



## Base Setup Service Training

**This manual is written utilizing the 1.5M  
Electronic Control Unit (ECU).**

The purpose of this manual is to provide instructions for carrying out proper base setup of the motor- bike.

This manual will provide illustrations coupled with text to assist in clarification of the mechanical sequence required for disassembly, testing and assembly procedures for proper performance.

It is essential that technicians responsible for repairs know these details for the work to be carried out correctly.

This manual will work with the Weber injection-ignition system which is an "alpha/N" type which the engine r.p.m. and the throttle position are used to measure the quantity of air taken in, knowing the air quantity, the fuel quantity is measured according to the desired mixture ratio. Other sensors in the system allow the basic strategy to be adjusted under particular operating conditions.

The engine r.p.m. and the throttle angle make it possible to calculate the optimal spark advance for any operating conditions VIA the throttle position sensor (TPS).

The quantity of air taken in by each cylinder, per cycle, depends on the air density in the manifold on the single displacement and the volumetric efficiency. The volumetric efficiency is determined on the engine through out the operating range and is stored in a "map" in the Electronic Control Unit (ECU).

The injector control, per cylinder, is a "timed sequence" type control: this means that the two injectors are controlled according to the intake sequence, while each cylinder can start directly from the expansion stage up to the already begun



intake stage. The timing for the supply start is contained in the map inside the ECU.

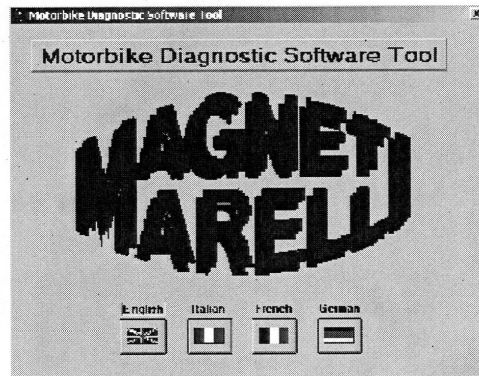
The ignition is an inductive discharge static type and the mapping of the spark advance stored in the ECU. The coils receive the commands from the ECU I.A.W. 15M which processes the spark advance through the power modules (incorporated in the ECU).

**The Weber Marelli 1.5 injection / ignition system main feature lies in the fact that it can be adjusted and diagnosed only through a special software. This can be ordered from Moto Guzzi NA P/N 00 97 97 15.**

The computer program is called "Motorbike Diagnostic Software Tool" (MDST) and can be installed on any PC (min requirements 486 DX2 33 Mhz).

This version (1.5) will run on Windows 95 and Windows 98. It will not run on Windows 2000 or Windows XP.

By connecting the PC with a special hardware key and cable (contained in 00 97 97 15) to a jack on the ECU, the software (MDST) allows the user to adjust the fuel injection and run system diagnostics.





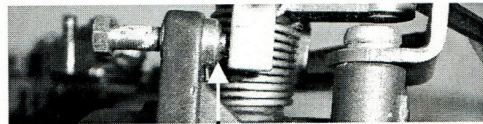
## Fuel Injection Setup Sequence (Baseline)

Note: There are two base setup procedures.  
The V11 California and The V11 Sport.

### **California Setup (Baseline):**

1. Ride bike to warm up engine. This is necessary in order to have the proper fuel/air mixture which is based on engine oil temperature.
2. Remove the throttle body covers (two 5.5 mm screws).
3. Disconnect **the L/H** plastic tie-rod from the throttle valve (butterfly valves).
4. On **both** throttle bodies : back off the butterfly positioning screw until the screw (using a 2.5 mm allen) no longer touches the butterfly valve arm.  
Make sure the butterfly valve is completely closed.

70-80° C





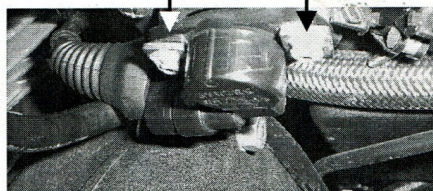
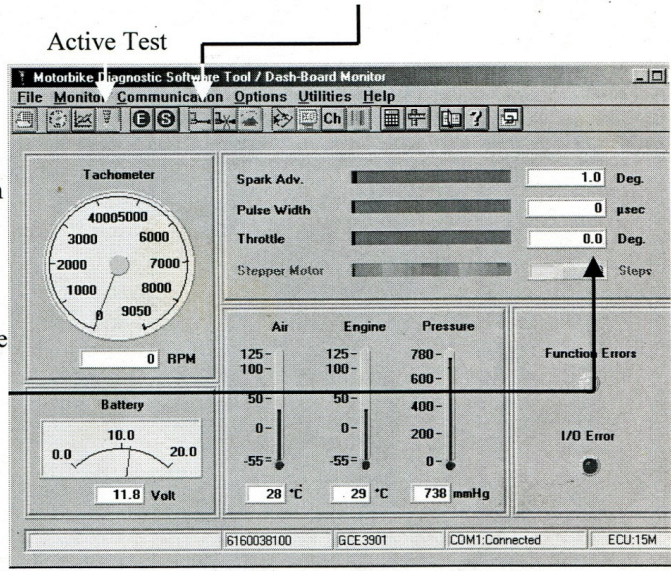
NOTE: Click on the connect icon with the key on.

