

Competitive Advantage of EZ Joint

1) Durability on High water pressure

EZ Joint boasts the average water pressure of 50kgf/cm² depending on the size. Please refer to the Table on the Right.

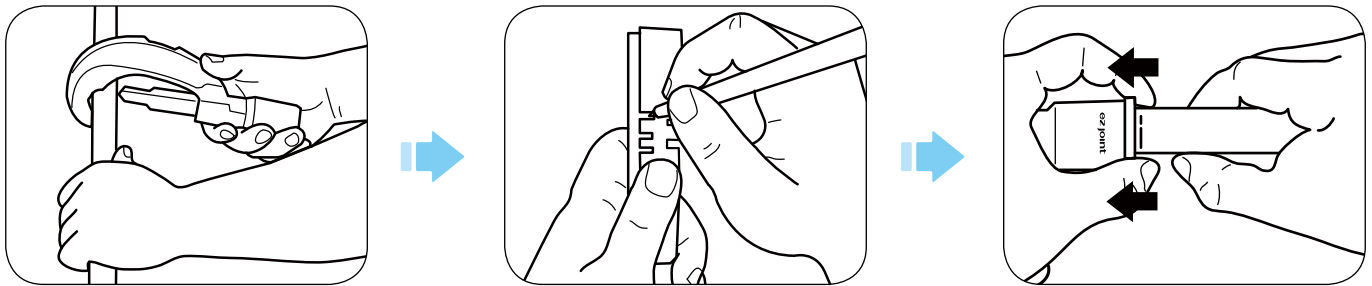
SIZE	Working Water Pressure	Tensile Power
13su	50kgf/cm ²	7.65KN
20su	50kgf/cm ²	8.36KN
25su	50kgf/cm ²	9.76KN
30su	50kgf/cm ²	14.08KN
40su	50kgf/cm ²	18.90KN
50su	50kgf/cm ²	18.72KN
60su	50kgf/cm ²	28.69KN

2) Revolutionary design to Maximize tensile power

Jaws, made of SUS420J2, strongly bite the surface of the tube.

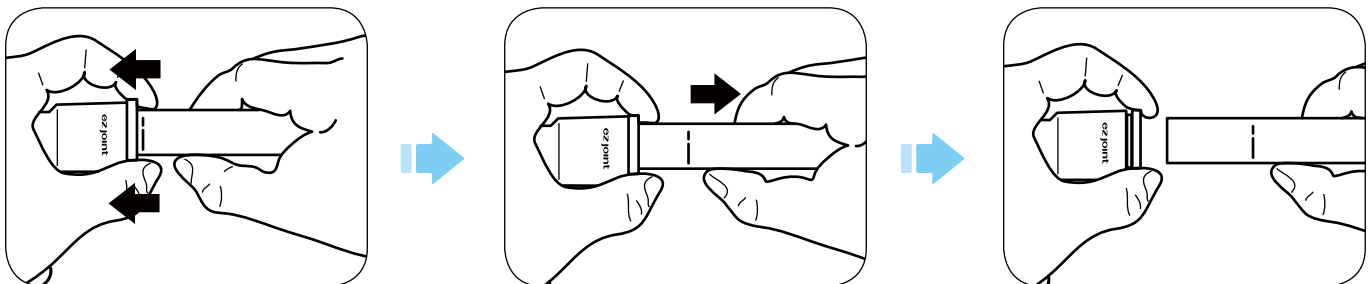
3) Easier and Faster installation

EZ Joint is easy to connect or disconnect with no tools. No welding required.

