

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.



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 abovementioned training or qualifications are not permitted to mount, install or, 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. As mentioned above, it should be understood as a recommendation.

2 Product Information

2.1 MegaPress CuNi Systems

Viega MegaPress CuNi is a state-of-the-art iron pipe size (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. MegaPress CuNi fittings are available in sizes ranging from ½" to 4" and provide a fast, reliable, consistent joining method. The MegaPress CuNi fitting system is offered in configurations that allow 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. The fittings use Viega's unique Smart Connect® technology to help installers ensure that they have pressed all connections.

The 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 electrohydraulic 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 the 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
- Engineering Services: For more information on fire protection system design, radiant system design, and plumbing design services, contact engineering@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 seawater and other media in accordance with section 4.6.2, Tables 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

The 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 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

2.7.3 Viega MegaPress CuNi Pipe Marking Guide

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	- Flammable or explosive - Chemically active or toxic - Radioactive - Extreme temperature / pressure	- Process piping - High-pressure Steam - Acids/corrosives	YELLOW ON BLACK
Low-hazard materials (liquid)	- Liquid - Liquid admixture	- Cooling water - Greywater - Chilled water	WHITE ON GREEN
Low-hazard materials (gas)	- Gas - Gas admixture	- Compression air - Nitrogen (N₂) - Argon (Ar)	WHITE ON BLUE
Fire suppression	- Liquid - Gas - Foam	- Sprinklers (wet/dry) - CO₂ - Foam (AFFF)	WHITE ON RED

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
¾" to 1¼"	8"	13 mm
1½" to 2"	8"	19 mm
2½" to 4"	12"	32 mm

Table 2: Pipe markers

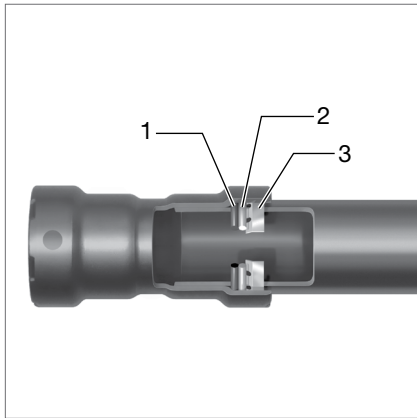
Marker Placement

- 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 must 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 grip ring's teeth grip 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 polybutylene terephthalate (PBT) 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

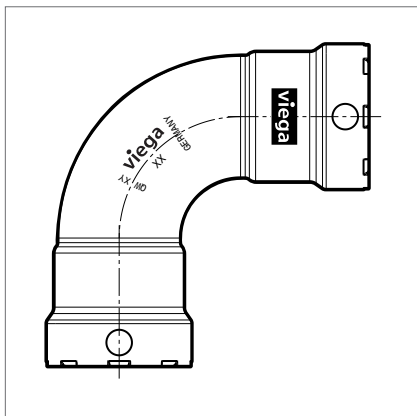


Viega MegaPress CuNi fittings are manufactured with a high-quality, dull black fluoroelastomer (FKM) sealing element installed at the factory. Sealing elements are inserted into the fitting using an H1 food-grade lubricant that is registered with NSF and the USDA and is approved for use under FDA 21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

FKM possesses excellent resistance to aging, ozone, sunlight, weathering, environmental influences, 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 – indicates FKM sealing element and Smart Connect technology
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- Batch code

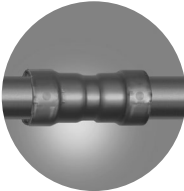
2.7.4.3 Viega Smart Connect Technology



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 following general industry requirements must be considered while installing the Viega MegaPress CuNi fitting system.

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

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

Press tool models	Press jaw models	Press ring models
Standard		
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
Compact		
RIDGID RP240	48433 – ½" Compact MegaPress jaw	
RIDGID RP241	48438 – ¾" Compact MegaPress jaw	
XL		
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 as low as 23°F (-5°C).

Piping systems exposed to freezing temperatures must be protected per acceptable engineering practices and 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. When installing underground, Viega suggests that all MegaPress CuNi systems, as well as the installed pipe, be coated or wrapped to prevent corrosion.

2.8.5 Concealed Spaces

The Viega MegaPress CuNi fitting system has been approved for use in concealed spaces. Specific performance tests have been conducted to evaluate the fittings for use in concealed spaces. Concealed tubing and fittings must 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, or death.

- Because all metallic piping can conduct electricity, unintentional contact with a live wire can cause 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.

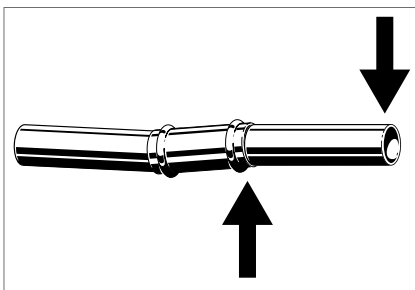
2.8.8 Corrosion Protection

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, or 2009 UMC Chapter 13 Section 1312.1.3, or satisfying local code requirements.

