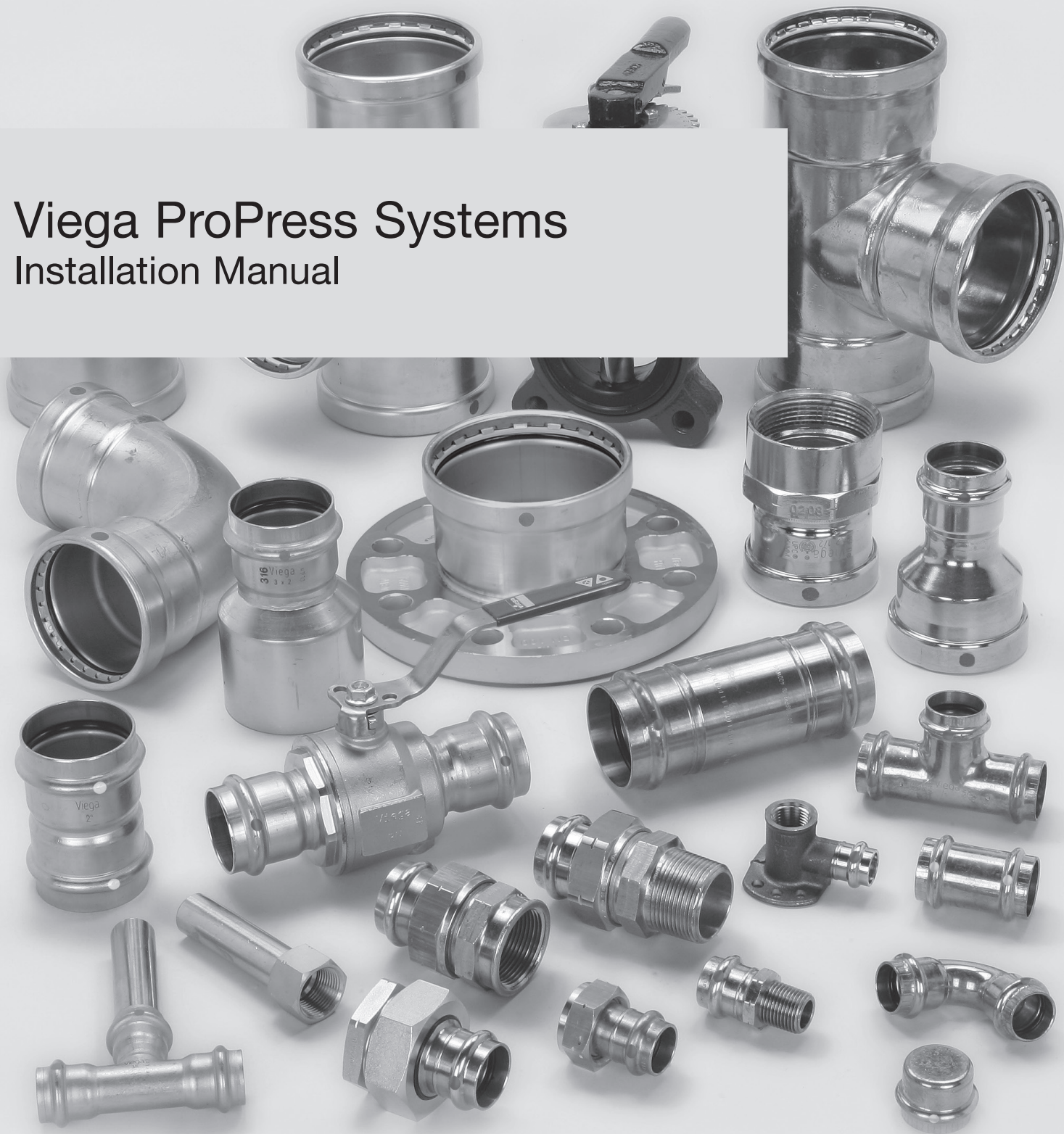


Viega ProPress Systems Installation Manual



The global leader
in plumbing, heating
and pipe joining systems

viega

Heritage of quality, vision for the future

Viega's heritage of superiority demands nothing but the best for our customers. Engineered to be efficient, Viega products perform at the highest possible level, providing confidence and peace of mind. Viega is the only manufacturer to offer press systems in multiple pipe joining materials and, with a supply chain that can process orders in 48 hours or less, Viega is positioned to provide customers the best, most versatile support in the industry.

Introducing Viega ProPress systems

Viega ProPress systems are state-of-the-art press fitting systems that provide economical and reliable piping installations for the commercial, industrial and residential markets.

The Systems

Our products are the result of decades of experience in manufacturing fittings. Viega ProPress systems are offered in the following configurations:

Viega ProPress: Copper and Zero Lead Bronze fittings in copper tube size (CTS) with Smart Connect® feature.

Viega ProPressG: Copper and Bronze fittings for use with fuel gas in copper tube size (CTS) with Smart Connect feature.

Viega ProPress for Stainless: 304 and 316 stainless steel pipe and fittings in copper tube size (CTS) with Smart Connect feature.

Viega ProPress fittings require no soldering or welding, and thus no fire hazard, which is particularly important in restoration or retrofit work. The press

fittings are installed with electro-hydraulic press tools (battery-powered or corded press tools).

One squeeze of the trigger makes the connection on any size tube in four to seven seconds.

Flameless

No flame is required to make the connection. This eliminates noxious fumes, the need for a hot work permit and a fire watch.

World's Largest Selection of Fittings

There are more than 1,400 different engineered fittings available in a variety of materials, configurations and sizes.

Professional Appearance

Because there is no buildup of joining material, exposed threads or tarnish, Viega ProPress connections have a clean, professional look.

Less Equipment

With Viega ProPress systems there is no need to buy or carry expensive, cumbersome equipment. Welding tanks and threading machines are a thing of the past.

IMPORTANT NOTE:

A GREEN DOT ON A VIEGA PROPRESS FITTING INDICATES THE SMART CONNECT FEATURE WITH AN EPDM SEALING ELEMENT. A YELLOW DOT ON A VIEGA PROPRESSG FITTING INDICATES THE SMART CONNECT FEATURE WITH AN HNBR SEALING ELEMENT. A WHITE DOT ON A VIEGA PROPRESS (304 FKM) FITTING INDICATES THE SMART CONNECT FEATURE WITH AN FKM SEALING ELEMENT. FOR A CURRENT LIST OF APPLICATIONS, PLEASE VISIT WWW.VIEGA.US/APPLICATIONS.





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1.1 Viega ProPress

Viega ProPress ½" to 4" fittings feature a green dot representing the Smart Connect feature with an EPDM sealing element suitable for many applications, including:

- Hot and Cold Potable Water
- Rainwater/Gray Water
- Fire Sprinkler
- Chilled Water
- Hydronic Heating
- Compressed Air
- Low-Pressure Steam
- Vacuum
- See Table 1.1 on Page 9 for more applications or, for a current list of applications, visit www.viega.us/applications.

1.1.1 Listings and certifications

- NSF 61 Annex G
- IAPMO PS 117
- UL 213
- FM Class 1920
- ICC LC 1002
- ABS
- CSA MSE 13

1.1.2 Codes

Compliant with:

- ICC International Plumbing Code
- IAPMO Uniform Plumbing Code
- PHCC National Standard Plumbing Code
- NFPA 13, 13D and 13R
- ICC International Mechanical Code
- IAPMO Uniform Mechanical Code

1.2 Viega ProPressG

Viega ProPressG ½" to 2" fittings have a yellow dot that represents the Smart Connect feature and a factory-installed HNBR sealing element suitable for many applications, including:

- Natural Gas
- Propane Gas
- Diesel Fuel
- See Table 1.1 on Page 9 for more applications or, for a current list of applications, visit www.viega.us/applications.

1.2.1 Listings and certifications

Viega ProPressG fittings have been listed for use with fuel gas distribution systems intended for installations above ground, underground, indoors and outdoors, for operating pressures not exceeding 125 psig for use with copper tube ½" through 2" nominal size.

- CSA LC-4
- IAPMO LC-4
- ICC-ES PMG 1036

1.2.2 Codes

The major codes and standards regulating fuel gas piping systems include:

- NFPA 54 National Fuel Gas Code
- IAPMO Uniform Plumbing Code
- NFPA 58 Liquefied Petroleum Gas Code
- UPC Chapter 12 Fuel Piping
- NFPA 30 Flammable and Combustible Liquids Code
- NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages
- NFPA 31 Standard for the Installation of Oil-Burning Equipment

Note: All systems must be installed per local code requirements.

1.3 Viega ProPress for Stainless 304 and 316

Viega ProPress 304 fittings feature a white dot representing the Smart Connect feature with an FKM sealing element. Viega ProPress 316 fittings feature a green dot that represents the Smart Connect feature with an EPDM sealing element. ProPress for Stainless systems are suitable for many applications, including:

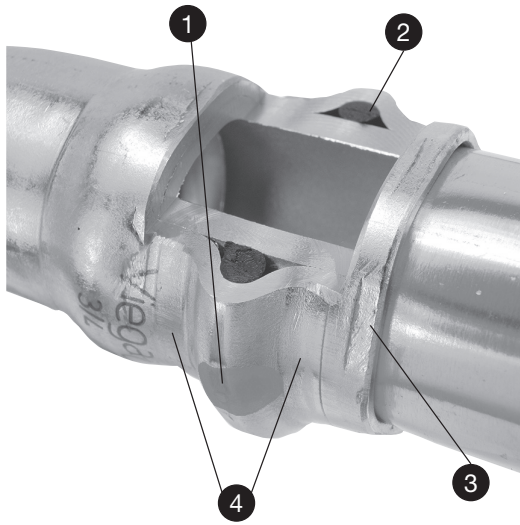
- Potable Water (316 EPDM)
- Condenser Water
- Process Water
- RO and DI Water (316 EPDM)
- Caustic Chemicals
- Compressed Air
- See Table 1.1 on Page 9 for more applications or, for a current list of applications, visit www.viega.us/applications.

