Conex | Bänninger

>B< Sonic

>B< Sonic Technical Brochure

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1.0 General

>B< Sonic is a quick and easy to install flame-free fitting, manufactured using high quality copper and brass materials, suitable for use with hard, half-hard and soft copper tube. It is reusable up to 20 times and recyclable. It is also suitable for use in potable water, heating and sanitary applications. Jointing is simple and quick, providing savings on installation costs compared to other systems.

1.1 Quality and certification

For 110 years Conex Bänninger has specialised in providing innovative and versatile fittings, valves and accessories. Conex Bänninger is a byword for quality in the domestic, commercial, industrial, shipbuilding, air-conditioning and refrigeration markets worldwide, and is an ISO 9001 company, which assures you the very best in quality. Conex Bänninger operates an accredited Quality Management System to EN ISO 9001.

>B< Sonic fittings are designed in accordance with international and national standards.

For more details on approvals please contact our technical department: technical@ibpgroup.com

1.2 Materials

>B< Sonic fittings are made from oxygen-free copper Cu-DHP (material number CW024A). >B< Sonic transition fittings are made of dezincification resistant brass (CW511L), suitable for drinking water.

Sealing elements: EPDM (ethylene propylene diene monomer) is a synthetic, peroxide-cured rubber.

1.3 Threads

All the threads in >B< Sonic fittings are designed in accordance with EN 10226-1 (ISO 7-1) and are 'thread sealing' (threaded connection of taper male threads/ cylindrical female threads R/Rp). Screw nut threads are designed in accordance with EN ISO 228-1 (threaded connection of cylindrical male and female thread.

1.4 Processing

>B< Sonic fittings are tested for use with copper tubes as per EN 1057. Thin-walled copper tubes for heating installations can also be used, but must not be externally chrome-plated because of the hardness of the chrome layer.

Note: Parameters laid down in section 2 must be adhered to before using >B< Sonic.

1.5 Electrical continuity

>B< Sonic fittings maintain earth continuity without the need for additional continuity straps. For more information please refer to the IET Wiring Regulations (BS7671) for guidance.

1.6 Approvals

>B< Sonic fittings are WRAS and DVGW approved and are in accordance with EN 1254-6.

1.7 Trademarks

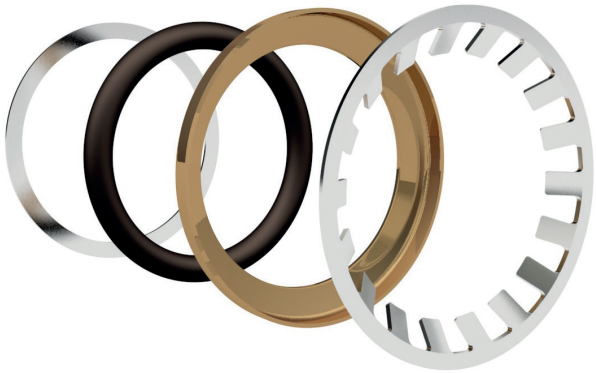
>B< Sonic is a registered trademark in numerous countries worldwide.

2.0 Areas of Application

Applications	Flow Medium	Pressure bar	Temp °C
Hot and cold water installations	General installations for cold potable and non potable water outside EN specified requirements	16	30°
		10	65°
		6	95°
Drinking water installations EN 806 and EN 1988	Drinking water in accordance with the drinking water ordinance	16	30°
		10	65°
		6	95°
Hot water heaters EN 12828	Heating water	6	95°
Cooling systems	Water and water-glycol mixtures mixing ration max. 50/50%	10	-20°

