

## Environmental Protection Agency

## § 85.2122

purchased by a vehicle owner as certified, shall be considered certified pursuant to this subpart.

[45 FR 78462, Nov. 25, 1980, as amended at 54 FR 32593, Aug. 8, 1989]

### § 85.2122 Emission-critical parameters.

(a) The following parts may be certified in accordance with § 85.2114(b):

(1) *Carburetor Vacuum Break (Choke Pull-Off)*. (i) The emission-critical parameters for carburetor vacuum breaks are:

- (A) Diaphragm Displacement.
- (B) Timed Delay.
- (C) Modulated Stem Displacement.
- (D) Modulated Stem Displacement Force.
- (E) Vacuum Leakage.

(ii) For the purposes of this paragraph:

(A) "Diaphragm Displacement" means the distance through which the center of the diaphragm moves when activated. In the case of a non-modulated stem, diaphragm displacement corresponds to stem displacement.

(B) "Timed Delay" means a delayed diaphragm displacement controlled to occur within a given time period.

(C) "Modulated Stem Displacement" means the distance through which the modulated stem may move when actuated independent of diaphragm displacement.

(D) "Modulated Stem Displacement Force" means the amount of force required at start and finish of a modulated stem displacement.

(E) "Vacuum Leakage" means leakage into the vacuum cavity of a vacuum break.

(F) "Vacuum Break" ("Choke Pull-off") means a vacuum-operated device to open the carburetor choke plate a predetermined amount on cold start.

(G) "Modulated Stem" means a stem attached to the vacuum break diaphragm in such a manner as to allow stem displacement independent of diaphragm displacement.

(H) "Vacuum Purge System" means a vacuum system with a controlled air flow to purge the vacuum system of undesirable manifold vapors.

(2) *Carburetor Choke Thermostats*. (i) The emission-critical parameters for all Choke Thermostats are:

- (A) Thermal Deflection Rate.

(B) Mechanical Torque Rate.

(C) Index Mark Position.

(ii) The emission-critical parameters for Electrically-Heated Choke Thermostats are:

(A) Those parameters set forth in paragraph (a)(2)(i) of this section

(B) Time to rotate coil tang when electrically energized

(C) Electrical circuit resistance

(D) Electrical switching temperature

(iii) For the purpose of this paragraph:

(A) "Choke" means a device to restrict air flow into a carburetor in order to enrich the air/fuel mixture delivered to the engine by the carburetor during cold-engine start and cold-engine operation.

(B) "Thermostat" means a temperature-actuated device.

(C) "Electrically-heated Choke" means a device which contains a means for applying heat to the thermostatic coil by electrical current.

(D) "Thermostatic Coil" means a spiral-wound coil of thermally-sensitive material which provides rotary force (torque) and/or displacement as a function of applied temperature.

(E) "Thermostatic Switch" means an element of thermally-sensitive material which acts to open or close an electrical circuit as a function of temperature.

(F) "Mechanical Torque Rate" means a term applied to a thermostatic coil, defined as the torque accumulation per angular degree of deflection of a thermostatic coil.

(G) "Thermal Deflection Rate" means the angular degrees of rotation per degree of temperature change of the thermostatic coil.

(H) "Index or Index Mark" means a mark on a choke thermostat housing, located in a fixed relationship to the thermostatic coil tang position to aid in assembly and service adjustment of the choke.

(I) "PTC Type Choke Heaters" means a positive temperature coefficient resistant ceramic disc capable of providing heat to the thermostatic coil when electrically energized.

(3) *Carburetor Accelerator Pumps*. (i) The emission-critical parameter for accelerator pumps (plungers or diaphragms) is the average volume of fuel

delivered per stroke by the pump within prescribed time limits.

(ii) For the purpose of this paragraph an "Accelerator Pump (Plunger or Diaphragm)" means a device used to provide a supplemental supply of fuel during increasing throttle opening as required.

(4) *Positive Crankcase Ventilation (PCV) Valves.* (i) The emission-critical parameter for a PCV valve is the volume of flow as a function of pressure differential across the valve.

(ii) For the purposes of this paragraph a "PCV Valve" means a device to control the flow of blow-by gasses and fresh air from the crankcase to the fuel induction system of the engine.

(5) *Breaker Points.* (i) The emission-critical parameters for breaker points are:

- (A) Bounce.
- (B) Dwell Angle.
- (C) Contact Resistance.

(ii) For the purposes of this paragraph:

(A) "Breaker Point" means a mechanical switch operated by the distributor cam to establish and interrupt the primary ignition coil current.

(B) "Bounce" means unscheduled point contact opening(s) after initial closure and before scheduled reopening.

(C) "Dwell Angle" means the number of degrees of distributor mechanical rotation during which the breaker points are conducting current.

(D) "Contact Resistance" means the opposition to the flow of current between the mounting bracket and the insulated terminal.

