Installation Manual

Viega MegaPress® Systems for Marine

viega

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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 pipe fitters and marine contractors who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

MegaPressG
ANSI/CAN/UL/ULC 180 Standard for Safety for Combustible Liquid Tank Accessories: Compression Fittings for Aboveground Pipe Supply and Fill Vents. Install according to the Manufacturer's Instructions. For Combustible Liquid Use. Pressure rating max 125 psi / 861 kPa. Fire rating 30 minutes.

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 pipe fitters and marine contractors 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 governed by the appropriate class society and the U.S. Coast Guard.

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 Systems

MegaPress fittings are a cold press fitting system for use with IPS carbon steel or stainless steel pipe for the U.S. in sizes ½" to 4" and also sizes per DIN EN 10255:2007 / DIN EN 10216-1:2013 / DIN EN 10217-1:2005. The fittings are offered with EPDM, FKM, and HNBR sealing elements (*flammable fluid applications require a HNBR or FKM sealing element). All MegaPress fittings use Viega's unique Smart Connect® technology to help installers ensure that they have pressed all connections. MegaPress fittings may be used with seamless (S) or longitudinal welded (W) steel pipes.

The Viega MegaPress 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). A hydraulic hand press tool is also available for use with MegaPress fittings.

The fittings are an approved fire resistant type recognized by all class societies and USCG and can be used with applications per IACS P2.7.4 Rev. 9, Mechanical Joints Tables 6 and 7.

MegaPress ½" to 2" and MegaPress 316 ½" to 4" fittings feature a green dot with an EPDM sealing element while MegaPress FKM ½" to 4", MegaPress 304 FKM ½" to 4", and MegaPress 316 FKM ½" to 4" fittings have a white dot with an FKM sealing element. MegaPressG ½" to 4" fittings feature a yellow dot with an HNBR sealing element.

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

The system is intended for use as a replacement for welded, threaded, and rolled-groove connection in new installations and repairs. The system is not suitable for use in potable water installations.

Systems	Connection Type	MegaPress	MegaPress FKM	MegaPressG	MegaPress 304 FKM	MegaPress 316 EPDM	MegaPress 316 FKM
	Compression Coupling	14° to 230° F (-10° to 110° C)	23° to 284° F (-5° to 140° C)	-40° to 180° F (-40° to 82° C)	23° to 284° F (-5° to 140° C)	14° to 230° F (-10° to 110° C)	23° to 284° F (-5° to 140° C)
		Pressure: -12.04 psi (Vacuum) to 232 psi, 170mbar absolute to 16bar, 1.6 MPa					
Flammable Fluids (Flash Point < 60C)							
Cargo oil lines	Yes		✓	✓	✓		✓
Crude oil washing lines	Yes		✓	✓	✓		✓
Vent lines	Yes		✓	✓	✓		✓
Inert Gas							
Water seal effluent lines	Yes		✓	✓	✓		✓
Scrubber effluent lines	Yes		✓	✓	✓		✓
Main lines	Yes		✓	✓	✓		✓
Distribution lines	Yes		✓	✓	✓		✓
Flammable Fluids (Flash Point > 60C)							
Cargo oil lines	Yes		✓	✓	✓		✓
Fuel oil lines	Yes		✓	✓	✓		✓
Lubricating oil lines	Yes		✓	✓	✓		✓
Hydraulic oil	Yes		✓	✓	✓		✓
Thermal oil	Yes		✓	✓	✓		✓
Sea Water							
Bilge lines	Yes	✓	✓		✓	✓	✓
Water-filled fire extinguishing systems (e.g., sprinkler systems)	Yes	✓	✓		✓	✓	✓
Non-water-filled fire extinguishing systems (e.g., foam, drencher systems)	Yes	✓	✓	✓	✓	✓	✓
Fire main (not permanently filled)	Yes	✓	✓		✓	✓	✓
Ballast system	Yes	✓	✓		✓	✓	✓
Cooling water system	Yes	✓	✓		✓	✓	✓
Tank cleaning services	Yes	✓	✓		✓	✓	✓
Non-essential systems	Yes	✓	✓		✓	✓	✓
Fresh Water							
Cooling water system	Yes	✓	✓	✓	✓	✓	✓
Condensate return	Yes	✓	✓		✓	✓	✓
Non-essential systems (non-potable)	Yes	✓	✓	✓	✓	✓	✓
Sanitary/Drains/Scuppers							
Deck drains (internal)	Yes		✓	✓	✓		✓
Sanitary drains	Yes	✓	✓	✓	✓	✓	✓
Scuppers and discharge (overboard)	Yes	✓	✓	✓	✓	✓	✓
Sounding/Vent							
Water tanks/dry spaces	Yes	✓	✓	✓	✓	✓	✓
Oil tanks (f.p. > 60°C)	Yes	✓	✓	✓	✓	✓	✓
Miscellaneous							
Starting/control air	Yes		✓	✓	✓		✓
Service air (non-essential)	Yes		✓	✓	✓		✓
Brine	Yes	✓	✓	✓	✓	✓	✓
CO_2 system (oil concentration >25 mg/m^3)	Yes	✓	✓	✓	✓	✓	✓
Steam (up to 15 psi)	Yes		✓		✓		✓

[1] It is recommended that all systems be clearly labeled with the media being conveyed. For further information, refer to ISO 14726 or consult Viega Technical Services.
[2] All Viega systems must be used with the manufacturer's recommended sealing element. Contact your local Viega representative or Viega Technical Services for specific application temperature, pressure, and concentration limits.
[3] System temperature ranges depend on sealing element.

Table 1: Applications approved for use with MegaPress systems

MegaPressG:
The installation, inspection, testing, and purging of the fuel gas system shall be in accordance with the governing body of the vessel and with class society rules and procedures.

CAUTION!
MegaPressG fittings are for use with fuel gases and are intended for operating pressures of 0-125 psi.

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 ISO 14726.

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.

2.3.1 Technical Assistance

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

- Viega Technical Support: techsupport@viega.us

2.4 Standards and Regulations

2.4.1 Overview

The following standards and regulations apply to the United States and Canada and are provided as a support feature.

2.4.2 Regulations: Applications

Please consult your class society requirements, product type approval, and manufacturer's specific literature including but not limited to this manual for specific parameters.

2.4.3 Standards: Pipes

Standard	Definition
ASTM A53	Standard specifications for steel, black and hot dipped, zinc-coated, welded, or seamless pipe
ASTM A106	Standard specification for seamless carbon steel pipe for high-temperature service
ASTM A135	Standard specification for electric-resistance-welded steel pipe
ASTM A312	Standard specification for seamless, welded, and heavy cold worked austenitic stainless steel pipes
ASTM A554	Standard specification for welded stainless steel mechanical tubing
ASTM A778	Standard specification for welded, unannealed austenitic stainless steel tubular products
ASTM A795	Standard specification for black and hot-dipped zinc-coated (galvanized) welded and seamless steel pipe for fire protection
ASME B36.10	Welded and seamless wrought steel pipe
ASME B36.19	Stainless steel pipe
EN 10255	Non-alloy steel tubes suitable for welding and threading - technical delivery conditions
EN 10220	Seamless and welded steel tubes dimensions and masses per unit length

Table 2: Pipes standards

2.4.4 Standards: Sealing Elements

Standard	Definition
ASTM F1476	Performance of gasketed mechanical couplings for use in piping applications
ASTM F3226	Standard specification for metallic press-connect fittings for piping and tubing systems

Table 3: Sealing elements standards

2.4.5 Standards: Pipe Hangers

Standard	Definition
MSS SP 58	Pipe hangers and supports materials, design, and manufacturer
MSS SP 127	Bracing for piping systems seismic - wind - dynamic design, selection, and application

Table 4: Mounting standards

2.4.6 Standards: Pressure Testing

Standard	Definition
ASME B31	Pressure piping
IAPMO/ANSI/ CAN Z1117	Press and nail connections
ASTM F3226	Standard specification for metallic press-connect fittings for piping and tubing systems
ASTM F1387	Standard specification for performance of piping and tubing mechanically attached fittings
IACS	Requirements concerning pipes and pressure vessels

Table 5: Pressure testing standards

2.4.7 Standards: Fire Protection

Standard	Definition
ISO 19921	Ships and marine technology - fire resistance of metallic pipe components with resilient and elastomeric seals - test methods
ISO 19922	Ships and marine technology - fire resistance of metallic pipe components with resilient and elastomeric seals - requirements imposed on the test bench
FM Class 1920	Pipe coupling and fittings for aboveground fire protection systems
UL 213	Rubber gasketed fittings for fire protection service

Table 6: Fire protection standards

2.4.8 Standards: Potable Water

Standard	Definition
NSF/ANSI/CAN 61	Drinking Water System Components- Health Effects
NSF/ANSI 372	Drinking Water System Components- Lead Content

Table 7: Potable water standards

2.5 Listings and Certifications

The following listings and certifications are not a complete list, but only those relevant for marine applications for MegaPress, MegaPress FKM, MegaPressG, and MegaPress Stainless product lines.

