

## BELLOW

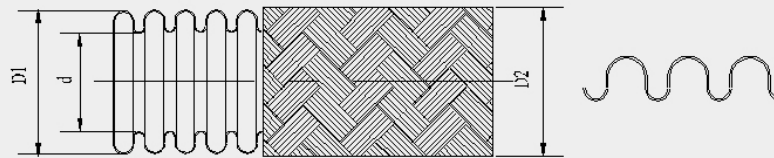
### YB Type Bellows



#### Features :

JB type bellows are manufactured by machinery spinning continuously in forming of annular corrugation or U-shape annular corrugation. They have good flexibility and pressure resistant and are available to variety of fittings.

- Manufactured based on ISO10380 and GB/T14525-2010
- Materials of hose body : SUS304, SUS321, SUS316L
- Materials of braiding : SUS304



TYPE	DN	IN	INNER DIAMETER	OUTER DIAMETER	OUTER DIAMETER	TOLEANCE	MINI.STATIC BENDING RADIUS	MINI.STATIC BENDING RADIUS	TYPE
			d/mm	D1/mm	D2/mm		R min/mm	Rr/mm	TYPE
JB	6	1/4	6.1	9.6	10.8	±0.25	25	80	T15
JB	8	5/16	8.4	12.2	13.4	±0.25	32	120	10
JB	10	3/8	10.1	14.2	15.4	±0.25	38	130	10
JB	12	1/2	12.3	16.8	18	±0.25	45	140	6.5
JB	16	5/8	16.3	21.8	23	±0.25	58	160	6.5
JB	20	3/4	20.3	26.6	27.8	±0.25	70	170	4
JB	25	1	25.4	32.3	33.5	±0.3	85	190	5
JB	32	1 1/4	34.1	41.1	42.7	±0.3	105	260	2.5
JB	40	1 1/2	40	49.5	51.1	±0.3	130	300	4
JB	50	2	50.5	60.5	62.1	±0.3	160	320	2.5

## BELLOW

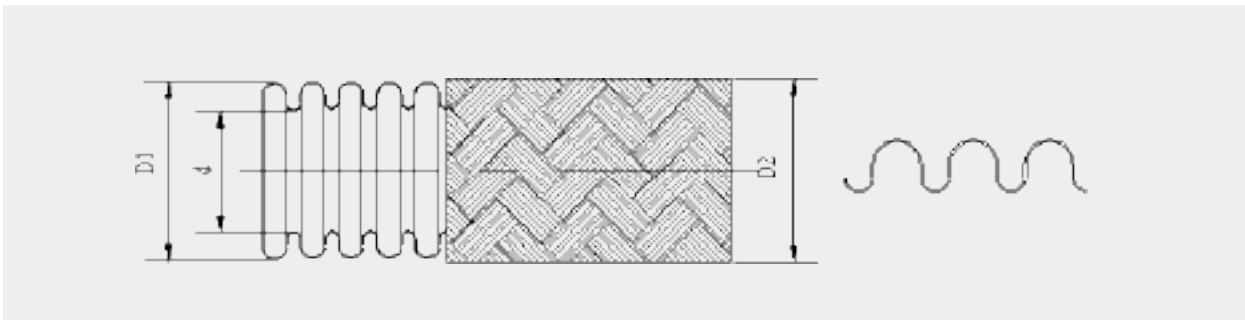
### YB Type Bellows



#### Features :

YB type bellows are manufactured by hydraulic forming continuously. They have good flexibility and pressure resistant and are available to variety of fittings.

- Manufactured based on ISO10380 and GB/T14525-2010
- Materials of hose body : SUS304, SUS321, SUS316L
- Materials of braiding : SUS304



TYPE	DN	IN	INNER DIAMETER	OUTER DIAMETER	OUTER DIAMETER	TOLERANCE	MINI.STATIC BENDING RADIUS	NOMINAL BENDING RADIUS	NOMINAL PRESSURE (20°C/Mpa)	WEIGHT
			d/mm	D1/mm	D2/mm		R min/mm	Rn/mm		
YB	65	2 1/2	66.7	82	84	±0.3	200	845	9	2.25
YB	80	3	80.5	100	102	±0.3	240	1000	9	3.02
YB	100	4	100	121	122.6	±0.3	290	1200	7	4.08
YB	125	5	124.5	150	152	±0.5	750	1500	6	6.7
YB	150	6	149.5	180	182	±0.5	900	1800	6	7.75
YB	200	8	199.4	240	242	±1	1000	2000	6	12.2
YB	250	10	249.5	302	304	±1	1250	2500	6	16.5
YB	300	12	300	352	354	±1	1500	3000	3.5	22.9
YB	350	14	350	406	409.2	±1	1750	3500	3.5	32.35
YB	400	16	404	464	467.2	±1	2000	4000	3.5	40.15

## BELLOW

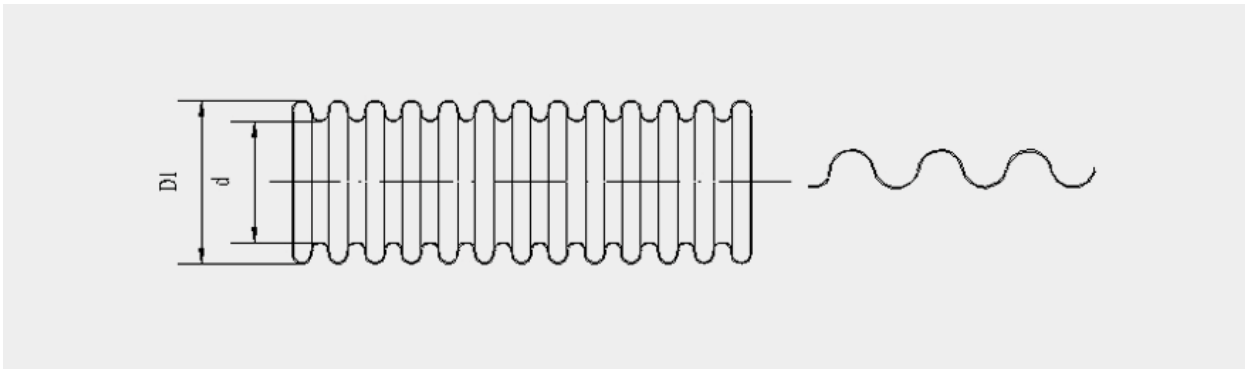
### KB Type Bellows



#### Features :

KB type bellows are manufactured by machinery spinning continuously. They have high performance in pressure resistant and large heat-bearing area and are available to variety of fittings.

- Manufactured based on ISO10380 and GB/T14525-2010
- Materials of hose body : SUS304, SUS321, SUS316L



TYPE	DN	IN	INNER DIAMETER	OUTER DIAMETER	TOLERANCE	MINI.STATIC BENDING RADIUS	NOMINAL PRESSURE	WEIGHT
			d/mm	D1/mm	mm	Rm in/mm	(20°C/MPa)	kg/m
KB	20	3/4	20.5	26	±0.25	30	1	0.305
KB	25	1	25.6	31.7	±0.3	35	1	0.382
KB	32	1 1/4	34.6	41.1	±0.3	40	0.4	0.553
KB	40	1 1/2	40.7	49.5	±0.3	50	0.35	0.8

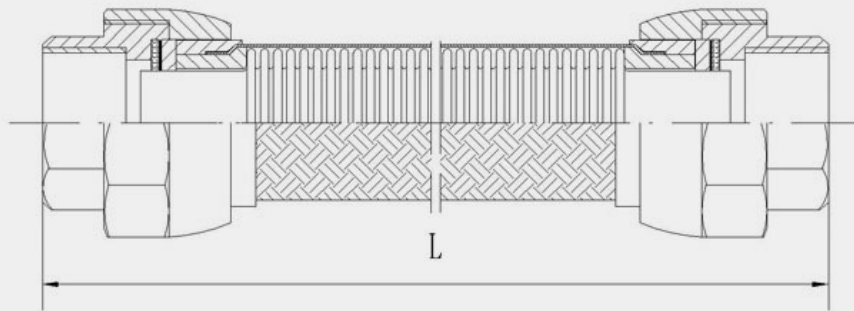
## FLEXIBLE METAL HOSE

DQ-W50

### Features :

The product is mechanically clinching with compact structure and reasonable manufacturing process. Compared with the welding type hose, it has lower cost but longer service life. The simple connection to the pipeline makes it the best choice, especially for low and high temperature and high frequency vibration ambient

- Material of bellows: SUS304 (SUS316L is also available)
- Material of braid: SUS304
- Connection: Union
- Joint Material: Cast iron Q235B



NOMINAL DIAMETER	TYPE	NOMINAL PRESSURE (Mpa)	LENGTH (mm) L
DN15	DQ-W50	1.6	$L \geq 250$
DN20	DQ-W50	1.6	$L \geq 250$
DN25	DQ-W50	1.6	$L \geq 250$
DN32	DQ-W50	1.6	$L \geq 250$
DN40	DQ-W50	1.6	$L \geq 250$
DN50	DQ-W50	1.6	$L \geq 250$



## FLEXIBLE METAL HOSE

DQ-W60

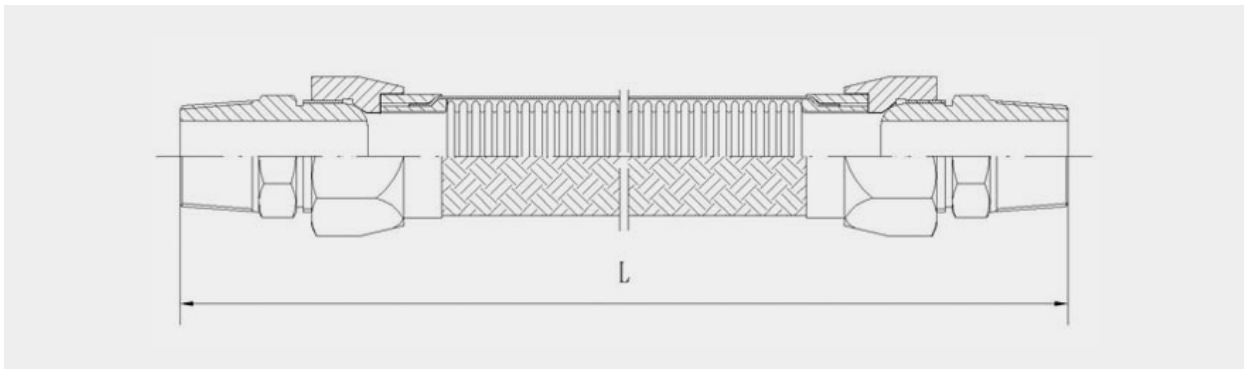


### Features :

The product is mechanically clinching with metallic seal, compact structure and reasonable manufacturing process.

