

## Series LF600

### Bronze Silent Check Valves

Sizes: 1/4" – 2" (8 – 50 mm)

**LEAD FREE**

#### Features

- PTFE seats and brass disc
- Install in a horizontal or vertical position
- Stainless steel guide rod and spring
- Silent check operation
- Prevents water hammer

*For additional information, reference literature ES-LF600.*

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



LF600

## Series HWA

### Hot Water Angle Valves

Sizes: 1/2" – 1 1/4" (15 – 32mm)

1/2" – 1 1/4" bronze — FIP x male union.

1/2" – 3/4" bronze — solder x male union.

Phenolic handwheel.

**Working Pressure non-shock for hot water:** 60psi (413.7 kPa).

*For additional information, reference literature ES-HWA.*



HWA

## Series UL

### Union Elbows

#### Models

**UL-1** - 1/2" – 1 1/4" (15 – 32mm)

Bronze body, FIP x male union

**UL-2** - 1/2", 3/4" (15, 20mm)

Bronze body, solder x male union

*For additional information, reference literature ES-UL.*



UL-1

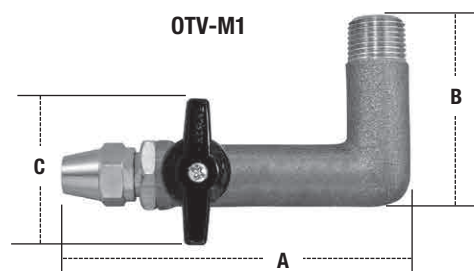
## Series OTV-M1 Oil Tank Valves

### Features

- 1/4-Turn ball valve design
- Heavy duty brass
- Adjustable packing nut
- PTFE seat and packing

### Pressure

Working Pressure Non-Shock:  
125psi WOG



### Dimensions — Weights

MODEL	SIZE		DIMENSIONS						WEIGHT	
	in.	mm	A		B		C		lbs.	kgs
OTV-FL-M1	1/2 M x 3/8 FL	15 x 10	4 15/16	125	2 9/16	65	1 15/16	49	.76	.34
OTV-M-M1	1/2 M x 3/8 M	15 x 10	4 1/2	114	2 9/16	65	1 15/16	49	.70	.32

For additional information, reference literature ES-OTV-M1.

## Model RBFF Residential Boiler Fill Fitting

Size: 1/2" (15mm)

Model RBFF Residential Boiler Fill Fitting provides a convenient solution to comply with boiler manufacturers' piping requirements and provide ease of service for expansion tanks and water pressure regulator valves in closed-loop hot water heating systems. Using a unique 3-way ball valve design, the RBFF eliminates up to twelve 1/2 inch fittings in a compact package.

### Features

- One-piece construction, eliminating up to 11 threaded joints
- Unique 3-way ball valve for isolation of water pressure regulator and expansion tank from system pressure
- Drain port with integral ball valve for unloading pressure from waterside of expansion tank diaphragm for air charge servicing and maintenance. Drain port can also be used for a variety of system draining and filling operations.
- 0 to 30psi (0 to 87kPa) pressure gauge for convenient system pressure reference

### Pressure – Temperature

Maximum Working Pressure: 125psi (860 kPa)  
Maximum Inlet Temperature: 250°F (121°C)

For additional information, reference literature ES-RBFF.

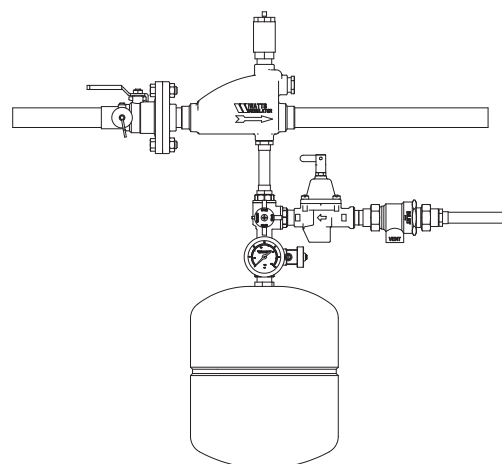
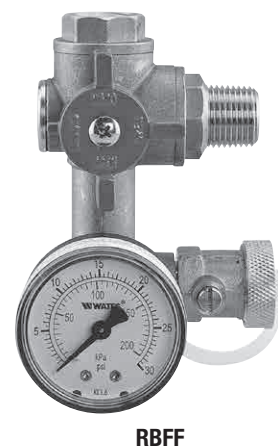


Fig. 1

## Series LFBD-QT / BD-QT Quarter-Turn Boiler Drain Shutoffs

Sizes: 1/2" and 3/4" (15 and 20mm)

Provide speed and convenience of quarter-turn ball valve performance for boiler drain or sill cock applications. Uses rugged brass body, adjustable Teflon® stem packing, and aluminum tee-handle. The 1/2" (15mm) model has a dual-pattern combination threaded and solder end by 3/4" (20mm) hose connection. The 3/4" (20mm) model is available in either solder or threaded ends.

### Features

- Quarter-turn ball valve design
- Positive shutoff
- Rugged aluminum Tee-handle design
- Adjustable Teflon® stem packing

**LEAD FREE** Series LFBD-QT features Lead Free\* brass construction and complies with Lead Free\* installation requirements.

Series BD-QT features forged brass construction and are for use in non-potable applications.

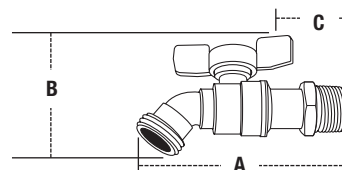
### Pressure – Temperature

Maximum Pressure: 200psi (13.8 bar)  
Maximum Temperature: 250°F (121°C)

For additional information, reference literature ES-LFBD-QT or ES-BD-QT.



LFBD-QT / BD-QT  
3/4" (20mm)



### Dimensions — Weights

MODEL	SIZE (DN)		DIMENSIONS						WEIGHT	
	in.	mm	A	B	C				lbs.	kgs.
LFBD-QT/BD-QT	1/2	15	3 3/8	86	2 1/4	57	1 5/16	24	.04	.018
LFBD-QT/BD-QT	3/4	20	4 1/8	104	2 7/16	62	1 1/8	29	.05	.022

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

## Series LFBD / BD

## Brass Boiler Drain Shutoffs for Water Service

Sizes: 1/2" x 3/4" — 3/4" x 3/4" (15 x 20mm – 20 x 20mm)

### Features

- 3/4" hose thread connection on outlet
- Dual solder or IP connection models
- Angle and straight pattern models

**LEAD FREE** Series LFBD features Lead Free\* brass construction and complies with Lead Free\* installation requirements.

Series BD features brass construction and are for use in non-potable applications.

### Pressure – Temperature

Pressure Rating: 200psi (13.8 bar) non-shock WOG  
Maximum Temperature: 180°F (82°C)

### Models

- LFBD1C / BD1C** Size 1/2" (15mm) dual connection, solder or male IPS x 3/4" (20mm) hose thread connection, angle pattern
- LFBD2 / BD2** Size 3/4" (20mm) male IPS x 3/4" (20mm) hose thread connection, angle pattern
- LFBD2C / BD2C** Size 3/4" (20mm) MIP x 3/4" (20mm) hose thread connection, angle pattern
- LFBD3F / BD3F** Size 1/2" (15mm) female IPS x 3/4" (20mm) hose thread connection, angle pattern
- LFBD4F / BD4F** Size 3/4" (20mm) female IPS x 3/4" (20mm) hose thread connection, angle pattern
- LFBD5 / BD5** Size 1/2" (15mm) dual connection, solder or male IPS x 3/4" (20mm) hose thread connection, straight pattern, hose thread connection
- LFBD6 / BD6** Size 3/4" (20mm) Male IPS x 3/4" (20mm) hose thread connection, straight pattern



LFBD1C / BD1C



LFBD2 / BD2



LFBD3F / BD3F



LFBD4F / BD4F



LFBD5 / BD5



LFBD6 / BD6

For additional information, reference literature ES-LFBD or ES-BD.