1.3.1 Listings and certifications

- NSF-61 G (316 EPDM)
- ABS
- TSSA
- United States Coast Guard
- Lloyd's Register
- Det Norske Veritas
- ASME B31
- UL 213 (304 FKM ½" to 2")
- IAPMO PS 117

1.3.2 Codes

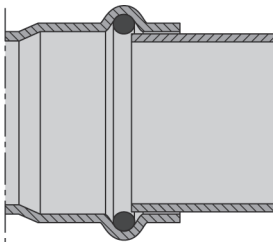
- ICC International Plumbing Code
- IAPMO Uniform Plumbing Code
- PHCC National Standard Plumbing Code
- Contact your local Viega representative for details on approvals in your area.



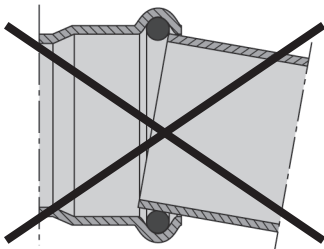
1.4 Fitting description

Viega ProPress fittings are offered in more than 600 configurations in copper, bronze, 304 and 316 stainless steel, including: elbows, couplings, ball valves, reducers, tees, reducing tees, threaded adapters, unions, caps and flanges. Viega ProPress fittings for Stainless are designed to be used with only Viega's stainless steel pipe.

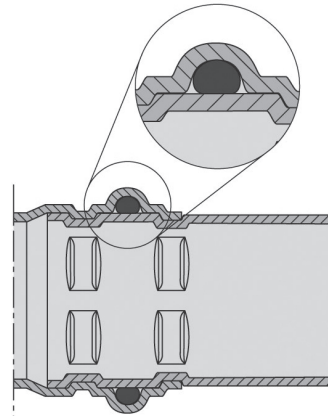
1. Viega's unique, patented Smart Connect feature helps installers ensure that they have pressed all connections.
2. Viega offers three different sealing elements to suit virtually any application: EPDM, HNBR and FKM.
3. Viega's distinctive hexagonal pressing pattern bonds fitting and pipe and provides the mechanical strength for the connection.



4. All Viega ProPress fittings are designed with cylindrical pipe guides to keep the pipe straight and protect the sealing element during assembly.



Fittings that do not have cylindrical pipe guides risk making an unsecure connection. Without the pipe guides, installers can possibly damage the sealing element.



Viega fittings are pressed before, after and on top of the sealing element in a single step, which creates a reliable connection that is secure and proven to last.

1.4.1 Viega large-diameter fittings

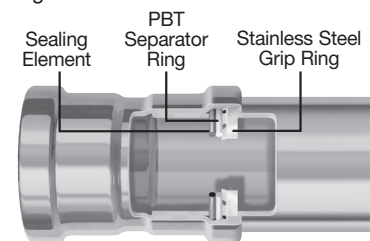
Viega 2½" to 4" fittings feature an EPDM or FKM sealing element, stainless steel grip ring and PBT separator ring as shown in Figure 1.1.

The grip ring comes standard in all 2½" to 4" fittings. The grip ring is a stainless steel ring with teeth, which grips the tube and ensures that the fitting is locked securely in place.

The PBT (Polybutylene Terephthalate) separator ring ensures that the sealing element and grip ring perform at a maximum capacity by providing a positive physical separation.

Whether working with stainless steel or copper, ProPress XL fittings are designed to be pressed with RIDGID's XL-C press rings and V2 actuator. This will produce a non-detachable, secure connection.

Figure 1.1



1.4.2 Pipe

Viega stainless steel pipe is offered in either 304 stainless steel or 316 stainless steel to complement the Viega ProPress for stainless fittings and offer a complete system solution. Viega stainless steel pipe meets the requirement of ASTM A312 or ASTM A554 for Schedule 5 304 and 316 stainless steel pipe.

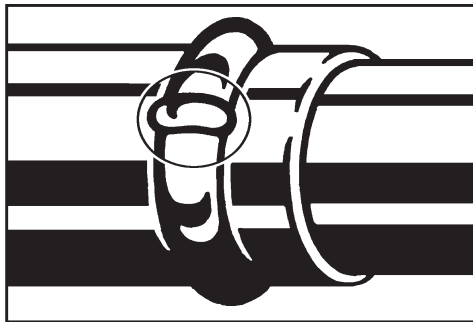
1.4.3 Special features

Viega ProPress copper, 316 stainless steel and Zero Lead bronze fittings meet the federal lead-free requirements of NSF 61-G through testing under NSF/ANSI 372 (0.25% or less maximum weighted average lead content). Fast and easy — one squeeze of the trigger makes the press connection on any size tube in four to seven seconds.

1.4.4 Viega Smart Connect feature

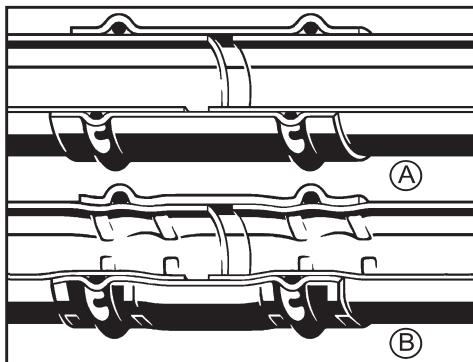
In Viega ProPress ½" to 4" fittings, the Smart Connect feature (Figure 1.2) assures the escape of liquids or gases from inside the system past the sealing element of an unpressed connection. The function of this feature is to provide the installer quick and easy identification of connections that have not been pressed prior to putting the system into operation (Figure 1.4).

Figure 1.2: The Smart Connect feature of Viega press fittings is color marked on the bead



When the fitting is pressed (Figure 1.3), a secure, non-detachable, mechanical connection is created.

Figure 1.3: Section of a press fitting in unpressed (A) and pressed (B) condition



Unpressed fittings from other manufacturers, without the patented Smart Connect feature, may not leak during the initial system pressure test. However, they can unseat in future system operation. The Smart Connect feature is designed to protect from this potential risk.

Figure 1.4



1.4.5 Sealing elements

Viega ProPress EPDM sealing element

Operating temperature:
0°F to 250°F (-18°C to 120°C)

Viega ProPress and ProPress for stainless 316 fittings are manufactured with a high-quality EPDM sealing element installed at the factory. This sealing element is used mainly in the applications of potable water, hydronic heating, fire sprinkler and compressed air installations. EPDM, or ethylene-propylene diene monomer, is shiny black in color. The EPDM sealing element is a synthetically manufactured and peroxide cross-linked, general-purpose elastomer with a wide range of applications.

It possesses excellent resistance to aging, ozone, sunlight, weathering, environmental influences, most alkaline solutions and chemicals used in a broad range of applications.

The EPDM sealing element has particularly good resistance to hot water, making it ideal for seals and gaskets in heating systems, fittings and household appliances (e.g. washing machines, pumps, dishwashers).

All sealing elements are inserted into the fitting using an H1 Grade lubricant registered with NSF, the USDA and approved for use under FDA 21 CFR.

Viega ProPress FKM sealing element

Operating temperature:
0°F to 284°F (-18°C to 140°C)

FKM is well-known for its excellent resistance to petroleum products and solvents as well as exceptional high-temperature performance. The FKM sealing element is a special-purpose elastomer typically installed where higher temperatures are required.

FKM, a fluoroelastomer, is dull black in color. It possesses excellent resistance to aging, ozone, sunlight, weathering, environmental influences, oils and petroleum-based additives. Its superb resistance to high temperatures and petroleum-based additives makes it ideal for seals and

gaskets in solar, district heating, low-pressure steam and compressed air system fittings. It can withstand heat spikes up to 356°F.

Viega ProPress HNBR sealing element

This sealing element is used mainly for applications of natural gas, propane, mixed and manufactured fuel gases in the vapor state (not in the liquid state). It is commonly used in fuel oil heating systems. HNBR, or Hydrogenated Nitrile Butadiene Rubber, is yellow in color for easy identification.

Ambient operating temperature:
-40°F to 180°F (-40°C to 82°C)

HNBR is widely known for its physical strength and retention of properties after long-term exposure to heat, oil and chemicals.

The unique properties attributed to HNBR have resulted in wide adoption of HNBR in automotive, industrial and assorted high-performance applications (e.g. engine seals, grommets, gaskets, fuel system seals and hoses, transmission system bonded piston seals, oil field packers and rotary shaft seals).

With its excellent performance for the most demanding of applications, HNBR is the ideal choice for applications needing excellent physical properties as well as oil, heat and/or chemical resistance.

For specific applications, please contact your local Viega District Manager or contact Viega at 1-800-976-9819.

1.4.6 Fitting markings

Markings on Viega ProPress fittings include:

- Green Dot: EPDM sealing element and Smart Connect feature
- Size of fitting
- Manufacturer name
- Manufacturer date code

Markings on Viega ProPressG fittings include:

- Yellow Dot: HNBR sealing element and Smart Connect feature
- CSA: indicates certification to ANSI/CSA LC4
- Yellow rectangle: identifies Viega ProPressG fitting as a certified gas or fuel oil fitting
- 125G: identifies the CSA maximum pressure rating of the fitting for fuel oil or gas applications
- Size of fitting
- Manufacturer name
- Manufacturer date code

Markings on Viega ProPress for Stainless 316 include:

- Green dot: EPDM sealing element and Smart Connect feature
- Stainless steel alloy number
- Size of fitting
- Manufacturer name
- Manufacturer date code

Markings on Viega ProPress for Stainless 304 include:

- White dot: FKM sealing element and Smart Connect feature
- Stainless steel alloy number
- Size of fitting
- Manufacturer name
- Manufacturer date code

1.5 Applications

Listed below are common applications approved by Viega for Viega ProPress fitting systems.