Care should be taken to select hangers made of 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 avoid saturating the fittings with paint and prevent excess paint from accumulating on the fitting hub. Failure to use caution could result in a premature failure.

2.8.7 Deflection



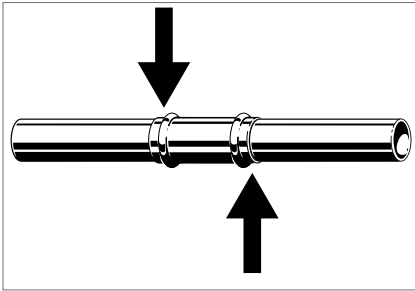
The pressing process can cause deflection (angular misalignment). When pressing Viega MegaPress fittings in a system, the deformation of the fitting is constant. This allows for a consistent leak-free joint every time and is a result of the pressing technique.

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, the installer 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.

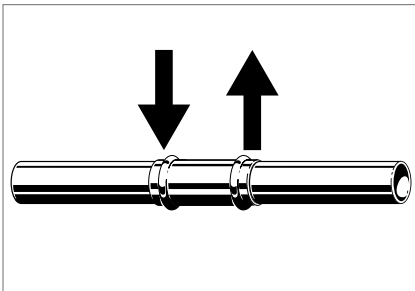
2.8.8.1 Controlling Deflection

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



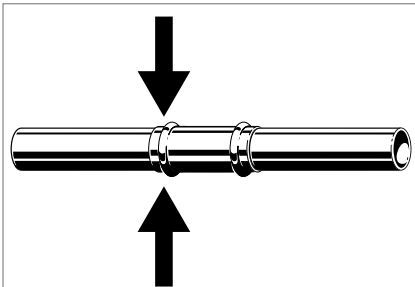
Alternate press directions

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



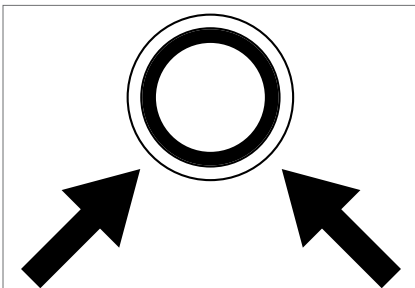
Push-pull method

- 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 the 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 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 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 must be free from dirt, debris, or other items that may interfere with the sealing element and the press connection. The Viega MegaPress CuNi sealing element, separator ring, and grip ring must be visually inspected prior to installation to ensure the seal is intact and properly located within the fitting. Viega MegaPress CuNi sealing elements, separator rings, and grip rings 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 must be followed for pipe layout and support. Supports, hangers, and anchors must 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.

Hangers and supports must conform to 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 diameter (in)	Maximum span (feet)	Minimum rod diameter (in)
1/2	7	3/8
3/4	7	3/8
1	7	3/8
1 1/4	7	3/8
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

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

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

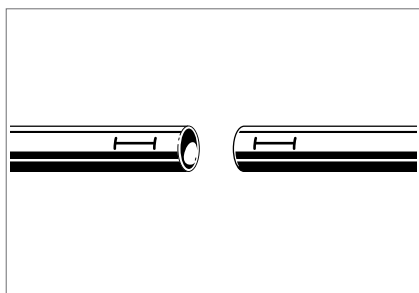
This process avoids unnecessary torsion on the press fitting.

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, with a line connecting the two marks.



Pipe diameter (in)	Minimum insertion depth		Maximum insertion depth	
	(in)	(mm)	(in)	(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



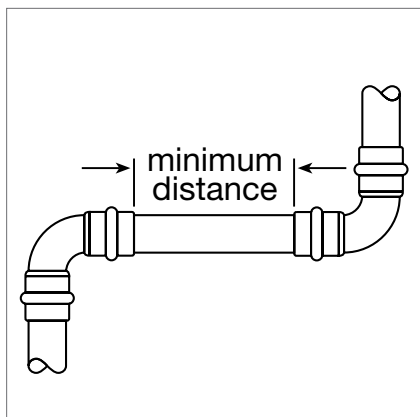
Not enough space

Malfunctions may arise from improper technique.

- 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.

4.3.1 Minimum Distance Between Fittings

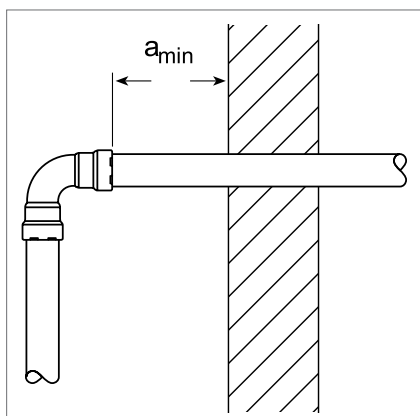
To ensure a correct press, a minimum distance between press fittings must be maintained. Failure to provide this distance may result in an improper seal.