Compared with the welding type hose, it has lower cost but longer service life. The unique simple connection to the pipeline makes it the best choice for piping work, especially for low and high temperature and high frequency vibration ambient.

- Material of bellows: SUS304 (SUS316L is also available)
- Material of braid: SUS304
- Connection: Union
- Joint material: Copper and carbon steel



NOMINAL DIAMETER	TYPE	NOMINAL PRESSURE (Mpa)	LENGTH (mm) L
DN15	DQ-W60	1.6	$L \geq 250$
DN20	DQ-W60	1.6	$L \geq 250$
DN25	DQ-W60	1.6	$L \geq 250$

## FLEXIBLE METAL HOSE

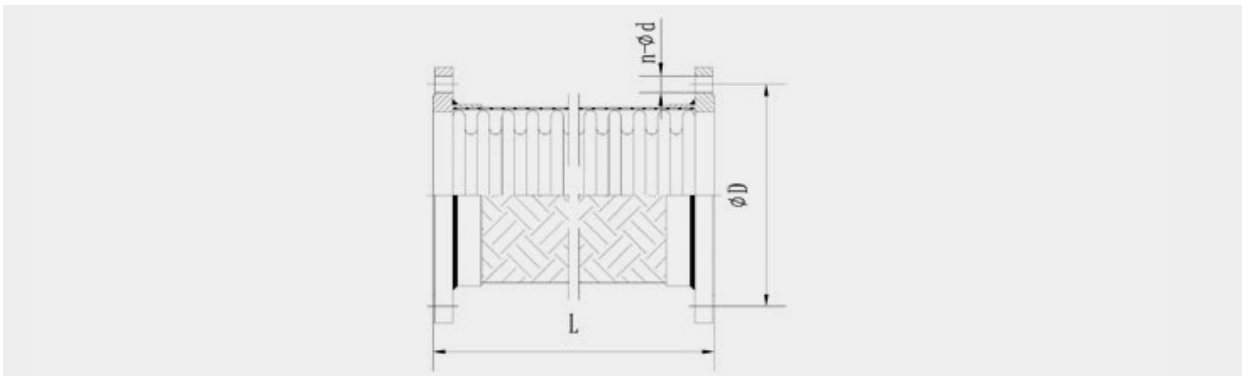
DQ-JZ-F11/F11



### Features :

Anti-vibration metal hose, with fixed flanged ends, is good at decreasing vibration and noise. The project quality and service life of equipment will be significantly advanced if such hoses are installed at inlet and outlet of the pump and compressor. The product can avoid disadvantages of rubber fitting, such as aging and burst caused by material fatigue and failure. This vibration absorption hose is a good choice for engineering design and application because it can not only reduce the vibration and noise during operation but also compensate misalignment of pipeline.

- Material of bellows: SUS304 (SUS316L is also available)
- Material of braid: SUS304
- Connection: Flanged connection
- Joint material: Carbon steel and SUS304, SUS316L



NOMINAL DIAMETER	TYPE	CONNECTION PARAMETER		LENGTH (mm)		
		D	n-φd	L		
DN15	DQ-JZ-F11/F11	Please refer to		200	250	300
DN65	DQ-JZ-F11/F11	GB/T9119-2000		200	250	300
DN80	DQ-JZ-F11/F11	HG/20592-20635-2009		200	250	300
DN100	DQ-JZ-F11/F11	EN1092-1 ASME-B16.5		200	250	300
DN125	DQ-JZ-F11/F11	SH3406-1996 and etc.		200	250	300
DN150	DQ-JZ-F11/F11			200	250	300
DN200	DQ-JZ-F11/F11			200	250	300
DN250	DQ-JZ-F11/F11			200	250	300
DN300	DQ-JZ-F11/F11			200	250	300

## FLEXIBLE METAL HOSE

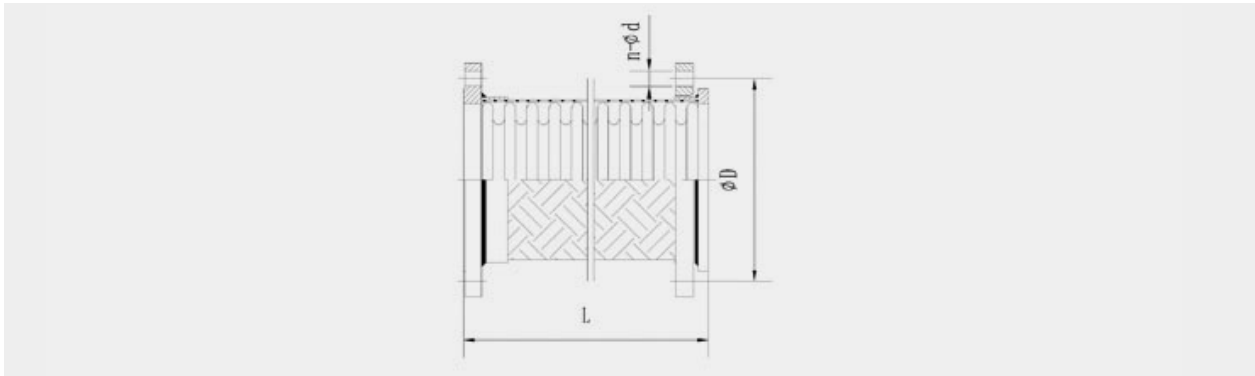
DQ-JZ-F11/F12



### Features :

Anti-vibration metal hose is good at decreasing vibration and noise. One of the ending sides is fixed flanged connection and the other is swivel flanged connection. The project quality and service life of equipment will be significantly absorbed if such hoses are installed at inlet and outlet of the pump and compressor. The product can avoid disadvantages of non-metallic fittings, such as aging and burst caused by material fatigue and failure. This vibration absorption hose is a good choice for engineering design and application because it can not only reduce the vibration and noise during operation but also compensate misalignment of pipeline.

- Material of bellows: SUS304 (SUS316L is also available)
- Material of braid: SUS304
- Connection: Flanged connection
- Joint material: Carbon steel and SUS304, SUS316L



NOMINAL DIAMETER	TYPE	CONNECTION PARAMETER		LENGTH (mm)	
		D	n-φd	L	
DN50	DQ-JZ-F11/F12	Please refer to		250	300
DN65	DQ-JZ-F11/F12	GB/T9119-2000		250	300
DN80	DQ-JZ-F11/F12	HG/20592-20635-2009		250	300
DN100	DQ-JZ-F11/F12	EN1092-1 ASME-B16.5		250	300
DN125	DQ-JZ-F11/F12	SH3406-1996 and etc.		250	300
DN150	DQ-JZ-F11/F12			250	300
DN200	DQ-JZ-F11/F12			250	300
DN250	DQ-JZ-F11/F12			250	300
DN300	DQ-JZ-F11/F12			250	300

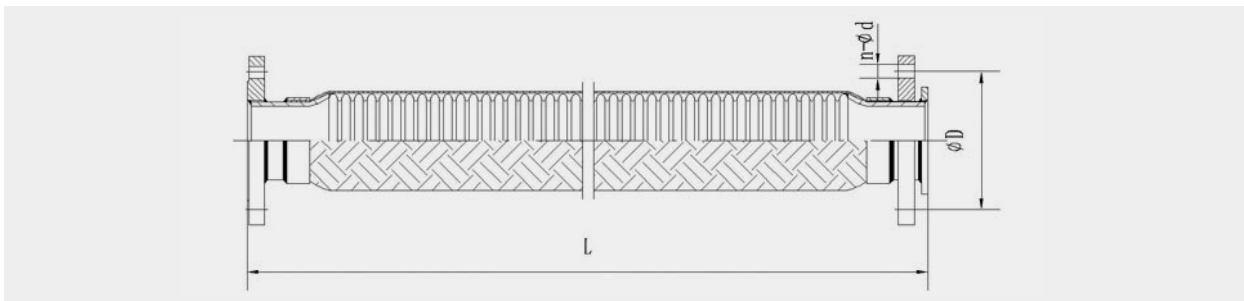
## FLEXIBLE METAL HOSE

DQ-SP-F1

### Features :

This type of hose plays important role in the field of transmission and distribution. As a transmission link of all kinds of piping connection, DQ-SP-F1 hose is used to convey medium and change the direction of conveyance or machinery position. So it is applied to many fields such as petrochemical industry and aerospace. The corrugated hose which is covered with metal braiding is made of stainless steel. One of the ending sides is fixed flanged connection and the other is swivel flanged connection.

