

JIS

JAPANESE INDUSTRIAL STANDARD

Windshield wiper motors for automobiles

JIS D 5703—1995

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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

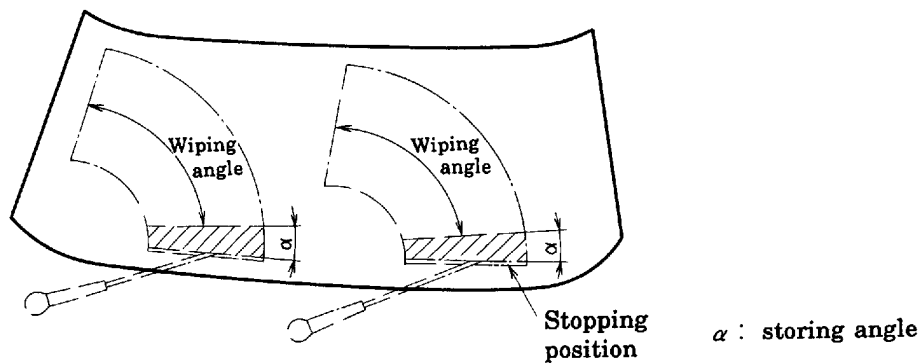
2. **Definitions** For the purposes of this Standard, the definitions given in JIS D 0103 and the following definitions apply:

- (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 ± 0.2	13.5 ± 0.3	27 ± 0.6
Durability test voltage	7.0 ± 0.5	14.0 ± 0.5	28.0 ± 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.