

§ 89.109 Maintenance instructions and minimum allowable maintenance intervals.

(a) The manufacturer must furnish or cause to be furnished to the ultimate purchaser of each new nonroad engine subject to standards under this part written instructions for the maintenance needed to ensure proper functioning of the emission control system. Paragraphs (b) through (h) of this section do not apply to Tier 1 engines with rated power at or above 37 kW.

(b) Maintenance performed on equipment, engines, subsystems or components used to determine exhaust emission deterioration factors is classified as either emission-related or nonemission-related and each of these can be classified as either scheduled or unscheduled. Further, some emission-related maintenance is also classified as critical emission-related maintenance.

(c) This paragraph (c) specifies emission-related scheduled maintenance for purposes of obtaining durability data for nonroad engines. The maintenance intervals specified below are minimum intervals:

(1) All emission-related scheduled maintenance for purposes of obtaining durability data must occur at the same or longer hours of use intervals as those specified in the manufacturer's maintenance instructions furnished to the ultimate purchaser of the engine under paragraph (a) of this section. This maintenance schedule may be updated as necessary throughout the testing of the engine, provided that no maintenance operation is deleted from the maintenance schedule after the operation has been performed on the test equipment or engine.

(2) Any emission-related maintenance which is performed on equipment, engines, subsystems, or components must be technologically necessary to ensure in-use compliance with the emission standards. The manufacturer must submit data which demonstrate to the Administrator that all of the emission-related scheduled maintenance which is to be performed is technologically necessary. Scheduled maintenance must be approved by the Administrator prior to being performed or being included in the maintenance

instructions provided to the purchasers under paragraph (a) of this section.

(i) The Administrator may require longer maintenance intervals than those listed in paragraphs (c)(3) and (c)(4) of this section where the listed intervals are not technologically necessary.

(ii) The Administrator may allow manufacturers to specify shorter maintenance intervals than those listed in paragraphs (c)(3) and (c)(4) of this section where technologically necessary for engines rated under 19 kW, or for constant speed engines rated under 37 kW with rated speeds greater than or equal to 3,000 rpm.

(3) The adjustment, cleaning, repair, or replacement of items listed in paragraphs (c)(3)(i) through (c)(3)(iii) of this section shall occur at 1,500 hours of use and at 1,500-hour intervals thereafter.

(i) Exhaust gas recirculation system-related filters and coolers.

(ii) Positive crankcase ventilation valve.

(iii) Fuel injector tips (cleaning only).

(4) The adjustment, cleaning and repair of items in paragraphs (c)(4)(i) through (c)(4)(vii) of this section shall occur at 3,000 hours of use and at 3,000-hour intervals thereafter for nonroad compression-ignition engines rated under 130 kW, or at 4,500-hour intervals thereafter for nonroad compression-ignition engines rated at or above 130 kW.

(i) Fuel injectors.

(ii) Turbocharger.

(iii) Electronic engine control unit and its associated sensors and actuators.

(iv) Particulate trap or trap-oxidizer system (including related components).

(v) Exhaust gas recirculation system (including all related control valves and tubing) except as otherwise provided in paragraph (c)(3)(i) of this section.

(vi) Catalytic convertor.

(vii) Any other add-on emission-related component (i.e., a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control and whose function is not integral to the design and performance of the engine).

(d) Scheduled maintenance not related to emissions which is reasonable and technologically necessary (e.g., oil change, oil filter change, fuel filter change, air filter change, cooling system maintenance, adjustment of idle speed, governor, engine bolt torque, valve lash, injector lash, timing, lubrication of the exhaust manifold heat control valve, etc.) may be performed on durability vehicles at the least frequent intervals recommended by the manufacturer to the ultimate purchaser, (e.g., not the intervals recommended for severe service).

(e) Adjustment of engine idle speed on emission data engines may be performed once before the low-hour emission test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with advance approval of the Administrator.

(f) Equipment, instruments, or tools may not be used to identify malfunctioning, maladjusted, or defective engine components unless the same or equivalent equipment, instruments, or tools will be available to dealerships and other service outlets and:

(1) Are used in conjunction with scheduled maintenance on such components; or

(2) Are used subsequent to the identification of a vehicle or engine malfunction, as provided in paragraph (e) of this section for emission data engines; or

(3) Specifically authorized by the Administrator.

(g) All test data, maintenance reports, and required engineering reports shall be compiled and provided to the Administrator in accordance with § 89.124.

(h)(1) The components listed in paragraphs (h)(1)(i) through (h)(1)(vi) of this section are defined as critical emission-related components.

(i) Catalytic converter.

