

## Environmental Protection Agency

## § 85.2123

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.

(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]

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

### § 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 nonconfidential 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 ±13 mm (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 ±13 mm (18.0 ±0.5 inches) Hg. vacuum applied to unit, the diaphragm displacement shall be within ±1 mm (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 ±13 mm (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 vacuum purge system must be open and the adjusting screw holes should be temporarily sealed during this test when applicable.

d. Modulated stem displacement (when applicable): With a force sufficient to extend the modulated stem to its full displacement, the displacement shall be within ±0.8 mm (±0.03 inches) of the original equipment specification.

e. Modulated stem displacement force (when applicable): The force required to start and finish the modulated stem displacement shall be within ±35% of the original equipment specification for forces up to 142 grams (5 ounces) and shall be within ±20% of the original equipment specification for forces exceeding 142 grams (5 ounces).

2. *Durability Procedures*: After 250,000 full displacement cycles (from atmospheric pressure to a minimum of 530mm (21 inches) Hg. vacuum at a temperature of 79 °C (175 °F)) in air, the following conditions shall be met:

a. Diaphragm displacement shall not degrade more than 10% from the original test measurements of paragraph 1.b. above.

b. Timed delay shall not degrade more than 10% from the original test measurement in paragraph 1.c. above.

c. Following these tests, the units must be free of visible defects.

B. CARBURETOR CHOKE THERMOSTATS

1. *Test Procedures and Criteria*

a. All chokes

i. *Thermal deflection rate*

When tested on a suitable fixture, the deflection rate shall be within ±6% of the original equipment value. The initial temperature and final temperature for purposes of this test may vary but shall exhibit a test temperature range of at least 44 °C (80 °F). Recommended test equipment, test procedures, and associated calculations are outlined in ASTM B389 (latest revision) or American National Standards Institute Z155-20.

ii. *Mechanical torque rate*

When tested on a suitable fixture, the torque rate shall be within ±12% of the mean original equipment value. Recommended test equipment, test procedures, and associated calculations are outlined in ASTM B362 (latest revision) or American National Standards Institute Z155-18 (latest revision).

iii. *Index mark position*

When stabilized for four hours at room temperature, the relative position of the thermostatic coil outer tang or loop and the index mark, when corrected to 24 °C (75 °F), shall be within ±5 angular degrees of the mean original equipment positions.

b. Electrically-heated Chokes

i. *Time to rotate coil tang*

When tested on a suitable fixture, the time to rotate through a prescribed angle at a prescribed temperature and prescribed voltage,

## Environmental Protection Agency

## Pt. 85, Subpt. V, App. I

for the specific choke device under test shall be within  $\pm 12$  seconds or  $\pm 25\%$  of the mean original equipment value whichever is greater.

### ii. *Electrical circuit resistance*

In an electrically-heated choke utilizing PTC type choke heater, the circuit resistance shall be within  $\pm 1.5$  ohms of the mean original equipment value at  $24 \pm 3$  °C ( $75 \pm 5$  °F) unenergized.

### iii. *Electrical switching temperature*

In an electrically heated choke thermostat utilizing a thermostatic disc switch in the electrical circuit, the temperature to open the circuit shall be within  $\pm 5.5$  °C ( $10$  °F) and the temperature to close the circuit shall be within  $\pm 11$  °C ( $20$  °F) of the mean original equipment value. Circuit opening temperature shall be measured on a decreasing temperature change, and the circuit closing temperature shall be measured on an increasing temperature change.

## C. CARBURETOR ACCELERATOR PUMPS

### 1. *Test Procedure and Criteria*

a. Expose plunger or diaphragm assembly to temperatures of  $-30$  °C ( $-20$  °F) for 70 hours and at  $70$  °C ( $158$  °F) for 24 hours, with a commercial grade fuel or equivalent.

b. Within one hour after temperature exposure of 1.a. above, each plunger or diaphragm assembly, when installed in an applicable carburetor or test fixture, shall at room temperature deliver a volume of test fluid (Standard solvent or equivalent) from a 10 stroke cycle,\* within  $\pm 30\%$  of the volume from a 10 stroke cycle of an original equipment plunger or diaphragm assembly.

2. *Durability Procedure:* After 250,000 operational cycles, at approximately 30 cycles per minute at room temperature in test fluid, the output of the plunger/diaphragm shall not drop below 90% of the low limit as established in 1.b.

\*10 stroke cycle: 10 strokes from closed throttle plate position to wide open throttle plate position occurring within a 15-25 second time period.

## D. POSITIVE CRANKCASE VENTILATION (PCV) VALVE

### 1. *Test Procedure and Criteria*

a. Measure the flow of the PCV valve in standard cubic feet per minute (SCFM) vs. pressure differential across the valve over a range of operating pressures from 4-22 inches Hg., at standard atmospheric conditions ( $21.1$  °C ( $70$  °F) at 755mm (29.92 inches).

b. A PCV valve shall flow within the vehicle manufacturer's specifications or shall meet the following criteria: Whenever the mean of the original equipment flow curve is below 1 SCFM, a maximum deviation of the mean replacement PCV valve shall not exceed  $\pm 0.1$  SCFM. Whenever the mean original equipment curve is equal to or greater than 1 SCFM, a maximum deviation of the mean of the replacement PCV valve shall not exceed  $\pm 10\%$ . The total flow tolerance of the replacement valve shall not exceed the original equipment variation from the mean, at any pressure differential.

