

**Installation Manual**

**Viega MegaPress® CuNi Systems**





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# 1 About this Document

## 1.1 Disclaimers



This document is subject to updates. For the most current Viega technical literature please visit [www.viega.us](http://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.**

## 1.2 Symbols Used

The following symbols may be used within this document:



### **DANGER!**

This symbol warns of possible life-threatening injury.



### **WARNING!**

This symbol warns of possible serious injury.



### **CAUTION!**

This symbol warns of possible injury.



### **NOTICE!**

This symbol warns of possible damage to property.



Notes give additional helpful tips.

## 1.3 Audience

The information in this manual is directed at plumbing and mechanical professionals and trained personnel. Individuals without the above-mentioned training or qualification are not permitted to mount, install and, if required, maintain this product.

## 1.4 About this Version

This installation manual contains important information about the choice of product or system, assembly, and commissioning as well as intended use and, if required, maintenance measures. The information about the products, their properties, and application technology are based on the current standards in the United States and Canada.

Some passages in the text may refer to technical codes in the United States and Canada. These should serve as recommendations in the absence of corresponding national regulations. The information herein is not binding for other countries and regions; and as mentioned above, should be understood as a recommendation.

## 2 Product Information

### 2.1 MegaPress CuNi Systems

Viega MegaPress CuNi is a state-of-the-art, IPS cold press fitting system made of non-corrosive copper nickel wrought alloy that provides an economical and reliable installation of class 200 and schedule 40 copper-nickel pipe. Viega MegaPress CuNi fittings are available in sizes ranging from ½" to 4" and provide a fast, reliable, consistent joining method. The Viega MegaPress CuNi fitting system is offered in configurations that allow for the installation of the vast majority of copper-nickel piping applications in the shipbuilding market.

MegaPress CuNi fittings feature a white dot with an FKM sealing element. It uses Viega's unique Smart Connect® technology to help installers ensure that they have pressed all connections.

The Viega MegaPress CuNi fitting system requires no welding, soldering, brazing, or threading and poses no fire hazard, which is particularly important in restoration or retrofit work. The fittings are installed with electro-hydraulic press tools (battery-powered or corded press tools).

### 2.2 Safety

Please read and understand the instructions before beginning installation to eliminate safety concerns and reduce risks associated with use and handling of Viega products.

### 2.3 Areas of Use

With its 90/10 copper-nickel alloy and FKM sealing element, Viega MegaPress CuNi is approved for a variety of different applications including:

Fresh water:

- Machinery cooling
- Fire main and water spray
- Sprinkler system
- Hot/cold potable water

Seawater:

- Bilge and ballast
- Wet or dry fire main
- Foam system
- Water spray
- Sprinkler system
- Cooling water systems



Flammable fluids:

- Cargo oil
- Fuel oil
- Lube oil
- Hydraulic oil

Miscellaneous:

- Compressed air system
- Condensate return
- Vacuum piping
- Sewage discharge

It is recommended that all systems be clearly labeled with the fluid or gas being conveyed. In the absence of local requirements, systems should be identified in accordance with ANSI/ASME A13.1.



The use of the system for applications other than those listed or outside of these parameters must be approved by the Viega Technical Services Department.

## 2.4.1 Technical Assistance

Consult Viega's Customer Success Division for information on applications not listed or applications outside listed temperature and pressure ranges.

- Viega Technical Support: [techsupport@viega.us](mailto:techsupport@viega.us)
- Engineering Services: For more information on fire protection system design, radiant system design, and plumbing design services: [engineeringervices@viega.us](mailto:engineeringervices@viega.us)

## 2.4 Listings and Certifications

MegaPress CuNi fittings have the following listings and certifications:

- ABS: American Bureau of Shipping Type Approval
- BV: Bureau Veritas Type Approval
- DNV GL: Det Norske Veritas Germanischer Lloyd Type Approval
- LR: Lloyd's Register Type Approval
- NKK: Nippon Kaija Kyokai Type Approval
- RINA: Registro Italiano Navale
- USCG: US Coast Guard

For use in Class III pipe components for transporting sea water and other media in accordance with section 4.6.2, Table 9 and 10 of the ABS Steel Vessel Rules for compression couplings. The fittings are an approved fire-resistant type.

## 2.5 Codes and Standards



It is the responsibility of the installer or any other parties to adhere to all applicable local rules and regulations governing the nature of the installation.

MegaPress CuNi fittings comply with the following codes and standards:

- ISO 19921, 19922 Fire Resistance Test
- IACS P2.11.5
- ISO 9001 Quality Management System Certification

## 2.6 Shipbuilding Rules

MegaPress CuNi system conforms to the following:

- International Association of Classification Societies
  - Requirements concerning pipes and pressure vessels
- United States Coast Guard
- ABS Steel Vessel Rules
- ASTM F3226/F3226M Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems

## 2.7 Product Description

### 2.7.1 Overview

The MegaPress CuNi system consists of press connectors for heavy steel pipes and the corresponding press tools. MegaPress press jaws, actuator, and rings are available for various dimensions. Their constant compression produces a positive, nondetachable, mechanical joint.

### 2.7.2 Pipes

Viega MegaPress CuNi ½" to 4" fittings are compatible with class 200 and schedule 40 copper-nickel pipe manufactured in accordance to the following standards:

- ASTM B466 standard specification for seamless copper-nickel pipe and tube
- ASTM B467 standard specification for welded copper-nickel pipe
- MIL-T-16420K Military Specification, tube, copper-nickel alloy, seamless and welded

### 2.7.3 Viega MegaPress CuNi Pipe Marking Guide

Viega MegaPress CuNi ½" to 4" fittings are compatible with class 200 and schedule 40 copper-nickel pipe manufactured in accordance with the following standards:

- ASTM B466 standard specification for seamless copper-nickel pipe and tube
- ASTM B467 standard specification for welded copper-nickel pipe
- MIL-T-16420K Military Specification, tube, copper-nickel alloy, seamless and welded

All Viega MegaPress CuNi piping systems should be continuously marked in accordance with ANSI A13.1 or as required by the local authority having jurisdiction.

Usage	Material Properties	Type of Application (typical)	Color Scheme
Hazardous Materials	<ul style="list-style-type: none"> <li>■ Flammable or Explosive</li> <li>■ Chemically Active or Toxic</li> <li>■ Radioactive</li> <li>■ Extreme Temperature / Pressure</li> </ul>	<ul style="list-style-type: none"> <li>■ Process Piping</li> <li>■ High-Pressure Steam</li> <li>■ Acids/Corrosives</li> </ul>	<b>YELLOW ON BLACK</b>
Low Hazard Materials (Liquid)	<ul style="list-style-type: none"> <li>■ Liquid</li> <li>■ Liquid Admixture</li> </ul>	<ul style="list-style-type: none"> <li>■ Cooling Water</li> <li>■ Grey Water</li> <li>■ Chilled Water</li> </ul>	<b>WHITE ON GREEN</b>
Low Hazard Materials (Gas)	<ul style="list-style-type: none"> <li>■ Gas</li> <li>■ Gas Admixture</li> </ul>	<ul style="list-style-type: none"> <li>■ Compression Air</li> <li>■ Nitrogen (N<sub>2</sub>)</li> <li>■ Argon (Ar)</li> </ul>	<b>WHITE ON BLUE</b>
Fire Suppression	<ul style="list-style-type: none"> <li>■ Liquid</li> <li>■ Gas</li> <li>■ Foam</li> </ul>	<ul style="list-style-type: none"> <li>■ Sprinklers (Wet/Dry)</li> <li>■ CO<sub>2</sub></li> <li>■ Foam (AFFF)</li> </ul>	<b>WHITE ON RED</b>

