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The American Society of
Mechanical Engineers

LIQUID PROPANE GAS (LPG) FUEL CYLINDERS (HORIZONTAL OR VERTICAL) MOUNTING—LIQUID WITHDRAWAL—FOR POWERED INDUSTRIAL TRUCKS

AN AMERICAN NATIONAL STANDARD

ASME B56.11.7-1998

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POWERED AND NONPOWERED INDUSTRIAL TRUCKS

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FOREWORD

(This Foreword is not part of ASME B56.11.7-1998.)

On December 9, 1993, the ASME B56.11 Subcommittee began work on this Standard at the direction of the B56 Committee. Following a number of meetings, it was approved by the Subcommittee and submitted to the ASME B56 Committee on Powered and Nonpowered Industrial Trucks.

After several B56 Committee ballots and public review, the standard was approved by the B56 Committee, by ASME, and by the American National Standards Institute on June 2, 1998.

Safety codes and standards are intended to enhance public health and safety. Revisions result from committee consideration of factors such as technological advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate.

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Powered and Nonpowered Industrial Trucks

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LIQUIFIED PETROLEUM GAS (LPG) FUEL CYLINDERS (HORIZONTAL OR VERTICAL) MOUNTING — LIQUID WITHDRAWAL — FOR POWERED INDUSTRIAL TRUCKS

1 SCOPE

This Standard establishes dimensions for LPG fuel cylinders used on powered industrial trucks.

2 PURPOSE

The purpose of this Standard is to promote the interchangeability of 20#, 33.5#, and 43.5# LP-Gas cylinders used on powered industrial trucks.

3 INTERPRETATION

3.1 Mandatory and Advisory Rules

To carry out the provisions of this Standard, all items are mandatory except those including the word *should,* which are recommendations.

3.2 Requests for Interpretation

The B56 Committee will render an interpretation of any requirement of this Standard. The interpretations will be rendered only in response to a written request sent to the Secretary of the B56 Committee, ASME, Three Park Avenue, New York, NY 10016-5990. The request for interpretation shall be in the following format:

Subject: Cite the applicable paragraph number(s) and provide a concise description.

Edition: Cite the applicable edition of the pertinent standard for which the interpretation is being requested.

Question: Phrase the questions as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

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4 DESIGN AND CONSTRUCTION STANDARDS

(a) LP-Gas fuel cylinders shall be constructed of steel or aluminum and shall conform to the appropriate ASME, Department of Transportation (DOT), and Transport Canada (TC) Standards. DOT and TC cylinders shall have a minimum service pressure rating of 240 psi (16 bar).

NOTE: Newly constructed cylinders used in Canada require TC markings. Cylinders manufactured to TC standards contain metric markings. Cylinders used in the United States require DOT markings. Some cylinders are manufactured and dual marked to allow filling and use in both countries (e.g., DOT-4BA240 — TC4BAM16).

(b) LPG fuel cylinders shall be constructed to engage a substantial positioning pin or an equivalent means to provide for intended positioning of the cylinder. (See Fig. 1, G.)

(c) LPG fuel cylinders shall be filled (see Table 1) by weight only or by either weight or volume.

(d) LPG fuel cylinders, which can be filled by either weight or volume, shall have a fixed liquid level gauge.

5 MARKINGS

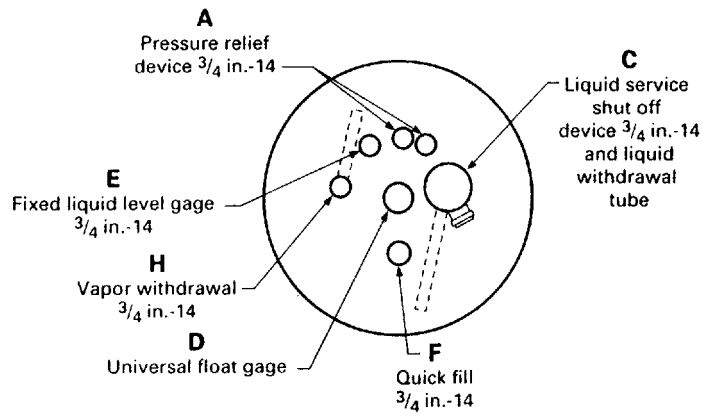
Cylinders shall be marked in accordance with NFPA 58.

