



NIBCO Bench Press GYM Fitting Instructions

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NIBCO
Bench  PressG
GYM Fitting
Instructions



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Submittal Package

Job Name.....
Contractor.....
Job Location.....
Wholesaler.....
Engineer.....
NIBCO Sales Rep.....

Heating Fuel Oil Compressed Air Argon Liquid Propane/Butane Gas Oxygen (non-medical)	Vacuum Systems Natural Gas Nitrogen Diesel Fuel Carbon Dioxide
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PRODUCT DESCRIPTION

NIBCO BenchPressG carbon steel fittings for use in mechanical applications. Available sizes range from ½” through 1½” in diameter. Product is designed to join Schedule 10 to 40 steel pipe as defined by ASTM A53, A106, A135 and A795. 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.

STANDARDS AND CODES

- NFPA 54/Z223.1 National Fuel Gas Code
- NFPA 58 Liquefied Petroleum Gas Code
- ASME B31 Code for Pressure Pipe
- NFPA 30 Flammable and Combustible Liquids Code
- NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages
- NFPA 31 Standard for the Installation of Oil Burning Equipment (supply line only)
- CSA ANSI LC-4/CSA 6.32
- Uniform Plumbing Code (UPC)*
- National Plumbing Code of Canada
- International Mechanical Code

*Uniform Plumbing Code is a copyrighted publications of the International Association of Plumbing and

THIRD PARTY LISTINGS AND CERTIFICATIONS

- CSA Group: Gas Accessory Devices – Press Connect Type Metallic Fittings, Class 3305-11 (Canada Standards) and 3305-91 (US Standards)
- IAPMO R&T: File #11446, Press-connect metallic fittings for use in fuel gas distribution systems, US and Canada

OPERATING PARAMETERS

- Operating Pressure: Ranges from 125 to 200 psi max depending on the application
- Air Test Pressure: 15 psi maximum
- Operating Temperature: -40°F to 180°F

BenchPressG™ Fitting Applications Chart

Types of Service	Comments	Pressure	Temperature	Compatible with HNBR Seal
Oil and Lubricant				
Heating Fuel Oil		125 psi	-40°F to 180°F	•
Diesel Fuel		125 psi		•
Gear Grease		150 psi	104°F	•
Engine Oil		150 psi	Ambient	•
Hydraulic Fluid	Mineral Based	200 psi	Ambient	•
Transmission Fluid		200 psi	Ambient	•

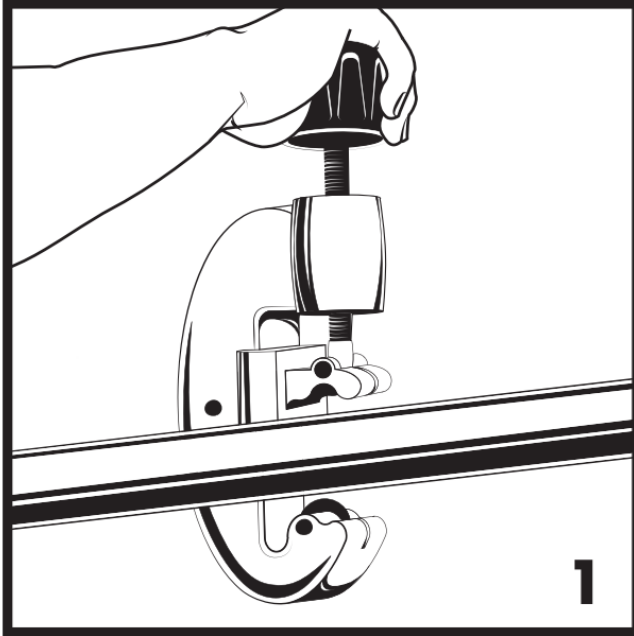
Gases				
Natural Gas & LP Gas		125 psi max	-40°F to 180°F	•
Compressed Air	More than 25mg/m3 Oil Content	200 psi	Up to 140°F	•
Oxygen – (non medical)	Oil and Fat Free/Non Liquid	140 psi	Up to 140°F	•
Nitrogen		200 psi	Up to 140°F	•
Carbon Dioxide		200 psi	Up to 140°F	•
Argon		200 psi	Up to 140°F	•
Vacuum		Max 29.2" of Hg	Up to 140°F	•

Operating Temperature: -40°F to 180°F

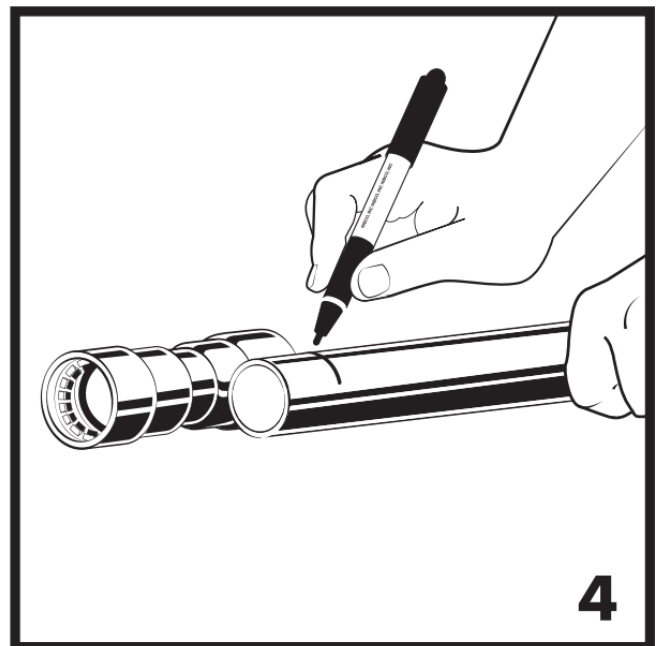
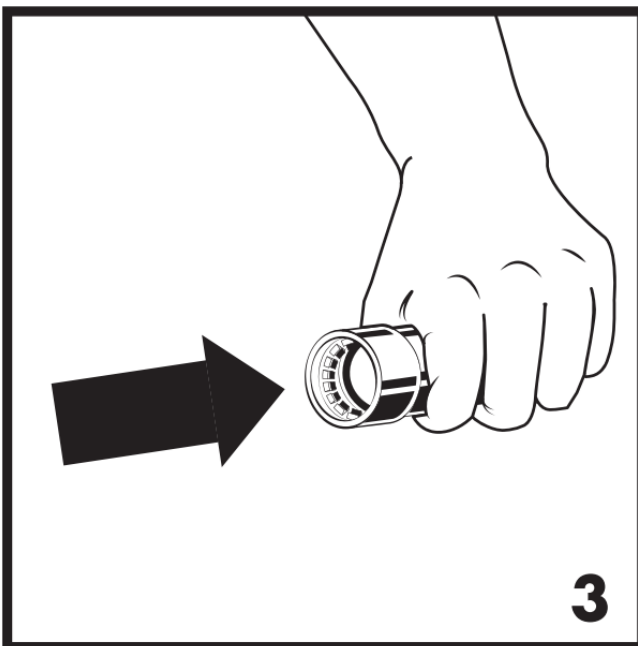
½" – 1½" Fitting Installation Instructions

For ASTM A53, A106, A135, A795 (schedule 10 to 40) carbon steel pipe in ½" to 1½" sizes

1. Select clean, undamaged pipe and cut to desired length. Cut tube end square using a pipe cutter or fine-toothed steel saw. If using a vise or other method to hold the pipe, do not damage the pipe section which is inserted into the fitting. Scratches or deformed pipe may result in an improper seal.

