

## Renewal

12 Remove the old spark plugs (see Steps 1 to 5). Prior to installation, ensure the new plugs are the correct type and recommended heat range (see *Specifications* at the beginning of this Chapter). Measure the gap between the electrodes and adjust it if necessary (see Step 8).

### 4 Fuel system



**Warning:** Petrol (gasoline) is extremely flammable, so take extra precautions when you work on any part of the fuel system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a natural gas-type appliance is present. If you spill any fuel on your skin, rinse it off immediately with soap and water. When you perform any kind of work on the fuel system, wear safety glasses and have a fire extinguisher suitable for a Class B type fire (flammable liquids) on hand.

### Check fuel hoses and system components

- 1 Remove the fuel tank (see Chapter 4) and check the tank, the fuel supply hose and the tank drain and breather hoses for damage and deterioration. In particular check that there are no leaks from the fuel hose or hose unions. Replace any hose that is cracked or deteriorated with a new one. Where appropriate, secure each new hose to its unions using new clips. Note that the fuel supply hose has integral seals within the unions on either end – if the seals are leaking a new hose will have to be fitted.
- 2 If the joint between the fuel pump mounting plate and the tank is leaking, ensure the mounting bolts are tightened to the specified torque setting (see Chapter 4). If the leak persists, remove the pump and fit a new gasket (see Chapter 4).
- 3 Inspect the joints between the fuel rail, the injectors and the throttle body. If there are any leaks, remove the fuel rail and fit new seals and O-rings to the injectors (see Chapter 4).

## Fuel filter

4 Cleaning and/or renewal of the fuel filter is advised after a particularly high mileage has been covered, although no interval is specified by Suzuki. It is also necessary if fuel starvation is suspected.

5 The filter is integral with the fuel pump. Remove the pump from the fuel tank and disassemble the unit to access the filter (see Chapter 4).

### 5 Engine oil and filter



## Oil change

**Warning:** Be careful when draining the oil, as the exhaust pipes, the engine, and the oil itself can cause severe burns.

- 1 Regular oil and filter changes are the single most important maintenance procedure you can perform on a motorcycle. The oil not only lubricates the internal parts of the engine, transmission and clutch, but it also acts as a coolant, a cleaner, a sealant, and a protector. Because of these demands, the oil takes a terrific amount of abuse and should be changed at the specified service interval. The oil filter should be changed with every third oil change.
- 2 Before changing the oil, warm up the engine so the oil will drain easily.
- 3 Support the bike in an upright position on level ground and place a drain tray below the engine. Unscrew the oil filler cap from the clutch cover to vent the crankcase and to act as a reminder that there is no oil in the engine (see illustration).
- 4 Next, unscrew the oil drain plug from the sump on the bottom of the engine and allow the oil to flow into the drain tray (see illustration). Note the magnet inside the plug and clean off any metal swarf. Check the condition of the sealing washer on the drain plug and fit a new one if it is damaged or worn – you will probably need to cut the old one off. It is good practice to fit a new washer whenever the drain plug is removed.

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To help determine whether any abnormal or excessive engine wear is occurring, place a strainer between the engine and the drain tray so that any debris in the oil is filtered out and can be examined. If there are flakes or chips of metal in the oil or on the drain plug magnet, then something is drastically wrong internally and the engine will have to be disassembled for inspection and repair. If there are pieces of fibre-like material in the oil, the clutch is wearing excessively and should be checked.

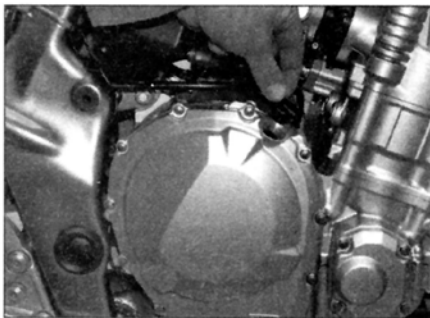
5 When the oil has completely drained, fit the plug into the sump, using a new sealing washer if necessary, and tighten it to the torque setting specified at the beginning of this Chapter. Avoid overtightening, as damage to the sump will result.

6 Refill the engine with the correct amount and type of oil (see *Specifications*). With the motorcycle supported upright on level ground, the oil level should lie between the 'F' and 'L' lines on the inspection window (see illustration). Install the filler cap. Start the engine and let it run for two or three minutes (make sure that the oil pressure warning display and the warning light extinguish after a few seconds). Shut it off, wait a few minutes, then recheck the oil level. If necessary, add more oil to bring the level up to the 'F' line on the window. Check that there are no leaks from around the drain plug.

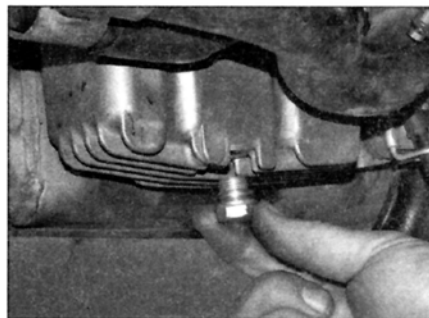
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Saving a little money on the difference between good and cheap oils won't pay off if the engine is damaged as a result.

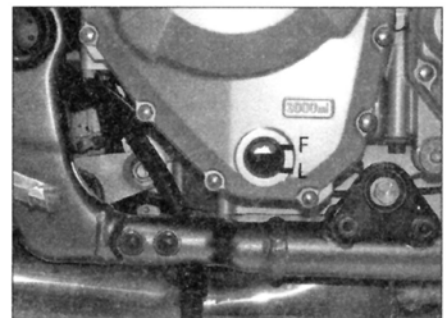
7 The oil drained from the engine should be disposed of properly. Check with your local refuse disposal company, disposal facility or environmental agency to see whether they will accept the used oil for recycling. Don't pour used oil into drains or onto the ground.