**Table 1: Guide to the ANSI A13.1 standard for the identification of pipes**

Pipe O.D. Including Covering	Minimum Length of Label Field	Minimum Height of Letters	Label Field Color
¾" to 1¼"	19 mm to 32 mm	8"	203 mm
1½" to 2"	38 mm to 51 mm	8"	203 mm
2½" to 4"	64 mm to 108 mm	12"	305 mm

**Table 2: Pipe markers**

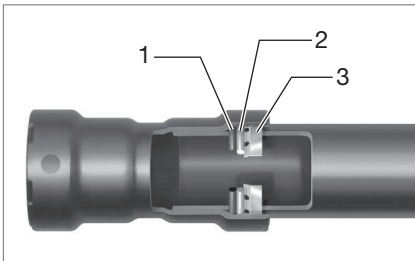
#### Marker Placement

- At all changes in direction
- At both sides of any penetrations (valves, flanges, tees, etc.)
- At frequent intervals on straight run (50 feet is typical)
- Locate pipe markers so they are readily visible
- Provide arrows indicating direction of flow

**Note:** This guide is for general information purposes only. Pipe markings shall be in accordance with local code requirements.

## 2.7.4 Press Fittings

MegaPress CuNi press fittings are available in a number of configurations and sizes. An overview of the press fittings suitable for a system can be found in the catalog.



- 1 The 420 stainless steel bite ring's teeth bite into the pipe and lock the fitting securely in place.
- 2 For ½" to 2" fittings, a 304 stainless steel separator ring protects the sealing element from damage by creating a positive physical separation during installation. For 2½" to 4" fittings, a PBT (Polybutylene Terephthalate) separator ring protects the sealing element.
- 3 The FKM sealing element ensures water-tight or air-tight connections.

### 2.7.4.1 FKM Sealing Element

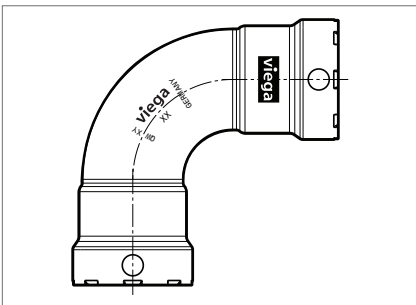


Viega MegaPress CuNi fittings are manufactured with a high-quality, dull black FKM (Fluoroelastomer) sealing element installed at the factory. Sealing elements are inserted into the fitting using a H1 food grade lubricant registered with NSF and the USDA, and is approved for use under FDA 21 CFR.

FKM possesses excellent resistance to aging, ozone, sunlight, weathering, environmental influences, and 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.

The operating temperature of the MegaPress CuNi FKM sealing element is 23° to 284°F (-5° to 140°C). It can withstand heat spikes up to 356°F.

### 2.7.4.2 Fitting Markings



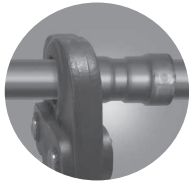
Each MegaPress CuNi fitting is marked with the following:

- White dot: FKM sealing element and Smart Connect technology
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- Batch code

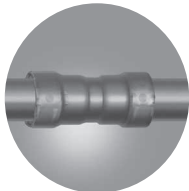
### 2.7.4.3 Viega Smart Connect Technology



**1** Identify an unpressed connection during pressure testing when water flows past the sealing element.



**2** Upon identification, use the press tool to press the fitting, making a secure leak-proof connection.



**3** Viega MegaPress connections are fast, flameless, and reliable.

Viega Smart Connect technology provides the installer quick and easy identification of an unpressed fitting during a leak test. When the fitting is pressed, a secure, non-detachable, mechanical connection is created. Smart Connect technology provides the installer with an easy way to see connections that have not been pressed before putting the system into operation.



Testing for leaks using Viega Smart Connect is not a replacement for testing requirements of local codes and standards. If testing with compressed air, it is necessary to use an approved leak-detect solution.

## 2.8 General Installation Requirements

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

### 2.8.1 Required Tools

The following tools are required for making a press connection:

- Pipe cutter or a fine-toothed hacksaw
- Deburring tool
- Marker for marking insertion depth on pipe
- Press machine with constant pressing force
- Press jaw or press ring with corresponding actuator suitable for the pipe diameter and with the proper profile



#### Improper Tool/Material Damage

Only use press jaws and rings that are designed for use with MegaPress fittings.

Press Tool Models	Press Jaw Models	Press Ring Models
<b>Standard</b>		
RIDGID RP330	37958 - ½" MegaPress jaw	21878 - V2 Press Ring Actuator
RIDGID RP340	37963 - ¾" MegaPress jaw	37973 - 1¼" MegaPress Ring
Milwaukee M18	37968 - 1" MegaPress jaw	37978 - 1½" MegaPress Ring
		37983 - 2" MegaPress Ring
<b>Compact</b>		
RIDGID RP240	48433 - ½" Compact MegaPress jaw	
RIDGID RP241	48438 - ¾" Compact MegaPress jaw	
<b>XL</b>		
Use standard tools	60658 - MegaPress XL PressBooster	60643 - 2½" MegaPress ring
		60648 - 3" MegaPress ring
		60653 - 4" MegaPress ring

Table 3: Press tools

## 2.8.2 Expansion

Pipelines expand with heat. Heat expansion is dependent on the material. Thermal expansion in installed systems generates stress on pipes and appliance connectors. Compensation must be allowed for expansion and contraction that may occur within the piping system. Expansion joints or mechanical expansion compensators may be used to alleviate these stresses.

The following methods are effective:

- Fixed and sliding hangers
- Expansion equalization joints (expansion bends)
- Expansion compensators

## 2.8.3 Exposure to Freezing Temperatures

Viega MegaPress CuNi systems with FKM sealing elements can be installed in ambient temperatures down to 23°F (-5°C).

Piping systems exposed to freezing temperatures must be protected per acceptable engineering practices, codes, and as required by the local authority.

## 2.8.4 Underground Installations

Viega MegaPress CuNi fitting systems are all approved for underground installations. However, installations must meet all state and local codes, including those for underground. Proper authorization must be obtained prior to installation from the local authority.

## 2.8.5 Concealed Spaces

The Viega MegaPress CuNi fitting system has been approved for use in concealed spaces. Specific performance tests were conducted to evaluate the fittings for use in concealed spaces. Concealed tubing and fittings shall be protected from puncture threats.

## 2.8.6 Electrical Bonding

When properly installed, MegaPress CuNi fittings comply with Section 1211.15 Electrical Bonding and Grounding of the Uniform Plumbing Code.

The mechanical press provides continuous metal-to-metal contact between fitting and pipe. The press ensures the continuity of the bonding through this contact.



A qualified electrician is responsible for ensuring electrical bonding is tested and secured.



**DANGER!**  
**Electric Shock**

An electric shock can cause burns, serious injury, and even death.

