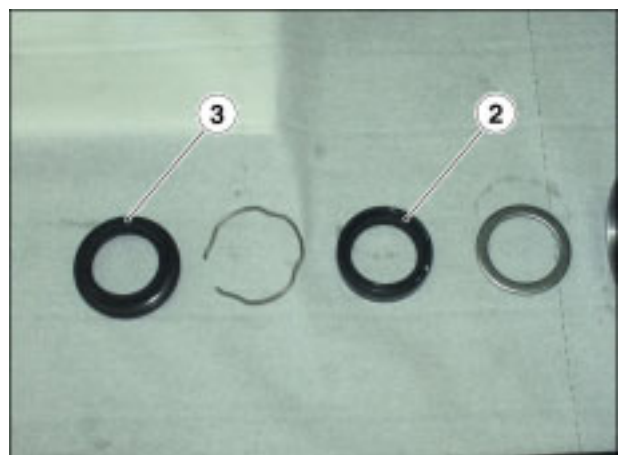
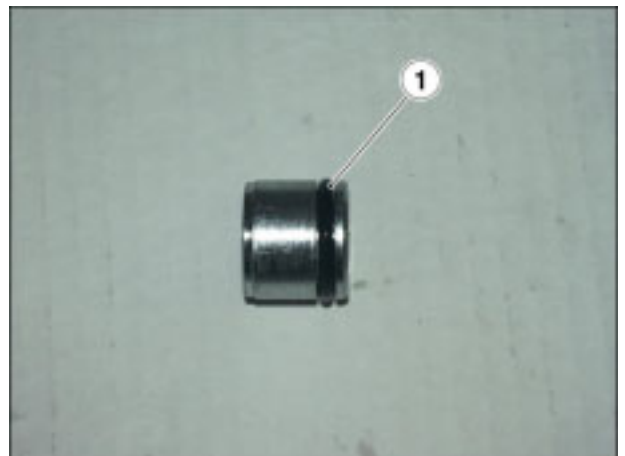
- Inspect for damage and/or cracking. Replace if damaged.
- Change any component which is badly worn or damaged.

Renew the following components on assembly:

- top cap O-ring (1);

- oil seal (2);

- dust seal (3).

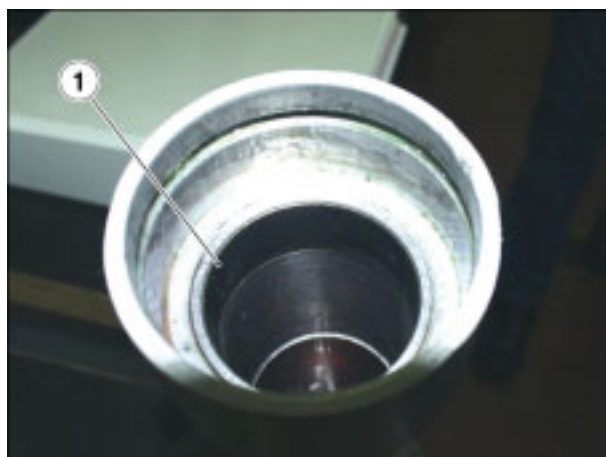


5.8.7. REFITTING THE STANCHION TUBES AND SLIDERS

- Place the slider in a vice with soft (aluminium) jaws.
- Position the spacer (1).

**WARNING**

Make sure no dirt or objects fall into the slider or the stanchion.



CAUTION Apply a light film of fork oil to the seals and bushes before assembly.

- Insert the washer.



- Insert the oil seal.



- Insert the snap ring.



- Insert the dust seal.



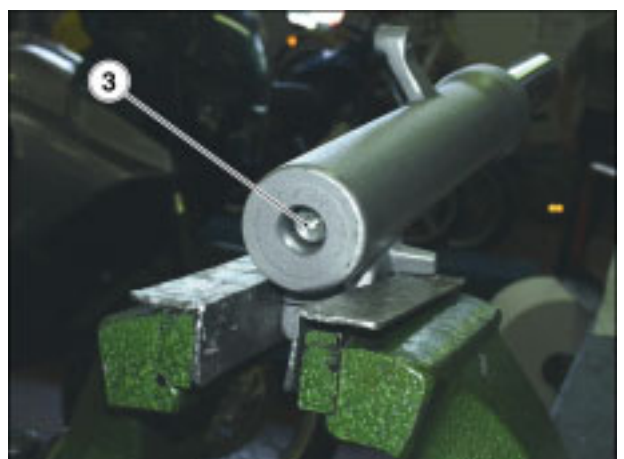
- Insert the damping cylinder and the spring into the stanchion.



- Insert the centring bush (2) first and then the slider into the stanchion.



- Tighten the capscrew (3).



5.9. REAR SUSPENSION

5.9.1. REMOVING THE SHOCK ABSORBER

- Loosen the top nut and remove the screw.



- Lower the shock absorber.

RIGHT SHOCK ABSORBER

- Unscrew and remove the nut (1).
- Remove the right shock absorber.



LEFT SHOCK ABSORBER

- Loosen and remove the nut (2), collect the washer.
- Remove the screw (3).
- Remove the left shock absorber.



