

1 System Data Sheet

MegaPress FKM Fittings



MegaPress FKM is a carbon steel, cold press system designed for use in chilled water, hydronic heating, compressed air, and fire sprinkler applications. MegaPress FKM fittings in sizes from ½" to 4" are offered in configurations including: elbows, couplings, no-stop couplings, reducers, tees, reducing tees, adapters, unions, caps, and flanges.

Components

- Alloy: carbon steel with corrosion-resistant zinc/nickel coating
- FKM sealing element
- 420 stainless steel grip ring
- 304 stainless steel separator ring for ½" to 2" fittings
- PBT separator ring for 2½" to 4" fittings

Operating Parameters

- Operating Pressure: 200 psi max
- Test Pressure: 600 psi max
- Operating Temperatures: 14° F to 284° F
(with temperature spikes up to 356° F)

Listings and Certificates

- ANSI/CAN/UL 213
 - ASME B31.1, B31.3, B31.9
 - ASTM F3226
 - CRN 23019.5 A/B/C
 - IAPMO PS117
 - ICC LC1002
 - NFPA 13, 13D, 13R
- The following apply to 2½" to 4" fittings only:
- FM Class 1920

Compliant With

- ASME B31: Code for Pressure Piping
- IAPMO Uniform Mechanical Code (UMC)
- ICC International Mechanical Code (IMC)
- ICC International Residential Code (IRC)
- National Building Code of Canada (NBCC)
- National Plumbing Code of Canada (NPCC)

Approved Applications

- Fire Sprinkler
- Hydronics
- Low Pressure Steam
- Fuel Oil
- Industrial Gases
- Compressed Air
- Vacuum

MegaPress FKM is not approved for potable water application. For more specific information on applications for MegaPress FKM, contact Viega Technical Services at 1-800-976-9819.

MegaPress FKM systems are approved for underground use and must be protected against corrosion in accordance with NFPA 54 section 404.8, NACE Standard RP0169-2002 section 5, 2009 UPC Chapter 6 section 609.3.1, 2009 UMC Chapter 13 section 1312.1.3, and in accordance with local and national codes.

MegaPress FKM fittings are designed for use in piping systems utilizing ASTM A53, A106, A135, and A795 Schedule 5 to Schedule 40 carbon steel pipe.

