

Dyna FS Ignition DFS9-1P for 2003- Predator 500

Congratulations on your purchase of a Dynatek 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 the DynaFS ignition, mounting bracket, 8" tie wrap, 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. Remove one end of the battery negative (-) cable. Locate the stock ignition box, it is mounted to the left side of the bike, below the riders left leg.
- 2) Remove the seat. Using a Torx® T25 wrench, remove the four screws that hold the left plastic panel. Remove the two screws holding the ignition to the bike.
- 3) Unplug the stock ignition, taking care not to damage the harness connector. There is a small tab on the harness connector 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 supplied bracket and bolt it to the stock ignition mounting location. Plug the Dyna ignition in. Plug in the Curve Selector Switch. Zip-tie any loose accessory wires away from the front sprocket.
- 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.

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 will allow the engine to rev to a higher RPM than what it has before. The rev limit is programmable from 2000rpm to 12,000rpm. Stock rev limit is 9000rpm. The rev limit is pre-programmed to 9,100. If the rev limit is increased, 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.

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 – Programmable launch limiter. Ground this wire to activate (requires separate clutch switch)

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 “PV Solenoid” in PC Software.

The Launch RPM is programmable and can be wired to a separate clutch switch (not included) for a “two step/low side” launch limiter. See attached wiring diagram for installation. The launch limiter has a one-time only activation. If the ignition detects the purple wire is grounded, then the ignition will not rev past the low-side limit. When the low-side limit rpm is detected, and the purple wire becomes ungrounded, then the launch limiter is defeated and will not work again until the power is cycled off and back on.

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 ($\text{Amps} = \text{Volts}/\text{Resistance}$). See attached wiring diagram for wiring the relay.

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 plugs, 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 Predator 500 uses the 12-pole "reverse signal coil" 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 for the Signal Coil to pinpoint the problem.

WARNING:

Installation of a grounded tether kill switch to the ignition coil signal will damage the CDI and void the warranty.

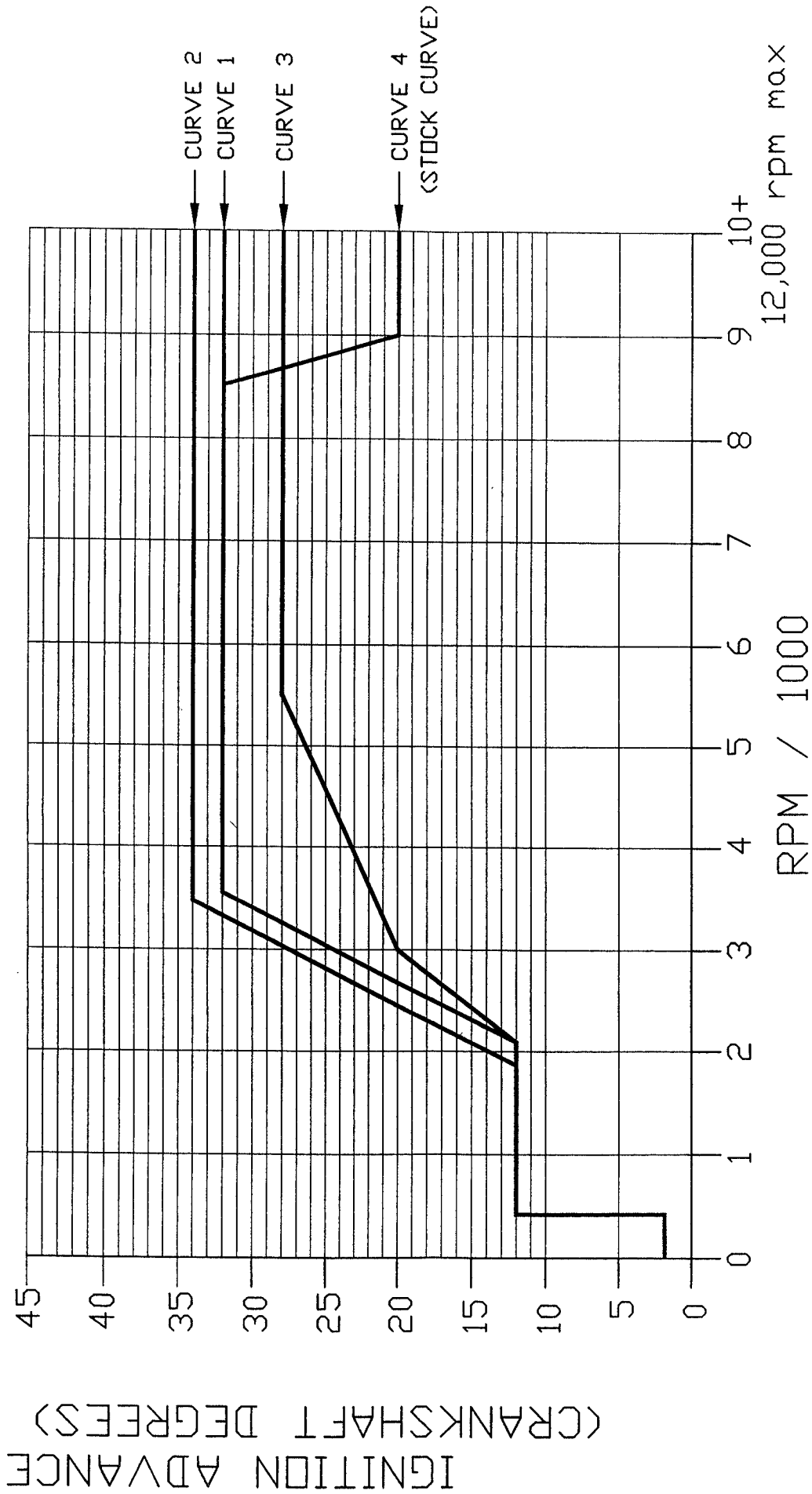
NOTE: 2003 Polaris Predator 500 utilizes the factory installed tether switch, which is wired to a separate kill switch inside the CDI box. If this is removed for any reason, follow the instructions below.

12V DC-CDI (Predator 500/Raptor 660/LTZ400/KFX400/etc.): Use a normally closed tether kill switch connected in series with the +12V input to the ignition. When the tether is removed, it should disconnect the +12V power to the ignition. If a normally closed tether kill switch cannot be located, then a grounded tether can be used to ground the pickup signal (White/Red wire at the ignition module)

PREDATOR 500 +12V POWER INPUT: RED at the ignition module.

The RUN/STOP SWITCH is another +12V input into the ignition module.

DYNA FS / POLARIS PREDATOR 500 IGNITION CURVES



PREPROGRAMMED WITH 9,100 RPM LIMIT (STOCK 9,000 RPM)

CURVE4 = STOCK ADVANCE

DYNATEK 164 S. VALENCIA ST., GLENORA, CA 91741 (626)963-1669	
TITLE	PREDATOR 500 ADV. CURVES
DATE	8-4-03
FILE	2801174A
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