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LIVING WITH YOUR SCOOTER

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MAINTENANCE

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Note: *The daily (pre-ride) checks outlined in your owner's manual covers those items which should be inspected on a daily basis.*

Engine oil level check

Before you start:

✔ Make sure you have a supply of the correct oil available.

✔ Support the machine in an upright position whilst checking the level. Make sure it is on level ground.

The correct oil:

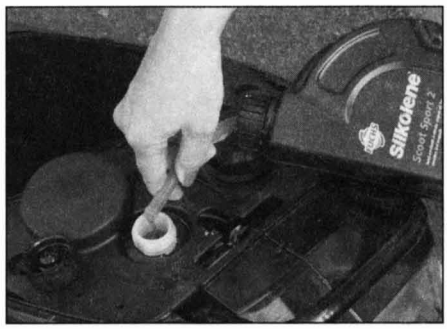
● Modern engines place great demands on their oil. It is very important that the correct oil for your bike is used.

● Always top up with a good quality oil of the specified type. Peugeot specify a semi-synthetic, JASO FC SAE20 oil for two-stroke engines with separate lubrication.

● If the oil level warning light comes on the oil tank requires topping up immediately or at the earliest opportunity. However, do not rely on the oil warning light to tell you that the oil tank needs topping up. Get into the habit of checking the oil level in the oil tank regularly, such as at the same time as you fill up with fuel.

● If the engine is run without oil, even for a short time, engine damage and very soon engine seizure will occur. It is advised that a bottle of two-stroke oil is carried in the storage compartment for such emergencies.

1 Remove the filler cap to check the oil level; it should be up to the bottom of the filler neck when full.



2 If the level is low, top the tank up with the recommended oil, then fit the filler cap securely.

Coolant level check (liquid-cooled models)

⚠ ***Warning: DO NOT leave open containers of coolant about, as it is poisonous.***

⚠ ***Warning: Do not remove the reservoir cap when the engine is hot. It is good practice to cover the cap with a heavy cloth and turn the cap slowly anti-clockwise. If you hear a hissing sound (indicating that there is still pressure in the system), wait until it stops, then continue turning the cap until it can be removed.***

Before you start:

✔ Make sure you have a supply of coolant available (a mixture of 50% distilled water and 50% Procor 3000 anti-freeze is needed). Peugeot state that other anti-freeze products will not mix with Procor 3000. If you are in any doubt about the type of coolant already in the system, it is advised that you drain and flush the cooling system (see Chapter 3) and refill with the specified coolant mixture.

✔ Always check the coolant level when the engine is cold.

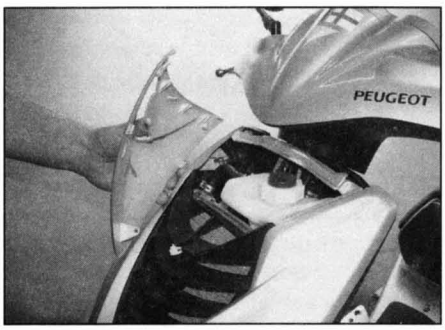
✔ Support the machine in an upright position whilst checking the level. Make sure it is on level ground.

Bike care:

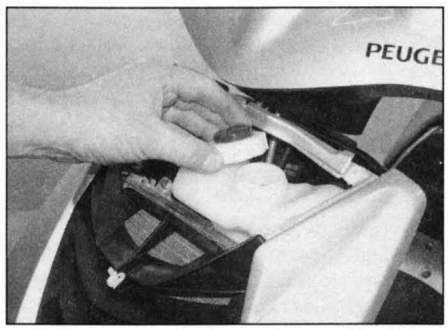
● Use only the specified coolant mixture. It is important that anti-freeze is used in the system all year round, and not just in the winter. Do not top-up the system with water only, as the coolant will become too diluted.

● Do not overfill the reservoir tank, which is located behind the front panel on all models. The coolant level should be just below the bottom of the filler neck. Any surplus should be siphoned or drained off to prevent the possibility of it being expelled.

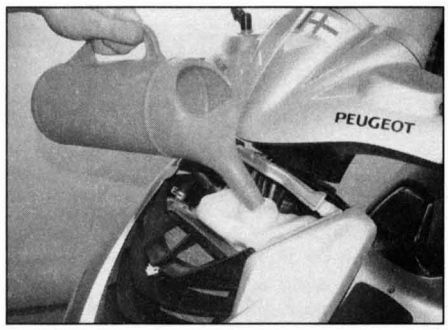
● If the coolant level falls steadily, check the system for leaks (see Chapter 1). If no leaks are found and the level continues to fall, it is recommended that the machine is taken to a Peugeot dealer for a pressure test.



1 Undo the screws securing the front panel and remove the panel.



2 Unscrew the reservoir cap – see ***Warning*** above. The reservoir should be at least half full.



3 Top-up if necessary with the specified coolant mixture.

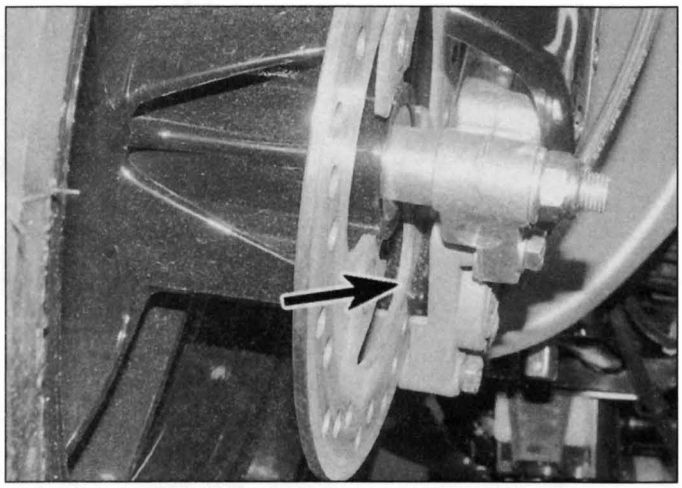
Speedfight 2 50 LCDP/LBDP/LNDP/LEDP, X-Team 50 LNDP, X-Race 50 LNDP, WRC 206 50, Furious

Model identification

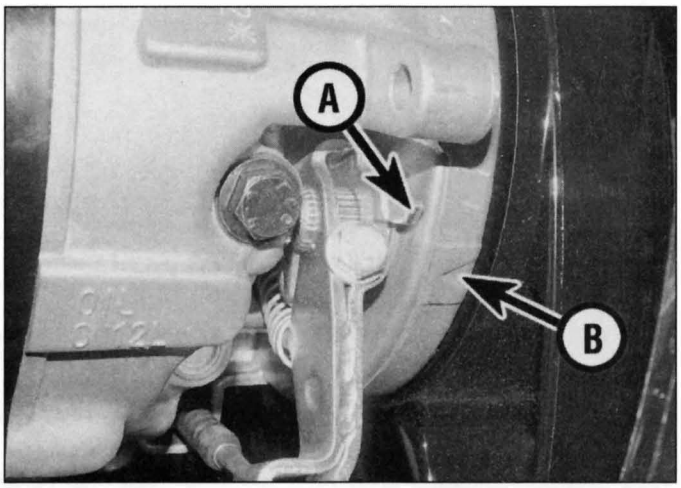
Engine	49 cc single cylinder liquid-cooled two-stroke
Transmission	Variable speed automatic, belt driven
Ignition	Capacitor discharge ignition (CDI)
Front suspension	Leading link monolever
Rear suspension	Swingarm and single shock
Front brake	180 mm disc
Rear brake	180 mm disc
Front tyre size	120/70 x 12
Rear tyre size	
2000 to 2002 models	140/70 x 12
2003 to 2005 models	130/70 x 12
Engine no. suffix	FL1
Frame no. prefix	VGAS1B
Wheelbase	1225 mm
Overall length	1730 mm
Overall width (excl. mirrors)	700 mm
Overall height (excl. mirrors)	1155 mm
Weight (dry)	90 kg
Fuel tank capacity	7.2 litres

Servicing specifications and lubricants

Spark plug type	NGK BR7HS
Spark plug electrode gap	0.6 mm
Idle speed	1500 rpm
Front tyre pressure	19 psi (1.3 Bar)
Rear tyre pressure	23 psi (1.6 Bar)
Disc brake pad minimum thickness	1.5 mm
Throttle twistgrip freeplay	2 to 5 mm
Fuel	Unleaded petrol (gasoline) min 95 octane
Engine oil	JASO FC, SAE 20 semi-synthetic
Engine oil tank capacity	1.3 litres
Relay box oil	80W-90 scooter gear oil
Relay box oil capacity	120 ml
Brake fluid	DOT 4
Coolant	50% distilled water and 50% Procor 3000 anti-freeze is needed). Peugeot state that other anti-freeze products will not mix with Procor 3000.



8.1 Check brake pad wear at the underside of the caliper



9.1 Rear drum brake wear indicator (A) and index mark (B)

material wear can be checked by looking at the underside of the caliper **(see illustration)**. Alternatively, displace the caliper (see Chapter 8) to check the amount of wear.

2 If the amount of friction material remaining on the pads is below 1.5 mm, new pads must be fitted.

Warning: Brake pads often wear at different rates. If there is any doubt about the condition of either of the pads in a caliper, remove the caliper and check. Brake failure will result if the friction material wears away completely.

3 Refer to Chapter 8 for details of pad removal, inspection and replacement.

9 Brake shoes – check

1 The rear drum brake is equipped with a wear indicator **(see illustration)**.

2 As the brake shoes wear and the cable is adjusted to compensate, the indicator moves closer to the index mark on the casing. To check the extent of brake wear, have an assistant apply the brake firmly; if the indicator aligns with the index mark, the brake shoes must be replaced with new ones (see Chapter 8).

10 Throttle cable – check and adjustment

All models

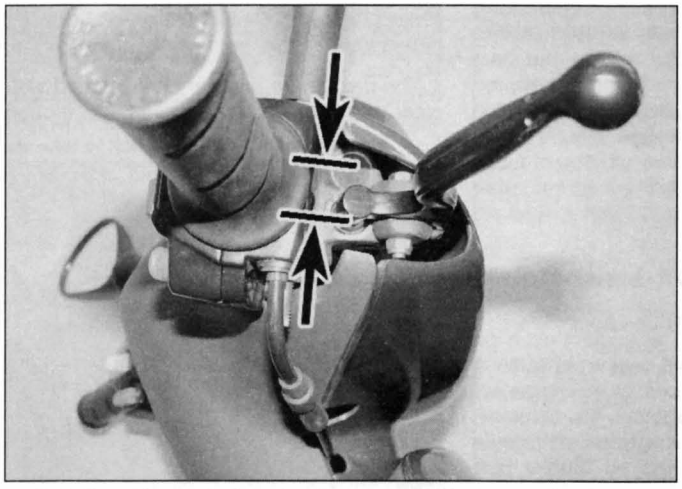
1 Ensure the throttle twistgrip rotates easily from fully closed to fully open with the handlebars turned at various angles. The twistgrip should return automatically from fully open to fully closed when released.

