DYNA3000 DIGITAL IGNITION
1985-1989 YAMAHA VMAX 1200
D3K7-7 Dynatek PN 1101489

Congratulations on your purchase of a Dynatek product. Please take a moment to read these instructions completely before installing the ignition. The installation will only take about thirty minutes, but proper setup for your specific vehicle may take longer.

IMPORTANT: With any microprocessor based system such as the Dyna3000 Ignition, you must retain the original resistor spark plugs and resistor spark plug caps to reduce the radio frequency interference caused by ignition sparks. Use of copper or spiral core wires without any resistance or non-resistor spark plugs may cause malfunction of the ignition due to severe electrical noise.

DESCRIPTION

The DYNATEK Ignition Module for the Yamaha VMAX is a complete replacement ignition that will increase the performance of the engine. With the Dynatek CurveMaker software the ignition curves, rev-limits, and rpm activated outputs can be custom tailored for any application.

INSTALLATION

This kit includes: Dynatek ignition, mounting screws, and instruction sheet. This is a complete kit, and includes everything needed to install the ignition. Route all wires carefully. Secure any loose wires using cable-ties to ensure electrical wires do not chafe or touch anything sharp or hot.

1. LOCATE THE STOCK IGNITION MODULE - Remove the airbox cover with the ignition key, then remove left & right upper engine cover (snorkels). The stock module is lying flat, just below the stock gauges. The gauges need to be unbolted to allow access to the ignition mounting screws. The module can then be removed from the bike. Caution! Do not allow the small screws, washers or clipnuts to drop into the engine!

2. MOUNT THE DYNA 3000 IGNITION – Mount the DYNA 3000 in the stock location using the supplied screws (longer) and plug in the two electrical connectors as if it were the stock ignition.

3. 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 both LED's on the DYNA 3000 module flash once when the ignition key is turned on. If you don't see both diagnostic LED's flash once, check your connections, engine stop switch, and/or the battery voltage.

4. REPLACE THE COVERS. The basic installation is complete! If you have any trouble starting the bike, inspect all wiring connections. See below for more instructions on using the additional features included in this ignition.

CALIBRATION

The DYNA 3000 ignition for the Yamaha VMAX has two built-in advance curves, selectable with the optional DMS-1 handlebar mount map switch. If the map switch is not connected, then Curve#2 is the default curve. This is a performance curve and may require a jet-kit for optimum performance. The ignition advance will rise aggressively in the mid rpm range to give you better mid range power. You may also notice an increase in fuel mileage, and slightly faster idle. Curve#1 is a high-compression map which rises more slowly across the rpm range. This curve is more appropriate for lower revving, high compression engines which would detonate with too much low-end advance. This curve is for extreme engines only and is designed for engines with internal modifications. Caution! Do not exceed 10,000 rpm on a stock VMAX without aftermarket valve springs.

Either Curve#1, or Curve#2, along with other ignition functions and features, can be completely reprogrammed through the Dynatek Curve Maker software (free download). 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 tube must be connected to CYL#2 (front left intake port).

THE STATUS LEDS

The STATUS LEDS located on the back of the DYNA 3000 are 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 GREEN STATUS LED will then stay on when the ignition key is on, indicating power is to the module. The GREEN LED will then flash each time the crankshaft position sensor senses the engine rotating. This function will allow you to see that the DYNA 3000 module is communicating with the stock pickup. When the engine is not running, the RED STATUS LED will show the operation of the following inputs: Side stand safety switch, MAP sensor, retard input, and two-step (launch) input. The RED LED will illuminate when the side stand is down. Move the sidestand up and then the MAP sensor, retard and two-step inputs can be tested. When vacuum is applied to the MAP sensor, the RED LED will illuminate, indicating the MAP sensor is working properly. If the MAP sensor is disconnected, the RED LED will illuminate and the ignition will stay on the Wide Open Throttle curve, and the RED LED will not be able to display anymore functions. Best mileage will be achieved when the MAP sensor is operating properly (See Ignition Curves Graph and MAP Sensor Test). When the MAP sensor is operating normally, the ignition will use a Part-Throttle advance curve for best gas mileage. The RED LED will also illuminate when either the retard input or the two-step input are grounded.

