ProPress® SYSTEM w/Smart Connect® feature

viega

Submittal Package

ProPress® SYSTEM

- ☐ Potable Water
- ☐ Hydronic Heating
- ☐ Chilled Water
- ☐ Compressed Air
- ☐ Nitrogen N_2
- ☐ Argon
- ☐ Low Pressure Steam
- ☐ Fire Protection
- ☐ Vacuum
- ☐ Argomac - K (welding gas)
- ☐ Corgon
- ☐ Oxygen 0_2 (non medical)

VIEGA • The global leader in plumbing and heating systems.
301 N. Main, Floor 9 • Wichita, KS 67202 • Ph: 877-843-4262 • Fax: 1-800-976-9817 • E-Mail: service@viega.com • www.viega.com

SM-PP-0808

ProPress® SYSTEM w/Smart Connect® feature

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System Data Sheet

System Description
ProPress®, ProPress XL™ and ProPress XLC are safe, reliable, and economical copper pipe installation systems that use modern cold press connection technology for a wide assortment of more than 500 fittings in dimensions ranging from 1/2" to 4".

Applications
Tubing: K, L, and M hard copper tubing from 1/2" to 4" and soft copper tubing in1/2" to 1-1/4" diameters. All tubing must comply with the ASTM B88 standard. ProPress fittings are approved for installations in both above and below ground applications. Per code, local inspector approval must be obtained prior to installation below ground.

Operating Parameters:
Operating Pressure 200 PSI Max.
Test Pressure 600 PSI Max.
Low Pressure Steam 15 PSI Max.
Vacuum 29.2" Mercury Max. @ 68°F
Operating Temperature 0°F - 250°F

Approved Applications:
- Potable water
- Hydronic heating (w/ Glycol)
- Chilled water
- Compressed Air (200 PSI Max.)
- Non Medical Gases (140 PSI Max.)
- Fire Sprinkler (175 PSI Max.)
- Low Pressure Steam (15 PSI Max.)
- Vacuum (29.2" Mercury Max. @ 68°F)

System Benefits
- Fast and Easy to Use
- Flameless
- Permanent Connections
- Wide Capacity from 1/2" to 4"
- Large Selection of Fittings
- Consistent Professional Appearance
- Less Equipment Required
- Environmentally Friendly Connection System
- Versatility of Fittings and Tools for Variety of Applications

Fittings
Viega ProPress fittings are offered in 500+ configurations including: Elbows, Couplings, Reducers, Tees, Reducing Tees, Threaded Adapters, Unions, Caps, and Flanges. All Threaded 1/2"- 2" fittings are bronze.

Smart Connect™ (SC Feature)
In ProPress 1/2"- 4" dimensions, the Smart Connect Feature assures leakage of liquids and/or gases from inside the system past the sealing element of an **unpressed** connection. The function of this feature is to provide the installer quick and easy identification of connections which have not been pressed prior to putting the system into operation.

RIDGID Pressing Tools			
Model	330C	330B	100B
Volts	120v	14.4v Battery	14.4v Battery
Amps	5.2A	27.2A	24A
Weight (w/out jaw)	9 lbs.	10 lbs.	7.5 lbs.

Tools
RIDGID offers three pressing tools for connecting ProPress fittings.
- 330-C Corded Tool (1/2" to 4")
- 330-B Battery powered Tool (1/2" to 4")
- 100-B Battery powered Tool (1/2" to 1")
- 1/2" to 4" fittings are pressed in 4-7 sec.

History
ProPress has been used in Europe since the late 1980s and in the U.S. since the late 1990s for a variety of applications. Backed by two plumbing leaders with over 175 years of combined excellence.

Warranty
Viega ProPress products carry a 50-year warranty against defects in material and workmanship. The RIDGID Lifetime Warranty applies to tools, jaws and crimp rings from Ridge Tool Company.

Approvals and Certificates
NSF International
www.nsf.org/business/search_listings/index.asp#mname (enter "Viega")

IAPMO
http://pld.iapmo.org/ (enter "Viega")

UL
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/gfilenbr.html (enter"ex6157")

ABS
(American Bureau of Shipping)
http://www.eagle.org/typeapproval/contents.html (enter "Viega")

CSA International
http://www.csa-international.org/product/ (enter "Viega")

FM

INTERNATIONAL APPROVALS
- Deutsch Verein des Gas-und Wasserfachese.V. (DVGW)
- Lloyd's Register (LLOYD'S)
- Det Norske Veritas (DNV)
- Registro Italiano Navale (RINA)
- Bureau Veritas (BV)
- KIWA

Compliant with
- ICC International Plumbing Code
- UPC Uniform Plumbing Code
- PHCC National standard plumbing code
- Florida Building Code, Volume IIPlumbing Code
- NFPA 13,13D, and 13R

Contact your local Viega or RIDGID representative for details on local approvals

For more information on RIDGID products contact:
Ridge Tool Company
400 Clark Street, Elyria, Ohio 44036
Demos, Literature: 800-769-7743
Technical inquiries: 800-519-3456
Availability: 888-743-4333
Web: www.ridgid.com

ProPress® Warranty

VIEGA LLC LIMITED WARRANTY PROPRESS® FITTINGS AND VALVES

Subject to the conditions and limitations in this Limited Warranty, Viega LLC (VIEGA) warrants to wholesalers and licensed plumbing and mechanical contractors in the United States and Canada that its PROPRESS fittings, when properly installed in non industrial and non marine applications and under normal conditions of use, will be free of failure from manufacturing defect for a period of fifty (50) years from date of installation and that its PROPRESS valves, when properly installed in non industrial and non marine applications and under normal conditions of use, will be free of failure from manufacturing defect for a period of two (2) years from date of installation.

Under this Limited Warranty, you only have a right to a remedy if the failure or leak resulted from a manufacturing defect in the products covered by this warranty and the failure or leak occurred during the warranty period. You do not have a remedy under this warranty and the warranty does not apply if the failure or any resulting damage is caused by (1) components other than those manufactured or sold by Viega; (2) not designing, installing, inspecting, or testing the ProPress fittings or valves in accordance with Viega's installation instructions in effect at the time of the installation; applicable code requirements; and accepted industry practice; (3) improper handling and protection of the product prior to and during installation, inadequate freeze protection, exposure to water pressures or temperatures or in applications outside acceptable operating conditions; (4) acts of nature such as, but not limited to, earthquakes, fire, flood, or lightning, or (5) external environmental causes, such as water quality variations, aggressive water, or other external chemical or physical conditions.

In the event of a leak or other failure of the parts covered by this warranty, it is the responsibility of the property owner to obtain and pay for repairs. Only if the warranty applies will Viega be responsible for the remedy under this warranty. The part or parts which you claim failed should be kept and Viega contacted by writing to the address below or telephoning 1-877-843-4262 within thirty (30) days after the leak or other failure and identifying yourself as having a warranty claim. You should be prepared to ship, at your expense, the product which you claim failed due to a manufacturing defect and document the date of installation. Within a reasonable time after receiving the product, Viega will investigate the reasons for the failure, which includes the right to inspect the product at Viega. Viega will notify you in writing of the results of its review.

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

THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. If a limited warranty shall be found to apply, such warranty is limited to four years. Other than this Limited Warranty, Viega does not authorize any person or firm to create for it any other obligation or liability in connection with its products.

This Limited Warranty gives you specific legal rights and you also may have other rights which may vary from state to state. This warranty shall be interpreted and applied under the law of the state in which the product is installed and is intended as a Commercial Warranty.

ProPress Warranty 0408

301 N. Main, Floor 9 • Wichita, KS 67202 • Ph: 877-Viega-NA • Fax: 1-800-976-9817 • E-Mail: service@viega.com • www.viega.com

ProPress® SYSTEM w/Smart Connect® feature

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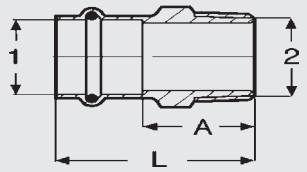
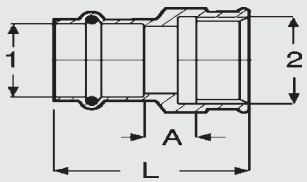
Dimensional Documentation



Adapter C x M				
Stock Code	Size	Material	A (in)	L (in)
	1 2			
77812	1/2"x 3/8" NPT	Bronze	0.96	1.713
77817	1/2"x 1/2" NPT	Bronze	1.12	1.870
77822	1/2"x 3/4" NPT	Bronze	1.22	1.969
77827	3/4"x 1/2" NPT	Bronze	1.18	2.087
77832	3/4"x 3/4" NPT	Bronze	1.18	2.087
22348	3/4"x 1" NPT	Bronze	1.42	2.323
77837	1"x 3/4" NPT	Bronze	1.32	2.224
77842	1"x 1" NPT	Bronze	1.46	2.362
77847	1"x 1-1/4" NPT	Bronze	1.73	2.638
77852	1-1/4"x 1" NPT	Bronze	1.42	2.441
77857	1-1/4"x 1-1/4" NPT	Bronze	1.54	2.559
77862	1-1/4"x 1-1/2" NPT	Bronze	1.65	2.677
77867	1-1/2"x 1-1/4" NPT	Bronze	1.54	2.953
77872	1-1/2"x 1-1/2" NPT	Bronze	1.54	2.953
22343	1-1/2" x 2" NPT	Bronze	1.83	3.248
22338	2" x 1-1/2" NPT	Bronze	1.67	3.248
77877	2" x 2" NPT	Bronze	1.67	3.248



Adapter C x F				
Stock Code	Size	Material	A (in)	L (in)
	1 2			
77887	1/2"x 3/8" NPT	Bronze	0.224	1.378
77892	1/2"x 1/2" NPT	Bronze	0.291	1.575
77897	1/2"x 3/4" NPT	Bronze	0.394	1.693
77902	3/4"x 1/2" NPT	Bronze	0.331	1.772
77907	3/4"x 3/4" NPT	Bronze	0.394	1.850
14548	1"x 1/2" NPT	Bronze	0.252	1.693
77912	1"x 3/4" NPT	Bronze	0.394	1.850
77917	1"x 1" NPT	Bronze	0.480	2.047
77922	1"x 1-1/4" NPT	Bronze	0.539	2.126
22208	1-1/4"x 1/2" NPT	Bronze	0.374	1.929
77927	1-1/4"x 1" NPT	Bronze	0.205	1.890
77932	1-1/4"x 1-1/4" NPT	Bronze	0.382	2.087
77937	1-1/4"x 1-1/2" NPT	Bronze	0.461	2.165
77942	1-1/2"x 1-1/4" NPT	Bronze	0.382	2.480
77947	1-1/2" x 1-1/2" NPT	Bronze	0.382	2.480
77952	2" x 2" NPT	Bronze	0.445	2.717

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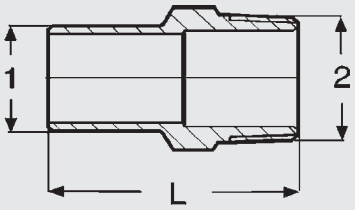
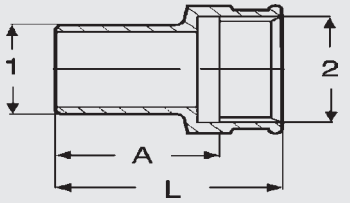
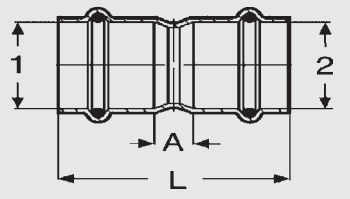
Dimensional Documentation



