

DRAFT PROCEDURES FOR EXEMPTION OF ADD-ON AND MODIFIED PART(S) FOR ON-ROAD VEHICLES/ENGINES

I. APPLICABILITY

These procedures apply to any entity that manufactures add-on or modified part(s), as defined in Section 1900 (b), (1) and (14), Article 1, Chapter 1, Division 3, Title 13, California Code of Regulations. Add-on or modified part(s) that satisfy the criteria as specified in these procedures will be issued an Executive Order by the Executive Officer that exempts the add-on or modified part(s) from the prohibitions of VC 27156 and 38391.

These procedures do not affect the provisions of Title 13, CCR Sections (to be added later, such as, Procedures for Aftermarket Critical Emission Control Parts on Highway Motorcycles, California Evaluation Procedures For New Aftermarket Catalytic Converters, etc.)

II. DEFINITIONS

Adjustment Factors

Baseline levels

California Certified Vehicle/Engine

California Smog Check Program

Component Elements of Exhaust Emissions

Emission Control System

Emission Standards

Excluded Vehicles

“Executive Officer” means the Executive Officer of the California Air Resources Board or his or her authorized representative or designee.

Executive Order

Exemption Label

Frontal Area

GVWR

In-Use Monitoring Performance Ratios

Malfunction Indicator Light

Manufacturer

On-Board Diagnostic System

Road Load

Smog Check Inspection

Vehicle Identification Number

III. SCOPE

These procedures are intended to assist manufacturers of add-on or modified part(s) to receive an exemption from the prohibitions of Section 27156 and 38391 of the California Vehicle Code.

IV. APPLICATION FOR AN EXEMPTION

A manufacturer of an add-on or modified part(s) shall choose an appropriate application category, as listed in Section IV (A)(1-7) and shall submit a completed application, see Section IV (C), in the format described by the Executive Officer, to:

(insert electronic submission address)

A. Category Selection

A manufacturer of an add-on or modified part(s) must choose one of the following categories:

1. Category I – Air Intake Kits or Modifications

Air Intake kits or modifications made to the stock air intake that are not applicable to Category VI.

2. Category II – ECU Programmers and/or ECU Signal Modifications

New ECU calibrations and/or ECU signal modifications.

3. Category III – Fuel Tanks and/or Fuel Tank Modifications

New fuel tanks and/or modifications made to the stock fuel tank or fuel system modifications.

4. Category IV – Intercooler Kits, Intercooler Components or Modifications

Intercooler kits, intercooler components or modifications made to the stock intercooler systems.

5. Category V – Supercharger/Turbocharger Kits or Modifications

Supercharger and Turbocharger kits or modifications made to a stock supercharger or turbocharger.

6. Category VI – Miscellaneous Parts

This category is for add-on or modified part(s) that fit in one of the following groups listed:

- a. Air Filter Rams (dirty side air intake funnel, stock air box)
- b. Automatic Transmission Mechanical Shift Kits (no change in shift points)
- c. Exhaust or Transmission Braking Systems
- d. Ignition Coils
- e. Ignition Modules that replace Stock Ignition Points
- f. Ignition Distributors
- g. Intake Manifolds (vehicles not equipped with an OBD II system or EGR valve)
- h. Lift Pumps (vehicles equipped with an downstream pressure regulator)
- i. Pulley Kits, Non-Supercharged Vehicles
- j. Rear Axle Modifications (within a 3 percent ratio change over stock)
- k. Shorty Headers (vehicles not equipped with an OBD II system, oxygen sensor, air injection, and/or EGR in stock location and orientation)
- l. Speedometer Adjustors
- m. Throttle Bodies and Throttle Body Spacers that do not incorporate fuel injectors
- n. Throttle Pedal Sensitivity Adjustors
- o. Torque Converters
- p. Oil Separators (diesel vehicles only)

7. Category VII – Add-On or Modified Part(s) Not Applicable to Categories I through VI.

Add-on or modified part(s) that do not fit the above mention Categories of I through VI.