ADDITIONAL FEATURES:

The D3K for the Yamaha VMAX has many additional features. These are pre-programmed and they all can be accessed using Dynatek CurveMaker Software. If the ignition was not purchased directly from Dynatek, the dealer may have programmed a custom set of ignition curves and auxiliary settings. The dealer should be consulted with any questions regarding the curves and settings that are programmed into the ignition.

The D3K ignition for the Yamaha VMAX comes standard with additional leads coming out of the ignition. These leads allow the ignition to control other features. To program these features, download the D3K7-7 CurveMaker software from our website, then install the software on your computer. Then, connect the USB cable from the computer to the D3K and start the software.

GREEN/BLACK/RED 3-position connector – Connect to DMS-1 optional map selector switch.
PURPLE – Launch Limiter. Connect this wire to the clutch switch Black/Yellow wire preset at 6,000 RPM (adjustable using CurveMaker)
YELLOW – Retard Input. Ground this wire to activate the preset curve when required (curve is adjustable using CurveMaker software)
BLUE – Optional 2-amp RPM window activated switch to ground, referenced as “RPM Switch 1” in PC Software.
WHITE – Optional 2-amp RPM window activated switch to ground, referenced as “RPM Switch 2” in PC Software.

The Blue and White wires are 2-amp switches that can be used to activate a solenoid or relay. Connect the relay with +12v wired to one side of the relay coil, and the other side connected to Blue or White. When the rpm activates the switch, it will be grounded inside the ignition box, causing current to flow through the relay coil. DO NOT connect any device which requires more than 2 Amps (Amps=Volts/Resistance). See attached wiring diagram for wiring the relay.

DATA RECORDING:

The D3K7-7 ignition will continuously record important engine operating parameters. This information can only be viewed and reset through the Diagnostics Tab of the CurveMaker software. The recorded data includes:

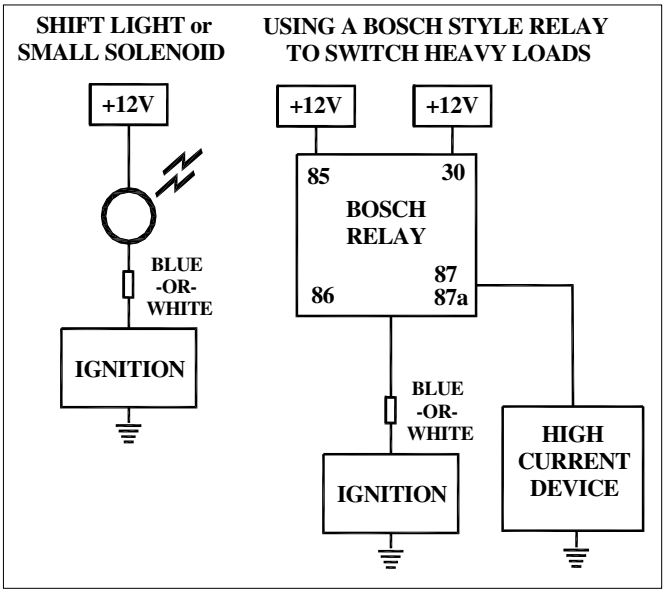
Number of Engine Starts (recorded after 2.25min of run time)
Total Operating Time (hours)
Total Time Engine at WOT
Time Near Rev Limit
Histogram Bar Chart of Engine Speed VS. Time
Maximum Engine Speed
Longest WOT operation

TROUBLESHOOTING:

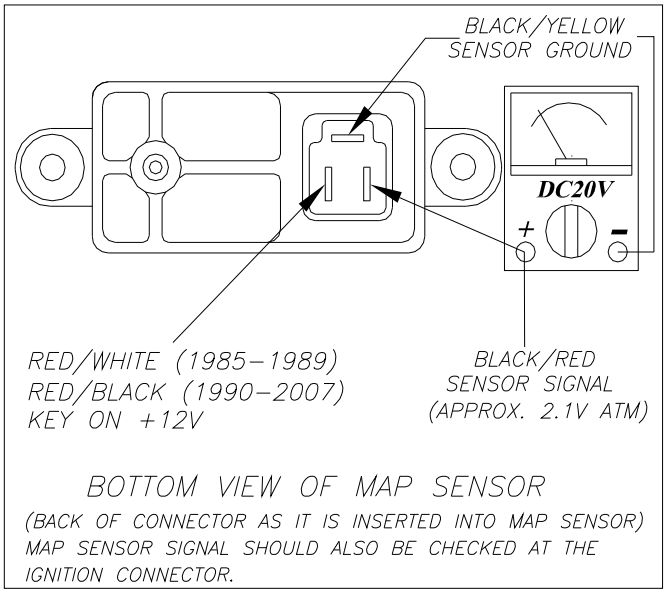
Troubleshooting the ignition is simple. If the LEDs on the ignition do not function properly, or if the engine will not start or run at all, follow these procedures: Check all electrical connections. Look for loose wires. Pull test the wires at crimped or posi-tapped connections. If this does not fix the problem, then reconnect the stock wire connectors back to the stock ignition module. If this fixes the problem, then the D3K ignition should be returned to Dynatek for testing. If this does not fix the problem, then the problem is somewhere else on the engine or vehicle wiring. Follow the troubleshooting procedures outlined in your vehicle shop manual.

If you are using non-stock spark plugs, replace them with OEM units. Then follow the procedures in the calibration section to set the D3K to the default settings. If calibration doesn't fix the problem, the D3K should be returned for testing.

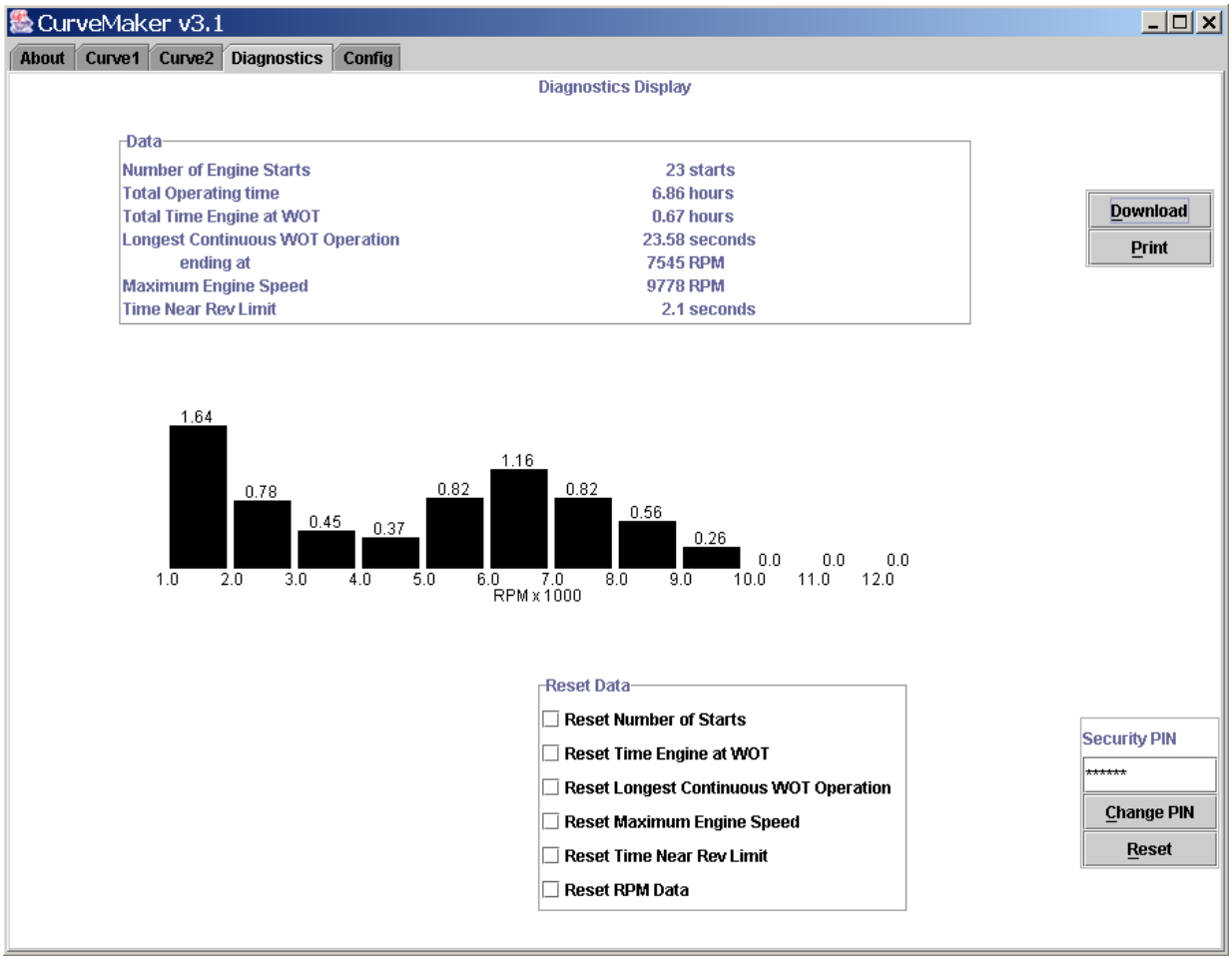
EXAMPLES OF RPM ACTIVATED SWITCH WIRING:



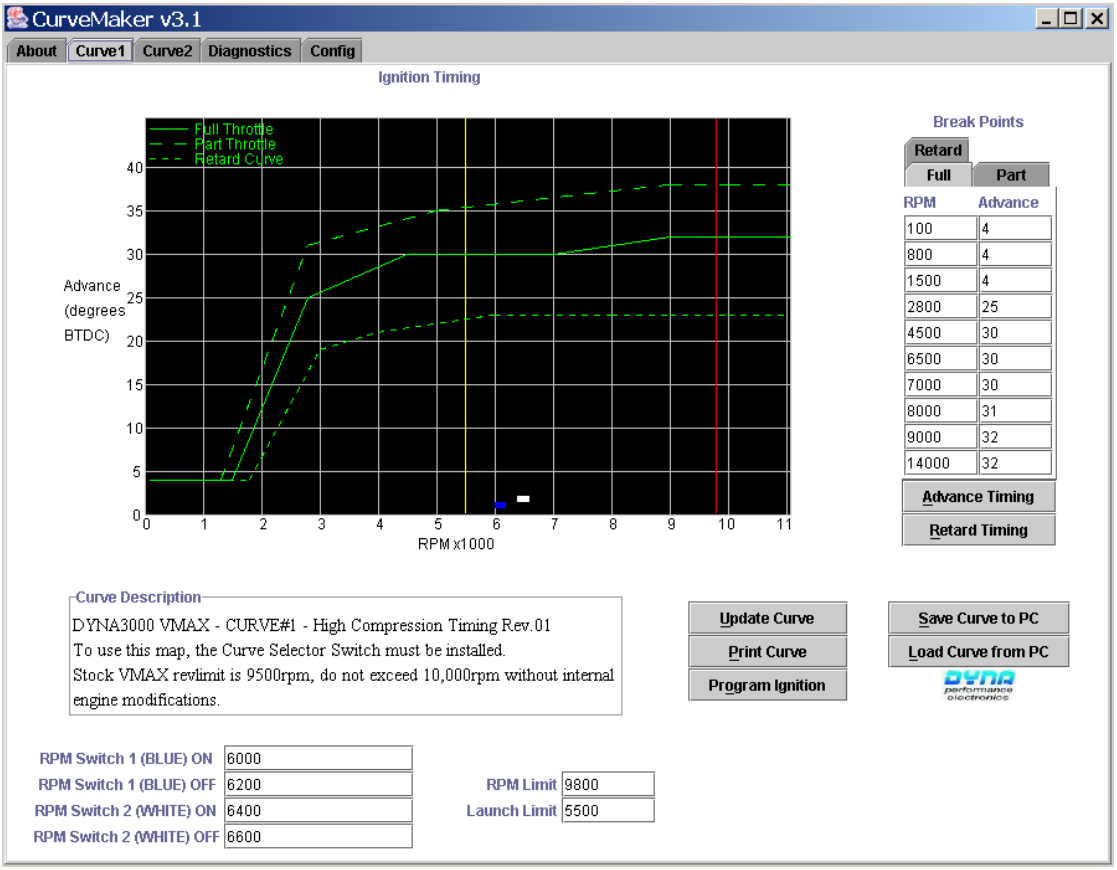
MAP SENSOR TESTING:



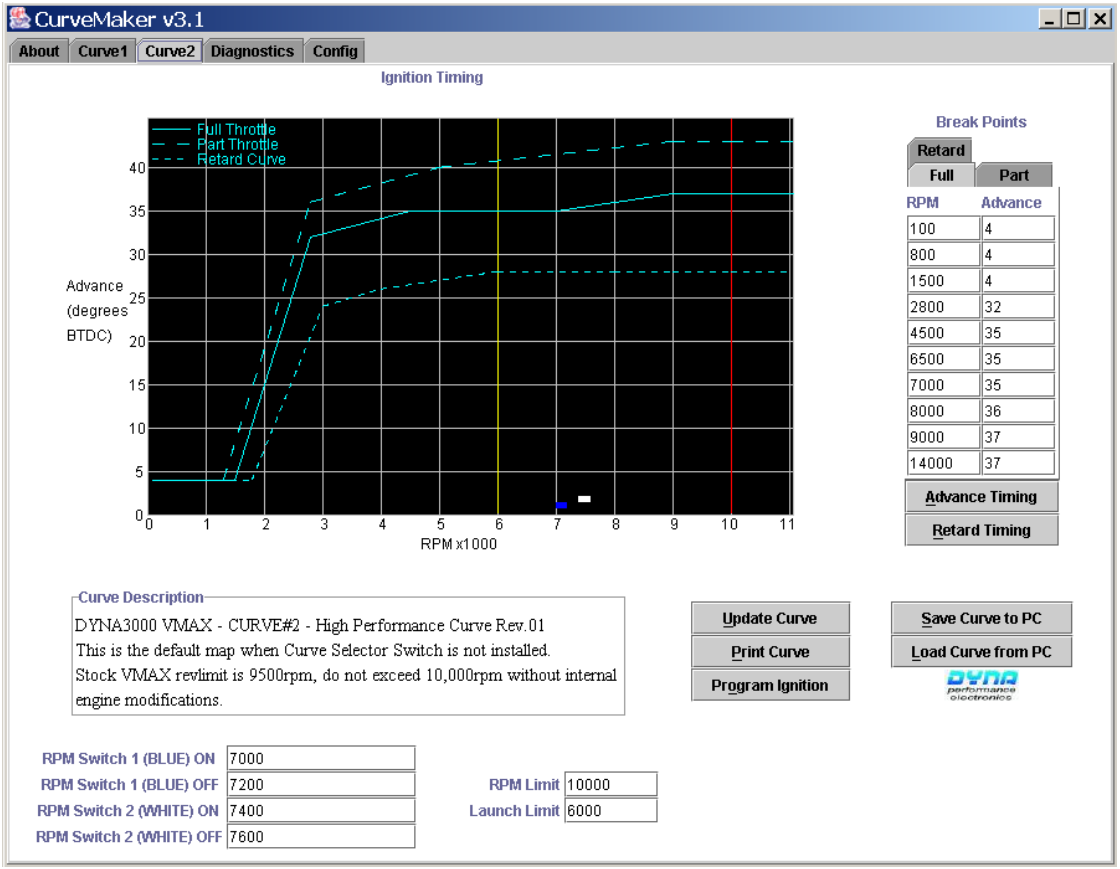
EXAMPLE OF DATARECORDING:



CURVE1 = MUST USE DMS-1 MAP SWITCH:



CURVE2 = DEFAULT MAP AND REVLIMIT:



Make sure to select the proper version of the CurveMaker software for your product:

FOR ALL DYNA FS DIRT BIKE IGNITIONS SELECT:
CURVEMAKER FOR DIRTBIKES INSTALL

FOR DYNA FS ATV IGNITIONS SELECT:
CURVEMAKER FOR ATV INSTALL

FOR DYNA 2000 SPORTBIKE IGNITIONS SELECT:
CURVEMAKER FOR SPORTBIKES INSTALL

FOR DYNA 2000 HARLEY IGNITIONS SELECT:
CURVEMAKER FOR HARLEY-DAVIDSON INSTALL

FOR DYNA 3000 METRIC CARBURETED IGNITIONS SELECT:
CURVEMAKER FOR D3K CARBURETED METRIC CRUISERS

VISIT

http://www.dynaonline.com/support/downloads.aspx

and select the **SOFTWARE** category then chose the appropriate software for your application.

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