# DYNA 3000 IGNITION
# 1985-1989 YAMAHA VMAX 1200

## INSTALLATION INSTRUCTIONS

### Product Description

The Dyna 3000 is a plug in upgrade for the factory installed ignition. It features a broad range of advance curves to allow tuning for a wide range of engine builds and riding styles. An adjustable 2-stage rpm limiter provides over rev protection and launch rpm capability for drag race applications. A single stage retard mode is provided for nitrous or blown applications.

### Installation

**Tools needed: Phillips screwdriver, 4mm Allen wrench, 10mm socket wrench**

1. Remove the false fuel tank cover (airbox cover) with the ignition key.
2. Remove the two 10mm nuts & washers holding the tachometer cluster to the frame. Allow the tachometer cluster to hang over the airbox, it is not necessary to remove it from the bike.
3. Remove the two bolts holding the right side snorkel cover using 4mm Allen wrench.
4. Remove the three Phillips screws holding the plastic thermostat housing bracket. Allow the bracket to hang loose.
5. Remove the ignition key cover.
6. Remove the two 10mm bolts holding the ignition key bracket to the frame, allow the ignition key cylinder & bracket to hang freely.
7. Remove the two bolts holding the left side snorkel cover using 4mm Allen wrench.
8. Remove the left side plastic neck cover using a Phillips screwdriver.
9. LOCATE THE IGNITION BOX - The stock module is lying flat, behind the steering neck, just below the stock gauges. Remove the two Phillips screws holding the ignition box to the frame. **CAREFUL: Do not allow the small screws, washers & clipnuts to drop into the engine!** Remove the stock ignition, then install the DYNA3000 in the reverse order. Use the supplied screws to replace the stock (too short) mounting screws.
10. SET THE ADVANCE AND REV LIMIT MODES USING THE DIP SWITCHES - Start by selecting ADVANCE MODE #1 and a REV LIMIT of 9500. These settings are identical to stock, and will give you a good baseline to start with. Advance curve #2 and curve #3 has increased midrange and top-end advance, which will pep up a stock motor with more power in the cruising rpm range. Putting a jet kit in the carb will wake up the motor even more. With a jet kit, you may be able to run curve #4 or #5 for even more power. But don't try these more aggressive curves without a jetting change and premium fuel. See: THE ADVANCE CURVES for more information. NOTE: Do not exceed 10,000 rpm on a stock Vmax without aftermarket valve springs.
11. MOUNT THE DYNA 3000 IGNITION – Mount the DYNA 3000 in the stock location as if it were the stock ignition, using the supplied screws. ** **DO NOT ALLOW WATER TO COLLECT AROUND THE SWITCHES WHEN WASHING BIKE** **
12. START THE BIKE – Before installing the airbox covers, this is a good time to start the bike to make sure everything is working properly. Turn the ignition key on. You should be able to see red LED on the DYNA 3000 module flash once when the ignition key is turned on. If you don't see the diagnostic LED flash once, check your connections, engine stop switch, and/or the battery voltage. See RED AND GREEN STATUS LEDs for more information.
13. REPLACE THE COVERS. Your installation is complete. If you have any trouble starting the bike, inspect all wiring connections.

**ADVANCE CURVES**

The DYNA 3000 ignition for the Yamaha Vmax has eight built-in advance curves. Curve#1 is identical to the stock curve, however you may notice an increase in fuel mileage, and slightly faster idle. Curve #2 is very similar to the stock curve, except the timing is slightly increased in the midrange and on the top end for stronger over-rev. Curve 2 is a good starting point if you are not sure what your engine will like best. Curves 3 through 5 rise aggressively in the mid rpm range to give you better mid range power. Most engines will work best with one of these curves. Curves 6 and 7 are more conservative curves, which taper off in the high rpms. These curves are more appropriate for high revving, high compression engines which would detonate with too much advance. These curves are for extreme engines only. If your engine does not experience detonation with curves 1 through 5 then stay with them. If you do have a detonation problem try curves 6 and 7. Curve 8 is a retarded curve for even higher compression applications. The best way to optimize ignition timing is by putting your bike on a rear wheel dyno at a local shop to see which settings make the best horsepower.

Each advance setting utilizes the Manifold Absolute Pressure sensor (MAP) for part throttle increased advance (see the dashed line on the IGNITION CURVES chart). The MAP SENSOR vacuum line must be connected to CYL#2 (front left intake port).

