

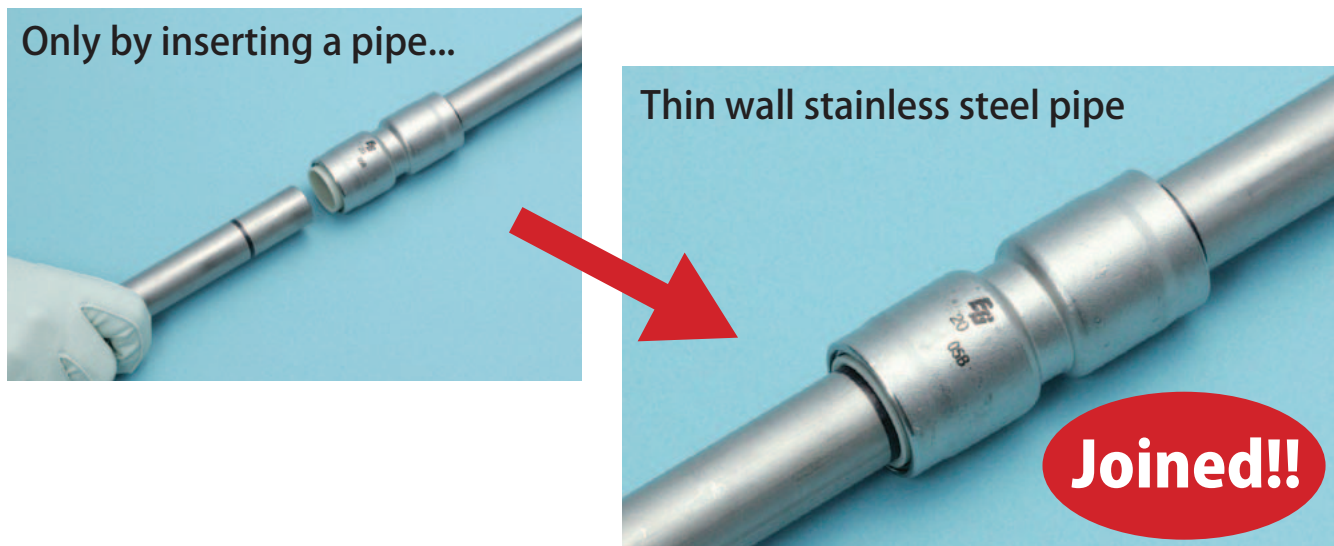
EGJOINT

Light Gauge Stainless Steel Fitting - One-Touch Mechanical Joint Fitting

Product Overview

Many mechanical joints for light gauge stainless steel pipes for ordinary piping (JIS G 3448) require joining with special tools or pipe processing, and therefore require the availability of the tools and their maintenance.

The BENKAN EG Joint allows the joining of pipes by simple insertion into the joint for pipes cut by a tube cutter or other cutting tool, chamfered, marked with an insertion length mark, and coated with silicon spray.



The BENKAN EG Joint eliminates the need for special tools, pipe machining, welding, or threading for pipe joining!!

Feature

1 One-touch joining

Joining pipes only through insertion into the joint

2 Requiring no pipe joining tools

Requiring no special tools or even pipe wrenches for joining

3 Reworkable

Allowing the removal of inserted pipes with a remover before running water

* Be sure to follow the appropriate work instructions.

Scope

● Applicable pipe and nominal size

Light gauge stainless steel pipes for ordinary piping JIS G 3448	13Su	20Su	25Su	30Su	40Su	50Su
Pipe outside diameter (mm)	15.88	22.22	28.58	34.0	42.7	48.6

- Usage : Cold water, hot water, chilled/hot water, coolant water. * Unavailable for steam plumbing.
- Maximum water pressure : 1.0 MPa (10.2 kgf/cm²)
- Maximum water temperature : Under 80°C
- Water quality criteria : Please refer to the chart below to check water quality.

