

ICS 27.020
CCS J91



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

GB/T 10398-2008

Replacing GB/T 10399-1989

**Small gasoline engines - Evaluation and measurement of
vibration**

小型汽油机 振动评级和测试方法

Issued on: August 11, 2008

Implemented on: February 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

This standard is GB 10398-1989 "small gasoline engine vibration test methods" and GB 10399-1989 "Small Gasoline Engine Vibration Dynamic rating of "amendments. This standard and GB/T 10398-1989 and GB/T 10399-1989 compared to the main content amended as follows:

--- This standard applies to ignite the following single-cylinder power 12kW single cylinder reciprocating piston type small gasoline engine and the use of alternative fuels internal combustion engine;

--- Simplify the original standard measuring instrument system requirements;

--- Redefine the validity of a reference standard, and added two criteria;

--- Cancel vibration quality assessment;

--- Calculated on the equivalent vibration intensity, increase the gasoline engine vibration intensity calculation method of the vertical axis. Since the implementation of this standard replaces GB/T 10398-1989 and GB/T 10399-1989. Appendix A of this standard is a normative appendix, Appendix B, Appendix C, Appendix D is an informative annex. This standard is proposed and managed by China Machinery Industry Federation. This standard was drafted. Tianjin Internal Combustion Engine Research Institute. The main drafters of this standard. King Yabing, Jia Bin, Yang Jingling, Wang Dong, Sun Yaqin. This standard replaces the standards previously issued as follows:

--- GB/T 10398-1989;

--- GB/T 10399-1989. Small gasoline engine vibration test methods and rating

1 Scope

GB/T 10398-2008 is the Chinese national standard on small gasoline engines - evaluation and measurement of vibration, in the field of energy and heat transfer engineering. 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 11 August 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2009. Classification: ICS 27.020, CCS J91. 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 standard specifies the test method for small gasoline engine vibration and vibration quality rating. This standard applies to operating speed range 600r/min ~ 14000r/min, 12kW power following a small single cylinder reciprocating piston type steam Oil machine. This standard also applies to the power of 12kW or less use of alternative fuels for spark ignition internal combustion engine is a single cylinder.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2298 Mechanical vibration and shock term (GB/T 2298-1991, neq ISO 2041.1990)

GB/T 6072.1 reciprocating internal combustion engine performance - Part 1. Power, calibration and test methods of fuel consumption and lubricating oil consumption Additional requirements for engines for general use (GB/T 6072.1-2008, ISO 3046-1.2002, IDT)

GB/T 6072.3 reciprocating internal combustion engine performance - Part 3. Test measurements (GB/T 6072.3-2003, ISO 3046-3. 1989, IDT)

GB/T 13824-1992 vibration intensity meter requirements (eqv ISO 2954. 1987)

GB/T 14412 Mechanical vibration and shock - Mechanical mounting of accelerometers (GB/T 14412-2005, ISO 5348.1998, IDT)

3 Terms and definitions

Terms and definitions GB/T 2298 established apply to this standard.

3.1 Description gasoline engine - an integrated flat system characteristic parameter

vibrational state. With rms vibration velocity as a measure of gasoline flat The amount of plate system vibration intensity standard.

a) according to the survey record vibration velocity versus time history, v_p rms vibration intensity shall formula (1). $V_p \text{ rms} = \frac{1}{T} \int_0^T v_p^2 dt$ Where. T

--- vibration cycle.

b) may be obtained for each harmonic vibration velocity amplitude v_p times the center frequency of the spectral measurement record $f_1, f_2, \dots, v_p, v_p, \dots$ like, v_p rms vibration intensity should According to equation (2). $V_p \text{ rms} = \sqrt{\frac{1}{2} (v_p^2 f_1^2 + v_p^2 f_2^2 + \dots + v_p^2 f_n^2)}$ Sang) (2)

3.2 Describe the state of a gasoline engine vibration integrated parameters, with " V_p s" indicates, as a vibration rating foundation.