

State of California

AIR RESOURCES BOARD

Proposed
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PROCEDURES FOR EXEMPTION OF ADD-ON AND MODIFIED PARTS
FOR
OFF-ROAD CATEGORIES

Adopted: _____

NOTE: This is a new document proposed for adoption by the Air Resources Board.

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AIR RESOURCES BOARD

PROCEDURES FOR EXEMPTION OF ADD-ON AND MODIFIED PARTS FOR OFF-ROAD VEHICLES/ENGINES/EQUIPMENT

I. APPLICABILITY

These criteria apply to add-on or modified parts that are emission related, as defined in Section 1900 (b), (1) and (10), Chapter 3, Title 13, California Code of Regulations (CCR). Examples of emission related parts are shown in Appendix B of these procedures. Such parts require an exemption from the prohibitions of Sections 27156 and 38391 of the California Vehicle Code (VC) and 13, CCR, Section 2472 in order to be legally advertised, offered for sale, sold, or installed in California. The Executive Officer shall grant an exemption from VC 27156 and VC 38391 for parts that satisfy criteria as specified in these procedures.

II. APPLICATION FOR EXEMPTION BY THE BOARD FROM THE PROHIBITIONS OF SECTIONS 27156 AND 38391 OF THE CALIFORNIA VEHICLE CODE AND 13, CCR, SECTION 2472.

The manufacturer of an add-on or modified part shall file an application for exemption for each generic category, as defined in Paragraph III.D of these procedures. The application shall be in writing, and must be signed by a person authorized to act on behalf of the manufacturer.

An applicant shall complete information required in the application form in Appendix A. In addition to the application, the Executive Officer shall require an applicant to submit other design or technical information, photographs, and a sample of the part, if the information submitted in the application does not permit a proper evaluation of the add-on or modified part. Upon request of an applicant, the Executive Officer shall return any sample part within 30 days, after the exemption request is either granted, denied, or withdrawn.

III. EMISSION TESTING REQUIRED BY THE EXECUTIVE OFFICER

A. Vehicle/Engine/Equipment Selection

The Executive Officer shall require the applicant to conduct emission testing in accordance with Paragraph IV.E.1, unless the Executive Officer determines, based upon a review of available information, that the part for which an exemption is sought meets the standards and requirements set forth in these procedures, and does not significantly affect emissions. Upon request by the applicant, the Executive Officer shall provide a list of test vehicles/engines/equipment, including alternates. When selecting test vehicles/engines/equipment, the Executive Officer shall consider the worst case and/or the most popular configurations as defined in Paragraph III.E.2 of these test

procedures. The number of vehicles/engines/equipment to be tested is specified in Paragraph III.E of this section. Manufacturers are advised to consult with the Air Resources Board staff before conducting any testing in support of an exemption application.

B. Test Laboratory

The applicant shall have any required testing performed at a laboratory properly equipped to conduct such tests. The test vehicle(s)/engine(s)/equipment shall be under the control of the laboratory for the entire test period and shall not be returned.

C. Additional or Alternate Testing

If the Executive Officer finds that the emission testing specified in Paragraph IV.E is not adequate to characterize the emissions performance or durability of an add-on or modified part, the Executive Officer shall require alternate emission testing (including monitoring of toxic emissions or “off-cycle” testing) and/or functional and bench testing. If the Executive Officer requires such additional or alternate testing, the Executive Officer shall notify the applicant of the requirement prior to the start of any other required testing and shall provide the applicant with reasons or justification for imposing the alternate or additional requirements. The Air Resources Board may conduct confirmatory tests at the option of the Executive Officer. Confirmatory tests, if required, shall be performed by ARB within 30 days of receipt of all data, materials, and vehicles necessary for the conduct of the test. The results of ARB confirmatory tests shall be reported to the applicant within 20 days of completion of all ARB testing. The applicant shall be given the opportunity to observe the confirmatory tests. The confirmatory testing conducted by the Air Resources Board shall utilize the same procedure and test type as that used by the applicant.

D. Categorization of Parts - Generic Categories

Any add-on or modified part will be categorized according to its "Generic Category". For example, the term “intake manifold” shall define the entire generic category for this part. Generic categories shall include:

- Turbochargers
- Superchargers
- Intercoolers
- Carburetors
- Fuel Injection Systems
- Intake Manifolds
- Ignition Systems (excluding Distributors)
- Ignition Distributors
- Electronic Control Units

- Camshafts

Other Internal Engine Components
Evaporative Control System
Positive Crankcase Ventilation System
Exhaust Gas Recirculation System
Air Injection System
Fuel Filler Necks with Restrictions
Thermal Reactors
Exhaust Systems

For other components which in any way can affect emissions, applicants should check with the Executive Officer for a determination of the appropriate breadth of the generic category. Appendix B outlines a list of components which are examples of emissions-related parts for on-road vehicles as defined in Section 1900 (b)(3), Chapter 3, Title 13, California Code of Regulations.

