Submittal Package

Viega ProPress® Valves

Project _____ **Date** _____

Engineer _____ **Contractor** _____

Submitted by _____

Approved by _____ **Date** _____ **Approved by** _____ **Date** _____

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This document is subject to updates. For the most current Viega technical literature please visit www.viega.us.

Viega products are designed to be installed by licensed and trained plumbing and mechanical professionals who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

1 Tech Data Sheet

ProPress Zero Lead Ball Valve Model 2971.1ZL

Description

The two-piece zero lead bronze ball valve is equipped with a full port, zero lead bronze body. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Features

- 316 stainless steel ball
- Eco Brass® blowout-proof stem
- Lockable metal handle
- Reinforced PTFE seats
- Smart Connect technology

Ratings

- 250 CWP
- Temperature Range: 0°F - 250°F
- Max. Operating Pressure: 250 psi

Approvals

- IAPMO/ANSI Z1157
- NSF®-61-372
- NSF®-U.P. Code
- Listed by NSF to Commercial Hot

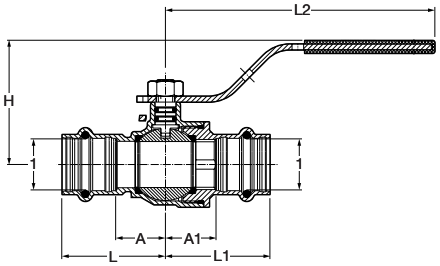
Zero Lead identifies Viega products meeting the lead-free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Component	Material
Body	Zero Lead Bronze C87700
Ball	316 Stainless Steel
Seat	Reinforced PTFE
Stem	Eco Brass C69300
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

ProPress Ball Valve 2971.1ZL Insulation Thickness

Size (in)	Insulation max w no ext (in)	Insulation max w ext (in)	Extension Part No.
½	0.50	2.15	23443
¾	0.55	2.20	23443
1	0.60	2.30	23445
1¼	0.69	2.39	23445
1½	1.25	3.35	23447
2	1.31	3.41	23447

Viega ProPress Ball Valve Zero Lead Bronze P x P - Model 2971.1ZL



Part No.	Size (in) 1	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
79920	½	0.75	0.75	1.57	1.57	4.57	1.97
79925	¾	0.85	0.87	1.75	1.77	4.57	2.09
79930	1	1.02	1.06	1.93	1.96	5.75	2.46
79935	1¼	1.14	1.12	2.17	2.15	5.75	2.67
79940	1½	1.46	1.25	2.87	2.67	6.12	3.02
79950	2	1.73	1.47	3.31	3.05	6.12	3.32

Tech Data Sheet

ProPress Zero Lead Ball Valve Model 2971.1XL

Description

The two-piece zero lead brass ball valve is equipped with a full port, plated ball. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during testing.

Features

- Chromium-plated ball
- Lockable metal handle
- PTFE seats
- Smart Connect technology

Ratings

- 250 CWP
- Temperature Range: 0°F - 250°F
- Max. Operating Pressure: 250 psi

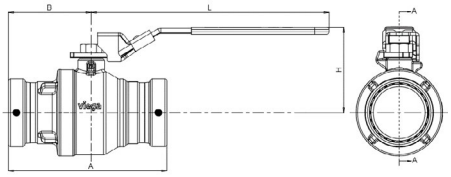
Approvals

- IAPMO/ANSI Z1157
- NSF®-61-372
- NSF®-U.P. Code
- Listed by NSF to Commercial Hot

Zero Lead identifies Viega products meeting the lead-free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Component	Material
Body	Brass C27453
Ball	Low Lead Brass Chromium Plated
Seat	PTFE
Stem	Brass C27450
Stem Seals	EPDM
Nut	Zinc-Plated Steel
Handle	Geomet-Plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Viega ProPress Ball Valve Zero Lead Brass P x P - Model 2971.1XL



Part No.	Size (in)	A (in)	B (in)	H (in)	L (in)	Weight (lbs)
78300	2½	7.47	3.91	4.02	11.22	7.0
78305	3	8.15	4.17	4.37	11.22	9.7
78310	4	9.72	4.99	5.12	11.22	17.5

Tech Data Sheet

ProPress Zero Lead Ball Valve Model 2971.3ZL

Description

The two-piece zero lead bronze ball valve is equipped with a full port, zero lead bronze body. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Zero Lead identifies Viega products meeting the lead-free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Component	Material
Body	Zero Lead Bronze C87700
Ball	316 Stainless Steel
Seat	Reinforced PTFE
Stem	316 Stainless Steel
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Features

- 316 stainless steel ball
- 316 stainless steel blowout-proof stem
- Lockable metal handle
- Reinforced PTFE seats
- Smart Connect technology

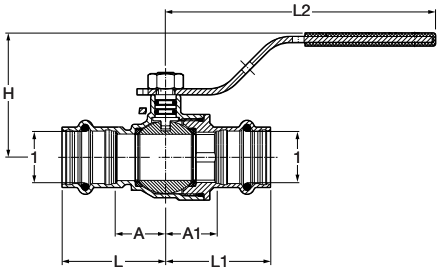
Ratings

- 250 CWP
- Temperature Range: 0°F - 250°F
- Max. Operating Pressure: 250 psi

Approvals

- IAPMO/ANSI Z1157
- NSF®-61-372
- NSF®-U.P. Code
- Listed by NSF to Commercial Hot

Viega ProPress Ball Valve Zero Lead Bronze P x P - Model 2971.3ZL



Part No.	Size (in) 1	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
79923	½	0.75	0.75	1.57	1.57	4.57	1.97
79928	¾	0.85	0.87	1.75	1.77	4.57	2.09
79933	1	1.02	1.06	1.93	1.96	5.75	2.46
79938	1¼	1.14	1.12	2.17	2.15	5.75	2.67
79943	1½	1.46	1.25	2.87	2.67	6.12	3.02
79948	2	1.73	1.47	3.31	3.05	6.12	3.32

Tech Data Sheet

ProPress Zero Lead Ball Valve Model 2971.4ZL

Description

The two-piece zero lead bronze ball valve is equipped with a full port, zero lead bronze body. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Zero Lead identifies Viega products meeting the lead-free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Component	Material
Body	Zero Lead Bronze C87700
Ball	316 Stainless Steel
Seat	Reinforced PTFE
Stem	Eco Brass C69300
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Features

- 316 stainless steel ball
- Eco Brass® blowout-proof stem
- Lockable metal handle
- Reinforced PTFE seats
- Smart Connect technology
- Press x FPT connections

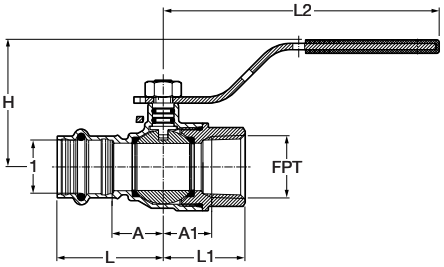
Ratings

- 250 CWP
- Temperature Range: 0°F - 250°F
- Max. Operating Pressure: 250 psi

Approvals

- IAPMO/ANSI Z1157
- NSF®-61-372
- NSF®-U.P. Code
- Listed by NSF to Commercial Hot

Viega ProPress Ball Valve Zero Lead Bronze P x FPT - Model 2971.4ZL



Part No.	Size (in) 1 x FPT	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
79970	½ x ½	0.73	0.66	1.57	1.20	4.57	1.97
79975	¾ x ¾	0.85	0.79	1.75	1.35	4.57	2.09
79980	1 x 1	1.02	0.98	1.93	1.63	5.75	2.46