COOLING SYSTEM

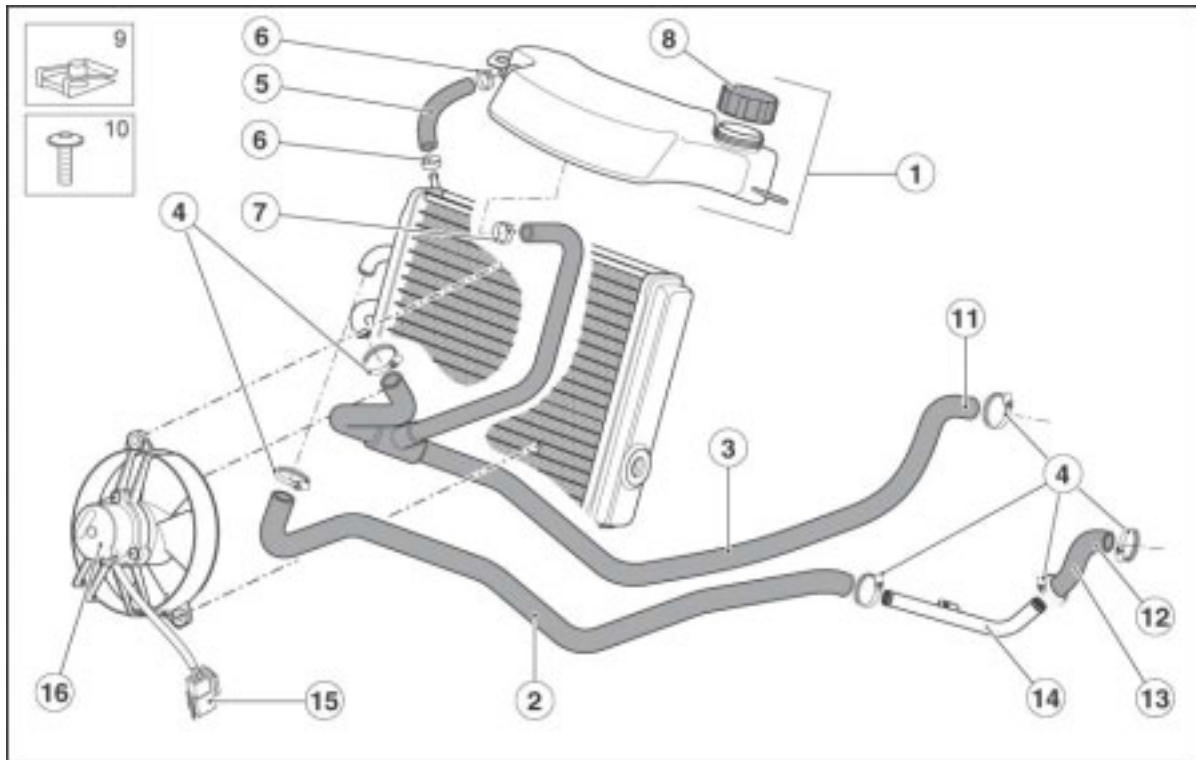
6

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6.1. COOLING SYSTEM

6.1.1. COOLING SYSTEM DIAGRAM

**Key:**

1. Expansion tank with plug;
2. Radiator / coupling hose;
3. Coupling-radiator / pump hose,
4. Clamp;
5. Breather hose;
6. White click clamps;
7. White click clamp;
8. Expansion tank plug;
9. Clip;
10. Flanged screw;
11. To water pump;
12. From head;
13. Coupling / head hose;
14. Coupling;
15. Electric fan connector;
16. Electric fan.

6.2. RADIATOR

6.2.1. EMPTYING THE COOLING SYSTEM

CAUTION Before proceeding with cooling system emptying, it is necessary to take a container having a capacity of at least 1.8 litres (0.39 gal).

Proceed as follows to completely drain the cooling system:

- Remove the front cover, see (REMOVING THE FRONT COVER).
- Loosen and remove the expansion tank plug.



- Loosen the clamp and remove the radiator-pump hose, let the coolant flow in the container.

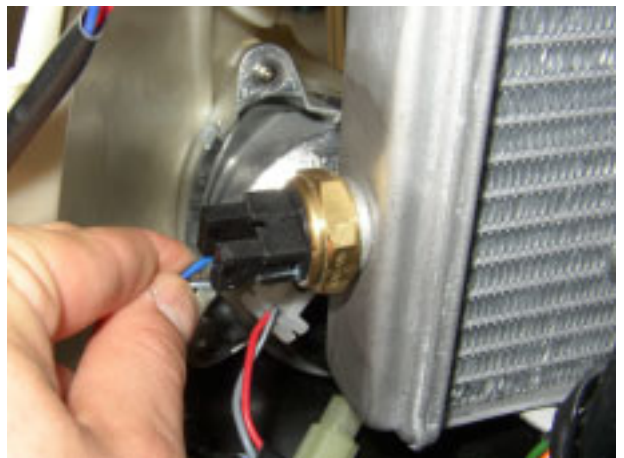


6.2.2. REMOVING THE RADIATOR

- Drain the system, see (EMPTYING THE COOLING SYSTEM).
- Remove the inner front shield, see (REMOVING THE INNER FRONT SHIELD).
- Remove the front shield, see (REMOVING THE FRONT SHIELD).
- Disconnect the electric fan connector.



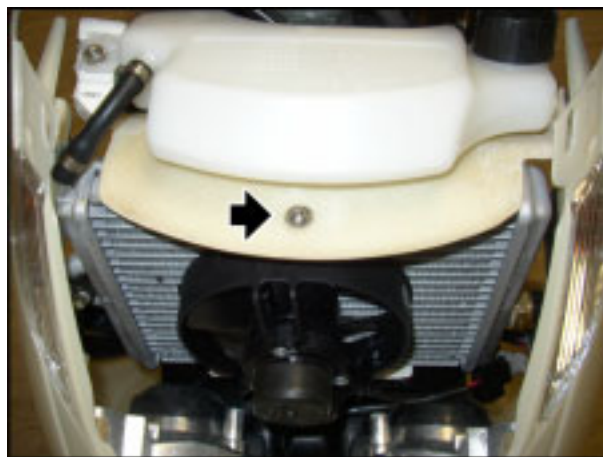
- Disconnect the two thermal switch connectors.



- Loosen the clamps and remove the three hoses.



- Unscrew and remove the screw.
- Pull up the radiator to remove it.