E. Number and Type of Test Vehicles/Engines/Equipment Required

1) When required by the Executive Officer, add-on or modified parts shall be emission tested using one of the test procedures specified in Paragraph IV.E as applicable.

2) The required number and type of test vehicles/engines/equipment is the same for each test procedure specified in paragraph IV.E of these procedures. The test vehicle/engine/equipment types will be the "worst case" and/or "most popular" as determined by the Executive Officer. Selection of a "most popular" test vehicle/engine/equipment shall be based on the configuration with the highest projected sales volume of the add-on or modified part. Selection of a "worst case" test vehicle/engine/equipment shall be based on the engine displacement and vehicle/engine/equipment test weight which produce the greatest stress on the emission related components. When the Executive Officer finds that a "worst case" vehicle/engine/equipment cannot be obtained with a reasonable effort or cost to the applicant, one with the same engine displacement but different test weight may be substituted. When the Executive Officer makes such a finding, the substitute vehicle/engine/equipment may be emission tested at the same test weight and road load horsepower as that of the "worst case" vehicle/engine/equipment. If the applicant elects to test the substitute vehicle/engine/equipment at a test weight less than that of the "worst case", the Executive Officer shall restrict the exemption for the add-on or modified part to vehicles/engines/equipment with the lower weight, unless the Executive Officer determines that the lower weight adequately represents the heavier vehicle/engine/equipment substituted for in all ways related to emissions. The number of vehicles/engines/equipment the applicant will be required to emission test depends on the application and is provided herein.

a) Universal Vehicle/Engine/Equipment Application Type:

Refers to the generic categories in which the add-on or modified part exemption application applies to the product line of four or more vehicle/engine/equipment manufacturers. In such cases the applicant shall be required to emission test a maximum of four different model vehicles, engines, or equipment for each application category.

b) Less Than Universal Vehicle/Engine/Equipment Application Type:

Refers to the generic categories in which the add-on or modified part exemption is applicable to the product line of two or three vehicle, engine, or equipment manufacturers. In such cases the add-on or modified part manufacturer shall be required to emission test a number of vehicle, engine, or equipment equal to or less than the number of applicable manufacturers for each application category.

c) Single Manufacturer Vehicle/Engine/Equipment Application Type:

Refers to the generic categories in which the add-on or modified part exemption application only applies to one vehicle/engine/equipment manufacturer. In such cases the applicant may be required to emission test no more than one vehicle/engine/equipment for each application category.

IV. EVALUATION CRITERIA

A. Basis of Emissions Evaluation

The Executive Officer shall review the applicant's emission test data and the Air Resources Board test results, if any, to determine if the add-on or modified part increases emissions. In the absence of certification emission test data, the Executive Officer shall use good engineering judgment and the results of any functional, emission test results from similar parts in making the determination regarding the effect of the add-on or modified part on emissions.

B. Resolution of Discrepancies

In the event of discrepancies between the Air Resources Board test results and the applicant's test results, the Executive Officer's evaluation may be based solely on the Air Resources Board test results. The Executive Officer shall inform the applicant of any such discrepancies, and shall endeavor to resolve the conflict between the test results. If the conflict cannot be resolved, the Executive Officer shall inform the applicant that there are still discrepancies and that the Air Resources Board test results will be used.

C. Performance and Driveability

The Executive Officer shall evaluate the effects of the add-on or modified part on the vehicle's/engine's/equipment's driveability or performance. If the add-on or modified part degrades the driveability or performance such that owners may be encouraged to adjust the engine settings or tamper with required emission control systems to improve driveability or performance, the Executive Officer may find that the add-on or modified part will increase emissions.

D. Durability

If the Executive Officer has reason to believe, on the basis of an engineering evaluation, that an add-on or modified part will affect the durability of the vehicle/engine/equipment emission control system, or that in the past the part did not demonstrate durability equivalent to the part or system replaced or added to, he or she shall find that the modification will increase emissions. In such cases the applicant shall be required to submit data in order to show that the vehicle/engine/equipment emission control system is not affected, and/or that the add-on or modified part has demonstrated adequate durability.

E. Specific Evaluation Criteria Parts Subject to Emission Testing

When the Executive Officer requires an add-on or modified parts manufacturer to perform emission testing, the applicant shall demonstrate compliance with the requirements of these test procedures using the procedures contained herein.

