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>B< Press

Water & Gas 15mm–25mm New Zealand



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Key Features

>B< Press NZ is a versatile press fitting system for use with hard, half hard or annealed copper tube providing a secure, life long, leak-proof joint.

>B< Press NZ fittings are quick to fit, providing a low cost installation solution. The slimline design gives an aesthetically pleasing finish with a secure, permanent joint that can't be tampered with.

>B< Press NZ is suitable for use with copper tube complying with NZS 3501.



Designed for New Zealand

Developed in partnership with Reece, Conex and Rothenberger to meet specific needs of New Zealand plumbers.

To ensure optimal performance, your Rothenberger press tools can be serviced through the Rothenberger Tool Service Department.

Tool Service Support

Flame free

Flame free installation takes away risk of fire on site.

Reliable simplicity

Simple, quick and reliable installation provides low installed cost.

Performance

Corrosion resistant and with a design life of 50 years, >B< Press NZ can be relied on to perform long after installation.

Permanent joint

Secure, permanent joint crimped both sides of deep set O-ring ensures fitting cannot be tampered with.

Practical by design

Lead-in edge aids installation and helps protect O-ring from damage or displacement.

Leak Indicator

The unique pressing indicator in the O-ring shows leaks at low pressures when fittings are not pressed.



Extensive testing

>B< Press fittings undergo rigorous internal testing to ensure they meet New Zealand standards and piping tolerances.



Training and Certification

Reece supports you with training and certification as well as expert advice whenever you need it.



1. General

>B< Press NZ fittings are quick and easy to install and are available in copper and copper alloy. This flame-free range is designed with an innovative 3-point press system, to ensure a secure, permanent leak-free joint that is suitable for multiple applications.

1.1 Quality and certifications

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

>B< Press NZ Water fittings are Branz appraised, and comply with the requirement of AS 3688 and the test requirements of EN 1254-7.

>B< Press NZ Gas fittings comply with the requirement of AS 3688 and the test requirements of EN 1254-7.

Conex Bänninger also has approvals from numerous national and international bodies.

Table 1						
Certific	ations					
>B< Press 15 to 25mm (1/2" to 1")						
New Zealand BRANZ Appraised						
WRAS	GASTE					≡cstb
	0	- Sve Ssie	S. S	HOFOR	AENOR NA	kiwa

1.2 Features and benefits

- Suitable for potable water, hot and cold water installations, chilled water, compressed air, vacuum and gas.
- · Suitable for specified Gas applications.
- Suitable for use with copper tube complying with NZS 3501.
- Pressing indicator assists identification of unpressed joints.
- Manufactured using high quality materials to applicable standards.
- Maximum operating pressure for water fittings is: 1600 P (kPa) – (please see application tables).
- Maximum operating pressure for gas fittings is: 1600 P (kPa) – (please see application tables).
- Max operating temperature: Water 110 °C, Gas 70 °C.
- No soldering or brazing consumables required.
- Comprehensive range of fittings sizes 15mm (1/2") to 25mm (1").
- Suitable for in built water installations.

1.3 Materials and threads

Water

>B< Press NZ water copper fittings are produced from copper and copper alloy materials.

Copper fittings are made from oxygen-free copper CU-DHP (material number EN 12165 or CW 602N)

Copper alloy fittings are produced from Red brass (gunmetal): EN 1982, CC 499K.

All components in contact with water are manufactured from low lead materials complying with the European requirements for materials in contact with drinking water.

The materials meet the requirements of the 'UBA/4MS list of hygienically suitable materials for drinking water', and are ideal for all types of drinking water systems without restriction.

Gas

>B< Press NZ Gas copper fittings are made from oxygen-free copper CU-DHP (material number CW024A).

These can be combined with copper tubes to NZS 3501.

>B< Press NZ Gas fittings are made of high quality alloy materials offering the best protection against corrosion.

Adaptor fittings are made of red brass CuSn5Zn5Pb2-C (material number CC499K-DW to EN 1982).

Screw nuts in screw connections fittings are made from brass CuZn39Pb2 (material number CW617N in accordance with EN 12164).

The threads in >B< Press NZ Gas fittings are made in accordance to EN 10226-1 (ISO 7-1) and are accordingly 'sealed with the thread' (threaded connection of conical male threads/cylindrical female threads R/Rp).

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.

Gas: Important, NO other lubricants such as oils or greases should be applied to the O-ring.

2. Product Suitability & Applications

1.5 Sealing elements (O-ring)

Black EPDM sealing elements

>B< Press EPDM O-rings are peroxide cured rubber seals with high elasticity, excellent cold and heat performance, and fully comply with the recruitments of EN 681-1.

Please refer to section 2 for the fitting operating parameters for the different applications.

Yellow HNBR sealing elements

>B< Press Gas fitting O-rings are made of elastomer HNBR yellow material are fully compliant with the requirements of EN 549 and EN 682.

1.6 Pressing indicator

>B< Press benefits from patented 'pressing indicator' O-ring technology which indicates if a joint has not been pressed. The O-ring contains two in-built water pathways that allows water to pass through and create a noticeable leak when the system is tested at low pressure (10 to 600 kPa).