5.3 Unscrew the oil filler cap



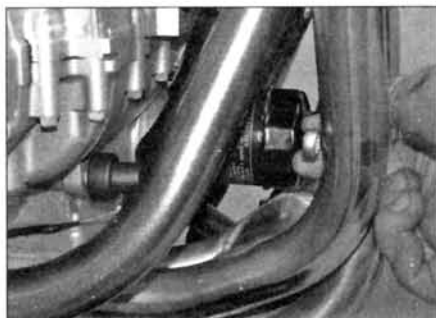
5.4 Unscrew the oil drain plug



5.6 Oil level should lie between the 'F' and 'L' lines



5.10a Use an oil filter adapter . . .



5.10b . . . to unscrew the oil filter



5.12 Screw the new filter on by hand

## Oil and oil filter change

**Special tool:** A filter removing tool is necessary for this job.



**Warning:** Be careful when draining the oil, as the exhaust pipes, the engine, and the oil itself can cause severe burns.

8 On GSX650F models, remove the fairing side panels (see Chapter 7).

9 Drain the engine oil as described in Steps 2 to 5.

10 Now place the drain tray below the oil filter, which is on the front of the engine behind the exhaust system. Clean the crankcase or oil cooler around the filter, then unscrew the filter using a filter adapter (Suzuki service tool Part No. 09915-40610/40611, or an aftermarket alternative) (see illustrations).

**Note:** There is not much clearance for using certain aftermarket tools – on the machine used to illustrate this procedure there was only sufficient clearance to engage a ring spanner on the adapter drive.

11 Tip any residual oil into the drain tray. Clean any oil off the exhaust pipes to prevent smoking when the engine is started.

12 Smear clean engine oil onto the seal of the new filter, then screw it onto the engine by hand until the seal just seats (see illustration). Using a filter adapter (DO NOT use a strap or chain type removing tool), tighten the filter a further two full turns. **Note:** Although Suzuki specify two full turns, in our experience the filter became very tight before this, and tightening it further would possibly have damaged the seal or the filter. It is best to use

your own judgement should the filter become very tight – the most important consideration is that the filter does not leak. If the exhaust system has been removed a torque wrench can be applied to the adapter – a tightening torque is given in the Specifications at the beginning of this Chapter.

13 Refill the engine with oil (see Step 6).

## 6 Throttle cables



1 Make sure the throttle twistgrip rotates easily from fully closed to fully open with the front wheel 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 cables (see Chapter 4) and lubricate them (see Section 12). If the inner cables still do not run smoothly in the outer cables, replace them with new ones.

3 With the cables removed, check that the twistgrip turns smoothly around the handlebar – dirt combined with a lack of lubrication can cause the action to be stiff. Remove, clean and lightly grease the twistgrip pulley and the inside of the twistgrip housing if necessary.

**Note:** To remove the twistgrip it will first be necessary to remove the right-hand bar end – see Chapter 5, Section 5).

4 Install the lubricated or new cables, making sure they are correctly routed (see Chapter 4). If this fails to improve the operation of the

throttle, the fault could lie in the throttle bodies. Remove the air filter housing and check the action of the throttle pulley (see Chapter 4).

5 With the throttle operating smoothly, check for a small amount of freeplay in the opening (accelerator) cable, measured in terms of the amount of twistgrip rotation before the throttle opens, and compare the amount to that listed in this Chapter's Specifications (see illustration). If it is incorrect, adjust the cables as follows.

6 Loosen the locking on the accelerator (throttle opening) cable and turn the adjuster until the specified amount of freeplay is obtained – turn the adjuster out to reduce freeplay and in to increase freeplay (see illustration). Retighten the locking.

7 If the cable cannot be adjusted as specified, install a new one (see Chapter 4).



**Warning:** Turn the handlebars all the way through their travel with the engine idling. Idle speed should not change. If it does, the cables may be routed incorrectly. Correct this condition before riding the bike.

8 Check that the throttle twistgrip operates smoothly and snaps shut quickly when released.

## 7 Clutch system



1 Check the fluid level in the reservoir (see Pre-ride checks).

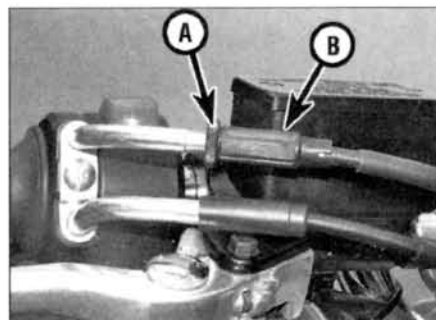
2 Check that the clutch lever operates smoothly and easily. If the lever is stiff, remove it from its bracket (see Chapter 5) and check for damage or distortion, and remedy as necessary. Clean and lubricate the pivot bolt and contact areas (see Section 12).

3 All models covered in this manual are fitted with an hydraulic clutch. If there is evidence of air in the system (spongy feel to the lever, difficulty in engaging gear, drag when in gear) bleed the system (see Chapter 2).

4 If the clutch action is stiff or sticky, follow the procedure in Chapter 2 and overhaul the release cylinder located on the engine



6.5 Throttle cable freeplay is measured in terms of twistgrip rotation



6.6 Accelerator cable locking (A) and adjuster (B)