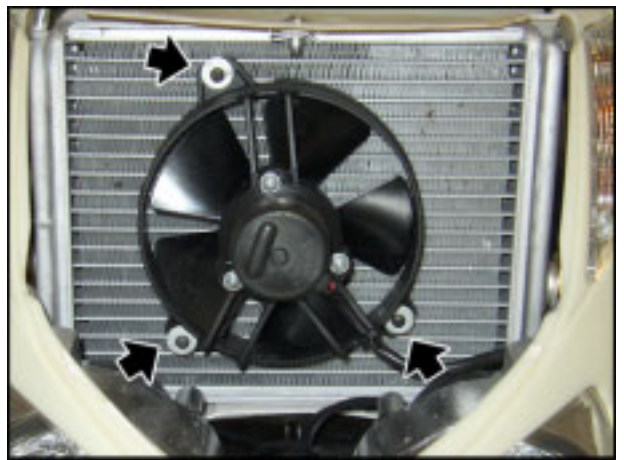
6.2.3. REMOVING THE ELECTRIC FAN**WARNING**

Proceed with care to avoid damaging the radiator fins.

- Remove the front cover, see (REMOVING THE FRONT COVER).
- Disconnect the electric fan connector.

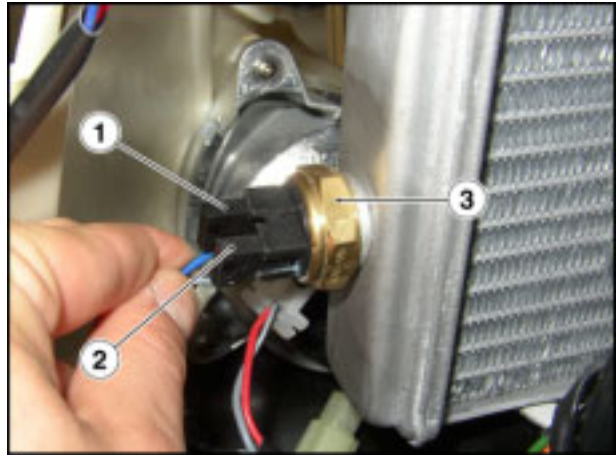


- Release and remove the three screws.
- Remove the electric fan.



6.2.4. REMOVING THE COOLANT THERMAL SWITCH

- Remove the inner front shield, see (REMOVING THE INNER FRONT SHIELD).
- Drain the system, see (EMPTYING THE COOLING SYSTEM).
- Disconnect the connectors (1-2).
- Loosen and remove the coolant thermal switch (3).



6.2.5. REMOVING THE COOLANT THERMISTOR

- Remove the fuel tank, see (REMOVING THE FUEL TANK).
- Drain the cooling system, see (EMPTYING THE COOLING SYSTEM).
- Disconnect the electric connector (1).
- Unscrew and remove the thermistor (2).

**WARNING**

Upon reassembly, smear LOCTITE® 515 onto thermistor thread (2).



6.3. EXPANSION TANK

6.3.1. REMOVING THE EXPANSION TANK

- Drain the cooling system, see (EMPTYING THE COOLING SYSTEM).
- Remove the front cover, see (REMOVING THE FRONT COVER).
- Remove the inner front shield, see (REMOVING THE INNER FRONT SHIELD).
- Loosen and remove the clamp.

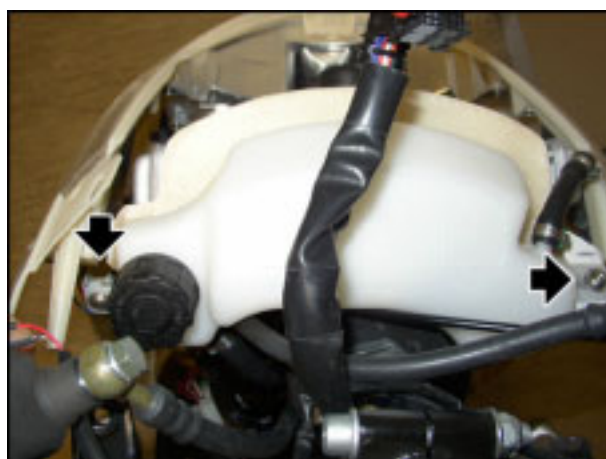


- Loosen and remove the clamp.

CAUTION When reassembling, renew all clamps.



- Working on either side, loosen and remove the screw.
- Remove the expansion tank.



ELECTRICAL SYSTEM

7

SUMMARY

7.1. CHECKING THE ELECTRICAL COMPONENTS 3
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7.1. CHECKING THE ELECTRICAL COMPONENTS

7.1.1. INTRODUCTION

Following are some useful instructions.

CAUTION The numbers appearing on the specific electric diagrams correspond to the ones of the main wiring diagram.

WIRE COLOUR CODING

Ar	orange
Az	light blue
B	blue
Bi	white
G	yellow
Gr	grey
M	brown
N	black
R	red
Ro	Pink
V	green
Vi	violet

ELECTRICAL CONNECTORS

Disconnect two electric connectors as follows:

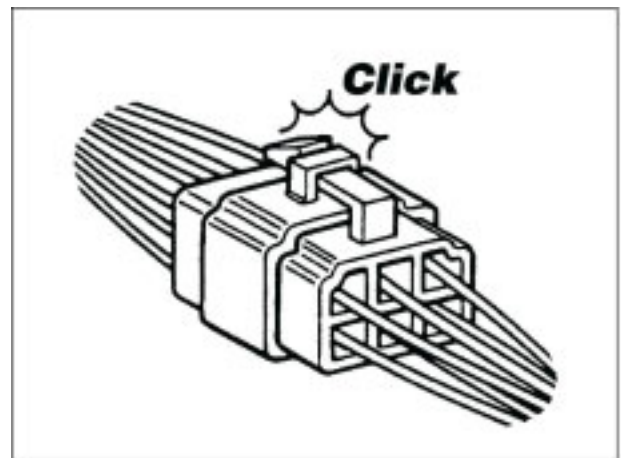
- If present, press the special safety hooks.



