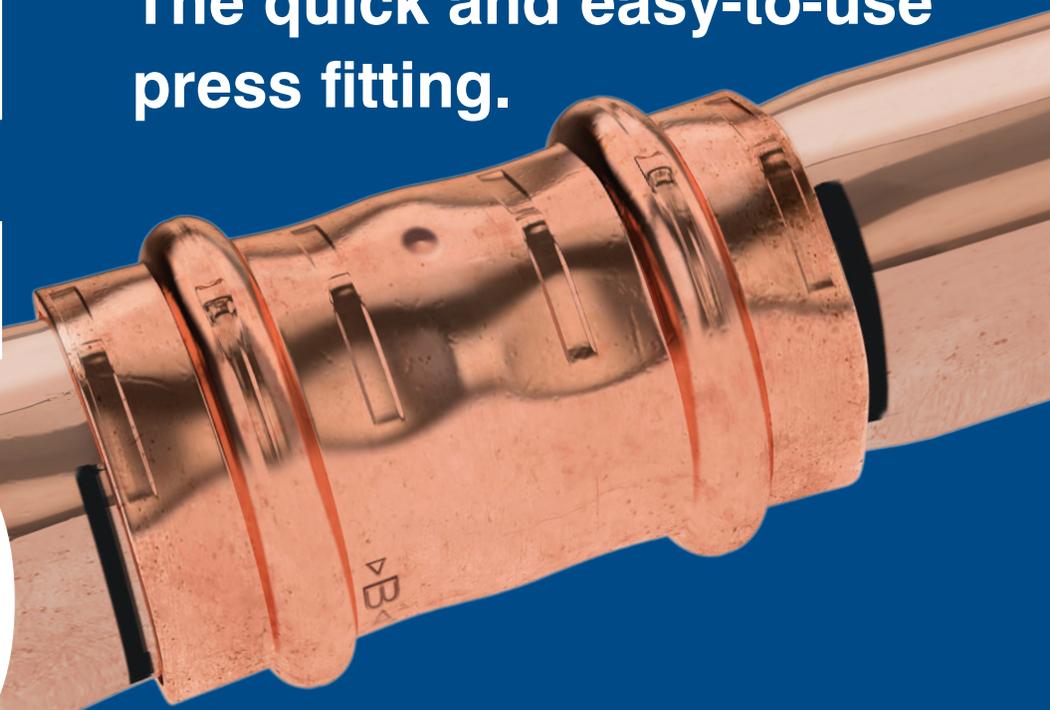


CK C I U Q

The quick and easy-to-use
press fitting.



Engineering Specification August 2019

PROJECT NAME:	
PROJECT REF:	
ENGINEER:	
DATE:	
CONTRACTOR:	
RFI/RPA NUMBER:	

Conex | Bänninger

>B< Press

Conex | Bänninger

>B< Press XL

>B< Press Engineering Specification

1.0 System description

>B< Press fittings are quick and easy to install and are available in copper and lead-free brass. This flame-free range is designed with an innovative 3-point press system, with >B< Press XL (2 1/2" to 4") featuring a stainless steel grip ring for additional strength. Both ranges ensure a secure, permanent leak-free joint that is suitable for multiple applications.

1.1 Features and benefits

The following are benefits of the >B< Press fitting:

- Suitable for potable water, hydronic heating, chilled water, compressed air, non-medical gases, low pressure steam, vacuum.
- Quick and easy to install, saving on labor costs.
- Permanent, flame-free connection - no hot works permit required.
- Suitable for use with hard, half-hard and soft copper tubes to ASTM B88.
- Leak before press indicator assists identification of unpressed joints.
- Manufactured using high quality materials to applicable standards.
- Tested and approved by national and international standard authorities.
- Maximum working pressure 200 psi.
- Fifty year limited warranty, for full terms and conditions please see section 1.7.
- Maximum working temperature 250 °F.
- 3-point press safety feature for added security. (1/2" to 2" only).
- >B< Press XL has a stainless grip ring for additional strength.
- No soldering or brazing consumables required.
- Comprehensive range of fittings - sizes from 1/2" to 4".
- Compatible with commonly available press tools (see section 2.3 for >B< Press and section 3.2 for >B< Press XL).
- Suitable for concealed water installations.