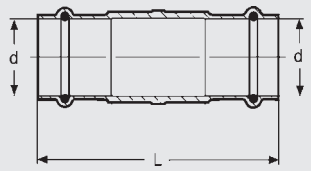
Adapter FTG x M			
Stock Code	Size	Material	L
	1 2		(in)
77957	1/2"x 3/8" NPT	Bronze	1.732
77962	1/2"x 1/2" NPT	Bronze	1.969
77967	1/2"x 3/4" NPT	Bronze	2.047
77972	3/4"x 1/2" NPT	Bronze	2.028
77977	3/4"x 3/4" NPT	Bronze	2.146
14553	1"x 3/4" NPT	Bronze	2.146
77982	1"x 1" NPT	Bronze	2.362
77987	1-1/4"x 1-1/4" NPT	Bronze	2.657
77992	1-1/2"x 1-1/2" NPT	Bronze	3.051
77997	2"x 2" NPT	Bronze	3.543



Adapter FTG x F				
Stock Code	Size	Material	A (in)	L (in)
	1 2			
78002	1/2"x 3/8" NPT	Bronze	1.031	1.437
78007	1/2"x 1/2" NPT	Bronze	1.118	1.654
78012	1/2"x 3/4" NPT	Bronze	1.181	1.732
78017	3/4"x 1/2" NPT	Bronze	1.217	1.752
78022	3/4"x 3/4" NPT	Bronze	1.256	1.811
22218	1"x 1/2" NPT	Bronze	1.433	1.969
22213	1-1/4"x 1/2" NPT	Bronze	1.630	2.165
78027	1"x 1" NPT	Bronze	1.307	1.969
78032	1-1/4"x 1-1/4" NPT	Bronze	1.484	2.165
78037	1-1/2"x 1-1/2" NPT	Bronze	1.878	2.559
78042	2"x 2" NPT	Bronze	2.335	3.031

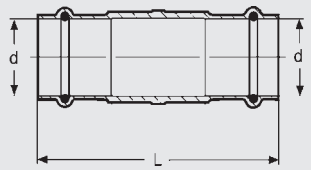


Coupling C x C with Stop				
Stock Code	Size	Material	A (in)	L (in)
	1 2			
78047	1/2"	Copper	0.236	1.732
78052	3/4"	Copper	0.394	2.205
78057	1"	Copper	0.394	2.205
78062	1-1/4"	Copper	0.394	2.441
78067	1-1/2"	Copper	0.394	3.307
78072	2"	Copper	0.472	3.622

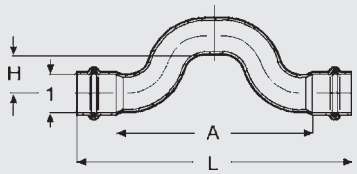


Coupling C x C No Stop			
Stock Code	Size	Material	L (in)
	1 2		
78172	1/2"	Copper	1.732
78177	3/4"	Copper	2.205
78182	1"	Copper	2.205
78187	1-1/4"	Copper	2.441
78192	1-1/2"	Copper	3.307
78197	2"	Copper	3.622

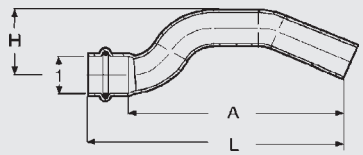
Dimensional Documentation



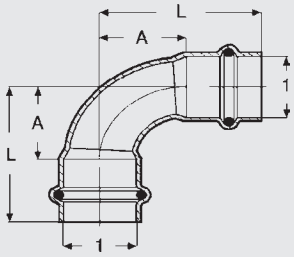
Coupling C x C Extended No Stop			
Stock Code	Size	Material	L (in)
	d		
78213	1/2"	Copper	2.9
78218	3/4"	Copper	3.3
78223	1"	Copper	3.7
78228	1-1/4"	Copper	4.1
78233	1-1/2"	Copper	4.7
78238	2"	Copper	5.2



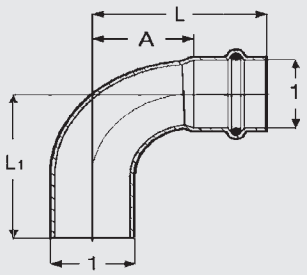
Cross-Over C x C					
Stock Code	Size	Material	A (in)	L (in)	H (in)
	1				
77742	1/2"	Copper	3.622	5.118	0.772
77747	3/4"	Copper	4.488	6.339	0.902



Cross-Over FTG x C Close Rough					
Stock Code	Size	Material	A (in)	L (in)	H (in)
	1				
78137	1/2"	Copper	3.835	4.583	1.098
78142	3/4"	Copper	4.638	5.543	1.539

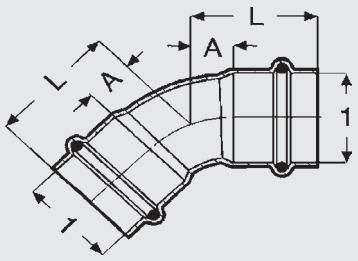


Elbow 90° C x C Close Rough				
Stock Code	Size	Material	A (in)	L (in)
	1			
77317	1/2"	Copper	0.748	1.496
77322	3/4"	Copper	1.039	1.945
77327	1"	Copper	1.323	2.228
77332	1-1/4"	Copper	1.654	2.677
77337	1-1/2"	Copper	1.984	3.402
77342	2"	Copper	2.551	4.126

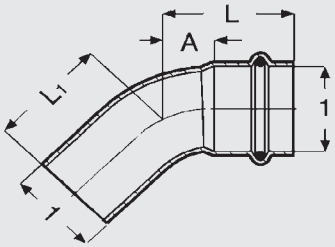


Elbow 90° FTG x C Close Rough					
Stock Code	Size	Material	A (in)	L (in)	L1 (in)
	1				
77347	1/2"	Copper	0.748	1.496	1.535
77352	3/4"	Copper	1.039	1.945	1.984
77357	1"	Copper	1.323	2.228	2.268
77362	1-1/4"	Copper	1.654	2.677	2.756
77367	1-1/2"	Copper	1.984	3.402	3.480
77372	2"	Copper	2.551	4.126	4.205

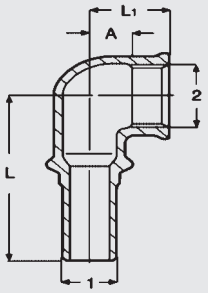
Dimensional Documentation



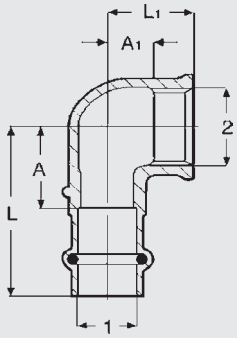
Elbow 45° C x C				
Stock Code	Size	Material	A (in)	L (in)
	1			
77607	1/2"	Copper	0.295	1.043
77612	3/4"	Copper	0.433	1.339
77617	1"	Copper	0.551	1.457
77622	1-1/4"	Copper	0.685	1.709
77627	1-1/2"	Copper	0.823	2.240
77632	2"	Copper	1.059	2.634



Elbow 90° FTG x C					
Stock Code	Size	Material	A (in)	L (in)	L1 (in)
	1				
77637	1/2"	Copper	0.311	1.059	1.098
77642	3/4"	Copper	0.433	1.339	1.374
77647	1"	Copper	0.551	1.457	1.492
77652	1-1/4"	Copper	0.685	1.709	1.787
77657	1-1/2"	Copper	0.823	2.240	2.319
77662	2"	Copper	1.059	2.634	2.709

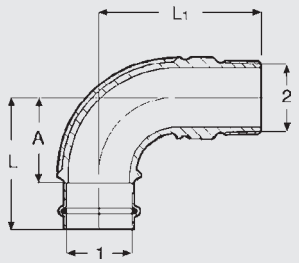


Elbow 90° FTG x F					
Stock Code	Size	Material	A (in)	L (in)	L1 (in)
	1 2				
77577	1/2" x 1/2" NPT	Bronze	0.331	2.008	0.866

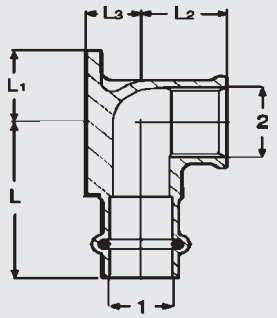


Elbow 90° C X F						
Stock Code	Size	Material	A (in)	A1 (in)	L (in)	L1 (in)
	1 2					
22193	1/2"x 3/8" NPT	Bronze	0.945	0.295	1.693	0.728
77532	1/2"x 1/2" NPT	Bronze	0.984	0.331	1.732	0.866
77537	1/2"x 3/4" NPT	Bronze	1.142	0.409	1.890	0.965
77542	3/4"x 3/4" NPT	Bronze	1.150	0.488	2.055	1.043
77547	3/4"x 1/2" NPT	Bronze	1.142	0.472	2.047	1.004
22203	1"x 1/2" NPT	Bronze	1.299	0.709	2.205	1.260
77552	1"x 1" NPT	Bronze	1.417	0.618	2.323	1.280
22198	1-1/4"x 1/2" NPT	Bronze	1.260	0.728	2.283	1.260
77557	1-1/4"x 1-1/4" NPT	Bronze	1.575	0.841	2.598	1.516
77562	1-1/2"x 1-1/2" NPT	Bronze	1.614	1.012	3.031	1.693
77567	2"x 2" NPT	Bronze	2.244	1.469	3.819	2.165

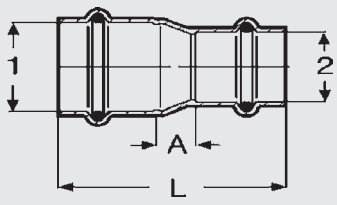
Dimensional Documentation



Elbow 90° C X M					
Stock Code	Size	Material	A (in)	L (in)	L1 (in)
	1 2				
77492	1/2"x 1/2" NPT	Bronze	0.945	1.693	1.890
77497	1/2"x 3/4" NPT	Bronze	0.945	1.693	2.047
77502	3/4"x 1/2" NPT	Bronze	0.984	1.890	1.870
77507	3/4"x 3/4" NPT	Bronze	1.102	2.008	2.323
77512	1"x 1" NPT	Bronze	1.382	2.287	2.835
77517	1-1/4"x 1-1/4" NPT	Bronze	1.870	2.894	3.465
77522	1-1/2"x 1-1/2" NPT	Bronze	2.205	3.622	3.839
77527	2"x 2" NPT	Bronze	2.756	4.331	4.724

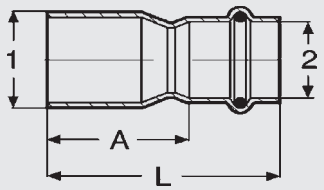


Elbow Drop 90º C X F with Wall Plate						
Stock Code	Size	Material	L(in)	L1(in)	L2(in)	L3(in)
	1 2					
77697	1/2" x 1/2" NPT	Bronze	1.732	0.835	0.866	0.512
77702	3/4" x 3/4" NPT	Bronze	2.047	1.181	1.122	0.835
22223	1/2" x 3/8" NPT	Bronze	1.77	0.83	0.51	0.73
72431	1" x 1" NPT	Bronze	2.36	0.93	0.87	1.26