1.7 System testing

Pressure testing should be carried out to the appropriate standard (e.g. Water - AS/NZS 3500, or for Gas – AS/NZS 5601). For specific information please see section 5.

1.8 Electrical continuity

>B< Press copper and red brass fittings maintain earth continuity without the need for additional continuity straps.



1.9 Recommended water velocities

Please note the maximum allowance for water velocities as per the relevant standards and codes, which includes AS/NZS 3500.1 (30 m/s for non-fire water services).

1.10 COSHH (Control of substances hazardous to health)

It is the responsibility of the end user to ensure that adequate protection is available where required and the necessary information regarding possible health and safety regulations is adhered to. Copper and copper alloy fittings are considered non-hazardous under normal circumstances.

1.11 Tube compatibility

>B< Press fittings can be used on hard, half-hard and soft copper tube to NZS 3501.

1.12 Warranty

A 25 year warranty covers against faults caused by defective manufacture of the fittings. It does not cover faults arising from incorrect installation.

The warranty does not cover any faults arising from competitor fittings used on the same installation nor faults caused by damaged >B< Press fittings (through excessive pressure, for example) where competitor fittings created non-compliant conditions. All >B< Press fittings must be installed by a licensed plumber.



The application parameters referred to, and the tube compatibility must be adhered to when using and connecting >B< Press copper and copper alloy fittings.

Drinking water installations must be planned and operated in accordance with local regulations, codes of practice, by laws and standards governing the installation e.g. AS/NZS 3500.

Water

Application	Comments	kPa (bar)	Temp (°C)	>B< Press	>B< Press Gas
Hot and cold potable water	-	1600 (16)	110 Max	~	×
Pump circulated hot water systems	Compliant with EN 12828	1600 (16)	110 Max	~	×
Hot water heaters AS/NZS 3500	Heating water	1600 (16)	110 Max	~	×
Chilled water and cooling water systems	Water and water-glycol mixtures mixing ratio max. 50/50%	1600 (16)	-10 Min	~	×
Rainwater	-	1600 (16)	Ambient	~	×
Industrial and processing water	Prepared, softened, partially and partially de-ionized water with a pH of $6.5 \le 9.5$	1000 (10) 1600 (16)	95 Max 25 Max	V	×

Oils, cooling materials and lubricants

Application	Comments	kPa (bar)	Temp (°C)	>B< Press	>B< Press Gas
Engine oils and Lubricants (Petroleum-based)	Consultation required	1000 (10)	70 Max	×	~
Heating oil, Diesel in acc with EN 590	-	500 (5)	-20 to 40	×	✓

Gases

Application	Comments	kPa (bar)	Temp (°C)	>B< Press	>B< Press Gas
Natural Gas, Liquid gas, Propane, Butane, Methane	The scope of AS 5601 for all gas systems is restricted to 200 kPa.	1000 (10)	-20 to 70	×	~
Argon	For welding	1600 (16)	70 Max	~	~
Carbon Dioxide (Dry Gas)	Dry CO ²	1600 (16)	70 Max	~	~
Carbon Monoxide	-	1600 (16)	70 Max	~	~
Compressed Air	Oil Concentration < 25mg/m ³ Oil Concentration > 25mg/m ³	1600 (16)	70 Max	✓ ×	ン ン
Forming Gas, dry / inert gas	80% Argon / 20% CO2	1600 (16)	70 Max	~	~
Helium	-	1600 (16)	70 Max	~	~
Krypton	-	1600 (16)	70 Max	~	~
Neon	-	1600 (16)	70 Max	~	~
Nitrogen	Nitrogen Gas	1600 (16)	70 Max	~	~
Synthetic Air	-	1600 (16)	70 Max	~	~
Vacuum	-	-80 (-0.8)	Ambient	~	~
Xenon	-	1600 (16)	70 Max	~	~



>B< Press copper and copper alloy fittings have several accreditations for use in drinking water systems see section 1.1.

A variety of tube materials including copper, internally tin-plated copper and stainless steel may all be combined in one system.

Please see section 5 for corrosion protection information.

3. Thermal Expansion

4. Corrosion Resistance, Frost / Heat Protection

3.1 Effects of expansion

Using the general equation for change in length (linear expansion) which is: $DL = L \times Dt \times a$ Where: DL = change in length in mm L = length in m Dt = change in temperature °C a = coefficient of linear expansion.

The coefficient of linear expansion for copper is 16.8 x 10-6°C. For example, a 10m length of copper tube, irrespective of its size, wall thickness or temper, will increase in length by 10.08mm a temperature rise of 60°C. Tubes installed on hot water services must be free to accommodate this expansion; otherwise stresses will build up in the pipework that may lead to joints being pulled apart and/or tubes fracturing. Clearly the magnitude and frequency of such changes in length will determine the life of the joint or failure of the tube.

Table 4 shows the amount of tube expansion for a given temperature rise. In the case of tube in domestic hot water and heating installations the limited size of rooms and hence straight tube runs, together with the many bends and offsets that normally occur, will result in thermal movement being accommodated automatically. However where long straight tube runs, exceeding 10m, are encountered, allowance for expansion should be made.

A quick, economic and effective way of accommodating thermal expansion is to simply incorporate the horseshoe or compensating bend to the system design.

