

JIS

JAPANESE INDUSTRIAL STANDARD

**Open type natural ventilating oil
burning space heaters**

Ⓔ **JIS S 2019**—1992

Translated and Published

by

Japanese Standards Association

Printed in Japan

AVA Documents
Document Sharing Club

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



JAPANESE INDUSTRIAL STANDARD

J I S

Open type natural ventilating oil
burning space heaters

S 2019-1992

1. Scope

This Japanese Industrial Standard specifies the open type natural ventilating ⁽²⁾ oil burning space heaters of 600 g/h or under in fuel consumption ⁽¹⁾, using kerosine as fuel (hereafter referred to as the "space heaters").

Notes ⁽¹⁾ The fuel consumption means the maximum quantity of fuel to be burnt, being expressed by per hour, when a normal burning condition has been attained.

Furthermore, it shall be the quantity of fuel to be burnt in one combustion cylinder or flame opening.

⁽²⁾ The open type of natural ventilating type means the "natural ventilation type" and "open type" specified in 3.2 of JIS S 3030 (Division of appliances according to draft system).

Remarks 1. The Applicable Standards to this Standard are given in Attached Table 3.

2. The units and numerical values given in { } in this Standard are based on the traditional units and are appended for informative reference.

2. Types

2.1 Type according to burning systems The type of the space heater according to burning systems shall be the "wick type" specified in 3.1 (Division of appliances according to burning systems) of JIS S 3030 (See Attached Figs. 1 to 4).

2.2 Type according to drafting systems The types of space heaters according to drafting systems shall be the "natural ventilating type" of the open type specified in 3.2 (Division of appliances according to draft system) of JIS S 3030 (see Attached Figs. 1 to 4).

2.3 Types according to systems classified by uses The types according to systems classified by uses shall be the "radiation type" and "natural convection type" specified in 3.3 (Division of appliances by heat medium and systems classified by uses (See Attached Figs. 1 to 4).

3. Performances

3.1 Service performances The service performances of space heater shall be in accordance with the following.

(1) It shall be that easy in lighting, and neither requires a large amount of a dangerous substance high in inflammability such as alcohol or others, nor dangerous operation.

- (2) The actuations of respective parts shall be smooth and reliable, and be free from harmful defects in use.
- (3) The knobs and the like shall neither cause deformation easily, nor cause abnormality in actuation during using.
- (4) The operation shall be easy, and, in this case, it shall not be liable to generate any danger.
- (5) The operation of extinguishing shall be that capable of being carried out rapidly and reliably.
- (6) The space heater having an inspection window shall be free from such a condition that, during burning by normal handling, the burning condition can not be confirmed due to adherence of oil smoke to the inspection window.
- (7) The space heater having an adjusting device of burning shall not be liable to cause, at each burning quantity, an abnormal enlargement of flame, generation of remarkable smoke, or other abnormal burning.
- (8) After lighting, the combustion cylinder shall be capable of being set rightly with ease.

3.2 Quality performances The quality performances of the space heater, when tested in accordance with 8. and JIS S 3031, shall conform to the requirements of Table 1.

Table 1. Quality performances

Item	Quality performance	Applicable No. of clause of JIS S 3031
(1) Surface temperatures ⁽³⁾ of parts to which hands are applied, such as knobs and the like	The difference between the measured temperature and the room temperature shall be 25°C or under for metal and ceramics, 35°C or under for plastics	5.1 and 5.2 (1)
(2) Surface temperatures ⁽⁴⁾ of parts liable to be touched with hands	150°C or under	5.1 and 5.2 (2)
(3) Surface temperature of oil tank	The difference between the measured temperature and the room temperature shall be 25°C or under.	5.1 and 5.2 (5)
(4) Surface temperature of the wooden table at lower face of space heater	45°C or under	5.1 and 5.2 (6)
(5) Surface temperature of the wooden table at periphery of space heater	80°C or under	5.1 and 5.2 (6)
(6) Surface temperature of the wooden walls at side faces of space heater	90°C or under	5.1 and 5.2 (6)
(7) Oil temperature	The difference between the measured temperature and the room temperature shall be 25°C or under.	5.1 and 5.2 (9)
(8) Burning conditions and service performances	During burning, there shall be no abnormality of enlarging of flame, back flashing, generation of visible smoke, oil leakage, breakage and the like, and these shall conform to the requirements of 3.1.	5.3 and 33.1

