



WEAPONX IGNITION COIL SERIES

PLEASE READ BEFORE CALLING OR RETURNING PRODUCT. EXTREMELY IMPORTANT!!!

To help avoid issues we would like to explain some of the PRIMARY reason customers run into issues with their ignition coils so that you can enjoy long service life and high performance.

Firstly, die-electric grease IS NOT a conductor. It is an insulator. This means by applying die-electric grease to any connectors on the ignition coil you are PREVENTING the ignition coil from working properly and can cause permanent damage. Die-electric grease is meant to coat the rubber boot or ceramic portion of the spark plug ONLY. It is intended to prevent the boot from sticking to the spark plug or spark plug bore when the cylinder head gets hot so please do not use the product on the connections as it may void your warranty due to improper installation. Coils applied with this to the connection point are not serviced or accepted by WeaponX for ANY reason.

Also, unlike the OEM units, the XCOPS have a positive retention clip much like spark plug wires and do not need any other form of retention in the heads. PUSH FIRMLY down on the ignition coils until you HEAR and FEEL them CLICK into place. If they do not you may experience issues due to an improper spark plug connection. The ignition coil terminal can be **EXTREMELY** tight from factory. This is to improve the connection and performance characteristics of the ignition coil. If you are uncertain about the installation use a socket extension, place it firmly on the end of the ignition coil and tap down on the top extension until the ignition coil seats in place.

Do not use excessive force on the harness connector and take care not to drop or force the ignition coil on the harness connector as it is not meant for high amounts of torque or impact pressure. Broken connectors are not covered by manufacturer warranty as it is not a manufacturer defect.

Also, it is **HIGHLY recommended to plug in and unplug the ignition coil several times on a removed spark plug to loosen the terminal connection for insertion into the cylinder head.** PLEASE NOTE THE FOLLOWING - **IF THE INSTALLER DOES NOT HEAR A SNAP THE IGNITION COILS ARE NOT INSTALLED PROPERLY.** The SNAP tells the installer that the ignition coil is installed and connected properly to the spark plugs. If engine does not start, performance decreases or if the ignition coils are popping out of the spark plug bore soon after installation, or engine missing is observed, the ignition coil was not installed correctly. Please pull out, RE-SEAT and re-install the ignition coils and be sure to listen to the SNAP. All coils should noticeably “snap” into place. Please see appendix B for installation suggestions to reduce effort on install.

Do not move, remove or adjust the external seals, or sleeve on any ignition coil unless explicitly specified. Removal may cause the seals to work improperly, cause water intrusion and will void the manufacturer warranty.

INTRODUCTION

WeaponX XCOPS are a total balanced ignition coil package that makes no sacrifices in material or ignition quality.

Top notch construction ensures you won't have any broken tabs or connectors, zero spark arching due to inferior boot quality, no misfire due to improper wire alignment and weather tight seals that perform to OEM specs.

XCOPS allow super fast removal and installation of spark plugs and offer our top notch progressive gain design that reliably increases power output as you improve your ignition without the worries or hassles of an ignition coil not meant for increased input power. Unlike other brands as your ignition grows so do the XCOPS.

WeaponX stands by our products and know they are a reliable investment now and years down the road.

INSTALLATION

PLEASE READ

This installation procedure will detail installation basics and tech tips on how to reliably improve your vehicles ignition system with your ignition coil upgrade. Also please read the important notes for important tips in each application.

RECOMMENDATIONS

A) Although it is not required, with the added power output of the ignition system it is HIGHLY recommended to use a 4 gauge or larger ground strap tied from your battery negative terminal to the engine block as well as your vehicle frame. This will aid in reducing RFI/EMI and increase power output of the ignition coils by improving electrical conduction to the ignition system. The XCOPS require more than 12 volts to fire properly. In a system that does not supply the proper voltage our ignition coils may not operate properly or start the engine. Also, if possible, upgrading the alternator supply wire size greatly improves system efficiency and ignition coil performance.

B) It is very important to shield any piggybacked devices and wiring that is connected to the PCM. With extra spark output comes increased EMI interference. WeaponX takes measures to reduce EMI via shielding and internal inductive resistor devices in the ignition coils but piggyback devices increase the chances that the computer will be effected by interference. Typical devices include shift lights and flip chips that connect to vital control signal wiring to the PCM. When the computer wiring is extended without shielding the chance of interference and computer malfunction drastically increases. Some symptoms include shift lights and tachometers that don't function properly, stalling vehicles and random computer codes. If these symptoms occur make sure all grounds are connected, and all piggybacked wiring is shielded. If required contact WeaponX for appropriate wire type for your application or spark plug selection to relieve symptoms. Also, see APPENDIX (A) for further methods on reducing interference.

Legal for use on racing vehicles.

APPENDIX (A)Information on further reducing PCM EFI and RFI issues.