3.2 Expansion devices



By change of direction Horseshoe or compensating bend

Where copper tubes pass through walls, floors and ceilings, they should be able to move as a result of expansion and contraction. This can be arranged by passing the tube through a sleeve or length of larger diameter tube fixed through the whole thickness of the wall, floor, ceiling, or by means of flexible joints on either side of the wall.

Short stubs to and from radiators, connected to relatively long straight runs should also be avoided. This can usually be achieved by introducing an expansion loop, thereby increasing the length of pipework fixed between the flow/return legs and the radiator connection. However, expansion accommodation techniques such as the use of loops and horseshoes may not be sufficient to accommodate large expansions and in such cases the use of the bellows type couplers may be necessary.

Table 4 shows the increase in length due to thermal expansion as a function of change in temperature Δt and the length of the tube, irrespective of diameter, temper or wall thickness.

Table 4

Tube	Change in length mm with temperature difference $\Delta t^\circ C$							
length m	Δt=30°	∆t=40°	∆t=50°	Δt=60°	Δt=70°	Δt=80°	∆t=90°	Δt=100°
1.0	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68
2.0	1.01	1.34	1.68	2.02	2.35	2.69	3.02	3.36
3.0	1.51	2.02	2.52	3.02	3.53	4.03	4.54	5.04
4.0	2.02	2.69	3.36	4.03	4.70	5.40	6.05	6.72
5.0	2.52	3.36	4.20	5.04	5.88	6.72	7.56	8.40
10.0	5.04	6.72	8.40	10.80	11.76	13.44	15.12	16.80
15.0	7.56	10.80	12.60	15.12	17.64	20.16	22.68	25.20
20.0	10.08	13.44	16.80	20.16	23.52	26.88	30.24	33.60
25.0	12.60	16.80	21.00	25.20	29.40	33.60	37.80	42.00

ΔL dimensional increase is stated in mm

4.1 Internal corrosion

Systems containing copper tube with copper and copper alloy fittings generally have a high resistance to internal corrosion. However, it is recommended when systems have been hydrostatically pressure tested and are not going into immediate service, they are fully drained down and blown out with dry air. Alternatively, if this is impracticable, the system should be left 'wet', and flushed at regular intervals prior to being commissioned to reduce carbon film cold water pitting and the potential for legionella in stagnant water.

4.2 External corrosion

Pipework may need to be protected from external corrosion causing construction materials, corrosive environments or abrasion. A variety of solutions are available, ducting, insulation, corrosion resistant paint finishes and anti-abrasive tape, the most effective solution should be chosen.

4.3 Thermal insulation

Thermal insulation of tubes and fittings should be implemented in accordance with national codes and standards including AS/NSZ 3500 for water systems and AS 5601 for gas systems.

4.4 Protection against heat gain and frost

Regulations require that all water services (except warning or overflow pipes) shall be protected from freezing temperatures and heat gain. This is best achieved by protecting the system by use of a suitable thickness of insulation or in the case of particular situations such as unheated roof spaces that require special care, a self-regulating trace heating tape.

In non-drinking water applications, if a frost protection inhibitor is to remain in the pipelines permanently, at least one concentration test must be carried out annually. All chemical additions must be agreed before use to rule out negative interactions with materials and sealing elements (O-rings).

4.5 Connecting to other materials

Copper, copper alloys and stainless steel can be incorporated into a single system with no restriction of flow direction.

However, a direct connection between >B< Press copper fittings and stainless steel tube should be avoided. In such cases, a copper alloy spacer of at least 50mm in length or dielectric union should be used for this connection.

For further information on the prevention of corrosion, please refer to the AS/NZS 3500 series for water systems and AS 5601 for gas installations.



5. Pressure Testing

7. Loss Coefficients

For water applications

It is preferable that testing a system containing >B< Press fittings is initially carried out pneumatically with oil-free compressed air or inert gas (e.g. nitrogen).

This is particularly important where systems are to remain idle for extended periods of time, and if tested hydrostatically and not properly drained or flushed (see section 4.1), there is the potential for bacteria growth and or corrosion. Pneumatic testing shall be carried out to a maximum of 30 kPa and the pressure shall be increased slowly and incrementally.

A hydrostatic test shall only be carried out immediately prior to commissioning the installation. The system shall be filled with clean drinking water against an open high point valve allowing all trapped air to be removed from the network. Once free of trapped air, the high-level valve should be closed and the system topped up, at that stage testing should be completed between 10-20 kPa to ensure any un-pressed joints are identified.

The recommended system test pressure should be in accordance with the requirements of AS/NZS 3500 and or ONORM EN 806-4:2010. A full inspection should then be carried out to identify any leaks. During hydrostatic or pneumatic testing, any joints identified as unpressed and are showing signs of leakage should be pressed upon the return to atmospheric pressure, however it is essential the tube is fully inserted to the tube stop prior to pressing.

All joints shall remain uncovered and visible when pressure testing systems containing >B< Press fittings.

Pressure testing should be carried out in accordance with national regulations and appropriate specifications drawn up and a risk assessment must be completed prior to testing.

For gas applications

Testing shall be carried out in accordance with the requirements of AS/NZS 5601.

During testing, any joints identified as unpressed and are showing signs of leakage should be pressed upon the return to atmospheric pressure, however it is essential the tube is fully inserted to the tube stop prior to pressing.