Pipe diameter (in)	Minimum distance	
	(in)	(mm)
1/2	1/4	7
3/4	1/4	7
1	1/4	7
1 1/4	1/2	13
1 1/2	1/2	13
2	1/2	13
2 1/2	1/2	13
3	1/2	13
4	1/2	13

Table 6: Minimum distance between MegaPress fittings

4.3.2 Minimum Space Requirements



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

Pipe diameter (in)	A minimum	
	(in)	(mm)
1/2 to 1	1 1/2	39
1 1/4 to 2	3/8	10
2 1/2 to 4	3/8	10

Table 7: MegaPress minimum distance for press jaws between pipe and wall – RIDGID RP241, RP320, RP330, RP340, CT400 and Milwaukee M18 press tools

4.3.3 MegaPress Jaws Clearance Requirements

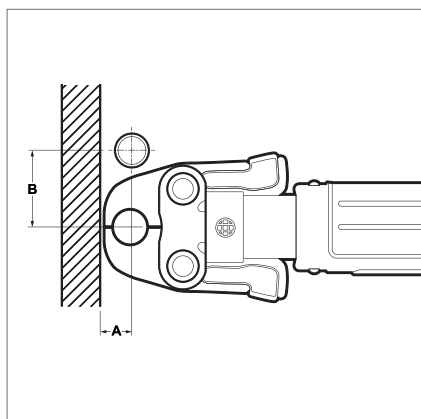
The minimum distance between pipes, or between the pipe and the wall/ceiling construction, must be taken into consideration in the planning phase for a problem-free work process. The following illustrates the clearance requirements for jaws and fittings and the procedure for pressing fittings in tight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



Pipes installed too closely together

Connection may leak without proper clearance.

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

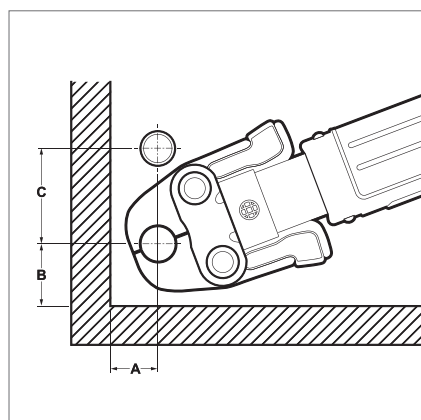


Pipe diameter (in)	A minimum		B minimum	
	(in)	(mm)	(in)	(mm)
1/2	1	26	2 5/8	67
3/4	1 1/4	32	3 1/8	79
1	1 3/4	45	3 5/8	93

Table 8: MegaPress standard jaws clearance requirements

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

Table 9: MegaPress compact jaws clearance requirements



Pipe diameter (in)	A minimum		B minimum		C minimum	
	(in)	(mm)	(in)	(mm)	(in)	(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

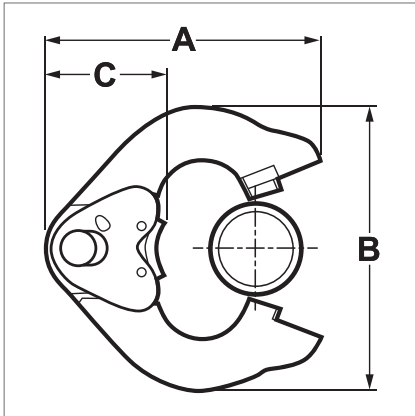
Table 10: MegaPress standard jaws clearance requirements between pipe, wall, and floor

Pipe diameter (in)	A minimum		B minimum		C minimum	
	(in)	(mm)	(in)	(mm)	(in)	(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 11: MegaPress compact jaws clearance requirements between pipe, wall, and floor

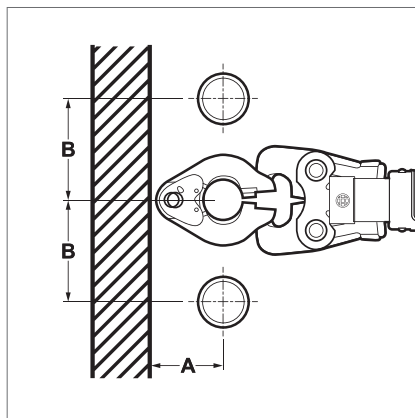
4.3.4 MegaPress Rings Clearance Requirements

