

TMN-5000

Non-welding expansion joint

- Structure**
- The structure in which the bellows is embedded without welding
 - Stainless steel is used in the fluid contact portions.

- Application**
- Used for absorbing vibration, exhaust pipes, and various types of low-pressure pipes

- Feature**
- Suitable for pipe layouts of low-pressure exhaust gases and air. (Internal gasket (O-ring) is necessary if airtightness is required.)
 - Products without the internal cylinder can also be produced.

No.	Name	Material
1	Bellows	SUS304·SUS316·SUS316L others
2	Flange	SS400·SUS304·SUS316·SUS316L
3	Inner sleeve	SUS304·SUS316·SUS316L others
4	Mounting bracket	SS400·SUS304
5	Set bolt · nut	SS400·SUS304

Various flanges such as JIS2K, JIS5K, JIS10K, JISF8705, etc. can be attached

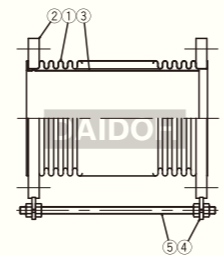
● Available NB : 20A~1500A

For low pressure (Other than standard face to face distance are also available. Please contact us for detail)

NB.	Standard face to face(mm)	NB.	Standard face to face(mm)	NB.	Standard face to face(mm)
20A	150	350A	300	950A	350
32A	150	400A	300	1000A	350
40A	150	450A	300	1050A	350
50A	150	500A	300	1100A	350
65A	150	550A	300	1150A	350
80A	150	600A	300	1200A	350
100A	200	650A	300	1250A	350
125A	200	700A	300	1300A	350
150A	200	750A	300	1350A	350
200A	200	800A	300	1400A	350
250A	200	850A	300	1450A	350
300A	200	900A	300	1500A	350



(Shape of inner sleeve will change depending on sizes)



TMN-1000 (10K)

Non-welding anti-vibration joint For 10K/20K

- Structure**
- The structure in which the bellows is embedded without welding
 - Stainless steel is used in the fluid contact portions.

- Application**
- Used for absorbing vibration, exhaust pipes, and various types of low-pressure pipes

- Feature**
- The double-layer bellows structure provides excellent vibration absorption and pressure resistance.

No.	Name	Material
1	Internal bellows	SUS316L
2	Outer bellows	SUS304
3	Flange	SS400·SUS304 others
4	Tie-rod bolt	SS400·SUS304 others
5	Shock absorber	Urethane, etc.
6	Base metal	SPCC·SUS304
7	Mounting bracket	SS400·SUS304
8	Adjustment nut	SS400·SUS304

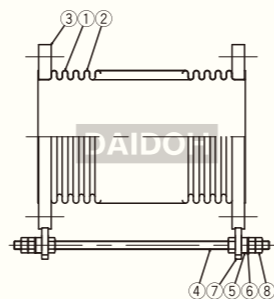
● Available NB : 50A~300A (32A, 40A) (350A~500A)

Standard face to face distance for 10K and distances that can be produced

NB.	Standard face to face(mm)	Producible face to face(mm)
50A	150	100~200
65A	150	100~200
80A	150	100~200
100A	150	100~300
125A	150	100~300
150A	150	100~300
200A	200	100~400
250A	200	100~400
300A	200	100~400

Standard face to face distance for 20K and distances that can be produced

NB.	Standard face to face(mm)	Producible face to face(mm)
50A	110	100~200
65A	110	100~200
80A	110	100~200
100A	150	100~300
125A	150	100~300
150A	150	100~300
200A	200	100~400
250A	200	100~400
300A	200	100~400



Operation manual for Expansion Joint and Vibration-proof Joint

1. This document is described general attention matters about conveyance, installation and maintenance of "Expansion joint".

- Warning** The meaning of this mark is the contents supposing man dying or becoming serious injury.
- Attention** The meaning of this mark is the contents supposing material damage, or man is injured. But it may be connected with a serious result depending on a situation.
- The meaning of this mark is "Prohibition".
- The meaning of this mark is "Compulsion".

2. The main portion of expansion joint is "Bellows" made from thin thickness stainless steel (or corrosion-resistant alloy, heat-resistant alloy). If bellows is damaged or corroded, durability of expansion joint will decline. Therefore, it is necessary to pay sufficient attention for prevention of the following matters with a possibility of reducing the quality of the expansion joint.