2.5.1 MegaPress and MegaPress FKM

MegaPress and MegaPress FKM fittings have the following listings and certifications:

- ABS: American Bureau of Shipping Type Approval
- BV: Bureau Veritas Type Approval
- Canadian Registration Number (CRN): 0A14541.5 A/B/C
- DNV GL: Det Norske Veritas Germanischer Lloyd Type Approval
- FM Class 1920: Pipe Couplings and Fittings for Aboveground Fire Protection Systems
- IAPMO/ANSI/CAN Z1117: Press and Nail Connections
- ICC-ES LC1002: Press-Connection Fittings for Potable Water Tube and Radiant Heating Systems
- LR: Lloyd's Register Type Approval
- UL/ANSI 213: Standard for Rubber Gasketed Fittings for Fire-Protection Service
- ULC/ANSI ORD-C213: Canadian Standard for Rubber Gasketed Fittings for Fire-Protection Service
- US Coast Guard Acceptance Letter

2.5.2 MegaPressG

MegaPressG fittings have the following listings and certifications:

- ABS: American Bureau of Shipping Type Approval
- BV: Bureau Veritas Type Approval
- Canadian Registration Number (CRN): 0A14541.5 A/B/C
- CSA: ANSI LC 4a/CSA 6.32a: Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems
- DNV GL: Det Norske Veritas Germanischer Lloyd Type Approval
- IAPMO: ANSI LC 4a/CSA 6.32a: Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems
- ICC-ES: ANSI LC 4a/CSA 6.32a: Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems
- LR: Lloyd's Register Type Approval
- ANSI/CAN/UL/ULC 180
- US Coast Guard Acceptance Letter

MegaPressG
ANSI/CAN/UL/ULC 180 Standard for Safety for Combustible Liquid Tank Accessories: Compression Fittings for Aboveground Pipe Supply and Fill Vents. Install according to the Manufacturer's Instructions. For Combustible Liquid Use. Pressure rating max 125 psi / 861 kPa. Fire rating 30 minutes.

2.5.3 MegaPress 304 FKM

MegaPress 304 FKM fittings have the following listings and certifications:

- ABS: American Bureau of Shipping Type Approval
- BV: Bureau Veritas Type Approval
- Canadian Registration Number (CRN): 0A14541.5 A/B/C
- DNV GL: Det Norske Veritas Germanischer Lloyd Type Approval
- LR: Lloyd's Register Type Approval
- NKK: Nippon Kaija Kyokai Type Approval
- FM Class 1920: Pipe Couplings and Fittings for Aboveground Fire Protection Systems (½" to 2" fittings only)
- IAPMO/ANSI/CAN Z1117: Press and Nail Connections
- ICC-ES LC1002: Press-Connection Fittings for Potable Water Tube and Radiant Heating Systems
- UL/ANSI 213: Standard for Rubber Gasketed Fittings for Fire-Protection Service (½" to 3" fittings only)
- ANSI/CAN/UL 213: 2019: Standard for Rubber Gasketed Fittings for Fire-Protection Service (½" to 3" fittings only)

2.5.4 MegaPress 316

MegaPress 316 fittings have the following listings and certifications:

- ABS: American Bureau of Shipping Type Approval
- BV: Bureau Veritas Type Approval
- Canadian Registration Number (CRN): 0A14541.5 A/B/C
- DNV GL: Det Norske Veritas Germanischer Lloyd Type Approval
- LR: Lloyd's Register Type Approval
- NKK: Nippon Kaija Kyokai Type Approval
- FM Class 1920: Pipe Couplings and Fittings for Aboveground Fire Protection Systems (½" to 2" fittings only)
- IAPMO/ANSI/CAN Z1117: Press and Nail Connections
- ICC-ES LC1002: Press-Connection Fittings for Potable Water Tube and Radiant Heating Systems
- UL/ANSI 213: Standard for Rubber Gasketed Fittings for Fire-Protection Service (½" to 3" fittings only)
- ANSI/CAN/UL 213: 2019: Standard for Rubber Gasketed Fittings for Fire-Protection Service (½" to 3" fittings only)
- NSF/ANSI 61: Drinking Water System Components – Health Effects
- NSF/ANSI 372: Drinking Water System Components – Lead Content

2.5.5 MegaPress 316 FKM

MegaPress 316 FKM fittings have the following listings and certifications:

- ABS: American Bureau of Shipping Type Approval
- Canadian Registration Number (CRN): 0A14541.5 A/B/C
- IAPMO/ANSI/CAN Z1117: Press and Nail Connections
- ICC-ES LC1002: Press-Connection Fittings for Potable Water Tube and Radiant Heating Systems

2.6 Codes and Standards

The following codes and standards are not a complete list, but only those relevant for marine applications for MegaPress, MegaPress FKM, MegaPressG, MegaPress Stainless, and MegaPress CuNi product lines.

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.

All MegaPress fittings systems (carbon steel and stainless steel) comply with the following codes and standards:

- ASME B31: Code for Pressure Piping
- ASME B31.1: Power Piping
- ASME B31.3: Process Piping
- ASME B31.9: Building Service Piping
- IACS: International Annealed Copper Standard
- IAPMO National Standard Plumbing Code (NSPC)
- IAPMO Uniform Mechanical Code (UMC)
- IAPMO Uniform Plumbing Code (UPC)
- ICC International Mechanical Code (IMC)
- ICC International Residential Code (IRC)
- National Building Code of Canada (NBCC)
- National Plumbing Code of Canada (NPCC)
- USCG - Title 46 CFR 56.30-25

MegaPressG fittings also comply with the following codes and standards:

- CAN/CSA-B149.1: Natural Gas and Propane Installation Code
- ICC International Fuel Gas Code (IFGC)
- NFPA 54/Z223: National Fuel Gas Code
- NFPA 58: Liquefied Petroleum Gas Code
- USCG - Title 46 CFR 56.30-25

MegaPress Stainless fittings also comply with the following codes and standards:

- ASTM A312: Standard Specification for Seamless, Welded and Heavily Cold Worked Austenitic Stainless Steel Pipes
- ASTM A554: Standard Specification for Welded Stainless Steel Mechanical Tubing

2.7 Product Description

2.7.1 Overview

The MegaPress system consists of press connectors for carbon steel and stainless steel pipes and the corresponding press tools. MegaPress press jaws, actuator, and rings are available for various sizes. Their constant compression produces a positive, nondetachable, mechanical joint. The system components are available in the following sizes: ½", ¾", 1", 1¼", 1½", 2", 2½", 3", 4".

2.7.2 Pipes

2.7.2.1 Carbon Steel

MegaPress connectors may be used with the following seamless or longitudinal welded steel pipes:

- Black
- Galvanized (non-potable applications)
- Industrially painted
- Powder coated

Viega MegaPress systems are for use with Schedule 10 to Schedule 40 steel pipe. The fittings may also be used with Schedule 80 pipe, limited to the maximum listed operating pressure. MegaPress fittings are compatible with the pipes manufactured to the following standards:

- ASTM A53
- ASTM A106
- ASTM A135
- ASTM A795
- ASME B36.10
- EN 10255
- EN 10220

If the pipe has been coated, the maximum external diameter listed in the tables on the next page must not be exceeded.

2.7.2.2 Stainless Steel

Viega MegaPress Stainless ½" to 4" fittings are compatible with ASTM A312 stainless steel pipe, schedule 5 to schedule 40 for ½" to 2" fittings and schedule 10 to schedule 40 stainless steel pipe for 2½" to 4" fittings. Fittings are for use with both annealed and unannealed pipe.

If the pipe has been coated, the maximum external diameter listed in the tables on the next page must not be exceeded.

