

JIS

JAPANESE INDUSTRIAL STANDARD

**Gas burning clothes dryers
for domestic use**

JIS S 2130—1991

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

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Gas burning clothes dryers for
domestic use

S 2130-1991

1. Scope

This Japanese Industrial Standard specifies the gas burning clothes dryers mainly for general domestic use ⁽⁴⁾ (hereafter referred to as the "equipment") taking as fuel the liquefied petroleum gas or city gas ⁽¹⁾ (hereafter referred to as the "gas") to be used by placing on a floor or board, whose indicated gas consumption ⁽²⁾ is 5.81 kW : 20.9 MJ/h {0.42 kg/h} or under for liquefied petroleum gas and 5.81 kW : 20.9 MJ/h {5000 kcal/h} or under for city gas and with a standard drying capacity ⁽³⁾ is 5 kg or under.

Notes ⁽¹⁾ The liquefied petroleum gas designates the gas mentioned in "standard of liquefied petroleum gas" of Enforcement regulation (Ordinance of Ministry of International Trade and Industry No. 14, 1968) based on the Law Concerning the Security of Safety and Optimization of Transaction of Liquefied Petroleum Gas (Law No. 149, 1967).

The city gas designates the gas in the gas group mentioned in Ministry Ordinance concerning certification of gas articles (Ordinance of Ministry of International Trade and Industry No. 27, 1971) based on the gas utility Law (Law No. 51, 1954).

- ⁽²⁾ Indicated gas consumption designates the quantity of consumed gas of equipment used in the using state with largest gas consumption quantity and the value indicated on equipment.
- ⁽³⁾ The standard drying capacity designates the maximum mass (kg) in dried state of wash able to be dried at one time and the wash in this case shall be the dummy wash specified in Annex (hereafter referred to as the "wash").
- ⁽⁴⁾ The gas burning clothes dryer is the equipment to dry washed clothes and dry by ventilating the air heated by combustion of gas by electric motor.

Remarks 1. The applicable standards of this standard are as follows.

JIS C 0702 General Rules for Insulation Construction of Class II Electrical Appliances

JIS C 9606 Electric Washing Machine

JIS S 2092 General Constructions of Gas Burning Appliances for Domestic Use

JIS S 2093 Test Methods of Gas Burning Appliances for Domestic Use

2. The units and numerical values shown in () in this standard are in accordance with the traditional system of units and are standard values.

Further, from January 1st of 1995, they shall be in accordance with International system of units (SI) and traditional units and values shall be taken as informative references.

3. The indicated gas consumption in this standard is described by units and numerical values in four kinds, but they are substantially equivalent in every kind.
4. The pressure shown in this standard is gauge pressure in all other than that shown as atmospheric pressure.

2. Classification

The equipment shall be classified by drying method as shown in Table 1.

Table 1. Classification by drying methods

Drying method	Content of classification	Informative reference
Rotary drum type	Method to dry clothes put in a rotary drying vessel (drum) rotating by electric motor	Informative reference Fig. 1 Informative reference Fig. 2
Suspending type	Method to dry clothes suspended in drying chamber	Informative reference Fig. 3

3. Performance

The equipment shall comply with the performance of Table 2 when it has been tested according to JIS S 2093 and 5.

Table 2. Performance and testing methods

Item	Performance	Testing method	
		JIS S 2093	Testing method defined in this standard
Airtightness of gas path	The quantity to leak through appliance valve is 0.07 l/h or under.	Table 6	
	The quantity to leak through gas shut-off valves other than appliance valve is 0.55 l/h or under.		
	To be free from outside leakage from gas connecting port up to the flame port.		
	Precision to indicated gas consumption is $\pm 10\%$.		
Gas consumption	Flame establishment is secure and is free from explosive ignition.	Table 5	
	To be free from lifting.		
	To be free from extinction.		
	The flames are to be uniform.		
	To be free from flash back.		
	Continuous noise is 60 dB or under.		
	To be free from explosive noise at extinguishing.		
	Concentration of CO in theoretical drying combustion gas (volume %) (hereinafter referred to as CO %) is 0.14 % or under.		
	To be free from soot generation.		
	Yellow flame is not to contact the electrode part at all times.		
Combustion state	To be free from extinction and flash back of pilot burner.	Table 7	