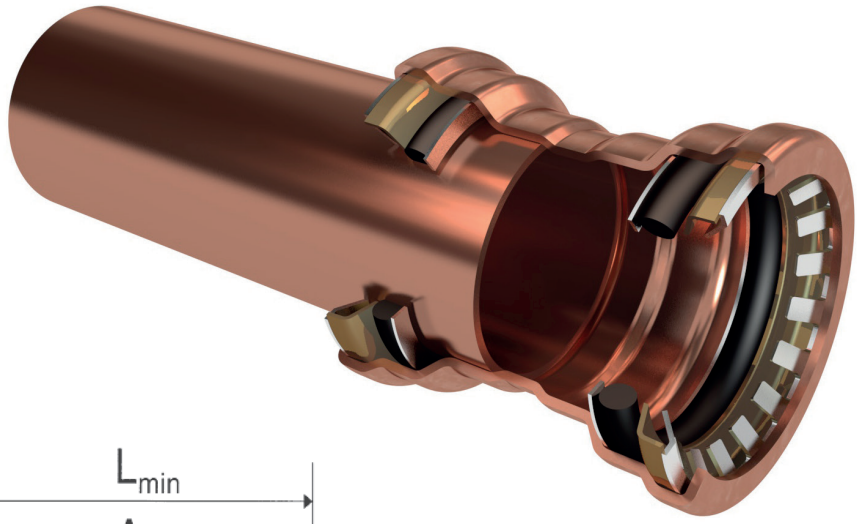
3.0 Fitting Construction

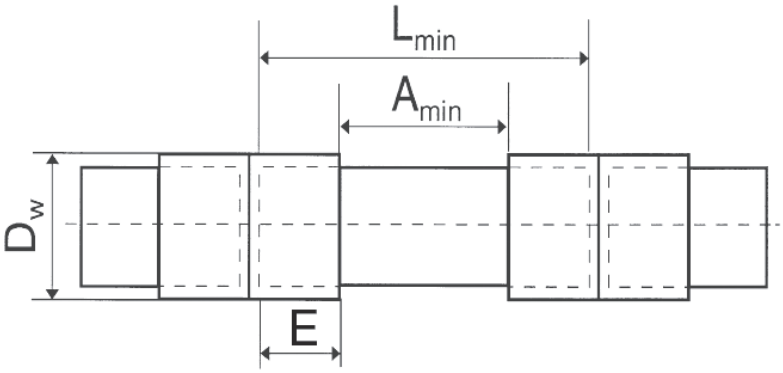
>B< Sonic is designed with a special positioning and retaining ring made of stainless steel and a fixed longitudinal-force-locking mechanism built to ensure secure joints. With an EPDM seal >B< Sonic ensures a permanent seal, without deforming the copper tube in the process.



4.0 Tube Installation Instructions

4.1 Minimum distances/insertion lengths





While using >B< Sonic, please comply with the minimum distances given in the table below.

Dimension (mm)	Diameter D (mm)	Fitting distance* A (mm)	Minimum pipe length L (mm)	Insertion length minimum E (mm)
10	22	30	60	15
12	24	30	60	15
14	26	30	60	15
15	26	30	61	15.5
16	27	30	62	16
18	32	26	63	16.5
22	35	20	64	17
28	44	26	67	17.5

* Requisite minimum distance for using the >B< Sonic-dismantling tool

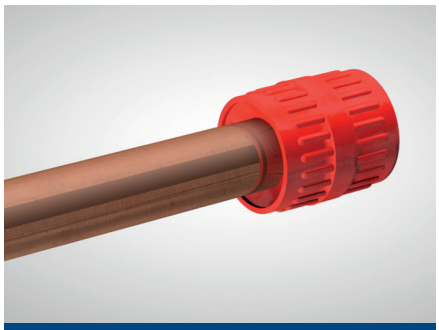
5.0 >B< Sonic Installation Process

5.1 Instructions

It is advisable to leave the fittings in the packaging prior to final installation to protect them from contamination and to conserve the lubrication of the O-rings.

1. Cutting to length

Tubes should be cut perpendicularly to the required length with a pipe cutter. An angle grinder or cutting torch must not be used for cutting to length.

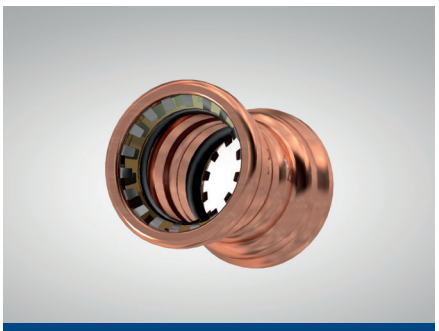


2. Internal and external deburring

The tubes should then be carefully deburred inside and out to remove all sharp edges and debris.

3. Cleanliness

Once the tube has been prepared, check for any deep scratches and scores in the tube. If either are visible cut the tube back and start the process again.



