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**Filler pumps for oil burning
appliances**

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Foreword

This translation has been made based on the original Japanese Industrial Standard 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 Heating Appliance Inspection Association (JHIA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS S 2037** : 1992 is replaced with this Standard.

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Filler pumps for oil burning appliances

Introduction

With the view to promote stability and standardization of quality of filler pumps for oil burning appliances that are used to transfer kerosene from 18-litre kerosene cans, this Japanese Industrial Standard was established as **JIS S 2028** (*Filler pumps for oil burning appliances*) in 1963 and then had its title and number changed to the present ones.

As a result of the revision at this time, the numerals in this Standard are to be only given in the SI unit and are to be rounded to result in values no less severe than those given in the previous provision, without compromising the effectiveness. The format of standard and the wordings used to express the provisional requirements have been modified according to **JIS Z 8301** (*Rules for the layout and drafting of Japanese Industrial Standards*) revised in 2005. Also, in the marking on products, “number and title of this Standard” have been added in seeking compliance with the relevant ministerial ordinance and Japanese Industrial Standards.

1 Scope

This Standard specifies the filler pumps to be used for transferring kerosene contained in polyethylene containers or steel drums to oil burning appliance and the like (hereafter referred to as the “pumps”). In this case, the polyethylene containers herein stated are those specified in **JIS Z 1710**. And, the drums mean the type specified in **JIS Z 1601**.

2 Normative references

The following standards contain provisions which, 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 8501 *Carbon zinc batteries*

JIS C 8511 *Alkaline primary batteries*

JIS K 2201 *Gasoline for industrial purpose*

JIS K 2203 *Kerosine*

JIS K 6741 *Unplasticized poly (vinyl chloride) (PVC-U) pipes*

JIS K 6761 *Polyethylene pipes for General Purposes*

JIS K 6771 *Flexible vinyl tube*

JIS S 3030 *General rules for construction of oil burning appliances*

JIS Z 1601 *Tight head steel drums*

JIS Z 1710 *Blow moulded polyethylene containers for kerosine*

3 Classification

The pumps shall be classified according to bore diameter of discharge hose and construction as shown in table 1.

Table 1 Classification

Unit: mm

Classification	Bore diameter of discharge hose	Division by construction	Remarks
A8	8 to 9	Manual operative type for polyethylene containers	Figure 8
A10	10 to 12		
A14	14 to 16		
B17	17 to 19	Manual operative type for steel drums	
B20	20 to 25		
C10 ^{a)} (The detecting element of automatic stop motion device at the end of discharge hose, the bore diameter of discharge hose is unspecified.)	10 to 12	Battery-operated type for polyethylene containers	Figures 9 to 11
Note ^{a)} Type C 10 pumps include the exclusive pumps for airtight oil tanks with automatic stop motion devices, which can supply oil without uncapping the oil supplying caps of the airtight oil tanks of the oil burning appliances. An airtight oil tank means the airtight oil tank specified in 5.4 in JIS S 3030 .			

4 Quality and performance

The qualities and performances of pumps shall satisfy the requirements specified in table 2, when tested in accordance with clause 10.

Table 2 Quality and performance

Test item			Quality and performance	Test method
Leakage			There shall be no leakage.	10.2
Number of starting operations (type C10 pumps are excluded)			4 times or less.	10.3
Flow rate	Type	Flow rate L/min	90 % or over of indicated flow rate	10.4
	A8	2.0 min.		
	A10	4.0 min.		
	A14	8.0 min.		
	B17	16.0 min.		
	B20	20.0 min.		
	C10	4.0 min.		
Lift head			Water should flow out from the top of discharge hose.	10.5
Joint	Type		Jointing strength	10.6
	A8, A10, A14 and C10		No coming out when weight of 5 kg in mass is hung.	
	B17 and B20		No coming out when weight of 10 kg in mass is hung.	
Oil resistance of plastic material			Within range of ±15 % in rate of mass change	10.7

Table 2 (concluded)

Test item	Quality and performance	Test method
Oil resistance of joint	No coming out when weight of 3 kg in mass is hung.	10.8
Fatigue (type C10 pumps are excluded)	The requirements of number of starting operations and the flow rate shall be satisfied.	10.9
Operation at low temperature	The requirements of number of starting operations and the jointing strength shall be satisfied. Battery-operated type pumps are required to allow kerosene to flow without stop of pump, and they are exempted from the application of the requirement for the number of starting operations.	10.10
Bend	Neither breakage nor crushing shall occur.	10.11
Change in slow rate at low voltage (for only type C10 pumps)	35 % or under.	10.12
Operation (for only type C10 pumps)	No abnormality shall take place.	10.13
Insulation resistance (for only type C10 pumps)	1 MΩ or over.	10.14
Falling down (for only type C10 pumps)	No abnormality shall take place in functions.	10.15
Pressure resistance	There shall not be any leakage.	10.16
Automatic stop motion (for only type C10 pumps with automatic stop motion)	To ensure the automatic stop motion.	10.17
Durability of automatic stop motion device (for only type C10 pumps with automatic stop motion)	The device shall function without any abnormality and shall ensure the automatic stop motion.	10.18
Durability of mounting/ demounting to oil supplying cap (for only type C10 pumps for airtight oil tank)	No abnormality shall take place.	10.19

5 Construction

5.1 General construction

The construction of pumps shall be as follows:

- a) The pumps after starting shall allow kerosene to flow out continuously and shall stop it easily when the stop motion device works. However, it is permitted that the kerosene remaining in the discharge hose flows out after the pumps cease to work.
- b) The pumps during their service shall have no leakage at any parts, and their pipes both for suction and for discharge shall not crush when subjected to suction force. However, the battery-operated pumps are exempted from this requirement concerning the kerosene leakage taking place at the bearing and the air inlet hole.

- c) The pumps shall neither be tilted nor fall down with ease during their service.

5.2 Construction of manual operative type pumps

The construction of manual operative type pumps shall be as follows:

- a) The pumps shall allow the valves and the actuating cylinder to work smoothly, even when they are tilted.
- b) The pumps shall be surely fixed with the valves, etc. not to allow them to come off easily during service.
- c) The lid of air inlet hole shall be opened and closed easily and surely without coming off the pump body.

5.3 Construction of battery-operated type pumps

The construction of battery-operated type pumps shall be as follows:

- a) For the electric source, the dry cell specified in **JIS C 8501** or the primary cell specified in **JIS C 8511**, or those equivalent to or superior to them shall be used.
- b) The cell shall be so constructed as to facilitate the easy exchange, and the connection of cell case with the pump body shall be made with ease with neither looseness nor backlash.
- c) The pumps shall allow the kerosene having overflowed from the bearing, etc. to return to the polyethylene container from the pump body.
- d) The pumps, during normal use, shall not allow the kerosene to enter the energized part and to leak out of the joint.
- e) The switch shall have the construction of easy handling and of good electric contact during the use of pump.
- f) The spring and the like shall have the suitable strength and the sufficient durability.
- g) Good electric insulation between the energized part and the pump body shall be ensured under the condition of use.
- h) There shall be no possibility that the internal wiring comes in contact with the rotary part.
- i) The conductive metals to be fixed and the fixing part thereof shall be so fixed that they do not loosen during normal use.
- j) The pumps with automatic stop motion shall be so constructed as to meet the requirements below.
 - 1) The position of the automatic stop motion shall be marked.
 - 2) The position of automatic stop motion, if adjustable, shall be of easy adjustment.
 - 3) The pumps shall ensure to stop the kerosene flow, and after the stoppage, the pumps shall not restart by itself.