2 If the throttle sticks, this is probably due to a cable fault. Remove the cable and lubricate it (see Chapter 4).

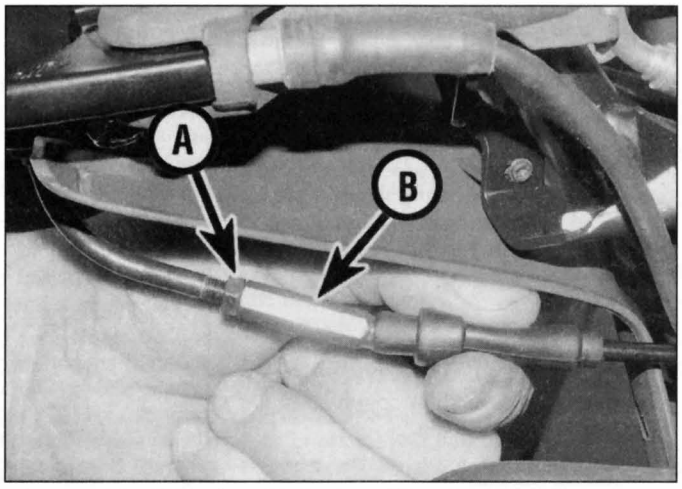
3 With the throttle operating smoothly, check for a small amount of freeplay in the cable, measured in terms of the amount of twistgrip rotation before the throttle opens, and compare the amount to the Specifications at the beginning of this Chapter **(see illustration)**.

4 If there is insufficient or excessive freeplay, loosen the locknut on the cable adjuster, then turn the adjuster until the specified amount of freeplay is evident, then retighten the locknut **(see illustration)**. If the adjuster has reached its limit of adjustment, replace the cable with a new one (see Chapter 4).

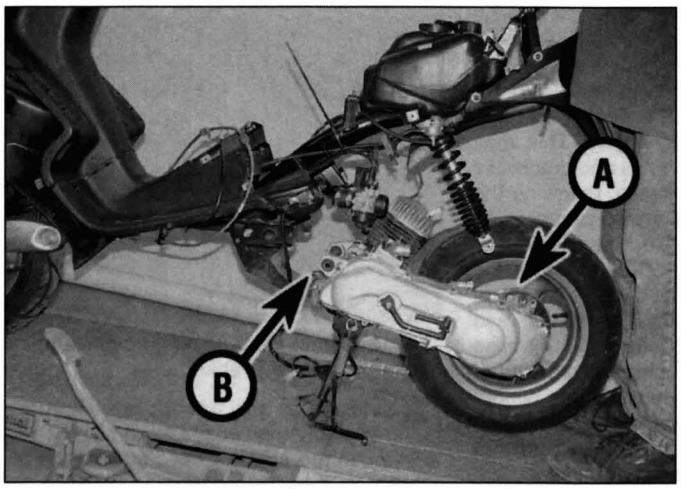
5 Start the engine and check the idle speed. If the idle speed is too high, this could be due to incorrect adjustment of the cable. Loosen the locknut and turn the adjuster in – if the idle speed falls as you do, there is insufficient freeplay in the cable. Reset the adjuster (see Step 4). **Note:** *The idle speed should not change as the handlebars are turned. If it does, the throttle cable is routed incorrectly. Rectify the problem before riding the scooter (see Chapter 4).*



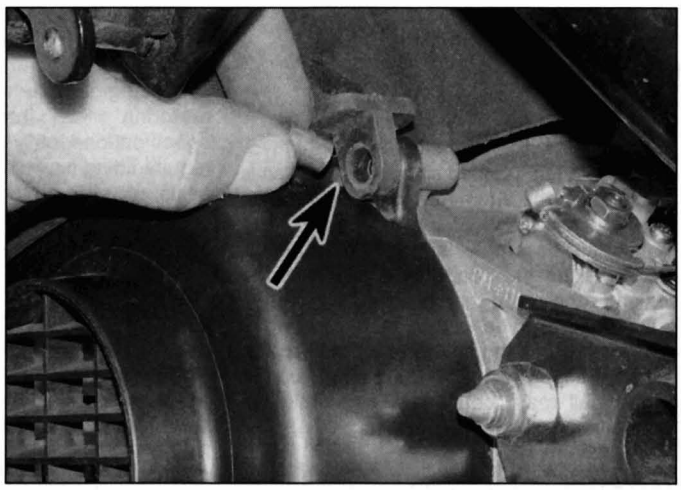
10.3 Throttle cable freeplay is measured in terms of twistgrip rotation



10.4 Throttle cable locknut (A) and adjuster (B)



5.14 Remove the bolts securing the rear shock (A) and the frame (B) to the engine unit



7.2a The engine cowling is secured by a bolt on the cooling fan cowling . . .

caliper, then temporarily refit the rear wheel (see Chapter 8). Unclip the brake hose from the underside of the drive belt casing **(see illustration 5.12)** .

14 Check that all wiring, cables and hoses are clear of the engine/transmission unit. With the aid of an assistant, support the weight of the machine on the rear grab handle. Remove the bolt securing the rear shock absorber to the transmission casing, then remove the front engine mounting bolt and lift the frame away from the engine/transmission unit **(see illustration)**.

15 If required, remove the stand (see Chapter 6) and the rear wheel (see Chapter 8) .

Installation

16 Installation is the reverse of removal, noting the following points:

- Make sure no wires, cables or hoses become trapped between the engine and the frame when installing the engine.
- Tighten the engine mounting bolts to the torque settings specified at the beginning of this Chapter.
- Make sure all wires, cables and hoses are correctly routed and connected, and secured by any clips or ties.
- Bleed the oil pump (see Section 13) and check the adjustment of the oil pump cable where fitted (see Chapter 1).
- Check the operation of the rear brake before riding the machine (see Chapter 8).

6 Disassembly and reassembly – general information

Disassembly

1 Before disassembling the engine, the external surfaces of the unit should be thoroughly cleaned and degreased. This will prevent contamination of the engine internals, and will also make working a lot easier and cleaner. A high flash-point solvent, such as paraffin can be used, or better still, a proprietary engine degreaser such as Gunk. Use an old paintbrush to work the solvent into the various recesses of the engine casings. Take care to exclude solvent or water from the electrical components and inlet and exhaust ports.

Warning: The use of petrol (gasoline) as a cleaning agent should be avoided because of the risk of fire.

2 When clean and dry, arrange the unit on the workbench, leaving suitable clear area for working. Gather a selection of small containers and plastic bags so that parts can be grouped together in an easily identifiable manner. Some paper and a pen should be on hand to permit notes to be made and labels attached where necessary. A supply of clean rag is also required.

3 Before commencing work, read through the appropriate section so that some idea of the necessary procedure can be gained. When removing components it should be noted that great force is seldom required, unless specified. In many cases, a component's reluctance to be removed is indicative of an incorrect approach or removal method – if in any doubt, re-check with the text.

4 When disassembling the engine, keep 'mated' parts that have been in contact with each other during engine operation together. These 'mated' parts must be reused or renewed as an assembly.

5 Complete engine disassembly should be done in the following general order with reference to the appropriate Sections. Refer to Chapter 2C for details of transmission components disassembly.

Remove the cooling fan (see Section 11)
Remove the alternator (see Chapter 9)
Remove the variator (see Chapter 2C)
Remove the cylinder head (see Section 7)
Remove the cylinder (see Section 8)
Remove the piston (see Section 9)
Remove the oil pump (see Section 13)
Remove the reed valve (see Chapter 4)
Remove the starter motor (see Chapter 9)
Separate the crankcase halves (see Section 14)

Reassembly

6 Reassembly is accomplished by reversing the general disassembly sequence.

7 Cylinder head – removal, inspection and installation

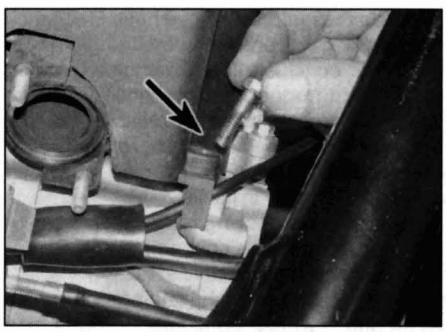
Note: *This procedure can be carried out with the engine in the frame. If the engine has been removed, ignore the steps that do not apply.*
Caution: The engine must be completely cool before beginning this procedure or the cylinder head may become warped.

Removal

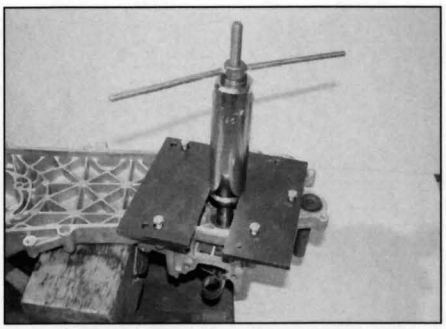
1 Remove the body panels as necessary according to model (see Chapter 7).

2 Pull the spark plug cap off the spark plug, then remove the bolts securing the engine cowling and remove the cowling, noting how it fits **(see illustrations)**.

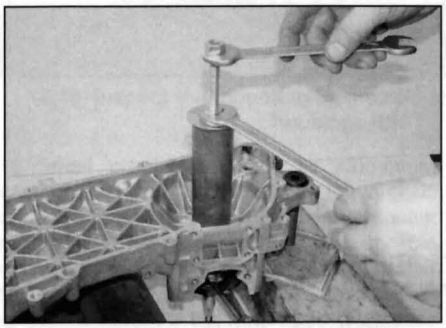
3 Remove the spark plug, then unscrew the



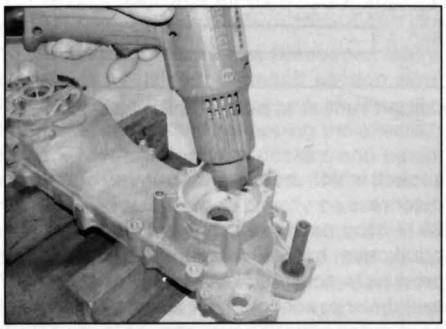
7.2b . . . a bolt on the left-hand side front of the cowling . . .