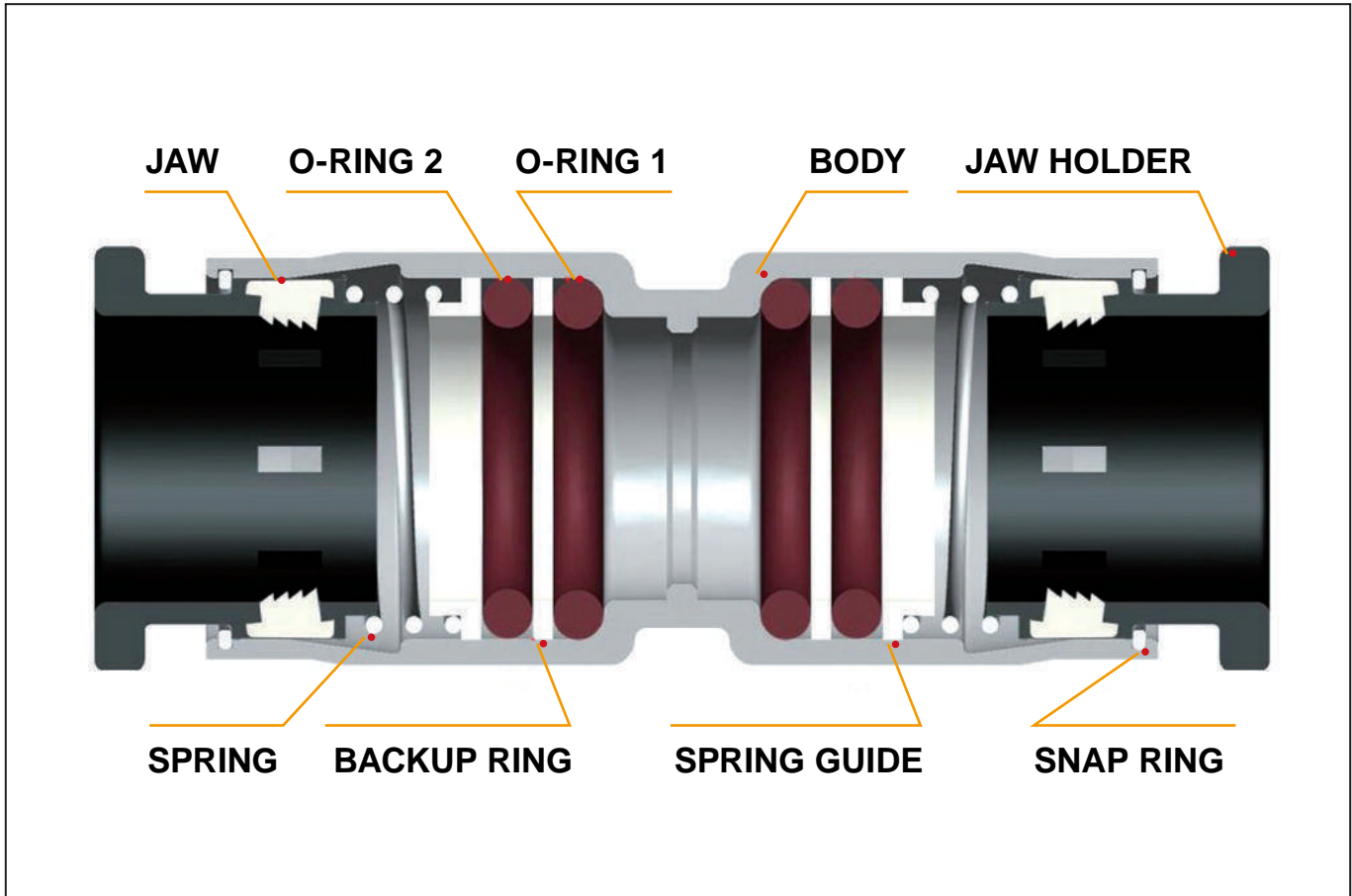


4) Reusable and Rotatable

EZ Joint shows no water leakage or decreased pressure after 20 times of connecting and disconnecting test. It can be reused and be rotated as well without compromising performance.