2.7.2.3 Schedule 10 Pipe - Carbon and Stainless

Pipe Size (in)	Outside diameter (in)	Outside diameter (mm)	Wall thickness (in)	Wall thickness (mm)
½	0.84	21.3	0.083	2.11
¾	1.05	26.7	0.083	2.11
1	1.315	33.4	0.109	2.77
1¼	1.66	42.2	0.109	2.77
1½	1.9	48.3	0.109	2.77
2	2.375	60.3	0.109	2.77
2½	2.875	73.0	0.12	3.05
3	3.5	88.9	0.12	3.05
4	4.5	114.3	0.12	3.05

Table 8: Schedule 10 pipe sizing

2.7.2.4 Schedule 40 Pipe - Carbon and Stainless

Pipe Size (in)	Outside diameter (in)	Outside diameter (mm)	Wall thickness (in)	Wall thickness (mm)
½	0.84	21.3	0.109	2.77
¾	1.05	26.7	0.113	2.87
1	1.315	33.4	0.133	3.38
1¼	1.66	42.2	0.14	3.56
1½	1.9	48.3	0.145	3.68
2	2.375	60.3	0.154	3.91
2½	2.875	73.0	0.203	5.16
3	3.5	88.9	0.216	5.49
4	4.5	114.3	0.237	6.02

Table 9: Schedule 40 pipe sizing

2.7.2.5 Schedule 80 Pipe - Carbon and Stainless

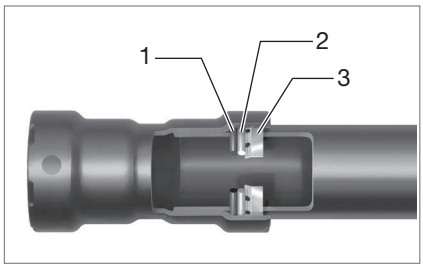
Pipe Size (in)	Outside diameter (in)	Outside diameter (mm)	Wall thickness (in)	Wall thickness (mm)
½	0.84	21.3	0.147	3.73
¾	1.05	26.7	0.154	3.91
1	1.315	33.4	0.179	4.55
1¼	1.66	42.2	0.191	4.85
1½	1.9	48.3	0.200	5.08
2	2.375	60.3	0.218	5.54
2½	2.875	73.0	0.276	7.01
3	3.5	88.9	0.300	7.62
4	4.5	114.3	0.337	8.56

Table 10: Schedule 80 pipe sizing

2.7.3 Press Fittings

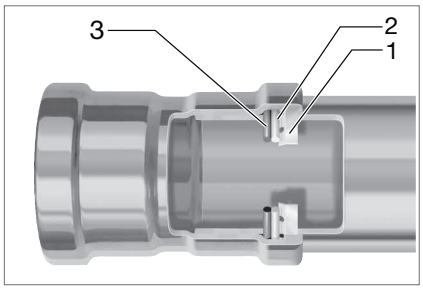
Press fittings are available in a number of configurations and sizes. An overview of the press fittings suitable for a system can be found in the catalog.

2.7.3.1 Viega MegaPress ½" to 2" Fittings



1 Each fitting contains an application specific sealing element.
2 The 304 stainless steel separator ring ensures that the sealing element and grip ring perform at maximum capacity by providing a positive physical separation.
3 The grip ring is a 420 stainless steel ring with bidirectional teeth that grip the pipe and ensure that the fitting is locked securely to the piping.

2.7.3.2 Viega MegaPress 2½" to 4" Fittings



1 The 420 stainless steel grip ring's teeth cut into the pipe and lock the fitting securely in place.
2 In MegaPress FKM and all MegaPress Stainless 2½" to 4" fittings, a PBT (Polybutylene Terephthalate) separator ring protects the sealing element from damage by creating a physical separation during installation and later during pressing. In MegaPressG 2½" to 4" fittings, a graphite separator ring is used.
3 The sealing element ensures watertight or airtight connections.

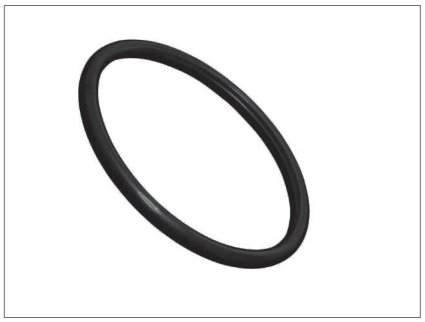
2.7.3.3 EPDM Sealing Element

Viega MegaPress ½" to 2" and MegaPress 316 ½" to 4" fittings are manufactured with a high-quality, shiny black EPDM (Ethylene Propylene Diene Monomer) 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.

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

The operating temperature of the EPDM sealing element is 14° to 230°F (-10° to 110°C).

2.7.3.4 FKM Sealing Element



Viega MegaPress FKM, MegaPress 304 FKM, and MegaPress 316 FKM ½" to 4" 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 FKM sealing element is 23° to 284°F (-5° to 140°C). It can withstand heat spikes up to 356°F.

2.7.3.5 HNBR Sealing Element

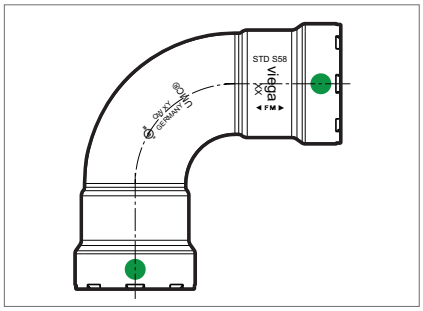
Viega MegaPressG ½" to 4" fittings are manufactured with a yellow HNBR (Hydrogenated Nitrile Butadiene Rubber) sealing element installed at the factory. HNBR is widely known for its physical strength and retention of properties after long-term exposure to heat, oil, and chemicals.

The unique properties attributed to HNBR have resulted in wide adoption of HNBR in marine, automotive, industrial, and assorted high-performance applications.

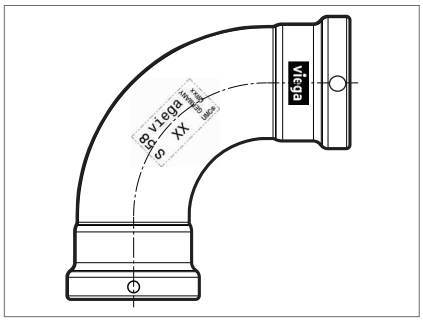
Sealing elements are inserted into the fitting using a H1 food grade lubricant registered with NSF and the USDA, and is approved for use under FDA 21 CFR.

The operating temperature of the HNBR sealing element is -40°F to 180°F (-40°C to 82°C).

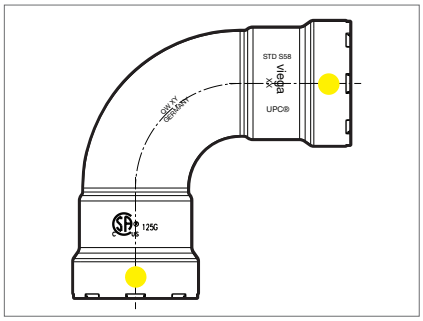
2.7.3.6 Fitting Markings



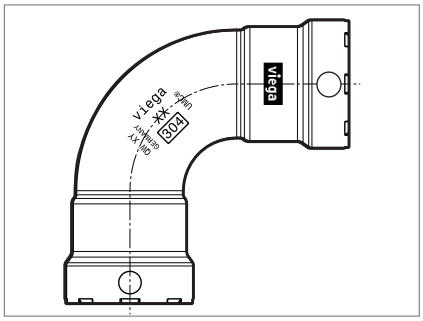
Each MegaPress ½" to 2" fitting is marked with the following:
- Green dot: EPDM sealing element and Smart Connect technology
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- UMC®
- UL®
- FM
- STD S58



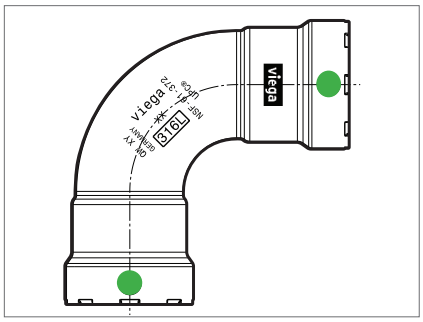
Each MegaPress FKM ½" to 4" fitting is marked with the following:
- White dot: FKM sealing element and Smart Connect technology
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- UMC®
- UL®
- FM
- STD S58