- Because all metallic piping can conduct electricity, unintentional contact with a live wire can lead to the entire system and components connected to it to become energized. Metal piping is not meant to conduct electricity.
- A properly bonded system creates a safe path for electricity to travel so that the system can't be energized.
- An unbonded or improperly bonded system can be a shock hazard.
- Always ensure bonding is in accordance with local codes.

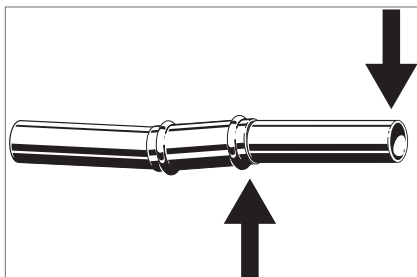
**2.8.8 Corrosion Protection**

Viega MegaPress CuNi 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, or satisfying local code requirements.

Care should be taken to select hangers of suitable material that is galvanically compatible with the piping system. In addition, systems should be properly sized to minimize the risk of erosion corrosion resulting from excessive velocities.

In some cases the local authority may require pipe and fittings to be painted. Installers should use caution to prevent saturating the fittings with paint and take care to not allow excess paint to accumulate on the fitting hub. Failure to use caution could result in a premature failure.

**2.8.7 Deflection**



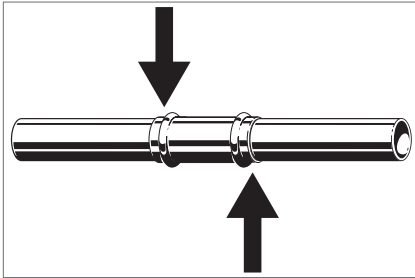
The pressing process can cause deflection (angular misalignment) to occur. When pressing Viega MegaPress CuNi fittings in a system, the deformation of the fitting is constant. This allows for a consistent leak-free joint every time and is a result of the pressing technique.

Deflection occurs in the same way for every fitting. The fitting being pressed will move in the direction of the jaw or ring opening.

- Since the fitting will deflect toward the opening of the jaw or ring, the pipe end will deflect in the opposite direction.
- By counteracting the fitting movement, one can minimize the deflection of the fitting and ultimately the pipe.
- When using strut and clamps, deflection is minimized and nearly eliminated depending on clamp spacing.

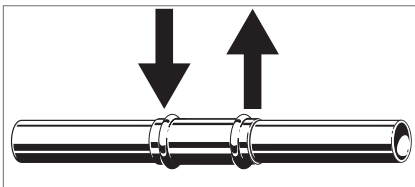
### 2.8.8.1 Controlling Deflection

Deflection while pressing can be minimized by utilizing the following installation practices.



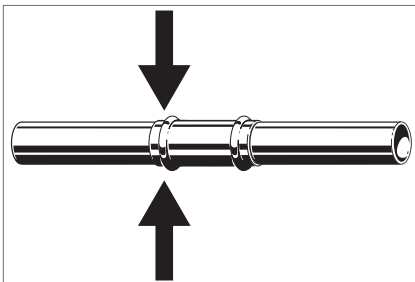
#### Alternate Press Directions

- Press one end of fitting.
- Make second press on other end of fitting from the opposite side. Site conditions permitting.



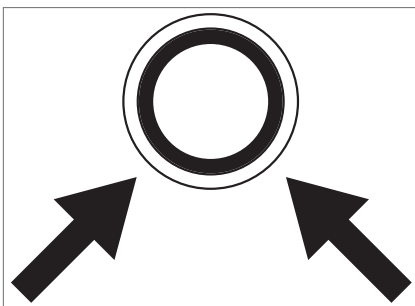
#### Push-Pull Method

- Rings = Push on press tool.
  - Jaws = Pull on press tool.
- The press tool can be feathered using the trigger as needed to apply pulling or pushing force to control deflection.



#### Re-Press

- Press the fitting, once on each side (that is, re-press the fitting a second time on the opposite side). Pressing the same connection from the opposite side will usually straighten misalignment between the pipe and fitting.



- When pressing overhead piping, it may be inconvenient to alternate sides for each press.
- The natural weight of the piping plus pressing on opposite sides at a 45 degree angle should adequately eliminate deflection.
- This technique can also be used for any horizontal piping and also when working above the piping.



- As long as the pipe is properly prepped and marked and the fitting is installed according to Viega's MegaPress CuNi Product Instructions, if there is any deflection present after the installation of the fitting, the connection is still acceptable and meets Viega's manufacturing specifications for proper installation and warranty.
- Deflection of a press connection has no effect on the integrity of the system, and it can be pressure tested in accordance with the MegaPress CuNi Product Instructions.



## 3 Handling Instructions

All Viega MegaPress CuNi components and associated pipe shall be free from dirt, debris, or items that may interfere with the sealing element and the press connection. Viega MegaPress CuNi sealing element, separator ring, and bite ring are to be visually inspected prior to installation to ensure the seal is intact and properly located within the fitting. Viega MegaPress CuNi sealing element, separator ring, and bite ring are not interchangeable between the different MegaPress systems.

### 3.1 Transport

When transporting fittings:

- Do not pull or drag the fittings or system components along other surfaces.
- Secure fittings, piping, and system components during transportation to keep them from shifting.
- Do not damage the protective cap on components or pipe ends.
- Do not remove protective caps until immediately before installing.

### 3.2 Storage

When storing materials:

- Store fittings, pipe, and system components in a clean and dry place.
- Do not store components directly on the floor.
- Provide at least three points of support for the storage of piping.
- Where possible, store different sizes separately.
- Store small sizes on top of larger sizes if separate storage is not possible.
- Store fittings, pipe, and system components of different materials separately to prevent contact corrosion.

## 4 Installation Instructions

### 4.1 Check System Components

System components may, in some cases, become damaged through transportation and storage.

- Check all parts.
- Replace damaged components.
- Do not repair damaged components.
- Contaminated components may not be installed.

### 4.2 Installing and Mounting the Pipe

Observe the general rules of hanging and mounting:

- Fixed piping should not be used as support for other piping and components.
- Do not use pipe hooks.
- Observe distance between fittings and mounting points.
- Observe the expansion direction – plan fixed and sliding mounts.

#### 4.2.1 Pipe Hangers and Supports

Piping supports perform two functions:

- To provide support for the piping.
- To guide the pipe during thermal expansion and contraction.



#### **Fittings must not be used as support**

- System malfunction may result from additional stress and strain put on the fitting.
- At no point in the 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.

Industry standard practices and guidelines shall be used for pipe layout and support. 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.

- Do not use fixed pipelines as a support for other pipelines and components.
- Do not use pipe hooks.
- Observe the expansion direction: plan fixed and gliding points.

Hangers and supports must conform to the local code requirements. In the absence of local code requirements, hangers and supports should conform to ANSI/MSS SP 58 Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application and Installation. Only pipe clamps with chloride-free noise insulation inlays should be used to secure the pipes.

Pipe Size (inches)	Maximum Span (feet)	Minimum Rod Diameter (inches)
1/2	7	3/8
3/4		
1		
1 1/4		
1 1/2	9	3/8
2	10	3/8
2 1/2	11	1/2
3	12	1/2
4	14	1/2

Table 4: Pipe hanger spacing

## 4.2.2 Transition Fittings

### 4.2.2.1 Threaded Connections

The Viega MegaPress CuNi systems can be joined with off-the-shelf threaded fittings. In this regard:

- The threaded connection is made first.
- The press connection is made second.