Recommended Tools

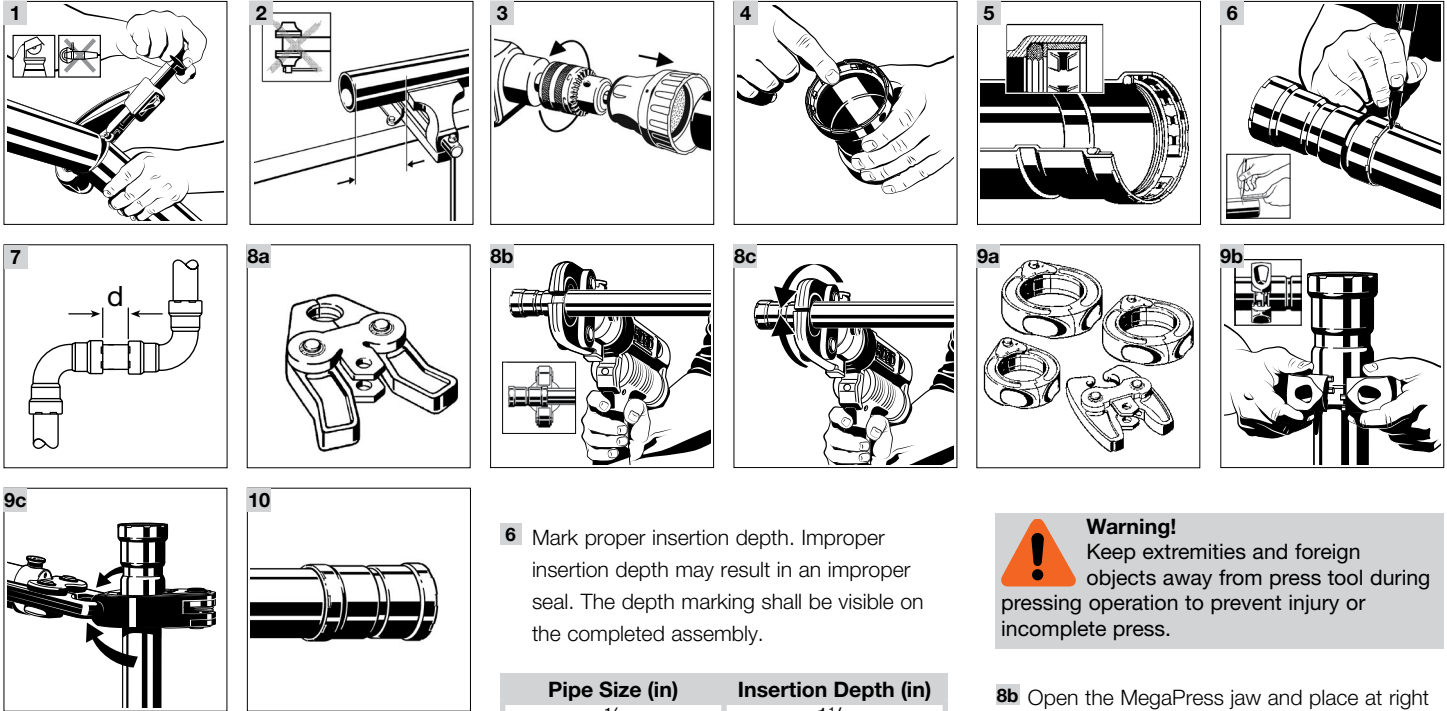
- Standard size press tool (minimum hydraulic ram output of 7200 lbs.)
- #56013 MegaPress jaw/ring kit (½" to 2")
- Viega 26200 PressBooster with 2½" MegaPress XL ring
- Viega 26201 3" and 4" MegaPress XL rings
- #57081 Z3 Actuator with 2½" ring (must be used with press gun with minimum 80mm press stroke)

Smart Connect® Technology

MegaPress FKM fittings are manufactured with Viega's unique Smart Connect technology. A design of the fitting, Smart Connect technology allows identification of an unpressed fitting during pressure testing.

2 Product Instructions

MegaPress FKM ½" to 2" Fittings



- 1 Cut piping at right angles using displacement type cutter.
- 2 Keep end of piping a minimum of 4" away from the contact area of the vise to prevent possible damage to the piping in the press area. See *MegaPress Installation Manual* for minimum clearance required for prep tools.
- 3 Remove burr from inside and outside of piping and prep to proper insertion depth using a preparation tool or fine grit sandpaper.
- 4 Check seal and grip ring for correct fit. Do not use oils or lubricants.
- 5 Illustration demonstrates proper fit of grip ring, separation ring and sealing element.

- 6 Mark proper insertion depth. Improper insertion depth may result in an improper seal. The depth marking shall be visible on the completed assembly.

Pipe Size (in)	Insertion Depth (in)
½	1 ⅛
¾	1 ¾
1	1 ¾
1 ¼	1 ⅞
1 ½	1 ¾
2	2

- 7 Refer to chart for 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)	d (in)	d (mm)
½	¼	6
¾	¼	6
1	¼	6
1 ¼	½	13
1 ½	½	13
2	½	13