1.2 Areas of service

>B< Press copper fittings are suitable for use in the following applications.

Type of service	Comments	Pressure psi	Temp °F
Fluids/water			
Hot and cold potable water	-	200	32 to 250
Rainwater/gray water	PH 6.5 < 9.5	200	32 to 250
Chilled water	Ethylene glycol/Propylene glycol*	200	0 to 250
Hydronic heating	Up to 50% Ethylene glycol/Propylene glycol	200	32 to 250
Cooling water	Up to 50% Ethylene glycol/Propylene glycol	200	0 to 250
Fuel oil and lubricant			
Ethanol	Pure grain alcohol	200	Ambient
Gases			
Compressed air	Less than 25mg/m ³ oil content	200	Up to 140
Nitrogen	-	200	Up to 140
Argon	Welding use	200	Up to 140
Vacuum	-	24.5 in Hg	Up to 140
Carbon dioxide - CO ₂	Dry	200	Up to 140

* Please refer to glycol manufactures instructions.

1.3 Quality and certification

Conex Bänninger has 110 years of experience in manufacturing innovative products and operates an accredited Quality Management System to EN ISO 9001 and ISO 14001.

>B< Press copper and lead-free brass fittings are tested and certified by independent national certification bodies confirming its suitability and reliability for use with potable water applications.

>B< Press is certified by the following bodies:

Listings and Certificates	
IAPMO	PS 117
NSF/ANSI	61
NSF/ANSI	372
ICC-ES	LC 1002

Standards and Codes Compliance	
ASME	B16.51 Copper and Copper Alloy Press-Connect Pressure Fittings
	B31 Code for Pressure Pipe; Standards B31.1, B31.3 and B31.9
	B1.20.1 Pipe Threads, General purpose, Inch
IAPMO	Uniform Plumbing Code (UPC)
	National Plumbing Code of Canada (NPC)
	California Health and Safety Code - Lead Free Plumbing Products
ICC	International Residential Code (IRC)
	International Plumbing Code (IPC)
	International Mechanical Code (IMC)

Other >B< Press International Certifications	
Australia	Watermark
France	ACS
	CSTB
Germany	DVGW
	DNV
Netherlands	KIWA
Marine	Lloyd's register
Poland	ITB
Sweden	KIWA SE
Switzerland	SVGW
UK	WRAS
	BSI Kitemark

1.4 Storage and handling

Store in a cool and dry place to protect the fittings from contamination, damage and dirt. Keep out of direct sunlight. Fittings should be left in their packaging to preserve the lubrication on the O-rings prior to installation.

1.5 Black EPDM sealing elements

>B< Press and >B< Press XL copper EPDM O-ring contains a peroxide cured rubber seal with high elasticity, and excellent cold and heat performance.

Please refer to section 1.2 for the fitting operating parameters for the different applications.

1.6 Leak before press indicator and system testing

>B< Press benefits from a patented 'leak-before press' O-ring technology (sizes 1/2" to 2"). This tri-lobal O-ring allows water to pass through and create a noticeable leak when the system is tested at low pressure (1.5 to 85 PSI).

The >B< Press XL (2 1/2" to 4") features a larger internal fitting diameter so water can pass through and create a leak path when the system is tested at low pressure (1.5 to 85 PSI).

Low pressure testing for leaks or unpressed joints should be done once the installation has been completed. The benefit from this technology is that it will identify any unpressed joints within the system, allowing the installer to revisit and press any joint that may have been unpressed. The unpressed fittings can then be pressed without having to drain the system, saving time.

1.7 Limited warranty

Conex Universal Ltd. warrants that its >B< Press and >B< Press XL fittings will be free of material defects resulting from errors in manufacture, for fifty (50) years from the date of first purchase by an end user. This warranty will be void if not professionally installed, used and maintained in accordance with the installation and maintenance instructions detailed in the >B< Press and >B< Press XL technical brochure.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THIS DESCRIPTION, EXCEPT FOR ANY REQUIREMENTS THAT ARE LEGALLY MANDATED IN THE JURISDICTION OF THE FIRST END USER'S PREMISES. THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF MATERIALLY DEFECTIVE FITTINGS AT THE SOLE DISCRETION OF CONEX UNIVERSAL LTD.