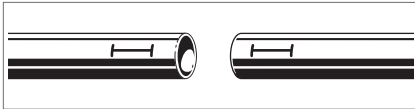
This process avoids unnecessary torsion on the press fitting.

### 4.2.2.2 Flange Connections

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

### 4.2.3 No-Stop Couplings

No-stop couplings are often used to conduct repairs. Without a stop, these couplings can slide completely onto a pipe and allow a connection to be made in tighter spaces. Unlike fittings with an integrated stop that have a minimum insertion depth, no-stop couplings have minimum and maximum allowable insertion depths. Both the minimum and the maximum insertion depths must be marked and a line connecting the two marks.



Pipe Diameter (inches)	Minimum Insertion Depth (inches)	Minimum Insertion Depth (mm)	Maximum Insertion Depth (inches)	Maximum Insertion Depth (mm)
1/2	1 1/16	27	1 5/8	41
3/4	1 3/16	30	1 13/16	46
1	1 3/8	35	1 15/16	49
1 1/4	1 13/16	46	2 1/2	64
1 1/2	1 7/8	48	2 3/4	70
2	2	51	2 3/4	70
2 1/2	1 13/16	46	3 1/8	79
3	2 5/16	59	3 11/16	94
4	3 1/8	80	4 3/8	111

**Table 5: Insertion depths for MegaPress CuNi no-stop couplings**

### 4.3 Space Requirements and Intervals



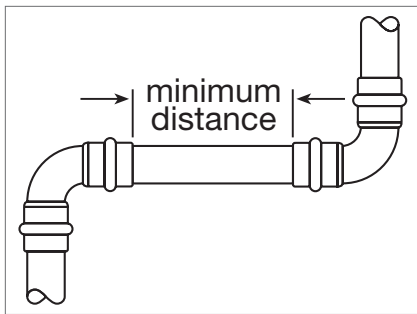
#### Not enough space

The connection may leak and/or ring/press gun may not fit around the fitting.

- Adhere to minimum space requirements.
- Make sure that the space required for pressing tools is available if fittings will be pressed immediately upstream or downstream from wall or ceiling penetrations.
- Take the minimum required distances into consideration during the planning phase of the project whenever possible.

#### 4.3.2 Minimum Distance Between Fittings

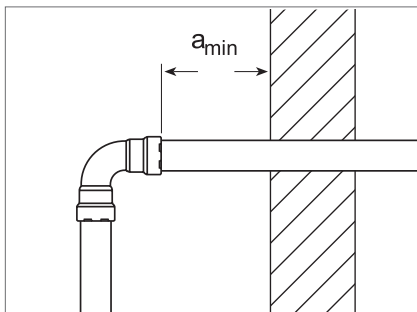
To ensure a correct press, a minimum distance between press fittings must be maintained. Failure to provide this distance may result in an improper seal.



Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)
1/2	1/4	7
3/4		
1		
1 1/4	1/2	13
1 1/2		
2		
2 1/2		
3		
4		

Table 6: Minimum distance between press fittings

#### 4.3.1 Minimum Space Requirements



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

Pipe Size (inches)	Minimum space requirement, $a_{min}$ for press tools (inches)
	RIDGID RP241, RP320, RP330, RP340, and CT400 Press Tools Milwaukee M18 Press Tools
1/2 to 1	1 1/2
1 1/4 to 2	3/8
2 1/2 to 4	3/8

Table 7: MegaPress distance requirements for press jaws between pipes and walls

### 4.3.3 MegaPress Jaws Clearance Requirements

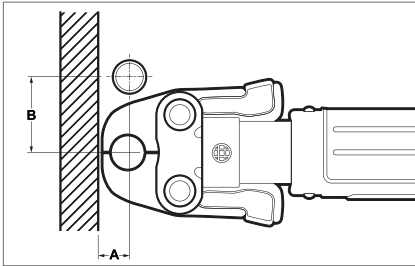
The minimum distance between pipe, or the pipe and the wall/ceiling construction, must be taken into consideration in the planning phase for a problem free work process. The following illustrate the clearance requirements for the jaws and fittings and the procedure for pressing fittings in tight quarters.



#### Pipe installed too closely together

Connection may leak

- Adhere to minimum intervals between fittings.
- Insert pipe to full insertion depth before pressing.

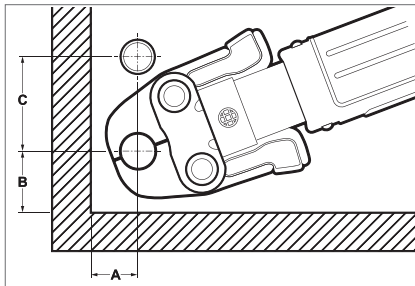


Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)
1/2	1	26	2 5/8	67
3/4	1 1/4	32	3 1/8	79
1	1 3/4	45	3 5/8	93

Table 10: MegaPress standard jaws clearance requirements

Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)
1/2	1 1/4	32	2 7/8	74
3/4	1 1/8	29	3	77

Table 11: MegaPress compact jaws clearance requirements



Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)	C minimum (inches)	C minimum (mm)
1/2	1 1/4	32	1 7/8	48	3	77
3/4	1 1/2	39	2 1/8	54	3 1/2	89
1	2	51	2 1/2	64	4	102

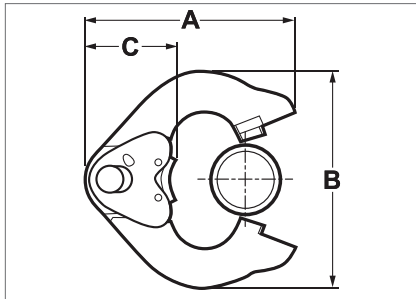
Table 8: MegaPress standard jaws clearance requirements between pipe, wall, and floor

Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)	C minimum (inches)	C minimum (mm)
1/2	1 1/2	39	2 1/8	54	3 1/8	80
3/4	1 3/8	35	2 1/8	54	3 3/8	86

Table 9: MegaPress compact jaws clearance requirements between pipe, wall, and floor

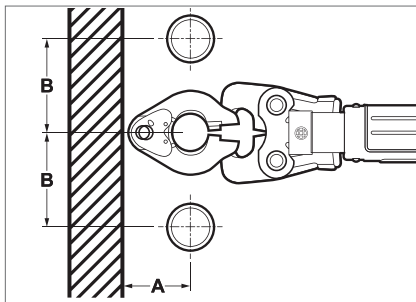
### 4.3.4 MegaPress Rings Clearance Requirements

Ensure that the space required for system pressing tools is available if Viega MegaPress CuNi fittings will be installed immediately upstream or downstream from ceiling penetrations.



