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Radiators for automobiles— Test method of heat dissipation

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by the Society of Automotive Engineers of Japan, Inc. (JSAE)/ the Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law. Consequently **JIS D 1614 : 1991** is replaced with this Standard.

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Radiators for automobiles— Test method of heat dissipation

1 Scope This Japanese Industrial Standard specifies testing method for heat dissipation of a cooling radiator intended to be used for automobile water cooling engines (hereafter referred to as “radiator”).

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 8330 *Testing methods for turbo-fans*

3 Definitions For the purposes of this Standard, the following main definitions apply.

- a) **inlet water-to-air temperature difference** Difference between the inlet temperature of cooling water flowing into radiator (hereafter referred to as “water”) and that of the air. To be expressed in degrees Celsius (°C).
- b) **water heat dissipation amount** Calorific value which the water loses per unit time under the state of testing. To be expressed in kilowatts (kW).
- c) **heat dissipation amount** The value calculated from water heat dissipation amount assuming the inlet water-to-air temperature difference to be 60 °C. To be expressed in kilowatts (kW).
- d) **water flow rate** Amount of water passing through the radiator per unit time. To be expressed in liter per minute (l/min).
- e) **frontal mass wind velocity** The wind velocity at the radiator core front area multiplied by the mass per unit square volume of air. To be expressed in mass per unit area divided by second [kg/(m²·s)].
- f) **water pressure loss** Difference of total pressure⁽¹⁾ of water between the radiator inlet and the outlet measured under the state of testing. To be expressed in kilopascals (kPa).

Note (1) Total pressure = static pressure + dynamic pressure

- g) **air pressure loss** Difference of total pressure of air between the radiator inlet and the outlet measured under the state of testing. To be expressed in pascals (Pa).

4 Test items Tests shall be as follows.

- a) Heat dissipation amount test
- b) Water pressure loss test
- c) Air pressure loss test