2. *Durability Procedure:* The flow of any specific PCV valve must not deviate from the flow curve of the original equipment PCV valve by more than the total original allowable tolerance when each is similarly operated in the intended vehicle application over the service interval stated by the certifier.

## E. BREAKER POINTS

### 1. *Test Procedures and Criteria*

a. Set up test system circuit and equipment per Figure 1 with an OE breaker point assembly. Connect the primary to a  $14 \pm 5$  V DC regulated power supply.

b. Record dwell angle and open-circuit output voltage at 300 and 500 distributor rpm and at 500 rpm intervals up to the maximum speed of the intended application.

c. Insert the replacement part in the test system and repeat the observations per b above under identical test conditions.

d. The data observed with the replacement part in the system must meet the following criteria:

(1) The dwell angle change: Not to exceed that of the original equipment by more than  $\pm 2^\circ$  at all measured rpm intervals.

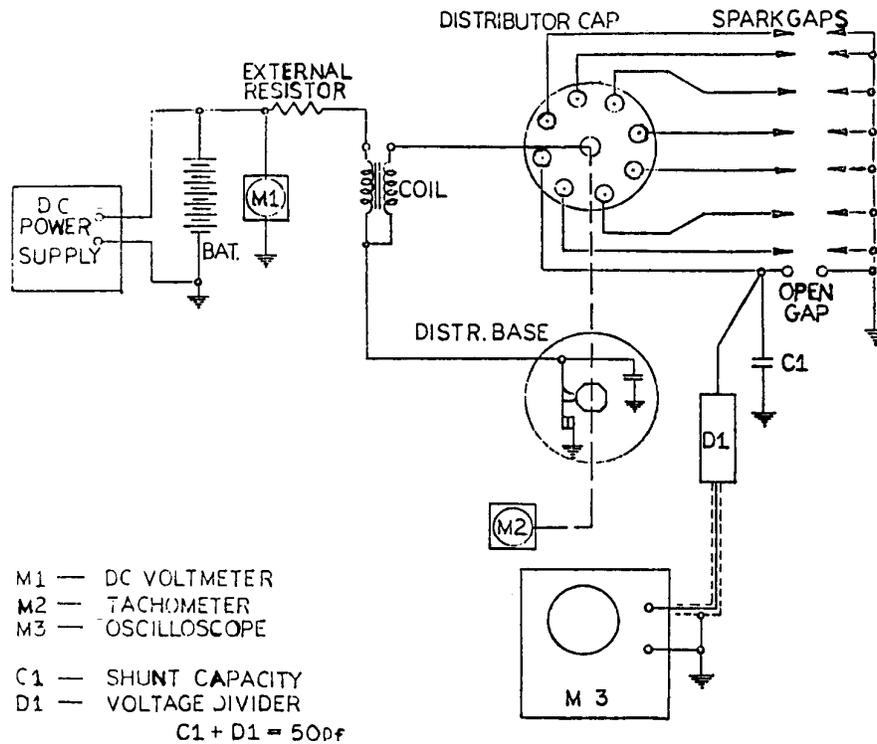


FIGURE I

(2) The open circuit output voltage (M-3): Not less than 90% of the OE breaker point assembly at any measured rpm.

e. Repeat step c above at  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) and  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ).

f. The breaker points shall operate without evidence of point bounce at all test speeds and temperatures and shall operate easily without binding when operated manually.

#### 2. Durability Procedures

a. Set up a bench ignition system using an applicable distributor or electro-mechanical equivalent.

b. Install the breaker point assembly under test in the distributor, lubricate and adjust per applicable vehicle manufacturer's specifications. Use applicable coil, primary resistor, capacitor, cap and rotor.

c. Connect the primary of the test system with a power supply regulated at  $14 \pm 0.5$  V DC for a 12V system.

d. The secondary portion of the test system is to be connected to a  $12 \pm 2$  KV spark gap.

e. An external heat source shall generate an ambient temperature of  $70^{\circ}$  ( $158^{\circ}\text{F}$ ) for the distributor.

f. Drive the distributor at  $1750 \pm 50$  rpm for 200 hours. After each 50 hour interval, run the distributor for 5 minutes with one open circuit spark gap instead of a 12KV gap.

g. The replacement breaker point assembly must have the capability of performing throughout the duration of the test without evidence of any failure resulting in loss of spark in the 12KV spark gap.

h. After the 200 hours repeat step 1.c. above. The open circuit output voltage must be at least 90% of that measured in 1.c.

#### F. CAPACITORS/CONDENSERS

##### 1. Test Procedures and Criteria

a. The electrostatic capacitance of the replacement condenser shall be within  $\pm 20\%$  of the value of the original part at  $20 \pm 3^{\circ}\text{C}$  ( $68 \pm 5^{\circ}\text{F}$ ). The capacitance is to be measured on

a capacitance bridge having an accuracy of  $\pm 1\%$  at 1 KHz frequency.

b. Set up the test system in accordance with Figure 1. The condenser series resistance shall be such that the output voltage at 500 distributor rpm with the replacement condenser shall not be less than 90% of the output voltage (M-3) with the original equipment condenser.

c. The capacitor must be able to withstand a minimum test voltage of 500V DC for a minimum of 0.1 seconds without failure.

d. (1) Measure capacitance after 4 hours minimum soak at 70° (158 °F).