- Material of bellows: SUS304 (SUS316L is also available)
- Material of braid: SUS304
- Connection: Flanged connection
- Joint material: Carbon steel and SUS304, SUS316L



NOMINAL DIAMETER	TYPE	CONNECTION PARAMETER		LENGTH (mm)
		D	n-φd	L
DN15	DQ-SP-F1	Please refer to		$L \geq 500$
DN20	DQ-SP-F1	GB/T9119-2000		$L \geq 500$
DN25	DQ-SP-F1	HG/20592-20635-2009		$L \geq 500$
DN32	DQ-SP-F1	EN1092-1 ASME-B16.5		$L \geq 500$
DN40	DQ-SP-F1	SH3406-1996 and etc.		$L \geq 500$
DN50	DQ-SP-F1			$L \geq 500$
DN65	DQ-SP-F1			$L \geq 500$
DN80	DQ-SP-F1			$L \geq 500$
DN100	DQ-SP-F1			$L \geq 500$
DN125	DQ-SP-F1			
DN150	DQ-SP-F1			
DN200	DQ-SP-F1			

## METAL EXPANSION JOINTS

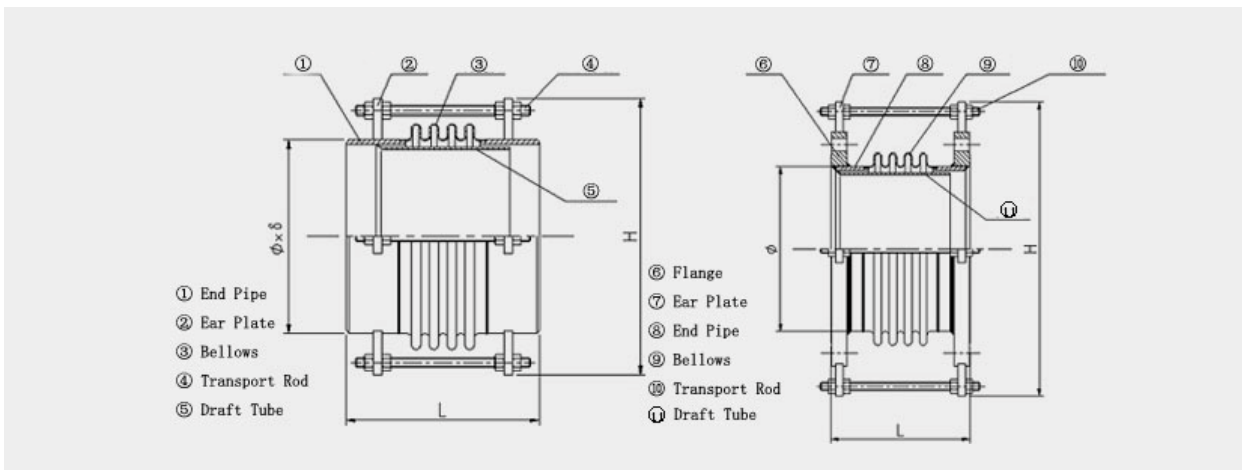
### 1. General Simplex Internal Pressure Type



#### Features :

The type of expansion joints consists of one bellow and some other components. It can compensate axial movements through the corrugated flexible deformation and also can absorb a little lateral movements or axial and lateral movements in combination as well as angular movements which is seldom used. There are two ways of installation, one is the pipe end can be welded with pipeline directly, and the other one is connected with flanges during the.

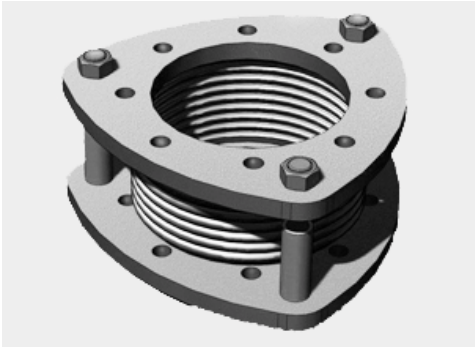
The rod of expansion joints doesn't carry the weight at all but only is a support during the transportation or as an adjustment in case of pre-deformation.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN80-DN3000
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Flanged connections or pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

## METAL EXPANSION JOINTS

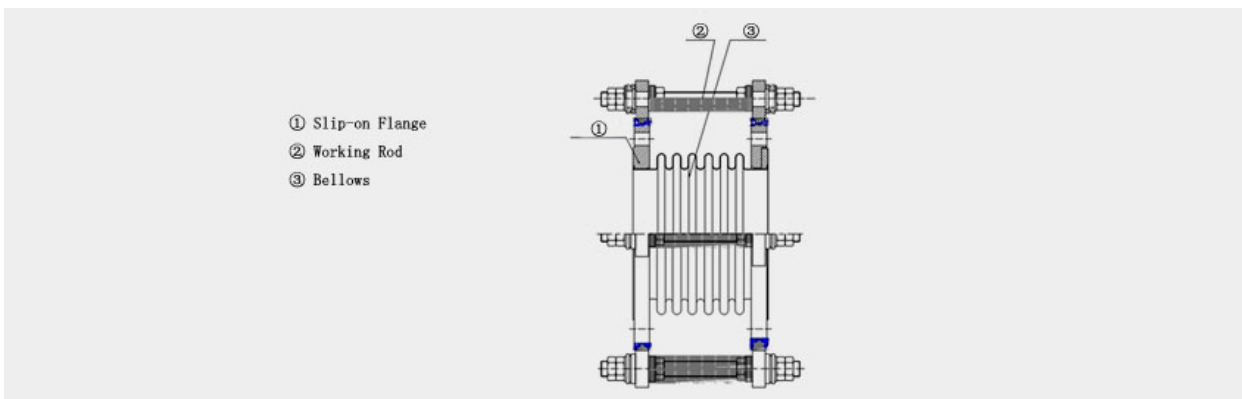
### 2.Vibration Decoupling Type Expansion Joints



#### Features :

Our corporation has years of manufacturing experience and developed this type of product particular for the working environments of equipments such as pumps and compressors. The flexible bellows designed by special technology help the product with higher ability of absorbing vibration and noise. At the same time the project quality and service life of equipments will be greatly improved.

The product solves the problem of bad weather resistance of rubber flexible joints, avoiding burst caused by material fatigue and failure. It is a good choice for engineering design and application because it can not only reduce the vibration and noise during operation but also compensate movements of pipeline.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN50-DN700
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Flanged connections or pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

## AXIAL EXPANSION JOINTS

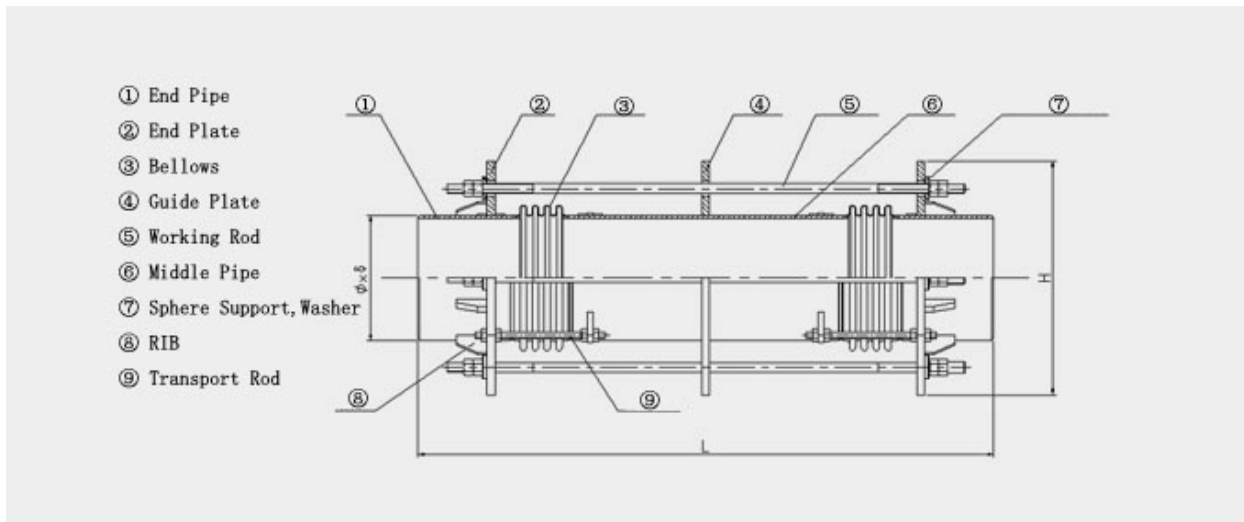
### 1. Lateral Tie Rod Type Expansion Joints



#### Features :

This type of expansion joints consist of two bellows connected by an intermediate pipe, tie rods, end plates, washers of spherical surface or conical surface and some other components.

Movements in any plane can be absorbed. Once movements occur, the spherical surface washer will turn around the conical surface washer and the tie rod will carry the thrust created by medium's internal pressure at the same time.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN100-DN3000
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Flanged connections or pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)



## AXIAL EXPANSION JOINTS

### 2. Directly Buried One-off Expansion Joints



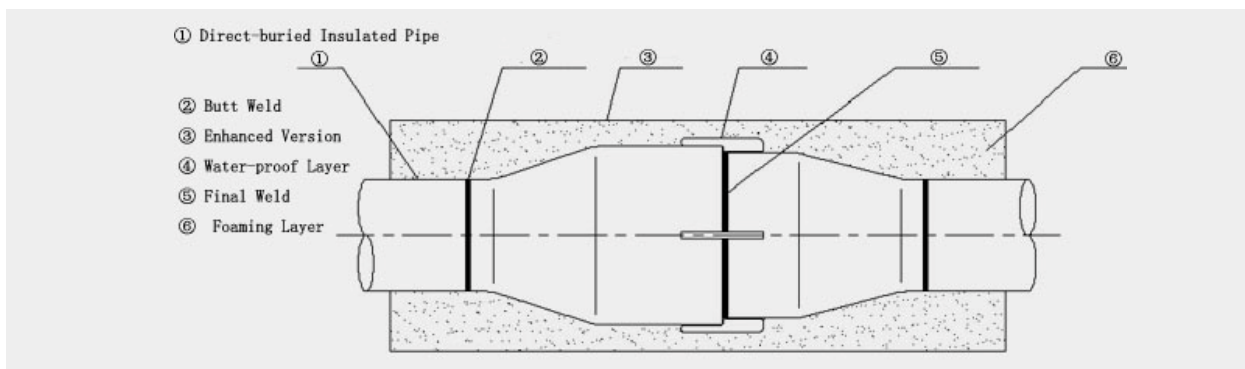
#### Features :

This type of expansion joints is the corporation's patented product. After improvement, the arc transition is adopted between the straight section and the continuously changing reducer which connected with outer sleeve. This structure has solved the problem of stress concentration totally and the force that working force of the bellow expansion joints will tend to be more reasonable.