6. System Commissioning

To ensure the quality and safety of hot and cold-water supply systems always follow best practice techniques in their design, installation, commissioning, and maintenance.

A reliable and predictive regime of commissioning that does not have any detrimental effect on the longevity of the system should be in place as required by national, regional and local laws and regulations.

The chemicals used in the pre-commissioning, if incorrectly administered can have a serious effect on the systems' life, therefore the choice of chemicals is dependent on the particular site conditions, the materials used and the method(s) of construction. Where a temporary mains supply(s) is to be used it should be cleaned and chlorinated in accordance with national regulations before being used for system filling and flushing.

For more information on chlorination, please refer to document 'pre-commissioning of systems' available at www.conexbanninger.com.

Note: Commercial anti-corrosion chemicals must not to be used on potable water systems.

Table 5		1		
Symbol	Designation	ζ	Appli	cation
			DW	н
	Angle or elbow reference value in accordance with DIN 1988 T3	0,70	x	x
	Angle 90° r/d = 0,5 $(r/d = 1,2)$ = 1,0 with fittings = 2,0 complying with DIN EN 1254) = 3,0	1,0 0,35 0,20 0,15	x x x x	X X X X
$= \sum_{i=1}^{n}$	Angle $\beta = 90^{\circ}$ = 60° = 45°	1,3 0,8 0,4	X X X	X X X
$\overline{}$	Crossover	0,5	х	х
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Branch, square flow separation	1,3	х	x
	Flow merging	0,9	x	x
<u>·</u>	Clearance at flow merging	0,3	x	x
+ <u> </u>	Clearance at flow merging	0,6	x	х
<u>*-</u>	Counter-flow at flow merging	3,0	x	х
<u> </u>	Counter-flow at flow separation	1,5	x	x

Symbol	Designation		ζ	Applic	cation
				DW	н
ľ∟	Distributor outle	t	0,5	х	х
t ^v [Collective inlet		1,0	x	x
<u> </u>	Reservoir outlet		0,5	х	
<u> </u>	Inlet		1,0	х	x
	Reducer		0,4	х	х
ν <u>β</u>	Constriction β – constant =	30° 45° 60°	0,02 0,04 0,07	x x x	x x x
vB	Expansion β – constant =	10° 20° 30° 40°	0,10 0,15 0,20 0,20	X X X X X	x x x x x
	Expansion bend	s	1,0	x	x
vß{	Compensator		2,0	x	x
νβ	Compensator		2,0	x	x

Symbol	Designation	ation ζ		Application		Sym
			DW	н		
<u></u>	Branch, curved flow separation	0,9	х	x		
<u> </u>	Flow merging	0,4	x	x		1
<u>-</u>	Clearance at flow separation	0,3	x	х		L
<u>−_</u> *	Clearance a flow merging	0,2	x	x		
\swarrow	Angle valves DN 10 DN 15 DN 20 to DN 50 DN 65 to DN 100	7,0 4,0 2,0 3,5 4,0	X X X X X	X X X X X		
Ŕ	Diaphragm valves DN 15 DN 20 DN 25 to DN 32 DN 40 to DN 100	10,0 8,5 7,0 6,0 5,0	X X X X X X	X X X X X X		
\bowtie	Shutter valves Piston valves Ball valves DN 10 to DN 15 DN 20 to DN 25 DN 32 to DN 150	1,0 0,5 0,3	x x x	X X X		[
	Radiator valves	4,0		Х		
	Control valve	2,0		Х		
\bowtie	Pressure regulator fully open	30,0		х		

nbol	Designation	ζ	Application		
			DW	н	
\rtimes	Shut-off valve Straight seat valve DN15 DN20 DN25 DN32 DN40 to DN100 Angle seat valve DN 15 DN20 DN 25 to DN50 DN65	10,0 8,5 7,0 6,0 5,0 3,5 2,5 2,0 0,7	x x x x x x x x x x	X X X X X X X X X	
	Return flow inhibitor DN 15 to DN 20 DN 25 to DN 40 DN 50 DN 65 to DN 100	7,7 4,3 3,8 2,5	X X X X		
	Control valve with return flow inhibitor DN 20 DN 25 to DN 50	6,0 5,0	X X		
\sum	Valve tapping sleeve DN 25 to DN 80	5,0	x		
0 0	Boiler	2,5		x	
	Heating radiator	2,5		Х	
\ge	Panel radiator	3,0		х	

8. >B< Press NZ Fittings

>B< Press NZ fittings are quick and easy to install and are available in copper and copper alloy. This flame-free fitting is designed with an innovative 3-point press system to ensure a leak-free, secure, permanent joint and is suitable for multiple applications.

9. Fitting Construction

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

>B< Press NZ copper fittings have a 'pressing indicator' that highlights unpressed connections at test pressures of 10 to 600 kPa. Any unpressed joints can easily 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.



>B< Press NZ fittings are installed using a press tool with a mother jaw and inserts. Inserts 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 10.