B. Application Requirements. The application must contain:

1. Vehicle List
2. Installation instructions for each kit and/or part number
3. Part numbers assigned by the manufacturer to kits and/or parts, new ECU calibrations will require a new unique calibration identification code with Executive Order Number imbedded into the new calibration identification code.
4. Detailed description of operation and technical data of the add-on or modified part(s)

5. A physical sample of an exemption label
6. Sample kit and/or part (if requested by Executive Officer)

C. Application Form

(insert electronic address for applications)

D. Vehicle List Requirements

1. A manufacturer of an add-on or modified part(s) shall include only the following in each application:
 - a. Single vehicle/engine manufacturer
 - b. Same vehicle class
 - c. Same engine configuration
 - d. Same fuel type
 - e. Same emissions control system
 - f. Same emission standards
2. A list of excluded vehicles, organized by test groups and applicable California new vehicle certification Executive Order numbers.

E. Label Requirements

1. A physical sample of an exemption label (see Section VII for details).
2. For new manufactures, facsimile and material specifications of an exemption label will be acceptable. An actual label must be submitted prior to start of production.

V. EVALUATION CRITERIA

The criteria for obtaining an exemption for an add-on or modified part(s) are set forth below.

A. Drivability and Performance

If the add-on or modified part(s) degrades the drivability and/or vehicle performance, such that a vehicle owner is encouraged to tamper with the add-on or modified part(s) and/or the host vehicle, the Executive Officer will request the manufacturer to demonstrate adequate drivability and/or vehicle performance.

B. Durability

If the Executive Officer has reason to believe, on the basis of an engineering evaluation or other evidence, that:

1. an add-on or modified part(s) will affect the durability of any vehicle's emissions control system(s), or
2. that in the past the add-on or modified part(s) has not exhibited durability equivalent to the part(s) or system(s) replaced or the add-on part will increase emissions, the manufacturer shall be required to submit data to show that the durability of the vehicle emission control system(s) is not affected, and/or that the add-on or modified part(s) demonstrate adequate durability.

C. On-Board Diagnostic Requirements

The add-on or modified part(s) manufacturer shall be responsible for ensuring that the manufacturer's add-on or modified part(s) will not affect the proper operation of the vehicle's on-board diagnostic monitoring system, cause a fault code to be stored, inhibit a fault code to be stored, cause the malfunction indicator light (MIL) to become illuminated, cause the MIL to not illuminate, and/or cause the vehicle to fail an inspection and maintenance evaluation (e.g., Smog Check) for vehicles listed in the application list of affected vehicles.

D. Reporting

Manufacturers receiving exemption for an add-on or modified part that modifies the stock Engine Control Module (ECM) and/or body or transmission control module(s) shall be required to collect calibration identification codes and calibration verification numbers. The manufacturer must also collect identification numbers from a purchaser's vehicle. Upon request, by the Executive Officer, the manufacturer shall submit this information within 30 days.

E. Testing Requirements (chassis dynamometer, excluding vehicles with a GVWR \geq 14,001 lbs. and motorcycles)

Categories I and IV

- Air Intake Kits / Modifications and Intercooler Kits, Intercooler Components or Modifications
 - **No OEM sensors** located in stock or modified parts.
 - Required test cycle: US06, and OBD. If requested by Executive Officer, air intakes only, evaporative testing.
 - Ways to evaluate
 - Comparable baseline levels
 - Certification emission standards
 - Composite standard using FTP and SC03 new vehicle certification values
 - **With OEM Sensor(s)** located in stock and modified parts.
 - Required test cycles: FTP, US06, SC03, and OBD. If

requested by Executive Officer, air intakes only, evaporative testing.

- Ways to evaluate
 - Comparable baseline levels
 - Certification emission standards

Category II

- ECU Programmers and /or ECU Signal Modifications
 - With no end user adjustability
 - Required test cycles: FTP, US06, SC03, and OBD. If requested by Executive Officer Highway and steady state testing.
 - Ways to evaluate
 - Comparable baseline levels
 - Certification emission standards
 - With user adjustability, additional testing as listed above, if requested by Executive Officer.