Compared with the traditional structure, the improved product has high strength, good quality, and is more stable and reliable. In a sense, the new structure has changed the concept that the

single-use directly buried bellows expansion joint was regarded as a weak link in the network of directly buried non-compensation pipeline network. The new structure has promoted the technology of directly buried without compensation. Hundreds of improved bellow expansion joints has been put into use in several and no one is damaged by cold-drawn tearing. We believe that this new structure is worth popularizing in the heating engineering, especially suitable for high chlorine ion soil of the coastal city.

At present the product has got the national patent protection (patent number: ZL200520026114. X)



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN50-DN1200
- Working Pressure: PN2.5/6/10/16
- Working Temperature: -80°C/+ 450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)



## AXIAL EXPANSION JOINTS

### 3. Axial Unidirectional Internal Pressure Type

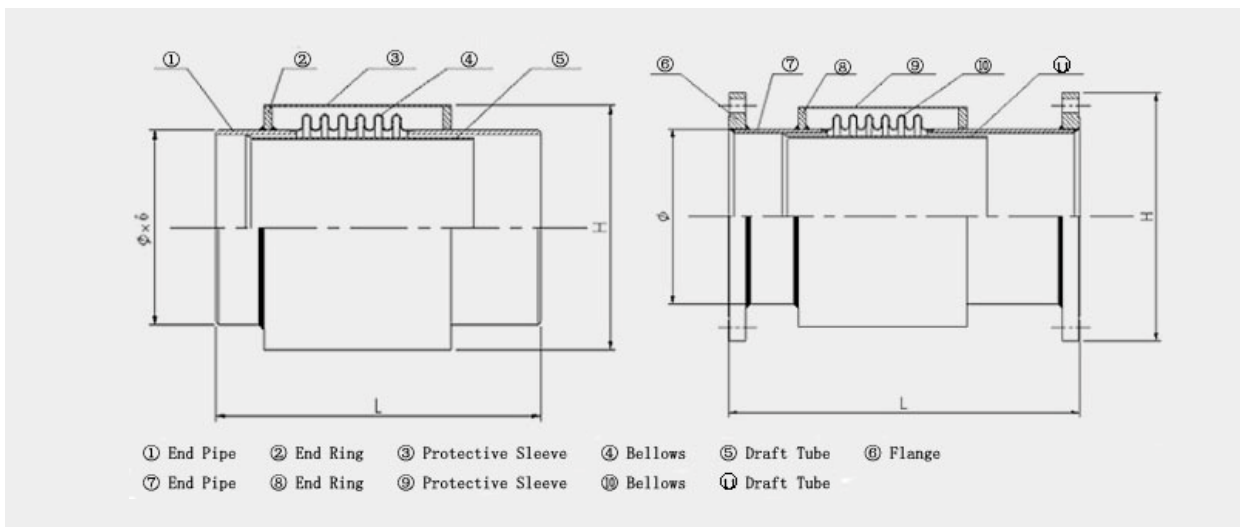


#### Features :

The type of expansion joints consists of one bellows and some other components. It can compensate and absorb axial movements through the corrugated flexible deformation. The bellows is protected by strong sleeve.

The sleeve also keeps the product stable.

The pipe end will be connected by welding directly during the installation.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN80-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Flanged connections or pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

## AXIAL EXPANSION JOINTS

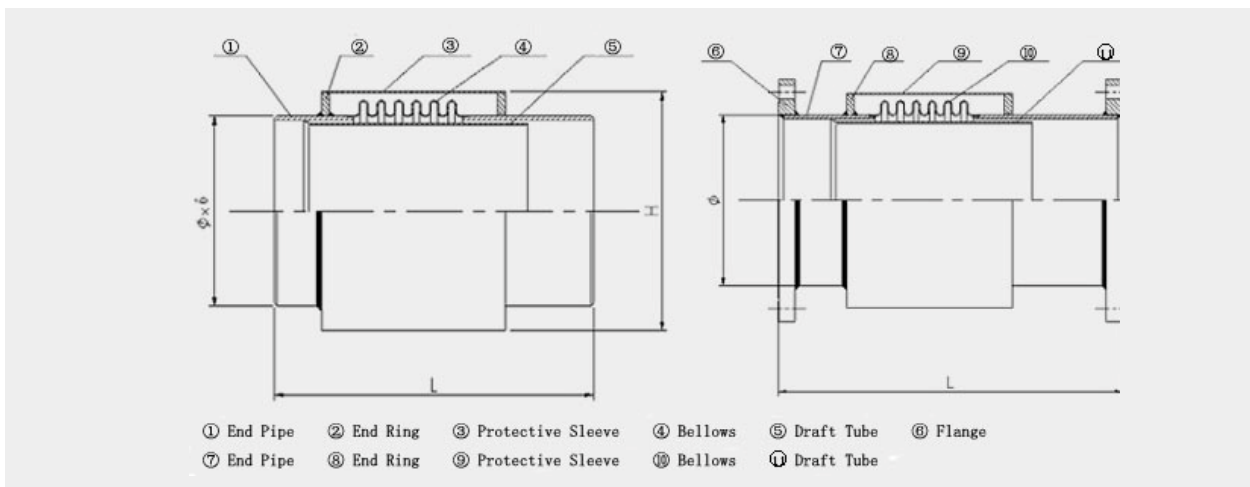
### 4. Axial Unidirectional External Pressure Type



#### Features :

This type of expansion joints consists of one bellow which is used to carry the external pressure , one sleeve, two end rings and some other components.

The expansion joints, with good self-conductance, is widely used in heat supply network. It can absorb most axial movements but do not carry the thrust created by the bellow's pressurization.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN65-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Flanged connections or pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements) Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

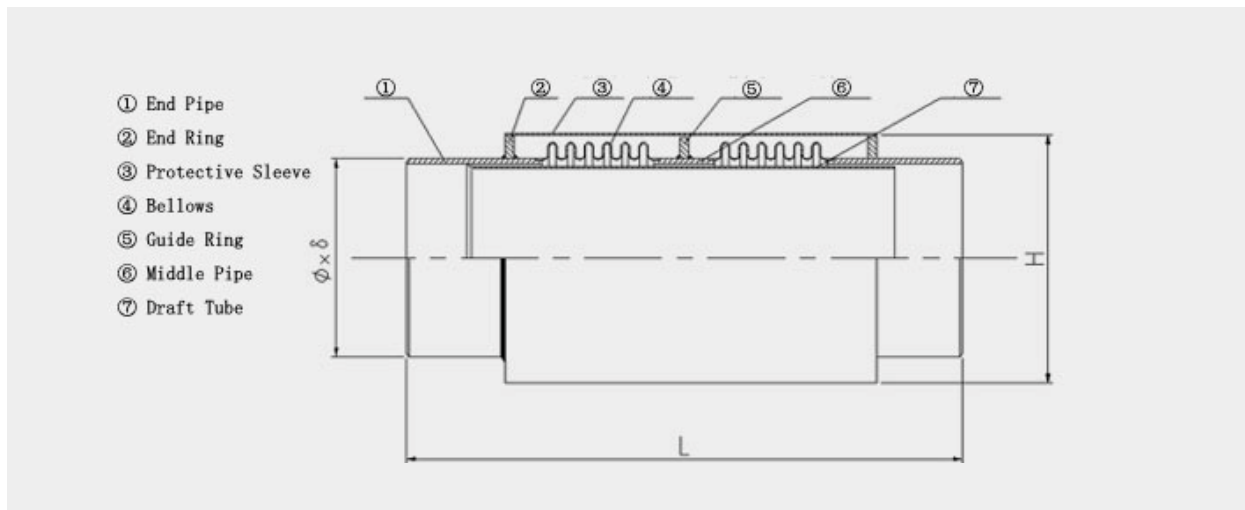
## AXIAL EXPANSION JOINTS

### 4. General Multiple Internal Pressure Type



#### Features :

The type of expansion joints consists of two or more groups of bellows, end pipes, annular plates and one sleeve. It can only absorb axial movements along with the pipeline. It has more pitches, and more movements can be compensated. The sleeve not only protects the bellows during the transportation and installation, but also makes sure of the stability of bellow expansion joints. In addition, the operation of keeping warm for the pipeline is much easier by this sleeve.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN80-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