10. Compatible Press Tools

10.1 Tool chart

Table 6						
1/2" to 1" Compact machines						
Manufacturer	Press machine	Press jaws	Insert Size	Jaw profile		
			15mm (1/2")			
Rothenberger	Compact TT	7701218	20mm (3/4")	>B< (Bänninger)		
			25mm (1")			

11. Installation Requirements

11.1 Space required for the pressing process

The following minimum clearances are required from structural components to allow operation of tool for press fitting.

Table 8





Table 7

Space required for the pressing process between fittings					
External tube	X	Y			
Size Inch	mm	mm			
15 (1/2")	33	69			
20 (3/4")	33	69			
25 (1")	33	69			

Space required for the pressing process between fittings			
External tube	Х	Y1	Y2
Size Inch	mm	mm	mm
15 (1/2")	38	55	80
20 (3/4")	38	55	80
25 (1")	38	55	80

11.2 Insertion depth and minimum distances between pressings

Due to reforming of the tube profile when pressed, it is advised that a minimum distance is allowed between each fitting.



Table 9

Insertion depth and minimum distance between pressings				
Size	External – Ø pressing bead	Minimum distance	Minumum tube length	Insertion depth
Inch	D – mm	A – mm	L – mm	E – mm
15 (1/2")	22.6	10	55	22.5
20 (3/4")	30	20	66	23
25 (1")	37	20	70	25

11.3 Minimum distance for press fittings from an existing brazed joint

To ensure proper sealing of both the brazed and pressed joints, the following minimum distances must be maintained between the joints. Please see Table 10 for further information.

Table 10

Minimum distance from a brazed joint		
Tube size mm	mm	
15 (1/2")	5	
20 (3/4")	5	
25 (1")	5	

Note: It is important that there is no residual solder or other foreign debris on the tubing to be inserted into the >B< Press fitting. The surface condition on the area of press joint should be as tube standard NZS 3501.

11.5 >B< Press tube compatibility table

>B< Press NZ fittings can be used on hard, half-hard and soft copper tube to NZS 3501 with the wall thicknesses stated below.

Table 12

Tube wall thic	kness (mm)						
Size	21.875 mm	Copper – R22	20	Copper – R25	50	Copper – R29	0
15 (1/2")	14.73	1.02	-	0.7	1.02	-	_
20 (3/4")	21.08	1.02	-	0.9	1.02	-	—
25 (1")	27.43	-	_	_	_	1.02	_

11.4 Minimum brazing distance to an existing pressed fitting

Caution: Brazing or soldering near to >B< Press NZ joints should be avoided as this may cause the seal to degrade due to heat transfer. Table 11 states the minimum distance away from the press joint which is acceptable to braze. If this distance cannot be maintained then adequate precautions must be taken such as fabricating the brazed section prior to assembly with the press fittings, wrapping in a wet rag or applying a hot block, to prevent heat transfer to the press fitting during brazing.

Ta	b	le	1	1
	~	· •		

Minimum distance brazing		
Tube size mm	mm	
15 (1/2")	450	
20 (3/4")	600	
25 (1")	700	

12. >B< Press NZ Installation Process

13. >B< Press NZ Jaw Assembly Process

Leave the fittings in the packaging prior to final installation to protect them from contamination and to preserve the lubrication of the O-rings. Please note the space required for pressing tools (see section 11.1).



- 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 in a clockwise direction 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.
- · Important: Please ensure that the tube surface is free from any deep scores or scratches.



- 3. Check the fittings
- Check the fitting is the correct size for the tube.
- Check the O-rings are present and correctly seated.
- · It is good practice to add a small amount of Conex Bänninger press fitting lubricant to the O-rings to aid tube insertion.



- 4. Assemble & 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.
- · Prior to pressing ensure the tube has not moved out from the fitting socket.
- Use the depth gauge for >B< Press NZ.
- · Insert tube into correct socket in depth gauge
- Check window to see the tube is fully inserted.
- · Mark the insertion depth on the tube.



- 5. Complete 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.
- Important: The joint is complete after one full cycle of the tool. DO NOT crimp any fitting more than once.



- 6. Mark the completed joint
- Mark the completed joint . after pressing.
- This enables joints to be inspected easily before testing.

Fit the inserts





1. Check insert sizes

- Select the correct size of inserts for the fitting being pressed.
- Important: Ensure that both insert halves are the same size.

Removing the inserts



- insert into the mother jaw from the side.
- Ensure keying is aligned and the dot lines up with the mouth of the iaw when in place.





6. Remove upper insert

• Push the upper insert out.

- To remove the existing insert push out each part, one at a time.
- The insert will slide through to the other side of the jaw once the pressure from the spring loaded ball bearing is overcome.

Things to remember – Mother jaw and inserts

- For >B< Press NZ fittings a mother jaw with interchangeable inserts is available. 19kN press tools can press fittings up to 25mm (1") in size.
- Always remove the jaw from the press tool prior to changing an insert.
- Inserts come in two parts (pairs) and are keyed to slide into the jaw from the side. A spring loaded ball bearing secures each insert in place.
- The keying on the inserts and mother jaw ensures the inserts can only be inserted in the mother jaw in the correct orientation.





5. Mother iaw with





- 3. Push in lower insert
- Push the second half of the insert into the mother jaw from the side.
- Ensure keying is aligned and the dot lines up with the mouth of the iaw when in place.



4. Check the dots Always check that the dots on each insert line up with the mouth of the jaw and that insert halves are the same size before pressing any fittings.