Table 1.1

Types of Service	System Operating Conditions			ProPress 304 Stainless	ProPress 316 Stainless	ProPress	ProPressG
	Comments	Pressure	Temperature	FKM	EPDM	EPDM	HNBR
Fluids/Water							
Hot and Cold Potable Water		200 PSI	32°F-250°F		√	√	
Rainwater/ Gray Water		200 PSI	Note 3		√	√	
Fire Sprinkler	Listed with UL and FM	175 PSI	Note 3	√		√	
Chilled Water	Ethylene Glycol / Propylene Glycol	200 PSI	Note 3	√	√	√	
Hydronic Heating	Ethylene Glycol / Propylene Glycol	200 PSI	Note 3	√	√	√	
Cooling Water	Up to 50% Ethylene Glycol or Propylene Glycol solution	200 PSI	Note 3	√	√	√	
Deionized Water		200 PSI	158°F		√		
Low-Pressure Steam		Up to 15 PSI	248°F	√	√	√	
Isopropyl Alcohol		200 PSI	75°F		√		
Ethanol	Pure Grain Alcohol	200 PSI	Note 3		√	√	
Latex Paint		200 PSI	32°F-250°F		√		
Methyl Ethyl Ketone		200 PSI	100°F		√		
Nitric Acid	10%	200 PSI	73°F	√	√		
Phosphoric Acid	25%	200 PSI	Ambient		√		
Paraffin Wax		200 PSI	100°F	√			
Fuel, Oil and Lubricant							
Heating Fuel Oil		125 PSI	Note 3	√			√
Diesel Fuel		125 PSI	Note 3	√			√
Propane	Compliant with CSA LC4	125 PSI	-40°F-180°F				√
Natural Gas	Compliant with CSA LC4	125 PSI	-40°F-180°F				√
Butane	Compliant with CSA LC4	125 PSI	-40°F-180°F				√
Kerosene		Note 3	68°F	√			√
Lube Oil	Petroleum Based	200 PSI	Note 3	√			√
Gases							
Compressed Air	Less than 25mg/m ³ oil content	200 PSI	Note 3	√	√	√	√
Compressed Air	More than 25mg/m ³ oil content	200 PSI	Note 3	√			√
Oxygen - O ₂ (nonmedical)	Keep oil and fat free / non-liquid O ₂	140 PSI	Up to 140°F		√	√	√
Nitrogen - N ₂		200 PSI	Note 3	√	√	√	√
Carbon Dioxide - CO ₂		200 PSI	Note 3			√	√
Ammonia	Anhydrous	200 PSI	122°F	√			
Acetylene		200 PSI	86°F	√	√		
Argon	Welding Use	200 PSI	Ambient		√	√	√
Hydrogen - H ₂		125 PSI	0°F-250°F		√	√	√
Vacuum		29.2 in Hg	Note 3	√	√	√	√
1. All systems are recommended to be clearly labeled with the fluid or gas being conveyed. For further information please consult Viega Technical Services.							
2. All Viega systems must be used with the manufacturer's recommended sealing element. Contact your local Viega representative or Viega Technical Services for application temperature, pressure and concentration limits.							
3. System pressure and temperature ranges depend on sealing element.							

1.5.1 Commercial and residential

Viega ProPress systems are approved for numerous applications in commercial and residential markets including potable water. “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). For additional applications please refer to Table 1.1 on Page 9 or consult your local Viega District Manager.

1.5.2 Industrial and plant operations

Viega ProPress systems are also suitable for use in industrial and plant processes. Primary areas of application include utility piping, process piping, cooling water, potable water and fire sprinkler systems. Your local Viega District Manager should be consulted regarding the use of Viega ProPress systems in areas not covered by Viega literature.

1.5.3 Fire protection systems

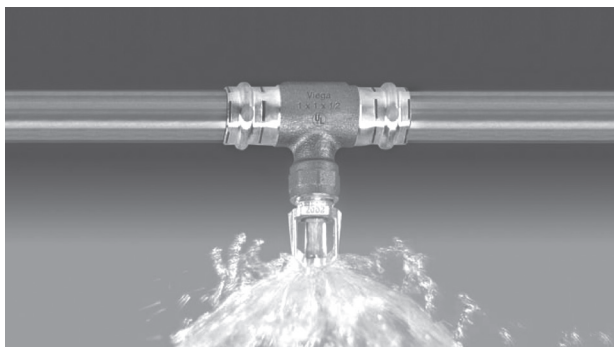
Viega ProPress and ProPress for stainless 304 fittings can be installed in NFPA 13, 13R and 13D fire sprinkler systems. They are certified for use in “wet” and “dry” fire protection piping in accordance with UL and FM certifications:

- UL VIZM.EX6157 - Fittings, Rubber Gasketed
- UL VIZM7.EX6157 - Fittings, Rubber Gasketed for Canada
- UL VIZY.EX16017 - Metallic Sprinkler Pipe
- UL VIZY7.EX16017 - Metallic Sprinkler Pipe for Canada
- FM Approvals Class 1920

1.5.4 Fuel gas systems

Viega ProPressG fittings with HNBR sealing elements are suitable for applications that include:

- Natural Gas
- Propane Gas
- Mixed Fuel Gases (vapor state only)
- Manufactured Fuel Gases
- Butane
- Fuel Oil Heating Systems
- Carbon Dioxide CO₂ (dry)
- Vacuum (up to 29.2 in. Hg)
- Diesel Fuel
- Motor Oil



2.1 Tools







Viega recommends RIDGID press tools, Viega ProPress jaws and ring sets and RIDGID pipe preparation tools manufactured and sold by The Ridge Tool Company for use with Viega Systems.

Viega ProPress products carry a limited warranty against defects in material and workmanship. The RIDGID lifetime warranty applies to tools, jaws and press rings from The Ridge Tool Company. For more information, contact Ridge Tool Company at 1-888-743-4333 or visit www.RIDGID.com.

2.2 Pressing tools

The following RIDGID pressing tools are available for use with the Viega ProPress system:

- RP200-B Battery-Powered Press Tool
- RP210-B Battery-Powered Press Tool
- RP330-B Battery-Powered Press Tool
- RP330-C Corded Press Tool
- RP340 Battery-Powered and Corded Press Tool

<p>Compact Series Press Tools - 1/2" – 1 1/4"</p>  <p>RP200-B RP210-B</p>	<p>Standard Series Press Tools - 1/2" – 4"</p>  <p>RP330-B and RP330-C RP340</p>
<p>Compact Series Press Jaws* - 1/2" – 1 1/4"</p> 	<p>Standard Series Press Jaws - 1/2" – 2"</p> 
<p>C1 Compact Series Press Rings* - 1/2" – 1 1/4" V1 Standard Series Press Rings - 1/2" – 1 1/4" V2 Standard Series Press Rings - 1 1/2" – 2"</p> 	<p>XL-C Press Rings V2 Actuator - 2 1/2" – 4"</p> 

*Compact series press rings and jaws are only for use with compact series press tools. RIDGID® is a registered trademark of RIDGID, Inc.

3.1 Tube selection

3.1.1 Viega ProPress

Viega ProPress copper and copper alloy fittings are compatible with ½" to 1¼" soft copper tube and ½" to 4" hard copper tubing types K, L and M. All copper tubing that is to be used with Viega ProPress copper and bronze fittings must comply with ASTM B88 standards.

Note: Tubing shall be free of surface imperfections including metal stamped print lines.

3.1.2 Viega ProPressG

Viega ProPressG fuel gas installations can be made with seamless, drawn copper tubing. These tubes must comply with the requirements of ASTM B88.

Types K and L copper tube (ASTM B88) have been used in fuel gas systems for many years. Type L is typically used for interior distribution systems and type K for any underground lines.

Designers and installers should be specific with size designations in their references and when ordering. Copper tubing should not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet (scf) of gas (0.7 mg/100 L). Today, federal regulations limit the amount of hydrogen sulfide allowed in natural gas transmission. The allowable limits are below those specified in the model codes and below the amounts that would adversely affect copper tubing. Copper tubing can be installed in all areas of construction, including concealed spaces.

Viega ProPressG and copper tubing is approved for underground installations. However, any installations must meet all state and local codes, including those for underground.

Proper authorization must be obtained prior to underground installation from the local Authority Having Jurisdiction. Viega ProPressG and copper tubing may be installed outside without any additional corrosion protection.

In residential applications, copper tubing with Viega ProPressG fittings can be used to run fuel gas from the meter or source to furnaces, boilers, gas ranges, water heaters, gas fireplaces, clothes dryers, outdoor barbecues and decorative lighting.

Copper tubing can be easily installed in wall and floor cavities. When retrofitting an installation in a home with copper tubing, using Viega ProPressG fittings is easier, faster and less expensive than installing threaded steel pipe or CSST.

For commercial construction, copper tubing using Viega ProPressG fittings may be installed for gas lines to air handling units, boilers, water heaters and many other gas appliances. For rooftop installations, copper tubing with Viega ProPressG fittings can be installed either on or below the roof. When installed on the roof, the copper tubing does not have to be coated or covered since the material is naturally corrosion resistant.

3.1.3 Viega ProPress for Stainless

Only Viega stainless tubing is approved for installation with Viega ProPress for Stainless fittings. This is to ensure reliability and conformity with the stainless steel system. Viega ProPress for Stainless pipe comes in sizes ½" to 4".

General

Viega ProPress for Stainless tubing is thicker than Schedule 5 inert gas welded pipes, meeting ASTM A312, A554 and DIN 1988 wall thickness requirements.

Delivery condition

All dimensions are delivered in sticks that are nominal 20 ft. in length, with a metallic bare exterior and interior surface. The sticks are free from annealing color and corrosion-promoting substances.

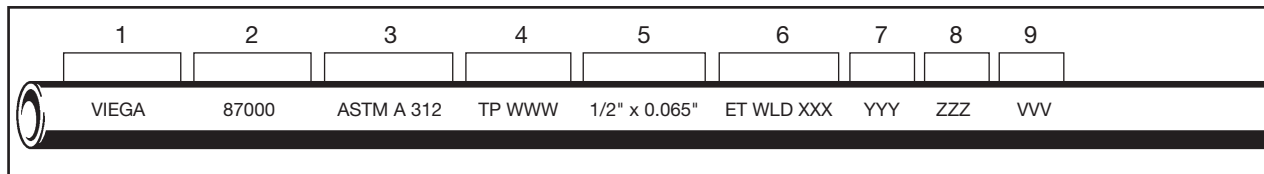
All tubing has been tested for leaks and is subject to continuous quality monitoring as well as external monitoring by the material testing office.

