Formed Bellows Ordering Information

成型波纹管订购信息

66701	-	0075	-	0275	-	0300	-	CB	-	10	-	F4

产品系列	
66701	KF法兰金属软管
66702	ISO法兰金属软管
66703	CF法兰金属软管
66704	KF法兰外衬编织网金属软管
66705	ISO法兰外衬编织网金属软管
66706	CF法兰外衬编织网金属软管

终端A	
0050	KF16
0133	CF16
0075	KF16
0212	CF25
0100	KF25
0275	CF35
0150	KF40
0338	CF50
0200	KF50
0450	CF63
0250K	ISO63-K
0250F	ISO63-F
0250N	NW63
0462	CF80
0300K	ISO80-K
0300F	ISO80-F
0300N	NW80
0600	CF100
0400K	ISO100-K
0400F	ISO100-F
0400N	NW100
0675	CF130
0600K	ISO160-K
0600F	ISO160-F
0600N	NW160
0800	CF160
0800K	ISO200-K
0800F	ISO200-F
0800N	NW200
1000	CF200
1000K	ISO250-K
1000F	SO250-F
1000N	NW250
1200	CF250
1200K	ISO320-K
1200F	ISO320-F
1200N	NW320
TW	直管对焊

终端B	
0050	KF16
0133	CF16
0075	KF16
0212	CF25
0100	KF25
0275	CF35
0150	KF40
0338	CF50
0200	KF50
0450	CF63
0250K	ISO63-K
0250F	ISO63-F
0250N	NW63
0462	CF80
0300K	ISO80-K
0300F	ISO80-F
0300N	NW80
0600	CF100
0400K	ISO100-K
0400F	ISO100-F
0400N	NW100
0675	CF130
0600K	ISO160-K
0600F	ISO160-F
0600N	NW160
0800	CF160
0800K	ISO200-K
0800F	ISO200-F
0800N	NW200
1000	CF200
1000K	ISO250-K
1000F	SO250-F
1000N	NW250
1200	CF250
1200K	ISO320-K
1200F	ISO320-F
1200N	NW320
TW	直管对焊

长度（mm）
xxxx

产品类型	
CB	可弯曲压缩(Compressible Bellows)
FH	可弯曲不可压缩 (Flexible hoses)

材质	
10	304
40	316L
HH	哈氏合金
TR	纯钛

内表面处理	
空白	FA
F4	EF
PT	PTFE涂层

说明

1、直管对焊端为英制规格，尺寸代码参见121页

2、当端口B和端口A代码完全相同时，端口B代码将被省略。

3、型号说明仅用于说明型号组成规则，有些组合实际并不存在；如有疑问请联系迈格诺科销售代表。

Formed Bellows Technical Data
成型波纹管技术参数

Type	Flange	Dimensions, mm			contraction Rate %
		ID	OD	Thickness	
Compressible Bellows	KF10	10.50	15.20	0.15	7.00
	KF16	20.00	30.50	0.15	7.00
	KF25	25.30	36.00	0.15	8.00
	KF40	39.50	54.00	0.15	11.00
	KF50	49.50	65.00	0.15	12.00
	ISO63	62.70	82.00	0.20	13.00
	ISO80	78.50	102.00	0.20	13.00
	ISO100	101.00	126.00	0.20	14.00
	ISO160	149.00	176.20	0.25	23.00
	ISO200	200.00	240.00	0.25	24.00

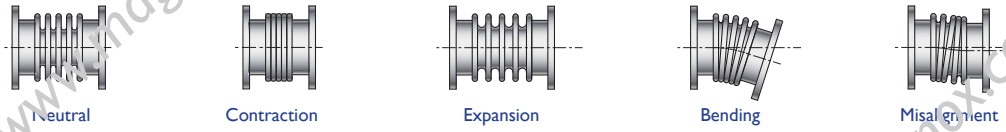
Flexible Hoses Technical Data
普通波纹管技术参数

Type	Flange	Dimensions, mm			Bending Radius (mm)	
		ID	OD	Thickness	Constant Bending	Repeated Bending
Flexible Hoses	KF10	10.50	15.20	0.15	30.00	40.00
	KF16	20.30	29.00	0.20	70.00	70.00
	KF25	26.00	35.00	0.20	90.00	90.00
	KF40	40.00	52.00	0.25	120.00	120.00
	KF50	54.00	67.00	0.25	140.00	140.00
	ISO63	63.00	80.00	0.25	150.00	150.00
	ISO80	78.50	102.00	0.25	220.00	220.00
	ISO100	101.00	126.00	0.25	280.00	280.00
	ISO160	151.00	179.00	0.30	500.00	500.00
	ISO200	200.00	231.00	0.30	750.00	750.00

Metal Mesh Bellows Technical Data
金属编织网波纹管技术参数

Type	Flange	Dimensions, mm			Bending Radius (mm)		Max. working pressure(Mpa)
		ID	OD	Thickness	Constant Bending	Repeated Bending	
Single Braid	KF10	10.50	15.20	0.15	30.00	185.00	4.90
	KF16	20.30	29.00	0.20	80.00	140.00	2.90
	KF25	26.00	35.00	0.20	90.00	170.00	3.90
	KF40	40.00	52.00	0.25	120.00	220.00	2.80
	KF50	54.00	67.00	0.25	170.00	220.00	1.50
	ISO63	63.00	80.00	0.25	140.00	240.00	1.60
	ISO80	78.50	102.00	0.25	260.00	250.00	1.60
	ISO100	101.00	126.00	0.25	320.00	280.00	1.10
	ISO160	150.50	178.50	0.30	500.00	600.00	1.00
	ISO200	200.00	231.00	0.30	750.00	850.00	1.10