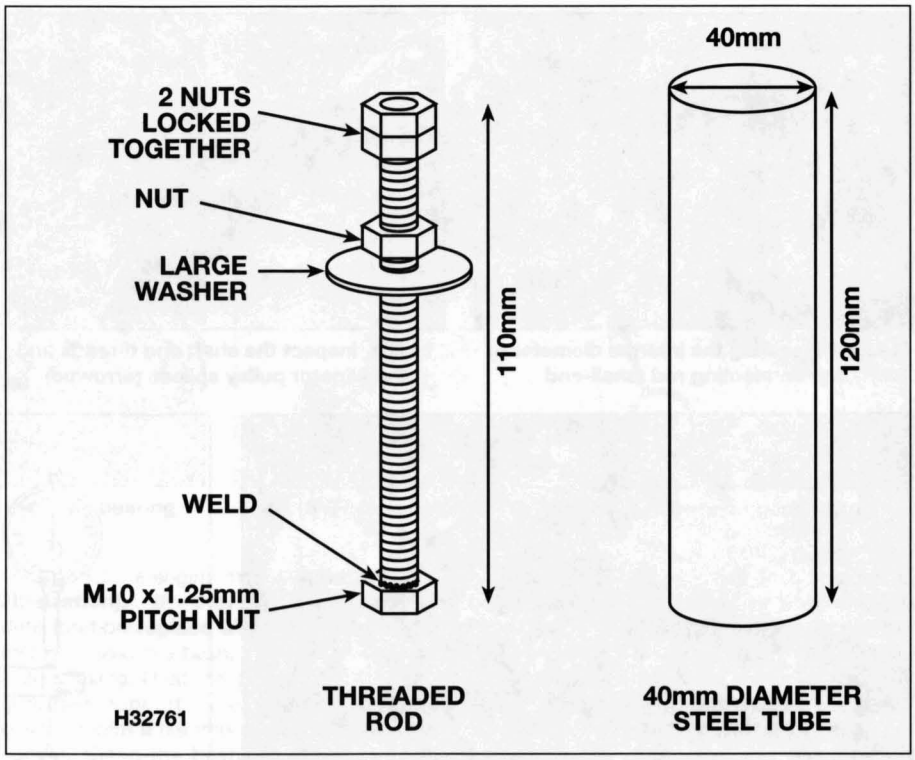
14.29b Installing the crankshaft with the Peugeot service tools



14.29c Installing the crankshaft with the home-made tool



14.29e Heating the crankcase with a hot air gun

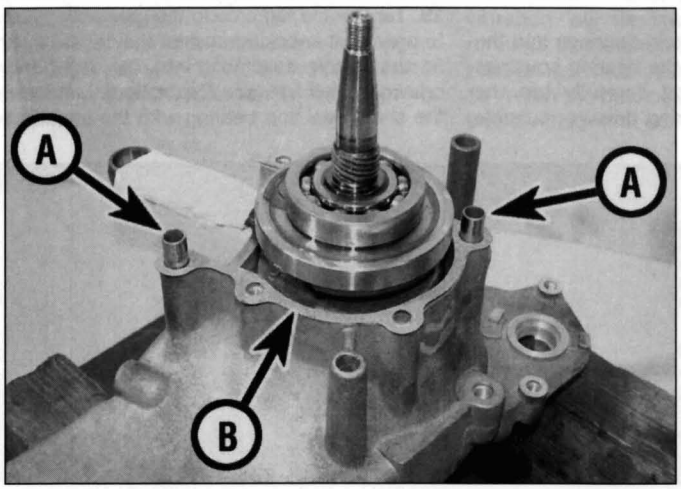


14.29d Details of the home-made tool for installing the crankshaft

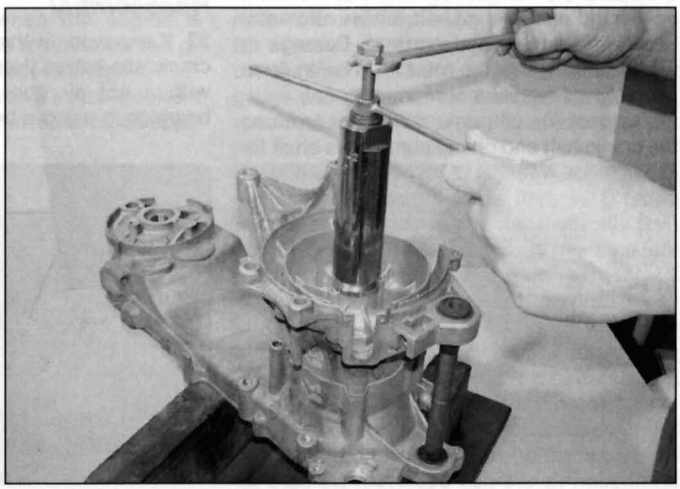
two-stroke oil, then, if the main bearing is in the crankcase half, pull the crank assembly into place ensuring the connecting rod is aligned with the crankcase mouth. Peugeot produce five individual service tools (Pt. Nos. 752168, 64706, 750069, 64710 and 69104) to do this **(see illustration)**. Alternatively, use the set-up shown **(see illustrations)**. If the main bearing is on the crankshaft, heat the bearing housing in the crankcase with a hot air gun before fitting the crank assembly **(see illustration)**. **Note:** *Avoid applying direct heat onto the crankshaft oil seal.*

30 Wipe the mating surfaces of both crankcase halves with a rag soaked in a suitable solvent and fit the dowels and new gasket to the left-hand half **(see illustration)**.

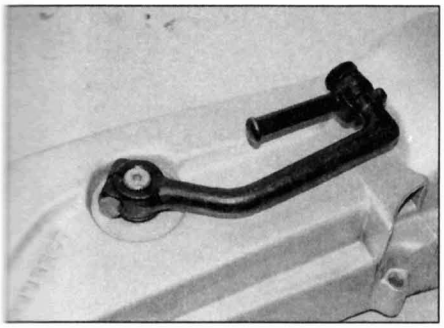
31 Now fit the right-hand crankcase half. Lubricate the shaft, seal and bearing with the specified two-stroke oil, then, if the main bearing is in the crankcase half, press the crankcase half into place. Peugeot produce five individual service tools (Pt. Nos. 750808, 64706, 750069, 64710 and 69104) to do this **(see illustration)**. Alternatively, place a thick washer over the centre of the crankcase to



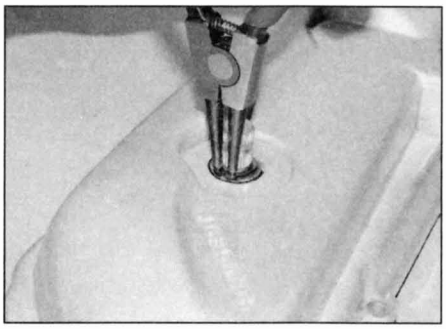
14.30 Install the crankcase dowels (A) and gasket (B)



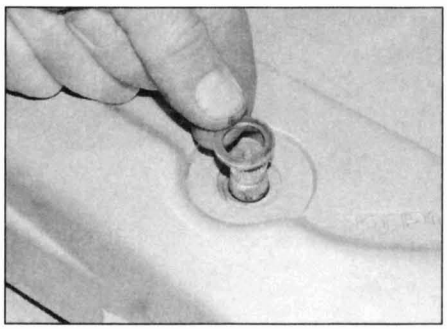
14.31 Installing the right-hand crankcase half with the Peugeot service tools



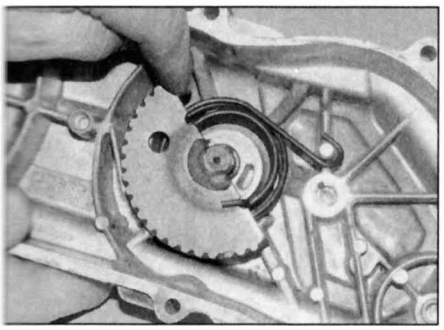
3.3 Kickstart lever rest position



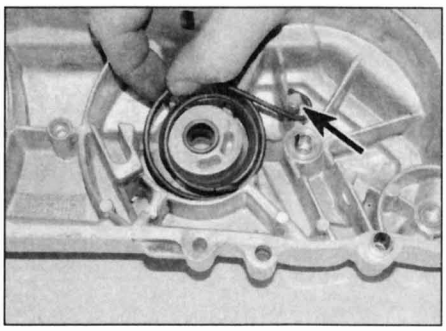
3.4a Remove the circlip . . .



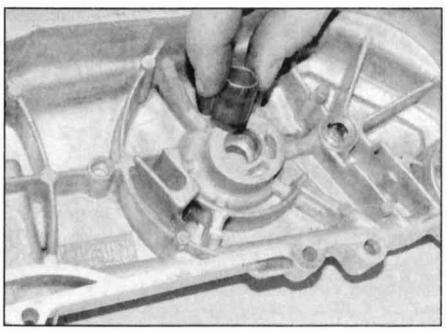
3.4b . . . and washer from the kickstart shaft



3.5 Release the tension in the spring and unhook it from the quadrant



3.6a Unhook the spring from the post (arrowed) . . .



3.6b . . . and remove the kickstart bush

gear and that the lever returns to its proper rest position afterwards. Fit the bracket over the rear brake cable or hose and secure it to the underside of the drive belt cover with the screw.

3 Kickstart mechanism – removal, inspection and installation

Removal

1 Remove the drive belt cover (see Section 2).

2 Pull the engaging pinion out of its recess in the cover, noting how the spring locates **(see illustration 2.3)**. Remove the washer from behind the pinion.

3 Note the rest position of the kickstart lever, then undo the lever pinch bolt and pull the lever off the shaft **(see illustration)**.

4 Remove the circlip and washer (if fitted) from the kickstart shaft on the outside of the cover **(see illustrations)**.

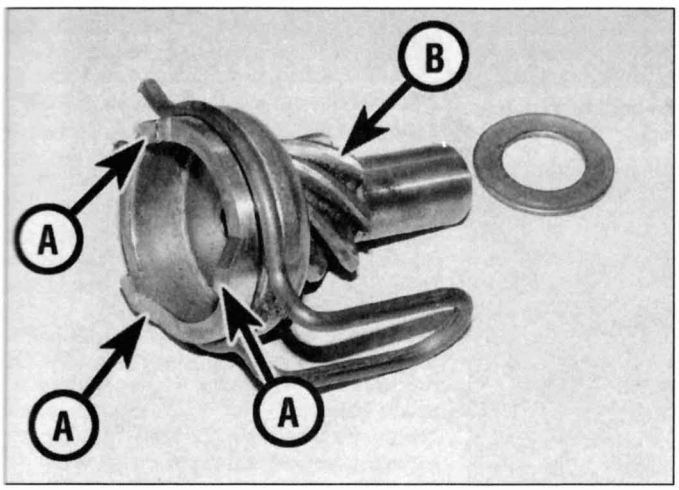
5 Ease the kickstart shaft out of the cover and release the tension on the kickstart return spring. Unhook the spring from the kickstart quadrant and remove the shaft **(see illustration)**.