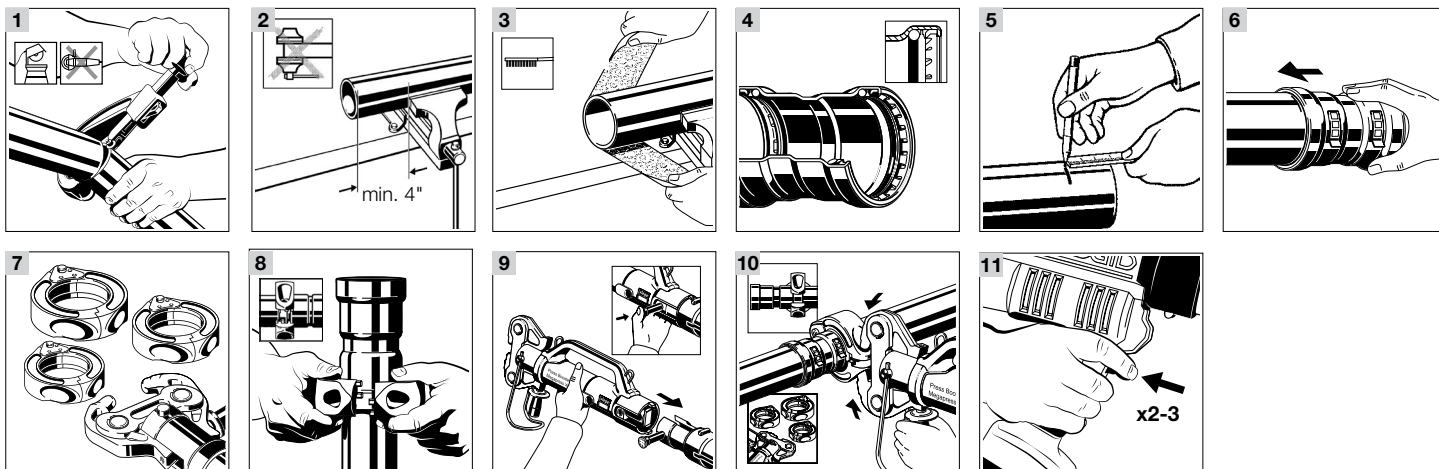
- 8a Viega MegaPress ½" to 1" fitting connections must be performed with MegaPress jaws. See the pressing tool's Operator's Manual for proper tool instructions

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

- 8b Open the MegaPress jaw and place at right angles on the fitting. Visually check insertion depth using mark on piping.
- 8c Start pressing process and hold the trigger until the jaw has engaged the fitting.
- 9a Viega MegaPress 1 ¼" to 2" fitting connections must be performed with MegaPress rings and V2 actuator. See the pressing tool's Operator's Manual for proper tool instructions.
- 9b 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.
- 9c Place V2 actuator onto the MegaPress ring and start pressing process. Hold the trigger until the actuator has engaged the MegaPress ring.
- 10 Remove the MegaPress jaw from the fitting or release the V2 actuator from the MegaPress ring and then remove the MegaPress ring from the fitting on completion of press. Remove control label to indicate press has been completed.

Product Instructions

MegaPress FKM 2½" to 4" Fittings



- 1 Cut piping at right angles using displacement type cutter.
- 2 Keep end of piping a minimum of 4" away from the contact area of the vise to prevent possible damage to the piping in the press area. See *MegaPress Installation Manual* for minimum clearance required for prep tools.
- 3 Remove burr from inside and outside of piping and prep to proper insertion depth using a preparation tool or fine grit sandpaper.
- 4 Illustration demonstrates proper fit of grip ring, separation ring and sealing element.

- 5 Mark proper insertion depth. Improper insertion depth may result in an improper seal. The depth marking shall be visible on the completed assembly.

Insertion Depth (in)	d (in)	d (mm)
2½	1 ¹³ / ₁₆	46
3	2 ⁵ / ₁₆	59
4	3 ¹ / ₈	80

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

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

- 7 Viega MegaPress FKM 2½" to 4" fitting connections must be made using MegaPress XL rings and a PressBooster/Z3 actuator. See Operator's Manual for proper tool instructions.
- 8 Open MegaPress ring and place at right angles on the fitting. MegaPress ring must be engaged on the fitting bead. Check insertion depth.
- 9 Remove the retaining bolt of the press machine. Slide the PressBooster in via the press jaw fixture.
- 10 Place PressBooster/Z3 actuator onto MegaPress XL rings and start pressing process. Hold the trigger until the actuator has engaged the MegaPress ring.
- 11 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.