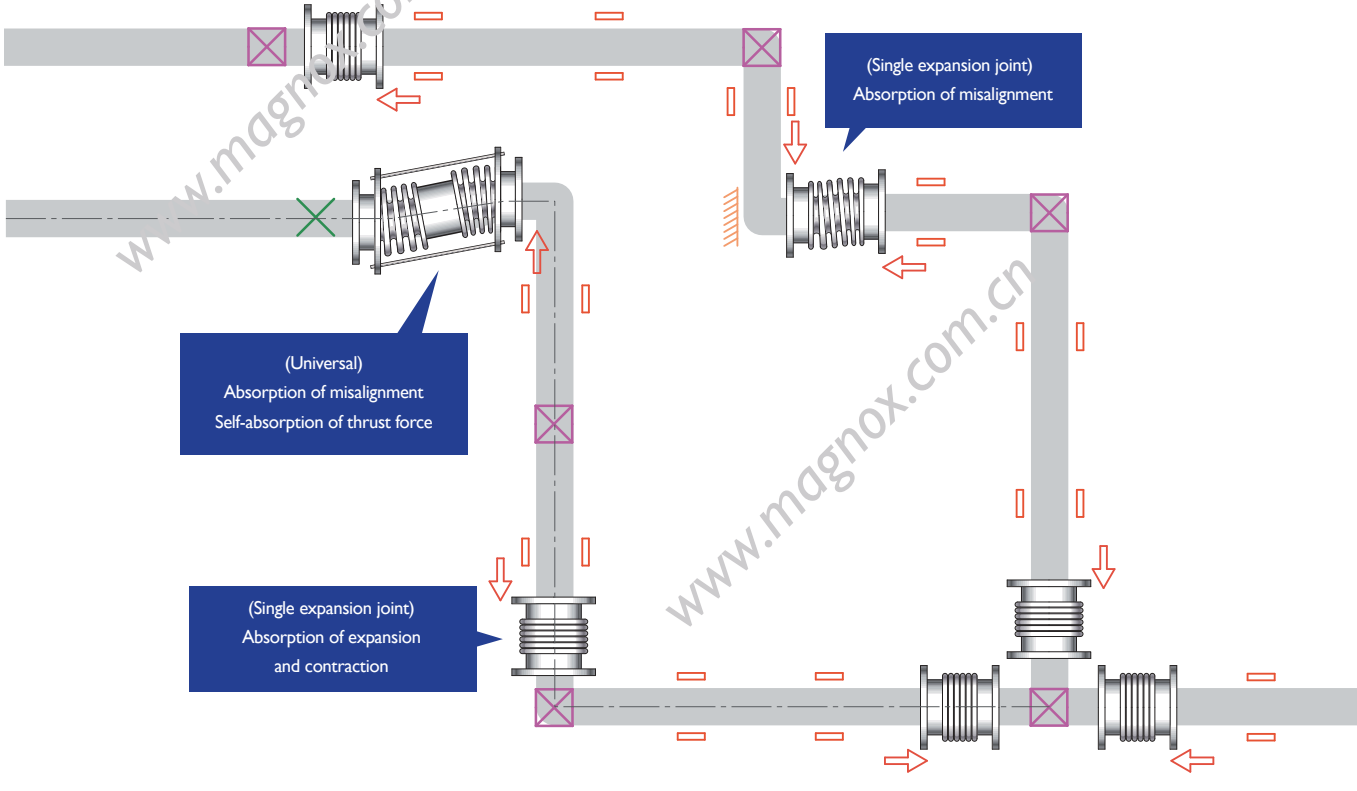
Basic Motions Of Bellows Expansion Joints
波纹管基本运动形式