Tech Data Sheet

ProPress Zero Lead Ball Valve Model 2971.6ZL

Description

The two-piece zero lead bronze ball valve is equipped with a full port, zero lead bronze body. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Zero Lead identifies Viega products meeting the lead-free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Component	Material
Body	Zero Lead Bronze C87700
Ball	316 Stainless Steel
Seat	Reinforced PTFE
Stem	Eco Brass C69300
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Features

- 316 stainless steel sall
- Eco Brass® blowout-proof stem
- Lockable metal handle
- Reinforced PTFE seats
- Smart Connect technology
- Press x garden hose connections
- Hose cap is full pressure rated

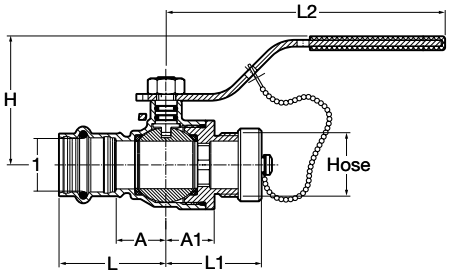
Ratings

- 250 CWP
- Temperature Range: 0°F - 250°F
- Max. Operating Pressure: 250 psi

Approvals

- IAPMO/ANSI Z1157
- NSF®-61-372
- NSF®-U.P. Code
- Listed by NSF to Commercial Hot

Viega ProPress Ball Valve Zero Lead Bronze P x Hose - Model 2971.6ZL



Part No.	Size (in) 1 x Hose	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
79875	½ x ¾	0.75	0.79	1.57	1.56	4.57	1.99
79876	¾ x ¾	0.85	0.79	1.75	1.56	4.57	2.10

Tech Data Sheet

ProPress Ball Valve Model 2973

Description

Viega ProPress model 2973 is a two-piece, full port ball valve intended for hydronic and non-potable applications. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Component	Material
Body	Brass C37700
Ball	Chrome-plated Brass
Seat	Reinforced PTFE
Stem	Brass C37700
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Features

- Chrome-plated brass ball
- Blowout-proof stem
- Reinforced PTFE seats
- Smart Connect technology
- ProPress connections

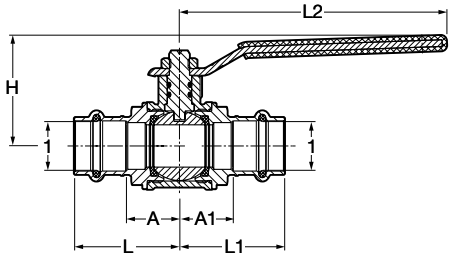
Ratings

- 250 CWP
- Temperature range: 0°F - 250°F
- Max. operating pressure: 200 psi

Approvals

- Conforms to MSS SP-110
- NSF®-U.P. Code
- IAPMO/ANSI Z1157

Viega ProPress Ball Valve Bronze/Brass P x P - Model 2973



Part No.	Size (in) 1	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
24000	½	0.83	0.83	1.58	1.58	3.94	1.69
24005	¾	0.95	0.95	1.86	1.86	4.72	1.97
24010	1	1.18	1.18	2.09	2.09	4.72	2.13
24015	1¼	1.29	1.29	2.31	2.31	6.22	2.87
24020	1½	1.39	1.39	2.81	2.81	6.22	3.11
24025	2	1.85	1.85	3.43	3.43	6.22	3.46

Model 2973 is for use in non-potable applications. For NSF-61G compliant valves refer to Viega ProPress models 2971.1ZL and 2971.3ZL.

Tech Data Sheet

ProPress Ball Valve Model 2973.1

Description

Viega ProPress model 2973.1 is a two-piece, full port ball valve intended for hydronic and non-potable applications. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Features

- Chrome-plated brass ball
- Blowout-proof stem
- Reinforced PTFE seats
- Smart Connect technology
- Press x FPT connections

Ratings

- 250 CWP
- Temperature range: 0°F - 200°F
- Max. Operating Pressure: 250 psi

Approvals

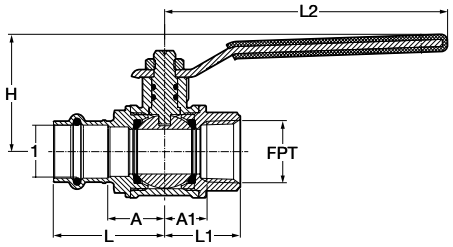
- Conforms to MSS SP-110
- NSF®-U.P. Code
- IAPMO/ANSI Z1157

ProPress Ball Valve 2973.1 Insulation Thickness

Size (in)	Insulation max w no ext (in)	Insulation max w ext (in)	Extension Part No.
½	0.59	2.81	23449
¾	0.58	3.04	23451
1	0.55	3.01	23451

Component	Material
Body	Brass C37700
Ball	Chrome-plated Brass
Seat	Reinforced PTFE
Stem	Brass C37700
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Viega ProPress Ball Valve Bronze/Brass P x FPT - Model 2973.1



Part No.	Size (in) 1 x FPT	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
24030	½ x ½	0.83	0.63	1.58	1.16	3.94	1.69
24035	¾ x ¾	0.95	0.71	1.86	1.26	4.72	1.97
24040	1 x 1	1.18	0.93	2.09	1.59	4.72	2.13

Model 2973.1 is for use in non-potable applications. For NSF-61G compliant valves refer to Viega ProPress model 2971.4ZL.

Tech Data Sheet

ProPress Ball Valve Model 2973.3

Description

Viega ProPress model 2973.3 is a two-piece, full port ball valve intended for hydronic and non-potable applications. The ball valve features EPDM sealing elements, EPDM stem seals and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Features

- Chrome-plated brass ball
- Blowout-proof stem
- Reinforced PTFE seats
- Smart Connect feature
- Press x garden hose connections
- Hose cap is full pressure rated

Ratings

- 250 CWP
- Temperature range: 0°F - 200°F
- Max. Operating Pressure: 250 psi

Approvals

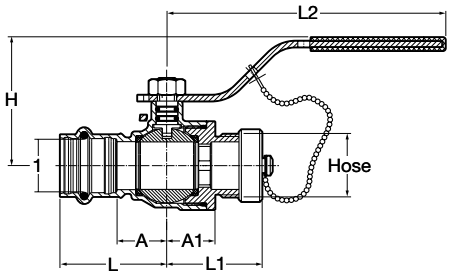
- Conforms to MSS SP-110
- NSF®-U.P. Code
- IAPMO/ANSI Z1157

ProPress Ball Valve 2973.3 Insulation Thickness

Size (in)	Insulation max w no ext (in)	Insulation max w ext (in)	Extension Part No.
½	0.68	2.90	23449
¾	0.75	3.21	23451

Component	Material
Body	Brass C37700
Ball	Chrome-plated Brass
Seat	Reinforced PTFE
Stem	Brass C37700
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Viega ProPress Ball Valve Bronze/Brass P x Hose - Model 2973.3



Part No.	Size (in) 1 x Hose	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
24090	½ x ¾	0.83	0.85	1.58	1.30	3.89	1.67
24095	¾ x ¾	0.95	0.94	1.86	1.39	4.72	1.97

Tech Data Sheet

ProPress 316 Ball Valve Model 4070

Description

The ProPress 316 two-piece ball valve can be used in a variety of commercial and industrial applications. The EPDM sealing elements make it the perfect choice for potable water systems while the durable 316 stainless steel allows it to stand up to some of the harshest environments found in power plants, refineries, utilities, and mills. The double EPDM stem seals prevent leaks without the need for constant adjustment. The 316 stainless steel ball valves are available in sizes ranging from ½" to 2" and are equipped with Viega's unique Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Features