3 Engineering Specifications

MegaPress FKM Fittings

Part 1: General

1.1 Summary

MegaPress FKM is a cold press mechanical joint fitting system utilizing standard Schedule 5 to Schedule 40 carbon steel pipe in sizes ½" to 4".

1.2 Definitions

ASME: American Society of Mechanical Engineers
 ASTM: American Society for Testing and Materials
 AWWA: American Water Works Association
 CRN: Canadian Registration Number
 CSA: Canadian Standards Association
 FKM: Fluoroelastomer
 FM: Factory Mutual
 IACS: International Association of Classification Societies
 IAPMO: International Association of Plumbing & Mechanical Officials
 ICC: International Code Council
 MSS: Manufacturers Standardization Society
 NACE International: National Association of Corrosion Engineers
 NFPA: National Fire Protection Association
 UL: Underwriters Laboratory

1.3 References

ANSI/CAN/UL 213 Rubber gasketed fittings for fire protection service
 ASME A13.1 Scheme for the Identification of Piping Systems
 ASME B1.20.1 Pipe Threads, General Purpose (inch)
 ASME B16.3 Malleable Iron Threaded Fittings
 ASME B16.9 Factory Made Wrought Steel Butt Welding Fittings
 ASME B31.1 Power Piping
 ASME B31.3 Process Piping
 ASME B31.9 Building Piping Systems
 ASME B36.10 Welded and Seamless Wrought Steel Pipe
 ASTM A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless Pipe
 ASTM A106 Specification for Seamless Carbon Steel Pipe - High Temperature Service
 ASTM A135 Specification for Electric-Resistance-Welded Steel Pipe
 ASTM A420 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low Temperature Service
 ASTM A795 Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use
 ASTM D2000 Classification System for Rubber Products in Automotive Applications
 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
 AWWAC651 Standard for Disinfecting Water Mains
 FM Class 1920 Pipe coupling and fittings for aboveground fire protection systems
 IACS Requirements concerning Pipes And Pressure Vessels
 IAPMO Uniform Mechanical Code
 IAPMO Uniform Plumbing Code
 ICC International Mechanical Code
 ICC International Plumbing Code
 MSS SP 58 Pipe Hangers and Supports Materials, Design and Manufacturer
 NACE RP 0169 Control of External Corrosion on Underground or Submerged Metallic Piping Systems

NFPA13 Standard for the Installation of Sprinkler Systems

NFPA13D Standard for the Installation of Sprinkler Systems in One/Two Family Dwellings and Mobile Homes

NFPA13R Standard for the Installation of Sprinkler Systems for Residential Occupancies up to and including Four Stories in Height

NFPA14 Standard for the Installation of Standpipe and Hose Systems

1.4 Quality Assurance

- A. Installer shall be qualified, licensed within the jurisdiction, and familiar with the installation of cold press mechanical joint systems.
- B. MegaPress press fittings shall be installed using the proper tool, actuator, jaws and rings as instructed by the press fitting manufacturer.
- C. The installation of carbon steel pipe in sprinkler or standpipe systems shall conform to NFPA13, 13D, 13R and 14.
- D. The installation of carbon steel pipe in hydronic systems shall conform to the requirements of the ICC International Mechanical Code or the IAPMO Uniform Mechanical Code.
- E. Compliance to ASME B31.9 for building services piping.

1.5 Delivery, Storage and Handling

- A. Carbon steel pipe shall be shipped to the job site in such a manner to protect the pipe. The pipe and fittings shall not be roughly handled during shipment. Pipe and fittings shall be unloaded with reasonable care.
- B. Protect the stored product from moisture and dirt. Elevate above grade. When stored inside, do not exceed the structural capacity of the floor.
- C. Protect fittings and piping specialties from moisture and dirt.

1.6 Project Conditions

Verify length of pipe required by field measurements.