6 Note how the return spring locates inside the cover and remove the spring and kickstart bush **(see illustrations)**.

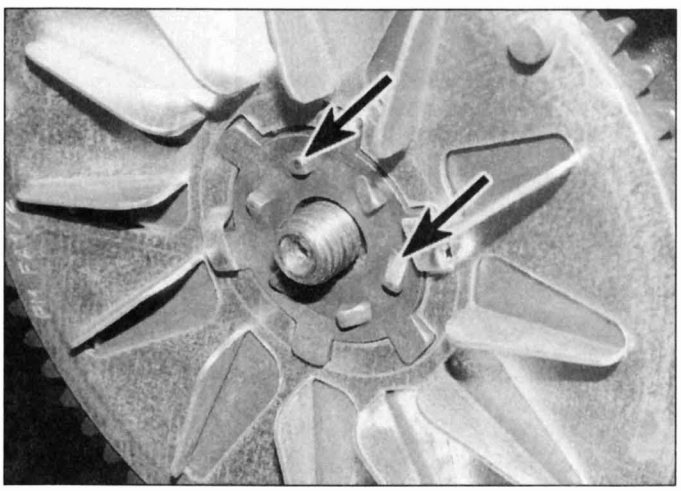
7 Clean all the components with a suitable solvent.

Inspection

8 Check the dogs on the end of the engaging pinion and the corresponding dogs on the kickstart driven gear **(see illustrations)**. Inspect the teeth on the engaging pinion and the teeth on the kickstart quadrant **(see illustrations)**. Check the shafts of the engaging pinion and the kickstart quadrant,



3.8a Inspect the dogs (A) and teeth (B) on the engaging pinion



3.8b Inspect the dogs on the kickstart driven gear (arrowed)

Chapter 3
Cooling system (liquid-cooled engine)

Refer to Chapter 1 for model identification details

Contents

Coolant hoses – removal and installation 8
Coolant level check .....see *Daily (pre-ride) checks*
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Cooling system – draining, flushing and refilling 2
General information 1
Radiator – removal and installation 6
Temperature gauge and sender – check and replacement 3
Thermostat – removal, check and installation 4
Water pump – check, removal and installation 7

Degrees of difficulty

Easy, suitable for novice with little experience 

Fairly easy, suitable for beginner with some experience 

Fairly difficult, suitable for competent DIY mechanic 

Difficult, suitable for experienced DIY mechanic 

Very difficult, suitable for expert DIY or professional 

Specifications

Coolant

Type and mixture	50% distilled water and 50% Procor 3000 anti-freeze is needed. Peugeot state that other anti-freeze products will not mix with Procor 3000.

Temperature sender

Resistance	
@ 20°C	1.91 to 2.58 K-ohms
@ 90°C	92 to 124 ohms

Torque settings

Water pump mounting bolts	10 Nm

1 General information

The cooling system uses a water/antifreeze coolant to carry excess energy away from the engine in the form of heat. The coolant is contained within a water jacket inside the cylinder and cylinder head which is connected to the radiator and the water pump by the coolant hoses.

Coolant heated by the engine is circulated by thermo-syphonic action, and the action of the pump, to the radiator. It flows across the radiator core, where it is cooled by the passing air, then through the water pump and back to the engine where the cycle is repeated.

A thermostat is fitted in the cylinder head to prevent the coolant flowing to the radiator when the engine is cold, therefore accelerating the speed at which the engine reaches normal operating temperature. A coolant temperature sender mounted in the cylinder head is connected to the temperature gauge on the instrument panel.

Warning: Do not remove the reservoir cap when the engine is hot. Scalding hot coolant and steam may be blown out under pressure, which could cause serious injury.

Warning: Do not allow antifreeze to come in contact with your skin or painted or plastic surfaces of the scooter. Rinse off any spills immediately with plenty of water. Antifreeze is highly toxic if ingested. Never leave antifreeze lying around in an open container or in puddles on the floor; children and pets are attracted by its sweet smell and may drink it. Check with the local authorities about disposing of used antifreeze. Many communities will have collection centres which will see that antifreeze is disposed of safely. Antifreeze is also combustible, so don't store it near open flames.

Caution: At all times use the specified type of antifreeze, and always mix it with distilled water in the correct proportion. The antifreeze contains corrosion inhibitors which are essential to avoid damage to the cooling system. A lack of these inhibitors could lead to a build-up of corrosion which would block the coolant passages, resulting in overheating and severe engine damage. Distilled water must be used as opposed to tap water to avoid a build-up of scale which would also block the passages.

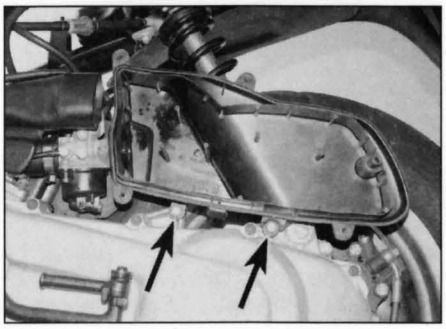
6 Air filter housing – removal and installation

Removal

1 Remove the cover from the air filter housing and remove the filter element (see Chapter 1).
2 Unscrew the bolts securing the air filter housing to the transmission casing and manoeuvre the housing away, noting how it fits **(see illustrations)**.
3 Unscrew the bolt securing the air intake duct to the transmission casing and remove the duct **(see illustrations)**.

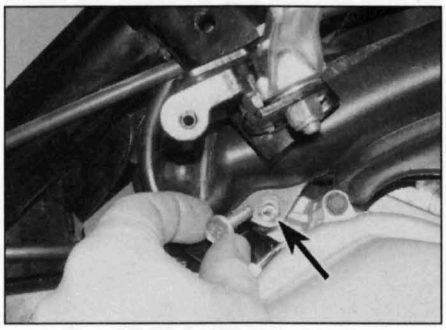
Installation

4 Installation is the reverse of removal. Ensure the filter housing is a firm fit over the carburettor intake.

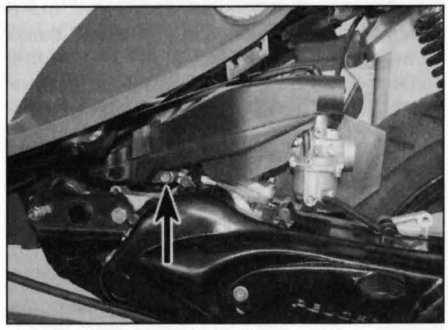


6.2a Fixings for air filter housing on Speedfight

6.2b Fixing for air filter housing on Trekker and Vivacity



6.3a Fixing for air intake duct on Speedfight



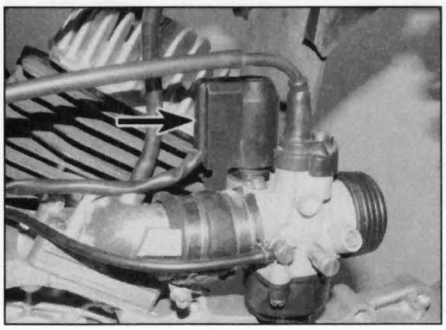
6.3b Fixing for air intake duct on Trekker and Vivacity

7 Choke mechanism – check

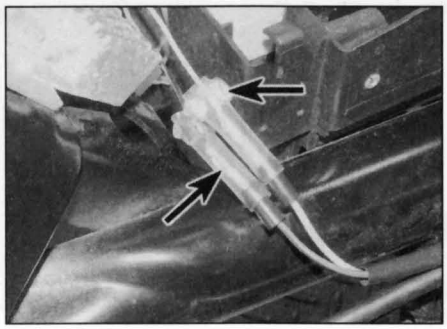
1 Poor starting or poor engine performance and an increase in fuel consumption are possible signs that the automatic choke mechanism is not working properly.
2 The resistance of the automatic choke unit should be checked with a multimeter when the engine is cold. Remove the storage compartment (see Chapter 7) and trace the wiring from the automatic choke unit on the carburettor and disconnect it at the connectors **(see illustrations)**.
3 Measure the resistance between the terminals on the choke unit side of the connector with the multimeter set to the ohms x 1 scale. If the result is not as specified at the beginning of this Chapter, the choke unit is probably faulty. Renew the choke unit (see Section 10).
4 On 1996 to 2003 models, if the automatic choke unit appears to be functioning correctly, check the resistance in the choke resistor **(see illustration).** Remove the headlight panel (see Chapter 7) and disconnect the resistor wiring connector (see *Wiring Diagrams*, Chapter 9). Measure the resistance between the terminal on the resistor side of the connector and earth (ground). If the result is not as specified at the beginning of this Chapter, the resistor is probably faulty.

8 Carburettor overhaul – general information

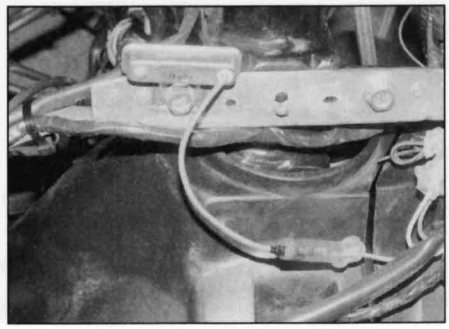
1 Poor engine performance, hesitation, hard starting, stalling, flooding and backfiring are all signs that major carburettor maintenance may be required.
2 Keep in mind that many so-called carburettor problems are really not carburettor problems at all, but mechanical problems within the engine or ignition system malfunctions. Try to establish for certain that the carburettor is in need of maintenance before beginning a major overhaul.
3 Check the fuel tap and filter, the fuel and vacuum hoses, the air filter, the ignition system and the spark plug before assuming that a carburettor overhaul is required.
4 Most carburettor problems are caused by dirt particles, varnish and other deposits which build up in and block the fuel and air passages. Also, in time, gaskets and O-rings shrink or deteriorate and cause fuel and air leaks which lead to poor performance.
5 When overhauling the carburettor, disassemble it completely and clean the parts thoroughly with a carburettor cleaning solvent, then dry them with filtered compressed air. Blow through the fuel and air passages with compressed air to force out any dirt that may have been loosened but not removed by the solvent. Once the cleaning process is complete, reassemble the carburettor using new gaskets and O-rings.



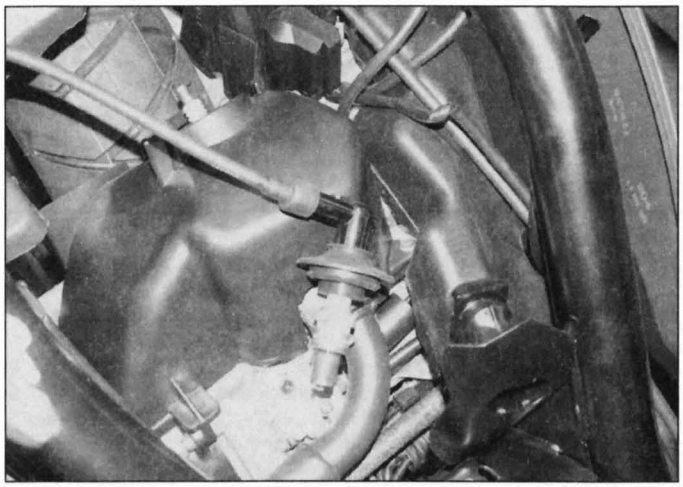
7.2a Trace the wiring from the automatic choke unit . . .



