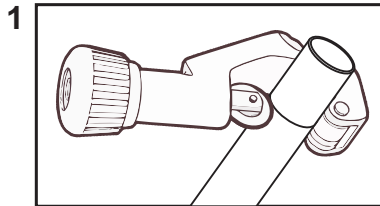


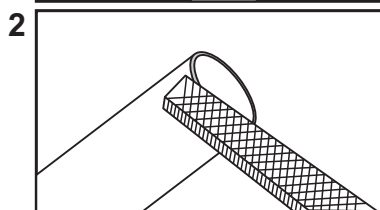
INSTALLATION INSTRUCTIONS

BMI CARBON PRESS BALL VALVES

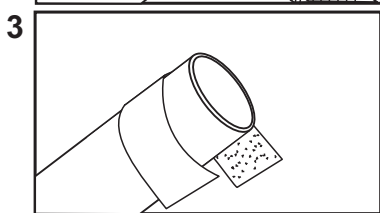
Compatible references: All pipes must comply with the ASTM A53, A106, A135, A795 standards schedule 10~40.



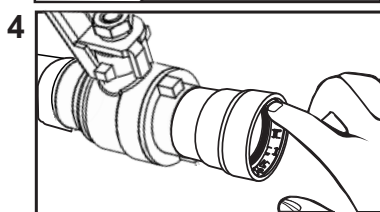
Step 1: Cut the pipe at a square angle using a rotary pipe cutter or a fine tooth metal saw blade.



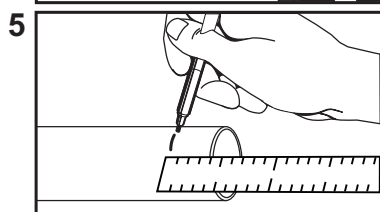
Step 2: Remove any burr from inside and outside of the pipe with a deburring tool or a fine file to prevent damage on the sealing rubber O-Ring.



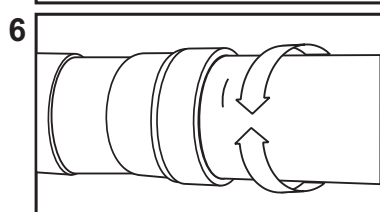
Step 3: Clean the pipe surface if necessary; see page 3 for instructions.



Step 4: Check each of the seal and grip ring for any damages before insertion. Make sure you have the proper sealing ring for the usage (ex. yellow for gas connection).

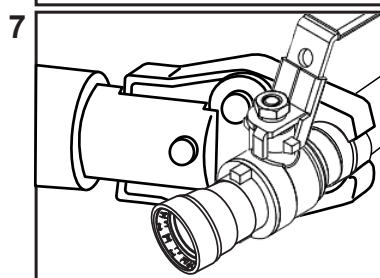


Step 5: Mark the proper insertion depth on the pipe as indicated by the depth chart below. It's important to reach the recommended depth mark to get a properly sealed joint.



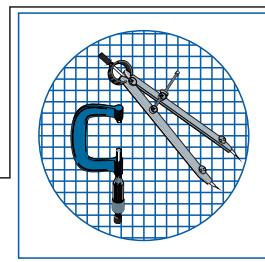
Step 6: Insert the valve end over on the pipe while turning slightly left & right, and make sure to insert up to the mark on the pipe.

Note: The depth mark should be near the edge of the insert end when the tube hits the stop inside the valve insert.



Step 7: For 1/2" to 1", insert and secure the appropriate jaw on the tool for the size of fitting you want to press. For 1 1/4" to 4", install the appropriate jaw saddle on the press end for the size you want to press. Use the pincer tool on the saddle to press the connexion.