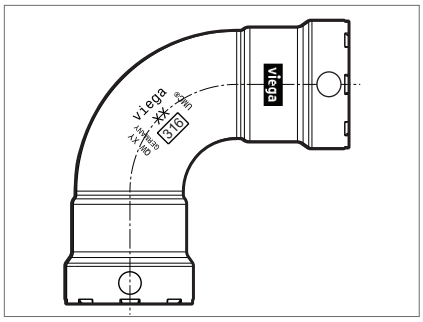
Each MegaPressG ½" to 4" fitting is marked with the following:
- Yellow dot: HNBR sealing element and Smart Connect technology
- Yellow rectangle: identifies Viega MegaPressG fitting as a certified gas or fuel oil fitting
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- UPC®
- CSA: indicates certification to ANSI/CSA LC4
- 125G: identifies the CSA maximum pressure rating of the fitting for fuel oil or gas applications



Each MegaPress 304 FKM 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
- UMC®



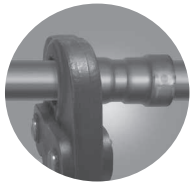
Each MegaPress 316 fitting is marked with the following:
- Green dot: EPDM sealing element and Smart Connect technology
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- Batch code
- NSF®-61-372
- UPC®



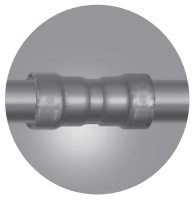
Each MegaPress 316 FKM fitting is marked with the following:
- White dot: FKM sealing element and Smart Connect technology
- Size of fitting
- Manufacturer name
- Manufacturer date code
- Country of origin
- Batch code
- UMC®

2.7.3.7 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 survey requirements of the governing body. If testing with compressed air, it is necessary to use an approved leak-detect solution.

2.8 General Installation Requirements

The Viega MegaPress 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.

Tool	Attachments	MegaPress Sizes (in)	SeaPress Sizes (mm)
Viega Pressgun 6	Standard Jaws	½ - 1	
	V1 Actuator and Rings		
	V2 Actuator and Rings	1¼ - 2	
Viega Pressgun Picco 6	Compact Jaws	½ - ¾	
	C1 Actuator and Rings	½ - 1¼	
RIDGID 330/340/350	Standard Jaws	½ - 1	
	V2 Actuator and Rings	1¼ - 2	
	MegaPress XL PressBooster	2½ - 4	
RIDGID 240/241	Compact Jaws	½ - 1	
	C1 Actuator and Rings	½ - 1¼	
RIDGID RP 342-XL	Standard Jaws	½ - 1	
	V2 Actuator and Rings	1¼ - 2	
	Z3 Actuator and Rings	2½ - 4	
Milwaukee M12 Force Logic	M12 Jaws	½ - 1	
Milwaukee M18 Force Logic	M18 Jaws	½ - 1	
	M18 Rings	1¼ - 2	
Milwaukee M18 Long Throw	M18 Jaws	½ - 1	
	M18 Rings	1¼ - 2	
	Z3 Actuator and Rings	2½ - 4	
Viega Pressgun 6	Metric Jaws		12 - 54
	P2 Actuator and Chain		76.1 - 108 (flanges only)
	Z1 Actuator and Rings		12 - 35
	Z2 Actuator and Rings		42 - 108 (no flanges)
Viega Pressgun Picco 6	Metric Jaws		12 - 35
	P1 Actuator and Rings		12 - 35
RIDGID 330/340/350	Metric Jaws		12 - 54
	Z1 Actuator and Rings		12 - 35
	Z2 Actuator and Rings		42 - 108
RIDGID 240/241	Metric Jaws		12 - 35
	P1 Actuator and Rings		12 - 35

Table 11: Press tools matrix

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

Hogging and sagging caused by wave action on a vessel must also be taken into account using one of the above corrective methods.

2.8.3 Exposure to Freezing Temperatures

Viega MegaPress systems with EPDM sealing elements can be installed in ambient temperatures down to 14° F. Viega MegaPress systems with FKM sealing elements can be installed in ambient temperatures down to 23°F. The HNBR sealing element available with Viega MegaPressG fittings can be installed in ambient temperatures down to -40°F.

Piping systems exposed to freezing temperatures must be protected per acceptable engineering practices in accordance with classification society rules.

2.8.4 Concealed Spaces

The Viega MegaPress Stainless 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.

2.8.5 Electrical Bonding

The mechanical press provides continuous metal-to-metal contact between fitting and pipe when properly installed. The press ensures the electrical 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 classification society rules.

CAUTION!
Pressure and electrical grounding
- The fittings are for use with fuel gases and are intended for the operating pressure 0-125 psi.
- The fuel gas system shall not be used as a grounding electrode for an electrical system.

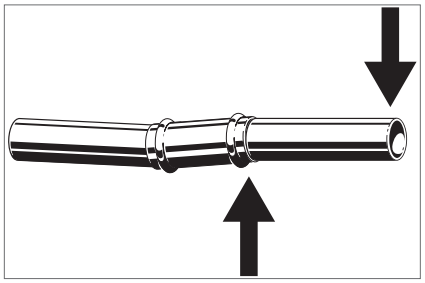
2.8.6 Corrosion Protection

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 installation 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.

CAUTION!
Galvanic isolation must be utilized between some hull material and piping system materials to prevent galvanic corrosion.

2.8.7 Deflection

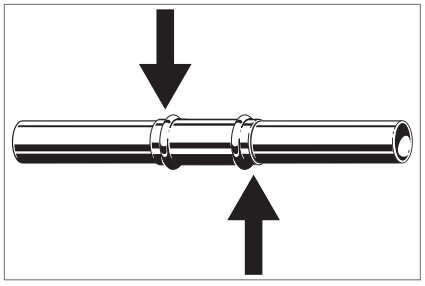


The pressing process can cause deflection (angular misalignment) to occur. When pressing Viega MegaPress fittings in a system, the deformation of the fitting is constant. This allows for a consistent leak-free joint every time and is a result of the pressing technique.

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, 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.

2.8.7.1 Controlling Deflection

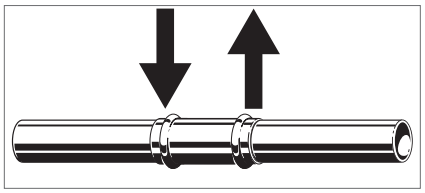
Deflection while pressing can be minimized by utilizing the following installation practices.



Alternate Press Directions

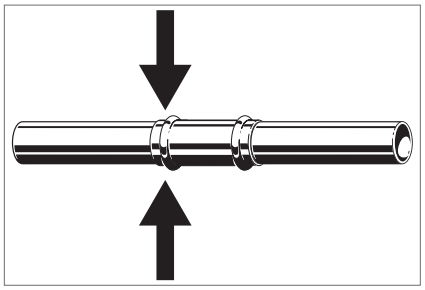
- Press one end of fitting.
- Make second press on other end of fitting from the opposite side.

Site conditions permitting.



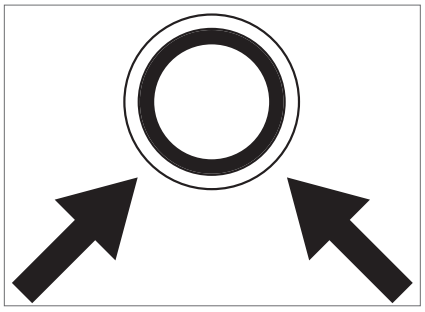
Push-Pull Method

- 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 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 Product Instructions.

3 Handling Instructions

All Viega MegaPress 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 sealing elements, separator rings, and grip rings are to be visually inspected prior to installation to ensure the seal is intact and properly located within the fitting. Viega MegaPress 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

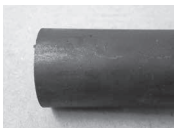
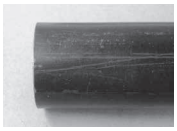
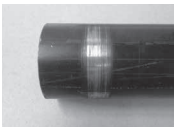
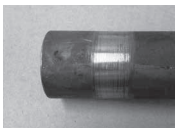
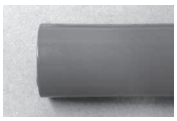
- Store fittings, pipe, and system components in a clean and dry place.
- Store fittings in original bag when possible.
- Do not store components directly on the floor.
- Provide at least three points of support for the storage of piping.
- Where possible, store different sizes separately.
- Store small 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.

Proper storage of rubber shelf life items is critical so as not to shorten the shelf life of the item. The requirements for storage/shelf life have been established by MIL – HDBK – 695E. Important factors to consider when storing rubber shelf life items are:

- Temperature: Rubber end products should be stored below 100 °F (38 °C). It may be necessary to raise the temperature of the product if it was stored below its optimum use temperature prior to installation. Optimum installation temperatures may vary based on the end use or application of the product.
- Humidity: Rubber end products should be stored in an atmosphere of less than 75 percent relative humidity.
- Ozone: Minimize exposure to ozone, since ozone can degrade some unprotected rubber products. This is especially pertinent when products are stored in a manufacturing environment, as equipment that uses high voltage sources or emits combustion products generates precursors to ozone formation.
- Light: Rubber products should not be stored in direct sunlight or ultraviolet light.
- Stock rotation: In general, stock of rubber end products should be issued based on their shelf life expiration date. Use of a first-in, first-out (FIFO) principle based on cure date may aid in this process.