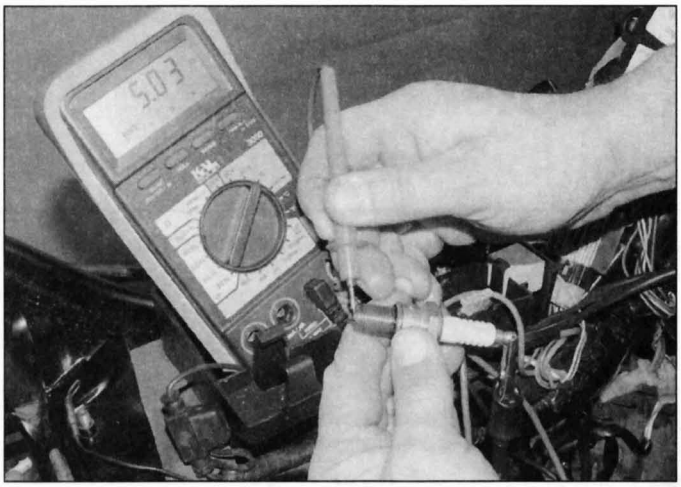
7.2b . . . and disconnect it at the connectors



7.4 Choke resistor is mounted behind the front panel



2.2 Ground (earth) the spark plug and operate the starter



2.4 Measuring the resistance of the spark plug

2 Ignition system – check

Warning: The energy levels in electronic systems can be very high. On no account should the ignition be switched on whilst the plug or plug cap is being held – shocks from the HT circuit can be most unpleasant. Secondly, it is vital that the engine is not turned over with the plug cap removed, and that the plug is soundly earthed when the system is checked for sparking. The ignition system components can be seriously damaged if the HT circuit becomes isolated.

1 As no means of adjustment is available, any failure of the system can be traced to failure of a system component or a simple wiring fault. Of the two possibilities, the latter is by far the most likely. In the event of failure, check the system in a logical fashion, as described below.

2 Disconnect the HT lead from the spark plug. Connect the lead to a new plug of the correct specification and lay the plug on the engine with the thread earthed (grounded) **(see illustration)**. If necessary, hold the spark plug with an insulated tool.

Warning: Do not remove the spark plug from the engine to perform this check – atomised fuel being pumped out of the open spark plug hole could ignite, causing severe injury!

3 Having observed the above precautions, turn the ignition switch ON and turn the engine over on the starter motor. If the system is in good condition a regular, fat blue spark should be evident between the plug electrodes. If the spark appears thin or yellowish, or is non-existent, further investigation will be necessary. Before proceeding further, turn the ignition OFF.

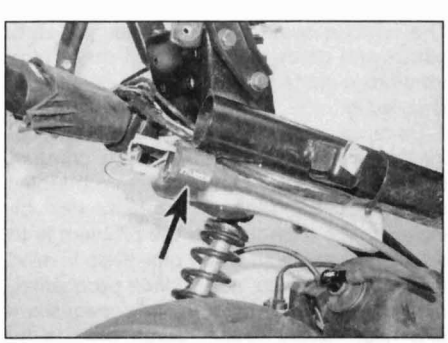
Caution: The ignition system is designed for the combined resistance of the spark plug (5 K-ohms) and spark plug cap (5 K-ohms). Under no circumstances should a spark testing tool be used on this system.

4 Spark plug resistance can be checked with a multimeter. Remove the plug and clean the electrodes (see Chapter 1). Set the multimeter to the K-ohms scale and connect the meter probes to the terminal at the top of the plug and the central electrode **(see illustration)**. If the reading is not within the range shown in the Specifications, the plug is defective and must be replaced with a new one.

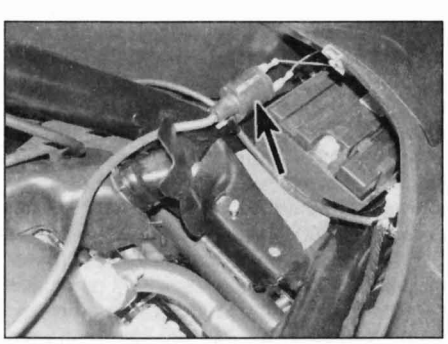
5 Ignition faults can be divided into two categories, namely those where the ignition system has failed completely, and those which are due to a partial failure. The likely faults are listed below, starting with the most probable source of failure. Work through the list systematically, referring to the subsequent sections for full details of the necessary checks and tests. **Note:** *Before checking the following items ensure that the battery is fully charged and that all fuses are in good condition.*

- Loose, corroded or damaged wiring connections, broken or shorted wiring between any of the component parts of the ignition system (see Chapter 9).
- Faulty spark plug with dirty, worn or corroded plug electrodes, or incorrect gap between electrodes (see Chapter 1).
- Faulty HT coil or spark plug cap.
- Faulty ignition (main) switch (see Chapter 9).
- Faulty immobiliser (where fitted).
- Faulty source coil.
- Faulty pulse generator coil.
- Faulty CDI unit.

6 If the above checks don't reveal the cause of the problem, have the ignition system tested by a Peugeot dealer.



3.1a Location of the HT coil on Speedfight and Vivacity models



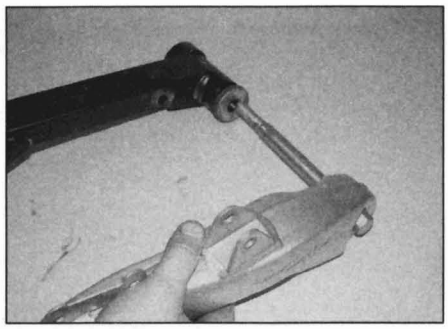
3.1b Location of the HT coil on Trekker models

3 HT coil and spark plug cap – check, removal and installation

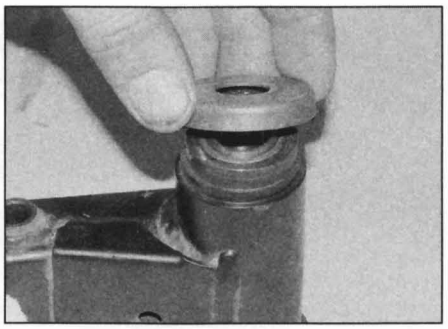
Check

1 On Speedfight and Vivacity machines the HT coil is mounted on the right-hand side of the frame behind the seat cowling **(see illustration)**. On Trekker machines the HT coil is mounted alongside the battery **(see illustration)**. Remove any body panels as required for access (see Chapter 7). Disconnect the battery negative (-ve) lead (see Chapter 9).

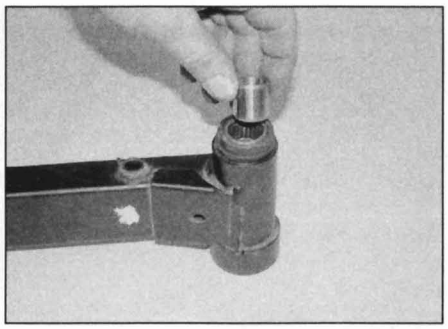
2 Pull the spark plug cap off the plug and inspect the cap, HT lead and coil for cracks and other damage.



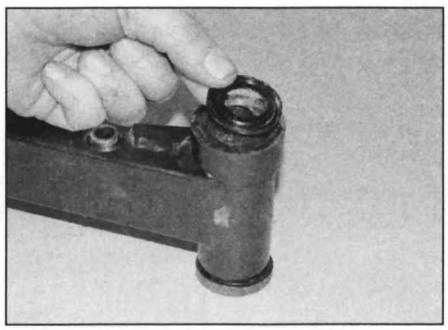
9.7 Withdraw the pivot bolt and arm from the suspension leg



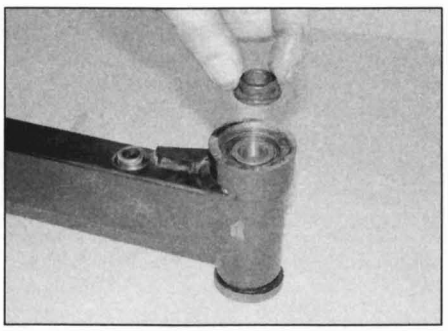
9.8a Remove the left-hand side dust cap and seal . . .



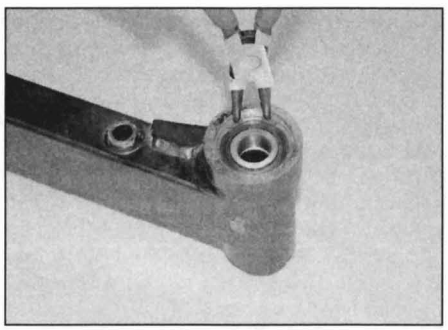
9.8b . . . and the needle bearing sleeve



9.9a Remove the right-hand side seal . . .



9.9b . . . and spacer



9.11a Remove the circlip . . .

suspension leg **(see illustration)**. The bolt is a press fit in the arm and should not be removed unnecessarily.

8 If bearings are fitted in the end of the suspension leg, remove the dust cap and seal from the left-hand side of the leg and remove the sleeve from inside the needle roller bearing **(see illustrations)**.

9 Carefully lever the seal from the right-hand side of the leg with a screwdriver, taking care not to damage it, and remove the spacer, noting how it fits **(see illustrations)**.

Inspection

10 Clean all components thoroughly, removing all traces of dirt, corrosion and grease. Inspect all components closely, looking for obvious signs of wear such as heavy scoring, or for damage such as cracks or distortion.

11 Check the condition of the caged ball bearing in the right-hand side of the suspension leg. The inner race should turn smoothly without any grating or roughness. If necessary, remove the bearing for further inspection. First remove the circlip retaining the bearing in the leg, then turn the leg over and support it on a block of wood. Use a metal rod (preferably a brass punch) inserted through the middle of the needle roller bearing to tap evenly around the outer race of the ball bearing **(see illustrations)**. The bearing spacer will come out with the bearing. The bearing should be almost silent when spun. If it grates or rattles it should be renewed.

12 Clean the needle roller bearing with a suitable solvent and dry it with compressed air. Inspect the surface of the rollers for wear and pitting. Apply a few drops of clean oil to the rollers and insert the sleeve. The sleeve should turn smoothly; if it does not, or if the rollers show signs of damage, a new bearing should be fitted. Note the position of the bearing before removing it, then drive it out with a metal rod (see Step 11). **Note:** *The needle roller bearing should only be removed if it is going to be renewed.*

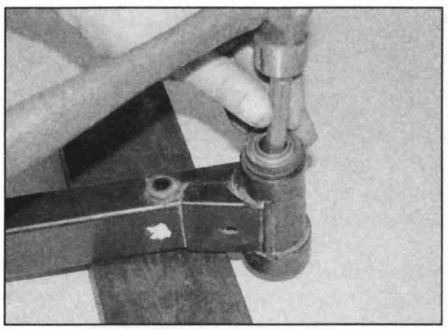
13 Inspect the pivot bolt for wear and remove any corrosion with steel wool. Check the bolt for straightness with a straight-edge. If the bolt is worn or bent, renew it.

