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Electric or manual pencil sharpeners

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based on JIS C 6950-1 21

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Writing Instruments Manufacturers Association (JWIMA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS S 6049** : 2001), which has been technically revised.

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Electric or manual pencil sharpeners

1 Scope

This Japanese Industrial Standard specifies requirements for electric pencil sharpeners and manual pencil sharpeners (hereafter referred to as the electric and manual pencil sharpeners) used for sharpening black and colour pencils in wooden casing (hereafter referred to as the pencils).

2 Normative references

Part or all of the provisions of the following standards, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS C 2134 *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

JIS C 3306 *Polyvinyl chloride insulated flexible cords*

JIS C 4003 *Electrical insulation — Thermal evaluation and designation*

JIS C 6950-1 *Information technology equipment — Safety — Part 1 : General requirements*

JIS C 61558-1 *Safety of transformers, reactors, power supply units and combinations thereof — Part 1 : General requirements and tests*

JIS C 8303 *Plugs and receptacles for domestic and similar general use*

JIS C 8500 *Primary batteries — General*

JIS C 8705 *Secondary sealed nickel-cadmium cells and batteries for portable applications*

JIS C 8708 *Secondary sealed nickel-metal hydride cells and batteries for portable applications*

JIS C 8711 *Secondary cells and batteries containing alkaline or other non-acid electrolytes — Secondary lithium cells and batteries for portable applications*

JIS S 6006 *Pencils, coloured pencils and leads for them*

JIS Z 8401 *Rounding of numbers*

JIS Z 8703 *Standard atmospheric conditions for testing*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1

electric pencil sharpener

machine designed to sharpen pencils by motor-driven rotation of a cutter

Note 1 to entry Electric pencil sharpeners may be powered by dry cells, rechargeable batteries or AC adapters.

3.2**manual pencil sharpener**

machine equipped with a feeding device and designed to sharpen pencils by manual rotation of a handle that rotates the cutter

Note 1 to entry Non-power-operated mini pencil sharpeners that require rotating the pencil directly by hand, etc. do not fall under this category.

3.3**feeding device**

device for feeding the pencil into the sharpener

3.4**waste case**

vessel which receives shavings of pencils

3.5**cutter**

metallic cylinder whose outer periphery is machined into helical cutting blades

3.6**cutter holder**

frame to which the cutter is attached, and which is either directly or indirectly connected to the motor

3.7**sharpening completion display**

device for indicating that the sharpening of the pencil is complete

3.8**regulating device**

device for regulating the thickness of the lead tip of pencils

3.9**one sided sharpening**

sharpening that partially leaves wooden casing at the lead tip in such a way that it interferes with writing

Note 1 to entry See Figure 1.



Figure 1 . One sided sharpening (example)

3.10

sharpening angle

angle formed at the sharpened tip of a pencil

3.11

thickness of tip

diameter of the lead tip of a sharpened pencil

3.12

temperature fuse

device that, upon detecting an abnormal temperature, cuts off the current to prevent further rise in temperature

3.13

overheating prevention device

regulator that, upon detecting an abnormal temperature, controls the current to prevent further rise in temperature

Note 1 to entry Typically, its temperature setting cannot be changed by the operator.

4 Classification

Electric and manual pencil sharpeners are further classified as shown in Table 1.

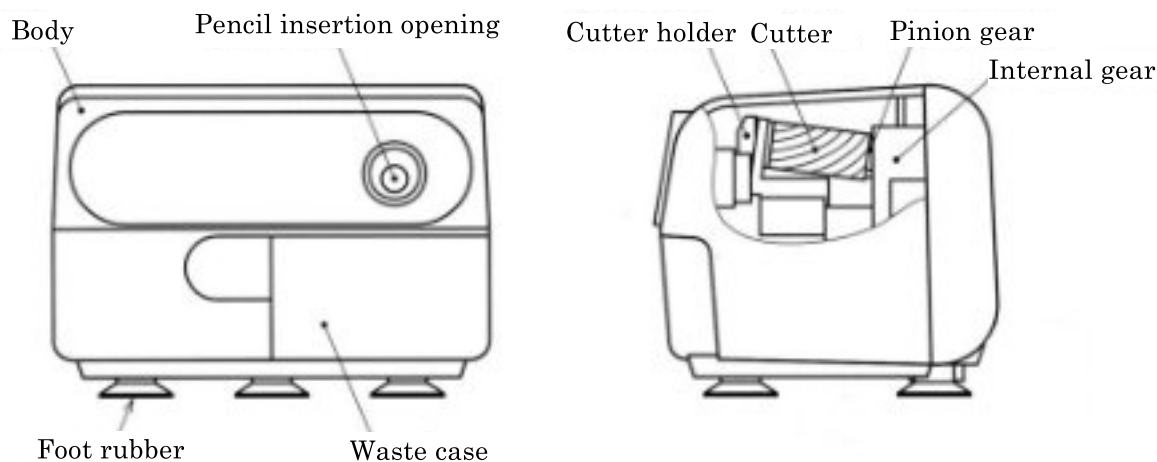
Table 1 Classification of electric and manual pencil sharpeners

