

**State of California  
AIR RESOURCES BOARD**

**EXECUTIVE ORDER DE 06-007-03**

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 38395 of the Vehicle Code, and Verification under Sections 2700 through 2710 of Title 13 of the California Code of Regulations (CCR):

HUSS Umwelttechnik GmbH  
FS-MK Series Diesel Particulate Filter

ARB has reviewed HUSS's request for verification of the FS-MK filter. 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 FS-MK filter reduces emissions of diesel particulate matter consistent with a Level 3 device (greater than or equal to 85 percent reductions) (Title 13 California Code of Regulations Sections 2702 (f) and Section 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 the FS-MK filter as a Level 3 plus system for off-road applications that use diesel engines of all model years up through and including 2009, except those belonging to engine families listed in Attachment 1.

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

- The engine must be model year 2009 or older, and not belong to any of the engine families listed in Attachment 1.
- The engine must not have external exhaust gas recirculation.
- The engine may have internal exhaust gas recirculation.
- The engine must not be certified with an oxidation catalyst from the original equipment manufacturer.
- The engine must not be certified with a diesel particulate filter from the original equipment manufacturer.
- The engine can be mechanically or electronically controlled.
- The engine can be turbocharged or naturally aspirated.
- Certified engines must be in original certified configuration.
- Certified engines must be certified for off-road applications unless the on-road certified engine is used to power off-road vehicles and equipment.
- 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.
- FS-MK<sup>M</sup> 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 fuel additive(s).
- The product 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 the FS-MK filter, manufactured by HUSS Umweltechnik GmbH of Nordostpark 74, D-90411 Nürnberg, Germany, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the FS-MK filter is exempt from the prohibitions in Section 38390 and 38391 of the Vehicle Code for installation on all off-road equipment.

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

The FS-MK filter consists of a wall-flow diesel particulate filter, a diesel fuel burner, and an electronic control system. The major components of the FS-MK filter are identified in Attachment 2.

This Executive Order is valid provided that installation instructions for the FS-MK filter do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

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

Prior to sale of an FS-MK system, HUSS must provide each prospective owner/purchaser with a written estimate of the number of hours of vehicle operation that will typically elapse before regeneration is required. HUSS must also provide, in writing, the length of time of a typical regeneration event.

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

Marketing of the FS-MK filter 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 written approval is obtained from ARB.

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

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/HUS/2006/PM3+/N00/OFF/DPF01**

As stated in the Diesel Emission Control Strategy Verification Procedure, HUSS is responsible for record keeping requirements (section 2702), honoring the required warranty (section 2707), and conducting in-use compliance testing (section 2709).

This Executive Order 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 parts per million sulfur content;
- The diesel fuel portion of the blend complies with Title 13, CCR, sections 2281 and 2282; and
- The use of biodiesel applies to devices verified to reduce only diesel particulate matter.

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

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 CCR, Title 13, Section 2222, et seq and CCR, Title 13, Sections 2700 through 2710.

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

This Executive Order does not release HUSS from complying with all other applicable regulations.

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

This Executive Order hereby supersedes Executive Orders DE-06-007-02 (dated August 18, 2008), DE-06-007-01 (dated March 23, 2007), and DE-06-007 (dated November 13, 2006).

Executed at El Monte, California, and effective this 5<sup>th</sup> day of August 2009.

/s/

Robert H. Cross, Chief  
Mobile Source Control Division

Attachment 1. Engine Family List  
Attachment 2. Parts List for the FS-MK Filter:  
Attachment 3. Labels for the FS-MK Filter

