Australian Standard™

Internal combustion engines—Spark emission control devices

Standards Australia

This Australian Standard was prepared by Committee ME/20, Internal Combustion Engines. It was approved on behalf of the Council of Standards Australia on 12 May 2000 and published on 1 August 2000.

The following interests are represented on Committee ME/20:

Australian Automobile Association

Australian Automotive Aftermarket Association

Australian Industry Group

Australian Institute of Petroleum

Construction & Mining Equipment Association of Australia

Electricity Supply Association of Australia

Environment Australia

Environment Protection Authority N.S.W.

Federation of Automotive Products Manufacturers

Institution of Engineers Australia

University of Melbourne

Victorian Automobile Chamber of Commerce

Additional interests participating in the preparation of this Standard:

Users and manufacturers of spark arresters

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PREFACE

This Standard was prepared by the Standards Australia Committee ME-020, Internal Combustion Engines, to supersede AS 1019—1985, *Internal combustion engines—Spark emission control devices*.

The objective of this revision is to reconfirm the existing requirements and to present the Standard in the current editorial style.

When this Standard was originally being prepared, tests were carried out by the Agricultural Engineering Centre at Werribee which showed that turbochargers acted as spark arresters on compression-ignition engines; these results clarified the test methods which are reflected in the Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

CONTENTS

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1 SCOPE

This Standard specifies requirements for the materials, design, construction and performance of spark arresters for controlling the emission of sparks from internal combustion engines. A method of testing the performance of spark arresters is set out in Appendix A.

This Standard does not cover the following:

(a) The risk of ignition of combustible materials by hot surfaces of the engine, the exhaust pipe, or the spark arrester.

(b) Aspects of installation.

(c) Applications in explosive atmospheres which may require flame arresting, exhaust gas cooling or isolation.

(d) The effect of the spark arrester on engine noise levels.

NOTE: Recommended maintenance procedures are given in Appendix B.

2 REFERENCED DOCUMENTS

The following Standards are referred to in this Standard:

AS
1152 Specification for test sieves

1449 Wrought alloy steels—Stainless and heat-resisting steel plate, sheet and strip

3 DEFINITION

For the purpose of this Standard, the following definition applies:

3.1 Spark arrester

A device, system or method which controls the emission from an engine exhaust of particles potentially capable of igniting combustible material in the vicinity by virtue of their size and temperature.

4 RATING

Spark arresters shall be rated according to—

(a) the type of engine to which the spark arrester is fitted (i.e. spark-ignition engine or compression-ignition engine); and

(b) the highest net power output of the engine equipped with the standard production auxiliaries necessary for its operation for the particular application.

5 MATERIALS

Materials used in the construction of spark arresters shall be suitable for the conditions of use (e.g. high temperature, acidic corrosion, weather). In particular, the following requirements apply:

(a) Screens, where used, shall be made of stainless steel AS 1449/304L or AS 1449/316L or equivalent.

