

(vi) The vehicle air conditioning system (if so equipped) shall be set to the "normal" air conditioning mode and adjusted to the minimum discharge air temperature and high fan speed. Vehicles equipped with automatic temperature controlled air conditioning systems shall be set to operate in "automatic" temperature and fan modes with the system set at 72 °F.

(vii) The temperature and pressure recording systems shall be started. Measurement of vapor temperature is optional during the running loss test. If vapor temperature is not measured, fuel tank pressure need not be measured.

(viii) The temperature of the liquid fuel shall be monitored and recorded at least every 15 seconds with the temperature recording system specified in § 86.1207-96(e).

(ix) When the ambient temperature is  $95 \pm 5$  °F ( $35 \pm 3$  °C) and the fuel tank temperature is  $95 \pm 3$  °F the running loss test may begin.

(x) The ambient temperature shall be maintained at  $95 \pm 5$  °F ( $95 \pm 2$  °F on average) during the running loss test, measured at the inlet to the cooling fan in front of the vehicle; it shall be recorded at least every 60 seconds.

(xi) Fuel temperatures shall be controlled according to the specifications of paragraph (g)(1)(xv) of this section.

(xii) The tank pressure requirements described in paragraph (g)(1)(xvi) of this section apply also to running loss testing by the point source method.

(xiii) The running loss test ends with completion of the third 2-minute idle period.

(xiv) If emissions are collected in bags, the sample bags must be analyzed within 20 minutes of their respective sample collection phases, as described in § 86.137-94(b)(15). The results of the analysis are used in § 86.1243 to calculate the mass of hydrocarbons emitted.

(xv) At the end of the running loss test, turn off all the fans specified in § 86.1207-96(d).

(h) Following the completion of the running loss drive, the vehicle may be

tested for hot soak emissions as specified in § 86.1238-96.

[58 FR 16059, Mar. 24, 1993, as amended at 59 FR 48524, Sept. 21, 1994; 60 FR 43905, Aug. 23, 1995; 65 FR 59958, Oct. 6, 2000]

#### § 86.1235-85 Dynamometer procedure.

(a) The dynamometer run consists of one HDV urban dynamometer driving schedule cycle starting within one hour after completion of the diurnal loss test. This run includes engine startup (with all accessories turned off) and operation over the driving schedule.

(b) During dynamometer operation, one or more cooling fans shall be positioned so as to direct cooling air to the vehicle in an appropriate manner. The engine compartment cover shall be closed. If, however, the manufacturer can show that the engine compartment cover must be open to provide a test representative of field operation, the Administrator will allow the engine cover to be open. In the case of vehicles with front engine compartments, the fan(s) shall be squarely positioned within 12 inches of the vehicle. In the case of vehicles with rear engine compartments (or if special designs make the above impractical), the cooling fan(s) shall be placed in a position to provide sufficient air to maintain vehicle cooling. The fan capacity shall normally not exceed 10,600 (cfm (5.0 m<sup>3</sup>/s)). If, however, the manufacturer can show that during field operation the vehicle receives additional cooling, and that such additional cooling is needed to provide a representative test, the fan capacity may be increased or additional fans used.

(c) The vehicle speed as measured from the dynamometer rolls shall be used.

(d) Practice runs over the prescribed driving schedule may be performed at test points, provided emissions are not measured, for the purpose of finding the minimum throttle action to maintain the proper speed-time relationship, or to permit test procedure adjustments.

NOTE: When using two-roll dynamometers a truer speed-time trace may be obtained by minimizing the rocking of the vehicle in the rolls. The rocking of the vehicle changes the tire rolling radius on each roll. This rocking may be minimized by restraining the vehicle

## Environmental Protection Agency

## § 86.1236-85

horizontally (or nearly so) by using a cable and winch, or chain.

(e) Drive wheel tires shall be inflated to the maximum gauge pressure recommended to the ultimate purchaser. If drive wheel tires have a maximum recommended inflation gauge pressure of less than 45 psi (310 kPa), they may be inflated up to a gauge pressure of 45 psi (310 kPa) in order to prevent tire damage. The drive wheel tire pressure shall be recorded with the test results.

(f) If the dynamometer has not been operated during the 2-hour period immediately preceding the test it shall be warmed up for 15 minutes by operating at 30 mph (48 km/h) using a non-test vehicle or as recommended by the dynamometer manufacturer.

(g) If the dynamometer horsepower must be adjusted manually, the power shall be set within 1 hour prior to dynamometer operation preceding the hot soak test. The test vehicle shall not be used to make the adjustment.

(h) If the dynamometer horsepower is selected by automatic control, the power may be set anytime prior to the beginning of the driving cycle.

(i) Multiple drive axle vehicles will be tested in one axle drive mode of operation. Full time multiple drive axle vehicles will have all but one axle temporarily disengaged by the vehicle manufacturer. Multiple drive axle vehicles which can be manually shifted to a one axle drive mode will be tested in the one axle drive mode of operation, unless this would pose a safety hazard, in which case all but one axle will be temporarily disengaged by the vehicle manufacturer.

### § 86.1235-96 Dynamometer procedure.

Section 86.1235-96 includes text that specifies requirements that differ from § 86.1235-85. Where a paragraph in § 86.1235-85 is identical and applicable to § 86.1235-96, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.1235-85.”

(a) The dynamometer run consists of one dynamometer driving schedule cycle (see § 86.1215 and appendix I of this part) starting not less than 12 nor more than 36 hours after completion of the drive specified in § 86.1232-96. This run includes engine startup (with all

accessories turned off) and operation over the driving schedule.

(b) through (i) [Reserved]. For guidance see § 86.1235-85.

[58 FR 16060, Mar. 24, 1993, as amended at 65 FR 59958, Oct. 6, 2000]

### § 86.1236-85 Engine starting and re-starting.

(a) *Starting.* (1) The engine shall be started (including choke operation) according to the manufacturers recommended starting procedures in the owner's manual. The initial idle period shall begin when the engine starts.

(2) The operator may use the choke, accelerator pedal, etc., where necessary to keep the engine running.

(3) If the manufacturer's operating instructions in the owner's manual do not specify a warm engine starting procedure, the engine shall be started by depressing the accelerator pedal about half way and cranking the engine until it starts.

(4) If the vehicle does not start after the manufacturer's recommended cranking time (or 10 continuous seconds in the absence of a manufacturer's recommendation), cranking shall cease for the period recommended by the manufacturer (or 10 seconds in the absence of a manufacturer's recommendation). This may be repeated for up to three start attempts. If the vehicle does not start after three attempts, the reason for failure to start shall be determined. If failure to start is an operational error, the vehicle shall be rescheduled for the dynamometer run. If failure to start is caused by a vehicle malfunction, corrective action of less than 30 minutes duration may be taken, and the test continued. When the engine starts, the driving schedule timing sequence shall begin. If failure to start is caused by vehicle malfunction and the vehicle cannot be started, the test shall be voided, the vehicle removed from the dynamometer, and corrective action may be taken. The reasons for the malfunction (if determined) and the corrective action taken shall be recorded.

(b) *Stalling.* (1) If the engine stalls during an idle period, the engine shall be restarted immediately and the driving schedule continued. If the engine cannot be started soon enough to allow