■ BENKAN'S water quality criteria

Water composition	BENKAN's specified water quality level
Chloride ion	Under 25mg/L
Sulfate ion	Under 30mg/L
Hardness	Under 80mg/L
Electrical conductivity	Under 250 μ S/cm
Iron or chemical compound	Under 0.05mg/L
pH level	Over 7.0, Under 8.6

Performance

Applicable Pipe/ Nominal Size		Light gauge stainless steel pipes for ordinary piping JIS G3448					
		13Su	20Su	25Su	30Su	40Su	50Su
Hydrostatic Pressure Test Withstanding Pressure MPa (kgf/cm ²)	Min.	2.5 (25.5)					
	Result	Pass	Pass	Pass	Pass	Pass	Pass
Tensile Test Tensile Strength kN (kgf)	Min.	2.2 (224)	3.8 (387)	4.9 (500)	7.0 (714)	8.8 (897)	10.1 (1,030)
	Result	Pass	Pass	Pass	Pass	Pass	Pass
Negative Pressure Test	Min.	-96 kPa (-720mmHg)					
	Result	Pass	Pass	Pass	Pass	Pass	Pass
Vibration Test	Min.	1,000,000 Times, Water Pressure: 1.75 MPa, Amplitude: \pm 2.5 mm, 600 Times/Minute					
	Result	Pass	Pass	Pass	Pass	Pass	Pass
Internal Cycle Pressure Test	Min.	0 \leftrightarrow 4.0 MPa (40.7 kgf/cm ²), 4 Sec/Cycle, 10,000 Times					
	Result	Pass	Pass	Pass	Pass	Pass	Pass
Bending Test under Water Pressure	Measurement (Reference)	>30°	20.1°	5.7°	7.2°	10.3°	11.6°

- Freezing Prevention - In cold regions, more care should be taken to prevent freezing.
- Refer to our Technical Data for more details as well as the results of other verification tests, such as a hot and cold water cycle test.
- The maximum water pressure during normal operation is under 1.0 MPa (10.2 kgf/cm²).
- Hydrostatic Pressure Test - Tested as per Section 9.5 of SAS322 (Japan Stainless Steel Association Standard: Fittings for light gauge stainless steel tubes for ordinary piping) and verified to meet the requirements of Section 5 "Performance".
- Tensile Test - Tested as per Section 9.6 of SAS322 and verified to meet the requirements of Section 5 "Performance".
- Negative Pressure Test - Tested as per Section 9.4 of SAS322 and verified to meet the requirements of Section 5 "Performance".
- Vibration Test - Tested as per Section 9.7 of SAS322 and verified to meet the requirements of Section 5 "Performance".
- Alternative Internal Pressure Test - Tested as per Section 9.9 of SAS322 and verified to meet the requirements of Section 5 "Performance".
- Bending Under Water Pressure Test - Tested as per BENKAN's test standards.

Items

EG90E 	EG45E 	EGT 	EGS 	EGR 
90 Elbow	45 Elbow	Tee	Socket	Reducer

EGBS 	EGC 	EGMA  R Threaded	EGFA  Rc Threaded	EGS-P  * PJ Threaded
Bare Socket	Cap	Adapter Socket Male	Adapter Socket Female	Floor Socket

EGWTE  * PJ Threaded	EGWTT  * PJ Threaded	EGWTS  ● The nut portion is grooved. * PJ Threaded	EGWTE-P  * PJ Threaded	EGFLG  JIS 10K
Water Tap Elbow	Water Tap Tee	Water Tap Socket	Water Tap Elbow w/clip plate	Flange Adapter

* : The PJ threaded products are used for connection with male-threaded (PJ threaded) water tap fittings.
Do not use them with taper-threaded (R threaded) fittings.

Jigs

● Remover

(removal jig dedicated to each pipe size)



(13Su, 20Su, 25Su, 30Su, 40Su, 50Su)

● Line Marker

[Ruler type]



(Marker common to 13Su, 20Su, and 25Su)
(Marker common to 30Su, 40Su, 50Su, and 60Su)

[Arm type]



(13Su, 20Su, 25Su)

Recommended Products

● Tube Cutter

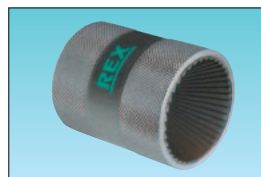


RB Tube Cutter N30S
by REX Industries Co., Ltd.
(For outside diameters of 4.5 to 32 mm)



RB Tube Cutter N67S
by REX Industries Co., Ltd.
(For outside diameters of 6 to 70 mm)