At the request of Conex Universal Ltd. the claimed defective fitting(s) must be returned to the address opposite*. Conex Universal Ltd. reserves the right to inspect and test claimed defective fittings before deciding whether to repair or replace a fitting claimed to be defective.

This warranty is subject to the following additional conditions:

A. Any claimed defect(s) must be reported to Conex Universal Ltd. within one month of the first occurrence of any such claimed defect, clearly setting out the nature of the claim and the circumstances surrounding it.

B. Conex Universal Ltd. shall have no liability in respect of any fitting claimed to be defective if any of the following circumstances apply:

- defective installation;
- normal wear and tear;
- wilful misconduct;
- negligence or omissions of any party other than Conex Universal Ltd.;
- abnormal working or environmental conditions;
- failure to follow the installation and maintenance instructions detailed in the >B< Press and >B< Press XL technical brochure, and any other instructions of Conex Universal Ltd. communicated through the Conex Bänninger website or its successor, www.conexbanninger.com (the Website) or otherwise;
- misuse (which includes any use of the fittings for a purpose or in a situation / environment or for an application other than that for which it was designed according to the specifications of the fittings as described on the website or in other materials provided to the buyer from Conex Universal Ltd.); or
- alteration or repair of any fitting without the prior written approval of Conex Universal Ltd.

C. At the request of Conex Universal Ltd., the person claiming under this warranty must deliver to Conex Universal Ltd. written evidence of the date of first purchase by an end user of the products claimed to be defective.

*** The address for returns is:**

Customer Services at IBP Group LLC. 24 Cathedral Place, Suite 400, St Augustine, Florida 32084.

Note: This warranty applies in the United States of America only.

2.0 >B< Press 1/2" to 2"

2.1 Fitting construction 1/2" to 2"

The >B< Press copper design has the advantage of a 3-point press profile; two hexagonal mechanical presses on either side of the bead, and one press on the O-ring. The O-ring material compresses to form a permanent leak proof joint.

>B< Press copper fittings have a 'leak before press indicator' that highlights unpressed connections at low pressure. This specifically designed tri-lobal O-ring allows water to pass through and create a small leak when the system is tested at low pressure (1.5 to 85 PSI). Any unpressed joints can be identified during the test phase and pressed, saving valuable time and money.

There is no need to drain down as the pressing operation can be carried out while the water is still in the system.

For a leak-free joint you must use approved pressing jaws, see section 2.3.

>B< Press copper fittings are installed using a press tool with a compatible >B< profile or V profile jaw. Jaws are sized to match the fitting required. When force is exerted through the press tool the jaw closes to make a permanent joint.

Please refer to the approved list of press machines and jaws in section 2.3.

2.2 Tube compatibility chart 1/2" to 2"

Nominal or standard size (inches)	Outside diameter (inches)	Average outside diameter ^A tolerance (inches)		Wall thickness and tolerances (inches)					
				Type K		Type L		Type M	
		Annealed	Drawn	Wall thickness	Tolerance ^B	Wall thickness	Tolerance ^B	Wall thickness	Tolerance ^B
1/4	0.375	0.002	0.001	0.035	0.0035	0.030	0.003	C	C
3/8	0.500	0.0025	0.001	0.049	0.005	0.035	0.004	0.025	0.002
1/2	0.625	0.0025	0.001	0.049	0.005	0.040	0.004	0.028	0.003
5/8	0.750	0.0025	0.001	0.049	0.005	0.042	0.004	C	C
3/4	0.875	0.003	0.001	0.065	0.006	0.045	0.004	0.032	0.003
1	1.125	0.0035	0.0015	0.065	0.006	0.050	0.005	0.035	0.004
1 1/4	1.375	0.004	0.0015	0.065	0.006	0.055	0.006	0.042	0.004
1 1/2	1.625	0.0045	0.002	0.072	0.007	0.060	0.006	0.049	0.005
2	2.125	0.005	0.002	0.083	0.008	0.070	0.007	0.058	0.006

C - Indicated that the material is not generally available or that no tolerance has been established