1) Determination of Baseline Emissions

The applicant shall submit a list of vehicles/engines/equipment for which the add-on or modified part may be applied to, before commencing testing. The ARB shall inform the applicant as to which engine may need to be tested. An applicant may be required to test more than one vehicle/engine/equipment.

The applicant shall select a functional vehicle/engine/equipment. A functional vehicle/engine/equipment is one that complies with the original certification standard. The baseline emissions of the test vehicles/engines/equipment without the add-on or modified part (s) shall be determined using the appropriate test procedures as referenced above.

2) Emissions Testing

Emissions testing performed pursuant to these test procedures shall be conducted by an exhaust emissions test laboratory.

V. OFF-ROAD CATEGORIES

Applicants shall utilize the appropriate test procedure for their engine category as referenced in Section V addition to the test criteria outlined in Section VI. Emissions testing performed

pursuant to these test procedures shall be conducted by an exhaust emissions test laboratory.

The vehicle/engine/equipment tested shall follow the appropriate break-in period as specified in the exhaust emissions test procedures before commencing testing. Break-in periods for each off-road category are specified in the test procedures referenced below. The baseline emissions without the add-on or modified part shall be determined prior to testing, but after stabilization of the vehicle/engine/equipment. Following the addition of the add-on or modified part, the test vehicle/engine/equipment shall be tested to ensure that the original certification standards are met. For the purposes of these procedures, off-road vehicles/engines/equipment and equipment are categorized as follows:

A. Small Off-Road Engines

Small Off-Road Engines include all engines less than 25 horsepower (hp) used in off-road mobile applications, with the exceptions of off-road motorcycles, all-terrain vehicles (ATV) and engines used to propel marine vessels or watercraft. New golf carts used in areas that do not meet the federal ozone standards will continue to have a zero-emission requirement. The proposed regulations are applicable to small off-road engines produced on or after January 1, 1995.

B. Off-Road Diesel Engines and Equipment

The heavy-duty off-road diesel cycle engine and equipment category consists of off-road diesel-cycle engines that are:

- (1) greater than or equal to 50 hp and less than 100 hp manufactured on or after January 1, 1998, and certified to meet the federal emission standards and certification provisions;
- (2) greater than or equal to 100 hp and less than 175 hp manufactured on or after January 1, 1997, and certified to meet the federal emission standards and certification provisions; and
- (3) diesel cycle and alternative fueled diesel cycle engines equal to 175 hp and above for off-road engines produced on or after January 1, 1996, and certified to meet California's exhaust emission standards and test procedures. This last category includes engines used in farm and construction equipment, as well as mining, forestry, and industrial equipment.

C. Off-Highway Recreational Vehicles and Engines

The off-road recreational vehicle subcategory includes off-road motorcycles, ATVs, go-karts, golf carts, and specialty vehicles. Engines used in these vehicles consist of both 2- and 4- stroke configurations and range in power from 8 hp for golf carts to over 30 hp for the larger off-road

motorcycles and specialty vehicles. The proposed regulations are applicable to new specialty vehicle engines under 25 hp produced on or after January 1, 1995 and all other new small off-road engines produced on or after January 1, 1997.

D. Gasoline Spark Ignition Marine Engines

The ARB is currently developing regulations for gasoline spark-ignition marine engines, including outboard engines and personal watercraft. Outboard engines are defined as integrated engine and drive units externally mounted to the hulls of the watercraft. Personal watercraft engines are defined as watercraft that are not outboards, inboards, or sterndrive engines. This encompasses watercraft typically thought of as personal watercraft; such engines encompass watercraft commonly known as personal watercraft (Jet Skis, Wave Runners, etc.) and jet boats (the newer class of inboard style watercraft using two-stroke jet propulsion).

Staff is currently scheduled to present its marine engine proposal to the Board in December of this year. Until the marine engine regulations are formally adopted, staff proposes to utilize the U.S. EPA's definitions, standards, and test procedures for gasoline spark-ignition marine engines as set out in 40 Code of Federal Regulations Part 91.

VI. TEST PROCEDURES AND STANDARDS

A. Test Procedures

1) Test Procedures for equipment for Small Off-Road Engines

For vehicles in Category I, the exhaust emission standards and test procedures set forth in "California Exhaust Emission Standards and Test Procedures for 1995 and Later Small Off-Road Engines," adopted_____, incorporated by reference in California Code of Regulations (CCR), Title 13, Section 2404.

