



## Troubleshooting Procedure

### **TROUBLESHOOTING PROCEDURE**

1. Check the fuel quantity
2. Check the air filter - Throttle body
3. Check the spark plug
4. Check with K-scan:
  - i. Self diagnosis
  - ii. Tps Adjustment
  - iii. Check actuators
  - iv. Check the Kds version
5. Check the cylinder compression (9-12 Kg/cm<sup>2</sup>)
6. Check the alternator pin
7. Check crankshaft cover sealing
8. Check fuel pressure (3,5 Kg/cm<sup>2</sup>)
9. Check reed valve
10. Check cylinder head gasket
11. Check cylinder base gasket
12. Check the Alternator current generator
13. Call the factory



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### 1. Check the amount of Fuel

It is quite common because of our tank's design to guess that we have enough gas to start the motorcycle.

### 2. Check the air filter - Throttle body

Due to a dirty air filter, the air by-pass pre-drilled hole can get clogged, which will cause a loss on idle performance. This will cause an overly rich condition which could affect the sparkplug life and bad starting performance.

### 3. Check the spark plug

It is very common with older versions of KDS files to obtain certain conditions of enrichment in the air-fuel ratio and this, added to a poor calibration of the fuel - oil ratio mix by the user, can cause a lot of carbon deposits on the electrode of the spark plug, causing mis firing and poor performance. Also by observing the nature of the deposits, we can guess other problems related to other engine's malfunctions, like air leaks, poor reed valve sealing, poor crankcase gasket sealing, ....

### 4. Check with K-scan

We must connect the interface through the specified connector on the bike, disconnect the condensator-capacitor from the wiring of the bike, supply 12v regulated voltage through the condensator-capacitor connector to the bike.

#### 4.1 Using the K-scan software

The first test that should be done is to diagnose faults present or stored in the memory of the ECU. To accomplish this task, use the icon with the exclamation mark in the top bar of tools (fig.1). With this function, we can check the error codes that are currently active on the ECU and those we had in the past (fig. 2). To clear the error codes which are stored on the historic memory, we must use the top menu