4. Checking the fittings

The fittings should be inspected visually for damaged o-ring or grip ring prior to use.

Caution: When checked, if the fitting is dry, add a suitable WRAS approved lubricant to the O-ring. For more details please contact the technical department: technical@ibpgroup.com.

5. Marking the insertion depth

Before assembly, mark the insertion depth of the fitting on the tube. (Please see the table in section 4).

6. Connecting the tube and fitting

Insert the tube into the fitting using the insertion depth mark as a guide.

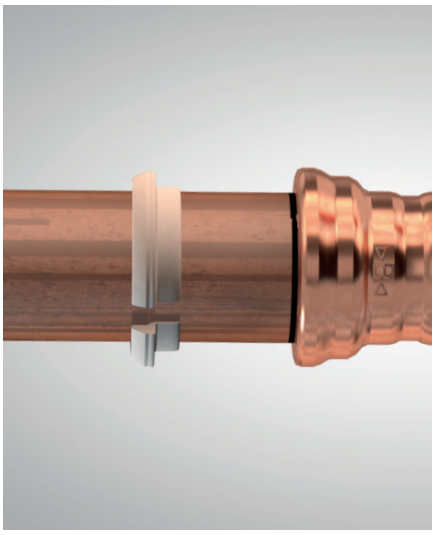
Please note the insertion depth line marking must be within 3 mm from the end of the fitting. If not remove the fitting using the release tool and check for internal obstructions and recheck the correct marking depth.

Caution: It is important that the tube is fully inserted to the correct depth to avoid joint failure.

5.2 Demounting

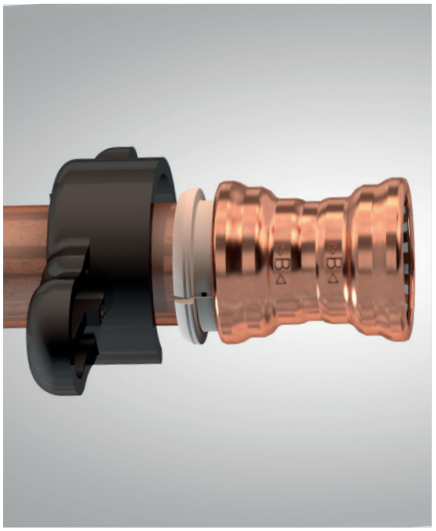
>B< Sonic fittings are designed to be demountable and reusable up to 20 times. To prevent accidental disassembly, they can only be demounted with a purpose designed release tool.

Please note the following steps:



Step 1:

- Locate demounting ring on tube, push ring against fitting end.

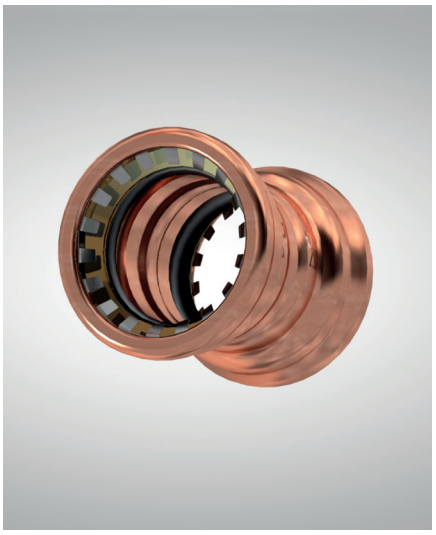


Step 2:

- Locate black pulling handle on tube and align with demounting ring.

  Pull the black handle towards the fitting, this releases the grip ring allowing the fitting to be removed from the tube.

- **Caution:** Do not attempt to dismantle the fitting prior to applying the force with the release tool.



Step 3:

- Before re-use, ensure that the grip ring or the O-ring has not been damaged.
- >B< Sonic has been designed for demounting and re-assembling to allow for system alteration.
- **Caution:** Please check the seal carefully for damage before re-using the fitting.

If a >B< Sonic fitting has been demounted from a tube end, check the tube end for any deep scratches and scores in the tube. If either are visible cut the tube back to a scratch free section and prepare the tube end again.

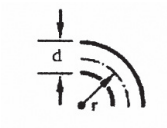
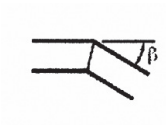
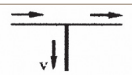
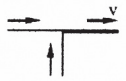
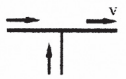
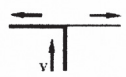
5.3 Brazing and soldering near >B< Sonic fittings.

