

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER DE-04-012

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 39616 and Executive Order G-02-003;

Relating to Exemptions under Section 27156 of the Vehicle Code, and Verification under Sections 2700 through 2710 of Title 13 of the California Code of Regulations

Lubrizol Engine Control Systems (ECS)
Unikat Combifilter

ARB has reviewed ECS's request for verification of the Unikat Combifilter (Combifilter). 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 the Combifilter reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85 percent reductions) (Title 13 California Code of Regulations ("CCR") Sections 2702 (f) and (g) and Section 2708). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies the Combifilter as a Level 3 system for off-road construction, material handling, and cargo handling applications and engine families listed in Attachment 1.

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

- The engines are model years 1996 through 2004 having the engine family names listed in Attachment 1.
- The engine must be in their original certified configuration.
- The engine must not have a pre-existing original equipment manufacturer oxidation catalyst.
- The engine must not have a pre-existing diesel particulate filter.
- The engine must be certified in California for off-road applications.
- The engine must be used for construction, material handling, and cargo handling purposes.
- The engine must be certified at a particulate matter emission level equal to or less than 0.43 grams per brake horsepower-hour (0.58 grams per kilowatt-hour).
- The engine must be able to return to regeneration control panel after operating for 8-10 hours.
- The engine does not employ exhaust gas recirculation.
- The engine must be four-stroke.
- The engine can be turbocharged or naturally-aspirated.
- The engine can be mechanically or electronically controlled.

- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, should not be mixed with the fuel.
- The engine must be operated on diesel fuel (e.g. not biodiesel blends or alternative diesel fuels) with a sulfur content of no more than 500 parts per million by weight.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the Combifilter, manufactured by Engine Control Systems, A Division of Lubrizol Canada, Ltd., 165 Pony Drive, Newmarket, Ontario, Canada L3Y 7V1, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the Combifilter is exempt from the prohibitions in Section 27156 of the Vehicle Code for installation on heavy-duty off-road vehicles listed in Attachment 1.

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

The Combifilter is an actively regenerated non-catalyzed diesel particulate filter. The collected diesel particulate matter (PM) is stored in the filter matrix until the unit is regenerated via an electrically-heated regeneration system. The major components of the Combifilter are identified in Attachment 2.

This Executive Order is valid provided that installation instructions for the Combifilter do not recommend tuning the engine to specifications different from those of the engine manufacturer.

Changes made to the design or operating conditions of the Combifilter, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system, shall invalidate this Executive Order.

No changes are permitted to the device. The ARB must be notified in writing of any changes to any part of the Combifilter. Any changes to the device must be evaluated and approved by ARB. Failure to do so shall invalidate this Executive Order.

Marketing of the Combifilter using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained from ARB.

This Executive Order shall not apply to any Combifilter advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

The ARB estimates that the Combifilter might incur an average fuel economy penalty of 4.7 percent.

As specified in the Diesel Emission Control Strategy Verification Procedure (Title 13 CCR Section 2706 (g)), the ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is: CA/LUB/2004/PM3/N00/OFF/DPF03.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, ECS is responsible for honoring the required warranty (Section 2707) and conducting in-use compliance testing (Section 2709).

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 California Code of Regulations, Title 13, Section 2222, et seq and California Code of Regulations, Title 13, Sections 2700 through 2710.

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

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

Executed at El Monte, California, this 13th day of December 2004.

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Robert H. Cross, Chief
Mobile Source Control Division

Attachment 1: Combifilter Engine Family List
Attachment 2: Combifilter System Parts List