3.3 Pipe Preparation

3.3.1 Carbon Steel Pipe Preparation

Description	Different kinds of pipe surface	Surface after prepping	Comments
Clean, bare pipe			If the pipe has no lacquer and there is no rust on the surface and the surface is smooth, no preparing is necessary.
Galvanized steel pipe			If the surface of the galvanized pipe is uneven, then the pipe surface must be smoothed.
Pipe with black shellac or lacquer			If the pipe is coated with black shellac or lacquer the coating has to be smoothed. It is not necessary to completely remove the coating.
Pipe with rust			If the pipe has no lacquer and there is a rust film on the surface, the surface has to be prepped until the rust film is removed and the pipe surface is smooth.
Epoxy coating			The epoxy coating must be reduced to allow the pipe to be inserted into the fitting. If the pipe has been coated, the maximum external diameter must not exceed the limit in the Pipe Schedule table.
Cataphoretic paint (KTL)			If the pipe is cataphoretic painted (KTL) and the surface is smooth, it is not necessary to prep the pipe. If there are scratches on the KTL, the surface has to be smoothed.

Pipe surfaces for each type of pipe must be smooth, free of indentations (even and undamaged), pits, and deformations and must be clean and free of dirt, debris, rust, scale, oil, and grease. It is not necessary to completely remove protective coatings or to expose the bare steel material.

Marine pipe coatings must be removed prior to fitting installation Install MegaPress fittings on plain end pipe only. Pressing fittings directly over threads will result in an improper seal.

To avoid leak paths, engraved or stamped pipe shall not be used with the Viega MegaPress fitting system. Engraving or stamping shall not be removed through use of a grinder or other tool. Scratches or scuffs that may have occurred to the pipe during shipping and handling must be smoothed out to insure no leak path was created.

In systems where complete corrosion protection is required (e.g., cooling systems), apply suitable corrosion protection to the previously processed pipe surfaces that are still uncovered after pressing.

The Viega MegaPress system does not require lubrication of the pipe or the fitting.

3.3.2 Stainless Steel Pipe Preparation

Pipe surfaces for each type of pipe must be smooth, free of indentations (even and undamaged), pits, and deformations and must be clean and free of dirt, debris, rust, scale, oil, and grease. It is not necessary to completely remove protective coatings or to expose the bare steel material.

To avoid leak paths, engraved or stamped pipe shall not be used with the Viega MegaPress fitting system. Engraving or stamping shall not be removed through use of a grinder or other tool.

In systems where complete corrosion protection is required (e.g., cooling systems), apply suitable corrosion protection to the previously processed pipe surfaces that are still uncovered after pressing.

The Viega MegaPress Stainless system does not require lubrication of the pipe or the fitting.

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

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.

Hangers and supports must conform to the requirements of the classification society, the USCG, or the governing authority. In the absence classification society requirements, hangers and supports should conform to MSS SP 58 and 127. Only pipe clamps with chloride-free noise insulation inlays should be used to secure the pipes.

4.2.1 Transition Fittings

4.2.1.1 Threaded Connections

The Viega MegaPress 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.

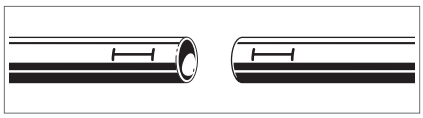
This process avoids unnecessary torsion on the press fitting.

4.2.1.2 Flange Connections

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

4.2.2 No-Stop Couplings

No-stop couplings and extended 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 (in)	Minimum Insertion Depth (mm)	Maximum Insertion Depth (in)	Maximum Insertion Depth (mm)
½	1 1/16	27	1 5/8	41
¾	1 3/16	30	1 13/16	46
1	1 3/8	35	1 15/16	49
1¼	1 13/16	46	2½	64
1½	1 7/8	48	2¾	70
2	2	51	2¾	70
2½	1 13/16	46	3⅛	79
3	2 5/16	59	3 11/16	94
4	3⅛	80	4⅜	111

Table 12: Insertion depths for MegaPress no-stop couplings

Pipe Diameter (in)	Minimum Insertion Depth (in)	Minimum Insertion Depth (mm)	Maximum Insertion Depth (in)	Maximum Insertion Depth (mm)
½	1 1/16	27	2¾	70
¾	1 3/16	30	2 13/16	71
1	1 3/8	35	3	776
1¼	1 13/16	46	3½	89
1½	1 7/8	48	3 9/16	90
2	2	51	3 11/16	94

Table 13: Insertion depths for MegaPress extended no-stop couplings

4.3 Space Requirements and Intervals

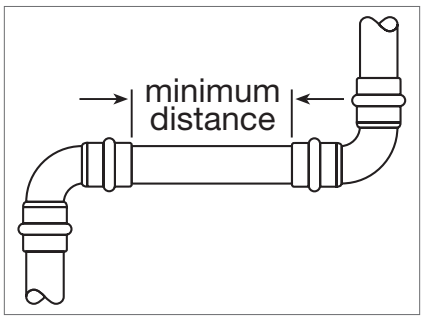
Not enough space

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 deck or bulkheads penetrations.
- Take the minimum required distances into consideration during the planning phase of the project whenever possible.

4.3.1 Minimum Distance Between Fittings

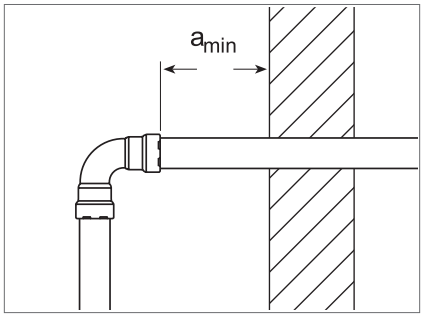
To ensure a correct press, a minimum distance between press fittings must be maintained. Failure to provide this distance may result in an improper seal.



Pipe Diameter (in)	A minimum (in)	A minimum (mm)
½	¼	7
¾		
1		
1¼	½	13
1½		
2		
2½		
3		
4		

Table 14: Minimum distance between press 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 and downstream from deck or bulkhead penetrations.

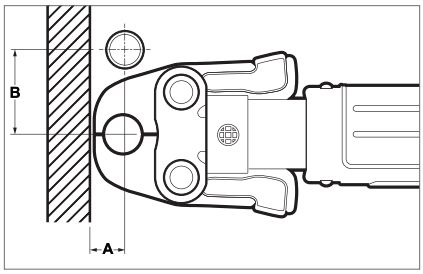
Pipe Size (in)	Minimum space requirement, a_{min} for press tools (in)
⅜, ½ to 1	1½
1¼ to 2	⅜
2½ to 4	⅜

Table 15: MegaPress distance requirements for press jaws between pipes and walls

4.3.3 RIDGID MegaPress Jaws Clearance Requirements

The minimum distance between pipe, or the pipe and the deck/bulkhead 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.

