

**GTR text modification on the
Evaluation of front-rear roller speed
synchronization for the 4WD-CHDY**

prepared by Japan

Proposal

◆ Background

- The requirements on the front and rear roller speed synchronaization for the 4WD-CHDY are specified in Japan's JASO standard and are transferred into the GTR#15. However, it was noticed that one of the requirement is missing accidentally.

◆ Proposal (insert the following paragraph in 2.3.1.2. of Annex5)

- “The dynamometer speed less than 0.2 km/h [**shall or may**] be excluded during the evaluation defined in paragraph 2.3.1.2.1. to 2.3.1.2.3.”

◆ Justification

- During the distance and/or speed check of the front and rear rollers, pulse detection at 0km/h may be incremented due to vehicle vibration. This unexpected inaccurate detection [**shall or may**] be excluded.
- to be in line with JASO

Modification point

◆ JASO E014:2015, Automobiles - Requirements and evaluation methods of chassis dynamometers - Supplement to fuel consumption tests

5.5 Evaluation of front-rear roller speed synchronization

5.5.1 Overview

Front-rear roller speed synchronization of a chassis dynamometers for four-wheel drive vehicle is evaluated using the speed difference, interval distance difference, and total distance difference rate in order to evaluate the conformity of roller speeds and check for effects on vehicle control.

5.5.2 Evaluation procedure

Process the front-rear roller speed data that was recorded by the data acquisition and evaluation system. First, evaluate the speed difference of the front-rear rollers. If the allowable range is satisfied, evaluate the total distance difference rate of the front-rear rollers. If the allowable range of the speed difference of the front-rear rollers is not satisfied, evaluate the interval distance difference in the front-rear rollers, and when the allowable range is satisfied, evaluate the total distance difference rate of front-rear rollers. For details, see Annex C.

5.5.3 Data sampling

Data sampling on a 50-ms cycle (20 Hz).

5.5.4 Data processing method

5.5.4.1 Range subject to evaluation

The range where the vehicle speed is less than 0.2 km/h shall be excluded in the evaluation driving mode.

This text is missing in the GTR

◆ GTR 15, Amend.5, Annex 5, ECE-TRANS-WP29-GRPE-2019-02e

- 2.3. Additional specific requirements for chassis dynamometers for vehicles to be tested in four wheel drive (4WD) mode
 - 2.3.1. The 4WD control system shall be designed such that the following requirements are fulfilled when tested with a vehicle driven over the WLTC.
 - 2.3.1.1. Road load simulation shall be applied such that operation in 4WD mode reproduces the same proportioning of forces as would be encountered when driving the vehicle on a smooth, dry, level road surface.
 - 2.3.1.2. Upon initial installation and after major maintenance, the requirements of paragraph 2.3.1.2.1. of this annex and of either paragraph 2.3.1.2.2. or 2.3.1.2.3. of this annex shall be satisfied. The speed difference between the front and rear rollers shall be assessed by applying a 1 second moving average filter to roller speed data acquired at a minimum frequency of 20 Hz. **(Add)**
 - 2.3.1.2.1. The difference in distance covered by the front and rear rollers shall be less than 0.2 per cent of the distance driven over the WLTC. The absolute number shall be integrated for the calculation of the total difference in distance over the WLTC.
 - 2.3.1.2.2. The difference in distance covered by the front and rear rollers shall be less than 0.1 m in any 200 ms time period.
 - 2.3.1.2.3. The speed difference of all roller speeds shall be within ± 0.16 km/h.

(Add) The dynamometer speed less than 0.2 km/h [shall or may] be excluded during the evaluation defined in paragraph 2.3.1.2.1. to 2.3.1.2.3."