14 Inspect the condition of the bearing seals and renew them if they show signs of wear or deterioration.

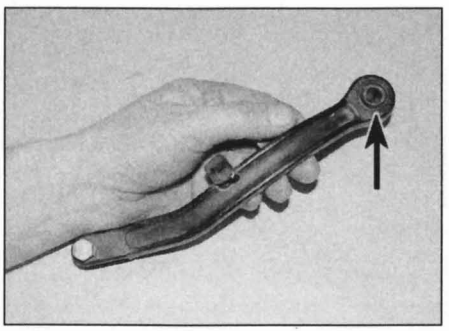
15 Inspect the bush in the caliper bracket torque arm **(see illustration)**. If it is a loose fit or shows signs of wear, renew it.

16 Inspect the shock absorber for obvious physical damage and the shock spring for looseness, cracks or signs of fatigue.

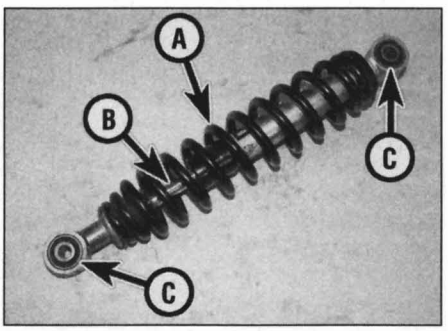
17 Inspect the damper rod for signs of bending, pitting and oil leakage and check the mountings at the top and bottom of the shock for wear or damage **(see illustration)**.



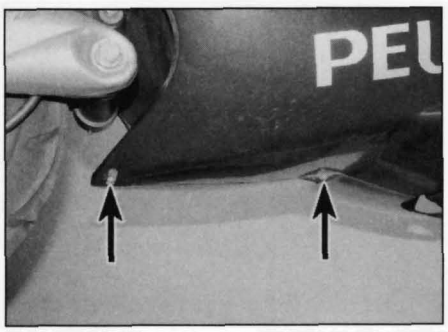
9.11b . . . then tap out the bearing



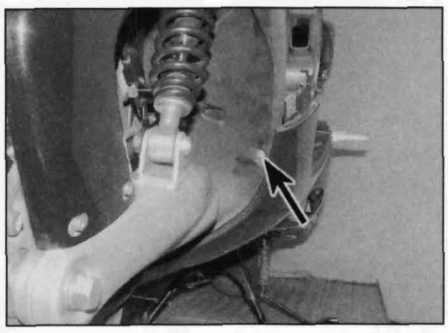
9.15 Inspect the bush (arrowed) in the torque arm



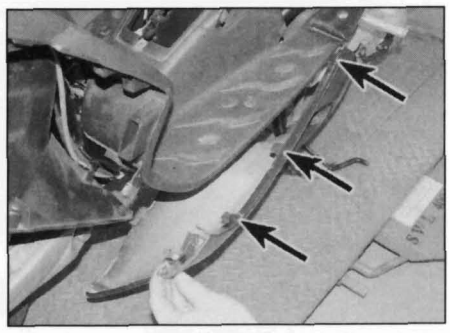
9.17 Inspect the shock spring (A), damper rod (B) and mountings (C)



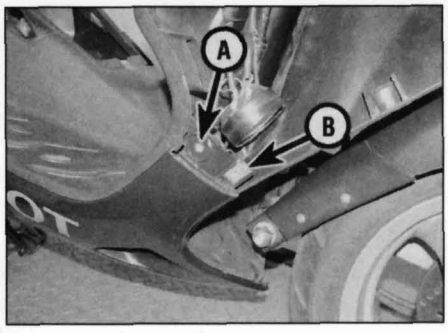
6.27 Belly panels are joined on the lower edge



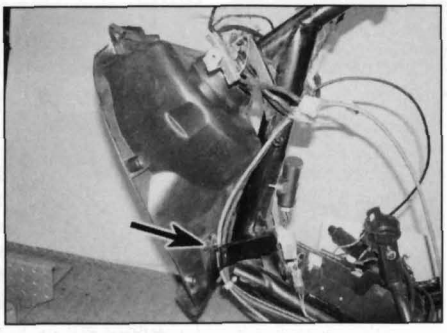
6.29 Screw secures belly panel to mudflap



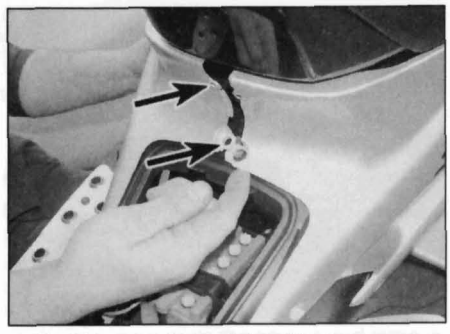
6.30 Tabs locate in side of floor panel



6.31 Ensure U-clips are in place on frame (A) and belly panel (B)



6.32 Mudflap is supported by frame lugs on both sides



6.34 Side panels are joined by two screws

30 Tabs along the top edge of the belly panel fit into slots along the side of the floor panel. Lift the panel off carefully to avoid damaging the tabs **(see illustration)**.

31 Installation is the reverse of removal. Ensure the U-clips are in place on the frame bracket and fixing point on the belly panel **(see illustration)**.

Mudflap

32 The mudflap is secured by the assembly of front body panels and belly panels. Once the headlight panel, front side panels, kick panel and belly panels have been removed, remove the front suspension (see Chapter 6). If still attached, note the route of the speedometer cable and front brake hose through the mudflap, then lift the mudflap off the lugs on the frame and remove it **(see illustration)**. **Note:** *The mudflap is split at the front to facilitate fitting the speedometer cable and front brake hose.*

33 Installation is the reverse of removal. Ensure the speedometer cable and brake hose are correctly routed before installing the mudflap on the frame lugs.

Side panels

34 Remove the battery access panel (see Section 5) and undo the screws joining the two side panels above the battery compartment **(see illustration)**.

35 Undo the two screws securing the side panel to the floor panel and the two screws securing the side panel to the rear cowling, then remove the panel **(see illustration)**.

36 Installation is the reverse of removal. Ensure the U-clips are in place on the floor panel and rear cowling fixing points.

Floor panel

37 Remove the belly panels and the side panels.

38 Undo the four flange bolts securing the floor panel to the frame and lift off the panel **(see illustration)**.

39 The floor panel trim, where fitted, is secured to the floor panel by three screws; undo the screws to remove the trim.

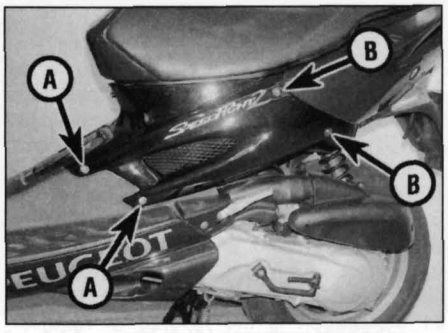
40 Installation is the reverse of removal. Ensure no cables, hoses or wiring are trapped between the panel and the frame before tightening the flange bolts.

Rear cowling

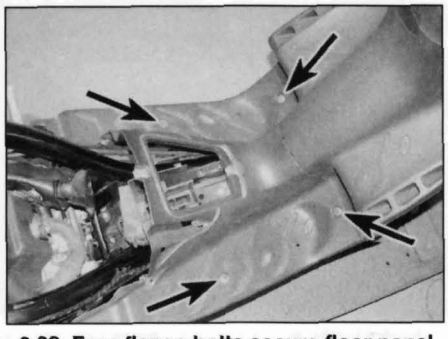
41 Lift out the tool tray **(see illustration 4.9)**. The seat lock is located in the left-hand side of the cowling; before removing the cowling, the lock must be disconnected (see Section 4).

42 Undo the screws securing the cowling to the side panels **(see illustration 6.35)** and to the rear mudguard **(see illustration)**.

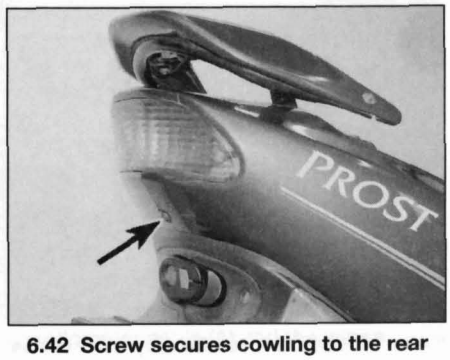
43 Undo the screws securing the cowling to



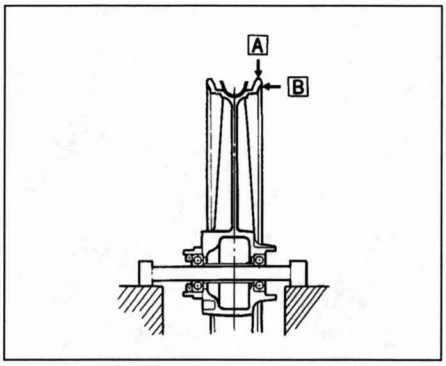
6.35 Screws secure the side panel to the floor (A) and rear cowling (B)



6.38 Four flange bolts secure floor panel



6.42 Screw secures cowling to the rear mudguard



12.2 Check the wheel for radial (out-of-round) runout (A) and axial (side-to-side) runout (B)

the brake cable from the underside of the lever as you remove it.

2 Installation is the reverse of removal. Apply grease to the pivot bolt shank and the contact areas between the lever and its bracket, and to the brake cable nipple (where applicable).

12 Wheels – inspection and repair

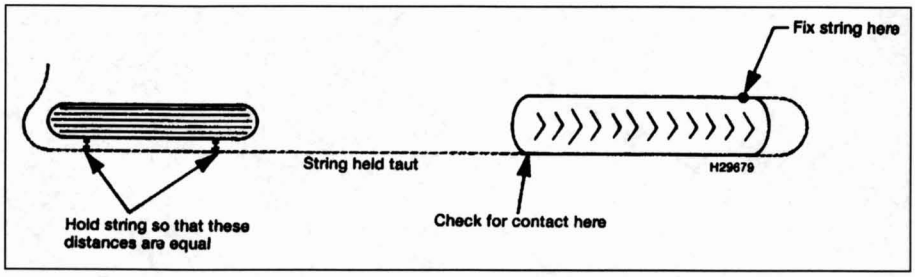
1 In order to carry out a proper inspection of the wheels, it is necessary to support the scooter upright so that the wheel being inspected is raised off the ground. Clean the wheels thoroughly to remove mud and dirt that may interfere with the inspection procedure or mask defects. Make a general check of the wheels (see Chapter 1) and tyres (see *Daily (pre-ride) checks*).

2 Attach a dial gauge to the suspension (front) or the transmission casing (rear) with the tip of the gauge touching the side of the rim **(see illustration)**. Spin the wheel slowly and check the axial (side-to-side) runout of the rim, then compare the result with the specifications at the beginning of this Chapter.