(6) *Capacitors/Condensers.* (i) The emission-critical parameters for capacitors/condensers are:

- (A) Capacitance.
- (B) Series Resistance.
- (C) Breakdown Voltage.

(ii) For the purposes of this paragraph:

(A) "Capacitance" means the property of a device which permits storage of electrically-separated charges when differences in electrical potential exist between the conductors and measured as the ratio of stored charge to the difference in electrical potential between conductors.

(B) "Series Resistance" means the sum of resistances from the condenser

plates to the condenser's external connections.

(C) "Breakdown Voltage" means the voltage level at which the capacitor fails.

(D) "Capacitor/Condenser" means a device for the storage of electrical energy consisting of two oppositely charged conducting plates separated by a dielectric and which resists the flow of direct current.

(7) *Distributor Caps and/or Rotors.* (i) The emission-critical parameters for distributor caps and/or rotors are:

- (A) Physical and Thermal Integrity.
- (B) Dielectric Strength.
- (C) Flashover.

(ii) For the purposes of this paragraph:

(A) "Flashover" means the discharge of ignition voltage across the surface of the distributor cap and/or rotor rather than at the spark plug gap.

(B) "Dielectric Strength" means the ability of the material of the cap and/or rotor to resist the flow of electric current.

(C) "Physical and Thermal Integrity" means the ability of the material of the cap and/or rotor to resist physical and thermal breakdown.

(8) *Spark Plugs.* (i) The emission critical parameters for spark plugs are:

- (A) Heat Rating.
- (B) Gap Spacing.
- (C) Gap Location.
- (D) Flashover.
- (E) Dielectric Strength.

(ii) For the purposes of this paragraph:

(A) "Spark Plug" means a device to suitably deliver high tension electrical ignition voltage to the spark gap in the engine combustion chamber.

(B) "Heat Rating" means that measurement of engine indicated mean effective pressure (IMEP) value obtained on the engine at a point when the supercharge pressure is 25.4mm (one inch) Hg below the preignition point of the spark plug, as rated according to SAE J549A Recommended Practice.

(C) "Gap Spacing" means the distance between the center electrode and the ground electrode where the high voltage ignition arc is discharged.

(D) "Gap Location" means the position of the electrode gap in the combustion chamber.

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(E) "Dielectric Strength" means the ability of the spark plug's ceramic insulator material to resist electrical breakdown.

(F) "Flashover" means the discharge of ignition voltage at any point other than at the spark plug gap.

(9) *Inductive System Coils.* (i) The emission-critical parameters for inductive system coils are:

- (A) Open Circuit Voltage Output.
- (B) Dielectric Strength.
- (C) Flashover.
- (D) Rise Time.

(ii) For the purposes of this paragraph:

(A) "Coil" means a device used to provide high voltage in an inductive ignition system.

(B) "Flashover" means the discharge of ignition voltage across the coil.

(C) "Dielectric Strength" means the ability of the material of the coil to resist electrical breakdown.

(D) "Rise Time" means the time required for the spark voltage to increase from 10% to 90% of its maximum value.

(10) *Primary Resistors.* (i) The emission-critical parameter for primary resistors is the DC resistance.

(ii) For the purpose of this paragraph, a "Primary Resistor" means a device used in the primary circuit of an inductive ignition system to limit the flow of current.

(11) *Breaker Point Distributors.* (i) The emission-critical parameters for breaker point distributors are:

- (A) Spark Timing.
- (1) Centrifugal Advance Characteristics.
- (2) Vacuum Advance Characteristics.
- (B) Dwell Angle.
- (C) Breaker point contact operation.
- (D) Electrical resistance to ground.
- (E) Capacity for compatibility with generally available original equipment and certified replacement parts listed in § 85.2112(a) (5), (6), (7), and (9).

(ii) For the purposes of this paragraph:

(A) "Distributor" means a device for directing the secondary current from the induction coil to the spark plugs at the proper intervals and in the proper firing order.

(B) "Distributor Firing Angle" means the angular relationship of breaker

point opening from one opening to the next in the firing sequence.

(C) "Dwell Angle" means the number of degrees of distributor mechanical rotation during which the breaker points are capable of conducting current.

- (12) Engine Valves [Reserved].
- (13) Camshafts [Reserved].
- (14) Pistons [Reserved].

(15) *Oxidizing Catalytic Converter.* (i) The emission-critical parameters for oxidizing catalytic converters are:

- (A) Conversion Efficiency.
- (B) Light-off Time.
- (C) Mechanical and Thermal Integrity.

(ii) For the purposes of this paragraph including the relevant test procedures in the Appendix:

(A) "Catalytic Converter" means a device installed in the exhaust system of an internal combustion engine that utilizes catalytic action to oxidize hydrocarbon (HC) and carbon monoxide (CO) emissions to carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O).