- ProPress press ends
- 316 stainless steel ball and stem
- Full port, two piece design
- Blowout-proof stainless steel stem
- Reinforced PTFE seats
- Lockable metal handle

Ratings

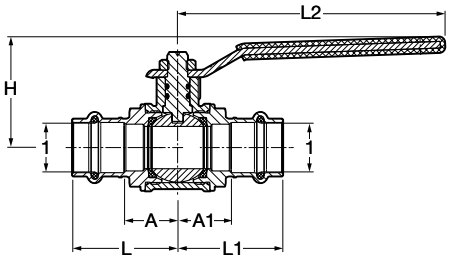
- 250 CWP
- Temperature Range: 0˚F to 250˚F
- Max. Operating Pressure: 200 psi

Approvals

- Conforms to MSS SP-110
- NSF-61 Annex G
- NSF-372

Component	Material
Body	316 Stainless Steel
Ball	316 Stainless Steel
Seat	Reinforced PTFE
Stem	316 Stainless Steel
Stem Seals	EPDM
Nut	Zinc-plated Steel
Handle	Zinc-plated Steel
Handle Cover	Polyvinyl
Sealing Element	EPDM

Viega ProPress 316 Ball Valve - Model 4070



Part No.	Size (in) 1	A (in)	A1 (in)	L (in)	L1 (in)	L2 (in)	H (in)
81080	½	0.89	1.17	1.64	1.92	5.55	2.44
81085	¾	1.06	1.36	1.97	2.26	5.55	2.52
81090	1	1.18	1.57	2.09	2.48	5.55	2.68
81095	1¼	1.45	1.72	2.48	2.75	6.10	3.09
81100	1½	1.83	1.81	3.26	3.24	6.10	3.34
81105	2	1.97	2.18	3.54	3.78	6.10	3.66

Tech Data Sheet

ProPress 316 3-Piece Ball Valve Model 4370.8

Description

The ProPress 316 3-piece ball valve is equipped with a full port, 316 stainless steel 3-piece body. The ball valve features FKM sealing elements, PTFE stem seals, lockable metal handle and Viega's Smart Connect® technology for easy identification of unpressed connections during pressure testing.

Features

- 316 stainless steel ball
- Blowout-proof 316 stainless steel stem
- 304 stainless steel locking handle
- Adjustable packing nut
- Reinforced PTFE seats
- Smart Connect technology
- ISO 5211 mounting pad

Ratings

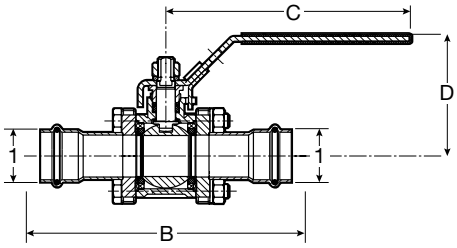
- 250 CWP
- Max. operating pressure: 200 psi
- Temperature range: 14°F to 250°F

Approvals

- Conforms to MSS SP-110

Valve Size (in)	Valve Body Bolt & Nut Size		Bolt Torque +/- 5		Valve Stem Nut Size (mm)	Stem Nut	
			ft/lbs	(Nm)		(ft/lbs)	(Nm)
½	M8 x 45	M8	7.5	(10)	AF 16	7.5	10
¾	M8 x 56	M8	7.5	(10)	AF 18	7.5	10
1	M8 x 65	M8	15	(20)	AF 21	11	15
1¼	M10 x 75	M10	15	(20)	AF 22	11	15
1½	M10 x 90	M10	22.5	(30)	AF 24	18.5	25
2	M10 x 100	M10	22.5	(30)	AF 24	18.5	25

Viega ProPress 316 3-Piece Ball Valve Stainless Steel P x P - Model 4370.8



Part No.	Size (in)	B (in)	C (in)	D (in)
S/S 316	1			
85132	½	5.41	3.99	2.28
85133	¾	5.79	5.88	2.85
85134	1	6.00	5.88	2.93
85136	1¼	6.61	7.54	3.27
85137	1½	7.26	7.54	3.57
85138	2	9.67	7.54	3.89

Tech Data Sheet

Flash Shower Valve Models 2842.5 and 2842.6

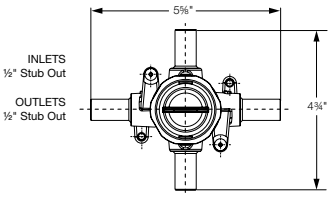
Description

The Flash Shower Valve body features cast DZR brass construction with a pre-installed flush plug with stainless steel retaining ring with flats, back-to-back capability, and ½" copper stub-out connections. Available with screwdriver stops. It has a plaster guard designed as a rough-in guide and for use as a thin wall mounting support.

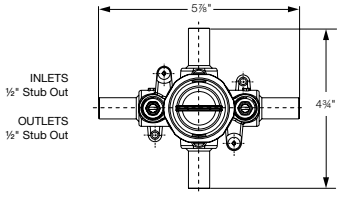
Features

- Choice of connections: copper stub-outs can accommodate ProPress© and PureFlow© connections.
- Cast DZR brass valve body: durable, ideal material for prolonged contact with water. Resists corrosion due to high chloride and pH levels in water.
- Flat back: allows valve to be mounted flush against cross brace for easy and solid installation.
- Flush plug: allows valve body to be tested and flushed without the presence of the valve cartridge. Can be tested using Flush Plug with air (100 psi) or water (300 psi).
- Stainless steel retaining ring with flats: secures test cap/cartridge in place and eliminates need for screws. Flats make it simple to loosen ring for quick, easy insertion/removal of test cap/cartridge.
- Back-to-back capability: hot and cold can be reversed quickly and easily.
- Exclusive plaster guard: plaster guard is designed to protect valve and act as a guide during installation. It can serve as mounting support for thin-wall installations.
- Wide rough-in range: from 1¾" to 2¾" from finished wall to the back of the valve.