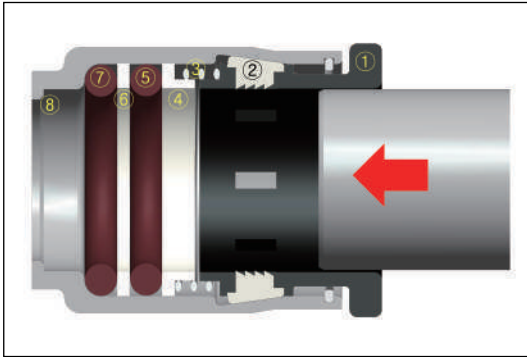
J-Type Parts Informaton



PARTS		FUNCTIONS	MATERIALS
1	Jaw Holder	1) A container of plastic for holding the Jaws with a Snap Ring. 2) A tube-release clip. When it is pushed, the Jaws move along to be able to easily insert or easily release the tube, which was tightly grabbed by the Jaws. 3) Spring is fit on the end of the Jaw Holder	Polyamide 66
2	Snap Ring	A ring of stainless for preventing the disassembly of all the parts inside, fit into the groove inside of the body end.	Stainless steel 304
3	Jaw	The main parts for biting the surface of the tube to grab and to generate the tensile force. The stronger water pressure pushes the Spring backward, the more Jaws generate the tensile force.	Stainless steel 420J2
4	Spring	A supporter of stainless for helping the Jaws bite the tube tight, and smoothly slide up and down, when pushing the Jaw Holder.	Stainless steel 304
5	Spring Guide	A supporter of plastic for 1) guiding Spring to fit in the Body, and to align properly, 2) protecting O-Ring 2 from directly contacting with the Spring.	Polyamide 66
6	Backup Ring	A ring of plastic for 1) preventing O-Ring 1 from contacting with O-Ring 2 to avoid melting rubber, 2) helping two compressed O-rings fill the space between the wall of the Body and the tube.	Polyamide 66
7	O-Ring 1	A rubber ring sealing the space between the body and the inserted tube to prevent the water leak.	EPDM
8	O-Ring 2	A rubber ring sealing the space between the Body and the inserted tube to prevent the water leak, supporting the O-ring 1.	EPDM
9	Body	A metal castings, containing all the parts.	Stainless steel 304

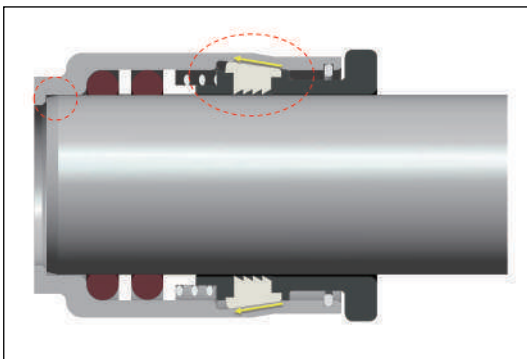
Theory of Operation

EZ Joint fittings system is designed with an advanced Push-Fit Technology with two sealing O-Rings. EZ Joint works as follows.



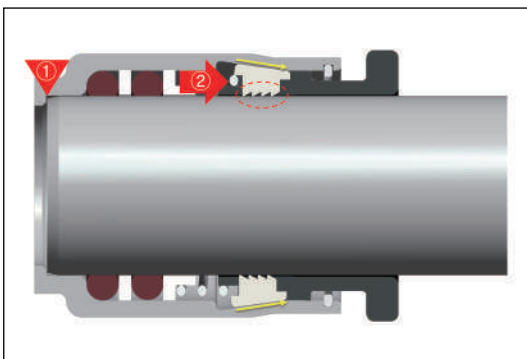
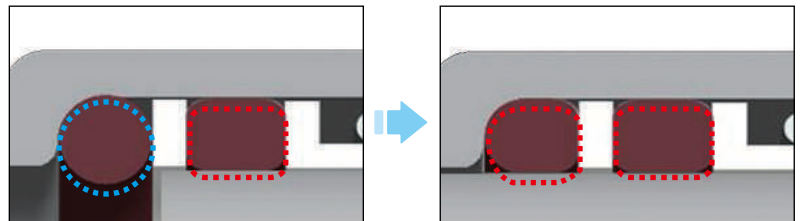
- 1) As a tube is inserted into the fitting, it passes through Jaw Holder(①), Jaws(②), Spring(③), Spring Guide (④), O-Ring 2(⑤), Backup Ring(⑥) and O-Ring 1(⑦) until it reaches to tube stop(⑧).