WeaponX Part Number WPXIE-v1 (Interference Eliminator)

WeaponX has developed a 2 wire solution that successfully removes unwanted interference in any automotive application. Also, please refer to our technical article (RFI/EMI/EMC Reduction Manual.pdf) for further information on reducing in car interference issues.

IMPORTANT NOTES - APPENDIX (B) Installation of Ignition Coils

1) Never remove ignition coils while engine is still hot. Proper engine cool down should take place or damage to the ignition coil may result.

FORD DURATEC

2) This identified issue primarily affects all Ford Duratec engines. The area of concern is where the ignition coil enters the cylinder head. It is imperative that the mechanic or installer makes ABSOUTELY sure they use the proper supplied seals to install the ignition coil. This aids in preventing moisture / water and oil from entering the spark plug well. Improper seating, or failure to seat the gasket may result in foreign material entering the spark plug well which will void the warranty on the ignition coils. A secondary set of seals is provided and can be slipped over the body of the coil to fit alternate Duratec configurations. Please make sure to use the proper replacement gasket as per the OEM ignition coil configuration.

FORD 2V and 4V engines

All Ford Modular ignition coils also now come with a ribbed boot which serves to keep debris, water and oil from the spark plug well. This is to prevent any misfire situations in disadvantageous environments. Because of the tight fit to the engine it is highly recommended to coat the ignition coil boot with 3 IN 1 Silicon Spray Lubricant or Vaseline to aid in installation and removal of the ignition coil. Without lubricant it may be impossible for proper installation of these ignition coils. If you are NOT concerned about water entry into the spark plug well and are more concerned about easy installation and removal of the ignition coils the ribbed portion can be trimmed from the boot using a sharp hobby knife.

See below for suggested trim areas. (3VEFX AND STREET COILS, NO TRIM AREA SUGGESTED)



DODGE HEMI

The Dodge Twin Coil EFX setup requires installation of the umbrella seals and supplied pigtail adaptor harness as shown.



FREQUENTLY ASKED QUESTIONS

What gap size should I use?

WeaponX highly suggests to initially use a gap size that you know works. Our ignition coils will compensate by adding extra spark duration automatically making spark gap adjustment much less critical than on other ignition coil setups. NOTE: On forced induction applications greater spark duration seems to be more advantageous than larger spark gap. This is the first step in optimizing your ignition system. When things are operating properly it is suggested to open up gap in 0.002 increments until optimal gap size without blowout is reached then back off gap size by 0.004. It should also be noted that inoperable or poorly functioning charging systems greatly reduce the output and capability of the system and ignition coils.

I am experiencing problems with misfire after testing for EMI issues any suggestions?

For fault codes, please click the link below.

<http://www.weaponxperformance.com/manuals/Misfire%20Diagnosis.pdf>

VERY IMPORTANT IF YOU HAVE A BATTERY RELOCATION KIT

The ignition coil system will NOT WORK if your battery relocation system has under sized wiring. This is because there is a voltage drop which causes an issue with the EFX ignition coils. All setups should use a 1/0 AWG wire to maintain a proper amperage rating of over 245amps. If you are using a high power alternator, please see the requirements below.

1/0 AWG 245amps and up

2/0 AWG 285amps and up

3/0 AWG 385amps and up

4/0 AWG 445amps and up

* it is important to keep these runs as short as possible, and to eliminate as many connection points as possible. Extra wiring leads to increased wire resistance and lower amperage rating.

If you are still experiencing problems with your setup after firmly installing the ignition coils we HIGHLY recommend data logging your output voltage. It is possible that certain combinations are exceeding the specifications of the OEM charging system, especially if your battery is re located to the trunk. If after logging you experience a significant voltage drop during wide open throttle (below 13 volts) it is highly recommended to upgrade the alternator, ground and power wires to at least a 4awg wire. Size grounding and power wires to handle the upgraded potential of the new alternator in question. For optimizing output power of the XCOPS the system power should be stable at over 13 volts. Misfire is common on vehicles where batteries are re located to the trunk because the high output coils require a steady state 13+ volts to operate at 100% efficiency. When under 13 volts the engine is not be providing the optimum power required to properly operate the XCOP ignition coils. OEM ignition coils can operate at very low voltages because of the lower power requirements where the XCOP ignition coils require a steady state 13+ volt charge to work properly. Also, inspect the sleeves of the ignition coils for any cracks or splits and for any liquid or debris in the spark plug bore such as oil or water. If any obvious fluids are

in the bore or cracks are on the sleeves there may be a voltage leak from the ignition coil to ground. The outer sleeves and lack of fluids prevent high voltage from sparking to the cylinder head, which may cause the spark to be created external to the spark plug.

Why are my ignition coils still not snapping into place?

WeaponX ignition coils are very tight from factory for improved electrical conductivity. Use of force is necessary at times to install the spark plug. Please attempt to install spark plug into ignition coil by hand first. Also, inspect the inner spark plug boot of the XCOPS for any molding flash where the spark plug fits through. In some rare cases this leftover rubber flashing may inhibit full spark plug insertion. In this case use a small bit, screwdriver or knife to remove the flashing on the inside of the boot.