Combustion state

Table 2 (Continued)

Item	Performance	Testing method	
		JIS S 2093	Testing method defined in this standard
State of wind [Apply to equipment to be used with moisture exhaust (air exhaust) pipe (hereinafter, referred to as moisture exhaust pipe) in outside of room]	To be free from extinction, flash back and flame overflow impeding use.	Table 8	15 min or more after igniting the burner, impose wind of 10 m/s by the test device shown in Attached Fig. 1 to top end of moisture exhaust pipe for 5 min and examine during this time for the existence of extinction, flash back of burner and flame overflow impeding use.
	To be free from extinction and flash back of pilot burner.		Set the condition of test gas as P-2 or 3-2, ignite only pilot burner, after the burning state has become stable or after 5 min, impose wind of 10 m/s by the test device shown in Attached Fig. 1 to top end of moisture exhaust pipe for 1 min and examine for the existence of extinc- tion and flash back.
Blocked state of exhaust (moisture exhaust) path (hereinafter, referred to as exhaust path)	To be free from extinction, flash back and flame overflow impeding use.	Table 8	(1) As for state of equipment, block the opening area of exhaust path by amount equivalent to 50 % of normal state to conduct the test. In this case, for that of structure to conduct exhaust through filter, decrease opening area of filter to conduct the test.
			(2) Ignite the burner and examine for 15 min for the existence of extinction, flash back and flame overflow impeding the use. Further, in the case where safety device actuates halfway and the gas path of the main burner is blocked, examine for the time until then.

Combustion state

Table 2 (Continued)

Item	Performance		JIS S 2093	Testing method							
	Surface of parts contacted by hand at operation (knobs and the like)	Those made of metal, ceramic and glass 60°C or under Others 70°C or under	Table 10	(1) <u>Setting condition of equipment</u> Set the equipment according to contents specified by manufacturer (contents shown in the instructions, etc.) to temperature measuring plate shown in Attached Fig. 2 so that the distance between equipment and temperature measuring plate shall be the distance shown in the following Table. Further, as for distance to temperature measuring plate, in the case where the effective measures for fire prevention has been taken and the distance specified by manufacturer is under the dimension specified in the following Table, the specified condition shall apply. Distance of equipment to temperature measuring plate Unit: mm <table><tr><th></th><th>Upper</th><th>Side</th><th>Rear</th></tr><tr><td>Main body of equipment</td><td>150</td><td>45</td><td>45</td></tr></table> Further, for that able to be connected with moisture exhaust pipe, install the moisture exhaust pipe of specified maximum length by the method specified in the instructions. (2) <u>Using condition of equipment</u> Set the equipment to the using condition with largest quantity of gas consumption. In this case, the temperature of thermostat shall be set at position of maximum temperature. Moreover, as for that with rotatory speed adjusting device, set to maximum and minimum speeds and conduct the tests respectively. (3) <u>Temperature measuring time</u> Take the temperature measuring time for every part of equipment shall be one hour from ignition of burner and for wooden wall, etc. of adjacent to the equipment, successive one hour.		Upper	Side	Rear	Main body of equipment	150	45
	Upper	Side	Rear								
Main body of equipment	150	45	45								
Temperature rise at normal time (each part of equipment)	Surface of parts liable to be touched by hand at operation	140°C or under	Table 10 Table 14								
	Centre of inside of drying vessel (drying drum)	120°C or under									
	Surface of gas connection port (screw connection port is excluded)	60°C or under									
	External surface of main body of gas shut-off valve (appliance valve is included.) in which gas passes through	Equal to or less than 85°C or less than temperature ascertained by heat resistance test that the clause of airtightness of gas path is complied with and the operation is free from abnormality									
Temperature rise	Surface of ignition unit (Piezo-electric element is included.)	Equal to or less than 85°C or less than temperature ascertained by heat resistance test that the use is not impeded									
	External surface of appliance governor in which gas passes through	Equal to or less than 70°C or less than temperature ascertained by heat resistance test that the clause of airtightness of gas path is complied with and the variation of adjusted pressure is (0.05 P ₁ + 29.4) Pa { (0.05 P ₁ + 3) mmHg(O) or under P ₁ : Adjusted pressure prior to test									

Temperature rise