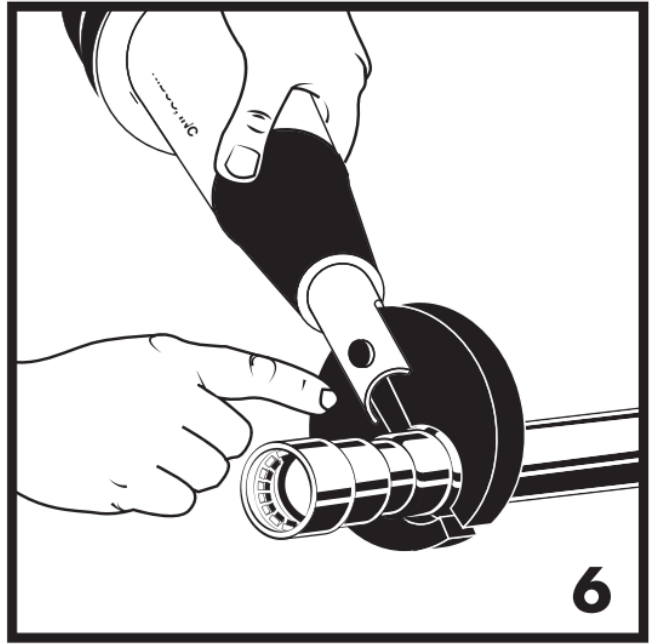
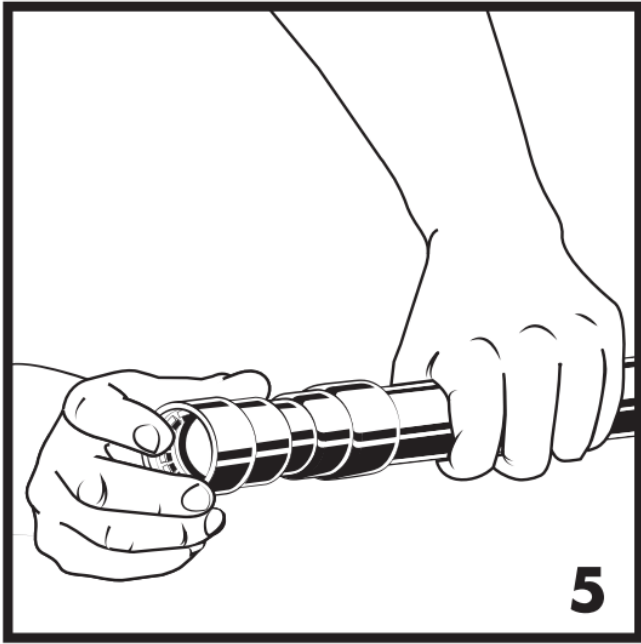


2. Prep pipe to a smooth and even surface with a fine grit sandpaper. The surface should be free of indentations, oil, and debris. Do not use engraved or stamped pipe. Indentations in the pipe may result in an improper seal. To avoid damage to the O-ring, the pipe must be free of burrs and sharp edges.
3. Visually inspect the fitting to ensure the grip ring, separator ring, and seal are in place, clean and, free of contaminants. Only original NIBCO yellow HNBR Bench PressG™ seals are to be used.

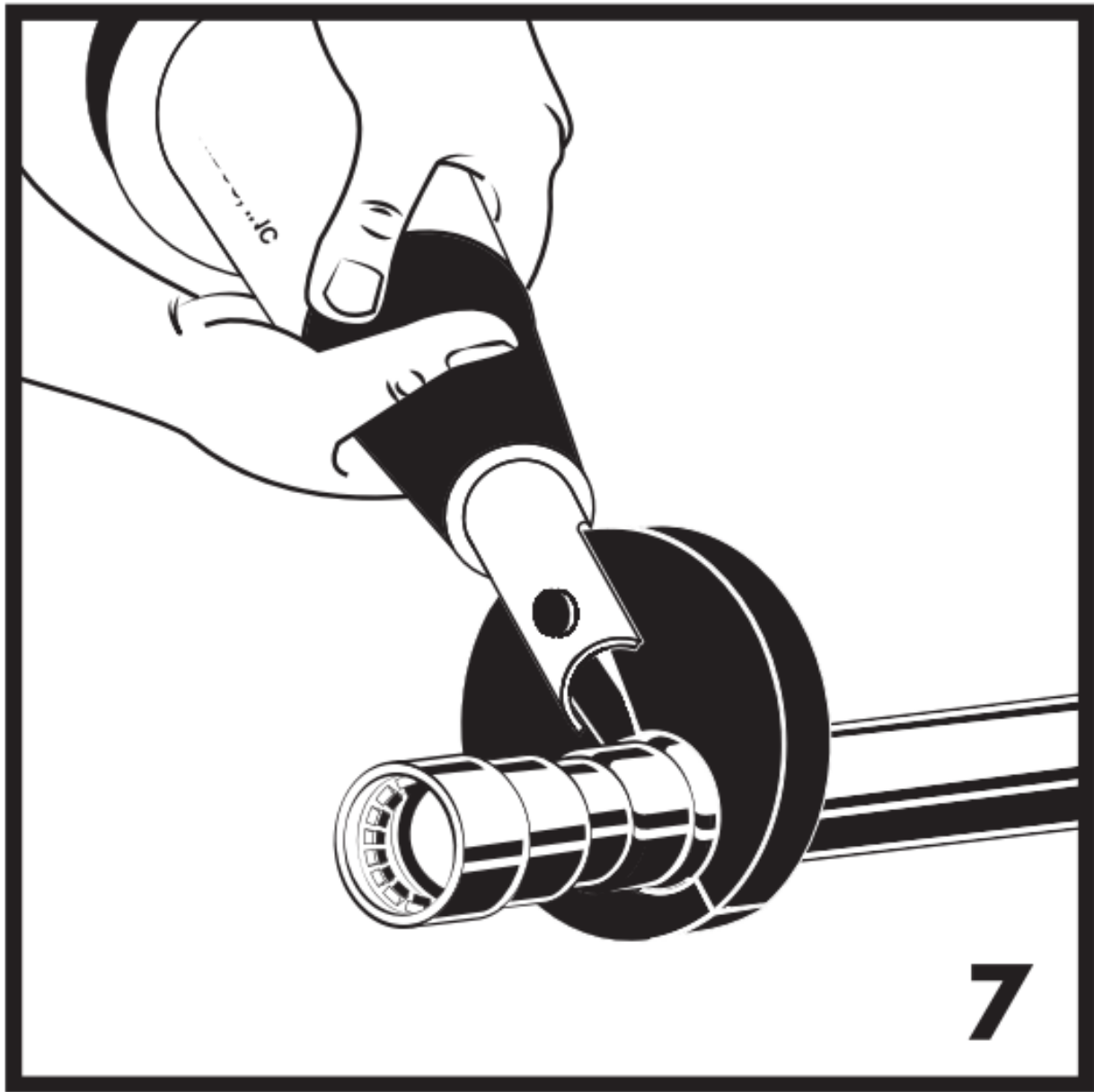


4. Mark the pipe to the proper insertion depth as indicated by the Insertion Depth Chart. Improper insertion depth may result in an improper seal.
5. Fully insert the pipe into the fitting. For fittings with stops, insert the pipe to make contact with the fitting stop.