It would feel already reaching to the tube stop at the first time when it actually reaches to the O-Ring 2, due to the narrow internal diameter of the O-Ring 2. Then, insert the tube firmly to make sure that the tube passes the O-Ring 1. Then finally the tube reaches to the tube stop.



- 2) When the tube passes the Jaws, the Jaws are pushed out to move along with the inclined inside-wall of Body, making it easier to insert the tube.

When the tube passes two O-Rings, two O-Rings are compressed between the wall of the fittings and the tube. Then it would be perfectly sealed.



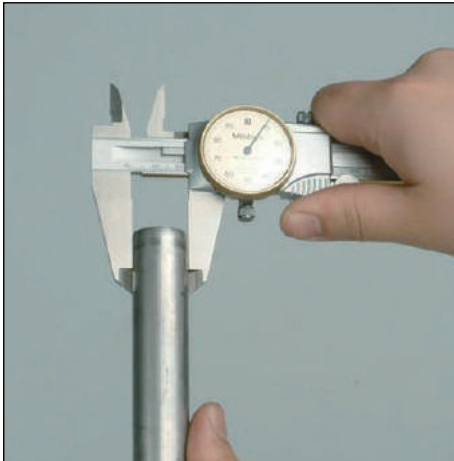
- 3) Once the tube reaches to the tube stop(①), the Spring pushes out the Jaw Holder for the Jaws, sliding down towards the surface of the tube and thus bites the tube. Once the water flows and its pressure increases, it also pushes out the Jaw Holder, which creates more tensile force of the Jaws.

The higher the water pressure goes up, the stronger the Jaws bite. The Jaw Holder cannot be pushed in while the water runs. Therefore, EZ Joint never can be disconnected by any hand or tool.

On the contrary, when the water drains out of the tube and there is no pressure in the fittings, the Jaw Holder can be pushed in and therefore the tube can be easily disconnected from the fittings.

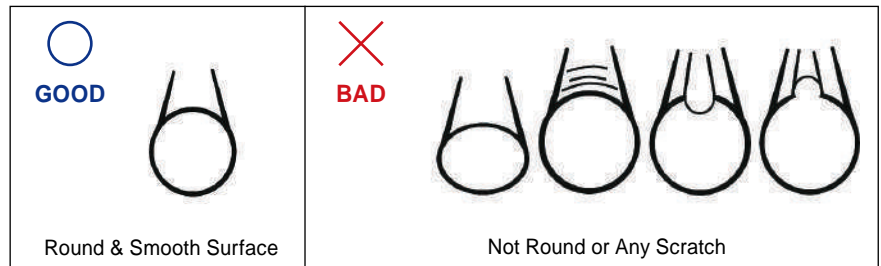
Installation Instructions

Preparation



1) Select a tube and check out its external-diameter, which has to match up with the desirable size of tubes.

Check out that the shape and the surface of the selected tube are round and smooth. No scratch or any dent accepted.



2) Cut into the desired tube length, using a proper cutter(a Hand cutter or a Stainless Tube Cutter) such as the pictures below.