(ii) Electronic engine control unit and its associated sensors and actuators.

(iii) Exhaust gas recirculation system (including all related filters, coolers, control valves, and tubing).

(iv) Positive crankcase ventilation valve.

(v) Particulate trap or trap-oxidizer system.

(vi) Any other add-on emission-related component (i.e., a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control and whose function is not integral to the design and performance of the engine).

(2) All critical emission-related scheduled maintenance must have a reasonable likelihood of being performed in use. The manufacturer must show the reasonable likelihood of such maintenance being performed in-use. Critical emission-related scheduled maintenance items which satisfy one of the conditions defined in paragraphs (h)(2)(i) through (h)(2)(vi) of this section will be accepted as having a reasonable likelihood of being performed in use.

(i) Data are presented which establish for the Administrator a connection between emissions and vehicle performance such that as emissions increase due to lack of maintenance, vehicle performance will simultaneously deteriorate to a point unacceptable for typical operation.

(ii) Survey data are submitted which adequately demonstrate to the Administrator with an 80 percent confidence level that 80 percent of such engines already have this critical maintenance item performed in-use at the recommended interval(s).

(iii) A clearly displayed visible signal system approved by the Administrator is installed to alert the equipment operator that maintenance is due. A signal bearing the message "maintenance needed" or "check engine," or a similar message approved by the Administrator, shall be actuated at the appropriate usage point or by component failure. This signal must be continuous while the engine is in operation and not be easily eliminated without performance of the required maintenance. Resetting the signal shall be a required step in the maintenance operation. The method for resetting the signal system shall be approved by the Administrator. The system must not be designed to deactivate upon the end of

the useful life of the engine or thereafter.

(iv) A manufacturer may desire to demonstrate through a survey that a critical maintenance item is likely to be performed without a visible signal on a maintenance item for which there is no prior in-use experience without the signal. To that end, the manufacturer may in a given model year market up to 200 randomly selected vehicles per critical emission-related maintenance item without such visible signals, and monitor the performance of the critical maintenance item by the owners to show compliance with paragraph (h)(2)(ii) of this section. This option is restricted to two consecutive model years and may not be repeated until any previous survey has been completed. If the critical maintenance involves more than one engine family, the sample will be sales weighted to ensure that it is representative of all the families in question.

(v) The manufacturer provides the maintenance free of charge, and clearly informs the customer that the maintenance is free in the instructions provided under paragraph (a) of this section.

(vi) The manufacturer uses any other method which the Administrator approves as establishing a reasonable likelihood that the critical maintenance will be performed in-use.

(3) Visible signal systems used under paragraph (h)(2)(iii) of this section are considered an element of design of the emission control system. Therefore, disabling, resetting, or otherwise rendering such signals inoperative without also performing the indicated maintenance procedure is a prohibited act.

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§ 89.110 Emission control information label.

(a) The manufacturer must affix at the time of manufacture a permanent and legible label identifying each nonroad engine. The label must meet the following requirements:

- (1) Be attached in such a manner that it cannot be removed without destroying or defacing the label;
- (2) Be durable and readable for the entire engine life;

- (3) Be secured to an engine part necessary for normal engine operation and not normally requiring replacement during engine life;

- (4) Be written in English; and

- (5) Be located so as to be readily visible to the average person after the engine is installed in the equipment. A supplemental label meeting all the requirements of this section may be attached to a location other than the engine, in cases where the required label must be obscured after the engine is installed in the equipment.

(b) The label must contain the following information:

- (1) The heading "Important Engine Information;"

- (2) The full corporate name and trademark of the manufacturer;

- (3) EPA standardized engine family designation;

- (4) Engine displacement;

- (5) Advertised power;

- (6) Engine tuneup specifications and adjustments. These should indicate the proper transmission position during tuneup, and accessories (for example, air conditioner), if any, that should be in operation;

- (7) Fuel requirements;

- (8) Date of manufacture (month and year). The manufacturer may, in lieu of including the date of manufacture on the engine label, maintain a record of the engine manufacture dates. The manufacturer shall provide the date of manufacture records to the Administrator upon request;

- (9) Family emission limits (FELs) if applicable;

- (10) The statement: "This engine conforms to [model year] U.S. EPA regulations large nonroad compression-ignition engines;"

- (11) Engines belonging to an engine family that has been certified as a constant-speed engine using the test cycle specified in Table 2 of appendix B to subpart E of this part must contain the statement on the label: "constant-speed only"; and

- (12) Engines meeting the voluntary standards described in § 89.112(f)(1) to be designated as Blue Sky Series engines must contain the statement on the label: "Blue Sky Series".