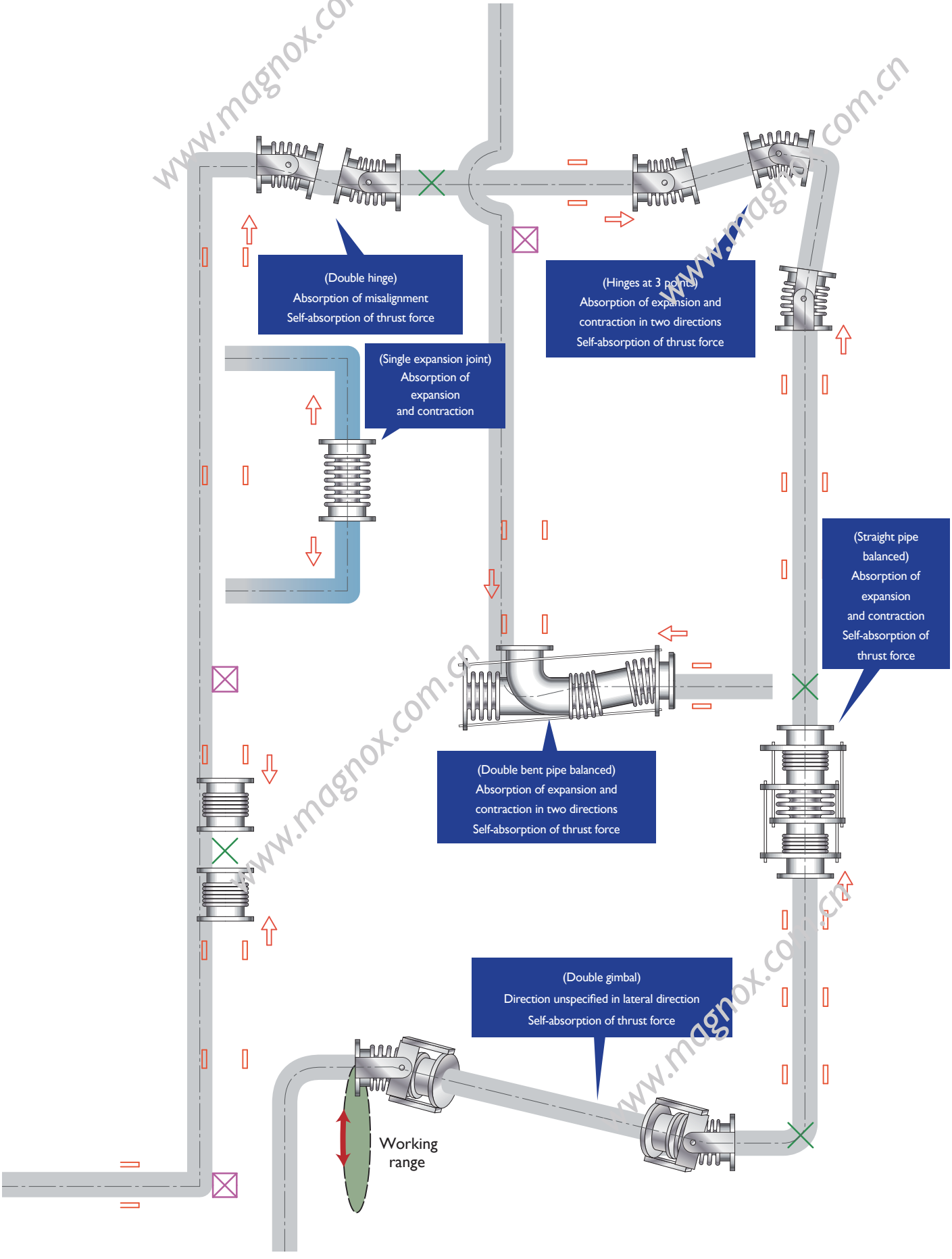


Examples Of Application Of Bellows Expansion Joints
应用实例介绍

Terms and symbols

Tem	Description	Symbol
Main anchor	Must be resistant to the expansion joint thrust force and the spring reaction force.	
Slide anchor	Must be resistant to the expansion joint thrust force and the spring reaction force but does not restrain the force in the sliding direction.	
Intermediate anchor	Must be resistant to the spring reaction force of expansion joint.	
Guide	Pipe guide device for transmitting smoothly the necessary force for centering of expansion joint and pipe and movement in the axial direction to the anchor	
Direction of expansion of pipe		



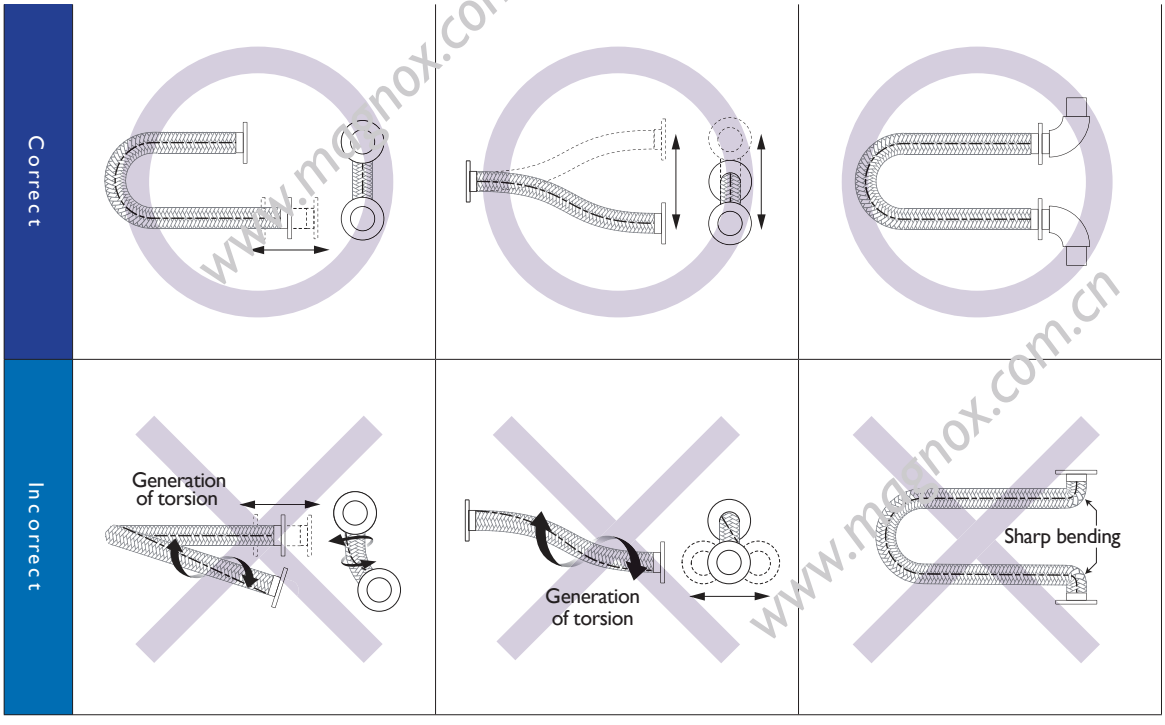


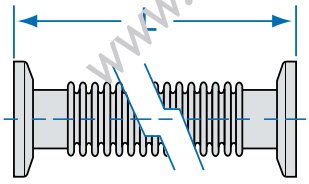
Instructions common to flexible hoses and bellows

- These products are made from thin plates. Even insignificant impact may damage the products.
  For transportation, pack them with sufficient packaging materials, and handle them carefully during transportation.
- Store the products in a clean and dry room. Avoid contact with high moisture, saline matter and high lyacid atmosphere.
- Use them in the ranges specifi ed in drawings, delivery specifi cations and catalogs. If any product is used out of the design specifi cations, it may be damaged.
- Avoid using fluids which do not have corrosion resistance for each material.
- Do not expose the products directly to sparks from a welder or a grinder. When using a welder or a grinder near the products, appropriately protect them.
- If they are moved after installation or used as measures against vibration, fatigue cracks may develop in them in a short period.