Burning performance

Table 1 (Cont'd)

Item	Quality performance	Applicable No. of clause of JIS S 3031
(9) Hot air temperature	150°C or under	5.5
(10) Ratio of carbon monoxide to carbon dioxide in burnt exhaust gas (CO/CO ₂)	0.002 or under	5.7
(11) Odor	Four persons out of five persons shall not detect the odor.	5.10
(12) Extinguishing time	Within 300 s	5.14
(13) Fuel consumption (Maximum)	The difference between the marked value and the actually measured value shall be ± 10 %.	5.15.1
The maximum burning of wick adjusting device	(1) No remarkable smoke shall be generated. (2) The flame shall not appear to outside the space heater, lower part of combustion cylinder and inside of wick guide cylinder.	7.
Inclined burning	The flame shall neither be extended, nor generate remarkable smoke.	10.1
10° inclination	When inclined by 10°, there shall be no oil leakage. However, the left and right directions of a multi-series type (5) shall be 7°.	10.2
30° inclination	When inclined by 30°, there shall be no such change as falling down of main parts (6), and the space heater body shall not be overturned. However, that of tensile overturn value is 13.73 N·m{140 kgf·cm} or over and the mass of the space heater not filled with fuel exceeds 20 kg shall be 25°, and that of tensile overturn value is 17.65 N·m{180 kgf·cm} or over shall be 20°.	10.3

Inclinations

Burning performances

Table 1 (Cont'd)

Item	Quality performance	Applicable No. of clause of JIS S 3031
Overturn	Tensile overturning value	12.1
	Overturn oil leakage	12.2
	Overturn extinguishing	12.3
Wind resistance	It shall be extinguished within 10 s. Respectively at wind velocities of 2 m/s, 3 m/s and 5 m/s, it shall be extinguished while blown by the wind and within 5 min after the wind has been stopped, or the flame shall not appear outside the space heater and the guard. However, exclusively for the flame appears to the front of the space heater or outside the guard, one that corresponding to either of the following shall be excluded. (1) The flame of approximately 10 cm or under (2) The flame of which time of appearing outside is within 2 s, and the flame of approximately 30 cm or under in length of 10 times or less per minute intermittently.	20.1 and 20.2
Electric lighting	It shall light smoothly and securely.	24.
Insulation	Insulation resistance [Exclusively for the space heater (7) with electric lighting device using dry cells.]	30.1

Table 1 (Cont'd)

Item	Quantity performance	Applicable No. of clause of JIS S 3031
Vibration	Respectively at periods of 0.3 s, 0.5 s and 0.7 s, (1) When subjected to vibration by 100 cm/s^2 {100 Gal}, the extinguishing device shall not actuate within 10 s. (2) When subjected to vibration by 200 cm/s^2 {200 Gal}, it shall be extinguished within 10 s. Furthermore, abnormal burning shall not take place until it is extinguished.	31.1 and 31.2
Leakage of oil tank	When the pneumatic pressure of 49 kPa{0.5 kgf/cm ² } has been applied for 2 min, there shall be no leakage.	33.2
Pressure resistance of oil tank	When the hydraulic pressure of 147 kPa{1.5 kgf/cm ² } has been applied for 1 min, there shall be no leakage.	34.
Heat resistance (Limited to constituting materials of rubber and plastics to be used for parts liable to be subjected to heat influence during ordinary using.)	There shall be no abnormality.	36.
Low temperature burning (Limited to the space heater using an air tight oil tank.)	When lighted at $-20 \pm 2^\circ\text{C}$, no overflow of oil and abnormal burning shall take place until it reaches to $+20 \pm 2^\circ\text{C}$.	37.1 and 37.2
Oil resistance (Limited to constituting members of rubber and plastics to be used for parts liable to be contacted with oil during ordinary using.)	It mass change rate shall be $\pm 20 \%$.	38.