## Series GBV

### 2-Piece, Brass Gas Ball Valves

Sizes: 3/8" – 1" (10 – 25mm)

- Brass two-piece body construction
- Available with tee handle or square handle

#### Models

**GBV** – Sizes: 3/8" – 1" (10 – 25mm), NPT female connections and tee handle.

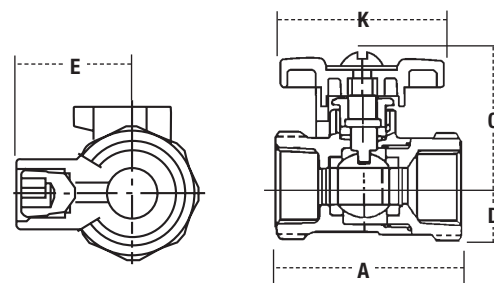
**GBV-FL** – Sizes: 1/2" x 3/8", 1/2" x 1/2", 3/4" x 15/16" (15 x 10, 15 x 15, 20 x 24mm), Female NPT x Flare connections and tee handle.

**GBV and GBV-FL** – rated 20°F – 125°F (-29° – 52°C). CSA approved @ 1/2, 2 and 5psi (3.4, 13.8, 34.5 kPa). UL listed @ 5psi (34.4 kPa).

For additional information, reference literature ES-GBV.



GBV



#### Dimensions — Weights

MODEL	SIZE (DN)		DIMENSIONS										WEIGHT	
			A		C		D		K		E			
	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>
GBV	3⁄8	10	1 13⁄16	45	1 3⁄8	37	3⁄8	10	1 3⁄4	45	—	—	.41	.19
GBV	1⁄2	15	2 3⁄16	56	1 3⁄8	37	3⁄8	10	1 3⁄4	45	—	—	.51	.23
GBV	3⁄4	20	2 7⁄16	60	1 7⁄16	42	9⁄16	15	1 3⁄4	45	—	—	.73	.33
GBV	1	25	2 7⁄8	73	1 9⁄16	40	1 3⁄16	20	1 3⁄4	45	—	—	.59	.27
GBV-FL	1⁄2 x 3⁄8	15 x 10	2 7⁄16	62	1 1⁄4	32	1⁄2	13	1 3⁄4	45	—	—	.53	.24
GBV-FL	1⁄2 x 1⁄2	15 x 15	2 1⁄2	64	1 1⁄4	32	1⁄2	13	1 3⁄4	45	—	—	.58	.26
GBV-FL	3⁄4 x 15⁄16	20 x 24	3 1⁄16	77	1 7⁄16	36	5⁄8	16	1 3⁄4	45	—	—	.86	.39

## Series GBV-1

### One Piece Gas Ball Valves

Sizes: 1/2" and 3/4" (15 and 20mm)

- Sizes 1/2" and 3/4" (15 and 20mm) NPT female connections.
- Blowout proof stem design.

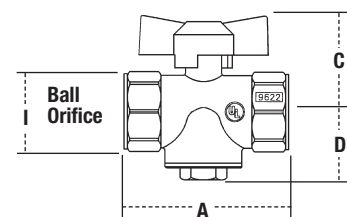
#### Features

- Blowout proof stem design
- One-piece body
- UL approved @5psi (34.4 kPa)
- Approved by CSA @ 1/2, 2 and 5psi (3.4, 13.8, 34.5 kPa). UL Listed @ 5psi (34.4 kPa).
- Capacity: 1/2" @ 295 ft.3/hr., 3/4" @ 760 ft.3/hr
- Tested under Standards Z21.15 IAS Requirement

For additional information, reference literature ES-GBV-1.



GBV-1



#### Dimensions — Weights

SIZE (DN)		DIMENSIONS						WEIGHT			
A		C		D		I					
<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>		
1/2	15	2 <sup>5</sup> / <sub>16</sub>	59	1 <sup>7</sup> / <sub>16</sub>	37	1 <sup>5</sup> / <sub>16</sub>	24	1/2	15	.41	.19
3/4	20	2 <sup>11</sup> / <sub>16</sub>	68	1 <sup>5</sup> / <sub>8</sub>	41	1 <sup>1</sup> / <sub>8</sub>	29	9/16	15	.65	.30

Note: This valve is not to be used as a mainline shutoff valve. Refer to literature ES-FBV-3 for mainline shutoff applications.

## Series LFB6000 and LFB6001 2-Piece, Standard Port, Bronze Ball Valves

Sizes: 1/4" – 4" (8 – 100mm)

### LEAD FREE

Lead Free\* Series LF6000 and LFB6001

2-Piece, Standard Port, Bronze Ball Valves

feature a blowout proof pressure retaining stem. The B6000, B6001, LFB6000 and LFB6001 standard port orifice ensures minimal pressure drop, while Durafill® and Uniseal® seats and chrome plated brass ball provide lasting service for a wide range of liquids and gases. LFB6000 and LFB6001 models are constructed using Lead Free\* brass and comply with Lead Free\* installation requirements.

### Features

- Durafill® (carbon/glass filled PTFE) seats for sizes 1/4" - 1/2" (8 – 15mm) and 1 1/4" - 4" (32 – 100mm) and Uniseal® (enhanced PTFE) seats for sizes 3/4" & 1" (20 & 25mm) for lasting service for a wide range of liquids and gases
- 316 stainless steel ball and stem
- Blowout proof, pressure retaining stem
- High cycle life reinforced PTFE stem packing seal and thrust washer
- Vinyl insulator on heavy duty, zinc-plated, carbon steel handles
- Low operating torque
- Adjustable stem packing gland
- Each valve factory tested

### Models

**LFB6000** – 1/4" - 4" (8 – 100mm) threaded NPT end connections (Lead Free\*).

**LFB6001** – 3/8" - 3" (10 – 80mm) solder end connections (Lead Free\*).

### Options

Suffix

LH – Locking lever handle

SH – 304 Stainless steel handle and nut

XH – Extended lever handle

TH – Tee handles 1/4" – 2" (8 – 50mm)

UL – UL approved as follows:

- Flammable Liquids (YRBX)
- LP Gas (YSDT)
- Compressed Gas (YQNZ)
- Natural/Manufactured Gas (YRPV)
- Fire Protection (HNFEX)
- For #1/#2 Fuel Oils (MHKZ)

### Pressure – Temperature

Temperature Range: 0°F – 450°F (-18°C – 232°C) @ 50psi (3.4 bars)

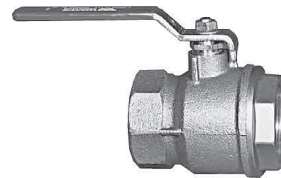
Pressure Range:

1/4" – 3" (8 – 80mm), 600psi (41 bar) WOG non-shock; 150psi (10 bar) WSP

4" (100mm), 400psi (28 bar) WOG non-shock; 125psi (8.6 bar) WSP

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

For additional information, reference literature ES-LFB6000.



LFB6000



LFB6001

## Series LFFBV

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

Sizes: ½" – 2" (15 – 50mm)

**LEAD FREE** Series LFFBV 2-Piece, Full Port, Lead Free\* Bronze Ball Valves comply with MSS-SP-110 and feature a blowout proof stem and virgin PTFE seats. The LFFBV full port design ensures maximum flow capacity and minimal pressure drop. The LFFBV features Lead Free\* construction to comply with Lead Free\* installation requirements.

#### Features

- Suitable for a full range of liquids and gases
- Minimal pressure drop due to full size ports
- Bottom loaded blowout proof stem
- Virgin PTFE stem packing seal, thrust washer and seat
- Vinyl insulator on heavy duty zinc plated carbon steel handles
- Fast quarter-turn open or close operation
- Excellent for throttling and balancing application of non-abrasive fluids where minimum flow is 20% to 100% of valve capacity
- Low operating torque
- Adjustable stem packing gland
- 600psi (41 bar) WOG, 125psi (8.6 bar) WSP

#### Pressure – Temperature

Temperature Range: 0°F – 350°F (-18°C – 177°C) @ 50psi (3.4 bar)

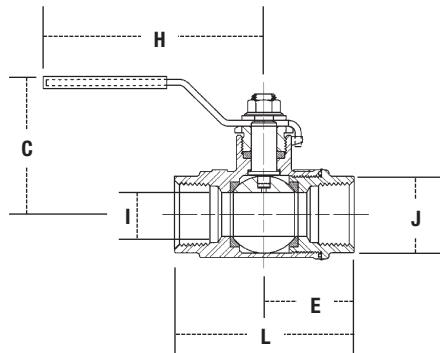
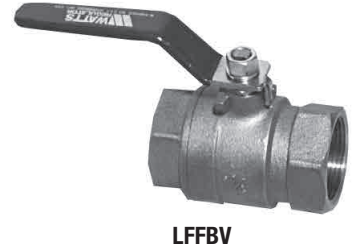
Maximum Working Pressure: 600psi (41 bar) WOG non-shock @ 100°F (38°C) and 125psi (8.6 bar) WSP

#### Models

**LFFBV** ½" – 2" (15 – 50mm) threaded end connections

For additional information, reference literature ES-LFFBV.