7. Remove lower insert • Push the lower insert out.



8. Store in the case Store the inserts you have removed in their carrying case.

- The mother jaw and inserts are non service items. The mother jaw should be cleaned and lubricated regularly, and the inserts checked periodically for wear and tear, with worn inserts replaced. Inserts should be replaced every 2 years.
- For your safety, always wear ear and eye protection when using a press tool. If a mother jaw or insert is damaged they MUST NOT BE USED, replace immediately.

14. The Range – Water

90° Elbow with Female Thread	90° Elbow with Male Thread	Male Straight Connector	Female Straight Connector
Wall Plate Elbow	Elbow M&F – 90°	90° Bend	Elbow M&F – 45°
Elbow – 45°	Tee – Equal	Tee – Reduced Branch	Tee – Reduced End & Branch
			all and all a
Reduced Straight Coupler	Fitting Reducer	Straight Coupler	Repair Coupler
Stop End	Depth Gauge & Marker Pen	Tool case includes: Mother jaw, 3 x jaw inserts, tube cutter, deburrer, depth gauge & marker pen.	Fitting Lubricant (DO NOT use with Gas NZ fittings)
	2Re Dirace	Cores Barners	Constants on Constants on the Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Constants Consta

90° Elbow with	Female Thread			1.	.1
Code	Fitting size	L	L1	z	Z1
406224	15 x 15 (1/2" x 1/2")	46.00	21.25	23.50	13.5
406230	20 x 20 (3/4" x 3/4")	52.00	27.00	29.00	16.3



90° Elbow with	Male Thread			+	
Code	Fitting size	L	L1	z	Z1
406238	15 x 15 (1/2" x 1/2")	44.00	30.00	21.50	17.00
406239	20 x 20 (3/4" x 3/4")	49.00	35.00	23.00	19.00



Male Straight	Connector			<u> </u>
Code	Fitting size	L	z	S
406275	15 x 15 (1/2" x 1/2")	41.30	18.80	22.00
406237	15 x 20 (1/2" x 3/4")	48.50	25.50	28.00
406235	20 x 15 (3/4" x 1/2")	46.00	23.50	28.00
406236	20 x 20 (3/4" x 3/4")	46.00	23.00	27.00
406274	25 x 20 (1" x 3/4")	50.00	27.00	32.00
406231	25 x 25 (1" x 1")	50.80	25.80	34.00



Female Straight Connector

Code	Fitting size	L	min L1	Z	S
406227	15 x 15 (1/2" x 1/2")	39.50	15.00	2.00	26.00
406228	20 x 20 (3/4" x 3/4")	45.50	16.30	6.20	30.50
406225	25 x 25 (1" x 1")	50.50	19.10	8.90	37.50

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Code	Fitting size	L	L1	z	Z1	ød
406261	15 x 15 (1/2" x 1/2")	46.00	32.50	22.00	20.80	40.00
406262	20 x 20 (3/4" x 3/4")	52.00	48.00	28.75	35.70	50.00



Elbow M&F – 9	90°		_+	
Code	Fitting size	L	ы	Z
406259	15 (1/2")	38.00	44.50	15.50
406260	20 (3/4")	46.50	51.00	23.50
406257	25 (1")	55.00	63.00	30.00



90° Bend				
Code	Fitting size		L	z
406248	15 (1/2")		38.00	15.50
406250	20 (3/4")		46.50	23.50
406245	25 (1")		55.00	30.00





Elbow M&F – 45°

Wall Plate Elbow

Code	Fitting size	L	ы	Z
406577	15 (1/2")	30.00	32.50	7.50
406576	20 (3/4")	34.50	37.00	11.50
406258	25 (1")	38.00	41.00	13.00

Elbow – 45°			
Code	Fitting size	L	Z
406242	15 (1/2")	30.00	7.50
406316	20 (3/4")	34.50	11.50
406244	25 (1")	38.00	13.00

Tee – Equal					
Code	Fitting size	L	L1	Z	Z1
406297	15 x 15 x15 (1/2" x 1/2" x 1/2")	82.00	33.00	18.50	10.50
406302	20 x 20 x 20 (3/4" x 3/4" x 3/4")	92.00	39.00	23.00	16.00
406298	25 x 25 x 25 (1" x 1" x 1")	96.00	43.00	23.00	18.00



Tee – Reduced Branch**

Code	Fitting size	L	L1	z	Z1
406312	20 x 15 x 20 (3/4" x 1/2" x 3/4")	80.00	35.00	17.50	12.50
406309	25 x 15 x 25 (1" x 1/2" x 1")	81.00	41.00	17.50	18.00
406310	25 x 20 x 25 (1" x 3/4" x 1")	91.00	42.00	20.50	17.00

**The above code reads end, branch, end.



Tee – Reduced End and Branch**

Code	Fitting size	L	L1	L2	z	Z1	Z2
406313	20 x 15 x 15 (3/4" x 1/2" x 1/2")	40.00	35.00	43.00	17.00	12.50	20.50
406315	20 x 20 x 15 (3/4" x 3/4" x 1/2")	43.00	36.00	46.00	20.00	13.00	23.50

**The above code reads end, branch, end.

All above measurements are in mm unless stated differently.