6 DIMENSIONAL DETAIL (See Fig. 1)

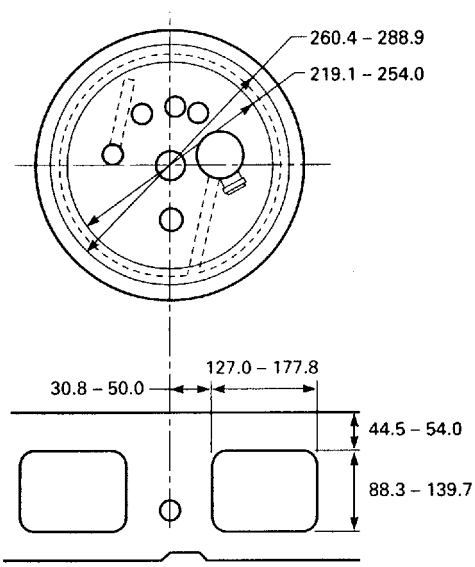
(a) Pressure relief device with captive rain cap shall discharge at 45 deg. from horizontal with cylinder in

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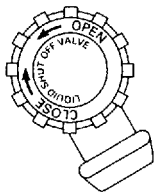
NOTE:
All dimensions are in mm.
All pipe threads are tapered.



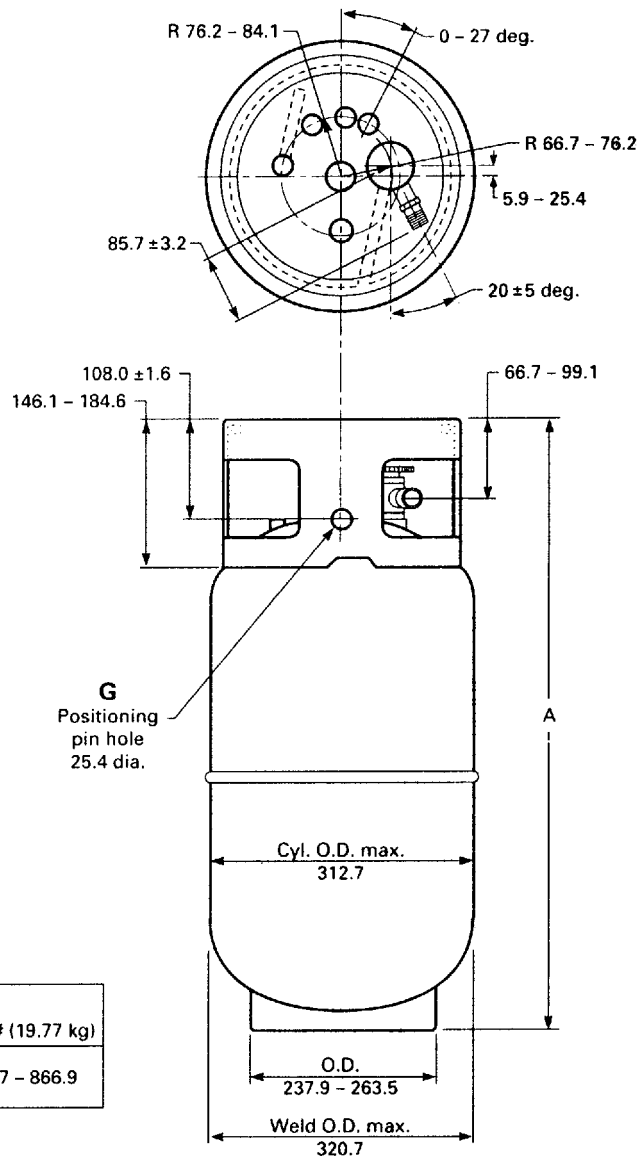
Collar Detail



B
Hand Hole Detail



Liquid Service Shut off Device Detail



Dimension	Cylinder		
	20# (9.1 kg)	33.5# (15.22 kg)	43.5# (19.77 kg)
A	479.4 – 536.2	679.5 – 720.0	831.7 – 866.9

FIG. 1 DIMENSIONAL DETAIL

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TABLE 1 WEIGHT AND VOLUME SPECIFICATIONS