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



#### Dimensions – Weights

SIZE (DN)		DIMENSIONS								WEIGHT	
In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	lbs.	kgs.
½	15	1¼	44	1⅜	28	3⅝	86	½	13	.6	.3
¾	20	2⅛	52	1⅞	33	3⅝	92	¾	19	.8	.4
1	25	2½	64	1⅞	31	4⅝	111	1	25	1.5	.7
1¼	32	2⅞	67	1⅞	40	4⅝	111	1¼	32	2.5	1.1
1½	40	3⅛	79	1⅞	49	6⅝	156	1½	38	3.5	1.6
2	50	3½	89	2⅞	56	6⅝	156	2	51	5.5	2.5

## Series LFFBV-3C, LFFBVS-3C 2-Piece Full Port Brass Ball Valves

Sizes: 1/4" – 4" (8 – 100mm)

**LEAD FREE\*** Series LFFBV-3C 2-piece, full 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, LFFBVS-3C features Lead Free\* construction to comply with Lead Free\* installation requirements.

Standard material FBV-3C and FBVS-3C are also available for use in non-potable applications.

### Features

- Lead Free\* forged copper silicon alloy body and adapter
- Certified to NSF/ANSI standard 61/8
- CSA approved threaded valves only 1/4" – 3" (15 – 80mm)
- UL/FM approved threaded valves 1/2" – 2" (15 – 50mm)
- UL Listed solder valves 1/2" – 2" (15 – 50mm)
- Fluorocarbon elastomer stem O-ring prevents stem leaks
- Adjustable stem packing gland
- PTFE stem packing seal, thrust washer, and seats
- Bottom loaded blowout proof stem
- Machined chrome plated Lead Free\* brass ball
- Valves comply to MSS-SP-110 standard

### Models

**LFFBV-3C** – 1/4" – 4" (8 – 100mm), with threaded connections.

**LFFBVS-3C** – 1/2" – 3" (15 – 80mm), with solder connections.

### Pressure – Temperature

**Temperature Range:** -40°F 50 400°F (-40°C to 204°C)

#### Pressure Ratings:

**LFFBV-3C: Sizes 1/4" – 2" (8 – 50mm)** 600psi (41 bar) WOG non-shock, 150psi (10.3 bar) WSP

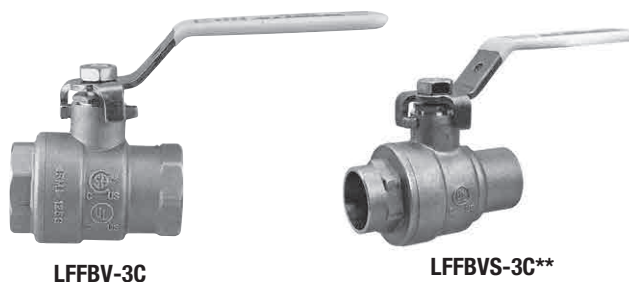
**Sizes 2 1/2" – 4" (65 – 100mm)** 400psi (27.5 bar) WOG non-shock, 125psi (8.6 bar) WSP

**LFFBVS-3C: Sizes 1/2" – 2" (15 – 50mm)** 600psi (41 bar) WOG non-shock, 150psi (10.3) WSP

**Sizes 2 1/2" – 3" (65 – 80mm)** 400psi (27.5 bar) WOG non-shock, 125psi (8.6 bar) WSP

### Dimensions – Weights

SIZE (DN)		DIMENSIONS								WEIGHT	
in.	mm	C		E		H		I		L	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/2	15	1 3/4	44	1 3/32	28	3 3/8	86	1/2	13	2 3/16	56
3/4	20	2 1/16	52	1 9/32	33	3 5/8	92	3/4	19	2 9/16	65
1	25	2 1/2	64	1 7/32	31	4 3/8	111	1	25	3 1/16	78
1 1/4	32	2 5/8	67	1 1/16	40	4 3/8	111	1 1/4	32	3 1/2	89
1 1/2	40	3 1/8	79	1 15/16	49	6 1/8	156	1 1/2	38	3 3/8	98
2	50	3 1/2	89	2 7/32	56	6 1/8	156	2	51	4 7/16	113
										lbs.	kg.



### Approvals

1/4" – 3" (8 – 80mm) LFFBV-3C  
Certified to NSF/ANSI standard 61/8\*\* NSF

1/2" – 3" (15 – 80mm) LFFBVS-3C  
Certified to NSF/ANSI standard 61/8\*\* NSF

\*\*Domestic cold water at 73°F (23°C)

1/2" – 2" (15 – 50mm) LFFBV-3C UL/FM approved  
1/2" – 1" (15 – 25mm) LFFBV-3C-TH

1/2" – 2" (15 – 50mm) LFFBVS-3C UL Listed  
1/2" – 1" (15 – 25mm) LFFBVS-3C-TH



### Gas Approvals (Threaded Valves Only)

1/4" – 3/8" (8 – 10mm) CSA 



1/2 psig, 5psig, (14, 34 kPa)

@ -40°F to 125°F (-40°C to 52°C)

1/2" – 2" (15 – 50mm) ASME B16.33, CSA   
ASME B16.44, CSA 

1/2 psig, 5psig, and 125psig (14, 34 and 862 kPa)  
@ -40°F to 125°F (-40°C to 52°C)

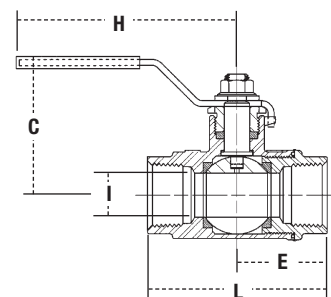
2 1/2" – 3" (65 – 80mm)

ASME B16.38, CSA   
ASME B16.44, CSA 

1/2 psig, 5psig, and 125psig (14, 34 and 862 kPa)  
@ -40°F to 125°F (-40°C to 52°C)

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

For additional information, refer to literature ES-LFFBV-3C. Refer to ES-FBV-3C for standard material ball valve.





## Series LFFBV-4, LFFBVS-4 2-Piece, Full Port, Brass Ball Valves

Sizes: 1/4" – 3" (8 – 80mm)

**LEAD FREE** Series LFFBV-4, LFFBVS-4 2-Piece, Full Port, Lead Free\* Brass Ball Valves are suitable for a full range of liquids and gases in residential and commercial applications.

These valves feature an adjustable packing for longer service life, a bottom loaded blow-out proof stem for safety, a fluorocarbon elastomer stem O-ring to prevent stem leaking at installation, and are rated to 600psi WOG/150psi WSP 1/4"–2" (8–50mm) and 400psi WOG/125psi WSP 2 1/2"–3" (65–80mm). The LFFBV-4, LFFBVS-4 features Lead Free\* construction to comply with Lead Free\* installation requirements.

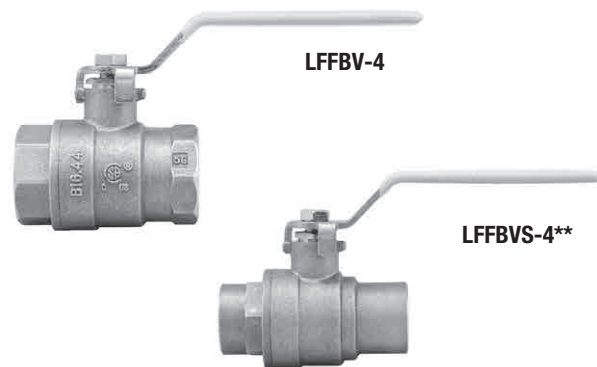
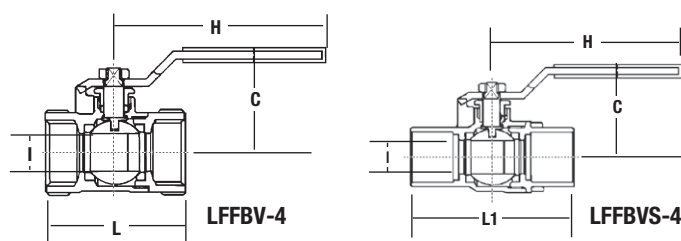
### Features

