

UL 668

ISBN 1-55989-857-7

Hose Valves for Fire-Protection Service





Underwriters Laboratories Inc.®

Northbrook, Illinois • (847) 272-8800

Melville, New York • (516) 271-6200

Santa Clara, California • (408) 985-2400

Research Triangle Park,
North Carolina • (919) 549-1400

Camas, Washington • (360) 817-5500

Underwriters Laboratories Inc., founded in 1894, is chartered as a not-for-profit organization without capital stock, under the laws of the State of Delaware, to establish, maintain, and operate laboratories for the examination and testing of devices, systems and materials to determine their relation to hazards to life and property, and to ascertain, define and publish standards, classifications and specifications for materials, devices, products, equipment, constructions, methods, and systems affecting such hazards.

UL Standards for Safety are developed under a procedure which provides for participation and comment from the affected public as well as industry. The procedure takes into consideration a survey of known existing standards and the needs and opinions of a wide variety of interests concerned with the subject matter of the standard. Thus manufacturers, consumers, individuals associated with consumer-oriented organizations, academicians, government officials, industrial and commercial users, inspection authorities, insurance interests and others provide input to UL in the formulating of UL Standards for Safety, to keep them consonant with social and technological advances.

A not-for-profit organization
dedicated to public safety and
committed to quality service

October 15, 1996 - UL 668

tr1

Underwriters Laboratories Inc. (UL)
333 Pfingsten Road
Northbrook, IL 60062-2096

UL Standard for Safety
for
Hose Valves for Fire-Protection Service, UL 668

Ninth Edition, Dated December 28, 1995

Revisions: This Standard contains revisions through and including October 15, 1996.

A change is indicated by a note following the affected item. The note is preceded and followed by an asterisk.

The revisions dated October 15, 1996 include a reprinted title page (page 1) for this Standard.

The master for this Standard at UL's Northbrook Office is the official document insofar as it relates to a UL service and the compliance of a product with respect to the requirements for that product and service, or if there are questions regarding the accuracy of this Standard.

UL's Standards for Safety are copyrighted by UL. Neither a printed copy of a Standard, nor the distribution diskette for a Standard-on-Diskette and the file for the Standard on the distribution diskette should be altered in any way. All of UL's Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of UL.

Revisions of UL Standards for Safety are issued from time to time. A UL Standard for Safety is current only if it incorporates the most recently adopted revisions.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

UL will attempt to answer support requests concerning WordPerfect, Envoy, and Standards-on-Diskette. However, this support service is offered on a reasonable efforts basis only, and UL may not be able to resolve every support request. UL supports a Standards-on-Diskette only if it is used under the conditions and operating systems for which it is intended. UL's support policies may change from time-to-time without notification.

UL reserves the right to change the format, presentation, file types and formats, delivery methods and formats, and the like of both its printed and electronic Standards without prior notice.

Standards-on-Diskette purchasers agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgement (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing a Standard-on-Diskette on the purchaser's computer system.

If a single-user version Standards-on-Diskette was purchased, one copy of this Standard may be stored on the hard disk of a single personal computer, or on a single LAN file-server or the permanent storage device of a multiple-user computer in such a manner that this Standard may only be accessed by one user at a time and for which there is no possibility of multiple concurrent access. The original distribution diskette should be stored in a safe place.

If a multiple-user version Standards-on-Diskette was purchased, one copy of the Standard may be stored on a single LAN file-server, or on the permanent storage device of a multiple-user computer. The number of concurrent users shall not exceed the number of users authorized for the Standards-on-Diskette version. The original distribution diskette should be stored in a safe place.

Standards-on-Diskette are intended for on-line use, such as for viewing the requirements of a Standard, conducting a word search, and the like. Only one copy of the Standard may be printed from each single-user version of a Standards-on-Diskette. Only one copy of the Standard may be printed for each authorized user of a multiple-user version of a Standards-on-Diskette. An employee of an organization purchasing a Standard-on-Diskette can make a copy of the page or pages being viewed for their own fair and/or practical internal use. Because of differences in the computer/software/printer setup used by UL and those of Standards-on-Diskette purchasers, the printed copy obtained by a purchaser may not look exactly like the on-line screen view or the printed Standard.

