

Dyna FS Ignition

2001-2002 YFM-660R Yamaha Raptor

Kit No. DFS7-10 for 2001 RAPTOR ONLY

Kit No. DFS7-11 for 2002 RAPTOR ONLY

NOTE: The 10th digit in the VIN denotes the model year:

Example: JY4AM01Y0 1 C012730

↑ 2001 model year.

Congratulations on your purchase of a Dyna ignition. Please take a moment to read these instructions completely before installing the ignition. The installation will only take a few minutes, but proper setup for your specific bike will take longer.

The DynaFS ignition was designed to work best with the stock coil, coil wire, plug cap, and spark plug. The increase in spark energy from using the DynaFS ignition is enough so that adding any of these will not improve performance, and can cause problems. Use resistor type spark plugs ONLY. Use the stock resistor style spark plug cap.

This kit includes: DynaFS ignition, Curve Selector Switch, and instruction sheet. This is a complete kit, and includes everything needed to install the ignition.

Installation

- 1) Turn ignition key off, and remove the battery negative (-) cable for safety. Locate the stock ignition box, it is under the seat behind the battery.
- 2) Remove the two 10mm nuts that hold the ignition mounting bracket to the bike. These nuts are located above the rear axle, under the bike.
- 3) Unplug the stock ignition, taking care not to damage the harness connectors. There is a small tab on the harness connectors that must be pushed in to unplug it. Remove the stock ignition from the bike. Keep the stock ignition in a safe place - it may be required for troubleshooting.
- 4) Place the Dyna ignition in the factory bracket, and bolt it to the stock ignition mounting location. Plug the Dyna ignition in. Plug in the Curve Selector Switch.
- 5) Mount switch in desired location. You may want to mount it so that it is easily accessible for initial tuning. Do not cut or lengthen the wires!

Calibration

The Dyna FS ignition is preprogrammed with 4 timing curves. The curves are selected by the curve selector switch. Removing the switch will cause the ignition to default to the curve in position 4 (labeled stock on the curve switch) which is the stock timing curve.

Curve 4 is identical to the curve that came with the stock ignition module. Due to improved microprocessor control and significantly higher spark energy, the performance of this curve will be enhanced. A quicker throttle response and increased power over stock is still achieved with the stock ignition curve. For the other 3 timing curves, see the attached chart for the timing information.

Calibration (continued)

Use of this ignition may require rejetting of the carburetor to supply more fuel to maximize performance gains. If you are unsure of this tuning process, the services of a competent mechanic should be employed. Curve 4, the stock curve, is least likely to require any sort of jetting adjustment. Using the other curves may result in a lean misfire condition at high RPMs when the jetting is not properly set. Do not operate the engine in a lean condition for extended periods or damage may result.

This ignition may also allow the engine to rev to a higher RPM than what it has before. At these high RPMs, the performance limits of other engine parts (valvetrain for example) may be found. It may be necessary to replace these parts for best engine performance. Consult with an engine builder for answers on what works best for your engine.

Programmable ignitions

Lap-top/PC Programmable versions (suffixed with a P in the part number) require a separate programming kit to reprogram them. It is not supplied with the ignition. If the programmable ignition was not purchased directly from Dynatek, the dealer may have programmed a custom set of ignition curves. The dealer should be consulted with any questions regarding the curves that are programmed into the ignition.

The Park Brake switch limiting RPM is programmable and can be rewired to a separate clutch switch for a "two step/low side" launch limiter. Ground the Green/Yellow park switch wire to activate.

Programmable ignitions are shipped with additional leads coming out of the ignition. These leads allow the ignition to control other features. To program these features, follow the instructions in the programming kit.

PURPLE/WHT – Ignition kill, ground this wire for shift kill or security.

LIGHT GREEN – Tachometer output, for a standard 12v, two pulse per rev aftermarket tach.

WHITE – Optional 2-amp switch to ground, referenced as "Power Jet" in PC Software.

BLUE – Optional 2-amp switch to ground, referenced as "Power Valve" in PC Software.