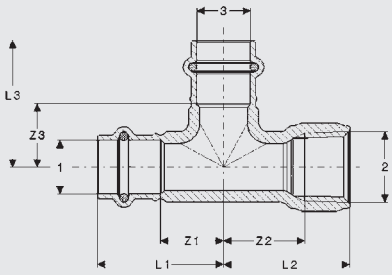


Reducer C x C				
Stock Code	Size	Material	A (in)	L (in)
	1 2			
78147	3/4"x 1/2"	Copper	0.445	2.071
15603	1"x 1/2"	Copper	0.736	2.362
78152	1"x 3/4"	Copper	0.504	2.287
15593	1-1/4"x 3/4	Copper	0.728	2.638
78157	1-1/4"x 1"	Copper	0.614	2.524
18473	1-1/2"x 3/4"	Copper	0.994	3.327
15588	1-1/2"x 1"	Copper	0.768	3.071
78162	1-1/2"x 1-1/4"	Copper	0.528	2.959
18468	2"x 3/4"	Copper	1.524	4.016
15608	2"x 1"	Copper	1.319	3.780
22328	2"x 1-1/4"	Copper	0.827	3.425
78167	2"x 1-1/2"	Copper	0.846	3.827

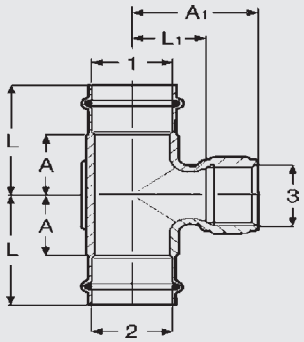
Dimensional Documentation



Reducer FTG x C				
Stock Code	Size	Material	A (in)	L (in)
	1 2			
78077	3/4"x 1/2"	Copper	1.417	2.165
78082	1"x 1/2"	Copper	1.693	2.441
78087	1"x 3/4"	Copper	1.417	2.323
22333	1-1/4"x 1/2"	Copper	2.185	2.933
78092	1-1/4"x 3/4"	Copper	1.850	2.756
78097	1-1/4"x 1"	Copper	1.575	2.480
15573	1-1/2"x 1/2"	Copper	2.008	2.756
14543	1-1/2"x 3/4"	Copper	2.559	3.465
78102	1-1/2"x 1"	Copper	2.283	3.189
78107	1-1/2"x 1-1/4"	Copper	2.047	3.071
15578	2"x 1/2"	Copper	2.913	3.661
15583	2"x 3/4"	Copper	2.874	3.780
78112	2"x 1"	Copper	3.031	3.937
78117	2"x 1-1/4"	Copper	2.795	3.819
78122	2"x 1-1/2"	Copper	2.638	4.055

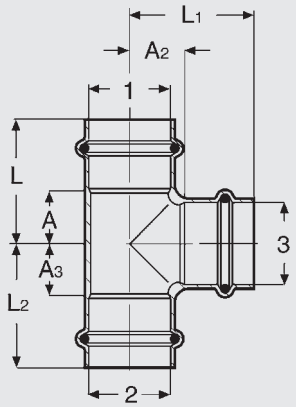


Tee C x C x F								
Stock Code	Size	Material	Z1 (in)	Z2 (in)	Z3L (in)	L1 (in)	L2 (in)	L3 (in)
	1 2 3							
77583	1/2"x 1/2" NPT x 1/2"	Bronze	0.75	0.96	0.75	1.50	1.50	1.50
77593	3/4"x 1/2" NPT x 3/4"	Bronze	0.94	0.96	0.94	1.85	1.50	1.85
7758?	3/4"x 3/4" NPT x 3/4"	Bronze	1.94	1.14	0.94	1.85	1.69	1.85
77598	1"x 3/4" NPT x 1"	Bronze	1.14	1.08	1.14	2.05	1.77	2.05
77603	1-1/4"x 3/4" NPT x 1-1/4"	Bronze	1.26	1.20	1.26	2.28	1.89	2.28
77608	1-1/2"x 3/4" NPT x 1-1/2"	Bronze	1.34	1.36	1.34	2.76	2.05	2.76
77613	2"x 3/4"x 2"	Bronze	1.69	1.56	1.69	3.27	2.24	3.27



Tee C x C x F						
Stock Code	Size	Material	A (in)	A1 (in)	L (in)	L1 (in)
	1 2 3					
77582	1/2"x 1/2"x 1/2" NPT	Bronze	0.945	1.339	1.693	0.803
14563	3/4"x 3/4"x 1/4" NPT	Bronze	0.768	1.378	1.673	0.928
77587	3/4"x 3/4"x 1/2" NPT	Bronze	1.004	1.673	1.909	1.138
77592	1"x 1"x 1/2" NPT	Bronze	1.004	1.772	1.909	1.236
15623	1"x 1"x 3/4" NPT	Bronze	1.161	1.969	2.067	1.343
77597	1-1/4"x 1-1/4"x 1/2" NPT	Bronze	0.886	1.929	1.909	1.323
15618	1-1/4"x 1-1/4"x 3/4" NPT	Bronze	0.945	1.929	1.969	1.303
78342	1-1/2"x 1-1/2"x 1/2" NPT	Bronze	0.748	1.969	2.165	1.433
15613	1-1/2"x 1-1/2"x 3/4" NPT	Bronze	0.886	2.087	2.303	1.461
77602	2"x 2"x 1/2" NPT	Bronze	0.984	2.165	2.559	1.630
14558	2"x 2"x 3/4" NPT	Bronze	1.083	2.362	2.657	1.736

Dimensional Documentation



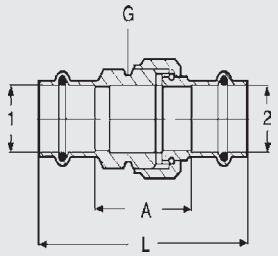
Tee C x C x C								
Stock Code	Size	Material	A (in)	A2 (in)	A3 (in)	L (in)	L1 (in)	L2 (in)
	1 2 3							
77377	1/2"	Copper	0.738	0.498	0.738	1.496	1.443	1.496
77382	1-1/2" x 1-1/2" x 3/4"	Copper	0.906	0.591	0.906	1.654	1.496	1.654
15493	1-1/2" x 1-1/2" x 1"	Copper	1.102	0.551	1.102	1.850	1.457	1.850
77387	3/4"	Copper	0.837	0.591	0.837	1.752	1.496	1.752
77392	3/4" x 1/2" x 1/2"	Copper	0.687	0.630	0.984	1.594	1.378	1.732
77397	3/4" x 1/2" x 3/4"	Copper	0.844	0.591	1.142	1.752	1.496	1.890
77402	3/4" x 3/4" x 1/2"	Copper	0.687	0.630	0.687	1.594	1.378	1.594
77407	3/4" x 3/4" x 1"	Copper	0.965	0.630	0.965	1.870	1.535	1.870
77412	1"	Copper	0.955	0.787	0.955	1.870	1.693	1.870
22263	1" x 1/2" x 3/4"	Copper	0.846	0.748	1.240	1.752	1.654	1.988
94767	1" x 1/2" x 1"	Copper	0.978	0.787	1.516	1.870	1.693	2.264
77417	1" x 3/4" x 1/2"	Copper	0.703	0.787	0.886	1.594	1.535	1.791
77422	1" x 3/4" x 3/4"	Copper	0.837	0.748	1.043	1.752	1.654	1.949
77427	1" x 3/4" x 1"	Copper	0.709	0.787	1.161	1.870	1.693	2.067
77432	1" x 1" x 1/2"	Copper	0.689	0.787	0.689	1.594	1.535	1.594
77437	1" x 1" x 3/4"	Copper	0.844	0.748	0.844	1.752	1.654	1.752
15488	1" x 1" x 1 1/4"	Copper	1.161	0.837	1.161	2.067	1.870	2.067
77442	1 1/4"	Copper	1.024	0.866	1.024	2.047	1.890	2.047
22253	1"-1/4 x 1/2" x 1-1/4"	Copper	1.024	0.866	1.772	2.047	1.890	2.520
22243	1"-1/4 x 3/4" x 1/2"	Copper	0.650	0.925	1.122	1.673	1.673	2.028
22258	1"-1/4 x 3/4" x 3/4"	Copper	0.768	0.866	1.299	1.791	1.772	2.205
22268	1"-1/4 x 3/4" x 1"	Copper	0.886	0.906	1.398	1.929	1.811	2.303

Continued on next page

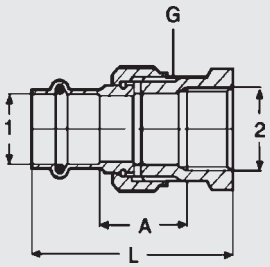
Dimensional Documentation

Tee C x C x C (continued from previous page)								
Stock Code	Size	Material	A (in)	A2 (in)	A3 (in)	L (in)	L1 (in)	L2 (in)
	1 2 3							
22248	1-1/4" x 3/4" x 1-1/2"	Copper	1.024	0.866	1.535	2.047	1.890	2.441
22238	1-1/4" x 1" x 1/2"	Copper	0.650	0.925	0.906	1.673	1.673	1.811
94762	1-1/4" x 1" x 3/4"	Copper	0.768	0.866	1.142	1.791	1.772	2.047
14568	1-1/4" x 1" x 1"	Copper	0.886	0.906	1.280	1.909	1.811	2.185
94757	1-1/4" x 1-1/4" x 1/2"	Copper	0.650	0.925	0.650	1.673	1.673	1.673
77452	1-1/4" x 1-1/4" x 3/4"	Copper	0.768	0.866	0.768	1.791	1.772	1.791
77447	1-1/4" x 1-1/4" x 1"	Copper	0.886	0.906	0.886	1.909	1.811	1.909
77457	1-1/2"	Copper	1.142	1.142	1.142	2.559	2.559	2.559
15478	1-1/2" x 3/4" x 3/4"	Copper	0.906	1.299	1.299	2.323	2.205	2.205
15473	1-1/2" x 1/2" x 1-1/2"	Copper	1.240	1.240	1.417	2.657	2.657	2.165
15468	1-1/2" x 1" x 3/4"	Copper	0.906	1.299	1.063	2.323	2.205	1.969
15458	1-1/2" x 1" x 1"	Copper	0.738	1.063	1.535	2.165	1.969	2.441
15463	1-1/2" x 1" x 1-1/2"	Copper	1.132	1.132	1.831	2.559	2.559	2.736
22233	1-1/2" x 1-1/4" x 3/4"	Copper	0.669	1.142	1.083	2.087	2.047	2.106
15453	1-1/2" x 1-1/4" x 1"	Copper	0.738	1.181	1.289	2.165	2.087	2.323
15483	1-1/2" x 1-1/4" x 1-1/4"	Copper	0.866	1.142	1.339	2.283	2.165	2.362
15448	1-1/2" x 1-1/2" x 1/2"	Copper	0.463	1.102	0.463	1.890	1.850	1.890
77462	1-1/2" x 1-1/2" x 3/4"	Copper	0.669	1.142	0.669	2.087	2.047	2.087
77467	1-1/2" x 1-1/2" x 1"	Copper	0.748	1.181	0.748	2.165	2.087	2.165
77472	1-1/2" x 1-1/2" x 1-1/4"	Copper	0.866	1.142	0.866	2.283	2.165	2.283
77477	2"	Copper	1.378	1.378	1.378	2.953	2.953	2.953
15533	2" x 1/2" x 2"	Copper	1.772	1.772	1.535	3.346	3.346	2.283
15523	2" x 1" x 1"	Copper	1.220	1.772	1.732	2.795	2.638	2.638
15528	2" x 1" x 2"	Copper	1.722	1.722	2.244	3.346	3.346	3.150
15518	2" x 1-1/4" x 1-1/4"	Copper	0.935	1.329	1.841	2.520	2.362	2.874
15498	2" x 1-1/2" x 1"	Copper	0.817	1.378	1.447	2.402	2.283	2.874
15513	2" x 1-1/2" x 3/4"	Copper	0.709	1.378	1.260	2.283	2.283	2.677
15508	2" x 1-1/2" x 1-1/4"	Copper	0.935	1.486	1.545	2.520	2.520	2.972
15503	2" x 1-1/2" x 1-1/2"	Copper	1.142	1.378	1.654	2.717	2.795	3.071
22228	2" x 1-1/2" x 2"	Copper	1.378	1.378	1.890	2.953	2.953	3.327
15538	2" x 2" x 1/2"	Copper	0.541	1.299	0.541	2.126	2.047	2.126
94777	2" x 2" x 3/4"	Copper	0.797	1.260	0.797	2.372	2.165	2.372
94772	2" x 2" x 1"	Copper	0.915	1.299	0.915	2.490	2.205	2.490
77487	2" x 2" x 1-1/4"	Copper	1.043	1.378	1.043	2.618	2.402	2.618
77482	2" x 2" x 1-1/2"	Copper	1.142	1.378	1.142	2.717	2.795	2.717

