DYNA 2000
DIGITAL PERFORMANCE IGNITION KIT
TO FIT
FONTANA BLOCKS
KIT NO. 1003007

Installation & User Guide

Product Description
The Dyna 2000 is a high energy, high RPM capable ignition system designed for late model four-cylinder engines with a broad range of advance curves and RPM limit settings. Important features of this unit include:

- Five advance curves to cover a wide range of engine builds.
- Retard Mode with 4 levels of retard.
- Adjustable Rev Limiter - Adjusts from 8500 to 16,000 RPM.
- Easy static timing with built in timing light.
- Complete wiring harness for error free installation.

Crank Trigger Installation
Install timing plate onto gear case cover supplied. It is best to start in the middle of the adjustment. Your fixed pointer on your engine block must be accurate to the timing degree you choose. To be sure, you should install a degree wheel and check it against the timing degree marks on the new rotor supplied with this kit. Your pointer may be adjusted to your old front rotor and may be off to the new one supplied in this kit. Checking will insure accurate timing and avoid any timing degree mistakes, causing engine damage.

Ignition Timing
The LED on the front of the module is used to time the engine. Since the LED is usually easier to see before the module is mounted, you will need to temporarily wire up the module.

1. Plug the four pin crank trigger connector into the mating harness connector. Attach the black harness ground wire to the battery negative terminal. Strip the harness red wire about ¼" and attach to the battery positive terminal. Do not attach any other wires. This completes the temporary wiring.
2. Plug in the Dyna 2000 module. The switches can be set to any position for this procedure.
3. Rotate the crankshaft close to your preferred timing mark, turning clockwise until the LED just turns on. The mark on the rotor will need to line up with your fixed pointer on your engine block.
If the marks don’t meet, rotate the rotor back slightly and move the backing plate pickup slightly. Roll
the engine forward and check again. After timing 1&4 do not move backing plate again. Timing of
2&3 will require moving trigger only.

4. Disconnect the Dyna 2000 module and harness. This completes the timing procedure. The timing is
now set. The timing can be changed by rotating the crank trigger until the desired final timing is
reached. Modified engines generally require different settings which you will need to determine
through experimentation on a dyno or at the track.

Wiring - Stock
1. Connect the harnesses together as follows:

<table>
<thead>
<tr>
<th>Dyna 2000</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>+12 Volts</td>
</tr>
<tr>
<td>White</td>
<td>1/4 Coil Negative</td>
</tr>
<tr>
<td>Blue</td>
<td>2/3 Coil Negative</td>
</tr>
</tbody>
</table>

For maximum reliability all connections should be soldered. Shrink sleeving is included in this kit to
cover the connections (remember to place on the wire before soldering!).

The Green and Yellow wires are for use with aftermarket tachs and accessories. Connection of these
wires is discussed in the “Tach” section of these instructions.

2. Connect the Black wire directly to the battery negative terminal.

Wiring - Custom
1. Run the short leg of the Dyna 2000 harness down to the crank trigger and plug in. If the harness is too
long, fold up and tape the excess - do not cut. Run the long leg up to the coils

2. Connect switched +12 Volts to one terminal on each coil (either terminal is OK - there is no polarity).
Attach the White wire to the opposite terminal on the 1/4 coil and Blue to 2/3. See wiring diagram on
back page.

The Green and Yellow wires are for use with aftermarket tachs and accessories. Connection of these
wires is discussed in the “Tach” section of these instructions.

3. Connect the Black wire directly to the battery negative terminal.

Tach
The Green and Yellow wires can be used to activate a number of accessories such as tachs, RPM switches
and other devices triggered by a 12 volt pulse. The Green wire outputs 2 pulses per crankshaft revolution.
The Yellow outputs one pulse per rev. Both tach outputs will provide pulses during rev limiting and shift
kill. This prevents the tach from becoming erratic when the engine is limiting.
RPM Limiter

The Dyna 2000 includes an extremely accurate rev limiter that can be set from 8,500 to 16,000 RPM in 500 RPM steps. The limit set is by turning the rev limit knob on the end of the Dyna 2000 module to the desired position. NOTE: The rev limit setting is read into memory only during power up. When changing the setting, the power must be switched off then back on for the new setting to be recognized.

Advance Curves

The Dyna 2000 ignition module allows selection between five different advance curves and four levels of retard. The advance curves are as follows:

<table>
<thead>
<tr>
<th>Advance Curve #</th>
<th>Total Span</th>
<th>Reaches Final Timing At</th>
<th>Typical Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20 deg</td>
<td>2,500 rpm</td>
<td>4 valve stock</td>
</tr>
<tr>
<td>2</td>
<td>20 deg</td>
<td>4,500 rpm</td>
<td>4 valve increased compression</td>
</tr>
<tr>
<td>3</td>
<td>20 deg</td>
<td>6,500 rpm</td>
<td>4 valve high compression</td>
</tr>
<tr>
<td>4</td>
<td>25 deg</td>
<td>3,500 rpm</td>
<td>2 valve stock</td>
</tr>
<tr>
<td>5</td>
<td>25 deg</td>
<td>6,500 rpm</td>
<td>2 valve high compression</td>
</tr>
</tbody>
</table>

The final timing is determined by where the crank trigger is set. Most modern 4 valve engines run best with 35 to 40 degrees total ignition timing. Older 2 valve engines will run well with about 30 degrees total timing. The Dyna 2000 ignition will generate an advance curve based upon the total timing that you set with the crank trigger.