Identification

Viega ProPress for Stainless pipe is marked and labeled with the following information along its entire length:

1. Manufacturer
2. Stock code

3. Specification standard
4. Material type
5. Nominal diameter x wall thickness
6. Manufacturing information
7. Date of manufacture
8. Batch code
9. Country of origin



Identification of ProPress for Stainless

3.2 Handling instructions

All Viega ProPress components and associated piping shall be free from dirt, debris or items that may interfere with the sealing element and the press connection.

Viega ProPress sealing elements, separator rings and grip rings are to be visually inspected prior to installation to ensure the seal is intact and properly located within the fitting. See Section 1.4.1 on Page 5 for more information.

3.3 Pressing requirements

3.3.1 Minimum distance between fittings

To ensure a correct press, a minimum distance between press fittings must be maintained (refer to Table 3.1 and Table 3.2). Failure to provide this distance may result in an improper seal.

Note: Viega ProPress XL systems include XL-C (copper) and XL (stainless) fittings. All XL sizes are 2½" to 4".

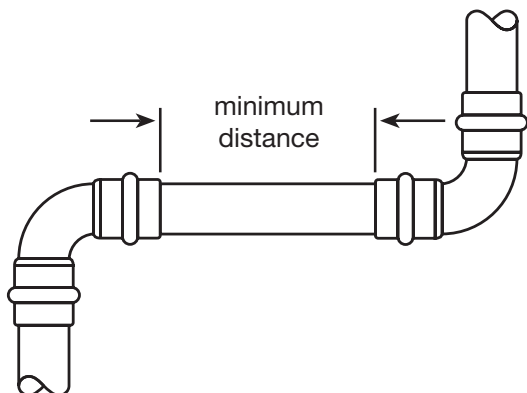
For installations where the minimum distance is 0, it is particularly important to ensure the correct insertion depth of the tubing into each fitting.

Table 3.1

Minimum distance between two Viega ProPress press connections ½" to 2"		
Tubing Diameter	Minimum Distance (in)	Minimum Distance (mm)
½"	0	0
¾"	0	0
1"	0	0
1¼"	7/16	10
1½"	5/8	15
2"	¾	20

Table 3.2

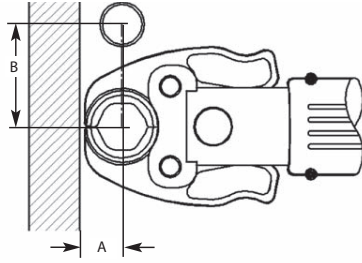
Minimum distance between two Viega ProPress XL press connections 2½" to 4"		
Tubing Diameter	Minimum Distance (in)	Minimum Distance (mm)
2½"	5/8	15
3"	5/8	15
4"	5/8	15



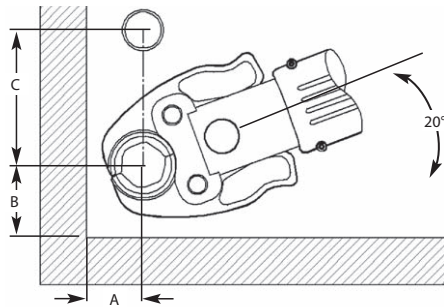
3.3.2 Pressing in tight quarters

The minimum distance between piping, or the piping and the wall/ceiling construction, must be taken into consideration in the planning phase for a problem-free work process. The following figures illustrate the clearance requirements for the jaws and fittings and the procedure for pressing fittings in tight quarters.

Pressing with standard jaws clearance requirements

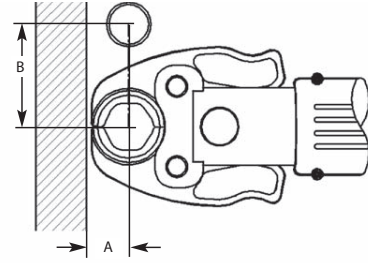


Tube Diameter	A minimum		B minimum	
	inch	mm	inch	mm
1/2"	3/4	19	1 5/8	41
3/4"	7/8	22	2 1/8	54
1"	1	26	2 1/2	64
1 1/4"	1 1/8	29	2 7/8	73
1 1/2"	1 3/4	45	3 1/2	89
2"	2	51	4 3/8	111

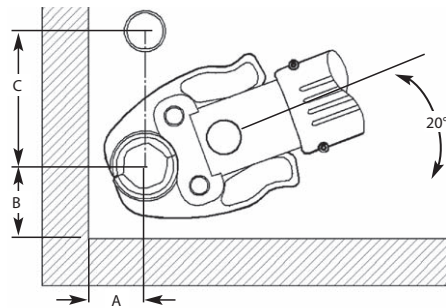


Tube Diameter	A minimum		B minimum		C minimum	
	inch	mm	inch	mm	inch	mm
1/2"	7/8	23	1 3/8	35	2 1/2	64
3/4"	1	26	1 1/2	38	2 1/2	64
1"	1 1/8	29	1 3/4	45	3	76
1 1/4"	1 1/4	32	2 1/4	57	3 1/8	80
1 1/2"	1 7/8	48	2 1/2	64	3 3/4	95
2"	2 1/8	54	3 1/8	80	5	127

Pressing with compact jaws clearance requirements



Tube Diameter	A minimum		B minimum	
	inch	mm	inch	mm
1/2"	3/4	19	2	51
3/4"	7/8	22	2 3/8	60
1"	7/8	26	2 5/8	67
1 1/4"	1 1/8	28	3 1/8	85



Tube Diameter	A minimum		B minimum		C minimum	
	inch	mm	inch	mm	inch	mm
1/2"	7/8	23	1 3/8	35	2 1/2	64
3/4"	1	26	1 1/2	38	2 3/4	70
1"	1 1/8	29	1 5/8	41	3	76
1 1/4"	1 5/8	39	2 1/8	53	3 3/8	85

3.3.3 Clearance requirements for ProPress rings

Ensure that the space required for system pressing tools is available if Viega ProPress fittings will be executed immediately upstream and downstream from ceiling penetrations.

3.3.4 Transition connections

Threaded connections

The Viega ProPress systems 1/2" to 4" can be joined with off-the-shelf threaded fittings made of non-ferrous metals.

In this regard:

1. The threaded connection is made first.
2. The press fitting is made.

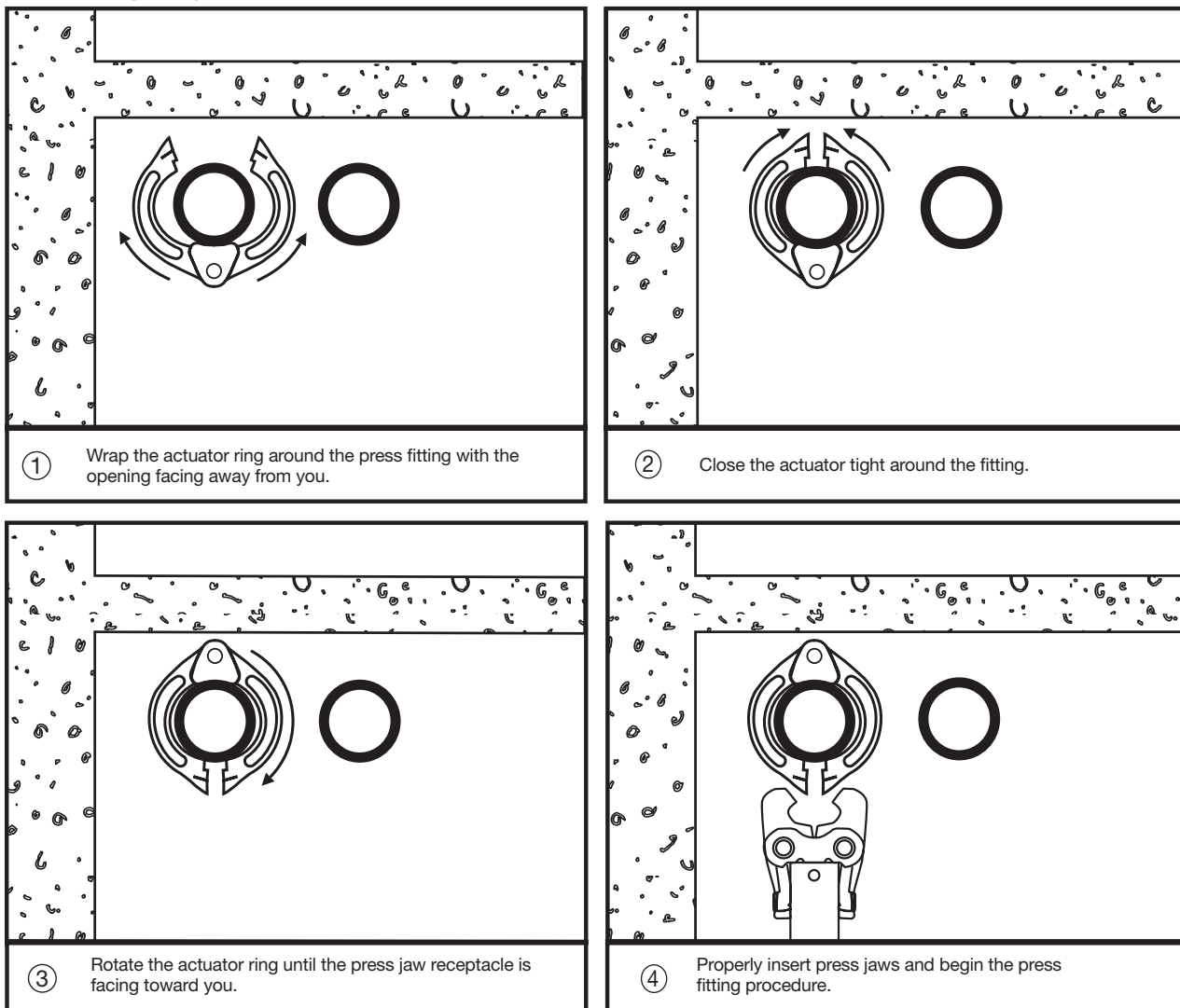
This process avoids unnecessary torsion.