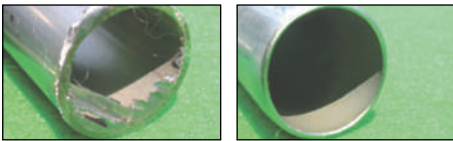


■ : Compatible

Stainless Steel Tube							Copper Tube(L-Type)		
KS D3595, JIS G3448, ASTM A269			KS D3576, JIS G3459, ASTM A312				ASTM B88		
SU	inch	O.D(mm)	A	inch	O.D(mm)		SU	inch	O.D(mm)
					KS(JIS)	ASTM			
13	1/2"	15.88	-	-	-	-	15	1/2"	15.88
20	3/4"	22.22	15	1/2"	21.70	21.34	20	3/4"	22.22
25	1"	28.58	20	3/4"	27.20	26.67	25	1"	28.58
30	1 1/4"	34.00	25	1"	34.00	33.40	32	1 1/4"	34.92
40	1 1/2"	42.70	32	1 1/4"	42.70	42.16	40	1 1/2"	41.28
50	2"	48.60	40	1 1/2"	48.60	48.26	50	2"	53.98
60	2 1/2"	60.50	50	2"	60.50	60.33	65	2 1/4"	66.68
75	2 3/4"	76.30	65	2 1/2"	76.30	73.03	80	2 1/2"	79.38
80	3"	89.10	80	3"	89.10	88.90	90	3 1/2"	92.08
100	4"	114.30	100	4"	114.30	114.30	100	4"	104.78

Installation Instructions

Preparation



Before Deburring

After Deburring

3) Deburr the selected tube, using a proper deburring tool. Make sure that the edge of the tube has nothing sharp or rough.

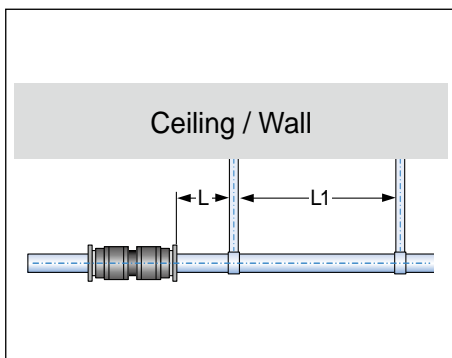
WARNING : It is an obligatory process before installing any EZ Joints. Make sure to deburr the edge of the tube as indicated below. The burr at the edge of the tube would damage the O-Rings, which could cause the water leak.



4) Make sure the edge of the tube should be "chamfered."



DEBURRING			ANGLE	
 GOOD	0.5mm (Reference)	 No Burrs No Sharp / Rough Edges	 GOOD	 90° Square Cut
 BAD		 No Deburring Burrs Sharp / Rough Edges	 BAD	 > 90° Not Square Cut

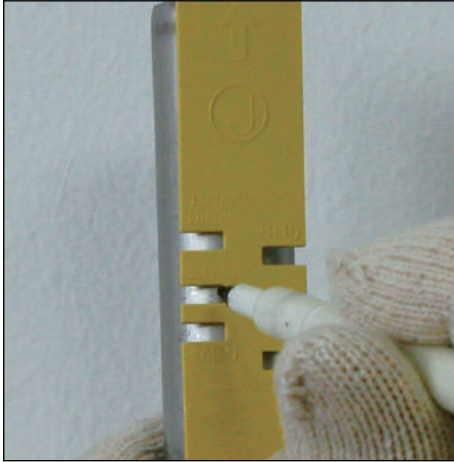


5) Hanger Table

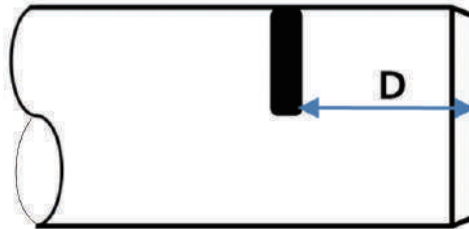
SU	L(mm)	L1(mm)
13 SU	≤ 150	1,800
20 SU	≤ 180	2,500
25 SU	≤ 180	2,500
30 SU	≤ 200	2,500
40 SU	≤ 250	2,500
50 SU	≤ 250	2,500
60 SU	≤ 250	2,500

Installation Instructions

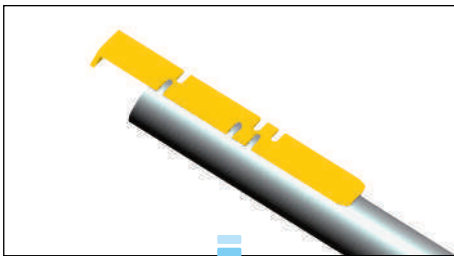
Installation



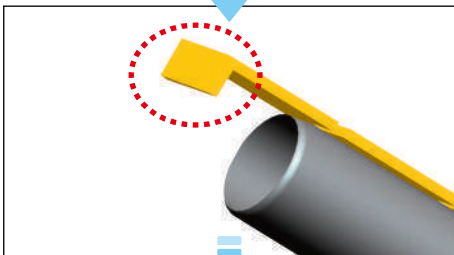
Find the size, matching to the tube, from the Insertion Depth Ruler. And mark a line on the surface of the tube, which indicates the depth of a tube, being inserted. Refer to the table below.