(2) After one hour at room temperature, place capacitor at -18 °C (0 °F) for 4 hours minimum and measure capacitance.

(3) Place capacitor at room temperature for 4 hours minimum and measure capacitance.

e. After thermal cycling, repeat 1.a. and b. The results must be within  $\pm 10$  percent of the initial measurements.

#### 2. Durability Procedure

a. Set up a bench ignition system using an applicable distributor or an electro-mechanical equivalent.

b. Install the capacitor under test in the distributor adjusted to applicable vehicle manufacturer's specifications. Use applicable coil, primary resistor, breaker points, cap and rotor.

c. Connect the primary of the test system with a power supply regulated at 14  $\pm 0.5$ V DC for 12V system.

d. The secondary portion of the test system is to be connected to a 12  $\pm 2$ KV spark gap.

e. An external heat source shall generate an ambient temperature of 70 °C (158 °F) for the distributor.

f. Drive the distributor at 1750  $\pm 50$  rpm for 200 hours. After each 50 hour interval, run the distributor for 5 minutes with one open circuit spark gap instead of a 12KV gap.

g. The replacement part must have the capability of performing throughout the duration of the test without evidence of any failure resulting in loss of spark in the 12KV spark gap.

h. After the 200 hours, the condenser shall be within 10 percent of the capacitance and voltage measured in 1.a. and b. respectively.

#### G. DISTRIBUTOR CAPS AND/OR ROTORS

##### 1. Test Procedures and Criteria

a. Set up test system in accordance with the circuit and equipment per Figure 1 with OE distributor cap and/or rotor. Connect the primary to a 14  $\pm 0.5$ V DC regulated power supply.

b. Record open circuit output voltage (M-3) at 300 and 500 distributor rpm and at intervals of 500 distributor rpm up to the maximum speed of the intended application.

c. Insert the intended replacement part(s) in the system and repeat step b. above under identical test conditions.

d. Subject the intended replacement part to the following thermal sequence through five complete cycles:

1. 12 hours at -40 °C (-40 °F)
2. 2 hours at room temperature
3. 4 hours at 100 °C (212 °F)
4. 2 hours at room temperature.

e. Repeat step b. above with the replacement part(s).

f. The output voltages measured with the replacement part(s) in the system must be at least 90% of the output voltage with the OE cap and/or rotor.

#### 2. Durability Procedures

a. Set up test system in accordance with circuit and equipment per Figure 1.

b. Install the cap and/or rotor under test in distributor, lubricate and adjust per applicable vehicle manufacturer's specifications. Use equivalent coil, primary resistor, breaker points and capacitor.

c. Connect the primary of the test system with a power supply regulated at 14  $\pm 0.5$  V D.C.

1. In breaker point operated systems, connect secondary to a 12 KV $\pm 2$  KV gap.

2. In electronic ignition systems, connect secondary to a gap equivalent to at least 50% of peak open-circuit voltage.

d. An external heat source shall generate an ambient temperature of 70° (158 °F) for the distributor.

e. Distributor shall be driven at 1750  $\pm 50$  rpm for 200 hours. After each 50 hours interval, run the distributor for 5 minutes with one open-circuit spark gap instead of a 12KV gap.

f. The replacement part(s) must have the capability of performing throughout the duration of the test without evidence of any failure resulting in loss of spark at the spark gap.

g. Repeat step 1.c. above. The open circuit output voltage must be at least 90% of that measured in step 1.c.

h. The replacement cap and/or rotor must be free of any visual cracks, arcing or melting.

#### H. SPARK PLUGS

##### 1. Test Procedures and Criteria

a. Heat rating: When comparatively rated in the SAE 17.6 Spark Plug Rating engine according to the SAE J549A Recommended Practice, the comparative average rating of at least five (5) replacement spark plugs shall be within 15 percent of the average IMEP of at least five (5) OE spark plugs.

b. Gap spacing: The electrode spark gap shall be equivalent or adjustable to the recommended gap for the original equipment spark plug.

c. Gap location: The electrode gap position in the chamber shall be the same as specified by the vehicle manufacturer.

d. Flashover: The spark plug terminal end, with the properly fitted connecting boot, shall not flash-over at peak anticipated voltage for the intended application when electrode gap is 15% larger than vehicle manufacturer's gap specifications.

#### I. INDUCTIVE SYSTEM COILS

##### 1. Test Procedures and Criteria

a. Set up the circuit in accordance with Figure 1. Operate the circuit by an applicable distributor or equivalent triggering device and applicable primary resistor with a 50 pf load at 14.0  $\pm$ 0.50 volts DC input as applicable and stabilized at an ambient temperature of 20  $\pm$ 3  $^{\circ}$ C (68  $\pm$ 5  $^{\circ}$ F).

b. With the original equipment coil installed, record the predominant minimum peak voltage and rise time at 300 and 500 distributor rpm, and at 500 rpm intervals up to the maximum intended operating speed. The measurement is to be taken after 4 minutes operation at each speed.

c. Install the replacement coil to be tested and repeat step b. above.

d. The replacement coil shall have an open-circuit output voltage (M-3) at least 90% of the OE coil output voltage and a rise time not to exceed 110% of original equipment coil at each distributor test speed.

