

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

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA) to improve the method for measuring internal combustion engine net power in the original version of Regulation No. 85. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

I. Proposal

Annex 5, Table 1., Annotation 9, amend to read:

"9 Charge air cooled engines shall be tested with charge air cooling, whether liquid or air cooled, but if the engine manufacturer prefers, a test bench system may replace the air cooled cooler. In either case, the measurement of power at each speed shall be made with the same pressure drop and temperature drop of the engine air across the charge air cooler on the test bench system as those specified by the manufacturer for the system on the complete vehicle., **or the charge air cooler outlet temperature shall be adjusted for the ambient temperature recorded during the vehicle tests by increasing or decreasing the charge air cooler outlet temperature by the same amount that the ambient conditions for the vehicle test varied from the standard temperature.**"

II. Justification

1. The current test method for measuring charge-air-cooled engines net power is not suitable for high power engines of those. While waiting for the constant test condition (ref. Annex 5, 3.5.), the charge air cooler outlet temperature rises and the net power cannot be measured correctly.
 2. To solve this problem, we propose an alternative test method to "decrease the charge air cooler outlet temperature by the same amount that the ambient conditions for the vehicle test varied from the standard temperature." This is aligned with SAE J1349, "9.3 Application of Vehicle Transient Data to Net Power Test."
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