



Air Resources Board



Matthew Rodriquez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Edmund G. Brown Jr.
Governor

March 22, 2012

Reference 12-661-1072

Mr. Tom Sem
Proventia Emission Control
9400 Old Cedar Avenue South, Suite 311
Minneapolis, Minnesota 55432

Dear Mr. Sem:

Using the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines* (Procedure), the Air Resources Board (ARB) staff reviewed your application for the conditional verification of the Proventia Emission Control's (Proventia) Electrically-Heated Diesel Particulate Filter (EHDPF) for use only with Thermo King Tripac Auxiliary Power Units (APU). Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, ARB hereby finds that the Proventia EHDPF reduces emissions of diesel particulate matter (PM) consistent with a Level 3 plus device (greater than or equal to an 85 percent reduction and compliant with the 2009 nitrogen dioxide standard). ARB also finds that the Proventia EHDPF satisfactorily completed at least 33 percent of the durability demonstration period for APU applications. Accordingly, ARB determines that the system merits conditional verification and, subject to the terms and conditions specified below, classifies the Proventia EHDPF as a Level 3 plus system for Thermo King Tripac APU applications that use diesel engines from the engine families listed in <http://www.arb.ca.gov/diesel/verdev/companies/proventia/ehdpf.htm>.

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

- The Proventia EHDPF is conditionally verified for a period not to exceed one year from the date of this letter.
- For the Proventia EHDPF to be considered for full verification, Proventia must complete all remaining requirements, as specified in letter, Reference Number 12-661-1171, within one year of the date of this letter.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

- Conditional verification is equivalent to verification for the purposes of satisfying the requirements of in-use emission control regulations.
- The verification is restricted to only those engine families and models listed in <http://www.arb.ca.gov/diesel/verdev/companies/proventia/ehdpf.htm> used in APU applications.
- The engine must be in its original certified configuration.
- The engine must be a Tier 2 or Tier 4 Yanmar TK270M, model year 2007 to 2012.
- The engine must be certified to 0.2 grams per kilowatt-hour PM or less.
- The engine must have a maximum power output rating of less than 11 horsepower.
- The application must be only for Thermo King Tripac APU applications.
- The engine must be four-stroke.
- The engine must not employ exhaust gas recirculation.
- The engine must not have a pre-existing diesel particulate filter (DPF) from the original equipment manufacturer.
- The engine must not have a pre-existing diesel oxidation catalyst from the original equipment manufacturer.
- The engine must be mechanically governed.
- The engine must be naturally aspirated.
- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lubricating oil, or other oil, must not be mixed with the fuel.
- The system must be operated on fuel that has a sulfur content of no more than 15 parts per million (ppm) by weight.

- The product must not be operated with fuel additives, as defined in Section 2701 of Title 13, of the California Code of Regulations (CCR), unless explicitly verified for use with the fuel additive(s).
- The product must not be used with any other systems or engine modifications without ARB and manufacturer written approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the Proventia EHDPF, manufactured by Proventia Emission Control Oy, Tietotie 1, Oulunsalo, Finland 90460, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the Proventia EHDPF exempt from the prohibitions in Sections 38390 and 38391 of the Vehicle Code for installation on APUs using engines from the families on the website: <http://www.arb.ca.gov/diesel/verdev/companies/proventia/ehdpf.htm>.

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

The Proventia EHDPF consists of a DPF, two backpressure switches, an electronic control unit, and a remote display module. Engines for which the Proventia EHDPF system is verified, the verified parts list, verified labels, swapping and re-designation information, and other product information can be found here: <http://www.arb.ca.gov/diesel/verdev/companies/proventia/ehdpf.htm>.

No changes are permitted to the device. ARB must be notified, in writing, of any changes to any part of the Proventia EHDPF. Any changes to the device must be evaluated and approved in writing by ARB. Failure to do so shall invalidate this conditional verification.

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

Marketing of the Proventia EHDPF using identification other than that shown in this conditional verification letter, or for an application other than that listed in this conditional verification letter, shall be prohibited unless prior written approval is obtained from ARB.

This conditional verification is valid provided that installation instructions for the Proventia EHDPF system do not recommend tuning the APU to specifications different from those of the APU manufacturer.

ARB estimates that the usage of the Proventia EHDPF could incur a fuel economy penalty of up to 5 percent depending on the application.

A copy of this conditional verification letter must be provided to the ultimate purchaser at the time of sale.

As specified in the Procedure, ARB assigns each diesel emission control strategy a family name. The designated family name for the conditional verification as outlined above is:

CA/PEC/2012/PM3+/N00/AP/DPF01

Additionally, as stated in the Procedure, Proventia 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 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.

This conditional verification is valid provided that the diesel fuel used in conjunction with the device complies with Title 13, CCR, Sections 2281 and 2282, and if biodiesel is used, the biodiesel blend shall be 20 percent or less subject to the following conditions:

- The biodiesel portion of the blend complies with the American Society for Testing and Materials Specification D6751 applicable for 15 ppm sulfur content; and
- The diesel fuel portion of the blend complies with Title 13, CCR, Sections 2281 and 2282.

Other alternative diesel fuels such as, but not limited to, ethanol diesel blends and water emulsified diesel fuel, are excluded from this conditional verification.

This conditional verification shall not apply to any Proventia EHDPF system installed on an APU prior to sale or lease to an ultimate purchaser.

Proventia must ensure that the installation of the Proventia EHDPF system conforms to all applicable industrial safety requirements.

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The terms and conditions of this conditional verification letter 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 conditional verification letter.

Systems conditionally verified in this letter shall conform to all applicable California emissions regulations.


This conditional verification does not release Proventia from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this conditional verification.

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

Thank you for participating in ARB's diesel emission control strategy verification program. If you have any questions or comments, please contact Ms. Shawn Daley, Manager, at (626) 575-6972, or by e-mail at sdaley@arb.ca.gov.

Sincerely,



Robert H. Cross, Chief
Mobile Source Control Division

cc: Shawn Daley, Manager
Retrofit Assessment Section