##### 2. Durability Procedure

a. Install the replacement ignition coil in the ignition system using the applicable rotor, cap, capacitor, breaker points, and primary resistor.

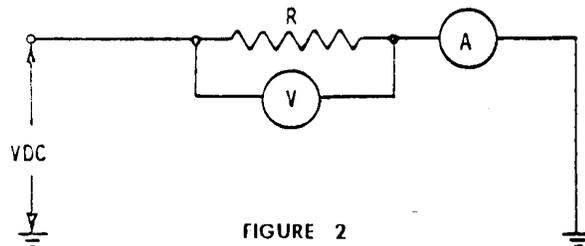


FIGURE 2

Current A to be maintained at 2.5 amps for duration of test.

b. Operate the circuit with a regulated power supply of 14.0  $\pm$ 0.5 volts DC connected to the primary at an ambient temperature of 70  $^{\circ}$ C (158  $^{\circ}$ F) at 1750  $\pm$ 50 distributor rpm for a duration of 200 hours. After each 50 hour interval, run the distributor for 5 minutes with one open-circuit spark gap instead of a 12KV gap.

c. The ignition coil shall perform throughout the test without any evidence of coil failure which would result in the loss of the spark in the 12 KV spark gap.

d. Repeat Step 1.c. above. The open-circuit output voltage must be at least 90% of that measured in 1.c.

#### J. PRIMARY RESISTORS

##### 1. Test Procedures and Criteria.

a. Configure the circuit shown in Figure 2, using the original equipment resistor.

b. At 20  $\pm$ 3  $^{\circ}$ C (68  $\pm$ 5  $^{\circ}$ F), apply voltage for 15 minutes; maintain current at 2.5 amps. At conclusion of 15 minutes, read voltage and current. Calculate resistance using the relationship

$$R = E/I,$$

where:

R=Resistance in ohms,

E=Voltage (V) in volts,

I=Current (A) in amps.

c. Replace OE test sample with part to be certified and repeat step b. above.

d. Resistance of the part shall be within  $\pm$ 20% of original equipment resistance.

##### 2. Durability Procedure.

a. Using the circuit shown in Figure 1, apply current at 70  $^{\circ}$ C (150  $^{\circ}$ F), for 200 hours.

b. After 200 hours retest as in step 1.c. above, and verify that resistance is within  $\pm$ 20% of the value as measured in step 1.b. above.

#### K. DISTRIBUTORS—BREAKER POINT

##### 1. Test Procedures and Criteria.

a. Using an appropriate test installation, operate the distributor through its intended speed range.

b. The advance mechanism shall function within the tolerance of the vehicle manufacturer's original specification over the speed range of the intended application as to vacuum and centrifugal advance.

c. The advance mechanism shall repeatedly return to the zero setting  $\pm$ 0.5 distributor degrees after advancing and retarding through the operating range.

**Environmental Protection Agency**

**Pt. 85, Subpt. V, App. I**

d. The distributor firing angle accuracy shall remain within the originally specified tolerances throughout the speed range of the intended application.

e. The distributor shall be capable of maintaining the dwell angle of the original equipment specification with  $\pm 2$  degrees throughout the speed range of the intended application.

f. The distributor shall be capable of open-circuit output voltage (M-3) equal to at least 90 percent of the voltage produced by the original equipment system over the speed range of the intended application.

**2. Durability Procedure.**

a. At an ambient temperature of 70 °C (150 °F), operate the distributor at 1750  $\pm$ 50 rpm for 200 hours.

b. The distributor must meet the requirements of paragraph 1.b. through f. after the 200 hours.

**L. RESERVED FOR ENGINE VALVES**

**M. RESERVED FOR CAMSHAFTS**

**N. RESERVED FOR PISTONS**

**O. OXIDIZING CATALYTIC CONVERTERS**

**1. Test Procedures and Criteria.**

(a) The fresh and aged conversion efficiencies of the replacement oxidizing catalytic converter shall be equal to or exceed those of the original equipment converter for CO and HC emissions. The fresh and aged Light-off Time (LOT) of the replacement converter shall be equal to or less than those of the original equipment converter for CO and HC emissions. These parameters shall be determined for both fresh and aged converters under the same conditions using the following steady state feed gas concentrations and conditions for LOT and Conversion Efficiency respectively:

	LOT	Conversion efficiency
Exhaust mass flow rate.	See note (2) .....	See note (1).
Total hydrocarbons	See note (3) .....	See note (3).
Carbon monoxide	1.0 to 2.5% .....	1.0 to 2.5%.
Hydrogen .....	0.33x% CO maximum.	0.33x% CO maximum.
Oxygen .....	1.5x% CO minimum.	1.5x% CO minimum.
Converter inlet gas temperature.	650 °F to 850 °F ..	650 °F to 850 °F.

NOTE 1: Not less than peak air flow of the vehicle or engine configuration being certified for. If more than one vehicle or engine application is to be covered by a generic converter, the greatest peak vehicle or engine air flow shall be used.

NOTE 2: Between 0.10 and 0.40 times the value determined in Note 1.

NOTE 3: 500-2000 parts per million by volume minimum based on Methane calibration.

