

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER DE-12-004

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Section 39515 and 39516 and Executive Order G-02-003;

Relating to Exemptions under Section 27156 of the Vehicle Code, and Verification under Sections 2700 through 2711 of Title 13 of the California Code of Regulations (CCR)

Boshart Engineering, Incorporated
Econix DPF-A Diesel Particulate Filter (DPF) System

ARB has reviewed Boshart Engineering, Incorporated's request for verification of Econix DPF-A Filter System. Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of ARB hereby finds that Econix DPF-A Filter System reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85 percent reductions) (Title 13, CCR, Sections 2702 and 2708) and is compliant with the 2009 nitrogen dioxide emissions limit. Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies Econix DPF-A Filter System as a Level 3 Plus system for heavy-duty on-road vehicles that use certain certified heavy-duty diesel engines. Engines for which the Econix DPF-A Filter System is verified, the verified parts list, the verified labels, swapping and re-designation information, and other product information can be found here:

<http://www.arb.ca.gov/diesel/verdev/companies/Boshart/EconixDPF-A.htm>

The aforementioned verification is subject to the following terms and conditions:

- The engine must be originally manufactured from model year 1993 through 2006 and have an engine family name listed at:

<http://www.arb.ca.gov/diesel/verdev/companies/Boshart/EconixDPF-A.htm>

- The engine must be used by an on-road motor vehicle with a manufacturer's Gross Vehicle Weight Rating of over 14,000 pounds.
- The engine must be certified for on-road applications.

- The engine must have a minimum displacement of 5.9 liters and maximum displacement of 13 liters.
- Only one filter may be installed per engine.
- The engine must be in its original certified configuration.
- The engine must have a PM certification level of at most 0.1 grams per brake horsepower-hour (g/bhp-hr) or 0.12 for model year 1993 engines, and greater than 0.01 g/bhp-hr.
- The engine must have rated power of at least 150 horsepower but not more than 400 horsepower.
- The engine must not be certified as having exhaust gas recirculation.
- The engine must not have a pre-existing oxidation catalyst from the original equipment manufacturer unless the following conditions are met:
 - The original equipment diesel oxidation catalyst is left in place and not removed.
 - The Econix DPF-A Filter System is installed downstream of the diesel oxidation catalyst.
 - The backpressure sensor is installed upstream of the diesel oxidation catalyst.
- The engine must not have a pre-existing DPF from the original equipment manufacturer.
- The engine must be four-stroke.
- The engine can be turbocharged or naturally aspirated.
- The engine can be mechanically or electronically controlled.
- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, must not be mixed with the fuel.
- The engine must be operated on fuel that has a sulfur content of no more than 15 parts per million by weight.
- Econix DPF-A Filter System must not be operated with fuel additives, as defined in Section 2701 of Title 13, of the CCR.

- Econix DPF-A Filter System must not be used with any other systems or engine modifications without ARB and manufacturer approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of Econix DPF-A Filter System, manufactured by Boshart Engineering, Incorporated, 1175 Del Rio Place, Ontario, California 91764, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, Econix DPF-A Filter System is exempt from the prohibitions in Section 27156 of the Vehicle Code for installation on heavy-duty on-road vehicles using engines from the engine families listed at [http://www.arb.ca.gov/diesel/verdev/companies/Boshart/Econix DPF-A.htm](http://www.arb.ca.gov/diesel/verdev/companies/Boshart/Econix%20DPF-A.htm)

This exemption is only valid provided the engines meet the aforementioned conditions.

The Econix DPF-A Filter System consists of the following major system components, listed in order from exhaust inlet to outlet as they are arranged within the exhaust system of the vehicle: 1 safety diverter assembly (reduced diameter (1.5 inch) tubing, rupture disk assembly (1 rupture disk flange, 1 rupture disk collar, 1 rupture disk gaskets, 1 rupture disk, 1 rupture disk gasket, 1 rupture disk flange), 1 mini silicon carbide DPF (mini DPF), 1 thermocouple, 1 exhaust tube with bend sufficient to prevent objects from reaching the filter), 1 safety diverter valve, 1 diesel fuel burner, 1 non-catalyzed metal fiber DPF, and 1 outlet cone. The Econix DPF-A Filter System also includes an electronic control and warning system, 3 temperature sensors, and 1 backpressure sensor. The major components of the Econix DPF-A Filter System are identified in the parts list. The parts list and schematics of the approved product and engine labels are available on the website shown above.