WARNING

Do not pull cables to disconnect the two connectors.

- Grasp the two connectors and disconnect them by pulling them in the two opposite directions.
- In case of dirt, rust, moisture, etc..., thoroughly clean the inside of the connectors with compressed air.



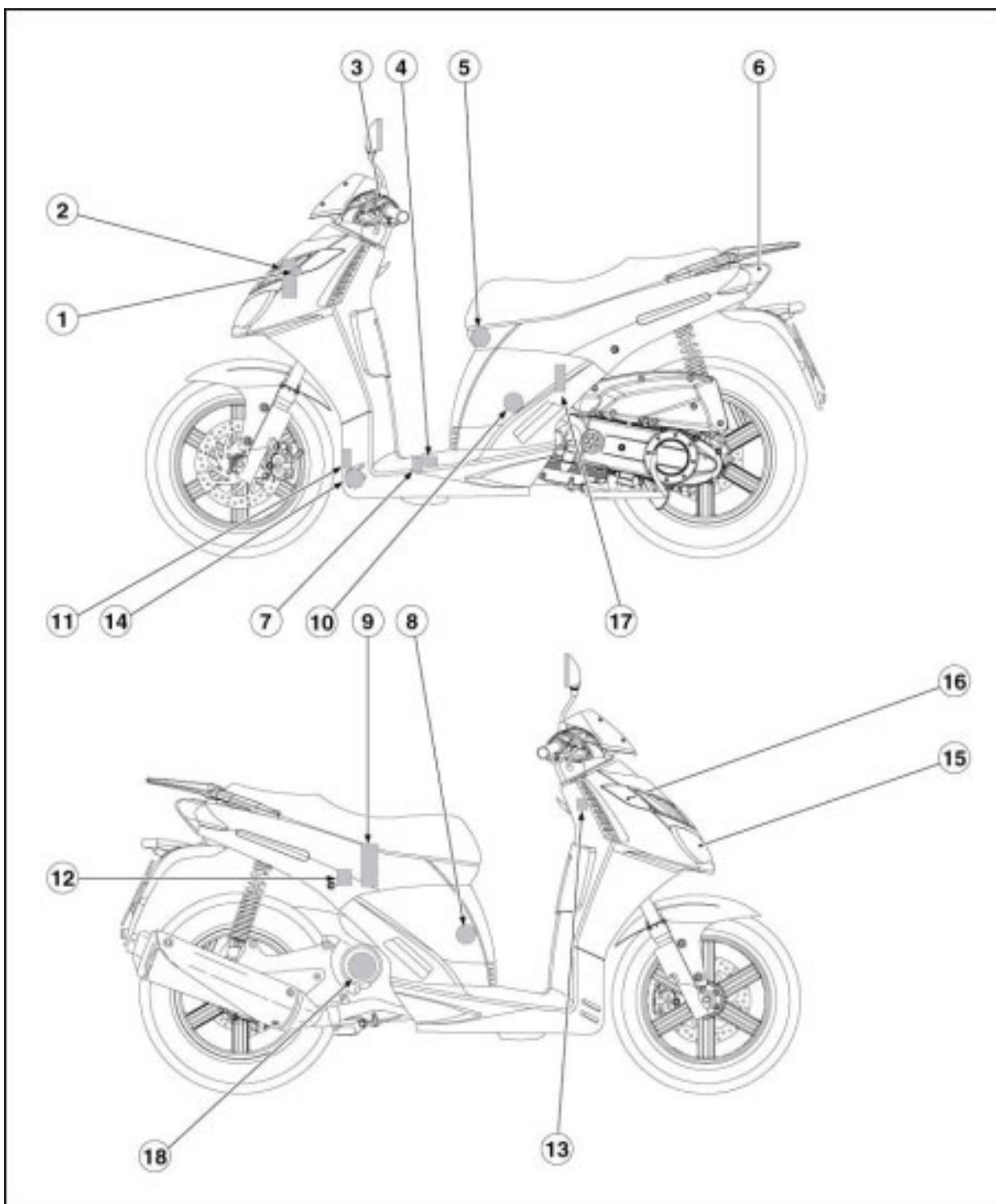
- Make sure that the cables are correctly fitted inside the connector terminals.

CAUTION The two connectors have just one correct positioning. Make sure to position them in the right direction.

- Then fit the two connectors. Make sure they are correctly coupled (a click will be heard if hooks are present).