● Reamer



Multi Reamer
(for both inside and outside reaming)
by REX Industries Co., Ltd.
(For $\phi 10$ to $\phi 54$)
(Supported for 13 to 50Su)

● Silicon Spray

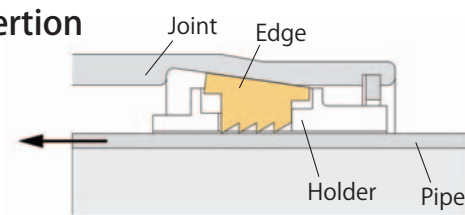


Silicon Spray
manufactured
by the Victaulic Company
of Japan Limited

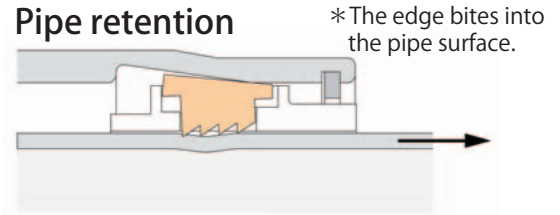
* These products are also available from BENKAN Corporation.

Joining Mechanism

Pipe Insertion

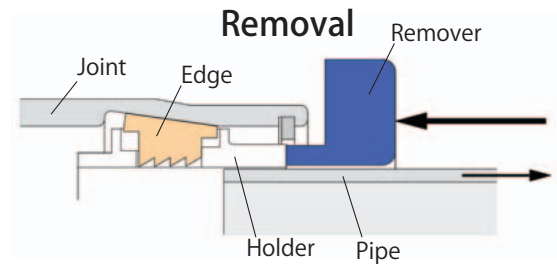


Pipe retention



The edge mounted in the holder bites into the pipe surface to ensure pipe retention. The edge is held inside the tapered portion of the joint and serves as a wedge to prevent the pipe from coming off.

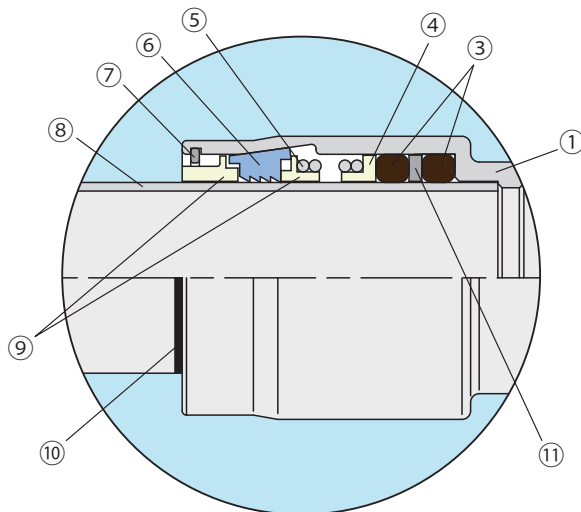
● Pipe removal



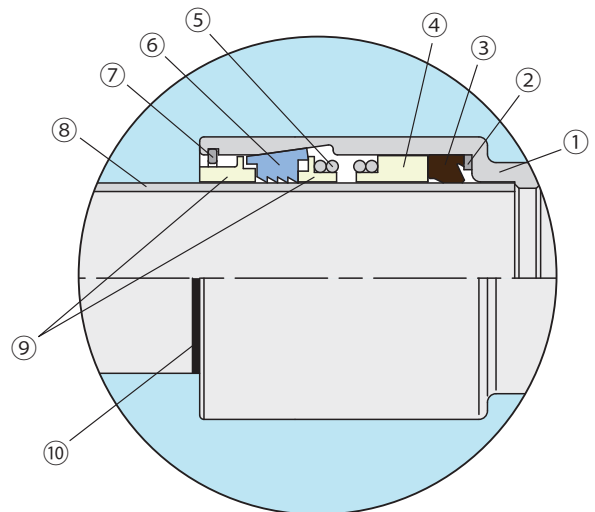
Before applying water pressure, an inserted pipe can be removed by using a remover (removal jig dedicated to each pipe size) to push the holder at the end of the joint and release the edge from the pipe surface.