**RETARD MODE**

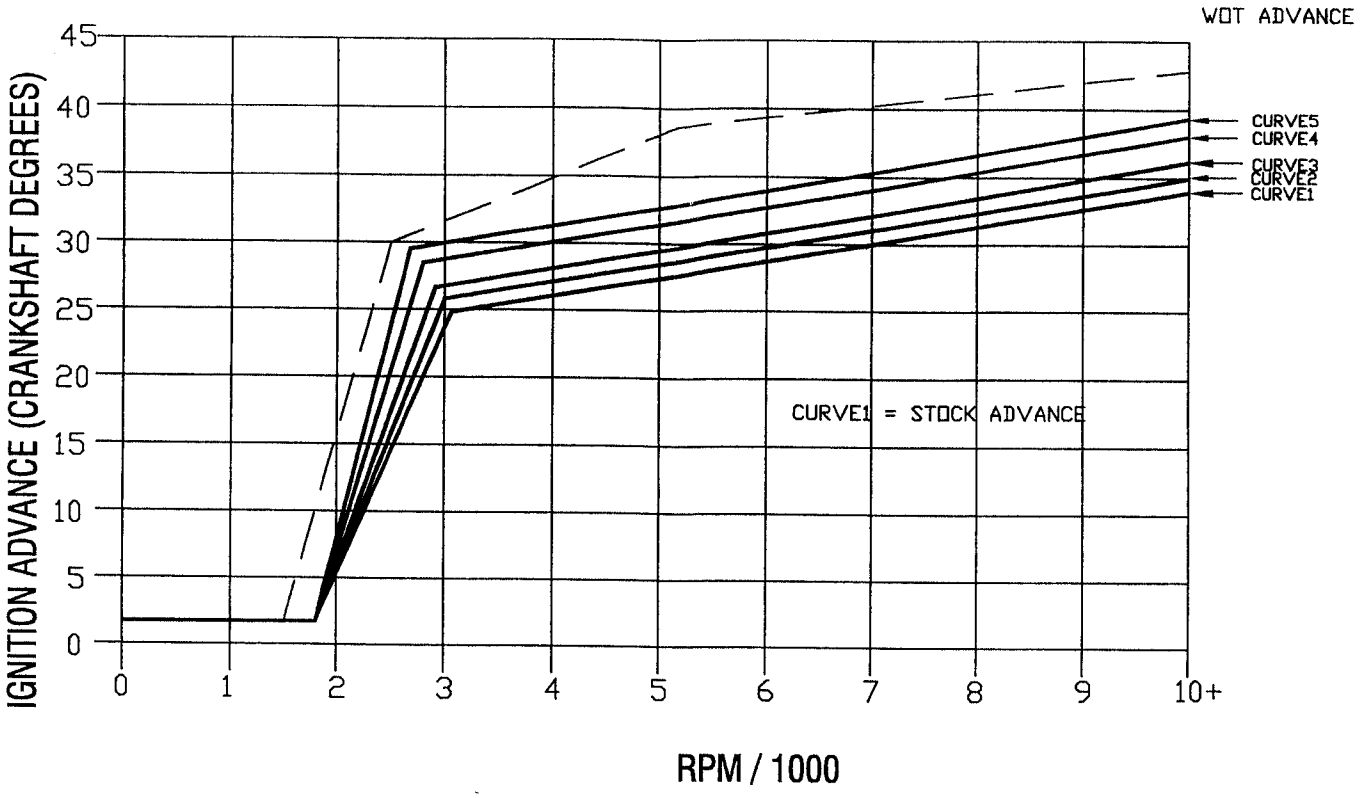
An external white wire (with female bullet connector) is provided to activate the retard mode. Ground the white wire to activate this mode. Leave the wire unconnected (floating) to ignore this mode. Any time the white wire is grounded, the ignition will retard the spark a fixed 8° from the selected curve. This feature is useful for nitrous or blower applications.