- CSA approved threaded valves only 1/4" – 3"
- Certified to NSF/ANSI Standard 61/8
- Metal-to-metal adapter body seal to eliminate adapter leaks after soldering
- Fluorocarbon elastomer stem O-ring prevents stem leaks
- Adjustable stem packing gland provides longer service life
- Bottom loaded blowout proof stem
- PTFE stem packing seal and seats
- Machined chrome-plated Lead Free\* brass ball
- Complies with MSS-SP-110

### Models

**LFFBV-4** – 1/4" – 3" (8 – 80mm) threaded end connections

**LFFBVS-4** – 1/2" – 3" (15 – 80mm) solder end connections\*\*



### Approvals

1/4" – 3" LFFBV-4



1/2" – 3" LFFBVS-4

Certified to NSF/ANSI Standard 61/8

\*\*Domestic cold water at 73°F

### Gas Approvals (Threaded Valves Only)

1/4" – 3"

CSA

1/2 psig, 5 psig

@ -40°F to 125°F



### Pressure – Temperature

Temperature Range: -40°F to 400°F (-40°C to 204°C)

#### Pressure Rating:

Sizes: 1/4" – 2" (8 – 50mm)

600psi (41.4 bar) WOG non-shock, 150psi (10.3 bar) WSP

Sizes: 2 1/2" – 3" (65 – 80mm)

400psi (27.6 bar) WOG non-shock, 125psi (8.6 bar) WSP

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

For additional information, refer to literature ES-LFFBV-4. Refer to ES-FBV-3C for standard material ball valve.

### Dimensions — Weights

SIZE (DN)		DIMENSIONS										WEIGHT			
in.	mm	C		H		I		L		L1		FBV-4		FBVS-4	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.	lbs.	kg.
1/4	8	1 13/16	46	3 7/16	87	7/16	11	1 3/4	45	—	—	0.4	0.16	—	—
3/8	10	1 13/16	46	3 7/16	87	1/2	13	1 3/4	44.7	—	—	0.4	0.17	—	—
1/2	15	1 13/16	46	3 7/16	87	1/2	13	2	50	2 1/16	53	0.4	0.18	0.4	0.16
3/4	20	2 1/16	53	3 15/16	101	1 1/16	18	2 1/4	57	2 5/8	67	0.6	0.27	0.5	0.24
1	25	2 1/16	62	4 1/4	108	1 5/16	24	2 13/16	71	3 1/16	83	1.1	0.49	1.0	0.44
1 1/4	32	2 1/2	64	4 1/4	108	1 3/16	31	3 1/8	80	3 11/16	93	1.5	0.68	1.4	0.64
1 1/2	40	3	76	5 5/16	135	1 7/16	37	3 7/16	88	4 3/16	107	2.3	1.06	2.1	0.95
2	50	3 1/2	89	6	153	2	51	4 1/8	105	5 5/16	135	3.7	1.69	3.8	1.74
2 1/2	65	4 1/16	104	7 3/8	188	2 1/2	64	5 5/16	134	6 3/16	158	7.9	3.57	7.2	3.27
3	80	4 1/2	114	7 3/4	197	3	76	6 1/8	155	7 1/4	184	11.8	5.37	11.0	4.99



## Series LFEMVII-6400SS

### Electric Motor Valves

Sizes ¼" – 3" (8 – 80mm)

**LEAD FREE** Combines our positive shutoff, quarter-turn ball valves with a highly efficient, reliable, electric operator. Compact, completely assembled.

#### Features

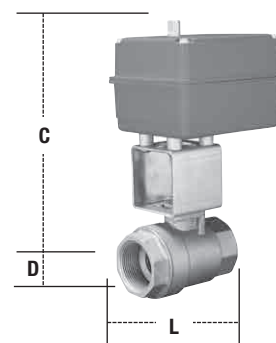
- Zone control valve for space heating with hot water or steam
- Zone control valve for air conditioning with chilled water

#### Pressure – Temperature

Steam working pressure: 100psi (6.9 bar), 600psi (41.4 bar) WOG for ¼" – 2" (8 – 50mm), 400psi (27.6 bar) WOG for 2½" and 3" (65 and 80mm).

Maximum operating temperature 150°F (66°C). 24VAC and 115 VAC models.

For additional information, reference literature ES-LFEMVII-6400SS.



LFEMVII-6400SS

#### Dimensions — Weights

MODEL	SIZE (DN)		DIMENSIONS						Cv Ratings		WEIGHT	
	in.	mm	C		D		L				lbs.	kgs.
† LFEMVII-6400SS-115-8	¼	8	7⅞	200	⅝	16	2¼	57	6.3		8.75	4.0
† LFEMVII-6400SS-115-8	⅜	10	7⅞	200	⅝	16	2¼	57	6.3		8.75	4.0
† LFEMVII-6400SS-115-8	½	15	7⅞	200	⅝	16	2¼	57	9.0		8.75	4.0
† LFEMVII-6400SS-115-35	¾	20	8	203	¾	19	2⅞	73	24.5		9.25	4.2
† LFEMVII-6400SS-24-40	1	25	8⅞	206	1	25	3⅜	86	45.5		10.25	4.6
† LFEMVII-6400SS-115-35	1¼	32	8⅞	225	2⅞	29	4	102	45.5		10.75	4.9
† LFEMVII-6400SS-24-40	1½	40	9⅞	232	1⅞	35	4⅜	111	73.0		11.75	5.3
† LFEMVII-6400SS-24-40	2	50	9½	241	1⅞	41	4⅞	124	102.0		14.25	6.5
†† LFEMVII-6400SS-115-25	2½	65	14	356	—	—	6½	165	200.0		23.00	10.4
†† LFEMVII-6400SS-115-25	3	80	14½	368	—	—	6⅞	175	300.0		27.50	12.5

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

† Sizes ¼" – 2" (8 – 50mm) are available 115-8, 115-35 and 24-40.

†† Sizes 2½" & 3" (65 & 80mm) also available 24 – 25. Contact your local Watts Agent.

## Series LFTP

### Temperature or Pressure Test Plugs

Sizes: 1/4" and 1/2" NPT (8, 15mm)

**LEAD FREE\*** Watts LFTP Series allows you to take pressure or temperature readings - quickly - and eliminate the need for leaving costly gauges or temperature recorders on the line. Can be used on various applications of gas, air, water or chemicals to 500psi (34 bar). The LFTP features Lead Free\* construction to comply with Lead Free\* installation requirements. Recommended maximum temperature ratings of Neoprene is 200°F (93°C), EPDM is 275°F (135°C) and Viton® is 400°F (204°C).

The pressure gauge adapter has a .076 diameter probe of 300 series stainless steel with Lead Free\* brass union nut. The probe operates in either 1/4" or 1/2" NPT sizes to accommodate insulated pipe applications.

#### Features

- Allows quick and efficient temperature or pressure readings
- Eliminates leaving expensive gauges or temperature recorders in line
- Economical means of balancing heating and air conditioning systems
- Eliminates shutting down system for temperature and pressure checks

#### Models

**Neoprene (Blue)** – Natural gas and petroleum products. Temperature range -40°F – 200°F (-40°C – 93°C)

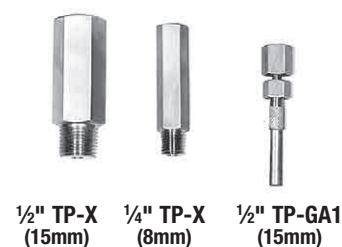
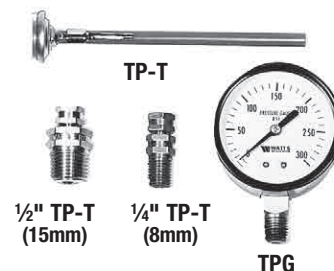
**EPDM (White)** – Hot and cold water service. Temperature range -40°F – 275°F (-40°C – 135°C)

**Viton® (Green)** – Hot oil service, chemical resistance. Temperature range -10°F – 400°F (-23°C – 204°C)

**Note 1:** Viton® Test Plugs are not recommended for use with probes larger than .080 diameter or continuous leakage may occur.

**Note 2:** Maximum temperature for TPG gauges is 185°F.

For additional information, reference literature ES-LFTP.