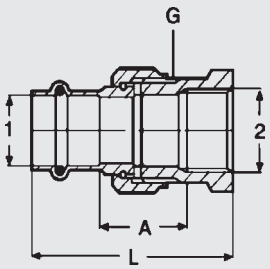
Dimensional Documentation



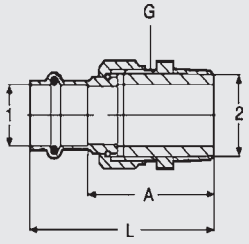
Union C x C					
Stock Code	Size	Material	A (in)	L (in)	G (in)
	1 2				
77667	1/2"	Bronze	1.260	2.756	3/4"
77352	3/4"	Bronze	1.335	3.146	1"
77357	1"	Bronze	1.827	3.638	1-1/4"
77362	1-1/4"	Bronze	1.634	3.681	1-1/2"
77367	1-1/2"	Bronze	2.126	4.961	2"
77372	2"	Bronze	2.067	5.217	2-1/2"



Union C x F					
Stock Code	Size	Material	A (in)	L (in)	G (in)
	1 2				
77752	1/2"x 1/2" NPT	Bronze	0.961	2.244	3/4"
77757	3/4"x 3/4" NPT	Bronze	0.957	2.417	1"
77762	1"x 1" NPT	Bronze	1.303	2.870	1-1/4"
77767	1-1/4"x 1-1/4" NPT	Bronze	1.268	2.972	1-1/2"
77772	1-1/2"x 1-1/2" NPT	Bronze	1.760	3.858	2"
77777	2"x 2" NPT	Bronze	1.646	3.917	2-1/2"

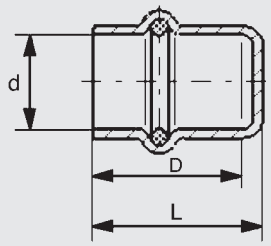


Di-electric Union C x F					
Stock Code	Size	Material	A (in)	L (in)	G (in)
	1 2				
15558	1/2" x 1/2" NPT	Bronze	0.961	2.244	1-1/4"
15568	3/4" x 3/4" NPT	Bronze	1.110	2.571	1-1/2"
15553	1" x 1" NPT	Bronze	1.004	2.571	1-1/2"
15548	1-1/4" x 1-1/4" NPT	Bronze	0.972	2.677	2"
15543	1-1/2" x 1-1/2" NPT	Bronze	1.004	3.102	2-1/4"
15563	2" x 2" NPT	Bronze	1.260	3.531	2-3/4"

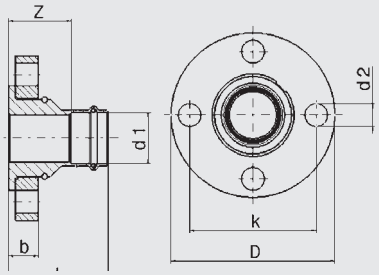


Di-electric Union C x M					
Stock Code	Size	Material	A (in)	L (in)	G (in)
	1 2				
77782	1/2" x 1/2" NPT	Bronze	2.087	2.835	3/4"
77787	3/4" x 3/4" NPT	Bronze	2.142	3.047	1"
77792	1" x 1" NPT	Bronze	2.732	3.638	1-1/4"
77797	1-1/4" x 1-1/4" NPT	Bronze	2.677	3.701	1-1/2"
77802	1-1/2" x 1-1/2" NPT	Bronze	3.228	4.646	2"
77807	2" x 2" NPT	Bronze	3.169	4.744	2-1/2""

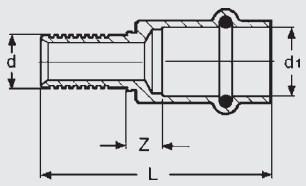
Dimensional Documentation



Cap C				
Stock Code	Size	Material	L (in)	D (in)
	d			
77712	1/2"	Copper	0.917	0.799
77717	3/4"	Copper	1.067	0.945
77722	1"	Copper	1.110	0.992
77727	1-1/4"	Copper	1.181	1.024
77732	1-1/2"	Copper	1.622	1.465
77737	2"	Copper	1.811	1.575

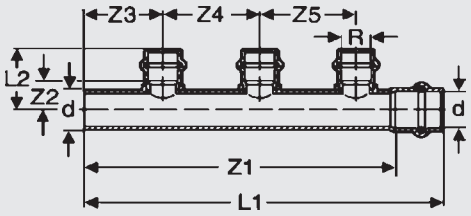


Adapter Flange C x Flange (Old Version)									
Stock Code	Size	Material	L (in)	Z (in)	b1 (in)	b2 (in)	D (in)	K (in)	d2 (in)
	d1								
19708	1"	Bronze	2.756	1.850	0.630	0.827	4.331	3.110	0.630
19713	1-1/4"	Bronze	2.756	1.850	0.630	0.827	4.528	3.504	0.630
19718	1-1/2"	Bronze	3.071	1.654	0.630	0.827	4.921	3.858	0.630
19723	2"	Bronze	3.661	2.087	0.630	0.827	5.906	4.764	0.748

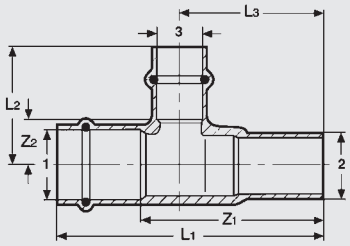


PureFlow/Propress Adapter PEX x C				
Stock Code	Size	Material	L (in)	Z (in)
	d x d1			
67620	1/2"-1/2"	Copper	1.575	0.236
67626	1/2"-3/4"	Copper	1.831	0.335
67627	5/8"-1/2"	Copper	1.496	0.157
67628	5/8"-3/4"	Copper	1.831	0.335
67630	3/4"-1/2"	Copper	1.417	0.079
67640	3/4"-3/4"	Copper	1.732	0.236
67660	1"-1"	Copper	1.969	0.315

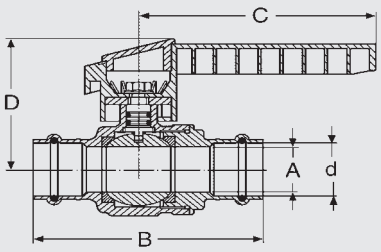
Dimensional Documentation



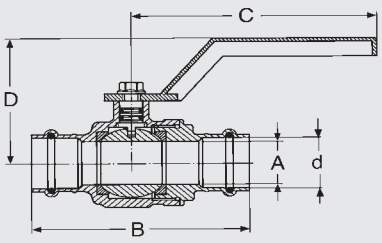
ProPress Manifold 3-Outlets (open) C x FTG x C									
Stock Code	Size	Material	L1 (in)	L2 (in)	Z1 (in)	Z2 (in)	Z3 (in)	Z4 (in)	Z5 (in)
	d x R								
65803	1"x 1/2"	Copper	7.323	1.512	6.378	0.773	1.654	1.969	1.969



ProPress Manifold 1-Outlets (open) C x FTG x C							
Stock Code	Size	Material	Z1 (in)	Z2 (in)	L1 (in)	L2 (in)	L3 (in)
	1 x 2 x 3						
65801	1" x 1" x 1/2"	Copper	2.500	.0787	3.661	1.535	2.067

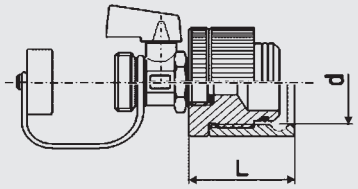


Propress Ball Valve - Plastic Handle C x C						
Stock Code	Size	Material	A (in)	B (in)	C (in)	D (in)
	d					
19678	1/2"	Bronze	0.551	3.346	3.858	2.539
19683	3/4"	Bronze	0.787	3.819	3.858	2.618
19688	1"	Bronze	0.984	4.291	4.429	2.795
19693	1-1/4"	Bronze	1.260	4.685	4.429	3.228
19698	1-1/2"	Bronze	1.575	5.610	4.685	3.346
19703	2"	Bronze	1.969	6.756	4.685	3.661

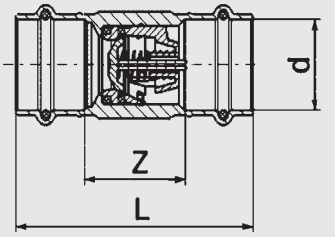


Propress Ball Valve - Metal Handle C x C						
Stock Code	Size	Material	A (in)	B (in)	C (in)	D (in)
	d					
22053	1/2"	Bronze	0.551	3.346	4.331	2.402
22058	3/4"	Bronze	0.787	3.819	4.331	2.461
22063	1"	Bronze	0.984	4.291	4.823	2.795
22068	1-1/4"	Bronze	1.260	4.685	4.823	3.228
22073	1-1/2"	Bronze	1.575	5.610	5.315	3.661
22078	2"	Bronze	1.969	6.756	5.315	3.976

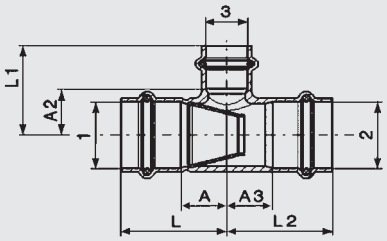
Dimensional Documentation



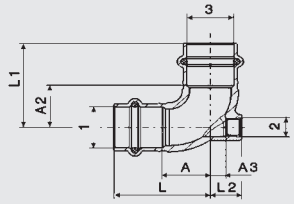
Bronze Pressure Test Plug			
Stock Code	Size	Material	L (in)
	d		
78202	1/2"	Bronze	1.654
78207	3/4"	Bronze	1.654
78212	1"	Bronze	1.654
78217	1-1/4"	Bronze	1.654
78222	1-1/2"	Bronze	1.811
78227	2"	Bronze	1.929



Bronze Check Valve C x C				
Stock Code	Size	Material	Z (in)	L (in)
	1			
22353	1/2"	Bronze	.0866	2.362
22358	3/4"	Bronze	1.142	2.953
22363	1"	Bronze	1.339	3.150
22368	1-1/4"	Bronze	1.693	3.740
22373	1-1/2"	Bronze	2.087	4.921
22378	2"	Bronze	2.559	5.709