1.7 Warranty

- A. Viega LLC (Viega) warrants to end users, installers and distribution houses that its Viega metal press products (MegaPress) when properly installed shall be free from failure caused by manufacturing defects. Refer to Viega warranties for specific information.
- B. Viega LLC (Viega) manufacturer of the fittings shall not be responsible for the improper use, handling or installation of the product.

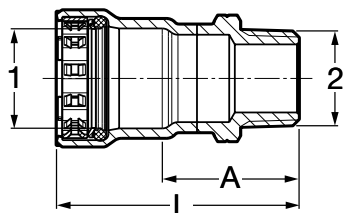
Part 2: Products

2.1 Manufacturer

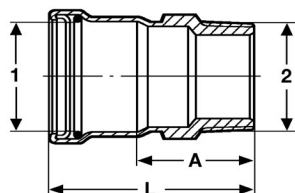
Viega LLC
585 Interlocken Blvd.
Broomfield CO, 80021
Phone: (800) 976-9819
www.viega.us

2.2 Material

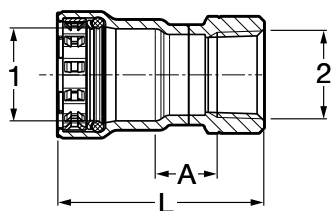
- A. Pipe: Carbon steel pipe shall conform to ASTM A53, A106, A135 or A795. Pipe schedule (pipe wall thickness) shall conform to the standard referenced dimensions for Schedule 5 to 40.
- B. Fittings: Cold Press Mechanical Joint Fitting shall conform to material requirements of ASTM A420 or ASME B16.3 and performance criteria of IAPMO PS117 and ASTM F3226. Sealing elements for press fittings shall be FKM. Sealing elements shall be factory installed or an alternative supplied by fitting manufacturer. Press ends shall have Smart Connect® technology design. MegaPress fittings with the Smart Connect technology assure leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The function of this technology is to provide the installer quick and easy identification of connections which have not been pressed prior to putting the system into operation.
- C. Pipe Thread: Pipe Threads shall conform to ASTM B16.3.

MegaPress Adapter, Carbon Steel, P x MPT - Models 4811 / 5911 / 6611


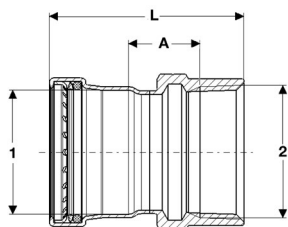
EPDM	Part No.		Size (in)		A (in)	L (in)
	FKM	HNBR	1	2		
25100	84245	25101	½ x ½		1.45	2.52
25105	84250	25106	¾ x ¾		1.50	2.66
25110	84255	25111	1 x 1		1.66	3.00
25115	84260	25116	1¼ x 1¼		1.90	3.70
25120	84265	25121	1½ x 1½		1.93	3.80
25125	84270	25126	2 x 2		1.93	3.92

Viega MegaPress Adapter P x MPT - Models 4811XL / 6611XL


FKM	Part No.		Size (in)		A (in)	L (in)
	HNBR		1	2		
26640	28740		2½ x 2½		2.75	4.55
26645	28745		3 x 3		2.89	5.20
26650	28750		4 x 4		3.03	6.21

MegaPress Adapter, Carbon Steel, P x FPT - Models 4812 / 5912 / 6612


EPDM	Part No.		Size (in)		A (in)	L (in)
	FKM	HNBR	1	2		
25130	84275	25131	½ x ½		0.69	2.29
25135	84280	25136	¾ x ¾		0.74	2.45
25140	84285	25141	1 x 1		0.73	2.74
25145	84290	25146	1¼ x 1¼		0.77	3.27
25150	84295	25151	1½ x 1½		0.72	3.28
25155	84300	25156	2 x 2		0.76	3.44

Viega MegaPress Adapter P x FPT - Models 4812XL / 6612XL


FKM	Part No.		Size (in)		A (in)	L (in)
	HNBR		1	2		
26655	28755		2½ x 2½		1.13	3.86
26660	28760		3 x 3		1.17	4.49
26665	28765		4 x 4		1.15	5.42