



DynaFS – Dynatek Fuel & Spark with EFI RevExtend

P/N DFS2-21 FOR 2008+ KAWASAKI KFX450R EFI

11,500 RPM LIMIT (10,500 stock KFX450R)

CAUTION: This ignition will increase the engine rev-limiter!

Congratulations on your purchase of a Dynatek product. Please take a moment to read these instructions completely before installing the module. The installation will only take about thirty minutes, but proper setup for your specific vehicle may take longer. The DynaFS ignition was designed to work best with the Dynatek coil kit DCK2-2 or stock coil with the stock coil wire, plug cap, and spark plug. Always use the stock resistor style spark plug and a resistor spark plug.

Description

The DynaFS Module for the Kawasaki KFX450R-EFI is a piggyback add-on device that will increase the performance of the stock ignition and fuel injection system. This Module is designed to work in conjunction with the stock ECU, and will take complete control of the Ignition Timing while safely extending the fuel injection rev-limit. With the optional Dynatek CurveMaker software or the Dynatek DRSP-1 remote serial programmer, the ignition curves, fuel maps, and rev-limits can be custom tailored for any application.

Installation

This kit includes: DynaFS ignition, electrical wiring, velcro, cable tie-wraps and instruction sheet. This is a complete kit, and includes everything needed to install the DynaFS. Route all wires carefully. Secure wires using the supplied cable-ties to ensure electrical wires do not chafe or touch anything sharp or hot.

1. Turn ignition key off. Remove the seat, front hood, and fuel tank. Use the supplied velcro to install the ignition in the preferred location, behind the tool kit. (See Picture 1)
2. Connect the GROUND EYELET TERMINAL to the common frame ground point under the rear of the fuel tank. (See Picture 2)
3. Connect the FUEL INJECTOR INTERCEPT (top of throttle body) by unplugging the stock connectors and connecting the matching DFS harness connectors inline. (See Picture 2)
4. Connect the THROTTLE POSITION INTERCEPT (left side of throttle body) by unplugging the stock connectors and connecting the matching DFS harness connectors inline. It may be difficult to reach the TPS connector, and may require removal of the engine mount support to reach these connectors. (See Picture 3)
5. Connect the CRANKSHAFT PICKUP INTERCEPT (located above the coolant reservoir) by unplugging the stock connectors and connecting the matching DFS harness connectors in-line. (See Picture 4)
6. Route the COIL CONNECTIONS HARNESS towards the coil. Connect the ORANGE Ignition Coil Intercept (at the ignition coil terminals) by removing the stock BLUE/WHITE wire (coil negative) and connecting it to the DFS ORANGE wire. Connect the ORANGE/BLACK DFS coil negative wire to the ignition coil. (See Picture 5)
6. Finally, tie-wrap the DFS Accessory Wires away from the engine and away from sharp objects.
7. Now is a good time to start the vehicle and check that the vehicle idles properly.
8. Installation is complete! Reinstall engine mount support, fuel tank and body plastics. Double-check your wiring and secure all loose wires using tie-wraps.

Picture 1:



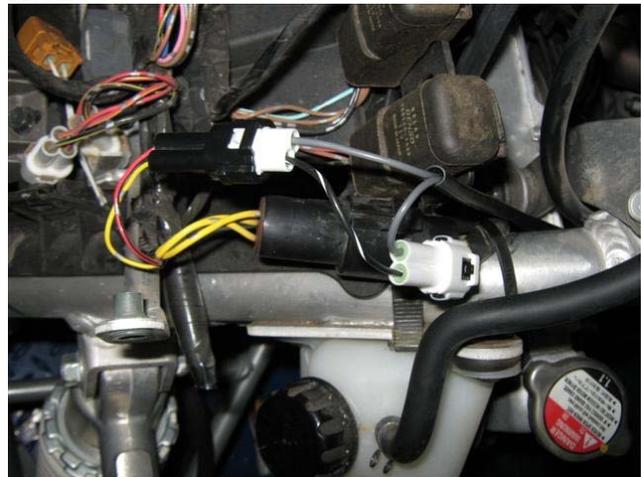
Picture 2:



Picture 3:



Picture 4:



Picture 5:



Calibration

The DynaFS is pre-programmed with a performance advance curve, +4° over stock, and an 11,500 RPM rev-limit. A quicker throttle response and increased power over the stock curve is achieved. To select another advance curve, use the DRSP-1 Programmer. For other advance curve information, see the attached Advance Chart. The DynaFS will allow the engine to rev to a higher RPM, and is adjustable to 12,000 RPM max by using the CurveMaker software. Because the rev limit is increased, the performance limits of other engine parts (valve train or piston for example) may be found. It may be necessary to replace these parts for best engine performance. The DynaFS is shipped from Dynatek with 0% adjustments to all of the fuel injection settings. For more information on fuel settings, see the section on Using the DRSP-1 Remote Programmer, and the Fuel Curves Chart.

Using the DRSP-1 Remote Serial Programmer

The DRSP-1 Remote Serial Programmer (sold separately) is a plug-in programmer for adjusting the fuel injection and ignition advance curves. Simply plug the DRSP-1 into the DFS HARNESS and mount the Remote for easy access. The Remote allows adjustment to the stock fuel injections signal in multiple stages.

NOTE: It is HIGHLY RECOMMENDED to use a wide band oxygen sensor and quality gauge (such as Dynojet's Wide Band Commander) when tuning the fuel injection. Without a gauge, the air/fuel ratio cannot be determined and possible engine damage can occur.

FUEL BASE – this setting will adjust the entire fuel map: 1 = 0% 2 = +10% 3 = +20% 4 = +40%
FUEL LOW – this setting will adjust fuel from 0 rpm to 6,000 rpm, in the ranges of: -17.5% to 0% to +20%
FUEL MID – this setting will adjust fuel from 6,001 rpm to 9,000 rpm, in the ranges of: -17.5% to 0% to +20%
FUEL HIGH – this setting will adjust fuel from 9,001 rpm to 12,000 rpm, in the ranges of: -17.5% to 0% to +20%
IGN CURVE – this setting will adjust the Ignition Curve, up to 4 selectable and all can be custom programmed using the CurveMaker Software. (see attached Curve Chart)

NOTE: The DRSP-1 can be removed after adjusting the settings, and the DynaFS will keep the settings even with the battery disconnected. If the LED on the Remote does not turn on, or the LED flashes continuously after 10 seconds, then the ignition and Remote should be returned to Dynatek for testing.

Additional Features

The DFS for the KFX450R has many additional features. These are pre-programmed and they all can be accessed using Dynatek CurveMaker Software (not supplied with the ignition). If the ignition was not purchased directly from Dynatek, the dealer may have programmed a custom set of ignition curves and fuel injection settings. The dealer should be consulted with any questions regarding the curves and settings that are programmed into the ignition.

The DFS ignition for the Kawasaki KFX450R is 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.

BLACK/YELLOW – Programmable Launch Limiter. Ground this wire to activate, preset at 4,500 RPM (0-10,000 RPM adjustable using CurveMaker software)

BLUE – Optional 2-amp RPM window activated switch to ground, referenced as “RPM Switch 1” in PC Software.

WHITE/BLUE – Optional 2-amp RPM window activated switch to ground, referenced as “RPM Switch 2” in PC Software.

The Blue and White/Blue wires are 2-amp switches that 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 Blue or White/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). See attached wiring diagram for wiring the relay.