2) Test Procedures for Off-Road Diesel Engines and Equipment

i) For 175 horsepower and greater:

"California Exhaust Emission Standards and Test Procedures for New 1996 and

Later Heavy-Duty Off-Road Diesel Cycle Engines and Equipment”, and “California Smoke Test Procedures for New 1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines and Equipment Engines” emission standards and test procedures are applicable, incorporated by reference in Title 13, Section 2424.

ii) For greater than or equal to 50 horsepower and less than 175 horsepower:

“Emission Standards and Certification Provisions”, Code of Federal Regulations, Part 40, Sections 89.112-96 and 89.113-96 and “Emission Test Equipment Provisions” and “Exhaust Emission Test Procedures”, Part 40, Section 89, Subparts D and E.

3) Test Procedures for Off-Highway Recreational Vehicles and Engines

Emission standards and test procedures set forth in “California Exhaust Emissions Standards and Test Procedures for 1995 and Later Off-Highway Recreational Vehicles and Engines”, which incorporates by reference subpart E and F, Title 40, Code of Federal Regulations.

4) Test Procedures for Gasoline Spark Ignition Marine Engines

The ARB is currently developing regulations for gasoline spark-ignition marine engines, including outboard engines and personal watercraft. Outboard engines are defined as integrated engine and drive units externally mounted to the hulls of the watercraft. Personal watercraft engines are defined as watercraft that are not outboards, inboards, or sterndrive engines. This encompasses watercraft typically thought of as personal watercraft; such engines encompass watercraft commonly known as personal watercraft (Jet Skis, Wave Runners, etc.) and jet boats (the newer class of inboard style watercraft using two-stroke jet propulsion).

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5) Alternative Test Plan

Applicants requesting certification for conversion systems for use in any of the above Categories may submit an alternative test plan subject to the Executive Officer’s approval.

B. Vehicle/Engine/Equipment Exhaust Emission Standards

1) For small off-road engines starting with engine model year 2000 and later:

To demonstrate compliance with the applicable emission standards, each emission test result shall be adjusted by the application of a deterioration factor. The Executive Officer shall specify the use of the certification deterioration factor provided in the original engine manufacturer's certification application for the model and model year of the test engine. The deteriorated emission test results shall be in compliance with these procedures only if they are equal to or less than the California new engine exhaust emission standards for the test engine. The applicant shall be permitted one retest if the initial emission test results fail to demonstrate compliance with these procedures. The results of the initial test and the retest will be averaged, and the averaged result must comply with the standards set for the single test in order to demonstrate compliance.

2) All other off-road categories:

The add-on or modified part manufacturer shall demonstrate compliance with these procedures by showing that the exhaust emissions from the test vehicle/engine/equipment with the add-on or modified part installed are in compliance with the applicable California new exhaust emission standards for the class and model year of the test vehicle/engine/equipment.

VII. ACTION ON THE APPLICATION

A. Application Evaluation

The Air Resources Board staff shall initially evaluate the application, the test data and any other pertinent information concerning the add-on or modified part. On the basis of the information provided by the applicant and/or the Air Resources Board test results, the staff will make a recommendation to the Executive Officer. If the Executive Officer determines that an add-on or modified part will not reduce the effectiveness of the emission control system or result in emissions that exceed the applicable model-year state or federal emission standards for each vehicle/engine/equipment, he or she shall issue an Executive Order exempting the add-on or modified part from the prohibitions of VC Sections 27156 and 38391 and 13, CCR, Section 2472. This Executive Order may restrict the installation of the add-on or modified part certified by engineering evaluation to certain makes, model-years, or classes of vehicles/engines/equipment. As a condition of exemption the applicant shall not use the Executive Order as an endorsement or approval by the Air Resources Board.

The Executive Officer shall deny the applicant's exemption request if the add-on or modified part increases emissions more than allowed under the Evaluation Criteria, paragraph IV.E. If the

Executive Officer denies the applicant's exemption request, the Executive Officer shall convey by letter notice of and the reasons for denial.

B. Labeling Requirements

The add-on or modified part manufacturer shall provide a product information label and complete instructions for its installation in a location readily visible to the average person with each part or kit of parts sold. The product information label shall contain, at a minimum, the product name as exempted, ARB executive order number using the format "CARB D-O-XXX," manufacturer's name, and the manufacturer's address. The product information label shall be designed for a minimum life of five years.

When the installation of the add-on or modified part requires removal of any emission control component, re-routing of any vacuum hose, or changes to the vehicle manufacturer tune-up specifications, the product information label shall provide a complete description of the required changes and the new tune-up specifications. The add-on or modified part manufacturer shall submit a facsimile or prototype of the product information label and the installation instructions with each application for exemption.