Venturi Tee C x C x C								
Stock Code	Size	Material	A (in)	A2 (in)	A3 (in)	L (in)	L1 (in)	L2 (in)
	d x d1							
23388	3/4"x 3/4"x 1/2"	Copper	0.689	0.630	0.433	1.594	1.378	1.594
23393	1"x 1"x 1/2"	Copper	0.689	0.787	0.689	1.594	1.535	1.594
23398	1"x 1"x 3/4"	Copper	0.846	0.748	0.591	1.752	1.654	1.752
23403	1-1/4"x 1-1/4"x 1/2"	Copper	0.650	0.925	0.650	1.673	1.673	1.673
23408	1-1/4"x 1-1/4"x 3/4"	Copper	0.768	0.866	0.768	1.791	1.772	1.791



Vent Tee C x F x C								
Stock Code	Size	Material	A (in)	A2 (in)	A3 (in)	L (in)	L1 (in)	L2 (in)
	1 2 3							
14573	1/2"x 1/8"NPTx 1/2"	Bronze	0.748	0.748	0.315	1.496	1.496	0.591
14578	3/4"x 1/8"NPTx 3/4"	Bronze	0.906	0.906	0.315	1.811	1.811	0.591

ProPress® XL SYSTEM w/Smart Connect® feature

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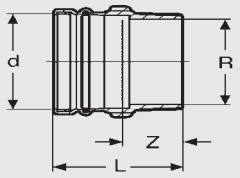
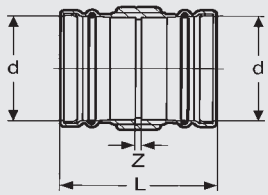
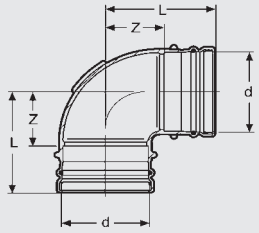
Dimensional Documentation



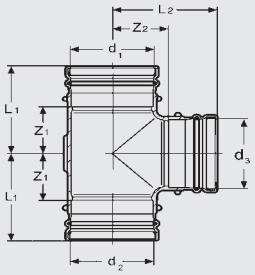
Adapter C x M				
Stock Code	Material	Size	Z (in)	L (in)
		d R		
91332	Bronze	2-1/2"x 2-1/2" NPT	2.047	4.213
91337	Bronze	3"x 3" NPT	2.047	4.213
91327	Bronze	4"x 4" NPT	1.969	4.528



Coupling C x C with Stop				
Stock Code	Material	Size	Z (in)	L (in)
		d		
91342	Bronze	2-1/2"	0.315	4.528
91347	Bronze	3"	0.315	4.528
91352	Bronze	4"	0.315	5.315



Elbow 90° C x C				
Stock Code	Material	Size	Z (in)	L (in)
		d		
91357	Bronze	2-1/2"	2.165	4.331
91362	Bronze	3"	2.362	4.528
91367	Bronze	4"	2.894	5.453



Tee C x C x C						
Stock Code	Material	Size	Z1 (in)	Z2 (in)	L1 (in)	L2 (in)
		d1 d2 d3				
91372	Bronze	2-1/2″	2.224	2.224	4.331	4.331
15633	Bronze	2-1/2″x 2-1/2″x 1-1/2″	1.618	2.283	3.602	3.701
91377	Bronze	3″	2.421	2.421	4.528	4.528
15638	Bronze	3″x 3″x 1-1/2″	1.618	2.480	3.720	3.898
91382	Bronze	4″	2.933	2.933	5.453	5.453
91387	Bronze	4″x 4″x 2″	1.831	3.071	4.331	4.665
91392	Bronze	4″x 4″x 2-1/2″	2.165	2.894	4.724	5.059
91397	Bronze	4″x 4″x 3″	2.362	2.894	4.921	5.059
15643	Bronze	4″x 4″x 1-1/2″	1.598	3.130	4.094	4.547
91402	Bronze	2-1/2″x 2-1/2″x 2″	1.831	2.205	3.937	3.819
91407	Bronze	3″x 3″x 2″	1.831	2.441	3.937	4.016
91412	Bronze	3″x 3″x 2-1/2″	2.165	2.362	4.331	4.547

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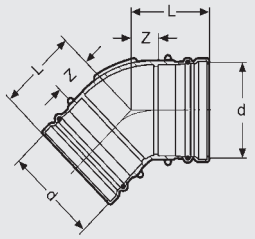
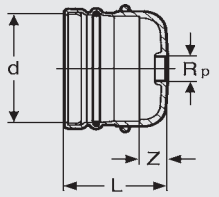
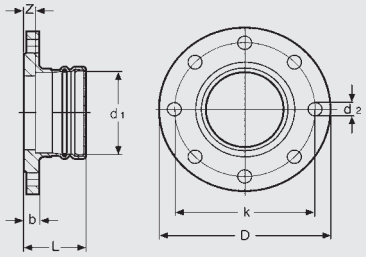
Dimensional Documentation



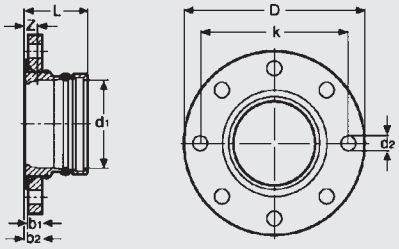
Elbow 45° C x C				
Stock Code	Material	Size	Z (in)	L (in)
		d		
91417	Bronze	2-1/2"	1.083	3.248
91422	Bronze	3"	1.181	3.346
91427	Bronze	4"	1.358	3.917



Cap C				
Stock Code	Material	Size	Z (in)	L (in)
		d Rp		
91432	Bronze	2-1/2"x 3/4" NPT	0.827	2.992
91437	Bronze	3"x 3/4" NPT	0.846	3.012
91442	Bronze	4"x 3/4" NPT	0.945	3.504

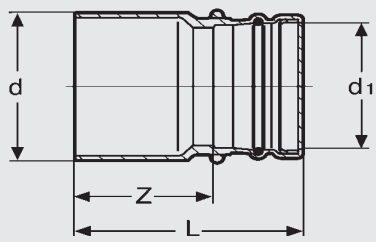


Adapter Flange C x Flange (old version)								
Stock Code	Material	Size	Z (in)	L (in)	b (in)	d2 (in)	D (in)	k (in)
		d1						
91567	2-1/2"	0.827	21	2.933	0.571	0.748	7.008	5.512
91572	3"	0.866	22	2.953	0.630	0.748	7.500	5.984
91577	4"	0.551	14	3.051	0.689	0.748	9.016	7.520

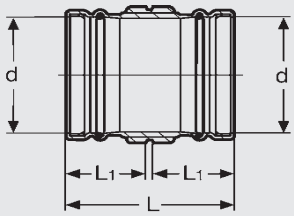


Adapter Flange C x Flan (new version)									
Stock Code	Material	Size	Z (in)	L (in)	b1 (in)	b2 (in)	k (in)	D (in)	d2 (in)
		d1							
19728	Bronze	2-1/2"	0.984	3.091	0.787	0.827	5.512	7.087	0.748
19733	Bronze	3"	1.024	3.150	0.787	0.906	5.984	7.480	0.748
19738	Bronze	4"	0.630	3.150	0.807	0.906	7.520	9.055	0.748

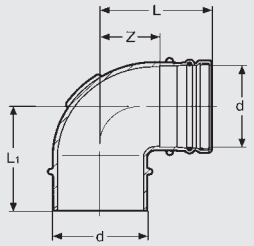
Dimensional Documentation



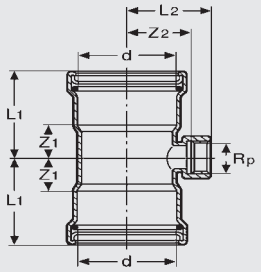
Reducer FTG x C				
Stock Code	Material	Size	Z (in)	L (in)
		d d1		
91452	Bronze	3"x 2"	3.031	4.606
91457	Bronze	3"x 2-1/2"	2.819	4.921
17593	Bronze	4"x 2-1/2"	3.543	5.650
91472	Bronze	2-1/2"x 1-1/2"	3.150	4.567



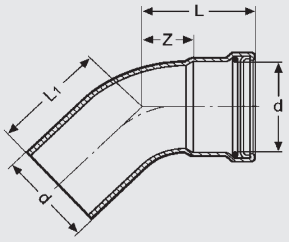
Coupling C x C No Stop				
Stock Code	Material	Size	L (in)	L1 (in)
		d		
91477	Bronze	2-1/2"	4.528	2.185
91482	Bronze	3"	4.528	2.185
91487	Bronze	4"	5.315	2.579



Elbow 90° FTG x C					
Stock Code	Material	Size	Z (in)	L (in)	L1 (in)
		d			
91492	Bronze	2-1/2"	2.224	4.331	4.606
91497	Bronze	3"	2.559	4.685	4.803
91502	Bronze	4"	2.972	5.472	5.591



Tee C x C x F						
Stock Code	Material	Size	Z1 (in)	Z2 (in)	L1 (in)	L2 (in)
		d d Rp				
91507	Bronze	4"x4"x2"	1.535	2.717	4.035	3.583
91512	Bronze	4"x4"x3/4"	1.220	2.520	3.740	3.209
91517	Bronze	2-1/2"x2-1/2"x2"	1.929	1.929	4.035	2.795
91522	Bronze	2-1/2"x2-1/2"x3/4"	1.240	1.772	3.346	2.461
91527	Bronze	3"x3"x2"	1.929	2.205	4.035	3.071
91532	Bronze	3"x3"x3/4"	1.220	2.047	3.346	2.756



Elbow 45° FTG x C					
Stock Code	Material	Size	Z (in)	L (in)	L1 (in)
		d			
91537	Bronze	2-1/2"	1.142	3.248	3.819
91542	Bronze	3"	1.240	3.346	4.094
91547	Bronze	4"	1.417	3.898	4.921

ProPress® SYSTEM XL-C

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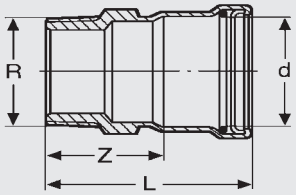
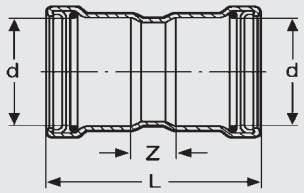
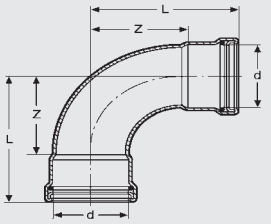
Dimensional Documentation



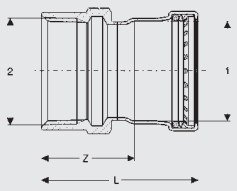
Adapter C x M				
Stock Code	Material	Size	Z (in)	L (in)
		d R		
20823	Copper	2-1/2"x 2-1/2" NPT	2.520	4.213
20828	Copper	3"x 3" NPT	2.598	4.567
20838	Copper	4"x 4" NPT	2.736	5.098