Data Recording

The Dynatek DFS will continuously record important engine operating parameters. This information can only be accessed through the Dynatek CurveMaker in the Diagnostics Tab of the software (sold separately). The recorded data includes:

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

Troubleshooting

Troubleshooting the Dyna ignition is simple. If the dashboard "Check Engine Light" is ON, or the vehicle will not start or run at all, follow these 3 steps:

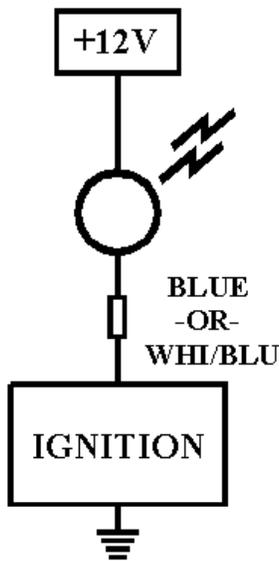
- 1) Disconnect the Fuel Injector Intercept connectors and reconnect the stock connector to the fuel injector,
- 2) Disconnect the DFS ORANGE/BLACK coil negative wire, and reconnect the stock BLUE/WHITE wire back to the ignition coil negative.

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 engine or vehicle. Follow the troubleshooting procedures outlined in your vehicle shop manual.

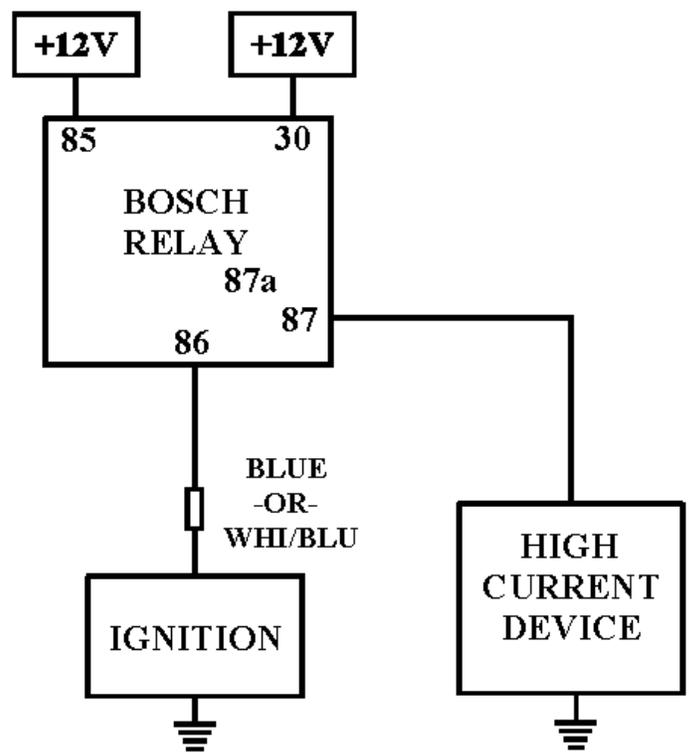
If you are using non stock spark plug, or stator, replace them with OEM units. Then follow the procedures in the calibration section to set the Dyna ignition up to work with your vehicle. If calibration doesn't fix the problem, the ignition should be returned for testing. If the problem persists when using the stock ignition then the problem is external to the Dyna ignition.

Examples of RPM Activated Switch wiring:

SHIFT LIGHT or SMALL SOLENOID



USING A BOSCH STYLE RELAY TO SWITCH HEAVY LOADS



FUEL4

FUEL3

FUEL2

FUEL1

STOCK

DE OPEN

ROTTLE

EL MAPS

NOT SHOWN

00 +

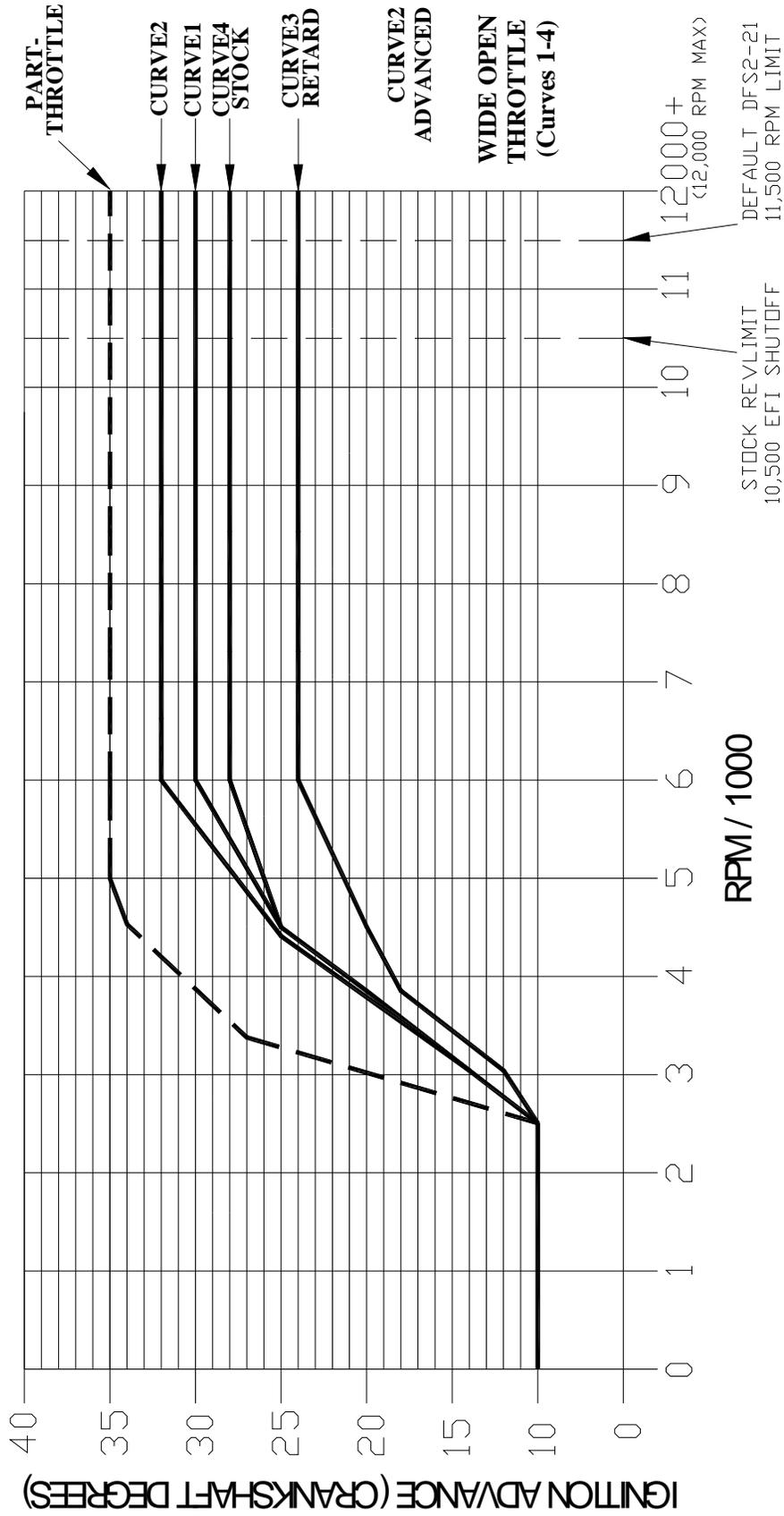
PM MAX)

6800292-3962

REV 1.0

OR

DYNA DFS2-21 / KAWASAKI KFX450R - IGNITION CURVES



ALL BASE MODULES USE CURVE 2
 CURVE4 = STOCK ADVANCE
 (Assumes 10° base timing)

DYNATEK 164 S. VALENCIA ST., GLENDORA, CA 91741 (800)928-3962	
TITLE	KFX450R ADVANCE CURVES
DATE	9-21-09
MODEL	2008+ KFX450R
REV	1.0