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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 17805-2025

Replacing GB/T 17805-1999

Measurement of intake air or exhaust gas flow of diesel engines

柴油机进、排气流量的测量

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 17805-1999 "Measurement of Intake and Exhaust Flow Rates of Diesel Engines". Compared with GB/T 17805-1999, except for the structure... Aside from adjustments and editorial changes, the main technical changes are as follows:

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 1999 edition);
- b) Abbreviations and symbols have been changed (see Chapter 4, 2.2 of the 1999 edition);
- c) Added selection and calibration of ultrasonic flow meters (see 6.5);
- d) Added selection and calibration of thermal gas mass flow meters (see 6.6);
- e) Added selection and calibration for Anuba gas mass flow meters (see 6.7);
- f) The use of the inclined tube manometer has been removed (see 5.2 in the 1999 edition);
- g) Added installation requirements for ultrasonic flow meters, as well as pressure and temperature measurement (see 7.5);
- h) Installation requirements for thermal gas mass flow meters have been added (see 7.6);
- i) Installation requirements for Anuba gas mass flow meters have been added (see 7.7);
- j) Time-difference ultrasonic flow meter flow measurement has been added (see 8.5);

1 Scope

GB/T 17805-2025 is the Chinese national standard on measurement of intake air or exhaust gas flow of diesel engines, in the field of metrology and measurement. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 2 December 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2026. Classification: ICS 17.120, CCS J 90. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken

from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the main equipment, measurement system, and measurement methods for the intake and exhaust flow of diesel engines under laboratory conditions. This document applies to the method of measuring the combustion air flow of diesel engines in a laboratory environment. Diesel engines using other fuels can refer to this method for application.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB 17691-2018 Emission Limits and Measurement Methods for Pollutants from Heavy-Duty Diesel Vehicles (China Stage VI)

GB 18352.6-2016 Limits and Measurement Methods for Pollutant Emissions from Light-Duty Vehicles (China VI) JJG1030-2007 Verification Procedure for Ultrasonic Flowmeters JJG1132 Verification Procedure for Thermal Gas Mass Flow Meters

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4 Symbols

The following symbols apply to this document. B

- Atmospheric pressure, kPa. C
- Outflow coefficient. D
- Upstream pipe diameter, mm. d
- Nozzle throat or orifice diameter, mm. E
- asymptotic velocity coefficient. Fa
- Coefficient of surface thermal expansion. f
- Frequency, Hz. Mm
- molar mass, g/mol. Mmair
- Molar mass of air.

28.964 g/mol. MmH₂O

---Molar mass of water.

---Mass flow rate, kg/s. Re

--- Reynolds number. p

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