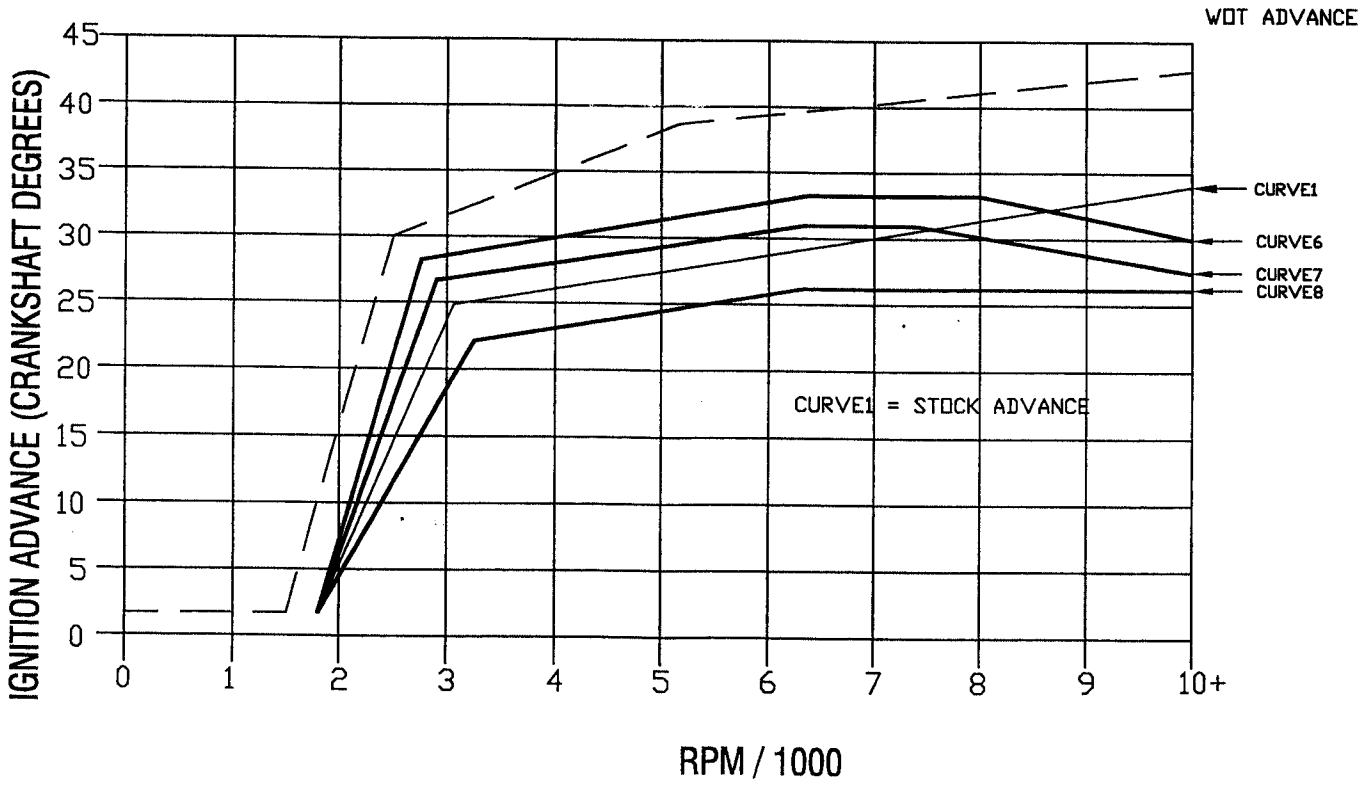
**TWO-STEP LIMITER MODE**

An external red with white stripe wire (with female bullet connector) is provided to activate the low-side limiter. Ground the red/white wire when a lower launch rev-limit is needed. This low side rev limit is default programmed at 3500rpm, but can be re-programmed for your application. To program this limit, first turn the ignition off. Then ground the red/white wire. Next, set the dip switches according to the chart for the Two-Step Limiter – NOTE: The first two switches on the left are not used during this procedure. After you have selected the proper dip switch settings, turn the ignition on. The ignition will NOT RUN, but will flash the red led repeatedly, indicating the low side rev limit has been re-programmed. Finally, turn the ignition off and unground the red/white wire. Reset the dip switches back to the Advance Curve and Upper Rev Limit of your choice. Ground the red/white wire whenever the low-side limiter is needed, but do not leave it grounded when cycling the power on/off.

