International Standard

ISO 5011

Inlet air cleaning equipment for internal combustion engines and compressors — Performance testing

Séparateurs aérauliques placés à l'entrée des moteurs à combustion interne et des compresseurs — Détermination des performances

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 34, *Propulsion, powertrain and powertrain fluids*.

This fifth edition cancels and replaces the fourth edition (ISO 5011:2020), which has been technically revised.

The main changes are as follows:

— capacity of UUT is no longer dependent on scavenge flow rate;

— “air cleaner” used instead of “air filter” where warranted;

— edited list of symbols to meet ISO specifications;

— significant editorial modifications to Annex H .

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Inlet air cleaning equipment for internal combustion engines and compressors — Performance testing

1 Scope

This document establishes and specifies uniform test procedures, conditions, equipment and a performance report to permit the direct laboratory performance comparison of air cleaners.

The basic performance characteristics of greatest interest are airflow restriction or differential pressure, dust collection efficiency, dust capacity and oil carry-over on oil bath air cleaners. This test code therefore deals with the measurement of these parameters.

This document is applicable to air cleaners used on internal combustion engines and compressors generally used in automotive and industrial applications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 1: General principles and requirements*

ISO 12103-1, *Road vehicles — Test contaminants for filter evaluation — Part 1: Arizona test dust*

3 Terms, definitions and symbols

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Terms and definitions

3.1.1
air cleaner
device which removes particles suspended in the intake air as it is drawn into the engine

3.1.2
filter element
replaceable part of the *air cleaner* (3.1.1), consisting of the filter material and carrying frame

3.1.3
secondary element
air cleaner (3.1.1) element fitted downstream of the primary element for the purpose of providing the engine with protection against dust in the event of

a) certain types of primary element failure, or

b) dust being present during the removal of the primary element for servicing