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

#### Dimensions — Weights

MODEL	ORDER NO.	SIZE	MATERIAL	MAX. TEMP./ PRESSURE	MASTER CARTON NO. PIECES	WEIGHT (LBS.)
LFTP-N (NEOPRENE)	0123012	1/4" NPT	LEAD FREE* BRASS	200°F-500PSI	180	17
LFTP-E (EPDM)	0123005	1/4" NPT	LEAD FREE* BRASS	275°F-500PSI	180	17
LFTP-V (VITON®)	0123008	1/4" NPT	LEAD FREE* BRASS	400°F-500PSI	180	17
LFTP-N (NEOPRENE)	0123013	1/2" NPT	LEAD FREE* BRASS	200°F-500PSI	72	14
LFTP-E (EPDM)	0123006	1/2" NPT	LEAD FREE* BRASS	275°F-500PSI	72	14
EXTENSIONS LFTP-X (3")	0123007	1/4"M X 1/4"F	LEAD FREE* BRASS		90	23
LFTP-X (3")	0123009	1/2"M X 1/2"F	LEAD FREE* BRASS		36	23
GAUGES LFDPG1-30	0121638	1/4" NPT	LEAD FREE* BRASS COPPER BOURDON TUBE SOCKET	185°F-30PSI	40	.06
LFDPG1-160	0121641	1/4" NPT		185°F-160PSI	40	.06
LFDPG1-300	0121643	1/4" NPT		185°F-300PSI	40	.06
GAUGE ADAPTORS LFTP-GA1	0123044	1/4" NPT	LEAD FREE* BRASS BODY 300 SERIES SS PROBE		90	23

## Series LFDPG1

### Pressure Gauges

Size: 2", 2½", 3", 4" (50, 65, 80, 100)

#### Bottom Entry Pressure Gauges

**LEAD FREE** Series LFDPG-1 Bottom-Entry Pressure Gauges are used in commercial, residential, and institutional HVAC applications. These gauges feature ABS polymer cases, Kostil Polymer windows, ¼" NPT connections, and copper alloy Bourdon tube sensing elements. The LFDPG-1 features Lead Free\* construction to comply with Lead Free\* installation requirements. Accuracy is ASME, Type B. Series LFDPG-1 gauges are available in various pressure-rating scales. The dual scale features PSI and kPa measurements.

#### Features

- ABS polymer case
- Kostil polymer window
- Copper alloy Bourdon sensing element
- Tin alloy welding
- ¼" Lead Free Brass NPT connection
- ASME Type "B" accuracy

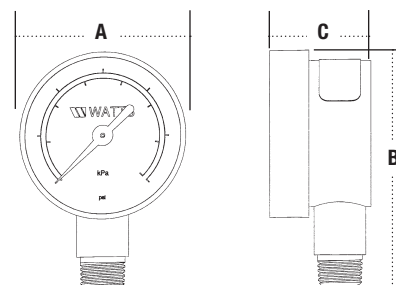
#### Pressure – Temperature

Working Temperature: -4°F to 176°F (-20°C to 80°C)

#### Dimensions — Weights



LFDPG1



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

For additional information, reference literature ES-LFDPG1.

	MODEL	SCALE	SIZE	DIMENSIONS						WEIGHTS	
				A		B		C		lbs.	kgs.
			in.	in.	mm	in.	mm	in.	mm		
LEAD FREE	LFDPG1-2	0 – 15psi 103 kPa	¼	2	50	2⅜	72	1⅞	28	.2	.09
	LFDPG1-2	0 – 60psi 413 kPa	¼	2	50	2⅜	72	1⅞	28	.2	.09
	LFDPG1-2	0 – 100psi 689 kPa	¼	2	50	2⅜	72	1⅞	28	.2	.09
	LFDPG1-2	0 – 160psi 1103 kPa	¼	2	50	2⅜	72	1⅞	28	.2	.09
	LFDPG1-2	0 – 200psi 1379 kPa	¼	2	50	2⅜	72	1⅞	28	.2	.09
	LFDPG1-2½"	0 – 15psi 103 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-2½"	0 – 30psi 207 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-2½"	0 – 60psi 413 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-2½"	0 – 100psi 689 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-2½"	0 – 160psi 1103 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-2½"	0 – 200psi 1379 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-2½"	0 – 300psi 2069 kPa	¼	2½	63	3⅝	85	1⅞	28	.3	.14
	LFDPG1-3	0 – 15psi 103 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-3	0 – 30psi 207 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-3	0 – 60psi 413 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-3	0 – 100psi 689 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-3	0 – 160psi 1103 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-3	0 – 200psi 1379 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-3	0 – 300psi 2069 kPa	¼	3	80	3⅞	99	1⅞	29	.4	.18
	LFDPG1-4	0 – 30psi 207 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23
	LFDPG1-4	0 – 60psi 413 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23
	LFDPG1-4	0 – 100psi 689 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23
	LFDPG1-4	0 – 160psi 1103 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23
	LFDPG1-4	0 – 200psi 1379 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23
	LFDPG1-4	0 – 300psi 2069 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23
	LFDPG1-4	0 – 600psi 4137 kPa	¼	4	100	4⅜	120	1¼	31	.5	.23

## Series LFDPG3

### Pressure Gauges

Dial Sizes: 1½", 2", 2½", 3" (40, 50, 65, 80mm)

#### Center Back-Entry Pressure Gauge

**LEAD FREE** Series LFDPG-3 Center Back-Entry Pressure Gauges are used in commercial, residential, and institutional HVAC applications. They feature ABS polymer cases, Kostil Polymer windows, 1/8" or 1/4" NPT connections, and copper alloy Bourdon tube sensing elements. The LFDPG-3 features Lead Free\* construction to comply with Lead Free\* installation requirements. Accuracy is ASME, Type B. Series LFDPG-3 gauges are available in various pressure rating scales. The dual scale features PSI and kPa measurements.

#### Features

- ABS polymer case
- Kostil polymer window
- Copper alloy Bourdon sensing element
- Tin alloy welding
- 1/8" or 1/4" NPT connections
- ASME Type "B" accuracy

#### Pressure – Temperature

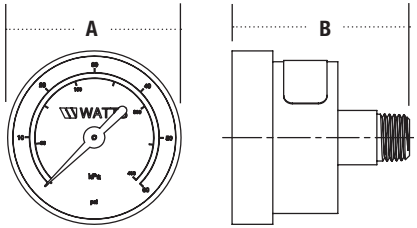
Working Temperature: -4°F to 176°F (-20°C to 80°C)

#### Dimensions — Weights

LEAD FREE	MODEL	SCALE		SIZE	DIMENSIONS				WEIGHTS	
					A		B			
				<i>in.</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>
	LFDPG3-1½	0 – 160psi	1103 kPa	⅛	1½	38	1 <sup>9</sup> / <sub>16</sub>	40	.1	.05
	LFDPG3-2	0 – 60psi	413 kPa	¼	2	50	1 <sup>15</sup> / <sub>16</sub>	49	.2	.09
	LFDPG3-2	0 – 160psi	1103 kPa	¼	2	50	1 <sup>15</sup> / <sub>16</sub>	49	.2	.09
	LFDPG3-2	0 – 200psi	1379 kPa	¼	2	50	1 <sup>15</sup> / <sub>16</sub>	49	.2	.09



LFDPG3



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

For additional information, reference literature ES-LFDPG-3.

Series LFDPG5

Pressure Gauges

Dial Sizes: 2" (50mm)

Top Entry Pressure Gauges

**LEAD FREE** LFDPG-5 Top-Entry Pressure Gauges are used in commercial, residential, and institutional HVAC applications. The LFDPG-5 features Lead Free\* construction to comply with Lead Free\* installations requirements. These gauges feature ABS polymer cases, Kostil Polymer windows, 1/8" or 1/4" NPT connections, and copper alloy Bourdon tube sensing elements. Accuracy is ASME, Type B. Series LFDPG-5 gauges are available in various pressure rating scales. The dual scale features PSI and kPa measurements.

Features

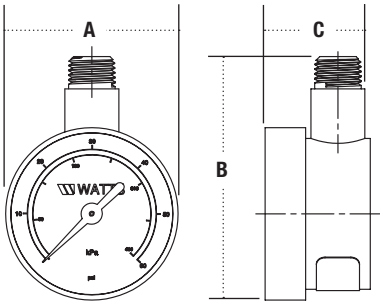
- ABS polymer case
- Kostil polymer window
- Copper alloy Bourdon sensing element
- Tin alloy welding
- 1/8" or 1/4" Lead Free Brass NPT connections
- ASME Type "B" accuracy

Pressure – Temperature

Working Temperature: -4°F to 176°F (-20°C to 80°C)



LFDPG5



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

For additional information, reference literature ES-LFDPG-5.