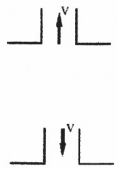
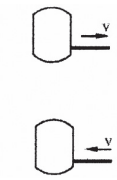
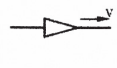
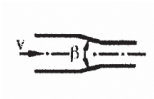
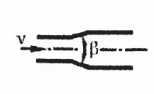
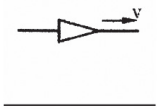
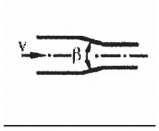
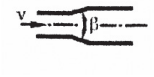
Caution: Brazing or soldering near to >B< Sonic joints should be avoided as this may cause the seal to degrade due to heat transfer. The table to the right states the minimum distance away from the >B< Sonic joint which is acceptable to solder. If this distance cannot be maintained then adequate precautions must be taken such as fabricating the soldered section prior to assembly with the >B< Sonic fittings, wrapping in a wet rag or applying a heat barrier spray, gel or putty, to prevent heat transfer to the >B< Sonic fitting during brazing.

Tube size (mm)	Minimum clearance (mm)
12	300
15	300
18	300
22	300
28	300

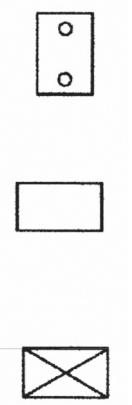
>B<22
>B<15

6.0 Loss Coefficients ('zeta values') of Individual Resistors

Symbol	Designation	ζ	Application	
			DW	H
	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
	Angle ß = 90° = 60° = 45°	1,3 0,8 0,4	X X X	X X X
	Crossover	0,5	X	X
	Branch, square flow separation	1,3	X	X
	Flow merging	0,9	X	X
	Clearance at flow merging	0,3	X	X
	Clearance at flow merging	0,6	X	X
	Counter-flow at flow merging	3,0	X	X
	Counter-flow at flow separation	1,5	X	X

Symbol	Designation	ζ	Application	
			DW	H
	Distributor outlet Collective inlet	0,5 1,0	X X	X X
	Reservoir outlet Inlet	0,5 1,0	X X	 X
	Reducer	0,4	X	X
	Constriction ß - constant = 30° 45° 60°	0,02 0,04 0,07	X X X	X X X
	Expansion ß - constant = 10° 20° 30° 40°	0,10 0,15 0,20 0,20	X X X X	X X X X
	Expansion bends	1,0	X	X
	Compensator	2,0	X	X
	Compensator	2,0	X	X

Symbol	Designation	ζ	Application	
			DW	H
	Branch, curved flow separation	0,9	X	X
	Flow merging	0,4	X	X
	Clearance at flow separation	0,3	X	X
	Clearance a flow merging	0,2	X	X
	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
	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
	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 Control valve	4,0 2,0		X X
	Pressure regulator fully open	30,0		X

Symbol	Designation	ζ	Application	
			DW	H
	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
   	Return flow inhibitor DN 15 to DN 20 DN 25 to DN 40 DN 50 DN 65 to DN 100 Control valve with return flow inhibitor DN 20 DN 25 to DN 50 Valve tapping sleeve DN 25 to DN 8O	 7,7 4,3 3,8 2,5 6,0 5,0 5,0	 X X X X X X X	
	Boiler Heating radiator Panel radiator	2,5 2,5 3,0		X X X