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



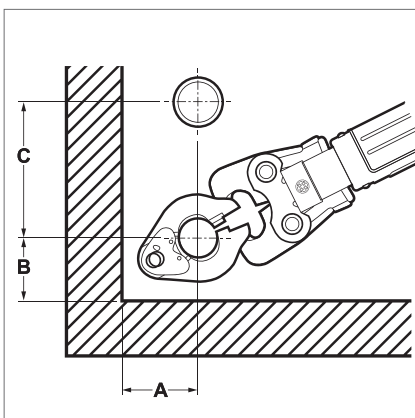
Pipe diameter (in)	A minimum		B minimum		C minimum	
	(in)	(mm)	(in)	(mm)	(in)	(mm)
1¼	6	153	6¼	159	2½	64
1½	6	153	6¾	172	2⅝	67
2	6	153	6⅞	175	2½	64
2½	6⅝	169	7⅞	194	2½	64
3	7½	191	8⅞	226	2½	64
4	8½	216	10⅞	264	2⅝	67

Table 12: MegaPress ring dimensions



Pipe diameter (in)	A minimum		B minimum	
	(in)	(mm)	(in)	(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

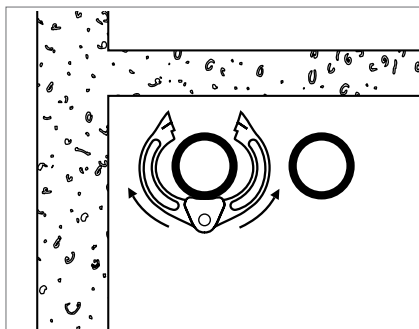
Table 13: MegaPress rings with V2/V3 actuator clearance requirements



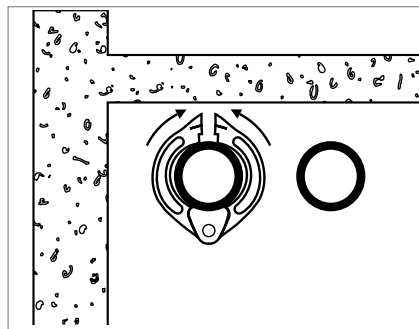
Pipe diameter (in)	A minimum		B minimum		C minimum	
	(in)	(mm)	(in)	(mm)	(in)	(mm)
1¼	3¾	96	3¾	96	4⅞	124
1½	4	102	4	102	5⅞	131
2	4	102	4	102	5⅞	137
2½	4½	115	4	102	5⅞	150
3	4¾	121	4¾	121	6¾	172
4	5⅞	137	5½	140	8¼	210

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

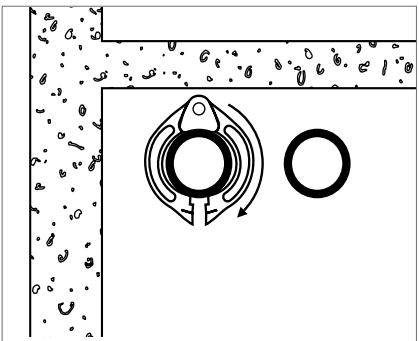
4.3.5 Pressing with Ring and Actuator in Tight Quarters



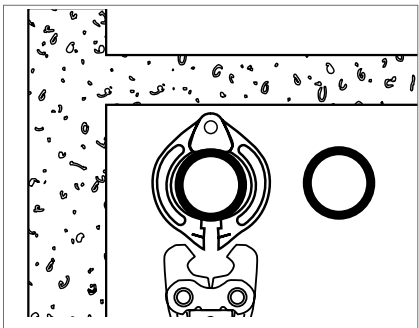
- Wrap the actuator ring around the press fitting with the opening facing away from you.



- 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 4 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 3 feet away from the connection to protect the sealing element.

4.4.3 Welding Requirements

The installer should take precautions to keep the MegaPress 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.

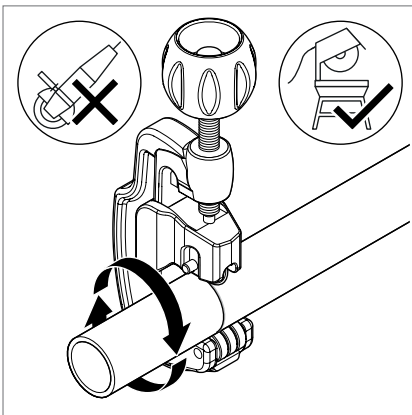
4.5 Cutting the Pipe



Damaged pipe and/or sealing element

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

- Do not use flame cutters.
- Do not use grease or oils.



- ▶ Cut the pipe square. Do not deform the pipe when cutting.

Note: Cut pipe a minimum of 4 inches away from the contact area of the vise to prevent possible damage to the pipe in the press area.



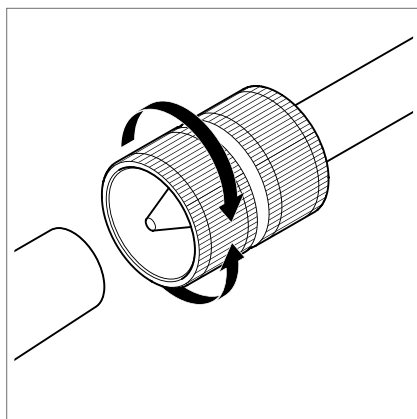
Avoid cutting through grooves, manufacturer's stamps, or engravings on the pipe's surface.