**STATUS LEDS**

The RED and GREEN STATUS LEDs located on the back of the DYNA 3000 is useful for giving you diagnostic information about the operation of your ignition. When you first apply power to the DYNA 3000 module, both STATUS LEDs will flash once, indicating the module is on. This is a good verification that your power wiring and ignition switches are working. The RED STATUS LED will then flash each time the magnetic pickup senses the engine rotating. This function will allow you to see that the DYNA 3000 module is communicating with the four stock pickups. The GREEN STATUS LED will show the operation of the Sidestand Switch, Retard Input, Two-Step Input and the MAP Sensor. When the engine is not running, the GREEN LED will illuminate when the sidestand is down with the bike in gear. Secondly, when the engine is not running, the GREEN LED will illuminate when the white wire (retard input) is grounded. When the engine is not running, the GREEN LED will illuminate when the two-step input (red/white wire) is grounded. Finally, when vacuum is applied while the engine is not running, the STATUS LED will illuminate indicating the MAP sensor input is working. When the engine is running, the GREEN LED will illuminate when WOT is sensed. Best mileage will be achieved when the MAP sensor is installed and operating properly, allowing maximum ignition timing during part throttle acceleration (see Ignition Curves Graph and MAP Sensor Test).




*DASHED LINE INDICATES PART THROTTLE CURVE WHEN USING MAP SENSOR.*

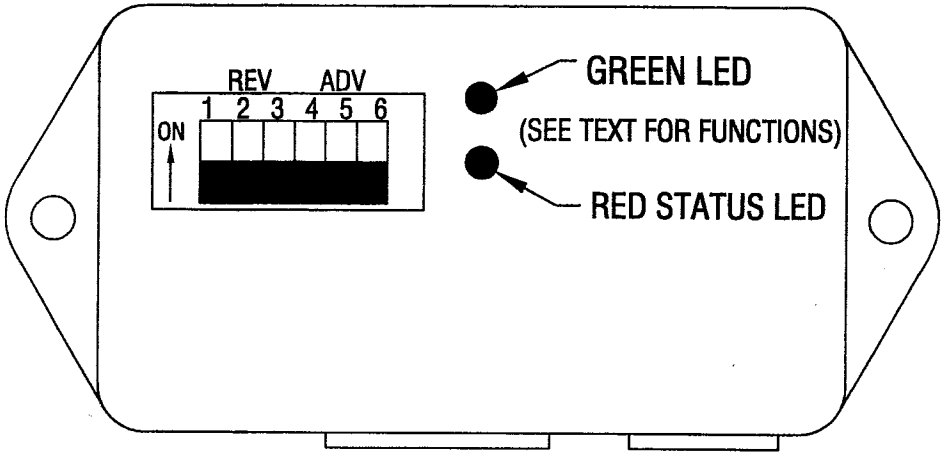
**DYNATEK**
164 S. VALENCIA ST., GLENDORA, CA 91741