2.3 Tool compatibility chart 1/2" to 2"

Manufacturer	Press machine	Press jaw manufacturer													
		Rothenberger V/SV Profile			"Klauke KSP4"		Milwaukee V Profile (P*)		NIBCO		RIDGID V Profile		Rems V/ V45 Profile		
		Compact	Compact TT	Standard	Mini SBMX	Standard	M12	M18	Mini	Standard	Compact	Standard	Mini	Standard	
Rothenberger	Romax Compact	✓			✓										
Rothenberger	Compact TT US		✓								✓				
Rothenberger	Romax 3000			✓		✓		✓		✓		✓		✓	
Rothenberger	Romax 4000			✓		✓		✓		✓		✓		✓	
Klauke	MAP219 / MAP2L19	✓			✓										
Klauke	UAP2/UAP3L/ UAP332			✓		✓		✓		✓		✓		✓	
Milwaukee	M12						✓				✓				
Milwaukee	M18			✓				✓				✓		✓	
Nibco	PC-20M								✓						
Nibco	PC-280			✓		✓		✓		✓		✓		✓	
Ridgid	RP 200 / 210 / 240 / 241		✓				✓				✓				
Ridgid	CT400			✓		✓		✓		✓		✓		✓	
Ridgid	RP 320 / 330 / 340			✓		✓		✓		✓		✓		✓	
Rems	Mini Press ACC												✓		
Rems	Power-Press/ Akku-Press			✓		✓		✓		✓		✓		✓	

*Milwaukee press jaws must be marked with a 

Please contact technical@ibpgroup.com for other tool and jaws compatibility.

! Always read the manufacturers instruction book before using press machines and jaws. When using a press tool always wear ear and eye protection.

Use of tools

If other machines and press jaws are used, their suitability for a permanent leak proof connection must be demonstrated by an accredited test. A constant thrust of at least 32 kN and max. 36 kN is a prerequisite to ensure that sufficient power reserves for the dimension of 2" are available, and that high shear forces cannot reduce the lifetime of the pressing jaws or destroy them.

2.4 Product range 1/2" to 2"

Straight Coupler	Reduced Straight Coupler	Slip Coupler	Female Straight Connector	Male Straight Connector
				
PA5270	PA5240	PA5270S	PA5270G	PA5243G
90° Bend	90° Street Bend	Fitting Reducer	90° Bend with Male Thread	90° Elbow with Female Thread
				
PA5002	PA5001	PA5243	PA5001G	PA5090G
45° Obtuse Elbow	45° Obtuse Street Elbow	Tee - Equal	Tee - Reduced Branch	Tee - Reduced End and Branch
				
PA5041	PA5040	PA5130	PA5130RB	PA5130REB
Tee with Female Threaded Branch	Stop End	Wall Plate Elbow	Crossover	Union
				
PA5130G	PA5301	PA4471G	PA5085	PA4340
Male Union	Female Union			
				
PA4341G	PA4340G			

>B< Press x threaded fittings are either NPT(M) for male or FPT(F) for female internal threads.

2.5 Installation instructions 1/2" to 2"

Leave the fittings in the packaging prior to final installation to protect them from contamination and to preserve the lubrication of the O-rings.



1. Cut tube to length

- Use a rotary tube cutter.
- Ensure that the tube is cut square.
- Check the tube has retained its shape and is damage free.



2. Deburr

- Deburr the tube both internally and externally.
- Where possible angle the tube downwards to prevent filings entering the tube.
- Make sure the internal and external surfaces of the tube ends are smooth and free from burrs or sharp edges.



3. Check the fittings

- Check the fitting is the correct size for the tube.
- Check the O-rings are present and correctly seated.
- Additional lubricant (silicon oil) may be used to aid tube insertion.



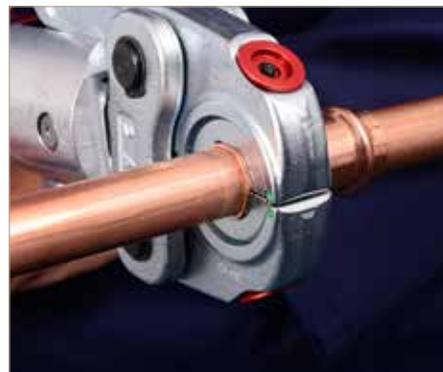
4. Mark the insertion depth

- The tube must be fully inserted into the fitting until it reaches the tube stop.
- To reduce the risk of dislodging the O-ring, rotate the tube (if possible) while slipping it into the fitting.
- Mark the insertion depth on the tube.