4.6 Deburring the Pipe



Damage resulting from 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. Deburring prevents damage to or twisting of the sealing element during installation.

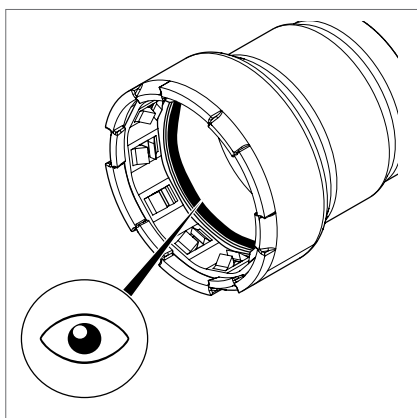
- Remove burr from inside and outside of piping and prep to proper insertion depth using a preparation tool or fine grit sandpaper.

4.7 Pressing the Fitting – Viega MegaPress ½" to 4"



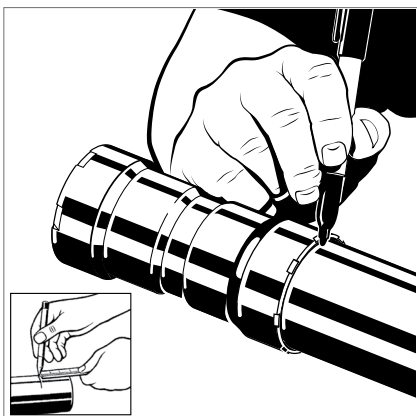
WARNING!

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



- 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 grip ring, separation ring, and sealing element.



- Measure insertion depth (see Table 23 below).
- Mark proper insertion depth on the outside of the pipe. It is recommended that the depth marking be visible on the completed assembly.

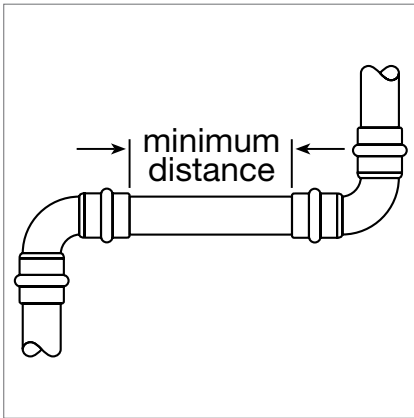


Improper insertion depth

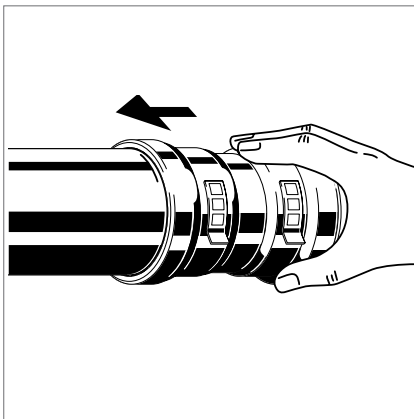
Improper insertion depth may result in an improper seal. Be sure to mark the correct insertion depth on the pipe before pressing the fitting.

Pipe size (in)	Minimum insertion depth	
	(in)	(mm)
½	1 ¼	27
¾	1 ⅜	30
1	1 ⅝	35
1 ¼	1 ⅞	46
1 ½	2	48
2	2 ⅛	51
2 ½	2 ⅜	46
3	2 ⅝	59
4	3 ⅛	80

Table 15: Minimum insertion depths for MegaPress ½" to 4" fittings



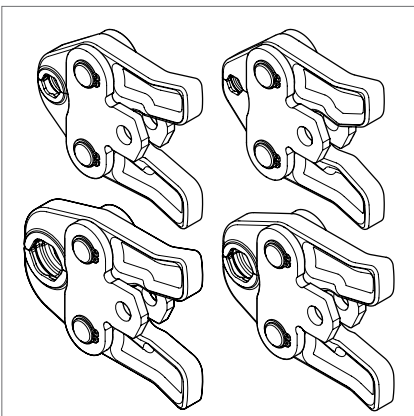
- Refer to [Table 6 for the minimum distance between fittings](#) to ensure a correct press. Failure to provide this distance may result in an improper seal.

**WARNING!**

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

- While turning slightly, slide press fitting onto the pipe to the marked insertion depth.
- End of pipe must contact stop.
- Once the assembly is completed, it is recommended that the depth marking still be visible.

4.7.1 Pressing ½"-1" Fittings

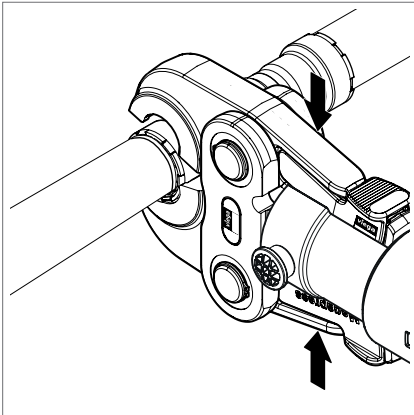


- Viega MegaPress ½" to 1" fitting connections must be performed with MegaPress jaws and rings.