Nominal Tube Size	Tube Insertion Depth	
	Inches	mm
1/2"	1 1/16	27
3/4"	1 3/16	29
1"	1 3/8	34
1 1/4"	1 13/16	46
1 1/2"	1 7/8	48
2"	2	50
2 1/2"	1 13/16	46
3"	2 5/16	59
4"	3 1/8	80




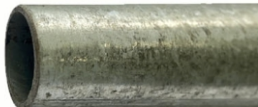






INSTALLATION INSTRUCTIONS

BMI CARBON PRESS BALL VALVES

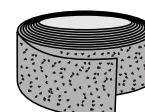
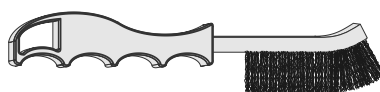
Carbon Steel Pipe preparation for press connection

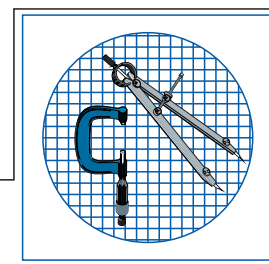
Compatible references: All pipes must comply with the ASTM A53, A106, A135, A795 standards schedule 10~40.

Different Type of Pipe Surface	Surface Description	Needs Prep.	Surface After Preparation	Instructions and Comments
	Clean bare pipe	No		If the pipe surface is smooth and clean, without scratches or dents, then no preparation is necessary.
	Pipe with rust	Yes		If the pipe surface has rust, scratches or dents, then it must be cleaned with a metal wire brush or emery cloth strap.
	Pipe with hot dip galvanized	Yes		If the pipe surface is galvanized (dip or plated), then it must be cleaned with a metal wire brush or emery cloth strap.
	Pipe with shellac paint or lacquer	Yes		If the pipe surface has paint, laquer or shellac, then it must be cleaned with a metal wire brush or emery cloth strap.
	Pipe with epoxy coating	No		If the pipe surface has an epoxy coating and has the same external diameter, then no preparation is necessary.

Manufacturer recommended tools for pipe cleaning:

- Manual metal wire brush
- Rotary metal wire brush
- Emery cloth strap
- Nylon scrubbing pad





INSTALLATION INSTRUCTIONS

BMI CARBON PRESS BALL VALVES

Pressing Distance Recommendations

The "Carbon Press Valves" are packed in individually color coded polybags to keep them clean and free from debris that could affect or damage the sealing element (O-Rings) in the handling. It's the installer's responsibility to make the final visual inspection of the connection prior to installation. All valves should be handled with care and removed from the bag just prior to use to ensure their cleanliness.

To prevent leaks, minimum distances between pressed joints should be as per the adjacent table.

Pressing Near Another Pressed Connection		
Nominal Tube Size	Minimum Distance	
	Inches	mm
1/2 ~ 1"	1/4	6
1 1/4 ~ 4"	1/2	13

Pressing a Valve Near a Wall or a Ceiling

To ensure proper distance for the tool to operate properly, a minimum clearance is required when pressing connections near an obstacle.

Pressing Near a Wall or Ceiling		
Nominal Tube Size	Minimum Distance	
	Inches	mm
1/2 ~ 1"	1 1/2	38
1 1/4 ~ 4"	3/8	10

Pressing a Fitting Near a Welded Connection

To prevent leaks, the distance between a pressed joint and a welded section should be at a minimum of 4 inches.

Welding Near a Pressed Connection

A minimum distance of 36 inches between any welding operation on the pipe and a pressed fitting should be respected.

Pipe Alignment

Since the mechanical pressing force can move the parts involved, it is important to support the alignment of the pipes during the pressing operation to maintain the desired final position.

Installation Pressure Test

Pressed Joint Detection Feature

The "Carbon Press Valves" are made with Pressed Joint Detection Feature, providing fast and easy identification of unpressed connections during the pressure testing process in any installation angle possible.

The design feature provides a path for liquids and/or gases from inside the system past the sealing element of an unpressed connection.

When pressed according to instructions, the Pressed Joint Detection Feature is neutralized, creating a leak proof, permanent connection.

Unpressed connections are located by pressurizing the system with air or water. When testing with water, the suggested pressure is 15 to 85 psi maximum. Tests with air can be dangerous; manufacturer recommends testing compressed air at 1/2 to 45 psi maximum.