Classification	Type	Reference
Electric pencil sharpener	Domestic AC power supply type	Appended Table 8 of the Interpretation of the Technical Standards Ministerial Order or JIS C 6950-1 ^{a)}
	Dry cell battery type	JIS C 8500
	Rechargeable battery type	JIS C 8705, JIS C 8708, JIS C 8711
	AC adapter type	Appended Table 8 or JIS C 61558-1
Manual pencil sharpener	—	—
Note ^{a)} The safety regulations for sharpeners using domestic AC power supply are based on the “Interpretation of the Ministerial Order to Provide Technical Standards for Electrical Appliances and Materials” of the Electrical Appliances and Materials Safety Act (hereafter referred to as the Interpretation of the Technical Standards Ministerial Order). The Interpretation of the Technical Standards Ministerial Order contains two technical standards: Appended Table 8, which is a technical standard specific to Japan, and Appended Table 12 (referring to JIS C 6950-1), which is a technical standard in accordance with IEC standard and in line with the power distribution situation in Japan.		

5 Names of parts

5.1 Electric pencil sharpeners

Names of parts of an electric pencil sharpener are shown in Figure 2.

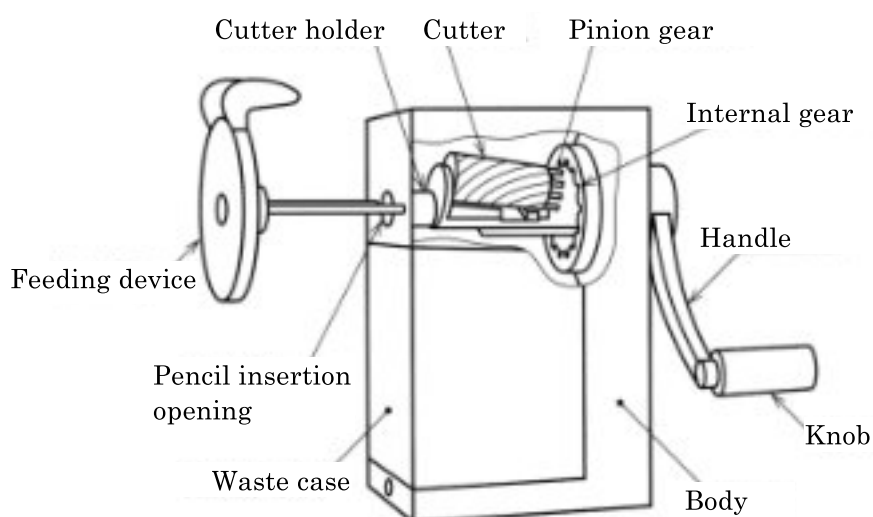


NOTE The illustration is an example.

Figure 2 Electric pencil sharpener

5.2 Manual pencil sharpeners

Names of parts of a manual pencil sharpener are shown in Figure 3.



NOTE The illustration is an example.

Figure 3 Manual pencil sharpener

6 Performance

6.1 Performance of electric pencil sharpeners using domestic AC power supply

The performance of electric pencil sharpeners using domestic AC power supply shall conform to the requirements in Tables 2 to 5.

The requirements in **A.1** may be applied depending on the specific manufacturing method, destination or other conditions of the product. Note, however, that the mixing of the two sets of requirements is not allowed. The contents of Appended Table 8 of the Interpretation of the Technical Standards Ministerial Order listed in Table 2 are summaries of the provisions given in the said Interpretation; whenever the said Interpretation is revised, the latest version of the Technical Standards shall be referred to.