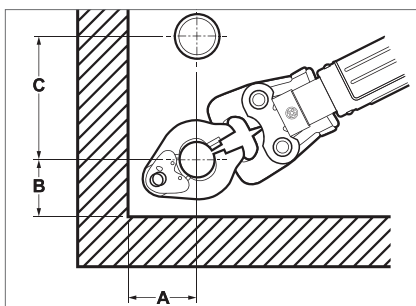
Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)	C minimum (inches)	C minimum (mm)
1¼	6	153	6¼	159	2½	64
1½	6	153	6¾	172	2⅝	67
2	6	153	6⅞	175	2½	64
2½	6⅝	169	7⅝	194	2½	64
3	7½	191	8⅞	226	2½	64
4	8½	216	10⅞	264	2⅝	67

Table 12: MegaPress rings dimensions



Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)
1¼	3¾	96	4⅞	124
1½	4	102	5⅞	131
2	4	102	5⅞	137
2½	4½	115	5⅞	150
3	4¾	121	6¾	172
4	5⅞	137	8¼	210

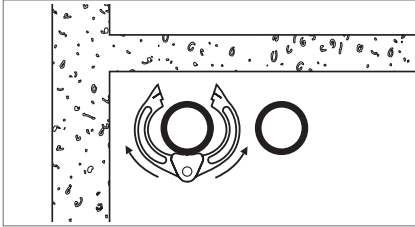
Table 13: MegaPress rings with V2/V3 actuator clearance requirements



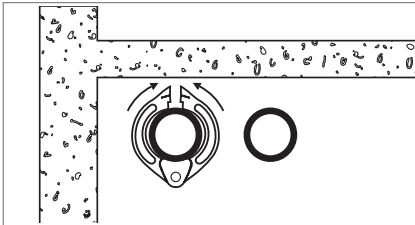
Pipe Diameter (inches)	A minimum (inches)	A minimum (mm)	B minimum (inches)	B minimum (mm)	C minimum (inches)	C minimum (mm)
1¼	3¾	96	3¾	96	4⅞	124
1½	4	102	4	102	5⅞	131
2	4	102	4	102	5⅞	137
2½	4½	115	4	102	5⅞	150
3	4¾	121	4¾	121	6¾	172
4	5⅞	137	5½	140	8¼	210

Table 14: MegaPress rings with V2/V3 actuator clearance requirements between pipe, wall, and floor

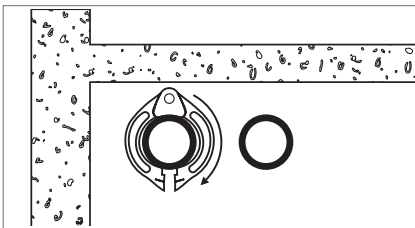
### 4.3.5 Pressing with Ring and Actuator in Tight Quarters



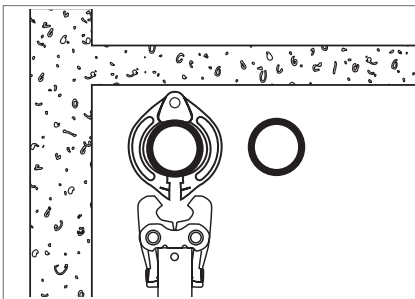
- Wrap the actuator ring around the press fitting with the opening facing away from you.



- Close the actuator ring tight around the fitting.



- Rotate the actuator ring until the press jaw receptacle is facing toward you.



- Properly insert the press jaw and begin the press fitting procedure.



## 4.4 Welding

### 4.4.1 Welding Adjacent to a Fitting

To prevent damage to the sealing element, maintain proper welding distances from the fitting. If welding adjacent to the connection, weld a minimum of four inches away.

### 4.4.2 Welding In Line with a Fitting

To prevent damage to the sealing element, maintain proper welding distances from the fitting. If welding in line with the connection, weld a minimum of three feet away from the connection to protect the sealing element.

### 4.4.3 Welding Requirements

The installer should take precautions to keep the MegaPress CuNi connection cool:

- Wrap the connection with a cold wet rag.
- Protect the connection with a weld blanket.
- Prefabricate solder connections/welded fittings prior to installing the press fitting. (Ensure pipe has cooled before installing the press fitting.)
- Apply heat sink gel or spray or spot freezing.

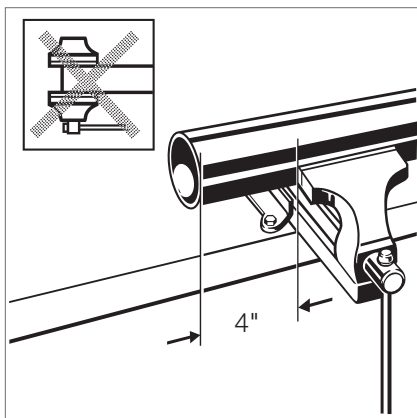
## 4.5 Cutting the Pipe



### Damaged pipe and/or sealing element

Press fittings can form improper connections as the result of damaged pipe and/or sealing elements.

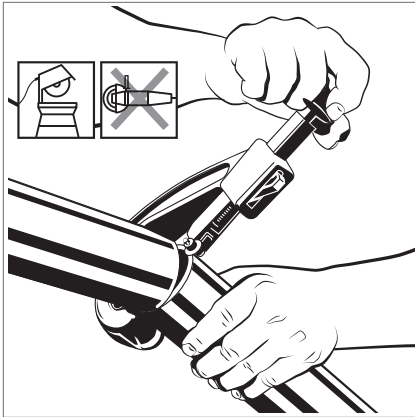
- Do not use flame cutters when cutting the pipe.
- Do not use grease or oils when cutting the pipe.



**Note:** Cut pipe a minimum of four inches away from the contact area of the vise to prevent possible damage to the pipe in the press area.



Avoid cutting through grooves, manufacturer's stamps, or engravings on the pipe's surface.



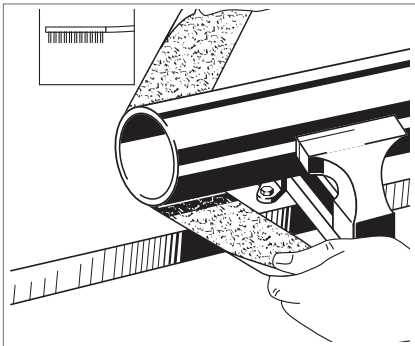
- Cut the pipe square using a displacement-type cutter or fine toothed saw.

## 4.6 Deburring the Pipe



### Damage resulting from the wrong deburring tool

- Connections may leak if they are damaged by improper deburring.
- Failure to deburr piping will reduce the service life of the system and can cause premature leaks.



The pipe ends must be thoroughly deburred after cutting. Damage to or twisting of the sealing element during installation is prevented by deburring.

- Remove burr from inside and outside of piping and prep to proper insertion depth using a preparation tool or fine grit sandpaper.

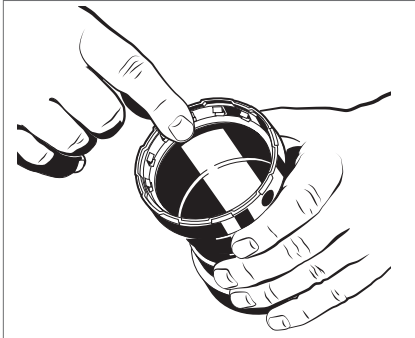
## 4.7 Pressing the Fitting



### WARNING!

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

### 4.7.1 Viega MegaPress CuNi 1/2" to 2" Installation



- Check the sealing element for correct fit:
  - The pipe end is not bent or damaged.
  - The pipe is deburred.
  - The correct sealing element is in the fitting.
  - The sealing element is undamaged.
  - The sealing element is completely in the bead.
- Check the separator ring for correct fit.
- Check the grip ring for correct fit.