3 In order to accurately check radial (out-of-round) runout with the dial gauge, the wheel should be removed from the machine, and the tyre from the wheel. With the axle clamped in a vice or jig and the dial gauge positioned on the top of the rim, the wheel can be rotated to check the runout.

4 An easier, though slightly less accurate, method is to attach a stiff wire pointer to the front suspension or transmission casing with the end of the pointer a fraction of an inch from the edge of the wheel rim where the wheel and tyre join. If the wheel is true, the distance from the pointer to the rim will be constant as the wheel is rotated. **Note:** *If wheel runout is excessive, check the wheel bearings very carefully before renewing the wheel (see Section 16).*

5 The wheels should also be visually inspected for cracks, flat spots on the rim and other damage. Look very closely for dents in the area where the tyre bead contacts the rim. Dents in this area may prevent complete sealing of the tyre against the rim, which leads to deflation of the tyre over a period of time. If damage is evident, or if runout is excessive, the wheel will have to be renewed. Never attempt to repair a damaged cast alloy wheel.



13.4 Wheel alignment check using string

13 Wheels – alignment check

1 Misalignment of the wheels can cause strange and potentially serious handling problems and will most likely be due to bent frame or suspension components as the result of an accident. If the frame or suspension are at fault, repair by a frame specialist or replacement with new parts are the only options.

2 To check wheel alignment you will need an assistant, a length of string or a perfectly straight piece of wood and a ruler. A plumb bob or spirit level for checking that the wheels are vertical will also be required. Support the scooter in an upright position on its stand.

3 If a string is used, have your assistant hold one end of it about halfway between the floor and the rear axle, with the string touching the back edge of the rear tyre sidewall.

4 Run the other end of the string forward and pull it tight so that it is roughly parallel to the floor. Slowly bring the string into contact with the front sidewall of the rear tyre, then turn the front wheel until it is parallel with the string. Measure the distance (offset) from the front tyre sidewall to the string **(see illustration)**. **Note:** *Where the same size tyre is fitted front and rear, there should be no offset.*

5 Repeat the procedure on the other side of the machine. The distance from the front tyre sidewall to the string should be equal on both sides.

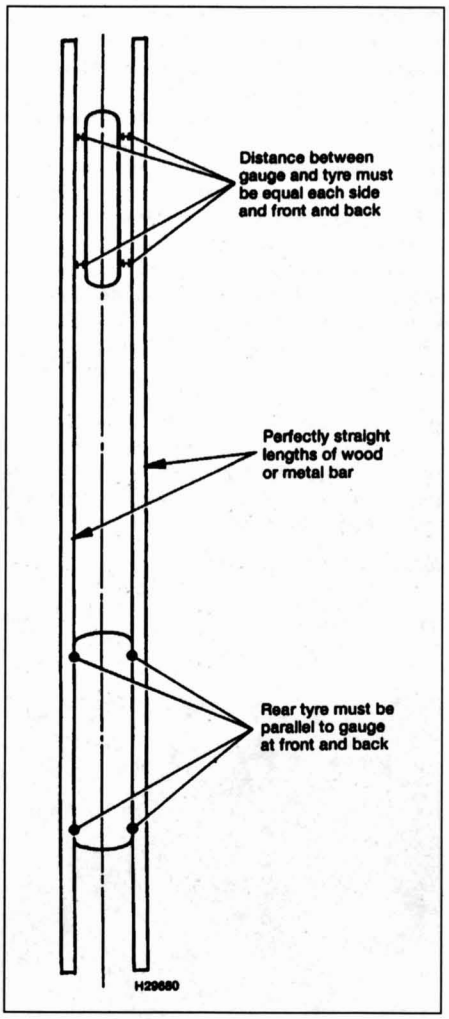
6 As previously mentioned, a perfectly straight length of wood or metal bar may be substituted for the string **(see illustration)**.

7 If the distance between the string and tyre is greater on one side, or if the rear wheel appears to be out of alignment, have your machine checked by a Peugeot dealer.

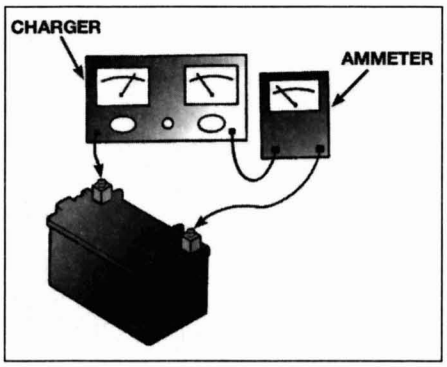
8 If the front-to-back alignment is correct, the wheels still may be out of alignment vertically.

9 Using a plumb bob or spirit level, check the rear wheel to make sure it is vertical. To do this, hold the string of the plumb bob against the tyre upper sidewall and allow the weight to settle just off the floor. If the string touches both the upper and lower tyre sidewalls and is perfectly straight, the wheel is vertical. If it is not, adjust the stand by inserting spacers under its feet until it is.

10 Once the rear wheel is vertical, check the front wheel in the same manner. If both wheels are not perfectly vertical, the frame and/or major suspension components are bent.



13.6 Wheel alignment check using a straight edge



4.3 If the charger has no built-in ammeter, connect one in series as shown. DO NOT connect the ammeter between the battery terminals or it will be ruined

13 If battery condition is suspect, connect the multimeter to the battery terminals as before (see Step 12), turn the ignition ON and press the starter button. If the meter reading drops below 8 volts a new battery is required.

Inspection and maintenance – maintenance-free battery

14 Later models are fitted with a maintenance-free battery, either a lead-acid type or gel type. Inspect the terminals and case as for a conventional battery (see Steps 8 to 10). If the machine is not used for long periods of time, disconnect the leads from the battery terminals and charge the battery periodically (see Section 4).

15 Battery condition can be assessed as for a conventional battery (see Steps 12 and 13).

4 Battery – charging

Caution: Be extremely careful when handling or working around the battery. The electrolyte is very caustic and an explosive gas (hydrogen) is given off when the battery is charging.

1 Ensure the charger is suitable for charging a 12V battery.

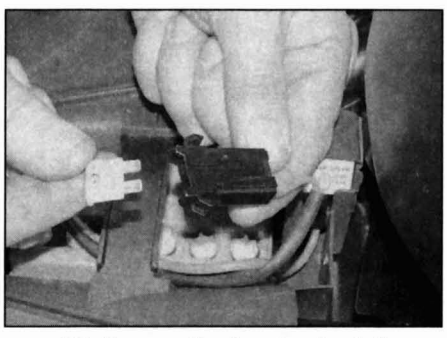
2 Remove the battery (see Section 3). Connect the charger to the battery **BEFORE** switching the charger ON. Make sure that the positive (+ve) lead on the charger is connected to the positive (+ve) terminal on the battery, and the negative (-ve) lead is connected to the negative (-ve) terminal.

3 Peugeot recommend that a discharged battery is charged at a maximum rate of 0.5 amps for 5 to 10 hours. Exceeding this figure can cause the battery to overheat, buckling the plates and rendering it useless. Few owners will have access to an expensive current controlled charger, so if a normal domestic charger is used check that after a possible initial peak, the charge rate falls to a safe level **(see illustration)**. If the battery becomes hot during charging **STOP**. Further charging will cause damage. **Note:** *In emergencies the battery can be charged at a higher rate of around 5.0 amps for a period of 30 minutes. However, this is not recommended and the low amp charge is by far the safer method of charging the battery.*

4 When charging a maintenance-free battery, make sure that you use a regulated battery charger. If using a constant voltage charger, ensure that the voltage does not exceed 15.2V otherwise the battery could be ruined.

5 If the recharged battery discharges rapidly if left disconnected it is likely that an internal short caused by physical damage or sulphation has occurred. A new battery will be required. A sound item will tend to lose its charge at about 1% per day.

6 Install the battery (see Section 3).



5.1 Remove the fuse to check it

5 Fuse – check and replacement

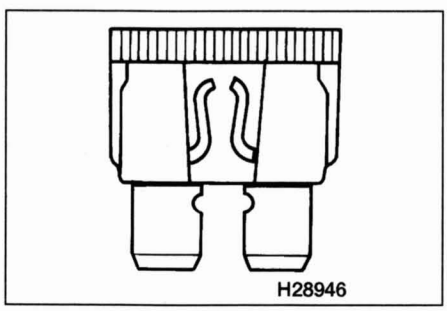
1 The electrical system is protected by a fuse which is located in a holder next to the battery. Pull the fuse out of its holder to check it visually **(see illustration)**.

2 A blown fuse is easily identified by a break in the element **(see illustration)**. The fuse is clearly marked with its rating and must only be replaced by a fuse of the correct rating (see Specifications at the beginning of this Chapter). It is advisable to carry a spare fuse on the scooter at all times.

Warning: Never put in a fuse of a higher rating or bridge the terminals with any other substitute, however temporary it may be. Serious damage may be done to the circuit, or a fire may start.

3 If the fuse blows, be sure to check the wiring circuit very carefully for evidence of a short-circuit. Look for bare wires and chafed, melted or burned insulation. If the fuse is renewed before the cause is located, the new fuse will blow immediately.

4 Occasionally the fuse will blow or cause an open-circuit for no obvious reason. Corrosion of the fuse ends and fuseholder terminals may occur and cause poor fuse contact. If this happens, remove the corrosion with a wire brush or steel wool, then spray the fuse end and fuseholder terminals with electrical contact cleaner.



5.2 A blown fuse can be identified by a break in the element

6 Lighting system – check

1 The alternator provides power for operation of the headlight, rear light, brake light, turn signal lights and instrument cluster lights. The engine must be running for any of these to work. If none of the lights work, always check the alternator lighting coil before proceeding (see Section 30). Also, check the condition of the lighting resistor (see Step 23).

Headlight

2 If the headlight fails to work, first check the bulb and the terminals in the bulbholder or the bulb wiring connector (see Section 7). Next check for voltage on the supply side of the bulbholder or wiring connector with a test light or multimeter. Refer to *Wiring Diagrams* at the end of this Chapter, then connect the negative (-ve) probe of the multimeter to earth (ground) and the positive (+ve) probe to first the high beam connector terminal (yellow/blue wire) and then the low beam connector terminal (white wire) with the engine running and light switch ON. Don't forget to select either high or low beam at the handlebar switch while conducting this test. Turn the engine OFF.

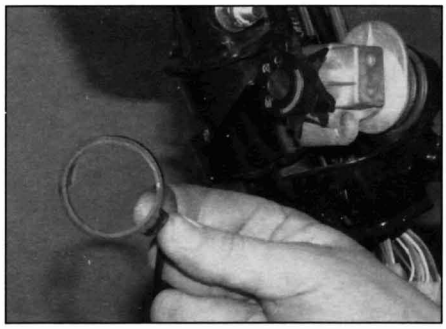
3 If no voltage is indicated at either terminal, check the wiring between the bulbholder or wiring connector and the light switch, then check the switch (see Section 22).