Dimensions — Weights

MODEL	SCALE		SIZE	DIMENSIONS						WEIGHT	
				A		B		C		lbs.	kgs.
			in.	in.	mm	in.	mm	in.	mm		
LFDPG5-2	0 – 160psi	1103 kPa	1/8	2	50	2 <sup>11</sup> / <sub>16</sub>	68	1 <sup>1</sup> / <sub>16</sub>	27	.15	.07
LFDPG5-2	0 – 160psi	1103 kPa	1/4	2	50	2 <sup>13</sup> / <sub>16</sub>	71	1 <sup>1</sup> / <sub>16</sub>	27	.2	.09

## Series LFDPTG3

### Center Back Entry Combination Pressure/ Temperature Gauges

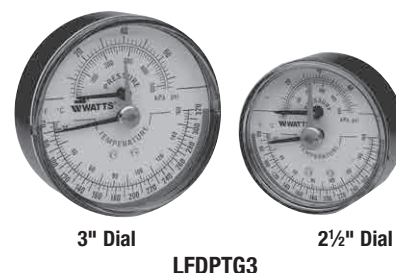
Dial Sizes: 2½" and 3" (65, 80mm)

**LEAD FREE\*** Series LFDPTG-3 Combination Pressure and Temperature Gauges are used in commercial, residential, and institutional HVAC applications. These gauges are center back entry type models with black enamel steel cases, Kostil Polymer windows, ½" NPT connections, copper alloy Bourdon tube pressure elements, and bimetal spiral springs. The LFDPTG-3 features Lead Free\* construction to comply with Lead Free\* installation requirements. Accuracy is ASME, Type B. Series LFDPTG-5 gauges are available in various pressure rating scales. The dual scale features PSI and kPa measurements.

#### Features

- Black enamel steel case
- Kostil polymer window
- Copper alloy Bourdon pressure element
- Bimetal spiral spring temperature element
- Tin alloy welding
- ½" Lead Free Brass NPT connection
- ASME Type "B" accuracy

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



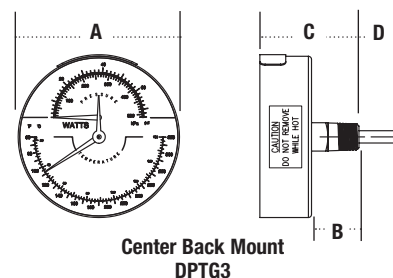
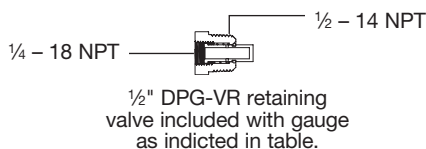
#### Pressure – Temperature

Working Temperature: 60°F – 320°F (20°C to 160°C)

#### Models

- LFDPTG-3 -** Center back entry  
**LFDPTG-3A -** Center back entry with extended temperature element  
**LFDPTG-3L -** Center back entry with extended mounting nut

For additional information, reference literature ES-LFDPTG-3.



#### Dimensions — Weights

LEAD FREE*	MODEL	SCALE		TEMP. RANGE		INCLUDES VR RETAINING VALVE	SIZE		DIMENSIONS								WEIGHTS		
									A		B		C		D				
				°F	°C		in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
	LFDPTG3-2½	0 – 50psi	340 kPa	60 – 320	15-160	Y	½	2½	64	1	25	1⅝	49	⅞	23	.5	13		
	LFDPTG3-2½	0 – 75psi	520 kPa	60 – 320	15-160	Y	½	2½	64	1	25	1⅝	49	⅞	23	.5	13		
	LFDPTG3-2½	0 – 200psi	1379 kPa	60 – 320	15-160	Y	½	2½	64	1	25	1⅝	49	⅞	23	.5	13		
	LFDPTG3-2½	0 – 75psi	520 kPa	60 – 320	15-160	N	¼	2½	64	1	25	1⅝	49	⅞	23	.5	13		
	LFDPTG3-3	0 – 50psi	340 kPa	60 – 320	15-160	Y	½	3	76	1	25	1⅝	49	⅞	23	.5	13		
	LFDPTG3-3	0 – 200psi	1379 kPa	60 – 320	15-160	Y	½	3	76	1	25	1⅝	49	⅞	23	.5	13		
	LFDPTG3A-2½	0 – 75psi	520 kPa	60 – 320	15-160	N	¼	2½	64	1	25	1⅝	49	2	51	.5	13		
	LFDPTG3A-3	0 – 75psi	520 kPa	60 – 320	15-160	N	¼	3	76	1	25	1⅝	49	2	51	.5	13		
	LFDPTG3L-2½	0 – 75psi	520 kPa	60 – 320	15-160	N	¼	2½	64	2	51	3⅝	100	1	25	.5	13		
	LFDPTG3L-3	0 – 75psi	520 kPa	60 – 320	15-160	N	¼	3	76	2	51	3⅝	100	1	25	.5	13		

## Series LFTBR Bottom Entry Bimetal Thermometers

Dial Size: 3" (80mm)

**LEAD FREE** Series LFTBR Bottom-Entry Bimetal Lead Free\* Thermometers are used in commercial, residential, and institutional HVAC applications. These thermometers feature chrome steel cases, Kostil polymer windows, Lead Free\* brass stems, brass amplifying movements, 1/2" NPT Lead Free\* brass snap-in thermowells, and bimetal spiral spring sensing elements. The LFTBR features Lead Free\* construction to comply with Lead Free\* installation requirements. The Series LFTBR thermometers are available in various temperature rating scales.

### Features

- Chrome steel case
- Kostil polymer window
- Lead Free\* Brass stem
- Brass amplifying movements
- 1/2" NPT Lead Free\* brass snap-in thermowells
- Bimetal spiral spring sensing element

### Dimensions — Weights

SIZE	MODEL	SCALE		PROBE SIZE		DIMENSIONS								WEIGHT			
<i>in.</i>		°F	°C	<i>in.</i>	<i>mm</i>	A		B		C		D		E		<i>lbs.</i>	<i>kgs.</i>
						<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>		
½	LFTBR-3-232-248	32 – 248	0 – 120	2	51	3	80	5⅝	137	2	51	1⅞	30	⅞	11	.4	.18
½	LFTBR-3-332-140	32 – 140	0 – 60	4	102	3	80	7⅞	186	3⅞	100	1⅞	30	⅞	11	.8	.36

## Series LFTB Center Back Entry Bimetal Thermometers

Dial Size: 1 1/2", 2 1/2", 3", 4" (40, 65, 80, 100mm)

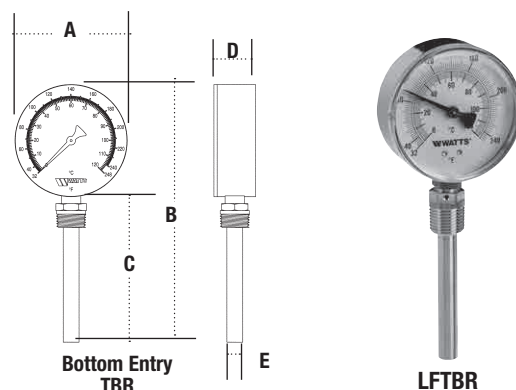
**LEAD FREE** Series LFTB Center Back-Entry Bimetal Lead Free\* Thermometers are used in commercial, residential, and institutional HVAC applications. These thermometers feature zinc plated steel cases, Kostil Polymer windows. They are furnished with a 1/2" NPT Lead Free\* brass thermowells with set screw, and bimetal spiral spring sensing elements. The LFTB features Lead Free\* construction to comply with Lead Free\* installation requirements. Series LFTB thermometers are available in various temperature rating scales, probe lengths and dual reading scale (°F, °C).