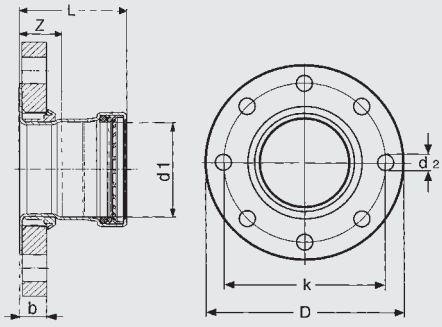
Coupling C x C with Stop				
Stock Code	Material	Size	Z (in)	L (in)
		d		
20728	Copper	2-1/2"	0.945	4.331
20733	Copper	3"	0.984	4.921
20738	Copper	4"	1.063	5.787



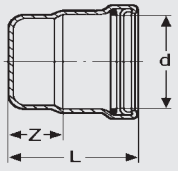
Elbow 90° C x C				
Stock Code	Material	Size	Z (in)	L (in)
		d		
20623	Copper	2-1/2"	3.189	4.882
20628	Copper	3"	3.760	5.728
20633	Copper	4"	4.902	7.264



Adaptor C x F				
Stock Code	Material	Size	Z(in)	L(in)
		1 2		
20819	Copper	2½" x 2½" NPT	2.46	4.15
20829	Copper	3" x 3" NPT	2.60	4.57
20839	Copper	4" x 4" NPT	2.78	5.14

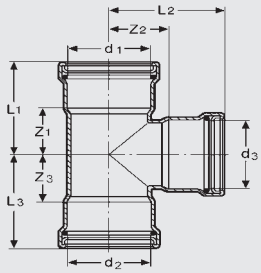


Adapter Flange C x Flange (new version)								
Stock Code	Material	Size	Z (in)	L (in)	b (in)	k (in)	D (in)	d2 (in)
		d1						
20853	Copper/Steel	2-1/2"	1.102	2.795	.787	5.512	7.087	.748
20858	Copper/Steel	3"	1.201	3.169	.787	5.984	7.480	.748
20863	Copper/Steel	4"	1.204	3.602	.807	7.520	9.055	.748

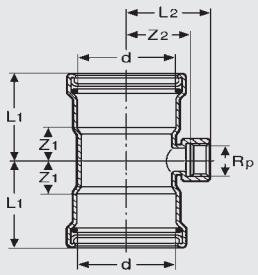


Cap C				
Stock Code	Material	Size	Z (in)	L (in)
		d		
20623	Copper	2-1/2"	1.339	3.031
20628	Copper	3"	1.358	3.327
20633	Copper	4"	1.398	3.760

Dimensional Documentation



Tee C x C x C								
Stock Code	Material	Size	Z1 (in)	Z2 (in)	Z3 (in)	L1 (in)	L2 (in)	L3 (in)
		d1 d2 d3						
20683	Copper	2-1/2"	1.831	1.870	1.831	3.524	3.563	3.524
20688	Copper	2-1/2"x 2-1/2"x 2"	1.535	1.732	1.535	3.228	3.327	3.228
20803	Copper	2-1/2"x 2-1/2"x 1-1/2"	1.299	1.732	1.299	2.992	3.169	2.992
22278	Copper	2-1/2 "x 2" x 2"	2.232	1.732	1.535	3.819	3.327	3.228
22283	Copper	2-1/2"x 2"x 1-1/2"	1.909	1.732	1.299	3.504	3.169	2.992
22288	Copper	2-1/2"x 2-1/2"x 1-1/4"	1.161	1.713	1.161	2.854	2.756	2.854
22293	Copper	2-1/2"x 2-1/2"x 1"	1.043	1.732	1.043	2.736	2.638	2.736
22298	Copper	2-1/2"x 2-1/2"x 3/4"	.906	1.575	.906	2.598	2.480	2.598
22303	Copper	2-1/2"x 2-1/2"x 1/2"	.906	1.516	.906	2.598	2.264	2.598
20693	Copper	3"	2.067	2.146	2.067	4.035	4.114	4.035
22308	Copper	3" x 3" x 1"	1.063	1.988	1.063	3.031	2.894	3.031
22313	Copper	3" x 3" x 1-1/4"	1.181	1.969	1.181	3.150	3.012	3.150
22323	Copper	3" x 3" x 3/4"	.925	1.870	.925	2.894	2.776	2.894
20698	Copper	3" x 3" x 2"	1.555	1.988	1.555	3.524	3.583	3.524
20703	Copper	3" x 3" x 2-1/2"	1.850	2.126	1.850	3.819	3.819	3.819
20798	Copper	3" x 3" x 1-1/2"	1.299	1.988	1.299	3.287	3.425	3.287
20708	Copper	4"	2.598	2.697	2.598	4.961	5.059	4.961
20713	Copper	4" x 4" x 2"	1.594	2.500	1.594	3.957	4.094	3.957
20718	Copper	4" x 4" x 2-1/2"	1.890	2.638	1.890	4.252	4.331	4.252
20808	Copper	4" x 4" x 1-1/2"	1.358	2.500	1.358	3.720	3.937	3.720
20723	Copper	4" x 4" x 3"	2.106	2.657	2.106	4.469	4.626	4.469



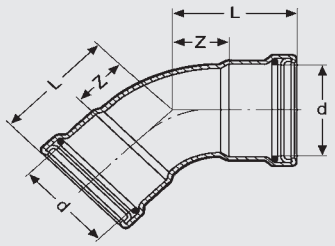
Tee C x C x F						
Stock Code	Material	Size	Z1 (in)	Z2 (in)	L1 (in)	L2 (in)
		d d Rp				
20868	Copper	4" x 4" x 2"	1.594	2.598	3.957	3.287
20873	Copper	4" x 4" x 3/4"	0.965	2.461	3.327	3.071
20878	Copper	2-1/2" x 2-1/2" x 2"	1.535	1.831	3.228	2.520
22883	Copper	2-1/2 "x 2-1/2" x 3/4"	0.906	1.693	2.598	2.303
22893	Copper	3"x 3"x 3/4"	0.925	1.949	2.894	2.559

ProPress® SYSTEM XL-C

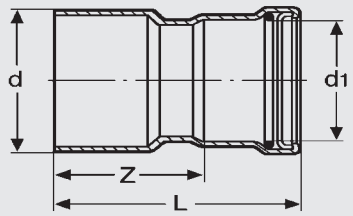
w/Smart Connect® feature

viega

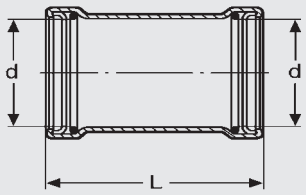
Dimensional Documentation



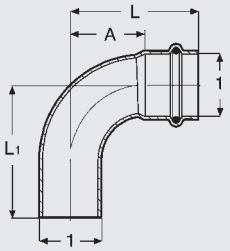
Elbow 45° C x C				
Stock Code	Material	Size	Z (in)	L (in)
		d		
20653	Copper	2-1/2″	1.476	3.169
20658	Copper	3″	1.732	3.701
20663	Copper	4″	2.224	4.587



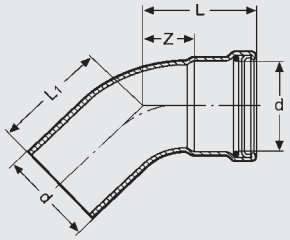
Reducer FTG X C				
Stock Code	Material	Size	Z (in)	L(in)
		d d1		
20758	Copper	2-1/2″ x 2″	2.264	3.858
20763	Copper	3″ x 2″″	2.815	4.409
20768	Copper	3″ x 2-1/2″″	2.559	4.252
20773	Copper	4″ x 2″	4.232	5.807
20778	Copper	4″ x 2-1/2″	4.173	5.787
20783	Copper	4″ x 3″	3.957	5.846
20813	Copper	2-1/2″ x 1-1/2″	2.480	3.937
20818	Copper	3″ x 1-1/2″	3.346	4.803



Coupling C x C No Stop			
	Material	Size	L (in)
		d	
20743	Copper	2-1/2″	4.331
20748	Copper	3″	4.921
20753	Copper	4″	5.787



Elbow 90º FTG X C					
Stock Code	Material	Size	A (in)	L (in)	L1 (in)
		1			
20638	Copper	2-1/2″	3.189	4.882	4.803
20643	Copper	3″	3.760	5.728	5.630
20648	Copper	4″	4.902	7.264	7.126



Elbow 45˚ FTG x C					
Stock Code	Material	Size	Z (in)	L (in)	L1 (in)
		d			
20668	Copper	2-1/2″	1.476	3.169	3.091
20673	Copper	3″	1.732	3.701	3.602
20678	Copper	4″	2.224	4.587	4.449

NSF International

April 14, 2005

TEST REPORT

Send To: 72320
VIEGA N.A., INC.
PLUMBING AND HEATING SYSTEMS
ENNESTER WEG 9
ATTENDORN 57439
GERMANY
Attn: MR. ANDREW GRANZOW

Customer: 72320
VIEGA N.A., INC.
PLUMBING AND HEATING SYSTEMS
ENNESTER WEG 9
ATTENDORN 57439
GERMANY
Attn: MR. ANDREW GRANZOW

Plant: 72322
VIEGA GMBH & CO. KG
PRODUCTION FACILITY ATTENDORN
ENNESTER WEG 9
ATTENDORN 57439
GERMANY
Attn: MRS. FIONA HEINRICHS

Sample Description: ProPress XL-C
Test Type: QQ - Qualification Testing

Thank you for having your product tested by NSF.

The enclosed report details the result of the testing performed on your product. Your program representative will be contacting you in the near future if there are any remaining issues concerning the status of this product.

Please do not hesitate to contact us if you have any immediate questions pertaining to your product.

Reviewer: _____ Status: **Pass**

Atabek Ciechanowski - Manager, Engineering Laboratory

CC: Program: 130 - Mechanical Plumbing Products (including Section 9 of Standard 61)
Program Rep: MARK MAPILI
Region: 02 - Europe
PA Project: 227078

789 Dixboro Road, Ann Arbor, Michigan 48105-9723 USA
1-800-NSF-MARK 734-769-8010
www.nsf.org

General Information

Standard: 0MP - MECHANICAL PLUMBING PRODUCTS PROGRAM

Family Code AA
Performance Standard IAPMO PS-117
Trade Designation Viega ProPress

Sample Id: **S-0000152314**
Description: ProPress XL-C
Sampled Date: 03/24/2005
Received Date: 03/25/2005

Testing Parameter	Result	Units
Engineering Lab		
Unrestrained Pressure Test - 73 degrees F		
Pressure:	600	psi
Duration:	4	hours
Temperature:	68	degrees F
Slippage:	0.014	inches
Required test pressure:	600	psi
Actual test pressure:	600	psi
Required test duration:	48	hours
Actual test duration:	48	hours
Required max. slippage:	0.157	inches
Actual max. slippage:	0.014	inches
Required leakage or damage:	None	
Actual leakage or damage:	No	
Unrestrained Pressure Test-73 degrees F	Pass	
Unrestrained Pressure Test - 210 degrees F		
Pressure:	600	psi
Duration:	48	hours
Temperature:	208	degrees F
Slippage:	0.020	inches
Required test pressure:	600	psi
Actual test pressure:	600	psi
Required test duration:	48	hours
Actual test duration:	48	hours
Required max. slippage:	0.154	inches
Actual max. slippage:	0.020	inches
Required leakage or damage:	None	
Actual leakage or damage:	No	
Unrestrained Pressure Test-210 degrees F	Pass	
Static Torsion Test		
Torque applied:	177	ft.*lbf.
Pressure:	400	psi
Duration:	48	hours
Temperature:	68	degrees F
Required torque:	177	ft.*lbf.
Actual torque:	177	ft.*lbf.
Required pressure:	400	psi
Actual pressure:	400	psi
Required duration:	48	hours
Actual duration:	48	hours
Evidence of cracking or slippage:	None	
Actual cracking or slippage:	No	