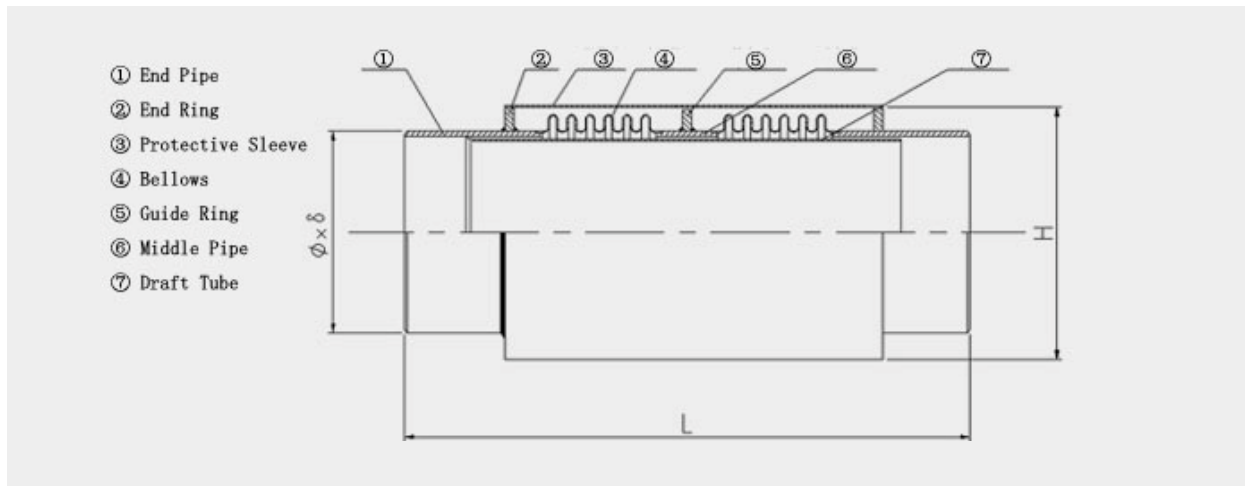
## AXIAL EXPANSION JOINTS

### 5. Anchor-Free Bidirectional Directly Buried Internal Pressure Type



#### Features :

Compared with the Bidirectional Directly Buried Internal Pressure Type this type has two more devices used for internal fixation and applies to straight-buried pipes without laying anchor block. Except that, there is no difference from general types. It has strong bending resistance, there is no need to worry about the pipeline sedimentation. It's very easy to be installed.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN80-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

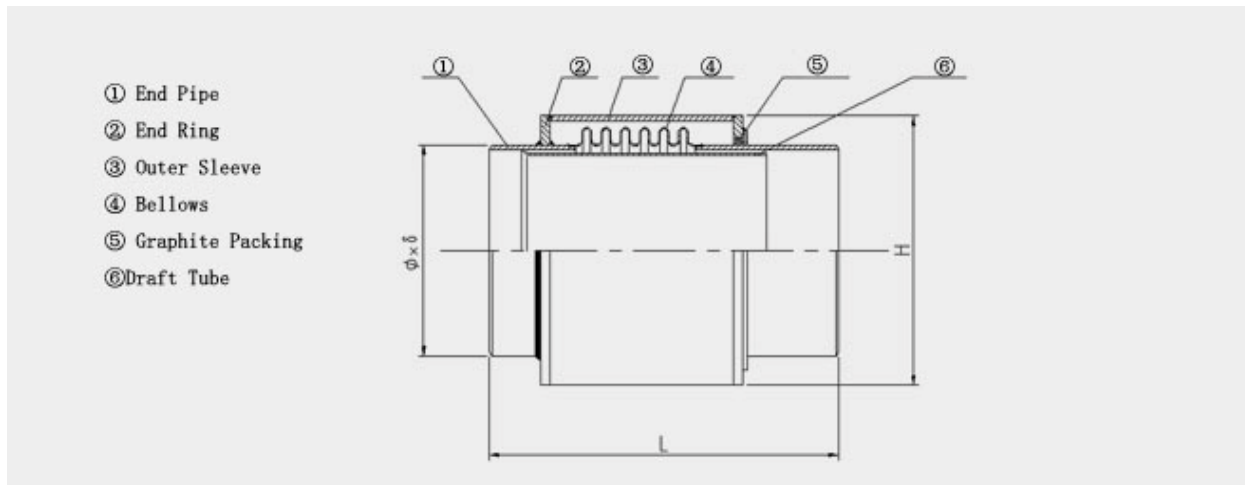
## AXIAL EXPANSION JOINTS

### 6. Unidirectional Directly Buried Internal Pressure Type



#### Features :

Under the protection of the sleeve and the guide ring, bellows of this type of expansion joints can stretch out and draw back freely to compensate. The sealing device makes it possible to bury directly to absorb the deformation of heat distribution pipelines. Except that, there is no difference from general types. It has strong bending resistance, there is no need to worry about the pipeline sedimentation. It's very easy to be installed.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN80-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

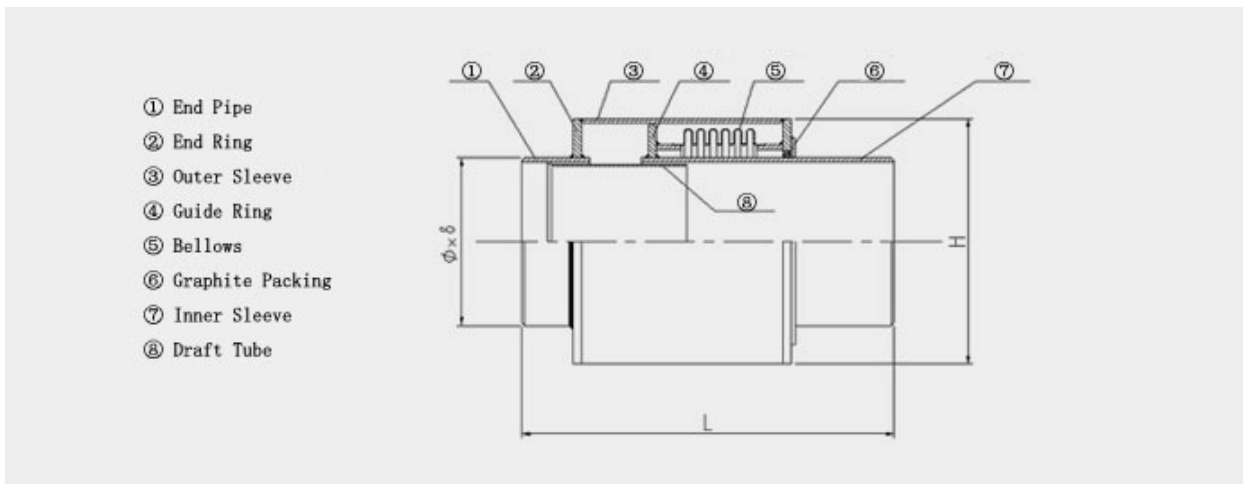
## AXIAL EXPANSION JOINTS

### 7. Unidirectional Directly Buried External Pressure Type



#### Features :

This type of expansion joints has all of the advantages both of the External Pressure Type and the Directly Buried Internal Pressure type. It not only can be buried directly, but also has strong compensation ability. So when we use this type of expansion joints we not only make sure of the construction quality but also save the project cost greatly at the same time. That's the reason why it is widely used in the city thermal pipeline network projects



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN65-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

## AXIAL EXPANSION JOINTS

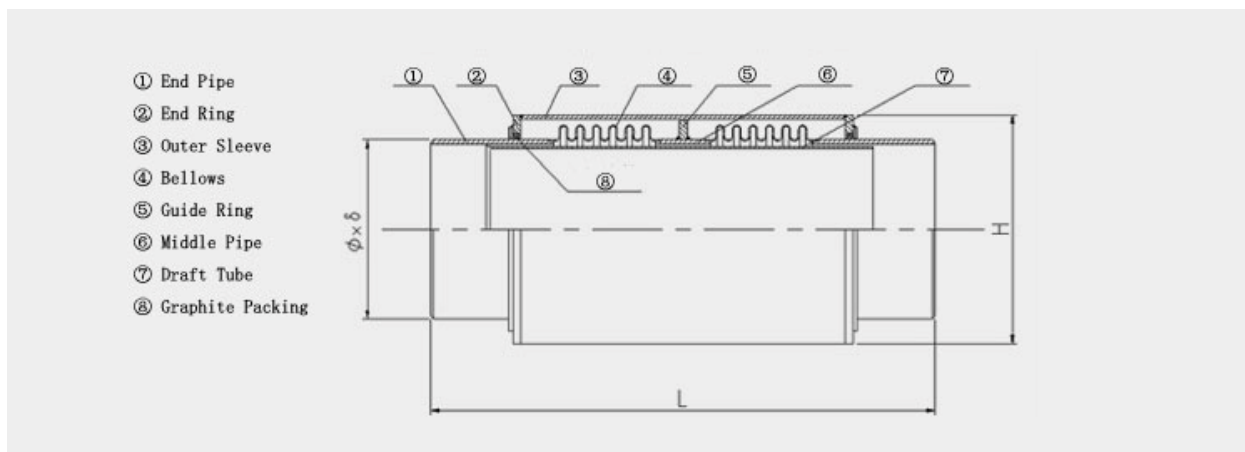
### 8. Bidirectional Directly Buried Internal Pressure Type



#### Features :

This type of expansion joints has all of the advantages both of the External Pressure type and the Directly Buried Internal Pressure type. It not only can be buried directly, but also has strong compensation ability. So when we use this type of expansion joints we not only make sure of the construction quality but also save the project cost greatly at the same time. That's the reason why it is widely used in the city thermal pipeline network projects.