7.0 The Range

Straight Connector
S270

Reducing Coupler
S240

Fitting Reducer
S243

Elbow
S090

Street Elbow
S092

Equal Tee
S130

Reduced Branch Tee
S130R

Tee with Female Branch
S130G

Stop End
S301

Straight Connector
>B< Sonic x BSP ISO 7
Taper Thread S243G

Straight Connector
>B< Sonic x BSP ISO 228
Parallel Thread S270G

Straight Tap Connector
S240G

Bent Tap Connector
S002G

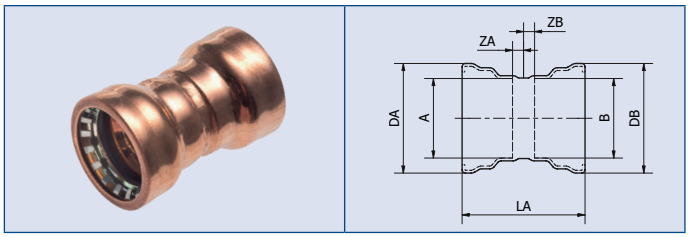
Wall Plate Elbow
S472G

Telescopic Connector
Single Leg
S370

Servicing Valve
Straight
S720

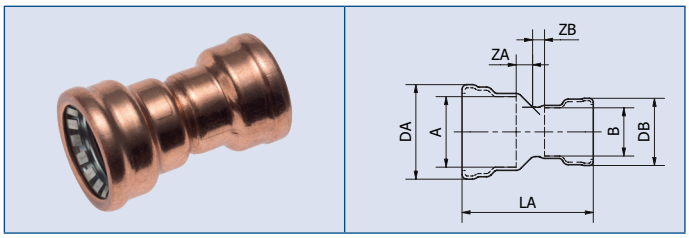
Washing Machine
Check Valve
S717

Release Tool
S850



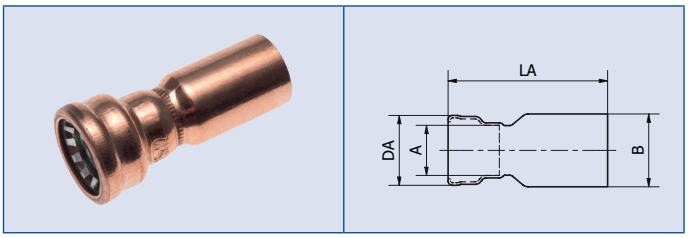
S270 Straight Connector

Code	Configuration	A	B	DA	DB	LA	ZA	ZB
S270 010000000	10 x 10 mm	10	10	17	17	36	3	3
S270 012000000	12 x 12 mm	12	12	19	19	35	2	2
S270 014000000	14 x 14 mm	14	14	21	21	35	2	2
S270 015000000	15 x 15 mm	15	15	21	21	32	1	1
S270 016000000	16 x 16 mm	16	16	24	24	35	2	2
S270 018000000	18 x 18 mm	18	18	27	27	40	2	2
S270 022000000	22 x 22 mm	22	22	30	30	37	2	2
S270 028000000	28 x 28 mm	28	27	39	39	48	4	4



S240 Reducing Coupler

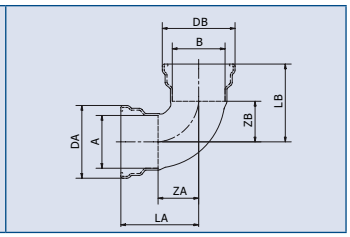
Code	Configuration	A	B	DA	DB	LA	ZA	ZB
S240 012010000	12 x 10 mm	12	10	9	17	36	3	3
S240 014012000	14 x 12 mm	14	12	21	19	38	3	2.5
S240 016012000	16 x 12 mm	16	12	24	19	37	3	3
S240 016014000	16 x 14 mm	16	14	24	21	37	4	1.5



S243 Fitting Reducer

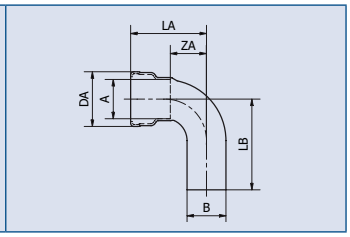
Code	Configuration	A	B	DA	LA
S243 015010000	15 x 10 mm	10	15	17	44.2
S243 015012000	15 x 12 mm	12	15	19	43
S243 018015000	18 x 15 mm	15	18	21	41.7
S243 022015000	22 x 15 mm	15	22	21	48.4
S243 022018000	22 x 18 mm	18	22	27	48
S243 028022000	28 x 22 mm	22	28	30	57