7.2. ELECTRIC SYSTEM

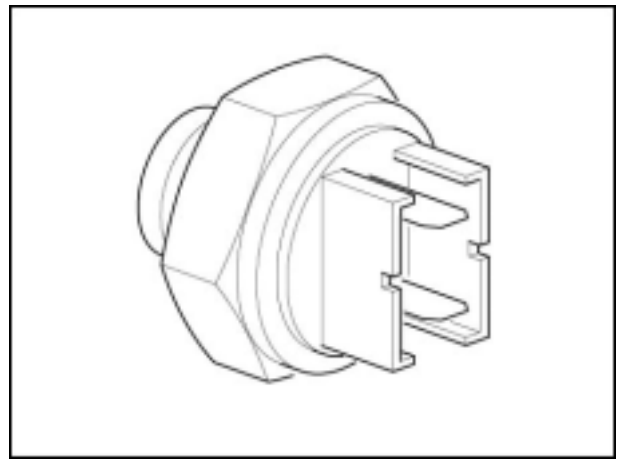
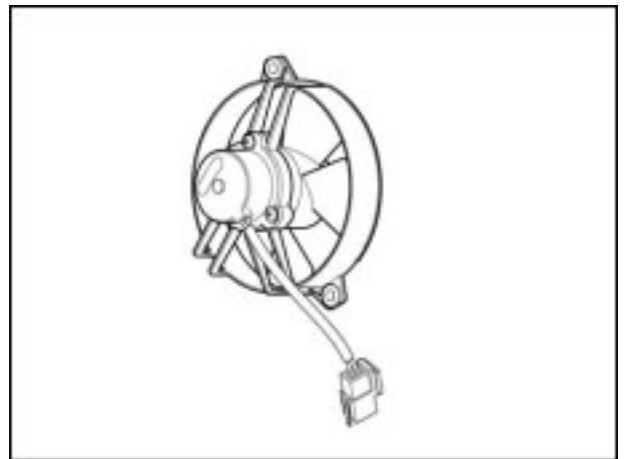
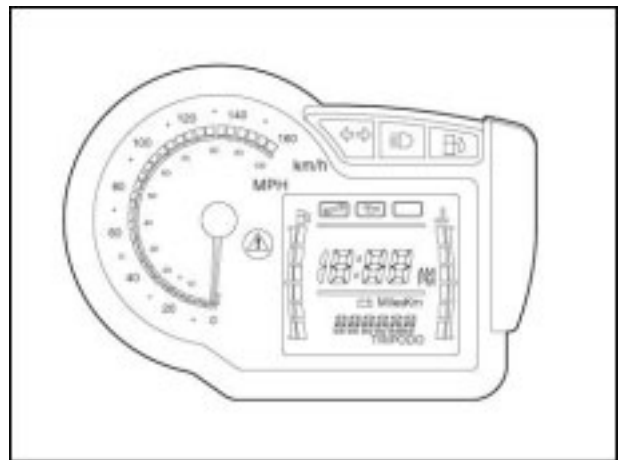
7.2.1. CHECKING THE ELECTRICAL COMPONENTS



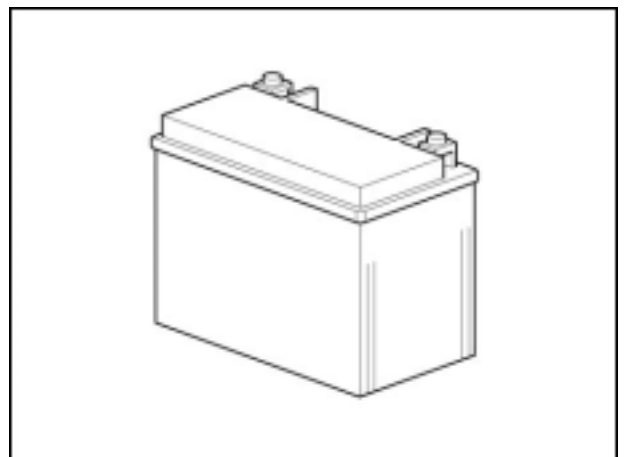
Sportcity 125 - 200

1 Electric fan thermal switch

IDROSTOP ON $100\pm 3^{\circ}\text{C}$ ($212\pm 37.4^{\circ}\text{F}$), OFF $95\pm 3^{\circ}\text{C}$ ($203\pm 37.4^{\circ}\text{F}$)

**2 Electric fan****3 Instrument panel****4 Battery**

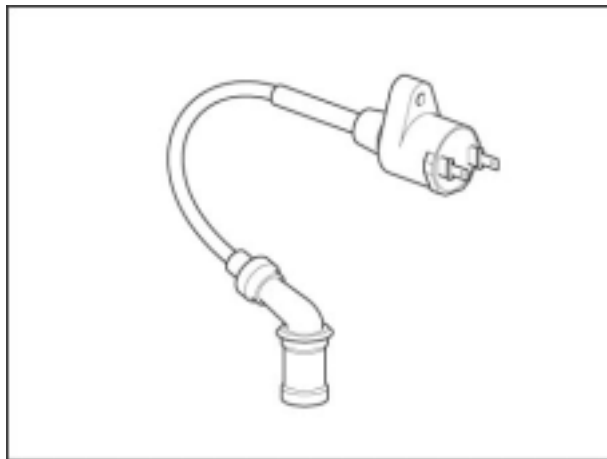
12 V - 10 Ah



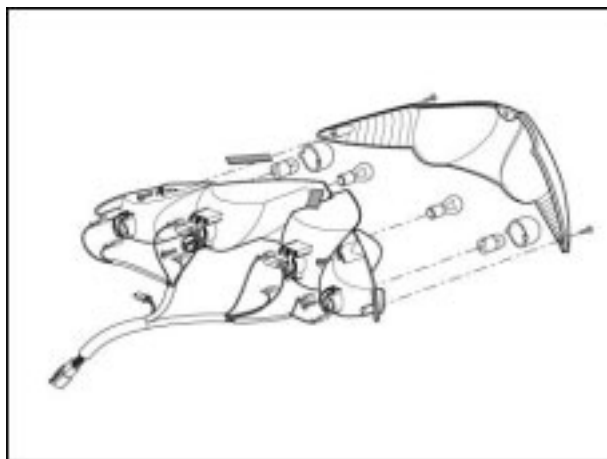
5 Coil

Primary resistance:
 $0.2 \pm 10\%$ ohm at 20°C (68°F)

Secondary resistance:
 $2.9 \pm 10\%$ kohm at 20°C (68°F)

**6 Rear lights**

Turn indicator light: 12 V - 10 W

**7 Fuses****Main fuses:****15A fuse (2):**

From the ignition switch to all light loads and horn.