Shower Valves with Stub-outs for Press Connection Fittings

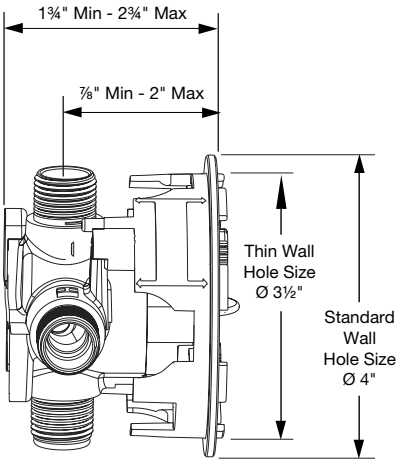


Model 2842.5

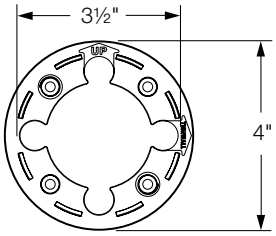


Model 2842.6

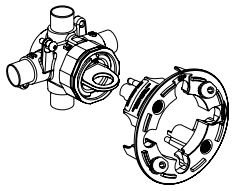
Side View



Front View



Plaster Guard

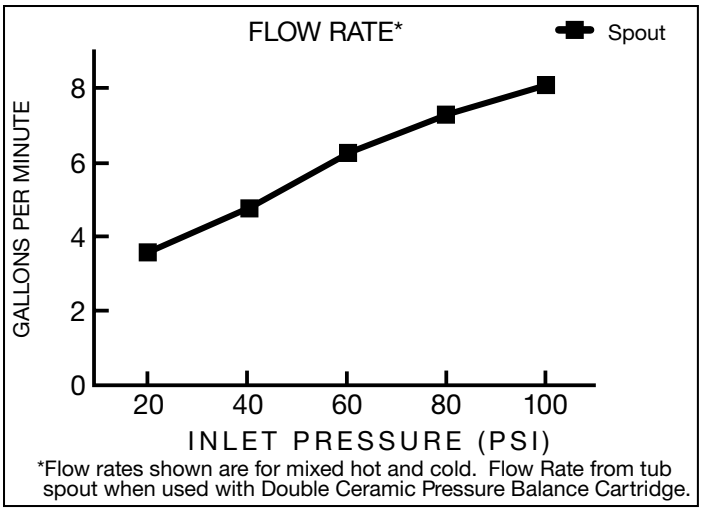


Codes and Standards

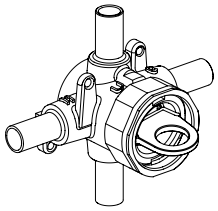
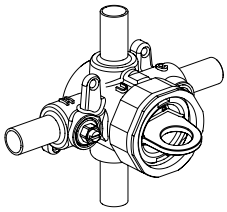
This product meet or exceed the following codes and standards:

- ASSE 1016
- ASME A112.18.1016
- CSA B125.16
- ASME A112.18.1
- CSA B125.1

Compatible only with American Standard pressure balance tub/shower, shower only, and valve only trims. Visit www.americanstandard-us.com for more information.



*Flow rates shown are for mixed hot and cold. Flow Rate from tub spout when used with Double Ceramic Pressure Balance Cartridge.

STUB-OUT FOR PRESS-CONNECT FITTINGS	
RU102	**RU102SS**
	
½" Stub-Out Inlets/ Outlets	½" Stub-Out Inlets/ Outlets
	Screwdriver Stops

Tech Data Sheet

ProPress Butterfly Valve Model 2973.81

Description

- Ductile iron body
- Lug body is polyurethane coated
- Anti-blowout stainless steel shaft
- Downstream dismantling allowed
- EPDM liner
- Sizes 2½" and 3" - 4 bolt pattern flanges
- Size 4" - 8 bolt pattern flanges
- Class 150

Features

- Spheroidal graphite cast iron body
- Lug body is polyurethane coated
- 316 stainless steel disc
- Anti-blowout stainless steel shaft
- Downstream dismantling allowed
- Bi-directional, can be mounted in all positions
- ISO 5211 flange type F05 flat head
- Conforms to MSS-SP67 and MSS-SP25

Ratings

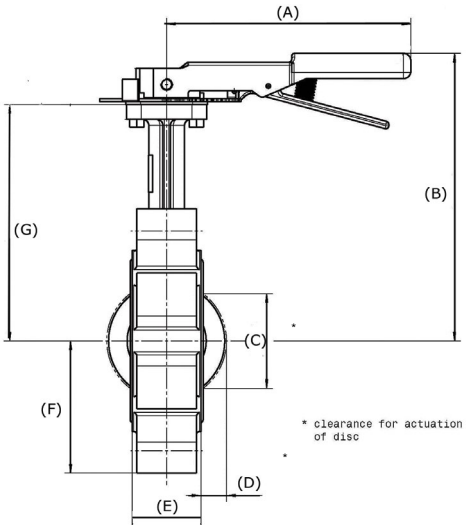
- Temperature Range: 0° – 250°F
- Max. Operating Pressure: 200 PSI

Standard Variants

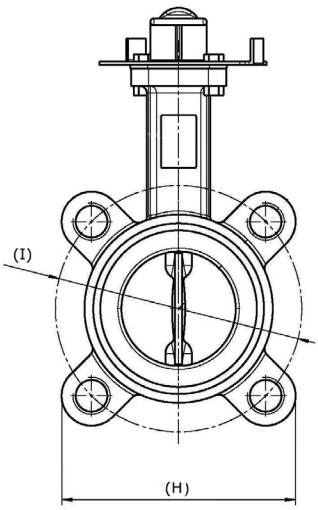
- Pneumatic Actuator: Actair / Dynactair
- Electric Actuator: Various Manufacturers
- Limit Switches: Monitor
- Positioner: Siemens

Weight	
Size (in)	**lbs.**
2½	7.78
3	8.46
4	12.79

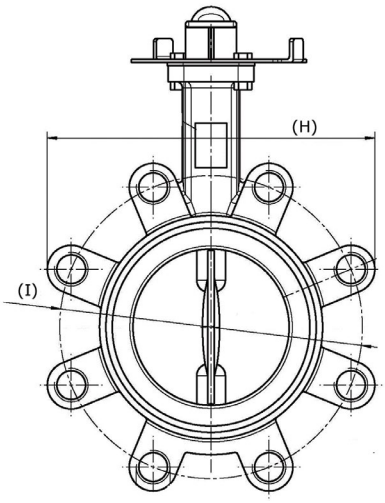
The indicated weights are those of the unit valve plus handle.



Size 2½" and 3"



Size 4"



Butterfly Valve Dimensions										
Part No.	Size (in)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)
22074	2½	6.50	7.40	2.17	0.43	1.81	2.64	5.35	5.20	5.51
22075	3	6.50	7.64	2.80	0.67	1.81	2.82	5.59	7.01	5.98
22076	4	9.06	8.47	3.54	0.91	2.05	3.62	6.42	8.27	7.48

Operating Torque Data	
Size (in)	ft./lbs.
2½	22.12
3	29.50
4	44.25

Lubricated

The safety coefficient to define the adapted actuator is included in the torque value.

Bolt and Washer Grade 5 Zinc-Plated Blue Chromated	
Part No.	Size (in)
19768	⅝" x 1½
19773	⅝" x 1⅝
19778	⅝" x 1¾

ASME B18.2.1 -- 1996

Hydraulic Characteristics	
Size (in)	Cvo
2½	280
3	475
4	760

Bolt Tightening	
Part No.	Recommended Max. Bolt Torque (ft/lbs)
19768	75
19773	
19778	

Tech Data Sheet

ProPress Zero Lead Bronze Check Valve Model 2974ZL

Zero Lead identifies Viega products meeting the lead free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Description

- Zero Lead bronze body
- ProPress ends
- Spring check
- EPDM seals
- 0.5 psi cracking pressure

Features

- Low pressure loss
- Silent operation
- Stainless steel spring
- Smart Connect® technology

