

## Engineering Specification

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Job Location \_\_\_\_\_

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

Contractor's P.O. No. \_\_\_\_\_

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# LEAD FREE\*

## Series LFFBV-3C-M1, LFFBVS-3C-M1

### 2-Piece, Full Port, Lead Free\* DZR\*\*\* Brass Ball Valves

1/4" – 4"

Series LFFBV-3C-M1 2-piece, full port, Lead Free\* ball valves are used in commercial and industrial applications for a full range of liquids and gases.

They feature a bottom-loaded blowout proof stem, virgin PTFE seats, thrust washer, and adjustable stem packing gland, stem packing nut, chrome plated Lead Free\* brass ball, copper silicon alloy brass adapter, and steel handle. The Series LFFBV-3C-M1, LFFBVS-3C-M1 features Lead Free\* construction to comply with Lead Free\* installation requirements.

#### Features

- Lead Free\* forged copper silicon alloy body and adapter
- Certified to NSF/ANSI standards 61 and 372 - For Potable Water and Lead Free Applications
- CSA approved threaded valves only 1/4" – 3" -For Gas Applications
- UL Listed (Threaded Valves 1/4" - 2", Solder Valves 1/2" - 2") - For Gas and Trim & Drain Applications
- FM Listed (Threaded Valves 1/4" - 2", Solder Valves 1/2" - 2") - For Fire Protection Applications
- Fluorocarbon elastomer stem O-ring prevents stem leaks
- Adjustable stem packing gland for easy maintenance
- PTFE stem packing seal, thrust washer, and seats for reliable performance
- Bottom loaded blowout proof stem
- Valves comply to manufacturing standard MSS-SP-110

#### Models

**LFFBV-3C-M1** 1/4" – 4" with threaded connections

**LFFBVS-3C-M1** 1/2" – 3" with solder connections

#### Pressure – Temperature

Temperature Range: 0°F to 400°F (-18°C to 204°C)

\*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

\*\*This valve is designed to be soft soldered into lines without disassembly, using a low temperature solder to 420°F (216°C). Higher temperature solders may damage the seat material.

\*\*\* DZR as per the requirements of ISO 6509



#### Pressure Ratings

##### LFFBV-3C-M1:

1/4" – 2"	600psi (41 bar) WOG, non-shock, 150psi (10.3 bar) WSP
2 1/2" – 4"	400psi (27.5 bar) WOG, non-shock, 125psi (8.6 bar) WSP

##### LFFBVS-3C-M1:

1/2" – 2"	600psi (41 bar) WOG, non-shock, 150psi (10.3 bar) WSP
2 1/2" – 3"	400psi (27.5 bar) WOG, non-shock, 125psi (8.6 bar) WSP

#### Approvals

1/4" – 4" LFFBV-3C-M1

1/2" – 3" LFFBVS-3C-M1

Certified to NSF/ANSI standards 61 and 372

1/4" – 2" LFFBV-3C-M1 UL/FM approved

1/2" – 2" LFFBVS-3C-M1 UL Listed

#### Gas Approvals (Threaded Valves Only)

1/2" – 2" ASME B16.33, CSA  
ASME B16.44

1/2 psig, 5psig, and 125psig (14, 34 and 862 kPa)  
@ 0°F to 125°F (-18°C to 52°C)

2 1/2" – 3" ASME B16.38, CSA,  
ASME B16.44

1/2 psig, 5psig, and 125psig (14, 34 and 862 kPa)  
@ 0°F to 125°F (-18°C to 52°C)

#### NOTICE

Apply heat with the flame directed AWAY from the center of the valve body. Excessive heat can harm the seats. After soldering, the packing nut may have to be tightened.

#### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements

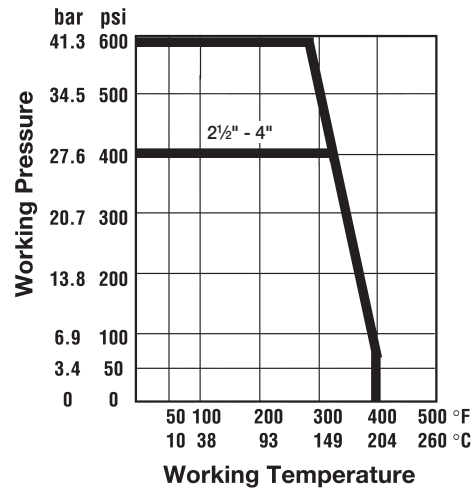


## Specifications

Approved valves shall be a Lead Free\* 2-Piece, Full Port, Ball Valve shall be constructed with Lead Free\* materials. Lead Free\* valves shall comply with state codes and standards, where applicable, requiring reduced lead content. Seats and stem packing shall be virgin PTFE. Stem shall be bottom loaded, blowout proof design with fluorocarbon elastomer O-ring to prevent stem leaks. The valve shall have chrome plated Lead Free\* brass ball and adjustable packing gland.

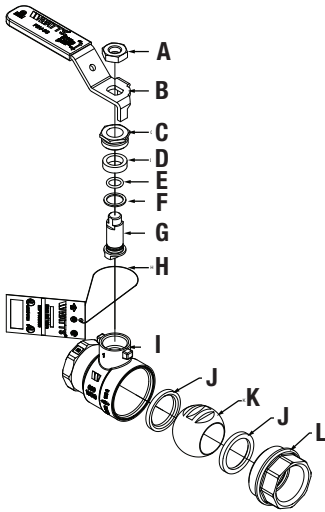
Threaded valves 1/4" - 2" shall be CSA approved to 1/2, 5, and 125psig (14, 34 and 862 kPa), UL/FM approved and 1/4" - 4" certified to NSF/ANSI standard 61/8. Solder valves 1/2" - 2" to be UL listed FM approved, and certified to NSF/ANSI standard 61/8. Valve sizes 1/4" - 2" shall be rated to 600psi (41 bar) WOG non-shock and 150psi (10.3 bar) WSP. Valve sizes 2 1/2" - 4" threaded, shall be rated to 400psi (27.5 bar) WOG non-shock and 125psi (8.6 bar) WSP. Valve sizes 2 1/2" - 3" solder shall be rated to 400psi (27.5 bar) WOG non-shock and 125psi (8.6 bar) WSP. Valve shall be a Watts Series LFFBV-3C-M1 (threaded) or LFFBVS-3C-M1 (solder).

## Temperature - Pressure



\*See application note on reverse side for solder end valves with regards to pressure/temperature rating.

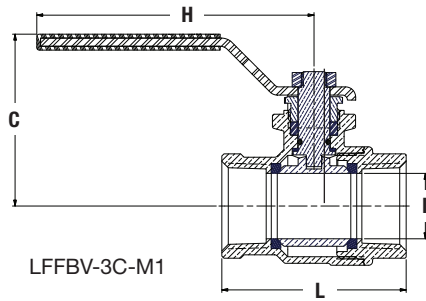
## Materials



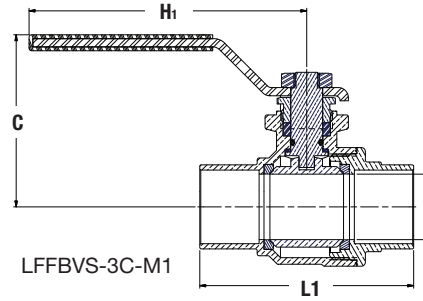
<b>A Handle Nut</b>	Zinc plated carbon steel
<b>B Handle Assembly</b>	Zinc plated carbon steel with vinyl insulator
<b>C Packing Nut</b>	Brass
<b>D Stem Packing</b>	Virgin PTFE
<b>E O-ring</b>	Fluorocarbon elastomer (FKM)
<b>F Thrust Washer</b>	Virgin PTFE (for the 2" - 4")
<b>G Stem</b>	Brass
<b>H Tag</b>	Cardboard, Mylar coated both sides
<b>I Body</b>	Forged Lead Free Brass (DZR per requirements of ISO 6509)
<b>J Seats</b>	Virgin PTFE
<b>K Ball</b>	Chrome plated Lead Free* brass
<b>L Adapter</b>	Forged Lead Free Brass (DZR per requirements of ISO 6509)