* All above measurements are in mm



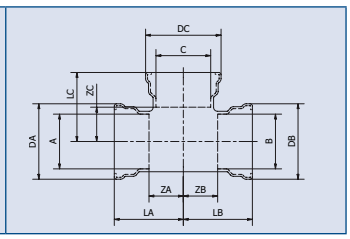
S090 Elbow

Code	Configuration	A	B	DA	DB	LA	LB	ZA	ZB
S090 010000000	10 x 10 mm	10	10	17	17	27.5	27.5	12.5	12.5
S090 012000000	12 x 12 mm	12	12	19	19	28	28	12	12
S090 014000000	14 x 14 mm	14	14	21	21	27	27	11	11
S090 015000000	15 x 15 mm	15	15	21	21	29	29	15	15
S090 016000000	16 x 16 mm	16	16	24	24	28	28	13	13
S090 018000000	18 x 18 mm	18	18	27	27	31	31	14	14
S090 022000000	22 x 22 mm	22	22	30	30	40	40	16	16
S090 028000000	28 x 28 mm	28	28	39	39	41.5	41.5	21.5	21.5



S092 Street Elbow

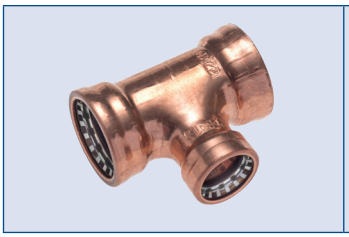
Code	Configuration	A	B	DA	LA	LB	ZA
S092 015000000	15 mm	15	15	21	30	35	14

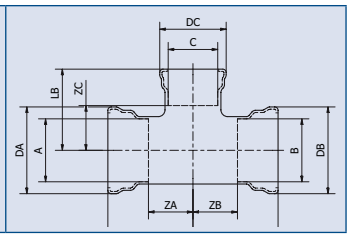


S130 Equal Tee

Code	Configuration	A	B	C	DA	DB	DC	LA	LB	LC	ZA	ZB	ZC
S130 010010010	10 x 10 x 10 mm	10	10	10	17	17	17	25	25	25	10	10	10
S130 012012012	12 x 12 x 12 mm	12	12	12	19	19	19	24	24	24	8	8	8
S130 014014014	14 x 14 x 14 mm	14	14	14	21	21	21	25	25	25	9	9	9
S130 015015015	15 x 15 x 15 mm	15	15	15	21	21	21	23	23	25	9	9	9
S130 016016016	16 x 16 x 16 mm	16	16	16	24	24	24	26	26	26	10	10	10
S130 018018018	18 x 18 x 18 mm	18	18	18	27	27	27	28	28	28	12	12	12
S130 022022022	22 x 22 x 22 mm	22	22	22	30	30	30	31	31	31	10	10	11

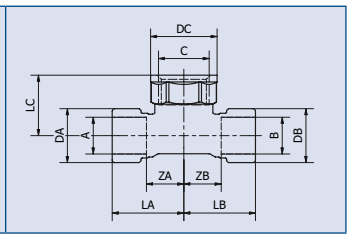
* All above measurements are in mm





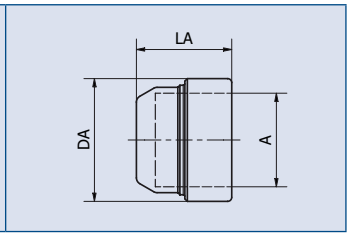
S130R Reduced Branch Tee

Code	Configuration	A	B	C	DA	DB	DC	LA	LB	LC	ZA	ZB	ZC
S130R014012014	14 x 12 x 14 mm	14	14	12	21	21	19	24	24	25	8	8	9
S130R016012016	16 x 12 x 16 mm	16	16	12	24	24	19	24	24	26	8	8	12
S130R016014016	16 x 14 x 16 mm	16	16	14	24	24	21	25	25	26	9	9	10
S130R018014018	18 x 14 x 18 mm	18	18	14	27	27	21	26	26	27	9	9	11
S130R022015022	22 x 15 x 22 mm	22	22	15	29.7	30	21.2	26.75	26.75	27.9	10	10	13



S130G Tee - with Female Branch

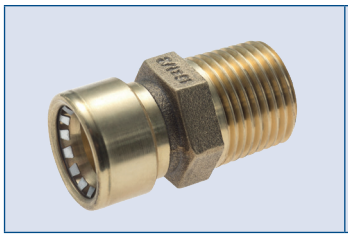
Code	Configuration	A	B	C	DA	DB	DC	LA	LB	LC	ZA	ZB
S130G015004000	15 mm x 1/2"	15	15	1/2"	21	21	24	29.3	29.3	38	12.5	13