20A fuse (1):

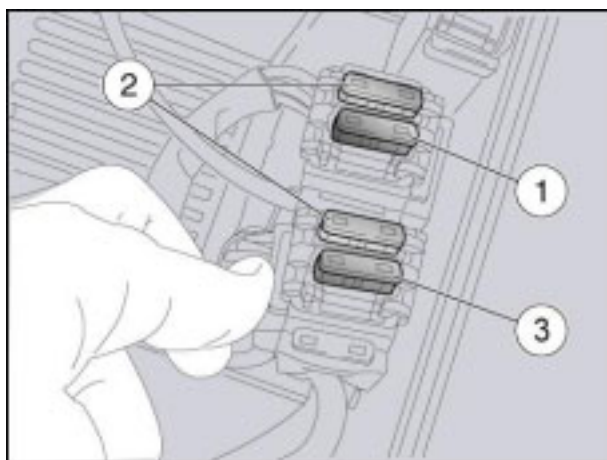
From the battery to ignition switch, voltage regulator, electric fan.

Auxiliary fuses:**15A fuse (2):**

From the ignition switch to all light loads and horn.

7.5A fuse (3):

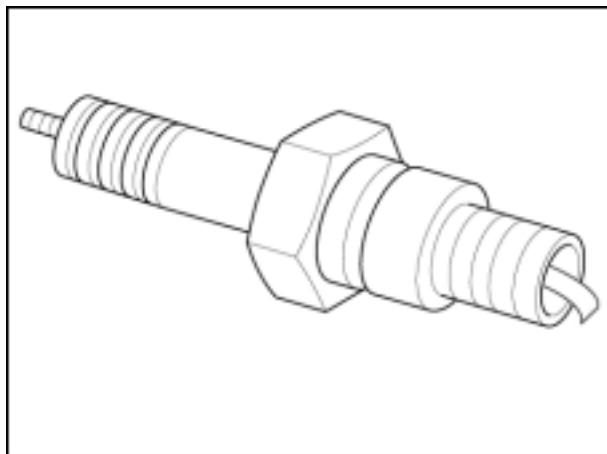
From the ignition switch to ignition.

**8 Spark plug**

NGK CR7EB or, as an alternative, NGK CR8EB
 NGK CR9EB
 CHAMPION RG6YC
 CHAMPION RG4HC

Spark plug gap: 0.7– 0.8mm

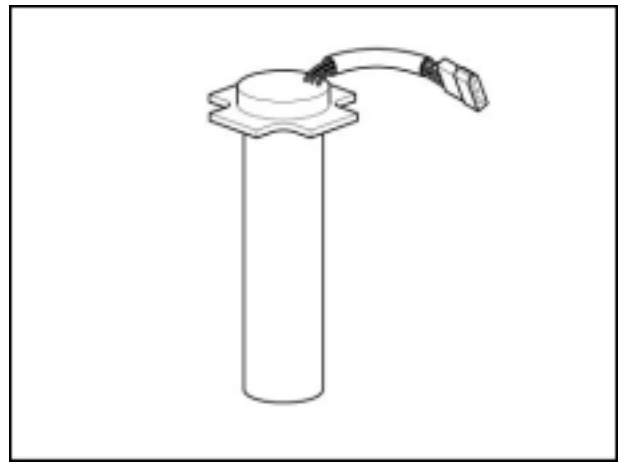
Spark plug cap resistor: 5 K



Sportcity 125 - 200

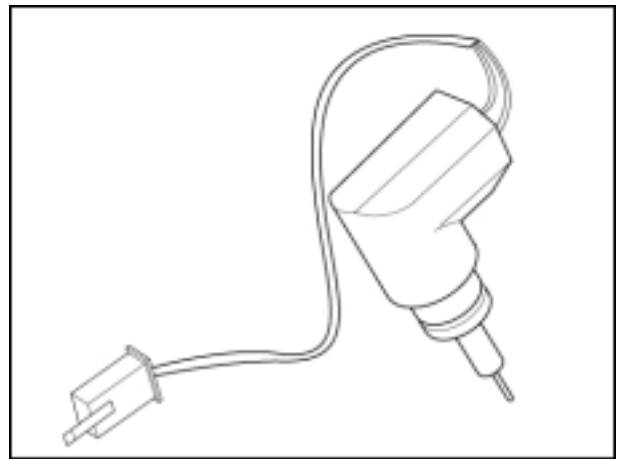
9 Fuel sensor

Float position	R
Full tank	$100 \pm 10\%$ ohm
Empty tank	$1200 \pm 10\%$ ohm



10 Automatic choke

Approx. 30 ohm at 20°C (68°F)

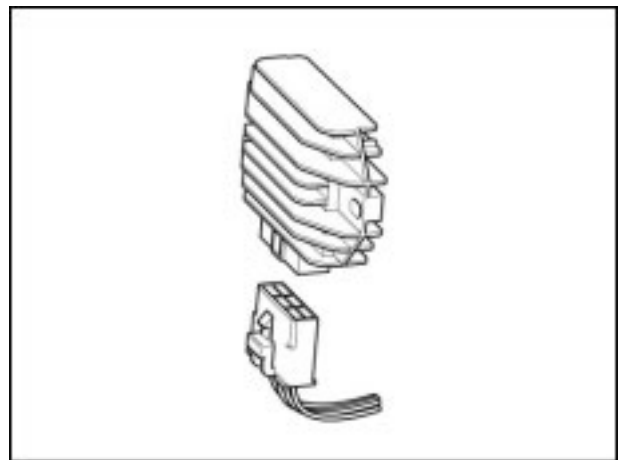


11 Voltage regulator

(SH640D)

