§ 1066.260 Parasitic friction compensation evaluation.

(a) Overview. This section describes how to verify the accuracy of the dynamometer’s friction compensation.

(b) Scope and frequency. Perform this verification upon initial installation, within 7 days of testing, and after major maintenance. Note that this procedure relies on proper verification or calibration of speed and torque, as described in §§1066.235 and1066.240. You must also first verify the dynamometer’s parasitic loss curve as specified in §1066.255.

(c) Procedure. Use the following procedure to verify the accuracy of the dynamometer’s friction compensation:

(1) Warm up the dynamometer as specified by the dynamometer manufacturer.

(2) Perform a torque verification as specified by the dynamometer manufacturer. For torque verifications relying on shunt procedures, if the results do not conform to specifications, re-calibrate the dynamometer using NIST-traceable standards as appropriate until the dynamometer passes the torque verification. Do not change the dynamometer’s base inertia to pass the torque verification.

(3) Set the dynamometer inertia to the base inertia with the road-load coefficients A, B, and C set to 0. Set the dynamometer to speed-control mode with a target speed of 10 mph or a higher speed recommended by the dynamometer manufacturer. Once the speed stabilizes at the target speed, switch the dynamometer from speed control testing. If this is not the case, compare the new parasitic loss curve to the original parasitic loss curve from the dynamometer manufacturer or the most recent parasitic loss curve you programmed into the dynamometer. You may reprogram the dynamometer to accept the new curve in all cases, and you must reprogram the dynamometer if any point on the new curve departs from the earlier curve by more than ±4.5 N (±1.0 lbf).

§ 1066.255 Parasitic loss verification.

(a) Overview. Verify and correct the dynamometer’s parasitic loss. This procedure determines the dynamometer’s internal losses that it must overcome to simulate road load. These losses are characterized in a parasitic loss curve that the dynamometer uses to apply compensating forces to maintain the desired road-load force at the roll surface.

(b) Scope and frequency. Perform this verification upon initial installation, within 7 days of testing, and after major maintenance. Note that this procedure relies on proper verification or calibration of speed and torque, as described in §§1066.235 and1066.240. You must also first verify the dynamometer’s parasitic loss curve as specified in §1066.255.

(c) Procedure. Perform this verification by following the dynamometer manufacturer’s specifications to establish a parasitic loss curve, taking data at fixed speed intervals to cover the range of vehicle speeds that will occur during testing. You may zero the load cell at the selected speed if that improves your ability to determine the parasitic loss. Parasitic loss forces may never be negative. Note that the torque transducers must be zeroed and spanned prior to performing this procedure.

(d) Performance evaluation. In some cases, the dynamometer automatically updates the parasitic loss curve for further testing. If this is not the case, compare the new parasitic loss curve to the original parasitic loss curve from the dynamometer manufacturer or the most recent parasitic loss curve you programmed into the dynamometer. You may reprogram the dynamometer to accept the new curve in all cases, and you must reprogram the dynamometer if any point on the new curve departs from the earlier curve by more than ±4.5 N (±1.0 lbf).

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