For fittings without o stop, insert the pipe to a depth no less than the specified insertion depth. Improper insertion depth may result in an improper seal. If necessary, the O-ring may be lubricated with water. Never use oils or lubricants as these can degrade or damage the sealing element.



6. Ensure the proper press jaw is installed in the pressing tool. Squeeze the jaw arms to open the jaw set. Place open jaws around the fitting end and ensure the jaw is properly aligned with the contour of the fitting. When using the ring and actuator instead of jaws, use the correct size ring and appropriate actuator. See NIBCO Tool and Jaw Compatibility Matrix for approved tools and jaws.
7. Make sure the pipe is inserted to the proper depth. With the tool square to the axis of the pipe, start pressing procedure. After the press is complete, remove the jaw from the fitting.



Pipe Insertion Depth Chart

Tube Size (In.)	Minimum Insertion Depth (In.)
1/2	1/16
3/4	1/16
1	1/5/16
1-1/4	1-3/4
1-1/2	1/13/16

WARNING

Read press tool operator's manual and fitting manufacturer's installation instructions before using. Failure to follow all instructions may result in extensive property damage and/ or serious personal injury. Call the NIBCO Technical Service Department at 1.888.446.4226 if you have any questions or need assistance.

Notes:

1. To ensure a proper press, maintain the specified minimum distance between fittings. The pressing jaw must

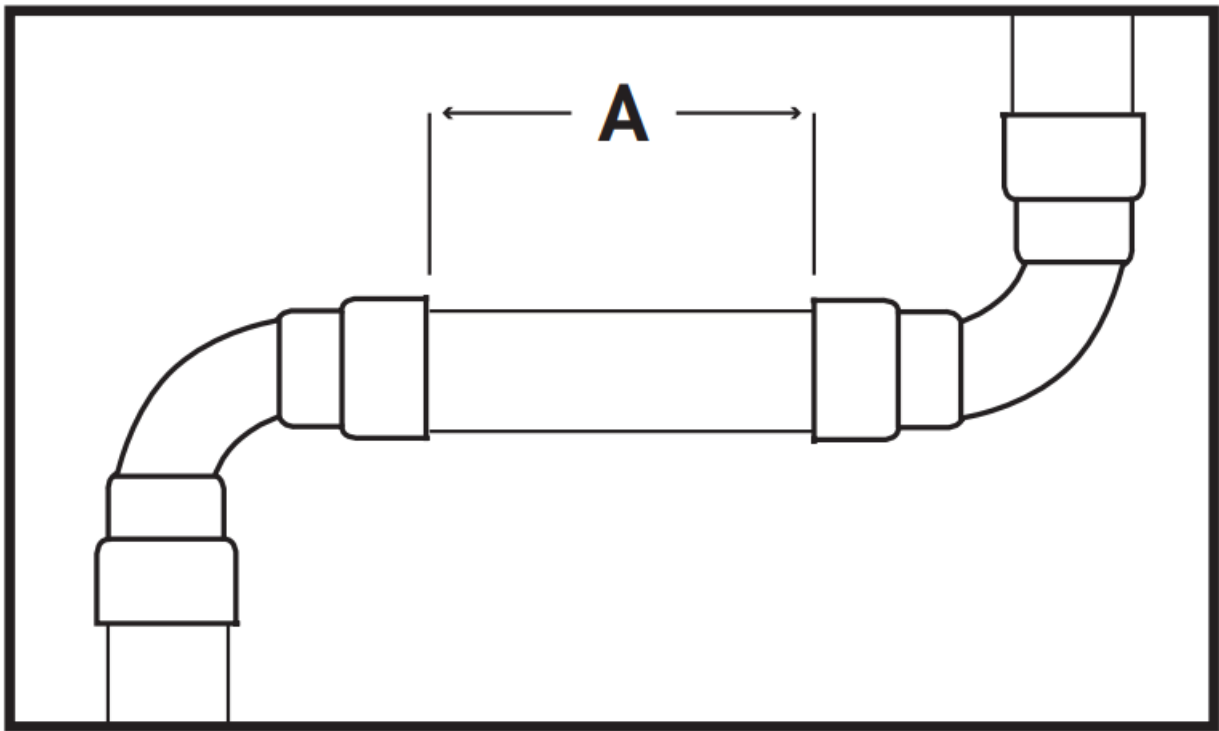
have clearance to the adjacent fitting. Failure to maintain the minimum specified distance may result in an improper seal.

2. A minimum distance to welds must always be maintained.

A minimum of 4 inches must be maintained when welding adjacent to a BenchPressG fitting and a minimum of 3 feet must be maintained when welding in-line. The following precautions should be used to protect the BenchPress fitting:

- Wrap the press fitting connection with a cold wet rag
- Protect the press fitting connection with a weld blanket
- Fabricate weld connections prior to installing the press fitting

Pipe Diameter (in)	Distance Between Fittings A (in)
1/2	0.20
3/4	0.20
1	0.20
1-1/4	0.59
1-1/2	0.59



maximum pressure is 15 psi. Following a successful leak test, the system may be pressure tested up to 200 psi if required by local code requirements or project specifications. Leak testing with air can be dangerous at high pressures.

The following standards, codes, and instructions should be followed when installing NIBCO® BenchPressGTM fittings for fuel gas:

- The installation of the fuel gas system shall be made in accordance with local codes, or in the absence of local codes, in accordance with the National Fuel Gas Code NFPA 54, the LP-Gas Code NFPA 58 as application.

- For use with ASTM A53, A106, A795 and A135 carbon steel pipe.
- Undue stress or strain on the fittings and the tubing is to be avoided.
- Concealed pipe and fittings shall be protected from puncture threats.
- If the installation requires components in addition to those supplied by the fitting manufacturer, those components shall be The instructions shall state that only the components provided or specified by the manufacturer are to be used in the installation.
- The fitting/pipe system shall not be used as a grounding electrode for an electrical system.
- The inspection, testing and purging of the installation shall be performed using procedures specified in Part 4 of the National Fuel Gas Code NFPA 54, ANSI Z223.1, the LP-Gas Code NFPA 58 section 3.2-10 as applicable or in accordance with the requirements of the applicable local codes.
- For use with natural, propane, mixed, and manufactured gasses in the vapor state, not in the liquid state.
- The fitting/pipe system shall not be used as a means of support.

NIBCO® BenchPress™ and BenchPressG™ Limited Warranty

NIBCO INC. LIMITED WARRANTY

Applicable to NIBCO BenchPress & BenchPressG

NIBCO INC. warrants each NIBCO BenchPress & BenchPressG fitting and flange (together, the “NIBCO Products”) to be free from defects in materials and workmanship under normal use, service, and maintenance in accordance with the product specifications (including, but not limited to installation recommendations) for a period of ten (10) years from the Warranty Commencement Date. The Warranty Commencement Date shall be the date upon which the NIBCO Products are installed.