Compared with Unidirectional Directly Buried External Pressure Type this product can be installed between two fixed supports and provide more compensation.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN65-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)



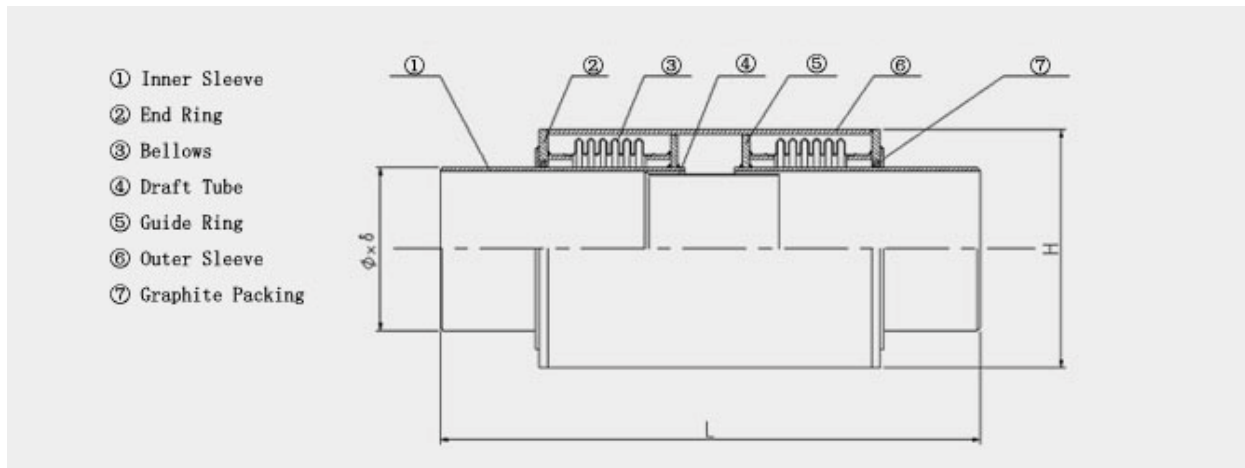
## AXIAL EXPANSION JOINTS

### 9. Bidirectional Directly Buried External Pressure Type



#### Features :

This type of expansion joints has all of the advantages both of the External Pressure type and the Directly Buried Internal Pressure type. It not only can be buried directly, but also has strong compensation ability. So when we use this type of expansion joints we not only make sure of the construction quality but also save the project cost greatly at the same time. That's the reason why it is widely used in the city thermal pipeline network projects. Compared with Unidirectional Directly Buried External Pressure Type this product can be installed between two fixed supports and provide more compensation.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN65-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)



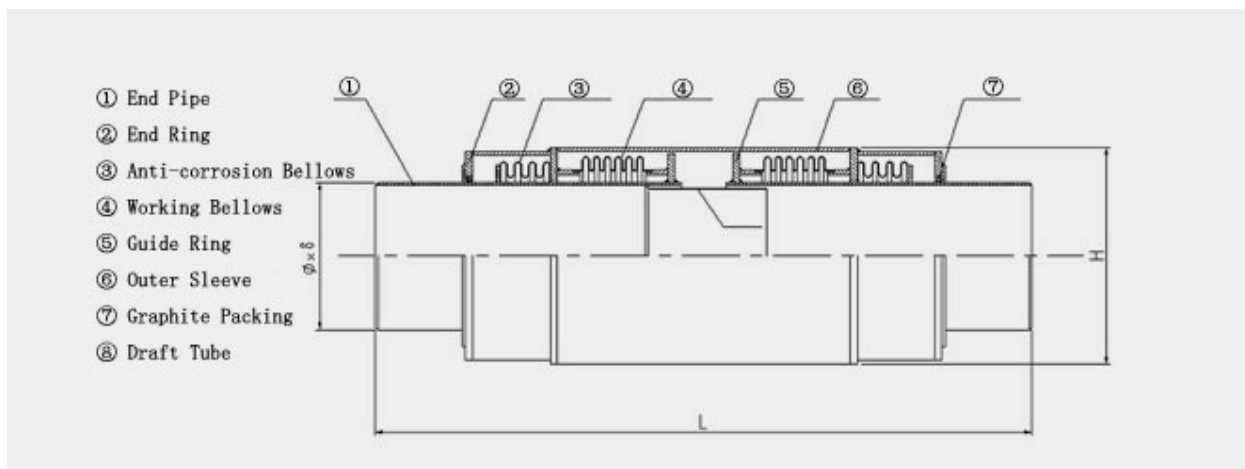
## AXIAL EXPANSION JOINTS

### 11. Corrosion-resistant Bidirectional Directly Buried Internal Pressure Type



#### Features :

Under the protection of the sleeve and the end ring, bellows of this type of expansion joints can maintain freely scalable compensation. Corrosion resistant bellows and the sealing device make it be able to bury directly to absorb the deformation of thermal pipelines. Corrosion resistant bellows can resist the corrosion caused by the underground water, especially suitable for high chlorine ion soil of the coastal city. This type of expansion joints can be installed between two fixed supports and provide more compensation and it's very easy to be installed.



- Material of Bellows: SUS 304(SUS316L is also available)
- Nominal Diameter: DN80-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS316L is also available)

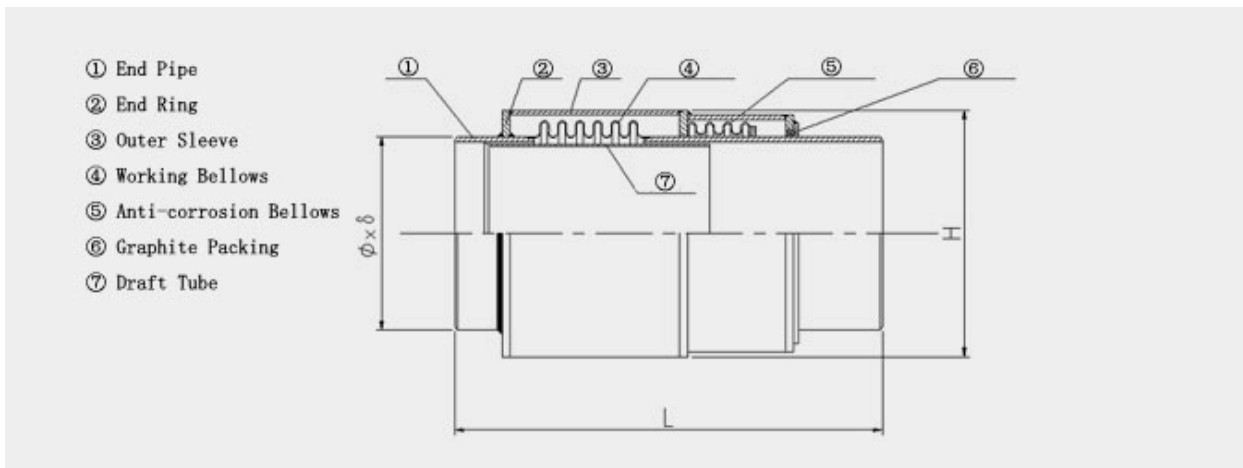
## AXIAL EXPANSION JOINTS

### 12. Corrosion-resistant Unidirectional Directly Buried Internal Pressure Type



#### Features :

Under the protection of the sleeve and the end ring, bellows of this type of expansion joints can maintain freely scalable compensation. Corrosion resistant bellows and the sealing device make it be able to bury directly to compensate the deformation by cold or hot temperature of the thermal pipelines. Corrosion resistant bellows can resist the corrosion caused by the underground water, especially suitable for high chlorine ion soil of the coastal city. It has strong bending resistance, there is no need to worry about the pipeline sedimentation. It's very easy to be installed.



- Material of Bellows: SUS 304(SUS316L is also available)
- Nominal Diameter: DN80-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS316L is also available)

## AXIAL EXPANSION JOINTS

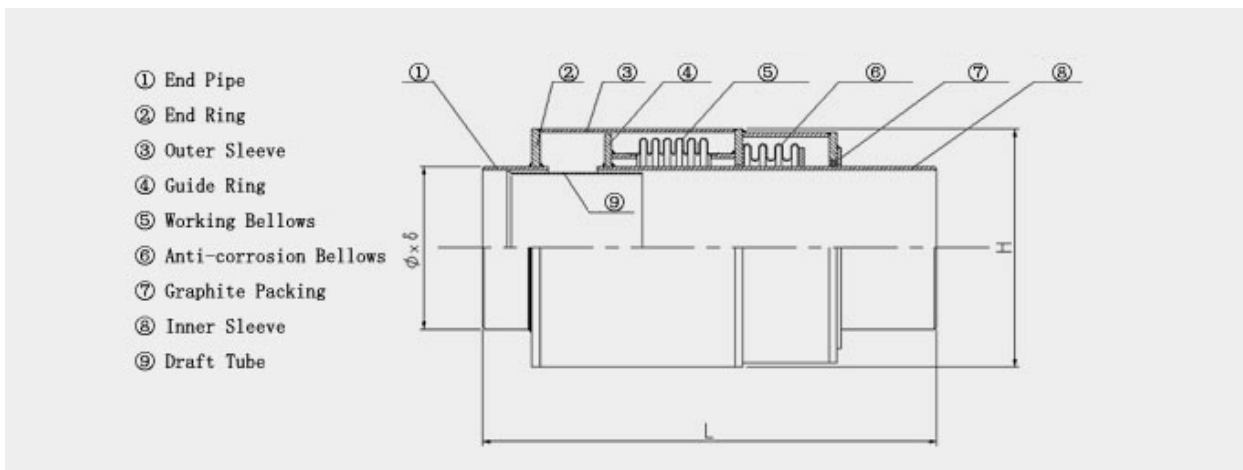
### 13. Corrosion-resistant Unidirectional Directly Buried External Pressure Type



#### Features :

This type of expansion joints has all of the advantages both of the external pressure type and the corrosion resistant Unidirectional directly buried Internal Pressure type. It not only can be buried directly, but also has strong compensation ability. So when we use this type of expansion joints we not only make sure of the construction quality but also save the project cost greatly at the same time. That's the reason why it is widely used in the city thermal pipeline network projects.

Corrosion-resistant bellows can resist the corrosion caused by the underground water, especially suitable for high chlorine ion soil of the coastal city.