Category III

- Fuel Tanks and/or Fuel Tank Modifications
 - Evaporative testing and OBD
 - Ways to evaluate
 - Comparable baseline levels
 - Stand-alone emission standards
 - Composite standard if applicable

Category V

- Supercharger/Turbocharger Kits or Modifications
 - With no end user adjustability,
 - Required test cycles: FTP, US06, SC03, and OBD. If requested by Executive Officer Highway and steady state testing.
 - Ways to evaluate
 - Comparable baseline levels
 - Certification emission standards
 - With user adjustability, additional testing as listed above, if requested by Executive Officer.

Category VI

- Miscellaneous Parts
 - OBD only (if applicable)

Category VII

- Add-On or Modified Part(s) Not Applicable to Categories I through VI
 - Testing requirements will be based on Executive Officer's

review of submitted application

Evaporative emission tests may be required when the Executive Officer has determined it to be necessary to fully characterize the overall emissions impact of the add-on or modified part(s) on the test vehicle(s).

1. Vehicle/Engine Selection

If test data is included with initial application submission, submitted test data must be in a format described in Section V (E)(5). If test data is not included with initial application submission and testing is required, the Executive Officer will provide the manufacturer an official test memo, which shall list test vehicle(s) and the testing protocol. Selected test vehicle(s) shall be the worst case vehicle configuration as defined in Section V (E)(1)(a) of these procedures. A manufacturer may request the Executive Officer to consider an alternative to the selected test vehicle(s). The Executive Officer's acceptance of an alternate vehicle(s) may limit vehicle(s) coverage of the submitted application if the Executive Officer determines that the alternate vehicle(s) does not adequately represent the vehicle coverage for which the manufacturer has applied.

- a. The application "worst case" test vehicle selection, as determined by the Executive Officer shall be based on an analysis of all the following criteria:
 - i. Applicable emission standards.
 - ii. Percentage of the new vehicle/engine certification data to emission standards.
 - iii. Vehicle/engine test weight and road load producing the greatest stress on the emission related components as determined by the Executive Officer.
 - iv. Extent of modification and applicable effects.
- b. The Executive Officer may allow test vehicle(s) that were originally equipped with an engine certified to California engine dynamometer exhaust emission standards using the test procedures appropriate to a chassis dynamometer new vehicle certification for vehicles with a GVWR \leq 14,000 lbs. The specific evaluation criteria for vehicle(s) tested herein shall be limited to the comparative test criteria of Section V (E)(2)(b).

The equivalent test weight of the test vehicle(s) shall be equal to the vehicle's curb weight plus one-half of the difference between the GVWR and the curb weight of the vehicle. The road load horsepower setting for the chassis dynamometer shall be based on the frontal area of the test vehicle without modifications, or by other means as determined by the

Executive Officer.

2. Emissions Testing Options

The primary compliance methods shall be: Against the test vehicle's emission standards or against the test vehicle's baseline emission levels (comparative emissions testing). An explanation of the two evaluation methods are listed below:

a. Exhaust Emission Standards

The add-on or modified part(s) manufacturer may demonstrate compliance with these procedures by showing that the exhaust emissions from the test vehicle with the add-on or modified part(s) installed are in compliance with the California new vehicle exhaust emission standards class of the test vehicle. To demonstrate compliance with the applicable emission standards, each emissions test result shall be adjusted by the appropriate deterioration factor(s) and/or adjustment factors, as calculated by the original vehicle manufacturer during the new vehicle certification application process, for the model and model-year of the test vehicle. An assigned deterioration factor shall be provided by the Executive Officer should the original vehicle manufacturer's certification application not contain one. The deteriorated emissions test results shall be considered in compliance with these procedures only if they are equal to or less than the California new vehicle emission standards for the test vehicle. The manufacturer shall be permitted only one duplicate test on any unique emissions test cycle. The results, including all applied deterioration and adjustment factors will be averaged, and these average values shall be used for compliance evaluation purposes.

b. Comparative Emissions testing (Baseline vs Modified)

The add-on or modified part(s) manufacturer may elect to conduct comparative emission tests to demonstrate compliance with these procedures. This test protocol option must be declared at the time of application.

A baseline emissions test is a test conducted with the test vehicle or engine in its as-built original equipment manufacturer configuration.

A modified emissions test is a test conducted with the test vehicle or engine in its modified state, i.e., with the installation of the add-on or modified part(s).

