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(JSAE)

**Automotive parts — Pressure caps
and filler necks for radiators — Part
2: Performance, test methods and
marking**

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In the event of any doubts arising as to the contents,
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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by Society of Automotive Engineers of Japan, Inc. (JSAE) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Consequently, **JIS D 2502:1991** has been withdrawn and partially replaced with this Standard.

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Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

JIS D 2502 consists of the following 2 parts under the general title “*Automotive parts — Pressure caps and filler necks for radiators*”:

Part 1: Dimensions

Part 2: Performance, test methods and marking

Automotive parts — Pressure caps and filler necks for radiators — Part 2 : Performance, test methods and marking

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 9818** published in 1991, but updating the technical contents to reflect the changes that have taken place since 1991.

Annexes JA and JB in this Standard are not contained in the corresponding International Standard. Further, the portions with continuous sidelines and dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with explanations is given in Annex JC.

1 Scope

This Standard specifies the performance, test methods and marking of pressure caps and filler necks for automobile radiators.

- NOTE 1 The performance test method for small type flattened pressure caps, which is not included in **ISO 9818** : 1991, is specified in Annex JA.
- NOTE 2 The specification of the filler necks for small type flattened pressure cap performance test, which is not included in **ISO 9818** : 1991, is given in Annex JB.
- NOTE 3 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 9818 : 1991 Passenger cars — Engine cooling systems — Test methods and marking of pressure caps (MOD)

The symbols which denote the degree of correspondence in the contents between **JIS** and the corresponding International Standard are IDT (identical), MOD (modified) and NEQ (not equivalent) according to **ISO/IEC Guide 21**.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this Standard. The most recent edition of the standard (including amendments) indicated below shall be applied.

- JIS D 2502-1 *Automotive parts — Pressure caps and filler necks for radiators — Part 1 : Dimensions*

NOTE : Corresponding International Standard : **ISO 9817 : 1991** *Passenger cars — Engine cooling systems — Dimensions of pressure caps and their ramp seats on filler necks* (MOD)

3 Terms and definitions

For the purpose of this Standard, the terms and definitions specified in **JIS D 2502-1** and the following apply.

3.1 valve opening pressure

3.1.1 valve opening pressure of pressure valve

the pressure at which the pressure valve opens by the applied air pressure, and continuous air leak of a specified rate starts

3.1.2 valve opening pressure of negative pressure valve

the pressure at which a negative pressure valve opens by the applied air pressure, and continuous air flow starts

3.2 negative pressure

the pressure at which the pressure within the water cooling system becomes below the atmospheric pressure

3.3 residual pressure

pressure remaining in the water cooling system when the pawls of the pressure cap are positioned at the part of dimension l_6 of the filler neck (see table A.1)

4 Shape and dimensions

The shape and dimensions of the filler necks and pressure caps shall be as specified in **JIS D 2502-1**.

5 Valve opening pressure

The valve opening pressure of pressure valve of pressure caps shall be as specified in table 1.

Table 1 Valve opening pressure of pressure caps

Unit : kPa	
Valve opening pressure	30, 50, 60, 70, 90, 110, 130

6 Performance of pressure caps

The performance of pressure caps, when tested in accordance with clause 7, shall conform to the specification in table 2.

Table 2 Performance of pressure caps

Item			Performance	Applicable test clause
Initial performance	Valve opening pressure	Pressure valve	±20 % of valve opening pressure	7 a)
		Negative pressure valve	10 kPa max.	7 b)
	Residual pressure		10 kPa max.	7 c)
Endurance performance	Fitting and removing pressure caps		Lowering of valve opening pressure of pressure valve 15 % max. of initial value	7 d)
	Pressure valve		Lowering of valve opening pressure of pressure valve 15 % max. of initial value	7 e)
	Negative pressure valve		10 kPa max.	7 f)

7 Performance test methods of pressure caps

The performance test of pressure caps shall be carried out as follows using a filler neck designed for pressure cap performance tests specified in Annex A. The pressure caps shall be in dry and room temperature conditions, unless otherwise specified.

Performance tests of small type flattened pressure caps shall be carried out in accordance with Annex JA.

- a) **Valve opening pressure test of pressure valve** Apply air pressure at room temperature, and measure the valve opening pressure of the pressure valve (see figure 1 and figure 2). The valve opening pressure shall be the pressure for which a constant air leak rate of 30 cm³/min is obtained. A discontinuous air leak (microleak) of 100 cm³/h is permitted before the valve opens itself.