- Material of Bellows: SUS 304(SUS316L is also available)
- Nominal Diameter: DN65-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS316L is also available)

## AXIAL EXPANSION JOINTS

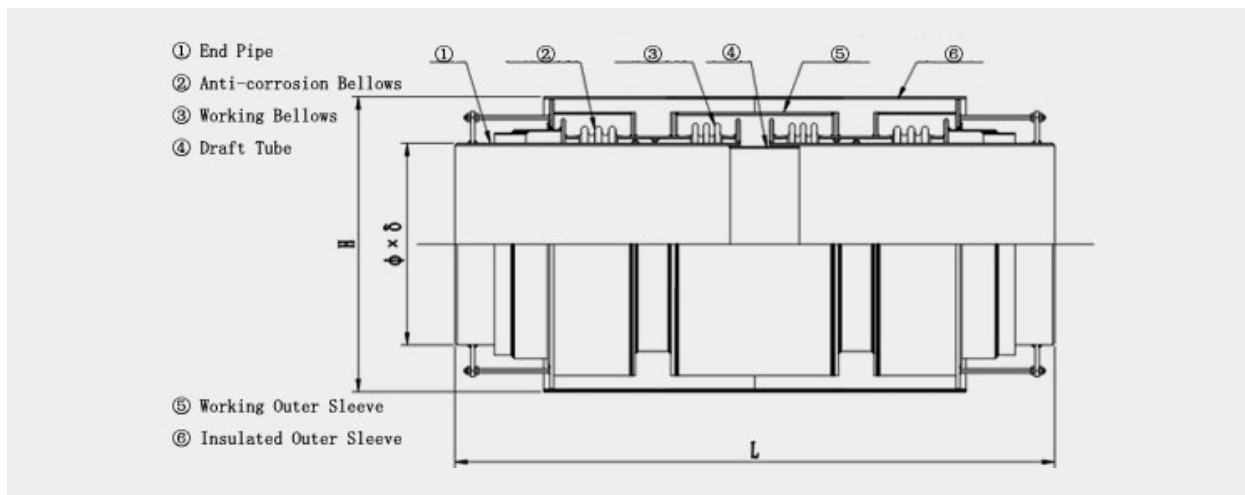
### 14. Heat-insulation Corrosion-resistance Bidirectional Directly Buried External Pressure Type



#### Features :

This type of expansion joints has all of the advantages both of the external pressure type and the corrosion resistant Unidirectional directly buried Internal Pressure type. It not only can be buried directly, but also has strong compensation ability. So when we use this type of expansion joints we not only make sure of the construction quality but also save the project cost greatly at the same time. That's the reason why it is widely used in the city thermal pipeline network projects.

Corrosion-resistant bellows can resist the corrosion caused by the underground water, especially suitable for high chlorine ion soil of the coastal city.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN150-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

## ANGLE EXPANSION JOINTS

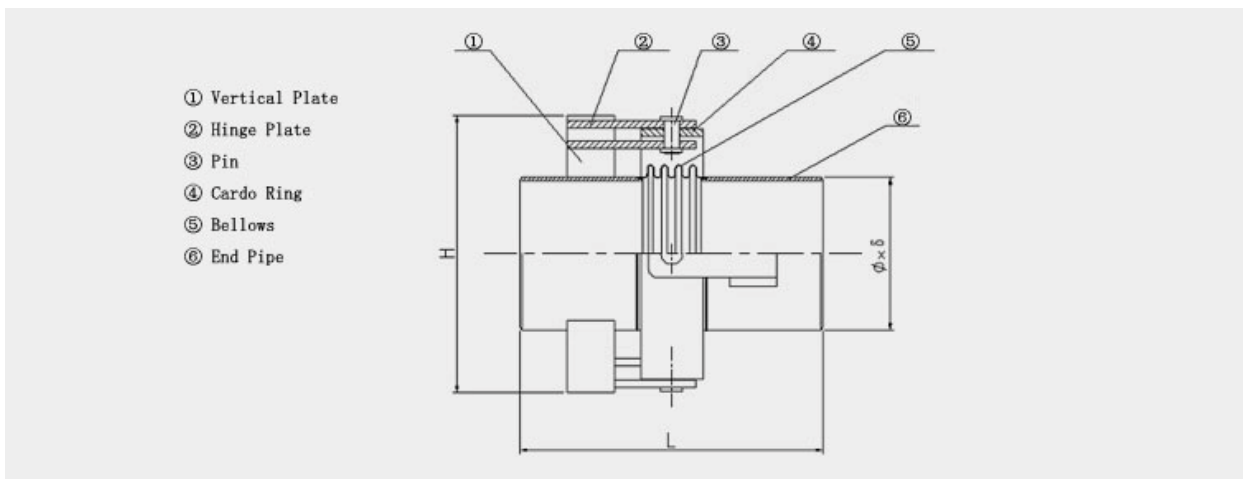
### 1. Universal Hinged Type Expansion Joints



#### Features :

Working principles of universal hinged type expansion joints are almost the same as that of simplex hinged bellows expansion joints. Universal hinged type expansion joints consist of one bellows and hinge plates connected with four groups of end pipes and gimbal ring, and flexibility components made of two pairs of hinge pins. The hinge plates face to face and they are perpendicular to the gimbal ring so it can absorb angular movements in any plane. Just as simplex hinged bellows expansion joints, SWJ don't work alone but usually two or three of them are combined together to be put into use.

It is used to compensate deflection movements of Z spatial pipe line. The hinge, hinge pin and hinge plate can carry thrust and some other additional external force.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN100-DN1000
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

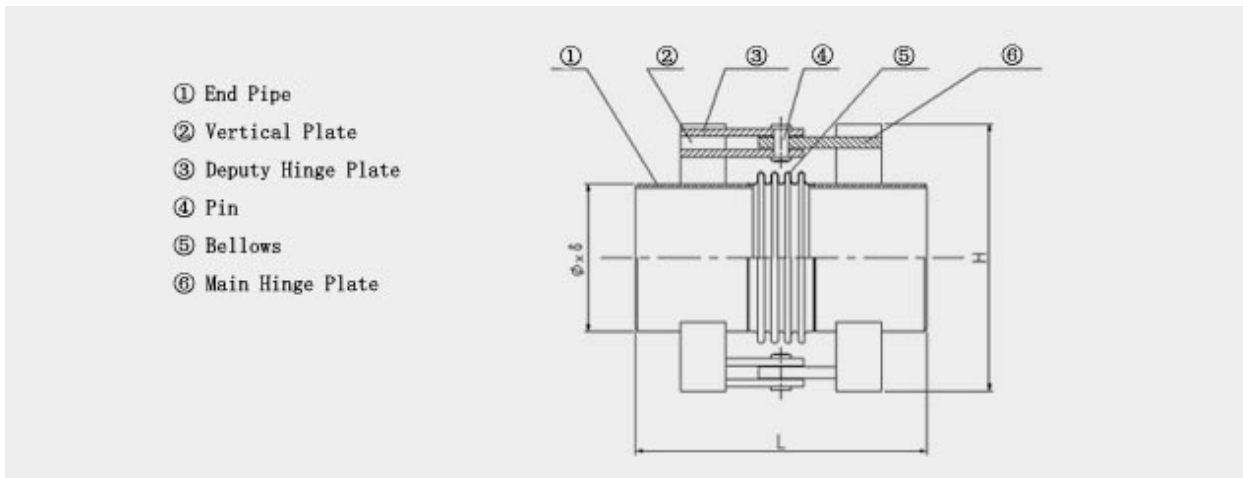
## ANGLE EXPANSION JOINTS

### 2. Planar Hinged Type Expansion Joints



#### Features :

This type of bellow expansion joints consist of one bellow, hinge pins, hinge plates, vertical plates and some other components. Simplex hinged bellow expansion joints don't work alone but usually two or three of them are combined together to be put into use. Movements of the angle pipes are compensated by angular deflection. The hinge, hinge pin and hinge plate can carry thrust and other additional external force. Only angular movements in a single plane can be absorbed.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN100-DN3000
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+ 450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

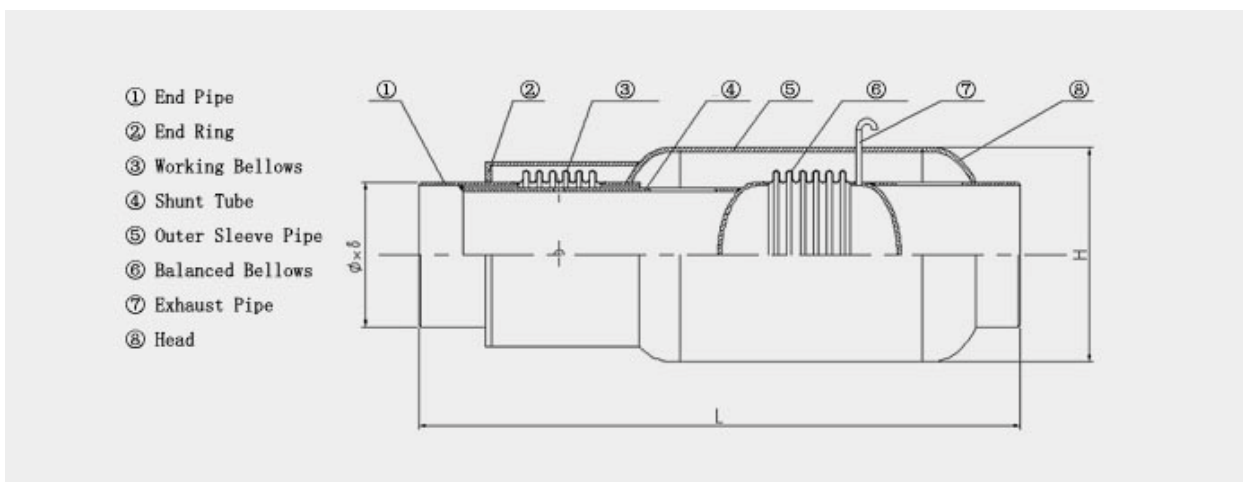
## PRESSURE BALANCED EXPANSION JOINTS

### 1. By-pass Pressure Balanced Expansion Joints



#### Features :

This type of expansion joints consists of two bellows with the same diameter and the same effective area, one sleeve and some other components. The working bellow bears the internal pressure while the balance bellow bears the external pressure. The piping and the equipment only carry the rigid counter-force caused by the movements of expansion joints instead of the axial thrust caused by internal pressurization. This balanced type of expansion joints is suitable for where the fixed support cannot be set between the two equipments because of its good self-guidance, economy and non-directional requirement of installing.

