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**Limits and Measurement Methods for Emissions from
Motorcycles (CHINA V)**
摩托车污染物排放限值及测量方法
(中国第五阶段)

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Limits and Measurement Methods for Emissions from Motorcycles (CHINA V)

1 SCOPE

This standard specifies the limits and measurement methods for exhaust emissions and evaporative emissions, the requirements for crankcase emissions, the durability requirements for pollution control devices and the technical requirements and measurement methods for onboard diagnostic (OBD) system, with respect to the motorcycles and mopeds equipped with a positive ignition engine (PIE).

This standard specifies the limits and measurement methods for exhaust emissions, the durability requirements for pollution control devices, and the technical requirements and measurement methods for OBD system, with respect to the motorcycles and mopeds equipped with a compression ignition engine (CIE).

This standard specifies the type test requirements and methods for motorcycles and mopeds (hereinafter referred to as “vehicle”), and the methods for checking and verifying the conformity of production (COP), in-service conformity (ISC) and end-of-line (EOL) inspection.

This standard is applicable to the motorcycles and mopeds equipped with a PIE or a CIE, and also applicable to the hybrid electric motorcycles and mopeds (HEMs).

2 NORMATIVE REFERENCES

This standard refers to the following normative documents or the provisions contained therein. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB 3847-2018	Limits and measurement methods for emissions from diesel vehicles under free acceleration and lug-down cycle
GB 15365	Symbols for controls, indicators and tell-tales for motorcycles and mopeds
GB 18285-2018	Limits and measurement methods for emissions from gasoline vehicles under two-speed idle conditions and simple driving mode conditions
GB/T 13554	High efficiency particulate air filter
GB/T 15089	Classification of power-driven vehicles and trailers
GB/T 19001	Quality management systems-Requirements
GB/T 39851.3	Road vehicles—Diagnostic communication over Controller Area Network (DoCAN)—Part 3: Requirements for emissions-related systems
GB/T 40822	Road vehicles—Unified diagnostic services
GB/T 41590.4	Road vehicles—Diagnostic communication over K-Line (DoK-Line)—Part 4: Requirements for emission-related systems
GB/T 42193	Road vehicles—Communication between vehicle and external equipment for emissions-related diagnostics
GB/T 43258.2	Road vehicles—Diagnostic communication over Internet Protocol (DoIP)—Part 2: Transport protocol and network layer services
GB/T 46741	Diagnostic connector of motorcycles and mopeds
HJ 1350	Technical specification for vehicle environmental information disclosure
QC/T 1003	Determination of precious metal in metal support catalytic converter for motorcycles

3 TERMS AND DEFINITIONS

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

- 3.1 vehicle of category L₁, L₂, L₃, L₄ and L₅
vehicles of categories L₁, L₂, L₃, L₄ and L₅ as specified in GB/T 15089
- 3.2 motorcycle
vehicles of categories L₃, L₄, and L₅ as specified in GB/T 15089
- 3.3 moped
vehicles of categories L₁ and L₂ as specified in GB/T 15089
- 3.4 vehicle of category I
Including vehicles of categories L₁ and L₂
- 3.5 vehicle of category II
Including vehicles of categories L₃, L₄, and category L₅ except vehicles of category III
- 3.6 vehicle of category III
motorcycles of category L₅, fitted with two rear wheels symmetrically arranged in relation to the front wheel, and designed and constructed to permit carrying goods or not more than two occupants (excluding driver), with a maximum design speed less than 70 km/h
- 3.7 type test
the type approval test performed on a trial-produced new product after the design of such a vehicle type is completed, to verify whether the product meets the technical requirements of this standard
- 3.8 hybrid electric motorcycle and moped (HEM)
a vehicle that is able to, at least, obtains power from both of the following onboard energy storage device:
— A consumable fuel;
— A rechargeable electrical energy/energy storage device.
- 3.9 bi-fuel vehicle
a vehicle that can run on both gasoline and a gaseous fuel, but is designed to run on only one fuel at a time
- 3.10 mono-fuel gas vehicle
a vehicle that is designed to run on a gaseous fuel (i.e., LPG or NG), or a vehicle that can run on both gaseous fuel (LPG or NG) and gasoline, but gasoline is intended for emergency purposes or engine starting only, and the fuel tank shall have a volume of not exceeding 1L
- 3.11 reference mass
the unladen mass of the vehicle plus a uniform figure of 75 kg
- 3.12 equivalent inertia
the mass that is equivalent to the inertia of movement and moment which is simulated by the inertia simulator equipped on the chassis dynamometer during vehicle operating
- 3.13 exhaust emissions
the gaseous pollutants and particulate matters emitted from the vehicle tailpipe
- 3.14 gaseous pollutants
gaseous pollutants including carbon monoxide (CO), oxides of nitrogen (NO_x, expressed in nitrogen dioxide (NO₂) equivalent), and hydrocarbons [HC, e.g., total hydrocarbons (THC), non-methane hydrocarbons (NMHC)], etc. Hydrocarbons assuming a ratio of:
— C₁H_{1.85} for gasoline,

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