Flexible hoses

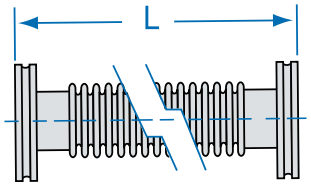
- When installing any flexible hose, do not apply torsion to it. To prevent damage owing to torsion during installation, it is recommended to use a joint, such as a loose fl ange, union joint or SNM joint, which can prevent torsion at one end of the tube.
- Do not install any flexible hose in such a way that the tube is twisted when it is bent. Install the tube in such a way that it is constantly on a certain plane to prevent damage to the tube caused by torsion when it is bent.
- Avoid bending any flexible hose at a sharp angle. If a tube is installed improperly, the tube may be repeatedly bent at a sharp angle. If a tube is used at a radius lower than the allowable minimum bending radius, it will be fatigued early and damaged in a short period.
- Do not expand or contract any fl exible hose. Do not install a tube in an expanded or contracted condition exceeding the specified range.
- Reworking
  Avoid reworking any joint if possible. When reworking a joint, take care not to damage the hose or joint, and protect the hose to prevent entry of dust into the tube.
- Welding
  When welding a hose to a mating pipe joint, take utmost care that the hose is not thermally influenced. Otherwise, it may be distorted, or the material characteristics may be degraded, thereby resulting in early breakage.
- Examples of correct use and incorrect use





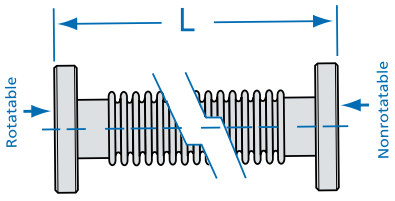
KF Bellows

Part Number	Flange Size	Dimensions, mm
		L
66701-0016	KF16	100/OPTION
66701-0025	KF25	100/OPTION
66701-0040	KF40	100/OPTION
66701-0050	KF50	100/OPTION



ISO Bellows

Part Number	Flange Size	Dimensions, mm
		L
66702-0063	ISO-63	100/OPTION
66702-0080	ISO-80	100/OPTION
66702-0100	ISO-100	100/OPTION
66702-0160	ISO-160	100/OPTION
66702-0200	ISO-200	100/OPTION

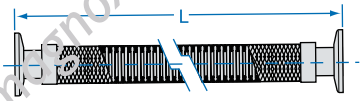


CF Bellows

Part Number	Flange Size	Dimensions, mm
		L
66703-0133	CF16	100/OPTION
66703-0275	CF35	100/OPTION
66703-0338	CF50	100/OPTION
66703-0450	CF63	100/OPTION
66703-0600	CF100	100/OPTION
66703-0800	CF160	100/OPTION

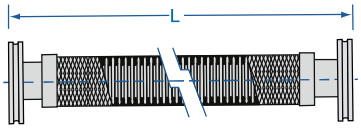
KF Flexible Braided Coupling

Part Number	Flange Size	Dimensions, mm	
		Wall Thickness	L
66704-0016	KF16	0.20	100/OPTION
66704-0025	KF25	0.20	100/OPTION
66704-0040	KF40	0.20	100/OPTION
66704-0050	KF50	0.20	100/OPTION



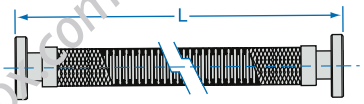
ISO Flexible Braided Coupling

Part Number	Flange Size	Dimensions, mm
		L
66705-0063	ISO-63	200/OPTION
66705-0080	ISO-80	200/OPTION
66705-0100	ISO-100	200/OPTION
66705-0160	ISO-160	200/OPTION
66705-0200	ISO-200	200/OPTION
66705-0250	ISO-250	200/OPTION
66705-0300	ISO-300	200/OPTION



CF Flexible Braided Coupling

Part Number	Flange Size	Dimensions, mm
		L
66706-0133	CF16	200/OPTION
66706-0275	CF35	200/OPTION
66706-0338	CF50	200/OPTION
66706-0450	CF63	200/OPTION
66706-0600	CF100	200/OPTION
66706-0800	CF160	200/OPTION



Vacuum Insulation Double-layer Flexible Hoses
真空双层绝热软管

Features

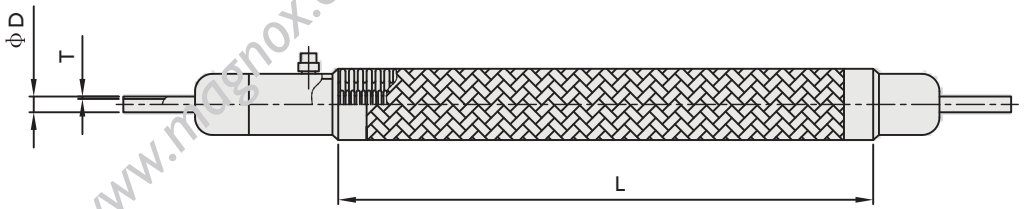
- Remarkably high flexibility
- The excellent heat insulating performance minimizes evaporation of the internal fluid.