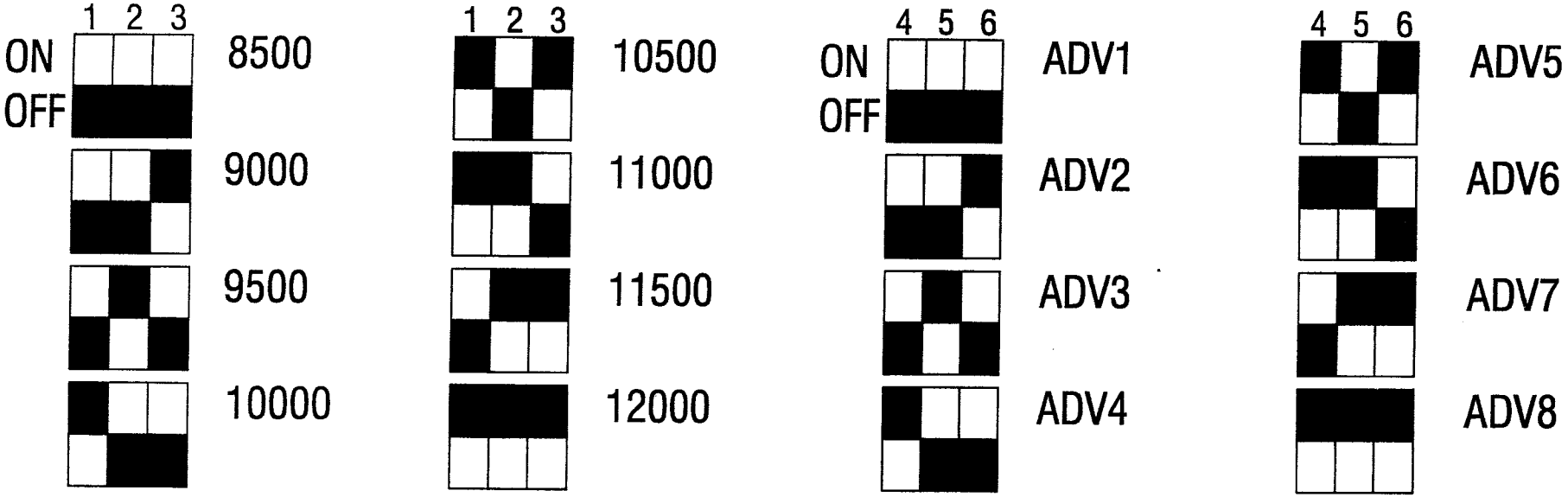
YAMAHA Vmax 1200 CURVES

1985–89 1200 MODEL

| DATE | REV | DRAWN | FILE |
|---|---|---|---|
| 1–29–02 | A | DC | 2801166A–1 |

Example: All Dip Switches OFF (DOWN) = 8500 RPM Limit, Advance Curve1 Selected.