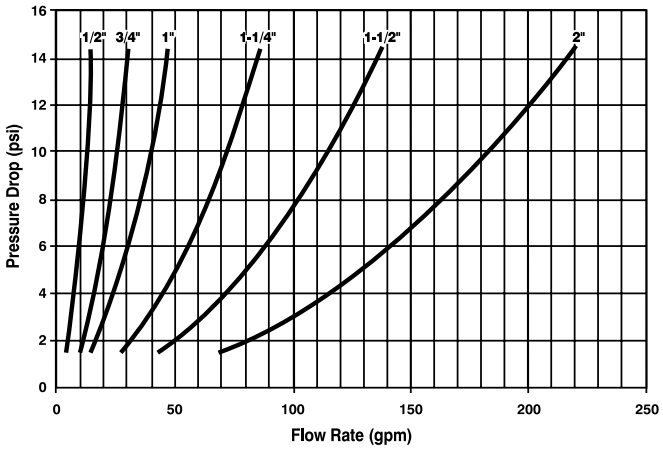
Ratings

- 400 WOG
- Max. Operating Pressure: 200 psi
- Temperature Range: 0°F - 200°F

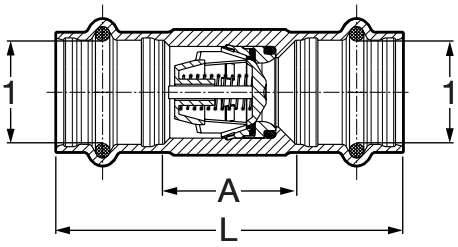
Approvals

- Conforms to MSS SP-80
- NSF-61 Annex G

Pressure Drop



Viega ProPress Check Valve Zero Lead Bronze P x P - Model 2974ZL



Part No.	Size 1	A (in)	L (in)
79035	½	0.87	2.52
79040	¾	1.14	2.95
79045	1	1.34	3.15
79050	1¼	1.69	3.74
79055	1½	2.09	4.92
79060	2	2.56	5.71

Tech Data Sheet

ProPress Automatic Recirculation Regulating Valve Model 2981.3ZL

Description

The ProPress automatic recirculation regulating valve provides automatic balancing of domestic hot water recirculation return lines. Balancing based on hot water return temperature allows the recirculation system to run more efficiently with smaller pipes and circulators.

The integrated bypass ensures that the thermal element is always sensing representative water and throttles flow accordingly. With low (I) and high (II) bypass settings, the same valve can balance hot water riser returns or hot water returns from smaller fixture groups.

Features

- Automatic, thermostatic balancing
- Zero lead body
- Integrated isolation (ball) valve
- Adjustable bypass.
- Adjustable temperature setpoint

Operating Parameters

- 150 CWP
- Setting range: 105°F to 150°F
- Factory setting: 135°F
- Maximum operating temperature: 180°F
- Maximum operating pressure: 150 psi

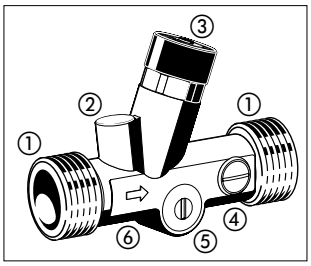
Listings and Certifications

- NSF-61-372
- Listed by NSF to Commercial Hot

Zero lead identifies Viega products meeting the lead free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Wetted Components

Component	Material
Body	Zero Lead Bronze C65680
Bonnet	Zero Lead Brass C69300
Disc	316 Stainless Steel
Springs	316 Stainless Steel
Plug	Zero Lead Brass C69300
Bypass Plug	PTFE Coated Zero Lead Bronze C65680
Ball	316 Stainless Steel
Ball Seats	POM
Sealing Elements	EPDM



1. 1" male BSP connections
2. Threaded temperature port with threaded plug
3. Temperature setpoint adjustment
4. Integrated isolation ball valve
5. Adjustable bypass
6. Flow direction arrow

Setting The Bypass Flow Control

Incoming temperature [°F]	Temperature setting [°F]							Cv (Δp 1 psi) [gpm]	
	150	**140**	**135**	**130**	**120**	**110**	**100**	**I**	**II**
	150	140	135	130	120	110	100	0.049	0.069
	141.5	135.5	130.5	125.5	115.5	105.5	95.5	0.298	0.319
	136.5	131	126	121	111	101	91	0.47	0.491
	132	126.5	121.5	116.5	106.5	96.5	86.5	0.714	0.735
	127.5	122	117	112	102	92	82	0.928	0.949
	123	117.5	112.5	107.5	97.5	87.5	77.5	1.221	1.242
	118.5	113	108	103	93	83	73	1.362	1.383
	114	108.5	103.5	98.5	88.5	78.5	68.5	1.498	1.519
	109.5	104	99	94	84	74	-	1.532	1.618
	105	99.5	94.5	89.5	79.5	69.5	-	1.71	1.731
	100.5	95	90	85	75	-	-	1.72	1.741
	96	90.5	85.5	80.5	70.5	-	-	1.741	1.762
								1.783 **t. D.**	1.803
	Thermal disinfection 158°F							0.832	

I *cV of bypass only (valve closed) 0.049 gpm*
II *cV of bypass only (valve closed) 0.069 gpm*
t. D. *thermal disinfection 0.832 gpm*

Tech Data Sheet

ProPress Valves and Accessories by Model

Zero Lead Bronze Ball Valve - P x P
Model 2971.1ZL

Part No.	Size (in)
79920	½
79925	¾
79930	1
79935	1¼
79940	1½
79950	2

- Smart Connect technology
- 250 CWP
- Body: Two Piece Zero Lead Bronze
- Ball: Full Port 316 Stainless Steel
- Stem: Blowout-Proof Eco Brass
- Sealing Element: EPDM
- Listings: APMO/ANSI Z1157, NSF®-61-372, NSF®-U.P. Code, Listed by NSF to Commercial Hot
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

Zero Lead Brass Ball Valve - P x P
Model 2971.1XL

Part No.	Size (in)
78300	2½
78305	3
78310	4

- Smart Connect technology
- 250 CWP
- Body: Two Piece Zero Lead Brass
- Ball: Chromium-Plated Brass
- Locking Handle
- Sealing Element: EPDM
- Listings: APMO/ANSI Z1157, NSF®-61-372, NSF®-U.P. Code, Listed by NSF to Commercial Hot
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

Zero Lead Bronze Ball Valve - P x P
Model 2971.3ZL

Part No.	Size (in)
79923	½
79928	¾
79933	1
79938	1¼
79943	1½
79948	2

- Smart Connect technology
- 250 CWP
- Body: Two Piece Zero Lead Bronze
- Ball: Full Port 316 Stainless Steel
- Stem: Blowout-Proof 316 Stainless Steel
- Sealing Element: EPDM
- Listings: APMO/ANSI Z1157, NSF®-61-372, NSF®-U.P. Code, Listed by NSF to Commercial Hot
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

Zero Lead Bronze Ball Valve - P x FPT
Model 2971.4ZL

Part No.	Size (in)
79970	½
79975	¾
79980	1

- Smart Connect technology
- 250 CWP
- Body: Two Piece Zero Lead Bronze
- Ball: Full Port 316 Stainless Steel
- Stem: Blowout-Proof Eco Brass
- Sealing Element: EPDM
- Listings: APMO/ANSI Z1157, NSF®-61-372, NSF®-U.P. Code, Listed by NSF to Commercial Hot
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

Zero lead identifies Viega products meeting the lead free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content.)