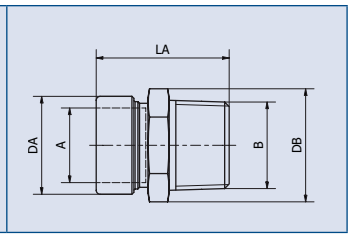


S301 Stop End

Code	Configuration	A	DA	LA
S301 010000000	10 mm	10	17	19.3
S301 015000000	15 mm	15	21	14
S301 018000000	18 mm	18	27	24.5
S301 022000000	22 mm	22	30	16.7
S301 028000000	28 mm	28	39	29.7

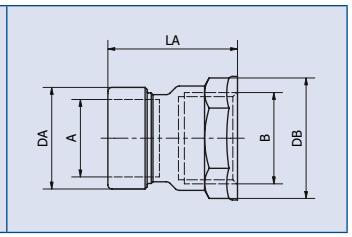
* All above measurements are in mm





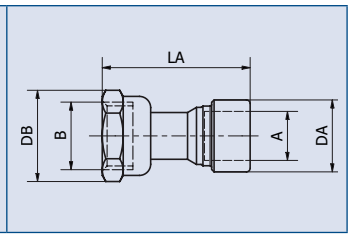
S243G Straight Connector
>B< Sonic x BSP ISO 7 Male Thread

Code	Configuration	A	B	DA	DB	LA
S243G0150400B	15 mm x 1/2"	15	1/2"	21	22	41.3
S243G0220600B	22 mm x 3/4"	22	3/4"	30	29	44.9
S243G0280800B	28 mm x 1"	28	1"	39	37	51
S243G0281000B	28 mm x 1.1/4"	28	1.1/4"	39	43	53.6



S270G Straight Connector
>B< Sonic x BSP ISO 228 Female Thread

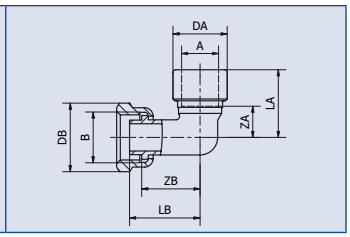
Code	Configuration	A	B	DA	DB	LA
S270G0150400B	15 mm x 1/2"	15	1/2"	21	24	36.2
S270G0220600B	22 mm x 3/4"	22	3/4"	30	30	41
S270G0280800B	28 mm x 1"	28	1"	39	38	48
S270G0281000B	28 mm x 1.1/4"	28	1.1/4"	39	47.5	56



S240G Straight Tap Connector

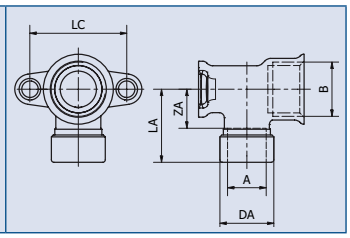
Code	Configuration	A	B	DA	DB	LA
S240G015004000	15 mm x 1/2"	15	1/2"	21	24	38
S240G022006000	22 mm x 3/4"	22	3/4"	30	30.5	47.5

* All above measurements are in mm



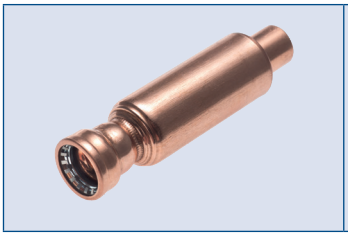
S002G Bent Tap Connector

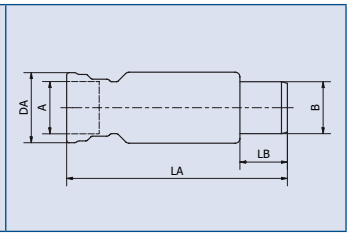
Code	Configuration	A	B	DA	DB	LA	LB	ZA	ZB
S002G01504000	15 mm x 1/2"	15	1/2"	21	24	27	29	10	24



S472G Wall Plate Elbow

Code	Configuration	A	B	DA	LA	LC	ZA
S472G015004000	15 mm x 1/2"	15	1/2"	21	28.5	38	12.5

