

**MSS SP-116-2003**

# Service-Line Valves and Fittings for Drinking Water Systems

**Standard Practice**  
Developed and Approved by the  
Manufacturers Standardization Society of the  
Valve and Fittings Industry, Inc.

127 Park Street, NE  
Vienna, Virginia 22180

Phone: (703) 281-6613

Fax: (703) 281-6671

e-mail: [info@mss.hq.com](mailto:info@mss.hq.com)



[www.mss-hq.com](http://www.mss-hq.com)

This is a preview of "MSS SP-116-2003". [Click here to purchase the full version from the ANSI store.](#)

This MSS Standard Practice was developed under the consensus of the MSS Technical Committee 112 and the MSS Coordinating Committee. The content of this Standard Practice is the result of the efforts of competent and concerned volunteers to provide an effective, clear, and non-exclusive specification that will benefit the industry as a whole. **This MSS Standard Practice** is intended as a basis for common practice by the manufacturer, the user, and the general public. The existence of an MSS Standard Practice does not in itself preclude the manufacture, sale, or use of products not conforming to the Standard Practice. Mandatory conformance is established only by reference in a code, specification, sales contract, or public law, as applicable.

Non-toleranced dimensions in this Standard Practice are nominal, and unless otherwise specified, shall be considered "for reference only".

This document has been substantially revised from the previous 1996 edition. It is suggested that if the user is interested in knowing what changes have been made, that direct page by page comparison should be made of this document.

Unless otherwise specifically noted in this MSS SP, any standard referred to herein is identified by the date of issue that was applicable to the referenced standard(s) at the date of issue of this MSS SP.  
(See Annex A)

*Any part of this standard may be quoted. Credit lines should read 'Extracted from MSS SP-116, 2003, with permission of the publisher, the Manufacturers Standardization Society.' Reproduction prohibited under copyright convention unless written permission is granted by the Manufacturers Standardization Society & the Valve and Fittings Industry, Inc.*

Originally Approved April 1996

Copyright © 1996 by  
Manufacturers Standardization Society  
of the  
Valve and Fittings Industry, Inc.  
Printed in U.S.A.

## FOREWORD

The Manufacturers Standardization Society was requested to develop a Standard Practice for line valves and assigned this as a project to the **MSS** Committee 112, Water Works Valves and Fittings. Many of the significant components of service lines for drinking water systems have not been specifically covered by standards. The **MSS** Committee 112, Water Works Valves and Fittings Committee, decided to fill this need in the water works industry by creating this Standard Practice (SP), which has a broader scope than previous drinking water service line standards. However, the tubing, pipe, water main, water meter, and machines associated with drinking water service lines are not covered by this SP.

Field testing information is provided in Section **6.4** but is not a part **of** this Standard Practice.

The Annex at the back of this Standard Practice is an official part **of** this Standard Practice.

**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
0 PURPOSE.....	1
1 SCOPE.....	1
2 DEFINITIONS.....	1
3 INFORMATION THAT MAY BE REQUESTED OF THE MANUFACTURER.....	2
4 MATERIALS.....	3
5 DESIGN.....	3
6 INSPECTION AND TESTING.....	18
7 MARKINGS.....	19
8 PREPARATION FOR SHIPMENT.....	19
9 INSTALLATION.....	19
 TABLE	
1 Drill Clearance Through Corporation Valves.....	5
2 Maximum Swing Radius.....	6
3 Maximum Length For Corporation Valves.....	6
4 Standard AWWA Corporation Valve Inlet External Threads.....	7
5 NPT Corporation Valve Inlet External Threads.....	7
6 NPT Corporation Valve Outlet External Threads.....	8
7 External Outlet Threads For Use With Flared Copper Tubing.....	8
8 Coupling Nuts For Use With Flared Copper Tubing.....	9
9 Corporation Valve Outlet External Special Purpose Coupling Threads.....	9
10 Coupling Nut For Connecting To Corporation Valve Outlet Special Purpose Coupling Threads.....	10
11 Internal Driving Threads For Corporation Valves.....	10
12 Straight Design Meter Valve/Angle Design Meter Valve.....	11
13 Meter Coupling.....	12
14 Oval Flange Meter Connections.....	12
15 Standard AWWA Threads For Service Saddle Clamps.....	17
 FIGURE	
1 1/2" - 2" NPS Curb Valve Keyhead Compatible With Shutoff Rod.....	14
2 1/2" - 1 1/4" NPS Curb Valve Keyhead Compatible-With Both NPS Shutoff Rod And 1/2" x 1 1/4" NPS Stationary Rod.....	15
3 1 1/2" - 2" NPS Curb Valve Keyhead Compatible With Both NPS Shutoff Rod and 1/2" - 2" NPS Stationary Rod.....	16
 ANNEX A	
Referenced Standards and Applicable Dates.....	21



## SERVICE-LINE VALVES AND FITTINGS FOR DRINKING WATER SYSTEMS

### 0. PURPOSE

To provide a Standard Practice covering most of the significant valves and fittings used in drinking water service-line systems including both buried and non-buried valves, fittings, meter settings, and service saddle clamps.

### 1. SCOPE

1.1 This standard covers valves and fittings in sizes 1/2" through 2" NPS for use in drinking water system service-line between the main and the meter.

Included are:

- a) Buried valves and fittings that are designed to be in direct contact with the soil (corporation valves, service saddle clamps, and curb valves).
- b) Non-buried valves and fittings that are not designed to be in direct contact with the soil (meter valves, check valves, meter fittings, and meter settings).
- c) Fittings include various types of couplings and adapters.

Not included is:

- d) Reduced pressure backflow preventers.

1.2 This Standard Practice establishes the minimum requirements that a drinking water service-line valve or fitting must possess at the time of manufacture. Details of design and manufacture, other than those stated in this standard, including such design and production tests to ensure that each valve or fitting will have these capabilities, remain the responsibility of the manufacturer.

### 2. DEFINITIONS

2.1 Under this Standard Practice the following definitions shall apply. Other definitions may be found in MSS SP-96.

2.1.1 **Angle Design Meter Valve** A meter valve in which the two body ends and the inlet and outlet flow ways are at right angles (i.e., 90°) to each other.

2.1.2 **Adapter** Facilitates the connection of an item to a size or type of tubing, pipe, or fitting, which is different from that to which the item was designed to be connected.

2.1.3 **Body** The principal pressure containing shell of a valve or fitting which has ends adapted for connection to tubing or piping.

2.1.4 **Body End** That portion of the body which is adapted for connection to tubing or piping components.

2.1.5 **Clamp** See "Service Saddle Clamp."

2.1.6 **Check Valve** A unidirectional valve which is opened by the fluid flow in one direction and which closes automatically to prevent flow in the reverse direction.

2.1.7 **Compression Fitting** A fitting for tube or pipe which seals and grips by radial deformation of circumferential sealing elements.

2.1.8 **Corporation Valve** Buried valve which connects to a water main or service saddle to prevent water flow while installing or maintaining service line components.

2.1.9 **Coupling** A fitting used to make a linear connection between two lengths of tubing or piping.

2.1.10 **Curb Valve** Water service line valve located partway between the main and meter, generally buried near the curb of the street and usually with a curb box installed over it for convenient operation from above ground.

2.1.11 **Driving Thread** Thread in an outlet end of a corporation stop to attach the valve to a tapping machine adapter during the valve installation.