Use only MegaPress jaws and rings to press MegaPress fittings.

- See tool 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.

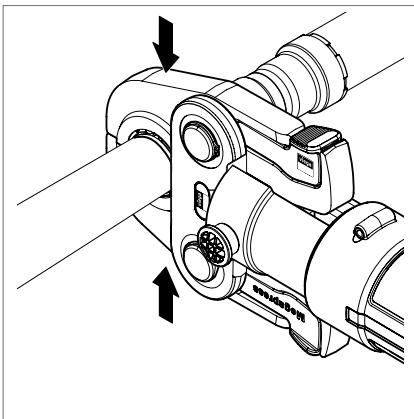


- Open the MegaPress jaw and place at right angles on the fitting.
- Visually check insertion depth using mark on piping.



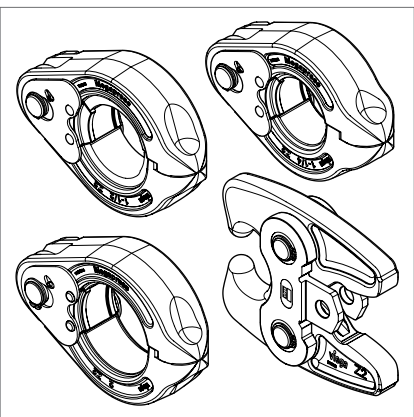
Do not press over pipe threads.

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

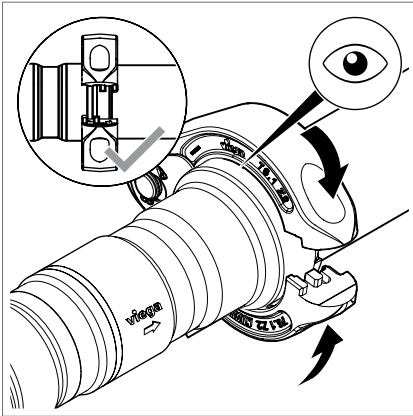


- Start the pressing process and hold the trigger until the jaw has engaged the fitting.
- Jaws will automatically release after a full press is made.
- Remove the MegaPress jaw from the fitting.

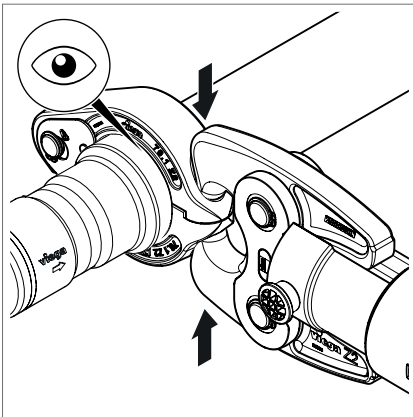
4.7.2 Pressing 1¼"-2" Fittings



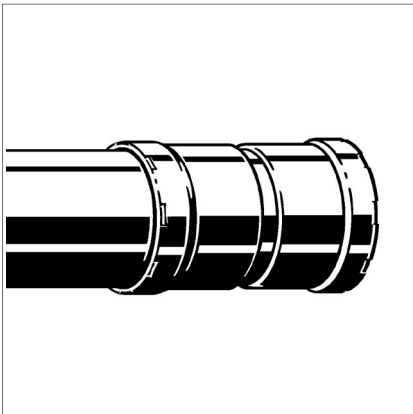
- Viega MegaPress 1¼" to 2" fitting connections must be performed with MegaPress rings and a V2 actuator.



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

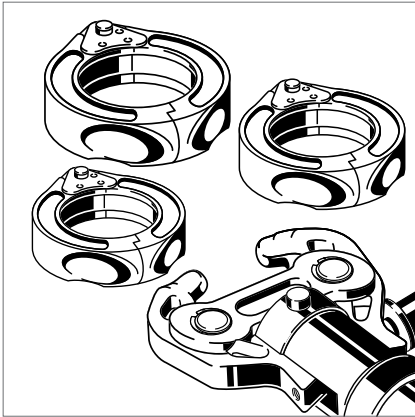


- Place V2 actuator onto the MegaPress ring and start the pressing process.
- Hold the trigger until the actuator has engaged the MegaPress ring.



- Once the press is complete, release the V2 actuator from the MegaPress ring.
- Remove the MegaPress ring from the fitting.

4.7.3 Pressing 2½"-4" Fittings

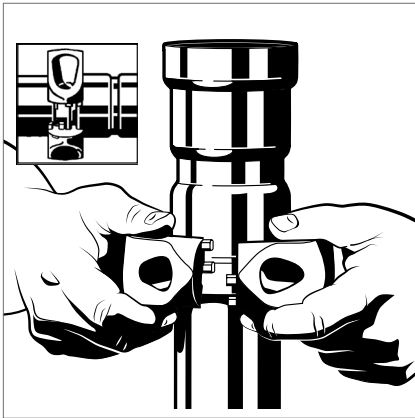


- Viega MegaPress 2½" to 4" fitting connections must be made using MegaPress XL rings and either the MegaPress XL PressBooster or the MegaPress Z3 actuator.