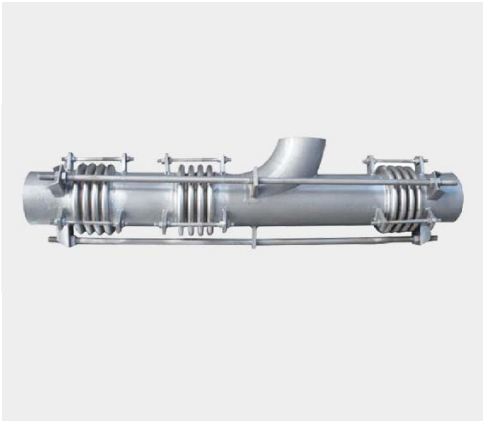


- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN100-DN1000
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)



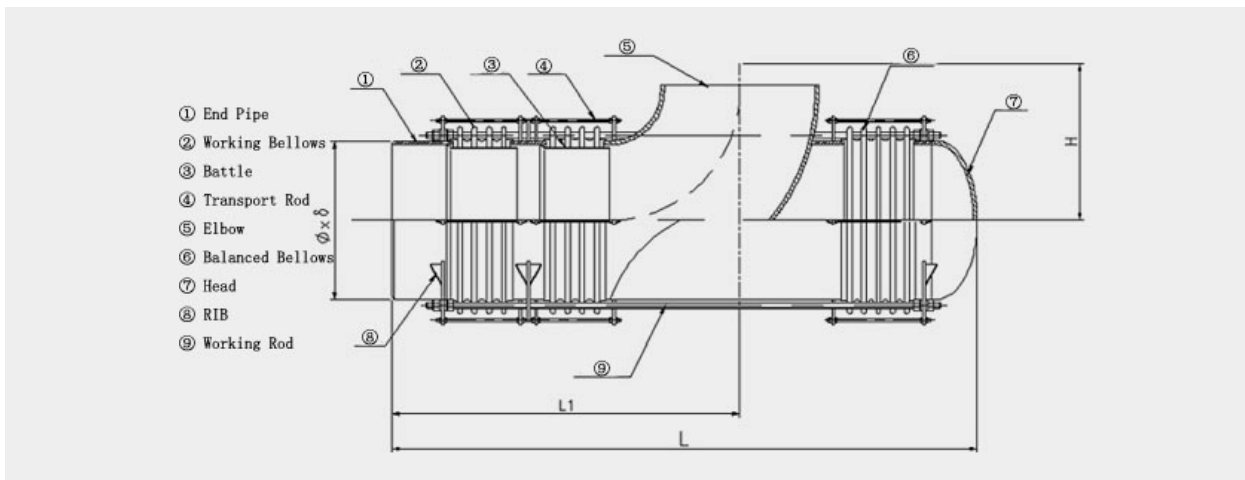
## PRESSURE BALANCED EXPANSION JOINTS

### 2. Angle-pipe Pressure Balanced Bellow Expansion Joints



#### Features :

This type of expansion joints consists of two bellows connected by an intermediate pipe and some other components. They are usually used to absorb axial and lateral movements in combination. What should be attention is the tie rod does not bear any force, which means it cannot carry the thrust created by medium's internal pressurization. So the situations of low pressure and large movements will be more available.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN300-DN1200
- Working Pressure: PN2.5/6
- Working Temperature: -80°C/+ 450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)



## PRESSURE BALANCED EXPANSION JOINTS

### 3. Straight Pressure Balanced Expansion Joints

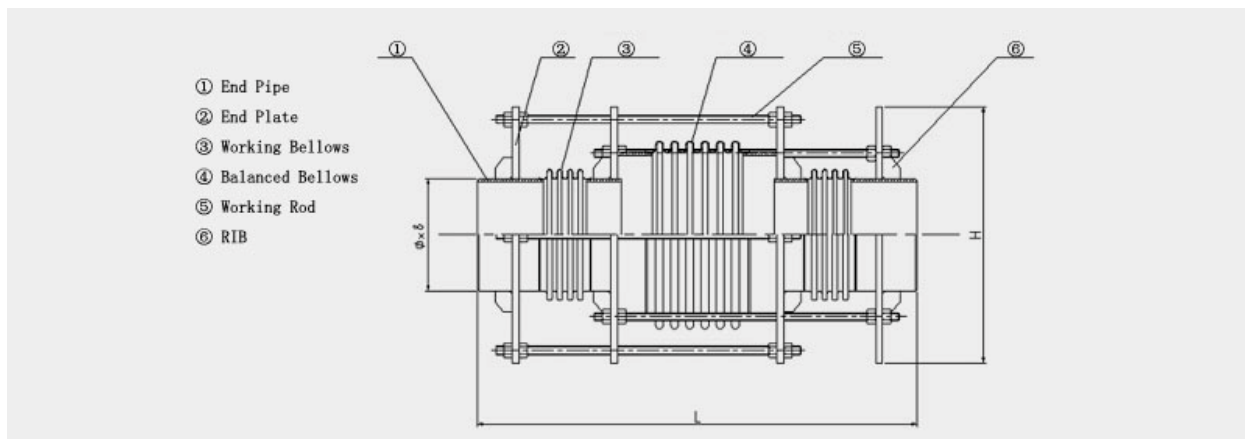


#### Features :

This type of expansion joints consist of two working bellows located at the ends, one balanced bellow located in the middle, tie rod, the end plate and some other components. The effective area of balanced bellows is twice of the working bellows.

So the lateral axial thrust caused by working bellows' Internal Pressure is canceled out by another thrust coming from the opposite direction caused by the balanced bellows' Internal

Pressure through the tie rod. Therefore the axial thrust doesn't output, which means the piping and the equipment only carry the rigid counter-force caused by the movements of expansion joints instead of the axial thrust caused by Internal Pressure. Compared with the blinding plate force, rigid counter-force is dozens of times smaller. So fixing the equipment and pipes becomes easier and available. But this type of expansion joints can only absorb axial movements.



- Material of Bellows: SUS 304(SUS 321 and SUS316L are also available)
- Nominal Diameter: DN300-DN1200
- Working Pressure: PN2.5/6/10/16/25
- Working Temperature: -80°C/+450°C
- Connection: Pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)

## FABRIC EXPANSION JOINTS

### DQ-FE J

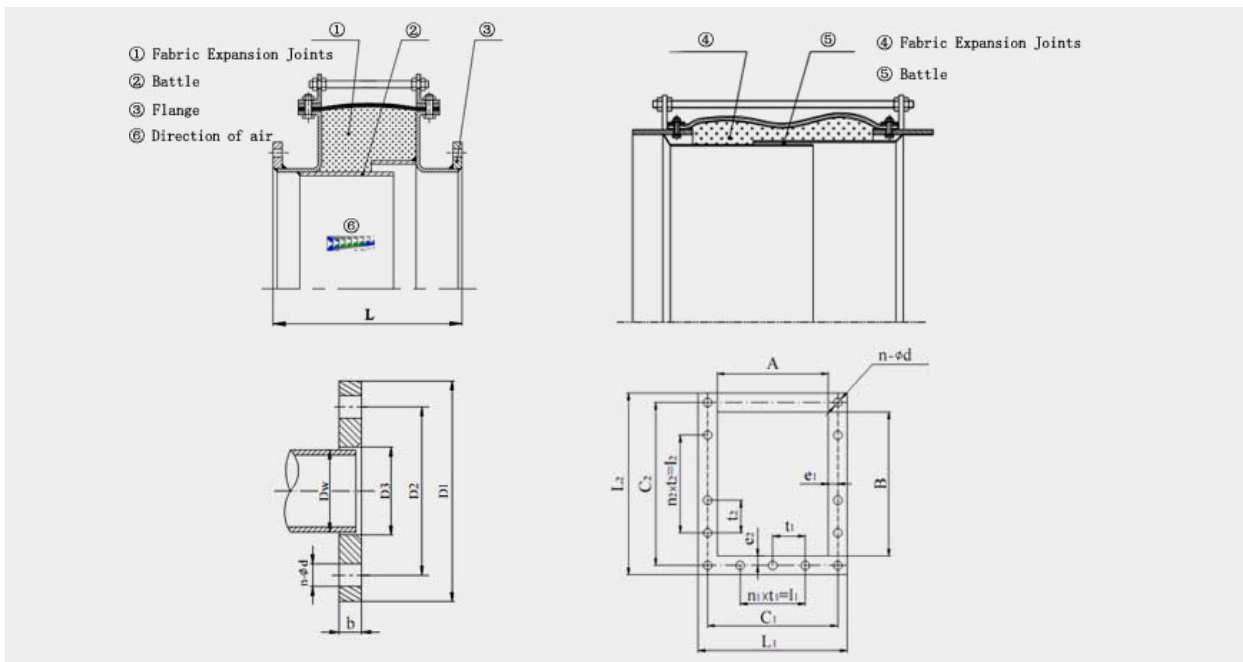


#### Features :

Fabric Expansion Joints consist of fabric, heat insulation cotton and metal components. It can not only absorb axial movements of pipelines by flexibility deformation of fabrics, but also compensate a little lateral movements or axial and lateral movements in combination. Besides, it can compensate angular movements. As fluoroplastics and organosilicone are parts of materials, the product has many advantages, such as zero thrust, simplified

support design, corrosion resistance, high-temperature resistance, vibration decoupling, noise reduction etc., so it usually applies to warm-air pipes and smoke pipes.

There are two ways of installations, one is the flanged connection, the other is weld end connection. The tie rod of this type of expansion joints is only used to support during the transportation or as an adjustment for the product's predeformation but not to carry any force.



- Nominal Diameter: DN80-DN8000
- Working Pressure: -20 KPa / +50KPa
- Working Temperature: -80°C/+ 1000°C
- Connection: Slip-on flange connection or pipe end connection
- Material of Connection: Carbon steel GB/T 700 for standard use(Special material of connection to meet specific customer & industry requirements)
- Other choices: Inner sleeve, carbon steel, SUS304(SUS 321 and SUS316L are also available)