If a non-engine simulator gas source is used, a mixture ratio of 10% propane to 90% propylene by volume will constitute an acceptable synthetic for total exhaust hydrocarbons.

(i) LOT tests shall be conducted by exposing the converter to a step change in temperature, from ambient to that specified above: 650°-850 °F. Converter inlet and outlet exhaust emissions as measured. Light-off Time is then determined by recording the time required for the converter to reduce the outlet emissions (HC and CO) to 50% of the inlet emissions, on a volumetric concentration basis, measured from the step temperature change.

(ii) Conversion efficiency measurements shall be obtained by passing stabilized-feed gas through the converter (at conditions specified above) and making simultaneous measurements of inlet and outlet emission volume concentrations. The conversion efficiency for CO and HC is then calculated.

(iii) The particular conditions for which LOT and conversion efficiency are measured (i.e., exhaust mass flow rate, total hydrocarbons, carbon monoxide, hydrogen, oxygen, and converter inlet temperature) for the replacement converter and original equipment converter tests must not vary from one another by more than 10%.

(b) Fresh and aged catalytic converters may be obtained by operating the converter on individual vehicle or engine application for which it is intended on the Federal Test Procedure road durability driving cycle. A fresh converter results when the converter has operated between 2000 and 5000 miles or equivalent hours. An aged converter results when the converter has been operated for the warranted life of the original equipment converter.

(c) Where one generic converter is intended to cover multiple vehicle or engine configurations, converter aging may be obtained per Paragraph (b) above, on a vehicle or engine which represents the greatest peak air flow of the group of vehicle configurations to be covered, and whose calibration and feed gas concentrations are representative of the vehicle or engine configurations being certified for.

**2. Other Considerations.**

(a) Replacement converter must fit within the width and length space envelope of the original equipment converter. Converter spacing from the underbody and for ground clearance must be the same or greater than the original equipment converter application.

(b) Pressure drop measured between inlet and outlet pipe interconnecting points on the replacement converter shall be within  $\pm 25\%$  of similar measurements for the original equipment converter being replaced, when measured at each of three flow conditions 50 SCFM, 100 SCFM, and 150 SCFM

with a suitable fluid medium such as air. Maximum allowable exhaust gas leakage from the replacement coverter shall be 0.4 cubic feet per minute measured at 4.0 pounds per square inch differential. All measurements must be normalized to equal density conditions.

(c) Converter skin temperature shall be measured during the converter efficiency test. The skin temperature for the replacement converter must equal or be less than that for the original equipment converter.

#### P. AIR CLEANER FILTER ELEMENT

##### 1. Test Procedures and Criteria.

(a) Using test equipment and procedures specified in SAE-J726c, perform:

(i) Air Flow and Pressure Drop Test (2.3) at 200 SCFM, record test conditions and pressure drop.

(ii) Efficiency Test (2.4) to measure full life efficiency at 200 SCFM to a total pressure drop of 9 inches of water, record test conditions and test duration from first to last addition of standard dust, weigh test element and absolute filter at end of test using three randomly selected original equipment air filter elements.

(b) Perform tests as in (a) above, under conditions controlled to within  $\pm 10\%$  of the corresponding original equipment test conditions, for three randomly selected replacement air filter elements.

(c) The replacement air filter element average recorded test results. The pressure drop in (i) and absolute filter weight in (ii) must be equal to or less than those average results for the original equipment test results. The replacement air filter averaged test results for element weight in (ii) must be equal to or larger than averaged result for the original equipment averaged test results.

##### 2. Durability Procedure.

(a) After use in the intended vehicle or engine application for the recommended service interval, the replacement element shall evidence an increase in pressure drop (as measured in 1 (a)(i) above) equal to or less than that of the original equipment air filter element tested in the identical manner.

[45 FR 78464, Nov. 25, 1980, as amended at 54 FR 32593, Aug. 8, 1989]

## APPENDIX II TO SUBPART V OF PART 85— ARBITRATION RULES

### Part A—Pre-Hearing

#### Section 1: Initiation of Arbitration

Either party may commence an arbitration under these rules by filing at any regional office of the American Arbitration Association (the AAA) three copies of a written submission to arbitrate under these rules, signed by either party. It shall contain a statement of the matter in dispute, the

amount of money involved, the remedy sought, and the hearing locale requested, together with the appropriate administrative fee as provided in the Administrative Fee Schedule of the AAA in effect at the time the arbitration is filed. The filing party shall notify the MOD Director in writing within 14 days of when it files for arbitration and provide the MOD Director with the date of receipt of the bill by the part manufacturer.

Unless the AAA in its discretion determines otherwise and no party disagrees, the Expedited Procedures (as described in Part E of these Rules) shall be applied in any case where no disclosed claim or counterclaim exceeds \$32,500, exclusive of interest and arbitration costs. Parties may also agree to the Expedited Procedures in cases involving claims in excess of \$32,500.

All other cases, including those involving claims not in excess of \$32,500 where either party so desires, shall be administered in accordance with Parts A through D of these Rules.

#### Section 2: Qualification of Arbitrator

Any arbitrator appointed pursuant to these Rules shall be neutral, subject to disqualification for the reasons specified in Section 6. If the parties specifically so agree in writing, the arbitrator shall not be subject to disqualification for said reasons.

The term "arbitrator" in these rules refers to the arbitration panel, whether composed of one or more arbitrators.