The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

New product submittals made prior to a specified future effective date will be judged under all of the requirements in this Standard including those requirements with a specified future effective date, unless the applicant specifically requests that the product be judged under the current requirements. However, if the applicant elects this option, it should be noted that compliance with all the requirements in this Standard will be required as a condition of continued Listing, and Follow-Up Services after the effective date, and understanding of this should be signified in writing.

Copyright 1996 Underwriters Laboratories Inc.

This Standard consists of pages dated as shown in the following checklist:

Page	Date
tr1, tr2	October 15, 1996
1	December 28, 1995 (Reprinted October 15, 1996)
2	May 6, 1996
3 – 14	December 28, 1995
15, 16	May 6, 1996
17, 18	December 28, 1995



DECEMBER 28, 1995

(Title Page Reprinted: October 15, 1996)

ANSI/UL 668-1996

1

UL 668

Standard for

Hose Valves for Fire-Protection Service

First Edition – 1921

Second Edition – 1937

Third Edition – June, 1958

Fourth Edition – April, 1967

Fifth Edition – June, 1970

Sixth Edition – January, 1978

Seventh Edition – July, 1980

Eighth Edition – August, 1989

Ninth Edition

December 28, 1995

Approval as an American National Standard (ANSI) covers the numbered paragraphs on pages dated December 28, 1995. These pages should not be discarded when revised or additional pages are issued if it is desired to retain the ANSI approved text.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc.

Approved as ANSI/B12.1-1970, May 15, 1970

Approved as ANSI/UL 668-1982, August 19, 1982

Approved as ANSI/UL 668-1989, April 11, 1989

Approved as ANSI/UL 668-1996, June 5, 1996

Revisions of this standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

ISBN 1-55989-857-7

COPYRIGHT © 1978, 1996 UNDERWRITERS LABORATORIES INC.

No Text on This Page

CONTENTS**FOREWORD****INTRODUCTION**

1 Scope	5
2 General	5
3 Components	5

CONSTRUCTION

4 Sizes	6
5 Working Pressure	6
6 Materials	6
7 Castings	7
8 Direction to Open	7
9 Metallic Seat Rings	7
10 Inlet Threads and Attachment Means	7
11 Outlet Nipples and Threads	7
12 Hose Outlet Caps	7
13 Valve Stems	8
14 Stuffing Boxes and Seals	8
15 Handwheels	8
16 Angle Pattern Valves	9
17 Straightway Pattern Valves	11

PERFORMANCE

18 General	11
19 Mercurous Nitrate Immersion Test for Copper Alloys	12
20 Elastomeric Parts Test	12
21 Hydraulic Operation Test	13
22 Leakage Tests	14
23 Strength of Body Test	15
24 Mechanical Strength Test	15

MANUFACTURING AND PRODUCTION TESTS

25 General	17
------------------	----

MARKING

26 General	17
------------------	----

FOREWORD

A. This Standard contains basic requirements for products covered by Underwriters Laboratories Inc. (UL) under its Follow-Up Service for this category within the limitations given below and in the Scope section of this Standard. These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. They are subject to revision as further experience and investigation may show is necessary or desirable.

B. The observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which complies with the text of this Standard will not necessarily be judged to comply with the Standard if, when examined and tested, it is found to have other features which impair the level of safety contemplated by these requirements.

D. A product employing materials or having forms of construction differing from those detailed in the requirements of this Standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be judged to comply with the Standard.

E. UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of UL represent its professional judgment given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed. UL shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. UL shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of or reliance upon this Standard.

F. Many tests required by the Standards of UL are inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting such tests.