Specifications

Material	Inner hose SUS316L
	Outer hose SUS304
Working pressure MAX	1.0 MPa
Working temperature	MIN -200℃
Allowable leak rate	1.33×10-10 Pa · m3 /sec or less

Remarks

- Hoses for working pressure of higher than 1 MPa can be designed and fabricated.
- Hoses having length not shown in the L column can be fabricated.



Standard dimensions

Part Number	Tube Size	Dimensions, mm			
		D	T	L	Min. bending radius
66713-0004	1/4"	6.35	1.0	000~3000	250
66713-0006	3/8"	9.52	1.0	1000~3000	300
66713-0008	1/2"	12.7	1.2	1000~3000	300

MAGNOX

Ultra High Purity Bellows
超高纯波纹管

Specifications

- Material: 304&316L stainless steel
- Pressure Rating:
  1/4":(10-9torr) to150 psi (10 bar)
  3/8"-1/2":(10-9torr) to 75 psi(5 bar)
- Temperature Rating:
  70 to 1000°F(20 to 537°C)

- Hoses for working pressure of higher than 1 MPa can be designed and fabricated.
- Hoses having length not shown in the L column can be fabricated.

订购信息
Ordering Information

66707	—	4SW	—	8	—	VF	—	0300	—	40	—	F4

产品系列	
66707	金属软管
66708	外衬编织网软管

终端接口尺寸	
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
6M	6mm
8M	8mm
10M	10mm
12M	12mm
20M	20mm
25M	25mm

终端接口形式A	
TW	TUBE
SW	Lok
VM	Male VCR
VF	Fmale VCR
OF	Fmale VCO
OM	Male VCO
QF	Quick Fittings
NM	Male NPT
NF	Fmale NPT
PM	Male PT
PF	Fmale PT
GM	G螺纹外丝
GF	G螺纹内丝

终端接口尺寸	
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
6M	6mm
8M	8mm
10M	10mm
12M	12mm
20M	20mm
25M	25mm

终端接口形式B	
TW	TUBE
SW	Lok
VM	Male VCR
VF	Fmale VCR
OF	Fmale VCO
OM	Male VCO
QF	Quick Fittings
NM	Male NPT
NF	Fmale NPT
PM	Male PT
PF	Fmale PT
GM	G螺纹外丝
GF	G螺纹内丝

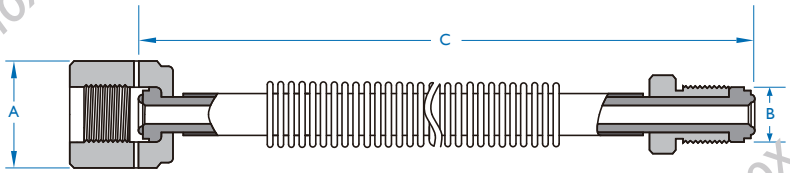
长度(mm)
XXXX

材质	
10	304
40	316L
PT	PTFE
PA	PFA

内表面处理	
BLANK	BA
F4	EP

说明

1、PTFE及PFA材质只能以带外套编织网形式，且内管为光滑圆管。
2、长度为终端至终端的尺寸，表示形式为4位，若总长300mm则表示为0300。
3、“选型说明”用于说明型号的组成规则，有些组合实际并不存在:如有疑问，请联系迈格诺科相关销售工程师。

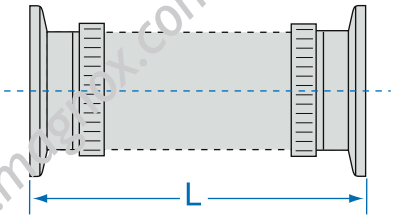


Inlet Type	Dimension,mm		
	A	B	C
Lok-Lok	1/4"Lok	1/4"Lok	OPTION
	3/8"Lok	3/8"Lok	OPTION
	1/2"Lok	1/2"Lok	OPTION
	3/4"Lok	3/4"Lok	OPTION
	1"Lok	1"Lok	OPTION
MVCR-MVCR	1/4"MVCR	1/4"MVCR	OPTION
	3/8"MVCR	3/8"MVCR	OPTION
	1/2"MVCR	1/2"MVCR	OPTION
	3/4"MVCR	3/4"MVCR	OPTION
	1"MVCR	1"MVCR	OPTION
FVCR-FVCR	1/4"FVCR	1/4"FVCR	OPTION
	3/8"FVCR	3/8"FVCR	OPTION
	1/2"FVCR	1/2"FVCR	OPTION
	3/4"FVCR	3/4"FVCR	OPTION
	1"FVCR	1"FVCR	OPTION
FVCR-MVCR	1/4"FVCR	1/4"MVCR	OPTION
	3/8"FVCR	3/8"MVCR	OPTION
	1/2"FVCR	1/2"MVCR	OPTION
	3/4"FVCR	3/4"MVCR	OPTION
	1"FVCR	1"MVCR	OPTION
FVCR-Lok	1/4"FVCR	1/4"Lok	OPTION
	3/8"FVCR	3/8"Lok	OPTION
	1/2"FVCR	1/2"Lok	OPTION
	3/4"FVCR	3/4"Lok	OPTION
	1"FVCR	1"Lok	OPTION
MVCR-Lok	1/4"MVCR	1/4"Lok	OPTION
	3/8"MVCR	3/8"Lok	OPTION
	1/2"MVCR	1/2"Lok	OPTION
	3/4"MVCR	3/4"Lok	OPTION
	1"MVCR	1"Lok	OPTION
TUBE-TUBE	1/4"TUBE	1/4"TUBE	OPTION
	3/8"TUBE	3/8"TUBE	OPTION
	1/2"TUBE	1/2"TUBE	OPTION
	3/4"TUBE	3/4"TUBE	OPTION
	1"TUBE	1"TUBE	OPTION