#### Section 3: Direct Appointment by Mutual Agreement of Parties

The involved manufacturers should select a mutually-agreeable arbitrator through which they will resolve their dispute. This step should be completed within 90 days from the date of receipt of the warranty claim bill by the part manufacturer.

#### Section 4: Appointment From Panel

If the parties have not appointed an arbitrator and have not provided any other method of appointment, the arbitrator shall be appointed in the following manner: 90 days from the date of receipt of the warranty claim bill by the part manufacturer, the AAA shall submit simultaneously to each party to the dispute an identical list of names of persons chosen from the National Panel of Commercial Arbitrators, established and maintained by the AAA.

Each party to the dispute shall have ten days from the mailing date in which to cross off any names objected to, number the remaining names in order of preference, and return the list to the AAA. If a party does not return the list within the time specified, all persons named therein shall be deemed acceptable. From among the persons who

## Environmental Protection Agency

## Pt. 85, Subpt. V, App. II

have been approved on both lists, and in accordance with the designated order of mutual preference, the AAA shall invite the acceptance of an arbitrator to serve. If the parties fail to agree on any of the persons named, or if acceptable arbitrators are unable to act, or if for any other reason the appointment cannot be made from the submitted lists, the AAA shall have the power to make the appointment from among other members of the panel without the submission of additional lists.

### Section 5: Number of Arbitrators; Notice to Arbitrator of Appointment

The dispute shall be heard and determined by one arbitrator, unless the AAA in its discretion, directs that a greater number of arbitrators be appointed.

Notice of the appointment of the arbitrator shall be mailed to the arbitrator by the AAA, together with a copy of these rules, and the signed acceptance of the arbitrator shall be filed with the AAA prior to the opening of the first hearing.

### Section 6: Disclosure and Challenge Procedure

Any person appointed as an arbitrator shall disclose to the AAA any circumstance likely to affect impartiality, including any bias or any financial or personal interest in the result of the arbitration or any past or present relationship with the parties or their representatives. Upon receipt of such information from the arbitrator or another source, the AAA shall communicate the information to the parties and, if it deems it appropriate to do so, to the arbitrator and others. Upon objection of a party to the continued service of an arbitrator, the AAA shall determine whether the arbitrator should be disqualified and shall inform the parties of its decision, which shall be conclusive.

### Section 7: Vacancies

If for any reason an arbitrator should be unable to perform the duties of the office, the AAA may, on proof satisfactory to it, declare the office vacant. Vacancies shall be filled in accordance with the applicable provisions of these rules.

In the event of a vacancy in a panel of arbitrators after the hearings have commenced, the remaining arbitrator or arbitrators may continue with the hearing and determination of the controversy, unless the parties agree otherwise.

### Section 8: Interpretation and Application of Rules

The arbitrator shall interpret and apply these rules insofar as they relate to the arbitrator's powers and duties. When there is more than one arbitrator and a difference

arises among them concerning the meaning or application of these rules, it shall be decided by a majority vote. If that is unobtainable, either an arbitrator or a party may refer the question to the AAA for final decision. All other rules shall be interpreted and applied by the AAA.

### Section 9: Administrative Conference and Preliminary Hearing

At the request of any party or at the discretion of the AAA, an administrative conference with the AAA and the parties and/or their representatives will be scheduled in appropriate cases to expedite the arbitration proceedings.

In large or complex cases, at the request of any party or at the discretion of the arbitrator or the AAA, a preliminary hearing with the parties and/or their representatives and the arbitrator may be scheduled by the arbitrator to specify the issues to be resolved, stipulate to uncontested facts, and to consider any other matters that will expedite the arbitration proceedings. Consistent with the expedited nature of arbitration, the arbitrator may, at the preliminary hearing, establish (i) the extent of and the schedule for the production of relevant documents and other information, (ii) the identification of any witnesses to be called, and (iii) a schedule for further hearings to resolve the dispute.

### Section 10: Fixing of Locale

The parties may mutually agree on the locale where the arbitration is to be held. If any party requests that the hearing be held in a specific locale and the other party files no objection thereto within ten days after notice of the request has been mailed to it by the AAA, the locale shall be the one requested. If a party objects to the locale requested by the other party, the AAA shall have the power to determine the locale and its decision shall be final and binding.

### *Part B—The Hearing*

#### Section 1: Date, Time, and Place of Hearing

The arbitrator shall set the date, time, and place for each hearing. The AAA shall mail to each party notice thereof at least ten days in advance, unless the parties by mutual agreement waive such notice or modify the terms thereof.

#### Section 2: Representation

Any party may be represented by counsel or other authorized representative. A party intending to be so represented shall notify the other party and the AAA of the name and address of the representative at least three days prior to the date set for the hearing at which that person is first to appear.

When such a representative initiates an arbitration or responds for a party, notice is deemed to have been given.

**Section 3: Attendance at Hearings**

The arbitrator shall maintain the privacy of the hearings unless the law provides to the contrary. Representatives of the MOD director, and any persons having a direct interest in the arbitration are entitled to attend hearings. The arbitrator shall otherwise have the power to require the exclusion of any witness, other than a party or other essential person, during the testimony of any other witness. It shall be discretionary with the arbitrator to determine the propriety of the attendance of any other person.