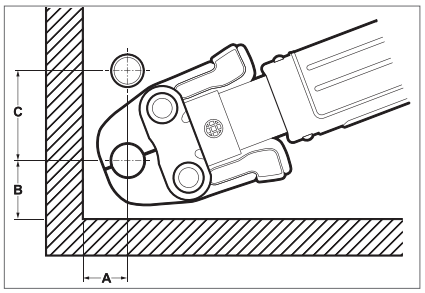


Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)
½	1	26	2⅝	67
¾	1¼	32	3⅛	79
1	1¾	45	3⅝	93

Table 16: RIDGID MegaPress standard jaws clearance requirements

Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)
½	1¼	32	2⅞	74
¾	1⅛	29	3	77

Table 17: RIDGID MegaPress compact jaws clearance requirements



Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)	C minimum (in)	C minimum (mm)
½	1¼	32	1⅞	48	3	77
¾	1½	39	2⅛	54	3½	89
1	2	51	2½	64	4	102

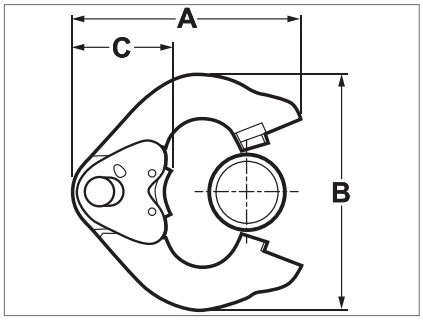
Table 18: RIDGID MegaPress standard jaws clearance requirements between pipe and ship structure, deck coverings, or bulkheads and overheads

Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)	C minimum (in)	C minimum (mm)
½	1½	39	2⅛	54	3⅛	80
¾	1⅜	35	2⅛	54	3⅜	86

Table 19: RIDGID MegaPress compact jaws clearance requirements between pipe and ship structure, deck coverings, or bulkheads and overheads

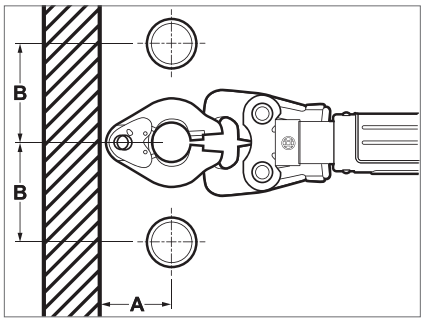
4.3.4 MegaPress Rings Clearance Requirements

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



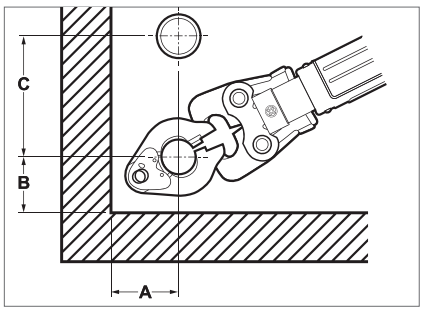
Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)	C minimum (in)	C minimum (mm)
1¼	6	153	6¼	159	2½	64
1½	6	153	6¾	172	2⅝	67
2	6	153	6⅞	175	2½	64
2½	6⅝	169	7⅝	194	2½	64
3	7½	191	8⅞	226	2½	64
4	8½	216	10⅜	264	2⅝	67

Table 20: RIDGID MegaPress rings dimensions



Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)
1¼	3¾	96	4⅞	124
1½	4	102	5⅛	131
2	4	102	5⅜	137
2½	4½	115	5⅞	150
3	4¾	121	6¾	172
4	5⅜	137	8¼	210

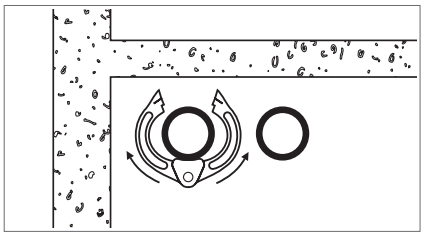
Table 21: RIDGID MegaPress rings with V2/V3 actuator clearance requirements



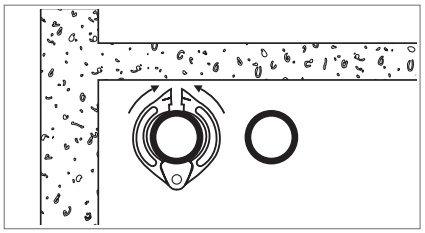
Pipe Diameter (in)	A minimum (in)	A minimum (mm)	B minimum (in)	B minimum (mm)	C minimum (in)	C minimum (mm)
1¼	3¾	96	3¾	96	4⅞	124
1½	4	102	4	102	5⅛	131
2	4	102	4	102	5⅜	137
2½	4½	115	4	102	5⅞	150
3	4¾	121	4¾	121	6¾	172
4	5⅜	137	5½	140	8¼	210

Table 22: RIDGID MegaPress rings with V2/V3 actuator clearance requirements between pipe and ship structure, deck coverings, or bulkheads and overheads

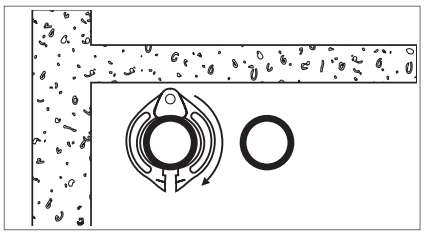
4.3.5 Pressing with Ring and Actuator in Tight Quarters



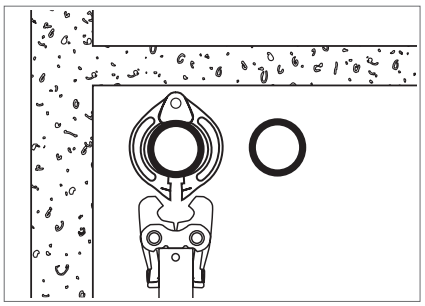
- Wrap the actuator ring around the press fitting with the opening facing away from you.



- 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 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.

4.4.2 Welding Adjacent to a Fitting

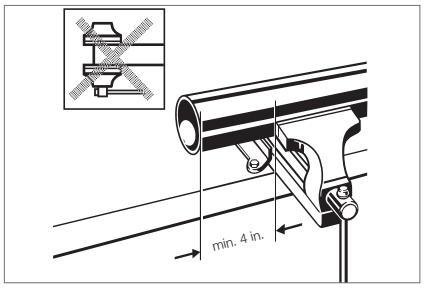
To prevent damage to the sealing element, maintain proper welding distances from the fitting. If welding adjacent to the connection, weld a minimum of four inches away.

4.4.3 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.

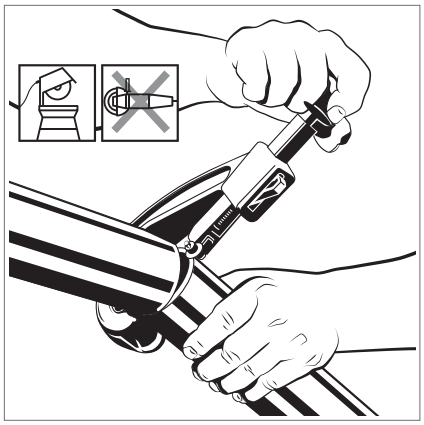
4.5 Cutting the Pipe

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.



➡ 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.

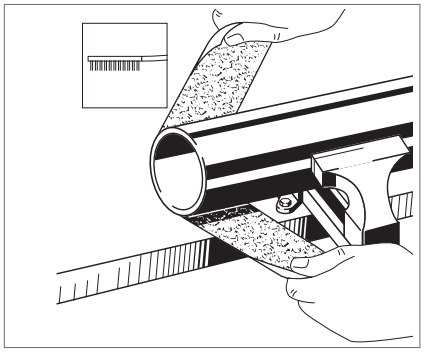


- Cut the pipe square using a displacement-type cutter or fine toothed saw.

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.

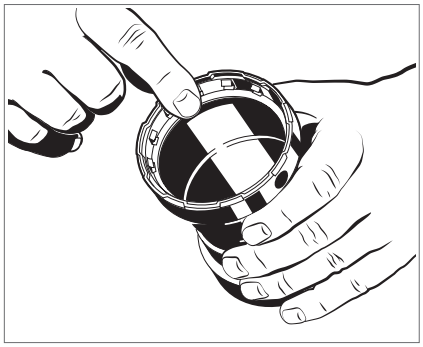


- Remove burr from inside and outside of piping and prep to proper insertion depth using a preparation tool, red Very Fine Scotch Brite pad, or fine grit sandcloth.

4.7 Pressing the Fitting

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.

4.7.1 Viega MegaPress ½" 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.

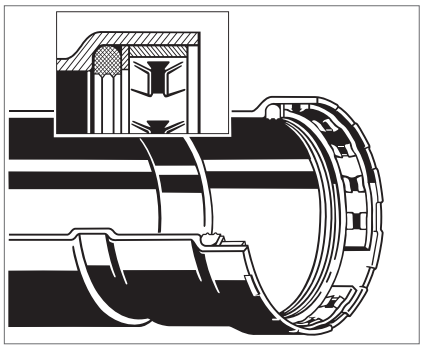
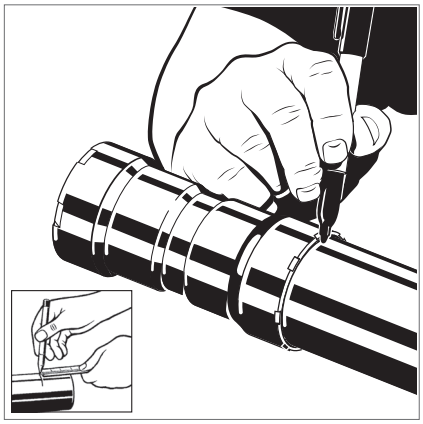


Illustration demonstrates proper fit of the grip ring, separation ring, and sealing element.