NIBCO will repair or replace – at its option and at no charge –NIBCO Products that have been determined by NIBCO, or an authorized representative or agent thereof, to have failed solely because of a defect in materials or workmanship under normal use, service, and maintenance during the warranty period. Replacements shall be shipped free of charge to the owner.

This limited warranty applies to all NIBCO Products installed, tested, applied, and used in accordance with NIBCO’s approved and published recommendations and instructions.

This warranty does not cover any failure or damage for or caused by:

1. any product, parts, or systems which are not manufactured or sold by NIBCO;
2. any NIBCO Product which is used for purposes other than a purpose authorized by NIBCO;
3. any NIBCO Product not installed, tested, applied, used, or maintained in accordance with NIBCO’s recommended installation guidelines and instructions;
4. any NIBCO Product not installed or used in accordance with applicable codes;
5. any damage caused by, contributed in whole or in part by, or resulting from, any of the following:
 - a. abuse, misuse, mishandling, alteration, tampering, neglect, or accidental damage such as, without limitation, vandalism;
 - b. natural disasters, such as, without limitation, flooding, windstorm, and lightning;
 - c. attachments or modifications not authorized by NIBCO;
 - d. external, physical or chemical qualities, or an unsuitable or hostile environment;
 - e. any defects other than those in material or workmanship; or
 - f. any other cause beyond the control of NIBCO.

NIBCO DISCLAIMS ANY AND ALL LIABILITY FOR ANY OTHER DIRECT OR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING BUT NOT LIMITED TO, ECONOMIC LOSS, LOSS OF BUSINESS, LOST PROFITS, PUNITIVE DAMAGES, MOLD INTRUSION, WATER DAMAGE, ETC.

Some states do not allow the exclusion or limitation of damages, so the above limitation or exclusion may not apply to you.

THIS WARRANTY IS THE ONLY WARRANTY FOR THE NIBCO PRODUCTS PROVIDED BY NIBCO, AND IS AND SHALL BE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, AN IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND FOR ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF A MANUFACTURER. NO EMPLOYEE OF NIBCO, OR ANY OTHER DISTRIBUTOR, AGENT, OR OTHER PERSON OR BUSINESS, IS AUTHORIZED TO MAKE ANY OTHER WARRANTY ON BEHALF OF NIBCO.

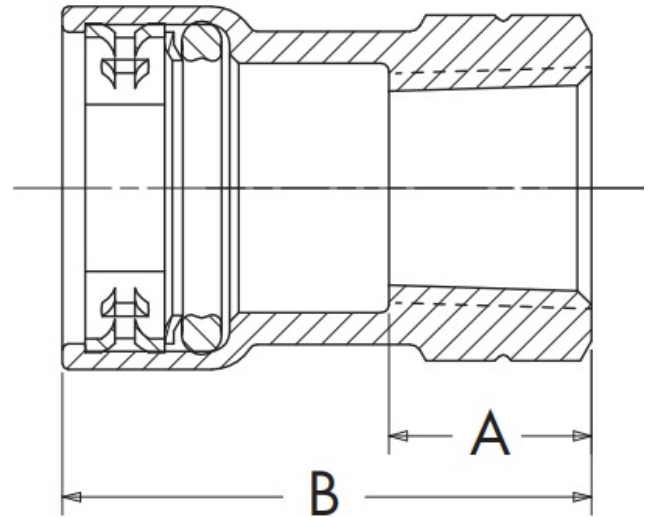
Some states do not allow limitations on implied warranties, so the above limitation may not apply to you.



In the event any defect occurs which is believed to be covered by this warranty, NIBCO Technical Services must immediately be contacted by calling 888.446.4226 or emailing CS-TechnicalServices@nibco.com. NIBCO Technical Services after being contacted will make further arrangements for the product's return to NIBCO at the customer's expense for review and evaluation.

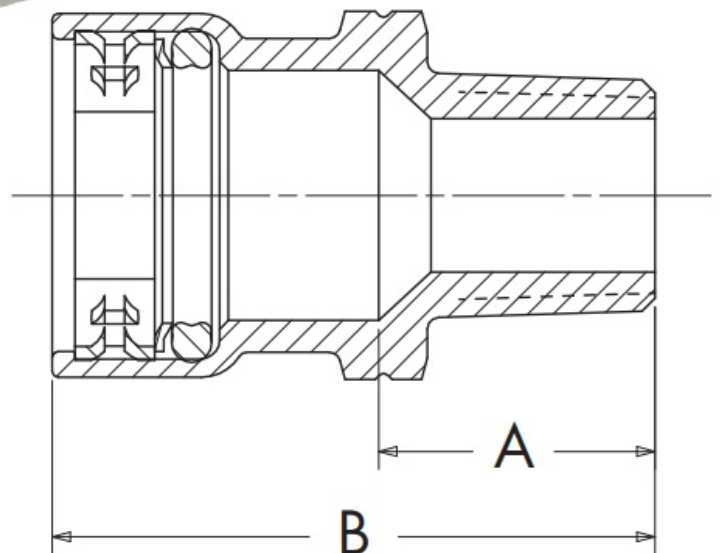
This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

ADAPTERS



PCH203
Adapter P x F – Carbon Steel

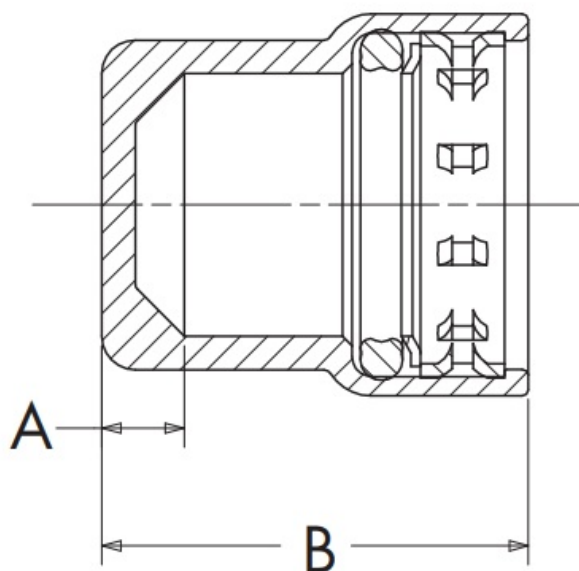
NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.234	.73	1.83
3/4	.360	.83	1.97
3/4 x 1/2	.340	.83	1.97
2	1.700	2.00	3.00



PCH204
Adapter P x M – Carbon Steel

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.206	.98	2.09
3/4	.338	1.06	2.20
1	.460	1.14	2.52
1 1/4	.941	2.17	4.02
1 1/2	1.167	2.27	4.20
2	1.670	2.31	4.32