Flange connections

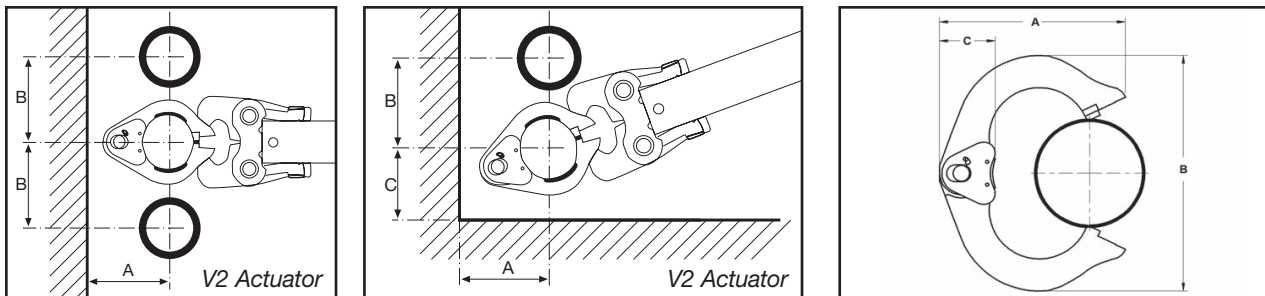
When using Viega flanges, bolt the flange end in place prior to pressing the fitting to the tubing.

3.3.5 Minimum space requirements for 2½" to 4" ProPress fittings

V2 Pressing in tight quarters



Procedure for laying the XL (copper and stainless) press ring around the XL (copper and stainless) Viega ProPress fitting with minimum space requirements.

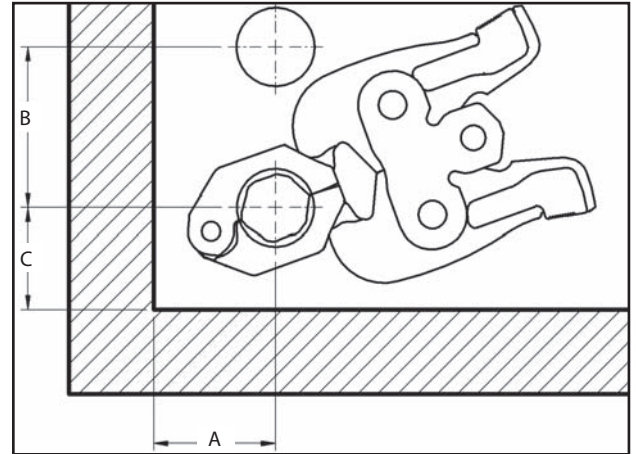
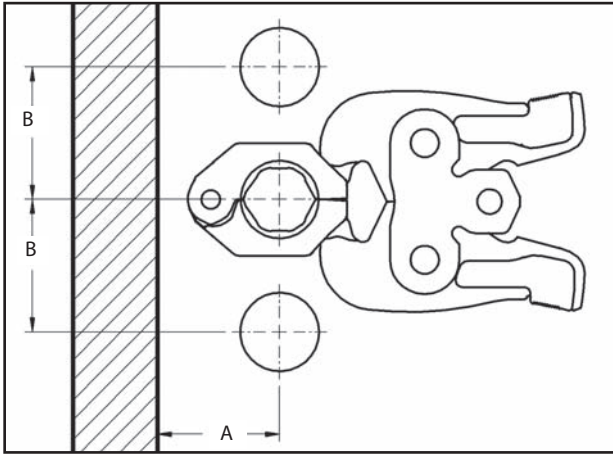


Tube Diameter	A		B	
	inch	mm	inch	mm
2½"	4⅛	105	6	152
3"	4⅜	111	7	178
4"	5	127	8	203

Tube Diameter	A		B		C	
	inch	mm	inch	mm	inch	mm
2½"	4⅛	105	6	152	4½	114
3"	4⅜	111	7	178	4⅞	124
4"	5	127	8	203	5¾	146

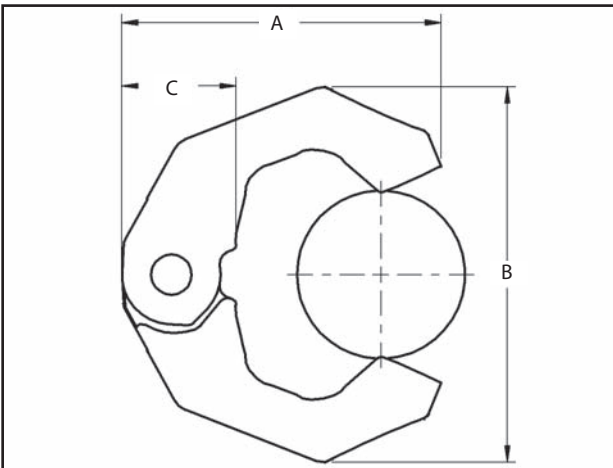
Tube Diameter	A		B		C	
	inch	mm	inch	mm	inch	mm
2½"	6⅜ ¹⁶	157	6 ¹⁵ ¹⁶	176	2 ⁷ ¹⁶	62
3"	7 ⁷ ¹⁶	189	8 ¹³ ¹⁶	224	2 ⁷ ¹⁶	62
4"	8 ¹ ¹⁶	205	10 ⁷ ¹⁶	265	2 ⁷ ¹⁶	62

Clearance requirements - ProPress rings



Tube Diameter	A minimum		B minimum	
	inch	mm	inch	mm
1/2"	1 5/8	41	2 13/16	71
3/4"	3/4	45	2 3/16	55
1"	2	51	1 5/8	42
1 1/4"	2 3/16	55	2 15/16	75
1 1/2"	2 3/8	60	3 5/16	85
2"	2 9/16	65	4 1/8	105

V1 Actuator and Press Rings						
Tube Diameter	A min.		B min.		C min.	
	inch	mm	inch	mm	inch	mm
1/2"	1 5/8	41	3 9/16	90	2 5/16	59
3/4"	1 3/4	45	3 5/8	92	2 1/8	55
1"	2	51	3 13/16	97	2 3/16	56
1 1/4"	2 3/16	55	3 3/4	92	2 1/8	55



V2 Actuator and Press Rings						
Tube Diameter	A min.		B min.		C min.	
	inch	mm	inch	mm	inch	mm
1 1/2"	2 3/8	60	5	127	2 3/16	56
2"	2 9/16	65	4 3/4	121	3 9/16	65

C1 Actuator and Press Ring						
Tube Diameter	A min.		B min.		C min.	
	inch	mm	inch	mm	inch	mm
1/2"	1 5/8	41	3 1/4	83	2	51
3/4"	1 3/4	45	3 1/4	83	1 7/8	48
1"	2	51	3 1/4	83	1 7/8	48
1 1/4"	2 3/16	55	3 3/8	86	1 7/8	48

Tube Diameter	A min.		B min.		C min.	
	inch	mm	inch	mm	inch	mm
1/2"	2 1/4	57	2 1/8	54	1 1/16	27
3/4"	2 11/16	68	2 7/8	73	1 1/8	28
1"	2 15/16	75	3 5/16	84	1 3/16	30
1 1/4"	3 5/16	84	3 7/8	99	1 3/16	30
1 1/2"	3 11/16	94	4 5/16	110	1 3/16	30
2"	4 7/16	113	5 7/16	139	1 3/16	30

3.4 Welding, soldering or brazing requirements

3.4.1 Viega ProPress to existing brazed fitting

Minimum clearance requirement when pressing connections near an existing brazed connection is two pipe diameters.

3.4.2 Viega ProPress to existing solder fitting

To ensure proper sealing of both the soldered and press connections, a minimum spacing between connections must be maintained. Refer to Table 3.3.

Note: Ensure there is no residual solder or other foreign debris on the tubing to be inserted into the Viega ProPress fitting.

Table 3.3

Tube Diameter	Minimum Distance	
	inch	mm
1/2"	1/4	7
3/4"	1/4	7
1"	7/16	11
1 1/4"	7/16	11
1 1/2"	5/8	16
2"	3/4	19
2 1/2"	1/4	7
3"	1/4	7
4"	1/4	7

3.4.3 Soldering or brazing near an existing Viega ProPress fitting

To ensure proper sealing of the soldered/brazed joint and the press connection, a minimum distance between connections must be maintained.

When soldering near a Viega ProPress connection, the installer must remain at least three tube diameters away from the connection to prevent damage to the sealing element. When brazing, the installer must remain at least nine tube diameters away from the connection. Refer to Table 3.4.

The installer should take precautions to keep the Viega ProPress connection cool. These include:

- Wrapping the connection with a cold wet rag
- Fabricating solder connections prior to installing the press fitting, making sure the tube has cooled before installing the fitting
- Applying "spray type" spot freezing

It is particularly important to ensure the tubing inserted into the Viega ProPress fitting and the Viega ProPress fitting are not exposed to excessive heat.

