

Outline of JASO E018, which standardizes the performance requirements of the chassis dynamometer test system and the evaluation method for the purpose of reproducing actual driving conditions

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As an environmental measure, there is increasing interest to evaluate vehicles for exhaust gas emissions, fuel and electricity consumption under actual driving conditions. Moreover, an exhaust gas certification test in actual driving conditions is also planned. A concern is that, even if the test is repeated in the case where the measured value on the actual road is significantly different from the expected level, the natural environment (temperature, humidity, wind) and road traffic conditions will be different.

Therefore, it is difficult to investigate the cause. At the vehicle development stage, it is necessary to evaluate a wide variety of actual road driving conditions. Accordingly, it is necessary to reproduce the actual road driving with laboratory test equipment on a chassis dynamometer. However, although various methods have been proposed at present, these have not been proven. The evaluation methods using chassis dynamometer, vehicle cooling device and the vehicle restraint system, as laboratory test equipment, are defined in JASO E014 and JASO E016 standards. However, the target driving is based on standard exhaust gas, fuel and electricity consumption tests such as the WLTC. When reproducing the actual real driving, many sudden accelerations and decelerations can occur, as well as variations in road gradient and cornering manouvres. Therefore, if the JASO E014 method is applied for this purpose, an accurate evaluation will not be achieved.

From this background, the Chassis Dynamometer Testing Method Subcommittee of JSAE has defined the control requirements for the chassis dynamometer test system for the reproduction of actual driving conditions and its performance evaluation method as the JASO E018 standard. In this report, we will describe the aim, outline and evaluation points.

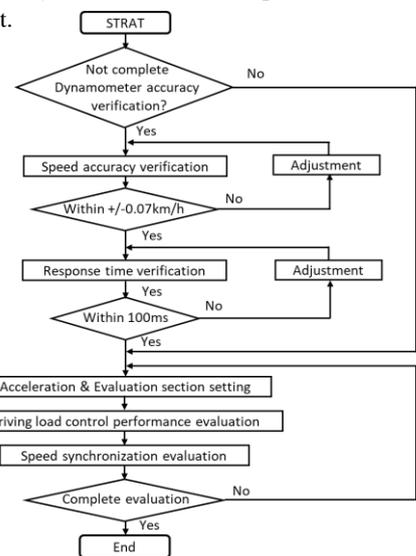


Fig.1 Evaluation process flow

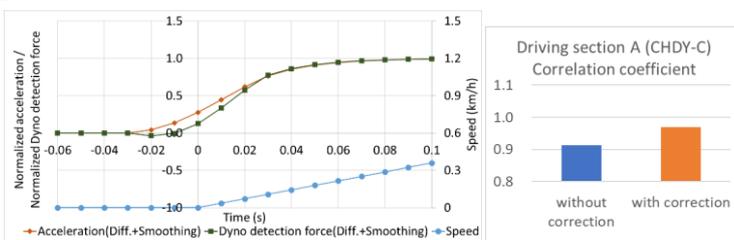


Fig.2 Relation of Speed, Corrected Acceleration and Corrected Mmeasured Dynamometer Force synchronization results



Fig.3 Driving force control verification results