Each test vehicle shall be subjected to a thorough examination prior to the baseline test to detect and correct all possible defects and deviations from the manufacturer's original emission related

specifications. The baseline emissions of the test vehicle must be similar to other vehicles within that particular make, model, mileage, engine displacement, and model-year. The appropriate test parameters for the particular vehicle being tested will be supplied by the California Air Resources Board upon request.

If vehicle emissions exceed the levels of other similar vehicles, as mentioned above, during the baseline test, the manufacturer may make a full diagnostic evaluation of the vehicle, make any necessary repairs, and retest the vehicle. If no other abnormal conditions of the engine or the emission controls are noted, pending approval by the Executive Officer, the vehicle shall be accepted as a test vehicle. The baseline emissions data, from the approved vehicle, shall be used for comparison against the test results when the add-on or modified part(s) are installed. The manufacturer has the option to forego the above and replace the test vehicle or select another test vehicle.

Upon completion of baseline testing, Executive Officer approval is required before any: Servicing, maintenance, or part replacement is made, with the exception of such actions that are in accordance with the written instructions provided with the application or stated in test memo. The same type of test fuel used in new vehicle certification shall be used for all tests unless otherwise specified in writing by the manufacturer in the application or installation instructions for modified testing only.

Each vehicle selected shall be tested in the baseline and modified configurations. All engine settings shall be adjusted to vehicle manufacturer specifications in the unmodified configuration (baseline) test. After baseline testing, the add-on or modified part(s) shall be installed in accordance with the written instructions provided with the application by the test laboratory personnel. The Executive Officer may release the vehicle back to the manufacturer for the installation only if the kit installation is required to be performed by an approved installer of the add-on or modified part(s). Engine settings shall be recorded and submitted with test results for each test in both the modified and unmodified configurations.

The difference between the modified emissions test result and the baseline emissions test result (both of which are measured in grams per mile or grams per test as applicable) must be equal to or less than 10.0 percent for each regulated pollutant. The Executive Officer may also group the component elements to the format of the test vehicle's certification standards (e.g., HC + NOx).

All emissions testing must be completed within a 3 month period and mileage accumulation shall not exceed 750 miles between the

baseline and modified emissions tests. At the request of the manufacturer and/or testing laboratory, the Executive Officer may allow more time and/or mileage.

3. On-Board Diagnostic Testing

If requested by the Executive Officer, manufacturers of an add-on or modified part will conduct on-board diagnostic field testing. This includes, but not limited to; ensuring for the applicable vehicle(s) that the readiness monitors operate as designed, the on-board diagnostic system robustly detects malfunctions at the required emission thresholds, and/or that required engine operating parameters are properly reported. Further the manufacturers may be required to demonstrate that In-Use Monitoring Performance Ratios are not negatively affected by the modifications..

4. Vehicle/Engine Mileage

Each test vehicle/engine must be a California certified vehicle/engine with at least 4,000 miles (motorcycles 3500 kilometers) of normal operation accumulated. In the event that a manufacturer acquires a vehicle/engine with less than 4,000 miles (motorcycles 3500 kilometers), the vehicle/engine mileage must be brought to 4,000 miles (motorcycles 3500 kilometers) by driving the vehicle on the road. The Executive Officer shall allow test vehicle(s) with less mileage if the manufacturer can demonstrate emission stability.

5. Test Laboratory

The manufacturer shall have any required testing performed at an independent laboratory properly equipped to conduct such tests The lab must be included on the California Air Resources Board's accepted laboratory list. The test vehicle(s) shall be under the control of the laboratory for the entire test period unless the Executive Officer gives permission to release the test vehicle(s) to the manufacturer. Unauthorized return of the test vehicle(s) to the manufacturer during the test period will invalidate test results. At the conclusion of the test program, the independent laboratory must present the Executive Officer a final report in a standardized format, as listed below:

- i. Executive Summary
 1. Project Number (if applicable)
 2. Conducted For
 3. Report Prepared By
 4. Table of Contents
- ii. Project Overview
- iii. Test Vehicle Information