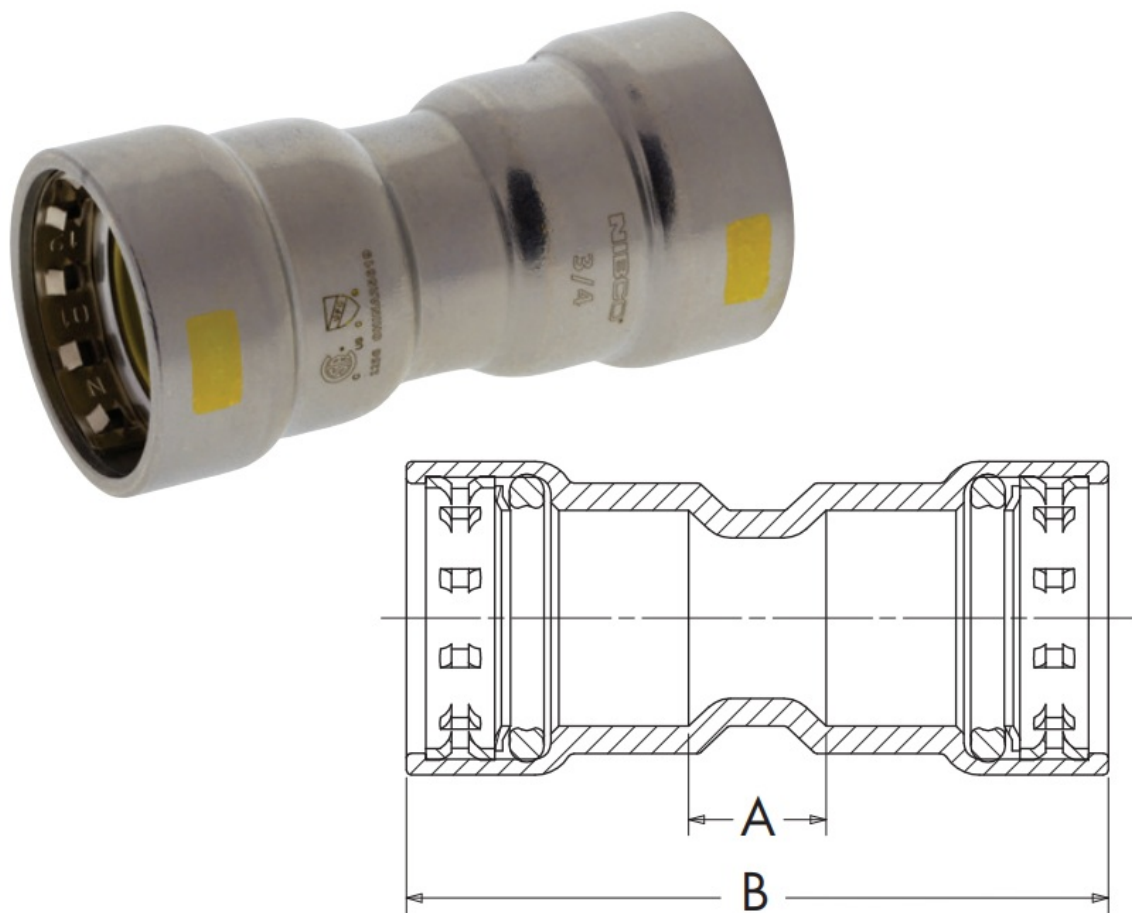
CAPS



PCH217
Cap P – Carbon Steel

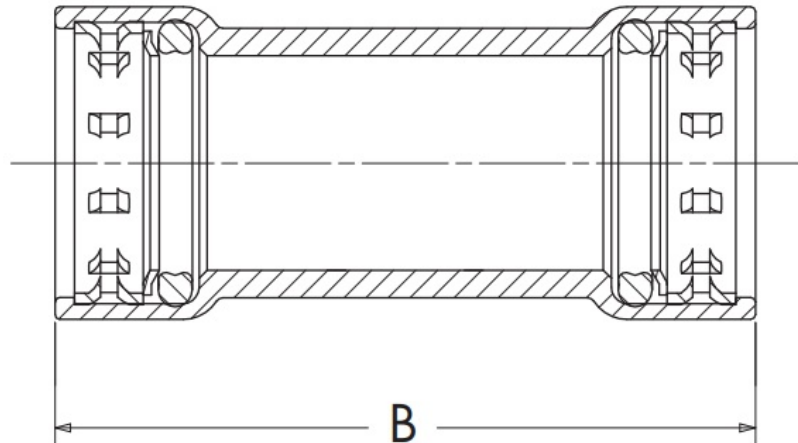
NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.173	.30	1.40
3/4	.258	.36	1.50
1	.370	.33	1.71
1 1/4	.559	.73	2.58
1 1/2	.729	.85	2.78
2	1.030	.81	2.81

COUPLINGS



PCH200
Coupling P x P – Carbon Steel

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.274	.61	2.81
3/4	.371	.80	3.09
1	.548	.61	3.36
1 1/4	.916	.76	4.46
1 1/2	1.202	.88	4.74
2	1.550	.84	4.86

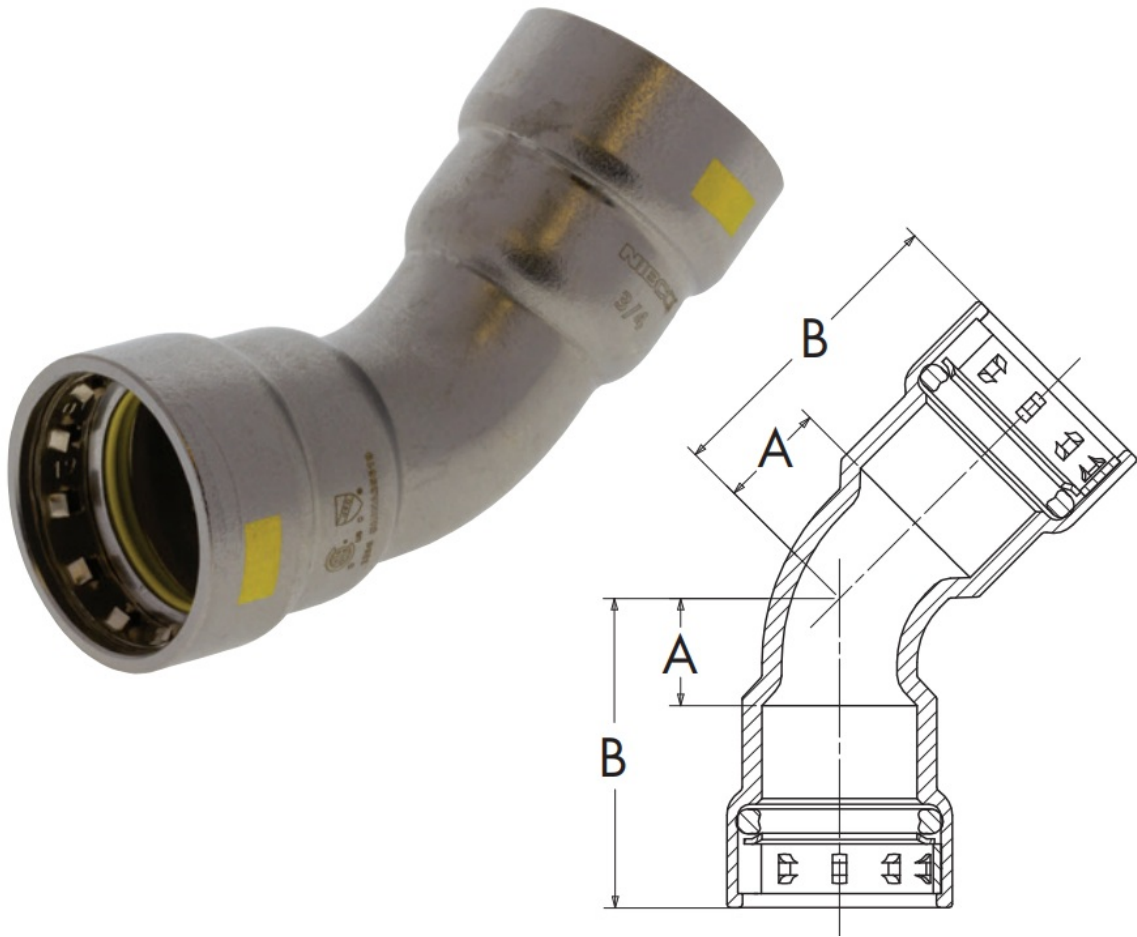


PCH201 (No Stop)