**Section 4: Oaths**

Before proceeding with the first hearing, each arbitrator may take an oath of office and, if required by law, shall do so. The arbitrator may require witnesses to testify under oath administered by any duly qualified person and, if it is required by law or requested by any party, shall do so.

**Section 5: Majority Decision**

All decisions of the arbitrators must be by a majority. The award must also be made by a majority.

**Section 6: Order of Proceedings and Communication with Arbitrator**

A hearing shall be opened by the filing of the oath of the arbitrator, where required; by the recording of the date, time, and place of the hearing, and the presence of the arbitrator, the parties and their representatives, if any; and by the receipt by the arbitrator of the statement of the claim and the answering statement, if any.

The arbitrator may, at the beginning of the hearing, ask for statements clarifying the issues involved. In some cases, part or all of the above will have been accomplished at the preliminary hearing conducted by the arbitrator pursuant to Part A Section 9 of these Rules.

The complaining party shall then present evidence to support its claim. The defending party shall then present evidence supporting its defense. Witnesses for each party shall submit to questions or other examination. The arbitrator has the discretion to vary this procedure but shall afford a full and equal opportunity to all parties for the presentation of any material and relevant evidence.

Exhibits, when offered by either party, may be received in evidence by the arbitrator.

The names and addresses of all witnesses and a description of the exhibits in the order received shall be made a part of the record.

There shall be no direct communication between the parties and an arbitrator other than at oral hearing, unless the parties and the arbitrator agree otherwise. Any other oral or written communication from the parties to the neutral arbitrator shall be directed to the AAA for transmittal to the arbitrator.

**Section 7: Evidence**

The parties may offer such evidence as is relevant and material to the dispute and shall produce such evidence as the arbitrator may deem necessary to an understanding and determination of the dispute. An arbitrator or other person authorized by law to subpoena witnesses or documents may do so upon the request of any party or independently.

The arbitrator shall be the judge of the relevance and materiality of the evidence offered, and conformity to legal rules of evidence shall not be necessary. All evidence shall be taken in the presence of all of the arbitrators and all of the parties, except where any of the parties is absent, in default, or has waived the right to be present.

**Section 8: Evidence by Affidavit and Post-hearing Filing of Documents or Other Evidence**

The arbitrator may receive and consider the evidence of witnesses by affidavit, but shall give it only such weight as the arbitrator deems it entitled to after consideration of any objection made to its admission.

If the parties agree or the arbitrator directs that documents or other evidence be submitted to the arbitrator after the hearing, the documents or other evidence shall be filed with the AAA for transmission to the arbitrator. All parties shall be afforded an opportunity to examine such documents or other evidence.

**Section 9: Closing of Hearing**

The arbitrator shall specifically inquire of all parties whether they have any further proofs to offer or witnesses to be heard. Upon receiving negative replies or if satisfied that the record is complete, the arbitrator shall declare the hearing closed and a minute thereof shall be recorded. If briefs are to be filed, the hearing shall be declared closed as of the final date set by the arbitrator for the receipt of briefs. If documents are to be filed as provided for in Part B Section 9 and the date set for their receipt is later than that set for the receipt of briefs, the later date shall be the date of closing the hearing. The time limit within which the arbitrator is required to make the award shall commence to run, in the absence of other agreements by the parties, upon the closing of the hearing.

## Environmental Protection Agency

## Pt. 85, Subpt. V, App. II

### Section 10: Reopening of Hearing

The hearing may be reopened on the arbitrator's initiative, or upon application of a party, at any time before the award is made. The arbitrator may reopen the hearing and shall have 30 days from the closing of the reopened hearing within which to make an award.

### Section 11: Waiver of Oral Hearing

The parties may provide, by written agreement, for the waiver of oral hearings.

### Section 12: Waiver of Rules

Any party who proceeds with the arbitration after knowledge that any provision or requirement of these rules has not been complied with and who fails to state an objection thereto in writing, shall be deemed to have waived the right to object.

### Section 13: Extensions of Time

The parties may modify any period of time by mutual agreement. The AAA or the arbitrator may for good cause extend any period of time established by these rules, except the time for making the award. The AAA shall notify the parties of any extension.

### Section 14: Serving of Notice

Each party shall be deemed to have consented that any papers, notices, or process necessary or proper for the initiation or continuation of an arbitration under these rules; for any court action in connection therewith; or for the entry of judgment on any award made under these rules may be served on a party by mail addressed to the party or its representative at the last known address or by personal service, inside or outside the state where the arbitration is to be held, provided that reasonable opportunity to be heard with regard thereto has been granted to the party.

The AAA and the parties may also use facsimile transmission, telex, telegram, or other written forms of electronic communication to give the notices required by these rules.

### *Part C—Award and Decision*

#### Section 1: Time of Award

The award shall be made promptly by the arbitrator and, unless otherwise agreed by the parties or specified by law, no later than 30 days from the date of closing the hearing, or, if oral hearings have been waived, from the date of the AAA's transmittal of the final statements and proofs to the arbitrator.

#### Section 2: Form of Award

The award shall be in writing and shall be signed by the arbitrator, or if a panel is uti-

lized, a majority of the arbitrators. It shall be accompanied by a written decision which sets forth the reasons for the award. Both the award and the decision shall be filed by the arbitrator with the MOD Director.