### Features

- Zinc plated steel case
- Kostil polymer window
- Furnished with 1/2" NPT Lead Free\* brass thermowells with set screw
- Bimetal spiral spring sensing element

### Dimensions — Weights

SIZE	MODEL	SCALE		PROBE SIZE		DIMENSIONS								WEIGHT			
						A		B		C		D		E			
<i>in.</i>		<i>°F</i>	<i>°C</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs</i>	<i>kgs</i>
½	½ LFTB-1½-132-176	32 – 176	0 – 80	1	25	1½	40	1⅞	40	1⅝	35	¾	10	⅞	11	0.4	0.18
½	½ LFTB-2½-232-140	32 – 140	0 – 60	2	51	2½	63	2⅝	60	1⅞	49	1	25	⅞	11	0.4	0.18
½	½ LFTB-2½-4 32-248	32 – 248	0 – 120	3	76	2½	63	2⅝	60	1⅞	49	1	25	⅞	11	0.4	0.18
½	½ LFTB-2½-232-248	32 – 248	0 – 120	4	102	2½	63	4⅝	111	3⅞	100	2⅞	75	⅞	11	0.4	0.18
½	½ LFTB-3-2-144	-22 – 122	30 – 49	2	51	3	80	2⅝	67	1⅞	49	1	25	⅞	11	0.4	0.18
½	½ LFTB-3-2 32-248	32 – 248	0 – 120	2	51	3	80	2⅞	64	1⅞	49	1	25	⅞	11	0.4	0.18
½	½ LFTB-3-4 32-140	32 – 140	0 – 60	4	102	3	80	4⅞	126	3⅞	100	2⅞	75	⅞	11	0.8	0.36
½	½ LFTB-4-2 32-248	32 – 248	0 – 120	2	51	4	100	2⅝	67	1⅞	49	1	25	⅞	11	1.2	0.54

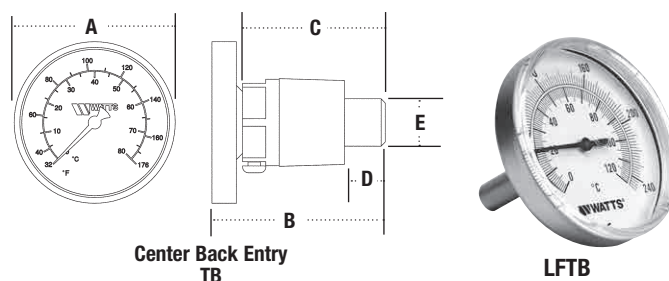


### Pressure – Temperature

Working Temperature: 32°F to 248°F (0°C to 120°C) or -22°F to 122°F (-30°C to 50°C)

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

For additional information, reference literature ES-LFTBR.



### Pressure – Temperature

Differs According to Model

Working Temperature Range: -22°F to 248°F (-30°C to 120°C)

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

For additional information, reference literature ES-LFTB.



## Series TBP

### Pipe-Mount Bimetal Thermometers

Dial Size: 2½" (65mm)

Type: Pipe Mount

Case: Steel, Black Enamel

Ring: Chromed Steel

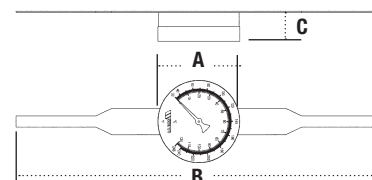
Window: Kostil Polymer

Sensing Element: Bimetal Spiral Spring

For additional information, reference literature ES-TBP.



TBP



### Dimensions — Weights

MODEL	SIZE (DN)		SCALE	FIXING PART	DIMENSIONS						WEIGHT	
	in.	mm			A		B		C		lbs.	kgs.
TBP-M-2½	½	15	32 – 248	spring	2½	63	—	—	7/8	22	.4	.18
TBP-F-2½	½	15	32 – 248	strip	2½	63	11	279	7/8	22	.4	.18

## Series TBC

### Bimetal Thermometers Chimney Mount Center Back Entry

Dial Size: 2½" (65mm)

Type: Chimney Mount-Center Back Entry

Case: Steel, Zinc Plate

Ring: Chromed Steel

Window: Glass

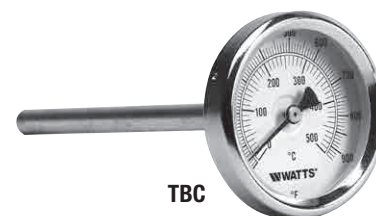
Stem: Brass

Sensing Element: Bimetal Spiral Spring

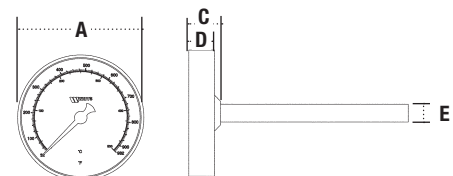
Stem: Zinc Plated Steel

Thermowell: None

For additional information, reference literature ES-TBC.



TBC



### Dimensions — Weights

MODEL	SCALE	PROBE SIZE		DIMENSIONS										WEIGHTS	
	°F	in.	mm	A		B		C		D		E		lbs.	kgs.
				in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
TBC-2½-4	32 – 932	4	102	2½	63	4⅞	111	½	13	⅝	16	¾	9	.5	.23
TBC-2½-6	32 – 932	6	152	2½	63	6⅞	160	½	13	⅝	16	¾	9	.5	.23
TBC-2½-8	32 – 932	8	203	2½	63	8⅞	211	½	13	⅝	16	¾	9	.5	.23
TBC-2½-12	32 – 932	12	305	2½	63	12¼	311	3⅞	100	2⅞	75	¾	9	.5	.23

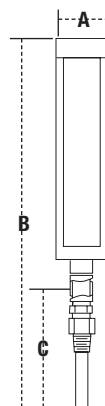
## Series LFTA

### Liquid Fill Thermometers

#### Adjustable Angle Thermometer

Scale Size: 9"

**LEAD FREE** Series LFTA Liquid-Fill, Adjustable Angle Lead Free\* Thermometers are used in commercial, residential, and institutional HVAC applications. These thermometers are sealed glass tube type models with a Valox case, glass lens, non-mercury sensing fluids, and a Lead Free\* brass thermowell. The LFTA features Lead Free\* construction to comply with Lead Free\* installation requirements. Accuracy is +/- 1 % of full scale. Series LFTA thermometers are available in various temperature rating scales.



LFTA

#### Features

- Valox case
- Glass lens
- Non-Mercury sensing fluids
- Lead Free\* Brass thermowell

#### Pressure – Temperature

Differs According to Model

Working Temperature Range: From -40°F to 300°F (From -40°C to 148°C)

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

For additional information, reference literature ES-LFTA.

#### Dimensions — Weights

MODEL	TEMP. RANGE	SIZE (DN)		STEM		DIMENSIONS								WEIGHT	
		in.	mm	in.	mm	A		B		C		D		lbs.	kg.
LFTA-9-3.5 0-12	0 - 120	3/4	20	3 1/2	89	2 3/8	60	17 3/8	442	5 5/8	144	1 1/16	26	1.65	.75
LFTA-9-3.5 0-160	20 - 160	3/4	20	3 1/2	89	2 3/8	60	17 3/8	442	5 5/8	144	1 1/16	26	1.65	.75
LFTA-9-3.5 30-240	30 - 240	3/4	20	3 1/2	89	2 3/8	60	17 3/8	442	5 5/8	144	1 1/16	26	1.65	.75

## Model LFTL

### Liquid Fill Angle Thermometers

Scale Size: 5"

#### LEAD FREE

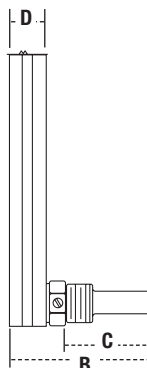
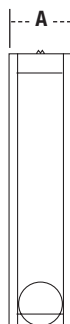
#### Features

- Lead Free\* construction to comply with Lead Free\* installation requirements
- Glass lens
- Non-Mercury sensing fluids
- Lead Free\* Brass 1/2" NPT thermowell

#### Temperature

Working Temperature Range: 32°F to 932°F  
(0°C to 500°C)

For additional information, reference literature ES-LFTL.



TL

#### Dimensions — Weights

MODEL	TEMP. RANGE	SIZE		STEM		DIMENSIONS								WEIGHT	
		in.	mm	in.	mm	A		B		C		D		E	
LFTL-5-2 30-240	30 - 240	1/2	20	1 5/16	33	1 3/8	34	3 1/8	79	1 7/8	48	1 3/16	21	5 13/16	147
														lbs.	kgs.

## Series FS10-C

### Paddle-Type Flow Switch Actuated by Liquid Flow for Automatic Control or Safety Devices

Used to monitor liquid flow in pipelines servicing water systems, heating systems, air conditioning and processing installations. An automatic control or safety device will start/stop a motor when a flow or no flow condition exists or actuate an alarm when flow is inadequate.