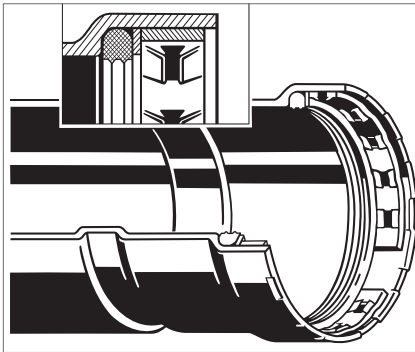
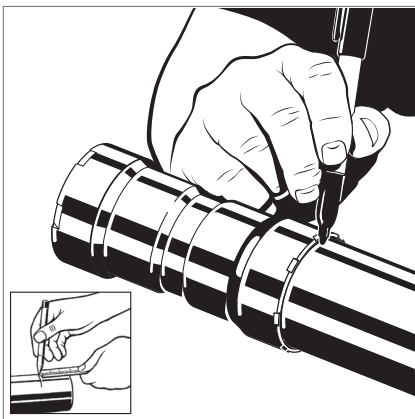


Illustration demonstrates proper fit of the bite ring, separation ring, and sealing element.



- Measure insertion depth (see table below).
- Mark the proper insertion depth on the outside of the pipe. It is recommended that the depth marking be visible on the completed assembly.



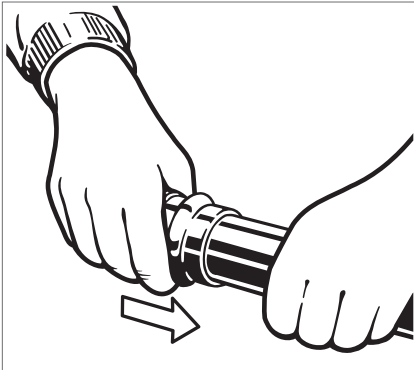
#### Improper insertion depth

Improper insertion depth may result in an improper seal.

- Be sure to mark the correct insertion depth on the pipe before pressing the fitting.

Pipe Diameter (inches)	Insertion Depth (inches)	Insertion Depth (mm)
1/2	1 1/16	27
3/4	1 3/16	30
1	1 3/8	35
1 1/4	1 13/16	46
1 1/2	1 7/8	48
2	2	51

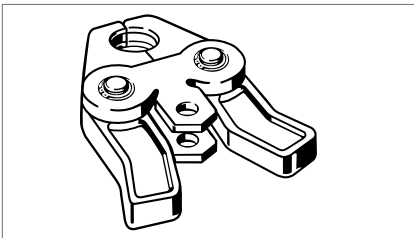
Table 15: Minimum insertion depths for MegaPress CuNi 1/2" to 2" fittings



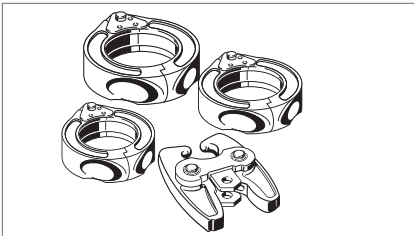
- While turning slightly, slide press fitting onto the pipe to the marked insertion depth.

**Note:** End of pipe must contact stop.

- Once the assembly is completed, it is recommended that the depth marking still be visible.



Viega MegaPress CuNi 1/2" to 1" fitting connections must be performed with MegaPress Jaws. See RIDGID Operator's Manual for proper tool instructions.

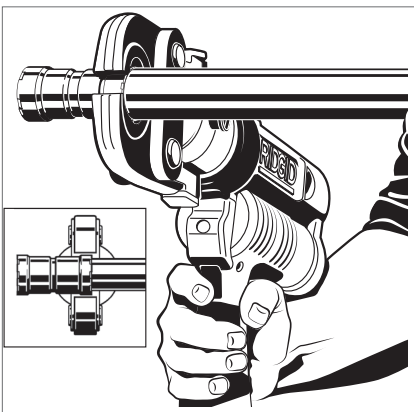


Viega MegaPress CuNi 1 1/4" to 2" fitting connections must be performed with MegaPress rings and V2 actuator. See RIDGID Operator's Manual for proper tool instructions.



**Use only MegaPress jaws and rings to press MegaPress CuNi fittings.**

- See Operator's Manual for proper tool instructions.
- Use of incompatible jaws or rings will result in an improper connection. Do not use ProPress press jaws or rings.
- Do not mix actuators and rings from different manufacturers.



- For 1/2" to 1" fitting connections, open the MegaPress Jaw and place at right angles on the fitting.
- Visually check insertion depth using mark on piping.



**Do not press over pipe threads!**

Install MegaPress CuNi fittings on plain end pipe only. Pressing fittings directly over threads will result in an improper seal.

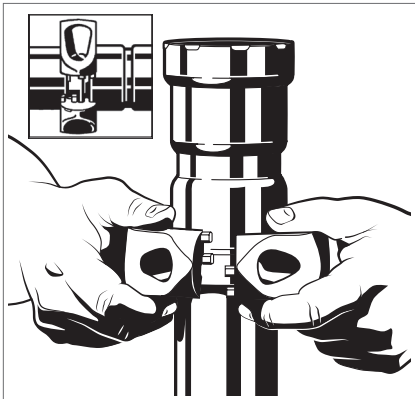


- Start the pressing process and hold the trigger until the jaw has engaged the fitting.

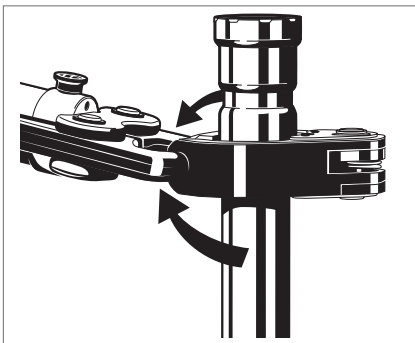


**WARNING!**

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



- For 1¼" to 2" fitting connections, open MegaPress ring and place at right angles on the fitting. MegaPress ring must be engaged on the fitting bead.
- Visually check insertion depth using mark on piping.

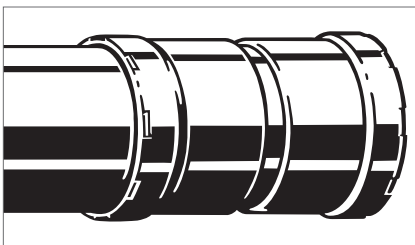


- Place V2 actuator onto MegaPress ring and start the pressing process.
- Hold the trigger until the actuator has engaged the MegaPress ring.



**WARNING!**

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



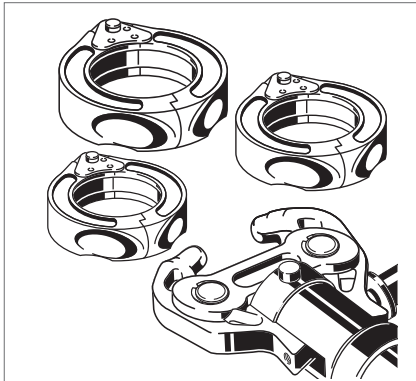
- Once the press is complete, remove MegaPress Jaw from fitting or release V2 actuator from RIDGID MegaPress ring.
- Remove MegaPress ring from the fitting.
- Remove control label to indicate press has been completed.