Type	Method of Fill	Fixed Dip Lube	LPG Cap lbs / kg	Min Water Cap lbs / kg	Approx. Tare Wgt lbs / kg (1)	Conforms to Specifications
1-HV	Wgt only	Not req'd	20.00 / 9.1	47.62 / 21.6	24 - 35 / 10.9 - 15.9 Steel 16 - 19 / 7.2 - 8.6 Alum	TC4BAM16 DOT 4B240 4BA240
2-HV	Wgt or vol	Req'd	20.00 / 9.1	47.62 / 21.6	24 - 35 / 10.9 - 15.9 Steel 16 - 19 / 7.2 - 8.6 Alum	4BW240 or 4E240
3-HV	Vol only	Req'd	20.00 / 9.1	47.62 / 21.6	80 / 36.3	ASME Code for U.P.V. Section VIII
4-HV	Wgt or vol	Req'd	20.00 / 9.1	47.62 / 21.6	80 / 36.3	ASME Code for U.P.V. Section VIII
1-HV	Wgt only	Not req'd	33.50 / 15.22	79.8 / 36.3	35 - 43 / 15.9 - 19.5 Steel 21 - 23 / 9.5 - 10.4 Alum	TC4BAM16 DOT 4B240 4BA240
2-HV	Wgt or vol	Req'd	33.50 / 15.22	79.8 / 36.3	35 - 43 / 15.9 - 19.5 Steel 21 - 23 / 9.5 - 10.4 Alum	4BW240 or 4E240
3-HV	Vol only	Req'd	33.50 / 15.22	79.8 / 36.3	100 / 45.4	ASME Code for U.P.V. Section VIII
4-HV	Wgt or vol	Req'd	33.50 / 15.22	79.8 / 36.3	100 / 45.4	ASME Code for U.P.V. Section VIII
1-HV	Wgt only	Not req'd	43.50 / 19.77	103.6 / 47.1	41 - 49 / 18.6 - 22.2 Steel 25.5 - 11.6 Alum	TC4BAM16 DOT 4B240 4BA240
2-HV	Wgt or vol	Req'd	43.50 / 19.77	103.6 / 47.1	41 - 49 / 18.6 - 22.2 Steel 25.5 / 11.6 Alum	4BW240 or 4E240
3-HV	Vol only	Req'd	43.50 / 19.77	103.6 / 47.1	120 / 54.5	ASME Code for U.P.V. Section VIII
4-HV	Wgt or vol	Req'd	43.50 / 19.77	103.6 / 47.1	120 / 54.5	ASME Code for U.P.V. Section VIII

NOTE:
(1) Weights vary based on cylinder design, manufacturing construction, and valving configuration.

horizontal or vertical position. Relief valve discharge shall be provided with clear passage without impinging on head ring. Relief valve inlet shall contact vapor space of filled cylinder when mounted horizontally or vertically.

(b) Hand hole may be enlarged from point of contact with the cylinder to curl on top side to maintain a 1-in. (25-mm) clearance for liquid service shut-off device extended centerline within window area.

(c) A liquid service shut-off valve shall be installed and it shall have a flow check valve. The valve handle shall be marked "liquid shut-off valve," with "close" and "open" directions denoted by arrows. Location of this valve shall provide free hand clearance with head ring and adjacent fittings. Liquid withdrawal tube shall be located to allow maximum practical emptying of tank in horizontal or vertical position.

(d) Universal cylinder float gauge position shall be optional.

(e) Fixed liquid level gauge and identification shall be required for volume filling (location optional).

(f) Quick fill valve (optional), when provided, shall terminate fill tube in upper 20% of the cylinder. Position and tube contour shall be optional.

(g) Cylinder positioning pin hole.

(h) Vapor withdrawal port, not used for powered industrial trucks.

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AMERICAN NATIONAL STANDARDS ON MATERIAL HANDLING EQUIPMENT

Safety Code for Elevators and Escalators A17.1-1990
Safety Standard for Conveyors and Related Equipment B20.1-1990
Safety Standard for Low Lift and High Lift Trucks B56.1-1988
Safety Standard for Guided Industrial Vehicles B56.5-1988
Safety Standard for Rough Terrain Forklift Trucks B56.6-1987
Safety Standard for Industrial Crane Trucks B56.7-1987
Safety Standard for Personnel and Burden Carriers B56.8-1988
Safety Standard for Operator Controlled Industrial Tow Tractors B56.9-1991
Double Race or Bi-Level Swivel and Rigid Industrial Casters B56.11.1-1991
Load Handling Symbols for Powered Industrial Trucks B56.11.3-1988
Hook-Type Forks and Fork Carriers for Powered Industrial Forklift Trucks B56.11.4-1988
Measurement of Sound Emitted by Low Lift, High Lift, and Rough Terrain Powered Industrial Trucks B56.11.5-1989
Liquid Propane Gas (LPG) Fuel Cylinders (Horizontal or Vertical) Mounting — Liquid Withdrawal — for Powered Industrial Trucks B56.11.7-1998
Definitions and Terminology Covering Pallets and Related Structures MH1.1.2-1989
Pallet Sizes MH1.2.2M-1989
Specifications for Identification and Marking of Cargo Containers MH5.3M-1982

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