PVC Hoses with NW Flanges

Part Number	Flange Size	Dimensions, mm
		L
66714-0016	KF16	100/OPTION
66714-0025	KF25	100/OPTION
66714-0040	KF40	100/OPTION
66714-0050	KF50	100/OPTION

可按照需求定制任意长度。例如，需定制KF25 L=750mm，订购号为66714-0025-0750



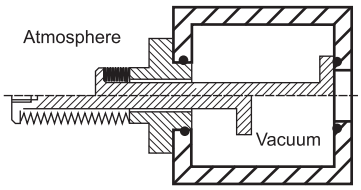
Teflon Bellows with NW Flanges

Part Number	Flange Size	Dimensions, mm
		L
66709-0016	KF16	100/OPTION
66709-0025	KF25	100/OPTION
66709-0040	KF40	100/OPTION
66709-0050	KF50	100/OPTION

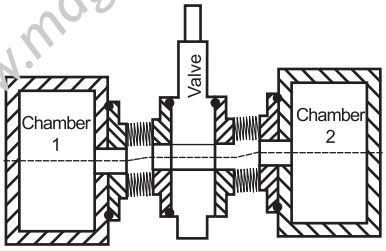
可按照需求定制任意长度。例如，需定制KF25 L=750mm，订购号为66709-0025-0750

Introduction To Welded Metal Bellows
金属焊接波纹管介绍

Welded metal bellows are flexible connecting elements between vacuum flanges or end fittings of any kind.The welded metal bellow is not a rigid body but can overcome a specified working stroke.Three main fields of application can be identifed: as feedthrough, as expansion joint or as vibration isolator.



welded metal bellows can serve as feedthroughs to introduce movements into the vacuum or to separate the vacuum chamber from mechanical parts.



welded metal bellows can serve as compensators to balance thermal expansion and mounting tolerances (e.g.height differences or angular offsets).

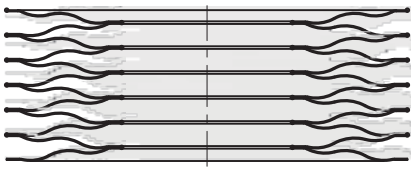
welded metal bellows are often used for vibration decoupling,e.g., between vacu.um pump and measuring instrument.A special design of the compensator causes a better vibration isolation by an increased number of diaphragm pairs, but enlarges the risk of self-resonance.

Advantages Of Welded Metal Bellows
金属焊接波纹管的优点

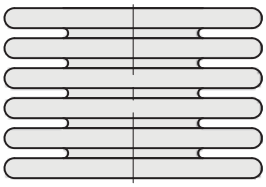
- High flexibility
- Lowest assembly dimension
- For highest demands in UHV applications
- Lower spring forces
- Variable web width (OD-ID)
- Almost unlimited bellow length
- Non-circular shapes available (racetrack, rectangular)

Comparison Of Welded Metal Bellows And Flexible Hoses
金属焊接波纹管与柔性软管比较

In comparison to flexible hoses which are made of a thin-walled, partly bead welded and hydraulically formed tube, welded metal bellows can execute significantly larger lateral, axial, and angular motions in relation to their size.They also have a lower spring rate.



welded metal bellows



Flexible hose

Types Of Movements
动作类型

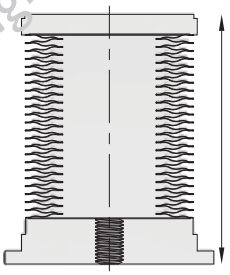
The following movements are possible:

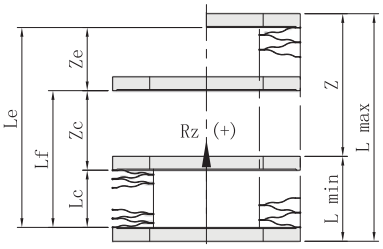
- Axial
- Lateral
- Angular

Any combination of these kinds of movements is possible.
The individual types of movements are briefly explained below:

Axial

The flange surfaces are in parellel position and move towards each other,Thereby, no deflection in lateral direction is executed.The axial stroke is attenuated to achieve higher service life, i. e., a streched stroke should not occur at high-cycle bellows.



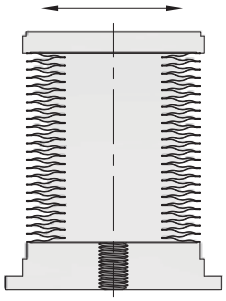


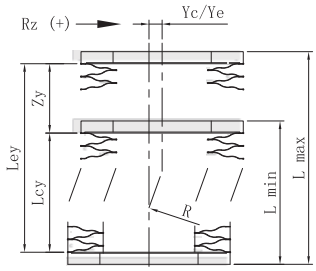
Abbreviations axial

Rz +	positive direction of force
Lf	free bellow length (without end fittings)
Lc	compressed bellow length = min. assembly dimension without end fittings
Le	stretched bellow length = max. assembly dimension without end fittings
Lmin	min. assembly dimension incl. end fittings from seal to seal
Lmax	max assembly dimension incl.end fittings from seal to seal
Z	axial stroke according to specification

Lateral

The flange surfaces shift sideways during lateral movement while always remaining parallel.
The maximal lateral stroke of an edge welded bellow depends on the assembly length.



