BS ISO 18580:2015

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# Motorcycles — Verification of total running resistance force during mode running on a chassis dynamometer

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## National foreword

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The UK participation in its preparation was entrusted to Technical Committee AUE/14, Motor cycles and mopeds.

A list of organizations represented on this committee can be obtained on request to its secretary.

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# INTERNATIONAL STANDARD

# ISO 18580

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# Motorcycles — Verification of total running resistance force during mode running on a chassis dynamometer

*Motocycles — Vérification de la force totale de résistance à l'avancement durant les essais sur un banc dynamométrique en mode roulage*

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# Foreword

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The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 38, *Motorcycles and mopeds*.


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# Introduction

The ordinary chassis dynamometer has the mechanical inertia system where the running resistance is set on the chassis dynamometer in accordance with ISO 11486 and the verification of force generated by the inertia mass is not necessary because the equivalent inertia mass is mechanically set by a flywheel. A chassis dynamometer using the electric inertia function is not equipped with such a mechanical flywheel equivalent to inertia mass system and the inertia force is electrically set in the same way of the running resistance force control. The inertia force is generated by the acceleration and/or deceleration, therefore, it is necessary to check the performance of electric inertia function during the mode running test and this International Standard specifies the method to verify the chassis dynamometer operated normally. The verification method specified in this International Standard can be applicable not only for the total running resistance check during the exhaust gas and/or fuel consumption mode test but also the system installation and the periodical performance check. The accurate verification can be achieved when this method is applied to the ordinary mechanical inertia system chassis dynamometer.

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INTERNATIONAL STANDARD ISO 18580:2015(E)

# Motorcycles — Verification of total running resistance force during mode running on a chassis dynamometer

## 1 Scope

This International Standard specifies the verification method of total running resistance force when the exhaust gas emissions and/or fuel consumption of motorcycles are measured during mode running on a chassis dynamometer. The performance of chassis dynamometer is verified by comparing the measured total running resistance force (measured by a chassis dynamometer absorption force) and the target total running resistance force (calculated from velocity, acceleration and/or deceleration). This International Standard is applicable when the running resistance force of a chassis dynamometer is set in accordance with ISO 11486.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**2.1**
**equivalent inertia mass of motorcycle**
$m_i$
mass obtained by adding the rotating mass of the front wheel to the total mass of the motorcycle, rider and instruments

**2.2**
**mechanical equivalent inertia mass of chassis dynamometer**
$m_b$
equivalent inertia mass of mechanical rotating parts of chassis dynamometer, e.g. roller and shaft and/or fly wheel

**2.3**
**chassis dynamometer absorption force**
$F_{dy}$
tangential force acted on the roller surface which is calculated from a roller shaft or motor cradling torque and roller radius

Note 1 to entry: The chassis dynamometer absorption force is the running resistance force for a chassis dynamometer equipped with a mechanical flywheel equivalent inertia mass system and is sum of running resistance force and inertia force generated by motorcycles for a chassis dynamometer using the electric inertia function.

**2.4**
**total friction loss of a chassis dynamometer**
$F_f$
friction and aerodynamic loss of rotating parts of chassis dynamometer, e.g. bearings and roller(s)

**2.5**
**running resistance force**
rolling resistance and aerodynamic loss of motorcycle on flat surface

**2.6**
**inertia force**
force generated by inertia mass of motorcycle or chassis dynamometer during acceleration and/or deceleration

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