## Options

- SS Stainless steel ball and stem
- TH Tee handle
- QC Quick connect
- CC Cap and chain



LFFBV-3C-M1



LFFBVS-3C-M1

## Dimensions – Weights

SIZE		DIMENSIONS										WEIGHT				
in.	C		H		H <sub>1</sub>		I		L		L1		Threaded		Solder	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg	lbs.	kg
1/4	1 <sup>13</sup> / <sub>16</sub>	46	3 <sup>7</sup> / <sub>16</sub>	87	-	-	1/2	13	1 <sup>7</sup> / <sub>8</sub>	48	-	-	0.4	0.2	-	-
3/8	1 <sup>13</sup> / <sub>16</sub>	46	3 <sup>7</sup> / <sub>16</sub>	87	-	-	1/2	13	1 <sup>7</sup> / <sub>8</sub>	48	-	-	0.4	0.2	-	-
1/2	1 <sup>13</sup> / <sub>16</sub>	46	3 <sup>7</sup> / <sub>16</sub>	87	3 <sup>7</sup> / <sub>16</sub>	87	1/2	13	2 <sup>3</sup> / <sub>8</sub>	61	2 <sup>1</sup> / <sub>16</sub>	52	0.4	0.2	0.4	0.2
3/4	2 <sup>1</sup> / <sub>4</sub>	53	4 <sup>1</sup> / <sub>16</sub>	103	4 <sup>1</sup> / <sub>16</sub>	103	3/4	18	2 <sup>7</sup> / <sub>16</sub>	62	2 <sup>1</sup> / <sub>2</sub>	66	0.7	0.3	0.6	0.3
1	2 <sup>3</sup> / <sub>8</sub>	60	4 <sup>1</sup> / <sub>4</sub>	108	4 <sup>1</sup> / <sub>4</sub>	108	1 <sup>5</sup> / <sub>16</sub>	24	3 <sup>1</sup> / <sub>16</sub>	77	3 <sup>1</sup> / <sub>4</sub>	83	1.2	0.5	1.0	0.5
1 1/4	2 1/2	64	4 1/4	108	4 1/4	108	1 1/4	31	3 9/16	85	3 3/4	93	1.6	0.7	1.5	0.7
1 1/2	3	76	5 1/4	135	5 5/16	135	1 1/2	37	3 3/4	93	4 1/4	107	2.4	1.1	2.2	1.0
2	3 1/2	89	6	152	6	152	1 5/16	50	4 1/8	108	5 1/4	135	4.0	1.8	3.9	1.7
2 1/2	4 1/16	103	7 3/8	187	7 3/8	187	2 1/2	64	5 1/2	140	6 1/4	158	8.3	3.8	6.6	3.0
3	4 1/2	114	7 3/4	197	7 3/4	197	3	75	6 5/16	161	7 3/8	184	12.5	5.7	9.4	4.3
4	5 1/32	136	9 5/8	245	-	-	4	102	7 5/8	194	-	-	23.3	10.6	-	-