Repair Coupling P x P – Carbon Steel

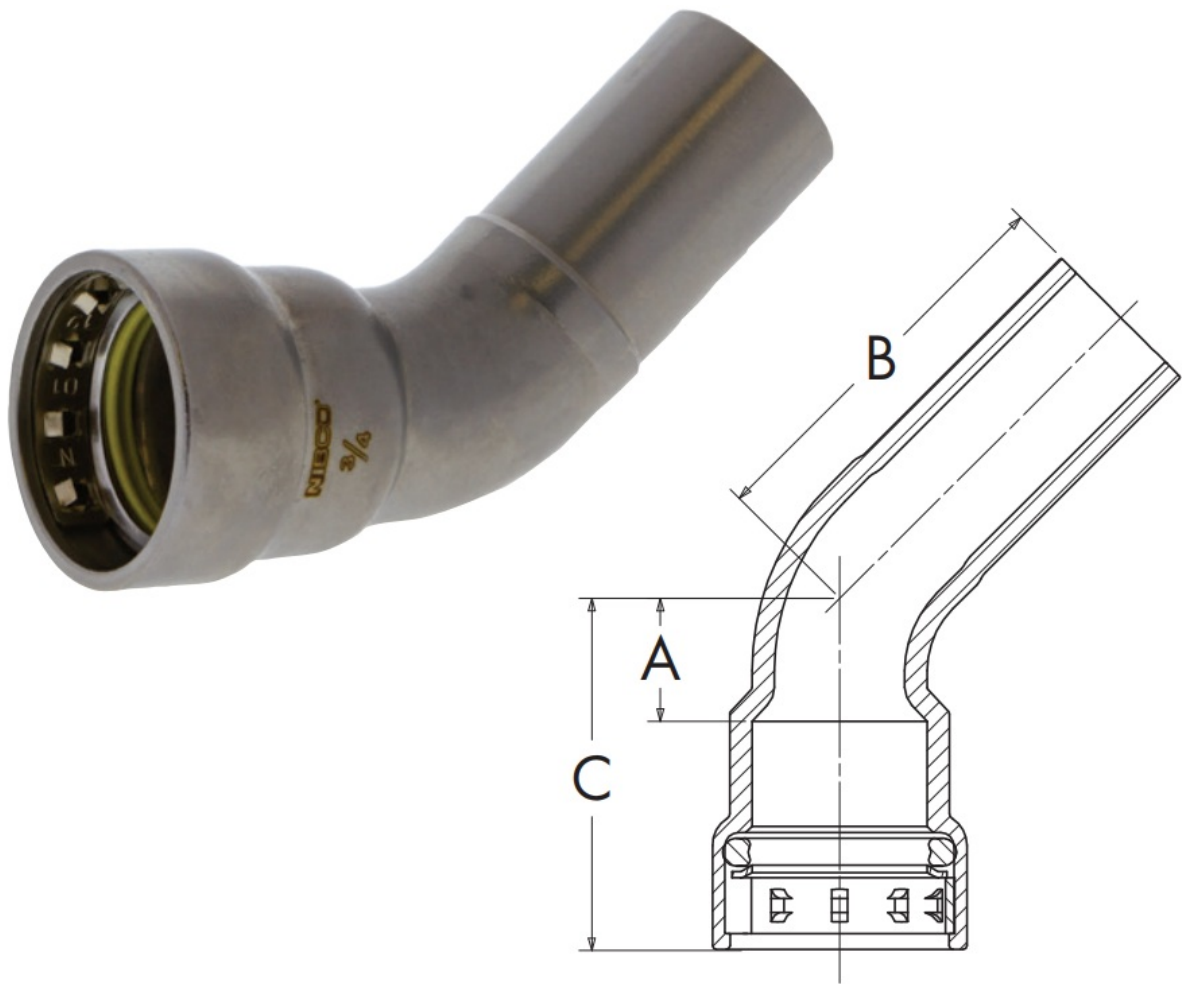
NOM. SIZE	APPROX. NET WT./LBS.	DIM. B INCHES
1/2	.260	2.81
3/4	.349	3.09
1	.544	3.36
1 1/4	.934	4.46
1 1/2	1.180	4.74
2	1.540	4.86

ELBOWS



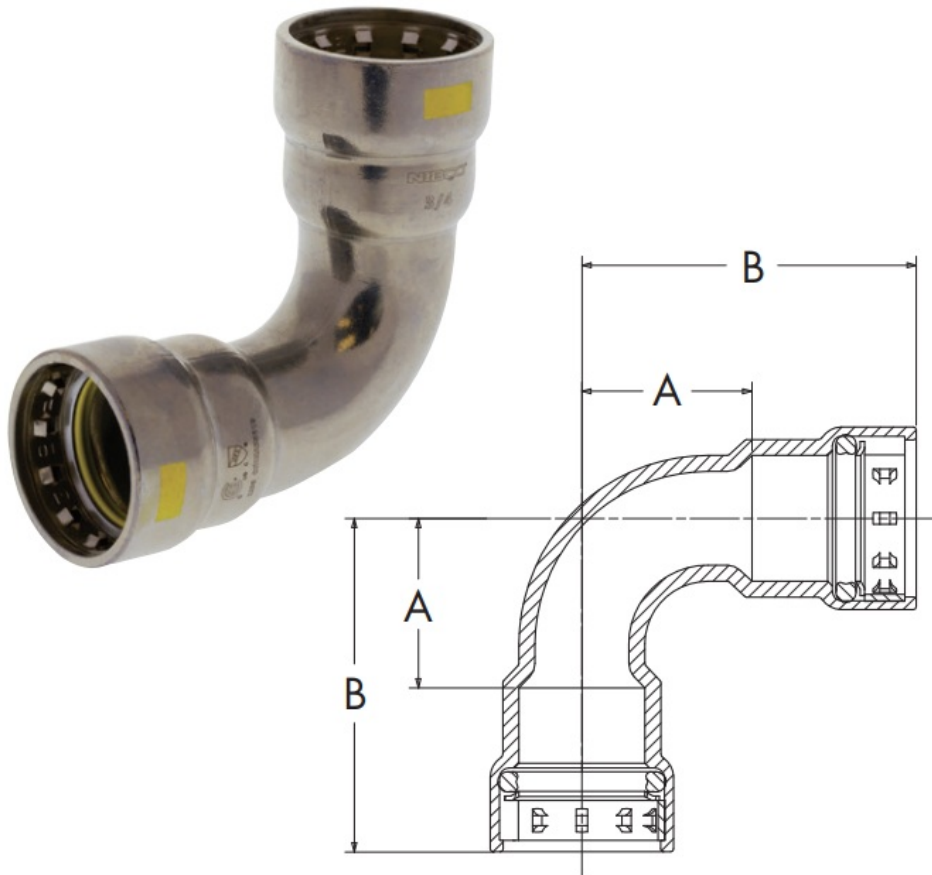
PCH206
45° Elbow P x P – Carbon Steel

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.324	.63	1.73
3/4	.427	.75	1.89
1	.669	.89	2.26
1 1/4	1.015	.99	2.84
1 1/2	1.384	1.13	3.06
2	1.990	1.33	3.33