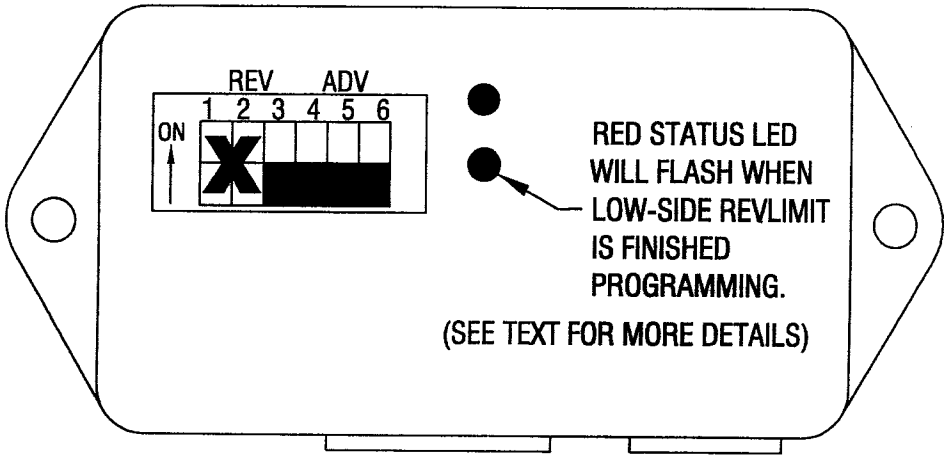



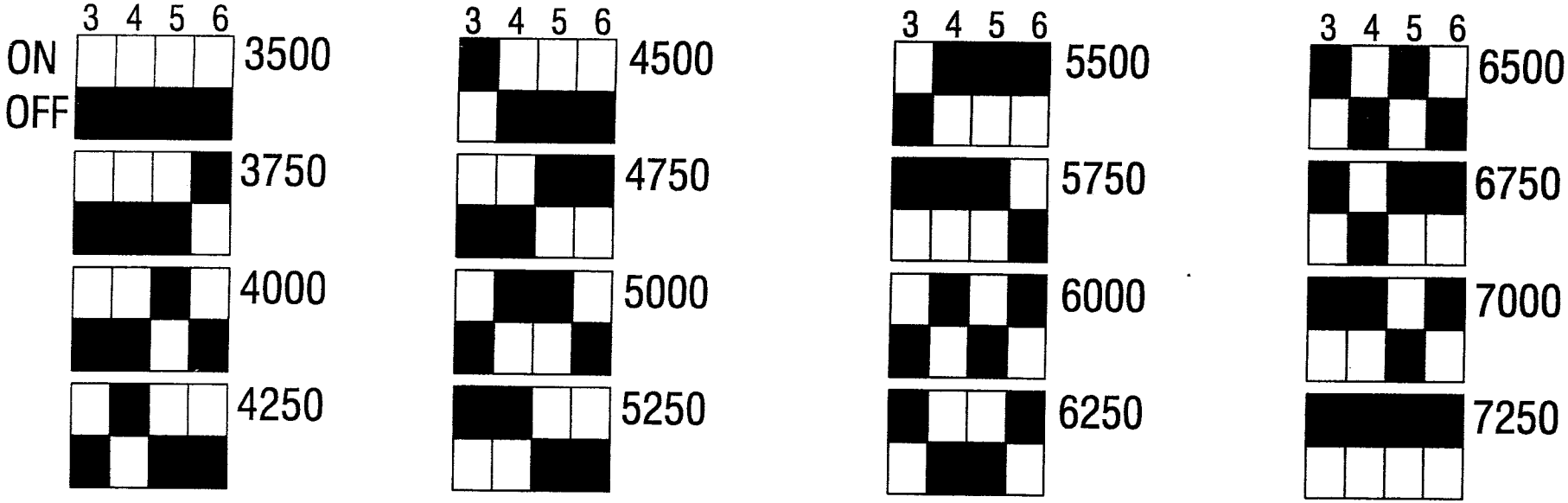

1985-1989 YAMAHA VMAX 1200

| | | |
|---|---|---|
| DYNATEK<br>164 S. VALENCIA ST., GLENDORA, CA 91741 (626)963-1669 | | |
| TITLE<br>DYNA3000 MODE SETTINGS | | |
| DATE<br>1-29-02 | MODEL<br>YAMAHA VMAX 1200 | REV<br>A |

# DIP SETTINGS FOR TWO-STEP REVLIMITER

With the two-step input (Red/White Wire) grounded, apply power to the ignition.
The last 4 Dip Switches provide the setting for the two-step limiting RPM.
Example: Last 4 switched OFF (DOWN) = 3500 RPM Limit when Red/White wire is grounded.