1. Vehicle Identification Number
 2. Model-Year / Make / Model
 3. Test Group
 4. Evaporative Family
 5. Tire Size
 6. Body Configuration (4 door, Convertible, Long Bed, etc.)
 7. Axle Configuration (front wheel drive, rear wheel drive, all-wheel drive, etc.)
- iv. Test Device Information
1. Device
 2. Device Manufacturer
 3. Device Description
 - a. Settings or measurements as tested (performance mode, pulley sizes, etc.)
- v. Test Sequence and Chronology
1. Date
 - a. Test(s) or Task(s) performed
- vi. Test Parameters
1. Test Type
 2. Test Fuel
 3. ETW (lb)
 4. Test Coefficients
 - a. A (ft-lb) track/set
 - b. B (ft-lb/mph) track/set
 - c. C (ft-lb/mph²) track/set
- vii. On Board Diagnostic Compatibility
1. Readiness Monitors and Diagnostic Trouble Code Status
 - a. @ Vehicle Check in
 - b. @ Monitor reset
 - c. @ After mileage accumulation
 - d. @ Conclusion of test program
 2. Total miles driven to allow all On Board Diagnostic monitors to complete
- viii. Test Results
1. Exhaust Emission Standards
 - a. Test Cycle
 - i. Pollutants? measured
 - ii. Conversion factors used (NMOG to NMHC ratio)
 - iii. Test results without deterioration factors
 - iv. Applied deterioration factors
 - v. Results with deterioration factors
 - vi. Applicable emission standard
 - vii. Pass/Fail Evaluation

2. Comparative Emissions Testing
 - a. Test Cycle
 - i. Pollutants measured
 - ii. Baseline measured emissions
 - iii. Modified measured emissions
 - iv. Pass/Fail Evaluation

ix. Data Review and Conclusion

- i. Appendices
 1. Emissions Test Summary Sheets
 2. Quality Assurance Packets
 - a. Vehicle Preconditioning Report
 - b. Canister Worksheet (purge and fill)
 - c. Dyno – ABC Derivation
 3. Check-In Documents
 4. On Board Diagnostic Data
 5. Vehicle mileage log
 - a. Date
 - b. Driver

6. Additional or Alternate Testing

If the Executive Officer finds that the emissions testing specified in Section V (E)(2) is not adequate to characterize the emissions performance or durability of an add-on or modified part(s), the Executive Officer shall require alternate emissions, functional, and/or bench testing. If the Executive Officer requires such additional or alternate testing of vehicle(s), the Executive Officer shall list those tests in the initial test memo issued to the manufacturer.

E. Other Ways To Evaluate Compliance

a. Engineering Judgement

In the absence of any test data required above, the Executive Officer may use good engineering judgment based on, but not limited to the information submitted by the manufacturer which may include emissions data used by the manufacturer on other exempted products, bench test data, functional data, similarity data, on-board diagnostic data, other types of emissions test data, and/or operational data, in making the determination regarding the effect of the add-on or modified part on emissions and the emissions control system.

b. Part Number(s) and/or Name Change(s),

If a manufacturer that has already been granted an Executive Order

seeks only to add part number(s) and/or a name change(s) to the add-on or modified part(s), the Executive Officer may evaluate the design, fit, and function of the additions to those which are currently exempted.

c. Model-Year Additions on Carryover Vehicle(s)

If a manufacturer has been granted an Executive Order and seeks to add model-year(s) for the same vehicle applications, the Executive Officer shall evaluate applicable emission certification standards and worst case vehicle(s) tested in prior Executive Orders, and whether the emissions control system has changed for the requested additional model year(s). The Executive Officer shall grant the request upon determining that the findings leading to the initial Executive Order approval are still valid. The add-on or modified part(s) must maintain the same design, fit, and function as described in prior Executive Orders

d. Private Label(s) or Extending Coverage to Subsidiaries

Manufacturers who seek to extend all or part of their Executive Order(s) to another manufacturer or to its own subsidiaries must request approval for such extensions from the Executive Officer. In reviewing the request, the Executive Officer shall evaluate design control and if the part(s) are identical in design, fit and function to those currently exempted.