Table 2 Performance of electric pencil sharpeners using domestic AC power supply

Item		Test method sub-clause	Performance	Relevant part of the Technical Standards Ministerial Order
Starting		9.3.1	The sharpener shall start at 90 % of the rated voltage.	Appended Table 8
One sided sharpening		9.3.2	There shall be no problem in writing.	—
Sharpening time		9.3.3	Not longer than 10 s.	—
Sharpening angle		9.3.4	13° to 28 °	—
Thickness of tip		9.3.5	Not more than 0.8 mm.	—
Durability		9.3.6	Breakage of lead shall not occur five times or more, nor shall other abnormalities of the sharpener be observed.	—
Mechanical strength	Impact test	9.3.7 a)	No cracking, fissuring, exposure of live parts or other abnormalities that may cause electric shock, fire, or other hazards shall occur. The test finger shown in Figure 5 shall not come into contact with live parts.	Appended Table 8
	Drop impact resistance	9.3.7 b)	No exposure of live parts nor short circuit shall occur. The insulation resistance shall be not less than 0.1 MΩ.	2 of Attached Table 5 of Appended Table 8
Temperature rise	Normal temperature rise	9.3.8 a)	Each part of the sharpener shall meet its maximum temperature limit specified in Table 3.	Attached Table 4 of Appended Table 8
	Charging test	9.3.8 b)	Each part of the sharpener shall meet its maximum temperature limit specified in Table 3.	Appended Table 8
	Abnormal temperature rise	9.3.8 c)	The outer casing temperature of the test sample and the surface temperature of the wooden table shall not exceed 150 °C. The insulation resistance between live parts and the surface of the test sample shall not be less than 0.1 MΩ. The 150 °C temperature limit for wooden table surface does not apply where a temperature fuse or an automatic switch used as an overheating prevention device has activated and eliminated the risk of combustion of the test sample or the wooden table.	Appended Table 8
Insulation performance	Insulation resistance	9.3.9 a)	Not less than the value specified in Table 4.	Attached Table 3 of Appended Table 8
	Dielectric strength	9.3.9 b)	The sharpener shall withstand the voltage specified in Table 9 for 60 s.	Attached Table 3 of Appended Table 8
Power consumption		9.3.10	The sharpener shall meet the tolerance specified in Table 5 with regard to the rated power consumption indicated on it.	Appended Table 8
Voltage fluctuation		9.3.11	The sharpener shall be able to smoothly sharpen pencils at 90 % and 110 % of the rated voltage.	Appended Table 8
Leakage of rechargeable battery		9.3.12	Sharpeners using rechargeable batteries shall be free from battery leakage or other abnormalities.	Appended Table 8
Energization		9.3.13	The sharpener shall work without any abnormalities.	—

Table 3 Temperature limit for each part

Part to be measured		Unit: °C
Windings	of Class A insulation	100
	of Class E insulation	115
	of Class B insulation	125 (120)
	of Class F insulation	150 (140)
	of Class H insulation	170 (165)
Rectifier used for AC power supply circuit	made of selenium	75
	made of germanium	60
	made of silicon	135
Contact part of fuse clip		90
Carrying handle (not including a handle that is operated by the user during use of the sharpener)	made of metal, ceramics or glass	65
	made of other material	80
Handle operated by the user during use of the sharpener	made of metal, ceramics or glass	55
	made of other material	70
Knob and push button of a switch or the like	made of metal, ceramics or glass	60
	made of other material	75
Outer casing	touched by the user during use	made of metal, ceramics or glass 55
		made of other material 70
	easily accessible	made of metal, ceramics or glass 85
		made of other material 100
not easily accessible		100
Surface of a wooden table for supporting the test sample		95
— Values in parentheses apply to motor windings. — Temperature measurement shall be conducted by the resistance method for windings and by the thermocouple method for other parts. NOTE The above temperature values are based on the reference ambient temperature of 30 °C.		

Table 4 Insulation resistance

Unit: MΩ	
Type of insulation	Insulation resistance
Basic insulation	1
Supplementary insulation	2
Reinforced insulation	3

Table 5 Tolerance on power consumption

Rated power consumption (W)	Tolerance (%)
Over 10 up to and incl. 30	±25
Over 30 up to and incl. 100	±20
Over 100 up to and incl. 1 000	±15

6.2 Performance of electric pencil sharpeners using dry cell battery, rechargeable battery or AC adapter