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

- See tool 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.

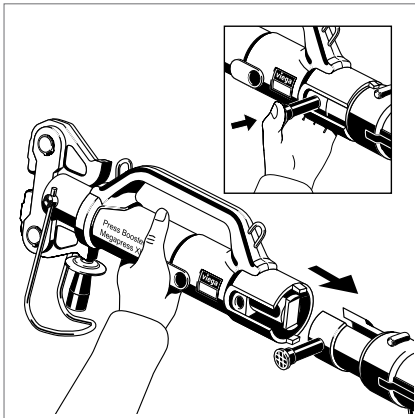


- Open MegaPress XL ring and place at right angles on the fitting.
- The MegaPress XL ring must be engaged on the fitting bead.
- Check insertion depth.

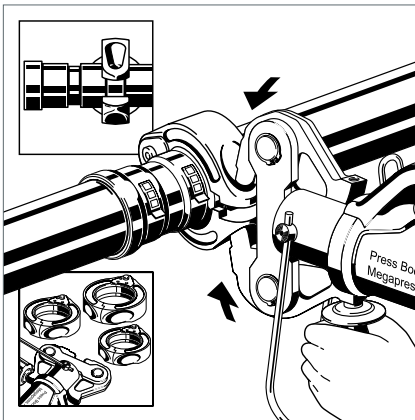
4.7.4 Pressing With Viega MegaPress XL PressBooster

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

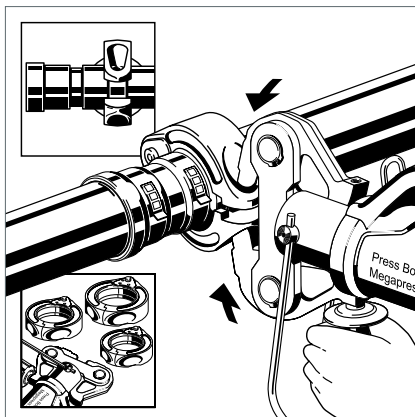
See the [MegaPress XL Press Booster Instructions for Use](#) for complete information on using the tool on the [Viega.us](#) website.



- Remove the retaining bolt from 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.



- To open the PressBooster jaw, pull back the handle at the hinged adapter jaw.
- Place PressBooster onto the MegaPress XL ring by inserting the ball heads of the hinged adapter jaw into the contact points of the XL ring.
- Push the handle forward to close the hinged adapter jaw.

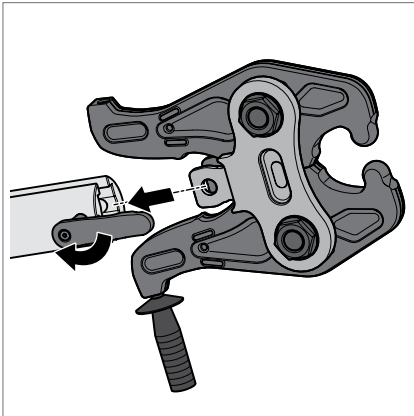


- Hold the trigger until the PressBooster has engaged the MegaPress XL ring.
- The PressBooster requires two presses of the trigger to execute a complete press. A third press may be needed to initiate a release cycle to reset the rollers back to the original position.
- Once the press is complete, release the PressBooster from the MegaPress XL ring.
- Remove the MegaPress XL ring from the fitting.

4.7.5 Pressing With Viega MegaPress Z3 Actuator

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

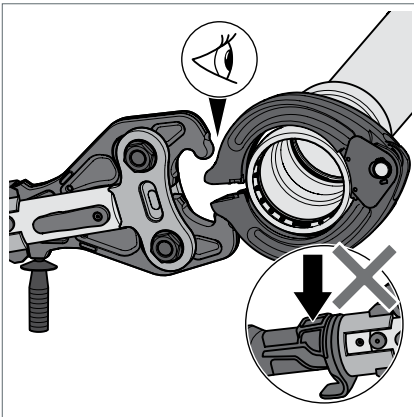
See the [MegaPress Z3 Actuator Instructions for Use](#) for complete information on using the tool on the Viega.us website.



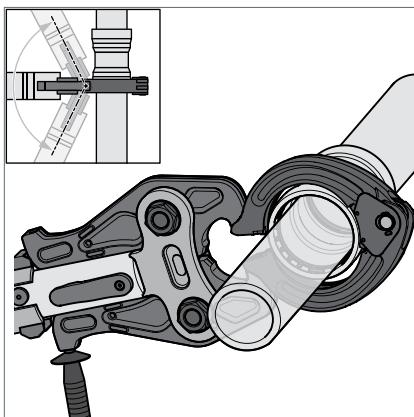
- On the press tool, rotate the retaining pin handle 180 degrees and pull it out to open the slot for the actuator.
- Insert the Viega Z3 actuator into the slot on the press tool.
- On the press tool, push the retaining pin back in and rotate it 180 degrees.