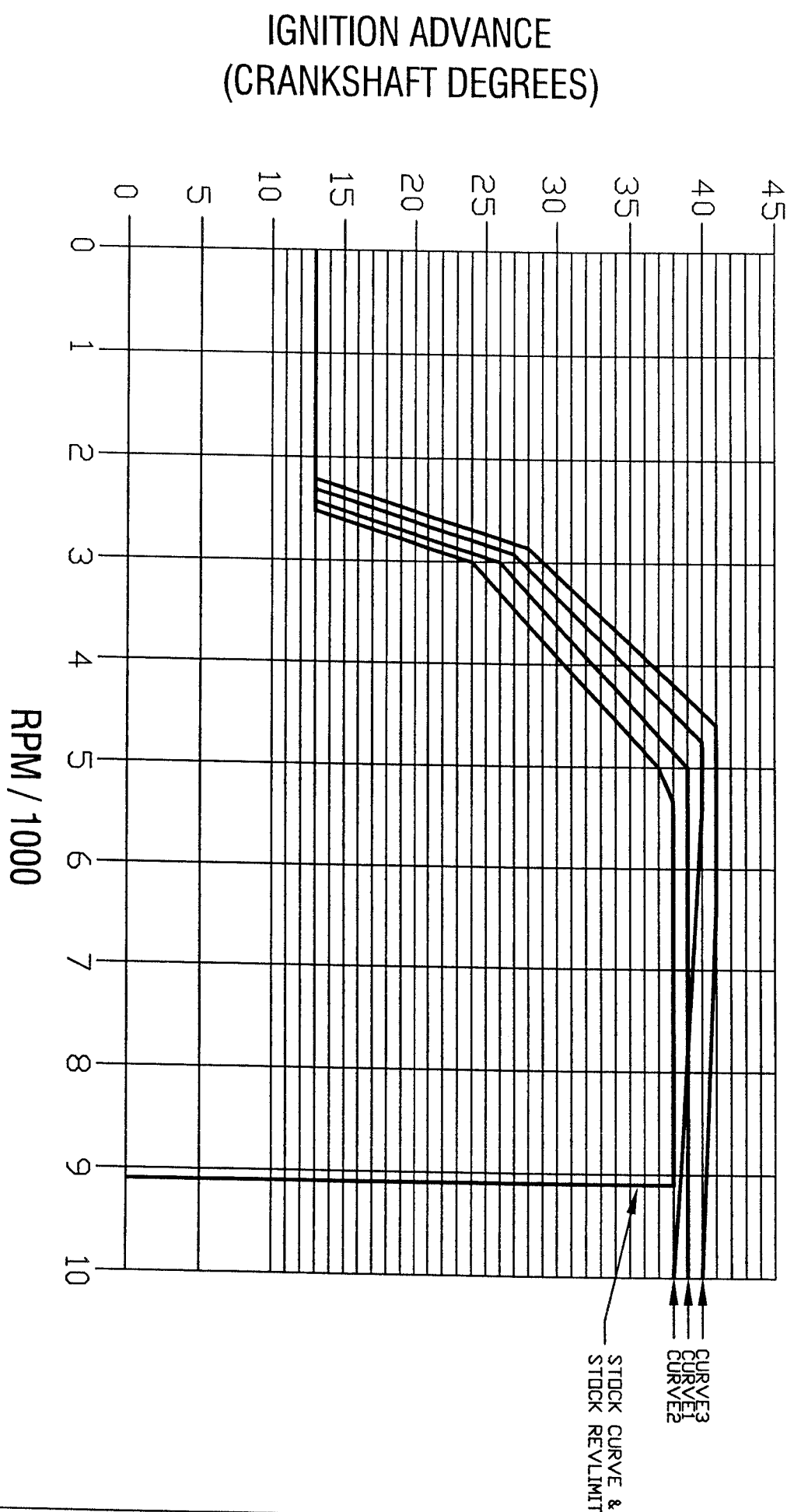
The White & Blue 2-amp switches can be used to activate a solenoid or relay. Connect the relay with hot +12v wired to one side of the relay coil, and the other side connected to White or Blue. When the rpm activates the switch, it will be grounded inside the ignition box, causing current to flow through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

Troubleshooting

Troubleshooting the Dyna ignition is simple. If the bike will not start or run at all, reinstall the stock ignition. If this fixes the problem, then the Dyna ignition should be returned to Dynatek for testing. If this does not fix the problem, then the problem is somewhere else on the bike. Follow the troubleshooting procedures outlined in your bike shop manual.

If the bike runs, but poorly, put the stock ignition back on the bike. If this fixes the problem, reinstall the Dyna ignition. If you are using non-stock plug wires, plug cap, ignition coil, spark plug, or stator, replace them with OEM units. Then follow the procedures in the calibration section to set the Dyna ignition up to work with your bike. If calibration doesn't fix the problem, the ignition should be returned for testing. If the problem persists when using the stock ignition then the problem is external to the Dyna ignition. Note: The Dyna FS ignition for the Raptor uses the 12-pole "rotor rotation detection" signal for accurate RPM information. If this signal is lost, the ignition will resort to TDC firing at all RPM. The engine will feel sluggish and won't want to rev-out. Follow the test procedures outlined in your bike shop manual to pinpoint the problem.

DYNA FS / YAMAHA RAPTOR YFM660R IGNITION CURVES



CURVE4 = STOCK ADVANCE
(Assumes 12° base timing)

DYNATEK		164 S. VALENCIA ST., GLENDBRA, CA. 91741 (626)263-1659	
TITLE YAMAHA RAPTOR ADV. CURVES			
DATE	MODEL	REV	
4-3-02	YAMAHA RAPTOR 660	A	

MEMO:

Yamaha Raptor YFM660R

DC 11/7/02

ISSUE:

Removal of factory sensors: Reverse limiter

The stock ignition uses the vehicle speed sensor to detect maximum speed, which is about 3000rpm. This is the engine speed at which the DFS limits. If the reverse switch is to be removed from the bike for racing, then the GREEN with WHITE STRIPE reverse switch wire needs to be grounded to make the ignition think it is in forward/neutral at all time. This wire leaves the box and goes to a two pin connector on the left side, near the crankcase. The ignition will no longer know reverse has been activated, and will not be able to turn on the reverse indicator light.

REVERSE SWITCH: GREEN/WHITE - GROUNDED = NOT REVERSE

ISSUE:

Removal of factory sensors: Neutral & Clutch switch

The other wire in the two pin connector is the neutral switch. The ignition uses this input OR the clutch input to allow the starter relay to be enabled. If this switch is removed AND the clutch switch is removed, then one of these inputs will have to be permanently grounded to enable the starter relay. The ignition sources +12 Volts to the starter relay when in neutral, or with the clutch in.

NEUTRAL SWITCH: LIGHT BLUE - GROUNDED = NEUTRAL

CLUTCH SWITCH: BLACK/YELLOW - GROUNDED = CLUTCH IN