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Electric power assist bicycles— Test method of travelling distance per full charging

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Vehicle Inspection Association (VIA)/Japanese Standards Association (JSA), with a draft of Industrial Standard based on the provision of Clause 1, Article 12 of the Industrial Standardization Law.

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Electric power assist bicycles— Test method of travelling distance per full charging

Introduction This Japanese Industrial Standard has been developed for establishing, as a means of knowing the performance of electric power assist bicycles, the test method of travelling distance per full charging by carrying out a simulated operation to drive, using an outside motor, the crank part of an electric power assist bicycle set on a chassis dynamometer.

1 Scope This Japanese Industrial Standard specifies the method for measuring, on a chassis dynamometer, the travelling distance covered by the electric power assist function maintained by a full charged battery mounted on an electric power assist bicycle or tricycle.

2 Definitions For the purpose of this Standard, the following definitions apply:

- a) **electric power assist bicycle** (hereafter referred to as “assist cycle”) Bicycle with a driving auxiliary machine conforming with the standard specified in 3 of Article 1, Enforcement Regulation of Road Traffic Law.
- b) **assist device** Device consisting of driving part, controlling part, power source part, etc. containing driving motor, reduction gears, etc. to assist driving.
- c) **assist function** Function of the assist cycle to travel by means of the assist device which operates normally keeping the assist ratio set up respectively.

The assist ratio is calculated by the following formula:

$$\alpha = (P_2 - P_1)/P_1$$

where, α : assist ratio

P_1 : rotation input of crank (W)

P_2 : output of driving wheel (W)

- d) **travelling distance per full charging** The distance to be travelled keeping the assist function when driving, on a chassis dynamometer, the assist cycle for which the battery to be mounted is used upon fully charged using an auxiliary charger.
- e) **battery** Power source mounted on the assist cycle as a standard equipment.
- f) **chassis dynamometer** An apparatus on the roller of which the driving wheel (usually the rear wheel) of the bicycle is set so that the rotation of the driving wheel is transmitted to the roller and, as a result, the output of bicycle is measured from the driving torque transmitted to the roller axis and the number of rotations of roller (see Fig. 1).
- g) **equivalent inertia weight** The mass required for simulating, on the chassis dynamometer, the inertia generating when a man-loaded assist cycle runs on the road. This mass is controlled by the fly wheel attached to the roller of the chassis dynamometer.