



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

☞ **JIS B 8245** : 2004
(JCVA/JSA)

Valves for liquefied petroleum gas cylinder

ICS 23.020.30; 75.160.30

Reference number : JIS B 8245 : 2004 (E)

PROTECTED BY COPYRIGHT

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 Cylinder Valve Association (JCVA)/Japanese Standards Association (JSA) 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 B 8245 : 1994** is replaced with this Standard.

Date of Establishment: 1964-03-01

Date of Revision: 2004-03-20

Date of Public Notice in Official Gazette: 2004-03-22

Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Industrial
Machinery

JIS B 8245 : 2004, First English edition published in 2004-06

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2004

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

Contents

	Page
1 Scope	1
2 Normative references	1
3 Classification	1
4 Performance	1
4.1 Opening/closing of valve	1
4.2 Coupling	1
4.3 Pressure resistance	1
4.4 Gastightness	2
4.5 Safety device functioning	2
4.6 Relieving capacity of safety device	2
4.7 Vibration proof	3
4.8 Abrasion resistance of O-ring	3
4.9 Connection/separation durability of coupling	3
5 Dimensions and constructions	3
5.1 Cylinder connection	3
5.2 Gas-filling port	4
5.3 Spanner flats	5
5.4 Safety device	6
5.5 Gland nut	6
5.6 Valve element	6
6 Appearance	6
7 Materials	6
8 Test and inspection	7
9 Designation	7
10 Marking	8
Annex (normative) Cylinder connection threads and gas-filling port threads	9

Valves for liquefied petroleum gas cylinder

1 Scope This Japanese Industrial Standard specifies the valves mainly used for a liquefied petroleum gas cylinder with a capacity of 3 L or up to 120 L to be filled with a liquefied petroleum gas of 1.53 MPa up to and including 1.82 MPa in pressure at a temperature of 48 °C (hereafter referred to as “valves”).

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS G 4314 *Stainless steel wires for springs*

JIS H 3100 *Copper and copper alloy sheets, plates and strips*

JIS H 3250 *Copper and copper alloy rods and bars*

3 Classification Valves shall be classified as given in table 1.

Table 1 Classification of valves

Type	Symbol	
	with safety device	without safety device
Gas-filling port screw-in	S	O
Gas-filling port coupling	SC	OC

4 Performance

4.1 Opening/closing of valve The opening/closing of valves shall be operated with ease and function smoothly.

4.2 Coupling

4.2.1 Connectivity and separability of coupling Connection and separation of the coupling shall be done easily, safely, and securely.

4.2.2 Self-insulation of coupling To be provided with a function by which the passage shall be insulated automatically when the coupling is separated.

4.3 Pressure resistance

4.3.1 Pressure resistance of valve body A valve body, when subjected to pressure resistant test with application of a pressure at least 3.0 MPa by using water, air or inert gas for a minimum of 1 min, shall be free from leakage and other abnormalities.

4.3.2 Pressure resistance of coupling connection For a coupling type in the state of engagement between the male and female ends, when carrying out pressure resistance test applying a pressure at least 3.0 MPa by using air or inert gas for a minimum of 1 min, there shall be no leakage or other abnormalities.

4.4 Gastightness Valves, when subjected to the gastightness test given in table 2 by using air or inert gas, shall be free from leakage at the respective checking portions.

Table 2 Gastightness test conditions

Type	Checking portion	Test method	Testing pressure MPa	Testing duration s
Screw-in gas-filling port	Valve body, filling port, safety device	Closing the valve, apply pressure from the cylinder connection to examine.	1.80 min.	30 min.
	Valve body and gland nutted part	Closing tightly the filling port or cylinder connection, apply pressure from the cylinder connection or filling port to examine by opening the valve.		
Coupling gas-filling port	Valve body and safety device	With the valve closed and the coupling opened, apply pressure from the cylinder connection to examine.		
	Valve body, filling port and gland nutted part	Applying pressure from the cylinder connection to examine by opening the valve.		
	Coupling connection	With the male and female parts engaged, opening the valve and closing female side outlet tightly, apply pressure to examine.		

4.5 Safety device functioning The start-to-discharge and reseating pressures of a safety device shall be as given in table 3.

Table 3 Start-to-discharge and reseating pressures of safety device

Unit: MPa

Start-to-discharge pressure	Tolerance on start-to-discharge pressure	Reseating pressure	Tolerance on reseating pressure
2.40	0 -0.40	1.80	+0.60 0

4.6 Relieving capacity of safety device The relieving capacity of a safety device, which is expressed by the air amount, m³/h, converted to a value under the state of 15.6 °C and 1 013 hPa, shall be at least the required value calculated from the following formula.

$$Q = 1.674 V (P + 0.1013)$$

where, Q : required relieving capacity (m³/h)

V : numerical value of the largest capacity of gas cylinder to be fitted (L)

P : decisive pressure for relieving capacity (MPa)

$$P = (TP \times 0.8) \times 1.2 = WP \times 1.2$$

where, TP : test pressure for pressure resistance (MPa)

WP : start-to-discharge pressure (MPa)

4.7 Vibration proof A valve, loaded with the testing pressure given in table 2, when vibrated for every 30 min in the three directions of vertical, lateral and lengthwise, with 2 mm total amplitude at a rate of 2 000 cycles per minute, shall be free from leakage and other abnormalities.

4.8 Abrasion resistance of O-ring For the O-ring used for valve element in a state mounted on a sliding abrader and loaded with an air or inert gas pressure of 0.69 MPa, when repeated in a sliding motion so as to effect the lift being at least 1/4 of the valve seat bore for 5 000 cycles or more, there shall be no leakage or other abnormalities.

The sliding reciprocations shall be 10 cycles to 50 cycles per min.

4.9 Connection/separation durability of coupling With a coupling subjected to a pressure of 1.8 MPa, after completion of connection and separation for at least 1 000 times, there shall be no leakage at the gas-filling port and coupling connection.

5 Dimensions and constructions

5.1 Cylinder connection The dimensions of cylinder connection of valves shall be as given in table 4.