- 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.

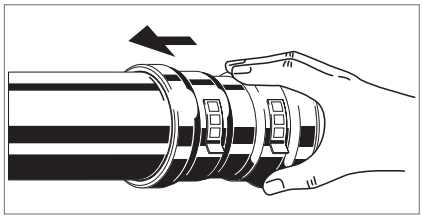
Improper insertion depth

Improper insertion depth may result in an improper seal.

- Be sure to mark the correct insertion depth on the pipe before pressing the fitting. The depth marking shall be visible on the completed assembly.

Pipe Diameter (in)	Insertion Depth (in)	Insertion Depth (mm)
½	1 1/16	27
¾	1 3/16	30
1	1 3/8	35
1¼	1 13/16	46
1½	1 7/8	48
2	2	51

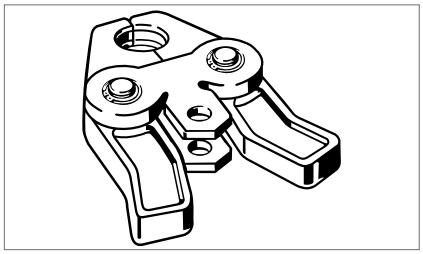
Table 23: Minimum insertion depths for MegaPress ½" to 2" fittings



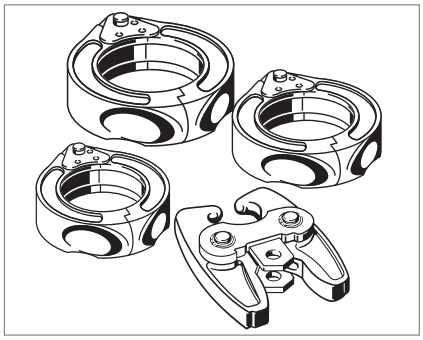
- While turning slightly, slide press fitting onto the pipe to the marked insertion depth.

Note: End of pipe must contact stop.

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



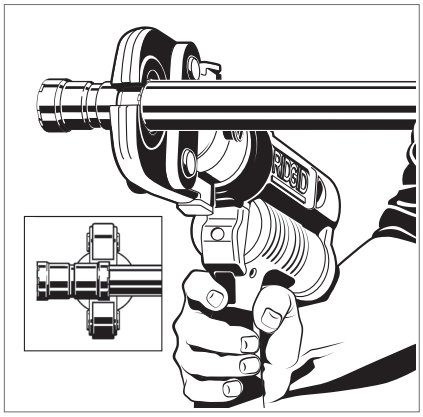
Viega MegaPress ½" to 1" fitting connections must be performed with MegaPress jaws or optional ring set and actuator. See Operator's Manual for proper tool instructions.



Viega MegaPress 1¼" to 2" fitting connections must be performed with MegaPress rings and V2 actuator. See Operator's Manual for proper tool instructions.

Use only MegaPress jaws and rings to press MegaPress 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 ½" to 1" fitting connections, open the MegaPress jaw and place at right angles on the fitting.
- Visually check insertion depth using mark on piping.

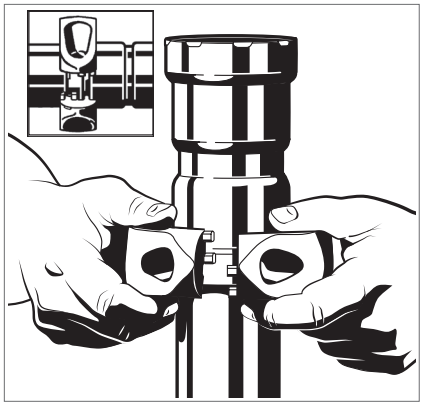
Do not press over pipe threads!

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

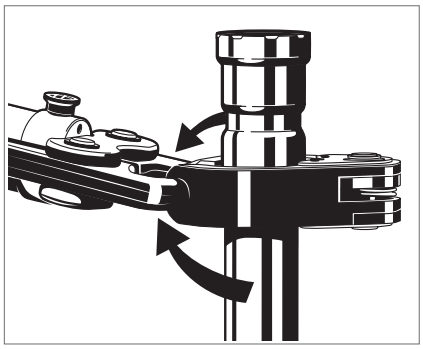
- Start the pressing process and hold the trigger until the jaw has engaged the fitting.

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

DANGER!
High pressure
Pressure above the specified range or improper application and use could cause pipes to burst resulting in serious injury or even death.

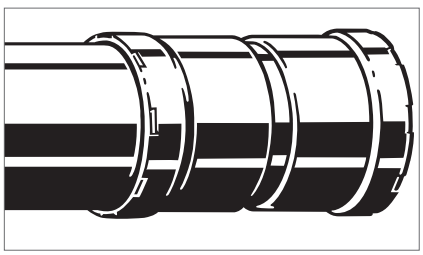


- For 1¼" to 2" fitting connections, open MegaPress ring and place at right angles on the fitting. MegaPress ring must be engaged on the fitting bead.
- Visually check insertion depth using mark on piping.



- 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.

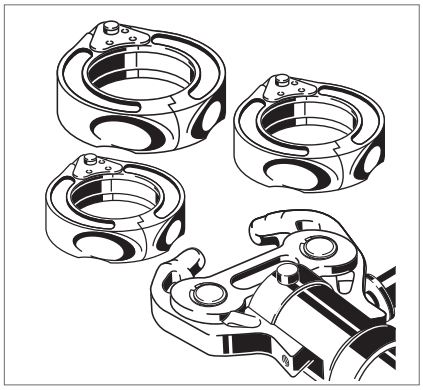


- Once the press is complete, remove MegaPress jaw from fitting or release V2 actuator from RIDGID MegaPress ring.
- Remove MegaPress ring from the fitting.

- Remove control label to indicate press has been completed.

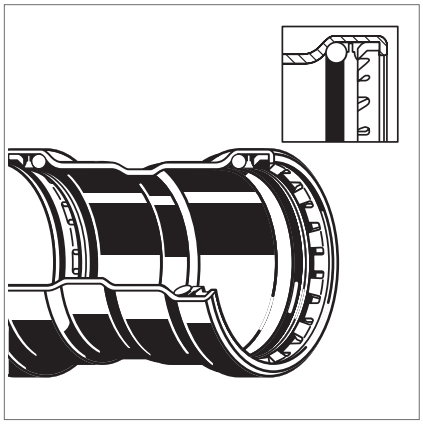
4.7.2 Viega MegaPress 2½" to 4" Installation

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



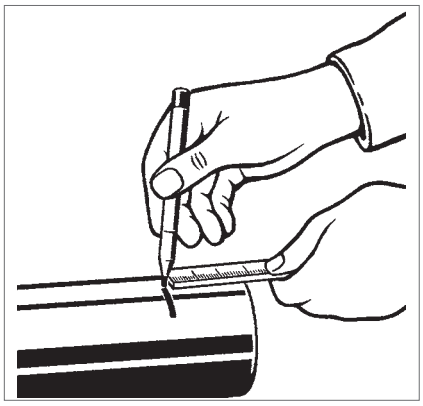
Use only rings that are compatible with MegaPress 2½" to 4" fittings.

- Viega MegaPress 2½" to 4" fitting connections must be made using MegaPress XL rings and either a standard press tool with PressBooster attachment or 80mm press stroke press gun with 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 grip 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 grip ring, separator ring, and sealing element.

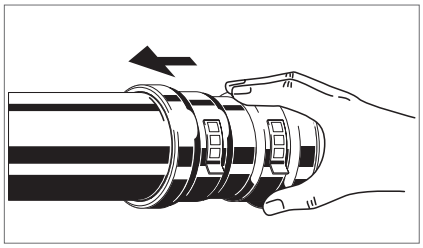


- Measure insertion depth (see table below).
- Mark the proper insertion depth on the outside of the pipe. It is recommended that the depth marking be visible on the completed assembly.

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. The depth marking shall be visible on the completed assembly.