Sample Id: **S-0000152314**

Testing Parameter	Result	Units
Engineering Lab (Cont'd)		
Static Torsion Test	Pass	
Bending Test		
Load applied:	240	lbs.
Pressure:	400	psi
Duration:	48	hours
Temperature:	68	degrees F
Required load:	240	lbs.
Actual load:	240	lbs.
Required pressure:	400	psi
Actual pressure:	400	psi
Required duration:	48	hours
Actual duration:	48	hours
Evidence of leakage:	None	
Actual leakage:	No	
Bending Test	Pass	
Vacuum Test		
Initial vacuum:	24.5	inch of Hg
Final vacuum:	24.5	inch of Hg
Duration:	1	hours
Temperature:	68	degrees F
Required vacuum:	24.5	inch of Hg
Actual vacuum:	24.5	inch of Hg
Required test duration:	1	hours
Actual test duration:	1	hours
Required vacuum drop > 0.5 inch of Hg:	No	
Actual vacuum drop > 0.5 inch of Hg:	No	
Vacuum Test	Pass	
Water Hammer Test		
Frequency:	0.5	Hz
Initial pressure:	36.5	psi
Surge pressure:	420.5	psi
Cycles completed:	10000	cycles
Required cycles:	10000	cycles
Actual cycles:	10000	cycles
Required surge pressure:	400	psi
Actual surge pressure:	420.5	psi
Required leakage or damage:	None	
Actual leakage or damage:	No	
Water Hammer Test	Pass	
Vibration Test		
Frequency:	25	Hz
Deflection:	0.065	inches
Pressure:	400	psi
Duration:	48	hours
Required number of cycles:	1000000	cycles
Actual number of cycles:	1000000	cycles
Required pressure:	400	psi
Actual pressure:	400	psi
Required duration:	48	hours
Actual duration:	48	hours

Sample Id: **S-0000152314**

Testing Parameter	Result	Units
Engineering Lab (Cont'd)		
Evidence of leakage:	None	
Actual leakage:	No	
Vibration Test	Pass	
Spalling Test		
Cold water cycle temperature:	68	degrees F
Hot water cycle temperature:	208	degrees F
Cold water pressure:	145	psi
Hot water pressure:	145	psi
Time at cold temperature:	15	min.
Time at hot temperature:	15	min.
Cycle change time:	1.0	min.
Required number of cycles:	5000	
Actual number of cycles:	5000	cycles
Required leakage:	None	
Actual leakage:	No	
Spalling Test	Pass	
Dynamic Torsion Test		
Angle of torsion:	5	degree
Temperature:	73	degrees F
Pressure:	400	psi
Duration:	48	hours
Required number of cycles:	10000	
Actual number of cycles:	10000	
Required pressure:	400	psi
Actual pressure:	400	psi
Required duration:	48	hours
Actual duration:	48	hours
Evidence of leakage:	None	
Actual leakage:	No	
Dynamic Torsion Test	Pass	
Dynamic Torsion Test		
Angle of torsion:	5	degree
Temperature:	208	degrees F
Pressure:	400	psi
Duration:	48	hours
Required number of cycles:	10000	
Actual number of cycles:	10000	
Required pressure:	400	psi
Actual pressure:	400	psi
Required duration:	48	hours
Actual duration:	48	hours
Evidence of leakage:	None	
Actual leakage:	No	
Dynamic Torsion Test	Pass	

Testing Laboratories:

	Id	Address
All work performed at: →	WT_TST	Witness Testing The testing reported herein occurred at an offsite location and was witnessed by NSF International staff.

References to Testing Procedures:

NSF Reference	Parameter / Test Description
P1066	Unrestrained Pressure Test - 73 degrees F
P1067	Unrestrained Pressure Test - 210 degrees F
P1068	Static Torsion Test
P1069	Bending Test
P1070	Vacuum Test
P1071	Water Hammer Test
P1072	Vibration Test
P1073	Spalling Test
P1074	Dynamic Torsion Test

NSF International Report
Page 1 of 3

NSF International
789 Dixboro Road
P.O. Box 130140
Ann Arbor, MI 48113-0140
Phone: 734-769-8010
Fax: 734-769-0109

Test Date: November 2-10, 1998, for all tests except Spalling Test (section 4.1.8), which was initiated November 9, 1998, and was completed in March, 1999.

Issuance Date: September 23, 1999

Revision Date: N/A

Client: VIEGA
Production Facility Attendorn
Ennester WEG 9
Attendorn 57439
Germany

Source of Test Sample: VIEGA
Production Facility Attendorn
Ennester WEG 9
Attendorn 57439
Germany

IAPMO File Number: None

Product Description: Viega Profipress copper fitting 2 inch CTS

Sample submitted by:

__X__ Client *
_____ IAPMO R & T Inspector (See Annex B for "Instruction for Testing" form)

All portions of each test performed were under continuous and direct supervision of NSF International.

Concluding Summary:

Viega Profipress copper fitting 2 inch CTS complied with IAPMO IGC 137-99.

Testing Conducted By:

Lab Staff: _____ Date: 6/12/00

Supervisor: _____ Date: 6/12/00

Scope of Testing: Evaluation and testing were conducted to determine compliance of the Viega Profipress copper fitting ½ inch CTS against the requirements of IAPMO IGC 137-99.

Primary and Subsequent Standards: IAPMO IGC 137-99

Sections

IAPMO IGC 137-99:

Parameter	Section	Pass/Fail
Material Requirements	**Section 3**	**Pass**

Section 3.1
The copper fitting complies with the material requirements of ANSI/ASME B16.22 and the chemical composition requirements of ASTM B 88 (Annex 1).

Section 3.2
The o-ring complies with the requirements of NSF 61 (Annex 2).

Section 3.3
The copper fitting complies with the requirements of NSF 61 (Annex 2).

Unrestrained Hydrostatic Pressure Test at 68°F	**Section 4.1.1**	**Pass**

Test assemblies fabricated with type K, L and M tubing (hard and annealed) were filled with water and a hydrostatic pressure of 600 psi was applied at a temperature of 68°F for a period of 48 hours. No slippage was observed after the first hour and no leakage occurred during the testing period.

Unrestrained Hydrostatic Pressure Test at 210°F	**Section 4.1.2**	**Pass**

Test assemblies fabricated respectively with type K, L and M tubing (hard and annealed) were filled with water and a hydrostatic pressure of 600 psi was applied at a temperature of 210°F for a period of 48 hours. No slippage was observed after the first hour and no leakage was detected.

Static Torsion Test	**Section 4.1.3**	**Pass**

Test assemblies fabricated respectively with type K, L and M tubing (hard and annealed) were subjected to a torsion of 18 ft-lbf. After application of the torsion, a hydrostatic pressure of 400 psi was applied at a temperature of 68°F for a period of 48 hours. No leakage of the joints was detected.

Bending Test	**Section 4.1.4**	**Pass**

Test assemblies fabricated respectively with type K, L and M hard tubing were subjected to a load of 25 lbs applied to the center of the span at the center of the coupling. A hydrostatic pressure of 400 psi was then applied at a temperature of 68°F for a period of one hour while the load was maintained. No leakage from the fittings was detected.

Vacuum Test **Section 4.1.5** **Pass**

Test assemblies fabricated respectively with type K, L and M tubing (hard and annealed) were subjected to a vacuum of 24.5 inches of mercury at a temperature of 68°F for a period of one hour. No change in vacuum was detected.

Hydraulic Shock Test **Section 4.1.6** **Pass**

Test assemblies fabricated respectively with type K, L and M tubing (hard and annealed) were subjected to a hydraulic shock of 400 psi for 10,000 cycles at a frequency of 0.5 Hz and a temperature of 68°F. No leakage was observed.

Vibration Test **Section 4.1.7** **Pass**

Test assemblies fabricated respectively with type K, L and M hard tubing were subjected to 1,000,000 vibration cycles while pressurized at 350 psi. After the vibration cycling, a hydrostatic pressure of 400 psi was applied at a temperature of 68°F for a period of 48 hours. No leakage was detected.

Spalling Test **Section 4.1.8** **Pass**

The test assembly was subjected to 5,000 cycles following the requirements of section 4.1.8. No leakage was detected.

Dynamic Torsion Test **Section 4.1.9** **Pass**

Two specimen were fabricated following the requirements of section 4.1.8. One specimen was cycled 10,000 times at a temperature of 68°F and the other specimen at a temperature of 210°F. After completion of the torsion cycles, a hydrostatic pressure of 400 psi was applied at a temperature of 68°F for a period of 48 hours. No leakage was detected.

Markings and Identification **Section 5** **Pass**

The fitting is marked with manufacturer's name and nominal size.

Other Products Included in Test Sample - Description and IAPMO Listing Status: N/A

Off-site Testing Information: Witness testing was performed at the client's location.

NSF International

NSF International Report for Job: 503635-01
Page 1 of 2

NSF International
789 North Dixboro Road
P.O. Box 130140
Ann Arbor, MI 48113-0140
Ph: 734-769-8010
Fx: 734-769-0109

Test Date:	October 10, 2001
Issuance Date:	October 17, 2001
Re-Issuance Date:	N/A
Revision Date:	N/A

Client: Viega, Franz Viegener II, Sanitary and Heating Systems
Ennester Weg 9
Attendorn 57439
Germany

Product Manufacturer (if different from client): N/A

Source of Test Sample: Viega, Franz Viegener II, Production Facility Attendorn

IAPMO File Number: None

Product Description: Viega Propress XL 4"

Sample submitted by:

__X__ Client *
_____ IAPMO R & T Inspector (See Annex B for "Instruction for Testing" form)

* Sample did not appear to have been tampered with before arriving at NSF International.

All portions of each test performed were under continuous and direct supervision of NSF International.

Concluding Summary:

Viega Propress XL 4" complied with the requirements of IAPMO PS 117-2001.

Testing Conducted By:

Lab Staff: _____ Date: 10/26/01
Atabek Ciechanowski – Lead Engineer, Plastics and Plumbing

Supervisor: _____ Date: 10/29/01
James Paschal – Director, Physical and Mechanical Testing

Scope of Testing: Evaluation and testing were conducted to determine compliance of the Viega Propress XL 4" against the requirements of the IAPMO PS 117-2001.

Sections

IAPMO PS 117-2001:

Parameter	Section	Pass/Fail
Material Requirements	**Section 4**	**Pass**

Section 4.1
The bronze fitting complies with the material requirements of ANSI/ASME B16.22 and the chemical composition requirements of ASTM B88.