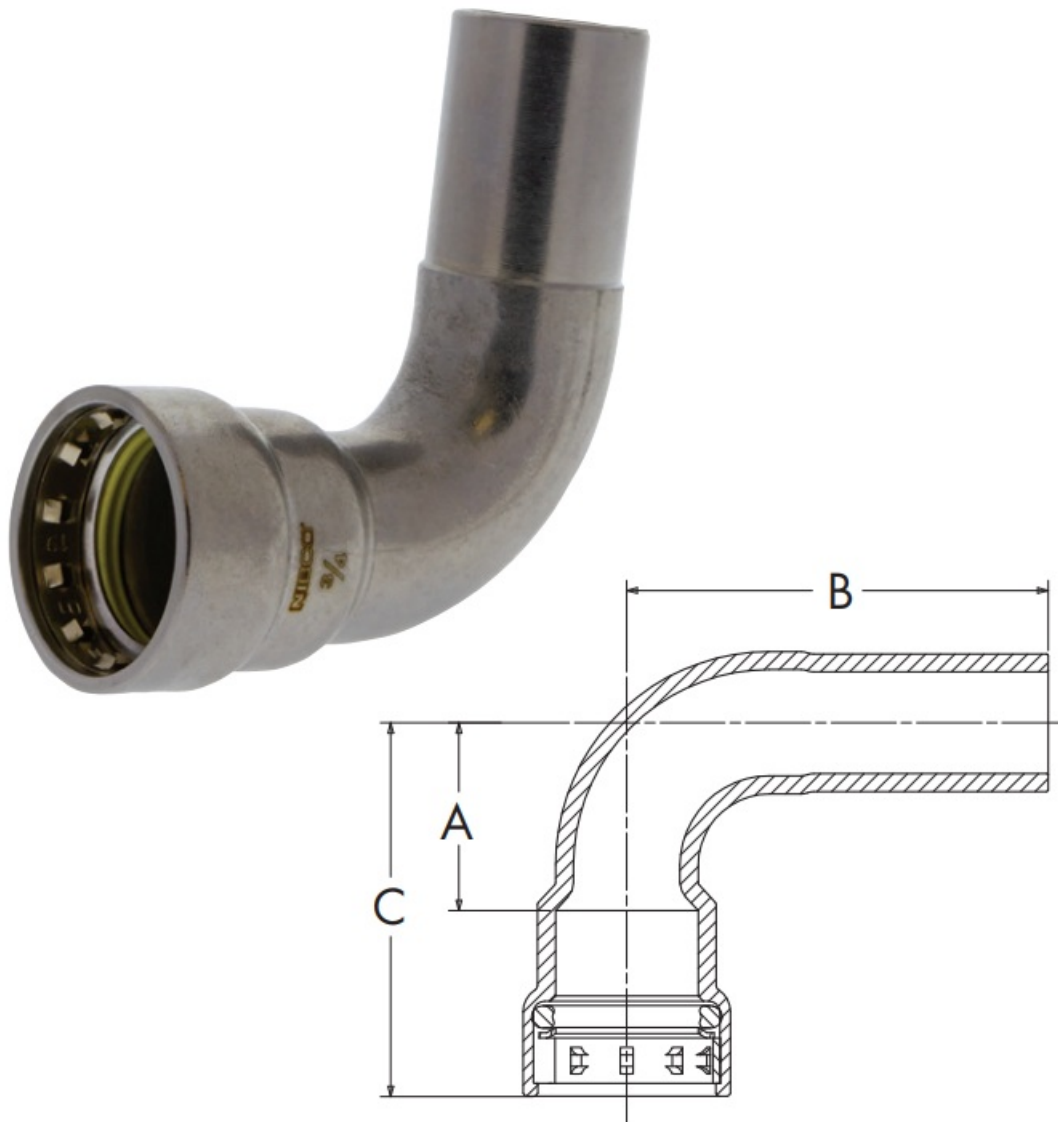
PCH206-2
45° Elbow Ftg x P – Carbon Steel

NOM. SIZE	APPROX. NET WT./LBS.	DIMENSIONS INCHES		
		A	B.....	C
1/2	.270	.64	1.97	1.74
3/4	.410	.75	2.13	1.89
1	.660	.89	2.52	2.27
1 ¼	.990	.99	2.99	2.84
1 ½	1.330	1.13	3.07	3.06
2	2.009	1.33	3.62	3.33



PCH207
90° Elbow P x P – Carbon Steel

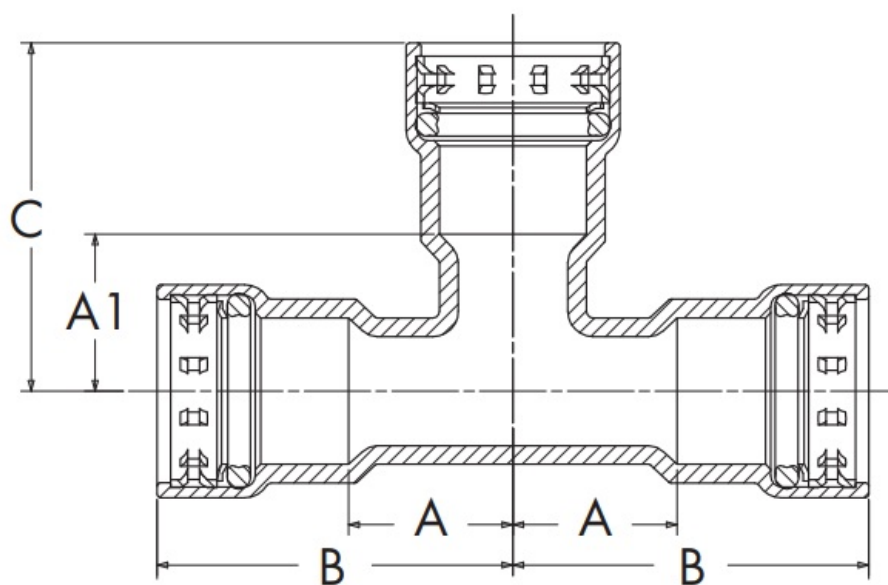
NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.392	1.20	2.30
3/4	.534	1.40	2.54
1	1.307	1.75	3.13
1¼	1.230	2.01	3.86
1 ½	1.712	2.27	4.20
2	2.500	2.81	4.81