Table 3.4

Tube Diameter	Soldering		Brazing	
	Minimum Distance		Minimum Distance	
	inch	mm	inch	mm
1/2"	1 1/2	38	4 1/2	114
3/4"	2 1/4	57	6 3/4	172
1"	3	76	9	229
1 1/4"	3 3/4	95	11 1/4	286
1 1/2"	4 1/2	114	13 1/2	343
2"	6	153	18	457
2 1/2"	7 1/2	191	22 1/2	572
3"	9	229	27	686
4"	12	305	36	915

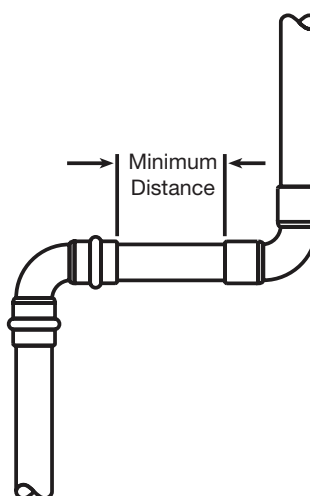
3.4.4 Welding adjacent to a Viega ProPress fitting

When welding pipe adjacent to pipe joined with a Viega ProPress fitting, installers must weld 4" away from the Viega ProPress connection to protect the sealing element. Precautions installers can take to keep the Viega ProPress connection cool include:

- Wrapping the connection with a cold wet rag
- Protecting the connection with a weld blanket
- Prefabricating welded connections prior to installing the pressed fitting
- Making sure the pipe has cooled before installing the fitting
- Consistently applying "spray type" spot freezing

3.4.5 Welding in line with a Viega ProPress fitting

When welding on the same pipe as a Viega ProPress fitting, installers must weld at least three feet away from the Viega ProPress connection to protect the sealing element. If three feet is not possible, installers should follow the precautions listed above to keep the Viega ProPress connection cool.



3.5 General installation requirements

The Viega ProPress fitting system must be installed while considering the following general industry requirements.

3.5.1 Expansion

Thermal expansion in installed systems generates stresses in pipes and appliance connectors. Compensation must allow for expansion and contraction that may occur within the piping system. Expansion joints or mechanical expansion compensators may be used to alleviate these stresses. ProPress systems do not require any additional protection when compared to a soldered system.

3.5.2 Electrical bonding

When properly installed, Viega ProPress fittings comply with Section 1211.15, Electrical Bonding and Grounding, of the Uniform Plumbing Code and Section 310 of the International Fuel Gas Code. The mechanical press provides continuous metal-to-metal contact between fitting and pipe. The press ensures continuity of bonding through this contact.

3.5.3 Piping exposed to freezing temperatures

In the Viega ProPress system, the EPDM sealing element can be installed in ambient temperatures down to 0°F. The HNBR sealing element available with Viega ProPressG fittings can be installed in ambient temperatures down to -40°F. Piping systems exposed to freezing temperatures must be protected per acceptable engineering practices, codes and as required by the local Authority Having Jurisdiction.

3.5.4 Corrosion protection

Viega ProPress fittings exposed to corrosive action, such as soil conditions or moisture, must be protected in an approved manner in accordance with NFPA 54 Section 404.8, NACE Standard RP0169-2002 Section 5, 2009 UPC Chapter 6 Section 609.3.1, 2009 UMC Chapter 13 Section 1312.1.3 and in a manner satisfactory to the local Authority Having Jurisdiction. Care should be taken to select hangers of suitable material that is galvanically compatible with the piping system. In addition, piping systems should be properly sized to minimize the risk of erosion corrosion resulting from excessive velocities.

3.5.5 Concealed spaces

Viega ProPressG was examined according to the construction and performance criteria in the CSA requirement LC-4 and was found acceptable. Specific performance tests were conducted to evaluate the fittings for use in concealed locations.

3.5.6 Underground installations

Viega ProPress fitting systems with copper tubing are approved for underground installations. However, any installations must meet all state and local codes, including those for underground.

Proper authorization must be obtained prior to installation from the local Authority Having Jurisdiction.

3.5.7 Pressure testing

The pressure testing of installed pipe is to be completed in accordance with local codes or Authority Having Jurisdiction. For Viega ProPressG, in the absence of local codes, test according to NFPA 54 or NFPA 58. Viega recommends air testing of gas systems to be a minimum of ½ psi.

The Viega Smart Connect feature is a quick and easy way for installers to identify connections that need to be pressed. Testing for leaks using the Viega Smart Connect feature is not a replacement for testing to the requirements of local codes or standards.

Water testing the Viega Smart Connect feature:

When testing the system with water, a pressure range of 15 psi - 85 psi is to be used. If an unpressed fitting is found, check to make sure the tubing is fully inserted before completing the press. Following a successful leak test, the system may be pressure tested up to 600 psi for water if required by local code requirements or project specifications.

Air testing the Viega Smart Connect feature:

Leak testing with air can be dangerous at high pressures. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. Following a successful leak test, the system may be pressure tested up to 200 psi maximum for air if required by local code requirements or project specifications.

3.5.8 Pipe hangers and supports

Pipe supports perform two functions. The first function is to provide support for the piping system.

The second function is to guide the pipe or tube during thermal expansion and contraction. Industry standard practices and guidelines shall be used for piping layout and support. Viega press connections require no special consideration for support.

Hangers and supports must conform to the local code requirements. In the absence of local code requirements, hangers and supports must conform to ANSI/MSS SP 58 Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application and Installation. Supports, hangers and anchors are to be installed in a manner that does not interfere with the free expansion and contraction of the piping.

All parts of the support equipment need to be designed and installed to not disengage due to movement of the supported piping. Sliding hangers must be positioned so that they cannot unintentionally become rigid hangers when the system is in use. See Figure 3.1. Figure 3.2 shows a sliding pipe hanger that becomes a rigid hanger with spacing in excess of 10".

Figure 3.1 Spacing for sliding pipe hanger

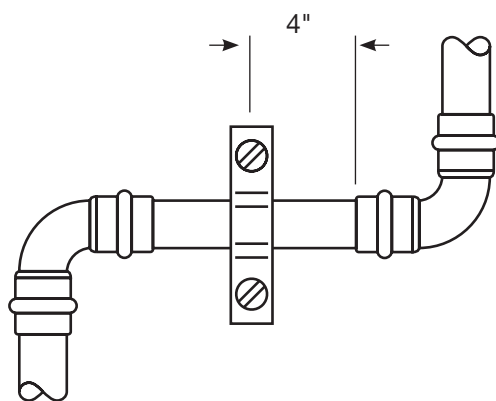
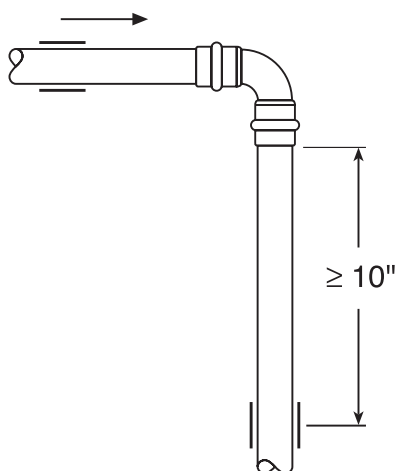


Figure 3.2 Spacing for sliding pipe hanger



At no point in the piping system should a fitting be the sole means of support. For example, when installing a tee, both the branch and the trunk must be properly supported. Piping systems should be isolated from shock and vibration through the proper use of hangers, supports and vibration-eliminating devices.

3.5.9 Pressure surges

The maximum operating pressure in a ProPress system is 200 psi; this is a working limit and applies to general operation as well as pressure transients. Good engineering practices should be utilized to design the system in a way that minimizes sharp pressure surges. Pressure surges or transients from fast-acting valves, pump surges and other sources that result in water hammer effects can cause damage to many system components, including press fittings. When fast-acting valves and/or pumps are incorporated into any system, the designer and installer should isolate press fittings from the effects of sharp pressure surges. ProPress fittings should be isolated or separated by sufficient distance from pumps, fast-acting valves and other sources of pressure transients.

3.6 Viega ProPress installation requirements

The following are special requirements to consider when installing the Viega ProPress fitting system.

3.6.1 Rotating a pressed fitting

Once a Viega ProPress fitting has been pressed, it can be rotated (not by hand), but once rotated more than five degrees, the fitting must be re-pressed to restore resistance to rotational movement. If the fitting is re-pressed, care should be taken to align the flats on the jaw and fitting.

3.6.2 Deflection

When pressing Viega ProPress fittings in a system, the deformation of the fitting is constant. This allows for a consistent leak-free joint every time and is a result of the pressing technique.

The pressing process can cause deflection (angular misalignment) to occur. Deflection while pressing can be minimized by alternating the position of the press tool on each fitting connection. An example would be placing the press tool on the right side of the first press connection and alternating to the left side of the press fitting on the second connection.

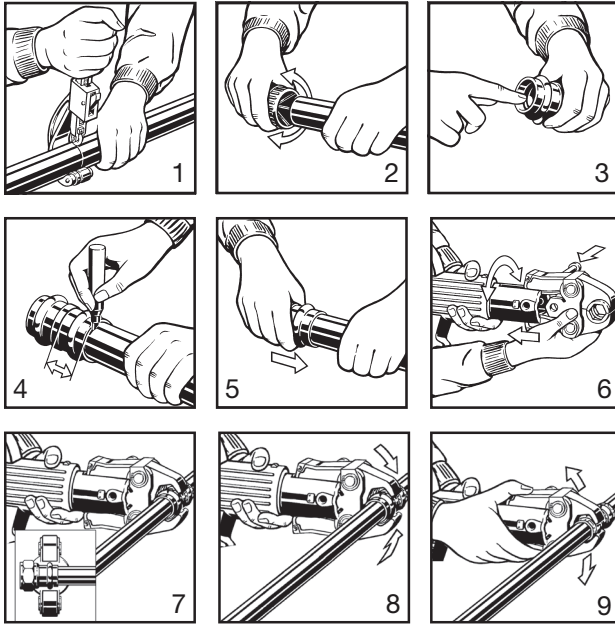
While deflection cannot be completely eliminated, it can be minimized using this method.

3.7 Identification

All Viega ProPress piping systems should be continuously marked in accordance with ANSI A13.1 or as required by the local Authority Having Jurisdiction.