## Ordering Chart

VALVE			LOCKING HANDLE KIT			STEM EXTENSION		
Ordering Code	Valve Description	Connection Type	Ordering Code	Description	Size	Ordering Code	Description	Size
88005596	1/4" LFFBV-3C-M1	Threaded	0789534	#1 LL-HK-LFFBV-3C M1	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
88005598	3/8" LFFBV-3C-M1	Threaded	0789534	#1 LL-HK-LFFBV-3C M1	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
88005687	1/2" LFFBV-3C-M1	Threaded	0789534	#1 LL-HK-LFFBV-3C M1	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
88005688	3/4" LFFBV-3C-M1	Threaded	0789535	#2 LL-HK-LFFBV-3C M1	Fits 3/4"	0789543	SXI-HK-2A StemExtension	3/4" 3C-M1 Only
88005689	1" LFFBV-3C-M1	Threaded	0789536	#3 LL-HK LFFBV-3C M1	Fits 1" - 1 1/4"	0789544	SXI-HK-3A StemExtension	1" - 1 1/4" 3C-M1 Only
88005694	1 1/4" LFFBV-3C-M1	Threaded	0789536	#3 LL-HK LFFBV-3C M1	Fits 1" - 1 1/4"	0789544	SXI-HK-3A StemExtension	1" - 1 1/4" 3C-M1 Only
88005695	1 1/2" LFFBV-3C-M1	Threaded	0789537	#4 LL-HK LFFBV-3C M1	Fits 1 1/2"	0789545	SXI-HK-4A StemExtension	1 1/2" 3C-M1 Only
88005696	2" LFFBV-3C-M1	Threaded	0789538	#5 LL-HK LFFBV-3C M1	Fits 2"	0789546	SXI-HK-5A StemExtension	2" 3C/3CM1/G2
88005697	2 1/2" LFFBV-3C-M1	Threaded	0789539	#6 LL-HK LFFBV-3C M1	Fits 2 1/2"	0789547	SXI-HK-6A StemExtension	2 1/2" 3C/3CM1/G2
88005698	3" LFFBV-3C-M1	Threaded	0789540	#7 LL-HK LFFBV-3C M1	Fits 3"	0789548	SXI-HK-7A StemExtension	3" 3C/3CM1/G2
88005699	4" LFFBV-3C-M1	Threaded	0789541	#8 LL-HK LFFBV-3C M1	Fits 4"	0789549	SXI-HK-8A StemExtension	4" 3C/3CM1/G2
88005700	1/2" LFFBVS-3C-M1	Solder	0789534	#1 LL-HK-LFFBV-3C M1	Fits 1/4" - 1/2"	0789542	SXI-HK-1A StemExtension	1/4"-1/2" 3C/3CM1/G2
88005701	3/4" LFFBVS-3C-M1	Solder	0789535	#2 LL-HK-LFFBV-3C M1	Fits 3/4"	0789543	SXI-HK-2A StemExtension	3/4" 3C-M1 Only
88005702	1" LFFBVS-3C-M1	Solder	0789536	#3 LL-HK LFFBV-3C M1	Fits 1" - 1 1/4"	0789544	SXI-HK-3A StemExtension	1" - 1 1/4" 3C-M1 Only
88005703	1 1/4" LFFBVS-3C-M1	Solder	0789536	#3 LL-HK LFFBV-3C M1	Fits 1" - 1 1/4"	0789544	SXI-HK-3A StemExtension	1" - 1 1/4" 3C-M1 Only
88005704	1 1/2" LFFBVS-3C-M1	Solder	0789537	#4 LL-HK LFFBV-3C M1	Fits 1 1/2"	0789545	SXI-HK-4A StemExtension	1 1/2" 3C-M1 Only
88005705	2" LFFBVS-3C-M1	Solder	0789538	#5 LL-HK LFFBV-3C M1	Fits 2"	0789546	SXI-HK-5A StemExtension	2" 3C/3CM1/G2
88005706	2 1/2" LFFBVS-3C-M1	Solder	0789539	#6 LL-HK LFFBV-3C M1	Fits 2 1/2"	0789547	SXI-HK-6A StemExtension	2 1/2" 3C/3CM1/G2
88005707	3" LFFBVS-3C-M1	Solder	0789540	#7 LL-HK LFFBV-3C M1	Fits 3"	0789548	SXI-HK-7A StemExtension	3" 3C/3CM1/G2



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