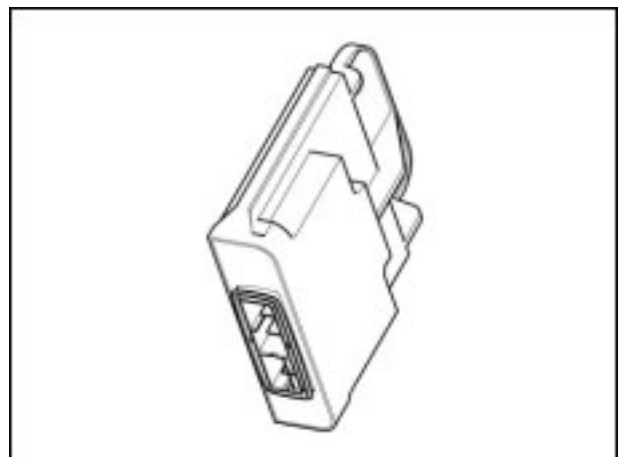
Charging voltage:

- at the terminals, loadless: 13/15 V at 5000 RPM



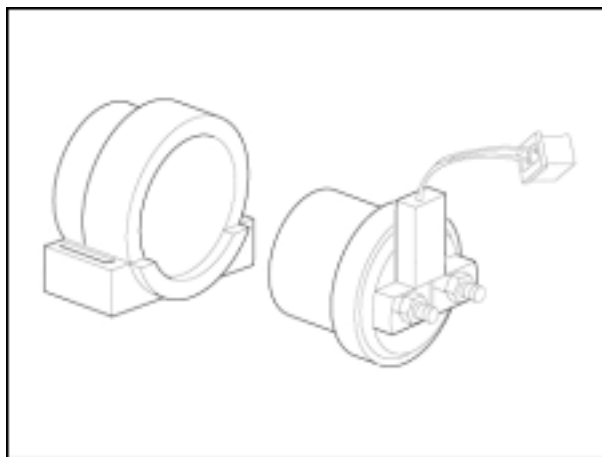
12 Control unit

MARELLI

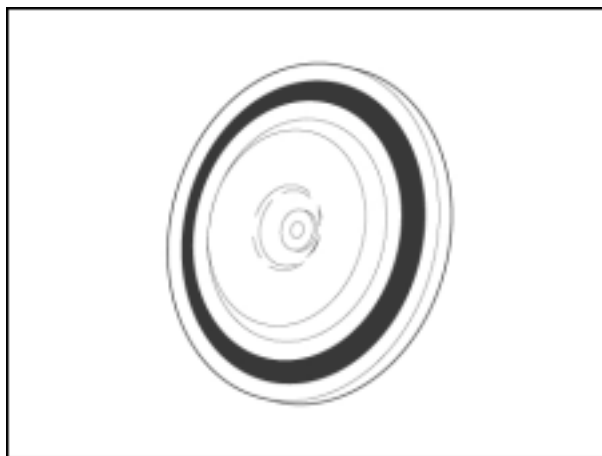
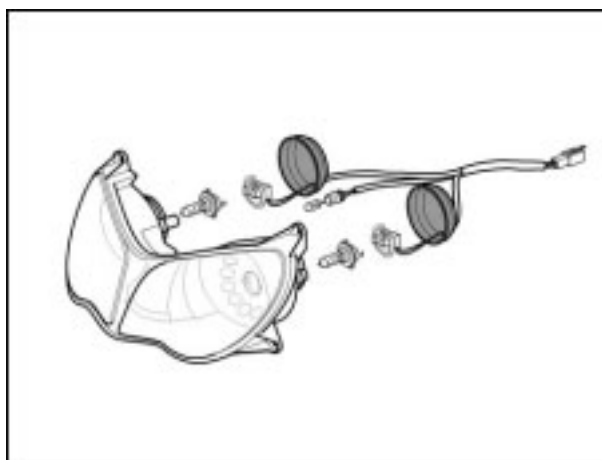


13 Start relay

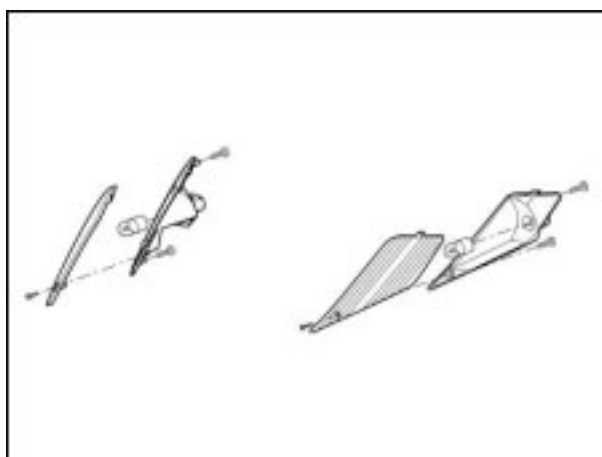
12 V / 100 A

**14 Horn**

LEB 12V 4A

**15 Headlight**Low/high beam: 12 V - 55 W - H7
Front parking light: 12 V - 5 W**16 Front turn indicators**

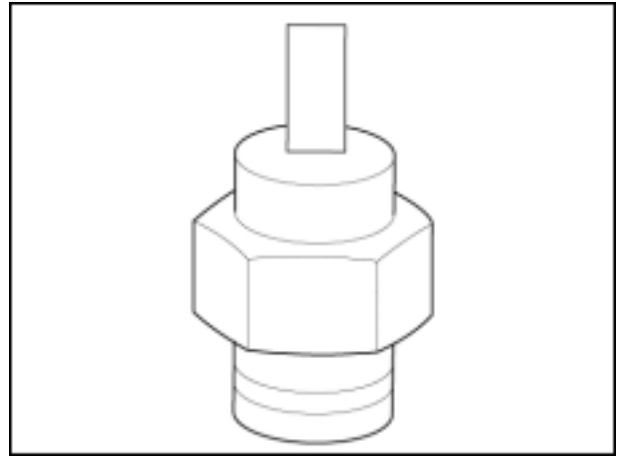
Turn indicator light: 12 V - 10 W



Sportcity 125 - 200

17 Water Temperature Sensor

Temperature		Resistance Ω
100 (°C)	212 (°F)	144
80 (°C)	176 (°F)	262
60 (°C)	140 (°F)	512
40 (°C)	104 (°F)	1090