5. Assemble the tube and fitting

- Insert the tube fully into the fitting up to the tube stop.
- To reduce the risk of dislodging the O-ring rotate the tube (if possible) while slipping it into the fitting.
- Prior to pressing ensure the tube has not moved out from the fitting socket.
- Use the insertion depth mark as a guide.



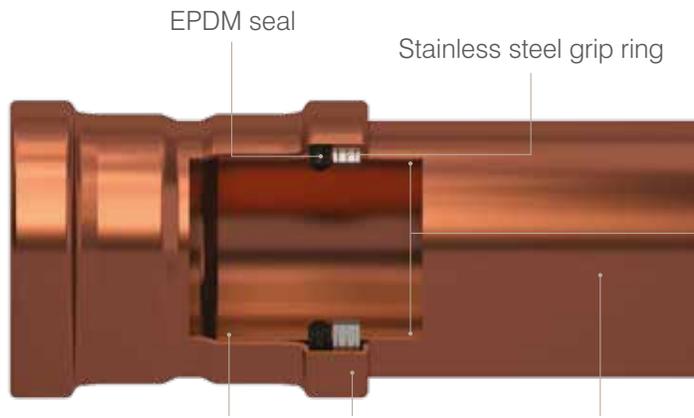
6. Complete the joint with the press tool

- Ensure pipework is correctly aligned prior to pressing.
- Ensure the correct size jaw is inserted into the tool.
- The jaws must be placed squarely on the fitting, locating the groove on the bead.
- The bead on the fitting should fit centrally in the groove of the jaw.
- Depress and hold the start button on the press tool to complete the pressing cycle.
- Pressing is complete when the jaws are fully closed.
- Complete the press cycle once only – do not repress.

3.0 >B< Press XL 2 1/2" to 4"

3.1 Product features 2 1/2" to 4"

>B< Press XL has only two internal parts, the grip ring and the seal. Both parts have an internal diameter larger than the tube, which allows for easy tube insertion and prepress leak indication.



The action of the pressing ring closes the joint and forces the grip ring teeth into the tube making a high strength connection.

>B< Press XL fitting Fitting bead Copper tubing

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3.1.1 Stainless steel grip ring

Full circumference grip ring ensures all round equal grip on the tube and an even seal compression between tube and fitting after pressing.



Stainless steel grip ring

3.1.2 Seal design

Triple point seal on the pressed fitting body counters any pressing distortion and gives greater seal contact area on the tube. The seal is self setting to ensure correct functioning. Seal security and longevity increased as a result.



Fitting section



Triple point seal

3.2 Tube compatibility chart 2 1/2" to 4"

Copper tube compatibility table ASTM B88						
Tube O/D	Soft			Hard		
	Type K	Type L	Type M	Type K	Type L	Type M
2 1/2"	-	-	-	✓	✓	✓
3"	-	-	-	✓	✓	✓
4"	-	-	-	✓	✓	✓

3.3 Tool compatibility chart 2 1/2" to 4"

Manufacturer	Press machine	Press jaw manufacturer
		RIDGID XL-C + V2 Profile
Milwaukee	M18	✓
Rems	Power-Press/ Akku-Press	✓
Ridgid	CT400	✓
Ridgid	RP 320 / 330 / 340	✓
Rothenberger	Romax 4000	✓

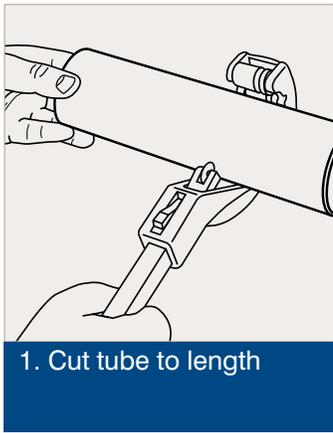
3.4 Product range 2 1/2" to 4"

<p>Straight Connector</p>	<p>Repair Coupling</p>	<p>Fitting Reducer</p>	<p>Male Threaded Straight Connector</p>
			
<p>PA5270</p>	<p>PA5275</p>	<p>PA5243</p>	<p>PA5243G</p>
<p>Threaded Female Straight Connector</p>	<p>90° Elbow</p>	<p>90° Street Elbow</p>	<p>45° Elbow</p>
			