Zero Lead Bronze Ball Valve - P x Hose
Model 2971.6ZL

Part No.	Size (in)
79875	½
79876	¾

- Smart Connect technology
- 250 CWP
- Body: Two Piece Zero Lead Bronze
- Ball: Full Port 316 Stainless Steel
- Stem: Blowout-Proof Eco Brass
- Sealing Element: EPDM
- Listings: APMO/ANSI Z1157, NSF®-61-372, NSF®-U.P. Code, Listed by NSF to Commercial Hot
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

Bronze Ball Valve - P x P - Model 2973

Part No.	Size (in)
24000	½
24005	¾
24010	1
24015	1¼
24020	1 ½
24025	2

- Smart Connect technology
- 250 CWP
- Body: Brass Body with Bronze Connections
- Ball: Full Port Chrome Plated Brass
- Stem: Blowout-Proof Brass
- Sealing Element: EPDM
- Listings: U.P. Code, IAPMO/ANSI Z1157
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 200°F Operating Temperature

Bronze Ball Valve - P x FPT
Model 2973.1

Part No.	Size (in)
24030	½
24035	¾
24040	1

- Smart Connect technology
- 250 CWP
- Body: Brass Body with Bronze Connections
- Ball: Full Port Chrome Plated Brass
- Stem: Blowout-Proof Brass
- Sealing Element: EPDM
- Listings: U.P. Code, IAPMO/ANSI Z1157
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 200°F Operating Temperature

Bronze Ball Valve - P x Hose
Model 2973.3

Part No.	Size (in)
24090	½
24095	¾

- Smart Connect technology
- 250 CWP
- Body: Brass Body with Bronze Connections
- Ball: Full Port Chrome Plated Brass
- Stem: Blowout-Proof Brass
- Sealing Element: EPDM
- Listings: U.P. Code, IAPMO/ANSI Z1157
- Conforms to: MSS SP-110
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 200°F Operating Temperature

316 Stainless Steel Ball Valve - P x P
Model 4070

Part No.	Size (in)
81080	½
81085	¾
81090	1
81095	1¼
81100	1 ½
81105	2

- Smart Connect technology
- Body: 316 Stainless Steel
- Ball: 316 Stainless Steel Fullport
- Stem: Blow-out Proof 316 Stainless Steel
- Sealing Element: EPDM
- Listings: NSF-61-372
- Conforms to: MSS SP-110
- Parameters:
  200 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

316 Stainless Steel Three Piece Ball Valve
P x P - Model 4370.8

Part No.	Size (in)
85132	½
85133	¾
85134	1
85136	1¼
85137	1 ½
85138	2

- Smart Connect technology
- Body: Three Piece 316 Stainless Steel
- Ball: 316 Stainless Steel Fullport
- Stem: Blow-out Proof 316 Stainless Steel
- Sealing Element: FKM
- Conforms to: MSS SP-110
- Parameters:
  200 psi Maximum Working Pressure
  0°F to 250°F Operating Temperature

Shower Valve - Model 2842.5

Part No.	Size (in)
93516	½

- ½" copper stub outs
- DZR brass construction
- Pre-installed flush plug
- Plaster guard
- Can test and flush without valve cartridge
- Flat back for flush mounting
- Back-to-back capability so hot and cold can be reversed easily

Shower Valve - Model 2842.6

Part No.	Size (in)
93517	½

- ½" copper stub outs
- DZR brass construction
- Pre-installed flush plug
- Plaster guard
- Can test and flush without valve cartridge
- Flat back for flush mounting
- Back-to-back capability so hot and cold can be reversed easily
- With screwdriver stops

Semi Lug Butterfly Valve - Model 2873.81

Part No.	Size (in)
22074	2½
22075	3
22076	4

- Body: Semi-Lug Spheroidal Cast Iron
- Disc: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Handle: 10 Position Spring Locking Handle
- Mounting Flange: ISO 5211
- Liner: EPDM
- Conforms to: MSS SP 67, AWWA C504-6
- Parameters:
  250 psi Maximum Working Pressure
  0°F to 200°F Operating Temperature

Inline Check Valve - Model 2974ZL

Part No.	Size (in)
79035	½
79040	¾
79045	1
79050	1¼
79055	1 ½
79060	2

- Smart Connect technology
- Body: Zero Lead Bronze
- Check Valve Insert: POM Bubble Tight
- Cracking Pressure: 0.5 PSIG
- Sealing Element: EPDM
- Listings: UPC NSF-61-372
- Parameters:
  200 psi Maximum Working Pressure
  0°F to 180°F Operating Temperature

Automatic Recirculation Regulating Valve Zero Lead - Model 2981.3ZL

Part No.	Size (in)
79901	1 x 1

- Automatic, thermostatic balancing
- Zero lead body
- Integrated isolation (ball) valve
- Adjustable temperature setpoint
- 1" BSP male threads
- NSF-61-372

Ball Valve Lockable Metal Handle - Model 2970.8

**Use with Model 4070*

Part No.	Size (in)
22143	½, ¾, 1
22163	1¼, 1½, 2

Ball Valve Lockable Metal Handle - Model 2971.8

**Use with Models 2971.1ZL, 2971.3ZL, 2971.4ZL and 2971.6ZL*

Part No.	Size (in)
22170	½ & ¾
22172	1 & 1¼
22174	1½ & 2

Ball Valve Metal Handle - Model 2973.8

**Use with Models 2973, 2973.1, and 2973.3*

Part No.	Size (in)
22176	½
22178	¾ & 1
22180	1¼, 1½, 2

Flange Bolt Set - Model 2959.7

**Use with Model 2873.81*

Part No.	Size (in)
19748	1, 1¼, 1½
19758	2, 2½, 3
19763	4

Ball Valve Stem Extension Kit - Model 2971.96

**Use with ProPress Models 2971.1ZL, 2971.3ZL, 2971.4ZL and 2971.6ZL and PureFlow® Model 2870ZL*

Part No.	Size (in)
23443	½ & ¾
23445	1 & 1¼
23447	1½ & 2

Ball Valve Stem Extension Kit - Model 2970.96

**Use with Model 4070*

Part No.	Size (in)
23442	½, ¾, 1
23444	1¼, 1½, 2

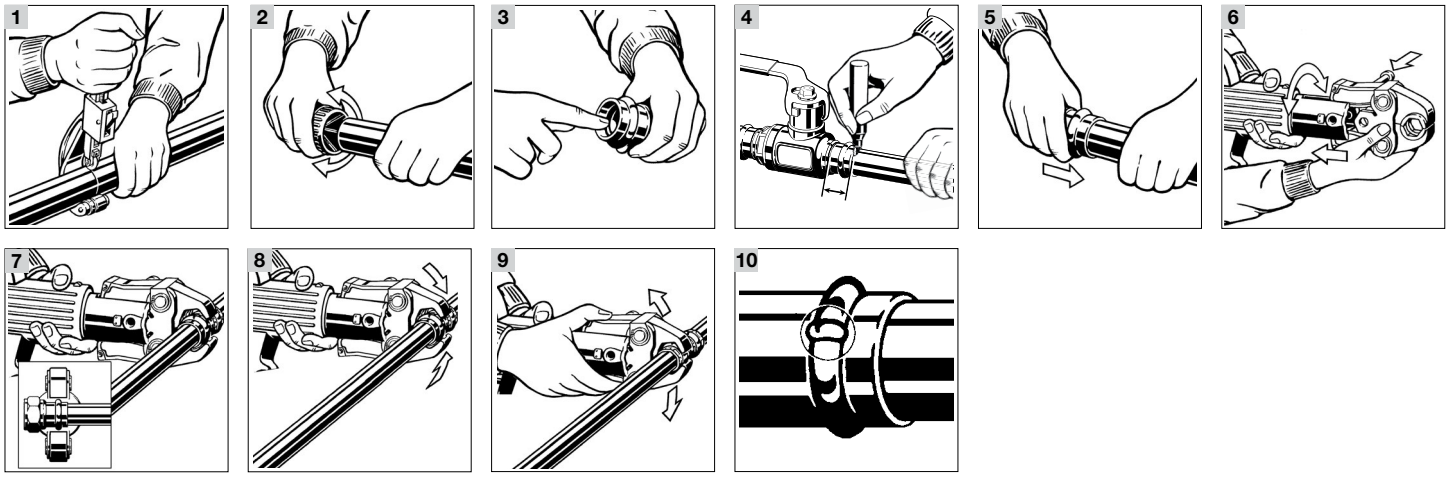
Ball Valve Stem Extension Kit - Model 2973.96

**Use with Models 2973, 2973.1, and 2973.3*

Part No.	Size (in)
23449	½
23451	¾ & 1
23453	1¼ to 2

2 Product Instructions

ProPress Ball Valves ½" to 2"



Viega ProPress Ball Valves ½" to 2"

For Hard Copper Tubing in ½" to 2" and Soft Copper Tubing in ½" to 1¼".