#### Features

- Segmented 3 in 1 paddle-beryllium copper
- Paddle adaptable for 1" – 3" (25 – 80mm) pipe
- Extended paddle for large pipe sizes up to 6" (150 mm)

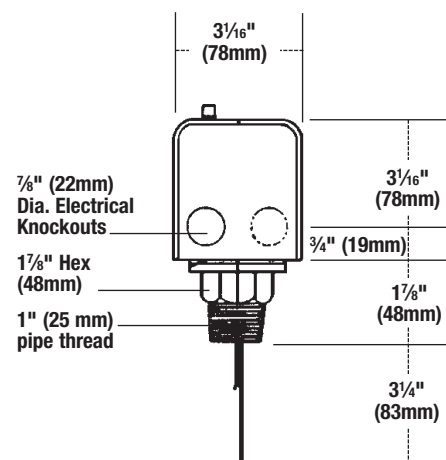
**Standards**  GENERAL SIGNALING EQUIPMENT LISTED 11S1

Underwriter's Laboratories Listed U.S.A. No. 11S1

#### Pressure – Temperature

Maximum Pressure: 175psi (12.1 bar).  
Maximum Temperature: 300°F (93°C). 1" (25mm) NPT connection

**FS10-C** – Standard unit  
**FS10-CL** – with indicator light



For additional information, reference literature ES-FS10-C.

## Series FS20

### Nema 4X Type Flow Switch

#### Sizes: For Pipes 1" - 6" (25 - 150mm)

Used as an automatic control or safety device. Provides accurate monitoring of flow in pipelines servicing water systems. Recommended for use in installations requiring Nema 4X watertight, dust-tight and corrosion-resistant enclosures. It can be wired to start or stop a motor when a flow or no flow condition exists or actuate an alarm.

#### Features

- Segmented 3 in 1 paddle - beryllium copper
- Paddle adaptable for 1" – 3" (25mm – 80mm) pipe
- Extended paddle for larger pipe size to 6" (150mm)

#### Pressure – Temperature

Maximum Pressure: 150psi (10.3 bar)  
Maximum Temperature: 300°F (149°C). Shipping weight 3 lbs (1.4 kg.).  
1" (25mm) NPT connection

For additional information, reference literature ES-FS20.



**FS20**

Series 77SM1  
Cast Iron, Wye-Pattern Strainers

Sizes 1/4" – 3" (8 – 80mm)

**LEAD FREE** The Series 77S Threaded, Wye-Pattern, Cast Iron Strainers are manufactured by Watts.

These strainers are designed to protect system components from dirt, rust, and other damaging debris in the piping system. Series 77S are used in steam and liquid applications. They are furnished with a machined seat that allows the screen to be self-aligning to assure a perfect fit. All sizes come with a PTFE gasket, threaded screen retainer cap, tapped blowdown connection, and an easily removable stainless steel screen. Blowdown plug is not furnished.

Features

- Cast iron body
- Wye-pattern
- Tapped retainer cap
- Threaded connections

Pressure – Temperature

Maximum Working Pressure:

400psi (27.6 bar) @ 150°F (66°C) WOG

250psi (17.2 bar) @ 406°F (208°C) WSP

For additional information, reference literature ES-77S-M1.

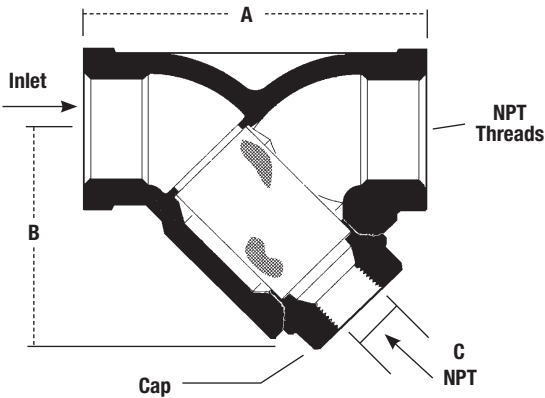


77S-M1

BAA/ARRA Compliant\*

\*This product complies with the Buy American Act and The American Recovery and Reinvestment Act. For more information, visit watts.com.

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



Dimensions – Weights

MODEL	SIZE		DIMENSIONS						WEIGHTS	
	in.	mm	A		B		C (NPT)		lbs.	kgs.
77S M1	1/4	8	3	76	2 1/4	57	3/8	10	1.3	.6
77S M1	3/8	10	3	76	2 1/4	57	3/8	10	1.3	.6
77S M1	1/2	15	3	76	2 1/4	57	3/8	10	1.3	.6
77S M1	3/4	20	3 5/16	84	2 1/4	62	1/2	15	1.7	.8
77S M1	1	25	4 1/2	114	3	76	3/4	20	3.7	1.7
77S M1	1 1/4	32	5 3/16	132	3 3/4	83	3/4	20	4.6	2.1
77S M1	1 1/2	40	5 7/8	149	3 13/16	97	3/4	20	6.4	2.9
77S M1	2	50	6 3/16	157	5 1/4	133	3/4	20	11.6	5.3
77S M1	2 1/2	65	8 3/16	208	5 5/8	130	1	25	15.5	7.0
77S M1	3	80	10 3/16	259	6 3/16	157	1 1/2	40	26.0	11.8

## Series LF777S, LFS777

### Wye-Pattern Lead Free\* Bronze Strainers

Sizes 1/4" – 4" (8 – 100mm)

**LEAD FREE** Series LF777, LFS777 Wye-Pattern Lead Free\* cast copper silicon alloy Strainers are designed to protect system components from dirt, rust and other damaging debris in the piping system. This series features a solid retainer cap with gasket. The LF777 and LFS777 features Lead Free\* construction to comply with Lead Free\* installation requirements.

#### Features

- Lead Free\* cast copper silicon alloy body
- Wye-pattern
- Solid retainer cap with gasket

#### Models

**LF777** – 1/4" – 4" (8 – 100mm) threaded connections

**LFS777** – 1/2" – 2" (15 – 50mm) solder connections

#### Pressure – Temperature

Maximum Working Pressure:

1/4" – 3" (8-75mm) 400psi (27.6 bar) WOG @ 210°F (99°C),  
125psi (8.6 bar) WSP @ 353°F (178°F)

4" (100mm) 300psi (20.7 bar) WOG @ 210°F (99°C),  
125psi (8.6 bar) WSP @ 353°F (178°F)

#### Dimensions – Weights

LF777

SIZE (DN)		DIMENSIONS				WEIGHT	
in.	mm	A		B		lbs.	kgs.
1/4	8	2 1/16	68	1 1/16	43	1.7	0.77
3/8	10	2 1/16	68	1 1/16	43	1.7	0.77
1/2	15	3	76	2	51	1.7	0.77
3/4	20	3 5/16	84	2 5/16	59	1.7	0.77
1	25	4 1/2	114	2 5/16	59	2.7	1.22
1 1/4	32	5 1/8	130	3 1/8	79	3.0	1.36
1 1/2	40	5 7/8	149	3 3/4	95	4.0	1.81
2	50	6 3/16	157	4 7/8	124	7.4	3.36
2 1/2	65	8 1/8	206	4 15/16	125	12.0	5.44
3	75	10 1/8	257	6 11/16	170	24.0	10.90
4	100	13	325	10 1/2	267	41.0	18.60

LFS777

SIZE (DN)		DIMENSIONS				WEIGHT	
in.	mm	A		B		lbs.	kgs.
1/2	15	3 3/8	86	2 1/16	52	1.5	0.68
3/4	20	3 3/4	95	2 1/16	63	1.6	0.73
1	25	5	127	3	76	2.5	1.13
1 1/4	32	5 5/8	143	3 1/4	82	2.8	1.25
1 1/2	40	6 7/16	164	3 13/16	97	4.0	1.81
2	50	7 1/2	191	4 5/8	118	7.4	3.39



LF777



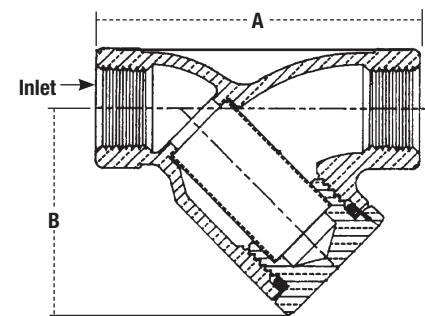
LFS777

#### BAA/ARRA Compliant\*\*

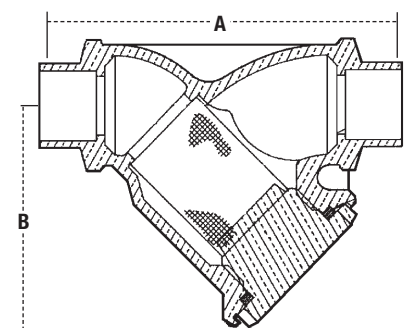
\*\*This product complies with the Buy American Act and The American Recovery and Reinvestment Act. For more information, visit watts.com.

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

For additional information, reference literature ES-LF777.



LF777



LFS777