## 4.7.2 Viega MegaPress CuNi 2½" to 4" Installation



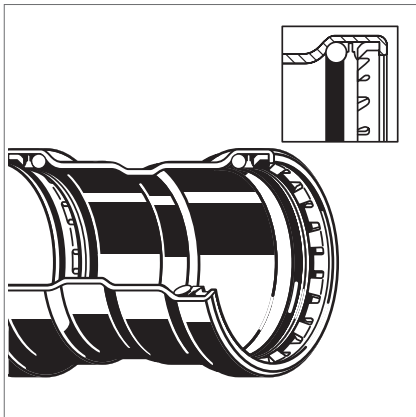
### WARNING!

Read and understand all instructions for installing Viega MegaPress CuNi 2½" to 4" fittings. Failure to follow all instructions may result in extensive property damage, serious injury, or death.



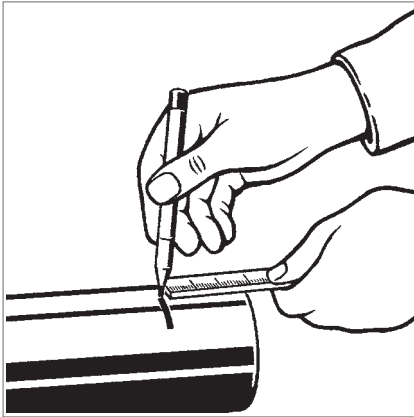
### Use only rings that are compatible with MegaPress CuNi 2½" to 4" fittings.

- Viega MegaPress CuNi 2½" to 4" fitting connections must be made using MegaPress XL rings and a PressBooster/Z3 actuator.
- See Operator's Manual for proper tool instructions.
- Use of incompatible rings will result in an improper connection.
- Do not mix actuators and rings from different manufacturers.



- Check the sealing element, separator ring, and bite ring for correct fit:
  - The pipe end is not bent or damaged.
  - The pipe is deburred.
  - The correct sealing element is in the fitting.
- Check the separator ring for correct fit.
- Check the grip ring for correct fit.

Illustration demonstrates proper fit of bite ring, separator ring, and sealing element.



- Measure insertion depth (see table below).
- Mark the proper insertion depth on the outside of the pipe. It is recommended that the depth marking be visible on the completed assembly.



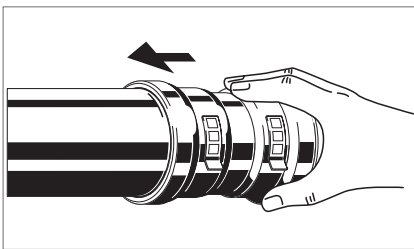
**Improper insertion depth**

Improper insertion depth may result in an improper seal.

- Be sure to mark the correct insertion depth on the pipe before pressing the fitting.

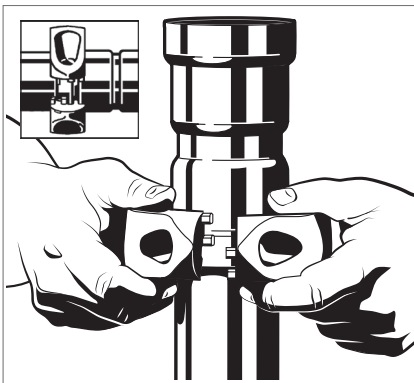
Pipe Diameter (inches)	Insertion Depth (inches)	Insertion Depth (mm)
2½	1 13/16	46
3	2 5/16	59
4	3 1/8	80

Table 16: Minimum insertion depths MegaPress CuNi 2½" to 4" fittings



- While turning slightly, slide fitting onto the pipe to marked insertion depth.

**Note:** End of pipe must contact stop.



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



**Do not press over pipe threads!**

Install MegaPress CuNi fittings on plain end pipe only. Pressing fittings directly over threads will result in an improper seal.

To press MegaPress CuNi 2½" to 4" fittings, use either the MegaPress XL PressBooster or the MegaPress Z3 actuator. Use MegaPress XL (2½", 3", or 4") press ring with either tool.



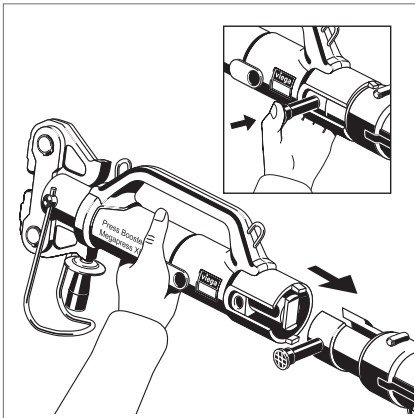
**WARNING!**

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

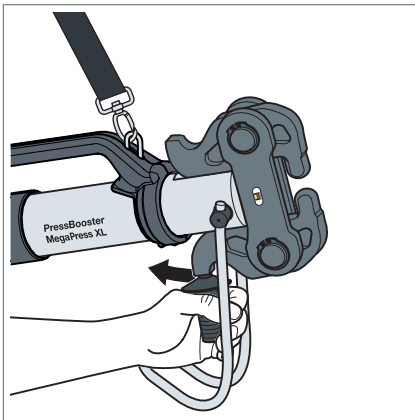
#### 4.7.2.1 Using Viega MegaPress XL PressBooster

The PressBooster amplifies the mechanical force output. The PressBooster requires two presses of the press tool to execute a complete press for MegaPress CuNi 2½" to 4" fittings.

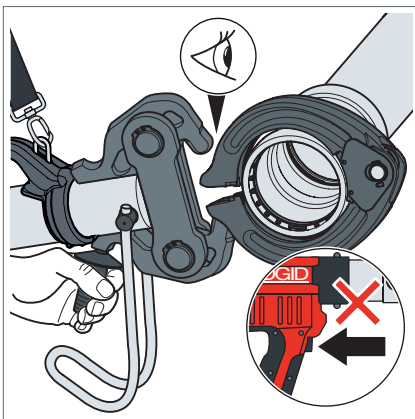
See the [MegaPress XL Press Booster Instructions for Use](#) for complete information on using the tool on the [viega.us](http://viega.us) website.



- Remove the retaining bolt of the press machine.
- Slide the PressBooster in via the press jaw fixture.
- Slide the retaining bolt of the press machine in as far as it will go.



- Look at insertion depth mark on the pipe to make sure that the pipe is properly inserted into the fitting.
- To open the PressBooster jaw, pull the handle at the hinged adapter jaw back.



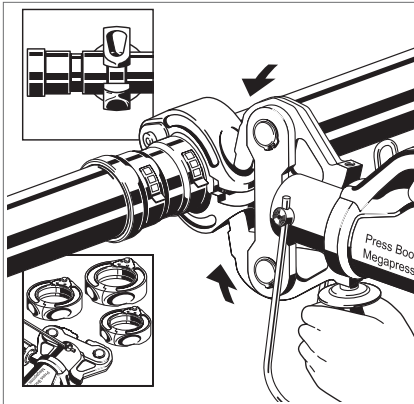
- Place PressBooster onto the MegaPress XL ring by inserting the ball heads of the hinged adapter jaw into the contact points of the press ring.