VI. ACTION ON APPLICATION

A. Basis of Evaluation

The Executive Officer shall utilize the manufacturer's test data and other required information, and, if applicable, the California Air Resources Board test data, to determine if the add-on or modified part(s) increase emissions and/or reduce the effectiveness of the emissions control system, including on-board diagnostics.

B. Confirmatory Testing

The California Air Resources Board may conduct confirmatory testing. If such testing is desired, the manufacturer will be notified within 14 days from the time the Executive Officer has been received a completed test report by the independent laboratory. The independent laboratory must bring the test vehicle(s) to the California Air Resources Board's test laboratory. Confirmatory tests will be completed within 45 days of receipt of test vehicle(s), issues with test vehicle(s) may cause a delay in confirmatory testing. The vehicle may be released back to the manufacturer after 14 days if the California Air Resources

Board has not requested confirmatory testing.

The results of the California Air Resources Board confirmatory tests shall be reported to the manufacturer within 20 days of completion of the testing and quality review of the data. The manufacturer shall be given the opportunity to observe the confirmatory tests. The confirmatory testing conducted by the California Air Resources Board shall utilize the same testing protocol and procedures required of the add-on or modified part(s) manufacturer's test vehicle.

C. Resolution of Discrepancies

In the event of discrepancies between the California Air Resources Board confirmatory test data and the manufacturer's test data, the Executive Officer's evaluation shall be based solely on the California Air Resources Board test data. The Executive Officer shall inform the manufacturer 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 manufacturer that there are still discrepancies and that the California Air Resources Board test data will be used as a basis to evaluate the add-on or modified part(s).

VII. LABELING REQUIREMENTS

The add-on or modified part(s) manufacturer shall provide an information label, minimum of 12 point font, and complete instructions for its installation in an under hood location, readily visible to the average person, with each add-on or modified part(s) sold. The information label shall contain only the following: one unique product name as listed on the Executive Order, the California Air Resources Board Executive Order number using the format "CARB D-XXX," and the manufacturer's name. The label installation instructions shall contain a warning to the consumer in bold lettering that the product information label is required to aid in passing the California Smog Check program. The product information label shall be designed for a minimum under-hood service life of fifteen years. A manufacturer must provide documentation to support compliance with the label durability requirements.

When the installation of the add-on or modified part(s) requires 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(s) manufacturer shall submit a physical facsimile or prototype of the product information label and the installation instructions with each application for exemption.

VIII. ISSUING AN EXECUTIVE ORDER

The Executive Officer shall evaluate the test data, on-board diagnostic data (if

applicable), and/or any other pertinent information concerning the add-on or modified part(s). If the Executive Officer determines that an add-on or modified part(s) will not reduce the effectiveness of the emissions control system, will not result in emissions that exceed the applicable model-year emission standards for each vehicle specified in the Vehicle List, and that it meets all the requirements set forth in Sections IV and V of these procedures, the Executive Officer shall issue an Executive Order exempting the add-on or modified part(s) from the prohibitions of Vehicle Code Section 27156. As a condition of exemption, the modified vehicle must be capable of completing and passing the Smog Check test that applies. The manufacturer may not: Use the Executive Order as an endorsement or approval by the California Air Resources Board, market the add-on or modified part(s) using any identification other than that shown on the Executive Order, market the add-on or modified part(s) for an application other than those listed on the Executive Order, offer for sale, or advertise any component of an applicable kit as an individual device, and/or advertise as "reduces emissions".

Violation of any of the above conditions shall be grounds for revocation of granted Executive Order. The Executive Order may be revoked only after a ten-day written notice of intention to revoke the order, during which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request and the order may not be revoked until a determination is made after the hearing that grounds for revocation exist.

The California Air Resources Board reserves the right in the future to review the Executive Order to assure that the exempted add-on or modified part(s) continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

IX. AUDIT TESTING

The California Air Resources Board reserves the right to perform audit testing. The California Air Resources Board may select up to five new aftermarket parts and/or kits per manufacturer each year for audit testing. Audit testing conducted by the California Air Resources Board shall utilize the same testing protocols and procedures required of the add-on or modified part(s) manufacturer during the exemption process. The California Air Resources Board may rescind a previously granted exemption for patterns of failure.