

# **RUBBER EXPANSION JOINTS & FLEXIBLE HOSES**

## **INSTALLATION OPERATION AND MAINTENANCE MANUAL**



## HANDLING MANUAL

### Notes of Use

#### 1. Damage of Body

Please check the body for any damage before use. If any damage is found, especially on the packing area & inner rubber, etc., do not use the product.

#### 2. Operating Conditions

Please use the product within maximum allowable working pressure and working temperature.

#### 3. Valve Position Checking

The products might be damaged by improper valve position, such as complete shut-off while pump in operation, etc. Please check the valve 'Open-Close' position when pump operation.

#### 4. Valve Operation

Please operate the valve smoothly not to create water hammer or abrupt flow surging.

#### 5. Flow Velocity through Pipe

Please use the products in less than 3 m/sec. of flow velocity through the pipe.

#### 6. Chemical attack

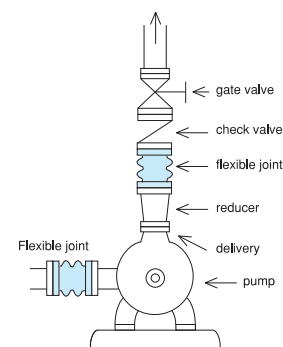
Please pay attention not to pour oils and fats, organic solvent (thinner, toluene, etc.), acid, alkali, etc. to the products. If spilled, wipe off at once.

### Notes of Storage

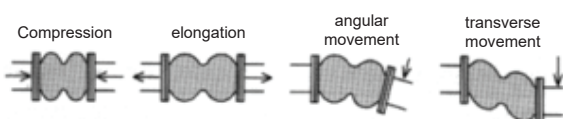
1. Pay attention to protect the products from damage during transportation and storage.  
If damaged, do not use the products.
2. In case of storage for a long time, avoid the direct rays of the sun and store the products in the cool and dark place.
3. Do not leave the products in the place in more than 40 Degree Celsius and excessive moisture for a long time.
4. Protect the products from fire and heat.
5. Do not load to the products.

### Notes of Installation

1. Avoid install the flexible joint at the downstream side of a check valve, i.e. Install the flexible joint between check valve and pump: Pressure surge or water hammer may occur at the delivery (downstream) side of a check valve when switching on & off a water pump. Such frequently occurred pressure surge may reduce the service life of the rubber joint.

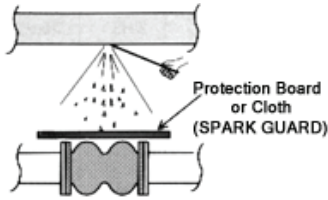


2. Install the joints within allowable tolerance of elongation, compression, transverse or angular bending.

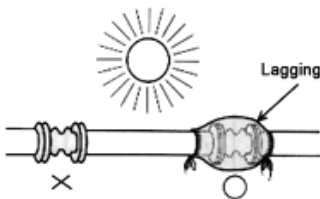


3. When the joints are in displacements, note for the joints not to touch the structure and equipment

4. Take measurement and make centering correctly not to add unnecessary external forces (compression, tension, torsion, etc.) when connecting the joints to the pipes.
5. When welding or cutting pipes nearby after installation, protect the joints with a cover like our SPARK GUARD from welding sparks. In case of the possibility of heat transmission, take some countermeasure like taking the joints off from the pipe, etc.



6. When installation to the outdoor pipes, make lagging to the joints to prevent the joints body aging.



## INSTRUCTION FOR CONNECTION :

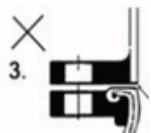
### Flange Type Connection



For the rubber flexible joints, the packing face of the joints might be damaged depending on the shape of counter flange. Check the shape of the counter flange with the followings.



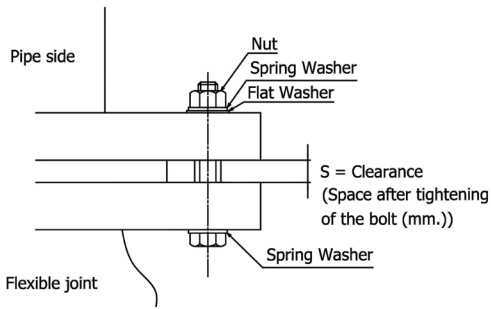
Do not use tongue and groove type flanges. It can damage the rubber packing face due to concentrated unit area load at small tongue contacting area.



In case of slip-on counter flanges, it is required for the contacting area is flat & smooth, or non-asbestos packing shall be used together because the packing face may be damaged even though the inner diameter of pipe end is same as rubber body and if the edge is not smooth.

Fix the installation bolts from the joint body side and tighten the nuts at the counter pipe side. It is more safety for the spring washers to be set to prevent looseness of the bolts. In case of the fully threaded bolt, note of the bolt edge not to protrude extraordinary the joint body side.

Tighten up the installation bolts in even in the diagonal order. Refer to the following table of the space after tightening of the bolts for each joint. The abnormal installation like uneven bolts tightening, etc. will be a factor of damage of the joints.

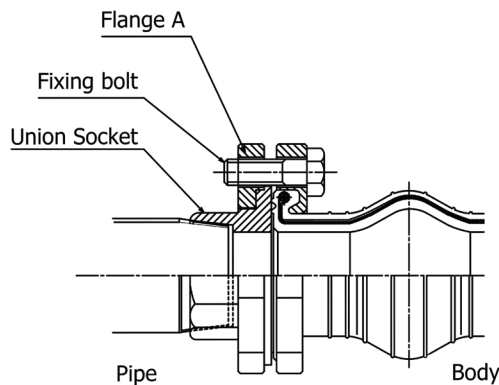


Nominal diameter	Clearance (mm)	Nominal diameter	Clearance (mm)
	TWINFLEX		eTWINFLEX25
	10-FLEX		
	OFLEX		
	OFLEX-H		
	TOZENFLEX		
20A・25A	1	32A~300A	1~2
32A~150A	1~2		
200A~600A	2~3		

\* Above clearance is based on flat face (FF) type counter flanges. If raised face (RF) type flange, add the RF thickness to the clearance.

### INSTALLATION PROCEDURE FOR SCREW END RUBBER JOINTS:

1. Examine the pipe threads on connecting pipes is to standard suitable for use.
2. Loosen the fixing bolts of the rubber joint until the union socket can turn freely.
3. Apply sealing tape (or sealant) on the pipe threads before attaching the socket onto the pipe.  
After tightening by hand, apply wrench between pipe and socket at normal torque.
4. Tighten the fixing-bolts evenly to the recommended clearance (S) as illustrated.



5. Connect another end of pipe in same manner. Avoid deforming the rubber joint during installation.  
The weight of the pipe shall be supported by other fixtures.
6. If both ends of pipe are fixed in place, remove the fixing-bolts to separate sockets with the rubber body before attaching socket onto the pipe.



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