***WARRANTY**

WeaponX guarantees this product free from defects and workmanship for a period of 2 years from the date of purchase if installed by a qualified professional. Products that fail will be replaced at WeaponX's option when product quality has been marked as the failing issue. This warranty does not include abuse, misuse, modification or improper installation of the product. Warranty is limited to the ignition coils only and shall not be liable in part or whole for any special, incidental or consequential damages or costs that may occur with this product. The foregoing is exclusive and in lieu of any other warranties either expressed or implied and is valid only to the original purchaser. During a return product must be accompanied by an RGA number and must be received within 30 days of RGA issue. WeaponX may at our discretion charge appropriate handling and shipping fees back to original purchaser if product is found to be in operating condition. Minimum \$9 handling fee on returned product to be charged for processing.

WEAPONX

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SENDING ALL OTHER IGNITION COMPANIES BACK TO THE DRAWING BOARD

Specified high grade electrical components ensure optimal operation and reduce electrical stress levels on the PCM all while offering significant high power characteristics.

High Power Ignition circuit allows for quick charge and coil recovery characteristics all while delivering high energy transfer potential. Exclusive windings are designed to reduce heat buildup and increase performance through use of extra thick, tightly nit, winding materials creating high intensity, long duration spark events.

A WeaponX exclusive for Ford ignition coils. Internal EMC, EMI and RFI shielding allows for improved PCM and onboard electronic performance allowing for precise instrumentation and PCM performance while reducing high frequency interference.

WeaponX Patent Pending technology** reduces high frequency transients, allows for multiple spark discharge events while allowing for precise electronic control through the reduction of harmful EMI, EMC and RFI emissions in the ignition circuit.

All epoxy resins and materials are designed with long life and high performance in mind.

Extra long form fitting boot wraps the ignition coil and spark plug to provide uncompromising ignition coil performance while reducing the possibility of spark flashover. WeaponX designed quad corrugated ribs also ensure reduced flashover, and reduced risk of separation.

FORD APPLICATIONS SUPPORTED
MODULAR 2V HEAD APPLICATIONS
MODULAR 3V HEAD APPLICATIONS
MODULAR 4V HEAD APPLICATIONS
FORD ZETEC

MAZDA APPLICATIONS SUPPORTED
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Checklist - Can the competition stack up?

- 1) Positive retention, CNC profiled connection point
- 2) Quad corrugated form fitting anti flashover boots
- 3) Low loss terminal for spark plug
- 4) High cross section terminals for PCM connector
- 5) Ignition optimized tunes for maximum performance
- 6) High grade epoxies, resins and materials throughout
- 7) EMI, EMC and RFI metal case shielding
- 8) Proven performance and mileage benefits

WeaponX PCM terminals are made of highly conductive and corrosion resistant brass material using the highest possible cross section to aid in highly efficient energy transfer characteristics.

WeaponX uses strategically placed heat sinking fins* to increase the output energy. The strategically placed heat conductive fins allow for maximum performance in the toughest environments.

WeaponX's exclusively designed high voltage sleeve protects against spark flashover in demanding environments. *Allows for proper use with CDI ignitions.

WeaponX's exclusive high power, high cross section laminated mag-core** provides lower electrical loss, lower temperature operation and high performance output characteristics in abusive environments.

WeaponX Mag-Core technology is the latest in high performance ignition coil technology. It successfully reduces electrical losses, improves coil charge rates, improves coils discharge energy and improves overall ignition coil efficiency. The use of this technology allows for a highly precise, high output ignition coil in a compact design.

WeaponX uses high cross section terminations and highly conductive conductors throughout the ignition coil to ensure minimal electrical loss and high performance characteristics with high energy output.

Another WeaponX exclusive. The XCOP uses a highly conductive direct termination to the spark plug which is over 35 times more conductive than a stainless steel connector all while protecting against corrosion. This positive retention termination point allows for precise coil performance, lower overall electrical losses and high performance characteristics.

Proven performance, hp and mileage benefits!

*05+ Performance Tunes available to optimize ignition coil performance. Exclusively tested and programmed via WeaponX Performance!

ANOTHER INDUSTRY FIRST FOR FORD OWNERS!
EXCLUSIVELY FROM WEAPONX!

** in EFX line only - standard core in Street line

- 9) Shortest possible electrical run from ignition coil to spark plug terminal
- 10) High voltage protective sleeve to withstand high power output
- 11) Precise EMI, EMC and RFI control circuitry that allows multi-spark
- 12) WeaponX Mag-Core technology to increase ignition coil output
- 13) High cross section laminated core to increase ignition coil output
- 14) Highly conductive terminals or poor conducting stainless interconnects
- 15) High cross section termination points for low loss electrical transfer
- 16) Exclusive internal heat sinking fins for maximum performance
- 17) High cross section windings for improved electrical conduction