SU	D (mm)
	J-Type
13	41
20	42
25	46
30	50
40	55
50	58
60	60



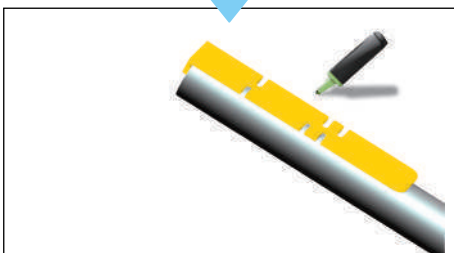
7) A. For smooth and easy push fit, insert the tube with keeping the Jaw Holder pushed backward.



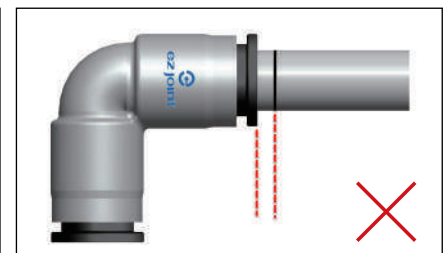
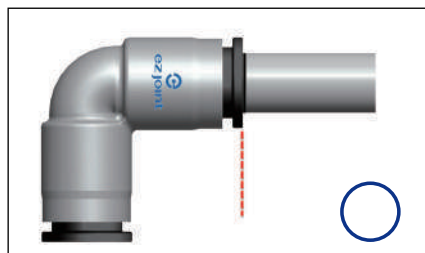
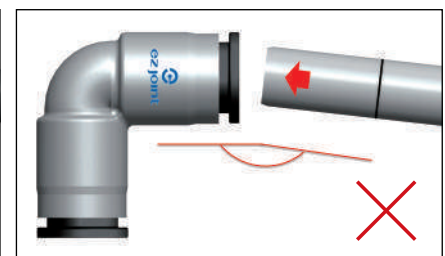
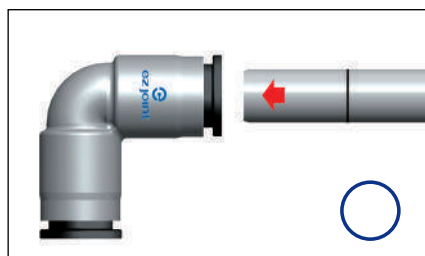
B. Insert the tube into EZ Joint until the Insertion Depth Line reaches to the edge of the Jaw Holder. Assure that the end of the tube should reach to the tube stop.



C. It would feel already reaching to the tube stop at the first time when it actually reaches to the O-Ring 2, due to the narrow internal diameter of the O-Ring 2. Then, insert the tube firmly to make sure that the tube passes the O-Ring 1 and finally the tube reaches to the tube stop.



D. Insert the tube into EZ Joint in parallel. Do not tilt the tube and the fittings.



Uninstallation

- 8) A. Make sure to drain out all the water in the tube. The Jaw Holder can be pushed in, when it has no pressure in the fittings.
- B. Push the Jaw Holder again to loosen the biting Jaws.
- C. Pull out the tube.



Uninstallation Tip

The Jaws might grab the tube too tight due to the high water pressure or the installed period. And thus it is difficult to push the Jaw Holder into the Body to disconnect the tube from the fittings.

In that case, tap the Jaw Holder or the red-circled area to loosen the Jaws by a spanner. Then the Jaw Holder would be easily pushed, and disconnected with the tube.

Warning : Do not hit the Jaw Holder too hard with the spanner. It would break the Jaw Holder.