- Next the TPS location must be set. This is done by using the Magneti Marelli Motorbike Diagnostic Software Tool (MDST). After connecting your computer to the ECU, turn the ignition switch to the on position. Launch the MDST and go to the "Dash-Board" screen.

- With the butterfly valves closed, notice the throttle angle in the MDST "Throttle", it should read 0.0

*150 millivolts*

Loosen the two torx screws (T20) and rotate the Throttle Position Sensor (TPS) until a throttle value is reading (flickering) between 0.0 and 0.2. Then tighten the two T20 screws and recheck the throttle angle, should read 0.0 or 0.2 (0.0 is desirable).



- Now use a 2.5 mm allen wrench to turn the butterfly positioning screw (clockwise) on the L/H throttle body until the throttle angle value is 3.4 in the MDST.

*540 millivolts*

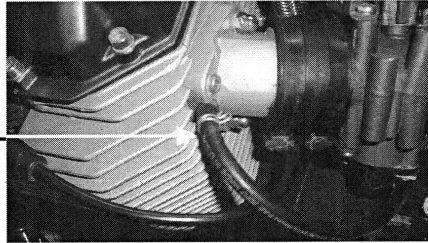
Note: You may get an I/O error and or a functional error when moving the TPS. If so click on the disconnect icon (to the right of the connect icon) and go to the active test icon and click on the erase button to clear the errors.

*150 millivolts*

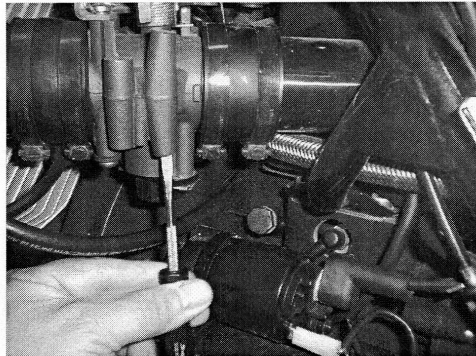


8. The next step is to adjust the idle.  
Start the engine and run until it reaches an operating temperature (between 70 and 80 Celsius) on the MDST in the Dash-Board mode under Temperature”

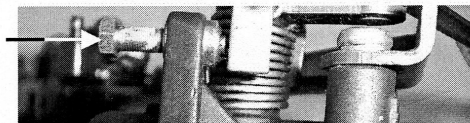
9. Attach the vacuum gages to the intake pipes of the two cylinders.



10. Close the throttle body bypass screws (turn screw clockwise) DO NOT FORCE!



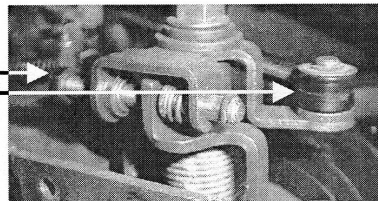
11. Adjust the R/H butterfly adjusting screw (clockwise) until L/H and R/H throttle bodies vacuum on **both** manifolds are the same.



12. Next back the two bypass screws out (turn screw counter-clockwise) until you get an operating engine speed (idle) of 1050 – 1150 rpm with the **same** vacuum on each manifold.



13. Now connect the L/H plastic tie-rod. To do this turn the throttle synchronizing screw until the tie-rod will drop in place on the pin.



14. Bring the engine speed to 1,500 rpm with the accelerator and check the vacuum on **both** manifolds. If you have to, use the synchronizing screw to make sure that the vacuum value on both manifolds are the **same**.
15. Release the accelerator and recheck the vacuum on **both** manifolds (they should be the **same**).
16. Disconnect the vacuum gages and reconnect the air box hoses.

This completes the California throttle setup.  
Refer to the section C on using the Magneti Marelli Motorbike Diagnostic Software Tool to set CO and the TPS.