#### Section 3: Scope of Award

The arbitrator may grant to the vehicle manufacturer any repair expenses that he or she deems to be just and equitable.

#### Section 4: Award upon Settlement

If the parties settle their dispute during the course of the arbitration, the arbitrator may set forth the terms of the agreed settlement in an award. Such an award is referred to as a consent award. The consent award shall be filed by the arbitrator with the MOD Director.

#### Section 5: Delivery of Award to Parties

Parties shall accept as legal delivery of the award, the placing of the award, or a true copy thereof in the mail addressed to a party or its representative at the last known address, personal service of the award, or the filing of the award in any other manner that is permitted by law.

#### Section 6: Release of Documents for Judicial Proceedings

The AAA shall, upon the written request of a party, furnish to the party, at its expense, certified copies of any papers in the AAA's possession that may be required in judicial proceedings relating to the arbitration.

### *Part D—Fees and Expenses*

#### Section 1: Administrative Fee

The AAA shall be compensated for the cost of providing administrative services according to the AAA Administrative Fee Schedule and the AAA Refund Schedule. The Schedules in effect at the time the demand for arbitration or submission agreement is received shall be applicable.

The administrative fee shall be advanced by the initiating party or parties, subject to final allocation at the end of the case.

When a claim or counterclaim is withdrawn or settled, the refund shall be made in accordance with the Refund Schedule. The AAA may, in the event of extreme hardship on the part of any party, defer or reduce the administrative fee.

#### Section 2: Expenses

The loser of the arbitration is liable for all arbitration expenses unless determined otherwise by the arbitrator.

## § 85.2201

### Section 3: Arbitrator's Fee

An arrangement for the compensation of an arbitrator shall be made through discussions by the parties with the AAA and not directly between the parties and the arbitrator. The terms of compensation of arbitrators on a panel shall be identical.

### Section 4: Deposits

The AAA may require the parties to deposit in advance of any hearings such sums of money as it deems necessary to defray the expense of the arbitration, including the arbitrator's fee, if any, and shall render an accounting to the parties and return any unexpended balance at the conclusion of the case.

### Part E—Expedited Procedures

#### Section 1: Notice by Telephone

The parties shall accept all notices from the AAA by telephone. Such notices by the AAA shall subsequently be confirmed in writing to the parties. Should there be a failure to confirm in writing any notice hereunder, the proceeding shall nonetheless be valid if notice has, in fact, been given by telephone.

#### Section 2: Appointment and Qualifications of Arbitrator

The AAA shall submit simultaneously to each party an identical list of five proposed arbitrators drawn from the National Panel of Commercial Arbitrators, from which one arbitrator shall be appointed.

Each party may strike two names from the list on a preemptory basis. The list is returnable to the AAA within seven days from the date of the AAA's mailing of the list to the parties.

If for any reason the appointment of an arbitrator cannot be made from the list, the AAA may make the appointment from among other members of the panel without the submission of additional lists.

The parties will be given notice by the AAA by telephone of the appointment of the arbitrator, who shall be subject to disqualification for the reasons specified in Part A, Section 6. The parties shall notify the AAA, by telephone, within seven days of any objection to the arbitrator appointed. Any objection by a party to the arbitrator shall be confirmed in writing to the AAA with a copy to the other party or parties.

#### Section 3: Date, Time, and Place of Hearing

The arbitrator shall set the date, time, and place of the hearing. The AAA will notify the parties by telephone, at least seven days in advance of the hearing date. Formal Notice of Hearing will be sent by the AAA to the parties and the MOD Director.

## 40 CFR Ch. I (7-1-07 Edition)

### Section 4: The Hearing

Generally, the hearing shall be completed within one day, unless the dispute is resolved by the submission of documents. The arbitrator, for good cause shown, may schedule an additional hearing to be held within seven days.

### Section 5: Time of Award

Unless otherwise agreed by the parties, the award shall be rendered not later than 14 days from the date of the closing of the hearing.

### Section 6: Applicability of Rules

Unless explicitly contradicted by the provisions of this part, provisions of other parts of the Rules apply to proceedings conducted under this part.

[54 FR 32593, Aug. 8, 1989, as amended at 70 FR 40432, July 13, 2005]

## Subpart W—Emission Control System Performance Warranty Short Tests

AUTHORITY: Secs. 207, 301(a), Clean Air Act as amended (42 U.S.C. 7541(b) and 7601(a)).

### § 85.2201 Applicability.

(a) This subpart contains the short tests and standards to be employed in conjunction with the Emissions Performance Warranty, subpart V.

(b) *Calendar and model year limitations.* Certain test procedures contained in this subpart are subject to calendar and model year limitations. Otherwise, unless specifically indicated, the provisions of this subpart may be used to establish warranty eligibility for any 1981 and later model year light-duty vehicle and light-duty truck when tested during its useful life as prescribed under the Emissions Performance Warranty, in subpart V of this part.

(c) *Special recommendations for Ford Motor Company and Honda Prelude vehicles.* Due to unique emission control systems, 1981 through 1987 model year vehicles manufactured by Ford Motor Company and 1984 through 1985 model year Honda Preludes must be tested with procedures that either incorporate a special engine restart feature or utilize a dynamometer to simulate a road load. The Agency has included short tests with the special engine restart feature in this subpart even