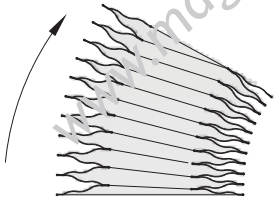


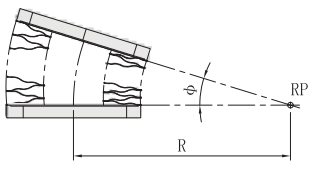
Abbreviations lateral

Ry +	positive direction of force
Yc	lateral stroke at Lcy
Ye	lateral stroke at Ley
Lcy	min. bellow length at given lateral stroke
Ley	max. bellow length at given lateral stroke
Lmin	min. assembly dimension incl. end fittings from seal to seal
Lmax	max. assembly dimension incl. end fittings from seal to seal
Zy	possible axial stroke at given lateral stroke Yc/Ye

Angular

The center axis of the bellow forms a bend with the radius "R" at angular movement(see figure). Not only the angle of rotation but also the location of the center of rotation is very important for dimensioning.





Key angular

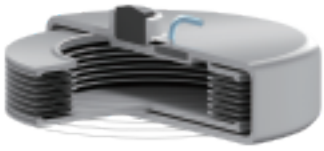
RP	the center of the bow of the bellow axis results from lc and le
R	Rradius of the bellow axis
Φ	angle between the flange surfaces according to specification
Φ/MP	angular stroke per convolution, catalog value
n	number of convolutions

Φ=Φ/MPxn

Design And Connectors
连接设计

Depending on the application, welded metal bellows consist of a number of moulded thin metal plates (diaphraams) which are welded together alternately at their inner or outer diameter.Two of these at the inner diameter welded plates form a convolution.

Usually, bellows will not be supplied without solid connections, so-called end fitings.The weld seam between the bellow and the end fitting needs a special preparation.



Materials
材质

We offer welded metal bellows and the appropriate flanges and end fittings in different materials.We use stainless steel 1.4435(AISI 316L) as standard for welded metal belows.The flanges and end fittings can be made from stainless steel 304, 304L.or 316L. if a very low magnetic permeability μr ≤1.005 is required, the flanges can be made of stainless steel 1.4429 in ESR quality. For welded metal bellows of AM350 we use flanges and end fittings from stainless steel 316L.

in addition, the special material Titanium Grade 1 can be used if the welded metal bellows are used in an especially corrosive environment in this case the flanges have to be made of Titanium Grade 1. Edge welded bellows of a nickel-based alloy (Haynes 242) are applicable for processes with temperatures up to 600 °C, depending on the environmental conditions even up to 1000 °C The appropriate flanges will be manufactured of the nickel-based alloy AU600.

Standard materials

1.4435 (AISI 316L): austenitic stainless steel (C: < 0.03 %; Cr: 1 % - 18 %; Ni: 10 % 14 %)
magnetic permeability μr s 1.1; good weldability; good corrosion resistance; operation temperature up to +450 °C; suitable for cryogenic capplications; for applications up to 500,000 cycles

AM 350 (AISI 633): mostly austenitic Cr-Ni steel with ca. 10 % ferrite, thus higher magnetic permeability; good weldability; nonresistant-to anorganic acids; operation temperature up to +250°C; not suitable for cryogenic applications; due to high elasticity and stability suitable up to 10 million cycles

Special materials (longer delivery time than standard materials)

Titanium Grade 1: pur titanium, nonalloy; lowest magnetic permeability; cannot be welded to other materials; good corrosionresistance; embrittles at temperatures above +350C
Nickel-based alloys (Haynes 242, Hastelloy®, Inconel®,,AU600): alloy on nickel basis, ;difficult to weld (if so, higher leak rates canresult): excellent resistance in oxidizing and reductive media: operation temperature to +1000 , in corrosive environment to ca, +600°C

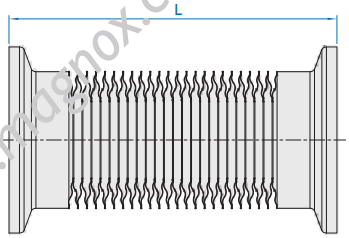
Important hint: The choice of material has to be made based on the specific requirements of the application

Standard Edge Welded Bellows
标准焊接波纹管

Quick availability of standard dimensions, in stock bellow material stainless steel 316L; flange material stainless steel 316L.

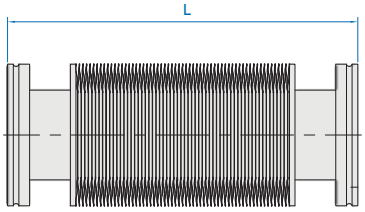
KF Flanges Edge Weld Bellows

Part Number	Flange Size	Dimensions, mm
		L
66710-0016	KF16	100/OPTION
66710-0025	KF25	100/OPTION
66710-0040	KF40	100/OPTION
66710-0050	KF50	100/OPTION



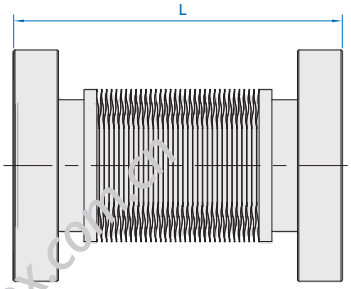
ISO Flanges Edge Weld Bellows

Part Number	Flange Size	Dimensions, mm
		L
66711-0063	ISO63	100/OPTION
66711-0080	ISO80	100/OPTION
66711-0100	ISO100	100/OPTION
66711-0160	ISO160	100/OPTION
66711-0200	ISO200	100/OPTION



CF Flanges Edge Weld Bellows

Part Number	Flange Size	Dimensions, mm
		L
66712-0133	CF16	100/OPTION
66712-0275	CF35	100/OPTION
66712-0338	CF50	100/OPTION
00712-0450	CF63	100/OPTION
66712-0600	CF100	100/OPTION
66712-0800	CF160	100/OPTION



Service And Repair
服务和维修

Besides the manufacturing of custom edge welded bellows, we deliver replacement bellows. In addition, we are able to offer the repair of damaged bellows. This includes bellow feedthroughs of valve drives, coupling elements, manipulators, etc.