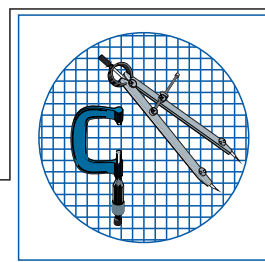
Following a successful test, the system may be pressurized at 100 psi and tested up to a maximum of 200 psi with non-combustable gases or from 200 psi to a maximum of 600 psi with water. The manufacturer recommends to verify with local code requirements before performing these tests.

Manufacturer Recommended Tools:

Milwaukee® M12TM 1/2" to 1"
Milwaukee® M18TM 1/2" to 2"
Ridgid® Compact 1/2" & 3/4"
Ridgid® Standard 1/2" to 2"

Warning:

You must use a recommended and appropriate pressing tool, and must follow the user's manual instructions supplied by the pressing tool manufacturer at all time.



INSTALLATION INSTRUCTIONS

BMI CARBON PRESS BALL VALVES

Type of Usage	Comments	Max. Pressure (psig)	Temperature Range	Compatible with:	
				EPDM	HNBR
Water/Liquids					
Chilled Water	≤50% Ethylene / Propylene glycol	230	See note ¹	✓	
Hydronic Heating	≤50% Ethylene / Propylene glycol			✓	
Isopropyl Alcohol	-			Ambient ³	✓
Fire Sprinkler	NFPA 13, 13D, 13R	175		✓	
Low-Pressure Steam	-	15	Max. 302°F / 150°C	✓	-
Fuels/Oils/Lubricants					
Hydraulic Fluid	Mineral Base	230	Ambient ³		✓
Transmission Fluid	-				✓
Engine Oil	-	150	Ambient ³		✓ ₄
Gear Grease	-		Max. 104°F / 40°C		✓ ₄
Heating Fuel Oil	-	125	Max. -40°F~180°F		✓
Diesel Fuel	Compliant with NFPA 30 and 30A		-40°C~ 82°C		✓
Gases					
Natural Gas, LP Gas	-	125	Max.-40~80°F / 80°C		✓
Compressed Air	Oil Concentration ≤25 mg/m ³	230	Max. 140°F / 60°C	✓ ₂	✓ ₂
	Oil Concentration >25 mg/m ³				✓ ₂
Argon - Ar	-			✓	✓
Nitrogen - N2	-			✓	✓
Carbon Dioxide - CO ₂	Dry			✓	✓
Vacuum	Minimum Absolute Pressure	750μm Hg	Max. 140°F / 60°C	✓	✓
	Maximum Differential Pressure	29.2" Hg			

Note 1: System pressure and temperature ranges depend on sealing element. Any ranges listed above will be overruled by the sealing element listed below.

Note 2: System must contain adequate condensate drainage.

Note 3: Ambient temperatures should be taken as normal operating conditions for the applications not to exceed sealing element limitations.

Note 4: Compliant with CSA 6.32 / ANSI LC-4.

Sealing Element	Operating Temperature	Description
EPDM Ethylene Propylene Diene Monomer	0°~250°F -18°~121°C	Possesses excellent resistance to aging, ozone, sunlight, weathering, environmental influences, most alkaline solutions and chemicals used in a broad range of applications.
HNBR Hydrogenated Nitrile Butadiene Rubber	-40°~180°F -40°~82°C	Widely known for its physical strength and retention of properties after long-term exposure to heat, oil and chemicals. The unique properties attributed to HNBR have resulted in wide adoption in automotive, industrial and high-performance applications.

EPDM

Certified and complies with:

- IAPMO/ANSI CAN Z1157
- UPC (Uniform Plumbing Code)
- National Plumbing Code of Canada
- CRN
- ISO9001

HNBR

Certified and complies with:

- CSA 6.32
- CSA/ANSI LC4
- IAPMO/ANSI CAN Z1157
- UPC (Uniform Plumbing Code)
- National Plumbing Code of Canada
- CRN
- ISO9001

Additional Features:

- Zinc & nickel coating for corrosion resistance on all forged steel parts
- 100% factory pressure tested

Technical specifications can be found here:

CANADA
https://www.bmicanada.com/products/bmi_specs_carbon_press_valves.pdf

USA
https://www.bmicanada.com/products/bmi_specs_carbon_press_valves_us.pdf