DANGER!
Read and understand all instructions for installing Viega ProPress fittings. Failure to follow all instructions may result in extensive property damage, serious injury, or death.

1 Cut the tube square using a displacement-type cutter or fine toothed saw.

Cut tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.

2 Remove burr from inside and outside of tubing to prevent cutting the sealing element.

For applications requiring a different sealing elements, remove the factory installed sealing element and replace with the applicable sealing element. See *Changing Sealing Elements Product Instructions* on the viega.us website.

3 Check the sealing element for correct fit. Do not use oils or lubricants. Use only Viega ProPress sealing elements.

4 Mark the proper insertion depth as indicated by the ProPress Insertion Depth Chart. Improper insertion depth may result in an improper seal.

ProPress Insertion Depth Chart

Tube Size (in)	Insertion Depth (in)
½	¾
¾	⅞
1	⅞
1¼	1
1½	1 7/16
2	1 9/16

Copper tubing must be free of surface imperfections, including metal stamped print lines, before a ProPress fitting is installed.

5 While turning slightly, slide ball valve onto tubing to the marked depth. End of tubing must contact stop.

6 Insert appropriate Viega ProPress jaw into the press tool and push in, holding pin until it locks in place.

7 Open the jaw and place at right angle on the valve. Visually check insertion depth using mark on tubing.

Warning!
Keep extremities and foreign objects away from press tool during pressing operation to prevent injury or incomplete press.

8 Hold trigger on press tool until press jaws have fully engaged the valve. Jaws will automatically release after a full press is made.

9 After pressing, open the jaw and remove the press tool.

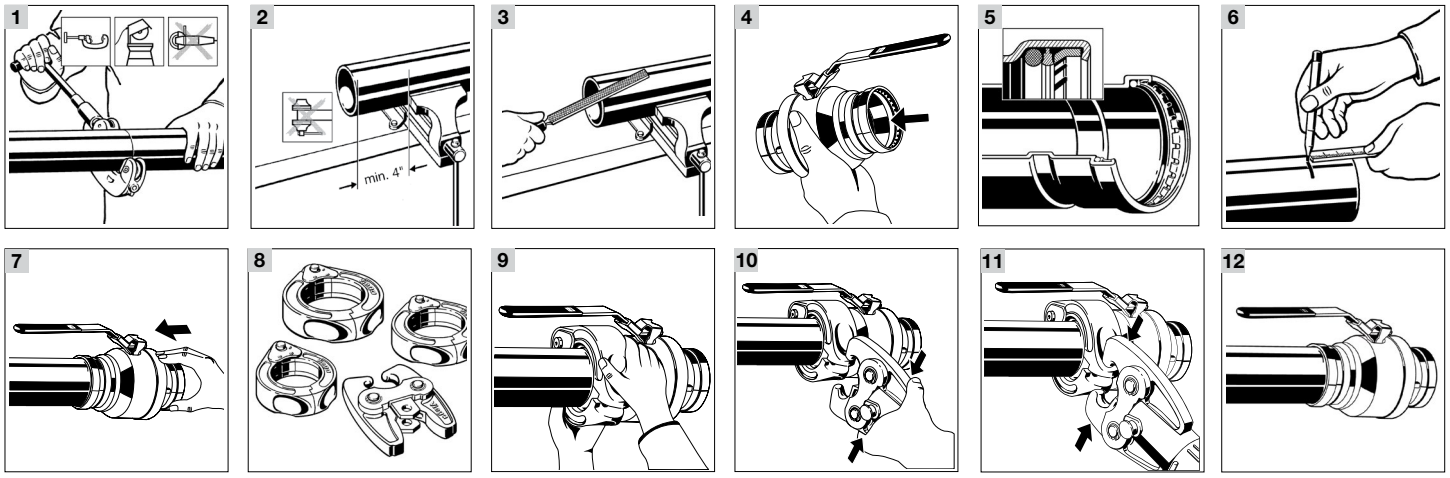
Only ball valves marked with NSF-61 and NSF 372 are allowed for use in potable water systems.

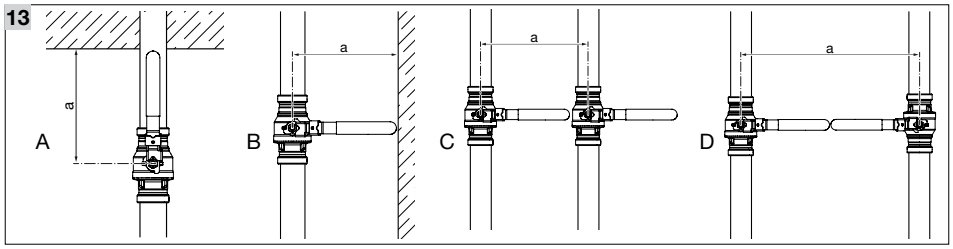
10 Pressure testing with Smart Connect®: Unpressed connections are located by pressurizing the system with air or water. When testing with water the proper pressure range is 15 psi to 85 psi. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. If testing with compressed air, use an approved leak-detect solution. Following a successful pressure test, the system may be pressure tested up to 200 psi with air or up to 600 psi with water.

Testing for unpressed connections using Smart Connect is not a replacement for pressure testing requirements of local codes and standards.

Product Instructions

ProPress Ball Valves 2½" to 4"





Viega ProPress Ball Valves 2½" to 4"

For Hard Copper Tubing

Viega products are designed to be installed by licensed and trained plumbing and mechanical professionals who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

DANGER!
Read and understand all instructions for installing ProPress fittings. Failure to follow all instructions may result in extensive property damage, serious injury, or death.

1 Cut copper tubing at right angles using displacement-type cutter or fine-toothed steel saw.

2 Keep end of tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.

3 Remove burr from inside and outside of tubing to prevent cutting sealing element.

4 Check seal and grip ring for correct fit. Ensure sealing element is free of cuts and damage. Do not use oils or lubricants.

For applications requiring a different sealing elements, remove the factory installed sealing element and replace with the applicable sealing element. See Changing Sealing Elements Product Instructions on the viega.us website.

5 Illustration demonstrates proper fit of grip ring, separation ring and sealing element.

6 Mark proper insertion depth as indicated by the ProPress 2½" to 4" Insertion Depth Chart. Improper insertion depth may result in an improper seal.

ProPress 2½" to 4" Insertion Depth Chart

Tube Size	2½"	3"	4"
Insertion Depth	1 11/16"	1 15/16"	2⅜"

Copper tubing must be free of surface imperfections, including metal stamped print lines, before a ProPress fitting is installed.

7 While turning slightly, slide press fitting onto tubing to the marked depth. End of tubing must contact stop.

8 ProPress 2½" to 4" fitting connections must be performed with rings that are compatible with fittings. See Tool Operator's Manual for proper tool instructions.

CAUTION!
Use only rings that are compatible with ProPress 2½" to 4" fittings.
- Use of incompatible rings will result in an improper connection.
- Do not mix actuators and rings from different manufacturers.
- Do not use rings intended for 2½" to 4" Bronze fittings.