PCH207-2
90° Elbow Ftg x P – Carbon Steel

NOM. SIZE	APPROX. NET WT./LBS.	DIMENSIONS INCHES		
		A	B	C
1/2	.360	1.17	2.56	2.65
3/4	.430	1.50	2.80	2.27
1	.810	1.70	3.39	3.08
1 1/4	1.230	2.04	4.04	3.89
1 1/2	1.770	2.34	4.21	4.27
2	1.930	2.79	5.08	4.80

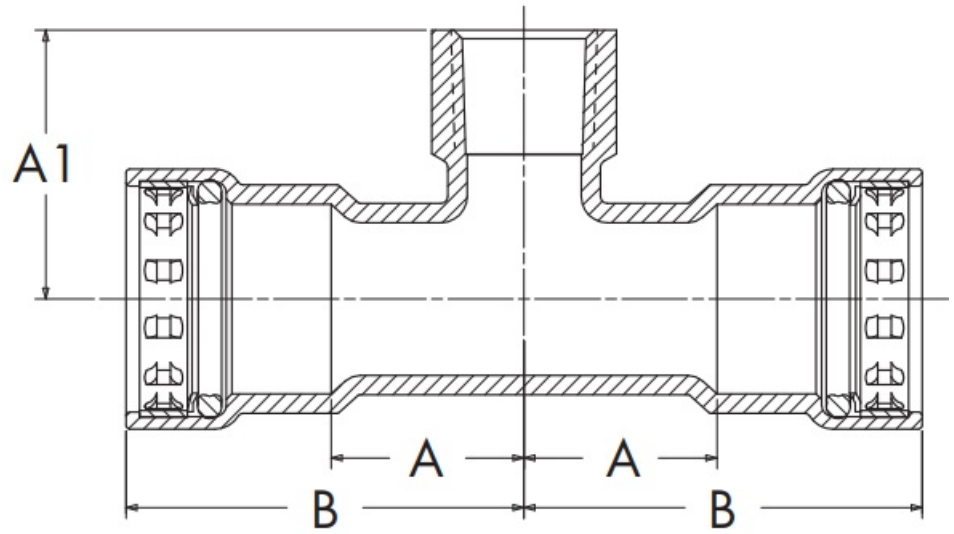
TEES



PCH211

Tee P x P x P – Carbon Steel

NOM. SIZE	APPROX. NET WT. LBS.	I DIMENSIONS INCHES			
		A	B	C	A1
1/2	.417	1.00	2.10	2.06	.96
3/4	.416	1.15	2.29	2.27	1.13
3/4 x 3/4 x 1/2	537	1.15	2 29	2 20	1.10
1	1.040	1.26	2.63	2.63	1.26
1x1x1/2	.940	1.26	2.63	2.33	1.23
1 x 1 x 3/4	.991	1.26	2.63	2.42	1.28



PCH212
Tee P x P x F – Carbon Steel

NOM. SIZE	APPROX. NET WT. LBS.	DIMENSIONS INCHES		
		A	B	A1
3/4	.740	1.15	2.29	1.58
3/4 x 3/4 x 1/2	.681	1.15	2.29	1.55

VALVES

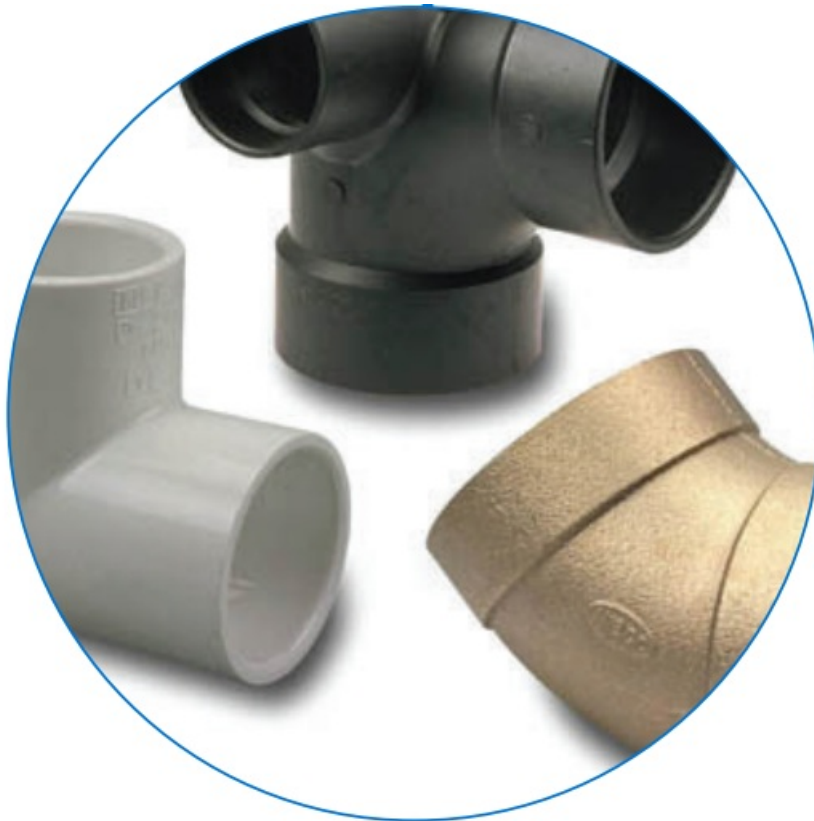


Pressure-rated bronze, iron and alloy-iron gate, globe and check valves

- Pressurated bronze ball valves
- Boiler specialty valves
- Commercial and industrial butterfly valves
- Lined butterfly valves
- Circuit balancing valves and kits
- Carbon and stainless steel ball valves
- ANSI flanged steel ball valves
- Lined ball valves
- Pneumatic and electric actuators and controls
- Grooved ball and butterfly valves
- High performance butterfly valves
- UL/FM fire protection valves
- MSS specification valves
- Bronze specialty valves
- Low pressure gate, globe, check and ball valves
- Frostproof sillcocks
- Quarter-turn supply stops
- Quarterturn low pressure valves
- PVC and CPVC plumbing and industrial ball valves
- Bronze and iron y-strainers
- Sample valves
- Sanitary valves
- Lead-free valves

- Hydronic valves
- Labor saving valves
- Manifold systems
- Water temperature control valves
- System quality valves
- Press x PEX transition valves

FITTINGS



Wrot and cast copper pressure and drainage fittings

- Cast copper alloy flanges
- Powder coated steel companion flanges
- Wrot and cast press fittings
- ABS and PVC DWV fittings
- Schedule 40 PVC pressure fittings
- CPVC CTS fittings
- CPVC CTS-to-metal transition fittings
- Schedule 80 PVC and CPVC systems
- Lead-free fittings
- Press x PEX transition fittings
- Cast bronze push fittings

LEAD-FREE: Weighted average lead content $\leq 0.25\%$
INDUSTRIAL PLASTICS



PVC and Corzan ® CPVC schedule 80 fittings, true union ball and ball check valves, butterfly valves, and specialty valves

- Polypropylene and Kynar ® PVDF schedule 80 pipe, fittings, and true union ball and ball check valves
- Pneumatic and electric actuation systems

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- NIBCOpartner.com




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Documents / Resources

	NIBCO Bench Press GYM Fitting [pdf] Instructions Bench Press GYM Fitting, Press GYM Fitting, GYM Fitting, Fitting
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References

- NIBCO.com
- nibco.com