Curves 1,2, and 3 generate a curve that changes a total of 20 degrees from idle to high rpm. This means that if you set the crank trigger to 35 degrees, at idle you will have 20 degrees less than this, so the engine will be idling at 15 degrees.

Curves 4 and 5 generate a curve that changes a total of 25 degrees from idle to high rpm.

During cranking, the module fires approx. 30° retarded from the final timing point on all curves. Refer to the graphs for a detailed description of each curve.

Retard Mode

The Dyna 2000 has four a four level retard feature that allows the final timing to be retarded in steps of 4, 8, 12, and 16 degrees. Refer to the graphs for a detailed description.

When a retard setting is selected, the Orange wire (located by the crank trigger connector) becomes the retard trigger. Grounding this wire causes the final timing is reduced by the number of degrees the knob is set to. When the retard line is not grounded, the curve follows the same slope as advance curve 1. If the setting is changed, the power to the module must be turned off then back on for the new setting to be recognized.
Test Mode

The Dyna 2000 includes a special test mode feature for checking the ignition without the engine running. Test mode is selected by turning the knob to the “TEST” position. Remember, power to the module needs to be turned on after moving the knob for the new setting to be recognized. NOTE: Do not try to start the engine with the ignition set in test mode - it will not run properly.

When in test mode, the Dyna 2000 will fire each coil as the magnet on the crankshaft rotor is rotated to the firing point for each cylinder pair. This allows you to easily determine if each crank trigger sensor is working, that each coil is working, and which coil is being controlled by which crank trigger sensor.

When the magnet in the crankshaft rotor reaches the pickup for cylinders 1 & 4, the 1/4 coil should spark. When the magnet in the crankshaft rotor reaches the sensor for cylinders 2 & 3, the 2/3 coil should spark.

Troubleshooting Tips

The Dyna 2000 should provide years of trouble-free operation. However, if problems arise, the following questions should help locate the source of the problem.

Does the LED on the front of the Dyna 2000 blink each time the power is turned on? If not, use a voltmeter or test light to verify that +12V is getting to the red wire of the harness. Inspect the ground connection and the condition of the terminal - especially if the ground wire has been shortened. Check your battery voltage. The battery should measure about +12.5 volts when the engine is not running. Check that the main battery ground cable.

With the ignition power on, turn the engine over slowly. Does the LED on the Dyna 2000 come on when the magnet on the crankshaft rotor passes each Crank Trigger sensor module? If not you may have a bad connection on one of the Crank Trigger wires.

With ignition power on, measure the voltage between ground and each crank trigger wire with the trigger plugged in. The Red wire should have +12 volts on it, the Black wire should have 0 volts on it. The White and Blue wires should read about +12 volts (more or less depending on battery voltage) when the magnet in the rotor lines up with the pickup. The voltage should drop back down to around 0 to 0.5 volts as the magnet moves away.

If the crank trigger operation is correct and the ignition module LED responds properly, you may have a problem with an ignition coil. With primary wires disconnected from a coil, you can measure if the coil is internally shorted by using a digital ohm meter. Measuring across the primary, you should read between 2.4 to 3.0 ohms resistance for the factory coils.

Measure the resistance from one spark plug tower to the other.

If the ignition module and coils check out OK, take a close look at your spark plug wires. Inspect for damage or breakage of the internal conductor.

*IMPORTANT* The ignition coils used with this system MUST have a primary resistance of at least 2.2 ohms or damage to the ignition will result. Coils with at resistance greater than 3.5 ohms are safe to use, but spark energy will be diminished slightly.

*IMPORTANT* It is necessary to use suppression core spark plug wires with the Dyna 2000 ignition system. Spiral core or carbon core spark plug wires are acceptable.

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ADVANCE CURVES 1, 2, AND 3
FOR 4 VALVE PER CYLINDER MOTORS
NOTE — THE ADVANCE VALUES SHOWN ARE FOR STATIC PICKUP TIMING SET AT 35° BTDC.

ADVANCE CURVES 4 AND 5
FOR 2 VALVE PER CYLINDER MOTORS
NOTE — THE ADVANCE VALUES SHOWN ARE FOR STATIC PICKUP TIMING SET AT 40° BTDC.
DD2000-4 RETARD MODE CURVES

RETARD CURVES SHOWN WITH STATIC TIMING SET AT 35° BTDC.
WIRING DIAGRAM — TYPICAL

TO SWITCHED +12 VOLTS

1 & 4 CYLINDER COIL

2 & 3 CYLINDER COIL

WHITE
RED
BLUE
GREEN (TACH)
YELLOW (TACH/2)

MODULE CONNECTOR

GROUND — ATTACH TO BATTERY NEGATIVE

CRANK TRIGGER

ORANGE
RETARD TRIGGER