Joint Structure with Pipe Inserted

■ 13Su, 20Su, 25Su, 30Su



■ 40Su, 50Su



No.	Name	Material
①	Joint	SCS13 (SUS304)
②	Spacer	Stainless steel
③	Rubber ring	EPDM
④	Spring guide	Heat-resistant reinforced nylon
⑤	Spring	Stainless steel
⑥	Edge	Stainless steel
⑦	Snap ring	Stainless steel
⑧	Pipe	See "Applicable pipe and nominal size".
⑨	Holder	Heat-resistant reinforced nylon
⑩	Insertion length mark	
⑪	Backup ring	Heat-resistant reinforced nylon

* Two types of joint structures are available depending on the pipe size.

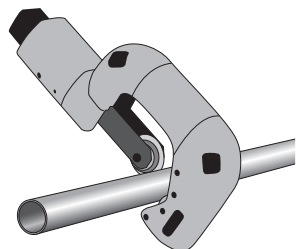


BENKAN EG Joint Installation Procedure

Caution: Observe the following instructions to prevent water leakage!!

① Cutting a pipe

Please use a tube cutter when cutting the pipe.



* Chamfer the pipe end to C0.5.

② Chamfering the cut end

Use a file to chamfer the cut end.



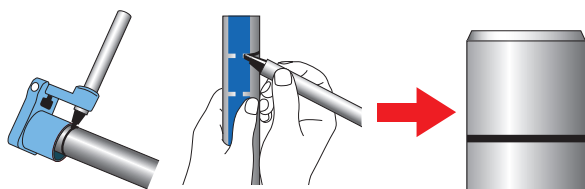
C 0.5



* If the pipe end cut by the tube cutter is not chamfered, it may damage the rubber ring, resulting in water leakage.
* Poor chamfering may cause damage to the rubber ring upon pipe insertion, resulting in water leakage.

③ Insertion length marking

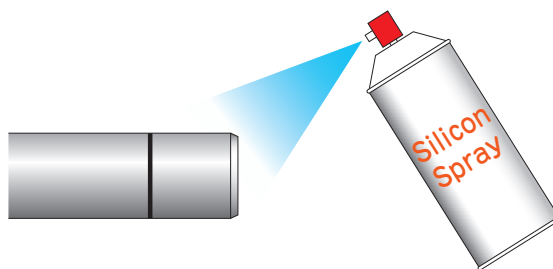
Use the special insertion length marker.



* Note that water leakage is not covered by the warranty if no line mark is present.

④ Silicon spraying

Apply silicon spray to the pipe before insertion.



⑤ Inserting the pipe

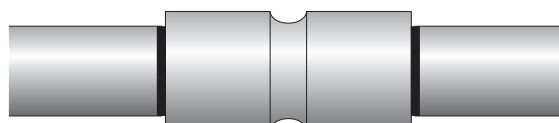
Slowly insert the pipe straight into the joint until it makes contact with the rubber ring. Then, press the pipe further into the joint until the line mark reaches the joint end.



* If the pipe is difficult to insert or cannot be inserted smoothly, forced pipe insertion may damage the rubber.

⑥ Completion

Check that the pipe has been inserted to the marked insertion length.

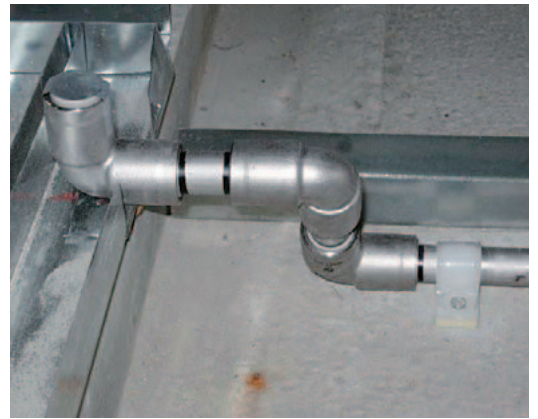


OK!

- ✓ Support and secure the pipe to prevent bending. A bent pipe or unstable (unsupported or unsecured) pipe may lead to water leakage.
- ✓ After the completion of the installation, perform the hydrostatic test as specified.

If it is difficult to insert a pipe into the joint, stop the installation process and contact us.

Project References





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<http://www.benkan.com/en>

* Information in this catalog released in October, 2013. The products are subject to change for quality improvement without notice.

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