Reduced	Straight	Coupler
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Code	Fitting size	L	Z
406281	20 x 15 (3/4" x 1/2")	55.00	9.50
406278	25 x 15 (1" x 1/2")	63.50	16.00
406279	25 x 20 (1" x 3/4")	58.00	10.00

Stop End			
Code	Fitting size	L	L1
406294	15 (1/2")	25.00	22.50
406296	20 (3/4")	26.00	23.00
406291	25 (1")	28.00	25.00





Fitting Reducer					
Code	Fitting size	D	L	L1	Z
406271	20 x 15 (3/4" x 1/2")	21.04	56.00	25.00	33.50
406272	25 x 15 (1" x 1/2")	27.39	67.50	25.50	45.00
406268	25 x 20 (1" x 3/4")	27.39	58.50	27.50	35.50

Depth Gauge & Marker Pen			
Code	Size		
406317	15 to 25 (1/2" to 1")		

New Zealand Tool case*

Description

Code

7701218





en algin ee ap			
Code	Fitting size	L	z
406254	15 (1/2")	50.00	5.00
406256	20 (3/4")	56.00	10.00
406251	25 (1")	59.40	9.40



Repair Coupler

nepair coupie		
Code	Fitting size	L
406288	15 (1/2")	50.00
406290	20 (3/4")	56.00
406285	25 (1")	59.40

	Fitting Lubricant*				
	Code	Size			
	406047	100 ml			
*DO NOT use with Gas fittings.					

All above measurements are in mm unless stated differently.





>B< Press Tool Case New Zealand (Jaw and 3 inserts)

*Tool case includes: Mother jaw, 3 x jaw inserts, tube cutter, deburrer, depth gauge & marker pen.



15. The Range – Gas*

90° Elbow with Female Thread	90° Elbow with Male Thread	Male Straight Connector	Female Straight Connector
Wall Plate Elbow	Elbow M&F – 90°	90° Bend	Elbow M&F – 45°
Elbow – 45°	Tee – Equal	Tee – Reduced Branch	Tee – Reduced End
Reduced Straight Coupler	Fitting Reducer	Straight Coupler	Repair Coupler

Stop End



*Important: The Gas fittings have a factory applied lubricant. No other/extra lubricants such as oils or greases should be appled to the fittings O-rings.



90° Elbow with Female Thread					
Code	Fitting size		L1	z	Z1
406128	15 x 15 (1/2" x 1/2")	46.00	21.25	23.50	13.50
406137	20 x 20 (3/4" x 3/4")	52.00	27.00	29.00	16.30



90° Elbow with Male Thread					
Code	Fitting size		L1	z	Z1
406135	15 x 15 (1/2" x 1/2")	44.00	30.00	21.50	17.00
406136	20 x 20 (3/4" x 3/4")	49.00	35.00	23.00	19.00

Male Straight 0	Connector			
Code	Fitting size		Z	S
406131	15 x 15 (1/2" x 1/2")	41.30	18.80	22.00
406132	15 x 20 (1/2" x 3/4")	48.50	25.50	28.00
406170	20 x 15 (3/4" x 1/2")	46.00	23.50	28.00
406133	20 x 20 (3/4" x 3/4")	46.00	23.00	27.00
406130	25 x 20 (1" x 3/4")	50.00	27.00	32.00
406129	25 x 25 (1" x 1")	50.80	25.80	34.00

Female Straight	Connector
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Code	Fitting size	L	min L1	Z	S
406157	15 x 15 (1/2" x 1/2")	39.50	15.00	2.00	26.00
406126	20 x 20 (3/4" x 3/4")	45.50	16.30	6.20	30.50
406127	25 x 25 (1" x 1")	50.50	19.10	8.90	37.50

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w					ad L		
	Fitting size	L	ы	Z	Z1	ød	
	15 x 15 (1/2" x 1/2")	46.00	32.50	22.00	20.80	40.00	
	20 x 20 (3/4" x 3/4")	52.00	48.00	28.75	35.70	50.00	



Elbow M&F – 9	90°			<u>+ i </u>	
Code	Fitting size	L	L	L1	Z
406557	15 (1/2")	3	38.00	44.50	15.50
406156	20 (3/4")	4	46.50	51.00	23.50
406155	25 (1")	5	55.00	63.00	30.00



90)° Bend		<u>-</u>	
С	ode	Fitting size	L	Z
4	06145	15 (1/2")	38.00	15.50
4	06147	20 (3/4")	46.50	23.50
4	06142	25 (1")	55.00	30.00



Elbow M&F – 45°

Wall Plate Elbow

406122

406123

Code	Fitting size		L1	z
406578	15 (1/2")	30.00	32.50	7.50
406579	20 (3/4")	34.50	37.00	11.50
406558	25 (1")	38.00	41.00	13.00

Elbow – 45°		
Code	Fitting size	
406554	15 (1/2")	
406555	20 (3/4")	

25 (1")

406138

Tee – Equal					
Code	Fitting size	L	ы	Z	Z1
406195	15 x 15 x15 (1/2" x 1/2" x 1/2")	82.00	33.00	18.50	10.50
406196	20 x 20 x 20 (3/4" x 3/4" x 3/4")	92.00	39.00	23.00	16.00
406197	25 x 25 x 25 (1" x 1" x 1")	96.00	43.00	23.00	18.00