The Econix DPF-A Filter System is comprised of a single safety diverter assembly and single DPF assembly (including the burner element, DPF, electronic control warning system, and sensors) designed to filter the exhaust from a single engine. Econix DPF-A Filter Systems with multiple safety diverter assemblies, DPF assemblies, and electronic control warning systems are not valid under this Executive Order. Including more than one rupture disk assembly or mini DPF core within a safety diverter assembly is not valid under this Executive Order. Including multiple non-catalyzed metal fiber DPFs, either canned together or multiple individually-canned filter components in parallel or in series (or any combination thereof) are not valid under this Executive Order. Channeling exhaust from a single engine through multiple Econix DPF-A Filter Systems, deployed in parallel, or in series or any combination thereof, is not valid under this Executive Order. Channeling exhaust from multiple engines through either a single Econix DPF-A Filter System, or through multiple Econix DPF-A Filter Systems installed on the same equipment is also not valid under this Executive Order.

No changes are permitted to the device without written approval of ARB. Changes from the verified design without written approval of ARB shall immediately invalidate this Executive Order.

Changes made to the design or operating conditions of the Econix DPF-A Filter System, as exempted by ARB, which adversely affect the performance or safety of the vehicle's pollution control system or safety diverter assembly, shall immediately invalidate this Executive Order.

Boshart Engineering, Incorporated, must ensure that the installation of Econix DPF-A Filter System conforms to all applicable industrial safety requirements.

Prior to sale of an Econix DPF-A Filter System, Boshart Engineering, Incorporated, must provide each prospective owner/purchaser of Econix DPF-A Filter System with a written estimate of the number of hours of vehicle operation that will typically elapse before regeneration is required. Boshart Engineering, Incorporated, must also provide, in writing, the length of time of a typical regeneration event.

This Executive Order is valid provided that installation instructions for Econix DPF-A Filter System do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Marketing of Econix DPF-A Filter System using identification other than that shown in this Executive Order for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained in writing from ARB.

This Executive Order shall not apply to any Econix DPF-A Filter System advertised, offered for sale, offered for lease, sold with, leased with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

A copy of this Executive Order must be provided to the ultimate purchaser at the time of sale.

As specified in the Diesel Emission Control Strategy Verification Procedure (CCR, Title 13, Section 2706), ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:

CA/BSH/2012/PM3+/N00/ON/DPF01

As stated in the Procedure, Boshart Engineering, Incorporated, is responsible for recordkeeping requirements (Section 2702), honoring the required warranty (Section 2707), and conducting in-use compliance testing (Section 2709).

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the vehicle on which the diesel emission control strategy is installed is strongly advised to adhere to all good engine maintenance practices. Failure to document proper engine maintenance, including keeping records of the engine's oil consumption, may be grounds for denial of a warranty claim.

The use of alternative diesel fuels such as, but not limited to, biodiesel, ethanol diesel blends, and water emulsified diesel fuel are prohibited from use with the Econix DPF-A Filter System.

In addition to the foregoing, ARB reserves the right in the future to review this Executive Order and the exemption and verification provided herein to assure that the exempted and verified add-on or modified part continues to meet the standards and procedures of Title 13 CCR, Section 2222, et seq, and Title 13 CCR, Sections 2700 through 2711.

The Econix DPF-A Filter System must not be located over any occupied space (e.g., driver or passenger compartments); or in a way which would result in any noncompliance with any applicable safety standards such as but not limited to Federal Motor Carrier Safety Administration, Subpart G, Miscellaneous parts and accessories, Section 393.83 Exhaust systems; and any other location deemed unacceptable by Boshart Engineering, Incorporated.

Systems verified under this Executive Order must conform to all applicable California emissions regulations.

The terms and conditions of this Executive Order must be satisfied regardless of where the system is sold in order for the system to be considered verified.

Systems sold as verified, or which carry ARB-approved label, must satisfy all the terms and conditions of this Executive Order.

This Executive Order does not release Boshart Engineering, Incorporated, from complying with all other applicable regulations.

Boshart Engineering, Incorporated, must comply with all the terms and conditions delineated in letter Reference Number 12-661-1268. If Boshart Engineering, Incorporated, fails to fulfill any of these requirements within the specified time, this Executive Order automatically terminates.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

Executed at El Monte, California, and effective this 10th day of September 2012.

Robert H. Cross, M.S.M.E., P.E.
Chief, Mobile Source Control Division