3.8 Viega ProPress ½" to 2" installation

For Types K, L and M Hard Copper Tubing in ½" to 2" and Soft Copper Tubing in ½" to 1¼"



Tube Size	½"	¾"	1"	1¼"	1½"	2"
Insertion Depth	¾"	7/8"	7/8"	1"	17/16"	19/16"

⚠ WARNING 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 copper tubing at right angles using displacement-type cutter or fine-toothed steel saw.
2. Remove burr from inside and outside of tubing to prevent cutting sealing element.
3. Check seal for correct fit. Do not use oils or lubricants. Use only Viega ProPress Shiny Black EPDM or Dull Black FKM sealing elements.
Note: For applications requiring Viega ProPress with FKM sealing elements, remove the factory-installed EPDM sealing element and replace with FKM sealing element.
4. Mark proper insertion depth as indicated by the Viega ProPress Insertion Depth Chart. Improper insertion depth may result in improper seal.
5. While turning slightly, slide press fitting onto tubing to the marked depth.
Note: End of tubing must contact stop.
6. Insert appropriate Viega jaw into the pressing tool and push in, holding pin until it locks in place.
7. Open the jaw and place at right angles on the fitting. Visually check insertion depth using mark on tubing.
8. Start pressing process and hold the trigger until the jaw has engaged the fitting.
9. After pressing, the jaw can be opened again.

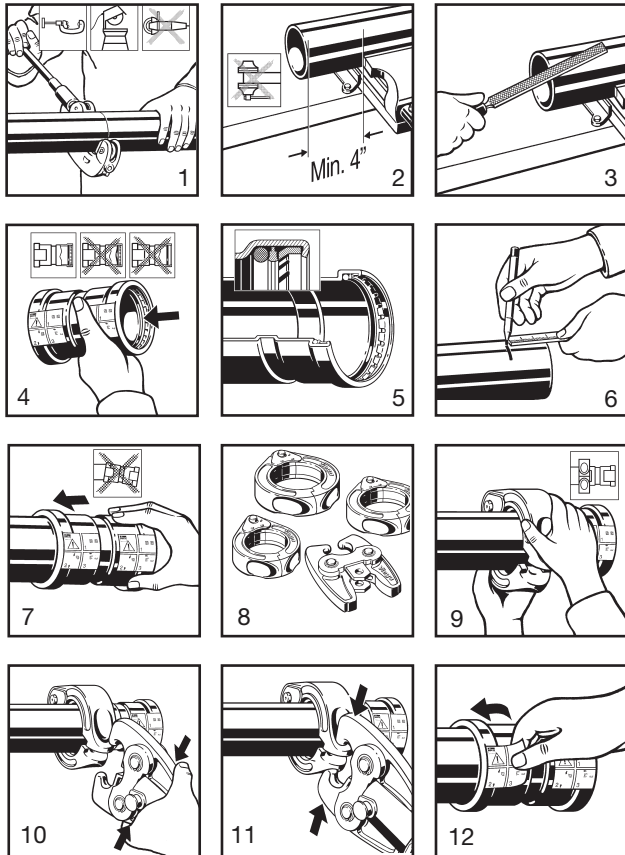


Leak Testing with Smart Connect®:

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 maximum. Leak testing with air can be dangerous at high pressures. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. Following a successful leak test, the system may be pressure tested up to 200 psi with air, or up to 600 psi with water, if required by local code requirements or project specifications.

3.9 Viega ProPress XL (Copper) 2½" to 4" installation

For Types K, L and M Hard Copper Tubing in 2½" to 4"



Tube Size	2½"	3"	4"
Insertion Depth	1 1/16"	1 15/16"	2 3/8"

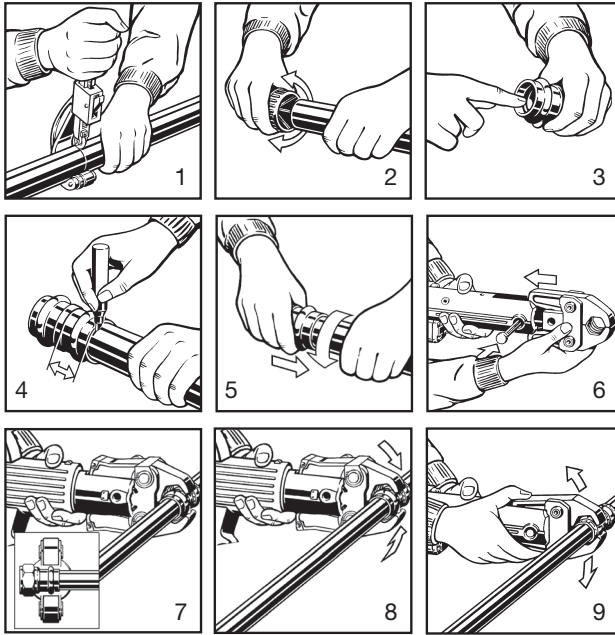
⚠ WARNING Read, understand and follow all instructions for installing ProPress XL (copper) fittings. Failure to follow all instructions may result in extensive property damage, serious injury or death.

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. Do not use oils or lubricants. Use only ProPress Shiny Black EPDM sealing elements.
5. Illustration demonstrates proper fit of grip ring, separation ring and sealing element.
6. Mark proper insertion depth as indicated by the ProPress XL (copper) Insertion Depth Chart. Improper insertion depth may result in an improper seal.
7. While turning slightly, slide press fitting onto tubing to the marked depth. End of tubing must contact stop.
8. ProPress XL (copper) fitting connections must be performed with ProPress XL-C Rings and V2 ACTUATOR. Use of ProPress XL Rings and/or Actuator (for Bronze fittings) will result in an improper connection. See Ridgid Operator's Manual for proper tool instructions.
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.
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.

Leak 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. Leak testing with air can be dangerous at high pressures. When testing with compressed air the proper pressure range is ½ psi to 45 psi. Following a successful leak test, the system may be pressure tested up to 200 psi with air, or up to 600 psi with water, if required by local code requirements or project specifications.

3.10 Viega ProPress for Stainless 1/2" to 2" installation

For use only with Viega stainless steel tubing



Pipe Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Insertion Depth	3/4"	7/8"	7/8"	1"	1 7/16"	1 9/16"

CAUTION It is the responsibility of designers of piping systems to verify the suitability of type 304 and 316 stainless steel pipe for use with the intended fluid media. The fluid's chemical composition, pH level, operation temperature, chloride level, oxygen level and flow rate and their effect on AISI type 316 stainless steel must be evaluated by the material specifier to confirm system life will be adequate for the intended service. Failure to do so may cause serious personal injury or property damage. Contact Viega Technical Services for questions and approvals.

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

1. Cut stainless steel tubing only with an approved stainless steel pipe cutting tool. Cut tubing at right angle to permit proper joining with the fitting.
2. Remove burr from inside and outside of tubing to prevent damage to the sealing element.
3. Check seal for correct fit. Do not use oils or lubricants. Use only Viega ProPress Shiny Black EPDM or Dull Black FKM sealing elements.
4. Mark proper insertion depth as indicated by the Viega ProPress Insertion Depth Chart. Improper insertion depth may result in improper seal.
5. While turning slightly, slide press fitting onto tubing to the marked depth.
Note: End of tubing must contact stop.
6. Insert appropriate Viega jaw into the pressing tool and push in, holding pin until it locks in place.
7. Open the jaw and place at right angles on the fitting. Visually check insertion depth using mark on tubing.
8. Start pressing process and hold the trigger until the jaw has engaged the fitting.
9. After pressing, the jaw can be opened again.

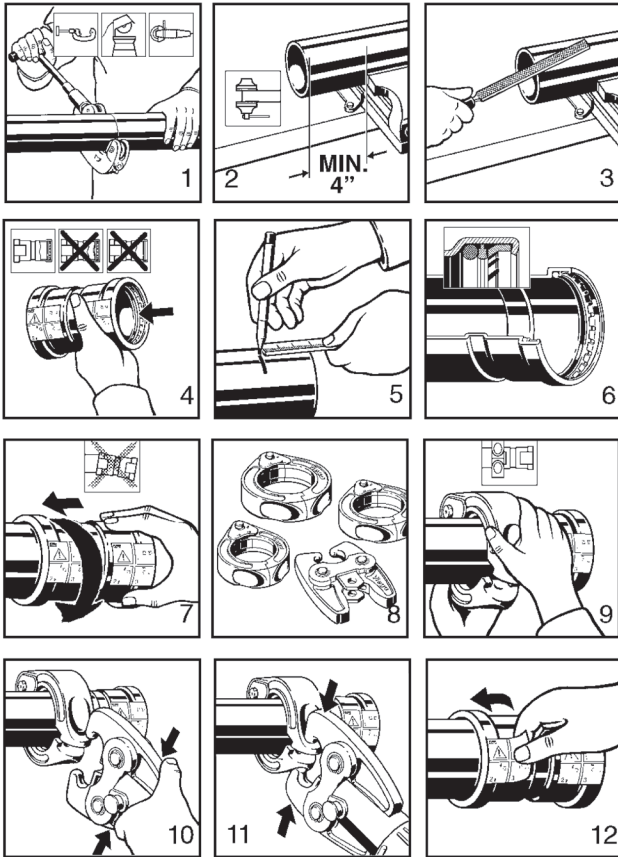


Leak Testing with Smart Connect®:

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 maximum. Leak testing with air can be dangerous at high pressures. When testing with compressed air the proper pressure range is 1/2 psi to 45 psi maximum. Following a successful leak test, the system may be pressure tested up to 200 psi with air, or up to 600 psi with water, if required by local code requirements or project specifications.

3.11 Viega ProPress XL (Stainless) 2½" to 4" installation

For use only with Viega stainless steel tubing



Pipe Size	2½"	3"	4"
Insertion Depth	1⅝"	1⅞"	2⅝"

CAUTION It is the responsibility of designers of piping systems to verify the suitability of type 304 and 316 stainless steel pipe for use with the intended fluid media. The fluid's chemical composition, pH level, operation temperature, chloride level, oxygen level and flow rate and their effect on AISI type 316 stainless steel must be evaluated by the material specifier to confirm system life will be adequate for the intended service. Failure to do so may cause serious personal injury or property damage.