Pipe Diameter (inches)	Insertion Depth (inches)	Insertion Depth (mm)
2½	1 13/16	46
3	2 5/16	59
4	3⅛	80

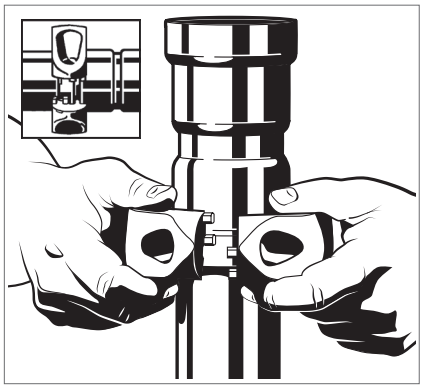
Table 24: Minimum insertion depths MegaPress 2½" to 4"



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



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

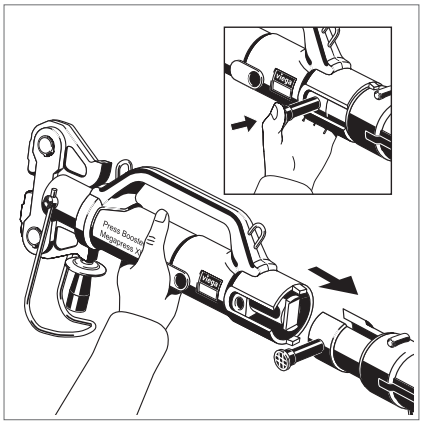
To press MegaPress 2½" to 4" fittings, use either the MegaPress XL PressBooster or the MegaPress Z3 actuator. Use MegaPress XL (2½", 3", or 4") press ring with either tool.

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

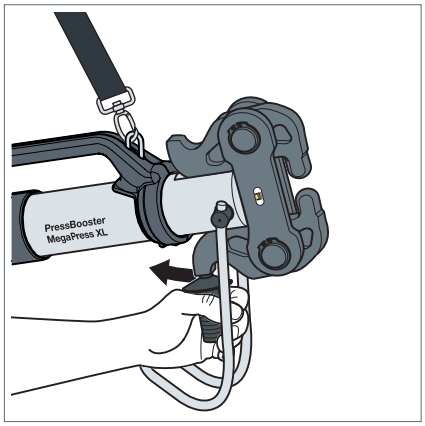
4.7.2.1 Using Viega MegaPress XL PressBooster

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

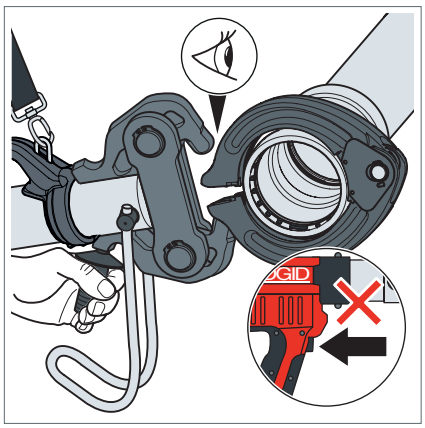
See the MegaPress XL Press Booster Instructions for Use for complete information on using the tool on the Viega.us website.



- Remove the retaining bolt 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.



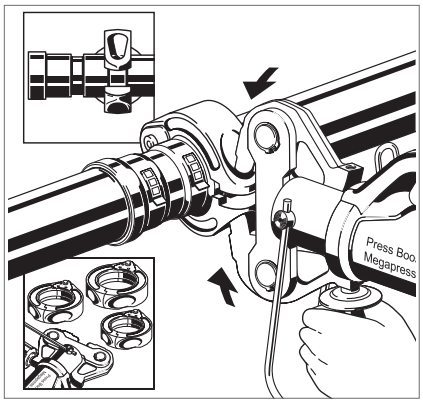
- Look at insertion depth mark on the pipe to make sure that the pipe is properly inserted into the fitting.
- To open the PressBooster jaw, pull the handle at the hinged adapter jaw back.



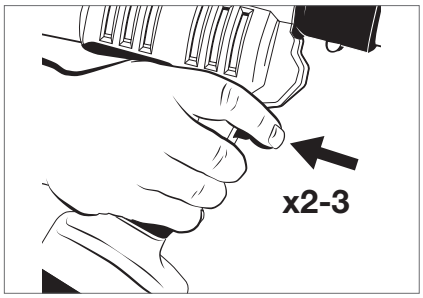
- Place PressBooster onto the MegaPress XL ring by inserting the ball heads of the hinged adapter jaw into the contact points of the press ring.

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.



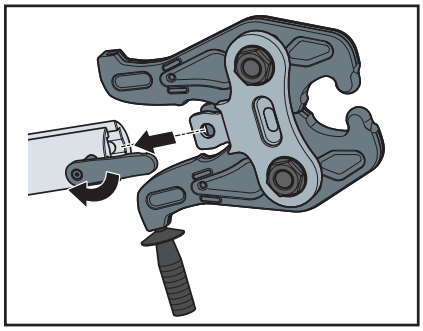
- The PressBooster requires two presses of the trigger to execute a complete press. A third press may be needed to initiate a release cycle to reset the rollers back to the original position.
- Once the pressing process is complete, the rollers at the front of the booster will retract and the hinged 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

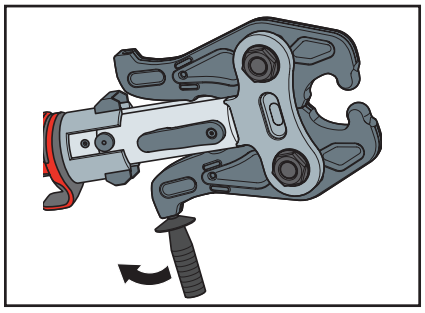
The Z3 actuator amplifies the mechanical force output in order to execute a complete press for MegaPress 2½" to 4" fittings.

See the MegaPress Z3 Actuator Instructions for Use for complete information on using the tool on the Viega.us website.

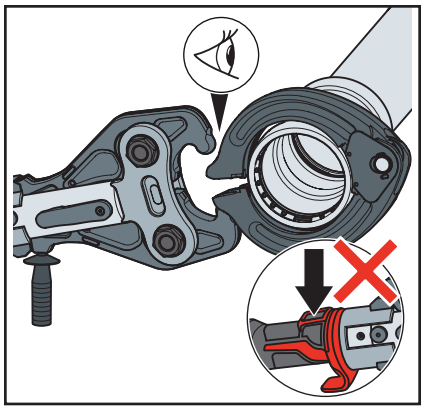


- On the press tool, rotate the retaining pin handle 180 degrees and pull it out to open the slot for the actuator.
- Insert the Viega Z3 actuator into the slot on the press tool.
- On the press tool, push the retaining pin back in and rotate it 180 degrees.

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

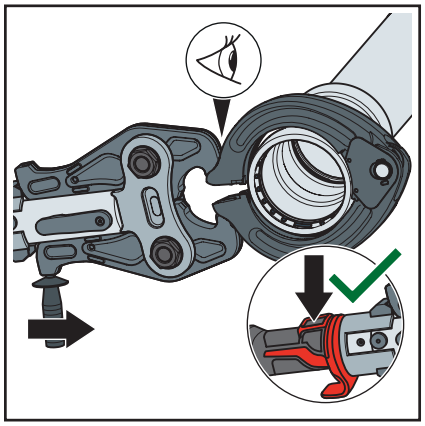


- Open the Viega Z3 actuator by pulling the handle back.



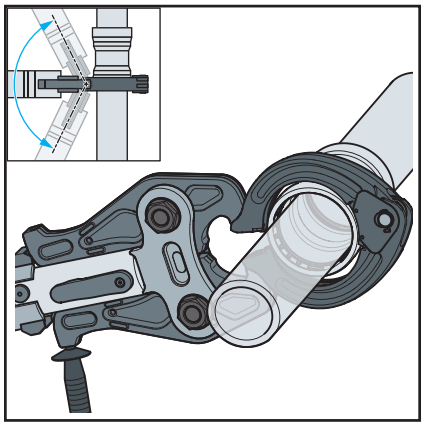
- Place the open Viega Z3 actuator onto the press ring by inserting the ball heads of the actuator into the contact points of the press ring.

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



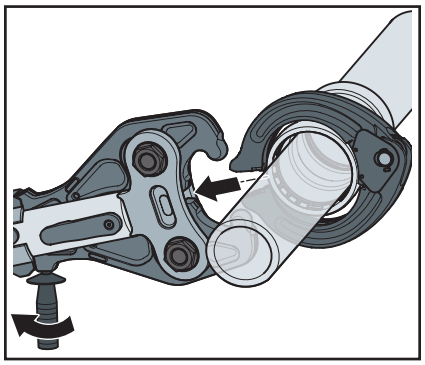
- Close the Z3 actuator.

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 classification society and/or USCG procedures.

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

Water testing with Viega Smart Connect:
- Use a range of 15 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 600 psi.

Testing with air or inert gases 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 300 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 classification society rules.

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 Limited Warranty for 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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