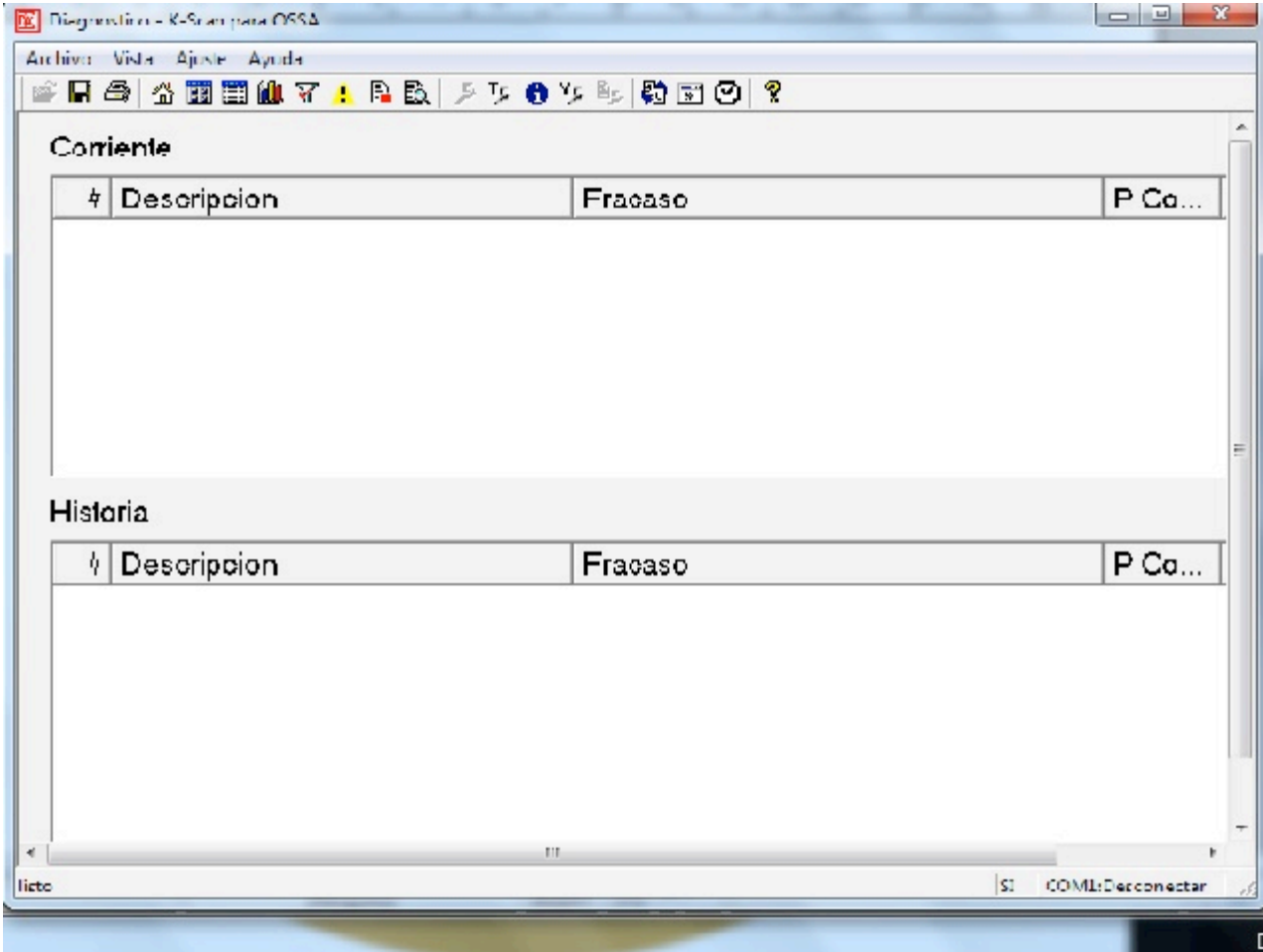
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icon (Fig.3). As soon as a present error is fixed, it won't affect performance on the next startup of the bike.



(Fig.1)

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(Fig. 2)



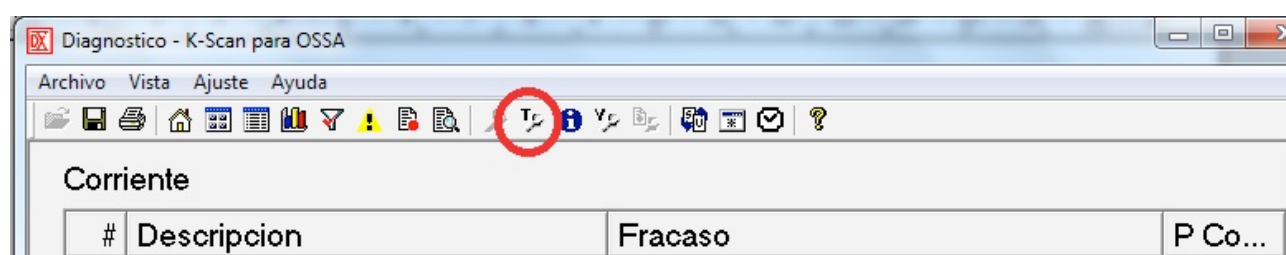
(Fig.3)

### 4. 2 TPS Adjustments

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In our EFI system it is very important to define the starting point of the throttle. For this purpose, we have the option "Throttle setting" of K-scan.

To proceed, we must click the icon in the toolbar (Fig.4) to access to the menu. Before making any adjustment, check that the throttle cable is free, otherwise you will not provide a good setting to the ECU.