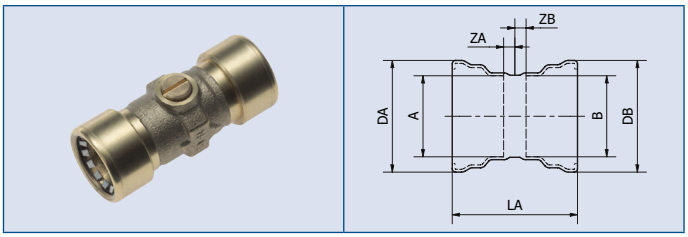




S370 Telescopic Connector - Single Leg

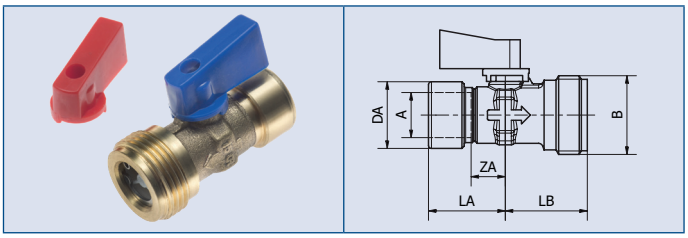
Code	Configuration	A	B	DA	LA	LB
S370 015000000	15 x 15 mm	15	15	21	92.6	18.5
S370 018000000	18 x 18 mm	18	18	27	93	15
S370 022000000	22 x 22 mm	22	22	30	93.5	21
S370 028000000	28 x 28 mm	28	28	39	100	27

* All above measurements are in mm



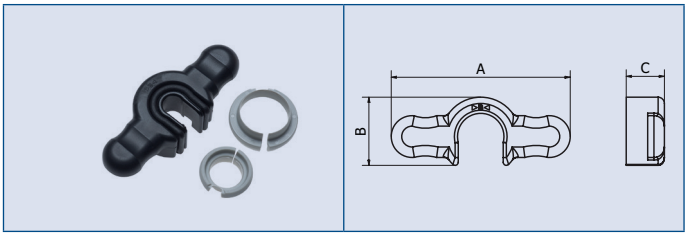
S720 Servicing Valve - Straight

Code	Configuration	A	B	DA	DB	LA	LB	ZA	ZB
S720 015000000	15 mm	15	15	21	21	25	27.5	9	11



S717 Washing Machine Check Valve

Code	Configuration	A	B	DA	LA	LB	ZA
S717 015006000	15 mm x 3/4"	15	3/4"	21	24	27.5	9



Release Tool

Code	Configuration	A	B	D
S850 022015010	10 mm - 22 mm	85	33	18
S850 028018000	18 mm - 28 mm	85	33	18

* All above measurements are in mm

8.0 Guarantee

When professionally installed, used and maintained in accordance with the installation and maintenance instructions detailed in the >B<Sonic technical brochure, Conex Universal Ltd. guarantees that >B< Sonic as supplied by Conex Universal Ltd. will be free of material defects resulting from errors in manufacture for twenty five (25) years from the date of first purchase by an end user. This Guarantee is limited to the repair or replacement of defective product(s) (at the sole discretion of Conex Universal Ltd.). At the request of Conex Universal Ltd. the allegedly defective product(s) must be returned to the address below* and Conex Universal Ltd. reserves the right to inspect and test the alleged defects. This guarantee provided by Conex Universal Ltd. does not affect your statutory rights.

The Guarantee set out is given by Conex Universal Ltd. and subject to the following conditions:

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

B. Conex Universal Ltd. shall be under no liability in respect of any defect in any product arising from:

- defective installation,
- fair wear and tear,
- wilful damage,
- negligence of any party other than Conex Universal Ltd.,
- abnormal working or environmental conditions,
- failure to follow the instructions of Conex Universal Ltd.,
- misuse (which includes any use of the product(s) concerned for a purpose or in a situation / environment or for an application other than that for which it was designed), or
- alteration or repair of any product without the prior approval of Conex Universal Ltd.

C. At the request of Conex Universal Ltd. the person claiming under this guarantee must deliver to Conex Universal Ltd. written evidence of the date of first purchase by an end user of the product(s) concerned.

*** The address for returns is:** Customer Services, Conex Universal Limited, Global House, 95 Vantage Point, The Pensnett Estate, Kingswinford, West Midlands ,DY6 7FT , UNITED KINGDOM

9.0 Notes

1/2

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