18 Generator

With permanent magnet, 12 V - 180 W

Stator coil resistance:
0.1- 1 ohm at 20°C (68°F)

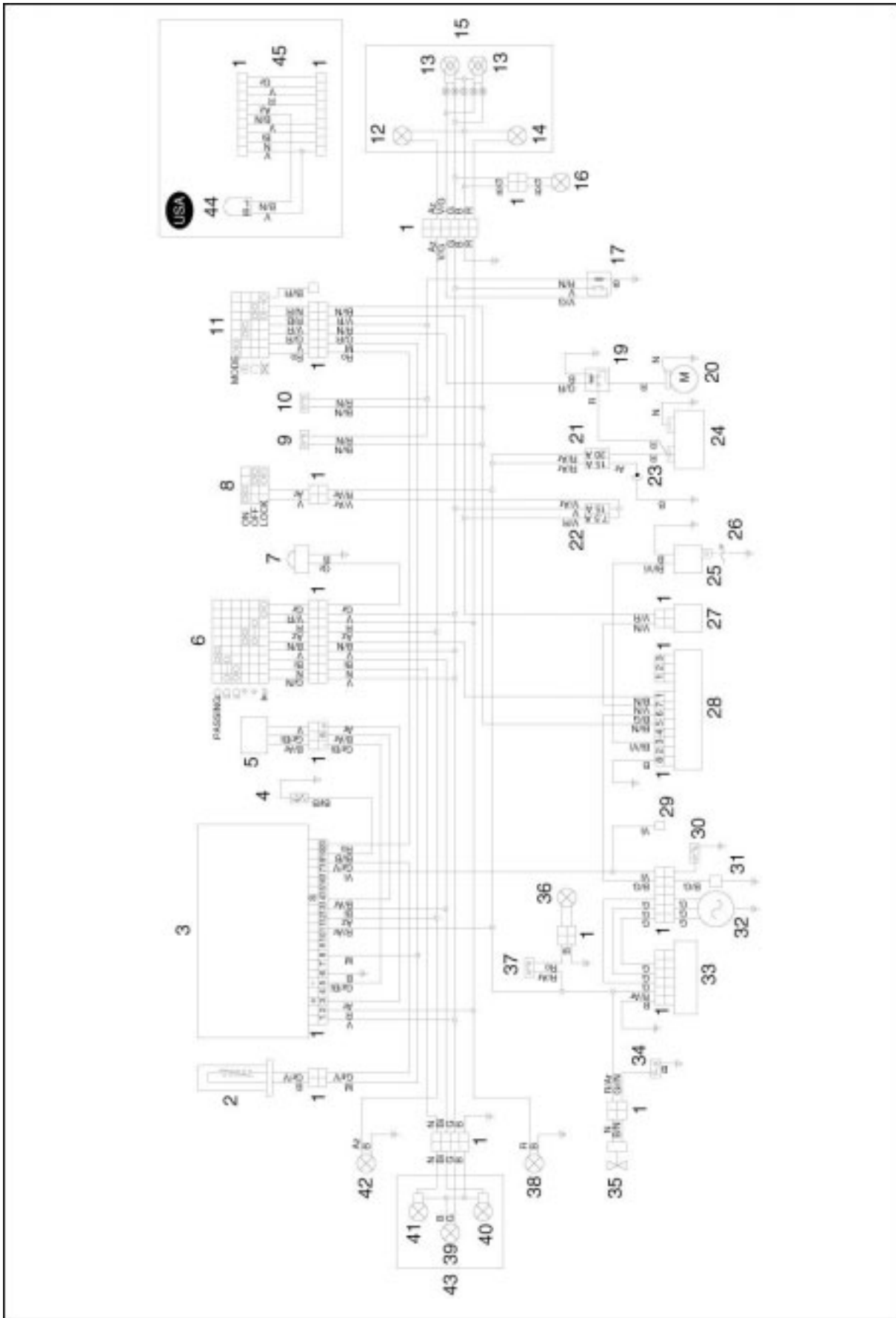
Voltage generated when loadless:
> 50 V at 5000 RPM



19 Pick-up sensor

Winding resistance: 105±10% ohm at 20°C (68°F)

7.2.2. WIRING DIAGRAM



Key:

1. Multiple connectors
2. Fuel sensor
3. Instrument panel
4. Water thermistor
5. Speed sensor
6. Left dimmer switch
7. Horn
8. Key-operated switch
9. Front brake switch
10. Rear brake switch
11. Right dimmer switch
12. Rear left turn indicator
13. Parking light/brake light
14. Rear right turn indicator
15. Complete tail light
16. Number plate light
17. Stoplight relay/ignition enable
18. -
19. Starter relay
20. Starter motor
21. Main fuses
22. Auxiliary fuses
23. Power outlet
24. Battery
25. H.T. coil
26. Spark plug
27. Automatic choke
28. C.D.I. control unit
29. Oil sensor connector (USA only)
30. Oil pressure sensor
31. Pick-up
32. Generator
33. Voltage regulator
34. Thermal switch
35. Fan
36. Case light
37. Case light switch
38. Front right turn indicator
39. Headlight parking light
40. High beam bulb
41. Low beam bulb
42. Front left turn indicator
43. Complete headlight
44. Flasher "det" (USA only)
45. Kit for flasher "det" (USA only)

WIRE COLOUR CODING

Ar	Orange
Az	Light blue
B	Blue
Bi	White
G	Yellow
Gr	Grey
M	Brown
N	Black
R	Red
V	Green
Vi	Violet
Ro	Pink



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