

Environmental Protection Agency

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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

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the vehicle to follow the next acceleration as prescribed, the driving schedule indicator shall be stopped. When the vehicle restarts, the driving schedule indicator shall be reactivated.

(2) If the engine stalls during some operating mode other than idle, the driving schedule indicator shall be stopped, the vehicle shall then be restarted and accelerated to the speed required at that point in the driving schedule and the driving schedule continued. During acceleration to this point, shifting shall be performed in accordance with §86.1228-85.

(3) If the vehicle will not restart within one minute, the test shall be voided, the vehicle removed from the dynamometer, corrective action taken, and the vehicle rescheduled for testing. The reason for the malfunction (if determined) and the corrective action taken shall be recorded.

[48 FR 1456, Jan. 12, 1983, as amended at 58 FR 16060, Mar. 24, 1993]

§ 86.1237-85 Dynamometer runs.

(a) The vehicle shall be either driven or pushed onto the dynamometer; however, if driven, the period of engine operation between the end of the diurnal loss test and beginning of the hot soak preparation run shall not exceed 3 minutes, and the vehicle shall be driven at minimum throttle. The dynamometer run shall follow the diurnal heat build by not more than one hour. The vehicle shall be stored prior to dynamometer operation in such a manner that it is not exposed to precipitation (e.g., rain or dew).

(b) The following steps shall be taken for the dynamometer run:

- (1) Place drive wheels of vehicle on the dynamometer.
- (2) Position the cooling fan(s).
- (3) Attach an exhaust tube to the vehicle tailpipe(s).
- (4) Start the engine.
- (5) Turn on the cooling fan(s).
- (6) Operate the vehicle according to the dynamometer driving schedule (§86.1215-85).
- (7) At the end of the last deceleration, disconnect the exhaust tube from the vehicle tailpipe(s) and drive vehicle from the dynamometer.

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§ 86.1237-96 Dynamometer runs.

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(a) The vehicle shall be either driven or pushed onto the dynamometer; however, if driven, the total time of engine operation during the 12 to 36 hour soak period shall not exceed 3 minutes, and the vehicle shall be driven at minimum throttle. The vehicle shall be stored prior to dynamometer operation in such a manner that it is not exposed to precipitation (e.g., rain or dew).

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

[58 FR 16061, Mar. 24, 1993]

§ 86.1238-90 Hot soak test.

The one-hour hot-soak evaporative emission test shall be conducted immediately following one cycle of the dynamometer driving schedule.

(a) Prior to the completion of the dynamometer cycle, the evaporative emission enclosure shall be purged for several minutes.

(b) The FID hydrocarbon analyzer shall be zeroed and spanned immediately prior to the test.

(c) Fresh impingers shall be installed in the methanol sample collection system immediately prior to the start of the test, if applicable.

(d) If not already on, the evaporative enclosure mixing fan(s) shall be turned on at this time.

(e) Upon completion of the dynamometer run the exhaust tube shall be disconnected from the vehicle tailpipe(s), the cooling fan(s) shall be moved, and the vehicle shall be disconnected from the dynamometer and driven at minimum throttle to the vehicle entrance of the enclosure.

(f) The vehicle's engine must be stopped before any part of the vehicle enters the enclosure. The vehicle may be pushed or coasted into the enclosure.

(g) The test vehicle windows and any storage compartments shall be opened, if not already open.