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**Fuel filter test method for
automotive gasoline engines**

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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 Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

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Fuel filter test method for automotive gasoline engines

1. Scope

This Japanese Industrial Standard specifies test methods for fuel filters, hereinafter referred to as the “filters”, mainly for use in automotive gasoline engines. These filters shall be applied for installation in the suction side of the piping joined to the fuel pump, but shall not be applied for installation in the discharge side piping.

Remarks : Normative references to this Standard are listed in last page of this text.

2. Definitions

For the purposes of this Standard, the following definitions apply:

- (1) **rated flow** Oil flow which is specified by agreement between the parties concerned, or a definite oil flow; it shall be expressed in litres per minute.
- (2) **slurry** Mixture of test oil and contaminants for test.
- (3) **contaminant catching capacity** Amount of contaminant caught by the filter before the increase in pressure loss reaches the specified value; it shall be expressed in grammes.
- (4) **pressure loss** Static pressure difference between the inlet and the outlet of a filter; it shall be expressed in megapascal.
- (5) **cleanliness efficiency** Mass ratio of the contaminant in the test oil at the filter inlet to that at the filter outlet; it shall be expressed in percent.

3. Test items

The filter test items shall be as follows:

- (1) **Pressure loss test**
- (2) **Contaminant catching capacity and cleanliness efficiency test**
- (3) **Filter element strength test**
- (4) **Pressure leakage resistance test**
- (5) **Pressure rupture resistance test**
- (6) **Vibration test**
- (7) **High-temperature exposure test**

- (8) Low-temperature exposure test
- (9) Gasoline immersion test
- (10) Pipe bending and twisting tests

4. Test apparatus

4.1 Pressure loss, contaminant catching capacity, and cleanliness efficiency test apparatus

Test apparatus for 3. (1) and 3. (2) shall, as a rule, be as shown in Fig. 1 and shall conform to the following:

- (1) The oil tank A of test apparatus shall have a conically-shaped bottom surface, and sufficient capacity for the performance of the tests specified in 6.1 and 6.2.
The pump suction side shall be designed so that the oil leaves from the tip of the cone of the oil tank bottom, and such that the added contaminant may not adhere to the bottom surface.
- (2) A stirrer shall be mounted on oil tank A with the stirring blades inserted as far as possible into the bottom of the oil tank.
An example of a stirring blade is shown in Attached Fig. 1, and an example of an oil tank A is shown in Attached Fig. 2.
- (3) Oil tank B shall have a sufficient capacity for the performance of the test specified in 6.2.
- (4) Pump A which is used should, preferably, comply with JIS D 3606.
- (5) The inside diameter of the circuit pipes shall be 6 mm. The pipe inner surface shall be smooth, with a circular section. The piping shall be designed such that its construction and shape shall not allow the contaminant to adhere to the connections and bends during the test.