9 Open XL-C ring and place at right angles on the fitting. XL-C ring must be engaged on the fitting bead. Check insertion depth.

10 With V2 actuator inserted into the tool, open the V2 actuator as shown and connect V2 actuator to the XL-C ring.

WARNING!
Keep extremities and foreign objects away from press tool during pressing operation to prevent injury or incomplete press.

11 Place V2 actuator onto XL-C ring and start pressing process. Hold the trigger until the actuator has engaged the XL-C ring. Keep extremities and foreign objects away from XL-C ring and V2 actuator during pressing operation to prevent injury or incomplete press.

12 Release V2 actuator from XL-C ring and then remove the XL-C ring from the fitting on completion of press. Remove tag from fitting, indicating press has been performed.

Only ball valves marked with NSF-61 and NSF 372 are allowed for use in potable water systems.

CAUTION!
Pipe wrench flats are not allowed on the valve body, the press ends, or any other piece. Do not clamp the ball valve in a vice.

13 A Vertical clearance
B Horizontal clearance
C Minimum clearance between 2 ball valves
D Minimum clearance between 2 ball valves, handles facing each other

Ball Valve	a for A, B, C	a for A, B, C	a for D	a for D
2½"	13"	330 mm	23.6"	600 mm
3"	13"	330 mm	23.6"	600 mm
4"	13"	330 mm	23.6"	600 mm

Viega recommends providing pipe hangers with a distance of 6" to 8" in front of and behind the press connections or in accordance with local codes.

CAUTION!
Ball valves are to be used in only the fully closed or fully opened position.

Pressure Testing with Smart Connect®
Unpressed connections are located by pressurizing the system with air or water. When testing with water the proper pressure range is 15 psi to 85 psi. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. If testing with compressed air, use an approved leak-detect solution. Following a successful pressure test, the system may be pressure tested up to 200 psi with air or up to 600 psi with water.

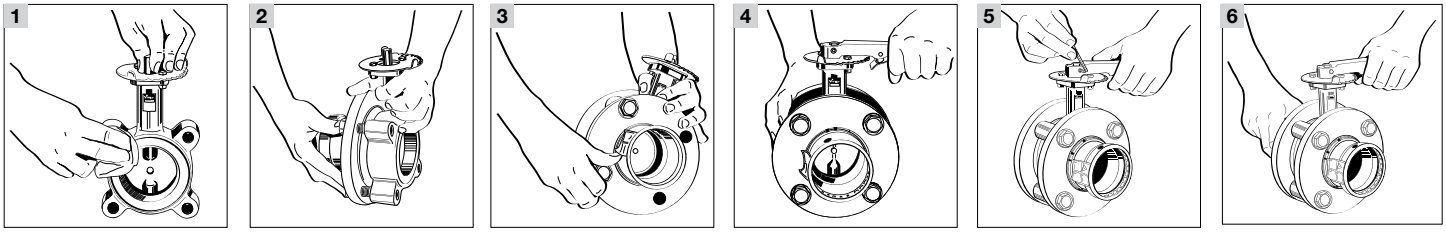
Testing for unpressed connections using Smart Connect is not a replacement for pressure testing requirements of local codes and standards.

CAUTION!
The use of ProPress ball valves for applications other than those listed in the approved Application Chart must be approved by the Viega Technical Services Department.

CAUTION!
Additional protection or coating may be necessary for applications that deviate from the general descriptions or for special ambient conditions. Please consult Viega Technical Service.

Product Instructions

ProPress Butterfly Valve



Viega ProPress Butterfly Valve

Model 2873.81

The Viega ProPress Butterfly Valve is designed to be installed as an in-line or end-line valve.

1. Ensure the flange face as well as the Butterfly Valve sealing surface are clean and free of debris and valve is in the near closed position.
2. Place the Butterfly Valve between the flanges. Use the flange bolts to align and center valve between the flanges.
3. Install flat washers on each bolt and tighten nuts to "finger tight".
4. Install Butterfly Valve handle by placing the handle over the stem and pushing the handle completely onto the stem.
5. Tighten handle set screw.
6. Open valve to full open position. Tighten to the recommended MAX. Bolt Torque in the table below.

Part No.	Size (in)	Bolt Dimensions (in)	Recommended Max. Bolt Torque (ft/lbs)
22074	2½	⅝ x 1½ (4 per flange)	75
22075	3	⅝ x 1⅝ (4 per flange)	
22076	4	⅝ x 1¾ (8 per flange)	

7. Position the Butterfly Valve in the required operating position by using the spring loaded locking indicator on the valve handle.

When using flanges other than Viega ProPress Adapter Flanges, bolt length requirements may vary.

3 Limited Warranty

Viega ProPress Fitting and Valves

Subject to the conditions and limitations in this Limited Warranty, Viega LLC (VIEGA) warrants to wholesalers and licensed plumbing and mechanical contractors in the United States and Canada that its ProPress fittings, when properly installed in non-industrial and non-marine applications and under normal conditions of use, will be free of failure from manufacturing defect for a period of fifty (50) years from date of installation and that its ProPress valves, when properly installed in non-industrial and non-marine applications and under normal conditions of use, will be free of failure from manufacturing defect for a period of two (2) years from date of installation.

Under this Limited Warranty, you only have a right to a remedy if the failure or leak resulted from a manufacturing defect in the products covered by this warranty and the failure or leak occurred during the warranty period. You do not have a remedy under this warranty and the warranty does not apply if the failure or any resulting damage is caused by (1) components other than those manufactured or sold by Viega; (2) not designing, installing, inspecting, or testing the ProPress fittings or valves in accordance with Viega's installation instructions in effect at the time of the installation; applicable code requirements; and accepted industry practice; (3) improper handling and protection of the product prior to and during installation, inadequate freeze protection, exposure to water pressures or temperatures or in applications outside acceptable operating conditions; (4) acts of nature such as, but not limited to, earthquakes, fire, flood, or lightning, or (5) external environmental causes, such as water quality variations, aggressive water, or other external chemical or physical conditions.

In the event of a leak or other failure of the parts covered by this warranty, it is the responsibility of the property owner to obtain and pay for repairs. Only if the warranty applies will Viega be responsible for the remedy under this warranty. The part or parts which you claim failed should be kept and Viega contacted by writing to the address below or telephoning 1-800-976-9819 within thirty (30) days after the leak or other failure and identifying yourself as having a warranty claim. You should be prepared to ship, at your expense, the product which you claim failed due to a manufacturing defect and document the date of installation. Within a reasonable time after receiving the product, Viega will investigate the reasons for the failure, which includes the right to inspect the product at Viega. Viega will notify you in writing of the results of its review.

In the event that Viega determines that the failure or leak as the result of a manufacturing defect in the part covered by this warranty and that this warranty applies, the EXCLUSIVE AND ONLY REMEDY under this warranty shall be the reimbursement for repair and/or replacement of the part. VIEGA SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR OTHER DAMAGE (FOR EXAMPLE, WATER OR PROPERTY OR MOLD REMEDIATION) UNDER ANY LEGAL THEORY AND WHETHER ASSERTED BY DIRECT ACTION, FOR CONTRIBUTION OR INDEMNITY OR OTHERWISE.

THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. If a limited warranty shall be found to apply, such warranty is limited to four years. Other than this Limited Warranty, Viega does not authorize any person or firm to create for it any other obligation or liability in connection with its products.

This Limited Warranty gives you specific legal rights and you also may have other rights which may vary from state to state. This warranty shall be interpreted and applied under the law of the state in which the product is installed and is intended as a Commercial Warranty.

Viega LLC
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