

# JIS

**JAPANESE INDUSTRIAL STANDARD**

**Windshield wiper motors for  
automobiles**

**JIS D 5703—1995**

**Translated and Published**

**by**

**Japanese Standards Association**

In the event of any doubt arising,  
the original Standard in Japanese is to be final authority.

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Windshield wiper motors for automobiles

D 5703-1995

1. **Scope** This Japanese Industrial Standard specifies the windshield wiper motors for automobiles (hereafter referred to as "wiper motors").

Remarks: The following standards are cited in this Standard:

|            |                                                                                  |
|------------|----------------------------------------------------------------------------------|
| JIS B 0209 | Limits of sizes and tolerances for metric coarse screw threads                   |
| JIS B 0211 | Limits of sizes and tolerances for metric fine screw threads                     |
| JIS C 1302 | Insulation resistance testers                                                    |
| JIS C 1502 | Sound level meters                                                               |
| JIS C 3406 | Low-voltage cables for automobiles                                               |
| JIS C 4003 | Classification of materials for insulation of electrical machinery and apparatus |
| JIS D 0103 | Glossary of terms relating to electric equipments for automobiles                |
| JIS D 0201 | Automobile parts general rules of electroplating                                 |
| JIS D 0204 | Method of high and low temperature test for automobile parts                     |
| JIS D 1601 | Vibration testing methods for automobile parts                                   |
| JIS D 5005 | Nominal voltages and test voltages for automotive electric equipments            |
| JIS Z 8703 | Standard atmospheric conditions for testing                                      |
| JIS Z 8731 | Methods of measurement and description of A-weighted sound pressure level        |

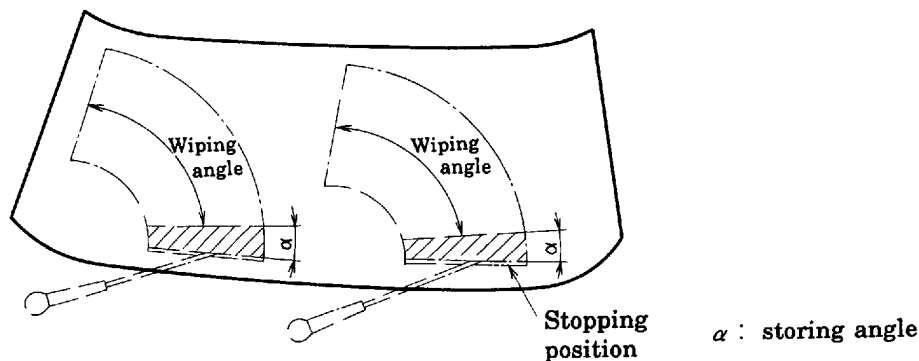
2. **Definitions** For the purposes of this Standard, the definitions given in JIS D 0103 and the following definitions apply:

- (1) **one-speed type** A type in which the number of revolutions of motor shaft is not variable.
- (2) **two-speed type** A type in which the number of revolutions of motor shaft is variable in two steps.
- (3) **stepless variable-speed type** A type in which the number of revolutions of motor shaft is variable without steps.
- (4) **cold state** A state of motor at which the temperature inside the motor and the ambient temperature are equal and are ordinary temperature.
- (5) **locked-rotor torque** The torque exerted by the shaft of R type motor or the final rotating shaft of P or F type motor (see Table 1 of 3) when the shaft is bound in cold state.

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- (6) **nominal torque** The locked-rotor torque of wiper motor rated by the manufacturer. It is expressed by newton-meter (N·m), and is the torque at the low speed for the two-speed type and the torque at the lowest speed for the stepless variable-speed type.
- (7) **starting torque** The maximum of the torques at which the motor shaft can start in cold state, in P type (see Table 1 of 3.).
- (8) **device for stopping at fixed position** The mechanism for automatically stopping the motor shaft at a fixed position when the wiper switch is turned off.
- (9) **storing device** The mechanism for stopping the wiper arm outside the wiping angle when it stops at the fixed position in accordance with (8) (see Fig. 1).

Fig. 1



3. **Types and additional devices** The types and additional devices, and the symbols and constructions of them shall be as given in Table 1 and Table 2.

Table 1

| Type                | Symbol | Construction                                                          |
|---------------------|--------|-----------------------------------------------------------------------|
| Reciprocating type  | P      | Such a construction that the motor shaft makes reciprocating motion   |
| Rotary type         | R      | Such a construction that the motor shaft makes rotary motion          |
| Wire-operation type | F      | Such a construction that the wiper shaft is operated by means of wire |

Table 2

| Additional device                     | Symbol | Construction |
|---------------------------------------|--------|--------------|
| Device for stopping at fixed position | T      | See 2. (8)   |
| Storing device                        | U      | See 2. (9)   |

**4. Voltage**

**4.1 Nominal voltage** The nominal voltage shall be 6 V, 12 V and 24 V in accordance with JIS D 5005.

**4.2 Test voltage** The test voltage shall comply with Table 3.

Table 3

Unit: V

| Nominal voltage                 | 6             | 12             | 24             |
|---------------------------------|---------------|----------------|----------------|
| Standard operation test voltage | $6.5 \pm 0.2$ | $13.5 \pm 0.3$ | $27 \pm 0.6$   |
| Durability test voltage         | $7.0 \pm 0.5$ | $14.0 \pm 0.5$ | $28.0 \pm 1.0$ |

Remarks: The test voltage is the voltage at the wiper motor terminals.

**5. Number of revolutions under no load** The number of revolutions under no load is the number of revolutions when the wiper motor has been run with no load for not less than 30 min and its number of revolutions has become stable, and shall be as given in Table 4. It is expressed by the number of revolutions or reciprocations per minute.

Table 4

Unit: r/min

| Speed type                   | Symbol | Number of revolutions under no load |    |    |    |
|------------------------------|--------|-------------------------------------|----|----|----|
| One-speed type               | S      | 55                                  |    |    |    |
| Two-speed type               | D      | Low speed                           | 45 | 50 | 55 |
|                              |        | High speed                          | 70 | 75 | 80 |
| Stepless variable-speed type | V      | 45 to 90                            |    |    |    |

Remarks: The voltage at the wiper motor terminals shall be the standard operation test voltage as in 4.2.

**6. Construction** The construction shall be as follows:

- (1) Every part of wiper motor shall be strong and mating parts shall be correctly assembled.
- (2) The wiper shaft and its sleeve shall be constructed watertight and the dimensions of the parts shall, as a rule, conform to Fig. 2.
- (3) The mounting dimensions of wiper motor shall, as a rule, conform to Fig. 3.