4 If voltage is indicated, check for continuity between the green wire terminal and earth (ground). If there is no continuity, check the earth (ground) circuit for a broken or poor connection.

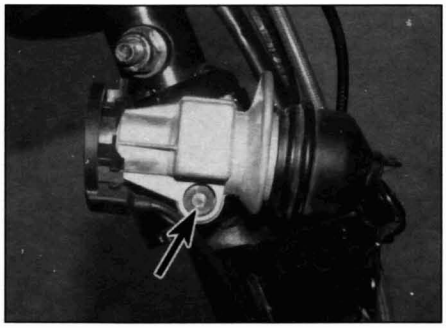
5 On Speedfight 2 models, check the terminals in the headlight unit wiring connector **(see illustration)**.

Sidelight (where fitted)

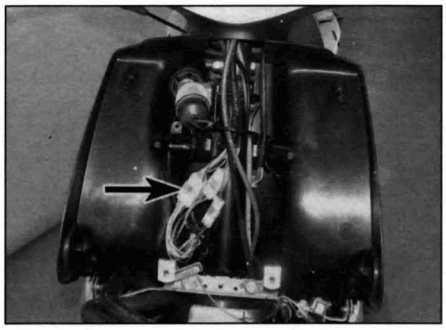
6 If the sidelight fails to work, first check the bulb and the terminals in the bulbholder (see Section 7). Next check for voltage on the supply side of the bulbholder (brown wire) with the engine running and light switch in the 'sidelights' position. Turn the engine OFF.



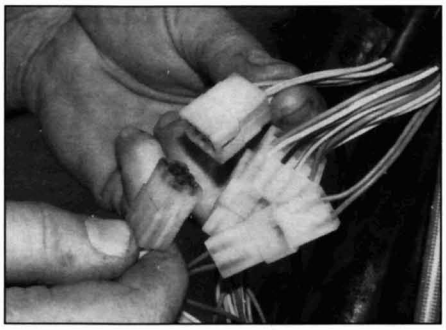
21.4 Unclip the transponder aerial



21.5 Ignition switch is secured by a shear bolt (arrowed)



22.3a Trace the wiring to the connectors . . .



22.3b . . . and disconnect them to test the switches

fitted. On machines built before that date this may not be possible and a new ignition immobiliser may have to be fitted when the switch is renewed – check with a Peugeot dealer.

Removal

4 Disconnect the battery negative (-ve) lead and the switch wiring connector (see Step 1). Unclip the immobiliser transponder aerial (where fitted) from the front of the switch **(see illustration)**.

5 The switch is secured to the frame by a shear bolt **(see illustration)**. To remove the bolt, drill off the bolt head, then remove the switch. The threaded section of the bolt can then be unscrewed with pliers.

Installation

Note: *A new shear-head bolt will be required.*

6 Installation is the reverse of removal. Operate the key to ensure the steering lock mechanism is correctly aligned with the frame and steering stem before tightening the new shear-head bolt – tighten the bolt until its head snaps off.

7 Reconnect the battery negative (-ve) lead once all electrical connections have been made to the switch.

22 Handlebar switches – check

1 Generally speaking, the switches are reliable and trouble-free. Most problems, when they do occur, are caused by dirty or corroded contacts, but wear and breakage of internal parts is a possibility that should not be overlooked when tracing a fault. If breakage does occur, the entire switch and related wiring harness will have to be renewed as individual parts are not available.

2 The switches can be checked for continuity using a multimeter or test light and battery. Always disconnect the battery negative (-ve) lead, which will prevent the possibility of a short circuit, before making the checks.

3 Remove the handlebar covers and front or headlight panel as necessary to trace the wiring from the switch in question back to its connector (see Chapter 7). Disconnect the relevant wiring connector **(see illustrations)**.

4 Check for continuity between the terminals of the switch wiring with the switch in the various positions (e.g. switch off – no continuity, switch on – continuity) referring to the *Wiring Diagrams* at the end of this Chapter.

5 If the checks indicate a problem exists, refer to Section 23, separate the switch housing and spray the switch contacts with electrical contact cleaner. If they are accessible, the contacts can be scraped clean carefully with a knife or polished with crocus cloth. If switch components are damaged or broken, it will be obvious when the switch is disassembled.

6 Clean the inside of the switch body thoroughly and smear the contacts with silicon grease before reassembly

23 Handlebar switches – removal and installation

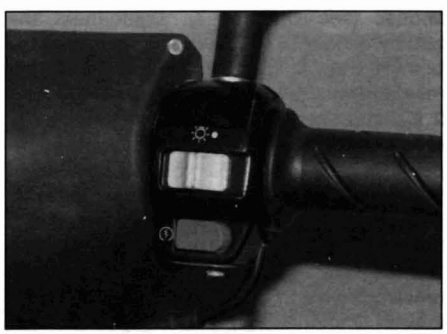
Removal

1 Remove the handlebar covers and front or headlight panel as necessary to trace the wiring from the switch in question back to its connector (see Chapter 7). Disconnect the relevant wiring connector **(see illustration 22.3b)**.

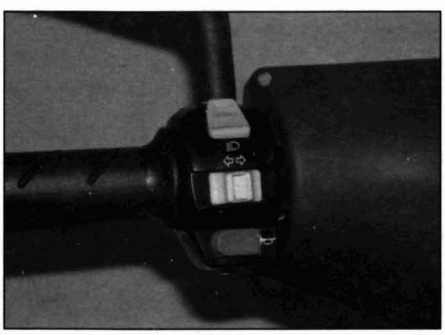
2 The right-hand switch housing is integral with the throttle twistgrip housing **(see illustration)**. Undo the two screws securing the two halves of the housing together, then remove the screws and lift the switch housing off the handlebar **(see illustration)**. **Note:** *It is not necessary to displace the throttle twistgrip.*

3 On machines fitted with a rear disc brake, undo the two screws securing the two halves of the left-hand housing together, then remove the screws and lift the switch housing off the handlebar **(see illustration 23.2c)**.

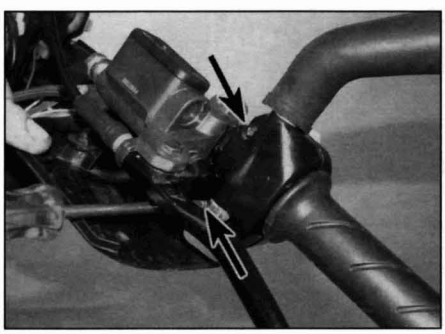
4 On machines fitted with a rear drum brake, the left-hand switch housing incorporates the brake lever. Undo the two screws securing the



23.2a Switch mechanism is in the rear half of the right . . .



23.2b . . . and left-hand switch housing



23.2c Undo the two screws from the front of the housing

Contents

1 Engine doesn't start or is difficult to start

- ☐ Starter motor doesn't rotate
- ☐ Starter motor rotates but engine does not turn over
- ☐ Starter works but engine won't turn over (seized)
- ☐ No fuel flow
- ☐ Engine flooded
- ☐ No spark or weak spark
- ☐ Compression low
- ☐ Stalls after starting
- ☐ Rough idle

2 Poor running at low speed

- ☐ Spark weak
- ☐ Fuel/air mixture incorrect
- ☐ Compression low
- ☐ Poor acceleration

3 Poor running or no power at high speed

- ☐ Firing incorrect
- ☐ Fuel/air mixture incorrect
- ☐ Compression low
- ☐ Knocking or pinking
- ☐ Miscellaneous causes

4 Overheating

- ☐ Engine overheats
- ☐ Firing incorrect
- ☐ Fuel/air mixture incorrect
- ☐ Compression too high
- ☐ Engine load excessive
- ☐ Lubrication inadequate
- ☐ Miscellaneous causes

5 Transmission problems

- ☐ No drive to rear wheel
- ☐ Vibration
- ☐ Poor performance
- ☐ Clutch not disengaging completely

6 Abnormal engine noise

- ☐ Knocking or pinking
- ☐ Piston slap or rattling
- ☐ Other noise

7 Abnormal frame and suspension noise

- ☐ Front end noise
- ☐ Shock absorber noise
- ☐ Brake noise

8 Excessive exhaust smoke

- ☐ White/blue smoke (two-stroke engines)
- ☐ Black smoke
- ☐ Brown smoke

9 Poor handling or stability

- ☐ Handlebar hard to turn
- ☐ Handlebar shakes or vibrates excessively
- ☐ Handlebar pulls to one side
- ☐ Poor shock absorbing qualities

10 Braking problems – disc brakes

- ☐ Brakes are ineffective
- ☐ Brake lever pulsates
- ☐ Brakes drag

11 Braking problems – drum brakes

- ☐ Brakes are ineffective
- ☐ Brake lever pulsates
- ☐ Brakes drag

12 Electrical problems

- ☐ Battery dead or weak
- ☐ Battery overcharged

1 Engine doesn't start or is difficult to start

Starter motor doesn't rotate

- ☐ Fuse blown. Check fuse and starter circuit (Chapter 9).
- ☐ Battery voltage low. Check and recharge battery (Chapter 9).
- ☐ Starter motor defective. Make sure the wiring to the starter is secure. Make sure the starter relay clicks when the start button is pushed. If the relay clicks, then the fault is in the wiring or motor.
- ☐ Starter relay faulty. Check it (Chapter 9).
- ☐ Starter switch on handlebar not contacting. The contacts could be wet, corroded or dirty. Disassemble and clean the switch (Chapter 9).
- ☐ Wiring open or shorted. Check all wiring connections and harnesses to make sure that they are dry, tight and not corroded. Also check for broken or frayed wires that can cause a short to earth (see wiring diagram, Chapter 9).
- ☐ Ignition switch defective. Check the switch according to the procedure in Chapter 9. Replace the switch with a new one if it is defective.

Starter motor rotates but engine does not turn over

- ☐ Starter pinion assembly defective. Inspect and repair or renew (Chapter 2).
- ☐ Damaged pinion assembly or starter gears. Inspect and renew the damaged parts (Chapter 2).

Starter works but engine won't turn over (seized)

- ☐ Seized engine caused by one or more internally damaged components. Failure due to wear, abuse or lack of lubrication. Damage can include piston, cylinder, connecting rod, crankshaft and bearings. Refer to Chapter 2A or 2B for engine disassembly.

No fuel flow

- ☐ No fuel in tank.
- ☐ Check that the fuel hose is not trapped and that tank filler cap vent is clear.
- ☐ Fuel tap filter clogged. Remove the tap and clean it and the filter (Chapter 4).
- ☐ Fuel tap vacuum hose split or detached. Check the hose.
- ☐ Fuel tap diaphragm split. Renew the tap (Chapter 4).
- ☐ Fuel hose clogged. Remove the hose and carefully blow through it.
- ☐ Float needle valve or carburettor jets clogged. The carburettor should be removed and overhauled if draining the float chamber doesn't solve the problem.