Tee – Reduce	d Branch**	Ó			
Code	Fitting size		L1	Z	Z1
406208	20 x 15 x 20 (3/4" x 1/2" x 3/4")	80.00	35.00	17.00	12.50
406205	25 x 15 x 25 (1" x 1/2" x 1")	81.00	41.00	16.50	19.00
406206	25 x 20 x 25 (1" x 3/4" x 1")	91.00	42.00	20.50	19.00

**The above code reads end, branch, end.



Tee – Reduced End**

Code	Fitting size	L	L1	L2	Z	Z1	Z2
406556	20 x 15 x 15 (3/4" x 1/2" x 1/2")	40.00	35.00	43.00	17.00	12.50	20.50
406209	20 x 20 x 15 (3/4" x 3/4" x 1/2")	43.00	36.00	46.00	20.00	13.00	23.50

**The above code reads end, branch, end.

All above measurements are in mm unless stated differently.

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		Z
:	30.00	7.50
:	34.50	11.50
:	38.00	13.00





|--|--|



L1

Fitting size L Z 406182 20 x 15 (3/4" x 1/2") 55.00 9.50 406177 25 x 15 (1" x 1/2") 63.50 16.00 406178 25 x 20 (1" x 3/4") 58.00 10.00

Stop End			
Code	Fitting size		ы
406192	15 (1/2")	25.00	22.50
406194	20 (3/4")	26.00	23.00
406189	25 (1")	28.00	25.00

Fitting Reducer						
	Code	Fitting size	D	L	и	Z
	406167	20 x 15 (3/4" x 1/2")	21.04	56.00	25.00	33.50
	406163	25 x 15 (1" x 1/2")	27.39	67.50	25.50	45.00
	406164	25 x 20 (1" x 3/4")	27.39	58.50	27.50	35.50



Straight Coupler

Code	Fitting size	L	Z
406151	15 (1/2")	50.00	5.00
406154	20 (3/4")	56.00	10.00
406148	25 (1")	59.40	9.40



Repair Coupler

Code	Fitting size	
406186	15 (1/2")	50.00
406188	20 (3/4")	56.00
406183	25 (1")	59.40

16. Frequently Asked Questions

Notes

Q. How long has Conex Bänninger been around?	Q. What pressure do you need to test to and for how long to show any leaks?
A. Since 1909.	 A. Unpressed fittings are identified by pressurising the system with a
Q. Where are the products manufactured? A. Europe.	pressure range of 100 kPa to 500 kPa for water and 2.2 kPa to 300 kPa for gas. Final testing of the system should
Q. What grades of copper tube do the fittings suit?	be conducted in accordance with AS/NZS 3500 and/or AS/NZS 5601.
A. >B< Press NZ fittings can be used on hard, half-hard and soft copper tube to NZS 3501.	Q. Can it be used with medical gas?A. No, the fittings are not recommended for use with medical gas.
Q. Can you rotate a >B< Press fitting	Q. What is the recommended space
once installed? A. No, once pressed, they cannot be rotated.	between fittings? A. Please see 'Installation Requirements' section on pages 12 & 13.
Q. Can >B< Press NZ be dismantled	Q. Can the fittings be used on compressed
and reused? A. No, this is a permanent installation.	air or oil lines? A. >B< Press NZ water fittings are
Q. Can the O-rings from water and gas fittings be swapped?	air (oil free) and >B< Press NZ Gas fittings are suitable for all
A. No. The O-ring is integral to the seal of the fitting, swapping the O-ring increases the risk of demage and	compressed air applications.
therefore O-rings are not to be interchanged.	 Q. What are benefits >B< Press NZ fittings? A. Fast, simple and reliable installation.
Q. What pipe preparation is required?	Q. Can you braze (silver soldering) near a >B< Press NZ connection?
A. Prease see '>B< Press NZ Installation Process' on page 14.	 A. See section on brazing near >B< Press NZ fittings on page 13.
Q. When using with older pipes, how do you prepare the surface?	Q. Can >B< Press NZ handle suction or negative pressure?
 A. The surface should be prepared in the same way as with new pipe. Please ensure that the tube surface 	A. Yes, >B< Press NZ fittings are tested at a vacuum test pressure of - 80 kPa at ambient temperature
is free from any deep scores or scratches. And provided there is no corrosion the tube dimensions	0 Can >B< Press N7 be installed
comply with NZS 3501 and the fittings are installed correctly, there	on pipes where the mains line won't shut off.
are no warranty issues. Note: Warranty is limited to faults due to the manufacturing defects	A. res, the fitting can be used in wet conditions and after pressing will provide a watertight joint.
of the fittings — not incorrect installation or installation on faulty or corroded pipe.	Q. Do I need to lubricate the O-ring?
Q. What are the application limitations,	 A. No, the O-ring is prelubricated. Additional lubricants could impact on the life of the O-ring and void the
where can't it be used? A. It cannot be used where pressures are greater than those recommended	warranty. If the O-ring appears dry a small amount of water can be used
are greater than those recommended or where corrosive fluids/gases need to be transmitted.	

>B< Press New Zealand Technical Guide 29

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