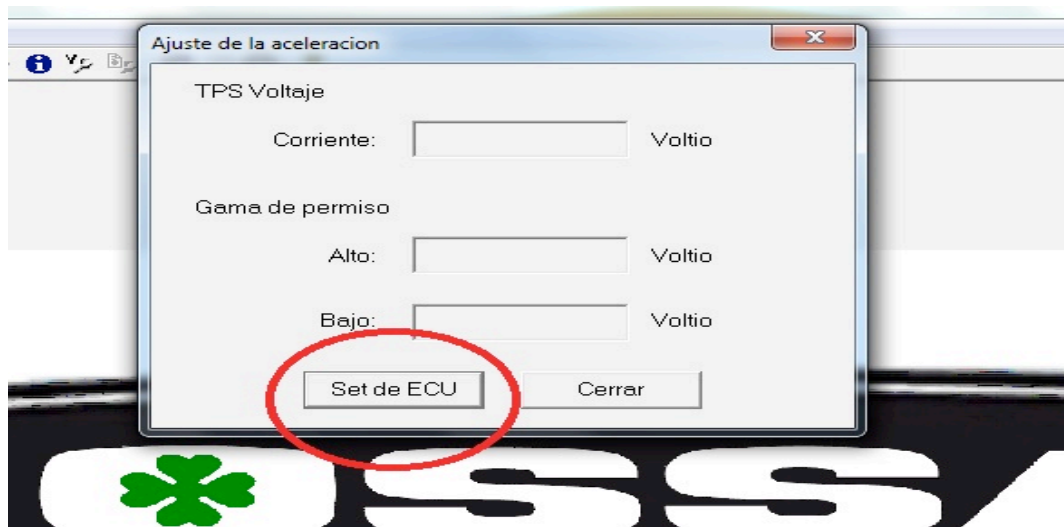


(Fig.4)

On the screen, we have an option labeled as 'Set to ECU " which is used for assigning the zero position of the throttle to the voltage value, which actually the ECU is reading from the sensor. (Fig. 5). Any error on the Tps setting, will offset ignition and injection timing, causing lack of performance, bad startability, and high fuel consumption, and it can also damage the engine. The standard value of TPS voltage is set at 0.6 V (0.6 V  $\pm$ 0.04 v).

To adjust the Tps correctly in case of manipulation by the user, we first must check the Idle, and forget about voltage readings. On a warmed up bike, the idle must be kept on a 1400 Rpm average value. We consider a warmed up bike, a bike that had the fan working for three times minimum. If this idle condition is not reached, we must set it through the throttle stop screw on the right side from riding position, on the tps. Before modifying the screw's position, first we must set the minimum voltage to the ECU with the computer as explained on the previous paragraph. After that we must use that screw to find the exact point of 1400 Rpm Idle. The next step is to stop the bike and set the throttle position to ECU again. After that, we must restart the bike and check that the idle is not affected by the resetting. If the idle is without specification, please repeat the previously mentioned steps until it gets stable after resetting the Tps value with the computer. Sometimes, it takes up to three or four times setting to get it right. Once we have reached the desired idle, we will work on the voltage reading. We must stop the bike, and modify the TPS sensor position, on the left side of the throttle body, to match our standard value. To do it, we must unscrew the fixing bolt of the sensor, and turn it clockwise or counterclockwise in order to find the 0,6 v reading on the throttle setting screen. Once we have this value on the screen, we must fix the retaining screw, and we must set that voltage to the ECU again, and restart the bike. If everything is done correct, this process is completed. The 0,6 voltage is for reference for guessing in further operations on the bike, if this system has any problem.

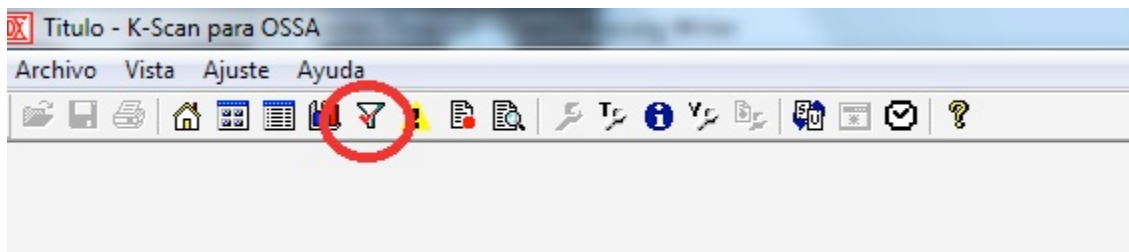
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(Fig.5)

### 4.3 Diagnose

By clicking on the icon (Fig. 6) a screen is opened in which we can trigger any electromechanical device of the motorcycle and check its functioning.