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 MegaPress XL ring by inserting the ball heads of the actuator into the contact points of the XL ring.
- Close the Z3 actuator.



- Start the pressing process by holding the press tool trigger until the actuator has engaged the XL ring.
- When the press cycle is complete, the actuator will stop and release.
- Once the Z3 actuator releases, remove it from the MegaPress XL ring.
- Remove the MegaPress XL 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 pipes 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.

When 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, the 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 must 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, nonferrous metals) and dispose in accordance with all national, state, and regional requirements.

5 Limited Warranty – Viega Metal Systems

Subject to the conditions and limitations in this Limited Warranty (“Warranty”), Viega LLC (“Viega”) warrants to end users, installers, and distributors in the United States and Canada that the following products (“Viega Products”) will be free of failure caused by a manufacturing defect from the date of installation for the time periods specified in the table included in this Warranty.

This Warranty will be valid only in the event the following conditions have been met: The Viega Products have been properly installed (1) under normal conditions of use; (2) under applications approved by Viega; (3) under Viega-specified system operating conditions; (4) using tools compatible with Viega systems; and (5) in alignment with Viega’s listings.

Further, you have a right to a remedy under this Warranty only if the Viega Product failure resulted from a manufacturing defect in the Viega Product and if the failure occurred during the applicable warranty period. You do not have a remedy under this Warranty if the failure was caused by (1) components other than those manufactured and/or sold by Viega; (2) failure to design, install, inspect, test, or maintain the Viega Product in accordance with Viega’s installation and product instructions in effect at the time of installation; (3) use of Viega Products under non-recommended system operating conditions (e.g., water pressures, temperatures, or other external chemical or physical conditions); (4) improper handling or protection of the Viega Product prior to, during, or after installation (e.g., inadequate freeze protection or exposure to environmental conditions not recommended for the application); or (5) acts of nature, including, without limitation, earthquakes, fire, or weather damage.

In the event of a failure of a Viega Product covered by this Warranty, it is the duty and responsibility of the end user to take appropriate measures to mitigate all potential damage, including making timely repairs to the system in which the Viega Product has been installed. The part or parts which you claim failed must be kept and returned to Viega for testing. Viega may be contacted at the phone number or mailing address below. All warranty claims must be made within 30 calendar days after the failure has (or should reasonably have) been discovered. You should be prepared to ship, at your expense, the Viega Product which you claim failed due to a manufacturing defect, with documentation of the installation date and the amount spent on any repair or replacement if performed by you. Within a reasonable time after receiving the Viega Product, Viega will investigate the cause of the failure, which includes the right to inspect the Viega Product at a Viega location and reasonable access to the site of any alleged damage. Viega will notify you in writing of the results of its review.

In the event Viega determines that the failure was the result of a manufacturing defect in the Viega Product covered by this Warranty and all conditions of this Warranty have been met, your **SOLE AND EXCLUSIVE REMEDY** under this Warranty shall be the reimbursement for the reasonable costs of repair or replacement of the Viega Product itself. **VIEGA SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR OTHER SIMILAR DAMAGES (E.G., ECONOMIC LOSS, WATER OR PROPERTY DAMAGE,**

OR MOLD REMEDIATION) UNDER ANY LEGAL THEORY AND WHETHER ASSERTED BY DIRECT ACTION, FOR CONTRIBUTION, INDEMNITY, OR OTHERWISE.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR ANY STATUTE OF LIMITATIONS RELATING TO SUCH WARRANTIES. Viega will be responsible for remedies only if all conditions of this Warranty have been met. Other than this Warranty, Viega does not authorize any person, company, contractor, or distributor to create any additional warranty, obligation, or liability in connection with the Viega Product.

This 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.

Warranty Period by Product and Application Type		
Viega Product Line	Residential and Commercial	Industrial ¹ and Marine ²
ProPress® copper fittings	50 years	2 years
ProPress 316 fittings and tubing	10 years	
MegaPress® fittings	15 years	
MegaPress FKM fittings		
MegaPress 304 FKM fittings		
MegaPress 316 fittings		
MegaPress 316 FKM fittings		
MegaPressG ³ fittings		
MegaPress CuNi fittings		
All valves	5 years	
¹ 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, or applications with components that have been cleaned for oxygen service.		
² Marine applications are defined as mobile structures used to navigate water or stationary structures in water.		
³ MegaPressG products covered by this Warranty must be installed by a licensed contractor in compliance with applicable building, permit, and inspection codes. See product instructions for additional information.		

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