A drawing, a precise sketch or a photo, if available, is essential for quotation. You can also send a sample or the damaged bellow for the estimation of costs. In this case, please contact us before shipping, so we can start working immediately on receipt of the goods.

Notes

The following criteria have to be considered:

◆ Conditions of surrounding area
Bake-out temperature, operating press ure, operating temperature, possible torsion and the inspection pressure affecting the life cycle directly.

◆ Vacuum inside the welded metal bellow (outside overpressure)
Edge welded bellows are stabilized by the vacuum inside. They can be up to ten times as long as the outside diameter in case of horizontal installation. However, the bellow will become unstable in case of zero pressure difference.

◆ Vacuum outside the welded metal bellow (inside overpressure)
In this case the bellow is very unstable and will buckle soon. The bellow needs to beaxially stabilized by guiding elements.

◆ Horizontal installation of long welded metal bellows
The deflection of the edge welded bellows has to be considered especially in this installation position.
It is recommended to split the bellows with intermediate rings into fragment bellows and put up the intermediate rings into a guidance system.

◆ Vertical installation of long welded metal bellows
It needs to be considered that the diaphragm on top always has to carry the weight of the whole edge welded bellow. Therefore, the edge welded bellow should also be splitinto segments by intermediate rings and should be released by rods or wire for traction relief.

Product Application Industry
产品应用行业

Welded Metal Bellows is widely used throughout the manufacturing industry.

Because high levels of weld quality control and reliability are required,

High End Market is dominated by only few leading companies national market, including MAGNOX.

- Maintain internal and external sealing of the product
- Tilt and swivel, compression and stretching is possible
- High durability in a high temperature, a high pressure, and a corrosive environment

Application

Automotive Systems

Aviation/Aerospace Systems

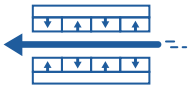
Implantable Medical Devices

Irrigation Processes

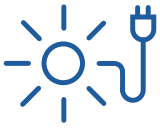
Semiconductor Manufacturing

Commercial Batteries

Relay Cases



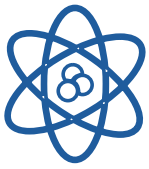
Accelerator



Energy(Solar)

Oil & Gas

Hydrogen



Nuclear

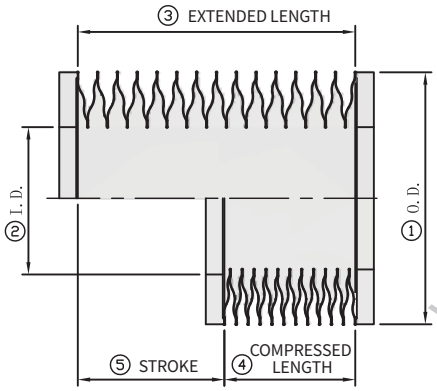
Weapon Systems

Chemical

FPD

High Speed Train

Welded Metal Bellows Design Request
焊接波纹管设计式样委托书



① Bellows Capsule Maximum O.D.: _____ mm
波纹管最大外径:

② Bellows Capsule Minimum I.D.: _____ mm
波纹管最小内径:

③ Extended Length: _____ mm
伸展长度(EL):

④Compressed Length: _____ mm
压编长度(CL):

⑤ Stroke(EL~CL): _____ mm
行程:

⑥ Install length: _____ mm
安装长度:

⑦ Life Cycle: _____ cycle
寿命:

⑧ Vacuum Side : Inside _____ kg/cm².
真空端: 内部

Outside _____ kg/cm²
外部

⑨ Temperature: _____ °C
使用温度:

⑩ Gas or Fluid: _____
腔体内使用流体(气体/液体):

⑪ Leak Rate : _____ pa*m³/s He
泄漏率:

⑫ Bellows Capsule Material: _____
波纹管材料:

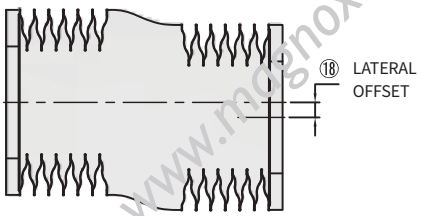
⑬ Flange material: _____
法兰材料:

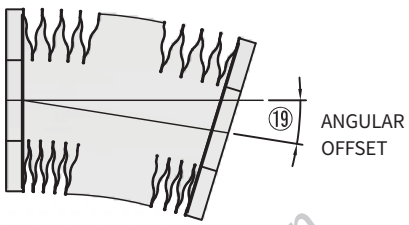
⑭ Spring rate: _____ /mm
弹性系数:

⑮ Shaft size: _____ mm
波纹管内部轴直径:

⑯ Installation:Vertical( ) Horizonal( )
安装方向: 垂直方向 水平方向

⑰ Process or equipment : _____
工程或设备名称:





⑱ Lateral Offset: _____ mm
侧向偏移:

⑲ Angular Oifset: _____ deg
角度偏移:

※ memo 其他事项要求

MEMO