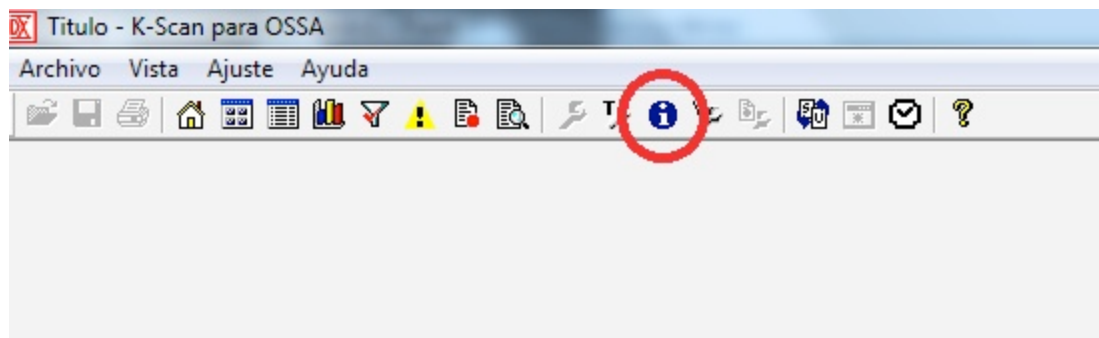
(Fig.6)

### 4.4 Version Software Checking

With the icon stamped with the letter "I" (Fig. 7) we can access to the system information screen, where we can check the actual version installed on the ECU. In case of any doubt about which is the latest version,

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you can contact the factory.



(Fig.7)

### 5 Verification of the cylinder compression

Once the sparkplug has been removed, we must screw a gauge on the cylinder head sparkplug's thread, and with 6 or 7 kickstarts at full throttle, we must have a reading of 9 -12 Kg/cm<sup>2</sup> on the gauge. In case this value is not at this range, we probably have trouble with cylinder or piston surface, or head gaskets.

### 6 Verification of the woodroof of the flywheel

A torn or broken woodroof, will offset all the ECU references about piston position, and will cause very big miscalculations, causing a very faulty operation. Replacing the woodroof will repair this condition. Slightly bent woodroofs makes a lot of a difference. If you have this trouble, please verify the crankshaft and flywheel's cone.

### 7 Checking crankshaft cover

Any residual oil on the flywheel cavity indicates that the crankshaft's cover is not sealing right. Verify the torque on the retaining screws, and on the oil seal of the crankshaft. If we have any leak on this system, we would have a rich condition. An excess of oil in the compression chamber, indicates that the crankshaft seal is in bad condition

### 8 Checking the fuel pump

With a fuel pressure gauge connected in "T" shape in the fuel line, we must obtain a value of  $3.5 \pm 0.3$  kg/cm<sup>2</sup> value. A value far from this reading shows that we have problems with the fuel filter and / or with the fuel pump itself.

### 9 Checking reed valve

If we don't have a good reed valve sealing, we could have a rich condition. Check reed valve end tips, and sealing to be in proper condition. A particular symptom of reed valve trouble is fuel smell on the air filter case



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because of blowby

### **10 Checking the cylinder head gasket**

Any remaining water in the spark plug tip indicates the failure of this element. Always verify cylinder head's surface to be absolutely flat and install new gaskets with abundant grease, and please respect the specified torque values

### **11 Checking the cylinder base gasket**

If inspecting the base of the cylinder you can see any oil leaking from the gasket, it's advisable to replace it in order to prevent air leakage on the engine. In magnesium crankcase, look up for breakage below the cylinder seating surface.

### **12 Checking alternator - Pick-up**

With K-scan you can check the electrical charging system's voltage. In case the voltage value is far from 12v, to guess if the problem comes from the regulator or from the alternator, if you provide 12v to the capacitor condensator plug, and the bike works perfect, then the problem located on the generator.

### **13 Call the factory!**

If you follow this guide but the problem persists, please contact our technical department who will try to