Performance Requirements

Bending Test	Section 5.1.4	Pass
Dynamic Torsion Test, 73° F	Section 5.1.9	Pass
Dynamic Torsion Test, 200° F	Section 5.1.9	Pass
Thermocycling Test	Section 5.1.8	Pass
Static Torsion Test	Section 5.1.3	Pass
Unrestrained Pressure Test, 210° F	Section 5.1.2	Pass
Unrestrained Pressure Test, 73° F	Section 5.1.1	Pass
Vacuum Test	Section 5.1.5	Pass
Vibration Test	Section 5.1.7	Pass
Water Hammer Test	Section 5.1.6	Pass

Other Products Included in Test Sample - Description and IAPMO Listing Status: N/A

Off-site Testing Information: All testing witnessed at manufacturer's facility

Test Results: Attached (Report for 503635-01)

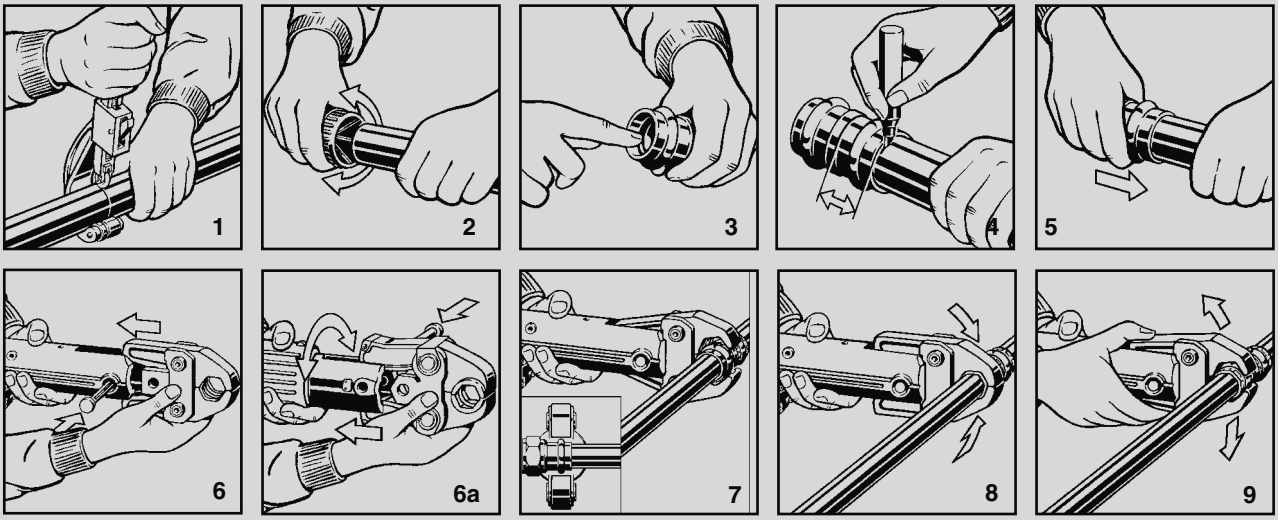
ProPress® SYSTEM w/Smart Connect™ Feature

viega

Product Instructions

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

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



ProPress Insertion Depth Chart						
Tube Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Insertion Depth	3/4"	7/8"	7/8"	1"	1-7/16"	1-9/16"

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

Pressure Testing: Pressure testing is to be carried out in accordance with local codes. ProPress includes the Smart Connect (SC) Feature providing quick and easy identification of **unpressed** connections during the pressure testing process. **Unpressed connections are located by pressurizing the system with air or water. When testing with air the pressure range is 1/2 PSI to 85 PSI maximum. When testing with water the pressure range is 15 PSI to 85 PSI maximum.** The SC Feature is an integral part of the design of the fitting assuring leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The SC Feature is removed during the pressing process creating a leak-proof, permanent connection.

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301 N. Main, Floor 9 • Wichita, KS 67202 • Ph: 877-Viega-NA • Fax: 316-425-7618 • E-Mail: service@viega.com • www.viega.com

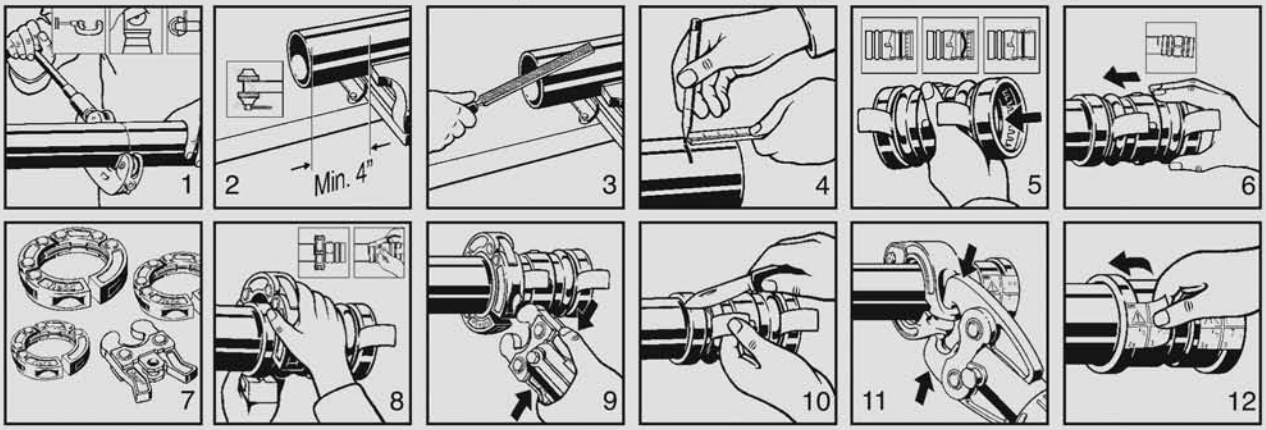
ProPress® XL SYSTEM w/Smart Connect™ Feature

viega

Product Instructions

Copper Fittings for Types K, L and M Hard Copper Tubing in 2-1/2" to 4"

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



ProPress XL Insertion Depth Chart			
Tube Size	2-1/2"	3"	4"
Insertion Depth	2-1/8"	2-1/8"	2-1/2"

1. Cut copper tubing at right angles using displacement type cutter or fine-toothed steel saw.
2. Keep end of tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.
3. Remove burr from inside and outside of tubing to prevent cutting sealing element.
4. Mark proper insertion depth as indicated by the ProPress XL insertion depth chart. Improper insertion depth may result in an improper seal.
5. Check seal and grip ring for correct fit.
6. While turning slightly, slide press fitting onto tubing to the marked depth. Do not use oils or lubricants.
7. ProPress XL fitting connections must be performed with ProPress XL Rings and Actuator. Use of other ring set or actuator will result in an improper connection. See Ridgid Operator's Manual for proper tool instructions.
8. Open XL Ring and place at right angle on the fitting. XL Ring must be engaged on the fitting bead. Check insertion depth.
9. With Actuator inserted into the tool, open the Actuator as shown.
10. Place Actuator onto XL Ring and start pressing process. Hold the trigger until the Actuator has engaged the XL Ring. Keep extremities and foreign objects away from XL Ring and Actuator during pressing operation to prevent injury or incomplete press.
11. Release Actuator from XL Ring and then remove the XL Ring from the fitting on completion of press. Remove elastic control ring from fitting indicating press has been performed.
12. For applications requiring ProPress XL with FKM sealing elements, remove the factory installed EPDM sealing element and replace with FKM sealing element.

Pressure Testing: Pressure testing is to be carried out in accordance with local codes. ProPress XL also includes the Smart Connect Feature providing quick and easy identification of unpressed connections during the pressure testing process. Unpressed connections are located by pressurizing the system with air or water. When testing with air the pressure range is 1/2 PSI to 85 PSI Maximum. When testing with water the pressure range is 15 PSI to 85 PSI Maximum. The SC Feature is an integral part of the design of the fitting assuring leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The SC Feature is removed during the pressing process creating a leak-proof, permanent connection.

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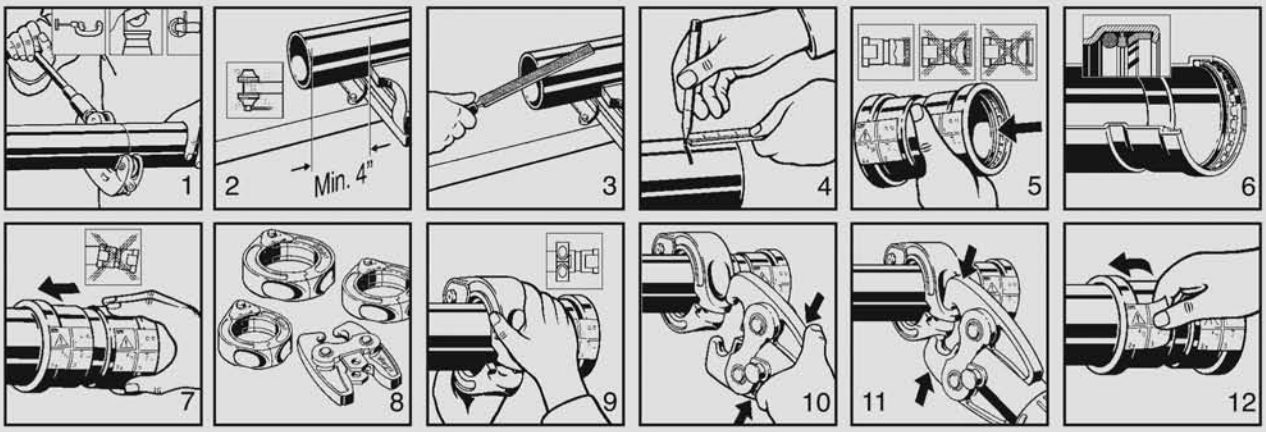
ProPress® XL-C SYSTEM w/Smart Connect™ Feature

viega

Product Instructions

Copper Fittings for Types K, L and M Hard Copper Tubing in 2-1/2" to 4"

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



ProPress XL-C Insertion Depth Chart			
Tube Size	2-1/2"	3"	4"
Insertion Depth	1-5/8"	1-7/8"	2-3/8"

1. Cut copper tubing at right angles using displacement type cutter or fine-toothed steel saw.
2. Keep end of tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.
3. Remove burr from inside and outside of tubing to prevent cutting sealing element.
4. Mark proper insertion depth as indicated by the ProPress XL-C insertion depth chart. Improper insertion depth may result in an improper seal.
5. Check seal and grip ring for correct fit.
6. Illustration demonstrates proper fit of grip ring, separation ring and sealing element. Use only ProPress Shiny Black EPDM sealing elements.
7. While turning slightly, slide press fitting onto tubing to the marked depth. Do not use oils or lubricants.
8. ProPress XL-C fitting connections must be performed with ProPress XL-C Rings and V2 ACTUATOR. Use of ProPress XL Rings and/or Actuator (for Bronze fittings) will result in an improper connection. See Ridgid Operator's Manual for proper tool instructions.
9. Open XL-C Ring and place at right angles on the fitting. XL-C Ring must be engaged on the fitting bead. Check insertion depth.
10. With V2 ACTUATOR inserted into the tool, open the V2 ACTUATOR as shown and connect V2 ACTUATOR to the XL-C Ring.
11. Place V2 ACTUATOR onto XL-C Ring and start pressing process. Hold the trigger until the Actuator has engaged the XL-C Ring. Keep extremities and foreign objects away from XL-C Ring and V2 ACTUATOR during pressing operation to prevent injury or incomplete press.
12. Release V2 ACTUATOR from XL-C Ring and then remove the XL-C Ring from the fitting on completion of press. Remove elastic control ring from fitting indicating press has been performed.

Pressure Testing: Pressure testing is to be carried out in accordance with local codes. ProPress XL-C also includes the Smart Connect Feature providing quick and easy identification of unpressed connections during the pressure testing process. Unpressed connections are located by pressurizing the system with air or water. When testing with air the pressure range is 1/2 PSI to 85 PSI Maximum. When testing with water the pressure range is 15 PSI to 85 PSI Maximum. The SC Feature is an integral part of the design of the fitting assuring leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The SC Feature is removed during the pressing process creating a leak-proof, permanent connection.

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