(B) "Conversion Efficiency" means the measure of the catalytic converter's ability to oxidize HC/CO to CO<sub>2</sub>/H<sub>2</sub>O under fully warmed-up conditions stated as a percentage calculated by the following formula:

$$\frac{\text{Inlet conc.} - \text{outlet conc.}}{\text{Inlet conc.}} \times 100$$

(C) "Light-off Time" or "LOT" means the time required for a catalytic converter (at ambient temperature 68-86 °F) to warm-up sufficiently to convert 50% of the incoming HC and CO to CO<sub>2</sub> and H<sub>2</sub>O.

(D) "Peak Air Flow" means the maximum engine intake mass air flow rate measure during the 195 second to 202 second time interval of the Federal Test Procedure.

(E) "Feed Gas" means the chemical composition of the exhaust gas measured at the converter inlet.

(F) "Aged Catalytic Converter" means a converter that has been installed on a vehicle or engine stand and operated thru a cycle specifically designed to chemically age, including exposure to representative lead concentrations, and mechanically stress the catalytic converter in a manner representative of in-use vehicle or engine conditions.

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(G) "Mechanical and Thermal Integrity" means the ability of a converter to continue to operate at its previously determined efficiency and light-off time and be free from exhaust leaks when subject to thermal and mechanical stresses representative of the intended application.

(16) *Air Cleaner Filter Element.* (i) The emission-critical parameters for Air Cleaner Filter Elements are:

- (A) Pressure drop.
- (B) Efficiency.

(ii) For the purpose of this paragraph:

(A) "Air Cleaner Filter Element" means a device to remove particulates from the primary air that enters the air induction system of the engine.

(B) "Pressure Drop" means a measure, in kilopascals, of the difference in static pressure measured immediately upstream and downstream of the air filter element.

(C) "Efficiency" means the ability of the air cleaner or the unit under test to remove contaminant.

(17) *Electronic Inductive Ignition System and Components* [Reserved].

(18) *Electronic Inductive Distributors* [Reserved].

(b) Additional part standards. [Reserved]

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§ 85.2123 Treatment of confidential information.

(a) Any manufacturer may assert that some or all of the information submitted pursuant to this subpart is entitled to confidential treatment as provided by 40 CFR part 2, subpart B.

(b) Any claim of confidentiality must accompany the information at the time it is submitted to EPA.

(c) To assert that information submitted pursuant to this subpart is confidential, a manufacturer must indicate clearly the items of information claimed confidential by marking, circling, bracketing, stamping, or otherwise specifying the confidential information. Furthermore, EPA requests, but does not require, that the submitter also provide a second copy of its submittal from which all confidential information shall be deleted. If a need arises to publicly release nonconfiden-

tial information, EPA will assume that the submitter has accurately deleted all confidential information from this second copy.

(d) If a claim is made that some or all of the information submitted pursuant to this subpart is entitled to confidential treatment, the information covered by that confidentiality claim will be disclosed by the Administrator only to the extent and by means of the procedures set forth in part 2, subpart B, of this chapter.

(e) Information provided without a claim of confidentiality at the time of submission may be made available to the public by EPA without further notice to the submitter, in accordance with 40 CFR 2.204(c)(2)(i)(A).

[50 FR 34798, Aug. 27, 1985]

APPENDIX I TO SUBPART V OF PART 85—RECOMMENDED TEST PROCEDURES AND TEST CRITERIA AND RECOMMENDED DURABILITY PROCEDURES TO DEMONSTRATE COMPLIANCE WITH EMISSION CRITICAL PARAMETERS

A. CARBURETOR VACUUM BREAK (CHOKE PULL-OFF)

1. Test Procedure and Criteria

a. Vacuum leakage: Apply 457±13mm (18.0±0.5 inches) Hg. vacuum to the vacuum unit to achieve full diaphragm displacement. Seal vacuum source to unit. There shall be no visible loss of diaphragm displacement or drop in vacuum gauge reading after a 15 second observation. Vacuum purge system and diaphragm displacement adjusting screw holes should be temporarily sealed during this test when applicable.

b. Diaphragm displacement: At stabilized temperature of -29 °C and 121 °C (-20 °F and 250 °F) with 457±13mm (18.0±0.5 inches) Hg. vacuum applied to unit, the diaphragm displacement shall be within±1mm (0.04 inches) of the nominal original equipment displacement. The vacuum purge system must be open during this test when applicable. Adjusting screws that limit displacement should be temporarily removed and adjusting screw holes temporarily sealed during this test.

c. Timed delay (when applicable): With 457±13mm (18.0±0.5 inches) Hg. applied to the unit, the vacuum break diaphragm displacement shall occur within±20% of the original equipment time over the specified range of displacement. The diaphragm displacement shall be timed over the same distance for the original equipment as the replacement part and shall not be less than 60% of the total displacement range. The