1985-1989 YAMAHA VMAX 1200

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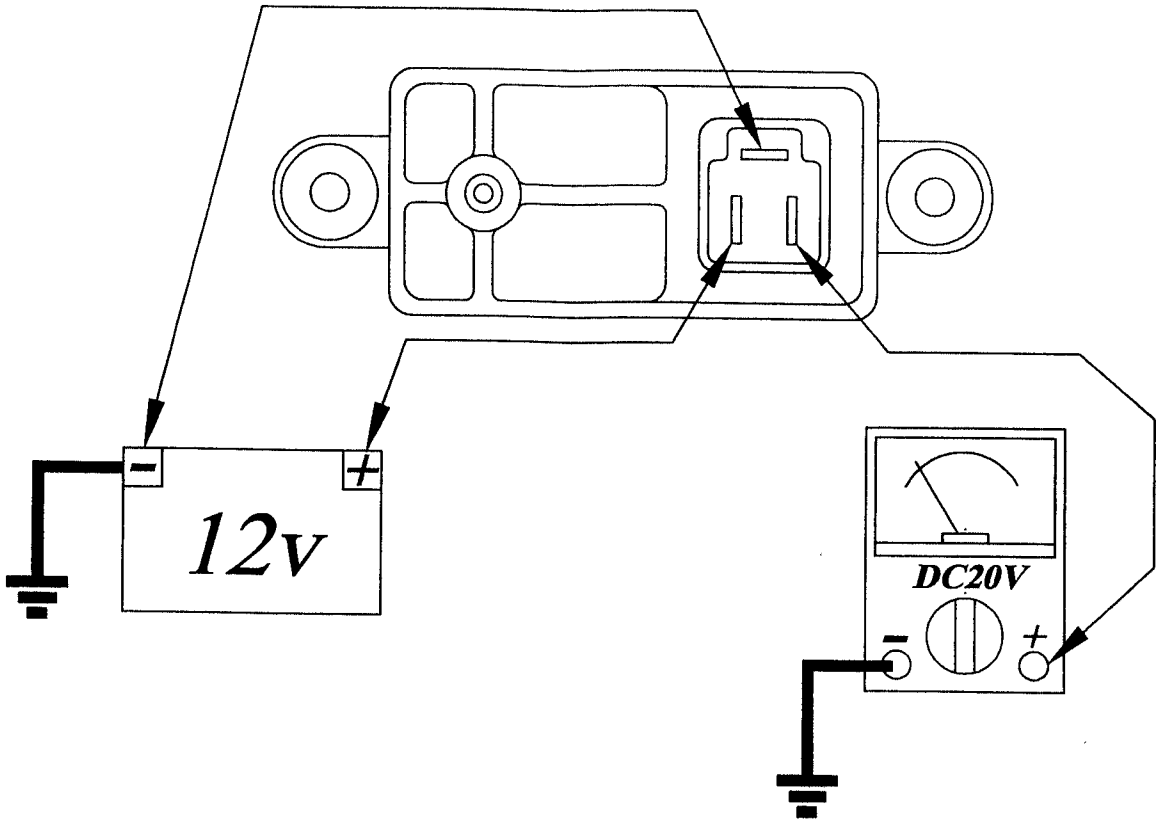
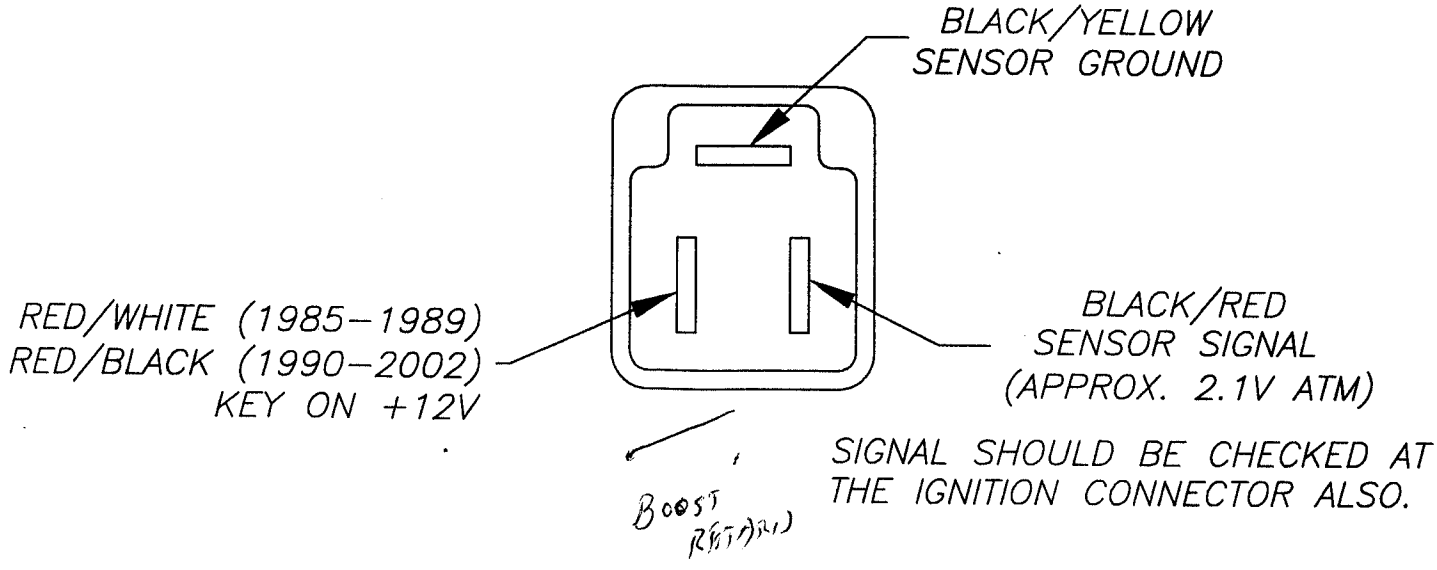
| DYNATEK<br>164 S. VALENCIA ST., GLENDORA, CA 91741 (626)963-1669 | | |
| TITLE<br>DYNA3000 MODE SETTINGS | | |
| DATE<br>2-05-02 | MODEL<br>YAMAHA VMAX 1200 | REV<br>A |




# WIRE INSERTION VIEW

(BACK OF CONNECTOR AS IT IS INSERTED INTO MAP SENSOR)

| DYNATEK | | | |
|---|---|---|---|
| 164 S. VALENCIA ST., GLENDORA, CA 91741 | | | |
| VMAX PRESSURE/MAP SENSOR TEST CONNECTIONS | | | |
| MAP SENSOR TEST | | | |
| DATE | REV | DRAWN | FILE |
| 1–29–02 | A | DC | 2801166A–2 |