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UN Regulations Nos. 24 (Visible pollutants, measurement of power of C.I. engines (Diesel smoke)), 85 (Measurement of the net power), 115 (LPG and CNG retrofit systems), 133 (Recyclability of motor vehicles) and 143 (Heavy Duty Dual-Fuel Engine Retrofit Systems (HDDF-ERS))

Proposal for a new Supplement to UN Regulation No. 85 (Measurement of the net power)

Submitted by the expert from the International Organization of Motor Vehicle Manufacturers *

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA). This document aims at clarifying and bringing up to date the requirements for fitment of auxiliaries when testing the net power or 30 minutes power of electric drive trains. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2023 as outlined in proposed programme budget for 2024 (A/78/6 (Sect. 20), table 20.5), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Annex 6, Table 1, amend to read:

" Table 1
Auxiliaries to be fitted for the test to determine net power and the maximum 30 minutes power of electric drive trains

("*Standard-production equipment*" means equipment provided by the manufacturer for a particular application).

No.	*Auxiliaries*	*Fitted for net power and the maximum 30 minutes power test*
1	DC voltage source	Voltage drop during test less than 5 %
2	Speed variator and control device	Yes: Standard-production equipment
3	Liquid-cooling Motor bonnet Bonnet outlet	No
	Radiator[1,2] Fan[2] Fan cowl Pump[1] Thermostat[1,3]	Yes: Standard production equipment
	Air cooling Air filter Cowl Blower Temperature adjustment system	Yes: Standard production equipment
4	Electric equipment	Yes: Standard production equipment
5	Bench test auxiliary fan	Yes, if necessary

[1] The radiator, the fan, the fan cowl, the water pump and the thermostat shall be located on the test bench in the same relative position as on the vehicle. The cooling-liquid circulation shall be activated by the drive train water pump only.
In the case that the liquid-cooling pumps are electrically driven, an external circuit including pump, radiator and thermostat in relative positions which differ from those in the vehicle can be used provided that the pressure loss of this circuit and/or the volume flow of the pump remain substantially the same as those of the drive train cooling system of the intended application.
Cooling of the liquid may be produced either by the drive train radiator, or by an external circuit, provided that the pressure loss of this circuit and the pressure at the pump inlet remain substantially the same as those of the drive train cooling system. The radiator shutter, if any, shall be in the open position.
Where the fan, radiator and fan cowl cannot conveniently be fitted for the bench test, the power absorbed by the fan when separately mounted in its correct position in relation to the radiator and cowl (if used), shall be determined at the speed corresponding to the motor speeds used for measurement of the motor power either by calculation from standard characteristics or by practical tests. This power, corrected to the standard atmospheric conditions should be deducted from the correct power.
[2] Where a disconnectable or progressive fan or blower is incorporated, the test should be carried out with the disconnectable fan (or blower) disconnected or at maximum slip condition.
[3] The thermostat may be fixed in the fully open position."

II. Justification

1. It is common practice with electric drive trains to employ electric pumps for cooling liquid and to control temperatures via pump control rather than with a conventional thermostat.

2. In this case it appears no longer necessary that the pump and thermostat are located on the test bench in the same relative position as on the vehicle.