- ① Shock, drop
- ② Over displacement
- ③ Welding and cutting work near the expansion joint
- ④ Invasion of salt, sand and iron powder

3. Conveyance
Keep the following matters at conveyance.

- ① Convey horizontally as much as possible.
- ② Avoid the drag, drop and crash.
- ③ When hanging up the joint, use the cloth belts so that the wire does not contact the bellows directly. Do not hang up the expansion joint to hook the set-bolts or tie-rods. (There is a possibility that the set-bolts or tie-rods may be fallen off or changed the form.)

4. Storage
Store the expansion joint in the state of the following.

- ① On the flat place at ventilative place.
- ② Do not put the expansion joint on floor directly. Be sure to use a tie.
- ③ Wrap the opening parts of expansion joint by polyethylene sheets not to mix dust.
- ④ Take care not to attach the corrosive matters. (Stainless steel is superior to corrosive proof but take care not to attach the chloride because it is possible to corrode stainless steel by chloride existence.)
- ⑤ The place where the expansion joint does not touch the copper products or copper alloy products.
- ⑥ The place where there is no operation of welding, gouging and gas cutting near the joint.
- ⑦ In case of bellows with control ring, if a dust gets in between control ring and bellows, it might prevent normal compression. Wrap the outer surface of bellows to prevent mixing dust. (Refer to Fig.1)

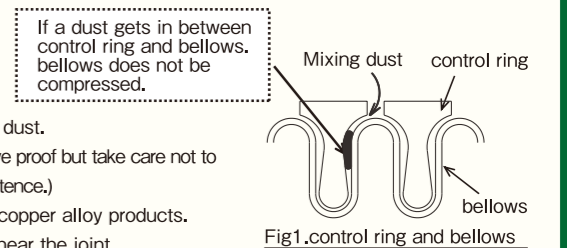


Fig1. control ring and bellows

5. Installation
At installation, take care of the following matters.

- ① Check the installation place by name plate or tag plate indicated the machinery number or size.
- ② Compare the fitting form and dimensions with drawing.
- ③ In case of expansion joint with inner sleeve, the direction of a flow of fluid is decided. Install according to the direction of flow given in the drawing (Refer to Fig.2).
- ④ Do not loosen the set-bolts until completing installation, because set-bolts are object for fixing overall length. After installation be sure to remove the set-bolts (Refer to Fig.2).
- ⑤ Nut of the tie-rods are already adjusted at the time of delivery. Do not loosen nuts of the tie-rods. (Given the drawing)
- ⑥ Don't install the tube with displacement beyond design value and don't twist.

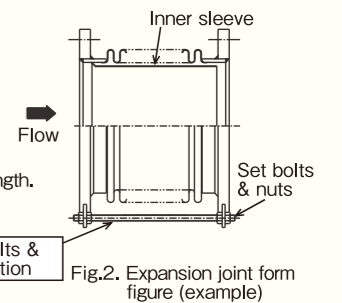


Fig.2. Expansion joint form figure (example)

6. After installation
Carry out the following matters not to damage and deteriorate the installed the expansion joint.

- ① Cover the tube with waterproof clothes and prevent to stick the iron powder, sand, dust and water.
- ② Attach the plate indicated to prohibit following matters.
 - A. Welding or weld cutting near and upper the tube.
 - B. Put the heavy things on the expansion joint.
 - C. Work to give a shock.
- ③ At welding or weld cutting upper the tube, be sure to cover the tube with nonflammable clothes.

7. Inspection of pressure proof test of piping line.

- Check the following matters during and immediately after system pressure test.
 - ① Leakage of fluid
 - ② Abnormal transformation
 - ③ Other abnormal condition

8. Check of the expansion joint at test working of piping line.

- Judge the following matters at test working.
 - ① Vibration
 - ② Displacement
 - ③ Rust
 - ④ Abnormal transformation, leakage

9. Regular inspection during using period.

- Check the following matters at regular inspection.
 - ① Determine the frequency of inspection according to external environment or inner fluid on operation. Clean and exchange old for new to prevent damage accident if needed.
 - ② Rust or corrosive condition on outer surface.
 - ③ Corrosive condition of inner surface of expansion joint.※ Remove the expansion joint from piping system and check.
 - ④ External damage and abnormal transformation
 - ⑤ Trace of leakage (Be careful of a penetration of the fluid from flange gasket faces.)
 - ⑥ Looseness of bolts.

10. Attention items of hinged expansion joint

- ① Hinged arms are attached in both sides of bellows of hinged expansion joint. Install the hinged expansion joint so that hinged arms and flow of displacement become parallel.