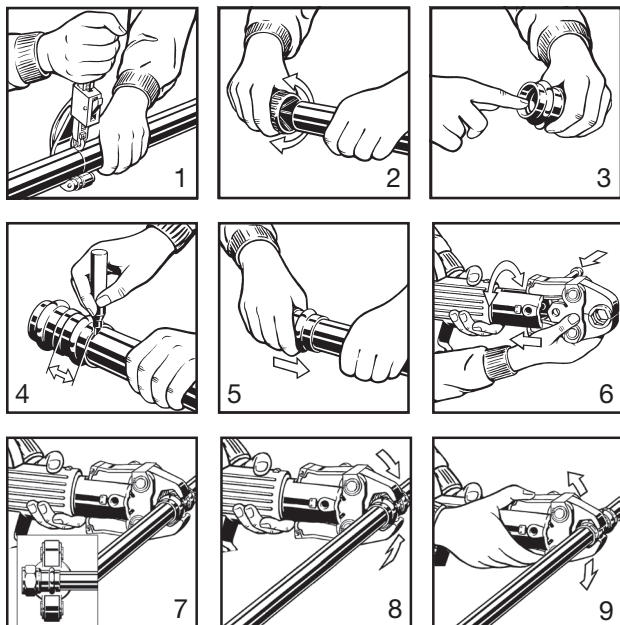
WARNING Read, understand and follow all instructions for installing Viega ProPress for Stainless fittings. Failure to follow all instructions may result in extensive property damage, serious injury or death.

- Cut stainless steel tubing only with an approved stainless steel pipe cutting tool. Cut tubing at right angle to permit proper joining with the fitting.
- Keep end of tube a minimum of 4" away from the contact area of the vise to prevent possible damage to the tube in the press area.
- Remove burrs from inside and outside of tubing to prevent damage of the sealing element.
- Check seal and grip ring for correct fit. Do not use oils or lubricants. Use only Viega ProPress XL (Stainless) sealing elements.
- Mark proper insertion depth as indicated by Viega ProPress XL (Stainless) insertion depth chart. Improper insertion depth may result in an improper seal.
- Illustration demonstrates proper fit of grip ring, separation ring and sealing element.
- While turning slightly, slide press fitting onto pipe to the marked depth.
Note: End of tube must contact stop.
- Press Viega ProPress XL (Stainless) fitting connections with Viega ProPress XL-C rings and V2 ACTUATOR.
Note: Use of Viega ProPress XL rings and/or Actuator (for Bronze Fittings) will result in an improper connection. See Ridge Tool operator's manual for proper tool instructions.
- 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.
- With V2 ACTUATOR inserted in the tool, open the V2 ACTUATOR as shown and connect the V2 ACTUATOR to the XL-C Ring.
- Place the V2 ACTUATOR onto the XL-C Ring. Hold the trigger until the Actuator has engaged the XL-C Ring. Keep extremities and foreign objects away from the XL-C Ring and V2 ACTUATOR during pressing operation to prevent injury or incomplete press.
- 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 completed.

Leak 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 maximum. Leak testing with air can be dangerous at high pressures. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. Following a successful leak test, the system may be pressure tested up to 200 psi with air, or up to 600 psi with water, if required by local code requirements or project specifications.

3.12 Viega ProPressG

For Types K, L and M Hard Copper Tubing in 1/2" to 2" and Soft Copper Tubing in 1/2" to 1 1/4"



Viega ProPress Insertion Depth Chart

Tube Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Insertion Depth	3/4"	7/8"	7/8"	1"	17/16"	1 9/16"



Leak Testing with Smart Connect®:

Unpressed connections are located by pressurizing the system with air or water. Leak testing with air can be dangerous at high pressures. When testing with compressed air the proper pressure range is 1/2 psi to 45 psi maximum. Following a successful leak test, the system may be pressure tested up to 200 psi if required by local code requirements or project specifications.

⚠ WARNING Read and understand all instructions for installing Viega ProPressG fittings for fuel gas. Failure to follow all instructions may result in significant property damage, serious injury or death.

1. Cut copper tubing at right angles using displacement-type cutter or fine-toothed steel saw.
2. Remove burr from inside and outside of tubing to prevent cutting sealing element.
3. Check seal for correct fit. Do not use oils or lubricants. Use only Viega ProPress Yellow HNBR sealing elements.
4. Mark proper insertion depth as indicated by the Viega ProPress Insertion Depth Chart. Improper insertion depth may result in improper seal.
5. While turning slightly, slide press fitting onto tubing to the marked depth.
Note: End of tubing must contact stop.
6. Insert appropriate Viega jaw into the pressing tool and push in, holding pin until it locks in place.
7. Open the jaw and place at right angles on the fitting. Visually check insertion depth using mark on tubing.
8. Start pressing process and hold the trigger until the jaw has engaged the fitting.
9. After pressing, the jaw can be opened again.

⚠ WARNING The following standards, codes and instructions should be followed when installing Viega ProPressG fittings for Fuel Gas.

- The installation shall be made in accordance with local codes or, in the absence of local codes, in accordance with the National Fuel Gas Code NFPA 54 or the LP-Gas Code NFPA 58, as applicable.
- For use with type K or L copper tubing, drawn copper from 1/2" to 2" and annealed copper from 1/2" to 1 1/4". All copper must be in compliance with ASTM B-88.
- The fittings are for use with fuel gases only and are intended for operating pressure specified (maximum 125 psi).
- Undue stress or strain on the fittings and the tubing is to be avoided.
- Concealed tubing and fittings shall be protected from puncture threats.
- If the installation requires components in addition to those supplied by the fitting manufacturer, those components shall be specified. The instructions shall state that only the components provided or specified by the manufacturer are to be used in the installation.
- The fitting/tubing system shall not be used as a grounding electrode for an electrical system.
- The inspection, testing and purging of the installation shall be performed using procedures specified in Part 4 of the National Fuel Gas Code NFPA 54, ANSI Z223 or the LP-Gas Code NFPA 58 section 3.2-10 as applicable, or in accordance with the requirements of the applicable local codes.
- For use with natural, propane, mixed and manufactured gases in the vapor state, not in the liquid state.
- The fitting/tubing system shall not be used as a means of support.

4.1 Limited warranty for Viega ProPress fittings 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 was 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.

4.2 Limited warranty for industrial applications

Industrial applications are defined as non residential and non commercial applications not normally accessible to the general public, including manufacturing, mining, process or fabrication environments.

Subject to the terms and conditions of this Limited Warranty, Viega LLC (Viega) warrants to end users, installers and distribution houses that its Viega metal press products (Viega product) when properly installed in industrial applications shall be free from failure caused by manufacturing defects 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 Viega product and the failure or leak occurs during the warranty period. You do not have a remedy under this warranty and the warranty remedy does not apply if the failure or any resulting damage is caused by (1) components other than those sold by Viega; (2) not designing, installing, inspecting, testing, or maintaining the Viega product in accordance with Viega's installation and product instructions in effect at the time of installation and other specifications and approvals applicable to the installation; (3) improper handling and protection of the Viega product prior to, during and after installation, inadequate freeze protection, or exposure to environmental or operating conditions not recommended for the application; or (4) acts of nature, such as, but not limited to earthquakes, fire, or weather damage. Final approval as to use compatibility to a specific process or fluid application is the responsibility of the engineer of record or responsible design/facilities personnel and this Limited Warranty only applies to manufacturing defects in the Viega Product.

In the event of a leak or other failure in the Viega product covered by this warranty, it is the responsibility of the end user to take appropriate measures to diminish any damage, to include making timely 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) calendar 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, document the date of installation, and the amount of the repair or replacement if performed by you. 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 a Viega location and reasonable access to the site of damage. Viega will notify you in writing as to the results of its review.

In the event that Viega determines that the failure or leak was the result of a manufacturing defect in the Viega Product covered by this warranty and to which this warranty applies, the EXCLUSIVE AND ONLY REMEDY under this warranty shall be the reimbursement for reasonable charges for repair or replacement of the Viega Product itself. VIEGA SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR OTHER DAMAGE (FOR EXAMPLE, ECONOMIC LOSS, 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 OR ANY STATUTE OF LIMITATIONS RELATING TO SUCH WARRANTIES. 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.

4.3 Limited warranty for marine applications

Marine applications are defined as mobile structures used to navigate water or stationary structures in water

Subject to the terms and conditions of this Limited Warranty, Viega LLC (Viega) warrants to end users, installers and distribution houses that its Viega metal press products (Viega product) when properly installed in approved marine applications and other products sold by Viega LLC when properly installed in marine applications in accordance with our listings shall be free from failure caused by manufacturing defects for a period of two (2) years from date of installation. This warranty applies only to approved applications. Installations that are not approved shall not be covered by this warranty and shall not be the responsibility of Viega LLC.

Under this Limited Warranty, you only have a right to a remedy if the failure or leak resulted from a manufacturing defect in the Viega product and the failure or leak occurs during the warranty period. You do not have a remedy under this warranty and the warranty remedy does not apply if the failure or any resulting damage is caused by (1) components other than those sold by Viega; (2) not designing, installing, inspecting, testing, or maintaining the Viega product in accordance with Viega's installation and product instructions in effect at the time of installation and other specifications and approvals applicable to the installation; (3) improper handling and protection of the Viega product prior to, during and after installation, inadequate freeze protection, or exposure to environmental or operating conditions not recommended for the application; or (4) acts of nature, such as, but not limited to earthquakes, fire, or weather damage. Final approval as to use compatibility to a specific process or fluid application is the responsibility of the engineer of record or responsible design/facilities personnel and this Limited Warranty only applies to manufacturing defects in the Viega Product.

In the event of a leak or other failure in the Viega product covered by this warranty, it is the responsibility of the end user to take appropriate

measures to diminish any damage, to include making timely 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) calendar 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, document the date of installation, and the amount of the repair or replacement if performed by you. 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 a Viega location and reasonable access to the site of damage. Viega will notify you in writing as to the results of its review.

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

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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.

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*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).

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