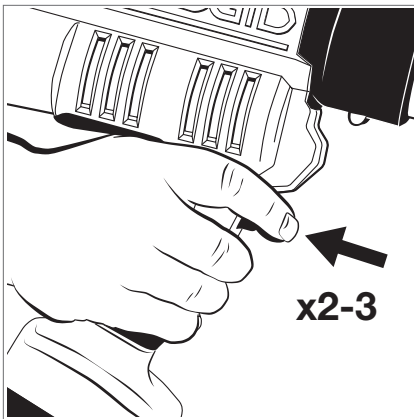
Before initiating a press make sure the ball heads sit correctly in the contact points of the press ring.

- Push the handle forward to close the hinged adapter jaw.





- Hold the trigger until the actuator has engaged the MegaPress ring.
- Wait two to three seconds and press the trigger a second time.

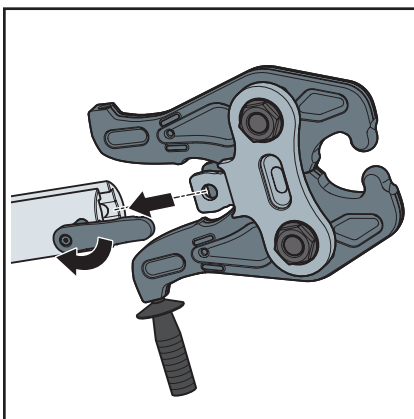


- The PressBooster requires two presses of the trigger to execute a complete press. A third press may be needed to initiate a release cycle to reset the rollers back to the original position.
- Once the pressing process is complete, the rollers at the front of the booster will retract and the hinged adapter jaw will open.
- Release the PressBooster from the MegaPress XL ring.
- Remove the MegaPress XL ring from the fitting.
- Remove control label to indicate press has been completed.

#### 4.7.2.2 Using Viega MegaPress Z3 Actuator

The Z3 actuator amplifies the mechanical force output in order to execute a complete press for MegaPress CuNi 2½" to 4" fittings.

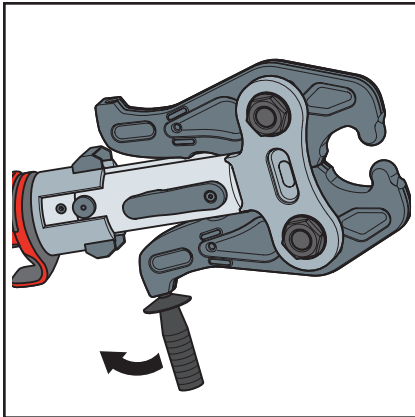
See the [MegaPress Z3 Actuator Instructions for Use](#) for complete information on using the tool on the [viega.us](http://viega.us) website.



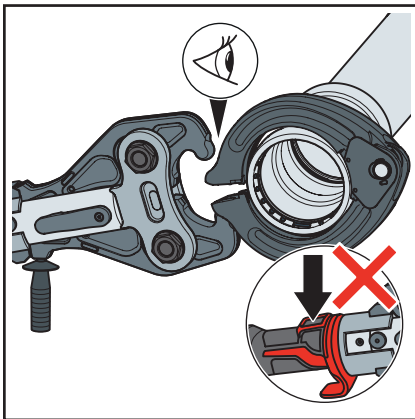
- On the press tool, rotate the retaining pin handle 180 degrees and pull it out to open the slot for the actuator.
- Insert the Viega Z3 actuator into the slot on the press tool.
- On the press tool, push the retaining pin back in and rotate it 180 degrees.



The handle of the actuator can be removed and attached to the opposite side of the actuator if necessary.



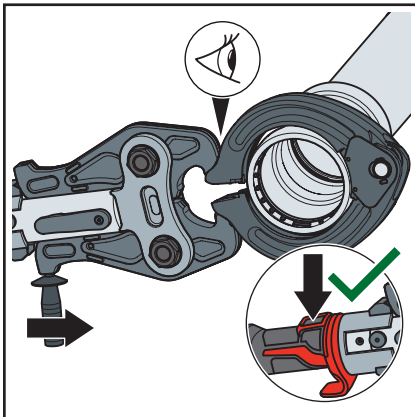
► Open the Viega Z3 actuator by pulling the handle back.



► Place the open Viega Z3 actuator onto the press ring by inserting the ball heads of the actuator into the contact points of the press ring.



Before initiating a press make sure the ball heads sit correctly in the contact points of the press ring.

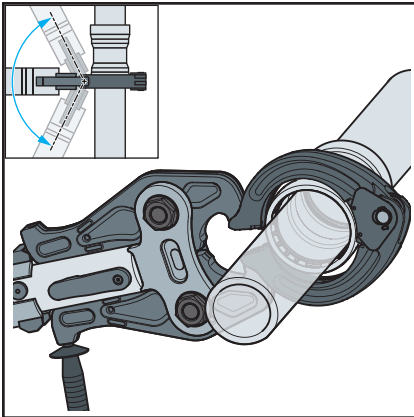


► Close the Z3 actuator.

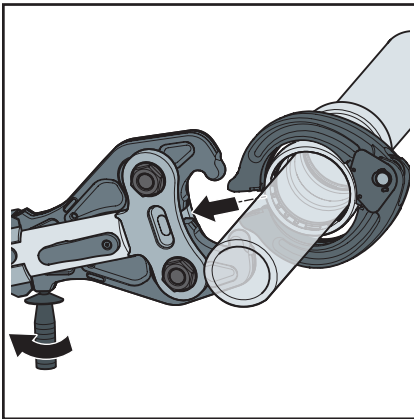


**WARNING!**

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



- Hold the press tool and handle of the Z3 actuator securely.
- Start the pressing process by holding the press tool trigger until the actuator has engaged the press ring.
- When the press cycle is complete, the actuator will stop and release.



- Once the press is complete, open the Z3 actuator and take the actuator off the press ring.
- Remove the press ring from the fitting.

## 4.8 Pressure Testing

Viega Smart Connect technology provides a quick and easy way for installers to identify connections that need to be pressed. Unpressed connections are located by pressurizing the system with air or water.

Pressure test all installed pipe in accordance with local codes or, in the absence of local codes, in accordance with NFPA 54 or NFPA 58.



### Smart Connect Testing

- Testing for unpressed connections using Smart Connect is not a replacement for pressure testing requirements of local codes and standards.
- If testing with compressed air, use an approved leak-detect solution.

Water testing with Viega Smart Connect:

- Use a range of 15 to 85 psi.
- If an unpressed fitting is found, make sure the pipe is fully inserted before completing the press.
- If the initial test is successful, system may be pressure tested as required up to 600 psi.

Testing with air can be dangerous at high pressures. When air testing with Viega Smart Connect:

- Use a range of ½ psi to 45 psi.
- If an unpressed fitting is found, make sure the pipe is fully inserted before completing the press.
- If the initial test is successful, system may be pressure tested as required up to 200 psi.

Viega recommends air testing of gas systems at a minimum of ½ psi.



The installation, inspection, testing, and purging of the fuel gas system shall be in accordance with local codes or, in the absence of local codes, tested in accordance with the International Fuel Gas Code, NFPA 54/National Fuel Gas Code z223.1, the Uniform Plumbing Code, NFPA 58 or CSA B 149.1 as applicable.

## 4.9 Disposal

Separate the product and packaging materials (e.g. paper, metal, plastic, non-ferrous metals) and dispose in accordance with all national, state, and regional requirements.

## 5 Limited Warranty

### 5.1 Viega 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.

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.



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IM-MP 593258 0324 MegaPress CuNi (EN)

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