<p>PA5270G</p>	<p>PA5002</p>	<p>PA5001</p>	<p>PA5041</p>
<p>45° Street Elbow</p>	<p>Tee - Equal</p>	<p>Tee - Reduced Branch</p>	<p>Tee- Reduced End and Branch</p>
			
<p>PA5040</p>	<p>PA5130</p>	<p>PA5130RB</p>	<p>PA5130REB</p>
<p>Tee with Female Threaded Branch</p>	<p>Stop End</p>		
			
<p>PA5130G</p>	<p>PA5301</p>		

>B< XL x threaded fittings are either NPT(M) for male or FPT(F) for female internal threads.

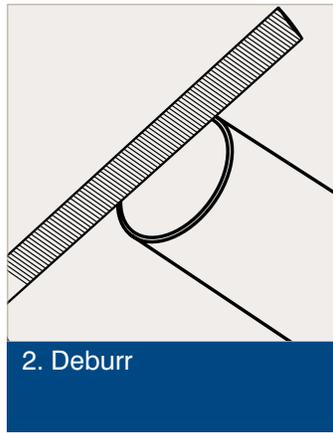
3.5 Installation instruction 1 1/2" to 4"

To install >B< Press XL, a press tool, actuator and compatible sized press ring to fit each size fitting is required. When pressure is exerted through the press tool a permanent joint is made and the fitting cannot be disassembled or reused.



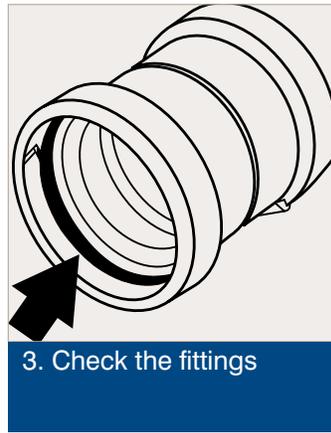
1. Cut tube to length

We recommend the use of a pipe cutter. It is important to ensure that the tube is cut square. Tube ends should be clean and free from scratches no less than the socket length.



2. Deburr

Make sure that the internal and external tube ends are free from burrs or sharp edges by using a half round file or deburring tool. Then wipe the tube ends clean to avoid damaging the O-ring on tube insertion.



3. Check the fittings

Before inserting the tube check seal for correct placement, damage or any ingress of debris. To prevent this occurring we recommend the fittings are retained in packaging up to the point of use.



4. Mark the insertion depth

The tube must be fully inserted into the fitting until it reaches the tube stop in order to make a perfect joint. Marking the insertion depth will ensure that any tube movement is detected, which is especially important if the joints are to be pressed at a later time. The depth marking must be visible on the pressed fitting.



5. Fit the pressing ring

Using the appropriate size pressing ring, open the pressing ring, locate on the fitting bead and close the pressing ring.



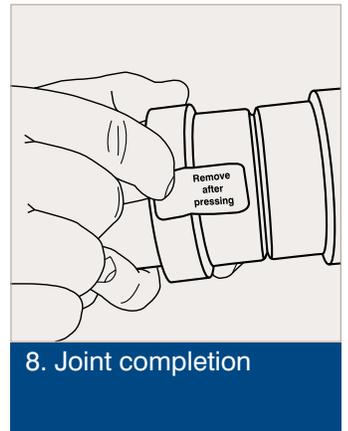
6. Engage the actuator and check insertion depth

With the actuator fitted in the press tool open the actuator and locate the actuator into the aperture of the pressing ring. Check for any tube movement prior to pressing.



7. Press the joint

Press and hold the trigger on the tool until the press cycle of the tool is automatically completed. Keep hands clear of the press actuator and press ring until the cycle is completed. Do not re-press.



8. Joint completion

Remove the actuator from the press ring, remove the press ring from the tube and remove the label to indicate the joint is pressed and complete.

Important

It is important to keep the fitting free of any dust or dirt, and to ensure the seal stays lubricated and protected from damage. Select the correct size of tube and fitting for the job. Ensure that both are clean and free from damage and imperfections. When using a press tool always wear ear and eye protection.

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>B< Press

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>B< Press Gas

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>B< Press XL

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